ALLIED
ELECTRONICS, INC.

AN AVNET COMPANY

Aynacon 291

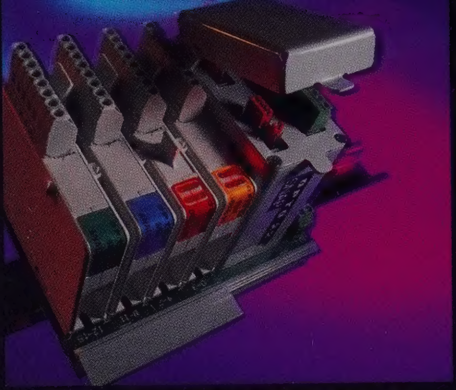
M/A/COM SMA
SMB
SMC 27

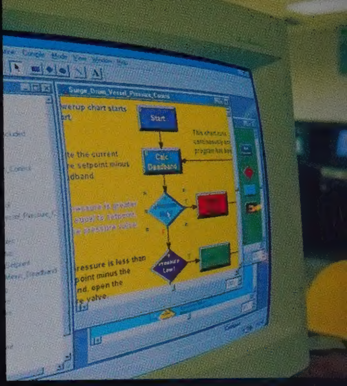
970 Engineering Manual & Purchasing Guide

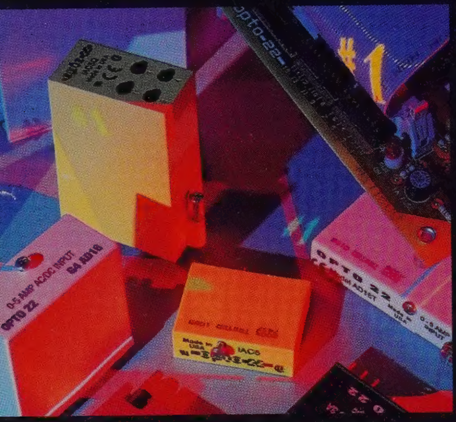
1-800-433-5700

http://www.allied.avnet.com

Solid-State Relays


Featuring New SNAP I/O


OptoControl Softw


I/O Modules

Brain Boards

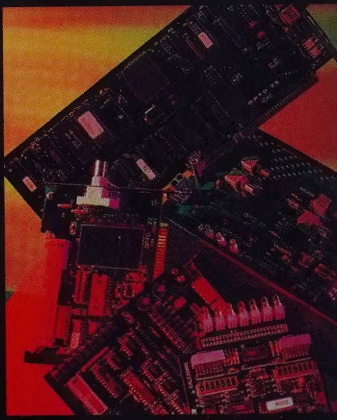
ALLIED ELECTRONICS NOW STOCKS THE COMPLETE LINE OF OPTO 22 AUTOMATION PRODUCTS.

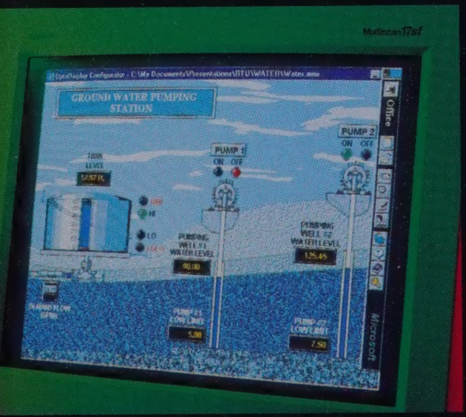
OPTO 22

SEE OUR COMPLETE PRODUCT LINE ON PAGES

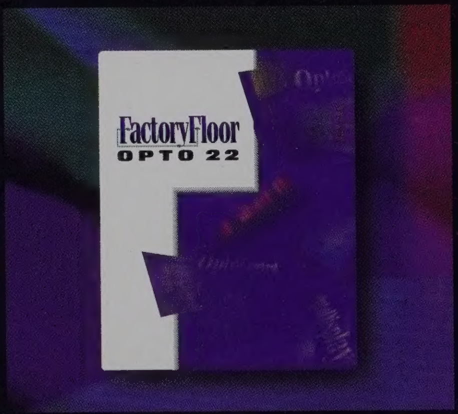
CALL ALLIED ELECTRONICS
1-800-433-5700

Racks


Interfaces



OptoDisplay Software



New FactoryFloor 32-Bit Windows-Based Software Suite

Controllers

ALLIED ELECTRONICS, INC.

AN AVNET COMPANY

• ISO 9002
• Local Sales Offices Throughout North America
• Internet • CD-ROM

Allied On The Internet

www.allied.avnet.com

- ✓ Check Stock Availability
- ✓ Enter Orders Electronically
- ✓ Find Technical Information
- ✓ See Product Spotlights
- ✓ Communicate with Sales Offices
- ✓ Track Shipments

CD-ROM

The Information Found In This Catalog Is Also Available On CD-ROM

- ✓ Macintosh
- ✓ Windows
- ✓ Electronically Search for Parts
- ✓ Order Entry Template Included

Line Card, Manufacturer Index, Locations, Service Information 1
Batteries, Circuit Breakers, Fuses, Accessories 2
Cabinets and Enclosures, Fans and Motors 3
Capacitors, Chokes and Inductors, Filters 4
Connectors, Sockets, Terminal Blocks, Plugs 5
Hardware and Tools 6
Lamps, LEDs, Displays, Optoelectronics, Photocells and Tubes 7
Potentiometers, Resistors and Dials 8
Power Conditioners, Power Supplies, Outlet Strips 9
Relays, Controls, I/O Modules, Timers and Sensors 10
Semiconductors, Heat Sinks, Static Control 11
Solder, Solder Equipment, Chemicals and Cleaners 12
Switches 13
Test Equipment, Accessories, Panel Meters 14
Telephone, Audio, Security, and Computer Products 15
Transformers 16
Wire, Cable, Shrink Tubing, Accessories 17
RF Microwave Products 18
Product Index 19

MANUFACTURERS ALPHABETICALLY

- ☐ 3M

A

- ☐ A. W. Sperry
- ☐ Aavid Thermal Technologies, Inc.
- ☐ Acme Electric
- ☐ Admiral Controls
- ☐ Advanced Micro Devices (AMD)
- ☐ AIM
- ☐ Akro-Mils
- ☐ Alectron
- ☐ Allied
- ☐ Alpha Wire
- ☐ Altech Corp.
- ☐ American Beauty
- ☐ American Reliance
- ☐ American Zettler, Inc.
- ☐ AMP
- ☐ Amperite
- ☐ Amphenol
- ☐ Analog Devices, Inc.
- ☐ AND
- ☐ Anderson Power Products
- ☐ Angstrohm
- ☐ Antex/Heli-Tube
- ☐ Arrow Hart
- ☐ Artisan Controls
- ☐ ASC
- ☐ Atlas/Soundolier
- ☐ Augat Alcoswitch
- ☐ Augat Interconnect
- ☐ Ault Incorporated
- ☐ Austin Semiconductor (MIL only)*
- ☐ Avantek*
- ☐ AVX

B

- ☐ Beau Interconnect Systems
- ☐ Beckman (See Wavetek)
- ☐ Belden
- ☐ Berg Electronics
- ☐ Best Power
- ☐ BI Technologies
- ☐ BK Precision
- ☐ Bogen Communications, Inc.
- ☐ Bomar Interconnect Products
- ☐ Bondhus
- ☐ Bourns
- ☐ Brooks (See Wiremold)
- ☐ Brooktree*
- ☐ Bud Industries
- ☐ Bussmann (See Cooper Bussmann)

C

- ☐ C & K Components
- ☐ Caddock
- ☐ Cambridge Products
- ☐ Carlingswitch
- ☐ Carlo Gavazzi, Inc.
- ☐ Century Electronics
- ☐ Chemtronics/Soder-Wick
- ☐ Cherry Switch
- ☐ Chicago Miniature Lamp
- ☐ CII Midtex
- ☐ Cinch Connectors
- ☐ Clarostat
- ☐ Collmer Semiconductor
- ☐ Comair Rotron
- ☐ Comlinear
- ☐ Communication Instruments*
- ☐ Condor
- ☐ Conner Peripherals*
- ☐ Cooper Bussmann
- ☐ Cooper Industries (See Arrow Hart)
- ☐ Cooper Tools
- ☐ Corcom
- ☐ Cosel U.S.A., Inc.
- ☐ Coto Wabash
- ☐ CP Clare
- ☐ Crompton Instruments
- ☐ Crouzet (See Also Syrelec)
- ☐ Crydom Company
- ☐ CSI Pro Video
- ☐ CSI Speco
- ☐ Curtis Industries

D

- ☐ Dale
- ☐ David Clark
- ☐ Davies
- ☐ Dearborn Wire and Cable
- ☐ Dow-Key Microwave
- ☐ Duracell
- ☐ Dynapar (See Veeder-Root)

E

- ☐ EAC
- ☐ Eagle-Picher
- ☐ Eaton/Cutler-Hammer
- ☐ ebm/Papst
- ☐ EECO (See Transico)
- ☐ EF Johnson (See Johnson Components, Inc.)
- ☐ EG & G Rotron
- ☐ EG & G Vactec
- ☐ ELCO*
- ☐ Electromatic (See Carlo Gavazzi, Inc.)
- ☐ Electronic Hardware Corporation (EHC)
- ☐ Electronic Specialty Markets (See 3M)
- ☐ Electroswitch
- ☐ Elpac
- ☐ EMCO
- ☐ Engineered Static Solutions
- ☐ ENM Company
- ☐ EPSCO
- ☐ Erem (Cooper Tools)
- ☐ ETC/Molex*
- ☐ ETI Systems (Allied)
- ☐ Eveready
- ☐ Exabyte*

F

- ☐ F. W. Bell
- ☐ Fair-Rite
- ☐ Fan-S/Division of Qualtek
- ☐ Fanon
- ☐ Fluke
- ☐ Four Star Chemical

G

- ☐ G.C. Electronics (Thorsen)
- ☐ Gates Energy Products (See EAC)
- ☐ General Electric (GE)
- ☐ General Instrument
- ☐ Gentron
- ☐ Global Specialties
- ☐ Globe Fans
- ☐ Globe Motors
- ☐ Gordos (See Crouzet)
- ☐ Grasslin
- ☐ Grayhill
- ☐ Greenlee
- ☐ Guardian Electric

H

- ☐ H.H. Smith (See NT•T/H.H. Smith)
- ☐ Hammond Manufacturing
- ☐ Hantronix
- ☐ Harris
- ☐ Harry Davies (See Davies)
- ☐ Harting Elektronik
- ☐ Hearst Business Publishing
- ☐ Hempe
- ☐ Hermetic Switch, Inc.
- ☐ Hewlett-Packard
- ☐ Howard Industries
- ☐ Hurst Mfg.

I

- ☐ IC MASTER (See Hearst Business Publishing)
- ☐ ICC
- ☐ Ico-Rally
- ☐ ICS
- ☐ Ideal Industries
- ☐ IDEC
- ☐ IDI
- ☐ IEE
- ☐ Indek*
- ☐ Industrial Devices (See IDI)
- ☐ Industrial Timer
- ☐ Integrated Device Technology, Inc.
- ☐ Intel
- ☐ Interfan
- ☐ Interswitch
- ☐ ITT Cannon*
- ☐ ITT Components*
- ☐ ITT Pomona
- ☐ ITT Schadow*

J

- ☐ J. W. Miller
- ☐ Johnson Components, Inc.
- ☐ Johnson Controls
- ☐ Jonard

K

- ☐ Kester
- ☐ Keystone Electronics
- ☐ Keystone Thermometrics
- ☐ Kings
- ☐ Klein
- ☐ Kodak (Diconix Printers)*
- ☐ Kroy

L

- ☐ Lattice Semiconductor
- ☐ Leach*
- ☐ Leader Instruments
- ☐ Leecraft (Lighting Components and Design)
- ☐ Linemaster
- ☐ Littelfuse
- ☐ Logical Devices
- ☐ Lumberg
- ☐ Luxo/Ledu
- ☐ LZR Electronics, Inc.

M

- ☐ M/A-COM
- ☐ Macromatic
- ☐ Magnecraft
- ☐ MagneTek/Triad
- ☐ Mallory
- ☐ Master Appliance
- ☐ Maurey
- ☐ Max Optix*
- ☐ Maxim
- ☐ McKenzie Technology (See Berg Electronics)
- ☐ Memcor-Truohm Inc.
- ☐ Mepco (See Philips Capacitors)
- ☐ Mepcopal
- ☐ Micro Lamps, Inc.
- ☐ Micron Technology, Inc.
- ☐ Microsemi (BTC) (MIL only)*
- ☐ Midtex Relays, Inc. (See CII Midtex)
- ☐ Mill-Max
- ☐ Minuteman
- ☐ MMM (See 3M)
- ☐ Modutec
- ☐ Molex*
- ☐ Molex/Waldom
- ☐ Mosel Vitelic
- ☐ Motorola Communications
- ☐ Motorola Semiconductors
- ☐ MSD, Inc.
- ☐ Mueller
- ☐ Multi-Flex
- ☐ Murata

N

- ☐ National Semiconductor
- ☐ NDK America*
- ☐ NEC Electronics, Inc.
- ☐ Neutrik
- ☐ Newport Electronics
- ☐ Nichicon
- ☐ NKK Switches
- ☐ Non-Linear Systems
- ☐ Northern Technologies
- ☐ NT•T/H.H. Smith
- ☐ NTE Electronics, Inc.

O

- ☐ Oak Grigsby
- ☐ Ohmite
- ☐ OK Industries
- ☐ Olympic Wire and Cable
- ☐ Omron
- ☐ Opto 22
- ☐ Orion
- ☐ Oryx Power Products
- ☐ Osram Sylvania, Inc.

P

- ☐ PacTec
- ☐ Paladin
- ☐ Panasonic Batteries
- ☐ PanaVise
- ☐ Papst (See ebm/Papst)
- ☐ Pelco
- ☐ PFT (See Zero/PFT)
- ☐ Philips Capacitors
- ☐ Philips Resistors
- ☐ Philips Semiconductors
- ☐ Planned Products
- ☐ Plantronics
- ☐ Polycase
- ☐ Pomona (See ITT Pomona)
- ☐ Potter & Brumfield (See Siemens)
- ☐ Power-One
- ☐ Power-Sonic
- ☐ Powerex*
- ☐ PowerPak (See EAC)
- ☐ Precision Fabrications Tech. (See Zero/PFT)
- ☐ Primary Power Components (PPC)/Division of Qualtek
- ☐ Products Unlimited
- ☐ PSelect
- ☐ Pyle-National (Division of Amphenol)*

Q

- ☐ Qualtek (See Fan-S and Primary Power Components Divisions)
- ☐ Quam-Nichols

R

- ☐ Radio Shack
- ☐ RAF
- ☐ Raltron
- ☐ Rayovac
- ☐ RCD
- ☐ RDI (See Augat Interconnect)
- ☐ Redington Counters, Inc.
- ☐ Richco
- ☐ Robinson Nugent
- ☐ Rotron (See Comair Rotron)
- ☐ Russell Industries

S

- ☐ Santronics
- ☐ Sanyo
- ☐ Schurter
- ☐ Schrack Components
- ☐ Seagate Technology*
- ☐ SEI Electronics
- ☐ Selecta Switch
- ☐ Semiconductors Circuits, Inc.
- ☐ Semiconductors Inc.
- ☐ Serpac
- ☐ SGS Thomson*
- ☐ Shape Electronics (See Wiremold)
- ☐ Shattuck (See Ideal Industries)
- ☐ Shure Bros.
- ☐ Shurite
- ☐ Siemens Components
- ☐ Siemens/Potter & Brumfield Division
- ☐ Siliconix*
- ☐ Silonex
- ☐ Simple Technology
- ☐ Simpson
- ☐ SL Waber, Inc.
- ☐ Smith (See NT•T/H.H. Smith)
- ☐ Soder-Wick/Chemtronics
- ☐ Sola
- ☐ Sola/Hevi-Duty
- ☐ Speco (See CSI Speco)
- ☐ Spectra•Strip/ITD (See Amphenol)
- ☐ Spectrol
- ☐ Spectroline
- ☐ Sperry, A. W. (See A. W. Sperry)
- ☐ Sprague
- ☐ Staco
- ☐ Stancor
- ☐ Struthers-Dunn (See MSD)
- ☐ Sunbank Electronics*
- ☐ Superior Electric
- ☐ Switchcraft
- ☐ Sylvania (See Osram Sylvania, Inc.)
- ☐ Syquest*
- ☐ Syrelec (See Also Crouzet)

T

- ☐ Tadiran
- ☐ Tapeswitch
- ☐ Tech Spray
- ☐ Tektronix
- ☐ Teledyne Relays
- ☐ Telex, Inc.
- ☐ Test Probes, Inc.
- ☐ Texas Instruments
- ☐ Thermometrics
- ☐ Thomas & Betts Electrical Division
- ☐ Thomas & Betts Electronics Division
- ☐ Thomson Consumer Electronics
- ☐ Thordarson
- ☐ Thorsen (See G.C. Electronics)
- ☐ Toko
- ☐ Topward
- ☐ Transico
- ☐ Triad (See MagneTek/Triad)
- ☐ Tripp Lite
- ☐ Tschudin & Heid
- ☐ Twin Industries
- ☐ Tyton Hellermann

U

- ☐ UDS*
- ☐ Ultralife
- ☐ Unitrode Integrated Circuits

V

- ☐ Vactec, EG & G (See EG & G Vactec)
- ☐ Valor Electronics*
- ☐ Vector Electronics
- ☐ Vector-VID Instruments
- ☐ Veeder-Root/Dynapar
- ☐ Vero Electronics

W

- ☐ Waber (See SL Waber, Inc.)
- ☐ WAGO
- ☐ WAHL Clipper
- ☐ Waldom (See Molex/Waldom)
- ☐ Walker Equipment
- ☐ Warner Electric (See Superior Electric)
- ☐ Wavetek
- ☐ WECO
- ☐ Weller (Cooper Tools)
- ☐ Wiha
- ☐ Wiltron
- ☐ Wire Pro, Inc.
- ☐ Wiremold

X

- ☐ Xcelite (Cooper Tools)
- ☐ Xicor*
- ☐ Xilinx

Z

- ☐ Zero/PFT

***Avnet Franchised — Inventory Available From Allied Electronics.**

3M
- Adhesives 1021, 1022
- Breadboards, Solderless 153
- Bumpons 318
- Cable Ties 1019
- Chemicals
  - Electrical Coating 152
  - Maintenance 1022
- Cleaning Products
  - Industrial Cleaners 1022
  - Penetrants 1022
  - Vacuums and Filters 318, 1022
- Connectors
  - 2 mm Connectors
    - Headers 148
    - Sockets 148
  - Card Edge, Flat Cable Termination 147
  - D-Subminiature (D-Sub)
    - Flat Cable Termination 147
    - Hoods 147
  - Electrical 150, 151, 152
  - Fiber Optic 145
  - Flat Cable Connectors
    - Card Edge 147
    - D-Subs 147
    - DIP Plugs 146, 147
    - Female/Socket 146, 148
    - Mini Flat Cable Connectors 148
  - Headers
    - Click (PCB) 146
    - Low Profile 146
    - Unprotected 148, 149
  - Intra Connectors 149
  - P.C. Board
    - Dip Plugs 146, 147
    - Headers 148, 149
    - Shunts 148
    - ZIP DIP 149
      - Programmable 149
  - Ribbon Cable Connectors 147
  - Terminals and Splices
    - Kit 151
    - Splices 150, 151, 152
    - T-Tap 152
    - Terminals 150, 151
    - Tooling 151
  - Wire Connectors 152
- Electrical
  - Coating 152
  - Communication Connectors 152
  - Electrical Connectors 152
  - IDC Electrical Connectors 152
  - Spring Connectors 152
  - Tapes 1020, 1021
  - Terminals and Splices — See Connectors
  - Wire Nut Connectors 152
- Fastening Systems
  - Dual Lock™ 318
  - Hook and Loop 318
- Fiber Optic Products 145
- Flat Cable/Wire
  - .025" Round Conductor 966
  - .050" Series
    - Round Conductor 966
    - Round Jacketed 966
    - Twisted Pair 966
  - Discrete Wire, Shielded/Jacketed 966
  - Round, Jacketed and Shielded 966
  - Zippable
    - Color Coded 966
    - Gray 966
- Markers — See Wire Markers and Accessories
- Prototyping
  - Breadboards, Solderless 153
  - Jumper Wires 153
- Static Control Products
  - Anti-Static Labels 757
  - Clean-Walk Mats 757
  - Dissipative Three-Layer Floor and Table Mats 756
  - Foam, Electrically Conductive 757
  - Hinged Containers, Electrically Conductive 757
  - Ionized Air Blower 757
  - Keyboard Pads 756
  - Portable Field Service Grounding Kits 756
  - Shoe Ground Assemblies 756
  - Static Sensor 757
  - Static Shielding Bags 757
  - Tape, Anti-Static Utility 757
  - Test Kit for Control Surfaces 756
  - Work Station Grounding Kit 756
  - Wrist Strap Tester 756
  - Wrist Strap/Foot Wear Tester 756
  - Wrist Straps and Grounding Cords 756
- Tapes/Adhesives
  - Duct 1020
  - Electrical Tape and Kit 1020
  - Foam Tapes, Acrylic Adhesive 1021
  - Hot Melt Adhesive System 1022
  - Kapton™ Film Tape 1021
  - Lane Marking 1020
  - Mastic Tapes 1020
  - Plating Tape 1021
  - Pronto™ Instant Adhesive 1021
  - ScotchWeld™ Adhesive Systems (EPX) 1022
  - Shielding Tape and Kit 1020
  - Solvent Cleaning 1021
  - Transfer Tape 1021
  - VHB™ (Very-High-Bond) Tape 1021
  - Wave Solder Tape 1021
- Test Products
  - Probe-It Clips 153
  - Test Clips
    - DIP 153
    - PLCC 153
    - SOIC 153
- Tubing, Heat Shrinkable
  - Adhesive Lined 967
  - Flame Retardant 967, 968
    - Assortment Packs 967
  - Kits 967
  - Low Shrink Temperature 968
  - Semi-Rigid 967, 968
  - Special Materials: Kynar, Neoprene, Polyolefin 967, 968
- Vacuum, Electronic 318, 1022
- Wire Duct and Accessories 968
  - Cable Ties 1019
- Wire Markers and Accessories
  - Embossing Tool 1019
  - Identifying Tapes 1019
  - Marking Pens 1019
  - Tag Dispenser 1019
  - Tape Dispenser 1019
  - Wire Marker Books 1019

A

A. W. SPERRY
- Digital Light Meter 845
- DMM 845
- Multimeters, Digital 845
- Snap-Around DMM 845
- Tachometer 845
- Temperature Probes 845

AAVID THERMAL TECHNOLOGIES, INC.
- Extrusions, 4 Foot 753
- Heat Sinks
  - Slide-On for DIPs 751
  - TO-3 751
  - TO-5 751
  - TO-92 753
  - TO-126 752, 753
  - TO-127 752
  - TO-202 752
  - TO-218 752
  - TO-220 751, 752, 753
- Insulators 753
- Software, Thermal Management 752
- Ther-O-Bond Adhesive 753
- Ther-O-Link, Thermally Conductive Compound 753

ACME ELECTRIC
- Linear Power Supplies 453, 454
- Switching Power Supplies 454, 455

ADMIRAL CONTROLS
- Quick Connect/Disconnect Binding Posts 285

ADVANCED MICRO DEVICES (AMD)
- Complex Programmable Logic Devices (MACH) 630
- Non-Volatile Memory 630, 631
- PAL Devices
  - Asynchronous PALs 632
  - Standard PALs 632
  - Universal PALs 631

AIM
- Adapters — See Connectors
- Cable Assemblies
  - BNC-BNC 157
  - Category 5 157, 158
- Category 5 Products 157, 158
- Computer Accessory Products
  - Baluns 909
  - Computer Hook-Up Cables 910
  - D-Sub (RS232) to Modular Jack Adapters 909
  - Gender Adapters 910
  - Keystone Jacks 158, 909
  - Multiport Data Switches 910
  - Surge Protectors 910
- Connectors
  - Category 5 158
  - Coaxial/RF Connectors, Adapters and Accessories
    - Attenuator Pads, BNC 154
    - BNC 154
    - F-Series 154, 155
    - N-Series 155
    - RCA 154, 155
    - SMA 154, 155
    - TNC 154
    - Tooling
      - Cable Stripper 154
      - Crimp 154, 155
      - Ratcheted Crimp Tool Kit 155
    - Twin-Ax 155
    - UHF 154, 155
    - Wall Plates 155
  - D-Subminiature (D-Sub)
    - Crimp Type Housings and Contacts 156
    - Hardware 156
    - High Density 156
    - Hoods 156
    - Solder Type 156
    - Tooling for D-Subs
      - Insertion/Extraction 156
- Modular Telephone Products
  - Baluns 909
  - Keystone Jacks 158, 909
  - Plugs 909
  - RS-232 Modular Jack Adapter 909
  - Surface Mount Modular Jacks 909
  - Tele-Communications Installer Kit 909
  - Telephone Wire 909
  - Tooling for Modular Connectors 909
  - Wall Plates 909
- Punch Down Tools 909

AKRO MILS
- Cabinets, Drawers, Bins 41
- Electrical Product 41
- Utility Boxes 41

ALECTRON
- Audio Extension Cables 159
- Connectors
  - Audio Connectors, Plugs and Jacks 159
  - Banana Plugs and Jacks 159
  - Binding Posts 159
  - Clips, Alligator 159
  - Coaxial Connectors and Adapters
    - BNC 159
    - UHF 159
  - Grabbers 159
- Fuse Holder 34
- Jumpers, Unshielded 159
- Patch Cords 159
- Pushbutton Switches 788
- Rocker Switches 788
- Thumbwheel Switches 788
- Toggle Switches 788

ALLIED
- Capacitors
  - Electrolytic (Radial) 108
  - Metallized Film 108
  - Mica 108
  - Polyester Film 108
- Dials 409
- Motorized Potentiometers 408
- Potentiometers
  - Conductive Plastic 407, 408
  - Hybrid 408
  - Linear Motion 407
  - Motorized 408
  - Multi-Turn 408
  - Single-Turn 407
  - Wirewound 407, 408
- Resistors
  - Carbon Film 420
  - Metal Film 420
  - Metal Oxide 420
- Tool Kits 319, 320
- Transformers 936, 937
- Tubes 357

ALPHA WIRE
- Braid 983
- Bus Bar 983
- Coaxial Cables
  - CATV 973
  - IBM Cables 972
  - LAN Trunk Cables 973
  - Plenum Rated 974
  - Precision Video Coaxial Cable 977
  - Thin-Net 973
  - Vinyl Insulation 972
- Conduit 987
- Connectors
  - BNC Coaxial Connectors 986
  - Conduit Tubing Connectors 987
- Data, Communication and Control Cables
  - Multiconductor
    - Braided Shield 975
    - Foil and Braid (SUPRASHIELD™) 978, 980
    - Foil Shielded 974, 975, 977, 978, 980
    - Unshielded 974, 980
  - Multi-Pair
    - Foil Shielded 974, 976, 978, 979, 980, 981
    - Unshielded 974, 982
- Fire Alarm Cable 979
- Flat Cable (Ribbon Cable)
  - Color-Coded Insulation and Grey Insulation 971
  - Cut Lengths 971
  - Grey 971
  - Round-to-Flat Cable 971
- Heat Guns 985
- Heat Shrink Hoods 985
- Heat Shrink Tubing (See Tubing)
- Hook-Up Wire
  - Kit 970
  - Kynar® 970
  - Mil Spec 969, 970
  - PVC 969, 970
  - Teflon® 970
  - Tefzel® 970
  - Test Lead 983
  - UL Rated 969, 970
- Instrumentation Cables 981
- Lacing Tapes and Twine 983
- Level 3 Cable 982
- Level 5 Cable 982
- Local Area Network Cables (LAN) 972, 973
- Microphone Cable 977
- Portable Cords 977
- Power Replacement Cords
  - Electronic Line Cords 456
  - Extension 456
  - Power Supply 456
- Shielding Tape 983
- Sleeving, Webbed 983, 987
- Telephone Cables 972, 977
- Tools, Cable Strip 986
- Transceiver Cables 976
- Tubing
  - All Purpose PVC 987
  - Braided Polyester Sleeving 983, 987
  - Flexible, Non-Metallic 987
  - Spiral Wrap 987
  - Teflon 987
  - Webbed Sleeving 983, 987
  - Zipper Tubing 987

***Avnet Franchised - Inventory Available From Allied Electronics**

- Tubing, Heat Shrinkable
  - Assortments and Kits ... 985
  - Highly Flame Retardant ... 984
  - Low Temperature Shrink ... 985
  - Markers ... 985
  - Special Material: Fluoropolymer, Kynar, Mylar, Neoprene, Nylon, Polyolefin, PVC, Shielded, Silico, Teflon, Vitron ... 984, 985, 986
  - Wrap ... 985
- Twinaxial Cable ... 972, 976
- Twisted Pair Cable ... 976
- Video Cables ... 977
- Xtra•Guard® ... 980

ALTECH CORP.
- Circuit Breakers ... 22, 23, 24, 25
- DIN Rail ... 160
- DIN Rail Mount Enclosures ... 43
- DIN Rail Mount Terminal Blocks and Accessories
  - Crimp Ferrules ... 162
  - Crimping Tools ... 162
  - DIN Rails ... 160
  - Disconnect ... 160
  - Feed-Through ... 160
  - Fuse ... 160
  - Ground ... 160
  - Marker Tags ... 161
  - Terminal Blocks Accessories ... 161
- Disconnect Switches ... 789
- Electronic Enclosures ... 44, 45, 46
- Eurostrips® ... 163
- Ferrules, Insulated and Noninsulated ... 162
- Fuses
  - Cylinder Fuses ... 28
  - Diazed Fuses (Bottle Fuses) ... 28
  - European Fuses ... 28
  - Neozed Fuses ... 28
- Headers ... 166, 169
- Interface Modules
  - I/O Opto Carriers ... 170
  - Relay ... 170
  - Ribbon Cable to Discrete Wire ... 170
  - Sub-D to Discrete Wires ... 170
- Liquid Tight Strain Reliefs ... 47
- Panel Mount Terminal Blocks ... 163
- Proximity Sensors ... 580, 581, 582
- Sensors ... 580, 581, 582
- Terminal Blocks and Accessories
  - Crimp Ferrules ... 162
  - Crimp Tools ... 162
  - DIN Rail Mount ... 160, 161
  - DIN Rails ... 160
  - Eurostrips® ... 163
  - Marking Tags ... 161
  - Panel Mount ... 163
  - Pluggable ... 164, 165, 166, 167, 168, 169
  - Printed Circuit Board ... 164, 165, 167

AMERICAN BEAUTY
- Dispensers ... 761
- Power Units ... 759
- Round House ... 760
- Solder ... 760
- Solder Pots ... 759
- Soldering/Desoldering Stations ... 759, 760, 761
- Tweezers ... 759
- Ultrasonic Cleaners ... 760
- Wick Gun ... 761

AMERICAN RELIANCE
- DMM, Handheld ... 843
- EEPROM, Programmers ... 844
- Power Supplies ... 843

AMERICAN ZETTLER
- Relays
  - DIP/SIP ... 516
  - General Purpose ... 515
  - Miniature ... 515
  - PC Board ... 515, 516
  - Power ... 516
  - Sockets and Accessories ... 515

AMP®
- Cable Assemblies
  - Fiber Optic ... 207
  - SCSI ... 179
- Cable, Flat/Ribbon ... 184, 185, 988, 989
- Category 5 Products ... 204
- Connectors
  - 2 mm Ribbon Cable Connectors ... 182
  - AMP-LATCH® — See Flat/Ribbon Cable Connectors
  - AMPLIMITE® — See D-Subminiatures
  - AMPMODU® — See Headers, Printed Circuit Board Connectors and Wire-to-Board Systems
  - Cable Assemblies ... 179, 207
  - Card Edge
    - Flat Cable Connectors ... 182
    - P.C. Board ... 213
  - Category 5 ... 204
  - Circular Plastic Connectors (CPC) ... 171, 172, 173
    - Cable Clamps ... 171, 173
    - Cable Seals and Clamps ... 173
    - Multimate Pin and Sockets Contacts ... 171
    - Tools for CPC ... 171, 172
  - Circular Plastic Connectors — Metal Shell ... 173
    - Cable Clamps ... 173
  - Coaxial/RF Connectors and Adapters
    - BNC ... 186, 187, 188, 189, 1038, 1039, 1040, 1041
    - Kits ... 187, 215, 321, 1040
    - N-Series ... 189, 1038
    - SHV ... 189, 1038
    - SMA ... 190, 1037
    - SMB ... 190, 1037
    - Tooling for Coaxial Connectors ... 186, 187, 188, 189, 190, 1038, 1039, 1040, 1041
    - UHF ... 189, 1038
  - D-Subminiature (D-Subs)
    - Crimp Type Housings and Contacts ... 175
    - Filtered ... 180, 181
    - Flat Cable D-Subs ... 176, 182
    - Hardware ... 178
    - High Density ... 176
    - Hoods ... 178
    - IDC ... 176, 182
    - Kits ... 176, 215, 321
    - P.C. Board ... 176, 177
    - Solder Type ... 175
  - Data Connectors ... 205
  - DIN Connectors ... 179, 181
  - DIPLOMATE® — See Sockets
  - Eurocard ... 213
  - Fiber Optic
    - Accessories ... 206, 207
    - Cable Assemblies ... 206
    - Connectors ... 206
  - Filtered Connectors ... 180, 181
  - Flat/Ribbon Cable Connectors
    - Card Edge ... 182
    - Connector Termination Kit ... 182
    - D-Subs ... 176, 182
    - DIP Plug ... 182
    - Receptacles ... 183
    - Ribbon ... 182
  - Headers ... 183, 194, 196, 198, 200, 201
  - High Current ... 174
  - IBM Style Data Connectors ... 205
  - Loose Piece Filters ... 180
  - MATE-N-LOK® — See Pin and Socket Connectors
  - Memory Card ... 214
  - Modular Connectors
    - Couplers ... 204
    - Jacks ... 204, 205
    - Keystone Jacks ... 204
    - Multiport Jacks ... 205
    - Plugs and Kit ... 204
    - Production Hand Tool Kits ... 204
    - RS-232 Modular Jack Adapter ... 204
    - Tooling ... 204
  - PCMCIA ... 214
  - Pin and Socket Connectors ... 191, 192, 193, 194, 195
    - Kit ... 191
    - Miniature Rectangular ... 192
    - Strain Reliefs ... 192, 193
    - Tooling for Pin and Socket ... 191, 192, 193, 194, 195
  - Power Lock Connectors ... 174
  - Printed Circuit Board Connectors
    - CST-Series ... 198
    - DIP Plug ... 182
    - MOD. II-Series ... 203
    - MOD. IV-Series ... 203
    - MT-Series ... 201
    - MTA-Series ... 196, 197, 198, 199
    - MTE-Series ... 202
  - SCSI ... 179
  - Shunts ... 200, 790
  - Sockets
    - DIP ... 211
    - PGA ... 212
    - PLCC ... 212
    - SIMM ... 212
    - SOJ ... 212
  - Surface Mount ... 202, 212
  - Terminal Blocks ... 214
  - Terminals and Splices
    - Kits ... 210, 215, 321
    - Splices ... 208, 209, 210
    - Terminals ... 208, 209, 210
    - Tools for Terminals and Splices ... 208, 209
  - Terminators, SCSI (Small Computer Systems Interphase) ... 179
  - Test Receptacles ... 211
  - V.35 Special Applications Connectors ... 179
- Fiber Optic Products ... 206, 207
- Industry Standard Tooling ... 215, 321
- Kits
  - D-Sub Kits ... 176, 215, 321
  - Flat Cable Termination Kit ... 182
  - Modular Plug and Handtool Kit ... 204
  - Pin and Socket Connector Kit ... 191
  - Terminal Kits ... 210
- Ribbon Cable ... 184, 185, 988, 989
- Shunts ... 200, 790
- Switches
  - DIP — 7000, 7100 Series ... 790
  - Preprogrammed PCB ... 790
  - Rotary ... 790
- Tapes, Cold Shrink ... 210

AMPERITE
- Flashers ... 518
- Relays, Time Delay ... 517, 518

AMPHENOL
- Connectors
  - Circular DIN ... 223
  - Circular Power Connectors (97-Series) ... 216, 217, 218, 219, 220, 221
    - Accessories ... 221, 222
    - Cable Clamps ... 222
    - Crimp Contacts ... 221
    - Solder Termination ... 216, 217, 218, 219, 220, 221
    - Tooling ... 221
    - Weather Proof ... 221
  - Coaxial/RF Connectors and Adapters
    - BNC ... 229, 230, 231, 1042, 1044, 1045
    - Grounding Lug ... 229, 231, 1042, 1045
    - MHV ... 231
    - N-Series ... 229, 232, 1043, 1045
    - Resistor Terminated Cap ... 232, 1043
    - SMA ... 228, 1042
    - SMB ... 228
    - TNC ... 231
    - Tooling for Coaxial Connectors ... 230, 1044
    - Twin-Ax ... 229, 230, 1044, 1045
    - UHF ... 229, 232, 1043, 1045
  - D-Subminiatures (D-Subs)
    - Filtered ... 224
    - Filtered Pin to Socket Adapters ... 224
    - Flat Cable ... 225
    - Hardware ... 225
    - Hoods ... 225
    - P.C. Board ... 224, 225
    - Solder Type ... 224, 225
  - Environmentally Sealed ... 223
  - Filtered Connectors ... 224
  - Flat/Ribbon Cable Connectors
    - Flat Cable (850-Series) ... 226
    - IDC Socket Connectors ... 228
    - Micro Ribbon
      - IDC Type (157-Series) ... 226
      - Solder Type (57-Series) ... 226
  - Headers, Protected and Unprotected ... 228
  - Modular Jacks ... 224
- Flat Cable/Ribbon Cable
  - .025" Series, PVC ... 227
  - Planar Cable
    - Color Coded ... 227
    - Gray ... 227
    - Twist and Flat ... 227
  - Round, Jacketed and Shielded ... 227
- Miniature Circular Connectors ... 223

ANALOG DEVICES INC.
- AC to DC Modular Power Supplies ... 642
- Accelerometers ... 634
- Amplifiers
  - Audio ... 639
  - Buffer ... 639
  - Comparators ... 639
  - Current Feedback High Speed ... 638
  - Difference ... 639
  - Instrumentation ... 637
  - Isolation ... 637
  - Low Current Noise ... 637
  - Low Voltage Noise ... 638
  - Low/Micro Power ... 637
  - Precision ... 638
  - Sample/Track and Hold ... 637
  - Single Supply ... 638
  - Voltage Feedback High Speed ... 638
- Analog Multipliers/Dividers ... 639
- Analog Switches and Multiplexers ... 636
- Analog to Digital Converters
  - High Speed ... 634
  - Non-Sampling ... 635
  - Sampling ... 634, 635
  - Sigma Delta ... 635
- DC to DC Converters ... 641, 642
- Digital Signal Processors ... 633
- Digital to Analog Converters
  - Current Output ... 635, 636
  - Voltage Output ... 635, 636
- Interface
  - Line Drivers/Receivers ... 640
  - Transceivers ... 640
- Micropower Linear Voltage Regulators ... 641
- Microprocessor Supervisory Circuits ... 641
- Modulator/Demodulator ... 639
- Motion Control Circuits ... 643
- RGB to NTSC/PAL Encoder ... 640
- RMS to DC Converters ... 639
- Signal Compression
  - Logarithmic Amplifiers ... 640
  - Variable Gain Amplifiers ... 640
- Signal Conditioners ... 643
- Temperature Sensors ... 642
- Temperature Switches ... 643
- Thermocouple Signal Conditioners ... 643
- Voltage References ... 641
- Voltage to Freq./Freq. to Voltage Converters ... 640, 641

AND
- LCD Displays ... 359
- LEDs
  - Discreet Lamps ... 358
  - Displays ... 358
  - Ultra Bright Outdoor ... 358

ANDERSON POWER PRODUCTS
- High Current Connectors ... 233
  - 15/30/45/75 Amp Modules ... 233
  - Accessories ... 233
  - Crimp Contacts and Tools ... 233
  - Housings, Multipole ... 233

ANGSTROHM
- Dials ... 385
- Knobs ... 385
- Rheostats ... 385

ANTEX/HELI-TUBE
- Cable Wrap ... 762
- Soldering Equipment ... 762

ARROW HART
- NEMA Wiring Devices ... 234
- Plugs ... 234
- Specification Grade Wiring Devices ... 234

ARTISAN CONTROLS
- Controllers ... 583
- Flashers ... 520
- Relays, Time Delay ... 519, 520
- Timers and Time Switches ... 583

ASC
- Capacitors
  - AC Motor Run ... 110
  - Hardware ... 110
  - Metallized Polycarbonate ... 109

***Avnet Franchised - Inventory Available From Allied Electronics**

- Metallized Polypropylene ... 109

ATLAS/SOUNDOLIER
- Attenuators ... 931
- Baffles ... 931
- Driver Units ... 931
- Speakers ... 931
- Transformers ... 931

AUGAT ALCOSWITCH
- DIP Switches ... 793
- Knobs ... 322
- Pushbutton Switches ... 791, 792
- Rotary Switches ... 793
- Slide Switches ... 792
- Snap-Actions Switches ... 791
- Tactile Switches ... 791
- Toggle Switches ... 793

AUGAT INTERCONNECT
- Connectors
  - RDI — See Terminal Blocks
  - Sockets
    - DIP ... 236, 237
    - PGA ... 237
    - PLCC ... 237
    - Plug Adapter Assemblies ... 238
    - Programming Jumper Plug Assemblies ... 238
    - SIP ... 236
    - SOJ ... 238
    - Solderless Sockets ... 238
    - Transistor ... 238
  - Terminal Blocks
    - Euro Block Headers ... 235
    - Euro Terminal Blocks ... 235

AULT INCORPORATED
- AC/AC Wall Plug Transformers ... 457
- Battery Chargers, Lead Acid ... 457
- External Power Supplies, AC/DC
  - Medical ... 457
  - Regulated, Linear ... 458
  - Regulated, Switching ... 458
  - Unregulated, Linear ... 458

AUSTIN SEMICONDUCTOR (MIL only)*

AVANTEK*

AVX
- Capacitors
  - Ceramic
    - Axial ... 112
    - Chip ... 112
    - Kits (Surface Mount) ... 111
    - Radial ... 112
    - Surface Mount ... 111, 112
  - Tantalum
    - Chip ... 112
    - Kit (Surface Mount) ... 111
    - Radial ... 111
    - Surface Mount ... 111
- Voltage Suppressors ... 111

B

BEAU INTERCONNECT SYSTEMS
- Connectors
  - Eurostyle® PC Terminal Blocks ... 239
  - Plug and Socket Connectors ... 241
  - Terminal Strips ... 240, 241
    - Insulating/Marker Strips and Accessories ... 240

BECKMAN (See WAVETEK)

BELDEN
- Audio Cable
  - Broadcast and Instrumentation ... 996, 997, 999, 1002
  - Control ... 996, 997, 1003
  - Snake Cable ... 996
- Bus Bar ... 992
- Coaxial Cable
  - Broadcast ... 994, 995
  - High Temperature ... 994
  - Low Loss VHF-UHF ... 995
  - Low Triboelectric ... 994
  - MATV ... 994
  - Microwave ... 994
  - Twinaxial ... 995
  - Video ... 994
- Communication Cables
  - Multiconductor
    - Shielded ... 992, 993, 996, 997, 998, 999, 1001, 1004
    - Unshielded ... 993, 997, 998, 1003, 1004
  - Multi-Pair
    - Individually Shielded ... 996, 997
    - Shielded ... 996, 997, 999, 1000, 1001, 1002, 1003, 1004
    - Twisted, Shielded ... 1001, 1002
    - Unshielded ... 996, 1002, 1003, 1004
- Connectors
  - D-Subminiature ... 991
  - Profile Socket ... 991
- Direct Burial ... 993
- Duplex Primary Wire ... 992
- Fire Alarm Cable ... 998, 999
- Flat Cable (Ribbon Cable)
  - Pitch Prelabel ... 991
  - Rainbow Flat Cable ... 991
  - Ribbon Coaxial Flat Cable ... 991
  - Standard Flat Cable ... 991
  - Twisted Pairs ... 991
- High Temperature Cable ... 993, 994, 1002
- Hook-Up Wire
  - Kit ... 990
  - Mil Spec ... 990
  - PVC ... 990
  - Teflon® ... 990
  - UL Rated ... 990
- Instrumentation Cable ... 993, 996, 997, 999, 1003, 1004
- LAN ... 1003, 1004
- Magnet Wire ... 992
- Plenum Cable
  - Coaxial ... 1003
  - Shielded ... 998, 1003, 1004
  - Twinaxial ... 1003
  - Unshielded ... 1003
- Portable Cordage ... 992
- Power Replacement Cords
  - Extension Cords ... 459
  - Hospital Grade ... 460
  - NEMA 5-15P ... 459, 460
  - Power Supply ... 459, 460
  - Retractile ... 460
  - Shielded and Unshielded ... 459, 460
- Retractile Cord ... 1004
- Ribbon Cable (See Flat Cable)
- Shielding and Bonding Cable ... 992
- Snake Cable ... 996
- Speaker Wire ... 997
- Test Prod Wire ... 992
- Tray Cable ... 997, 998
- Triaxial Cable ... 995
- Trunk Cable ... 1003, 1004
- Twinaxial Cable ... 995, 1004

BERG ELECTRONICS
- Connectors
  - Bergcon® Connector System
    - Crimp-to-Wire MaxiPV™ Receptacles ... 243
    - Crimp-to-Wire MiniPV™ Receptacles ... 243
    - Daisy Chain Jumpers ... 243
    - Low Profile Jumpers ... 243
    - Male Crimp-to-Wire Pins ... 243
    - Mini Jump™ Jumpers ... 243
    - Mini-Latch PV™ Housings ... 243
    - Polarization Plug ... 243
    - Tooling for Bergcon® System ... 243
  - Bergstik® II Headers ... 242
  - CONAN® 1.0 mm Pitch Connector System ... 242
  - D-Subminiatures
    - Flat Cable (IDC) ... 245
    - PC Board ... 245
  - GPIB, Assemblies and Headers ... 246
  - Minitek II Connector System
    - Crimp-to-Wire Housings ... 246
    - Headers ... 246
    - Shunts ... 246
    - Tooling ... 246
    - Vertical Card Connectors ... 246
  - Modular Jacks, PCB Mount ... 245
  - Quickie™ IDC Systems
    - Card Edge Connectors ... 244
    - D-Subminiatures ... 245
    - Female Connectors ... 244
    - Headers ... 244
  - Sockets
    - DIP ... 247
    - PGA ... 247
    - PLCC ... 248
      - Adapters ... 248
    - ZIF ... 248

BI TECHNOLOGIES
- Conductive Plastic ... 387
- Dials ... 392
- Networks
  - DIP ... 422, 423
  - SIP ... 421
- Precision Controls ... 386, 387
- Trimmers
  - Cermet ... 388, 389, 390, 391
  - Multi-Turn ... 388, 390
  - Single Turn ... 389, 391
  - Surface Mount ... 388, 391
- Wirewound ... 386, 387

BK PRECISION
- Analyzer ... 850, 851
- Capacitance Meters ... 848
- Clamp Meter ... 846
- Component Tester ... 851
- Counters ... 848
- Generators
  - Audio ... 849
  - Digital ... 849
  - Function ... 849
  - NTSC ... 849
  - Pattern ... 849
  - RF Signal ... 849
  - Sweep ... 849
- Multimeters
  - Bench ... 847
  - Handheld ... 846, 847, 851
- Oscilloscopes ... 850, 851
- Power Supply ... 461
- Probes, High Voltage ... 847
- Programmers ... 848
- Testers ... 847, 849, 851

BOGEN COMMUNICATIONS
- Amplifiers ... 911
- Intercoms ... 911
- Microphones ... 911
- Power Supplies ... 912
- Horns ... 912
- Sound Columns ... 913
- Speakers ... 913
- Tuner ... 913

BOMAR INTERCONNECT PRODUCTS
- Connectors
  - Between Series Adapters ... 250, 1047
  - Category 5 Plugs and Boots ... 250
- Coaxial/RF Connectors and Adapters
    - BNC ... 249, 250, 1046, 1047
    - F-Series ... 249, 250, 1046, 1047
    - N-Series ... 250, 1047
    - RCA ... 250, 1047
    - SMA ... 250, 1047
    - TNC ... 250, 1047
    - Twin-Ax ... 249, 1046
    - UHF ... 250, 1047

BONDHUS
- Balldriver Hex Tools ... 323
- Balldriver L-Wrench Sets ... 323
- Fold Up Tool Sets ... 323

BOURNS
- Dials ... 397, 398
- Encoders ... 394
- Fuses ... 29, 424
- Kit ... 398
- Knobpots ... 397
- Modular ... 395
- Multi-Turn ... 393, 399, 400, 401
- Networks, DIP and SIP ... 29, 424
- Panel Controls ... 394, 395
- Precision Controls ... 396
- Resettable Fuses ... 29, 424
- Surface Mount ... 29, 424
- Switches (DIP, Rotary, Slide, Tact) ... 794
- Trimmers
  - Adjustment Tools ... 398
  - Cermet ... 393, 398, 399, 400, 401
  - Multi-Turn ... 393, 398, 399, 400, 401
  - Single Turn ... 393, 398, 401
  - Wirewound ... 393, 401

BROOKS — See WIREMOLD

BROOKTREE*

BUD INDUSTRIES
- Boxes
  - Converta Boxes ... 55
  - Cowl-Type ... 55
  - Desktop Cases ... 52, 57
  - Econoboxes ... 55
  - Grabbers ... 57
  - Miniboxes ... 55
  - NEMA Boxes ... 58
  - Plastic Boxes ... 58, 59
  - Potting Boxes ... 60
  - Utilibox Series ... 60
- Cabinet Rack Accessories
  - Blowers ... 61
  - Casters ... 62
  - Doors ... 48, 49, 50, 51, 52
  - Fan Tray Assembly ... 61
  - Feet ... 62
  - Handles ... 62
  - Hinged Patch Panel Brackets ... 51
  - Panel Mounting Rails ... 52, 62
  - Panels ... 58, 61
  - Power Outlet Strips ... 53
  - Shelves ... 48, 51, 56
  - Sliding Mechanisms ... 62
  - Stem Levelers ... 62
  - Support Brackets ... 62
  - Temperature Controls ... 61
- Cabinet Racks
  - Add-A-Rack System ... 50
  - All American Rack ... 50
  - Cabinet Racks ... 52
  - Classic II ... 49
  - Datacom Cabinet Assembly ... 51
  - Economizer ... 48
  - Inclined Panel ... 49, 50
  - Low Priced Racks ... 52
  - Relay Racks ... 53
  - Upright Cabinet Racks ... 49, 50
  - Wall Mount Relay Racks ... 51
- Cabinets
  - Cabinet Racks ... 52
  - Desktop Cabinet ... 52, 57
  - Low-Cost Cabinets ... 54
  - Portable ... 53, 54, 56
  - Sloping Panel ... 52
  - Small ... 52, 54, 57
  - Stylist ... 52
  - Tilt-A-View ... 55
  - Utility Cabinets ... 55, 57
  - Wall Mount ... 51
- Chassis
  - Aluminum Chassis ... 60
  - Chassis Covers ... 58
  - Chassis Kit ... 57
  - Panel-Mounting ... 55
  - Rak-Mount Chassis ... 56
  - Small Rack Mount Chassis ... 58
  - Valu/Line Series ... 56
- Enclosures
  - Desktop ... 57
  - Keyboard ... 57
  - NEMA ... 58
  - Plastic ... 58, 59, 60
  - Polystyrene and ABS Molded ... 58
  - Sealed Die-Cast Aluminum ... 58
  - Slope ... 57

BUSSMANN — See COOPER BUSSMANN

C

C & K COMPONENTS
- Accessories ... 804, 805
- DIP Switches ... 798, 799
- Hardware ... 803
- Key Switches ... 799, 800, 805, 806
- Lever Handle Switches ... 795, 798

***Avnet Franchised - Inventory Available From Allied Electronics**

- Power Switches ... 797
- Proximity Sensors ... 806
- Pushbutton Switches ... 796, 797, 800, 801, 805, 806
- Rocker Switches ... 795, 798, 800, 801
- Rotary Switches ... 797, 799, 800
- Slide Switches ... 795, 797, 801
- Snap-Action Switches ... 804
- Thumbwheel Switches ... 803
- Toggle Switches ... 798, 800, 801, 802, 806

CADDOCK
- Power Resistors ... 425
- Resistor Networks ... 425

CAMBRIDGE PRODUCTS
- Connectors
  - Coaxial/RF Connectors and Adapters
    - BNC ... 251
    - BNC Boots and Hoods ... 251
    - TNC ... 251
    - Tooling ... 251
    - Twin-Ax ... 251

CARLINGSWITCH
- Circuit Breakers ... 26
- Pushbutton Switches ... 807
- Rocker Switches ... 808
- Snap-In Switches ... 808
- Toggle Switches ... 807, 808

CARLO GAVAZZI, INC.
- Contactors ... 521
- Photoelectric Sensors ... 584
- Proximity Sensors ... 584
- Relays (Solid State, Switching, TRIACs) ... 521
- Sensors ... 584

CENTRALAB — See PHILIPS CAPACITORS

CENTURY ELECTRONICS
- Capacitor Kits ... 426
- Diode Kits ... 426
- Inductor Kits ... 426
- Resistor Kits ... 426

CHERRY SWITCH
- Accessories ... 809
- Basic Switches ... 809, 810
- Hardware ... 809, 810
- Keyboard Switches ... 810
- Lever Switches ... 809
- Thumbwheel Switches ... 809

CHEMTRONICS/SODER-WICK
- Antistat Products
  - Freeze It 2000 ... 763
  - Hand Lotion ... 764
  - Mat and Benchtop Reconditioner ... 764
  - Plast-N-Glass ... 764
  - Screen Prep ... 764
- Chemicals
  - Dusters ... 763, 764
  - Cleaner/Degreaser ... 763, 764
  - Cleaners ... 763, 764
  - Flux-Off ... 763, 764
- Circuit Works Products
  - Conductive Epoxy ... 763
  - Conductive Grease ... 763
  - Conductive Pen ... 763
  - Overcoat Pens ... 763
  - Quick Bond Kit ... 763
- Swabs
  - Chamois Tips ... 764
  - Flextips ... 764
  - Foamtips ... 764
- Wick — Rosin Flux Solder Removal Braid ... 763
- Wipes ... 764

CHICAGO MINIATURE LAMP
- Electrical Industry Lamps ... 362
- Gas Filled, Outdoor Sign Industry ... 362
- Incandescent Lamps, Miniature ... 360
- Indicator Lights/Sockets
  - Non-Relampable ... 362
  - Relampable ... 363
- LEDs and Mounting Accessories ... 363
- Neon Lamps ... 360

CII MIDTEX
- Relays
  - General Purpose ... 522
  - Sockets and Accessories ... 522

CINCH CONNECTORS
- Cable Assemblies, Mini-DIN Plugs ... 253
- Connectors
  - Card Edge Connectors ... 256
    - Accessories
      - Card Guides ... 256
      - Polarizing Keys ... 256
  - D-Subminiature (D-Subs)
    - Crimp Type Housing and Contacts ... 252, 253
    - Dust Caps ... 253
    - Hoods ... 253
    - P.C. Board ... 252
    - Solder Type ... 252
  - DINs ... 253
  - Fanning Strips ... 254
  - Lug Type Terminal Strips ... 254
  - Plug and Socket (Jones) ... 255
  - Terminal Blocks
    - Jumpers ... 254
    - Marker Strips ... 254
    - Solder Terminals ... 254

CLAROSTAT
- Dials ... 404
- Encoders ... 406
- Knobs ... 404
- Potentiometers
  - Conductive Plastic ... 402, 405
  - JA Series ... 402
  - Modular ... 403
  - Multi-Turn ... 404
  - Precision ... 404
  - RV Series ... 402
  - Single Turn ... 402, 403, 405
  - Wirewound ... 403
- Resistance Decade Box ... 404
- Resistors
  - Adjustable ... 427
  - Aluminum Housed ... 428
  - Bracket Mount ... 427
  - Chassis Mount ... 428
  - Fixed ... 427, 428
  - Power ... 427, 428
  - Silicone ... 428
  - Vitreous ... 427, 428
  - Wirewound ... 427, 428
- Rheostats ... 405
- Trimmers ... 406

COLLMER SEMICONDUCTOR
- MOSFETs ... 647
- Rectifiers
  - 1 and 3 Amp Silicon ... 645
  - Bridge, 3 Phase Full Wave ... 645
  - Bridge, Silicon ... 645, 646
  - Fast Recovery ... 644
  - Fast Recovery High Voltage ... 648
  - Schottky Barrier ... 644
  - X-Ray/Microwave/Power Supply ... 647

COMAIR ROTRON
- Accessories ... 89, 93
- Blowers and Fans ... 88, 89, 90, 91, 92

COMLINEAR
- RF Amplifier ICs
  - Buffer ... 1053
  - Operational ... 1053
  - Variable Gain ... 1053

COMMUNICATION INSTRUMENTS*

CONDOR
- Power Supplies
  - 20 and 40 Watt ... 465, 466
  - 350 Watt, Switching ... 466
  - Enclosed, Switching ... 468
  - Linear, International ... 462, 463
  - Medical ... 463, 464
  - Switching ... 463 464, 466, 467, 468
  - Value Line Switching ... 467

CONNER PERIPHERALS*

COOPER BUSSMANN
- Emergency Fuse Kit ... 31
- Fuse Block, S-8000 ... 32
- Fuse Kit, Fuse Tester ... 30, 31
- Fuses
  - ABC, AGA, AGC ... 30, 31
  - FNM, FRN-R, FRS-R ... 33
  - GDA, GDB, GDC, GMA, GMC ... 31
  - GMT ... 33
  - HBH, HBV, HBW, HFB, HHB, HTB ... 32
  - KTK-R ... 33
  - MDA, MDL ... 30
  - Microtron ... 33
  - PCB (PC-Tron) ... 33
  - SMD, SMT ... 31
  - Type 140 Fuse Kit ... 30
- Surge Protectors
  - SEN Series ... 30
  - Sentry ... 30

COOPER INDUSTRIES — See ARROW HART

COOPER TOOLS — See EREM, WELLER, XCELITE

CORCOM
- Power Entry Modules
  - EEA Series ... 139
  - P Series ... 140
- RFI Power Line Filters
  - A and AYO Series ... 140
  - B Series ... 138
  - Chameleon Series ... 140
  - H Series ... 138
  - J Series ... 139
  - K Series ... 138
  - R Series ... 138
  - W Series ... 139

COSEL U.S.A., INC.
- Converters, DC/DC ... 471, 473
- Power Supplies, Internal, Switching
  - 240-960 Watts, 24 Volts ... 471
  - Dual Output ... 471
  - Encapsulated, On Board ... 471
  - Front End, High Power ... 471
  - Multiple Output, 8-100 Watts ... 470
  - Single Output, 10-150 Watts ... 470
  - Single Output, 300-1500 Watts ... 470
  - Small, Economical ... 469
  - World-Wide Input, Single Output ... 469

CP CLARE
- Relays
  - DIP/SIP ... 523
  - Dry Reed ... 523
  - Reed ... 523, 524
  - Solid State ... 524, 525
  - Surge Arrestors ... 525

CROUZET — See Also SYRELEC
- Controllers ... 528
- Modules, I/O ... 526, 527
- Relays
  - Solid State ... 527, 528

CRYDOM COMPANY
- Controllers ... 536
- Diode Modules ... 537, 538
- Filters, Solid State Relays ... 529
- Float Switches ... 536
- Handbook, Solid State Relays ... 536
- Heatsinks ... 533
- Modules, I/O ... 529, 535
- Relays
  - SCRs ... 532, 533, 534, 537, 538
  - Solid State ... 529, 530, 531, 532, 533, 534, 535, 536

CSI PRO VIDEO
- Accessories ... 914
- Cameras ... 914
- Monitors ... 914
- Security Video ... 914
- Video Switchers ... 914

CSI SPECO
- Amplifiers ... 915
- Audio Equipment PA Speakers ... 916
- Intercom Speakers ... 915
- Megaphones ... 916
- Sirens ... 916

CURTIS INDUSTRIES
- Interface Sockets ... 257
- Modules, Track Mount ... 257
- Terminal Blocks
  - Feed-Through ... 257
  - High Current and High Power ... 257

D

DALE
- Inductors
  - Molded ... 133
  - Surface Mount ... 133
- Resistors
  - Aluminum Housed ... 431
  - Bracket Mount ... 432
  - Chassis Mount ... 431
  - Chips (SMD) ... 429, 430
  - Kits ... 429, 430
  - Low Ohm Value ... 430
  - Metal Film ... 429
  - Networks, DIP and SIP ... 433
  - Power ... 432
  - RN Series ... 429
  - Silicone ... 431
  - Surface Mount ... 429, 430
  - Wirewound ... 430, 431, 432

DAVID CLARK
- Headsets and Accessories ... 917

DAVIES
- Handles ... 326
- Knobs ... 324, 325
- Plastic Enclosures ... 63

DEARBORN WIRE AND CABLE
- Braid, Tinned Copper ... 1008
- Coaxial Cable ... 1008
- High Temperature Cable ... 1008
- High Voltage Wire ... 1006
- Hook-Up Wire
  - High Temperature ... 1005
  - Lead Wire ... 1005
  - Mil-Spec Hook-Up Wire ... 1005
  - UL Hook-Up Wire ... 1005
- Lacing Tapes and Twine ... 1006
- Magnet Wire ... 1006
- Multi-Conductor Cable ... 1007, 1008
- Multi-Pair Cable ... 1008
- Twinaxial Cable ... 1008

DIAMOND/XCELITE (COOPER TOOLS) — See XCELITE

DOW KEY MICROWAVE
- Relays
  - Coaxial ... 539
  - Switching ... 539

Du PONT CONNECTOR SYSTEMS — See BERG ELECTRONICS

DURACELL
- Batteries
  - Alkaline Batteries ... 2
  - Heavy-Duty Zinc Carbon Batteries ... 2
  - Lap Top Rechargeable Battery ... 2
  - Lithium Batteries ... 2
  - Long life ... 2
  - Procell Industrial ... 2
  - Special Application ... 2

E

EAC
- Hawker Energy — Pure Lead Tin Batteries ... 3
- Rechargeable NiCad Battery Packs ... 3
- Yuasa-Exide — Lead Acid Batteries ... 3

EAGLE PICHER
- Lead Acid Batteries ... 5
- Lithium Batteries ... 4

EATON/CUTLER HAMMER
- Accessories ... 813
- Basic Switches ... 813
- Hardware ... 811, 812
- Pushbutton Switches ... 812, 813, 814
- Lever Switches ... 812, 813
- Rocker Switches ... 812, 814
- Toggle Switches ... 811, 812, 813

ebm PAPST
- Blowers ... 94, 96
- Fans ... 94, 95, 96, 97
- Fans Accessories ... 96, 97

EECO — See TRANSICO

EF JOHNSON — See JOHNSON COMPONENTS

EG & G ROTRON
- Custom Fans and Blowers ... 98

EG & G VACTEC
- Analog Optoisolators-Vactrols ... 364
- IR Emitters ... 364

***Avnet Franchised - Inventory Available From Allied Electronics**

- Optoswitches 364
- Photoconductive Cells 364
- Photodiodes 364
- Phototransistors 364

ELCO*
ELECTROMATIC (See CARLO GAVAZZI, INC.)
ELECTRONIC HARDWARE CORPORATION (EHC)
- Knobs 327, 328
- Shaft Locks 328

ELECTRONIC SPECIALTY MARKETS — See 3M
ELECTROSWITCH
- Rotary Switches 815, 816

ELPAC
- External Power Supplies
  - European, Regulated 476
  - Medical, Regulated 475
  - Wallmount and Tabletop 475, 476
  - Wallmount, MIADA, Switching 474
  - Wallmount, Unregulated 476
  - Wide Range, Regulated and Switching 474

EMCO
- Generators 852
- Multimeters 852
- Power Supplies 852
- Pressure Level Meter 852
- Resistance Decade Box 852

ENGINEERED STATIC SOLUTIONS
- Air Ionizers 329
- Anti-Fatigue Floor Mats 330
- Bags, Static Shielding 329
- Conductive Foam 329
- Cords, Replacement 330
- ESD Warning Labels 329
- Grounding Kit, Portable 329
- Heel Grounding Straps 330
- Keyboard Grounding Strap 329
- Mats
  - Floor 330
  - Table, Flexible 330
  - Terminal 329
- Static Shielding Bags 329
- Warning Labels 329
- Workstation Grounding Kit 330
- Wrist Straps 330

ENM COMPANY
- Counters 585
- Hand/Desk Tally 585
- Hourmeters 585

EPSCO
- Bench Power Supplies 853

EREM
- Ergonomic Hand Tools 331
- Tweezers 331

ETC/MOLEX*
ETI SYSTEMS (ALLIED)
- Dials 409
- Motorized Pots 408
- Potentiometers
  - Conductive Plastic 407, 408
  - Hybrid 408
  - Linear Motion 407
  - Motorized 408
  - Multi-Turn 408
  - Single Turn 407
  - Wirewound 407, 408

EVEREADY
- Batteries
  - Energizer Alkaline Batteries 6
  - General Purpose Carbon-Zinc Batteries 6
  - Industrial Alkaline Batteries 6
  - Lithium Batteries 6
  - Rechargeable Nickel-Cadmium Batteries 6
  - Special Application Batteries 7
- Charger for Nickel-Cadmium Batteries 6
- Flashlight Bulbs 7
- Flashlights, and Lanterns 7

EXABYTE*

F

F W BELL
- Clamp-On Current Meter 865
- Current Sensors 865
- ELF Meter 865
- Gauss Meter 865
- Multimeter 865

FAIR-RITE
- EMI Beads on Leads 134
- EMI Kits 134
- EMI Shield Beads 134
- EMI Suppression Cores 134
- EMI Wound Shield Beads 134
- Surface Mount EMI Shield Beads 134

FAN-S/A DIVISION OF QUALTEK
- Fan-Filter Assemblies, Fan Power Cords 99
- Wire Form Fan Guards 99, 100

FANON
- Amplifiers and Transceivers 918
- Intercoms, Megaphones, Speakers 918
- Two Way Radio 918

FLUKE
- Accessories 860, 861, 862
- Buying Guide 855
- Current Meters 858
- DMM
  - Analog/Digital 857, 858
  - Bench Type 860
- Graphical Multimeter 863
- Handheld Multimeter 864
- LAN Meters 854
- Power Meters 863
- Probes 856
- Scopemeter 856
- Temperature Test Equipment 859
- VoltAlert 1AC 858

FOUR STAR CHEMICAL
- Aerosol Spray Equipment
  - Brass Extension Tube 780
  - Precision Trigger Sprayer 780
  - Spiral Insert 780
- Antistat Products 780
- Chemicals
  - Cleaner/Lube 780
  - Cleaners 780
  - Duster 780
  - Flux Remover 780
  - Freezer 780
  - Silicone Spray 780
  - Solvents 780

G

G. C. ELECTRONICS (THORSEN)
- Adhesives 781
- Antistat Products
  - Duster 781
  - Big Bath 781
  - Freezer 781
  - High Strength Flux Remover 781
  - Optical Cleaner 781
  - Static Null 781
- Brushes, Acid 782
- Cements 782
- Chemicals
  - Butane 765
  - Duster 781
  - Freezer 781
  - Cleaner 781
  - Cleaner/Degreaser 781
  - Flux Remover 781
- Cleaning Compound 782
- Coatings 781
- Computer Accessories
  - BNC Cable Assemblies 921
  - Modular IDC Connectors 921
  - Networks Plates 921
  - Printer Cables 921
- Computer Data Transfer Switches 921
- Contact/Tuner Cleaner 782
- Epoxy 781
- Home Theater Products
  - Directional Bookshelf Speaker 919
  - In-Wall Speaker Selector Switches 919
  - In-Wall Speakers 919
  - In-Wall Subwoofer 919
  - Shielded Center Channel Speaker 919
  - Speaker Wire 919
  - Subwoofer Box 919
  - TV Wall Mounts 919
  - Volume Control Switches 919
- Lubricants 782
- Magnifiers 332, 765
- Non-Aerosol Cleaner 782
- Soldering Equipment
  - Electronic Temperature Controlled Soldering Station 765
  - Fume Extractor 765
  - Portable Hi-Speed Desoldering Tool (Corded) 765
  - Refillable Butane Gas-Powered Soldering Tool 765
  - Solder Aid Kit 765
  - Solder Popper 765
  - Soldering Iron 765
  - Soldering/Desoldering Station 765
  - Soldering/Desoldering Tweezer 765
  - Solid State Temperature Controlled Soldering Station 765
- Special Chemicals 782
- Surge Protection Products 921
- Swabs (Double Head Cotton and Poly/Cotton Lint Free) 782
- Telephone Accessories
  - Extension Cords 920
  - Jack Adapters 920
  - Modular Crimp Tool 920
  - Modular Line Tester 920
  - Modular Plugs 920
  - Outdoor Telephone Bell 920
  - Solid Telephone Hook-Up Wire 920
  - Stranded Flat Modular Line Cord 920
  - Wall Jacks 920
- Tools
  - Alignment Kits 332
  - Nibbling Tool 332
  - Pliers and Cutters 332
  - Precision Knife Set 332
  - Screwdriver Sets 332
  - Shears 332
  - Test Tools 332
  - Tweezers 332
  - Wire Strippers 332
  - Wrenches 332
- Wick, Pure Copper 765

GATES ENERGY PRODUCTS — See EAC
GENERAL ELECTRIC (GE)
- Capacitors
  - AC Motor Run 113, 114
  - High-Current DC 114
  - Snubber 114
  - Switching 114

GENTRON
- Relays
  - SCRs 540
  - Solid State 540

GLOBAL SPECIALTIES
- Breadboards 866, 867
- Capacitance Meters 867
- Counters 866
- Generators — Function, Pulse 866
- Kits, Wire Assortment 867
- Logic — Monitor, Probe, Test Kit 867
- Power Supplies 866
- Proto Boards 866, 867
- Sockets 867

GLOBE FANS
- AC and DC Cooling Fans 101

GLOBE MOTORS
- Motors Information 105

GRASSLIN
- In-Wall Timer 586
- Time Controlled Outlet Strip 586
- Timers and Time Switches 586

GORDOS — See CROUZET
GRAYHILL
- Hardware 818
- Modules
  - I/O 541
  - Keyboard 817
  - Mounting Racks 541
- Pushbutton Switches 818
- Relays
  - PC Board 541
  - Solid State 541
- Rotary Switches 817
- Sealed Keypads 817
- Solid State Relays 541
- Tactile Switches 817

GREENLEE
- Cable Cutters 333
- Gas Lamp Tester 333
- Punches 333
- Screwdriver Sets 333
- Step Bits 333
- Voltage Indicators 333

GUARDIAN ELECTRIC
- Relays, Solenoids 542

H

H.H. SMITH — See NT•T/H.H. SMITH
HAMMOND MANUFACTURING
- Boxes
  - Diecast Aluminum 65
  - Flame Retardant 66
  - Painted Aluminum 65
  - PC Card Diecast 65
  - Plastic 66
- Cases
  - Aluminum 64
  - High Impact Polystyrene 67
  - Instrument 64, 67
  - Low Profile 64
  - Metal 64
  - Plastic 67
  - Styrene Plastic 66
  - T-Case Hand Held 67
  - Utility 64
- Consoles
  - Desk Top 67
  - Metal 67
- Enclosures
  - Fiberglass 70
  - Hand Held Plastic 66
  - Hinged Cover 68
  - NEMA 68, 70
  - Non-Metallic 69
  - Screw Cover 68
  - Single Door 68
  - T-Case Hand Held 67
  - Wallmount 69
  - Water and Oil Tight 70
  - Watertight Diecast Aluminum 65, 70
- Rack Accessories
  - Adapter Kit 71
  - Doors 71
  - Hardware 72
  - Panels 72
  - Rails 71
  - Shelves 72
  - Storage Drawer Kit 72
  - Support Angles 72
- Racks
  - Contempra II 71
  - Economy 71
  - NEMA 12 Series 71
  - Table Top Racks 72
- Transformers
  - Machine Tool Control 938
  - P.C. Board Power 939, 940
  - Rectifier, Low Voltage 939

HANTRONIX
- Character and Graphic LCD Modules 366

HARRIS
- AC to DC Converters 652
- Amplifiers
  - Differential 655
  - General Purpose 654, 655
  - High Performance 654
  - Sample and Hold 651
- Analog to Digital Converters 650
- Buffers, High Performance 654
- Comparators 653, 654
- Data Communications 649, 650
- Digital Imaging Products 650

***Avnet Franchised - Inventory Available From Allied Electronics**

- Digital Signal Processor Filters 650
- Digital Signal Synthesis 650
- Digital to Analog Converters 651
- Diode Arrays 655
- Display Drivers 651
- ESD Protection Circuits 653
- Evaluation Boards 653
- Full Bridge Drivers 652
- Half Bridge MOSFET Drivers 652
- High Side Switches 652
- High Speed Data Converters
  - Analog to Digital 650
  - Digital to Analog 651
- IGBTs 659
- Interface
  - Multiplexers 651
  - Switches 652
  - Transceivers 651
- Logic
  - AC and ACT CMOS 657, 658
  - CD4000 CMOS 658
  - FCT CMOS 658, 659
  - HC and HCT CMOS 655, 656, 657
  - LPT 659
- Low Side Switches 652
- Microprocessor Peripherals 649
- Microprocessors 649
- MOSFETs
  - BUZ and RF Series 660
  - Full Bridge Drivers 652
  - Half Bridge Drivers 652
  - JEDEC 660
  - Logic Level 660
  - MEGAFET 660
  - N-Channel 660
  - P-Channel 660
- MOVs
  - "C" III Series 663
  - LA Series 662
  - ML Series 663
  - ZA Series 661, 662
- Operational Amplifiers
  - General Purpose 654
  - High Performance 654
- Power Supply Circuits
  - Pulse Width Modulator 653
  - Voltage Converters/Regulators 653
- PRISM Radio Chipset 649
- Protection Circuits 653
- Rectifiers
  - Fast Recovery 660
  - Hyper-Fast Recovery 659
  - Standard Recovery 660
  - Ultra-Fast Recovery 660
- Sample and Hold Amplifiers 651
- Switches, High and Low Side 652
- Timers/Oscillators 655
- Transient Surge Suppressors
  - "C" III Series 663
  - LA Series 662
  - ML Series 663
  - Surgectors 663
  - ZA Series 661, 662
- Transistor Arrays 655
- Voltage Monitoring Circuits 653

HARRY DAVIES — See DAVIES

HARTING ELEKTRONIK, INC.
- Connectors
  - Backplane Connectors
    - DIN 260
    - VME 261
  - DIN Connectors 260
  - Electrical Connectors 260
  - Flat/Ribbon Cable Connectors 261
  - I/O Connectors 261
  - Industrial Connectors 258, 259, 260
  - Power Connectors 258, 259, 260
  - SCSI 261
  - VME 261

HEARST BUSINESS PUBLISHING
- IC MASTER 743
- IC MASTER Alternate Source Directory 743
- IC MASTER CD ROM 743

HEMPE
- Precision Measuring Tools 323
- Specialty Tools 323
- Tubing Tools 323

HERMETIC SWITCH, INC.
- Accessories 819
- Proximity Sensors 820
- Reed Switches 819

HEWLETT-PACKARD
- Amplifiers 1054
- Displays, Seven Segment 367, 368
- Encoders, 2 and 3 Channel 368
- Fiber-Optic Components
  - Evaluation Kits 369
  - Miniature-Link 369
  - Transceivers 369
  - Versatile Link Plastic 369
- GaAs FETs 1054
- Integrated Circuits 1054
- LED Displays, Alphanumeric 368
- LED Light Bars 368
- LEDs 367
- Microwave Diodes and Transistors 664, 1055
- Mixers 1054
- Motion Control ICs 368
- Optocouplers 370
- Silicon Monolithic Integrated Circuits 1054
- Surface Mount LEDs 367

HOWARD INDUSTRIES
- Fans and Accessories 102

HURST MFG.
- Small Instrument Motors 106

I

IC MASTER — See HEARST BUSINESS PUBLISHING

ICC
- Buzzers
  - Electronic 923
  - External and Internal Drive 922
- Microphones 924
- Piezo 922
- Sounders 922
- Speakers 924
- Transducers 923

ICO-RALLY
- Sleeving, ICO-FLEX Expandable 1009
- Tubing, Heat Shrinkable 1009

IDEAL INDUSTRIES
- BNC/TNC Connector Removal Tools 335
- Coax Stripper 335
- Coax Termination Kit 335
- Crimper Tools 334
- Cutters 334
- Fuse Pullers 335
- Grounding System 335
- Heat Gun 334
- Modular Test Adapter 335
- Pathfinders 335
- Punch Down Tool 335
- Strippers 334, 335
- Tool Carriers 334
- Tool Kits 334
- Wire Marker Booklets 334
- Wire Marking Supplies 334
- Wire-Nut Wire Connectors 335

IDEC
- Relays
  - General Purpose 543
  - Heavy Duty 543
  - Miniature 543
  - Oiltight Units 821, 822
  - Pilot Lights 821
  - Power 543
  - Pushbutton 821
  - SCRs 543
  - Sockets and Accessories 543, 544
  - Solid State 543
  - Time Delay 544

IDI (INDUSTRIAL DEVICES, INC.)
- Indicators
  - Circuit Board 371
  - Incandescent 373
  - Neon Pilot Rectangular, Panel 373
  - Non-Relampable, Neon 372
  - Oil-Tight 373
  - Panel Mount, Rectangular 373
  - Solid State 373
  - Tiny-Mite Assembly 373
- LEDs, Panel Mount 373

IEE
- Display Modules, Vacuum Fluorescent 374
- LED, Universal Hardware Assemblies 374

INDEK*

INDUSTRIAL DEVICES — See IDI

INDUSTRIAL TIMER
- Timers and Time Switches 587

INTEL
- Microcontrollers 665, 666

INTERFAN
- Fans and Accessories 103

INTERSWITCH
- Hardware 823
- Rotary DIP Switches 823
- Thumbwheel Switches 823

ITT CANNON*

ITT COMPONENTS*

ITT POMONA
- Adapters 262, 264, 872
- Alligator Sets 869
- Attenuators 262
- Banana Jacks and Plugs 263, 264
- Binding Post 263
- BNC Breakouts 871
- Cable Assemblies 871
- Die Cast Aluminum Enclosures 73
- DMM Kits 869
- Flexible Test Lead Sets 869
- Insulated Alligator Clip Banana Jack 872
- Maxigrabber Sets 869
- MICRO-LC Oscilloscope 868
- Panel and Bulkhead Receptacles 262
- Patch Cords 870
- Phenolic Boxes 73
- Phone Plugs and Jacks 262
- Pin Jack 264
- Pop Jack DMM Kits 869
- Probes
  - Insulated Oscilloscope 868
  - Logic Scope 868
  - Oscilloscope 868
  - Probe Sets 869
  - RF Detector 868
- SMD Products 871
- Spade Lugs 264
- Test Clips 872, 874
- Test Companion Test Kits Guide 873
- Test Lead Holders 871
- Triaxial Connectors 262
- Universal Adapter Kits 262

ITT SCHADOW*

J

J. W. MILLER
- Chokes 135
- Ferrite Beads and Rods 135
- Inductors 135

JOHNSON COMPONENTS
- Banana Jacks and Plugs 266
- Binding Posts 266
- Coaxial Connectors 265, 1048
- Test Jacks 266
- Tip Jacks and Plugs 266

JOHNSON CONTROLS
- Charger 8
- Lead Acid Batteries
  - Large General Purpose Valve Regulated 8
  - Large Sealed High Rate UPS Batteries 8
  - Large Sealed Long Duration Battery 8
  - Small Valve Regulated Batteries 8
  - Telecommunication Batteries 8
- Rechargeable Battery Packs 8

JONARD
- Alignment and Adjusting Tools 337
- Burnishers 337
- Extraction and Insertion Tools 337
- Hand Wrapping Tools 336
- Insertion and Removal Tool Kits 336
- Manual Quick-Wrap Gun 336
- Precision Tool Kit 336
- Telecommunication Tools 336
- Tension Gauges 337
- Tool Kits 336

K

KESTER
- Chemicals
  - Bio-Clean 783
  - Residue Remover 783
  - Thinner 783
- Fluxes
  - Flux Pens 766
  - No Clean Fluxes 783
  - RA/RMA Fluxes 783
  - Water Soluble Fluxes 783
- Precision Braid
  - Type 44 Rosin Based Flux 766
  - Type 951 No Clean Flux 766
- Solder
  - 311 Water Soluble Core Soder 766
  - Acid Wire Soder 766
  - Bar Soder 766
  - Electronic Silver Solder 766
  - Kwik Draw 766
  - Lead Free Wire Solder 766
  - Mildly Activated Rosin Core Solder 766
  - No Clean Flux Core Solder 766
  - Pocket Pak 766
  - Rosin Core Solder 766
- Tip Tinner 766

KEYSTONE ELECTRONICS
- Battery Clips, Holders, Snap-Ons and Straps 9, 10, 11
- Ferrules 342
- Fuse Clips and Holders 11
- Handles 342
- Jack Screws 340
- Mounting Brackets 342
- Recessed Bumpers 341
- Rubber Grommets 341
- Standoffs and Spacers
  - Hex and Round Threaded Standoffs 339, 340
  - Hex Male/Female Threaded Standoffs 339
  - LED Spacer Mounts 341
  - Nylon Spacer Supports 342
  - Round Ceramic Threaded Standoffs 340
  - Round Clear Hole Spacers 341
  - Spacer Organizer 340
- Terminals
  - Lockwasher and Solder 338
  - Quick-Fit 338
  - Test Point 338
- Vertical P.C. Test Jack 340

KEYSTONE THERMOMETRICS
- Fuses, PTC Resettable 449
- Inrush Current Limiters 449
- Kits 449
- Thermistors
  - Beads 450
  - Cryogenic 450
  - Glass Encapsulated 450
  - NTC 449
  - Precision 449
  - Probes 450
  - PTC 449
  - Standard 450
  - Temperature 450

KINGS
- Connectors
  - Coaxial/RF Connectors
    - BNC, MHV, N, SHV, TNC 267, 1052
    - Tooling 267, 1052

KLEIN
- Crimping Tools 343
- Cutting Tools 343
- Pliers 343

*Avnet Franchised - Inventory Available From Allied Electronics

- Stripping Tools ... 343

KODAK* (Diconix Printers)

KROY
- Case ... 1023
- Heat Shrink Tubing ... 1023
- Labelers ... 1023

L

LATTICE SEMICONDUCTOR
- Generic Gate Array Logic ... 667
- High Density Programmable Logic ... 668
- isp Starter Kit ... 668
- isp Synario System ... 668

LEACH*

LEADER INSTRUMENTS
- Generators
  - Audio Sine ... 875
  - Sweep/Function ... 875
- Oscilloscope Probes ... 875
- Oscilloscopes ... 875
- Power Supplies ... 875

LEDU — See LUXO/LEDU

LEECRAFT (LIGHTING COMPONENTS AND DESIGN)
- Indicators
  - Compact Body ... 375
  - Front Panel Mount ... 375
  - Oil-Tight Panel ... 375
  - Press Fit Panel Mount ... 375
  - Snap Mount ... 375
  - Tapered And Splashproof ... 375
- Sockets
  - Automotive, Heavy Duty ... 377
  - Candelabra Bayonet
    - G-6, S-6, NE-48 ... 376
    - Halogen, Double Contact ... 377
  - Candelabra Screw — S-6, G-6, NE-45, 10C7 ... 377
  - GX5.3 And GY5.3 ... 377
  - Halogen, Bi-Pin (G4) ... 377
  - Halogen Cycle — Double Ended, Single Contact ... 377
  - Miniature Bayonet — G-3½, G-4½, T-3¼, NE-51 ... 377
  - Miniature Screw — G-3½, and T-3¼ ... 376
  - Miniature Wedge — T-3¼, T-5 ... 377
  - Plug Button — T-1¾ ... 377
  - Twist and Lock — T-1¾ ... 377

LINEMASTER
- Foot Switches and Switch Guards ... 824

LITTELFUSE
- 094 Series Kit
  - Appliance Service Kit ... 34
  - Complete Automotive Fuse Kit ... 34
  - Complete Electronic Kit ... 34
  - Economy Kit ... 34
  - Fuse Kit ... 34
  - PC Mount Kit ... 34
- Fuses
  - 122, 150, 154 ... 36, 37
  - 224, 225 ... 36
  - 229, 230 ... 36
  - 251, 252, 273, 282 ... 35
  - 312, 313, 314 ... 34
  - 326, 401 ... 35
  - FLM, FLN-R, FLQ, FLS-R ... 35
  - KLK, L25S, NLN ... 35
  - R429 ... 37
  - R451, R452 ... 37
- Fuse Blocks
  - Omni-Block FUSE Mounting ... 36
- Fuse Clips ... 36
- Fuse Holder
  - Bakelite In-Line ... 36
  - International Shock-Safe ... 36
  - Universal In-Line ... 36

LOGICAL DEVICES
- E/EEPROM Programmers ... 754
- FPGA Programmers ... 754
- PC Based Universal Programmer ... 754
- UV EPROM Erasers ... 754

LUMBERG
- DIN Connectors, Circular ... 269
- IDT Connectors ... 268, 269
- Relay Sockets ... 269
- Terminal Blocks, PC Board ... 268

LUXO/LEDU
- Lamps, Magnifiers and Accessories ... 378

LZR ELECTRONICS
- External Power Supplies, 10 and 20 Watt Switching ... 477
  - Desktop, Regulated (European and North American) ... 477
  - Wallmount, Unregulated (European and North American) ... 477

M

M/A-COM
- Attenuators ... 1056
- Connectors
  - Coaxial/RF Connectors
    - Between Series Adapters ... 270, 271, 1049, 1050
    - OSX ... 1051
    - SMA ... 270, 271, 1049, 1050
      - Solder Assembly Kit ... 270, 1050
    - SMB ... 270, 1050
    - SMC ... 270, 1050
- Diodes ... 1057
- IC Switches ... 1056
- Mixers ... 1057
- Power Splitters ... 1057
- Schottky Diodes ... 1057
- Test Cables ... 1056
- Transformers ... 1057

MACROMATIC
- Relays
  - Alternating ... 547
  - Monitoring ... 547
  - Sockets and Accessories ... 545
  - Time Delay ... 545, 546, 547

MAGNECRAFT
- Relays
  - DIP/SIP ... 548
  - General Purpose ... 548, 549
  - Heavy Duty ... 549
  - Mercury Displacement ... 550
  - Miniature ... 548
  - PC Board ... 548
  - Power ... 550
  - Reed ... 548
  - SCRs ... 550
  - Sockets and Accessories ... 549
  - Solid State ... 548, 550
  - Time Delay ... 550

MAGNETEK/TRIAD
- Transformers
  - Audio ... 946
  - Audio, PC ... 944
  - Autotransformers ... 944
  - Chassis ... 941
  - Flat Pack ... 942
  - Inductors
    - Common Mode ... 947
    - Current Sense ... 947
    - Rod Core ... 948
    - Smoothing Filter Choke ... 947
    - Toroidal Filter ... 948
  - PC Mount ... 941, 943
  - Power, General ... 945, 946
  - Split Bobbin ... 942
  - Telephone Couplers ... 944
  - Wall-Plugs, AC-DC ... 944

MALLORY
- Buzzers ... 926
- Capacitor Hardware ... 115, 118
- Capacitors
  - AC Motor Start ... 118
  - Ceramic
    - Monolithic ... 118
    - Kits ... 119
  - Aluminum Electrolytic
    - Axial ... 117
    - Computer Grade ... 115
    - Kits ... 119
    - Radial
      - High Temperature ... 116
      - Miniature ... 116
    - Snap-In ... 119
  - Film
    - Arc Suppressors ... 118
    - Metallized Polyester ... 118
    - Radials ... 117, 118
  - Tantalum
    - Axial ... 119
    - Kits ... 119
    - Radial ... 119
- Indicators ... 926
- Sirens ... 927
- Sonalerts ... 925
- Transducers ... 927
- Volume Control ... 925

MASTER APPLIANCE
- Butane ... 767, 768
- Master Heat Gun ... 768
- Masterflow Heat Blowers ... 768
- Mastermite Heat Gun ... 768
- Proheat Gun ... 768
- Ultratorches ... 767
- Varitemp Heat Gun ... 768

MAX OPTIX*

MAXIM
- Analog to Digital Converters ... 670
- Battery Chargers ... 671
- Boost Converters ... 671
- Charge-Pumps ... 671
- Comparators ... 672
- Digital to Analog Converters ... 670
- Flash Memory Programming Supplies ... 671
- Interface
  - High ESD RS-232 and RS-485 Products ... 669
  - RS-232 and RS-485 Isolation Products ... 669
  - RS-485/RS-422 Products ... 669
  - Transceivers ... 669
- LCD Power Supplies ... 671
- Linear Regulators ... 671
- Microprocessor Supervisory Circuits ... 670, 671
- Multiplexers ... 670
- Op-Amps ... 671, 672
- Switches ... 670
- Video Amplifiers ... 672
- Video Buffers ... 672
- Video Multiplexers/Amplifiers ... 672
- Video Switches
  - RGB ... 672

MAUREY
- Joysticks ... 410
- Potentiometers
  - Conductive Plastic ... 410, 411
  - Linear Motion ... 411
  - Single Turn ... 410
  - Wirewound ... 411

McKENZIE TECHNOLOGY — See BERG ELECTRONICS

MEMCOR TRUOHM
- Dials ... 412
- Knobs ... 412
- Resistors
  - Adjustable ... 435
  - Bracket Mount ... 435
  - Silicone ... 434
  - Vitreous ... 434
  - Wirewound ... 434, 435
- Rheostats ... 412

MEPCO — See PHILIPS CAPACITORS

MEPCOPAL
- Cermet Trimmers, Multi-Turn and Single Turn ... 413

MICRO LAMPS, INC.
- Incandescent ... 379
- LED Panel Holders ... 379
- LEDs ... 379

MICROSEMI (BTC) (MIL only)*

MIDTEX RELAYS — See CII MIDTEX

MILL-MAX
- PC Pin and Receptacles ... 274
- Sockets
  - DIP
    - 3-Level Wrapost ... 273
    - Solder Tail ... 272, 273
    - Ultra Low Profile ... 273
  - IC Sockets with Integral Capacitor ... 272
  - PGA ... 272
  - Shrink DIP ... 272
  - Strip ... 273
  - Transistor ... 273

MINUTEMAN
- Uninterruptible Power Supplies ... 478

MMM — See 3M

MODUTEC
- 2% Accuracy Panel Meters
  - AC/DC Current/Volt ... 896
- Backlit Digital Panel Meters ... 867
- Digital Panel Meters ... 897
- Elliptical Bar Graph ... 896
- Industrial Digital Panel Instruments ... 898
- LCD Digital Panel Meters ... 897
- Loop Powered Digital Panel Meters ... 898
- M Series Economy Moving Magnet Panel Meters
  - AC/DC Current Meters ... 896
  - AC/DC Volt Meters ... 896
- Microprocessor Based Digital Controller ... 898

MOLEX*

MOLEX/WALDOM
- Connectors
  - Crimp Housings and Contacts ... 276
  - Headers ... 276, 277
  - Jumpers ... 276
  - KK® Series PC Board Connector Kit ... 277
  - KK® Series PC Board Connectors and Tooling ... 277
  - Mini-Fit, Jr. Connector Series and Tooling ... 278
  - Modular Jacks, PC Board ... 278
  - Nylon Connector Kit ... 275
  - Pin and Socket (Nylon) and Tooling ... 275, 276, 279
  - SCSI Connectors ... 280
  - Shunts ... 276
  - Signal Connectors ... 279
  - SIMM Sockets ... 280
  - Solderless Terminals and Kits and Tooling ... 279

MOSEL-VITELIC
- DRAMs ... 673
- FIFOs ... 673
- SIMMs ... 673
- SRAMs ... 673
- Video RAMs ... 673

MOTOROLA COMMUNICATIONS
- Two-Way Radios and Accessories ... 928

MOTOROLA SEMICONDUCTORS
- Analog to Digital Converters ... 686
- Clock Drivers ... 684
- Comparators ... 688
- Data Books ... 674
- Digital Signal Processors ... 675
- Digital to Analog Converters ... 687
- Diodes
  - Hot-Carrier (Schottky) ... 701
  - Rectifiers ... 705, 706
  - Schottky ... 705
  - Surface Mount ... 705, 706
  - Switching ... 701, 702
  - Tuning ... 700, 701
  - TVS ... 703, 704
  - Zener ... 702, 703
- Embedded Controllers ... 676, 677
- Integrated Data Communication Processors ... 677
- Integrated Processors ... 677
- Interface
  - Display Drivers ... 685
  - Line Drivers ... 684
  - Line Receivers ... 684
  - Transceivers ... 685
- ISDN: Integrated Services Digital Network ICs ... 684
- Logic
  - 74AC and 74ACT ... 680
  - 74F ... 680
  - 74HC and 74HCT ... 681
  - 74LS ... 682
  - ECLinPS ... 682, 683
  - MC10 and MC16 ... 683
  - MC10E and MC100E ... 682
  - MC10EL, MC10ELT, MC100EL and MC100ELT ... 683
  - MC10H and MC100H ... 683
  - MC14000 ... 679
  - MECL ... 683
- Microcontrollers ... 677, 678, 679
- Microprocessor Voltage Regulator/Supervisory Circuit ... 690
- Microprocessors ... 675, 676
- Operational Amplifiers ... 687, 688
- Optoisolators ... 692, 693

*Avnet Franchised - Inventory Available From Allied Electronics

- Phase Locked Loop Clock Drivers 684
- Phase Locked Loop Frequency Synthesizers 684
- Phase Locked Loops 684
- Power Factor Controllers 690
- Pressure Sensors 691, 692
- Rectifiers
  - Fast Recovery 706
  - General Purpose 706
  - Schottky 705
  - Surface Mount 705, 706
  - Ultrafast 706
- Regulators
  - Switching 690
  - Voltage 689, 690
- Remote Control ICs 684
- RF Communications ICs
  - Modulator/Demodulator 686
  - Narrowband 686
  - Transmitters 686
  - Wideband 685
- SCRs 707
- Switching Regulators 690
- Technical Literature, Data Books 674
- Thyristors 707
- Transient Voltage Suppressors 703, 704
- Transistors
  - Bipolar 693, 694, 695
  - Bipolar Power 695, 696, 697
  - FETs 697, 698
  - JFETs 697
  - MOSFETs 697, 698, 699
  - Multiple 694
  - RF Amplifiers 700
  - RF Monolithic ICs 700
  - RF Power Bipolar Transistors 699
  - RF Power MOSFETs 698, 699
  - RF Small Signal 699, 700
  - Surface Mount Bipolar 694
  - Surface Mount JFETs 697
  - Surface Mount TMOS 698
  - TMOS 697, 698
  - TMOS Power MOSFETs 698
- TRIACs 707
- Under Voltage Sense/Reset Controllers 690
- Voice ICs
  - Encoders 686
  - IF Circuits 686
  - Modulators 686
  - Sound IF Detector 686
  - Video Capture Chip Sets 686
- Voltage References 690
- Voltage Regulators 689, 690

MSD (STRUTHERS DUNN)
- Relays
  - General Purpose 551
  - Latching 551
  - Power 551
  - Reversing Control 551
  - Sequencing 551
  - Sockets and Accessories 551

MUELLER
- Adapters 281
- Banana Jacks and Plugs 281, 877, 878
- Binding Posts 281
- Connectors 281
- Clip Kits 876
- Clips, Alligator and Battery 876, 877
- Insulators 876, 878
- Safety Products 877
- Test Leads 877, 878

MULTI-FLEX
- Switch and Panel Seals 814

MURATA
- Capacitors, Ceramic
  - Chip 121
  - Kits 121
  - Radial 120, 121
  - Resonators 121
- EMI Filters 136
- Inductors, Bead and Chip 136
- Piezo Alarms
  - Internal Drive 136
  - External 136
  - PC Mountable 136
  - Self-Drive 136

N

NATIONAL SEMICONDUCTOR
- Amplifiers
  - General Purpose 708
  - High Speed 708
  - Low Power 708
- Analog to Digital Converters 710
- Audio Control/Noise Reduction Pre-Amps 709
- Audio Power Amps 709
- Buffers
  - General Purpose 709
  - High Speed 708
- Clocks 715
- Digital to Analog Converters 710
- Interface
  - Future Bus+ and Backplane 715
  - Line Drivers 714
  - Line Receivers 714
  - Line Transceivers 714
- Logic
  - 74AC and 74ACT 715
  - 74ALS and 74LS 715
  - 74AS 716
  - 74C 716
  - 74F 716
  - CD4000 CMOS 716
- Motion Control Circuits 714
- Power Converters 711
- Regulators
  - Adjustable Negative 713
  - Adjustable Positive 712
  - Fixed Negative 713
  - Fixed Positive 713
  - Low Dropout 712
  - Shunt Voltage 713
- Sample and Hold Circuits 712
- Switched Capacitor Filters 712
- Switches, High Current 713
- Switching Regulators 712
- Temperature Sensors 711
- Video Pre-Amps/CRT Drivers 710
- Voltage Comparators 709
- Voltage References 710, 711
- Voltage to Frequency Converters 712

NDK AMERICA*

NEUTRIK
- Connectors
  - Audio Connectors 282, 283
  - DIN 282, 283
  - Loudspeaker Amplifier 282
  - Patch Cords 283
  - Phone Plugs and Jacks 283
  - RCA 283
  - XLR Cable Connectors and Receptacles 282

NEWPORT ELECTRONICS
- Infrared Thermometers 879
- Panel Meters
  - Indicators/Controllers 899, 900
  - Infinity C Series 900
  - Infinity D Series Economical Meters 899
  - Micro Infinity 900
  - True RMS Meter 900
- Thermocouple Probes, Connectors and Wire 879

NICHICON
- Aluminum Electrolytic Capacitors, Axial and Radial 122

NKK SWITCHES
- Accessories 829, 830
- Hardware 829
- Keylock Switches 828
- Keypad Switches 829
- Lever Switches 825
- Paddle Switches 826
- Pushbutton Switches 825, 826, 827, 828, 829, 830, 831
- Rocker Switches 826, 828
- Rotary Switches 827, 831
- Slide Switches 828
- Toggle Switches 825, 828, 829, 831

NON-LINEAR SYSTEMS
- Circuit/Component Analyzer 902
- Current Loop Panel Meter 902
- Digital Line Frequency Monitors 902
- Frequency Counters 902
- Panel Meter Counters 902
- PM Series Miniature Panel Meters 901
- Signal Conditioners/Isolators 902
- Temperature Panel Meters 902
- X Series Digital Panel Meters 901

NORTHERN TECHNOLOGIES
- Connectors
  - D-Subminiatures (D-Subs)
    - Crimp Housings and Contacts 284
    - Hardware 284
    - High Density 284
    - Hoods 284
    - Solder Type 284
    - Tooling — Insertion/Extraction 284

NT•T/H.H. SMITH
- Adapters 286
- Banana Plugs and Jacks 285
- Binding Posts 286
- Grommets 344
- Handles 344
- Nylon Strain Reliefs 344
- Phone Tip Plugs 285
- Snap Button Hole Plugs 344
- Spacers 344
- Standoffs 344
- Test Leads/Probes and Wire 286
- Wire and Cable Clamps 344

NTE ELECTRONICS
- Capacitor Kits 123
- Diodes, General Purpose and Zener 719
- Insulator Kits 717
- Integrated Circuits 719
- Linear ICs 719
- Logic ICs 719
- Rectifiers
  - Bridge 719
  - Fast Recovery 719
  - General Purpose 719
  - High Voltage 719
- Relays
  - Automotive 554
  - General Purpose 552, 553, 554
  - Heavy Duty 552
  - Industrial 553
  - Miniature 553
  - Power 553
  - Reed 554
  - Sockets and Accessories 552
  - Solid State 554
- Resistor Kits 123
- Software 717, 743
- Technical Manuals 717, 743
- Thermo Pads 717
- Transistors, Bipolar 717, 718

O

OAK GRIGSBY
- Rotary Switches 832

OHMITE
- Adjustable 441, 442
- Aluminum Housed 441
- Bracket Mount 441, 442
- Decade Box, Capacitance and Resistance 436
- Dials 414
- Hardware 414, 444
- Inductive Chokes 137
- Kits 436
- Knobs 414, 833
- Piezo Devices 929
- Resistors
  - Adjustable 442
  - Aluminum Housed 441
  - Bracket Mount 441, 442
  - Ceramic 440
  - Chassis Mount 441
  - Chips (SMD) 436, 443
  - Hardware 444
  - Kits 436
  - Low Ohm Values 440, 441, 444
  - Molded Vitreous 438
  - Power 441, 442, 443, 444
  - Radial Mount 440
  - Silicone-Ceramic 439
  - Surface Mount 436, 443
  - TA Series 440
  - Vitreous
    - Conformal 437
    - Molded 438
    - Power 441, 442, 443, 444
  - Wirewound 437, 438, 439, 440, 441, 442, 443, 444
- Rheostats 414
- Solid State Power Controls 949
- Surface Mount 436, 443
- Switches, Rotary and Tap 833
- Transducers 929

OK INDUSTRIES
- Crimp Tools 771
- Desoldering Pumps 769
- Desoldering Tools/Stations 769, 770
- Dispensers 771
- Extraction/Insertion Tool 769
- Hand Wrapping/Unwrapping Tools 1024
- Fume Absorbers 769
- Lead Bender 771
- Rework Nozzles 770
- Rework Systems 770
- Solder Stations 769, 770, 771
- Tweezers 770
- Wire Dispenser 1024

OLYMPIC WIRE AND CABLE
- Audio 1013, 1015, 1016
- Braid Cables 1010
- Braid Sleeving 1015
- Bus Bar 1010
- Coaxial Cable 1012, 1047
- Computer
  - Braid Shield Cables 1014
  - Ethernet 1018
  - IBM Compatible Cable 1018
  - Multi-Conductor 1013, 1014, 1016, 1017, 1018
  - Multi-Pair 1014, 1015, 1016, 1017
  - Shielded Pairs 1013, 1014, 1015, 1017
  - Single Pair 1013
- Control Cable 1016, 1017
- Direct Burial 1018
- Enduro 1018
- Extension Wire 1011
- Fire Alarm Cable 1012, 1017
- Hook-Up Wire
  - Teflon 1010
  - TFFN/THHN 1010
  - UL Rated 1010
- Instrumentation Cables 1013
- Lamp Cord 1012
- Lead Wire 1011
- Modular Cord 1015
- Plenum Cables
  - Control Cable 1017
  - Level 5 1018
  - Multi-Paired Individually-Shielded Cable 1017
  - Shielded 1017
  - Twinaxial Cable 1017
  - Unshielded 1017
- Retractile Cord 1011
- Sound and Control 1016
- Sound/Broadcast Cable 1013
- Speaker Wire 1010, 1012
- Telephone Wire
  - Inside Telephone Cables Type CM 1012
  - Station Type CM 1012
- Thermocouple Wire 1011
- Tubing, Heat Shrinkable Polyolefin 1015

OMNI SPECTRA — See M/A-COM

OMRON
- Counters 588
- Keyswitches 835
- Photoelectric Sensors 589
- Photomicrosensors 590
- Proximity Sensors 589
- Relays
  - General Purpose 555, 556

*Avnet Franchised - Inventory Available From Allied Electronics

    - Latching 555
    - PC Board 557
    - Power 556
    - Sockets and Accessories 555, 556
  - Safety-Door Switches 834
  - Sensors 589, 590
  - Snap-Action Switches 834, 835
  - Switches
    - Safety-Door 834
    - Snap-Action 834, 835
    - Key 835
    - Pushbutton 835
  - Tachometers 588
  - Timers and Time Switches 588
- **OPTO 22**
  - Brain Boards 559, 561
  - Controllers 558, 561
  - Modules
    - I/O 559, 560
    - Mounting Racks 559, 560
  - Relays
    - Interfaces/Accessories 561
    - Software 558
    - Solid State 558
- **ORION**
  - Fans and Accessories 104
- **ORYX POWER PRODUCTS**
  - Power Supplies, Internal, Switching
    - Low Power 479
    - Adjustable 479
    - Medical 479
    - Power Factor Correction 479
- **OSRAM/SYLVANIA, INC.**
  - Lamp Assemblies 381
  - Miniature Lamps 380
  - Single Socket Assemblies 380

P

- **PACTEC**
  - Enclosures and Kits 74, 75
  - Switch-Pac Kits 75
- **PALADIN**
  - Cable-Check 345
  - Coax Stripper 345
  - Coax-Check Tester and Remote 345
  - Crimper Tools 345
  - Patch-Check 345
  - Wire Strippers 345
- **PANASONIC BATTERIES**
  - Alkaline Batteries 13
  - Lead Acid Batteries 14
  - Lithium Batteries
    - Coin Cell Batteries 13
    - Cylindrical Cell Batteries 13
  - Nickel-Cadmium Batteries
    - High Capacity and Ultra High Charge Type 12
    - High Rate Discharge and Rapid Charge R/P Type 12
    - High Temperature H type 12
    - Rapid Charge R Type 12
    - Standard Type 12
    - Super High Capacity and Rapid Charge S Type 12
  - Zinc Chloride Batteries
    - Extra Heavy Duty Zinc Chloride (Green) 13
    - Heavy Duty Zinc Chloride (Blue) 13
- **PANAVISE**
  - Bases and Vises 346
  - Circuit Board Holders 346
- **PANEL PRODUCTS — See ELECTRONIC HARDWARE CORPORATION (EHC)**
- **PAPST — See ebm PAPST**
- **PELCO**
  - Camera — Enclosures, Mounts and Switches 933
- **P.F.T. — See ZERO PFT**
- **PHILIPS CAPACITORS**
  - Capacitors, Ceramic
    - High Voltage 124
    - Low Voltage 124
    - Miniature 124
    - Radial 124
- **PHILIPS RESISTORS**
  - Carbon Film 445
  - Chips (SMD) 445
  - Metal Film 445
- **PHILIPS SEMICONDUCTORS**
  - Analog to Digital Converters 722
  - Compandors 721
  - Comparators 721
  - Digital to Analog Converters 722
  - FM IF Systems 722
  - Mixer Systems 722
  - Function Generators 722
  - Line Drivers/Receivers 722
  - Logic
    - 74ABT, 74F, 74HC and 74HCT 720
  - Microcontrollers 720
  - Operational Amplifiers 721
  - Phase Lock Loops 722
  - Programmable Logic Arrays 721
  - Relay/Peripheral Drivers 722
  - RF Amplifiers 721
  - Timers 722
- **PHILIPS TRIMMERS — See MEPCOPAL**
- **PLANTRONICS**
  - Accessories and Spares 930
  - Hands Free Cordless Telephone 930
  - Headsets
    - CompuSet 930
    - FreeHand 930
    - Mirage 930
    - Modular 930
    - Starset 930
- **POLYCASE**
  - Electronic Enclosures 76, 77
  - Plug-In Modules 77
  - Potting Boxes 77
- **POMONA — See ITT POMONA**
- **POTTER & BRUMFIELD — See SIEMENS/POTTER & BRUMFIELD DIVISION**
- **POWER-ONE**
  - DC/DC Converters 484
  - Power Supplies, Internal, Switching
    - 30 to 150 Watt MAP Series 482
    - 275 W and 350 Watt Multiple Output 480
    - Linear, International 481
    - Mid-Range With PFC 480
    - Switching 482, 483
- **POWER-SONIC**
  - Nickel Cell Assemblies 15
  - Nickel-Cadmium Batteries
    - Button Cells 16
    - High Capacity — Rapid Charge Cells 16
    - High Capacity Cells 16
    - High Rate Cells 16
    - High Temp Cells 16
    - Pager Battery for Motorola Pagers 16
    - Printed Circuit Board Memory Batteries 16
    - Standard Cells 16
  - Sealed Lead Acid Batteries 17
  - SLA Battery Chargers 15
- **POWEREX***
- **POWERPAK — See EAC**
- **PRECISION FABRICATIONS TECH. (P.F.T.) — See ZERO PFT**
- **PRIMARY POWER COMPONENTS (PPC)/A DIVISION OF QUALTEK**
  - Filters, Power
    - IEC, PCB 141
    - Fused 141
    - General Purpose 141
    - Module 141
    - Snap-In 141
  - Plug Assemblies, Power Cord 487
  - Power Replacement Cords
    - Hospital Grade, International, Power Supply 485
  - Receptacles
    - AC Power Inlets and Outlets 486, 487
    - AC Power Inlets and Outlets with Fuseholders 486, 487
    - IEC Connector 486, 487
    - NEMA 5-15R 486
    - PCB Mount 486
- **PSELECT**
  - Cable Assemblies 1062
  - Cascadable Modules 1062
- **PYLE-NATIONAL (DIVISION OF AMPHENOL)***

Q

- **QUALTEK — See FAN-S and PRIMARY POWER COMPONENTS (PPC)**
- **QUAM-NICHOLS**
  - Baffles, Speakers and Transformers 931

R

- **RADIO SHACK**
  - Alarms 932
  - Batteries 18
  - Battery Charger 18
  - Battery Holders 18
  - Breadboards and PC Boards 772
  - Buzzers 932
  - Clamp-On Ammeter 964
  - Converter-Adapter 18
  - Cutting Tools and Strippers 772
  - Electrical Tape 18
  - Flashlight 18
  - Logic Probe 964
  - Microphones 932
  - Panel Voltmeter 964
  - Power Supply 18
  - Sirens 932
  - Soldering Equipment 772
  - Sound Meter 964
  - Telephone Cords 932
  - Test Leads 964
  - Tester 964
  - Track Repair Kits 772
- **RAF**
  - Handles 347
  - Screws 347
  - Spacers 348
  - Standoffs 348
- **RALTRON**
  - Clock Oscillators, TTL Compatible 142
  - Microprocessor Crystal Units 142
  - Tuning Fork Quartz Crystal Units 142
- **RAYOVAC**
  - Batteries
    - Alkaline Batteries 19
    - Calculator Batteries 19
    - Computer Clock Batteries 19
    - Industrial Batteries 19
    - Lantern Batteries 19
    - Lifex FB Lithium Batteries 19
    - Lifex Lithium Coin Cell Batteries 19
    - Rechargeable Alkaline Batteries 19
- **RCD**
  - Resistors
    - Aluminum Housed 446
    - Carbon Film 447
    - Ceramic 447
    - Chassis Mount 446
    - Metal Oxide 447
    - Power 446, 447
    - Silicone 446
    - Tape and Reel 447
    - Wirewound 446, 447
- **RDI — See AUGAT INTERCONNECT**
- **REDINGTON COUNTERS, INC.**
  - Counters 591
  - Hand/Desk Tally 591
  - Hourmeters 592
  - Tachometers 591
  - Totalizers 591
- **RICHCO**
  - Cable Clamps, Fasteners, Ties 349
  - Circuit Board Supports 349
  - Wire Saddles 349
- **ROBINSON NUGENT**
  - Connectors
    - DIN Plug, DIN Socket 290
    - IDC Socket 289, 290
    - Mil IDC Socket 290
      - Mil Pitch 290
    - Headers 289
    - IDC Plugs, Mil 290
    - Receptacles, Square Post 289
    - Sockets
      - DIM 290
      - DIP 287, 288
      - PLCC 289
      - Strip Sockets 288
- **ROTRON (See COMAIR ROTRON)**
- **ROTRON (See EG & G ROTRON)**
- **RUSSELL INDUSTRIES**
  - Bumpers, Grommets, PAD Series 350

S

- **SANTRONICS**
  - Detector, AC and DC 880
  - Sensor, AC 880
- **SANYO**
  - Camera 933
  - Lenses 933
  - Monitors 933
  - Time Lapse Recorders 933
- **SCHRACK**
  - Modules, Multimode 563
  - Relays
    - General Purpose 562, 563
    - Heavy Duty 563
    - Miniature 562, 564
    - Multimode 563
    - PC Board 562, 563
    - Power 564
- **SCHURTER**
  - Circuit Breakers, T11-211 Series 38
  - Connectors, Power 489
  - Fuse Blocks 38
  - Fuse Clips 38
  - Fuse Holder
    - 5 × 20 mm Fuse Holder 38
    - International 38
    - Surface Mount 39
  - Fuses 38, 39
  - Line Filters 490
  - Power Outlets Fused 488
- **SEAGATE TECHNOLOGY***
- **SEI ELECTRONICS (FORMERLY STACKPOLE)**
  - Carbon Composition 448
  - Carbon Film 448
  - Metal Film 448
  - Metal Oxide 448
  - Tape and Reel 448
  - Zero Ohm 448
- **SELECTA SWITCH**
  - Accessories 837
  - Basic Switches 836
  - Enclosed Switches 836, 837
  - Limit Switches 837
  - Precision Switches 836
  - Pushbutton Switches 837
- **SEMICONDUCTOR CIRCUITS, INC.**
  - DC/DC Converters 491
- **SEMICONDUCTORS INC.**
  - Diodes, Silicon Single Junction 723
  - Transistors
    - Power 723
    - Small Signal General Purpose 723
    - Unijunction 723
  - Voltage Regulators 723
- **SERPAC**
  - Electronic Enclosures 78
- **SGS THOMSON***
- **SHAPE ELECTRONICS — See WIREMOLD**
- **SHATTUCK/IDEAL IND. — See IDEAL INDUSTRIES**
- **SHURE BROS.**
  - Microphones 928
- **SHURITE**
  - Current — AC, DC 903
  - Voltmeters — AC, DC 903
- **SIEMENS COMPONENTS**
  - SIOV Metal Oxide Varistors 724, 725
  - SVP Surge Voltage Protectors 725
- **SIEMENS/POTTER & BRUMFIELD DIVISION**
  - Circuit Breakers 27
  - Modules, I/O 572
  - Relays
    - Automotive 565, 567
    - DIP/SIP 570
    - General Purpose 565, 566
    - Heavy Duty 567

*Avnet Franchised - Inventory Available From Allied Electronics

    - Impulse ... 571
    - Industrial ... 565
    - Latching ... 571
    - Miniature ... 567, 568, 569
    - PC Board ... 568, 569, 570
    - Power ... 567
    - Reed ... 570
    - SCRs ... 572
    - Sockets and Accessories ... 574
    - Solid State ... 572
    - Time Delay ... 570, 571, 573

SILICONIX*

SILONEX
- Arrays ... 383
- Diodes, Light Emitting ... 383
- LED/Photocell Optoisolators ... 382
- Photoconductive Cells ... 382
- Phototransistors ... 382
- Planar Photodiodes ... 383
    - Ceramic ... 383
    - Silicon Solderable ... 383

SIMPLE TECHNOLOGY
- Flash Memory Cards ... 726
- Hard Drives ... 726
- Memory Modules ... 726
- SIMMs ... 726

SIMPSON
- Accessories ... 881
- Controllers ... 904, 906
- Indicators ... 905
- Insulation Testers ... 881
- Microwave Leakage Tester ... 881
- Panel Meters
    - Analog Current — AC, DC ... 906, 907
    - Analog Voltmeters — AC, DC ... 906, 907
    - Shunts ... 904, 906
    - Transformers ... 907
- Sound Level Meters ... 881
- VOMs ... 881

SL WABER, INC.
- 20 Amp Outlet Strip ... 493, 494
- 20 Amp Surge ... 495
- 90 Degree Outlet Strip ... 494
- 250 VAC Outlet Strip ... 493
- Audio/Video Series ... 495
- Economical Surge ... 495
- Industrial Line Strips ... 494
- Power Conditioners ... 492
- Medical Outlet Strips ... 493
- Medical Surge Strips ... 493
- Outlet Strips ... 493, 494
- Surge, Noise Suppression ... 492, 495
- Residential Outlet Strips ... 494
- UPS System ... 492

SMITH — See NT•T/H.H. SMITH

SODER-WICK — See CHEMTRONICS/SODER-WICK

SOLA/HEVI-DUTY
- BEST On-Line UPS System ... 496, 497
- HEVI-DUTY Transformers
    - Buck-Boost ... 951
    - Electrical, General Purpose ... 951
    - Industrial Control ... 950
- Power Conditioners ... 501, 502
- SOLA Power Supplies, Internal
    - Constant Voltage, Regulated ... 498
    - High Power, Adjustable ... 498
    - Linear ... 498, 499
    - Solid ... 497
    - Switching, Low Watt, Multi-Output ... 499
    - Switching, Single Output ... 499, 500
    - Switching, Multi-Output ... 500

SPECTRA•STRIP/ITD — See AMPHENOL

SPECTROL
- Adjustment Tool ... 418
- Cermet ... 415, 418, 419
- Conductive Plastic ... 415, 417
- Dials ... 416
- Encoder ... 415
- Hardware and Tool ... 418
- Multi-Turn ... 416, 418
- Panel Controls ... 415
- Precision Controls ... 415, 416
- Single Turn ... 417, 418, 419
- Surface Mount ... 419
- Trimmers ... 418, 419
- Wirewound ... 416, 417

SPECTROLINE
- Digital Ultraviolet Radiometers ... 755
- Replacement UV Tubes and Grids ... 755
- UV EPROM Erasers ... 755

SPERRY, A W — See A W Sperry

SPRAGUE
- Capacitors
    - Aluminum Electrolytic
        - Axial ... 128, 130, 131, 132
        - Chip ... 125, 131
        - Miniature ... 128, 131, 132
        - Monolithic ... 129
        - Powerlytic ... 132
        - Radial ... 131
        - Snap Lock ... 132
    - Ceramic
        - Chip ... 125
        - Monolithic ... 129
        - Radial ... 128, 129
    - Film
        - Axial ... 128, 129, 131
        - Chip ... 125
        - Dipped Polyester ... 127, 128
        - Metallized Polyester ... 125, 129
        - Radial ... 127
    - Mounting Hardware ... 132
    - Tantalum
        - Axial ... 126
        - Chip ... 125, 126
        - Radial ... 127
- Reel Storage Rack ... 125

STACO
- UPS System, ON-LINE ... 503
- Variable Transformer, Enclosed ... 503
- Variable Transformers ... 952
- Voltage Controls, Fully Enclosed ... 952
- Voltage Regulator, Rack-Mount ... 503

STANCOR
- Adapter Plugs, International ... 954
- Contactors ... 575
- Relays, Power ... 575
- Transformers
    - Autoformers ... 954
    - Chokes, Filter ... 955
    - Control ... 955
    - Filter Chokes ... 955
    - Isolation ... 956
    - PC ... 957, 958
    - Rectifiers ... 956
    - Split Bobbin ... 958
    - Telephone Couplers ... 957
- Wall-Plug Power Sources
    - AC/AC and AC/DC ... 953
    - Domestic ... 953
    - European ... 953

STRUTHERS DUNN (See MSD)

SUNBANK ELECTRONICS*

SUPERIOR ELECTRIC (WARNER ELECTRIC)
- Binding Posts ... 291
- Electrical Connectors ... 291
- Transient Voltage Suppressors ... 504
- UPS Supplies ... 504
- Variable Transformers ... 959
    - NEMA Enclosures ... 959

SWITCHCRAFT
- Connectors
    - Audio Jacks and Plugs ... 292, 293
    - DINs ... 292, 294
    - Miniature ... 292, 293, 294
    - Power Receptacles ... 294
    - Weather Tight ... 292

SYLVANIA — See OSRAM/SYLVANIA, INC.

SYQUEST*

SYRELEC
- Counters ... 576, 577
- Modules, Multimode ... 576
- Relays, Time Delay ... 576, 577

T

TADIRAN
- Lithium Batteries
    - Computer Clock Batteries ... 20
    - Lithium Batteries ... 20
    - Memory Backup Batteries ... 20
    - Utility Meter Batteries ... 20
    - Xtra 3.6 Volt Cells ... 20
    - Xtra 3.6 Volt High Capacity Volt Cell ... 20

TAPESWITCH
- Accessories ... 838
- Flex Switches ... 838
- Ribbon Switches ... 838
- Switching Mats ... 838

TECH SPRAY
- Alcohol
    - Isopropyl Alcohol ... 785
    - Isopropyl Alcohol Presaturated Pads ... 785
- Antistat Products
    - Hand Lotion ... 766
    - Mat and Table Top Cleaner ... 766
    - Screen and Keyboard Cleaner ... 766
    - Zero Charge AntiStat Spray ... 786
- Brushes
    - Cleanroom Brushes ... 786
    - General Cleaning Brushes ... 786
    - Inspection Station and Instrument Cleaning Brushes
    - Technical Cleaning Brushes ... 786
- Chemicals
    - Cleaner/Degreasers ... 785
    - Cleaners ... 785
    - Defluxer ... 785
    - Duster ... 785
    - Flux Remover ... 785
    - Freezer ... 785
    - Label and Adhesive Remover ... 784
    - Rubber Rejuvenator ... 784
- Conformal Coating ... 784
- Heat Sink Compounds ... 784
- Swabs
    - Chamois Tip ... 786
    - Cotton Tip ... 786
    - Foam Tip ... 786
- Wick
    - Desoldering Braid, No-Clean Wick and Pro Wick ... 784
- Wipes, Tech Clean ... 786
- Wonder Mask ... 784

TEKTRONIX
- Color Photometers ... 887
- Counter ... 884
- Differential Preamplifier ... 883
- DMM ... 887
- Function Generators ... 884
- Oscilloscope Camera ... 889
- Oscilloscopes ... 883, 884, 886, 889
- Power Supplies ... 886
- Probes ... 883, 885, 888
- Surface Mount Device ... 885
- Tektools Accessories ... 889

TELEDYNE RELAYS
- Modules, I/O ... 578
- Relays
    - Armature ... 578
    - DIP/SIP ... 579
    - Latching ... 578
    - Reed ... 579
    - Solid State ... 579

TEST PROBES, INC.
- Kits ... 890
- Multimeter Leads ... 890
- Oscilloscope Probes ... 890

TEXAS INSTRUMENTS
- Analog Interface for DSP ... 731
- Analog to Digital Converters ... 730
- Bipolar Programmable Logic ... 729
- Comparators ... 732
- Digital Signal Processors ... 730
- Digital to Analog Converters ... 730
- EPROMs ... 729, 730
- Interface
    - General Purpose Drivers ... 731
    - Line Drivers ... 731
    - Line Receivers ... 731
    - Line Transceivers ... 731
    - Motor Drivers ... 732
    - Transistor Arrays ... 732
    - UARTs ... 731
    - Vacuum Fluorescent Display Drivers ... 731
- Logic
    - 7400, 74ACT11, 74BCT ... 727
    - 74ALS, 74AS ... 727
    - 74F ... 727, 728
    - 74HC, 74HCT ... 728
    - 74LS, 74S ... 728
- Operational Amplifiers
    - Internally Compensated, Dual ... 732, 733
    - Internally Compensated, Quad ... 733
    - Internally Compensated, Single ... 732
- Power Supply Supervisors ... 734
- Programmable Read Only Memory
    - EPROMs ... 729, 730
    - One Time Programmable ... 729, 730
- Switched Capacitor Voltage Converters ... 734
- Switching Power Supply Controllers ... 734
- Telecommunication Circuits ... 730
- Timers ... 733
- Voltage References ... 734
- Voltage Regulators ... 734

THERMOMETRICS
- NTC Thermistors ... 451

THOMAS & BETTS ELECTRICAL DIVISION (T&B)
- Conduit and Fittings ... 306, 307
- Connectors
    - Conduit Connectors ... 306, 307
    - Liquid Tight Strain Relief Connectors ... 307
    - Power Cable Connectors ... 306, 307
    - Terminal Blocks ... 308
    - Terminals and Splices
        - Heat Shrinkable ... 305
        - Lug, One Hole and Tooling ... 307
        - Splices ... 304, 305
        - Terminals ... 304, 305
        - Tooling for Terminals and Splices ... 305
        - Two-Way Connectors ... 307
- Electrician Supplies
    - Fiber Fishing Rod System ... 1027
    - Fish Tape, Steel ... 1027
    - Lug, One Hole and Tooling ... 307
    - Receptacle Tester ... 1027
    - Spring Connectors ... 1027
    - Wire Nut Connectors ... 1027
    - Wire Pulling Lubricant ... 1027
    - Wire/Cable Strippers ... 1027
- Heat Shrinkable Tubing, Thick Wall ... 307
- Identification System ... 1025
- TY-RAP® Cable Ties and Accessories
    - Cable Ties ... 1026, 1027
    - Marking Pens ... 1026
    - Mounting Bases ... 1026
    - Tooling ... 1026
- Wire Markers and Accessories
    - Wire Marker Books ... 1025
    - Wire Marker Cards ... 1025
    - Wire Marker Printer, Portable ... 1025
        - Refill Rolls ... 1025

THOMAS & BETTS ELECTRONICS DIVISION (T&B)
- Connectors
    - Card Edge Connectors ... 301, 303, 308
    - D-Subminiatures (D-Subs)
        - Flat Cable ... 295, 298, 299
        - Hardware ... 299
        - Hoods ... 299
        - PC Board ... 302
    - DIN ... 303
    - DIP Plugs ... 301
    - Fine Pitch Connector System (.050) ... 295, 303
    - Female Socket Transition Connectors ... 297, 298
    - Headers
        - Low Profile ... 296, 298
        - Male ... 296
        - Vertical Ejector ... 296
    - Male Connectors ... 301
    - PCB Transition Connectors ... 301
    - Ribbon Connectors and Hardware ... 300
    - SCSI ... 295, 303
    - Sockets, DIP and SIP ... 300
    - Terminators, SCSI ... 303

*Avnet Franchised - Inventory Available From Allied Electronics

- Flat Cable/Ribbon Cable
  - .050" Series, Color Coded and Stranded 297
  - Stranded 297
  - Termination Tooling for Flat Cable 301
- Terminators, SCSI 303

THOMSON CONSUMER ELECTRONICS
- Linear ICs 735
- Rectifiers 736
- SCRs 736
- Software 735, 743
- Technical Manuals 735, 743
- Thyristors 736
- Transistors 735, 736
- TRIACs 736
- Voltage Regulators 736

THORDARSON MEISSNER
- Transformers
  - Audio 963
  - Autoformers — International Step-Down 961
  - Autoformers — International Step-Up 960
  - Condensed for Power, Lugs 962
  - Control 961
  - Filament/Low Power 963
  - Isolation 960, 961
  - Power
    - Low-Voltage, Plug-In 962
    - Space-Saving PC 962

THORSEN — See G.C. ELECTRONICS

TOPWARD
- A/D Series Power Supplies 891
- Digital Function Generator/Frequency Counter 891

TOKO
- Filters, Low Pass and Medium Frequency 1036
- Inductors, Fixed and Multilayer 1036
- Voltage Regulator 1036

TRANSICO
- Hardware Kits 839
- Printed Circuit Board Switches 839
- Pushwheel Switches 839
- Stripswitches 839
- Thumbwheel Switches 839

TRIAD — See MAGNETEK/TRIAD

TRIPP LITE
- Base Station Power Supplies 505
- Inverters, DC to AC 505
- Isolation Transformers 505
- Line Conditioners 505, 508
- On-Line UPS System 507
- Standby UPS System
  - BC (for PCs) and BC Pro (Db9 Lan) 507
  - Line Interactive 507
  - Net Intelligent Network 507
  - Under Monitor 507
- Surge/Noise Suppressors 506
  - Data Communication 506
  - Economy 506
  - Fax/Modem 506

TSCHUDIN & HEID, INC.
- Accessories 841
- Emergency Stop Switches 840
- Key Switches 840
- Mushroom Switches 841
- Pushbutton Switches 840, 841
- Rotary Switches 840

TWIN INDUSTRIES
- Extender Cards 744, 745
- Prototyping Bread Boards 745
- Prototyping BUS Specific Boards 744
- Prototyping General Purpose Boards 744
- Surface Mount Adapters 745
- VME Backplanes 745

TYTON HELLERMANN
- Adhesive Cable Clamps 1029
- Cable Management Panel 1030
- Cable Tie Kit 1028
- Cable Ties 1028
- Convoluted Tubing 1029
- Electrical Tape 1029
- Grip Ties 1030
- Grommets 1029
- Labels 1032, 1033
- Laser Tags 1033
- Modular Networking Frames 1030
- Nylon Mounting Bases 1028
- Outlets 1030
- Patch Panels 1030
- Power Strips 1030
- Restraints 1029
- Rite-On Markers 1032
- Shelves 1030
- Shrink-Tag Markers 1032
- Spiral Wrap 1029
- Stainless Steel Clamps and Tools 1029
- Surface Raceway 1031
- Tagprint Labeling Software 1033
- Tensioning Tools 1028
- Tying Tools 1028
- Wall Mount Patch Panel Brackets 1030
- Wire Management Brackets 1030
- Wire Marker Tape 1032
- Wire Markers 1032
- Wiring Duct and Covers 1031

U

UDS*

ULTRALIFE
- Lithium Batteries 21
- Ultra Life Thin Cells 21

UNGAR (COOPER TOOLS) — See WELLER (COOPER TOOLS)

UNITRODE INTEGRATED CIRCUITS
- Battery Charger ICs 738
- Communications Interface Drivers and Receivers 737
- Drivers 737
- Electronic Circuit Breaker 738
- Evaluation Boards 737
- Lighting Controllers 738
- Linear Regulators 738
- Power Factor Correction 737
- Power Supply Support ICs 738
- PWM Controllers 738, 739
- SCSI Active Terminators 737
- Supply Monitors 739
- Switching Regulators 739

V

VACTEC, EG & G — See EG & G VACTEC

VALOR ELECTRONICS*

VECTOR ELECTRONICS
- Card Guides 748
- Extender Cards 747
- Metric Extender Cards 747
- PC Bus Plug Boards 746
- PCI Developers Kit 748
- PCI Extender Cards 747
- PCI Prototyping Boards 749
- PCMCIA Test Extender 749
- Prototyping Boards 746, 747, 748
- Punchboards 746
- Subrack Modules 748
- Subracks 748
- VME Prototyping Boards 746
- Wire Wrap Terminals and Pins 749

VECTOR-VID INSTRUMENTS
- AC/RMS Digital Wattmeters 892
- Decade Resistance and Capacitance Boxes 892
- Power Line Monitor 892
- Power Supplies 892
- R-C Circuit Box 892

VEEDER-ROOT/DYNAPAR
- Controllers 594
- Counters 593, 594
- Hourmeters 593
- Photoelectric Sensors 594
- Sensors 594
- Tachometers 594
- Timers and Time Switches 593
- Totalizers 594

VERO ELECTRONICS
- Card Cages 750
- Card Guides 750
- Prototyping Boards 750
- Terminals 750
- VME Backplane Spacer Strips 750
- VME Extender Cards 750
- VME Microracks 750
- VMExcel Monolithic Backplanes 750

W

WABER, SL — See SL WABER

WAGO
- Terminal Blocks
  - Chassis-Mount 309
  - DIN Rail 309
  - PC Board 309

WAHL CLIPPER
- Drill and Accessories 773
- Filer/Sander 773
- Light Tool 773
- Solder Station 773
- Soldering Irons 773

WALDOM — See MOLEX/WALDOM

WALKER EQUIPMENT
- Amplifier 934
- Handsets 934
- Headsets
  - Encore 934
  - Supra 934
  - TriStar 934
- Noise Censor Series 934

WARNER ELECTRIC — See SUPERIOR ELECTRIC

WAVETEK
- Capacitance Meter 894
- Clamp On Multimeter 894
- Component Test 894
- Counter 894
- DMM 893, 894
- Function Generator 894
- LCR Meter 894
- Logic Probes 894

WECO
- Modules, Rail Mount Interface
  - D-Subminiature 312
  - Ribbon Cable 312
- Mounting Rails, DIN 313
- Terminal Blocks
  - Ceramic 312
  - PC Board Mount 310, 311
  - Pluggable 310
  - Rail Mount 313
- Terminal Strips
  - De-Pluggable, Panel/Chassis 312
- Wire Duct 313

WELLER (COOPER TOOLS)
- ESD Soldering Stations 774, 777, 778, 779
- Fume Extractor 779
- Handles 775
- Heat Guns 775
- Polishing Bar 776
- Rework Systems 779
- Self Igniting Cordless Irons 776
- Solder Sponges 776
- Solder Stand 775, 776
- Soldering Gun Kits 777
- Soldering Guns 776, 777
- Soldering Irons 774, 776, 777, 778
- Soldering Stations 774, 777, 778, 779
- Tips 774, 775, 776, 777, 778

WIHA
- Bits-Selector 351
- Electricians Insulated Sets 351
- Handle Kits 351
- Magnetizer/Demagnetizer 351
- Precision Tool Sets 351

WILTRON
- Coaxial Adapters 1052
- Coaxial Connectors 1052
- K Connectors 1052
- Stress Reliefs 1052

WIRE PRO INC.
- Connectors
  - "Tiny Tim" Connectors 316
  - Card Edge Connectors, PC Board 315
  - D-Subminiatures (D-Subs)
    - Crimp Housings and Contacts 314
    - Hardware 314
    - Hoods 314
    - Tooling 314
  - Microphone Connectors 316
  - Miniature Hexagonal Connectors 315
  - PC Board Connectors, PC Plugs 315
  - Plug and Socket Connectors 316
  - Ribbon Connectors, Series 26 Blue 315
  - Sockets, Relay 316
  - Strip Connectors 316

WIREMOLD
- Brooks
  - Compact Models 512
  - Industrial 512
  - Mounting Ears 512
- Sentrex
  - Line Conditioners
    - Personal Computer 508
    - Medical, Commercial 508
    - Hard-Wired 508
  - Uninterruptible Power Systems 509
- Shape Electronics
  - Industrial Surge 510
  - Medical 511, 513
  - Multiple Outlet Strips 511, 512
    - 19" Rack Mount 513
    - 20 Amp 511
    - Cabinet with 20 A Capability 511
    - Deluxe Control 511
    - Medical 511, 513
  - Phone, TV Coax, Power Surge 510
  - Rack Mount 513
  - Stand-By Power Systems 508
  - Surge and Noise Protection 510, 513
    - 19" Rack Mount 513
    - 90 Degree Outlets, Rack Mount 513
    - Medical 19" Rack Mount 513
  - Voltage Regulators 509
- Wiremold
  - Wire Management Systems
    - Multioutlet Systems 1034
    - Raceways 1034

X

XCELITE (COOPER TOOLS)
- Attache Case Tool Kits 354
- Electricians Knife 353
- Hand Tools 353
- Handles 355
- Pliers 352, 353
- Power Bit Adapter 355
- Precision Knives and Blades 355
- Screwdrivers 354
- Tool Kits and Sets 354, 355
- Wrenches 354

XICOR*

XILINX
- CPLDs 742
- FPGAs 740, 741, 742

Z

ZERO PFT
- Accessories 79, 80, 81, 82, 83, 84, 85, 86, 87
- Bracket Kits 82
- Cable Management Rack 80
- Door Packs 86
- Economy Vertical Enclosures 83
- Express Racks 81
- Mod-U-Desk Racks 86
- Mod-U-Serv 81
- Modubox Enclosures 86
- Modular Vertical Enclosures 84
- Moduline Chassis 79
- Panels 85, 87
- Relay Racks 85
- Universal Networking Frames 82
- VIP Series 80
- Wall Mount Cabinets 82
- Wall Mount Patch Panel Brackets 82

*Avnet Franchised - Inventory Available From Allied Electronics

Our Local Address and Telephone Numbers

ALABAMA
HUNTSVILLE
4890 University Square Business Center
Suite 1
Huntsville, AL 35816
Phone: (205) 721-3500
FAX: (205) 721-9877

MOBILE
2970 Cottage Hill Road
Bel Air Park, Suite 148
Mobile, AL 36606
Phone: (334) 476-1875
FAX: (334) 473-4325

ARIZONA
PHOENIX
2111 E. Baseline, Suite F3
Tempe, AZ 85283
Phone: (602) 831-2002
FAX: (602) 831-2411

CALIFORNIA
ORANGE COUNTY
140 Technology Drive
Suite 400
Irvine, CA 92618-2401
Phone: (714) 727-3010
FAX: (714) 727-2092

RIVERSIDE AREA
11030 Arrow Route
Suite 214
Rancho Cucamonga, CA 91730
Phone: (909) 980-6522
FAX: (909) 980-7042

SACRAMENTO
580 Menlo Drive
Suite 2
Rocklin, CA 95765-3705
Phone (916) 632-3104
FAX: (916) 632-0609

SAN DIEGO
3914 Murphy Canyon Road
Suite A-124
San Diego, CA 92123
Phone: (619) 279-2550
FAX: (619) 495-0053

SAN FERNANDO VALLEY
21150 Califa Street
Woodland Hills, CA 91367
Phone: (818) 598-0130
FAX: (818) 598-0450
SAN JOSE
2105 Lundy Avenue
San Jose, CA 95131-1849
Phone: (408) 383-0366
FAX: (408) 383-0369

CANADA
OTTAWA
190 Colonnade Rd. South, Unit 100
Nepean, Ontario K2E7J5
Phone: (613) 228-1964
FAX: (613) 228-8006

VANCOUVER, B.C.
8610 Commerce Ct.
Burnaby, B.C. V5A 4N6
Phone: (604) 420-9691
FAX: (604) 420-5606

COLORADO
DENVER
12503 East Euclid Drive
Suite 20
Englewood, CO 80111
Phone: (303) 790-1664
FAX: (303) 790-8938

CONNECTICUT
CHESHIRE
1157 Highland Ave
Suite 206
Cheshire, CT 06410-1600
Phone: (203) 272-7730
FAX: (203) 272-1412

FLORIDA
JACKSONVILLE
8130 W. Baymeadows Circle
Suite 304
Jacksonville, FL 32256-1812
Phone: (904) 739-5920
FAX: (904) 739-5922

MIAMI
15271 NW 60th Ave.
Suite 206
Miami Lakes, FL 33014-2431
Phone: (305) 558-2511
FAX: (305) 558-1130

ORLANDO
100 E. Sybelia Avenue, Suite 327
Maitland, FL 32751
Phone: (407) 539-0055
FAX: (407) 645-1672

TAMPA BAY
9400 4th St. N., Suite 204
St. Petersburg, FL 33702
Phone: (813) 579-4660
FAX: (813) 579-1422

GEORGIA
ATLANTA
3475 Corporate Way, Suite C
Duluth, GA 30136
Phone: (770) 497-9544
FAX: (770) 497-9550

IDAHO
BOISE
4696 Overland Rd., Suite 464
Boise, ID 83705
Phone: (208) 331-1414
FAX: (208) 331-1484

ILLINOIS
NORTH CHICAGO
115 Commerce Dr., Unit E
Grayslake, IL 60030-1421
Phone: (847) 548-9330
FAX: (847) 548-9450

ROCKFORD
7117 Clinton Rd.
Loves Park, IL 61111
Phone: (815) 636-1010
FAX:.(815) 636-1061

SOUTH CHICAGO
5320 W. 159th St., Suite 401
Oak Forest, IL 60452
Phone: (708) 535-0038
FAX: (708) 535-0063

WOOD DALE
765 N. Route 83
Suite 114
Bensenville, IL 60106
Phone: (630) 860-0007
FAX: (630) 860-5315

INDIANA
INDIANAPOLIS
655 W. Carmel Drive
Suite 160
Carmel, IN 46032
Phone: (317) 571-1880
FAX: (317) 571-1890

IOWA
CEDAR RAPIDS
222 Edgewood Road N.W.
Suite 104
Cedar Rapids, IA 52405
Phone: (319) 390-5730
FAX: (319) 390-5733

KANSAS
KANSAS CITY
9200 Indian Creek Pkwy
Suite 270
Overland Park, KS 66210
Phone: (913) 338-4372
FAX: (913) 338-3559

KENTUCKY
LOUISVILLE
1939 Goldsmith Lane
Suite 133
Louisville, KY 40218
Phone: (502) 452-2293
FAX: (502) 451-1695

LOUISIANA
NEW ORLEANS
110 James Drive, West
Suite 210
St. Rose, LA 70087
Phone: (504) 466-7575
FAX: (504) 466-7471

MARYLAND
BALTIMORE/WASHINGTON,D.C.
7134 Columbia Gateway Dr.
Suite 200
Columbia, MD 21046
Phone: (410) 312-0810
FAX: (410) 312-0818

MASSACHUSETTS
BOSTON AREA
1410 Route One
Suite 404
Norwood, MA 02062
Phone: (617) 255-0361
FAX: (617) 255-0468

NORTH/WEST MASS.
10-L Centennial Drive
Peabody, MA 01960
Phone: (508) 538-2401
FAX: (508) 538-2402

MICHIGAN
DETROIT
44191 Plymouth Oaks Blvd.
Suite 1300
Plymouth, MI 48170
Phone: (313) 416-9300
FAX: (313) 416-9308

GRAND RAPIDS
5500 Northland Drive N.E.
Grand Rapids, MI 49505
Phone: (616) 365-9960
FAX: (616) 365-9895

MINNESOTA
MINNEAPOLIS
6110 Blue Circle Dr.
Suite 220
Minnetonka, MN 55343
Phone: (612) 938-5633
FAX: (612) 938-5992

MISSOURI
ST. LOUIS
3783 Rider Trail South
Earth City, MO 63045
Phone: (314) 291-7031
FAX: (314) 291-1853

NEBRASKA
OMAHA
10824 Old Mill Rd., Suite 5
Omaha, NE 68154-2642
Phone: (402) 697-0038
FAX: (402) 697-0238

NEVADA
LAS VEGAS
4550 W. Oakey Blvd., Suite 108
Las Vegas, NV 89102
Phone: (702) 258-1087
FAX: (702) 258-7022

NEW JERSEY
CENTRAL NEW JERSEY
54 Brunswick Woods Drive
E. Brunswick, NJ 08816
Phone: (908) 613-0828
FAX: (908) 613-0338

SOUTHERN NEW JERSEY
7000 Atrium Way, Suite 5
Mt. Laurel, NJ 08054
Phone: (609) 234-7769
FAX: (609) 234-6346

NEW MEXICO
ALBUQUERQUE
8015 Mountain Road Place NE
Suite 212
Albuquerque, NM 87110
Phone: (505) 266-7565
FAX: (505) 266-7561

NEW YORK
BUFFALO
331 Alberta Dr.
Suite 220
Amherst, NY 14226
Phone: (716) 831-8101
FAX: (716) 831-7059

EASTERN LONG ISLAND
390 Rabro Drive
Hauppauge, NY 11788
Phone: (516) 234-0485
FAX: (516) 234-5175

NYC/WEST LONG ISLAND
11 Grace Ave, Suite 108
Great Neck, NY 11021
Phone: (516) 487-5211
FAX: (516) 487-5251

POUGHKEEPSIE
Lexington Park
Route 55
Lagrangeville, NY 12540
Phone: (914) 452-1470
FAX: (914) 452-1448

ROCHESTER
333 Metro Park, Suite M105
Rochester, NY 14623
Phone: (716) 292-1670
FAX: (716) 292-1681

SYRACUSE
4309 E. Genesee St.
Suite 2, Dewitt Prof. Bldg.
Syracuse, NY 13214
Phone: (315) 446-7411
FAX: (315) 446-7625

NORTH CAROLINA
CHARLOTTE
1 Woodlawn Green,
200 E. Woodlawn Rd., Suite 146
Charlotte, NC 28217
Phone: (704) 525-0300
FAX: (704) 525-2666

RALEIGH
5234 Greens Dairy Road
Raleigh, NC 27616
Phone: (919) 876-5845
FAX: (919) 790-7647

OHIO
CINCINNATI
260 Northland Blvd., Suite 211
Cincinnati, OH 45246
Phone: (513) 771-6990
FAX: (513) 771-7604

CLEVELAND
23200 Chagrin, Bldg. #3
Suite 805
Beachwood, OH 44122
Phone: (216) 831-4900
FAX: (216) 831-2339

COLUMBUS
777 Dearborn Park Lane, Suite L
Worthington, OH 43085
Phone: (614) 785-1270
FAX: (614) 785-1277

OKLAHOMA
TULSA
12206 E. 51st Street
Suite 100
Tulsa, OK 74146-6201
Phone: (918) 250-4505
FAX: (918) 250-7202

OREGON
PORTLAND
9750 S.W. Nimbus Avenue
Beaverton, OR 97008
Phone: (503) 626-9921
FAX: (503) 627-0404

PENNSYLVANIA
EAST PENNSYLVANIA
Chadds Ford West, Marshallton Bldg., Ste. 1
Chadds Ford, PA 19317
Phone: (610) 388-8455
FAX: (610) 388-8450

HARRISBURG
4811 Jonestown Rd.
Suite 236
Harrisburg, PA 17109
Phone: (717) 540-7101
FAX: (717) 540-7130

PHILADELPHIA
7000 Atrium Way, Suite 5
Mt. Laurel, NJ 08054
Phone: (609) 234-7769
FAX: (609) 234-6346

PITTSBURGH
4550 McKnight Rd.
Suite 207B
Pittsburgh, PA 15237
Phone: (412) 931-2774
FAX: (412) 931-1297

SOUTH CAROLINA
GREENVILLE
750 Executive Center Drive
Ste. 216, B-197
Greenville, SC 29615
Phone: (864) 288-8835
FAX: (864) 288-9559

TEXAS
AUSTIN
12211 Technology Blvd.
Austin, TX 78727
Phone: (512) 219-7171
FAX: (512) 219-7701

BROWNSVILLE
3505 Boca Chica Blvd.
Suite 201
Brownsville, TX 78521
Phone: (210) 548-1129
FAX: (210) 548-1235

FORT WORTH COUNTER SALES
7410 Pebble Drive
Fort Worth, TX 76118
Phone: (817) 595-6455
FAX: (817) 595-6459

DALLAS
11333 Pagemill
Dallas, TX 75243
Phone: (214) 341-8444
FAX: (214) 341-6622

EL PASO
7500 Viscount
Suite 118
El Paso, TX 79925
Phone: (915) 779-6294
FAX: (915) 778-6212

FORT WORTH
7410 Pebble Drive
Fort Worth, TX 76118
Phone: (817) 595-3500
FAX: (817) 595-6444

HOUSTON
9802 FM 1960 Bypass
Suite 140
Humble, TX 77338
Phone: (281) 446-8005
FAX: (281) 446-6782

UTAH
SALT LAKE CITY
545 East 4500 South
Professional Plaza, Suite E-130
Salt Lake City, UT 84107
Phone: (801) 261-5244
FAX: (801) 261-5465

VIRGINIA
NORTHERN VIRGINIA
7406 Alban Station Court
Suite 201
Springfield, VA 22150
Phone: (703) 644-9515
FAX: (703) 644-2294

VIRGINIA BEACH
4525 E. Honeygrove Road
Suite 202
Virginia Beach, VA 23455
Phone: (757) 363-8662
FAX: (757) 363-9703

WASHINGTON
SEATTLE
271 SW 41st St.
Renton, WA 98055-4930
Phone: (206) 251-0240
FAX: (206) 251-0317

WISCONSIN
MILWAUKEE
2440 S. 179th Street
New Berlin, WI 53146
Phone: (414) 796-1280
FAX: (414) 796-1274

These Branches Can Also Be Contacted on the Internet at http://www.allied.avnet.com

Limited Warranty

We hereby certify that these goods were produced in compliance with all applicable requirements of Section 6, 7, and 12 of the Fair Labor Stds. Act as amended and of regulations and orders of the U.S. Dept. of Labor issued under Section 14 thereof. Allied is only acting as a distributor of products manufactured by other companies. Thus, Allied expressly limits its guarantees and warranties for products sold hereunder to those extended and allowed by the manufacturing company to be passed through to Allied's customers. There are no express or implied warranties which extend beyond the description of the face hereof. Allied disclaims and excludes from any sale of products herein any implied warranties of merchantability, or of fitness or suitability for any particular purpose or use. All goods sold by Allied are purchased by the buyer "AS IS." Since Allied cannot control the manner or use of its products after their sale, Allied will not be responsible for any direct, consequential or indirect damages to the purchaser or any third party or ultimate user of the products. Allied will, at its option, either replace the goods sold or refund the purchase price should a product defect be brought to its attention within a reasonable time after sale.

Welcome All New Customers, Open An Account Today

Allied extends open account privileges to all qualified enterprises that meet our requirements. Allied's terms are net 30 days. Please contact your local representative for details.

Minimum Order

Minimum order is $25.00 Mail in orders and credit card orders minimum $50.00. C.O.D. order minimum is $50.00 (orders for stock only no back orders).

Sales Tax

Allied Electronics, Inc. is required by law to collect all Federal, State, and Local taxes that apply to your shipment. **If you are exempt from tax, an original signed tax exemption certificate must be mailed to Allied. Without a valid signed tax certificate on file, all applicable taxes will be charged.**

Non-Catalog Items

Merchandise not listed in our catalog, if available from our regular suppliers, is subject to minimum order quantities and/or special handling charges. **Special order products are sold on a non-cancelable basis.**

Scheduled Deliveries/Future Ships

All orders for future scheduled deliveries must be confirmed in writing by Purchase Order with specific delivery information. Any changes in delivery schedules must be in writing and agreed upon by Allied and customer and confirmed. Reductions in quantity may result in a cancellation fee.

International Sales and Services (Export Orders)

Minimum export order is $50.00. Write **Allied Electronics International Marketing Dept. at 7410 Pebble, Fort Worth, Texas 76118 U.S.A. (Telex 75-8314, Telephone 817/595-3500, FAX 817/595-6444)** for complete information including, price quotations, handling, documentation and shipping.

Terms for payment on export orders are cash or irrevocable letter of credit. Cash orders in U.S. dollars will be accepted for immediate processing. Please include an extra 20% (10% on orders over $500.00) to cover handling, documentation and shipping charges. We promptly refund any excess of payment over actual charges. Credit terms are available to qualified customers–inquire when placing order.

In some cases, certain items from our suppliers may require a leadtime. To insure faster delivery to you, a divisible letter of credit for two (2) shipments is recommended to allow the majority of your order to be shipped immediately. **All letters of credit must be valid for a minimum of one hundred-fifty (150) days.**

Pricing

Prices shown are subject to change without notice. Orders are billed at the prices in effect at the time of shipment.

Shipping

All shipments are F.O.B. shipping point.

APO and FPO Orders

APO and FPO shipments will be routed Parcel Post Insured, with maximum size 100 inches (length plus girth) and maximum weight 70 lbs. For faster delivery, specify Priority Mail. To estimate shipping charges contact your local Post Office.

Truck Shipments

Trucks are the most economical way to ship items weighing approximately 50 pounds or more. Shipments weighing between 50 to 99 pounds will be charged at the minimum 100 pound rate as specified by truck carriers. Consult your local agent for truck rates.

Air-Freight Shipments

We will ship your order Air-Freight at your expense if you prefer. Contact your local Air Freight Carrier for Air-Freight charges.

Damaged Shipment

Merchandise shipped is carefully packed in compliance with carrier requirements. Claims for loss or damage in transit must be made with the carrier by the customer. All shipments should be unpacked and inspected immediately upon receipt.

Concealed Loss or Damage. If damage is not discovered until shipment is unpacked, make a request for inspection by the carrier's agent and file claim with the carrier.

Visible Loss or Damage. Any external evidence of loss or damage must be noted on the freight bill or carrier's receipt and signed by the carrier's agent. Failure to do this will result in the carrier refusing to honor the claim. For your protection our billing includes insurance for damage or loss in transit.

Shortages

All claims for shortage or shipment errors must be made **WITHIN 10 DAYS** after receipt of shipment.

Returning Merchandise

If you must return all or part of your order, for a reason other than carrier damage, contact your local representative within 30 days of receipt of shipment. Your local representative will provide the Return Authorization Number (and if any restocking charge is required). Return Authorization Numbers are good for only 30 days. All returned merchandise is subject to inspection prior to any credit being processed, merchandise should be returned in original cartons if possible.

Credit Cards

MasterCard

VISA®

AMERICAN EXPRESS
3712 95006
C F FROST
®

ORDER THE EASY WAY...Use Your American Express, Visa, or Mastercard

Batteries, Circuit Breakers, Fuses

Page

Alectron
- Fuse Holder 34

Altech Corp.
- DIN Rail Circuit Breakers 22, 23, 24, 25
- European Fuses 28
  - Cylinder Fuses 28
  - Diazed Fuses (Bottle Fuses) 28
  - Neozed Fuses 28
  - NH Fuses 28

Bourns
- Multi-Fuse 29

Carlingswitch
- AC1, AF1 26
- BA1, BA2, BA3 26
- CA1, CA2, CA3 26

Cooper Bussmann
- ABC, AGA, AGC 30, 31
- Emergency Fuse Kit 31
- FNM, FRN-R, FRS-R 33
- Fuse Kit, Fuse Tester 30, 31
- GDA, GDB, GDC, GMA, GMC 31
- GMT 33
- HBH, HBV, HBW, HFB, HHB, HTB 32
- KTK-R 33
- MDA, MDL 30
- Microtron 33
- PCB (PC-Tron) 33
- Quick Service Kit, Sen Series 30
- S-8000 32
- Sentry Surge Protectors
  - SEN Series 30
- SMD, SMT 31
- Type 140 Fuse Kit 30

Duracell
- Alkaline Batteries 2
- Heavy-Duty Zinc Carbon Batteries 2
- Lap Top Rechargeable Battery
  - DR19DP, DR31DP 2
- Lithium Batteries 2
- Long-Life
  - AAA, AA, C, D, N, Rect, Square 2
- Procell Industrial
  - AAA, AA, C, D, Rect, Square 2
- Special Application Batteries 2

EAC
- Rechargeable NiCad Battery Packs 3
- Lead Acid Batteries 3
- Pure Lead Tin Battery 3

Eagle Picher
- CF, CFC, CFM, CFP 5
- EP, LTC 4
- HE, PNP 5

Eveready
- Bulbs 7
- Charger for Nickel-Cadmium Batteries 6
- Energizer Alkaline Batteries
  - AAAA, AAA, AA, C, D, J-Size, Lantern, 6 V-Square, 9 V 6
- Flashlights and Lanterns 7
- General Purpose Carbon-Zinc Batteries
  - AA, C, D, Lantern, 6 V Square, 9 V 6
- Industrial Alkaline Batteries
  - AAA, AA, C, D, 6 V SQ, 9 V 6
- Lithium Batteries 6
- Rechargeable Nickel-Cadmium Batteries
  - AAA, AA, C, D, 7.2 V 6
- Special Application Batteries 7

Johnson Controls
- Chargers 8
- Large General Purpose Valve Regulated
  - Batteries 8
- Large Sealed High Rate Ups Batteries 8
- Large Sealed Long Duration
  - Telecommunication Batteries 8
- Lead Acid Batteries 8
- Rechargeable Battery Packs 8
- Small Valve Regulated Batteries 8

Keystone Electronics
- 9 V Battery Snap-Ons 9
- 9 V Battery Holders 9
- 9 V Battery Straps 9
- Automotive Blade Fuse Clips and Holders 11
- Battery Clips 10
- Battery Holders 10
- Battery Holders with Snap-On Connector 11
- Coin Cell Retainer Contacts 9

Page
- Fuse Clips 11
- Shielded 9 Volt Battery Straps 9

Littelfuse
- 094 Series Kits 34
- 101, 102, 105, 111 36
- 122, 150, 154, 155 36, 37
- 224, 225 36
- 229, 230 36
- 251, 252, 273, 282 35
- 312, 313, 314 34
- 326 35
- 344, 345, 354 36
- 401 35
- FLM, FLN-R, FLQ, FLS-R 35
- KLK, L25S, NLN 35
- R429 37
- R451, R452 37

Panasonic
- Alkaline Batteries
  - AAA, AA, C, D, N, 9 V 13
- Nickel-Cadmium Batteries 12
  - Charge Type 12
  - High Capacity and Ultra High Capacity 12
  - High Rate Discharge and Rapid Charge 12
  - High Temperature 12
  - Rapid Charge 12
  - Standard Type 12
  - Super High Capacity and Rapid Charge 12
- Lead Acid Batteries 14
- Lithium Batteries 13
  - BR, CR Series 13
- Zinc Chloride Batteries
  - AAA, AA, C, D, N, 9 V 13

Potter & Brumfield
- W23, W28, W31, W33 27
- W58, W67, W68 27
- W91, W92, W93 27

Power-Sonic
- Button Cells 16
- Nickel Cadmium Batteries 16
- Nickel Cell Assemblies 15
- Printed Circuit Board Memory Batteries 16
- Sealed Lead Acid Batteries 17
- SLA Battery Chargers 15

Radio Shack
- Alkaline Batteries 18
- Battery Chargers 18
- Battery Checker 18
- Battery Clips 18
- Battery Holders 18
- Electrical Tape 18
- Flashlights 18
- Foreign Adapter 18
- Nickel Cadmium Batteries 18
- Power Supply 18

Rayovac
- Alkaline Batteries
  - AAA, AA, C, D, N, 9 V 19
- Calculator Batteries 19
- Computer Clock Batteries 19
- Industrial Batteries
  - AAA, AA, C, D, N, 9 V 19
- Lantern Batteries 19
- Lifex FB Lithium Batteries 19
- Lifex Lithium Coin Cell Batteries 19
- Rechargeable Alkaline Batteries
  - AAA, AA, C, D 19

Schurter
- FBS, FEK, FIZ, FPG, Kit 38
- FAU, FEU, FUL, GSF 38
- FMS, FSF 38
- MSA, OG, OGN, OHM, SP 38
- MSF, MST, MXT, OMF, Kit 39
- T11-211 38

Tadiran
- Computer Clock Batteries 20
- Lithium Batteries 20
- Memory Back-Up Batteries 20
- Utility Meter batteries 20
- Xtra 3.6 Volt Cells 20
- Xtra 3.6 Volt High Capacity Volt Cells 20

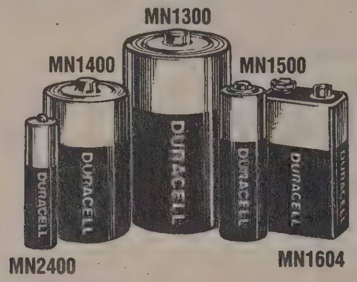
Ultralife
- U3VL, U9VL 21
- UB123A, UB223A, UB2CR5 21
- Ultra Life Thin Cells
  - U3VF-LT, U3VF-K, U3VF-H 21

Procell® Industrial Alkaline Batteries

- ► Long Shelf Life with Sustained Power
- ► Lasts Up to Five Times Longer Than Regular Zinc Carbon Batteries
- ► Low Battery Replacement Cost . . . Low Use Cost
- ► Distinctive Industrial Label Reduced Pilferage
- ► Operate Reliably in Temperature Extremes of –20°F to 160°F
- ► All Procell Lantern Batteries Sealed in Steel Cases for Durability
- ► Made to Exact Specifications as Duracell Copper Top

Stock No.	Mfr.'s Type	Size	Volts	MAH	EACH
737-0500	PC1300	D	1.5	14,000	**1.19**
737-0510	PC1400	C	1.5	7,000	**1.19**
737-0520	PC1500	AA	1.5	2,100	**.78**
737-0530	PC1604	Rect.	9.0	550	**2.02**
737-0540	PC2400	AAA	1.5	1,000	**.78**
737-0550	PC908	Sq.	6.0	20,000	**8.68**
737-0560	PC915	Sq.	6.0	20,000	**8.09**
737-0570	PC918	Rect.	6.0	40,000	**18.96**
737-0590	PC903	Rect.	7.5	40,000	**35.20**

Duracell Long-Life Alkaline Batteries

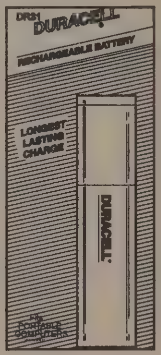


Extra service and long life. Designed for high drain service applications — outperform, outlast standard operating zinc-carbon batteries by up to 100%. Alkaline cells cost less, too. Compare by dividing the initial costs by the many extra hours of service provided.

Stock No.	Mfr.'s Type	Size	Volts	MAH	NEDA	EACH
737-0100	MN1300	D	1.5	14,000	13A	**1.92**
737-0110	MN1400	C	1.5	7,000	14A	**2.12**
737-0120	MN1500	AA	1.5	2,100	15A	**1.35**
737-0130	MN1604	Rect.	9.0	550	1604A	**4.11**
737-0140	MN2400	AAA	1.5	1,000	24A	**1.35**
737-0150	MN9100	N	1.5	700	91A	**1.43**
737-0908	MN908*	Sq.	6.0	20,000	908A	**9.55**
737-0918	MN918†	Rect.	6.0	40,000	918A	**19.84**

*Spring terminal. †Screw terminal.

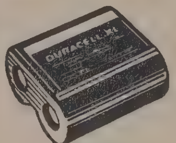
Lap Top Rechargeable Battery — *NEW* —



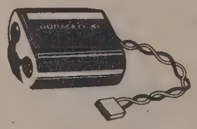
Stock No.	Mfr.'s Type	Volts	Application	EACH
737-0800	DR19DP	10.8 V NiMH	Compaq Contura Aero 4/25, Samsung SENSlite 200 Series, BCC Avanti 750C Series	**89.25**
737-0810	DR31DP	10.8 V NiMH	Compaq Contura Aero Series, Compaq Contura 400 Series, Compaq Contura 410 Series, BCC Avanti 750C Series, Hyundai Asanti Subnotebook Series, Trigem Subnotebook Series	**145.92**

Lithium, Heavy-Duty Plus® Zinc Carbon and Special Applications Batteries

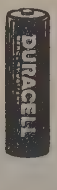
PX28L


DL223AB

DL1/3NB


DL223AR

7K67B


PC12A

PX625AB

MS76B

Lithium Batteries

Stock No.	Mfr.'s Type	Size	Volts	MAH	NEDA	EACH
737-0400	PX28LB	0.512 × 0.990	6.0	160	5005L	**7.78**
737-0405	DL223AB	1.368 × 0.760 × 1.409	6.0	1300	5024LC	**12.65**
737-0407	DL123AB	0.665 × 1.338	3.0	1300	5018LC	**6.88**
737-0409	DL245B	0.054 × 0.069 × 0.025	6.0	1300	5032LC	**12.66**
737-0410	DL1/3NB	0.457 × 0.425	3.0	160	5008L	**3.55**
737-0420	DL1620B	0.630 × 0.079	3.0	60	5009L	**1.40**
737-0430	DL2016B	0.787 × 0.063	3.0	75	5000LC	**1.40**
737-0440	DL2025B	0.787 × 0.098	3.0	140	5003LC	**1.40**
737-0450	DL2032B	0.787 × 0.126	3.0	190	5004LC	**1.40**
737-0460	DL2420B	0.965 × 0.079	3.0	120	5010L	**1.65**
737-0470	DL2430B	0.965 × 0.118	3.0	250	5011L	**1.48**

Heavy-Duty Plus® Zinc Carbon Batteries

The service capacity of a heavy duty battery is not a fixed number of ampere-hours because the battery functions at different efficiencies depending upon the conditions imposed upon it. The service varies with current drain, operating schedule, and cutoff voltage. It is also affected by the operating temperature and storage conditions of the battery prior to use.

Stock No.	Mfr.'s Type	Size	Volts	AH	NEDA	EACH
737-0600	M13SHD	D	1.5	*	13D	**.60**
737-0605	M14SHD	C	1.5	*	14D	**.60**
737-0610	M15SHD	AA	1.5	*	15D	**.45**
737-0615	M9VSHD	Rect.	9.0	*	1604D	**1.31**

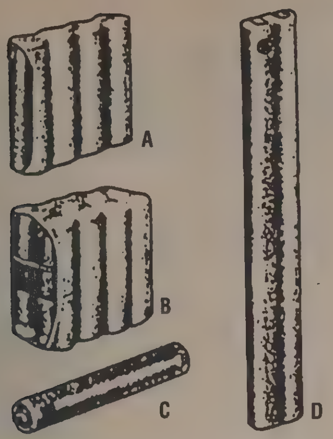
*AH will vary according to application.

Special Applications Batteries

Stock No.	Mfr.'s Type	Volts	MAH	Size Dia. × Ht.	System	Primary Usage	NEDA	EACH
737-0021	MN21B	12.00	34	0.406 × 1.220	Alkaline	Car Alarm	—	**1.24**
737-0146	DA146	8.40	1500	91 Rect.	Zina Air	Medical Battery	7004	**6.67**
737-0223	DL223AP	6.40	1300	91 Rect.	Lithium	Computer Backup	—	**13.80**
737-0224	DL223AR	6.40	1300	91 Rect.	Lithium	Computer Backup	5041	**15.60**
737-1005	7K67B	6.00	550	†	Alkaline	Photo/Remote	1412AP	**3.45**
737-1090	PC12A	1.50	2200	0.618 × 1.963	Alkaline	Inst./Pager	—	**6.69**
737-1095	PC175A	7.50	110	0.500 × 1.031	Alkaline	Inst.	—	**5.07**
737-2000	PX625AB	1.50	190	0.612 × 0.233	Alkaline	Photo	—	**2.45**
737-2005	PC7K67	6.00	565	0.900 × 0.360	Alkaline	Glucose Meter	—	**3.31**
737-1045	MS76B	1.50	180	0.455 × 0.210	Silver Oxide	Photo	1107SO	**3.57**
737-1055	D303/357B	1.50	180	0.455 × 0.210	Silver Oxide	Hearing Aids	1131SO	**1.56**
737-1060	D301/386B	1.50	120	0.455 × 0.165	Silver Oxide	Watch/Calculator	1133SO	**1.35**
737-1065	D389/390B	1.50	70	0.455 × 0.110	Silver Oxide	Watch/Calculator	1138SO	**.98**
737-1070	D384/392B	1.50	38	0.305 × 0.143	Silver Oxide	Watch Calculator	1135SO	**.81**
737-1075	D309/393B	1.50	70	0.305 × 0.210	Silver Oxide	Watch/Calculator	1137SO	**1.05**
737-1080	D364B	1.50	15	0.267 × 0.084	—	—	—	**.81**
737-1085	D381/391B	1.50	40	0.455 × 0.081	—	—	—	**1.13**

†1.4906 × .355W × 1.900H.

Rechargeable NICD Battery Packs



These replacement battery packs are made up of individual cells that are bonded together and insulated with PVC. They may be stored charged and uncharged. Other configurations are available. Order No. 69485K999 and specify battery type and configuration.

Fig.	Configuration of Cells			Total No. Of Cells	Volts	Cell Size AA (650) mAh				Cell Size Cs (Sub-C 1200) mAh			
	Wide	Deep	High			Stock No.	Mfr.'s Type	Part No.	EACH	Stock No.	Mfr.'s Type	Part No.	EACH
A	2	1	1	2	2.4	**221-2010**	801001	EA1AA241D2	**6.85**	**221-2080**	801025	EA1CS241H11	**9.95**
A	3	1	1	3	3.6	**221-2015**	801066	EA1AA341H3	**8.59**	**221-2085**	801026	EA1CS341H3	**13.52**
A	4	1	1	4	4.8	**221-2020**	801065	EA1AA441H5	**14.05**	**221-2090**	801027	EA1CS441H3	**18.40**
A	6	1	1	6	7.2	**221-2025**	801005	EA1AA641D8	**15.76**	**221-2095**	801028	EA1CS641H4	**40.32**
A	10	1	1	10	12.0	**221-2030**	801009	EA1AA1041J4	**29.62**	**221-4000**	801033	EA1CS1041H6	**44.16**
B	2	2	1	4	4.8	**221-2035**	801010	EA1AA441D15	**12.59**	**221-4006**	801034	EA1CS441D3	**16.65**
B	4	2	1	8	9.6	**221-2041**	801012	EA1AA841J2	**22.13**	**221-4011**	801036	EA1CS841H1	**36.05**
B	5	2	1	10	12.0	**221-2045**	801013	EA1AA1041D4	**30.49**	**221-4015**	801037	EA1CS1041H5	**43.49**
C	1	1	2	2	2.4	**221-2050**	801014	EA1AA241J1	**6.97**	**221-4020**	801038	EA1CS241H10	**10.31**
C	1	1	4	4	4.8	**221-2055**	801016	EA1AA441D1	**11.98**	**221-4026**	801040	EA1CS441H4	**18.71**
D	2	1	2	4	4.8	**221-2060**	801018	EA1AA441J7	**13.69**	**221-4030**	801042	EA1CS441H2	**21.44**
D	2	1	3	6	7.2	**221-2065**	801019	EA1AA641J7	**18.88**	**221-4035**	801043	EA1CS641H6	**28.16**
D	2	1	4	8	9.6	**221-2040**	801020	EA1AA841D12	**24.65**	**221-4040**	801044	EA1CS841H3	**37.31**
D	3	1	2	6	7.2	**221-2075**	801022	EA1AA641D9	**19.13**	**221-4045**	801046	EA1CS641H5	**30.24**

Pure Lead Tin Batteries From Hawker Energy

At high rates of discharge, Hawker Energy's pure-lead tin technology overpowers conventional lead-calcium cells in every category of comparison. Hawker Energy's batteries are smaller, lighter and have a longer service life. They also offer faster recharge, a high discharge rate and are extremely reliable. That superiority means more value for every energy dollar.

You can get pure-lead tin technology only in Cyclon® and Genesis® batteries from Hawker Energy Products. This exceptional technology has been awarded both the *EDN Innovation of the Year* and *The 1993 Missouri Governor's New Product* honors. The advantages of pure-lead tin will enhance your new product design, reduce shipping costs and require less maintenance and far fewer replacements.

These batteries are going to make a powerful difference in your designs.

Stock No.	Mfr.'s Type	Nominal Voltage (V)	Nominal Capacity		Length (In.)	Width (In.)	Total Height (In.)	Incl. Terminals (In.)	Weight (Approx.)	EACH
			10 Hr. Rate (Ah)	20 Hr. Rate (Ah)						1-24
221-2001	0810-0004	2.0	2.5	2.7	2.65	1.335	2.65	2.65	6.40 oz.	**6.27**
221-2002	0800-0004	2.0	5.0	5.4	3.16	1.735	3.16	3.16	13.00 oz.	**8.47**
221-2003	0840-0004	2.0	12.5	13.7	5.34	2.035	5.34	5.34	1.85 lbs.	**32.60**
221-2004	0820-0004	2.0	25.0	26.0	6.78	2.550	6.78	6.78	3.49 lbs.	**33.13**
221-0274	0810-0274	2.0	2.5	2.7	2.65	1.335	2.65	2.65	6.40 oz.	**7.34**
221-0235	0800-0235	2.0	5.0	5.4	3.16	1.735	3.16	3.16	13.00 oz.	**13.13**

Hawker Energy Sealed Lead Monobloc Batteries

Stock No.	Mfr.'s Type	Nominal Voltage (V)	Nominal 10 Hr. Rate (Ah)	Description (X)	Length (In.)	Width (In.)	Height (In.)	Total Height (In.)	Weight (Approx.)	EACH
										1-24
221-2005	0819-0010	4.0	2.5	1 × 2	3.09	1.78	2.75	2.75	.80	**11.93**
221-0032	0809-0010	4.0	5.0	1 × 2	3.77	2.11	3.02	3.02	1.62	**15.14**
221-2006	0819-0012	6.0	2.5	1 × 3	4.43	1.78	2.75	2.75	1.20	**12.56**
221-2012	0809-0012	6.0	5.0	1 × 3	5.47	2.11	3.02	3.02	2.43	**18.09**
221-0010	0859-0010	4.0	8.0	1 × 2	3.77	2.11	4.00	4.00	2.43	**15.08**
221-0012	0859-0012	6.0	8.0	1 × 3	5.47	2.11	4.00	4.00	3.65	**20.74**

Lead-Acid Batteries From Yuasa-Exide

Stock No.	Mfr.'s Type	Volts	20 Hr. Rate (Ah)	Length		Width		Overall Height Incl. Terminals		Weight Approx.		EACH
				mm	In.	mm	In.	mm	In.	Kg	Lbs.	
221-0400	NP3-4	4	3.0	90.5	3.56	34.0	1.34	64.0	2.52	0.43	0.95	**16.97**
221-0401	NP4.2-4H		4.4	48.0	1.89	35.5	1.40	119.0	4.68	0.56	1.23	**19.66**
221-0402	NP10-4		10.0	102.0	4.02	50.0	1.97	98.0	3.86	1.35	2.97	**19.87**
221-0403	NP1-6	6	1.0	51.0	2.00	42.5	1.67	54.5	2.15	0.25	0.55	**13.85**
221-0404	NP1.2-6		1.2	97.0	3.82	25.0	0.98	54.5	2.15	0.30	0.66	**9.36**
221-0405	NP2.6-6		2.6	134.0	5.28	34.0	1.33	64.0	2.52	0.56	1.23	**20.64**
221-0406	NP3-6		3.0	134.0	5.28	34.0	1.33	64.0	2.52	0.65	1.43	**22.87**
221-0407	NP4-6*		4.0	70.0	2.76	47.0	1.85	105.5	4.15	0.85	1.87	**11.84**
221-0408	NP4-6W		4.0	70.0	2.76	47.0	1.85	102.5	4.04	0.85	1.87	**17.43**
221-0409	NP4.2-6H		4.4	47.8	1.88	51.5	2.03	120.0	4.68	0.80	1.76	**25.79**
221-0410	NP7-6*		7.0	151.0	5.95	34.0	1.33	97.5	3.84	1.35	2.98	**15.52**
221-0411	NP10-6*		10.0	151.0	5.95	50.0	1.97	97.5	3.84	2.00	4.41	**17.97**
221-0412	NP0.8-12	12	0.8	96.0	3.78	25.0	0.98	61.5	2.42	0.35	0.77	**27.46**
221-0413	NP1.2-12		1.2	97.0	3.82	48.0	1.89	54.5	2.15	0.57	1.25	**22.99**
221-0414	NP2-12		2.0	150.0	5.91	20.0	0.79	89.0	3.50	0.70	1.54	**26.76**
221-0415	NP2.3-12		2.3	178.0	7.01	34.0	1.34	64.0	2.52	0.94	2.07	**26.09**
221-0416	NP2.6-12		2.6	134.0	5.28	67.0	2.64	64.0	2.52	1.12	2.47	**29.61**
221-0417	NP4-12*		4.0	90.0	3.54	70.0	2.76	106.0	4.17	1.70	3.74	**21.49**
221-0418	NP7-12*		7.0	151.0	5.94	65.0	2.56	97.5	3.84	2.65	5.84	**26.81**

*Made in USA.

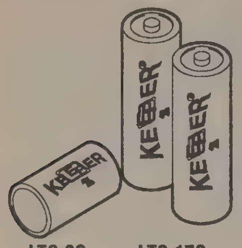
EAC ISO 9002 Registered Battery Assembly and Distribution

- **Bolder Technologies**
- **Duracell**
- **Eagle-Picher**
- **Electrochem**
- **Energizer**
- **Hawker**
- **Maxell**
- **Panasonic**
- **Polystor**
- **Portable Energy Products**
- **Renata**
- **Saft**
- **Sanyo**
- **Sonnenschein**
- **Tadiran**
- **Varta**
- **Xenotronics**
- **Yuasa Exide**

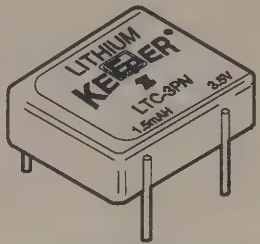
Lithium Batteries

The Keeper II Series – Power On Demand

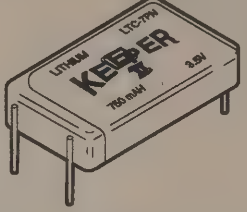
Power characteristics allow Keeper II batteries to be permanently mounted as long-lasting primary cells for improved total system reliability. No recharge circuits or components needed. Direct mount P.C. Board; no holder required. Features glass to metal seals, hermetic welds, and unique electro-chemistry for a design life of up to ten years. Highest available voltage characteristics; remains flat for the entire battery life. Other features include higher density than comparable batteries, non-pressurized design for nonvented applications, limited short circuits by internal design, prismatic design for optimum circuit board space utilization, and stainless steel construction for corrosive resistance, hermetic seal, and structural integrity. Short circuits with no adverse effects. Wave solderable within storage temperature limits. Dip solder processable — polarity keyed and pin-outs are 0.1" spacing. Nominal drain rates from –73° to +125°C. UL recognized. Meets Federal shipping regulations.



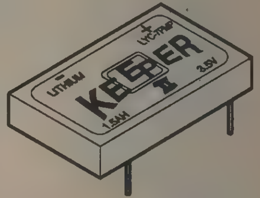
LTC-9C LTC-17C



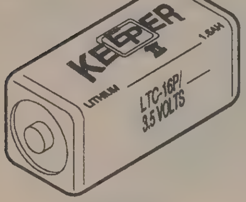
LTC-3PN



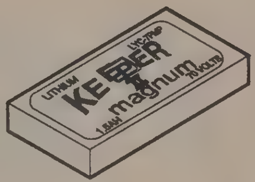
LTC-7PN



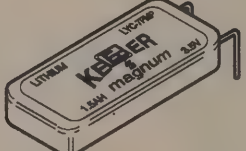
LTC-7P



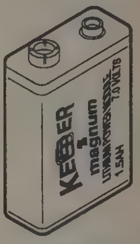
LTC-16P/T



LTC-16M



LTC-16M-S2



LTC-16M-MS-S1

Keeper II Cylindrical Batteries

Stock No.	Mfr.'s Type	Universal Size	Nominal Working Voltage	Nominal Capacity 350 Hr. Rate	Length		Diameter		Weight (Grams)	EACH			
					In.	mm	In.	mm		1-9	10-49	50-99	100-499
710-5009	LTC-9C	1/2AA	3.5	950 mAh	.985	25.02	.540	13.72	8.6	**6.26**	**5.97**	**5.78**	**5.53**
710-5017	LTC-17C	AA	3.5	1700 mAh	1.950	49.53	.540	13.72	15.5	**8.06**	**7.18**	**6.94**	**6.64**

Lithium-thionyl Chloride

Stock No.	Mfr.'s Type	Working Voltage	Capacity @ 350 Hr. Rate 25°C	Length In. (mm)	Width In. (mm)	Thickness In. (mm)	Wt. g	EACH			
								1-9	10-49	50-99	100-499
710-5010	LTC-3PN*	3.5	350 mAh	.60 (15.24)	.65 (16.51)	.25 (6.35)	4.0	**7.33**	**6.75**	**6.53**	**6.26**
710-5015	LTC-7PN*	3.5	750 mAh	1.00 (25.40)	.65 (16.51)	.25 (6.35)	6.8	**6.47**	**5.97**	**5.77**	**5.52**
710-5020	LTC-7P*	3.5	750 mAh	1.20 (30.48)	.70 (17.78)	.35 (8.89)	9.0	**6.65**	**6.14**	**5.92**	**5.67**
710-5025	LTC-7PMP*	3.5	1500 mAh	1.50 (38.10)	1.20 (30.48)	.35 (8.89)	19.0	**14.73**	**13.59**	**13.44**	**12.87**
710-5040	LTC-16P/T †	3.5	1600 mAh	1.44 (36.55)	.55 (13.46)	.55 (13.46)	16.0	**8.63**	**7.96**	**7.70**	**7.37**
710-3015	LTC-16P-CO-F-S11**	3.5	1600 mAh	1.86 (47.24)	.66 (16.76)	.70 (16.76)	25.0	**8.20**	**7.92**	**7.10**	**6.30**

*Standard terminal is .03" (.76 mm) diameter positive and negative. **Terminals .020 sq pins on 1.7" centerlines. †Terminals .005" (.127 mm) × .125" (3.17 mm) tab.

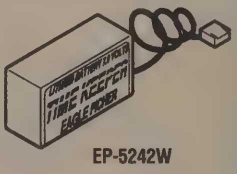
Magnum Lithium Batteries

710-4000	LTC-16M	3.5	1600 mAh	1.71 (43.43)	.99 (25.15)	.37 (9.40)	20.0	**10.86**	**10.38**	**9.91**	**9.49**
710-4005	LTC-16M-S2	3.5	1600 mAh	1.50 (38.10)	.90 (22.86)	.28 (7.11)	16.0	**11.34**	**10.44**	**9.97**	**9.53**
710-4010	LTC-16M-MS-S1	7.0	1600 mAh	1.92 (48.77)	1.03 (26.16)	.68 (17.27)	45.0	**22.47**	**21.51**	**21.15**	**20.22**

Computer Memory Backup Battery

Selection Guide

Timekeeper™ Battery	Fits Computer
EP-5242	AT&T 3B
EP-5242/W	Kapro
EP-5253	IBM PC/AT, PC Limited, AST-286, HP Vectra, NCR-PC8, Samsung 3001, Pro Exec. 286
EP-5257	Tandy 3000, Epson Equity
EP-5280	Compaq Desk Pro 286, Portable 286



EP-5242W

EP-5253

Cell Capacity at 350 Hr. Rate: 1600. **Length:** 1.90". 3 year warranty.

Stock No.	Mfr.'s Type	Working Voltage	Molex Conn. or Equal	Pin Polarization				Diode	Resistor	Wt. Grams	EACH			
				1	2	3	4				1-9	10-49	50-99	100-499
710-3020	EP-5242[1]	3.50	22-41-4033	Neg.	0*	Pos.	X**	N/A	N/A	30	**13.10**	**12.65**	**11.35**	**10.07**
710-3030	EP-5242W[1]	3.50	50-57-9004	Pos.	Key	0*	Neg.	N/A	N/A	30	**15.81**	**15.27**	**13.69**	**12.15**
710-3040	EP-5253[2]	6.80	50-57-9004	Pos.	Key	0*	Neg.	1N914	39K	53	**24.93**	**24.08**	**21.62**	**19.81**
710-3050	EP-5257[2]	6.80	22-01-3047	Pos.	Key	0*	Neg.	1N914	30K	53	**24.97**	**24.10**	**21.66**	**19.19**
710-3060	EP-5280[2]	6.80	22-41-4043	Pos.	Key	0*	Neg.	(2)1N914	11K	53	**24.97**	**24.10**	**21.66**	**19.19**
710-3000	LTC-16P-CO-F-S7[1]	3.50	22-01-3037	Pos.	Neg.	0*	X**	N/A	N/A	30	**13.25**	**12.78**	**11.49**	**9.31**

*0 is blank. **3-pin connector. [1]Width: .70", Thick: .72". [2]Width: 1.30"; Thick: .70".

Rechargeable Lead-Calcium Batteries

- ► Electrolyte Non-Gelled — 100% Capacity Delivery First Cycle
- ► Stand-By or Cyclic Service
- ► No Memory
- ► Maintenance-Free
- ► Lead Calcium Grid
- ► Rechargeable
- ► Interchangeable
- ► Use In Any Position
- ► Compact and Lightweight
- ► Optional Terminal Orientation Available
- ► Dual Seal

Carefree

Stock No.	Mfr.'s Type	Nom. Volt	Standard Terminal	Normal Cap. AH 20 HR.	Dimensions (Inches)				EACH			
					L	W	H	Including Term.	1-99	10-49	50-99	100-Up
710-0613	CF4V15	4	†	15.00	5.27	1.78	6.80	7.12	**57.49**	**55.52**	**49.82**	**45.02**
710-0611	CF6V1/2	6	A	0.45	1.92	1.00	2.00	2.25	**8.03**	**7.76**	**6.96**	**6.29**
710-0601	CF6V1	6	A	0.90	2.00	1.65	1.97	2.20	**10.28**	**9.93**	**8.91**	**8.05**
710-0626	CF6V2.6	6	A	2.60	5.30	1.35	2.37	2.56	**16.28**	**15.72**	**14.11**	**12.75**
710-0653	CF6V5.3	6	C	5.60	5.22	1.85	3.08	3.08	**19.49**	**18.82**	**16.89**	**15.26**
710-0608	CF6V8	6	C	8.00	6.00	2.00	3.75	3.93	**16.81**	**16.24**	**14.57**	**13.17**
710-0609	CF6V9	6	*	9.00	4.25	2.75	5.50	5.50	**14.89**	**14.38**	**12.90**	**11.66**
710-0630	CF6V30	6	C	28.00	6.25	3.35	6.50	6.75	**49.80**	**48.07**	**43.18**	**38.90**
710-0650	CF6V50	6	**	50.00	7.43	4.52	7.46	8.37	**77.80**	**75.10**	**67.45**	**60.75**
710-0806	CF8V6	8	C	6.00	3.34	2.15	6.50	6.66	**25.17**	**24.30**	**21.82**	**19.68**
710-1203	CF12V1/2L	12	A	0.45	3.85	1.00	2.00	2.25	**15.90**	**15.35**	**13.79**	**12.87**
710-1214	CF12V1.5	12	A	1.50	7.02	1.33	2.40	2.60	**27.35**	**26.40**	**23.71**	**21.36**
710-1226	CF12V2.6S1	12	A	2.60	5.28	2.52	2.30	2.48	**26.92**	**25.99**	**23.34**	**21.12**
710-1251	CF12V5L	12	C	5.20	6.12	2.42	3.94	4.16	**29.65**	**26.01**	**23.37**	**21.15**
710-1208	CF12V8	12	C	8.00	6.00	4.03	3.75	3.93	**33.42**	**32.26**	**28.97**	**26.09**
710-1210	CF12V9L	12	*	9.00	8.52	2.75	5.50	5.50	**28.80**	**27.80**	**24.97**	**22.50**
710-1217	CF12V9.5L	12	*	9.50	8.52	2.75	5.50	5.50	**34.70**	**33.51**	**30.07**	**27.17**
710-1215	CF12V15	12	C	15.00	7.22	3.34	6.49	6.70	**62.60**	**60.43**	**54.27**	**48.90**
710-1220	CF12V20	12	C	22.00	6.51	4.91	6.53	6.75	**68.72**	**66.34**	**59.58**	**50.70**
710-1801	CF18V1	18	A	0.90	4.90	2.00	1.97	2.20	**29.45**	**28.43**	**25.62**	**25.53**

Carefree Magnum

710-0406	CFM4V4.6	4	A	4.60	1.87	1.89	4.02	4.22	**9.05**	**8.74**	**7.85**	**7.03**
710-0410	CFM4V10	4	C	9.50	4.03	2.00	3.75	3.93	**13.70**	**13.22**	**11.88**	**11.28**
710-0620	CFM6V3	6	A	3.00	5.30	1.35	2.37	2.56	**16.02**	**15.47**	**13.89**	**12.55**
710-0646	CFM6V4.6	6	A	4.60	2.76	1.89	4.02	4.22	**11.69**	**11.32**	**10.32**	**9.74**
710-0621	CFM6V6.4	6	C	6.40	5.22	1.85	3.08	3.08	**22.44**	**21.67**	**19.45**	**17.57**
710-0606	CFM6V6.5	6	C	6.50	6.00	1.34	3.75	3.95	**13.68**	**13.24**	**12.63**	**12.07**
710-0610	CFM6V10	6	C	9.50	6.00	2.00	3.75	3.93	**17.18**	**16.63**	**15.86**	**15.16**
710-0618	CFM6V18	6	C	18.00	3.60	3.34	6.49	6.70	**30.70**	**29.71**	**28.34**	**27.09**
710-0633	CFM6V33	6	C	33.00	6.25	3.35	6.50	6.75	**47.46**	**45.93**	**43.81**	**41.88**
710-0632	CFM12V3	12	A	3.00	5.28	2.52	2.30	2.48	**28.91**	**27.92**	**25.06**	**22.64**
710-0624	CFM12V4.6L	12	A	4.60	5.54	1.89	4.02	4.25	**24.90**	**24.05**	**21.57**	**19.49**
710-1265	CFM12V6.5	12	A	6.50	5.95	2.58	3.75	3.95	**23.27**	**22.52**	**21.48**	**20.53**
710-1262	CFM12V6.2L	12	C	6.20	6.12	2.42	3.94	4.16	**26.52**	**25.66**	**24.48**	**23.40**
710-0628	CFM12V10	12	C	9.50	6.00	4.00	3.75	3.93	**35.77**	**34.54**	**31.00**	**28.01**
710-0629	CFM12V12.5	12	*	12.05	5.53	4.25	5.50	5.50	**50.50**	**48.77**	**43.77**	**39.55**
710-0631	CFM12V12.5L	12	*	12.50	8.52	2.75	5.50	5.50	**50.50**	**48.76**	**43.76**	**39.55**
710-1218	CFM12V18	12	C	18.00	7.21	3.34	6.49	6.70	**62.64**	**60.62**	**57.82**	**55.27**
710-1225	CFM12V25	12	C	25.00	6.51	4.91	6.53	6.75	**67.66**	**65.47**	**62.45**	**59.70**
710-1233	CFM12V33	12	C	33.00	6.72	6.25	6.50	6.75	**95.47**	**92.39**	**88.12**	**84.23**

Carefree UPS

710-2610	CF6V10UPS	6	C	10.00	6.00	2.00	3.75	3.93	**20.16**	**19.52**	**18.59**	**17.76**
710-2660	CF6V60UPS	6	**	60.00	7.42	4.51	7.42	8.32	**86.88**	**84.08**	**80.20**	**76.66**
710-2210	CF12V10UPS	12	C	10.00	6.00	4.00	3.75	3.75	**39.20**	**37.85**	**33.97**	**30.69**
710-2218	CFP12V18UPS	12	**	18.00	7.22	3.34	6.49	7.33	**65.97**	**63.84**	**60.90**	**58.21**

Carefree HE Series

710-2663	HE6V7.7	6	A	7.70	5.95	1.35	3.69	3.88	**14.79**	**14.28**	**12.82**	**11.58**
710-2664	HE6V12.7	6	A	12.70	5.95	1.97	3.69	3.88	**17.84**	**17.23**	**15.46**	**13.97**
710-2665	HE12V7.7	12	A	7.70	5.95	2.53	3.69	3.88	**23.49**	**22.69**	**20.36**	**18.40**
710-2666	HE12V12.7	12	A	12.70	5.95	3.94	3.69	3.88	**48.44**	**46.78**	**41.98**	**37.94**

*Standard is recessed terminals, negative is .187" wide × .03" thick; positive is .250" × .03" thick. **Lead terminals .50" length × .18" width × .92" height with .25" diameter hole through the terminal. †Cylindrical lead post, .19" diameter, .32" tall. ‡Wire lead and connector for ride-on toy.

Carefree Chargers

Stock No.	Mfr.'s Type	Charger Voltage	Normal Current	Terminal Type	EACH		
					1-24	25-99	100-Up
710-7001	PNP694A	15.0	500 mA-	Cigar Adapter	**14.95**	**13.45**	**12.25**
710-7650	CFC6V500F	6.9	500 mA	Alligator Clip	**28.30**	**27.39**	**26.12**
710-7620	CFC6V2000F	6.9	2 A	Alligator Clip	**69.78**	**67.53**	**64.41**
710-7655	CFC12V500F	13.9	500 mA	Alligator Clip	**33.15**	**32.08**	**30.60**
710-7656	CFC12V500C	15.1	500 mA	Alligator Clip	**33.15**	**32.08**	**30.60**

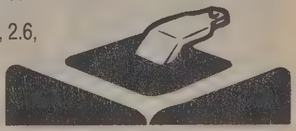
For Use In:

- ► Security Systems
- ► Emergency Lighting Systems
- ► Computer Stand-by
- ► Portable TVs and Radios
- ► Electronic Cash Registers
- ► UPS Systems
- ► Portable Medical Equipment
- ► Telephone Equipment
- ► Toys
- ► And Many Others

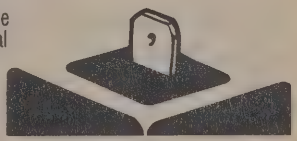
Carefree/Carefree magnum

Terminals

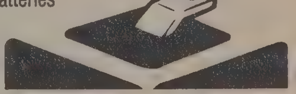
"A" TERMINAL
Tin-Plated Brass, Tab-Type
.187" × .031" 15°
Standard On .5, 1, 1.5, 2.6, 4, 4.6 AH Batteries
Optional On Other Batteries



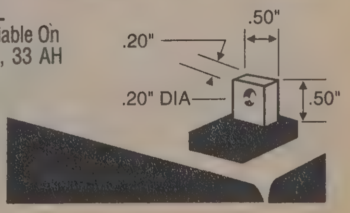
"B" TERMINAL
Tin-Plated Brass, Tab-Type
.250" × .031" 90°
Standard on All Single Cell Batteries Optional On Other Batteries



"C" TERMINAL
Tin-Plated Brass, Tab-Type
.250" × .031" 15° Standard on 4.5, 5, 5.3, 5.5, 6, 8, 10, 15, 18, 20, 25, 30 and 33. All Batteries Optional On Other Batteries

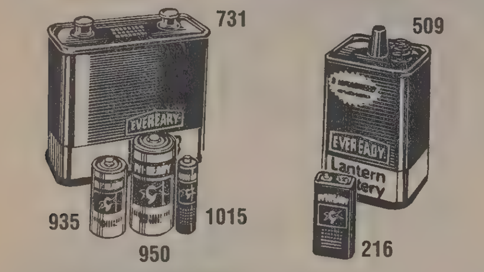


"P" TERMINAL
Cast Lead Available On 12, 20, 25, 30, 33 AH Batteries



Energizer Alkaline Batteries

Stock No.	Mfr.'s Type	NEDA	Volts	Dimensions Inches	Size	Common Use	EACH
729-0304	E90	910A	1.5	11.95 Dia. × 29.35	N	Photo-Cal.	**1.11**
729-5173	E91	15A	1.5	14.3 Dia. × 50.5	AA	Photo-Gen.	**1.26**
729-0303	E92	24A	1.5	10.5 Dia. × 44.5	AAA	Photo-Calc.	**1.20**
729-5172	E93	14A	1.5	26.2 Dia. × 50.0	C	Instrument	**1.69**
729-5171	E95	13A	1.5	34.15 Dia. × 61.1	D	Instrument	**1.69**
729-0096	E96BP-2	25A	1.5	8.3 Dia. × 42.5	AAAA	Photo-Gen.	**2.19**
729-0522	522	1604A	9.0	26.2 × 16.65 × 48.4	9V	Smoke Alarm	**3.55**
729-6004	521	—	6.0	136.5 × 73.0 × 125.4	Lantern	Lantern	**20.91**
729-0526	529	—	6.0	66.7 × 66.7 × 115.0	6V SQ	Lantern	**9.26**
729-0527	539BP	—	6.0	35.55 × 9.0 × 48.3	J-Size	Remote Control	**3.08**



General Purpose Carbon-Zinc Batteries

Long-life carbon-zinc batteries are most popular for portable power. Available in most standard sizes. For use in industrial, electronic, transistor, and many other applications. Specially sealed to provide protection in handling and against corrosive leakage. Sturdy construction. Long dependable service, even over a wide range of temperatures, plus peak performance at all times.

Stock No.	Mfr.'s Type	NEDA	Volts	Dimensions Inches	Size	Common Use	EACH
729-2005	509	908	6.0	2⅝ × 2⅝ × 4⁷⁄₁₆	6V SQ	Lantern	**2.97**
729-6037	935	14F	1.5	C 1¹⁄₃₂ × 1¹⁵⁄₁₆	C	General Purpose	**.54**
729-6038	950	13F	1.5	D 1¹¹⁄₃₂ × 2¹³⁄₃₂	D	General Purpose	**.43**
729-6014	1015	15F	1.5	AA ⁹⁄₁₆ × 1³¹⁄₃₂	AA	General Purpose	**.41**
729-6039	216	1604	9.0	1¹⁄₃₂ × 2¹⁄₃₂ × 1²⁸⁄₃₂	9V	Transistor Radio	**.98**
729-6002	731	918	6.0	5⁵⁄₁₆ × 2¹³⁄₁₆ × 4⅞	Lantern	Lantern	**8.11**

Super Heavy Duty (Zinc Chloride) Batteries

*Price per blister pack of 2 batteries.

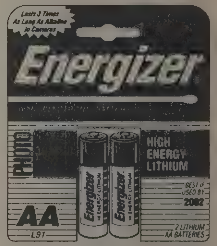
Stock No.	Mfr.'s Type	NEDA	Volts	Dimensions Inches	Replaces	Common Use	EACH
729-0781	1215	15D	1.5	AA ⁹⁄₁₆ × 1¹⁄₃₂	5AA	HD General Purpose	**.64**
729-0780	1222	1604D	9.0	1¹⁄₃₂ × ¹¹⁄₁₆ × 1¹⁵⁄₁₆	D1604	HD General Purpose	**1.68**
729-0782	1235BP-2	14D	1.5	C 1¹⁄₃₂ × 1¹⁵⁄₁₆	4C	HD General Purpose	**1.44***
729-0783	1250BP-2	13D	1.5	D 1¹¹⁄₃₂ × 2¹³⁄₃₂	6D	HD General Purpose	**1.44***
729-0786	1212	24D	1.5	¹³⁄₃₂ × 1¾	AAA	HD General Purpose	**.57**
729-0784	1209	908D	6.0	2⅝ × 2⅝ × 4¹³⁄₃₂	944	Lantern	**3.89**
729-0785	1231	918D	6.0	5⁵⁄₁₆ × 2¹³⁄₁₆ × 4⅞	TW1X	Lantern	**9.99**

Industrial Batteries

Stock No.	Mfr.'s Type	NEDA	Volts	Description	Size	Common Use	EACH
729-4095	EN95	13A	1.5	D Alkaline Battery	D	Industry	**1.58**
729-4093	EN93	14A	1.5	C Alkaline	C	Industry	**1.43**
729-4091	EN91	15A	1.5	AA Alkaline	AA	Industry	**.94**
729-4092	EN92	24A	1.5	AAA Alkaline	AAA	Industry	**.93**
729-4097	EN22	1604A	9.0	9V Alkaline	9V	Industry	**2.80**
729-5001	EN133A	1306	4.5	Alkaline	—	Photo	**11.65**
729-5002	EN164A	1404A	6.0	Alkaline	—	Commercial	**10.31**
729-5000	EV150	13CD	1.5	D HD Flashlight Battery	D	Industry	**.57**
729-4027	EV135	14CD	1.5	C HD Flashlight Battery	C	Industry	**.54**
729-4099	EV50	13C	1.5	D Flashlight Battery	D	Industry	**.52**
729-4098	EV35	14C	1.5	C Flashlight Battery	C	Industry	**.22**
729-4096	EV15	13C	1.5	AA Penlite	AA	Industry	**.35**
729-4090	EV90	908C	6.0	Lantern Battery	6V SQ	Industry	**3.09**
729-4031	EV31	918C	6.0	6V Carbon Zinc Lantern	6V SQ	Industry	**8.77**
729-4025	EV122	1604CD	9.0	9V Carbon Zinc Lantern	9V	Smoke Detector	**1.36**
729-4026	EV10S	915C	6.0	6V Screw Terminal	6V SQ	Spotlights	**4.04**

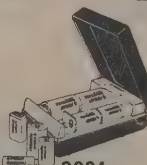
Lithium Batteries

Stock No.	Mfr.'s Type	NEDA	Volts	Dimensions Inches	Replaces	Common Use	EACH
729-6055	L91BP-2	15LF	1.5	14.3 Dia. × 50.5	AA, E91, EN91	Photo, Instrument	**6.03**
729-6050	L522FP	1604LC	9.0	25.9 m × 16.9 m × 48.8 m	—	Medical	**8.09**
729-6051	EL123APBP	5018LC	3.0	17.1 Dia × 34.5	—	Photo	**20.71**
729-6052	EL2CR5BP	5032LC	6.0	34.1 × 17.1 × 45.1	—	Photo	**20.18**
729-6005	E-CR1616BP	5021LC	3.0	.625 × .062	CR1616	Watch-Calculator	**1.52**
729-6006	E-CR1620BP	5009LC	3.0	.624 × .078	CR2016	Watch-Calculator	**1.18**
729-6010	E-CR2016BP	5000LC	3.0	.787 × .063	DL2016	Watch-Calculator	**1.18**
729-6011	E-CR2025BP	5003LC	3.0	.787 × .098	DL2025	Watch-Calculator	**1.18**
729-6012	E-CR2032BP	5004LC	3.0	.787 × .126	DL2032	Watch-Calculator	**1.04**



L91BP-2

FCC8



QCC4

FCC2

Rechargeable Nickel-Cadmium Batteries and Chargers

Batteries can be stored charged or uncharged. Capacity of Nickel-Cadmium batteries is expressed in average ampere hours, and stays relatively fixed over a wide range of discharge currents. Rechargeable batteries actually cost less to use per ampere hour than throwaway batteries. End of cycle life is considered to be the point where the battery no longer provides 80% of rated capacity. One hour recharge system available. Call for information.

Stock No.	Mfr.'s Type	Size	Volts	Capacity	Dimensions Inches	Replaces	EACH
729-6015	CH15	AA	1.2	500mAh	14.5 Dia. × 50.5	GC3	**4.19**
729-6065	CH12BP2	AAA	1.2	180mAh	10.5 Dia. × 44.5	GE3A	**7.16**
729-6017	CH35	C	1.2	1.2Ah	26.2 Dia. × 50.0	GC2	**5.26**
729-6018	CH50	D	1.2	1.2Ah	34.2 Dia. × 61.5	GC1	**5.26**
729-4022	CH22	7.2	7.2	80mAh	26.5 × 16.9 × 48.5	—	**9.01**
729-6007*	FCC2	—	—	4-AA/AAA	—	—	**9.13**
729-6008*	QCC4	—	—	1-4 C, D or 1-8 AA, AAA or 1-2 9V	—	—	**16.55**
729-6070*	FCC8	—	—	8-AA, AAA, C, D or 4 9V	—	—	**20.06**

*5 Hour Charger.

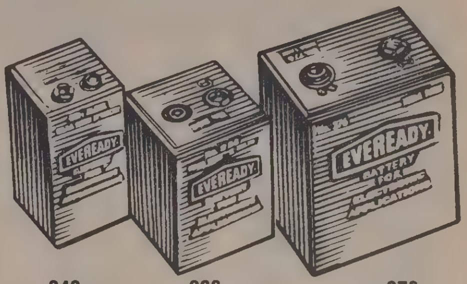
Batteries

All the batteries listed below are guaranteed fresh when they leave our stock and carry additional manufacturer's guarantees. Made to high standards and fully inspected, these batteries are of the highest quality. Equivalent NEDA numbers are included in tables for your convenience.

Stock No.	Mfr.'s Type	NEDA	Volts	Dimensions	Replaces	Common Use	EACH
729-0023	A23BP-2	1811A	12.0	10.3 Dia. × 28.5 mm	MN21	Electronic	**2.31**
729-6024	A76BP	1166A	$1\frac{1}{2}$	11.6 × 5.36 mm	—	Photo	**1.26**
729-6029	186BP	1167A	$1\frac{1}{2}$	.455 × .165	—	Watch/Calculator	**1.35**
729-6030	189BP	1168A	$1\frac{1}{2}$	.455 × .118	—	Watch/Calculator	**1.18**
729-6031	206	1611	9	$\frac{3}{4} \times 2$	M1611	Trans. Radio	**7.61**
729-6033	EL223APBP	5024LB	6	1.32 × .76 × 1.40	K223L	Photo	**16.59**
729-0790	246	1602	9	$1\frac{3}{8} \times 1\frac{3}{8} \times 2\frac{3}{4}$	2N6	Trans. Radio	**9.65**
729-6034	266	1605	9	$1\frac{13}{16} \times 1\frac{13}{16} \times 2\frac{7}{16}$	M1605	Trans. Radio	**12.83**
729-0791	276	1603	9	$2\frac{9}{16} \times 2 \times 3\frac{5}{32}$	D6	Trans. Radio	**14.87**
729-1000	301BP	1132SO	1.5	$4\frac{9}{16} \times 1\frac{19}{32}$	RW34	Watch/Calculator	**1.75**
729-1001	303BP	1130SO	$1\frac{1}{2}$	Button Cell	303	Watch/Calculator	**2.02**
729-1003	357BP	1131SO	$1\frac{1}{2}$	Button Cell	357	Watch/Calculator	**1.14**
729-0377	377BP	1176SO	1.5	Button Cell	377	Watch/Calculator	**.78**
729-1005	386BP	1133SO	$1\frac{1}{2}$	Button Cell	386	Watch/Calculator	**1.23**
729-0389	389BP	1138SO	$1\frac{1}{2}$	Button Cell	389	Watch/Calculator	**1.15**
729-1006	391BP	1160SO	1.5	$4\frac{9}{16} \times \frac{13}{16}$	391	Watch/Calculator	**1.25**
729-1007	392BP	1135SO	$1\frac{1}{2}$	Button Cell	392	Watch/Calculator	**.72**
729-1008	362BP	1158SO	1.5	Button Cell	D362	Watch/Calculator	**.75**
729-1009	364BP	1175SO	1.5	Button Cell	D364	Watch/Calculator	**1.01**
729-1010	396BP	1163SO	1.5	Button Cell	D396	Watch/Calculator	**1.02**
729-1011	393BP	1137SO	$1\frac{1}{2}$	Button Cell	RW48	Watch/Calculator	**1.21**
729-0580	411	208	15	$1\frac{1}{32} \times \frac{5}{8} \times 1\frac{29}{64}$	U10	Inst.	**8.50**
729-0590	412	215	$22\frac{1}{2}$	$1\frac{1}{32} \times \frac{5}{8} \times 2$	U15	Inst.	**6.80**
729-1013	413	210	30	$1\frac{1}{32} \times \frac{5}{8} \times 2\frac{9}{16}$	U20	Inst.	**10.09**
729-0610	415	213	45	$\frac{13}{64} \times \frac{5}{8} \times 3\frac{11}{16}$	U30	Inst.	**15.22**
729-1014	416	217	$67\frac{1}{2}$	$1\frac{21}{64} \times \frac{63}{64} \times 3\frac{1}{2}$	UX45	Inst.	**20.09**
729-1455	455	201	45	$2\frac{31}{32} \times 1 \times 3\frac{11}{16}$	XX30	B Radio	**21.54**
729-0670	467	200	$67\frac{1}{2}$	$2\frac{13}{16} \times 1\frac{3}{8} \times 3\frac{45}{64}$	XX45	B Radio	**29.78**
729-0489	489	728	225	$4\frac{11}{32} \times 2\frac{11}{16} \times 4\frac{3}{16}$	XX150	Photo	**86.37**
729-1019	497	741	180	$3 \times 1\frac{19}{32} \times 5\frac{5}{8}$	U320	Photo	**65.01**
729-0690	504	220	15	$\frac{39}{64} \times \frac{19}{32} \times 1\frac{3}{8}$	Y10	Inst.	**5.65**
729-0700	505	221	$22\frac{1}{2}$	$\frac{19}{32} \times \frac{19}{32} \times 1.975$	Y15	Inst.	**6.91**
729-1020	A544BP	1414A	6	.510 × .990	PX28	Photo	**3.75**
729-1026	706	902	6	$8\frac{5}{16} \times 2\frac{15}{16} \times 6\frac{7}{16}$	4F4H	Emergency	**33.77**
729-1027	711	700	$1\frac{1}{2}$	$2\frac{5}{8} \times 1\frac{5}{16} \times 4\frac{1}{32}$	2FH	Glo-Plug	**12.39**
729-0814	715	903	$7\frac{1}{2}$	$7\frac{1}{4} \times 4\frac{1}{16} \times 6\frac{7}{16}$	4F5H	Emergency	**29.81**
729-1028	716	904	9	8.570 × 4.053 × 5.874	4F6H	Emergency	**38.00**
729-6003	732	926	12	$5\frac{3}{8} \times 2\frac{7}{8} \times 4\frac{15}{16}$	TW2	Lantern	**12.15**
729-0812	735	900	$1\frac{1}{2}$	$2\frac{5}{8} \times 2\frac{5}{8} \times 4\frac{15}{16}$	4FM	Glo-Plug	**5.64**
729-0970	763	710	$22\frac{1}{2}$	$3\frac{1}{2} \times 2\frac{3}{32} \times 3\frac{1}{16}$	4156	Instrument	**22.30**

206

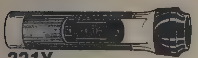
226

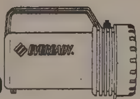


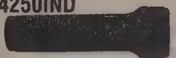
415

467

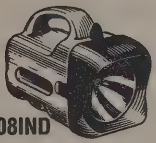
Flashlights and Lanterns


331Y


5109IND


4250IND

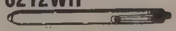
330Y


208IND

3251WH

1151

1251


6212WH

1259

1351

Stock No.	Mfr.'s Type	Description	EACH
729-0902	330Y	2 D-Cell Flashlight	**2.54**
729-0906	331Y	2 D-Cell with Magnet	**3.74**
729-0930	1151	2 AA-Cell Heavy Duty	**3.17**
729-0907	1251	2 D-Cell Heavy Duty	**4.11**
729-0935	1351	3 D-Cell Heavy Duty	**4.83**
729-0940	5109IND	6V Floating Lantern	**3.29**
729-0908	208IND	Heavy Duty Floating Lantern	**6.26**
729-0912	209H-S	Halogen Lantern	**13.74**
729-0914	3251D	Economy Flashlight	**1.37**
729-0901	1259	2 D Flashlight — Explosion Proof	**6.55**
729-0915	4250IND	2 D Rubber	**9.38**
729-0945	R215WBS	2AA Rubber with Batteries	**4.45**
729-0910	3251WH	2 D Hospital White	**1.77**
729-0911	6212WH	White Penlight — 2 AAA	**2.82**
729-0965	X250BP	2 D-Cell Accuspot Premium Light	**13.49**
729-0975	X215WBE	2 AA Personal Light with E91 Batteries	**7.77**
729-0980	X112WBE	1 AAA Cell Accuspot Micro Beam	**5.58**

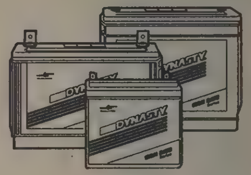
Flashlight Bulbs

Stock No.	Mfr.'s Type	Primary Purpose	Base†	# Per Pack	Amps	EACH
729-3000	PR2BP-2	2 D-Cell Flashlight Bulb	F	10	.50	**1.34**
729-3020	HPR50BP	Halogen 6V Lantern Bulb	F	10	1.00	**2.85**
729-3025	HPR52BP	Halogen 2 D-Cell Bulb	F	10	.70	**2.85**
729-3030	KPR102BP-2	Krypton 2 D-Cell Bulb	F	10	.50	**2.32**

†F=Flanged.

Dynasty® Sealed Maintenance-Free Rechargeable Batteries

DYNASTY®



Dynasty® batteries offer a tough, compact and convenient battery that provides reliable performance and versatility. Dynasty® batteries feature AGM mats in the JC, UPS and TEL Series, and gelled electrolyte in the GC Series. Batteries can operate, store or charge in any position. **Charged Operating Temperature:** –76°F to +140°F. Batteries are rated at 77°F. Capacities increase slightly above 77°F and decrease below 77°F. JC, GC and UPS series are ideal for lighting, security and supervisory back-up power systems and portable equipment. The TEL series is designed for telecom applications.

Small Valve Regulated Batteries

Stock No.	Mfr.'s Type	Voltage	Terminal Style*	Capacity (AH) @ 20 Hr. Rate	Discharge (mA) @ 20 Hr. Rate	L × W × H (In.)	Weight (Lbs.)	EACH
261-0100	JC610	6	1	1.0	50	2.01 × 1.65 × 2.26	0.60	**10.77**
261-0105	JC640	6	1	4.0	200	2.76 × 1.86 × 4.25	1.83	**12.31**
261-0110	JC665	6	1	6.5	325	5.95 × 1.33 × 3.94	2.54	**16.92**
261-0115	JC6100	6	1	10.0	500	5.95 × 1.97 × 3.94	3.86	**21.54**
261-0120	JC828	8	1	2.8	140	7.00 × 1.34 × 2.61	1.90	**30.88**
261-0125	JC832	8	1	3.2	160	7.03 × 1.34 × 2.54	1.90	**30.88**
261-0130	JC1213	12	1	1.3	60	3.82 × 1.89 × 2.18	1.30	**20.00**
261-0135	JC1222	12	1	2.2	110	6.97 × 1.34 × 2.67	1.76	**20.59**
261-0140	JC1240	12	1	4.0	200	3.82 × 2.76 × 4.33	3.66	**20.00**
261-0145	JC1265	12	1	6.5	325	5.95 × 2.54 × 3.94	4.85	**23.08**
261-0150	JC12170	12	6	17.0	850	7.13 × 2.99 × 6.57	14.30	**58.46**
261-0155	JC12240-6	12	4	24.0	1200	6.50 × 4.92 × 6.89	19.20	**72.06**
261-0160	JC12240-10	12	6	24.0	1200	6.50 × 4.92 × 6.89	19.20	**72.06**
Large General Purpose Valve Regulated Batteries								
261-0165	U1-31	12	2	31.0	1550	7.78 × 5.22 × 6.31	24.00	**67.69**
261-0170	U1-33	12	2	33.0	1650	7.78 × 5.22 × 7.28	26.70	**64.62**
261-0175	GC12400B	12	2	40.0	2000	9.40 × 5.57 × 8.05	33.00	**100.00**
261-0180	GC12V65A	12	2	65.0	3240	10.26 × 6.82 × 8.82	52.00	**120.90**
261-0185	GC12V65B	12	7	65.0	3240	10.26 × 6.83 × 8.82	52.00	**120.90**
261-0190	GC12V75A/B	12	2	75.0	3750	12.08 × 6.87 × 9.51	58.00	**144.12**
261-0195	GC12V100A/B	12	2	86.0	4300	13.02 × 6.84 × 9.51	65.00	**158.82**
261-0200	GC6V200A/B	6	2	170.0	8500	12.67 × 7.00 × 10.21	64.00	**163.77**
Large Sealed High Rate UPS Batteries†								
261-0205	UPS12-100	12	2	26.0	1300	6.54 × 5.17 × 6.45	21.10	**68.18**
261-0210	UPS12-140	12	2	37.0	1848	7.78 × 5.22 × 7.26	26.60	**90.91**
261-0215	UPS12-170	12	5	50.0	2500	8.99 × 5.35 × 8.74	40.00	**110.61**
261-0220	UPS12-270	12	2	75.0	3750	10.30 × 6.73 × 8.74	57.50	**136.36**
261-0225	UPS12-310	12	5	88.0	4400	12.08 × 6.87 × 9.51	66.60	**148.49**
261-0230	UPS12-370	12	2	100.0	5000	13.51 × 6.76 × 9.48	74.10	**192.42**
261-0235	UPS12-475	12	3	134.0	6700	13.67 × 6.76 × 10.93	100.00	**286.36**
261-0240	UPS6-620	6	5	200.0	10000	12.65 × 7.00 × 10.21	72.00	**193.94**
Large Sealed Long-Duration Telecommunication Batteries								
261-0325	TEL10-90	10	3	90.0‡	11000‡	13.51 × 6.76 × 8.51	59.7	**207.69**
261-0330	TEL12-24	12	3	24.0‡	1300‡	6.54 × 5.17 × 6.55	21.1	**104.62**
261-0350	TEL12-30	12	3	30.0‡	3810‡	7.78 × 5.22 × 6.73	26.7	**135.39**
261-0355	TEL12-45	12	3	46.0‡	5750‡	8.99 × 5.47 × 8.09	39.6	**155.39**
261-0360	TEL12-70	12	3	69.0‡	8630‡	10.30 × 6.83 × 8.02	54.8	**181.54**
261-0365	TEL12-80	12	3	80.0‡	9900‡	12.04 × 6.83 × 8.02	68.0	**195.39**
261-0370	TEL12-90	12	3	88.0‡	11000‡	13.51 × 6.76 × 8.51	72.0	**207.69**
261-0375	TEL12-125	12	3	125.0‡	15900‡	13.57 × 6.76 × 10.93	100.0	**347.69**
261-0380	TEL6-180	6	3	180.0‡	22000‡	12.65 × 7.00 × 10.21	72.0	**216.92**

***Terminal Style:** 1 — 0.187" Quick Disconnect; 2 — L Terminal; 3 — Threaded Insert; 4 — 0.250" Quick Disconnect; 5 — Flag Terminal; 6 — Clearance Hole - #10 Stud; 7 — Bi-Marine Terminal. †Flame retardant versions are available. ‡Capacity is based on an 8 hour rate.

Dynasty® Battery Chargers

Dual voltage chargers for use with sealed lead-acid batteries. CDM and M series have switchable "fast" or "float" charging. in "fast" mode, fully discharged batteries recharge in 12-16 hours. In "float" mode, charging takes up to 36 hours. Connection reversal annunciation. All models are voltage regulated except FX-6 and FX-12. Short circuit and reverse polarity protected. **Operating Temperature:** –4°F to +122°F.

Stock No.	Mfr.'s Type	Nominal Voltage	Nominal Output (Amps)	L × W × H (In.)	Weight (Lbs.)	EACH
261-0245	FX-6	6	0.50	2.25 × 2.10 × 2.00	0.88	**22.86**
261-0250	FX-12	12	0.50	2.25 × 2.10 × 2.00	0.88	**22.86**
261-0255	GRC6250CDF	6	0.25	4.00 × 2.94 × 2.00	0.90	**52.86**
261-0260	GRC12250CDF	12	0.25	4.00 × 2.94 × 2.00	0.90	**52.86**
261-0265	GRC6600M	6	0.60	6.25 × 3.75 × 2.50	1.75	**92.86**
261-0270	GRC12350M	12	0.35	6.25 × 3.75 × 2.50	1.75	**92.86**
261-0275	GRC12600M	12	0.60	6.25 × 3.75 × 2.50	1.75	**102.86**
261-0280	GRC62000CDM	12	2.00	7.25 × 3.75 × 2.50	3.80	**145.71**
261-0285	GRC122000CDM	12	2.00	7.25 × 6.38 × 2.75	3.80	**145.71**
261-0290	AB12-10	12	10.00	9.25 × 5.63 × 7.25	12.00	**83.08**
261-0295	GRC24250CDF	24	0.25	4.00 × 2.94 × 2.00	0.90	**57.14**
261-0300	GRC242000CDM	24	2.00	7.25 × 6.38 × 2.75	3.80	**145.71**

Rechargeable Battery Packs

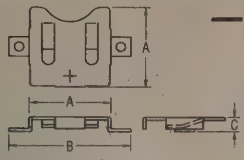
Self-contained battery packs provide power for emergency lights, radios, televisions, depth finders, boat lights, communications and test equipment. Operate by connecting to appliance with a standard automobile cigarette lighter appliance plug. Battery pack uses a self-contained charger which plugs into a standard wall outlet. **Charging Time:** 12 V pack — 16-20 hours. **Operating Temperature:** –76°F to +140°F. Includes carrying case and charger. Dimensions (L × W × H): PP6100 — 6.25 × 2.25 × 7.50; PP1260 — 8.25 × 2.88 × 6.50; PP12100 — 6.25 × 4.44 × 6.50; PP12130 — 9.13 × 3.25 × 8.75.

Stock No.	Mfr.'s Type	Nom. Voltage	Amp-Hrs. @ 20 Hr. Rate	Wt. (Lbs.)	EACH
261-0305	PP6100	12	10.0	5.8	**74.29**
261-0310	PP1260	6	6.0	7.0	**75.87**
261-0315	PP12100	12	10.0	10.0	**97.14**
261-0320	PP12130	12	13.0	13.0	**104.29**

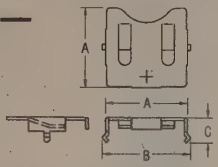
Battery Holders, Battery Snap-Ons and Battery Straps

Surface and Thru Hole Mount Coin Cell Retainer Contacts

— NEW —



Surface Mount



Thru Hole Mount

Material: Spring steel, nickel plate.

Stock No.	Mfr.'s Type	Cell Dia.	A	B	C	Battery Reference	PER PK./100
839-3010	3000	12 mm	0.520"	0.770"	0.118"	BR1216, BR1220, BR1225	**20.10**
839-3011	3002	20 mm	0.821"	1.220"	0.145"	BR2016, BR2020, BR2025, DR2032	**20.60**
839-3012	3004	23 mm	0.939"	1.339"	0.145"	BR2320, BR2325, BR2330	**21.10**
839-3013	3006	24 mm	1.000"	1.400"	0.145"	CR2430, DL2430	**21.60**
839-3014	3001	12 mm	0.520"	0.585"	0.229"	BR1216, BR1220, BR1225	**20.10**
839-3015	3003	20 mm	0.821"	0.886"	0.256"	BR2016, BR2020, BR2025, DR2032	**20.60**
839-3016	3005	23 mm	0.939"	1.004"	0.256"	BR2320, BR2325, BR2330	**21.10**
839-3017	3007	24 mm	1.000"	1.065"	0.256"	CR2430, DL2430	**21.60**

Thru Hole Mount Coin Cell Battery Holders

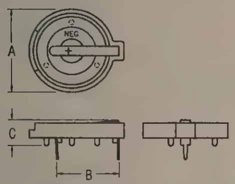


Fig. 1

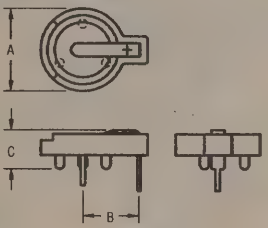


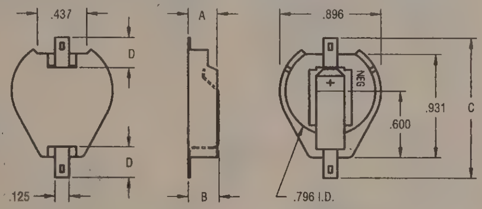
Fig. 2

Contacts: Spring steel, nickel plate over copper. **Base:** UL 94V-O PBT.

Stock No.	Mfr.'s Type	Fig.	Cell Dia.	No. Cells	A	B	C	Battery Reference	EACH
839-0500	500	1	12 mm	1	0.593"	0.393"	0.312"	BR1216, BR1220, BR1225	**1.08**
839-0501	501	1	12 mm	2	0.593"	0.393"	0.400"	BR1216, BR1220, BR1225	**1.19**
839-0502	502	1	16 mm	1	0.750"	0.463"	0.312"	CR1616, CR1620, CR1632	**1.08**
839-0103	103	2	20 mm	1	0.896"	0.807"	0.335"	BR2016, BR2020, BR2025, BR2032	**.67**
839-1026	1026	2	20 mm	2	1.093"	0.807"	0.452"	BR2016, BR2020, BR2025, BR2032	**.73**
839-3000	104	2	23 mm	1	1.000"	0.807"	0.335"	BR2320, BR2325, BR2330, BR2335	**.67**
839-1027	1027	2	23 mm	2	1.093"	0.807"	0.452"	BR2320, BR2325, BR2330, BR2335	**.73**
839-2030	105	2	24 mm	1	1.093"	0.807"	0.335"	CR2430	**.67**
839-1025	1025	2	24 mm	2	1.093"	0.807"	0.452"	CR2430, CR2450	**.73**
839-0301	301	2	30 mm	1	1.297"	0.807"	0.335"	BR2032	**.67**

Surface Mount Coin Cell Battery Holders

20 mm Holders. **Contacts:** Spring steel, tin over nickel plate. **Base:** UL 94V-O nylon, stanyl-46.



Stock No.	Mfr.'s Type	No. Cells	A	B	C	D	Battery Reference	EACH
839-1061	1061	1	0.256"	0.286"	1.015"	0.156"	CR2016*, CL2020, CR2025, CR2032	**.90**
839-1062	1062	2	0.375"	0.406"	1.015"	0.156"	CR2016†, CL2020, CR2025, CR2032	**.90**

*For 1 or 2 cells. †For 3 cells.

9 V Battery Holders

— NEW —

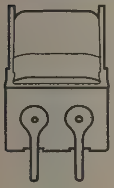


Fig. 1

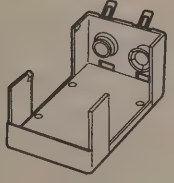


Fig. 2

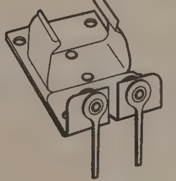


Fig. 3

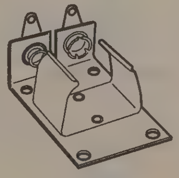


Fig. 4

Stock No.	Mfr.'s Type	Fig.	Material	Type	Termination	EACH
839-1294	1294	1	Plastic	Universal Holder	PC Lugs	**.75**
839-1295	1295	2	Plastic	Universal Holder	Quick-Fit/Solder Lugs	**.72**
839-4055	1291	3	Aluminum	Snap-In Holder	PC Lugs	**1.18**
839-4050	1290	4	Aluminum	Snap-In Holder	Solder Lugs	**1.14**

9 V Battery Snap-Ons

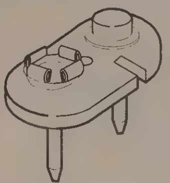


Fig. 1

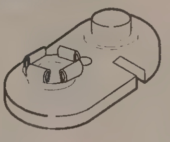


Fig. 2

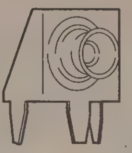


Fig. 3

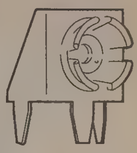


Fig. 4

Stock No.	Mfr.'s Type	Fig.	Material	Termination	EACH
839-0968	968	1	Fibre	PC Pins	**.51**
839-2027	68	2	Fibre	Without Pins or Leads	**.18**
839-0593	593	3	Steel, Tin Plate	For Mounting Battery on PCB	**.18**
839-0594	594	4	Steel, Tin Plate	For Mounting Battery on PCB	**21.00***
839-0636	636	4	Steel, Tin Plate	For Mounting Battery off PCB	**21.00***
839-0635	635	3	Steel, Tin Plate	For Mounting Battery off PCB	**18.00***

*Sold Per Pk./100.

9 V Battery Straps

— NEW —

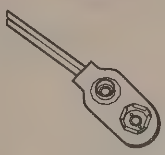


Fig. 1

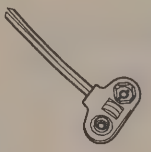


Fig. 2

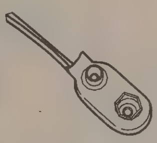


Fig. 3

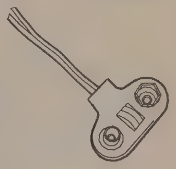


Fig. 4

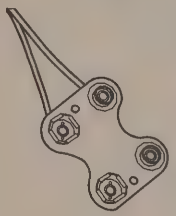


Fig. 5

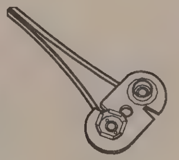


Fig. 6

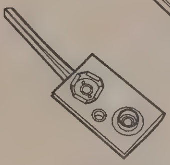


Fig. 7

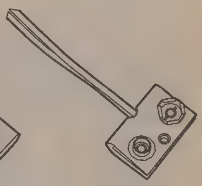


Fig. 8

Stock No.	Mfr.'s Type	Fig.	Material	Lead Length	Type	PER PK./100
839-3085	2238	1	Rigid Vinyl	4.00"	Premium Insulated	**29.55**
839-3086	2239	1	Rigid Vinyl	6.00"	Premium Insulated	**32.35**
839-3087	2240	1	Rigid Vinyl	8.00"	Premium Insulated	**33.30**
839-3088	2241	2	Rigid Vinyl	4.00"	Premium Insulated	**33.30**
839-3089	2242	2	Rigid Vinyl	6.00"	Premium Insulated	**34.25**
839-3090	2243	2	Rigid Vinyl	8.00"	Premium Insulated	**35.15**
839-3100	232	3	Flexible Vinyl	4.00"	Economy Insulated	**21.55**
839-3101	233	3	Flexible Vinyl	6.00"	Economy Insulated	**22.05**
839-3102	234	3	Flexible Vinyl	8.00"	Economy Insulated	**22.50**
839-3103	235	4	Flexible Vinyl	4.00"	Economy Insulated	**23.45**
839-3104	236	4	Flexible Vinyl	6.00"	Economy Insulated	**23.90**
839-3105	237	4	Flexible Vinyl	8.00"	Economy Insulated	**24.40**

Stock No.	Mfr.'s Type	Fig.	Mat'l.	Lead Length	Type	EACH
839-3091	72-4	6	0.062" Fibre	4.00"	Premium	**.51**
839-2028	72	6	0.062" Fibre	6.50"	Premium	**.52**
839-3093	72-8	6	0.062" Fibre	8.00"	Premium	**.53**
839-3094	83-4	7	Fibre	4.00"	Premium Insulated	**.71**
839-2029	83	7	Fibre	6.50"	Premium Insulated	**.72**
839-3096	83-8	7	Fibre	8.00"	Premium Insulated	**.73**
839-3097	85-4	8	Fibre	4.00"	Premium Insulated	**.75**
839-3098	85-6	8	Fibre	6.50"	Premium Insulated	**.76**
839-3099	85-8	8	Fibre	8.00"	Premium Insulated	**.77**
839-3106	227	5	Fibre	7.00"	Dual-Parallel Circuit	**1.24**
839-3107	229	5	Fibre	7.00"	Dual-Series Circuit	**1.24**

Shielded 9 Volt Battery Straps

- ► **Insulates and Shields 9 Volt Battery Snap-On Connector Contacts**
- ► **Assures Safe Secure Use, Reduces the Potential of Short Circuits and Prevents Tampering with Battery Contacts**
- ► **Protects Circuits and Sensitive Electronic Equipment, Prevents Unwanted Electrical Discharge Due to Unintended Grounding**
- ► **Protects Battery Contacts From Dust, Dirt, and Physical Damage**
- ► **Ideal for Rugged Applications, Constructed of High Impact Molded Plastic with Integral Wire Lead Strain Relief**
- ► **Male and Female Snap-On Contacts Assure a Positive Battery Connection and a Low Contact Resistance**

Specifications. Base: Polypropylene. **Male/Female Contacts:** Brass, nickel plate. **Wires (Red and Black):** #26 AWG, tinned, 0.187 end strip. UL/CSA 1007.

Stock No.	Mfr.'s Type	Lead Length	PER PK./100
839-3108	84-4	4.00±0.250	**25.35**
839-3109	84-6	6.00±0.250	**26.25**
839-3110	84-8	8.00±0.250	**26.75**

"AAA", "AA", "C" and "D" Size Battery Holders

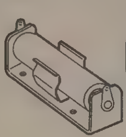


Fig. 1

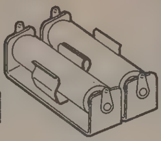


Fig. 2

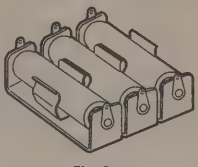


Fig. 3

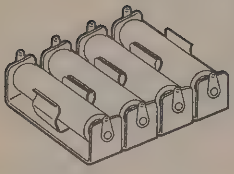


Fig. 4

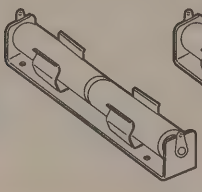


Fig. 5

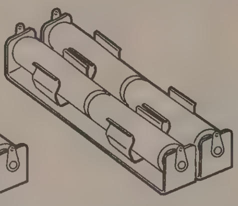


Fig. 6

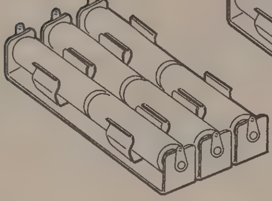


Fig. 7

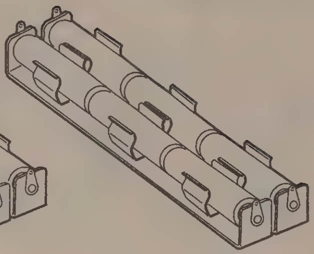


Fig. 8

Holders: Available with solder lugs, PC lugs or series connections.

"AAA" Battery Holders — Aluminum

Stock No.	Mfr.'s Type	Fig.	No. Cells	Termination	EACH
839-2000	137	1	1	Solder Lugs	1.03
839-2001	138	2	2	Solder Lugs	1.81
839-3018	169	3	3	Solder Lugs	2.65
839-3019	170	4	4	Solder Lugs	3.63

"AA" Battery Holders

Fig.	No. Cells	Termination	Steel			Aluminum		
			Stock No.	Mfr.'s Type	EACH	Stock No.	Mfr.'s Type	EACH
1	1	PC Lugs	839-3020	2228	1.00	839-5100	2222	.89
1	1	Solder Lugs	—	—	—	839-2002	139	.68
2	2	PC Lugs	839-5135	2229	1.70	839-5105	2223	1.42
2	2	Solder Lugs	—	—	—	839-2003	140	1.33
5	2	Solder Lugs	839-3026	2189	1.35	—	—	—
5	2	Solder Lugs	—	—	—	839-2006	189	1.07
2	2	Solder Lugs (Series Connection)	—	—	—	839-3021	146	1.46
2	2	Solder Lugs/Phenolic Base	839-2016	2140	1.70	—	—	—
3	3	Solder Lugs	—	—	—	839-2004	171	2.12
3	3	Solder Lugs (Series Connection)	—	—	—	839-3022	147	2.53
3	3	Solder lugs/Phenolic Base	839-2017	2171	2.54	—	—	—
4	4	Solder Lugs	—	—	—	839-2005	182	3.03
6	4	Solder Lugs	—	—	—	839-3023	192	2.05
6	4	Solder Lugs (Series Connection)	—	—	—	839-3024	148	2.24
4	4	Solder Lugs/Phenolic Base	839-2018	2182	3.23	—	—	—
7	6	Solder Lugs	—	—	—	839-3025	193	3.43

"C" Battery Holders

Fig.	No. Cells	Termination	Steel Stock No.	Steel Mfr.'s Type	Steel EACH	Aluminum Stock No.	Aluminum Mfr.'s Type	Aluminum EACH
1	1	PC Lugs	839-3027	2230	1.24	839-3030	2224	.84
1	1	Solder Lugs	839-2019	2173	1.12	839-0173	173	.81
2	2	PC Lugs	839-3028	2231	2.20	839-3031	2225	1.53
2	2	Solder Lugs	—	—	—	839-2007	174	1.42
5	2	Solder Lugs	839-3029	2185	1.65	839-3032	185	1.25
2	2	Solder Lugs (Series Connection)	—	—	—	839-3033	149	1.56
2	2	Solder Lugs/Phenolic Base	839-2020	2174	2.25	—	—	—
3	3	Solder Lugs	—	—	—	839-2008	187	2.95
3	3	Solder Lugs (Series Connection	—	—	—	839-3034	150	3.27
3	3	Solder Lugs/Phenolic Base	839-2021	2187	3.21	—	—	—
6	4	Solder Lugs	—	—	—	839-3035	196	2.31
6	4	Solder Lugs (Series Connection)	—	—	—	839-3036	151	2.42
4	4	Solder Lugs/Phenolic Base	839-2022	2188	4.22	—	—	—
7	6	Solder Lugs	—	—	—	839-3037	197	3.85

"D" Battery Holders

Fig.	No. Cells	Termination	Steel Stock No.	Steel Mfr.'s Type	Steel EACH	Aluminum Stock No.	Aluminum Mfr.'s Type	Aluminum EACH
1	1	PC Lugs	839-3044	2232	1.42	839-3038	2226	1.18
1	1	Solder Lugs	839-2023	2175	1.36	839-5070	175	.92
2	2	PC Lugs	839-3045	2233	2.54	839-3039	2227	1.88
2	2	Solder Lugs/Phenolic Base	839-2024	2176	2.56	—	—	—
2	2	Solder Lugs	—	—	—	839-2009	176	1.67
5	2	Solder Lugs	839-5025	2186	1.84	839-2011	186	1.42
2	2	Solder Lugs (Series Connection)	—	—	—	839-3040	152	1.90
3	3	Solder Lugs/Phenolic Base	839-2025	2190	3.68	—	—	—
3	3	Solder Lugs	—	—	—	839-2010	190	3.65
3	3	Solder Lugs (Series Connection)	—	—	—	839-3041	153	3.98
4	4	Solder Lugs/Phenolic Base	839-2026	2192	5.67	—	—	—
6	4	Solder Lugs	—	—	—	839-2012	200	2.58
6	4	Solder Lugs (Series Connection)	—	—	—	839-3042	158	2.78
7	6	Solder Lugs	—	—	—	839-3043	201	4.14

Battery Clips and Accessories

Snap-On Battery Clips for Battery Compartments

Stock No.	Mfr.'s Type	Fig.	Battery Size	Configuration	PER PK./100
839-2033	209	1	A, AA	Single Contact	11.95
839-0204	204	1	AAA, AAAA, N	Single Contact	11.95
839-2034	210	2	A, AA	Dual Contact	20.65
839-3005	202	2	AAA, AAAA, N	Dual Contact	20.65
839-0228	228	3	A, AA	Positive Contact	9.35

Battery Clips for Battery Compartments

Stock No.	Mfr.'s Type	Fig.	Battery Size	Configuration	PER PK./100
839-0206	206	4	AA	Anti-Rotation Tab	7.70
839-0207	207	5	C	Anti-Rotation Tab	21.10
839-0208	208	5	D	Anti-Rotation Tab	27.15

Battery Clips, Insulated and Non-Insulated Contact

Stock No.	Mfr.'s Type	Fig.	Battery Size	Configuration	EACH
839-0086	86	6	C	Non-Insulated Contact	.28
839-0087	87	6	C	Insulated Contact	.47
839-0088	88	6	D	Insulated Contact	.52
839-0089	89	6	D	Non-Insulated Contact	.33
839-0099	99	6	AA	Non-Insulated Contact	.16
839-0100	100	6	AA	Insulated Contact	.32

Battery Clips for PC Mount

Stock No.	Mfr.'s Type	Fig.	Battery Size	Configuration	EACH
839-0082	82	7	AAA, N	Snap-In PC Mount	.16
839-0092	92	7	A, AA	Snap-In PC Mount	.16

Battery Spring Clips for PC Mount

Stock No.	Mfr.'s Type	Fig.	Battery Size	Configuration	EACH
839-0628	628	8	A	PC Mount	.33
839-0629	629	9	AA, AAA	PC Mount	.33

Battery Spring Contacts

Stock No.	Mfr.'s Type	Fig.	Battery Size	Material	PER PK./100
839-0210	211	10	AA, A	0.025" Dia. Music Wire	4.95
839-0212	211-D	10	C, D	0.040" Dia. Music Wire	10.60

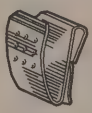


Fig. 1

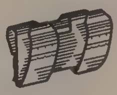


Fig. 2

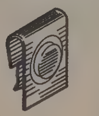


Fig. 3

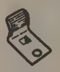


Fig. 4

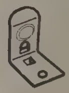


Fig. 5

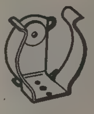


Fig. 6

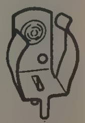


Fig. 7

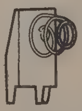


Fig. 8

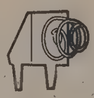


Fig. 9

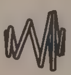


Fig. 10

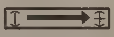


Fig. 11

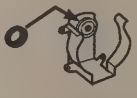


Fig. 12

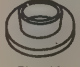


Fig. 13

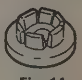


Fig. 14

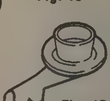


Fig. 15

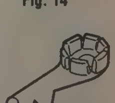


Fig. 16

Battery Accessories

Stock No.	Mfr.'s Type	Fig.	Size/Type	Description	PER PK./100
839-0058	58	11	0.250" × 1.375"	Label	2.55
839-0059	59	12	Red — Insulated	Polarizing Washer	5.60
839-0060	60	12	Black — Insulated	Polarizing Washer	5.60

Battery Snap-Ons

Stock No.	Mfr.'s Type	Fig.	Description	PER PK./100
839-0261	261	13	Jr. Stud — 0.093" Hole	4.80
839-1269	269	14	Jr. Socket — 0 .093 " Hole	9.65
839-0262	262	13	Sr. Stud — 0.125" Hole	11.40
839-0270	270	14	Sr. Socket — 0 .125" Hole	13.50
839-3134	265	13	Jr. Stud with Phenolic Washer	14.55
839-3135	266	14	Jr. Socket with Phenolic Washer	17.60
839-3136	273	13	Sr. Stud with Phenolic Washer	18.35
839-3137	274	14	Sr. Socket with Phenolic Washer	19.80
839-3138	263	15	Jr. Stud with Crimp Lug	23.35
839-3139	271	16	Jr. Socket with Crimp Lug	23.10
839-9010	264	15	Sr. Stud with Crimp Lug	26.05
839-9011	272	16	Sr. Socket with Crimp Lug	30.05

“1/2 A”, “2/3 A”,“1/2 AA”, “AA”, “AAA” and “N” Size Battery Holders

“1/2 A” Battery Holders

Stock No.	Mfr.'s Type	Fig.	No. Cells	Material	Termination	EACH
839-3052	1105	1	1	Steel	Solder Lugs	1.08
839-3075	2105	2	1	Steel	PC Lugs	1.15

“2/3 A” Battery Holders

Stock No.	Mfr.'s Type	Fig.	No. Cells	Material	Termination	EACH
839-1029	1029	3	1	Plastic UL 94V-0	PC Mount	1.18
839-9986	131	2	1	Aluminum	PC Lugs	.86
839-3054	132	1	1	Aluminum	Solder Lugs	.82

839-1030. 1029C. Retainer Cover for use with Type 1029 ....**EACH .52**

“1/2 AA” Battery Holders

Stock No.	Mfr.'s Type	Fig.	No. Cells	Material	Termination	EACH
839-0108	108	3	1	Plastic UL 94V-0	PC Mount	1.18
839-3050	1103	1	1	Steel	Solder Lugs	1.08
839-3051	2103	2	1	Steel	PC Lugs	1.15

839-0109. 108C. Retainer Cover for use with Type 108........................**EACH .31**

“AA” Battery Holders

Stock No.	Mfr.'s Type	Fig.	No. Cells	Material	Termination	EACH
839-1028	1028	3	1	Plastic UL 94V-0	PC Mount	1.18
839-3055	2460	4	1	Plastic	PC Lugs	.40

“AA” Battery Holders — Continued

Stock No.	Mfr.'s Type	Fig.	No. Cells	Material	Termination	EACH
839-3056	2461	4	1	Plastic	6" Wire Leads	.40
839-3057	2462	5	2	Plastic	PC Lugs	.45
839-9989	2463	5	2	Plastic	6" Wire Leads	.45
839-3058	2464	6	3	Plastic	PC Lugs	.76
839-3059	2465	6	3	Plastic	6" Wire Leads	.76

839-1018. 1028C. Retainer Cover for use with Type 1028 ....**EACH .52**

“AAA” Battery Holders

Stock No.	Mfr.'s Type	Fig.	No. Cells	Material	Termination	EACH
839-3060	2466	4	1	Plastic	PC Lugs	.36
839-3076	2467	4	1	Plastic	6" Wire Leads	.36
839-3077	2468	5	2	Plastic	PC Lugs	.45
839-3063	2469	5	2	Plastic	6" Wire Leads	.45

“N” Battery Holders

Stock No.	Mfr.'s Type	Fig.	No. Cells	Material	Termination	EACH
839-3078	2470	4	1	Plastic	PC Lugs	.40
839-3079	2471	4	1	Plastic	6" Wire Leads	.40
839-3080	2472	5	2	Plastic	PC Lugs	.45
839-3067	2473	5	2	Plastic	6" Wire Leads	.45

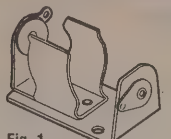


Fig. 1

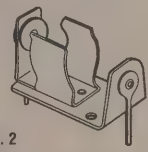


Fig. 2

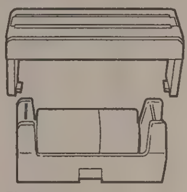


Fig. 3

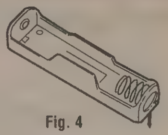


Fig. 4

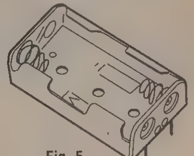


Fig. 5

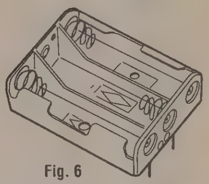
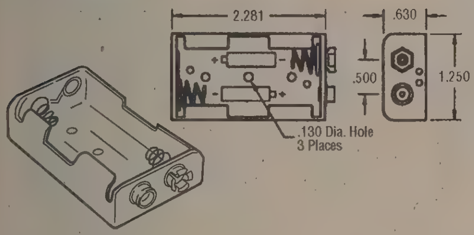
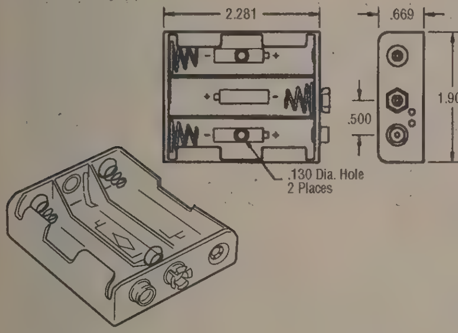


Fig. 6

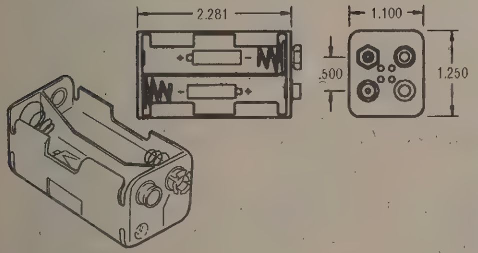
“AA” Size Battery Holders with Snap-On Connector



2474



2475



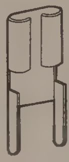
2476

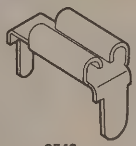
- **Features Separable “Snap-On/Snap-Off” Battery Connector (9 V Type) to Assure Reliable Connections to Battery Powered Equipment, Controls and Systems**
- **Economical Design, Holders Available for Two, Three or Four Cells; Wired in Series to Accept Connector (9 V Type)**
- **Batteries Securely Held in Place to Maintain a Positive Contact and a Low Contact Resistance**
- **Battery Contact Springs Self Adjust to Variations in Battery Length**
- **Withstands Shock and Vibration**
- **Ideally Mates with Keystone 9 V Battery Straps and Connectors**

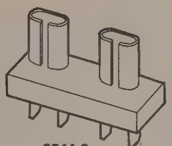
Specifications. Holder: Polypropylene. **Male/Female Contacts:** Brass nickel plate. **Battery Springs:** Spring steel, nickel plate.

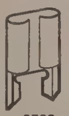
839-3068. Model 2474. Holds 2 “AA” cells in series..............................**EACH .57**
839-3069. Model 2475. Holds 3 “AA” cells in series..............................**EACH .76**
839-3070. Model 2476. Holds 4 “AA” cells in series..............................**EACH .84**

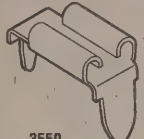
Automotive Blade Fuse Clips and Holders

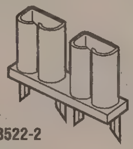

3544


3549


3544-2

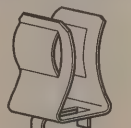

3522

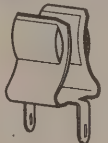

3550

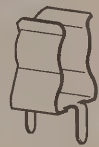

3522-2

Miniature Blade Clips. Brass, nickel plate.
839-3256. 3544. Vertical Mount ....**PER PK./100 8.25**
839-3262. 3549. Horizontal Mount.......................................**PER PK./100 22.50**
Miniature Blade Holder. Brass, nickel plate. UL 94V-O nylon base.
839-3147. 3544-2 ....**PER PK./100 34.25**
Standard Blade Clips. Brass, nickel plate.
839-3522. 3522. Vertical Mount ....**PER PK./100 8.25**
839-3264. 3550. Horizontal Mount.......................................**PER PK./100 23.45**
Standard Blade Holder. Brass, nickel plate. UL 94V-O nylon base.
839-3246. 3522-2 ....**PER PK./100 32.25**

3AG 1/4" Fuse Clips — PC Mount

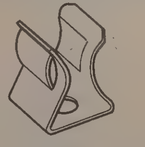

3530

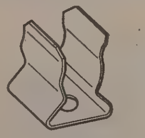

3516P, 3515

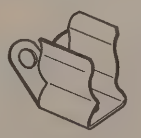

3529, 3510

PC Snap-In Clip. Brass, tin plate.
839-2422. 3530..**PER PK./100 11.00**
PC Snap-In Clips. Brass, tin plate.
839-2419. 3516P. With orientation leg...............................**PER PK./100 19.75**
839-2418. 3515. Without orientation leg............................**PER PK./100 16.20**
PC Clips. Brass, tin plate.
839-2416. 3529. With end stop ....**PER PK./100 5.55**
839-3249. 3510. Without end stop ....**PER PK./100 5.55**

3AG 1/4" Fuse Clips — Rivet Mount

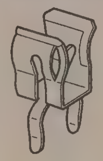

3532

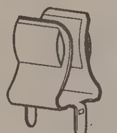

3531

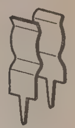

3535

Fuse Clip with End Stop. Brass, nickel plate.
839-2423. 3532..**PER PK./100 7.75**
Fuse Clip without End Stop. Brass, nickel plate.
839-3250. 3531..**PER PK./100 7.75**
Fuse Clip with Solder Lug. Brass, nickel plate.
839-3251. 3535..**PER PK./100 11.85**

5 mm Fuse Clips

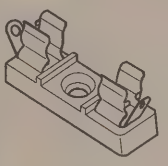

3521

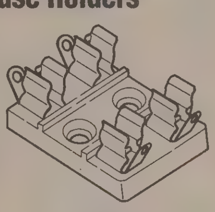

3517, 3518P

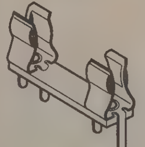

3519

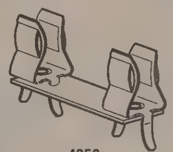
Low Profile PC Snap-In Clip. Brass, tin plate.
839-3521. 3521..**PER PK./100 6.35**
PC Clips with Orientation Leg. Brass, tin plate.
839-2420. 3517. Without orientation leg............................**PER PK./100 6.45**
839-2421. 3518P. With orientation leg...............................**PER PK./100 6.45**
PC Clip. Brass, tin plate.
839-3247. 3519..**PER PK./100 14.20**

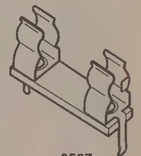
3AG and 5 mm Fuse Holders

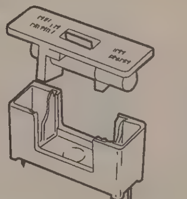

3523


3524


4245


4250


3527


4527, 4527C

3AG Molder Fuse Holder. Brass, bright finish, UL 94V-O alkyd base.
839-2425. 3523..**EACH .68**
Dual 3AG Molded Fuse Holder. Brass, bright finish, UL 94V-O alkyd base.
839-3252. 3524..**EACH 1.81**
34AG PC Mount Fuse Holder. Brass, tin plate, UL 94V-O fiberglass base.
839-2424. 4245..**EACH .44**
3AG PC Snap-In Fuse Holder. Brass, tin plate, UL 94V-O fiberglass base.
839-9006. 4250..**EACH .44**
5 mm PC Snap-In Fuse Holder. Brass, tin plate, UL 94V-O fiberglass base.
839-3527. 3527..**EACH .46**
5 mm Molded Fuse Holder with Cover. Brass, tin plate, UL 94V-O, nylon base.
839-3253. 4527. Holder ....**PER PK./100 28.15**
839-3254. 4527C. Cover only ....**PER PK./100 11.75**

Nickel-Cadmium Batteries

Wide Variety of Cells
- Standard
- Rapid Charge "R"
- High Temperature "H" Memory Backup
- High Capacity "E"

Features
- Rechargeable Sealed Nickel-Cadmium Alkaline Cell
- Long Shelf Life
- High-Rate Charging
- Reliable, Self-Resealing Vent

Applications
- For Cyclic Use
- For Trickle or Float Charge Use

The most notable characteristic of these batteries is their ability to be repeatedly used for extremely long periods of time (very often more than five years). The perfect portable power source for this age of energy conservation, Ni-Cd batteries retain most of their initial performance throughout their service life and are used in an increasing number of ways and fields, including factory, office and home automation systems, information network systems, and others. To satisfy these battery requirements, Panasonic places first priority on high product quality to assure high product reliability. Attention to detail is demanded in this severe quality control system that extends from raw and basic materials procurement to parts and even packaging.

Standard Type

Stock No.	Mfr.'s Type	Nominal Voltage (V)	Nominal Capacity C/5 (mAh)	Standard Charge		Quick Charge		Dimensions (with tube)		Approximate Weight oz. (g)	Size	EACH			
				Current (mA)	Time (h)	Current (mA)	Time (h)	Diameter inch (mm)	Height inch (mm)			1-9	10-24	25-49	50-99
884-0860	P-11AA	1.2	110	11	15	27.5	6.0	0.55±0.02 (14.0±0.5)	0.65±0.02 (16.5±0.5)	0.23 (6.5)	113AA	**2.35**	**1.79**	**1.55**	**1.42**
884-0830	P-15N	1.2	150	15	15	38.0	6.0	0.45±0.02 (11.5±0.5)	1.16±0.02 (29.5±0.5)	0.28 (8)	N	**2.81**	**2.14**	**1.95**	**1.78**
884-0865	P-15NC	1.2	150	15	15	38.0	6.0	0.45±0.02 (11.5±0.5)	1.12±0.02 (28.5±0.5)	0.28 (8)	N	**2.68**	**2.14**	**1.95**	**1.78**
884-0790	P-18AAA	1.2	180	18	15	54.0	5.0	0.39±0.02 (10.0±0.5)	1.73±0.02 (44.0±0.5)	0.35 (10)	AAA	**2.45**	**1.80**	**1.62**	**1.56**
884-0795	P-22AAA	1.2	220	22	15	66.0	5.0	0.39±0.02 (10.0±0.5)	1.73±0.02 (44.0±0.5)	0.35 (10)	AAA	**2.69**	**2.36**	**2.22**	**2.09**
884-0900	P-50AA	1.2	500	50	15	150.0	5.0	0.55±0.02 (14.0±0.5)	1.95±0.02 (49.5±0.5)	0.78 (22)	AA	**2.06**	**1.82**	**1.62**	**1.52**
884-0801	P-50AA/FT	1.2	500	50	15	150.0	5.0	0.55±0.02 (14.0±0.5)	1.88±0.02 (47.8±0.5)	0.78 (22)	AA	**2.55**	**1.91**	**1.71**	**1.57**
884-0905	P-60AA	1.2	600	60	15	180.0	5.0	0.55±0.02 (14.0±0.5)	1.95±0.02 (49.5±0.5)	0.78 (22)	AA	**2.05**	**1.80**	**1.60**	**1.51**
884-0806	P-60SC	1.2	600	60	15	150.0	6.0	0.89±0.02 (22.5±0.5)	1.02±0.02 (26.0±0.5)	1.02 (29)	2/3SC	**4.15**	**3.16**	**2.91**	**2.63**
884-0910	P-100C	1.2	1000	100	15	333.0	4.5	1.00±0.02 (25.3±0.5)	1.20±0.02 (30.5±0.5)	1.59 (45)	2/3C	**5.18**	**4.82**	**4.50**	**4.23**
884-0819	P-220C	1.2	2200	220	15	730.0	4.5	1.00±0.02 (25.3±0.5)	1.94±0.02 (49.3±0.5)	2.65 (75)	C	**7.53**	**6.02**	**5.47**	**5.02**
884-0915	P-240C	1.2	2400	240	15	1500.0	2.4	1.00±0.02 (25.3±0.5)	1.92±0.03 (48.8±0.7)	2.55 (73)	C	**6.58**	**6.12**	**5.72**	**5.36**
884-0818	P-400D	1.2	4000	400	15	—	—	1.27±0.03 (32.3±0.7)	2.36±0.04 (59.9±1.0)	4.90 (139)	D	**12.68**	**10.14**	**9.22**	**8.45**
884-0920	P-500D	1.2	5000	500	15	—	—	1.27±0.03 (32.3±0.7)	2.36±0.04 (59.9±1.0)	5.10 (145)	D	**10.58**	**9.76**	**9.07**	**8.81**

Rapid Charge "R" Type

Stock No.	Mfr.'s Type	Nominal Voltage (V)	Nominal Capacity C/5 (mAh)	Rapid Charge		Dimensions (with tube)		Approximate Weight oz. (g)	Size	EACH			
				Current (mA)	Time (h)	Diameter inch (mm)	Height inch (mm)			1-9	10-24	25-49	50-99
884-0925	P-30AAR	1.2	300	300	1.5	0.55±0.02 (14.0±0.5)	1.09±0.02 (27.7±0.5)	0.42 (12)	2/3AA	**2.29**	**2.03**	**1.90**	**1.78**
884-0930	P-45AR	1.2	450	450	1.5	0.65±0.02 (16.5±0.5)	1.10±0.02 (28.0±0.5)	0.63 (18)	2/3A*f*	**3.29**	**2.91**	**2.72**	**2.55**
884-0935	P-60AAR/FT	1.2	600	600	1.5	0.55±0.02 (14.0±0.5)	1.88±0.02 (47.8±0.5)	0.78 (22)	AA	**2.13**	**1.89**	**1.77**	**1.66**
884-0940	P-60SCR	1.2	600	600	1.5	0.89±0.02 (22.5±0.5)	1.02±0.02 (26.0±0.5)	0.95 (27)	2/3SC	**3.47**	**3.07**	**2.86**	**2.69**
884-0945	P-70AAR	1.2	700	700	1.5	0.55±0.02 (14.0±0.5)	1.95±0.02 (49.5±0.5)	0.78 (22)	AA	**2.98**	**2.77**	**2.59**	**2.43**
884-0950	P-70AR	1.2	700	700	1.5	0.65±0.02 (16.5±0.5)	1.67±0.02 (42.5±0.5)	0.95 (27)	4/5A*f*	**3.72**	**3.29**	**3.08**	**2.89**
884-0955	P-180SCR	1.2	1800	1800	1.5	0.89±0.02 (22.5±0.5)	1.67±0.02 (42.5±0.5)	1.73 (49)	SC	**5.18**	**4.82**	**4.50**	**4.23**

High Temperature "H" Type

Stock No.	Mfr.'s Type	Nominal Voltage (V)	Nominal Capacity C/5 (mAh)	Standard Charge		Dimensions (with tube)		Approximate Weight oz. (g)	Size	EACH			
				Current (mA)	Time (h)	Diameter inch (mm)	Height inch (mm)			1-9	10-24	25-49	50-99
884-0808	P-11AAH	1.2	110	3.7	48	0.55±0.02 (14.0±0.5)	0.66±0.02 (16.8±0.5)	0.23 (6.5)	1/3AA	**2.35**	**1.79**	**1.55**	**1.42**
884-0965	P-50AAH/FT	1.2	500	17.0	48	0.55±0.02 (14.0±0.5)	1.88±0.02 (47.8±0.5)	0.78 (22)	AA	**2.04**	**1.89**	**1.68**	**1.58**
884-0970	P-120SCH	1.2	1200	40.0	48	0.89±0.02 (22.5±0.5)	1.67±0.02 (42.5±0.5)	1.80 (51)	SC	**3.96**	**3.68**	**3.44**	**3.23**
884-0820	P-180CH	1.2	1800	60.0	48	1.00±0.02 (25.3±0.5)	1.94±0.02 (49.3±0.5)	2.65 (75)	C	**7.53**	**6.02**	**5.47**	**5.02**
884-0975	P-230CH	1.2	2300	75.0	48	1.00±0.02 (25.3±0.5)	1.94±0.02 (49.3±0.5)	2.75 (78)	C	**5.98**	**5.56**	**5.19**	**4.87**
884-0815	P-400DH	1.2	4000	133.0	48	1.27±0.03 (32.3±0.7)	2.36±0.04 (59.9±1.0)	4.90 (139)	D	**13.11**	**10.48**	**9.53**	**8.73**

Super High Capacity and Rapid Charge "S" Type

Stock No.	Mfr.'s Type	Nominal Voltage (V)	Nominal Capacity C/5 (mAh)	Rapid Charge		Dimensions (with tube)		Approximate Weight oz. (g)	Size	EACH			
				Current (mA)	Time (h)	Diameter inch (mm)	Height inch (mm)			1-9	10-24	25-49	50-99
884-0980	P-90AAS*	1.2	900	900	1.5	0.55±0.02 (14.0±0.5)	1.95±0.02 (49.5±0.5)	0.78 (22)	AA	**4.17**	**3.63**	**3.36**	**3.15**
884-0985	P-120AS*	1.2	1200	1200	1.5	0.65±0.02 (16.5±0.5)	1.67±0.02 (42.5±0.5)	0.92 (26)	4/5A*f*	**4.96**	**4.61**	**4.31**	**4.04**
884-0990	P-120AAS*	1.2	1200	1200	1.5	0.55±0.02 (14.0±0.5)	2.54±0.02 (64.5±0.5)	1.09 (31)	5/4AA	**4.96**	**4.61**	**4.31**	**4.04**
884-0995	P-140AS*	1.2	1400	1400	1.5	0.65±0.02 (16.5±0.5)	1.95±0.02 (49.3±0.5)	1.16 (32)	A*f*	**5.47**	**5.08**	**4.75**	**4.46**
884-1005	P-230SCS*	1.2	2300	2000	1.6	0.88±0.02 (22.5±0.5)	1.94±0.02 (49.2±0.5)	2.24 (57)	5/4SC	**8.35**	**7.77**	**7.26**	**6.81**
884-1010	P-60AS†	1.2	600	600	1.5	0.65±0.02 (16.5±0.5)	1.10±0.02 (28.0±0.5)	0.63 (18)	2/3A*f*	**3.36**	**2.98**	**2.78**	**2.61**
884-1015	P-70AAS/FT†	1.2	700	700	1.5	0.55±0.02 (14.0±0.5)	1.88±0.02 (47.8±0.5)	0.74 (21)	AA	**3.13**	**2.77**	**2.59**	**2.43**
884-1020	P-110AS†	1.2	1100	1100	1.5	0.65±0.02 (16.5±0.5)	1.67±0.02 (42.5±0.5)	0.88 (25)	4/5A*f*	**4.24**	**3.94**	**3.68**	**3.46**
884-1025	P-110AAS†	1.2	1100	1100	1.5	0.55±0.02 (14.0±0.5)	2.54±0.02 (64.5±0.5)	1.02 (29)	5/4AA	**4.62**	**4.29**	**4.01**	**3.75**
884-1030	P-180SCS†	1.2	1800	1500	1.6	0.88±0.02 (22.5±0.5)	1.67±0.02 (42.5±0.5)	1.66 (47)	SC	**5.50**	**5.12**	**4.78**	**4.49**

*SM60. †SM40.

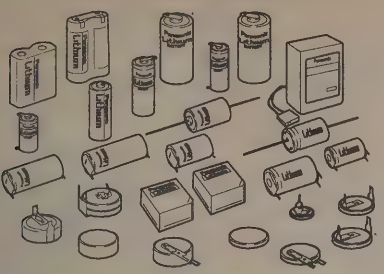
High Capacity and Ultra High Charge Type

Stock No.	Mfr.'s Type	Nominal Voltage (V)	Nominal Capacity (mAh)	Rapid Charge		Dimensions (with tube)		Approximate Weight oz. (g)	Size	EACH			
				Current (mA)	Time (h)	Diameter inch (mm)	Height inch (mm)			1-9	10-24	25-49	50-99
884-0945	P-70AAR	1.2	700	700	1.5	0.55±0.02 (14.0±0.5)	1.95±0.02 (49.5±0.5)	.078 (22)	AA	**2.98**	**2.77**	**2.59**	**2.43**
884-1040	P-120SCRJ	1.2	1200	1200	1.5	0.89±0.02 (22.5±0.5)	1.30±0.02 (33.0±0.5)	1.33 (38)	4/5SC	**3.85**	**3.35**	**3.08**	**2.93**
884-1045	P-170SCRP	1.2	1650	1700	1.5	0.89±0.02 (22.5±0.5)	1.67±0.02 (42.5±0.5)	1.72 (49)	SC	**5.15**	**4.70**	**4.32**	**4.12**
884-1050	P-180SCR	1.2	1800	1800	1.5	0.89±0.02 (22.5±0.5)	1.67±0.02 (42.5±0.5)	1.73 (49)	SC	**6.08**	**5.55**	**5.10**	**4.87**
884-1055	P-280CR	1.2	2800	2800	1.5	1.00±0.02 (25.3±0.5)	1.92±0.02 (48.8±0.5)	2.77 (79)	C	**7.84**	**7.15**	**6.58**	**6.27**

High Rate Discharge and Rapid Charge "R/P" Type

Stock No.	Mfr.'s Type	Nominal Voltage (V)	Nominal Capacity C/5 (mAh)	Rapid Charge		Maximum Discharge Current (A)	Dimensions		Approximate Weight oz. (g)	Size	EACH			
				Current (mA)	Time (h)		Diameter inch (mm)	Height inch (mm)			1-9	10-24	25-49	50-99
884-1065	P-120SCRP	1.2	1200	1200	1.5	30	0.89±0.02 (22.5±0.5)	1.670±0.02 (42.5±0.5)	1.66 (47)	SC	**3.85**	**3.35**	**3.08**	**2.93**
884-1070	P-130SCR	1.2	1300	1300	1.5	13	0.89±0.02 (22.5±0.5)	1.670±0.02 (42.5±0.5)	1.66 (47)	SC	**3.18**	**2.77**	**2.54**	**2.43**
884-1075	P-140SCR	1.2	1400	1400	1.5	14	0.89±0.02 (22.5±0.5)	1.670±0.02 (42.5±0.5)	1.66 (47)	SC	**3.42**	**2.98**	**2.74**	**2.61**
884-1080	P-170SCRP	1.2	1650	1700	1.5	30	0.89±0.02 (22.5±0.5)	1.670±0.02 (42.5±0.5)	1.73 (49)	SC	**5.15**	**4.70**	**4.32**	**4.12**
884-1085	P-120SCPC*	1.2	1200	1200	1.5	30	0.89±0.02 (22.5±0.5)	1.634±0.02 (41.5±0.5)	1.66 (47)	SC	**3.67**	**3.35**	**3.08**	**2.93**
884-1090	P-130SCRC*	1.2	1300	1300	1.5	13	0.89±0.02 (22.5±0.5)	1.634±0.02 (41.5±0.5)	1.66 (47)	SC	**3.36**	**2.87**	**2.61**	**2.49**
884-1095	P-140SCRC*	1.2	1400	1400	1.5	14	0.89±0.02 (22.5±0.5)	1.634±0.02 (41.5±0.5)	1.66 (47)	SC	**3.77**	**3.22**	**2.93**	**2.79**

*Compact Type.



Lithium Batteries

- ▶ High Voltage (3 V)
- ▶ High Energy Density
- ▶ Long Shelf Life
- ▶ Stable Operation
- ▶ .5% Capacity Deterioration Per Year
- ▶ Excellent Durability
- ▶ Flat Discharge Voltage and Stable Internal Impedance
- ▶ High Rate Discharge
- ▶ Wide Operating Temperatures
- ▶ Strong Leakage Resistance
- ▶ Excellent Safety

Versatile, long-life Panasonic lithium batteries for leakproof high-energy sources. Designed for a wide range of electronic applications, from cameras and radios to computer memory backup. Safe and chemically and thermally stable. No corrosive liquid or poisonous gas discharge. Two types available — BR (polycarbon monofluoride) provides flat discharge voltage and stable internal impedance; CR (manganese dioxide) gives high discharge rate and high discharge voltage. Panasonic cells are recognized under UL File No. MH12210.

(CF)N/LI Batteries: Poly-Carbon Monofluoride

Stock No.	Mfr.'s Type	Electrical Characteristics (20°C)					Recommended Drain		Dimensions			EACH			
		JIS	IEC	Nominal Voltage (V)	Nominal Capacity* (mA)	Pulse (mA)	Standard (mA)	Low (µA)	Diameter (mm)	Height (mm)	Weight (g)	1-9	10-24	25-49	50-99
884-0700	BR1216	—	—	3	25	5	0.03	1	12.5	1.60	0.6	1.48	1.32	1.03	.95
884-0710	BR1220	—	—	3	35	5	0.03	1	12.5	2.00	0.7	1.37	1.31	1.03	.95
884-0312	BR1225	—	—	3	38	5	0.03	1	12.5	2.50	0.9	1.42	1.20	1.03	.95
884-0317	BR1616	—	—	3	48	8	0.03	1	16.0	1.60	1.0	1.55	1.32	1.13	1.05
884-0715	BR1632	—	—	3	120	8	0.03	1	16.0	3.20	1.5	1.47	1.32	1.13	1.05
884-0316	BR2016	—	—	3	75	10	0.03	1	20.0	1.60	1.5	1.55	1.32	1.13	1.05
884-0720	BR2020	—	—	3	100	10	0.03	2	20.0	2.00	2.0	1.55	1.32	1.13	1.05
884-0301	BR2032	—	—	3	190	10	0.03	4	20.0	3.20	2.5	1.63	1.37	1.18	1.09
884-0320	BR2320	—	—	3	110	10	0.03	2	23.0	2.00	2.5	1.59	1.32	1.13	1.05
884-0325	BR2325	—	—	3	165	10	0.03	3	23.0	2.50	3.0	1.59	1.32	1.13	1.05
884-0725	BR2330	—	—	3	255	10	0.03	5	23.0	3.00	3.2	1.92	1.65	1.42	1.33
884-1000	BR3032	—	—	3	500	10	0.03	10	30.0	3.20	5.5	3.63	3.03	2.65	2.20

MN02/LI Batteries: Manganese Dioxide

884-0730	CR1025	CR1025	—	3	32	5	0.10	1	10.0	2.50	0.7	1.28	1.10	.94	.88
884-0735	CR1216	CR1216	—	3	25	5	0.10	1	12.5	1.60	0.7	1.28	1.10	.94	.88
884-0740	CR1220	CR1220	CR1220	3	35	5	0.10	1	12.5	2.00	0.9	1.28	1.10	.94	.88
884-0745	CR1616	CR1616	—	3	50	8	0.10	1	16.0	1.60	1.2	1.28	1.10	.99	.95
884-0750	CR1620	—	CR1620	3	70	8	0.10	1	16.0	2.00	1.3	1.30	1.18	1.01	.95
884-0755	CR1632	—	—	3	110	8	0.10	1	16.0	3.20	1.8	1.35	1.21	1.05	.98
884-0760	CR2012	CR2012	—	3	55	10	0.10	1	20.0	1.20	1.4	1.35	1.21	1.05	.98
884-0370	CR2016	CR2016	CR2016	3	70	10	0.10	2	20.0	1.60	1.7	1.58	1.32	1.15	1.06
884-0765	CR2025	CR2025	CR2025	3	150	15	0.20	3	20.0	2.50	2.5	1.48	1.25	1.08	1.00
884-0770	CR2032	CR2032	CR2032	3	210	15	0.20	4	20.0	3.20	3.3	1.48	1.25	1.08	1.00
884-0775	CR2320	CR2320	—	3	125	15	0.20	3	23.0	2.00	3.0	1.48	1.25	1.08	1.00
884-0375	CR2330	CR2330	—	3	250	15	0.20	5	23.0	3.00	4.0	2.08	1.76	1.52	1.40
884-0380	CR2354	—	—	3	560	15	0.20	5	23.0	5.40	5.9	2.18	1.86	1.60	1.48
884-0780	CR3032	—	—	3	500	15	0.20	10	30.0	3.20	7.1	2.53	2.18	1.98	1.85
884-0385	CR2477	—	—	3	1000	10	0.20	10	24.5	7.70	10.5	4.47	3.99	3.62	3.34

*Nominal Capacity shown is based on standard drain. **NOTE:** Cells are available in assorted pin and tab configurations. Consult your local regional office for additional information.

Cylindrical Type Lithium Batteries — (CF) /LI Batteries: Poly-Carbon Monofluoride

Stock No.	Mfr.'s Type	Electrical Characteristics (20°C)					Dimensions (Max.)		Weight (g)	EACH			
		Nominal Voltage (V)	Nominal Capacity* (mAh)	Standard Drain (mA)	Continuous Maximum Drain (mA)	Max. Pulse (mA)	Diameter (mm)	Approximate Height (mm)		1-9	10-24	25-49	50-99
884-0300	BR-CSSP	3	5000	150.0	300	1000	26.0	50.0	47.0	13.58	12.36	11.31	10.44
884-0785	BR-A	3	1800	2.5	250	1000	17.0	45.5	18.0	7.94	7.35	6.72	6.30
884-0437	BR-2/3ASSP	3	1200	2.5	250	1000	17.0	33.5	13.5	5.01	4.46	4.05	3.89
884-0436	BR-1/2A	3	650	2.0	120	500	17.0	23.0	9.5	5.37	5.00	4.50	3.58
884-0789	BR-2/3AA	3	600	2.0	80	5000	14.5	33.5	9.5	10.47	9.68	8.86	8.30

*Nominal Capacity shown above is based on standard drain and cut off voltage down to 1.8 V at 20°C.

Alkaline and Zinc Chloride Batteries

Extra Heavy Duty Zinc Chloride (Green)

Stock No.	Mfr.'s Type	Size	Voltage V	Service Life		EACH			
				Test Condition	Duration	1-9	10-24	25-49	50-99
884-5132	UM3NX	AA	1.5	10Ω, 1H/D, 0.9 V 75Ω, 4H/D, 0.9 V 4Ω continuous, 0.8 V	7.5 Hrs. 65.0 Hrs.	.38	.31	.27	.25
884-5135	UM4NX	AAA	1.5	5Ω, 5M/D, 0.9 V 300Ω, 12H/D, 0.9 V	1.5 Hrs. 120.0 Hrs.	.24	.20	.19	.17
884-5140	UM5NX	N	1.5	300Ω, 12H/D, 0.9 V 180Ω, 1H/D, 5.4V	85.0 Hrs. 55.0 Hrs.	.25	.23	.21	.18
884-5131	006PNX	9 V	9.0	900Ω, 4H/D, 5.4 V 225Ω continuous 5.4 V	49.0 Hrs. 8.0 Hrs.	1.09	1.04	.90	.84

Heavy Duty: Zinc-Chloride (Blue)

884-5114	UM1DX	D	1.5	3.9Ω, 1H/D, 1.0 V 40Ω, 4H/D, 0.9V 2.25Ω continuous, 0.8 V	12.5 Hrs. 210.0 Hrs. 336.0 Hrs.	.55	.47	.40	.36
884-5116	UM2DX	C	1.5	6.8Ω, 1H/D, 1.0 V 75Ω, 4H/D, 0.9 V 4Ω continuous, 0.8 V	10.5 Hrs. 165.0 Hrs. 325.0 Min.	.42	.36	.33	.30
884-5129	UM3DX	AA	1.5	10Ω, 1H/D, 0.9 V 75Ω, 4H/D, 0.9 V 4Ω continuous, 0.8 V	6.5 Hrs. 60.0 Hrs. 1.5 Hrs.	.28	.25	.22	.20

Heavy Duty: Zinc-Chloride (Blue) — continued

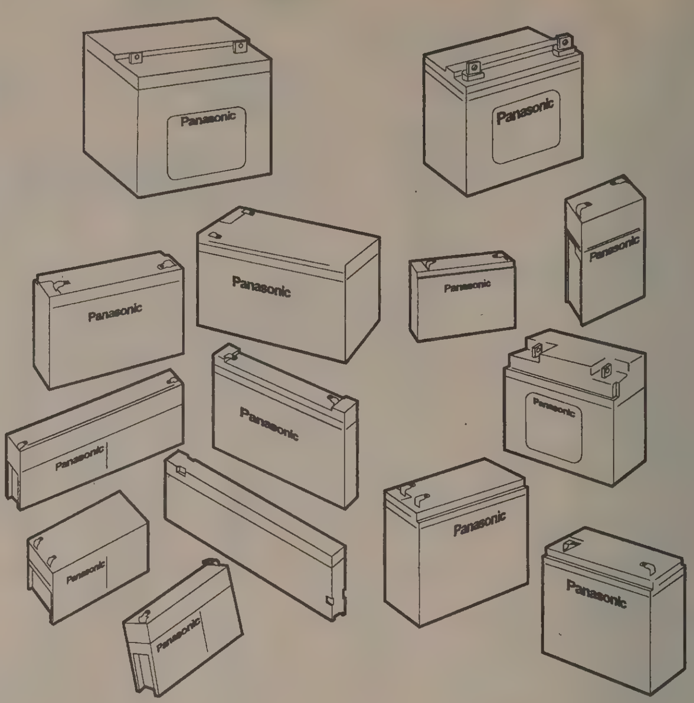
Stock No.	Mfr. Type	Size	Voltage V	Service Life		EACH			
				Test Condition	Duration	1-9	10-24	25-49	50-99
884-5112	006PDX	9 V	9.0	180Ω, 1H/D, 5.4 V 900Ω, 4H/D, 5.4 V 225Ω continuous, 5.4 V	7.0 Hrs. 45.0 Hrs. 5.2 Hrs.	.92	.81	.70	.65

Alkaline (Black)

Stock No.	Mfr.'s Type	Size	Nominal Voltage (V)	Service Life			EACH			
				Starting Drain (mA)	Load (Ω)	Hours	1-9	10-24	25-49	50-99
884-5171	AM1X	D	1.5	750	2.0	14.5	1.53	1.27	1.08	.98
884-5172	AM2X	C	1.5	380	3.9	10.0	1.01	.88	.74	.67
884-5173	AM3X	AA	1.5	150	10.0	11.0	.60	.53	.44	.40
884-5174	AM4X	AAA	1.5	75	20.0	11.0	.71	.62	.52	.47
884-5175	AM5X	N	1.5	75	20.0	8.0	.98	.85	.72	.65
884-5130	6AM6	9 V	9.0	60	150.0	11.0	3.12	2.60	2.20	1.80

Sealed Lead-Acid Batteries

- High Quality
- Excellent Lead Acid Rechargeable Battery System
- Excellent Deep Discharge Recovery
- Long Service Life — Float or Cyclic
- Starved Electrolyte Leakproof Design
- Maintenance-Free Operation
- 100% Factory Tested
- UL Component Recognition
- No Corrosive Gas Generation
- Use for Portable Equipment
- Charge, Discharge, or Store in any Position
- Use for Power Failure Backup, Emergencies
- No Memory Effect
- Approved as "Dry Cell" for Air Shipment By Dept. of Transportation and IATA
- Popular Video and Cellular Phone Batteries



The LCR-Battery is a new type of sealed lead-acid rechargeable battery system developed by Matsushita Battery Industrial Co., Ltd. The lead-calcium rechargeable (LCR) battery, will stand up to tough operating conditions such as overcharge and deep discharge. In field service, troubles due to abnormal, improper operation or misuse are reduced to a minimum. The LCR battery has stable and reliable capacity. It can be easily maintained to permit proper operation of the equipment that it powers. The battery withstands overcharge, overdischarge, vibration and shock, more readily than competitive products, and is capable of extended storage. To assure this high quality and reliability, **LCR batteries are 100% tested on line for voltage, capacity, and seals, and all vents are 100% visually inspected during the final assembly process.** The LCR battery uses an absorbed electrolyte system. All of the electrolyte is absorbed into the positive and negative plates, and the separator material. Coupled with the use of special sealing epoxies, tongue and groove case and cover construction, and long-sealing paths for posts and connectors, the LCR batteries have exceptional leak resistance, **and can be used in any position.** These batteries save installation space, while providing full and reliable power for the equipment, and many have been designed for rapid recharge, or for high power output. As a result, this power is used for applications ranging from VCRs to vacuums, electric tools, engine-start, UPS systems and computers. LCR batteries have exceptional deep discharge recovery and charge acceptance, even after deep or prolonged discharge.

Sealed Lead-Acid Rechargeable Batteries

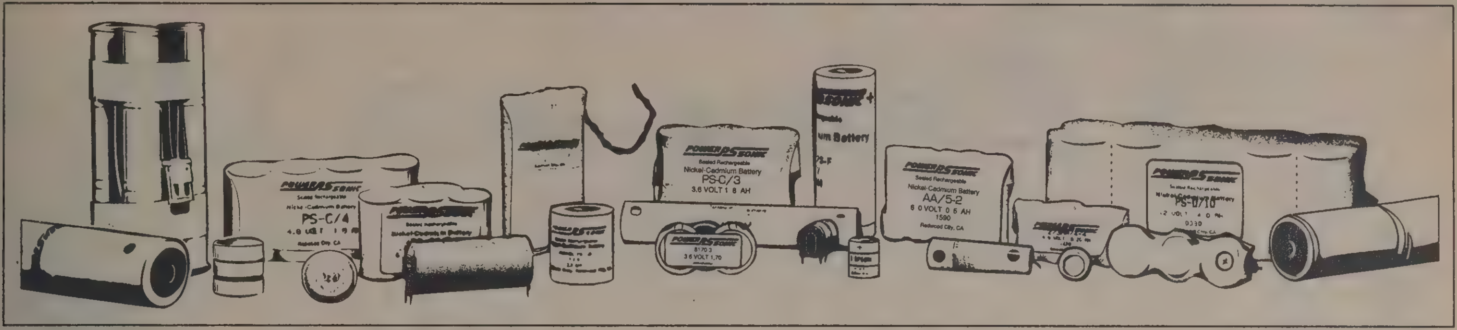
Stock No.	Mfr.'s Type	Nominal Voltage (V)	Nominal Capacity		Dimensions				Weight (Approx.) Lbs. (g)	Std. Terminals or Connectors	EACH			
			10 Hour Rate (Ah)	20 Hour Rate (Ah)	Length In. (mm)	Width In. (mm)	Height In. (mm)	Total Height Incl. Term. In. (mm)			1-9	10-24	25-49	50-99
884-0508	LC-R061R3PU	6	1.2	1.3	3.82 (97.0)	0.94 (24.0)	1.97 (50.0)	2.16 (56.0)	0.66 (300)	FASTON Type 187	**10.39**	**9.44**	**8.66**	**8.31**
884-0586	LC-R121R3PU	12	1.2	1.3	3.82 (97.0)	1.87 (47.5)	1.97 (50.0)	2.16 (56.0)	1.30 (590)	FASTON Type 187	**18.68**	**17.04**	**15.67**	**14.95**
884-0591	LC-TA121R9PU	12	1.8	1.9	0.94 (23.8)	7.17 (182.0)	2.33 (61.5)	2.43 (61.7)	1.40 (635)	Pressure Contact	**50.48**	**46.06**	**42.34**	**34.95**
884-0551	LC-R122R2PU	12	2.0	2.2	6.97 (177.0)	1.34 (33.0)	2.36 (60.0)	2.60 (66.0)	1.76 (800)	Pressure Contact	**24.91**	**22.32**	**21.82**	**21.10**
884-0542	LC-R062R4PU	6	2.2	2.4	2.60 (66.0)	1.30 (33.0)	3.88 (98.5)	4.11 (104.5)	1.15 (520)	FASTON Type 187	**11.39**	**11.06**	**10.58**	**10.28**
884-0536	LC-R063R2PU	6	3.0	3.2	2.60 (66.0)	1.30 (33.0)	4.69 (119.0)	4.92 (125.0)	1.46 (660)	FASTON Type 187	**12.54**	**11.57**	**10.57**	**10.27**
884-0516	LC-R063R4PU	6	3.0	3.4	5.28 (134.0)	1.34 (34.0)	2.36 (60.0)	2.60 (66.0)	1.36 (620)	FASTON Type 187	**16.24**	**14.77**	**13.54**	**12.71**
884-0556	LC-R123R4PU	12	3.0	3.4	5.28 (134.0)	2.64 (67.0)	2.36 (60.0)	2.60 (66.0)	2.73 (1240)	FASTON Type 187	**34.51**	**31.75**	**28.77**	**27.42**
884-0655	LCR6V4BP*	6	3.7	4.0	2.76 (70.0)	1.85 (47.0)	4.02 (102.0)	4.25 (108.0)	1.83 (830)	FASTON Type 187	**14.18**	**12.76**	**11.60**	**10.60**
884-0526	LC-R064PUL	6	3.7	4.0	2.76 (70.0)	1.85 (47.0)	4.02 (102.0)	4.02 (102.0)	1.83 (830)	Lead Wire Type	**14.03**	**12.76**	**11.70**	**10.80**
884-0600	LCR12V4BP	12	3.7	4.0	3.54 (90.0)	2.76 (70.0)	4.02 (102.0)	4.33 (110.0)	3.66 (1660)	FASTON Type 187	**25.38**	**23.15**	**21.29**	**20.30**
884-0605	LCR6V5BP*	6	4.7	5.0	2.76 (70.0)	1.85 (47.0)	4.02 (102.0)	4.25 (108.0)	2.14 (970)	FASTON Type 187	**15.26**	**13.92**	**12.80**	**12.21**
884-0610	LCR12V5BP*	12	4.7	5.0	3.54 (90.0)	2.76 (70.0)	4.02 (102.0)	4.25 (108.0)	4.25 (1930)	FASTON Type 187	**25.44**	**23.21**	**21.33**	**20.35**
884-0615	LCR6V6.5P/BP*	6	5.8	6.5	5.95 (151.0)	1.34 (34.0)	3.70 (94.0)	3.94 (100.0)	2.54 (1150)	FASTON Type 187 or 250	**15.09**	**13.77**	**12.66**	**12.07**
884-0620	LCR12V6.5P/BP*	12	5.8	6.5	5.95 (151.0)	2.54 (64.5)	3.70 (94.0)	3.94 (100.0)	4.85 (2200)	FASTON Type 187 or 250	**27.50**	**25.08**	**23.06**	**22.00**
884-0587	LCR6V7.2BP*	6	6.8	7.2	5.95 (151.0)	1.34 (34.0)	3.70 (94.0)	3.94 (100.0)	2.76 (1250)	FASTON Type 187 or 250	**13.66**	**12.61**	**11.71**	**11.38**
884-0625	LCR12V7.2BP*	12	6.8	7.2	5.95 (151.0)	2.54 (64.5)	3.70 (94.0)	3.94 (100.0)	5.29 (2400)	FASTON Type 187 or 250	**28.94**	**26.40**	**24.27**	**23.15**
884-0545	LCR6V10BP	6	9.3	10.0	5.95 (151.0)	1.97 (50.0)	3.70 (94.0)	3.94 (100.0)	3.86 (1750)	FASTON Type 187 or 250	**19.89**	**18.08**	**16.82**	**15.98**
884-0635	LCR12V10BPF	12	9.3	10.0	5.95 (151.0)	3.98 (101.0)	3.70 (94.0)	4.01 (102.0)	7.72 (3500)	FASTON Type 187 or 250	**38.77**	**35.36**	**32.51**	**31.00**
884-0640	LCR6V12BP*	6	11.3	12.0	5.95 (151.0)	1.97 (50.0)	3.70 (94.0)	3.94 (100.0)	4.19 (1900)	FASTON Type 187 or 250	**19.28**	**17.59**	**16.17**	**15.43**
884-0645	LCR12V17CP*	12	15.0	17.0	7.13 (181.0)	3.00 (76.0)	6.58 (167.0)	6.58 (167.0)	14.30 (6500)	M5 Bolt and Nut Type	**65.57**	**59.52**	**55.00**	**52.46**
884-0564	LCL12V20P	12	18.0	20.0	7.28 (185.0)	4.92 (125.0)	6.50 (165.0)	6.50 (165.0)	16.51 (7.5 kg)	M5 Bolt and Nut Type	**62.26**	**56.55**	**54.48**	**52.97**
884-0567	LC-L1224PU	12	22.0	24.0	4.92 (125.0)	6.50 (165.0)	6.89 (175.0)	6.89 (175.0)	19.20 (8.7 kg)	M5 Bolt and Nut Type	**87.58**	**78.10**	**71.65**	**65.68**
884-0650	LCL12V33P	12	30.0	33.0	7.70 (195.6)	5.12 (130.0)	6.10 (155.0)	7.09 (180.0)	—	M6 Bolt and Nut Type	**86.54**	**78.95**	**72.57**	**69.23**
884-0568	LC-L1238PU	12	35.0	38.0	7.76 (197.0)	6.50 (165.0)	6.88 (175.0)	6.88 (175.0)	28.70 (13.0 kg)	M6 Bolt and Nut Type	**121.28**	**112.00**	**102.66**	**94.76**
884-0581	LC-L1265PU	12	57.0	65.0	13.80 (350.0)	6.54 (166.0)	6.85 (174.0)	6.85 (174.0)	41.90 (19.0 kg)	M6 Bolt and Nut Type	**197.47**	**179.52**	**164.55**	**151.89**

*Available in ABS plastic resin cases to comply with UL94-VO designated as "LCV" types.

Popular Video and Cellular Phone Batteries

Stock No.	Mfr.'s Type	Nominal Voltage (V)	Nominal Capacity		Dimensions			Weight (Approx.) Lbs. (g)	Std. Terminals or Connectors	EACH			
			10 Hour Rate (Ah)	20 Hour Rate (Ah)	Length In. (mm)	Width In. (mm)	Height In. (mm)			1-9	10-24	25-49	50-99
884-0599	LC-S122BU	12	2.0	2.10	7.900 (200.7)	0.980 (24.80)	2.43 (61.7)	1.54 (700)	Pressure Contact	**50.67**	**45.60**	**41.45**	**38.00**
884-0601	LC-SA122R3CU	12	2.3	2.34	7.165 (182.0)	0.939 (23.85)	2.43 (61.7)	1.40 (635)	Pressure Contact	**24.60**	**22.95**	**22.10**	**21.41**

Nickel Cell Assemblies



Features

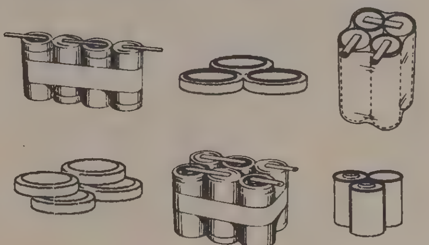
- Sealed Leak-Proof Construction
- Cell Uniformity
- An Operating Temperature Range
- Life Expectancy
- Sintered Plate Construction
- Low Cell Impedance

Power-Sonic nickel-cadmium batteries are also available as cell assemblies and packs. Both cylindrical and button cells may be packaged in any configuration to meet electrical and dimensional requirements.

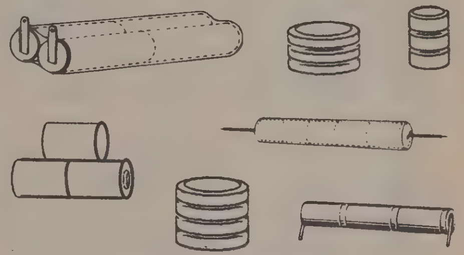
When specifying battery assemblies, the following information should be given:

1) Size and type of cell
2) Voltage or number of cells
3) Configuration of cells: e.g., 1 × 4, 2 × 5, stick, etc.
4) Packaging method: taped, shrink-tubing, or molded case
5) Termination: button top, solder tabs, or wire leads with or without connectors
6) Supply drawing of configurations

When ordering a replacement battery pack specify voltage or number of cells, ampere-hour capacity or cell size, and dimensions of the pack.

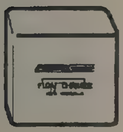


Linear Configurations

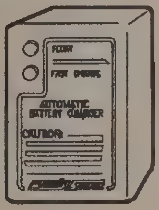


Tubular Configurations

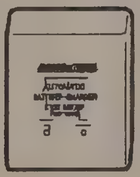
SLA Battery Chargers



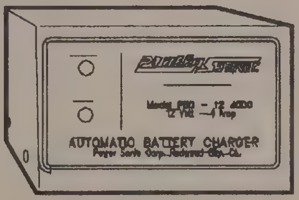
A



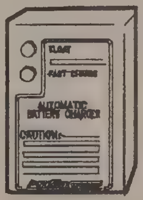
B



C


AUTOMATIC BATTERY CHARGER
Power Sonic Corp. Redwood City, Ca.

D



E

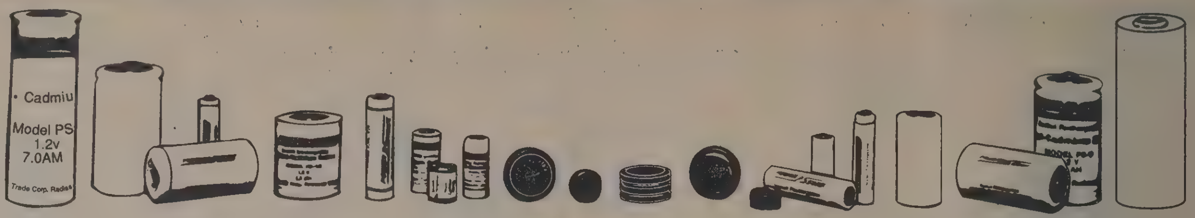
F

- **Electronically Regulated Current Limited Chargers for Sealed Lead-Acid Type Batteries**
- **Wall Mount Plug-In Design for 1.25 Amp and Below, Counter Top Design with Input Cord for 4 Amp Output and Above**
- **Operating Temperature Range: 32°F to 104°F (0°C to 40°C); Suitable for 105-129 VAC, 60 Hz Input; Voltage Regulation ±1.5% for Line and Load Current Up to Nominal Current Rating**
- **LED Indicators On "A"-Type Chargers — One to Indicate "POWER ON," the Other to Indicate "CHARGING MODE" ("ON" to Signal High-Rate Charging, "OFF" to Signal Float Charging)**
- **Hi-Impact Resistant Thermo-Plastic Housing for 250-1250 Series; Metal Housing for 300, 800, 4000, 10A Series**
- **Screw-Type Terminals for 250, 500, and 1250 Series, I/O Cord for 300, 800, 1000, 4000, 10A Series**

Stock No.	Mfr.'s Type	Fig.	Output Voltage (V)		Output Current (A)		Use With Battery		EACH			
			Nom.	Range	Nom.	Max.	Voltage	Capacity	1-9	10-24	25-49	50-99
621-0600	PSC-6250A	A	6	6.75/7.35	0.30	0.60	6 V	1-5 AH	**37.99**	**36.77**	**35.07**	**33.52**
621-0622	PSC-6250F	A	6	6.83	0.30	0.60	6 V	15 AH	**30.94**	**29.94**	**28.56**	**27.30**
621-6300	PSC-6300A	B	6	6.84/7.35	0.25	0.25	6 V	1-5 AH	**36.07**	**34.48**	**33.50**	**32.56**
621-0670	PSC-6500A	C	6	6.75/7.35	0.60	0.75	6 V	4-10 AH	**46.75**	**45.24**	**43.15**	**41.25**
621-0681	PSC-61000A	B	6	6.84/7.35	1.00	1.00	6 V	4.5-12 AH	**43.49**	**41.96**	**39.87**	**38.58**
621-0630	PSC-64000A	D	6	6.75/7.35	3.50	4.00	6 V	10-40 AH	**119.00**	**115.16**	**109.84**	**105.00**
621-1225	PSC-12250A	A	12	13.50/14.70	0.50	0.60	12 V	1-5 AH	**37.88**	**36.63**	**34.92**	**33.35**
621-0660	PSC-12250F	A	12	13.65	0.25	0.40	12 V	1-5 AH	**30.94**	**29.94**	**28.56**	**27.30**
621-6305	PSC-12300A	E	12	13.68/14.70	0.30	0.30	12 V	1-5 AH	**37.99**	**36.77**	**35.07**	**33.52**
621-0675	PSC-12500A	C	12	13.50/14.70	0.50	0.60	12 V	2-10 AH	**46.75**	**45.24**	**43.15**	**41.25**
621-0685	PSC-12500F	F	12	13.65	0.50	0.60	12 V	2-10 AH	**32.21**	**31.17**	**29.73**	**28.42**
621-6310	PSC-12800A	E	12	13.68/14.70	0.75	0.75	12 V	4-17 AH	**36.07**	**34.48**	**33.50**	**32.56**
621-6335	PSC-122000A*	D	12	13.50/14.70	2.00	2.00	12 V	10-20 AH	**122.92**	**118.95**	**113.46**	**108.46**
621-0695	PSC-124000A	D	12	13.50/14.70	4.00	4.75	12 V	10-40 AH	**119.00**	**115.16**	**109.84**	**105.00**
621-9999	PSC-124000AP	D	12	13.50/14.70	4.00	3.50/2.50	12 V	17-40 AH	**149.60**	**144.70**	**138.09**	**133.97**
621-0701	PSC-12-10A	†	12	13.50/14.70	10.00	10.00	12 V	60-100 AH	**250.58**	**242.49**	**231.30**	**221.10**
621-0340	PSC-241000A*	D	24	27.00/29.40	1.00	1.00	24 V	5-15 AH	**122.92**	**118.95**	**113.46**	**108.46**

*122000A and 241000A can be switched to accept 115 VAC or 230 VAC, 47-63 Hz making them usable both in North America and abroad. †Not Shown.

Nickel-Cadmium Batteries



Standard Cells

Stock No.	Mfr.'s Type	Nominal Voltage (V)	Capacity 5 Hr. Rate (mAh)	Std. Charge		Quick Charge		Diameter (Max.)		Height (Max.)		Weight		EACH			
				mA	Hrs.	mA	Hrs.	Inches	mm	Inches	mm	oz.	g	1-9	10-24	25-49	50-99
621-1000	PS-1/3AA	1.2	110	11	15	28	6.0	0.571	14.5	0.669	17.0	0.25	7	2.16	1.91	1.69	1.64
621-1001	PS-1/3AA/T	1.2	110	11	15	28	6.0	0.571	14.5	0.669	17.0	0.25	7	2.22	2.07	1.92	1.87
621-0830	PS-N	1.2	150	15	15	38	6.0	0.473	12.0	1.142	29.0	0.30	9	2.45	2.21	2.08	2.01
621-0831	PS-N/T	1.2	150	15	15	38	6.0	0.473	12.0	1.142	29.0	0.30	9	2.59	2.46	2.31	2.24
621-0790	PS-AAA	1.2	200	20	15	45	6.0	0.414	10.5	1.752	44.5	0.35	10	2.45	2.21	2.08	2.01
621-0791	PS-AAA/T	1.2	200	20	15	45	6.0	0.414	10.5	1.752	44.5	0.35	10	2.72	2.46	2.31	2.24
621-1015	PS-2/3AA	1.2	270	27	15	75	4.5	0.571	14.5	1.181	30.0	0.42	12	2.04	1.82	1.68	1.63
621-1016	PS-2/3AA/T	1.2	270	27	15	75	4.5	0.571	14.5	1.181	30.0	0.42	12	2.32	2.06	1.91	1.86
621-0800	PS-AAL	1.2	600	60	15	150	4.5	0.571	14.5	1.988	50.5	0.74	22	2.06	1.83	1.62	1.57
621-0801	PS-AA/T	1.2	600	60	15	150	4.5	0.571	14.5	1.988	50.5	0.74	22	2.03	1.81	1.68	1.63
621-0850	PS-SC	1.2	1300	130	15	300	6.0	0.906	23.0	1.692	43.0	1.69	48	3.19	2.84	2.64	2.56
621-0851	PS-SC/T	1.2	1300	130	15	300	6.0	0.906	23.0	1.692	43.0	1.69	48	3.37	2.99	2.78	2.70
621-0820	PS-C/B	1.2	2000	200	15	—	—	1.024	26.0	1.969	50.0	2.65	75	5.95	5.66	5.31	5.15
621-0821	PS-C/T	1.2	2000	200	15	—	—	1.024	26.0	1.969	50.0	2.65	75	6.21	5.90	5.54	5.37
621-1040	PS-1/2D	1.2	2200	220	15	—	—	1.300	33.0	1.476	37.5	3.03	86	6.28	5.97	5.61	5.44
621-1041	PS-1/2D/T	1.2	2200	220	15	—	—	1.300	33.0	1.476	37.5	3.03	86	6.55	6.23	5.85	5.67
621-0810	PS-D/B	1.2	4000	400	15	—	—	1.339	34.0	2.402	61.5	5.47	155	10.00	9.51	8.92	8.66
621-0811	PS-D/T	1.2	4000	400	15	—	—	1.339	34.0	2.402	61.5	5.47	155	8.69	8.26	7.75	7.52
621-1050	PS-F	1.2	7000	700	15	—	—	1.339	34.0	3.583	91.5	8.82	250	15.23	14.48	13.59	13.19
621-1051	PS-F/T	1.2	7000	700	15	—	—	1.339	34.0	3.583	91.5	8.82	250	16.35	15.54	14.59	14.59
621-1402	PS-TR7	9.0	110	11	15	28	6.0	—	—	1.909	48.5	1.66	47	10.18	9.33	8.89	8.62
621-1416	PS-850AA	1.2	850	85	15	255	4.5	0.567	14.4	1.949	49.5	0.81	23	2.04	1.87	1.78	1.72
High Temp Cells																	
621-0900	PS-AAH	1.2	600	60	15	—	—	0.571	14.5	1.933	49.1	0.74	22	1.91	1.77	1.65	1.59
621-0901	PS-SCH	1.2	1200	120	15	—	—	0.906	23.0	1.692	43.0	1.69	48	3.20	2.89	2.72	2.69
621-0902	PS-CH	1.2	1800	180	15	—	—	1.024	26.0	1.969	50.0	2.65	75	5.21	5.00	4.68	4.50
621-0903	PS-DH	1.2	4000	400	15	—	—	1.339	34.0	2.421	61.5	5.47	155	8.50	8.05	7.61	7.52
621-0916	PS-1/3AAH	1.2	110	11	15	—	—	0.571	14.5	0.669	17.0	0.25	7	2.50	2.12	1.83	1.69
621-0917	PS-1/2DH	1.2	2200	220	15	—	—	1.271	32.3	1.448	36.8	2.82	80	7.20	6.54	6.00	5.53
621-1404	PS-DH45	1.2	4500	450	15	—	—	1.300	33.0	2.402	61.0	4.57	130	7.89	7.23	6.89	6.68
621-1406	PS-FH80	1.2	8000	800	15	—	—	1.300	33.0	3.543	90.0	8.47	240	19.95	18.28	17.41	16.88
High Capacity Cells																	
621-0904	PS-AAX	1.2	700	70	15	230	5.0	0.571	14.5	1.988	60.5	0.87	23	1.72	1.60	1.50	1.46
621-0906	PS-SCX	1.2	1500	150	15	—	—	0.875	22.2	1.662	42.2	1.83	52	3.15	2.79	2.59	2.51
621-0907	PS-CX	1.2	2500	250	15	—	—	1.024	26.0	1.969	50.0	2.65	75	6.40	6.07	5.74	5.56
621-0908	PS-DX	1.2	5000	500	15	—	—	1.339	34.0	2.421	61.5	5.47	155	10.14	9.61	9.07	8.78
621-1408	PS-FX	1.2	8000	800	15	—	—	1.300	33.0	3.543	90.0	8.47	240	19.95	18.28	17.41	16.88
High Rate Cells																	
621-0909	PS-SCF	1.2	1500	150	15	2100	1.0	0.875	22.2	1.662	42.2	1.83	52	3.47	3.06	2.85	2.76
621-0910	PS-CF	1.2	2300	230	15	3000	1.0	1.024	26.0	1.969	50.0	2.65	75	6.23	5.91	5.58	5.43
621-0911	PS-DF	1.2	4500	450	15	6000	1.0	1.274	32.4	2.374	60.3	5.29	150	9.95	9.44	8.91	8.61
621-0918	PS-1/2DF	1.2	2200	220	15	750	4.5	1.271	32.3	1.448	36.8	2.82	80	7.30	6.53	6.08	5.61
621-1410	PS-2/3A	1.2	600	60	15	600	1.5	0.665	16.9	1.106	28.1	0.67	19	2.59	2.38	2.27	2.20
621-1412	PS-4/5A	1.2	1000	100	15	1000	1.5	0.669	17.0	1.693	43.0	1.06	30	2.87	2.63	2.51	2.43
621-1414	PS-A	1.2	1200	120	15	1200	1.5	0.669	17.0	1.929	49.0	1.23	35	3.62	3.32	3.16	3.06
High Capacity — Rapid Charge Cells																	
621-0912	PS-AAXF	1.2	700	70	15	1000	1.0	0.571	14.5	1.988	50.5	0.85	24	2.13	1.89	1.76	1.66
621-0913	PS-SCXF	1.2	1800	180	15	2500	1.0	1.875	22.2	1.662	42.2	1.83	52	4.03	3.76	3.51	3.39
621-0914	PS-CXF	1.2	2500	250	15	3300	1.0	1.024	26.0	1.969	50.0	2.65	75	6.26	5.95	5.63	5.47
621-0915	PS-DXF	1.2	5000	500	15	7000	1.0	1.274	32.4	2.295	58.3	5.29	150	10.90	10.33	9.76	9.49
Pager Battery for Motorola Pagers — Pageboy II, Page Com, Spirit, and Director																	
621-1080	PS-NP	1.2	150	15	15	38	6.0	0.473	12.0	1.260	32.0	0.35	10	4.19	3.76	3.46	3.36

"/T" indicates with Tabs.

PCBM — "Printed Circuit Board Memory" Batteries

Stock No.	Mfr.'s Type	Nominal Voltage (V)	Capacity 5 Hr. Rate (mAh)	Trickle Charge		Diameter (Max.)		Height (Max.)		Weight		EACH			
				mA	min. hrs.	Inches	mm	Inches	mm	oz.	g	1-9	10-24	25-49	50-99
621-1090	PS-PCBM-2.4	2.4	110	3.7	48	0.571	14.5	1.350	34.5	0.53	15.0	5.09	4.84	4.54	4.40
621-1095	PS-B60/3	3.6	60	2.1	48	0.650	16.5	0.700	18.0	0.31	9.0	4.99	4.73	4.47	4.27
621-1100	PS-PCBM-3.6	3.6	110	3.7	48	0.571	14.5	2.015	52.0	0.79	22.5	7.24	6.89	6.46	6.27
621-0073	PS-AA/3	3.6	500	3.7	48	—	—	2.000	50.9	2.25	68.0	8.72	8.00	7.74	7.38

Button Cells

Stock No.	Mfr.'s Type	Nominal Voltage (V)	Nominal Capacity 5 Hr. Rate (mAh)	End Voltage (V)	Standard Charge			Dimension (mm)		Weight (g)	IEC Standard	EACH			
					Current (mA)	Time (hr.)	Max. Charging Voltage	Dia.	Height			1-9	10-24	25-49	50-99
621-1105	PS-B60	1.2	60	1.0	6	16	1.5V	15.45 - 0.15	6.20 - 0.60	4	KBL 16/7	1.36	1.18	.96	.90
621-1115	PS-B170	1.2	170	1.0	17	16	1.5V	25.10 - 0.20	6.70 - 0.60	10	KBL 26/7	2.04	1.81	1.50	1.35
621-1120	PS-B280	1.2	280	1.0	28	16	1.5V	25.10 - 0.20	9.00 - 0.60	14	KBL 26/9	2.10	1.80	1.60	1.45
621-1125	PS-B60/T	1.2	60	1.0	6	16	1.5V	15.45 - 0.15	6.20 - 0.60	5	KBL 16/7	1.71	1.47	1.20	1.13
621-1135	PS-B170/T	1.2	170	1.0	17	16	1.5V	25.10 - 0.20	6.70 - 0.60	11	KBL 26/7	1.95	1.69	1.60	1.35
621-1140	PS-B280/T	1.2	280	1.0	28	16	1.5V	25.10 - 0.20	9.00 - 0.60	15	KBL 26/9	2.16	1.82	1.70	1.60

Economical, Rechargeable Power Combined with the Handling Ease of Dry Batteries

Features

- ► Sealed/Maintenance-Free
- ► High Discharge Rate
- ► Economical
- ► Wide Operating Temperature Range
- ► Design Flexibility
- ► Easy Handling
- ► Long Shelf Life
- ► Rugged Construction
- ► Deep Discharge Recovery
- ► Compact
- ► Long Service Life

Stock No.	Mfr.'s Type	Nom. V	Rt. Cap.* Amp-Hr.	20-H Dis. Rate mA	Terminal Type	Dimensions						Weight		EACH			
						Length		Width		Height†		Lbs.	Kg	1-9	10-24	25-49	50-99
						In	mm	In	mm	In	mm						
621-0445	PS-445	4	4.5	225	C	1.93	49	2.09	53	3.86	98	1.50	0.70	14.25	13.75	13.25	12.08
621-0448	PS-470	4	7.0	350	A	2.52	64	2.08	53	3.92	100	1.90	0.90	10.81	9.92	9.15	8.50
621-0490	PS-490	4	9.0	450	C	4.02	102	1.73	44	3.86	98	2.40	1.10	17.70	15.90	15.05	14.63
621-0605	PS-605	6	0.5	25	Wire	2.24	57	0.55	14	1.97	50	0.20	0.09	12.04	10.79	10.23	9.95
621-0180	PS-610	6	1.0	50	A	2.00	51	1.65	42	2.20	56	0.62	0.28	10.50	9.40	8.90	8.65
621-0190	PS-612	6	1.2	60	A	3.82	97	0.94	24	2.13	54	0.64	0.29	10.75	9.65	9.13	8.86
621-0200	PS-620	6	2.0	100	A	2.95	75	2.00	51	2.28	58	0.95	0.43	15.85	14.20	13.43	13.04
621-0220	PS-630	6	3.0	150	A	5.28	134	1.34	34	2.56	65	1.28	0.58	14.90	13.35	12.65	12.30
621-0632	PS-632	6	3.2	160	A	2.60	66	1.30	33	4.80	122	1.51	0.70	17.11	15.34	14.59	14.12
621-0240	PS-640F1	6	4.5	225	A	2.76	70	1.89	48	4.25	108	1.92	0.87	12.10	10.80	10.23	9.94
621-0241	PS-640WL	6	4.5	225	Wire	2.76	70	1.89	48	4.25	108	1.92	0.87	14.65	13.15	12.33	11.76
621-0242	PS-650L	6	5.0	250	Spring	2.63	67	2.63	67	4.28	109	2.00	0.90	14.00	12.73	11.67	10.77
621-0243	PS-650L/F	6	5.0	250	A	2.63	67	2.63	67	4.28	109	2.00	0.90	14.00	12.73	11.67	10.77
621-0665	PS-665	6	6.5	325	D	3.86	98	2.20	56	4.05	103	3.00	1.40	19.15	17.15	16.75	16.55
621-0260	PS-670	6	7.0	350	A	5.95	151	1.34	34	3.86	98	2.60	1.17	19.20	17.05	16.16	15.70
621-0280	PS-682F	6	8.0	400	A	3.86	98	2.20	56	4.65	118	3.30	1.50	18.25	16.35	15.48	15.04
621-0281	PS-682WL	6	8.0	400	Wire	3.86	98	2.20	56	4.65	118	3.30	1.50	19.90	17.85	16.90	16.43
621-0069	PS-695	6	9.5	475	D	4.26	108	2.75	70	5.54	141	4.90	2.20	19.25	17.25	16.33	15.86
621-1283	PS-6100-F1	6	10.0	500	A	5.95	151	2.00	51	3.86	98	4.60	2.10	21.00	18.80	17.80	17.30
621-6120	PS-6120	6	12.0	600	D	4.26	108	2.75	70	5.54	141	4.40	2.00	20.95	18.75	17.75	17.25
621-0380	PS-6200NB	6	20.0	1000	B	6.18	157	3.27	83	4.92	125	8.20	3.70	51.35	45.95	43.50	42.28
621-6360	PS-6360NB	6	36.0	1800	B	6.25	159	3.35	85	6.95	176	13.80	6.20	37.91	36.69	35.00	33.95
621-0832	PS-832	8	3.2	160	A	5.28	134	1.42	86	2.70	69	1.88	0.85	20.19	18.10	17.21	16.66
621-1208	PS-1208	12	0.8	40	F	3.78	96	0.98	25	2.42	62	0.80	0.35	15.92	15.00	14.33	13.80
621-0402	PS-1212	12	1.2	60	A	3.82	97	1.65	42	2.13	54	1.30	0.60	17.03	15.26	14.44	14.03
621-0340	PS-1220	12	2.0	100	A	7.01	178	1.34	34	2.56	65	2.00	0.90	22.65	20.30	19.23	18.69
621-1223	PS-1223	12	2.3	115	**	7.17	182	0.94	24	2.42	62	1.76	0.80	30.38	27.24	25.90	25.07
621-1229	PS-1229	12	2.9	145	A	7.01	178	1.34	34	2.56	65	2.20	1.00	20.08	19.43	18.53	17.21
621-1230	PS-1230	12	3.0	150	A	5.23	134	2.64	67	2.60	66	2.60	1.20	25.60	22.90	21.68	21.06
621-0350	PS-1232	12	3.2	160	A	7.68	195	1.85	47	2.95	75	3.15	1.40	32.94	29.46	27.90	27.10
621-1242	PS-1242	12	4.5	225	A	3.54	90	2.76	70	4.13	105	3.80	1.70	25.85	23.15	21.90	21.28
621-1252	PS-1252	12	5.0	250	A	3.54	90	2.76	70	4.25	108	4.20	1.90	20.46	19.80	18.88	17.54
621-0365	PS-1270	12	7.0	350	A	5.95	151	2.56	65	3.86	98	5.29	2.10	26.60	23.80	22.53	21.89
621-1281	PS-1282L	12	8.0	400	A	7.72	196	2.20	56	4.65	118	6.70	3.00	37.10	33.20	31.43	30.51
621-1280	PS-1282S	12	8.0	400	A	4.40	112	3.86	99	4.65	118	6.70	3.00	37.10	33.20	31.43	30.54
621-1295	PS-1295	12	9.5	475	D	8.38	213	2.75	70	5.50	140	10.00	4.60	37.91	33.91	32.12	31.22
621-0390	PS-12100	12	10.0	500	A, C	5.95	151	4.00	102	3.86	98	9.20	4.20	43.65	39.10	37.03	35.99
621-1212	PS-12120	12	12.0	600	D	5.94	151	3.86	98	3.94	100	8.80	4.00	42.15	37.75	35.76	34.75
621-2120	PS-12120L	12	12.0	600	D	8.38	213	2.75	70	5.50	140	11.00	5.00	43.65	39.10	37.03	35.99
621-0395	PS-12170F	12	17.0	850	C	7.13	181	2.99	76	6.57	167	12.80	5.80	52.16	46.71	44.22	42.98
621-0397	PS-12180NB	12	17.5	875	B	7.13	181	2.99	76	6.57	167	12.80	5.80	55.50	49.70	47.05	45.73
621-1226	PS-12260	12	26.0	1300	C	6.89	175	6.54	166	4.92	125	18.70	8.50	79.85	71.50	67.68	65.76
621-1227	PS-12260NB	12	26.0	1300	B	6.89	175	6.54	166	7.15	125	18.70	8.50	79.85	71.50	67.68	65.76
621-1225	PS-12280NB	12	28.0	1400	B	6.54	166	4.92	125	6.89	175	19.40	8.80	92.36	84.67	78.15	72.57
621-2330	PS-12330NB	12	33.0	1650	C	7.70	196	5.19	132	6.85	174	26.50	12.00	72.85	65.20	61.73	59.99
621-0405	PS-12400NB	12	40.0	2000	B	7.75	197	6.50	165	6.69	170	27.50	12.50	103.50	92.70	87.75	85.28
621-6000	PS-12600NB	12	60.0	3000	E	10.25	260	6.60	168	9.45	240	39.70	18.00	115.60	103.50	97.98	95.21
621-8000	PS-12800NB	12	80.0	4000	E	12.00	305	6.60	168	9.45	240	50.00	22.70	147.50	132.10	125.05	121.53
621-9000	PS-121000	12	100.0	5000	E	13.07	332	6.85	174	9.42	239	70.50	32.00	203.85	182.55	172.80	167.93

PSG Series

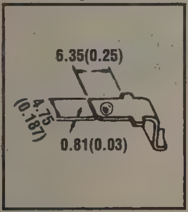
Correspond in size to Gates (Hawker-Sidley) battieries of the same voltage and capacity.

621-5000	PSG-450	4	5.0	250	C	3.54	90	1.94	49	2.87	73	1.70	0.80	14.71	14.46	13.72	13.26
621-5005	PSG-480	4	8.0	400	C	3.54	90	1.94	49	4.00	102	2.50	1.10	15.30	14.74	13.98	13.52
621-5010	PSG-625	6	2.5	125	A	4.15	105	1.63	41	2.70	68	1.50	0.70	12.99	12.52	11.07	11.48
621-5015	PSG-650	6	5.0	250	C	5.28	134	1.94	49	3.00	76	2.50	1.10	16.83	16.23	15.59	14.88
621-5020	PSG-680	6	8.0	400	C	5.28	134	1.94	49	3.99	101	3.70	1.70	20.40	19.65	18.64	18.02

*Capacity at 20-hour rate. †Height over terminal. **Pressure contact

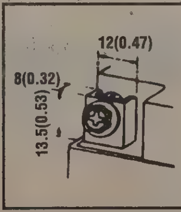
Terminal Type

Figure A



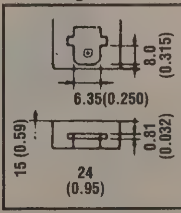
FASTON tabs .187" × .032" mate with AMP. INC. "187" series receptacles or equivalent

Figure B



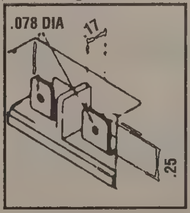
Threaded terminal post with nut and bolt terminal both in 5 mm and 6 mm diameter

Figure C



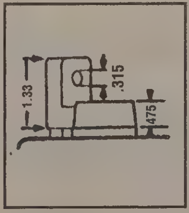
"250" FASTON .250" × .032" mate with AMP. INC. "250" series receptacles or equivalent

Figure D



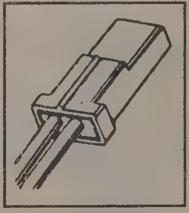
Polarized positive .250" × .032", negative .187" × .032"

Figure E



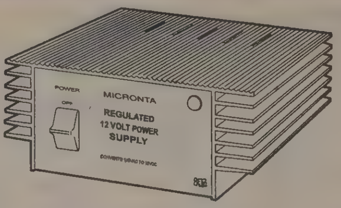
Heavy duty flag terminals

Figure F



Terminated with AMP, INC. part number 1-480318-0 and female pin part number 60619-1

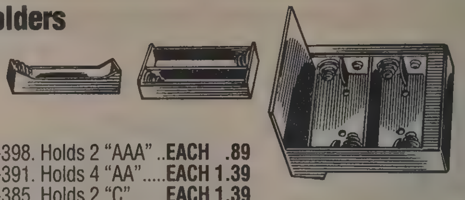
Regulated Power Supply



- ► Plugs Into 120 VAC House Current
- ► Powers Your Mobile CB Radio and Other Car Accessories That Use 12 VDC
- ► Tightly Regulated Voltage Output (Less Than 20 Millivolt Ripple)
- ► Safe to Use with Mobile CBs, Ham Radios, CD Players, Tape Players or Anything Powered with a Vehicle's DC Electrical System
- ► UL Listed
- ► Handy as Bench Power Supply for Electronic Experimenters or Technicians
- ► Push-to-Reset Circuit Breaker
- ► LED "On" Indicator
- ► Massive Heat Sink for Cool Operation
- ► Rated 2.5 Amps Continuous

910-9965. Type 22-504 .... **EACH 39.99**

Battery Holders



910-5182. 270-398. Holds 2 "AAA"	**EACH**	**.89**
910-5183. 270-391. Holds 4 "AA"	**EACH**	**1.39**
910-5184. 270-385. Holds 2 "C"	**EACH**	**1.39**
910-5185. 270-390. Holds 4 "C"	**EACH**	**1.59**
910-5186. 270-386. Holds 2 "D"	**EACH**	**1.59**
910-5187. 270-396. Holds 4 "D"	**EACH**	**1.79**
910-5189. 270-401. Holds 1 "AA"	**EACH**	**.79**
910-5190. 270-402. Holds 1 "C"	**EACH**	**.89**
910-5191. 270-403. Holds 1 "D"	**EACH**	**.99**

Rechargeable Nickel Cadmium Batteries

Can be charged and discharged up to 500 times to save you both time and money. Top performance no matter how many times it's been recharged. Both "C" and "D" cells are rated 1.25 V, "AA" is rated 1¼ V and sold in packages of 2.

Stock No.	Mfr.'s Type	Size	Wt. Oz.	EACH
910-5175	23-123	"D"	5	**6.99***
910-5176	23-124	"C"	2½	**6.99***
910-5177	23-125	"AA"	1	**5.49***
910-5178	23-126	9 V Rect.	1½	**8.99**
910-5179	23-127	"AAA"	1	**5.99***

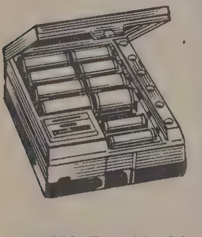
*Per Pkg. of 2.

Premium-Quality Alkalines

- ► Long Shelf Life
- ► High Output at Low Temperatures
- ► Anti-Corrosion Contacts
- ► Cost Less in the Long Run

These exclusive alkalines retain full power during long-term storage and give you top performance even under high current drain. For all standard uses. Non-rechargeable.

Stock No.	Mfr.'s Type	Size	Pkg. Quantity	PER PKG.
910-9015	23-551	"C"	2	**2.69**
910-9016	23-553	9 V Rect.	Each	**2.39**
910-9017	23-552	"AA"	4	**3.19**
910-9018	23-550	"D"	2	**2.69**
910-9019	23-555	"AAA"	2	**1.79**
910-9020	23-023	"N"	2	**1.79**



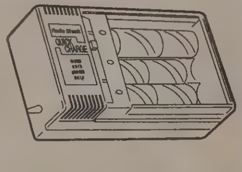
Battery Charger

- ► Automatically Regulated Charging Rate

Type 23-134. Charge up to ten "C", "D" or "AA" batteries at a time in any combination of twos. Also charges up to three 9 V cells. LEDs show when system is charging. UL listed.

910-5180. Type 23-134 .... **EACH 29.99**

Universal Quick Charger



Type 23-233. Charges standard "D", "C", "AA", "AAA", 9 V Ni-Cd batteries in 5 hours. High capacity "D", "C" and "AA" Ni-Cd batteries require longer charging time. Holds six batteries at a time (except 9 V).

910-2333. Type 23-233 .... **EACH 27.99**

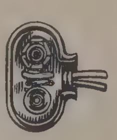
Krypton Flashlights with Batteries

— NEW —

Combo pack includes one "D"-cell flashlight for home or car and one "AA"-cell flashlight for purse or pack, plus heavy-duty batteries for both. Krypton bulbs produce brighter, whiter light than ordinary bulbs.

910-6188. 61-880 .... **EACH 11.99**

T-Type 9-Volt Battery Clips



Type 270-325. Perfect for replacement use in walkie-talkies, radios, tape players and battery-powered portable. ½" spacing. Fits transistor radio and other battery holder connectors. Made of sturdy plastic. Offers long life and excellent resistance to battery acid and physical stresses.

910-5205. Type 270-325 .... **PER PKG./5 1.39**

Battery Checker

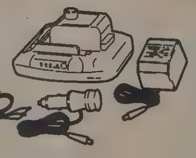
- ► For D/C/9V/AA
- ► AAA/N Sizes

Type 22-096B. For zinc carbon, alkaline, mercury and nickel-cadmium batteries.

910-2137. Type 22-096B. White .... **EACH 8.99**

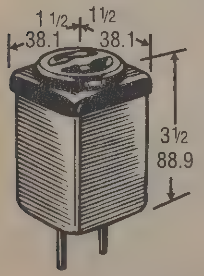
New Deluxe Charger

— NEW —



For 4.8, 6.0, 7.2, and 9.6-volt cellular, camcorder, notebook computer battery packs. Polarity, temperature protection. With AC and DC adapters. Battery not included.

910-2350. 23-250 .... **EACH 49.99**



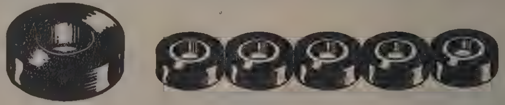
Foreign Travel Converter-Adapter

- ► Convert 220/240 Volts to 120 VAC 50/60 Hz

Type 273-1402. Allows use of 120 VAC irons, broilers, heating pads, etc. from 220/240 volts. Rated at 1000 watts. Built-in thermostat automatically prevents overheating and overloading. 3½" x 1½" x 1½". 3 Oz.

910-5255. Type 273-1402 .... **EACH 17.99**

10,000 Volt Dielectric Vinyl Electrical Tape



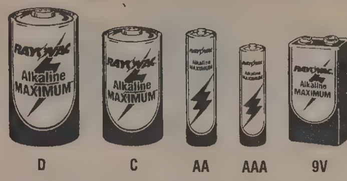
Type 64-2350. Protect your electrical connections. Hundreds of industrial, household, shop and auto uses. **Size:** ¾" × 66'.

910-5950. Type 64-2350 .... **EACH 1.99**

Type 64-5960. Handy 5-pack of PVC electrical tape. 5 popular colors for practically any job. Each roll ¾" × 12'.

910-5960. Type 64-2340 .... **PER PK./5 2.49**

Alkaline Batteries



- High Performance Alkaline
- Ultra Low Mercury Level

Stock No.	Mfr.'s Type	NEDA	Volts	Size	Common Use	Pack Qty.	EACH 1-99	EACH 100-499
738-0100	813	13A	1.5	D	Instrument	1	1.40	1.22
738-0105	814	14A	1.5	C	Instrument	1	1.40	1.22
738-0110	815	15A	1.5	AA	General	1	.41	.38
738-0115	824	24A	1.5	AAA	Calculator	1	1.27	1.16
738-0120	810	910A	1.5	N	Calc./Instr.	1	2.60	2.30
738-0125	A1604-1	1604A	9V	9V	Instrument	1	1.91	1.68

Lantern Batteries

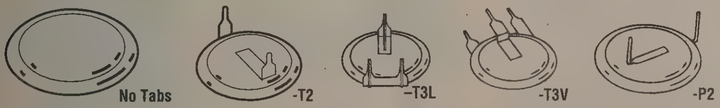
Stock No.	Mfr.'s Type	NEDA	Volts	Size	Common Use	Terminals	EACH 1-99	EACH 100-499
738-0200	941	906	6	Lantern	General	Spring	3.84	3.31
738-0205	942	915	6	Lantern	General	Screw	4.38	3.96
738-0210	944	906D	6	Lantern	Heavy Duty	Spring	4.88	4.41
738-0215	945	—	6	Lantern	Heavy Duty	Screw	5.32	4.91
738-0220	926	926	12	Lantern	General	Screw	12.32	11.37
738-0225	918	918	6	Lantern	General	Screw	10.18	9.40
738-0230	904	904	9	Lantern	Emer. Lights	Screw	32.30	29.81
738-0235	920	920	6	Lantern	Barricade Lights	—	4.81	4.35
738-0240	922	922	12	Lantern	Emer. Lights	Screw	39.95	36.87

Calculator and Electronic Batteries

Packaged As Singles.

Stock No.	Mfr.'s Type	NEDA	Volts	Carded	Type	Shape	EACH 1-99	EACH 100-499
738-0400	357	1131SO	1.5	YES	Silver Oxide	Button	1.38	1.18
738-0410	386	1133SO	1.5	YES	Silver Oxide	Button	.82	.75
738-0415	389	1138SO	1.5	YES	Silver Oxide	Button	.70	.63
738-0420	392	1135SO	1.5	YES	Silver Oxide	Button	.59	.53
738-0425	393	1137SO	1.5	YES	Silver Oxide	Button	.93	.83
738-0430	CR-2025	5003L	3.0	YES	Lithium	Button	1.91	1.63
738-0435	CR-2032	—	3.0	YES	Lithium	Button	1.34	1.17

Lifex™ Lithium Coin Cell Batteries



- Lifex™ Batteries Offer High Energy Density and Voltage
- Operating Temperature Range of –40° to 85°C
- Safe and Stable Lithium System

Stock No.	Mfr.'s Type	Voltage	Capacity (mAh)	Maximum Pulse (mA)	Tab Configuration	EACH 1-99	EACH 100-499
738-0504	BR1225	3.0	39	8mA	None	1.32	1.22
738-0506	BR1225-T2	3.0	39	8mA	Two Tabs	1.77	1.54
738-0508	BR1225-T2V	3.0	39	8mA	Two Tabs—Vertical	2.24	1.93
738-0512	BR2016	3.0	70	10mA	None	1.37	1.25
738-0516	BR2325	3,0	180	10mA	None	1.72	1.47
738-0518	BR2325-T2	3.0	180	10mA	Two Tabs	2.02	1.82
738-0528	BR2335	3.0	300	12mA	None	1.84	1.58
738-0535	BR2335T2-1	3.0	300	12mA	Two Tabs	2.11	1.88
738-0540	BR2335T3L-1	3.0	300	12mA	Three Tabs	2.47	2.20
738-0545	BR2335T3V-1	3.0	300	12mA	Three Tabs—Vertical	2.47	2.20

Computer Clock Batteries

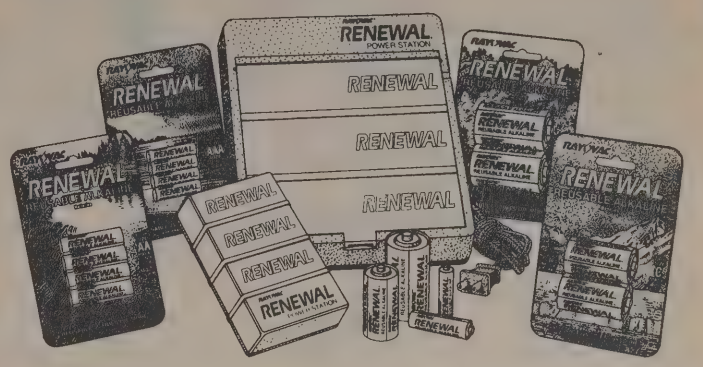
844-1

840-1

- Economical Replacement for IBM® PC-AT 286, 386 and 486 Computer and Compatibles with Standard 4-Pin Connector
- Replaces 6-Volt Lithium Batteries with No Circuit Modification

Stock No.	Mfr.'s Type	Volts	Use	EACH 1-99	EACH 100-499
738-0001	844-1	4.5	For IBM® PC-AT and Compatible Computers	9.99	9.22
738-0005	840-1	4.5	For IBM® PC-AT and Compatible Computers	10.45	9.77

RENEWAL® Reusable Alkaline™



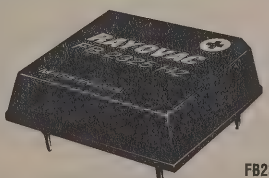
- Reusable 25 Times or More When Charged in a RENEWAL Power Station
- Better for the Environment
- Longer Lasting Charge Than Old Fashioned Rechargeable Batteries
- Easy to Use

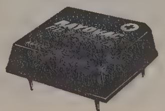
Stock No.	Mfr.'s Type	Size	Type	Pack Qty.	EACH 1-99	EACH 100-499
738-0713	713-2	D	Reusable Alkaline Batteries	2	5.37	5.12
738-0714	714-2	C	Reusable Alkaline Batteries	2	5.37	5.12
738-0715	715-4	AA	Reusable Alkaline Batteries	4	5.97	5.69
738-0724	724-4	AAA	Reusable Alkaline Batteries	4	5.97	5.69
738-0725	PS1	—	Portable Power Station	—	18.16	17.32
738-6000	PS2	—	Family Power Station	—	36.32	34.64

Industrial Batteries

Stock No.	Mfr.'s Type	NEDA	Volts	Size	Type	Pack Qty.	PER PACK 1-99	PER PACK 100-499
738-1000	AL-D	13A	1.5	D	Alkaline	6	9.05	8.35
738-1005	AL-C	14A	1.5	C	Alkaline	6	8.16	7.53
738-1010	AL-AA	15A	1.5	AA	Alkaline	8	7.34	6.77
738-1015	AL-9V	1604A	9V	9V	Alkaline	6	16.60	15.32
738-1020	AL-AAA	24A	1.5	AAA	Alkaline	8	7.60	7.01
738-1025	HD-D	13D	1.5	D	Heavy Duty	6	3.72	3.27
738-1030	HD-C	14D	1.5	C	Heavy Duty	6	3.75	3.23
738-1035	HD-AA	15D	1.5	AA	Heavy Duty	8	3.68	3.16
738-1040	HD-9V	1604D	9V	9V	Heavy Duty	6	8.46	7.81
738-1045	GP-D	13F	1.5	D	General Purpose	6	3.51	3.03
738-1050	GP-C	14F	1.5	C	General Purpose	6	2.89	2.54
738-1055	GP-AA	15F	1.5	AA	General Purpose	8	3.08	2.66
738-1060	GP-9V	1604	9V	9V	General Purpose	6	5.44	5.28

Lifex™ FB Lithium Batteries


FB2325H2

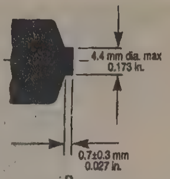

FB1225H2

- Lifex FB™ Batteries Are Designed for Outstanding Reliability and Wide Operating Temperature Range
- Allow for Series or Parallel Interconnection Between Cells
- Stand Up to Harsh Manufacturing and User Environments

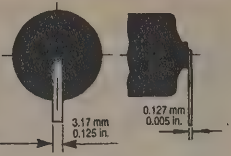
Stock No.	Mfr.'s Type	Voltage (Nominal)		Capacity (mAh)		Maximum Pulse (mA)		EACH	
		Parallel Connection	Series Connection	Parallel Connection	Series Connection	Parallel Connection	Series Connection	1-99	100-499
738-3000	FB1225H2	3.0	6.0	78	39	16	8	5.03	5.57
738-3005	FB2325H2	3.0	6.0	360	180	20	10	6.03	5.48
738-3009*	RH23H2-B	—	—	—	—	—	—	3.07	2.85

*Battery Socket for the FB2325H2.

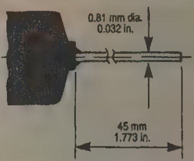
- Longest Life — 15 Years or More — Due to Their Low Self-Discharge Characteristics, and Hermetically-Sealed Construction
- Highest Cell Voltage — More Than Twice the Voltage of Other Batteries (3.6 V)
- Widest Operating Temperature Range: –55°C to +85°C
- Proven Performance and High Reliability — Used Successfully in the Harshest Environments
- Optimum Cost-Efficiency — Saving Space and Reducing Weight; Lowest Cost Per Unit of Energy
- Highest Energy Density



S
Pressure Contact



T
Flat Solder Tab



P
Axial Pin

3.6 Volt Memory Back-Up Batteries

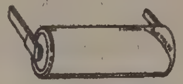
MH 12193

- CMOS Memory Back-Up
- Industrial Control Equipment
- Utility Meters
- Medical Components
- Consumer Electronics

TL-5101 Axial Pin

TL-5101 Solder Tab

TL-5104 Axial Pin



TL-5104 Solder Tab

TL-5134
TL-5135
3-Pin

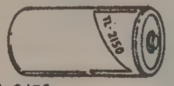
TL-5186 2-Pin

Stock No.	Mfr.'s Type*	Size	Terminals	Capacity (mAh)	D × H	EACH
590-0100	TL-5101/SBP	½ AA	Pressure Contact	850	0.58 × 1.00" (14.73 × 25.40)	**4.55**
590-0105	TL-5101/TBP	½ AA	Solder Tab	850	0.58 × 1.00" (14.73 × 25.40)	**4.73**
590-0110	TL-5101/PBP	½ AA	Axial Pin	850	0.58 × 1.00" (14.73 × 25.40)	**5.00**
590-0115	TL-5155/SBP	⅔ AA	Pressure Contact	1400	0.58 × 1.28" (14.73 × 32.51)	**5.18**
590-0120	TL-5155/TBP	⅔ AA	Solder Tab	1400	0.58 × 1.28" (14.73 × 32.51)	**5.64**
590-0125	TL-5155/PBP	⅔ AA	Axial Pin	1400	0.58 × 1.28" (14.73 × 32.51)	**5.36**
590-0130	TL-5104/SBP	AA	Pressure Contact	1900	0.58 × 2.00" (14.73 × 50.80)	**5.45**
590-0135	TL-5104/TBP	AA	Solder Tab	1900	0.58 × 2.00" (14.73 × 50.80)	**5.91**
590-0140	TL-5104/PBP	AA	Axial Pin	1900	0.58 × 2.00" (14.73 × 50.80)	**5.64**
590-0145	TL-5135/PBP	Coin	3 Pin	1500	1.30 × 0.39" (33.02 × 9.91)	**6.36**
590-0150	TL-5134/PBP	Coin	3 Pin	1000	1.30 × 0.26" (33.02 × 6.60)	**5.82**
590-0155	TL-5186/PBP	Coin	2 Pin	370	0.89 × 0.26" (22.61 × 6.60)	**4.28**

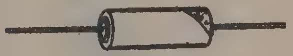
*BP — Blister Pack.

XTRA™ 3.6 Volt Cells

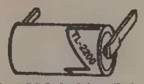
MH 12193



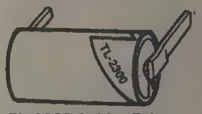
TL-2150
TL-5902 Pressure Contact



TL-2100
TL-5903 Axial Pin



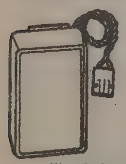
TL-2200 Solder Tab



TL-2300 Solder Tab

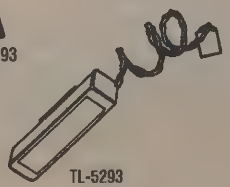
Stock No.	Mfr.'s Type*	Size	Terminals	Capacity (mAh)	D × H	EACH
590-0160	TL-2150/SBP	½ AA	Pressure Contact	850	0.58 × 1.00" (14.73 × 25.40)	**4.73**
590-0165	TL-2150/TBP	½ AA	Solder Tab	850	0.58 × 1.00" (14.73 × 25.40)	**5.18**
590-0170	TL-2150/PBP	½ AA	Axial Pin	850	0.58 × 1.00" (14.73 × 25.40)	**4.91**
590-0175	TL-2155/SBP	⅔ AA	Pressure Contact	1400	0.58 × 1.28" (14.73 × 32.51)	**5.45**
590-0180	TL-2155/TBP	⅔ AA	Solder Tab	1400	0.58 × 1.28" (14.73 × 32.51)	**5.91**
590-0185	TL-2155/PBP	⅔ AA	Axial Pin	1400	0.58 × 1.28" (14.73 × 32.51)	**5.64**
590-0190	TL-2100/SBP	AA	Pressure Contact	1900	0.58 × 2.00" (14.73 × 50.80)	**7.55**
590-0195	TL-2100/TBP	AA	Solder Tab	1900	0.58 × 2.00" (14.73 × 50.80)	**6.18**
590-0200	TL-2100/PBP	AA	Axial Pin	1900	0.58 × 2.00" (14.73 × 50.80)	**5.91**
590-0205	TL-2200/SBP	C	Pressure Contact	5200	1.02 × 1.98" (25.91 × 50.29)	**13.00**
590-0210	TL-2200/TBP	C	Solder Tab	5200	1.02 × 1.98" (25.91 × 50.29)	**13.64**
590-0215	TL-2300/SBP	D	Pressure Contact	14000	1.30 × 2.43" (33.02 × 61.72)	**16.64**
590-0220	TL-2300/TBP	D	Solder Tab	14000	1.30 × 2.43" (33.02 × 61.72)	**17.27**
XTRA™ 3.6 High Capacity Volt Cells						
590-0225	TL-5902/SBP	½ AA	Pressure Contact	1200	0.58 × 1.00" (14.73 × 25.40)	**5.45**
590-0230	TL-5902/TBP	½ AA	Solder Tab	1200	0.58 × 1.00" (14.73 × 25.40)	**5.91**
590-0235	TL-5902/PBP	½ AA	Axial Pin	1200	0.58 × 1.00" (14.73 × 25.40)	**5.64**
590-0240	TL-5955/SBP	⅔ AA	Pressure Contact	1650	0.58 × 1.28" (14.73 × 32.51)	**6.18**
590-0245	TL-5955/TBP	⅔ AA	Solder Tab	1650	0.58 × 1.28" (14.73 × 32.51)	**6.14**
590-0250	TL-5955/PBP	⅔ AA	Axial Pin	1650	0.58 × 1.28" (14.73 × 32.51)	**6.27**
590-0255	TL-5903/SBP	AA	Pressure Contact	2400	0.58 × 2.00" (14.73 × 50.80)	**6.27**
590-0260	TL-5903/TBP	AA	Solder Tab	2400	0.58 × 2.00" (14.73 × 50.80)	**7.18**
590-0265	TL-5903/PBP	AA	Axial Pin	2400	0.58 × 2.00" (14.73 × 50.80)	**6.91**

*BP — Blister Pack.



TL-5242

MH 12193



TL-5293

Computer Clock and Utility Meter Batteries

3.6 Volt Single Cell Battery Packs

Stock No.	Mfr.'s Type	Dimensions	Primary US Usage	EACH
590-0270	TL-5242/W	0.7 × 0.6 × 2.4" (17.78 × 15.24 × 60.96)	Acer, Hyundai, Wise and Most Clones, 4 Pin Connector	**7.73**
2 Cell Battery Packs				
590-0275	TL-5293/W	0.8 × 1.5 × 2.3" (20.32 × 38.10 × 58.42)	Universal Replacement, 6 Volt, 4 Pin	**9.55**

U9VL Battery

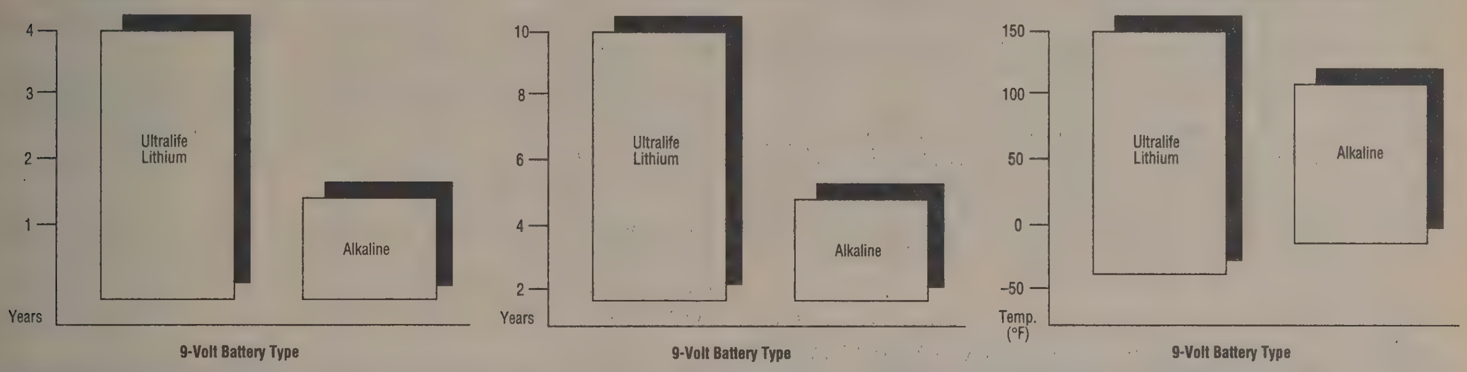
This unique lithium 9-volt battery is more powerful than any other 9-volt battery in the world. The Ultralife U9VL lasts up to 4 times longer than alkaline 9-volt batteries, 10 times longer than carbon-zinc or NiCd 9-volt batteries. Because it's lithium, the U9VL has every advantage: the highest energy-density, most reliability, longest shelf life (up to 10 years), widest operating temperature range (–40°C to 50°C), and lightest weight. Plus, the U9VL has a patented safety mechanism built in that prevents overheating and leakage due to accidental short circuiting or charging.

Ultralife makes a commitment to total quality in its high-technology lithium energy products. Made in the USA at Ultralife's state-of-the-art automated plant, the U9VL is tested to meet the strictest quality and safety standards. Ultralife batteries even carry the component recognition mark of Underwriters Laboratories (UL) — the benchmark of quality.

Specifications. Width: .674". **Height:** 1.933". **Length:** 1.039". **Weight:** 1.35 oz. **mAh Rating:** 1200. **Primary Applications:** Smoke Detectors, Security Devices, Medical Instruments, Meters, Radios, and Toys.

215-0010. U9VL..........EACH **6.00**

The U9VL Lithium 9-Volt Battery is the Ultimate Power Source for Wireless Security System Installations



Battery Life In A Typical Wireless Transmitter — **Battery Life In Storage** — **Battery Operating Temperature Range**

High-Energy Lithium Photo/Computer Batteries

The advanced Ultralife Lithium technology that created the world's longest-lasting 9-volt battery is now available in photographic batteries.

The new high-energy Ultralife Lithium Photo Batteries fit all cameras and flashes that use 3 V or 6 V lithium batteries. They also provide back-up power for many personal computers.

These batteries deliver exceptionally high energy over the widest temperature range. They also have a remarkably long shelf life, staying fresh in storage up to 10 years. And the Ultralife Lithium chemistry is environmentally friendly — 100% free of toxic metals. UL recognized.

215-0025. UB123A..........EACH **3.56**
215-0030. UB223A..........EACH **6.92**
215-0035. UB2CR5..........EACH **6.92**

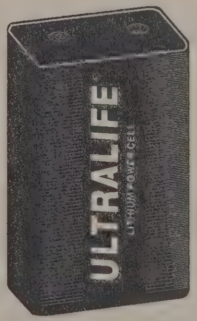
U3VL Battery

The Ultralife U3VL lithium 3-volt battery is ideal for applications requiring a power source with long life, maximum reliability, and minimum maintenance. With state-of-the-art lithium technology, the U3VL packs an incredible 3,600 mAh capacity into a remarkably compact housing (the flat, rectangular U3VL is about the same size as a normal 9-volt battery).

Because it is lithium, the U3VL has not only a tremendous energy density, but also a long shelf life (up to 10 years), a superior operating temperature range (from –40°C all the way up to 50°C), and environmentally friendly components (no mercury or other heavy metals). Plus, lithium is much lighter than alkaline and other chemistries, so it is the best battery to use for weight-critical applications. And lithium has an exceptionally flat voltage profile, so you can count on steady performance.

Specifications. Width: .660". **Height:** 1.764". **Length:** 1.017". **Weight:** 1.23 oz. **mAh Rating:** 3600. **Primary Applications:** Microprocessors, Memory Back-Up, Security Devices and Meters.

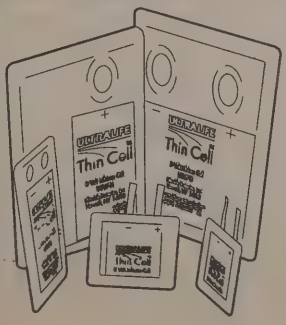
215-0005. U3VL..........EACH **6.46**



Ultra Life Thin Cells

— NEW —

- **High Specific Energy Cells Can Exceed 300 Wh/kg**
- **High Capacity: From 27 mAh to 2300 mAh Per Cell**
- **High Open Circuit Voltage: 3.2 Volts Per Cell**
- **Long Shelf Life: >10 Years**
- **Wide Operating Temperature Range: –20°C to +50°C**
- **Thin Prismatic Construction: As Thin as 0.5 mm (20 mils)**
- **Environmentally Friendly and Safe: No Toxic Materials**

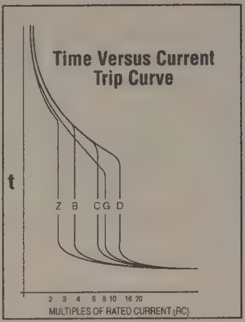


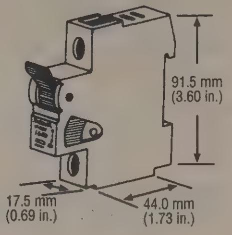
With a z-dimension of as thin as 0.020 inch (0.5 mm) and an advanced-technology lithium chemistry, Ultralife Thin Cells provide a unique combination of performance and design flexibility.

Stock No.	Mfr.'s Type	Specifications (mm)	Volts	mAh	Weight (Grams)	EACH
215-0040	U3VF-LT*	2.0 × 38.6 × 30.00	3.2	160	2.1	**4.55**
215-0045	U3VF-K†	2.3 × 73.7 × 46.00	3.2	800	8.5	**5.55**
215-0050	U3VF-H†	2.3 × 93.9 × 76.00	3.2	1800	18.0	**6.82**

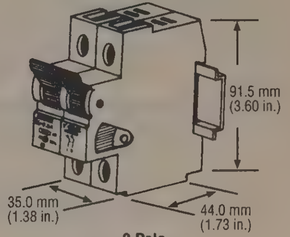
*Nickel tab contacts. †Window contacts.

V-EA Circuit Breakers, DIN Rail Mount

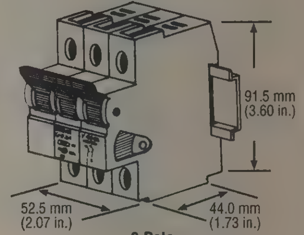




1 Pole



2 Pole



3 Pole

UL® Recognized as noted for group applications of motors and other loads in addition to general purpose applications. Altech/ABL SURSUM V-EA miniature DIN rail mount circuit breakers provide an opportunity for major cost and installation time savings and superior circuit protection.

The V-EA provides disconnect, overload protection, fast half-cycle short-circuit protection and current and energy let-through limiting. It is horsepower-rated for AC across-the-line motor starting and ampere-rated for general purpose applications.

Five trip characteristics are UL® Recognized. All trip characteristics are internationally defined and accepted. The "G" characteristic matches USA and Canadian thermal/magnetic trip norms. All rated currents (RC) have the same housing dimensions and terminal sizes. The V-EA can be loaded with full rated current (100% breaker). Recognized with Line/Load reversibility, i.e., power feed can be field or factory wired to the screw-cage clamp terminals at the "top", range 8 AWG to 3 AWG, or at the "bottom", range 18 AWG to 2 AWG. The V-EA/U is intended for OEM industrial applications, and the V-EA/UC is intended for industrial and commercial applications directly under the jurisdiction of USA and Canadian electrical codes.

World Class Approvals
UL® Recognized. UL1077, group and standard circuits, ampere rated at rated current for general purpose applications and horsepower rated for motor control applications, maximum 480Y/277 VAC (480 V phase-to-phase, 277 VAC to ground/neutral) trip characteristics B, C, D, G and Z..

One Pole and One Pole Plus Neutral. Rated current 0.3 A through 4.0 A, interrupt capacity 35 kA at 277 VAC with any upstream branch-circuit protection.

One Pole and One Pole Plus Neutral. Rated currents 5.0 A through 50 A, interrupt capacity 10 kA with upstream branch circuit fuse sized 350 A or less.

Two Pole and Three Pole. Rated currents 0.3 A through 25 A, standard interrupt capacity 10 kA with upstream branch circuit fuse sized maximum four time V-EA rated current, group interrupt capacity 8.7 kA with upstream branch-circuit protection fuse sized 350 A or less.

Pending UL® Listing. UL 508 for Series V-EA/UC, 1 pole, 2 pole and 3 pole, rated currents 30 A through 50 A. Expected November 1996.

CSA Certification. CAN/CSA-C22.2 No. 14 for Series V-EA/UC, 1 pole, 2 pole and 3 pole, rated currents 30 A through 50 A.

International: For various trip characteristics and rated currents, CENELEC/VDE, Germanischer Lloyds, SEV, SEMKO, NEMKO. CE mark on request.

Ampere Rating and Horsepower Rating

Horsepower Rating: Single Phase, One Pole V-EA

Max. FLA = Rated Current	Horsepower at Nominal Line Voltage, 1ø					
	110-120 V	200 V	208 V	220-240 V	265 V	277 V
0.30 A	2.0 A*	2.0 A*	2.0 A*	2.0 A*	2.0 A*	2.0 A*
0.50 A	3.3 A*	3.3 A*	3.3 A*	3.3 A*	3.3 A*	3.3 A*
0.75/0.80 A	5.3 A*	5.3 A*	5.3 A*	5.3 A*	5.3 A*	5.3 A*
1.00 A	6.6 A*	6.6 A*	6.6 A*	6.6 A*	6.6 A*	6.6 A*
1.60 A	10.6 A*	10.6 A*	10.6 A*	10.6 A*	10.6 A*	10.6 A*
2.00 A	13.2 A*	13.2 A*	13.2 A*	1/6	1/6	1/6
2.50 A	16.5 A*	1/6	1/6	1/6	1/4	1/4
3.00 A	1/10	1/4	1/4	1/4	1/3	1/3
3.50 A	1/8	1/4	1/4	1/3	1/3	1/3
4.00 A	1/8	1/3	1/3	1/3	1/2	1/2
5.00 A	1/6	1/2	1/2	1/2	3/4	1/2
6.00 A	1/4	1/2	1/2	3/4	3/4	1
8.00 A	1/3	3/4	1	1	1 1/2	1 1/2
10.00 A	1/2	1 1/2	1 1/2	1 1/2	2	2
12.50/13.00 A	3/4	1 1/2	2	2	3	3
15.00/16.00 A	1	2	2	3	3	3
20.00 A	1 1/2	3	3	3	3	5
25.00 A	2	3	3	5	5	5
30.00/32.00 A	3	5	5	5	5	7 1/2
40.00 A	3	7 1/2	7 1/2	7 1/2	10	10
50.00 A	5	7 1/2	10	10	10	15

Horsepower Rating: Three Phase, Three Pole V-EA

Max. FLA = Rated Current	Horsepower at Nominal Line Voltage, 3ø				
	110-120 V	200 V	208 V	220-240 V	440-480 V
0.30 A	2.0 A*	2.0 A*	2.0 A*	2.0 A*	2.0 A*
0.50 A	3.3 A*	3.3 A*	3.3 A*	3.3 A*	3.3 A*
0.75/0.80 A	5.3 A*	5.3 A*	5.3 A*	5.3 A*	5.3 A*
1.00 A	6.6 A*	6.6 A*	6.6 A*	6.6 A*	1/2
1.60 A	10.6 A*	10.6 A*	10.6 A*	10.6 A*	3/4
2.00 A	13.2 A*	13.2 A*	1/2	1/2	1
2.50 A	16.5 A*	1/2	1/2	3/4	1 1/2
3.00 A	19.8 A*	3/4	3/4	3/4	2
3.50 A	23.1 A*	3/4	3/4	1	2
4.00 A	1/2	1	1	1	2
5.00 A	3/4	1	1 1/2	1 1/2	3
6.00 A	3/4	1 1/2	1 1/2	2	3
8.00 A	1	2	2	2	5
10.00 A	1 1/2	3	3	3	7 1/2
12.50/13.00 A	2	3	3	3	10
15.00/16.00 A	2	5	5	5	10
20.00 A	3	5	5	7 1/2	15
25.00 A	5	7 1/2	7 1/2	10	20
30.00/32.00A†	5	10	10	10	25
40.00 A†	7 1/2	10	15	15	30
50.00 A†	10	15	15	20	40

*Locked Rotor Current Rating in lieu of Horsepower Rating. †UL and CSA Pending. Single Phase and "Two Phase" HP for 2 Pole V-EA are greater than or equal to Three Phase HP.

B Characteristic

"B" Thermal 1 hour trip zone 1.13 to 1.45 times V-EA rated current (RC); Magnetic 100 ms trip boundary 3 to 5 times RC. The "B" and "C" characteristics are for special applications requiring magnetic trips at lower overcurrent levels than the "G" or "D". Its thermal trip is delayed more than USA and Canadian norms, which allows less derating in higher temperature applications. Conductors may need to be sized larger to avoid excessive heating in overload conditions. "B" Trip Curve: CENELEC characteristic for residential and similar applications. European residential branch-circuits start at 6 amperes. For residential applications, special order "VDE" stamp required. CENELEC/VDE certifications can be provided.

Rated Current	"B" One Pole					"B" Two Pole					"B" Three Pole				
	Stock No.	Mfr.'s Type	Cat. No.	EACH		Stock No.	Mfr.'s Type	Cat. No.	EACH		Stock No.	Mfr.'s Type	Cat. No.	EACH	
				1-24	25-Up				1-24	25-Up				1-24	25-Up
6.00 A	**501-4091**	1B6.0U	15.301U	**18.80**	**15.67**	**501-4220**	2B6.0U	15.316U	**41.30**	**34.42**	**501-4310**	3B6.0U	15.331U	**65.00**	**54.17**
10.00 A	**501-4092**	1B10U	15.302U	**18.80**	**15.67**	**501-4221**	2B10U	15.317U	**41.00**	**34.17**	**501-4311**	3B10U	15.332U	**65.00**	**54.17**
13.00 A	**501-4093**	1B13U	15.303U	**18.80**	**15.67**	**501-4222**	2B13U	15.318U	**41.00**	**34.17**	**501-4312**	3B13U	15.333U	**65.00**	**54.17**
16.00 A	**501-4094**	1B16U	15.304U	**18.80**	**15.67**	**501-4223**	2B16U	15.319U	**41.00**	**34.17**	**501-4313**	3B16U	15.334U	**65.00**	**54.17**
20.00 A	**501-4095**	1B20U	15.305U	**18.80**	**15.67**	**501-4224**	2B20U	15.320U	**41.00**	**34.17**	**501-4314**	3B20U	15.335U	**65.00**	**54.17**
25.00 A	**501-4096**	1B25U	15.306U	**18.80**	**15.67**	**501-4225**	2B25U	15.321U	**41.00**	**34.17**	**501-4315**	3B25U	15.336U	**65.00**	**54.17**
32.00 A	**501-4097**	1B32U	15.307U	**18.80**	**15.67**	**501-5102**	2B32U†	15.322U	**41.00**	**34.17**	**501-5106**	3B32U†	15.337U	**65.00**	**54.17**
40.00 A	**501-4098**	1B40U	15.308U	**21.40**	**17.83**	**501-5103**	2B40U†	15.323U	**48.00**	**40.00**	**501-5107**	3B40U†	15.338U	**82.40**	**68.67**
50.00 A	**501-4099**	1B50U	15.309U	**23.30**	**19.42**	**501-5104**	2B50U†	15.324U	**51.80**	**43.17**	**501-5108**	3B50U†	15.339U	**86.00**	**71.67**
63.00 A	**501-5101**	1B63U†	15.310U	**27.60**	**23.00**	**501-5105**	2B63U†	15.325U	**55.70**	**46.42**	**501-5109**	3B63U†	15.340U	**98.90**	**78.25**

†UL and CSA Pending. Other ratings are UL recognized and CSA certified.

V-EA Circuit Breakers, DIN Rail Mount

"G" Characteristic

Magnetic 100 ms trip boundary is at 8 to 10 times rated current (RC) (i.e., hold for at least 100 ms at 8 times RC, trip in less than 100 ms at 10 times RC). At short-circuit currents, the V-EA typically trips in less than 1 ms and clears in less than 8 ms (half-cycle breaker).

Meets USA trip time-versus-current norms. The V-EA-G will thermally trip in about one hour at 125% of its RC, trip in less than one hour at 135% of RC, trip in less than 10 seconds at 600% of RC, hold for at least one hour at 105% of RC, and carry 100% of RC continuously (all at cold-start from 20°C to 25°C). When at operating temperature the times will be 25% to 50% of those given for cold-starts.

IEC/CEE general industrial trip characteristic. Meets USA and Canadian thermal and magnetic trip norms. It is suitable for most general industrial applications within its ratings. Most CENELEC and PacificBasin countries are signatories.

Rated Current	"G" One Pole					"G" Two Pole					"G" Three Pole				
	Stock No.	Mfr.'s Type	Cat. No.	EACH		Stock No.	Mfr.'s Type	Cat. No.	EACH		Stock No.	Mfr.'s Type	Cat. No.	EACH	
				1-24	25-Up				1-24	25-Up				1-24	25-Up
0.30 A	501-0002	1G0.3U	15.001U	18.50	15.42	501-0018	2G0.3U	15.029U	41.30	34.42	501-4360	3G0.3U	15.057U	62.90	52.42
0.50 A	501-4162	1G0.5U	15.002U	18.50	15.42	501-4271	2G0.5U	15.030U	41.30	34.42	501-4361	3G0.5U	15.058U	62.90	52.42
0.75 A	501-4163	1G0.75U	15.003U	18.50	15.42	501-4272	2G0.75U	15.031U	41.30	34.42	501-4362	3G0.75U	15.059U	62.90	52.42
0.80 A	501-4401	1G0.8U	15.004U	18.50	15.42	501-4404	2G0.8U	15.032U	41.30	34.42	501-4407	3G0.8U	15.060U	62.90	52.42
1.00 A	501-4164	1G1.0U	15.005U	18.50	15.42	501-4273	2G1.0U	15.033U	41.30	34.42	501-4363	3G1.0U	15.061U	62.90	52.42
1.60 A	501-4165	1G1.6U	15.006U	18.50	15.42	501-4274	2G1.6U	15.034U	41.30	34.42	501-4364	3G1.6U	15.062U	62.90	52.42
2.00 A	501-4166	1G2.0U	15.007U	18.50	15.42	501-4275	2G2.0U	15.035U	41.30	34.42	501-4365	3G2.0U	15.063U	62.90	52.42
2.50 A	501-4167	1G2.5U	15.008U	18.50	15.42	501-4276	2G2.5U	15.036U	41.30	34.42	501-4366	3G2.5U	15.064U	62.90	52.42
3.00 A	501-4168	1G3.0U	15.009U	18.50	15.42	501-4277	2G3.0U	15.037U	41.30	34.42	501-4601	3G3.0U	15.065U	62.90	52.42
3.50 A	501-4169	1G3.5U	15.010U	18.50	15.42	501-4278	2G3.5U	15.038U	41.30	34.42	501-4368	3G3.5U	15.066U	62.90	52.42
4.00 A	501-4170	1G4.0U	15.011U	18.50	15.42	501-4279	2G4.0U	15.039U	41.30	34.42	501-4369	3G4.0U	15.067U	62.90	52.42
5.00 A	501-0068	1G5.0U	15.012U	18.50	15.42	501-4280	2G5.0U	15.040U	41.30	34.42	501-4370	3G5.0U	15.068U	62.90	52.42
6.00 A	501-4172	1G6.0U	15.013U	18.50	15.42	501-4281	2G6.0U	15.041U	38.60	32.17	501-4371	3G6.0U	15.069U	59.10	49.25
8.00 A	501-4173	1G8.0U	15.014U	18.50	15.42	501-4282	2G8.0U	15.042U	38.60	32.17	501-4372	3G8.0U	15.070U	59.10	49.25
10.00 A	501-4174	1G10U	15.015U	18.50	15.42	501-4283	2G10U	15.043U	38.60	32.17	501-4373	3G10U	15.071U	59.10	49.25
12.00 A	501-4175	1G12U	15.016U	18.50	15.42	501-4405	2G12U	15.044U	38.60	32.17	501-4408	3G12U	15.072U	59.10	49.25
12.50 A	501-4402	1G12.5U	15.017U	18.50	15.42	501-0090	2G12.5U	15.045U	38.60	32.17	501-4374	3G12.5U	15.073U	59.10	49.25
15.00 A	501-0072	1G15U	15.018U	18.50	15.42	501-4285	2G15U	15.046U	38.60	32.17	501-4375	3G15U	15.074U	59.10	49.25
16.00 A	501-4177	1G16U	15.019U	18.50	15.42	501-4286	2G16U	15.047U	38.60	32.17	501-4376	3G16U	15.075U	59.10	49.25
20.00 A	501-4178	1G20U	15.020U	18.50	15.42	501-4287	2G20U	15.048U	39.60	33.00	501-4377	3G20U	15.076U	59.10	49.25
25.00 A	501-4179	1G25U	15.021U	18.50	15.42	501-4288	2G25U	15.049U	39.60	33.00	501-4378	3G25U	15.077U	59.10	49.25
30.00 A	501-0076	1G30U	15.022U	18.50	15.42	501-0096	2G30U†	15.050U	41.30	27.50	501-0116	3G30U†	15.078U	59.10	49.25
32.00 A	501-4181	1G32U	15.023U	18.50	15.42	501-4406	2G32U†	15.051U	41.30	27.50	501-4409	3G32U†	15.079U	59.10	49.25
40.00 A	501-4182	1G40U	15.024U	18.50	15.42	501-0098	2G40U†	15.052U	47.90	39.92	501-0118	3G40U†	15.080U	73.00	60.83
50.00 A	501-4183	1G50U	15.025U	21.30	15.42	501-0100	2G50U†	15.053U	51.50	42.92	501-0120	3G50U†	15.081U	79.80	66.50
60.00 A	501-0016	1G60U†	15.026U	21.90	18.25	501-0032	2G60U†	15.054U	56.40	47.00	501-0048	3G60U†	15.082U	86.40	72.00
63.00 A	501-4403	1G63U†	15.027U	21.90	18.25	501-4530	2G63U†	15.055U	56.40	47.00	501-4531	3G63U†	15.083U	86.40	72.00

†UL and CSA pending. Other ratings are UL recognized and CSA certified.

"Z" Characteristic

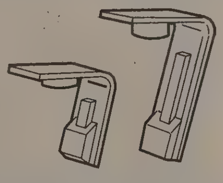
Thermal one hour trip zone 1.05 to 1.35 times rated current (RC); Magnetic 100 ms trip zone 2 to 3 times RC. Semiconductor Protection. The "Z" characteristic is intended for protection of loads that can withstand only very low I²t energy exposure (e.g. some electronic circuits). The Magnetic trip is very fast. The Thermal trip is the same as the "G" and meets USA, Canadian norms. Trip Curve. Specialty defined characteristic, primarily for Semiconductor protection (test applications).

Rated Current	"Z" One Pole					"Z" Two Pole					"Z" Three Pole				
	Stock No.	Mfr.'s Type	Cat. No.	EACH		Stock No.	Mfr.'s Type	Cat. No.	EACH		Stock No.	Mfr.'s Type	Cat. No.	EACH	
				1-24	25-Up				1-24	25-Up				1-24	25-Up
0.30 A	501-4191	1Z0.3U	15.801U	27.60	23.00	501-4290	2Z0.3U	15.826U	55.50	46.25	501-4380	3Z0.3U	15.851U	111.30	92.75
0.50 A	501-4192	1Z0.5U	15.802U	27.60	23.00	501-4291	2Z0.5U	15.827U	55.50	46.25	501-4381	3Z0.5U	15.852U	111.30	92.75
0.75 A	501-4193	1Z0.75U	15.803U	27.60	23.00	501-4292	2Z0.75U	15.828U	55.50	46.25	501-4382	3Z0.75U	15.853U	111.30	92.75
1.00 A	501-4194	1Z1.0U	15.804U	27.60	23.00	501-4293	2Z1.0U	15.829U	55.50	46.25	501-4383	3Z1.0U	15.854U	111.30	92.75
1.60 A	501-4195	1Z1.6U	15.805U	27.60	23.00	501-4294	2Z1.6U	15.830U	55.50	46.25	501-4384	3Z1.6U	15.855U	111.30	92.75
2.00 A	501-4196	1Z2.0U	15.806U	27.60	23.00	501-4295	2Z2.0U	15.831U	55.50	46.25	501-4385	3Z2.0U	15.856U	111.30	92.75
2.50 A	501-4197	1Z2.5U	15.807U	27.60	23.00	501-4296	2Z2.5U	15.832U	55.50	46.25	501-4386	3Z2.5U	15.857U	111.30	92.75
3.00 A	501-4198	1Z3.0U	15.808U	27.60	23.00	501-4297	2Z3.0U	15.833U	55.50	46.25	501-4387	3Z3.0U	15.858U	111.30	92.75
3.50 A	501-4199	1Z3.5U	15.809U	27.60	23.00	501-4298	2Z3.5U	15.834U	55.50	46.25	501-4388	3Z3.5U	15.859U	111.30	92.75
4.00 A	501-4200	1Z4.0U	15.810U	27.60	23.00	501-4299	2Z4.0U	15.835U	55.50	46.25	501-4389	3Z4.0U	15.860U	111.30	92.75
5.00 A	501-4201	1Z5.0U	15.811U	27.60	23.00	501-4300	2Z5.0U	15.836U	55.50	46.25	501-4390	3Z5.0U	15.861U	111.30	92.75
6.00 A	501-4202	1Z6.0U	15.812U	27.60	23.00	501-4301	2Z6.0U	15.837U	55.50	46.25	501-4391	3Z6.0U	15.862U	111.30	92.75
8.00 A	501-4203	1Z8.0U	15.813U	27.60	23.00	501-4302	2Z8.0U	15.838U	55.50	46.25	501-4392	3Z8.0U	15.863U	111.30	92.75
10.00 A	501-4204	1Z10U	15.814U	25.40	21.17	501-4303	2Z10U	15.839U	53.30	44.42	501-4393	3Z10U	15.864U	105.40	87.83
12.50 A	501-4205	1Z12.5U	15.815U	25.40	21.17	501-4304	2Z12.5U	15.840U	53.30	44.42	501-4394	3Z12.5U	15.865U	105.40	87.83
15.00 A	501-4206	1Z15U	15.820U	25.40	21.17	501-4305	2Z15U	15.845U	53.30	44.42	501-4395	3Z15U	15.870U	105.40	87.83
16.00 A	501-4207	1Z16U	15.816U	25.40	21.17	501-4306	2Z16U	15.841U	53.30	44.42	501-4396	3Z16U	15.866U	105.40	87.83
20.00 A	501-4208	1Z20U	15.817U	25.40	21.17	501-4307	2Z20U	15.842U	53.30	44.42	501-4397	3Z20U	15.867U	105.40	87.83
25.00 A	501-4209	1Z25U	15.818U	25.40	21.17	501-4308	2Z25U	15.843U	53.30	44.42	501-4398	3Z25U	15.868U	105.40	87.83
30.00 A	501-4210	1Z30U	15.821U	25.40	21.17	501-4500	2Z30U†	15.846U	53.30	44.42	501-4502	3Z30U†	15.871U	105.40	87.83
32.00 A	501-4211	1Z32U	15.819U	25.40	21.17	501-4501	2Z32U†	15.844U	53.30	44.42	501-4503	3Z32U†	15.869U	105.40	87.83

†UL and CSA pending. Other ratings are UL recognized and CSA certified.

Accessories

V-EA Touch Protectors

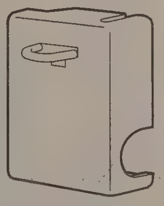


The V-EA protects against electrical shock during manual actuation in accordance with VDE 0106/Part 100 and VDE 0470/Part 1, with "finger safe" terminal-screw heads and "back of hand" safe terminals. If additional "touch" protection is desired, separate touch protector covers can easily be snapped on to the V-EA top and/or bottom terminals.

501-5120. 15.961. V-EA Bottom Terminals....................EACH .63

501-5121. 15-962. V-EA Top Terminals....................EACH .63

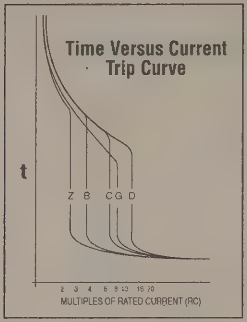
Lock-Outs

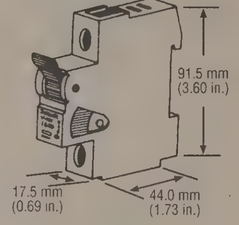


Prevent inadvertent resetting of the V-EA or MA during maintenance. Easily snaps on.

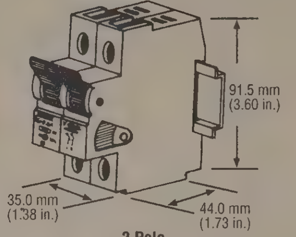
501-5122. 15.969. Lock-Out....................EACH 4.30

V-EA Circuit Breakers, DIN Rail Mount

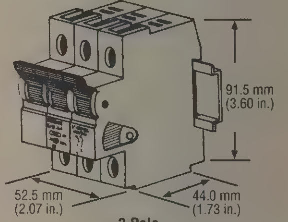




1 Pole



2 Pole



3 Pole

"C" Characteristic

Thermal one hour trip zone 1.13 to 1.45 times V-EA rated current (RC); Magnetic 100 ms trip boundary 5 to 10 times RC. Trip Curve. Secondary CENELEC characteristic for residential and similar applications. Used for higher-inrush circuits, such as motor loads. As with "B", specify "VDE stamp required" for European residential applications.

Rated Current	"C" One Pole					"C" Two Pole					"C" Three Pole				
	Stock No.	Mfr.'s Type	Cat. No.	EACH		Stock No.	Mfr.'s Type	Cat. No.	EACH		Stock No.	Mfr.'s Type	Cat. No.	EACH	
				1-24	25-Up				1-24	25-Up				1-24	25-Up
0.30 A	**501-4101**	1C0.3U	15.401U	**21.00**	**17.50**	**501-4230**	2C0.3U	15.426U	**44.00**	**36.67**	**501-4320**	3C0.3U	15.451U	**75.60**	**63.00**
0.50 A	**501-4102**	1C0.5U	15.402U	**21.00**	**17.50**	**501-4231**	2C0.5U	15.427U	**44.00**	**36.67**	**501-4321**	3C0.5U	15.452U	**75.60**	**63.00**
0.75 A	**501-4103**	1C0.75U	15.403U	**21.00**	**17.50**	**501-4232**	2C0.75U	15.428U	**44.00**	**36.67**	**501-4322**	3C0.75U	15.453U	**75.60**	**63.00**
1.00 A	**501-4104**	1C1.0U	15.404U	**21.00**	**17.50**	**501-4233**	2C1.0U	15.429U	**44.00**	**36.67**	**501-4323**	3C1.0U	15.454U	**75.60**	**63.00**
1.60 A	**501-4105**	1C1.6U	15.405U	**21.00**	**17.50**	**501-4234**	2C1.6U	15.430U	**44.00**	**36.67**	**501-4324**	3C1.6U	15.455U	**75.60**	**63.00**
2.00 A	**501-4106**	1C2.0U	15.406U	**21.00**	**17.50**	**501-4235**	2C2.0U	15.431U	**44.00**	**36.67**	**501-4325**	3C2.0U	15.456U	**75.60**	**63.00**
2.50 A	**501-4107**	1C2.5U	15.407U	**21.00**	**17.50**	**501-4236**	2C2.5U	15.432U	**44.00**	**36.67**	**501-4326**	3C2.5U	15.457U	**75.60**	**63.00**
3.00 A	**501-4108**	1C3.0U	15.408U	**21.00**	**17.50**	**501-4237**	2C3.0U	15.433U	**44.00**	**36.67**	**501-4327**	3C3.0U	15.458U	**75.60**	**63.00**
3.50 A	**501-4109**	1C3.5U	15.409U	**21.00**	**17.50**	**501-4238**	2C3.5U	15.434U	**44.00**	**36.67**	**501-4328**	3C3.5U	15.459U	**75.60**	**63.00**
4.00 A	**501-4110**	1C4.0U	15.410U	**21.00**	**17.50**	**501-4239**	2C4.0U	15.435U	**44.00**	**36.67**	**501-4329**	3C4.0U	15.460U	**75.60**	**63.00**
5.00 A	**501-4111**	1C5.0U	15.411U	**21.00**	**17.50**	**501-4240**	2C5.0U	15.436U	**44.00**	**36.67**	**501-4330**	3C5.0U	15.461U	**75.60**	**63.00**
6.00 A	**501-4112**	1C6.0U	15.412U	**21.00**	**17.50**	**501-4241**	2C6.0U	15.437U	**44.00**	**36.67**	**501-4331**	3C6.0U	15.462U	**71.40**	**59.50**
8.00 A	**501-4113**	1C8.0U	15.413U	**21.00**	**17.50**	**501-4242**	2C8.0U	15.438U	**44.00**	**36.67**	**501-4332**	3C8.0U	15.463U	**71.40**	**59.50**
10.00 A	**501-4114**	1C10U	15.414U	**20.00**	**16.67**	**501-4243**	2C10U	15.439U	**42.80**	**35.67**	**501-4333**	3C10U	15.464U	**71.40**	**59.50**
13.00 A	**501-4115**	1C13U	15.415U	**20.00**	**16.67**	**501-4244**	2C13U	15.440U	**42.80**	**35.67**	**501-4334**	3C13U	15.465U	**71.40**	**59.50**
16.00 A	**501-4116**	1C16U	15.416U	**20.00**	**16.67**	**501-4245**	2C16U	15.441U	**42.80**	**35.67**	**501-4335**	3C16U	15.466U	**71.40**	**59.50**
20.00 A	**501-4117**	1C20U	15.417U	**20.00**	**16.67**	**501-4246**	2C20U	15.442U	**42.80**	**35.67**	**501-4336**	3C20U	15.467U	**71.40**	**59.50**
25.00 A	**501-4118**	1C25U	15.418U	**20.00**	**16.67**	**501-4447**	2C25U	15.443U	**42.80**	**35.67**	**501-4337**	3C25U	15.468U	**71.40**	**59.50**
32.00 A	**501-4119**	1C32U	15.419U	**20.00**	**16.67**	**501-5111**	2C32U†	15.444U	**42.80**	**35.67**	**501-5115**	3C32U†	15.469U	**71.40**	**59.50**
40.00 A	**501-4120**	1C40U	15.420U	**22.50**	**18.75**	**501-5112**	2C40U†	15.445U	**51.00**	**42.50**	**501-5116**	3C40U†	15.470U	**71.40**	**59.50**
50.00 A	**501-4121**	1C50U	15.421U	**24.50**	**20.42**	**501-5113**	2C50U†	15.446U	**55.50**	**46.25**	**501-5117**	3C50U†	15.471U	**95.90**	**79.92**
63.00 A	**501-5110**	1C63U†	15.422U	**26.35**	**21.96**	**501-5114**	2C63U†	15.447U	**60.80**	**50.67**	**501-5118**	3C63U†	15.472U	**103.40**	**86.17**

†UL and CSA pending. Other ratings are UL recognized and CSA certified.

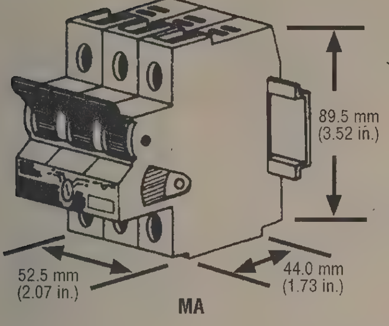
"D" Characteristic

Thermal one hour trip zone 1.13 to 1.45 times rated current (RC); Magnetic 100 ms trip boundary 10 to 16 times RC. CENELEC high-inrush industrial. The "D" characteristic meets USA and Canadian magnetic trip norms for high-inrush applications (transformers, high efficiency motors, etc.) Thermal trips are the same as the "B". Trip Curve. CENELEC industrial curve, particularly for motor and similar applications. No VDE required (not for residential use).

Rated Current	"D" One Pole					"D" Two Pole					"D" Three Pole				
	Stock No.	Mfr.'s Type	Cat. No.	EACH		Stock No.	Mfr.'s Type	Cat. No.	EACH		Stock No.	Mfr.'s Type	Cat. No.	EACH	
				1-24	25-Up				1-24	25-Up				1-24	25-Up
0.30 A	**501-4131**	1D0.3U	15.601U	**22.30**	**18.58**	**501-4250**	2D0.3U	15.626U	**46.20**	**38.50**	**501-4340**	3D0.3U	15.676U	**77.60**	**64.67**
0.50 A	**501-4132**	1D0.5U	15.602U	**22.30**	**18.58**	**501-4251**	2D0.5U	15.627U	**46.20**	**38.50**	**501-4341**	3D0.5U	15.677U	**77.60**	**64.67**
0.75 A	**501-4133**	1D0.75U	15.603U	**22.30**	**18.58**	**501-4252**	2D0.75U	15.628U	**46.20**	**38.50**	**501-4342**	3D0.75U	15.678U	**77.60**	**64.67**
1.00 A	**501-4134**	1D1.0U	15.604U	**22.30**	**18.58**	**501-4253**	2D1.0U	15.629U	**46.20**	**38.50**	**501-4343**	3D1.0U	15.679U	**77.60**	**64.67**
1.60 A	**501-4135**	1D1.6U	15.605U	**22.30**	**18.58**	**501-4254**	2D1.6U	15.630U	**46.20**	**38.50**	**501-4344**	3D1.6U	15.680U	**77.60**	**64.67**
2.00 A	**501-4136**	1D2.0U	15.606U	**22.30**	**18.58**	**501-4255**	2D2.0U	15.631U	**46.20**	**38.50**	**501-4345**	3D2.0U	15.681U	**77.60**	**64.67**
2.50 A	**501-4137**	1D2.5U	15.607U	**22.30**	**18.58**	**501-4256**	2D2.5U	15.632U	**46.20**	**38.50**	**501-4346**	3D2.5U	15.682U	**77.60**	**64.67**
3.00 A	**501-4138**	1D3.0U	15.608U	**22.30**	**18.58**	**501-4257**	2D3.0U	15.633U	**46.20**	**38.50**	**501-4347**	3D3.0U	15.683U	**77.60**	**64.67**
3.50 A	**501-4139**	1D3.5U	15.609U	**22.30**	**18.58**	**501-4258**	2D3.5U	15.634U	**46.20**	**38.50**	**501-4348**	3D3.5U	15.684U	**77.60**	**64.67**
4.00 A	**501-4140**	1D4.0U	15.610U	**22.30**	**18.58**	**501-4259**	2D4.0U	15.635U	**46.20**	**38.50**	**501-4349**	3D4.0U	15.685U	**77.60**	**64.67**
5.00 A	**501-4141**	1D5.0U	15.611U	**22.30**	**18.58**	**501-4260**	2D5.0U	15.636U	**46.20**	**38.50**	**501-4350**	3D5.0U	15.686U	**77.60**	**64.67**
6.00 A	**501-4142**	1D6.0U	15.612U	**22.30**	**18.58**	**501-4261**	2D6.0U	15.637U	**46.20**	**38.50**	**501-4351**	3D6.0U	15.687U	**75.00**	**62.50**
8.00 A	**501-4143**	1D8.0U	15.613U	**22.30**	**18.58**	**501-4262**	2D8.0U	15.638U	**45.00**	**37.50**	**501-4352**	3D8.0U	15.688U	**75.00**	**62.50**
10.00 A	**501-4144**	1D10U	15.614U	**21.40**	**17.83**	**501-4263**	2D10U	15.639U	**45.00**	**37.50**	**501-4353**	3D10U	15.689U	**75.00**	**62.50**
13.00 A	**501-4145**	1D13U	15.615U	**21.40**	**17.83**	**501-4264**	2D13U	15.640U	**45.00**	**37.50**	**501-4354**	3D13U	15.690U	**75.00**	**62.50**
15.00 A	**501-4146**	1D15U	15.623U	**21.40**	**17.83**	**501-4265**	2D15U	15.648U	**45.00**	**37.50**	**501-4355**	3D15U	15.698U	**75.00**	**62.50**
16.00 A	**501-4147**	1D16U	15.616U	**21.40**	**17.83**	**501-4266**	2D16U	15.641U	**45.00**	**37.50**	**501-4356**	3D16U	15.691U	**75.00**	**62.50**
20.00 A	**501-4148**	1D20U	15.617U	**21.40**	**17.83**	**501-4267**	2D20U	15.642U	**45.00**	**37.50**	**501-4800**	3D20U	15.692U	**75.00**	**62.50**
25.00 A	**501-4149**	1D25U	15.618U	**21.40**	**17.83**	**501-4468**	2D25U	15.643U	**45.00**	**37.50**	**501-4358**	3D25U	15.693U	**75.00**	**62.50**
30.00 A	**501-4150**	1D30U	15.624U	**21.40**	**17.83**	**501-4488**	2D30U†	15.649U	**45.00**	**37.50**	**501-4494**	3D30U†	15.699U	**75.00**	**62.50**
32.00 A	**501-4151**	1D32U	15.619U	**21.40**	**17.83**	**501-4489**	2D32U†	15.644U	**45.00**	**37.50**	**501-4495**	3D32U†	15.694U	**75.00**	**62.50**
40.00 A	**501-4152**	1D40U	15.620U	**23.90**	**19.92**	**501-4490**	2D40U†	15.645U	**53.60**	**44.67**	**501-4496**	3D40U†	15.695U	**93.00**	**77.50**
50.00 A	**501-4153**	1D50U	15.621U	**25.70**	**21.42**	**501-4491**	2D50U†	15.646U	**58.30**	**48.58**	**501-4497**	3D50U†	15.696U	**100.70**	**83.92**
60.00 A	**501-4486**	1D60U†	15.625U	**27.75**	**23.13**	**501-4492**	2D60U†	15.650U	**63.90**	**53.25**	**501-4498**	3D60U†	15.700U	**108.30**	**90.25**
63.00 A	**501-4487**	1D63U†	15.622U	**27.75**	**23.13**	**501-4593**	2D63U†	15.647U	**63.90**	**53.25**	**501-4499**	3D63U†	15.697U	**108.30**	**90.25**

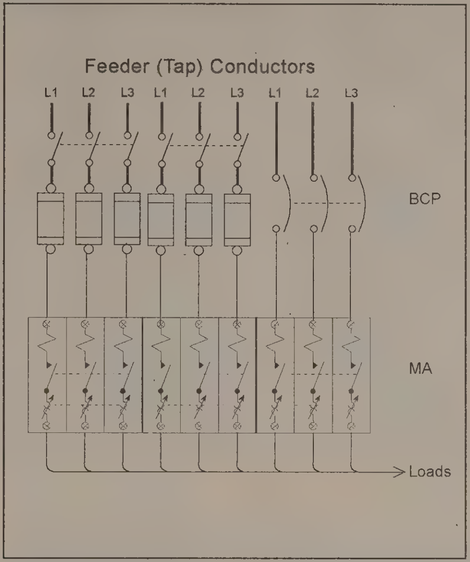
†UL and CSA pending. Other ratings are UL recognized and CSA certified.

MA Three Phase Adjustable Circuit Breakers — 35 mm DIN Rail Mount

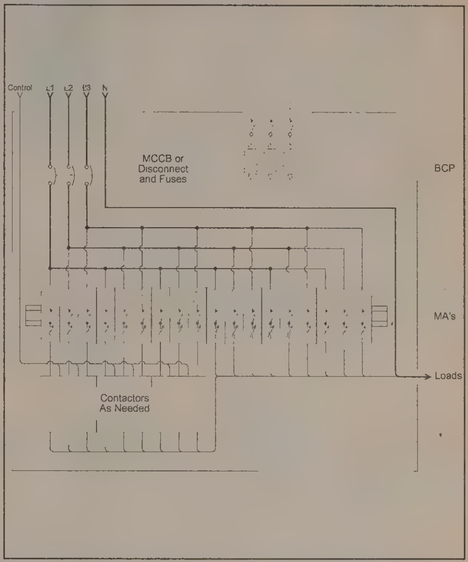


MA

Standard Circuit



Group Circuit



The Altech/ABL SURSUM MA holds through starting and inrush currents of three phase transformers, lighting, power supplies and motors (including the new high efficiency motors) yet provides tight overload protection, fast half-cycle short-circuit protection, and current/energy let-through protection.

The MA is UL 508 Listed and UL® certified to CAN/CSA-C22.2 No. 14 (C-UL) as a manual motor controller with group ratings, and functions as a 3-phase disconnect, overload protector and controller in one compact DIN rail mounted package. It is a thermal/magnetic circuit breaker in the IEC style with thermal overload trip curves calibrated for USA norms. With the adjustment dial set at the full-load-amps (FLA) of the load, the MA/U cold-start trips in about one hour at an overload of 115% FLA and in less than 10 seconds at 600% FLA, and hot-start trips in less than two minutes at 150% FLA (i.e., Class 10 A overload device). The MA/U is therefore suitable overload protection for all motor applications covered under NFPA70 - National Electrical Code® 430-32 (a)(1), including those with service factors less than 1.15 or temperature rise over 40°C. With screw-cage clamp terminals which accept 18 AWG to 3 AWG wire factory or field, the MA is particularly well suited for group applications and single motor taps under NEC® 430-53 (c) and (d).

Stock No.	Mfr.'s Type	Cat. No.	Rated Current	FLA Dial Range	3ø Horsepower Ratings at Nominal Line Voltage					Group SRT. CKT. Ratings	EACH	
					110-120 V	200 V	208 V	220-240 V	440-480 V		1-24	25-Up
501-4504	MA0.16U	15.901U	0.16 A	0.10 A-0.16 A	Through MA2.5U, amp rated for motor circuits having a full load amperage (FLA) not exceeding the MA's general purpose rated current (RC, equals maximum dial setting) and a locked rotor current not exceeding 6 times the MA's RC.					42 kARMS symmetrical (max. 1200 A MCCB or RK5)	**81.50**	**67.92**
501-4505	MA0.25U	15.902U	0.25 A	0.16 A-0.25 A							**81.50**	**67.92**
501-4506	MA0.40U	15.903U	0.40 A	0.25 A-0.40 A							**81.50**	**67.92**
501-4507	MA0.63U	15.904U	0.63 A	0.40 A-0.63 A							**81.50**	**67.92**
501-4508	MA1.0U	15.905U	1.00 A	0.63 A-1.00 A							**81.50**	**67.92**
501-4509	MA1.6U	15.906U	1.60 A	1.00 A-1.60 A							**81.50**	**67.92**
501-4510	MA2.5U	15.907U	2.50 A	1.60 A-2.50 A							**81.50**	**67.92**
501-4511	MA4.0U	15.908U	4.00 A	2.50 A-4.00 A	$\frac{1}{2}$	$\frac{3}{4}$	$\frac{3}{4}$	1	2	14 kARMS symmetrical (max. 350 A MCCB or RK5)	**81.50**	**67.92**
501-4512	MA6.3U	15.909U	6.30 A	4.00 A-6.30 A	$\frac{3}{4}$	$1\frac{1}{2}$	$1\frac{1}{2}$	$1\frac{1}{2}$	3		**81.50**	**67.92**
501-4513	MA10U	15.910U	10.00 A	6.30 A-10.00 A	1	2	2	3	5		**81.50**	**67.92**
501-4514	MA16U	15.911U	16.00 A	10.00 A-16.00 A	2	3	3	5	10		**89.20**	**74.33**
501-4515	MA20U	15.912U	20.00 A	16.00 A-20.00 A	3	5	5	5	10	10 kARMS symmetrical (max. 350 A MCCB or RK5)	**92.20**	**76.83**
501-4516	MA25U	15.913U	25.00 A	20.00 A-25.00 A	3	5	$7\frac{1}{2}$	$7\frac{1}{2}$	15		**98.30**	**81.92**
501-4517	MA32U	15.914U	32.00 A	25.00 A-32.00 A	5	$7\frac{1}{2}$	$7\frac{1}{2}$	10	20		**107.70**	**89.75**
501-4518	MA40U	15.915U	40.00 A	32.00 A-40.00 A	5	10	10	10	25		**119.80**	**99.83**

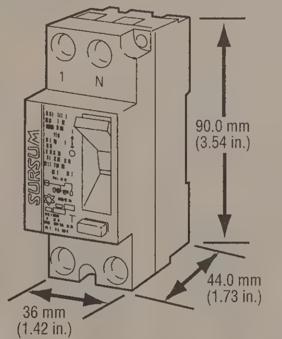
FI Earth Leakage Circuit Breakers — 35 mm DIN Rail Mount

Compact DIN rail mount Earth Leakage Circuit Breakers detect and interrupt ground faults. They are VDE approved for the European system of protecting people, animals, equipment and property from dangerous line-to-ground and shock hazard currents.

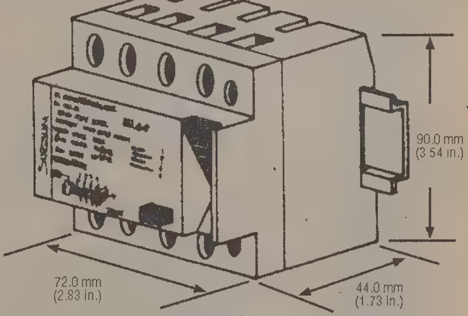
Trip-capable on decayed line voltage, marked approval of DIN/VDE, marked "Snowflake" temperature range, marked trip sensitivity to pulsed as well as sinusoidal fault currents, integral test circuit, insensitive to vibration, etc.

US applications include ground fault protection of equipment (GFPE) using the 10 mA and 30 mA fault current ratings, especially when high distributed capacitance or other leakage cause excessive nuisance trips at lower fault currents. Applications for the 300 mA rating are equipment protection and fire prevention by limiting the energy of a fault to less than the minimum ignition energy for many materials.

The FI is not intended to repeatedly make/break currents above rated line current. Breaking capacity is 1500 A for rated line currents through 40 A and 2000 A for 63 A line. Limit let-through to 30,000 A²s for FI-2 and 80,000 A²s for FI-4, or use gL fuses for 10 kA withstand capacity: 16 A line = 63 A fuse; 25 A and 40 A line = 80 A fuse; 63 A line = 100 A fuse.



FI2



FI4

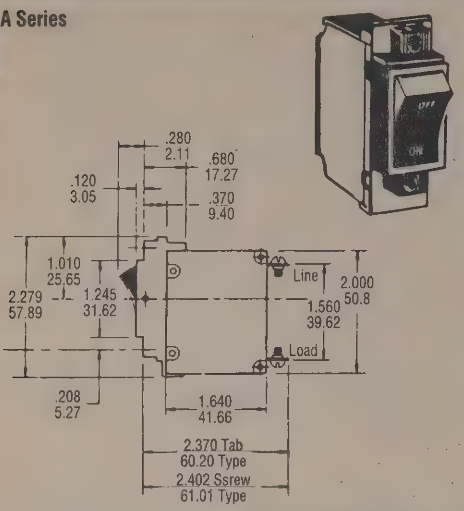
Two Pole Single Phase 240 VAC Max.

Stock No.	Mfr.'s Type	Cat. No.	Rated Line Current	Fault Trip Current	EACH	
					1-24	25-Up
501-4519	FI21.01	15.921	16 A	10 mA	**215.00**	**179.17**
501-4520	FI22.03	15.922	25 A	30 mA	**205.00**	**170.83**
501-4521	FI22.30	15.923	25 A	300 mA	**210.00**	**200.00**
501-4522	FI23.03	15.924	40 A	30 mA	**240.00**	**175.00**
501-4523	FI23.30	15.925	40 A	300 mA	**240.00**	**200.00**
—	—	—	—	—	—	—

Four Pole Two/Three Phase 415 VAC Max.

Stock No.	Mfr.'s Type	Cat. No.	Rated Line Current	Fault Trip Current	EACH	
					1-24	25-Up
501-4524	FI42.03	15.926	25 A	30 mA	**235.00**	**195.83**
501-4525	FI42.30	15.929	25 A	300 mA	**266.00**	**221.67**
501-4526	FI43.03	15.927	40 A	30 mA	**235.00**	**195.83**
501-4527	FI43.30	15.930	40 A	300 mA	**266.00**	**221.67**
501-4528	FI44.03	15.928	63 A	30 mA	**415.00**	**345.83**
501-4529	FI44.30	15.931	63 A	300 mA	**255.00**	**212.50**

A Series



VISI-Rocker Circuit Protection

Unique molded-in two-color rocker actuator indicates "tripped" mode when breaker is on or off (per illustrations) series trip, 6-32 threaded mounting inserts, push on .250" tab terminals. Rated at 250 VAC/65 VDC. Series trip curve-34 (AC-DC tpe) trip point is 135%. Recognized by UL, Inc. and CSA certified.

Indicate On

Stock No.	Mfr.'s Type	Amps	EACH 1-9	EACH 10-24	EACH 25-49
683-0001	AC1-BO-34-450-1G1-C	5	21.00	19.38	18.00
683-0002	AC1-BO-34-610-1G1-C	10	21.00	19.38	18.00
683-0003	AC1-BO-34-615-1G1-C	15	21.00	19.38	18.00
683-0004	AC1-BO-34-620-1G1-C	20	21.00	19.38	18.00
683-0005	AC1-BO-34-625-1G1-C	25	21.00	19.38	18.00
683-0006	AC1-BO-34-630-1G1-C	30	21.00	19.38	18.00

Indicate Off

Stock No.	Mfr.'s Type	Amps	EACH 1-9	EACH 10-24	EACH 25-49
683-0007	AF1-BO-34-450-1G1-C	5	21.00	19.38	18.00
683-0008	AF1-BO-34-610-1G1-C	10	21.00	19.38	18.00
683-0009	AF1-BO-34-615-1G1-C	15	21.00	19.38	18.00
683-0010	AF1-BO-34-620-1G1-C	20	21.00	19.38	18.00
683-0011	AF1-BO-34-625-1G1-C	25	21.00	19.38	18.00
683-0012	AF1-BO-34-630-1G1-C	30	21.00	19.38	18.00

BA and CA Series Circuit Breakers

All "B" and "C" series magnetic circuit breakers are recognized by UL, Inc. and are CSA certified and VDE approved.

All products are of a series trip construction, with 6-32 threaded mounting inserts, dual "I-O/ON-OFF" markings on a black toggle actuator, and come with .250" tab (Q.C.) terminals on the "B" series, and 10-32 threaded stud terminals on the "C" series. All units are supplied with an all purpose medium, AC-DC delay curve #34, rated at 227 VAC/65 VDC with trip times as shown below.

Percentage Of Rated Current With Trip Time In Seconds: 135% — 1.8-100; 200% — .60-20; 400%—.15-3; 600% — .03-1.3; 800% — .004-.60; 1000% — .004-.1.

BA1-Series (1-Pole)

Stock No.	Mfr.'s Type	Amps	EACH 1-9	EACH 10-24	EACH 25-49
683-0013	BA1-BO-34-425-121-D	2.5	17.24	15.91	14.78
683-0014	BA1-BO-34-450-121-D	5.0	17.24	15.91	14.78
683-0015	BA1-BO-34-610-121-D	10.0	17.24	15.91	14.78
683-0016	BA1-BO-34-615-121-D	15.0	17.24	15.91	14.78
683-0017	BA1-BO-34-620-121-D	20.0	17.24	15.91	14.78
683-0018	BA1-BO-34-630-121-C*	30.0	17.24	15.91	14.78

BA2-Series (2-Pole)

Stock No.	Mfr.'s Type	Amps	EACH 1-9	EACH 10-24	EACH 25-49
683-0019	BA2-BO-34-450-121-D	5.0	44.08	40.69	37.78
683-0020	BA2-BO-34-610-121-D	10.0	44.08	40.69	37.78
683-0021	BA2-BO-34-615-121-D	15.0	44.08	40.69	37.78
683-0022	BA2-BO-34-620-121-D	20.0	44.08	40.69	37.78
683-0023	BA2-BO-34-630-121-C*	30.0	44.08	40.69	37.78

BA3-Series (3-Pole)

Stock No.	Mfr.'s Type	Amps	EACH 1-9	EACH 10-24	EACH 25-49
683-0024	BA3-BO-34-610-121-C*	10.0	74.49	68.76	63.85
683-0025	BA3-BO-34-620-121-C*	20.0	74.49	68.76	63.85
683-0026	BA3-BO-34-630-121-C*	30.0	74.49	68.76	63.85

CA1-Series (1-Pole)

Stock No.	Mfr.'s Type	Amps	EACH 1-9	EACH 10-24	EACH 25-49
683-0027	CA1-BO-34-450-121-C	5.0	22.22	20.51	19.04
683-0028	CA1-BO-34-610-121-C	10.0	22.22	20.51	19.04
683-0029	CA1-BO-34-615-121-C	15.0	22.22	20.51	19.04
683-0030	CA1-BO-34-620-121-C	20.0	22.22	20.51	19.04
683-0031	CA1-BO-34-630-121-C	30.0	22.22	20.51	19.04
683-0032	CA1-BO-34-640-121-C	40.0	22.22	20.51	19.04
683-0033	CA1-BO-34-650-121-C	50.0	22.22	20.51	19.04

CA2-Series (2-Pole)

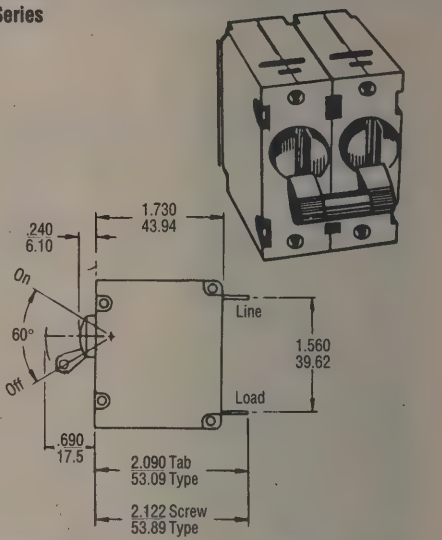
Stock No.	Mfr.'s Type	Amps	EACH 1-9	EACH 10-24	EACH 25-49
683-0034	CA2-BO-34-450-121-C	5.0	60.93	56.24	52.23
683-0035	CA2-BO-34-610-121-C	10.0	60.93	56.24	52.23
683-0036	CA2-BO-34-615-121-C	15.0	60.93	56.24	52.23
683-0037	CA2-BO-34-620-121-C	20.0	60.93	56.24	52.23
683-0038	CA2-BO-34-630-121-C	30.0	60.93	56.24	52.23
683-0039	CA2-BO-34-640-121-C	40.0	60.93	56.24	52.23
683-0040	CA2-BO-34-650-121-C	50.0	60.93	56.24	52.23

CA3-Series (3-Pole)

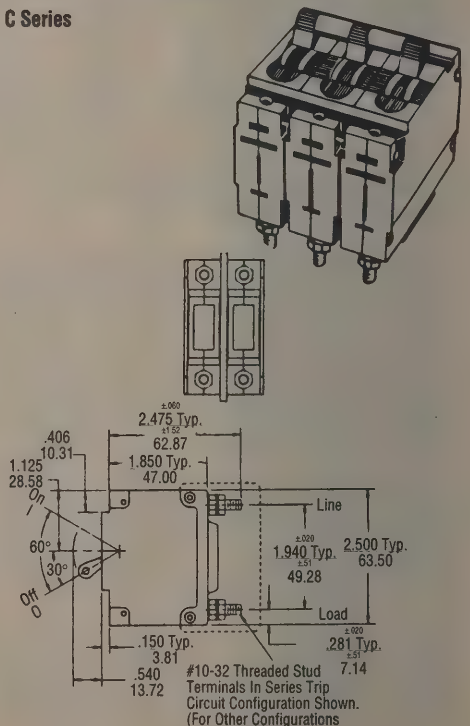
Stock No.	Mfr.'s Type	Amps	EACH 1-9	EACH 10-24	EACH 25-49
683-0041	CA3-BO-34-450-121-C	5.0	96.12	88.72	82.39
683-0042	CA3-BO-34-610-121-C	10.0	96.12	88.72	82.39
683-0043	CA3-BO-34-615-121-C	15.0	96.12	88.72	82.39
683-0044	CA3-BO-34-620-121-C	20.0	96.12	88.72	82.39
683-0045	CA3-BO-34-630-121-C	30.0	96.12	88.72	82.39
683-0046	CA3-BO-34-640-121-C	40.0	96.12	88.72	82.39
683-0047	CA3-BO-34-650-121-C	50.0	96.12	88.72	82.39

*UL Recognized and CSA Certified Only.

B Series

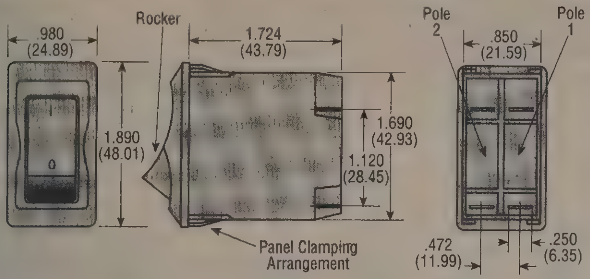


C Series



#10-32 Threaded Stud Terminals In Series Trip Circuit Configuration Shown. (For Other Configurations See PR2002-7181).

Model W33 Rocker Thermal Circuit Breaker



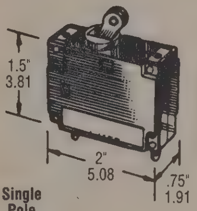
Switchable Rocker Actuated Thermal Circuit Breaker in convenient, snap-in mounting. Trip-free operation. Calibrated to continuously carry 100% of rated load. It may trip between 101% and 135% of rated load, but must trip at 135% within 1 hour at +25°C. **Dielectric Strength:** over 2,000 volts RMS. **Maximum Operating Voltages:** 50 VDC, 250 VAC to 400 Hz. **Interrupt Capacity:** 1,000 amps at 50 VDC; 250 VAC, 60 Hz; 125/250 VAC, 400 Hz; 1,500 amps at 125/250 VAC, 60 Hz. 1/4" Quick-Connect/Solder Terminals. **International Marking:** I/O. **Poles:** S type — Pole 1 – switch only, Pole 2 – series trip overload sensing; T type — Poles 1 and 2 – series trip overload sensing. UL Recognized, CSA Certified. Designed to meet requirements of IEC and VDE.

Stock No.	Mfr.'s Type	Amps	Rocker Color	Lighted	EACH		
					1-24	25-49	50-99
989-5501	W33-S1NIQ-5	5	Black	No	**8.39**	**7.97**	**7.45**
989-5511	W33-S4BIQ-10*	10	Amber	Yes	**9.54**	**9.07**	**8.64**
989-5512	W33-S4BIQ-15*	15	Amber	Yes	**9.54**	**9.07**	**8.64**
989-5517	W33-T2NIQ-20	20	White	No	**9.26**	**8.80**	**8.08**
989-5518	W33-T4BIQ-5*	5	Amber	Yes	**10.42**	**9.90**	**9.07**
989-5519	W33-T4BIQ-10*	10	Amber	Yes	**10.42**	**9.90**	**9.07**
989-5520	W33-T4BIQ-15*	15	Amber	Yes	**10.42**	**9.90**	**9.07**

*120 VAC (Neon with Resistor).

Mini-Mag Hydraulic-Magnetic Circuit Breakers

Rugged construction protects to 30 amps, to 277 volts, 60 Hz AC. Accurately calibrated to carry 100% of rated load and to trip at between 101% and 125% of load. Trip time at 200% of rated load is from 2.2 to 20 seconds. On heavy overloads, a spring-loaded iron piston moves instantly for immediate circuit interruption. Operation unaffected by ambient conditions. Terminals are .250" Quick Disconnect type. **Humidity Resistance:** per MIL-STD-202. **Dielectric Strength:** 1500 VAC 60 Hz. **Reset Time:** Instantaneous. **Voltage Drop:** less than 1.5 V at 1 A or more. **Shock and Vibration:** tested per MIL-STD-202. **Operating Temperature:** –40°C to +85°C. **Insulation Resistance:** 100 megs at 500 VDC. Fungus resistant. **Interruption Capacity:** 5-20 A — 5,000 amps; 30 A — 2,500 amps. **Shipping Weight:** 2.5 oz. per pole. UL recognized and CSA certified.



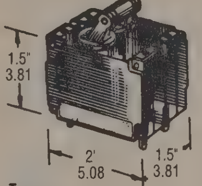
Single Pole

Single-Pole

Stock No.	Mfr.'s Type	Amps	EACH		
			1-24	25-49	50-99
989-6532	W67-X2Q1-2-5	5	**25.21**	**23.96**	**22.69**
989-6541	W67-X2Q1-2-15	15	**25.21**	**23.96**	**22.69**

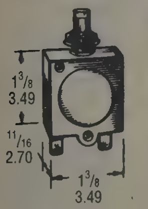
Two-Pole

Stock No.	Mfr.'s Type	Amps	EACH 1-24	EACH 25-49	EACH 50-99
989-6591	W68-X2Q1-2-10	10	**60.02**	**57.03**	**54.02**
989-6601	W68-X2Q1-2-20	20	**60.02**	**57.03**	**54.02**
989-6611	W68-X2Q1-2-30	30	**60.02**	**57.03**	**54.02**



Two Pole

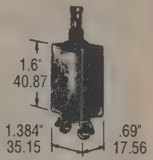
Model W58X Push-To-Reset Type Thermal Circuit Breakers



Here's an economical way to get low current protection. Button extends to indicate overload. **Max. Operating Voltage:** 250 VAC and 50 VDC. Carries 100% of rated load with ultimate trip at 145%. **Tripping Time:** for 1 to 4 amps is 10-45 sec. at 200%; 5 amps and up is 6-30 sec. at 200%. **Dielectric Strength:** over 1500 volts RMS. **Voltage Drop:** less than 1½ volts. **Interrupt Capacity:** 2000 A at 500 VDC, 1000 A at 250 VAC. UL recognized, CSA certified.

Stock No.	Mfr.'s Type	Amps	EACH		
			1-24	25-49	50-99
989-6486	W58-XB1A4A-1	1	**10.57**	**10.05**	**9.52**
989-6487	W58-XB1A4A-2	2	**10.57**	**10.05**	**9.52**
989-6488	W58-XB1A4A-3	3	**10.57**	**10.05**	**9.52**
989-6490	W58-XB1A4A-5	5	**6.79**	**6.45**	**6.13**
989-6491	W58-XB1A4A-7	7	**6.79**	**6.45**	**6.13**
989-6492	W58-XB1A4A-10	10	**6.79**	**6.45**	**6.13**
989-6496	W58-XB1A4A-15	15	**6.79**	**6.45**	**6.13**
989-6501	W58-XB1A4A-20	20	**6.79**	**6.45**	**6.13**

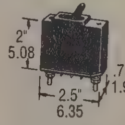
Model W23 Pushbutton Circuit Breakers



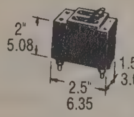
Single-pole with trip-free mechanism. Overload condition extends button, exposing white band for visible trip indication. **Meets MIL-STD:** 202, method 106 — humidity; 202, method 101, test condition B — salt spray. **Endurance Cycling:** 6000+ at 100% rating. 10,000 mechanical cycles. **Max. Operating Voltages:** 50 VDC; 250 VAC (to 400 Hz). **Weight:** less than 2 oz. UL recognized, CSA certified.

Stock No.	Mfr.'s Type	Amps	Trip Time @ 200% Rating	EACH		
				1-24	25-49	50-99
989-6064	W23-X1A1G-5	5	6-22 seconds	**20.66**	**19.63**	**18.60**
989-6067	W23-X1A1G-10	10	6-22 seconds	**20.66**	**19.63**	**18.60**
989-6069	W23-X1A1G-15	15	6-22 seconds	**20.66**	**19.63**	**18.60**
989-6073	W23-X1A1G-20	20	6-22 seconds	**20.66**	**19.63**	**18.60**
989-6074	W23-X1A1G-25	25	6-22 seconds	**20.66**	**19.63**	**18.60**
989-6079	W23-X1A1G-30	30	6-22 seconds	**20.66**	**19.63**	**18.60**

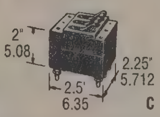
Magnetic Type Circuit Breakers



A



B



C

For 60 Hz AC, up to 277 V. Will carry 100% of rated load indefinitely, with ultimate trip at 125%. **Trip Time:** 2.2-20 seconds at 200%. **Interruption Capacity:** 5000 amps at 277 VAC. UL recognized.

Single-Pole AC Type — Fig. A

Stock No.	Mfr.'s Type	Amps	EACH		
			1-24	25-49	50-99
989-6188	W91-X112-10	10	**29.40**	**27.94**	**26.47**
989-6193	W91-X112-15	15	**29.40**	**27.94**	**26.47**
989-6198	W91-X112-20	20	**29.40**	**27.94**	**26.47**

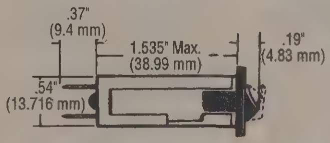
Two-Pole AC Type — Fig. B

Stock No.	Mfr.'s Type	Amps	EACH 1-24	EACH 25-49	EACH 50-99
989-6355	W92-X112-15	15	**70.52**	**66.99**	**63.47**
989-6356	W92-X112-20	20	**70.52**	**66.99**	**63.47**
989-6366	W92-X112-30	30	**70.52**	**66.99**	**63.47**
989-6717	W92-X112-50	50	**70.52**	**66.99**	**63.47**

Three-Pole AC Type — Fig. C

Stock No.	Mfr.'s Type	Amps	EACH 1-24	EACH 25-49	EACH 50-99
989-6440	W93-X112-30	30	**95.64**	**88.82**	**82.88**

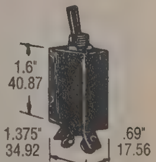
Model W28 Fuseholder-Type Thermal Circuit Breaker



Single pole breakers occupy about the same space as fuseholders. Dielectric strength over 1,500 volts RMS. **Max. Operating Voltages:** 32 VDC, 250 VAC. **Approx. Weight:** 0.35 oz. (10 g). UL recognized, CSA certified.

Stock No.	Mfr.'s Type	Amps	Trip Time @ 200% of Load	EACH		
				1-24	25-49	50-99
989-6701	W28-XQ1A-1	1	4.5-28 seconds @ +25°C	**8.00**	**7.60**	**7.18**
989-6702	W28-XQ1A-2	2	4.5-28 seconds @ +25°C	**8.35**	**7.91**	**7.51**
989-6703	W28-XQ1A-3	3	2.2-15 seconds @ +25°C	**4.64**	**4.29**	**3.93**
989-6705	W28-XQ1A-5	5	2.2-15 seconds @ +25°C	**4.64**	**4.29**	**3.93**
989-6707	W28-XQ1A-7	7	2.2-15 seconds @ +25°C	**4.64**	**4.29**	**3.93**
989-6710	W28-XQ1A-10	10	2.2-15 seconds @ +25°C	**4.64**	**4.29**	**3.93**
989-6715	W28-XQ1A-15	15	2.2-15 seconds @ +25°C	**4.64**	**4.29**	**3.93**

Model W31 Toggle Actuated Circuit Breakers

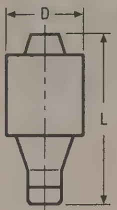


Single pole with toggle trip lever; trip-free mechanism. Wipe-on make contacts lessen voltage drop. Meets MIL-STD 202, method 106 — humidity; 202, method 101, test condition B — salt spray. **Endurance Cycling:** 6000+ at 100% of rating. 10,000 mechanical cycles. **Maximum Operating Voltages:** 50 VDC; 250 VAC (to 400 Hz). **Weight:** less than 2 oz. UL recognized, CSA certified.

Stock No.	Mfr.'s Type	Amps	Trip Time @ 200% Rating	EACH		
				1-24	25-49	50-99
989-6131	W31-X2M1G-5	5	6-22 seconds	**24.86**	**23.63**	**22.40**
989-6134	W31-X2M1G-10	10	6-22 seconds	**24.86**	**23.63**	**22.40**
989-6137	W31-X2M1G-15	15	6-22 seconds	**24.86**	**23.63**	**22.40**
989-6140	W31-X2M1G-20	20	6-22 seconds	**24.86**	**23.63**	**22.40**
989-6143	W31-X2M1G-25	25	6-22 seconds	**24.86**	**23.63**	**22.40**
989-6146	W31-X2M1G-30	30	6-22 seconds	**24.86**	**23.63**	**22.40**
989-6716	W31-X2M1G-35	35	6-22 seconds	**24.86**	**23.63**	**22.40**

Diazed Fuses (Bottle Fuses)

D16 D27 D33



Dimensions mm (In.)

Diazed Fuses	Length (L)	Diameter (D)
A	50.0 (1.97)	12.5 (0.50)
B	50.0 (1.97)	22.0 (0.87)
C	50.0 (1.97)	27.0 (1.06)

500 VAC; DIN 49360, 49515/VDE 0636/IEC 269.

gL/gG Slow Blow

Stock No.	Mfr.'s Type	Amps	Dim.	EACH 1-99	EACH 100-499
299-0101	2D16SB	2	A	2.50	2.13
299-0103	4D16SB	4	A	2.50	2.13
299-0105	6D16SB	6	A	2.50	2.13
299-0107	10D16SB	10	A	2.50	2.13
299-0109	16D16SB	16	A	2.50	2.13
299-0111	20D16SB	20	A	2.50	2.13
299-0113	25D16SB	25	A	2.50	2.13
299-0115	2D27SB	2	B	2.20	1.87
299-0117	4D27SB	4	B	2.20	1.87
299-0119	6D27SB	6	B	2.00	1.70
299-0121	10D27SB	10	B	2.00	1.70
299-0123	16D27SB	16	B	2.00	1.70
299-0125	20D27SB	20	B	2.00	1.70
299-0127	25D27SB	25	B	2.00	1.70
299-0129	35D33SB	35	C	2.50	2.13
299-0131	50D33SB	50	C	2.50	2.13
299-0133	63D33SB	63	C	2.50	2.13

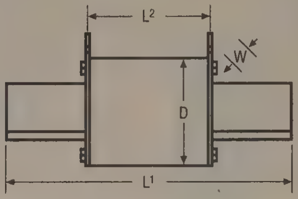
Fast Blow

Stock No.	Mfr.'s Type	Amps	Dim.	EACH 1-99	EACH 100-499
299-0135	2D16FB	2	A	2.50	2.13
299-0137	4D16FB	4	A	2.50	2.13
299-0139	6D16FB	6	A	2.50	2.13
299-0141	10D16FB	10	A	2.50	2.13
299-0143	16D16FB	16	A	2.50	2.13
299-0145	20D16FB	20	A	2.50	2.13
299-0147	25D16FB	25	A	2.50	2.13
299-0149	2D27FB	2	B	2.20	1.87
299-0151	4D27FB	4	B	2.20	1.87
299-0153	6D27FB	6	B	2.00	1.70
299-0155	10D27FB	10	B	2.00	1.70
299-0157	16D27FB	16	B	2.00	1.70
299-0159	20D27FB	20	B	2.00	1.70
299-0161	25D27FB	25	B	2.00	1.70
299-0163	35D33FB	35	C	2.50	2.13
299-0165	50D33FB	50	C	2.50	2.13
299-0167	63D33FB	63	C	2.50	2.13

gR Superfast Blow — Semiconductor Protection

Stock No.	Mfr.'s Type	Amps	Dim.	EACH 1-99	EACH 100-499
299-0169	2D16SC	2	A	5.00	4.50
299-0171	4D16SC	4	A	5.00	4.50
299-0173	6D16SC	6	A	5.00	4.50
299-0175	10D16SC	10	A	5.00	4.50
299-0177	16D16SC	16	A	5.00	4.50
299-0179	20D16SC	20	A	5.00	4.50
299-0181	25D16SC	25	A	5.00	4.50
299-0183	30D16SC	30	A	7.00	6.30
299-0185	2D27SC	2	B	5.00	4.50
299-0187	4D27SC	4	B	5.00	4.50
299-0189	6D27SC	6	B	4.80	4.32
299-0191	10D27SC	10	B	4.80	4.32
299-0193	16D27SC	16	B	4.80	4.32
299-0195	20D27SC	20	B	4.80	4.32
299-0197	25D27SC	25	B	4.80	4.32
299-0199	30D27SC	30	B	4.90	4.41
299-0201	35D33SC	35	C	6.00	5.40
299-0203	50D33SC	50	C	6.20	5.58
299-0205	63D33SC	63	C	6.40	5.76

NH Fuses



Dimensions mm (In.)

NH Fuses*	Overall Length (L1)	Body Length (L2)	Depth (D)	Width (W)
D	78 (3.10)	48 (1.89)	36 (1.42)	20 (0.79)

*To DIN 43620.

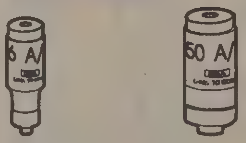
gL/gG. 500 VAC; VDE 0635/IEC 269; 120 kA at 500 VAC.

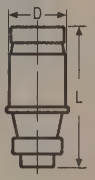
Stock No.	Mfr.'s Type	Amps	Dim.	EACH 1-49	EACH 50-249
299-0257	2NH00GL	2	D	9.00	8.10
299-0259	4NH00GL	4	D	9.00	8.10
299-0261	6NH00GL	6	D	7.00	6.30
299-0263	10NH00GL	10	D	7.00	6.30
299-0265	16NH00GL	16	D	7.00	6.30
299-0267	20NH00GL	20	D	7.00	6.30
299-0269	25NH00GL	25	D	7.00	6.30
299-0271	32NH00GL	32	D	7.00	6.30
299-0272	35NH00GL	35	D	7.00	6.30
299-0273	40NH00GL	40	D	7.00	6.30
299-0275	50NH00GL	50	D	7.00	6.30
299-0277	63NH00GL	63	D	7.00	6.30
299-0279	80NH00GL	80	D	7.00	6.30
299-0281	100NH00GL	100	D	7.00	6.30
299-0418	125NH00GL	125	D	8.00	7.20
299-0420	160NH00GL	160	D	8.00	7.20

gR — Semiconductor Protection 660 VAC

Stock No.	Mfr.'s Type	Amps	Dim.	EACH 1-49	EACH 50-249
299-0422	16NH00GR-6	16	D	20.00	18.00
299-0424	20NH00GR-6	20	D	20.00	18.00
299-0426	25NH00GR-6	25	D	20.00	18.00
299-0428	32NH00GR-6	32	D	21.00	18.90
299-0430	40NH00GR-6	40	D	21.00	18.90
299-0432	50NH00GR-6	50	D	21.00	18.90
299-0434	63NH00GR-6	63	D	22.00	19.80
299-0436	80NH00GR-6	80	D	22.00	19.80
299-0438	100NH00GR-6	100	D	24.00	21.60
299-0440	125NH00GR-6	125	D	24.00	21.60

Neozed Fuses





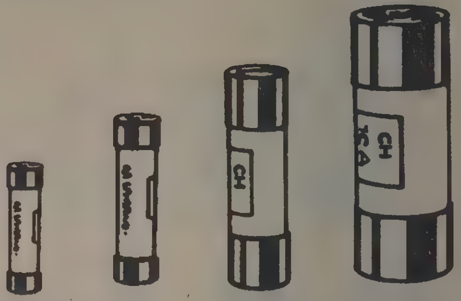
Dimensions mm (In.)

Neozed Fuses	Length (L)	Diameter (D)
E	36.0 (1.42)	11.0 (0.43)
F	36.0 (1.42)	15.3 (0.60)

gL Slow Blow. 380 VAC, 250 VDC; DIN 49522/VDE 0636/IEC 269. Low Power Loss.

Stock No.	Mfr.'s Type	Amps	Dim.	EACH 1-99	EACH 100-499
299-0399	2NZ01GL	2	E	2.50	2.13
299-0401	4NZ01GL	4	E	2.50	2.13
299-0403	6NZ01GL	6	E	2.50	2.13
299-0405	10NZ01GL	10	E	2.50	2.13
299-0407	16NZ01GL	16	E	2.50	2.13
299-0409	20NZ02GL	20	F	2.50	2.13
299-0411	25NZ02GL	25	F	2.50	2.13
299-0413	35NZ02GL	35	F	3.50	3.15
299-0415	50NZ02GL	50	F	3.50	3.15
299-0417	63NZ02GL	63	F	3.50	3.15

Cylinder Fuses



8 x 32 10 x 38 14 x 51 22 x 58

Dimensions mm (In.)

Cylinder Fuses	Length (L)	Diameter (D)
G	32.0 (1.25)	8.0 (.31)
H	38.0 (1.49)	10.0 (.39)
I	51.0 (2.00)	14.0 (.55)
J	58.0 (2.28)	22.0 (.86)

NFC 61200, NFC63210, NFC63211.

gl. 380 VAC 8 × 32 mm (.31 × 1.25")

Stock No.	Mfr.'s Type	Amps	Dim.	EACH 1-99	EACH 100-499
299-0442	2C8x32GI	2	G	1.60	1.44
299-0444	4C8x32GI	4	G	1.60	1.44
299-0446	6C8x32GI	6	G	1.60	1.44
299-0448	8C8x32GI	8	G	1.60	1.44
299-0450	10C8x32GI	10	G	1.60	1.44
299-0452	12C8x32GI	12	G	1.60	1.44
299-0454	16C8x32GI	16	G	1.60	1.44
299-0456	20C8x32GI	20	G	1.60	1.44

gl. 500 VAC 10 × 38 mm (.39 × 1.49")

Stock No.	Mfr.'s Type	Amps	Dim.	EACH 1-99	EACH 100-499
299-0458	1C10x38GI	1	H	1.60	1.44
299-0460	2C10x38GI	2	H	1.60	1.44
299-0462	4C10x38GI	4	H	1.60	1.44
299-0464	6C10x38GI	6	H	1.60	1.44
299-0468	8C10x38GI	8	H	1.60	1.44
299-0470	10C10x38GI	10	H	1.60	1.44
299-0472	12C10x38GI	12	H	1.60	1.44
299-0474	16C10x38GI	16	H	1.60	1.44
299-0476	20C10x38GI	20	H	1.60	1.44
299-0478	25C10x38GI	25	H	1.60	1.44
299-0480	32C10x38GI	32	H	1.60	1.44

gl. 660 VAC 14 × 51 mm (.55 × 2")

Stock No.	Mfr.'s Type	Amps	Dim.	EACH 1-99	EACH 100-499
299-0482	2C14x51GI	2	I	1.80	1.62
299-0484	4C14x51GI	4	I	1.80	1.62
299-0486	6C14x51GI	6	I	1.80	1.62
299-0488	8C14x51GI	8	I	1.80	1.62
299-0490	10C14x51GI	10	I	1.80	1.62
299-0492	12C14x51GI	12	I	1.80	1.62
299-0494	16C14x51GI	16	I	1.80	1.62
299-0496	20C14x51GI	20	I	1.80	1.62
299-0498	25C14x51GI	25	I	2.00	1.80
299-0500	32C14x51GI	32	I	2.00	1.80
299-0502	40C14x51GI	40	I	2.00	1.80
299-0504	50C14x51GI	50	I	2.00	1.80

gl. 660 VAC 22 × 58 mm (.86 × 2.28")

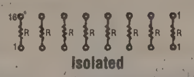
Stock No.	Mfr.'s Type	Amps	Dim.	EACH 1-99	EACH 100-499
299-0506	6C22x58GI	6	J	3.50	3.15
299-0508	8C22x58GI	8	J	3.50	3.15
299-0510	10C22x58GI	10	J	3.50	3.15
299-0512	12C22x58GI	12	J	3.50	3.15
299-0514	16C22x58GI	16	J	3.50	3.15
299-0516	20C22x58GI	20	J	3.50	3.15
299-0518	25C22x58GI	25	J	3.50	3.15
299-0520	32C22x58GI	32	J	3.50	3.15
299-0522	40C22x58GI	40	J	3.50	3.15
299-0524	50C22x58GI	50	J	3.50	3.15
299-0526	63C22x58GI	63	J	3.50	3.15
299-0528	80C22x58GI	80	J	4.00	3.60
299-0530	100C22x58GI	100	J	4.00	3.60
299-0532	125C22x58GI	125	J	4.00	3.60

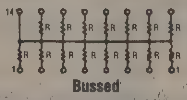
Multifuse PTC Resettable Overcurrent Protectors

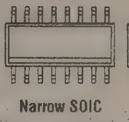
Multifuse products are made from a conductive plastic formed into thin sheets with electrodes attached to either side. The conductive plastic is manufactured from a non-conductive crystalline polymer and a highly conductive carbon black. The electrodes ensure even distribution of power through the device and provide a surface for leads to be attached. The conductive carbon black filler material is dispersed in the polymer. When the polymer is at room temperature, there are numerous carbon chains forming conductive paths through the material. Under a fault condition, I²R heating causes the plastic material's temperature to rise, resulting in a phase transformation of the polymer matrix to an amorphous stricture. This is accompanied with a small expansion. As the conductive particles move apart, most of them no longer conduct current and the resistance of the device increases sharply. The device will remain in this condition until the fault is cleared, allowing the carbon chains to reform as the polymer re-crystallizes. The resistance quickly returns to its original value. While fuses work well only once, replacement is not an option in many applications due to inconvenience, warranty cost or damaged reputations. Applications for resettable devices include computers and PDAs, motors, audio equipment, test and measurement equipment, security and fire alarms, medical, POS equipment, industrial controls, automotive and marine electronics, and battery-operated toys. **Maximum Voltage:** 30 volts. **Maximum Current:** 40 amps. Manufacturer's literature available upon request.

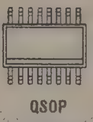
Stock No.	Mfr.'s Type	Initial Resistance @ 23°C		Hold and Trip Current Limits @ 23°C		EACH	
		Min.	Max.	Hold	Trip	1-9	10-24
754-1350	MF-R010	2.500	4.10	0.10	0.15	**.96**	**.86**
754-1352	MF-R020	1.830	2.67	0.20	0.30	**1.02**	**.92**
754-1354	MF-R025	1.250	1.83	0.25	0.38	**1.05**	**.95**
754-1356	MF-R030	0.870	1.27	0.30	0.45	**1.05**	**.95**
754-1358	MF-R040	0.550	0.81	0.40	0.60	**1.05**	**.95**
754-1360	MF-R050	0.490	0.75	0.50	0.75	**1.08**	**.97**
754-1362	MF-R065	0.300	0.46	0.65	0.98	**1.14**	**1.03**
754-1364	MF-R075	0.250	0.39	0.75	1.13	**1.14**	**1.03**
754-1366	MF-R090	0.190	0.34	0.90	1.35	**1.14**	**1.03**
754-1368	MF-R110	0.050	0.10	1.10	2.20	**1.14**	**1.03**
754-1370	MF-R135	0.040	0.08	1.35	2.70	**1.14**	**1.03**
754-1372	MF-R160	0.030	0.07	1.60	3.20	**1.20**	**1.08**
754-1374	MF-R185	0.030	0.06	1.85	3.70	**1.23**	**1.11**
754-1376	MF-R250	0.020	0.04	2.50	5.00	**1.32**	**1.19**
754-1378	MF-R300	0.020	0.05	3.00	6.00	**1.41**	**1.27**
754-1380	MF-R400	0.010	0.03	4.00	8.00	**1.50**	**1.35**
754-1382	MF-R500	0.010	0.03	5.00	10.0	**1.59**	**1.43**
754-1384	MF-R600	0.005	0.02	6.00	12.0	**1.65**	**1.49**
754-1386	MF-R700	0.005	0.02	7.00	14.0	**1.74**	**1.57**
754-1388	MF-R800	0.005	0.02	8.00	16.0	**1.83**	**1.65**

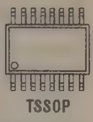
MiniNet Resistor Networks









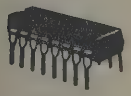


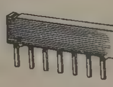
This new series of miniature MiniNet Resistor Networks is based on a Tantalum Nitride (TN) thin film deposited on a silicon substrate to create the smallest resistor networks available. One of the key factors to consider when selecting these networks is the long-term stability of thin film metalization and lower noise levels compared to thick film ink systems. They offer excellent matching, are the most precise, lowest noise, excellent TTRC and the best TCR available. They are made using IC processing techniques, resulting in networks that are even smaller than an equal number of chips resistors. Package dimensions are based on JEDEC standards. Packages include QSOP (Quarter Sized Outline Package), TSSOP (Thin Shrink Small Outline Package) and Narrow SOIC (Narrow Small Outline Integrated Circuit). With 25 mil. lead spacing for the QSOP, they can be put very close to IC outputs minimizing transmission line mismatching problems. The TSSOP has 25.6 mil. lead spacing and Narrow SOIC has 50 mil. lead spacing. These networks are ideal for applications where space is at a premium. Applications include computers (portable, handheld, notebooks, workstations), telecom (DBS receivers, networks, routers), wireless (pagers, radio, PCN handheld, cellular, LAN), instrumentation (test equipment, controls, sensors), medical (implants, mobile, portable). Manufacturer's literature available upon request.

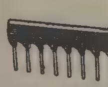
Stock No.	Mfr.'s Type	Ohms	Pin Count	Tol. %	EACH			
					1-9	10-24	25-49	50-99
755-1000†	2NBS08-TJ2-102	1K	8	5	**.94**	**.87**	**.78**	**.73**
755-1002†	2NBS08-TJ2-202	2K	8	5	**.94**	**.87**	**.78**	**.73**
755-1004†	2NBS08-TJ2-103	10K	8	5	**.94**	**.87**	**.78**	**.73**
755-1006*	2NBS16-TF1-203	20K	16	1	**1.28**	**1.19**	**1.07**	**1.00**
755-1008†	2NBS16-TF2-102	1K	16	1	**1.28**	**1.19**	**1.07**	**1.00**
755-1010†	2NBS16-TF2-103	10K	16	1	**1.28**	**1.19**	**1.07**	**1.00**
755-1012*	2NBS16-TG1-221	220	16	2	**1.16**	**1.07**	**.97**	**.91**
755-1014†	2NBS16-TG2-101	100	16	2	**1.16**	**1.07**	**.97**	**.91**
755-1016†	2NBS16-TG2-103	10K	16	2	**1.16**	**1.07**	**.97**	**.91**
755-1018*	2NBS16-TJ1-100	10	16	5	**1.06**	**.98**	**.88**	**.83**
755-1020*	2NBS16-TJ1-220	22	16	5	**1.06**	**.98**	**.88**	**.83**
755-1022*	2NBS16-TJ1-330	33	16	5	**1.06**	**.98**	**.88**	**.83**
755-1024*	2NBS16-TJ1-470	47	16	5	**1.06**	**.98**	**.88**	**.83**
755-1026*	2NBS16-TJ1-221	220	16	5	**1.06**	**.98**	**.88**	**.83**
755-1028*	2NBS16-TJ1-331	330	16	5	**1.06**	**.98**	**.88**	**.83**
755-1030*	2NBS16-TJ1-471	470	16	5	**1.06**	**.98**	**.88**	**.83**
755-1032*	2NBS16-TJ1-102	1K	16	5	**1.06**	**.98**	**.88**	**.83**
755-1034*	2NBS16-TJ1-222	2.2K	16	5	**1.06**	**.98**	**.88**	**.83**
755-1036*	2NBS16-TJ1-472	4.7K	16	5	**1.06**	**.98**	**.88**	**.83**
755-1038*	2NBS16-TJ1-103	10K	16	5	**1.06**	**.98**	**.88**	**.83**
755-1040†	2NBS16-TJ2-101	100	16	5	**1.06**	**.98**	**.88**	**.83**
755-1042†	2NBS16-TJ2-221	220	16	5	**1.06**	**.98**	**.88**	**.83**
755-1044†	2NBS16-TJ2-271	270	16	5	**1.06**	**.98**	**.88**	**.83**
755-1046†	2NBS16-TJ2-331	330	16	5	**1.06**	**.98**	**.88**	**.83**
755-1048†	2NBS16-TJ2-471	470	16	5	**1.06**	**.98**	**.88**	**.83**
755-1050†	2NBS16-TJ2-681	680	16	5	**1.06**	**.98**	**.88**	**.83**
755-1052†	2NBS16-TJ2-102	1K	16	5	**1.06**	**.98**	**.88**	**.83**
755-1054†	2NBS16-TJ2-202	2K	16	5	**1.06**	**.98**	**.88**	**.83**
755-1056†	2NBS16-TJ2-222	2.2K	16	5	**1.06**	**.98**	**.88**	**.83**
755-1058†	2NBS16-TJ2-472	4.7K	16	5	**1.06**	**.98**	**.88**	**.83**
755-1060†	2NBS16-TJ2-103	10K	16	5	**1.06**	**.98**	**.88**	**.83**
755-1062*	2QSP16-TG1-330	33	16	2	**1.16**	**1.07**	**.97**	**.91**
755-1064*	2QSP16-TG1-102	1K	16	2	**1.16**	**1.07**	**.97**	**.91**
755-1066*	2QSP16-TG1-471	470	16	2	**1.16**	**1.07**	**.97**	**.91**
755-1068†	2QSP16-TG2-221	220	16	2	**1.16**	**1.07**	**.97**	**.91**
755-1070†	2QSP16-TG2-331	330	16	2	**1.16**	**1.07**	**.97**	**.91**
755-1072†	2QSP16-TG2-102	1K	16	2	**1.16**	**1.07**	**.97**	**.91**
755-1074†	2QSP16-TG2-222	2.2K	16	2	**1.16**	**1.07**	**.97**	**.91**
755-1076†	2QSP16-TG2-472	4.7K	16	2	**1.16**	**1.07**	**.97**	**.91**
755-1078†	2QSP16-TG2-103	10K	16	2	**1.16**	**1.07**	**.97**	**.91**
755-1080*	2QSP16-TJ1-220	22	16	5	**1.06**	**.98**	**.88**	**.83**
755-1082*	2QSP16-TJ1-330	33	16	5	**1.06**	**.98**	**.88**	**.83**
755-1084*	2QSP16-TJ1-510	51	16	5	**1.06**	**.98**	**.88**	**.83**
755-1086*	2QSP16-TJ1-680	68	16	5	**1.06**	**.98**	**.88**	**.83**
755-1088*	2QSP16-TJ1-331	330	16	5	**1.06**	**.98**	**.88**	**.83**
755-1092*	2QSP16-TJ1-681	680	16	5	**1.06**	**.98**	**.88**	**.83**
755-1090*	2QSP16-TJ1-511	510	16	5	**1.06**	**.98**	**.88**	**.83**
755-1094*	2QSP16-TJ1-102	1K	16	5	**1.06**	**.98**	**.88**	**.83**
755-1096*	2QSP16-TJ1-222	2.2K	16	5	**1.06**	**.98**	**.88**	**.83**
755-1098*	2QSP16-TJ1-103	10K	16	5	**1.06**	**.98**	**.88**	**.83**
755-1100*	2QSP16-TJ1-203	20K	16	5	**1.06**	**.98**	**.88**	**.83**
755-1102*	2QSP16-TJ1-503	50K	16	5	**1.06**	**.98**	**.88**	**.83**
755-1104†	2QSP16-TJ2-101	100	16	5	**1.06**	**.98**	**.88**	**.83**
755-1104†	2QSP16-TJ2-101	100	16	5	**1.06**	**.98**	**.88**	**.83**
755-1106†	2QSP16-TJ2-221	220	16	5	**1.06**	**.98**	**.88**	**.83**
755-1108†	2QSP16-TJ2-271	270	16	5	**1.06**	**.98**	**.88**	**.83**
755-1110†	2QSP16-TJ2-331	330	16	5	**1.06**	**.98**	**.88**	**.83**
755-1112†	2QSP16-TJ2-471	470	16	5	**1.06**	**.98**	**.88**	**.83**
755-1114†	2QSP16-TJ2-681	680	16	5	**1.06**	**.98**	**.88**	**.83**
755-1116†	2QSP16-TJ2-102	1K	16	5	**1.06**	**.98**	**.88**	**.83**
755-1118†	2QSP16-TJ2-222	2.2K	16	5	**1.06**	**.98**	**.88**	**.83**
755-1120†	2QSP16-TJ2-472	4.7K	16	5	**1.06**	**.98**	**.88**	**.83**
755-1122†	2QSP16-TJ2-103	10K	16	5	**1.06**	**.98**	**.88**	**.83**
755-1124†	2QSP20-TJ2-472	4.7K	20	5	**1.10**	**1.02**	**.92**	**.86**
755-1126*	2QSP20-TJ1-220	22	20	5	**1.10**	**1.02**	**.92**	**.86**
755-1128*	2QSP20-TJ1-330	33	20	5	**1.10**	**1.02**	**.92**	**.86**
755-1130*	2QSP20-TJ1-390	39	20	5	**1.10**	**1.02**	**.92**	**.86**
755-1132†	2QSP20-TJ2-101	100	20	5	**1.10**	**1.02**	**.92**	**.86**
755-1134†	2QSP20-TJ2-472	4.7K	20	5	**1.10**	**1.02**	**.92**	**.86**
755-1136†	2QSP20-TJ2-103	10K	20	5	**1.10**	**1.02**	**.92**	**.86**
755-1138*	2QSP24-TJ1-100	10	24	5	**1.16**	**1.07**	**.97**	**.91**
755-1140*	2QSP24-TJ1-220	22	24	5	**1.16**	**1.07**	**.97**	**.91**
755-1142*	2QSP24-TJ1-330	33	24	5	**1.16**	**1.07**	**.97**	**.91**
755-1144*	2QSP24-TJ1-390	39	24	5	**1.16**	**1.07**	**.97**	**.91**
755-1146*	2QSP24-TJ1-331	330	24	5	**1.16**	**1.07**	**.97**	**.91**
755-1148*	2QSP24-TJ1-471	470	24	5	**1.16**	**1.07**	**.97**	**.91**
755-1150*	2QSP24-TJ1-102	1K	24	5	**1.16**	**1.07**	**.97**	**.91**
755-1152*	2QSP24-TJ1-103	10K	24	5	**1.16**	**1.07**	**.97**	**.91**
755-1154†	2QSP24-TJ2-101	100	24	5	**1.16**	**1.07**	**.97**	**.91**
755-1156†	2QSP24-TJ2-221	220	24	5	**1.16**	**1.07**	**.97**	**.91**
755-1158†	2QSP24-TJ2-331	330	24	5	**1.16**	**1.07**	**.97**	**.91**
755-1160†	2QSP24-TJ2-471	470	24	5	**1.16**	**1.07**	**.97**	**.91**
755-1162†	2QSP24-TJ2-681	680	24	5	**1.16**	**1.07**	**.97**	**.91**
755-1164†	2QSP24-TJ2-102	1K	24	5	**1.16**	**1.07**	**.97**	**.91**
755-1166†	2QSP24-TJ2-152	1.5K	24	5	**1.16**	**1.07**	**.97**	**.91**
755-1168†	2QSP24-TJ2-202	2K	24	5	**1.16**	**1.07**	**.97**	**.91**
755-1170†	2QSP24-TJ2-222	2.2K	24	5	**1.16**	**1.07**	**.97**	**.91**
755-1172†	2QSP24-TJ2-472	4.7K	24	5	**1.16**	**1.07**	**.97**	**.91**
755-1174†	2QSP24-TJ2-103	10K	24	5	**1.16**	**1.07**	**.97**	**.91**
755-1176*	2QSP28-TJ1-471	470	28	5	**1.20**	**1.11**	**1.00**	**.94**

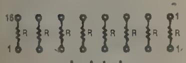
†Bussed. *Isolated.

Single and Dual In-Line Resistor Networks

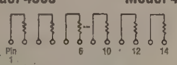

Model 4100


Model 4300

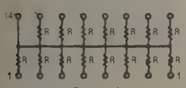

Model 4600



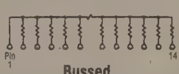
Isolated



Isolated



Bussed



Bussed

The model 4600 is a conformal coated and the model 4300 is a molded single in-line package resistor networks. Their low profile is compatible with DIPs. They are recommended for rosin flux and solvent clean or no clean flux processes. The 4100 series is a molded dual in-line network. Gold Epoxy provides excellent marking contrast for permanent laser marking on all three series. All are compatible with automatic insertion equipment. All are also available in additional values, dual terminators, additional pin count and additional profiles. Call for quote. Manufacturer's literature available upon request.

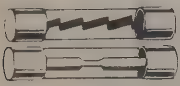
Stock No.	Mfr.'s Type	Ohms	Pin Count	Tol. %	EACH			
					1-9	10-24	25-49	50-99
755-4011†	4606X-101-151	150	6	2	.14	.13	.12	.11
755-4015†	4606X-101-331	330	6	2	.14	.13	.12	.11
755-4017†	4606X-101-471	470	6	2	.14	.13	.12	.11
755-4021†	4606X-101-102	1K	6	2	.14	.13	.12	.11
755-4026†	4606X-101-222	2.2K	6	2	.14	.13	.12	.11
755-4030†	4606X-101-472	4.7K	6	2	.14	.13	.12	.11
755-4034†	4606X-101-103	10K	6	2	.14	.13	.12	.11
755-4043†	4606X-101-473	47K	6	2	.14	.13	.12	.11
755-4047†	4606X-101-104	100K	6	2	.14	.13	.12	.11
755-4113†	4608X-101-221	220	8	2	.18	.17	.15	.14
755-4115†	4608X-101-331	330	8	2	.18	.17	.15	.14
755-4121†	4608X-101-102	1K	8	2	.18	.17	.15	.14
755-4126†	4608X-101-222	2.2K	8	2	.18	.17	.15	.14
755-4128†	4608X-101-332	3.3K	8	2	.18	.17	.15	.14
755-4130†	4608X-101-472	4.7K	8	2	.18	.17	.15	.14
755-4134†	4608X-101-103	10K	8	2	.18	.17	.15	.14
755-4143†	4608X-101-473	47K	8	2	.18	.17	.15	.14
755-4147†	4608X-101-104	100K	8	2	.18	.17	.15	.14
755-4209†	4610X-101-101	100	10	2	.22	.20	.18	.17
755-4213†	4610X-101-221	220	10	2	.22	.20	.18	.17
755-4214†	4610X-101-271	270	10	2	.22	.20	.18	.17
755-4215†	4610X-101-331	330	10	2	.22	.20	.18	.17
755-4217†	4610X-101-471	470	10	2	.22	.20	.18	.17
755-4221†	4610X-101-102	1K	10	2	.22	.20	.18	.17
755-4226†	4610X-101-222	2.2K	10	2	.22	.20	.18	.17
755-4227†	4610X-101-272	2.7K	10	2	.22	.20	.18	.17
755-4228†	4610X-101-332	3.3K	10	2	.22	.20	.18	.17
755-4230†	4610X-101-472	4.7K	10	2	.22	.20	.18	.17
755-4234†	4610X-101-103	10K	10	2	.22	.20	.18	.17
755-4238†	4610X-101-203	20K	10	2	.22	.20	.18	.17
755-4243†	4610X-101-473	47K	10	2	.22	.20	.18	.17
755-4247†	4610X-101-104	100K	10	2	.22	.20	.18	.17
755-4251†	4610X-101-224	220K	10	2	.22	.20	.18	.17
755-4321*	4606X-102-102	1K	6	2	.14	.13	.12	.11
755-4334*	4606X-102-103	10K	6	2	.14	.13	.12	.11
755-4403*	4608X-102-330	33	8	2	.18	.17	.15	.14
755-4409*	4608X-102-101	100	8	2	.18	.17	.15	.14
755-4414*	4608X-102-271	270	8	2	.18	.17	.15	.14
755-4421*	4608X-102-102	1K	8	2	.18	.17	.15	.14
755-4425*	4608X-102-202	2K	8	2	.18	.17	.15	.14
755-4426*	4608X-102-222	2.2K	8	2	.18	.17	.15	.14
755-4430*	4608X-102-472	4.7K	8	2	.18	.17	.15	.14
755-4434*	4608X-102-103	10K	8	2	.18	.17	.15	.14
755-4439*	4608X-102-223	22K	8	2	.18	.17	.15	.14
755-4447*	4608X-102-104	100K	8	2	.18	.17	.15	.14
755-4459*	4608X-102-105	1M	8	2	.18	.17	.15	.14
755-4503*	4610X-102-330	33	10	2	.22	.20	.18	.17
755-4521*	4610X-102-102	1K	10	2	.22	.20	.18	.17
755-4530*	4610X-102-472	4.7K	10	2	.22	.20	.18	.17
755-4534*	4610X-102-103	10K	10	2	.22	.20	.18	.17
755-4547*	4610X-102-104	100K	10	2	.22	.20	.18	.17
755-4713*	4114R-1-221	220	14	2	.33	.31	.28	.26
755-4715*	4114R-1-331	330	14	2	.33	.31	.28	.26
755-4721*	4114R-1-102	1K	14	2	.33	.31	.28	.26
755-4734*	4114R-1-103	10K	14	2	.33	.31	.28	.26
755-4802*	4116R-1-270	27	16	2	.34	.31	.28	.27
755-4803*	4116R-1-330	33	16	2	.34	.31	.28	.27
755-4809*	4116R-1-101	100	16	2	.34	.31	.28	.27
755-4811*	4116R-1-151	150	16	2	.34	.31	.28	.27
755-4813*	4116R-1-221	220	16	2	.34	.31	.28	.27
755-4815*	4116R-1-331	330	16	2	.34	.31	.28	.27
755-4817*	4116R-1-471	470	16	2	.34	.31	.28	.27
755-4821*	4116R-1-102	1K	16	2	.34	.31	.28	.27
755-4822*	4116R-1-122	1.2K	16	2	.34	.31	.28	.27
755-4826*	4116R-1-222	2.2K	16	2	.34	.31	.28	.27
755-4828*	4116R-1-332	3.3K	16	2	.34	.31	.28	.27
755-4830*	4116R-1-472	4.7K	16	2	.34	.31	.28	.27
755-4834*	4116R-1-103	10K	16	2	.34	.31	.28	.27
755-4847*	4116R-1-104	100K	16	2	.34	.31	.28	.27
755-4934†	4114R-2-103	10K	16	2	.33	.31	.28	.26
755-5021†	4116R-2-102	1K	16	2	.33	.31	.28	.26
755-5030†	4116R-2-472	4.7K	16	2	.33	.31	.28	.26
755-5034†	4116R-2-103	10K	16	2	.33	.31	.28	.26
755-6030†	4306R-101-472	4.7K	6	2	.27	.25	.23	.21
755-6034†	4306R-101-103	10K	6	2	.27	.25	.23	.21
755-6121†	4308R-101-102	1K	8	2	.31	.29	.26	.24
755-6130†	4308R-101-472	4.7K	8	2	.31	.29	.26	.24
755-6134†	4308R-101-103	10K	8	2	.31	.29	.26	.24
755-6221†	4310R-101-102	1K	10	2	.37	.34	.31	.29
755-6226†	4310R-101-222	2.2K	10	2	.37	.34	.31	.29
755-6228†	4310R-101-332	3.3K	10	2	.37	.34	.31	.29
755-6230†	4310R-101-472	4.7K	10	2	.37	.34	.31	.29
755-6234†	4310R-101-103	10K	10	2	.37	.34	.31	.29
755-6234†	4310R-101-103	10K	10	2	.37	.34	.31	.29
755-6247†	4310R-101-104	100K	10	2	.37	.34	.31	.29
755-6434*	4308R-102-103	10K	8	2	.31	.29	.26	.24

†Bussed. *Isolated.

Bussmann Information Fax 314-527-1450

Bussmann product information at your convenience. Available 24 hours a day — 7 days a week. Please have your fax number ready when you call.

To speak with a Customer Satisfaction Representative please call 314-527-3877 (Monday-Friday, 8 am-5 pm central).



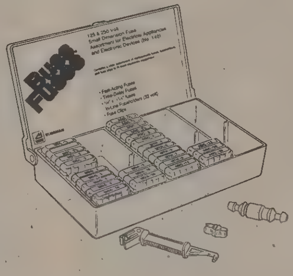
AGC Fast-Acting ¼" × 1¼" Fuses

Test Specifications: carry 110%, open at 135% within 1 hour. UL listed 250 V. UL Recognized. 32 V. CSA certified. Formerly called 3AG.

Stock No.	Amps	Volts	EACH*		
			5-45	50-245	250-Up
740-0120	1/16	250	1.21	1.06	.94
740-0126	⅛	250	1.15	1.01	.90
740-0128	3/16	250	1.22	1.06	.94
740-0106	2/10	250	1.22	1.06	.94
740-0107	¼	250	.65	.55	.50
740-0131	3/10	250	.66	.56	.50
740-0132	⅜	250	.71	.62	.54
740-0133	½	250	.44	.40	.35
740-0134	6/10	250	.45	.40	.35
740-0130	¾	250	.44	.39	.34
740-0113	1	250	.38	.31	.25
740-9125	1¼	250	.39	.32	.28
740-0114	1½	250	.36	.30	.24
740-0115	2	250	.39	.32	.27
740-0116	2½	250	.36	.32	.30
740-0141	3	250	.36	.30	.24
740-0143	4	250	.44	.39	.35
740-0144	5	250	.44	.39	.35
740-0145	6	250	.44	.39	.34
740-0200	7½	250	.35	.30	.25
740-0201	10	250	.35	.30	.25
740-0202	15	32	.36	.29	.25
740-0203	20	32	.36	.29	.25
740-0173	25	32	.36	.30	.25
740-0204	30	32	.27	.22	.19

*Sold in multiples of 5 only.

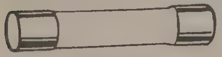
Type 140 Fuse Kit



- ► 125 and 250 Volt Small Dimension Fuse Assortment
- ► Fast Acting and Time Delay Fuses
- ► ¼" × 1¼" Fuses
- ► In-Line Fuseholders
- ► Fuse Clips

Type 140 fuse kit contains the most commonly used fuses. Applications and cross-reference data that comes with the kit helps identify correct fuse replacements. Inventory strips for convenient reordering. 31 different products including 140 fuses in a range of ½ to 30 A, plus 2 fuseholders, fuseclips and one fuse puller. Spaces allow customizing contents by user. Sturdy nylon box with sturdy hinge and positive closure make it ideal for factory or service truck use.

740-9140. Type 140 .... **EACH 145.02**



MDA Time-Delay ¼" × 1¼" Fuses

Ceramic body. UL listed, CSA certified through 15 A, UL recognized 20 A.

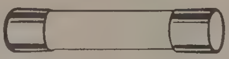
Stock No.	Amps	Volts	EACH		
			1-99	100-249	250-Up
740-5037	⅛	250	4.65	3.78	2.58
740-5038	¼	250	2.95	2.41	1.65
740-5039	⅜	250	2.74	2.24	1.53
740-5040	½	250	3.00	2.45	1.67
740-5041	¾	250	2.95	2.41	1.65
740-5042	1	250	2.14	1.75	1.43
740-5043	1¼	250	3.00	2.45	1.67
740-5044	1½	250	3.00	2.45	1.67
740-5045	2	250	2.14	1.75	1.43
740-5046	2½	250	1.95	1.57	1.18
740-5047	3	250	1.60	1.31	1.07
740-5048	3 2/10	250	2.21	1.81	1.47
740-5049	4	250	1.60	1.31	1.07
740-5050	5	250	1.59	1.29	1.05
740-5051	6	250	2.24	1.82	1.24
740-5052	7	250	2.21	1.81	1.23
740-5053	8	250	1.60	1.31	1.07
740-5054	10	250	1.18	.97	.79
740-5055	12	250	1.60	1.31	1.07
740-5056	15	250	1.59	1.30	1.06
740-5057	20	250	1.60	1.31	1.07

MDL Time-Delay ¼" × 1¼" Fuses

Time delay glass. For circuits with high inrush. Spiral wound construction. Avoid needless blows from starting currents and surges. Several seconds delay at 200%. UL listed, CSA certified 250 V. UL recognized 32 V.

Stock No.	Amps	Volts	EACH*		
			5-45	50-245	250-Up
740-0211	1/16	250	1.78	1.53	1.36
740-0212	1/10	250	1.77	1.53	1.36
740-0213	⅛	250	1.70	1.46	1.31
740-5016	¼	250	1.10	.95	.86
740-5017	3/10	250	1.14	.98	.88
740-5019	½	250	.74	.65	.57
740-5021	¾	250	1.02	.90	.70
740-5022	8/10	250	1.05	.93	.80
740-5023	1	250	.99	.88	.75
740-5024	1¼	250	.90	.78	.68
740-5025	1½	250	1.93	1.66	1.46
740-5027	2	250	.90	.76	.67
740-5028	2½	250	.94	.81	.71
740-5029	3	250	.90	.76	.67
740-5030	3 2/10	250	.95	.81	.71
740-5031	4	250	.66	.57	.50
740-5032	5	250	.90	.76	.67
740-0248	6	250	.90	.78	.68
740-5033	6¼	250	.94	.81	.71
740-5034	7	250	.90	.78	.68
740-5035	8	250	.90	.78	.68
740-0243	10	32	1.21	1.03	.91
740-0249	12	32	1.23	1.06	.94
740-0244	15	32	1.21	1.03	.91
740-0245	20	32	1.18	1.02	.90
740-0250	25	32	1.24	1.06	.94
740-0247	30	32	1.24	1.06	.94

*Sold in multiples of 5 only.



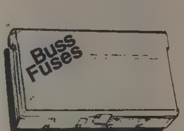
ABC Fast-Acting ¼" × 1¼" Fuses

Ceramic body. 10,000 amps at 125 V. Carry 110%, open at 135% within 1 hour. UL listed, CSA certified through 15 A. UL recognized 20 A.

Stock No.	Amps	Volts	EACH*		
			5-45	50-245	250-Up
740-5003	¼	250	.92	.80	.71
740-5004	½	250	.92	.80	.71
740-5005	¾	250	.92	.80	.71
740-5006	1	250	.88	.77	.68
740-5007	2	250	.85	.75	.67
740-5008	3	250	.85	.75	.67
740-5009	4	250	.87	.76	.59
740-5010	5	250	.78	.67	.59
740-5011	6	250	.79	.68	.61
740-5012	7	250	.81	.70	.61
740-3020	8	250	.77	.67	.60
740-3030	10	250	.77	.67	.60
740-3040	12	250	.77	.67	.59
740-3050	15	250	.77	.67	.60
740-3060	20	250	1.71	1.47	1.26

*Sold in multiples of 5 only.

Quick-Service Fuse Kit



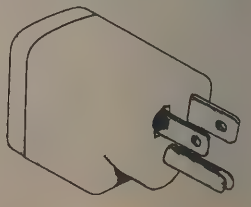
- ► One Fuseblock
- ► Three Fuseholders
- ► Two Pairs of Fuse Clips
- ► Five Each of 54 Different Fuses

A complete assortment of 125 V and 250 V small dimension fuses for repair of both electrical and electronic devices.

740-0270. 270 Kit .... **EACH 240.23**

MDL-⅛	MDL-¼	MDL-½	MDL-¾	MDL-1	MDL-1½
MDX-2	MDX-3	MDX-4	MDX-5	MDX-6	MDA-8
MDA-10	MDA-15	MDA-20	MDA-30	AGC-⅛	AGC-¼
AGC-½	AGC-¾	AGC-1	AGC-1½	AGC-2	AGC-2½
AGC-3	MTH-4	MTH-5	MTH-6	MTH-7	MTH-8
ABC-10	ABC-15	ABC-20	ABC-30	GMA-¼	GMA-½
GMA-1	GMA-2	GMA-3	GMA-4	GMA-6	GMC-1
GMC-2	GMC-3	GMC-4	GMC-6	GVJ-½	GVJ-1
GVJ-2	GVJ-3	MDV-½	MDV-1	MDV-2	MDV-3

Sentry Surge Protectors



- ► Protection for TVs, Laptop Computers, and Holiday Decorations
- ► Sentry's Two-Way Protection Outperforms Other Surge Protector Products
- ► Sentry Surge Protectors Are Fused to Prevent a Leading Cause of House Fires (Short Circuits Caused by Damaged or Overloaded Extension Cords)
- ► Sentry Surge Protectors Stop Electrical Surges and Spikes Instantly, Protecting Expensive Electronics Against Overvoltage Conditions

740-3401. Sen TV .... **EACH 7.76**
740-3402. Sen XM .... **EACH 7.76**
740-3403. Sen LT .... **EACH 7.76**

Bussmann Information Fax 314-527-1450

Bussmann product information at your convenience. Available 24 hours a day — 7 days a week. Please have your fax number ready when you call.

To speak with a Customer Satisfaction Representative please call 314-527-3877 (Monday-Friday, 8 am-5 pm central).

GDA Quick-Acting High Interrupting Rating Fuses

Designed to meet IEC specification 127-2, Standard Sheet 1. UL recognized. (5 mm × 20 mm.) Ceramic.

Stock No.	Amps	Volts	EACH		
			1-49	50-249	250-Up
740-5155	50.00 mA	250	2.34	1.91	1.32
740-5156	63.00 mA	250	2.21	1.81	1.25
740-5157	80.00 mA	250	2.21	1.81	1.25
740-5158	100.00 mA	250	2.34	1.91	1.67
740-5159	125.00 mA	250	2.34	1.91	1.32
740-5160	160.00 mA	250	2.21	1.81	1.25
740-5161	200.00 mA	250	2.34	1.91	1.32
740-5162	250.00 mA	250	2.34	1.91	1.32
740-5163	315.00 mA	250	2.34	1.91	1.67
740-5164	400.00 mA	250	2.21	1.81	1.25
740-5165	500.00 mA	250	2.06	1.68	1.16
740-5166	630.00 mA	250	2.06	1.68	1.16
740-5167	800.00 mA	250	2.16	1.76	1.22
740-5168	1.00	250	2.06	1.68	1.16
740-5169	1.25	250	2.06	1.68	1.16
740-5170	1.60	250	2.06	1.68	1.16
740-5171	2.00	250	2.16	1.76	1.22
740-5172	2.50	250	2.16	1.76	1.22
740-5173	3.15	250	2.16	1.76	1.22
740-5174	4.00	250	2.06	1.68	1.16
740-5175	5.00	250	2.06	1.68	1.16
740-9566	6.30	250	2.16	1.76	1.22

GDB Quick-Acting Low Interrupting Rating Fuses

Designed to meet IEC 127-2, Standard Sheet 2. (5 mm × 20 mm.) Glass.

Stock No.	Amps	Volts	EACH		
			1-49	50-249	250-Up
740-5176	50.00 mA	250	2.67	2.18	1.50
740-5177	63.00 mA	250	2.67	2.18	1.50
740-5178	80.00 mA	250	2.67	2.18	1.50
740-5179	100.00 mA	250	2.67	2.18	1.50
740-5180	125.00 mA	250	1.96	1.60	1.10
740-5181	160.00 mA	250	1.96	1.60	1.10
740-5182	200.00 mA	250	2.06	1.68	1.15
740-5183	250.00 mA	250	1.96	1.60	1.10
740-5184	315.00 mA	250	1.96	1.60	1.10
740-5185	400.00 mA	250	1.96	1.60	1.10
740-5186	500.00 mA	250	1.63	1.33	.91
740-5187	630.00 mA	250	1.71	1.40	.96
740-5188	800.00 mA	250	1.63	1.33	.91
740-5189	1.00	250	1.71	1.40	.96
740-5190	1.25	250	1.71	1.40	.96
740-5191	1.60	250	1.63	1.33	.91
740-5192	2.00	250	1.71	1.40	.96
740-5193	2.50	250	1.63	1.33	.91
740-5194	3.15	250	1.63	1.33	.91
740-5195	4.00	250	1.71	1.40	.96
740-5196	5.00	250	1.71	1.40	.96
740-5197	6.30	250	1.63	1.33	.91
740-9570	8.00	250	1.63	1.33	.91
740-9575	10.00	250	1.71	1.40	.96

GDC Time-Lag Fuses

Designed to meet IEC 127-2, Standard Sheet 3. (5 mm × 20 mm.) Glass.

Stock No.	Amps	Volts	EACH		
			1-49	50-249	250-Up
740-5198	32.00 mA	250	3.66	2.88	1.98
740-5199	40.00 mA	250	3.66	2.88	1.98
740-5200	50.00 mA	250	3.66	2.88	1.98
740-5201	63.00 mA	250	3.48	2.75	1.89
740-5202	80.00 mA	250	3.48	2.75	1.89
740-5203	100.00 mA	250	3.19	2.62	1.79
740-5204	125.00 mA	250	3.48	2.75	1.89
740-5205	160.00 mA	250	3.19	2.62	1.79
740-5206	200.00 mA	250	3.19	2.62	1.79
740-5207	250.00 mA	250	3.35	2.74	1.89
740-5208	315.00 mA	250	3.19	2.62	1.79
740-5209	400.00 mA	250	3.19	2.62	1.79
740-5210	500.00 mA	250	2.16	1.76	1.22
740-5211	630.00 mA	250	2.06	1.68	1.16
740-5212	800.00 mA	250	2.16	1.76	1.22
740-5213	1.00	250	2.16	1.76	1.22
740-5214	1.25	250	2.06	1.68	1.16
740-5215	1.60	250	2.06	1.68	1.16
740-5216	2.00	250	2.06	1.68	1.16
740-5217	2.50	250	2.16	1.76	1.22
740-5218	3.15	250	2.16	1.76	1.22
740-5219	4.00	250	2.16	1.76	1.22
740-5220	5.00	250	2.16	1.76	1.22
740-5221	6.30	250	2.16	1.76	1.22

GMA Fast Acting Fuses For Foreign Equipment

Compact 5 mm × 20 mm fuse. UL listed, CSA Certified through 6 amps. UL Recognized through 15 amps. Glass.

Stock No.	Amps	Volts	EACH*		
			5-45	50-245	250-Up
740-3004	63.00 mA	250	1.29	1.06	1.00
740-5127	100.00 mA	250	1.29	1.06	1.00
740-3005	125.00 mA	250	1.29	1.06	1.00
740-5128	200.00 mA	250	.75	.62	.57
740-3006	250.00 mA	250	.79	.65	.61
740-3007	500.00 mA	250	.69	.57	.53
740-3008	750.00 mA	250	.79	.65	.61
740-5129	800.00 mA	250	.73	.61	.57
740-5130	1.00	250	.74	.61	.57
740-3009	1.50	250	.75	.62	.57
740-5131	1.60	250	.75	.62	.57
740-3010	2.00	250	.69	.57	.53
740-3011	2.50	250	.79	.65	.61
740-3012	3.00	250	.75	.62	.58
740-5132	3.50	125	.79	.65	.61
740-3013	4.00	125	.79	.65	.61
740-3014	5.00	125	.75	.62	.57
740-3015	6.00	125	.79	.65	.61
740-3016	7.00	125	.75	.62	.57
740-3017	8.00	125	.79	.65	.61
740-3018	10.00	125	.79	.65	.61
740-3019	15.00	125	.75	.62	.57

*Sold in multiples of 5 only.

GMC Time-Delay Fuses 5 × 20 mm

Compact fuse. UL listed, CSA certified through 5 A. UL Recognized 8 A. Glass.

Stock No.	Amps	Volts	EACH		
			1-49	50-249	250-Up
740-5133	63.00 mA	250	2.08	1.62	1.53
740-5134	100.00 mA	250	2.19	1.72	1.53
740-5135	125.00 mA	250	1.91	1.57	1.47
740-5136	200.00 mA	250	1.99	1.64	1.53
740-5137	250.00 mA	250	1.99	1.64	1.53
740-5138	500.00 mA	250	1.26	1.02	.98
740-5139	750.00 mA	250	1.26	1.03	.99
740-5140	800.00 mA	250	1.19	.98	.93
740-5141	1.00	250	1.19	.98	.93
740-5142	1.50	250	1.26	1.02	.98
740-5143	1.60	250	1.19	.98	.93
740-5144	2.00	250	1.21	.98	.93
740-5145	2.50	250	1.29	1.02	.98
740-5146	3.00	250	1.19	.98	.93
740-5147	3.50	125	1.26	1.02	.98
740-5148	4.00	125	1.19	.98	.93
740-5149	5.00	125	1.19	.98	.93
740-5150	6.00	125	1.19	.98	.93
740-5151	7.00	125	1.19	.98	.93
740-5152	8.00	125	1.19	.98	.93
740-5153	10.00	125	1.19	.98	.93

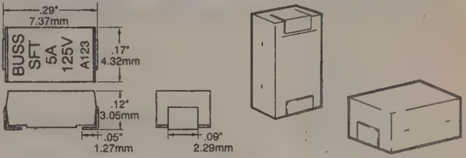
AGA Non Time-Delay Fuses ¼" × ⅝" (6.4 mm × 15.9 mm)

Formerly 1 AG fuse. UL listed through 5 A. UL recognized through 12 A.

Stock No.	Amps	Volts	EACH*		
			5-45	50-245	250-Up
740-9500	1⁄10	125	3.31	2.14	1.46
740-9505	¼	125	1.18	.97	.68
740-9510	½	125	1.18	.97	.68
740-9515	¾	125	1.18	.97	.68
740-9520	1	125	.76	.62	.43
740-9525	2	125	.76	.62	.43
740-9530	3	125	.76	.62	.43
740-9535	5	125	.59	.48	.33
740-9540	7	32	.59	.48	.33
740-9545	10	32	.59	.48	.33
740-9550	15	32	.59	.48	.33
740-9555	20	32	.59	.48	.33
740-9560	25	32	.59	.48	.33
740-9565	30	32	.59	.48	.33

*Sold in multiples of 5 only.

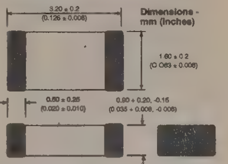
SMD TRON® Surface Mount Fuses



- ► .170" × .294" (4.32 mm × 7.47 mm)
- ► 0-10 Rated Current at 110%: 4 Hours Minimum
- ► 0-10 Rated Current at 250%: 1 Second Maximum
- ► Interrupting Rating: VAC — 50 A; VDC — 300 A
- ► Approvals: UL Recognition, Guide JDYX2, File E19180

Stock No.	Rated Current	Rated Voltage		EACH		
		AC (Max.)	DC (Max.)	1-49	50-249	250-Up
740-3301	63 mA	125 V	125 V	2.92	2.68	2.47
740-3302	125 mA	125 V	125 V	2.92	2.68	2.47
740-3303	250 mA	125 V	125 V	2.92	2.68	2.47
740-3304	375 mA	125 V	125 V	2.92	2.68	2.47
740-3305	500 mA	125 V	125 V	2.38	2.18	2.02
740-3306	750 mA	125 V	125 V	2.64	2.42	2.33
740-3307	1	125 V	125 V	2.72	2.44	2.23
740-3308	1.5	125 V	125 V	2.64	2.42	2.33
740-3309	2	125 V	125 V	2.64	2.42	2.23
740-3310	2.5	125 V	125 V	2.64	2.42	2.23
740-3311	3	125 V	125 V	2.64	2.42	2.23
740-3312	3.5	125 V	125 V	2.64	2.42	2.23
740-3313	4	125 V	125 V	2.64	2.42	2.23
740-3314	5	125 V	125 V	2.72	2.44	2.23
740-3315	7	60 V	90 V	2.92	2.68	2.47
740-3316	10	60 V	90 V	2.92	2.68	2.47

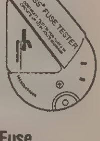
SMT Subminiature Surface Mount Chip Fuses



Bussmann SMT Chip Fuses utilize metal film and ultrasonic wire bond technologies for superior fusing action and enhanced reliability. The fuse element is bonded to a ceramic substrate and encapsulated with glass, providing excellent short circuit performance and environmental integrity. The end terminations are over-plated with nickel and tin-lead. **Catalog Symbol:** 3216FF. **Voltage Rating:** 32 VAC, 63 VDC. **Interrupting Rating:** 50 amp AC/DC. **Physical Size:** EIA SOCM-3216AC 3.2 × 1.6 × 0.90 mm (0.126 × 0.063 × 0.035"). **Agency Approvals:** UL Recognized (All Ratings) File E19180, Guide JDYX2; CSA Certified (1.5-3 A) File 53787, Class 1422-01; CSA Component Acceptance (250-750 mA, 1 A) File 53787, Class 1422-30. **Time Current Characteristics. Fast Acting Fuse:** Will carry 100% of rated current for a minimum of 4 hours, and will open within 5 seconds at 250% of rated current.

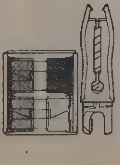
Stock No.	Mfr.'s Type	Current Rating (Amp)	EACH		
			5-45	50-245	250-Up
740-3216	3216FF-250mA	0.250	.60	.54	.50
740-3217	3216FF-375mA	0.375	.60	.54	.50
740-3218	3216FF-500mA	0.500	.60	.54	.50
740-3219	3216FF-750mA	0.750	.60	.54	.50
740-3220	3216FF-1A	1.000	.60	.54	.50
740-3221	3216FF-1.5A	1.500	.60	.54	.50
740-3222	3216FF-2A	2.000	.60	.54	.50
740-3223	3216FF-3A	3.000	.60	.54	.50

Fuse Tester



- ► Now, with the Buss Fuse Tester, You Can Test Fuses Right in the Fuseblock (24 Volt Max.) or, Out of the Fuseblock (Loose)
- ► Just Touch the Buss Fuse Tester's Prongs to the Contacts of the Fuse, If the Light Goes On, the Fuse Is Good; It's That Simple
- ► Test Any Auto, Marine, Motorcycle, RV or Truck Fuse

740-0003. BP/FT-2 ....EACH 10.41



Emergency Fuse Kit with Fusepuller FP-A3

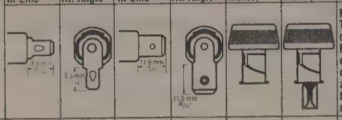
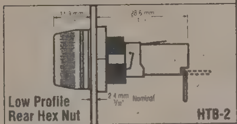
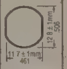
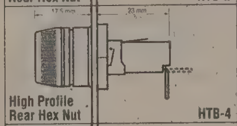
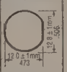
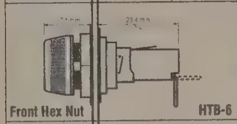
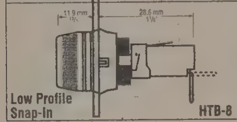
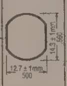
Works with Models: Peugeot, Renault, Volvo — 1985 or later; Audi, BMW, Fiat, Saab — 1984 or later; Plymouth, Datsun, Honda, Mazda, Subaru, Nissan, Volkswagen — 1982 or later; Toyota — 1981 or later; Chevrolet, Buick, Pontiac — 1980 or later; Ford, Lincoln, Mercury, Dodge, Chrysler, Cadillac — 1979 or later; Oldsmobile — 1978 or later.

740-0007. AT-7. Includes Blade-Type Fuses ATC-5, 10, 15, 20, 25, 30, and FP-A3 Fusepuller..............................**EACH 3.16**

HTB International Fuseholders

The 32 Models of the Buss HTB fuseholder offer complete design flexibility. Their reduced size permits maximum space utilization. Their appearance is compatible with aesthetically designed equipment. Designed to UL, CSA and IEC (SEMKO and VDE) standards. The HTB-4 offers high profile while the HTB-2 offers a low profile mounting option. The HTB-6 mounts through rear of panel permitting wire connections to be made to holder before mounting in panel. The HTB-8 provides fast, easy and secure mounting without tools or hardware. Terminal options include in-line or right angle solder 3⁄16" quick-connect and in-line or right angle ¼" quick-connect. The HTB will accept both ¼" × 1¼" and 5 mm × 20 mm fuses simply by changing the carriers. 250 volts.

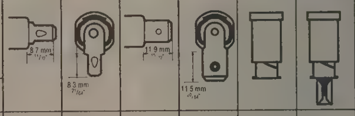
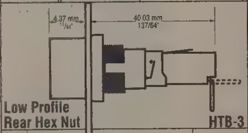
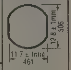
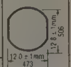
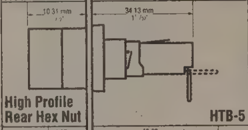
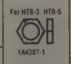
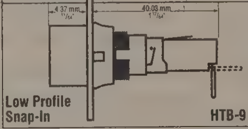
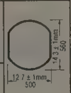
Knob Type HTB Fuseholder Selection Matrix

	Terminal Options: Solder/ 3/16" Quick-Connect In-Line	Solder/ 3/16" Quick-Connect Rt. Angle	1/4" Quick-Connect In-Line	1/4" Quick-Connect Rt. Angle	Carrier Options 1/4" × 1¼" ("I" Equals Inches)	Carrier Options 5 × 20mm ("M" Equals Metric)	Mounting Hole Options (Nominal Dimensions)
							Note: Before Tooling contact Factory for exact dimensions and panel thickness range
 Low Profile Rear Hex Nut HTB-2	HTB-22I	HTB-24I	HTB-26I	HTB-28I	✓		
	HTB-22M	HTB-24M	HTB-26M	HTB-28M		✓	
 High Profile Rear Hex Nut HTB-4	HTB-42I	HTB-44I	HTB-46I	HTB-48I	✓		
	HTB-42M	HTB-44M	HTB-46M	HTB-48M		✓	
 Front Hex Nut HTB-6	HTB-62I	HTB-64I	HTB-66I	HTB-68I	✓		
	HTB-62M	HTB-64M	HTB-66M	HTB-68M		✓	
 Low Profile Snap-In HTB-8	HTB-82I	HTB-84I	HTB-86I	HTB-88I	✓		
	HTB-82M	HTB-84M	HTB-86M	HTB-88M		✓	

Stock No.	Mfr.'s Type	EACH 1-49	50-249	250-Up
740-5262	HTB-22I	3.30	2.70	1.85
740-5263	HTB-22M	3.30	2.70	1.85
740-5264	HTB-24I	3.29	2.69	1.85
740-5265	HTB-24M	3.30	2.70	1.85
740-5266	HTB-26I	3.35	2.73	1.85
740-5267	HTB-26M	3.70	3.01	2.05
740-5268	HTB-28I	3.36	2.74	1.87
740-5269	HTB-28M	3.33	2.71	1.85
740-5270	HTB-42I	3.30	2.70	1.85
740-5271	HTB-42M	3.30	2.70	1.85
740-5272	HTB-44I	4.22	3.44	2.37
740-5273	HTB-44M	3.30	2.70	1.85
740-5274	HTB-46I	3.35	2.73	1.86
740-5275	HTB-46M	3.35	2.73	1.86
740-5276	HTB-48I	1.75	1.43	.98
740-5277	HTB-48M	3.35	2.73	1.86

Stock No.	Mfr.'s Type	EACH 1-49	50-249	250-Up
740-5278	HTB-62I	3.30	2.70	1.85
740-5279	HTB-62M	3.30	2.70	1.85
740-5280	HTB-64I	3.30	2.70	1.85
740-5281	HTB-64M	3.20	2.67	1.85
740-5282	HTB-66I	3.70	3.01	2.05
740-5283	HTB-66M	3.70	3.01	2.05
740-5284	HTB-68I	3.70	3.01	2.05
740-5285	HTB-68M	3.35	2.73	1.86
740-5286	HTB-82I	3.30	2.70	1.85
740-5287	HTB-82M	3.30	2.70	1.85
740-5288	HTB-84I	3.30	2.70	1.85
740-5289	HTB-84M	3.20	2.67	1.85
740-5290	HTB-86I	3.70	3.01	2.05
740-5291	HTB-86M	3.25	2.70	1.86
740-5292	HTB-88I	3.35	2.73	1.86
740-5293	HTB-88M	3.35	2.73	1.86

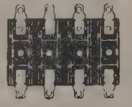
Slotted Type HTB Fuseholder Selection Matrix

All Holders: 5/8" (15.9mm) Diameter Length—1¾" (44.5mm) (plus in-line terminal)	Terminal Options: Solder/ 3/16" Quick-Connect In-Line	Solder/ 3/16" Quick-Connect Rt. Angle	1/4" Quick-Connect In-Line	1/4" Quick-Connect Rt. Angle	Carrier Options 1/4" × 1¼" ("I" Equals Inches)	Carrier Options 5 × 20mm ("M" Equals Metric)	Mounting Hole Options (Nominal Dimensions)
							Note: Before Tooling contact Factory for exact dimensions and panel thickness range
 Low Profile Rear Hex Nut HTB-3	HTB-32I	HTB-34I	HTB-36I	HTB-38I	✓		
	HTB-32M	HTB-34M	HTB-36M	HTB-38M		✓	
 High Profile Rear Hex Nut HTB-5	HTB-52I	HTB-54I	HTB-56I	HTB-58I	✓		
	HTB-52M	HTB-54M	HTB-56M	HTB-58M		✓	
 Low Profile Snap-In HTB-9	HTB-92I	HTB-94I	HTB-96I	HTB-98I	✓		
	HTB-92M	HTB-94M	HTB-96M	HTB-98M		✓	

Stock No.	Mfr.'s Type	EACH 1-49	50-249	250-Up
740-4962	HTB-32I	3.30	2.70	1.85
740-4963	HTB-32M	3.30	2.70	1.85
740-4964	HTB-34I	3.30	2.70	1.85
740-4965	HTB-34M	3.30	2.70	1.85
740-4966	HTB-36I	3.35	2.73	1.86
740-4967	HTB-36M	3.35	2.73	1.86
740-4968	HTB-38I	3.35	2.73	1.86
740-4969	HTB-38M	3.35	2.73	1.86
740-4970	HTB-52I	3.30	2.73	1.86
740-4971	HTB-52M	3.20	2.67	1.85
740-4972	HTB-54I	3.30	2.70	1.85
740-4973	HTB-54M	3.30	2.70	1.85

Stock No.	Mfr.'s Type	EACH 1-49	50-249	250-Up
740-4974	HTB-56I	3.35	2.73	1.86
740-4975	HTB-56M	3.35	2.73	1.86
740-4976	HTB-58I	3.35	2.73	1.86
740-4977	HTB-58M	3.25	2.70	1.86
740-4978	HTB-92I	3.30	2.70	1.85
740-4979	HTB-92M	3.29	2.69	1.85
740-4980	HTB-94I	3.29	2.69	1.85
740-4981	HTB-94M	3.29	2.69	1.85
740-4982	HTB-96I	3.25	2.70	1.86
740-4983	HTB-96M	3.25	2.70	1.86
740-4984	HTB-98I	3.25	2.70	1.86
740-4985	HTB-98M	3.25	2.70	1.86

S-8000 ¼" × 1¼" Fuseblocks



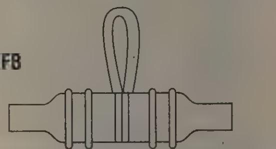
For tight cluster mounting of ¼" × 1¼" fuses. Single pole to 12 pole units. Break-away design permits fuseblock to be sub-divided by hand. 300 volt rating. UL recognized. CSA certified.

Stock No.	Mfr.'s Type	Description: Terminal	Size	Angle	Rated Amps	EACH 1-49	50-249	250-Up
740-5303	S-8001-1	Solder	—	0°	25	1.36	1.12	.76
740-5304	S-8002-1	Solder	—	40°	25	1.49	1.18	.76
740-5305	S-8002-12	Solder	—	40°	25	14.78	12.32	8.53
740-5306	S-8101-1	Quick connect	3⁄16"	0°	15	1.36	1.12	.76
740-5307	S-8102-1	Quick connect	3⁄16"	40°	15	2.52	2.05	1.42
740-5308	S-8201-1	Quick connect	¼"	0°	20	1.36	1.12	.76
740-5309	S-8202-1	Quick connect	¼"	40°	20	1.36	1.12	.76
740-5310	S-8202-12	Quick connect	¼"	40°	20	6.53	5.44	3.76
740-5311	S-8203-1	Quick connect	¼"	side	20	1.83	1.51	1.18
740-5312	S-8301-1	Screw	—	—	30	2.41	1.96	1.48
740-5313	S-8301-12	Screw	—	—	30	23.70	19.74	16.33

HFB-HHB In-Line Fuseholders

Both HFB and HHB feature easy assembly. Rated 30 amps, 32 volts. High visibility yellow bodies with raised letters. Accept #12'-#18' wires.

HFB



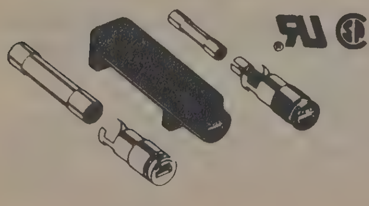
HFB for harsh environments — water, salt spray, ultraviolet, ozone — 40°C to 150°C temp. range.

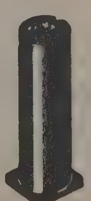
HHB

HHB universal holder for normal environments. Accepts ¼" × ⅞", ¼" × 1" and ¼" × 1¼" fuses.

Stock No.	Mfr.'s Type	EACH 1-49	50-249	250-Up
740-5301	HFB	6.53	5.44	3.76
740-5302	HHB	2.56	2.09	1.63

PC Board Fuseholder





"Kicked" terminals increase stability. HBH horizontal version; HBV (with stability pins) and HBW vertical models. HBH-I and HBH-M take ¼" × 1¼" or 5 × 20 mm fuses. UL-12A @ 250 V. Designed to UL, CSA and IEC (SEMKO and VDE) standards.

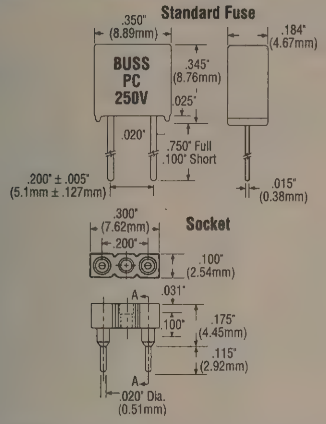
Stock No.	Mfr.'s Type	Feature	EACH 1-49	50-249	250-Up
740-5295	HBH-I	Horizontal	3.53	2.89	2.16
740-5296	HBH-M	Horizontal	4.05	3.32	2.27
740-5297	HBV-I	Vertical Stability Pins	4.20	3.43	2.59
740-5298	HBV-M	Vertical Stability Pins	4.79	3.92	2.69
740-5299	HBW-I	Vertical	4.79	3.92	2.69
740-5300	HBW-M	Vertical	4.79	3.92	2.69

Bussmann Information Fax 314-527-1450

Bussmann product information at your convenience. Available 24 hours a day — 7 days a week. Please have your fax number ready when you call.

To speak with a Customer Satisfaction Representative please call 314-527-3877 (Monday-Friday, 8 am-5 pm central).

PC-Tron® PC Board Fuses



The PC-Tron™ subminiature fuse offers high short circuit performance which until now could only be found in much larger glass tube fuses. Due to its unique construction the PC-Tron™ limits the I²t (energy let-thru) to very low levels. .2" lead spacing. Auto insertable. Standard wave soldering technique will not affect performance. Optional socket available. Long lead .75" or short lead .10" length. Surface mount versions also available.

Interrupting Rating	10,000 amperes @ 125 VAC; ½—5 amps 50 amperes @ 250 VAC; ½—3 amps

Stock No.	Amps	Lead Length	Type	EACH	
				1-49	50-249
740-5058	½	Long	PCB	3.05	2.37
740-5059	¾	Long	PCB	3.05	2.37
740-5060	1	Long	PCB	3.05	2.37
740-5061	1½	Long	PCB	3.05	2.37
740-5062	2	Long	PCB	3.05	2.37
740-5063	2½	Long	PCB	3.05	2.37
740-5064	3	Long	PCB	3.18	2.46
740-5065	5	Long	PCD	3.05	2.37
740-5066	½	Short	PCC	3.04	2.37
740-5067	¾	Short	PCC	3.05	2.37
740-5068	1	Short	PCC	2.89	2.15
740-5069	1½	Short	PCC	3.05	2.37
740-5070	2	Short	PCC	3.05	2.37
740-5071	2½	Short	PCC	3.05	2.37
740-5072	3	Short	PCC	3.05	2.37
740-5073	5	Short	PCE	3.05	2.37

Optional PCS Type Socket.
740-5074. 1-49 ....EACH .40 50-249 ....EACH 33.36

GMT Telecommunication Fuse

HLT

GMT

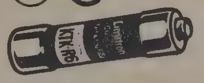
For multiple panel mounting in small spaces. Color-coded, spring-loaded flag indicates amp rating, performing visual indication when alarm circuit activates. Opening time @ 150% load, 5 mins. (max.). Amp ratings are 125 Vac, or 60 Vdc. **Size:** ¼" × 1 15/32". HLT holder fits all GMT fuses. Multipole holders available.

Stock No.	Amps	Color	EACH	
			1-49	50-249
740-5223	¼	Violet	2.62	2.03
740-5224	½	Red	2.58	2.00
740-5225	65/100	Black	3.30	2.63
740-5226	¾	Brown	2.99	2.32
740-5227	1	Gray	2.78	2.26
740-5228	1⅓	White	2.45	1.99
740-5229	2	Orange	2.49	2.03
740-5230	3	Blue	2.45	2.00
740-5231	5	Green	2.45	2.00
740-5232	7½	Blk-White	2.84	2.32
740-5233	10	Red-White	2.78	2.26

HLT Holder. Fits all GMT.
740-5234. 1-49 ....EACH 2.88 50-249 ....EACH 2.37

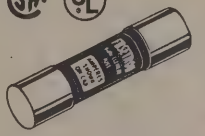
KTK-R Fast-Acting 13/32" × 1½" Fuses

Limitron Fast-Acting Class E E fuse. UL listed and CSA certified for branch circuit protection. Excellent short circuit protection.



Stock No.	Amps	Volts	EACH	
			1-49	50-249
740-5249	1	600	7.38	6.16
740-5250	1½	600	7.38	6.16
740-5251	2	600	7.38	6.16
740-5252	3	600	7.38	6.16
740-5253	4	600	8.78	7.32
740-5254	5	600	7.38	6.16
740-5255	6	600	7.45	6.22
740-5256	7	600	10.46	8.71
740-5258	9	600	12.21	10.19
740-5259	10	600	7.38	6.16
740-5260	12	600	8.70	7.25
740-5261	15	600	7.38	6.16
740-6025	20	600	7.38	6.16
740-6030	25	600	8.78	7.32
740-6035	30	600	7.39	6.16

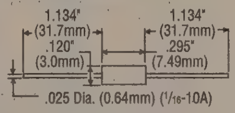
FNM Time-Delay 13/32" × 1½" Fuses



Dual elements, in single fiber tube, fuses avoid needless blows from starting currents or surges. Operates only on dangerous overloads, or short circuits. Fuse opening time is 1 hour (max.) at 135% load. UL listed, CSA certified through 15 A.

Stock No.	Amps	Volts	EACH	
			1-49	50-249
740-5235	½	250	4.01	3.11
740-5236	1	250	3.36	3.09
740-5237	1 6/10	250	4.10	3.18
740-5238	2	250	3.11	2.42
740-5239	2½	250	3.78	2.92
740-5240	3 2/10	250	3.71	2.87
740-5241	4	250	3.12	2.43
740-5242	5	250	3.11	2.42
740-5243	6¼	250	3.71	2.87
740-5244	8	250	3.12	2.43
740-5245	10	250	3.11	2.42
740-5246	12	125	3.78	2.95
740-5247	15	125	3.11	2.42
740-6010	20	32	3.12	2.43
740-6015	25	32	3.84	2.99
740-6020	30	32	3.12	2.43

Microtron® Fuses — PC Board

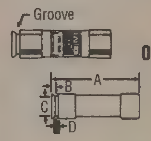


Specifications. Typical Opening Times: 5 sec. max. @ 250%. **Body Material:** High temperature plastic with a U.L. 94VO rating. **Lead Pull Force:** 7 lb. minimum. **Agency Approvals:** U.L. Recognition and CSA Certification. **Units Per Reel:** 2500. **Packaging:** Per E.I.A. Standard RS-296-D. All materials are sulfur free to maintain component solderability. **Interrupting Ratings:** Up to 5 A — 125 VAC - 50 A, 125 VDC - 300 A; 5.1 - 10 A — 60 VAC - 50 A, 90 VDC - 300 A. The Microtron Fuses are designed to safely interrupt 50 amps at 125 VAC. Maximum short circuit current of 300 amps at 125 VAC.

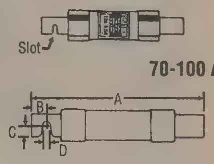
Stock No.	Mfr.'s Type	Resistance Ohms Cold	Amps	EACH	
				1-49	50-249
740-4901	MCR-1/16	7.000	1/16	2.52	2.06
740-4902	MCR-⅛	2.200	⅛	2.40	2.06
740-4903	MCR-¼	0.600	¼	2.52	2.06
740-4904	MCR-⅜	0.350	⅜	2.45	2.04
740-4905	MCR-½	0.250	½	2.33	1.95
740-4906	MCR-¾	0.150	¾	1.96	1.59
740-4907	MCR-1	0.120	1	1.85	1.50
740-4908	MCR-1½	0.070	1½	1.96	1.59
740-4909	MCR-2	0.050	2	1.86	1.52
740-4912	MCR-3	0.035	3	1.85	1.50
740-4913	MCR-3½	0.026	3½	1.85	1.50
740-4914	MCR-4	0.022	4	1.96	1.59
740-4915	MCR-5	0.016	5	1.85	1.50
740-4916	MCR-7	0.010	7	1.85	1.50
740-4917	MCR-10	0.006	10	1.80	1.49

FRN-R and FRS-R Fusetron® Dual-Element Time-Delay Class R Fuses

These fuses are ideal for use in rejection fuse clips or ordinary fuse clips. Fuses will fit existing fused equipment. Fusetron® fuse has a link element which handles only heavy overloads and short-circuits and a thermal cutout element for light overloads. Interrupting rating of 200,000 amperes rms symmetrical. UL listed, CSA certified.



0-60 A



70-100 A

0-60 Ampere

Mfr.'s Type	Ampere Rating	A	B	C	D
FRN-R	0-30 35-60	2" 3"	5/32" 3/16"	⅜" ⅝"	5/64" 3/32"
FRS-R	0-30 35-60	5" 5½"	3/16" ¼"	⅝" ⅞"	3/32" 3/32"

70-100 Ampere

FRN-R	70-100	5⅞"	½"	23/64"	9/32"
FRS-R	70-100	7⅞"	½"	23/64"	9/32"

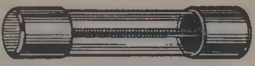
FRN-R Series 250 VAC

Stock No.	Amps	EACH	
		1-49	50-249
740-9580	½	5.11	4.27
740-9585	6/10	5.23	4.36
740-9590	1	4.59	3.57
740-9600	2	4.33	3.36
740-9605	2½	4.67	3.63
740-9610	3	4.01	3.12
740-9620	4	4.20	3.27
740-9625	5	4.16	3.24
740-9630	6	4.20	3.27
740-9635	6¼	4.27	3.33
740-9640	7	4.79	3.92
740-9645	8	4.20	3.27
740-9650	10	4.16	3.24
740-9655	12	4.20	3.27
740-9660	15	3.39	2.64
740-9665	20	3.39	2.64
740-9670	25	3.39	2.64
740-9675	30	3.40	2.64
740-9680	35	5.73	4.78
740-9685	40	5.73	4.78
740-9690	45	5.73	4.78
740-9695	50	5.73	4.78
740-9700	60	5.73	4.78
740-9705	70	12.89	10.73
740-9710	80	12.89	10.73
740-9715	90	13.01	10.83
740-9720	100	12.89	10.74

FRS-R Series 600 VAC

740-9725	1	8.49	7.08
740-9730	1 6/10	8.49	7.08
740-9735	2	8.40	7.00
740-9740	3	10.11	6.50
740-9745	3½	7.89	6.58
740-9750	4	7.80	6.50
740-9755	4½	9.48	7.90
740-9760	5	7.80	6.50
740-9765	5 6/10	9.48	7.90
740-9770	6	7.80	6.50
740-9775	8	7.80	6.50
740-9780	10	7.80	6.50
740-9785	15	6.95	5.80
740-9790	17½	6.95	5.80
740-9795	20	6.95	5.80
740-9800	30	6.95	5.80
740-9805	40	11.91	9.94
740-9810	50	11.91	9.94
740-9815	60	11.91	9.94
740-9820	70	24.66	20.54
740-9825	80	24.66	20.54
740-9830	90	24.66	20.54
740-9835	100	24.66	20.54

3AG Fast-Acting Fuses



For Low Time lag usage. 1¼ × ¼". Maximum 250 V. U.L. listed and CSA certified.

Stock No.	Mfr.'s Type	Amps	EACH*		
			5-95	100-495	500-995
845-4001	312.062	1⁄16	1.27	1.05	.89
845-4002	312.125	⅛	1.27	1.05	.89
845-4003	312.175	.175	1.40	1.15	.98
845-4004	312.187	3⁄16	1.40	1.15	.98
845-4005	312.250	¼	.55	.47	.41
845-4006	312.300	3⁄10	.32	.28	.24
845-4007	312.375	⅜	.84	.74	.63
845-4008	312.500	½	.38	.33	.28
845-4009	312.750	¾	.52	.45	.38
845-4010	312001	1	.23	.20	.17
845-4018	3121.25	1¼	.37	.32	.27
845-4011	31201.5	1½	.33	.28	.24
845-4012	312002	2	.24	.20	.17
845-4019	31202.5	2½	.34	.28	.24
845-4013	312003	3	.24	.20	.18
845-4014	312004	4	.37	.33	.28
845-4015	312005	5	.37	.33	.28
845-4016	312006	6	.50	.44	.37
845-4020	312007	7	.37	.33	.28
845-4017	312008	8	.52	.44	.38
845-4021	312010	10	.52	.44	.38

***Sold in multiples of 5 only.**

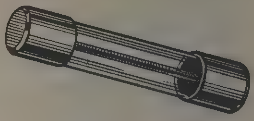
3AB Ceramic Body Fast-Acting Fuses

250 V or less. **Blow Time:** 110% 4 hour minimum; 135% 1 hour maximum; 200% 15 second maximum (⅛-12 A); 60 second maximum (15-30 A). 1¼ × ¼". U.L. listed thru 15 amps. Certified by CSA thru 15 amps. U.L. recognized, 20-30 A.

Stock No.	Mfr.'s Type	Amps	EACH*		
			5-95	100-495	500-995
845-4553	314001	1	.93	.82	.70
845-4022	314002	2	.93	.82	.70
845-4554	314003	3	.93	.80	.70
845-4023	314004	4	.93	.82	.70
845-4555	314005	5	.47	.41	.36
845-4556	314006	6	.89	.78	.67
845-4024	314007	7	.89	.78	.67
845-4557	314008	8	.48	.42	.36
845-4558	314010	10	.81	.71	.60
845-4559	314012	12	.47	.41	.36
845-4560	314015	15	.61	.53	.45
845-4561	314020	20	1.28	1.06	.90
845-4562	314025	25†	1.41	1.17	.99
845-4025	314030	30†	1.28	1.06	.90

***Sold in multiples of 5 only.** †125 V max.

3AG Slo Blo® Fuses



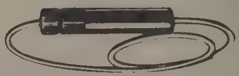
For circuits with high inductive surge. 1¼ × ¼". Maximum 250 V except (†) denotes 32 V. **Approvals:** Listed by Underwriters Laboratories and certified by CSA thru 7 amps; Recognized under the components program of Underwriters Laboratories from 8-30 amps.

Stock No.	Mfr.'s Type	Amps	EACH*		
			5-95	100-495	500-995
845-4036	313.031	1⁄32	2.65	2.21	1.98
845-4037	313.062	1⁄16	1.13	.94	.84
845-4038	313.100	1⁄10	2.00	1.67	1.42
845-4039	313.125	⅛	2.00	1.67	1.42
845-4043	313.200	2⁄10	2.11	1.75	1.57
845-4044	313.250	¼	.91	.75	.64
845-4045	313.300	3⁄10	1.35	1.11	.95
845-4046	313.375	⅜	1.40	1.14	.98
845-4047	313.400	4⁄10	.74	.61	.52
845-4048	313.500	½	.62	.55	.49
845-4049	313.600	6⁄10	1.16	.96	.82
845-4050	313.700	7⁄10	.68	.56	.48
845-4051	313.750	¾	.86	.71	.61
845-4052	313.800	8⁄10	1.28	1.06	.90
845-4053	313001	1	.82	.72	.61
845-4054	3131.25	1¼	.91	.81	.69
845-4055	31301.5	1½	.62	.55	.46
845-4056	31301.6	16⁄10	.92	.82	.69
845-4057	313002	2	.60	.53	.45
845-4058	31302.5	2½	.62	.55	.46
845-4059	313003	3	.83	.74	.62
845-4060	31303.2	32⁄10	.83	.74	.62
845-4061	313004	4	.83	.74	.62
845-4062	313005	5	.62	.55	.46
845-4063	3136.25	6¼	.62	.55	.46
845-4064	313007	7	.61	.55	.46
845-4065	313008	8	.83	.74	.62
845-4066	313010	10†	.96	.80	.68
845-4400	313012	12†	1.29	1.08	.92
845-4067	313015	15†	1.29	1.08	.92
845-4068	313020	20†	1.29	1.08	.92
845-4405	313025	25†	1.29	1.08	.92
845-4410	313030	30†	.76	.63	.54

***Sold in multiples of 5 only.** †125 V max.

Auto Fuseholder

ALECTRON

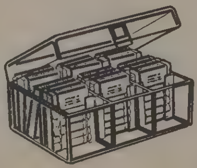


Auto

Rating: 20 amps. #14 gauge wire, 12" length. **Fuse Size:** 1/4" × 1 1/4".

Stock No.	Mfr.'s Type	Description	EACH			
			1-99	100-499	500-999	1000-2499
247-2102	ZC-210B	Bākelite Auto Fuseholder	1.45	1.26	.91	.84

Fuse Kits



Fuse Kit
Fuse caddy offers an assortment of the most popular industrial 3AG slow blow and regular fuses in an attractive plastic case. Kit contains 15 boxes of 5 fuses each in ½, 1, 1½*, 2, 3, and 5 amp. *Slow blow only.
845-9403. Type 094037..**EACH 56.92**

Complete Electronic Kit
The most complete circuit protection kit available. Ideal for schools, hospitals, plants, R&D labs, and maintenance departments. Two hundred eighty of our most popular fuses in a wide assortment of 3AG, 2AG, 5 × 20 mm glass and 3AB ceramic fuses. Also includes 10 variations of fuse clips, fuse blocks, and panel mount and in-line fuseholders. Packaged in a rugged clear plastic box with cross reference information and inventory strips. **Box Dimensions:** 7 5⁄16" × 5 5⁄16" × 1⅞" deep.
845-9404. Type 094376..**EACH 377.24**

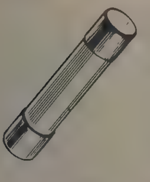
Economy Kit
This kit uses the same case as above but includes 150 of our most popular 3AG and 5 × 20 mm fuses and five variations of fuseholders, clips and blocks. This leaves space for the users to fill in with their most popular fuses and holders.
845-9405. Type 094377..**EACH 141.36**

PC Mount Kit
This kit also uses the same case as Model 094376 except it contains only PC mountable fuses, fuseholders, fuseblocks, and fuse clips. The kit includes an assortment of 200 picofuses, microfuses, 3AG, 5 × 20 mm, and 2AG pigtail fuses. Also included are 10 variations of PC mount fuseholders, fuse blocks, and fuse clips. Perfect kit for engineering departments and R&D labs.
845-9406. Type 094378..**EACH 361.51**

Complete Automotive Fuse Kit
The most complete automotive fuse kit available! This kit includes 200 glass, blade and ceramic fuses for use in all American, European and Japanese vehicles. Also included are 10 variations of fuse blocks and in-line fuseholders. This kit is ideal for automotive maintenance departments. Packaged in a sturdy, clear plastic box, 11⅝" × 6¾" × 1⅝" deep.
845-9407. Type 094379..**EACH 101.53**

Appliance Service Kit
This kit includes 150 of our most popular fuses used in the appliance market. Also included is an additional assortment of 12 items consisting of appliance switches, indicator lights, fuseholders and fuseblocks. This kit is ideal for the appliance repair industry. **Box Dimensions:** 7 5⁄16" × 5 5⁄16" × 1⅝" deep. Extra space is available for adding more items.
845-9408. Type 094380..**EACH 188.56**

3AB Slo-Blo® Type Fuses



Ceramic body construction permits higher interrupting ratings and voltage ratings. Ideal for applications where high current loads are expected. 250 Volts. ¼" × 1¼". **Approvals:** Listed by Underwriters Laboratories and Certified by CSA from ¼ through 10 amperes. Recognized under the Components Program of Underwriters Laboratories from 12 through 30 amperes. **Electrical Characteristics. % of Ampere Rating/Opening Time:** 110% — 4 hrs. min., 135% — 1 hr max., 200% — 5 sec. min.

Stock No.	Mfr.'s Type	Amps	EACH*		
			5-45	50-245	250-Up
845-4175	326001	1	1.21	1.01	.90
845-4176	3261.25	1¼	2.07	1.72	1.54
845-4177	326002	2	2.07	1.72	1.54
845-4178	326003	3	1.55	1.29	1.11
845-4179	326004	4	.88	.74	.63
845-4180	326005	5	1.36	1.14	.97
845-4181	3266.25	6¼	.88	.74	.63
845-4182	326007	7	1.50	1.25	1.07
845-4183	326008	8	.88	.74	.63
845-4184	326010	10	1.11	.94	.79
845-4186	326012	12	1.50	1.25	1.07
845-4187	326015	15	.67	.57	.48
845-4188	326020	20	.65	.55	.46
845-4189†	326025	25	1.50	1.25	1.07
845-4190†	326030	30	.88	.74	.63

***Sold in multiples of 5 only.** †125 Volts.

FLM Slo-Blo® Fuses

250 V or less. **Short Circuit Rating:** 10,000 amps AC. For use in circuits with hi in-rush currents. UL listed and CSA certified. 13/32 × 1½".

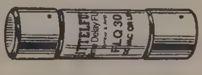
Stock No.	Amps	EACH	
		1-99	100-499
845-4535	½	3.78	3.00
845-4537	1 6/10	3.68	2.93
845-4539	2½	3.54	2.95
845-4540	3 2/10	3.50	2.78
845-4542	5	3.05	2.41
845-4543	6¼	3.50	2.78
845-4544	8	3.06	2.43
845-4545	10	3.05	2.41
845-4547	15	3.05	2.41

FLN-R Slo-Blo® Current Limiting Fuses

For protection against fault currents up to 200,000 amps in motor branch circuitry, transformers, etc. Class RK-5, 250 V or less. Dual element.

Stock No.	Amps	Size	EACH	
			1-99	100-499
845-4514	1	9/16 × 2	4.41	3.51
845-4519	3 2/10	9/16 × 2	4.45	3.21
845-4520	4	9/16 × 2	4.05	3.21
845-4521	5	9/16 × 2	4.01	3.18
845-4523	8	9/16 × 2	4.05	3.21
845-4524	10	9/16 × 2	4.01	3.18
845-4525	15	9/16 × 2	3.25	2.59
845-4526	17½	9/16 × 2	3.72	2.95
845-4527	20	9/16 × 2	3.26	2.58
845-4528	25	9/16 × 2	3.26	2.58
845-4529	30	9/16 × 2	3.26	2.58
845-4530	35	13/16 × 3	5.50	4.68
845-4531	40	13/16 × 3	5.50	4.68
845-4532	50	13/16 × 3	5.50	4.68
845-4533	60	13/16 × 3	5.50	4.68
845-4534	100	1 1/16 × 5⅞	12.39	10.53

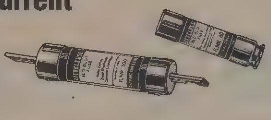
FLQ Midget Slo-Blo® Fuses



500 V or less. **Short Circuit Rating:** 10,000 amps. 13/32" × 1½".

Stock No.	Mfr.'s Type	Amps	EACH	
			1-99	100-499
845-4160	FLQ ¼	¼	9.51	8.07
845-4161	FLQ ½	½	8.60	7.32
845-4162	FLQ 1	1	7.16	6.09
845-4163	FLQ 1 6/10	1 6/10	8.20	6.97
845-4164	FLQ 2	2	8.13	6.92
845-4165	FLQ 2½	2½	8.20	6.97
845-4166	FLQ 3 2/10	3 2/10	8.20	6.97
845-4167	FLQ 4	4	8.13	6.92
845-4168	FLQ 5	5	8.13	6.92
845-4170	FLQ 8	8	8.13	6.92
845-4171	FLQ 10	10	8.13	6.92
845-4172	FLQ 12	12	8.13	6.92
845-4173	FLQ 15	15	8.13	6.92

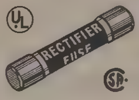
FLS-R Slo-Blo® Current Limiting Fuses



Similar to FLN-R Series except interrupting rating is 200,000 amps @ 600 volts AC and 20,000 @ 300 volts DC.

Stock No.	Amps	Size	EACH	
			1-99	100-499
845-4263	2	13/16 × 5	8.08	6.86
845-4268	6¼	13/16 × 5	7.60	6.46
845-4269	8	13/16 × 5	7.52	6.39
845-4271	10	13/16 × 5	7.52	6.39
845-4272	15	13/16 × 5	6.70	5.69
845-4273	20	13/16 × 5	6.70	5.69
845-4274	25	13/16 × 5	6.70	5.69
845-4275	30	13/16 × 5	6.06	5.15
845-4277	40	1 1/16 × 5½	11.45	9.74
845-4280	100	1 5/16 × 7⅞	21.49	18.27

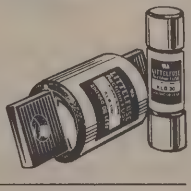
KLK Fast Acting Fuses



600 V or less. Hi-interrupting capacity. For use in circuits with up to 200,000 amps short circuit 13/32" × 1½".

Stock No.	Amps	EACH	
		1-99	100-499
845-4281	1/10	8.75	7.44
845-4282	¼	7.33	6.23
845-4283	3/10	10.02	8.52
845-4284	½	6.45	5.48
845-4286	1	6.59	5.59
845-4287	1½	6.74	5.74
845-4288	2	6.58	5.59
845-4289	3	6.28	5.33
845-4291	5	6.28	5.33
845-4292	6	6.28	5.33
845-4293	8	6.34	5.38
845-4294	10	6.28	5.33
845-4295	15	6.28	5.33
845-4296	20	6.47	5.51
845-4297	25	6.47	5.51
845-4298	30	6.47	5.51

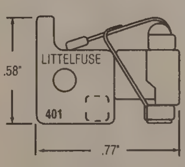
L25S (Formerly KLB) Very Fast-Acting Semiconductor Fuses



250 VAC or less. **Interrupting Rating:** 200,000 amps AC. **Blow Time:** 100%, 4 hour minimum.

Stock No.	Amps	EACH	
		1-99	100-499
845-4195	8	8.66	7.36
845-4198	15	8.94	7.60
845-4200	25	8.94	7.61
845-4201	30	8.05	6.84
845-4202	35	32.15	27.33
845-4203	40	28.39	24.13
845-4204	45	35.37	30.07
845-4205	50	28.13	24.13
845-4207	70	36.57	31.01
845-4208	80	36.14	30.73
845-4210	100	36.57	31.10
845-4211	125	36.58	31.10
845-4212	150	36.58	31.10

Alarm Indicating Fuses 125 VAC/60 VDC



► **For Telecommunications Equipment and Similar Applications**

Color coded by amperage. Blown fuse indicating flag can activate alarm circuit. Multiple panel mounting in limited space. .585 × .775". UL recognized at 60 VDC.

Stock No.	Mfr.'s Type	Amps	Color	EACH		
				1-99	100-499	500-Up
845-4548	401.180	18/100	Yellow	2.29	1.90	1.71
845-4549	401.250	¼	Violet	2.29	1.90	1.71
845-4550	401.500	½	Red	2.29	1.90	1.71
845-4552	401.750	¾	Brown	2.29	1.90	1.71
845-4253	401001	1	Gray	2.29	1.90	1.71
845-4255	401002	2	Orange	1.35	1.12	1.00
845-4256	401003	3	Blue	1.35	1.12	1.00
845-4257	401005	5	Green	1.35	1.12	1.00
845-4258	40107.5	7½	Blk/Wht.	2.29	1.90	1.71
845-4259	401010	10	Red/Wht.	2.29	1.90	1.71

NLN "One Time" Fuses

250 V or less. **Interrupting Rating:** 10,000 amps AC. Class H and 5 K.

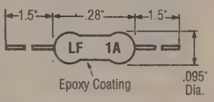
Stock No.	Amps	Size	EACH	
			10-90	100-499
845-4299	1	9/16 × 2	1.47	1.16
845-4300	2	9/16 × 2	1.96	1.54
845-4301	6	9/16 × 2	1.47	1.16
845-4302	10	9/16 × 2	1.21	1.01
845-4303	15	9/16 × 2	1.09	.91
845-4304	20	9/16 × 2	1.09	.91
845-4306	30	9/16 × 2	1.13	.93
845-4308	40	13/16 × 3	1.87	1.49
845-4311	60	13/16 × 3	1.85	1.48

Subminiature Microfuses

Very fast-acting. Ideal for printed circuits. Features low resistance and high reliability in ultrafast blowing characteristics. Series 279000 has 1" leads for wiring into circuit. Short circuit interrupting capacity 125 volts, 10,000 amps AC. Series 273000 has .170 leads for plugging into subminiature fuse holder. **Blowing Specifications:** 100% — 4 hours minimum; 200% — 5 second maximum; transparent glass cap. 125 V rating. UL Recognized. CSA Certified.

Stock No.	Mfr.'s Type	Amps	EACH		
			1-99	100-249	250-Up
845-4096	273.002	1/500	6.50	5.78	5.24
845-4097	273.005	1/200	6.50	5.78	5.24
845-4098	273.010	1/100	6.50	5.78	5.24
845-4099	273.015	1/64	6.50	5.78	5.24
845-4100	273.031	1/32	6.50	5.78	5.24
845-0015	273.050	1/20	2.89	2.39	2.05
845-4101	273.062	1/16	2.89	2.39	2.15
845-0017	273.100	1/10	1.77	1.47	1.32
845-4102	273.125	⅛	1.77	1.47	1.32
845-4103	273.200	2/10	2.89	2.39	2.15
845-0023	273.250	¼	2.89	2.39	2.05
845-4104	273.300	3/10	2.89	2.39	2.15
845-4105	273.400	4/10	1.78	1.47	1.32
845-0027	273.500	½	2.89	2.39	2.05
845-4106	273.600	6/10	2.89	2.39	2.15
845-4107	273.700	7/10	2.89	2.39	2.15
845-4108	273.750	¾	1.78	1.47	1.32
845-4109	273.800	8/10	2.88	2.39	2.15
845-0032	273001	1	2.88	2.39	2.15
845-4110	27301.5	1½	1.78	1.47	1.32
845-0036	273002	2	2.88	2.39	2.15
845-0038	273003	3	2.88	2.39	2.14
845-4111	273004	4	1.78	1.47	1.32
845-0041	273005	5	2.89	2.39	2.05

Axial-Lead PICO II™ Subminiature Fuses



For subminiature circuit protection where short circuit currents may be as high as 300 amperes. Low resistance values, high-speed action, insulated terminations, encapsulated epoxy-coated body. Will withstand vibrations of 10-55 Hz per method 201 of MIL-STD-202, and of 55-2000 Hz at 10 Gs per method 204, test condition C, of MIL-STD-202, and shock of 100 Gs for 6 milliseconds per method 213, test condition I of MIL-STD-202. **Operating Ambient Temperature:** –55°C to 125°C. At –55°C current carrying capacity is 110% of rating; at 25°C, 100% of rating; at 125°C, 80% of rating. Fuses will withstand an axial pull of 7 pounds. **Voltage Rating:** 125 V on 1/16-10 amps; 32 V on 12-15 amps. **Body Length:** .280". **Lead Length:** 1.50". **Body Diameter:** .095". **Lead Diameter:** .025" on 1/16-10 amps; .032 on 12-15 amps.

Stock No.	Mfr.'s Type	Amps	EACH*		
			5-95	100-245	250-Up
845-2000	251.062	1/16	.57	.47	.40
845-2002	251.125	⅛	1.44	1.20	1.02
845-2003	251.250	¼	1.31	1.09	.92
845-2004	251.375	⅜	1.44	1.20	1.02
845-2005	251.500	½	1.31	1.09	.92
845-2006	251.750	¾	1.08	.94	.80
845-2007	251001	1	.89	.79	.67
845-2008	25101.5.	1½	1.08	.94	.80
845-2009	251002	2	.43	.37	.32
845-2010	25102.5	2½	1.18	1.02	.88
845-2011	251003	3	.98	.85	.72
845-2012	25103.5	3½	1.08	.94	.80
845-2013	251004	4	1.08	.94	.80
845-2014	251005	5	.98	.85	.72
845-2015	251007	7	1.18	1.03	.87
845-2016	251010	10	.98	.85	.72
845-2017	251012	12	1.75	1.47	1.25
845-2018	251015	15	1.75	1.47	1.26

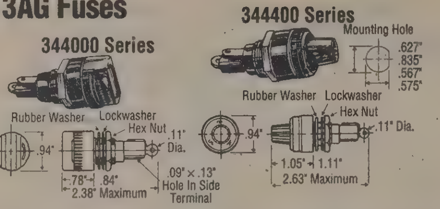
***Sold in multiples of 5 only.**

Microfuse Holder

Rear panel mount RF shielded microfuse holder. Housing and knob are aluminum. Body is molded of black phenolic. Rated 5 amps. 125 volts max.

845-4139. Type 282002. **1-99** .... **EACH 8.73**
100-499 .... **EACH 7.77**

Blown-Fuse Indicating Panel Mount Type For 3AG Fuses



QPL①

Approvals: Recognized under the Components Program of Underwriters Laboratories and Certified by CSA.

Specifications. Electrical: Rated at 20 amperes at lamp voltage as shown below. Dielectric withstanding voltage exceeds 1500 volts. All fuseholders are supplied with a resistor. When designing indicating type fuseholders into a circuit, consideration should be given to the resistance of fractional amperage fuses and the parallel resistance of the indicator lamp and its resistor. **Mounting:** Withstands 15 lb.-in. mounting torque. Maximum panel thickness is .250". **Molded Parts:** Black thermoset (UL 94V0), except lens is thermoplastic (UL 94V2). See Table below for lens color. **Knob:** Bayonet style. **Terminals:** Copper and copper alloy. Tin-plated. **Ambient Temperature:** –40°C to +60°C. **Hardware:** Neoprene washer, lockwasher and hex nut unassembled.

Stock No.	Mfr.'s Type	Voltage Range	Lamp Type	Lamp Current Rating Amps	Lens Color	EACH	
						1-99	100-499
845-9500	344006	2.5-7	6 V Incand.	0.200	Amber	**17.83**	**15.87**
845-9510	344401	2.5-7	6 V Incand.	0.200	Amber	**17.83**	**15.87**
845-9520	344012	7-6	14 V Incand.	0.080	Amber	**16.21**	**14.43**
845-9530	344402	7-6	14 V Incand.	0.080	Amber	**17.83**	**15.87**
845-9540	344024	16-32	28 V Incand.	0.040	Amber	**17.83**	**15.87**
845-9550	344403	16-32	28 V Incand.	0.040	Amber	**17.83**	**15.87**
845-9560	344125	100-125	Neon	0.002	Clear	**12.57**	**11.18**
845-9570	344404	100-125	Neon	0.002	Clear	**12.31**	**10.96**
845-9580	344250	200-250	Neon	0.002	Clear	**12.57**	**11.18**
845-9590	344405	200-250	Neon	0.002	Clear	**12.31**	**10.96**

Omni-Block™ Fuse Mountings

One piece self-aligning fuse clip/terminal design. Breakaway poles for easier stocking and ordering. Protective pole barriers surround each clip to provide greater protection against clip damage and electrical shock. Low profile design. UL recognized and CSA certified at 300 V. Molded of glass filled polyester. UL 94VO flammability rating. **Clip/Terminal:** High tensile spring brass, electro-tin plated. Standard gray color.

Stock No.	Mfr.'s Type	Terminals	Poles	EACH		
				1-99	100-499	500-999
845-3001	354001-GY	Solder	1	**.78**	**.68**	**.58**
845-3002	354002-GY	Solder	2	**1.75**	**1.45**	**1.24**
845-3012	354012-GY	Solder	12	**8.28**	**7.37**	**6.70**
845-4221	354602-GY	Q.C. 3/16"	2	**1.75**	**1.45**	**1.25**
845-4222	354612-GY	Q.C. 3/16"	12	**9.11**	**8.10**	**7.36**
845-4223	354801-GY	Q.C.¼"	1	**.44**	**.38**	**.32**
845-4224	354802-GY	Q.C.¼"	2	**1.76**	**1.45**	**1.24**
845-4225	354812-GY	Q.C.¼"	12	**8.28**	**7.37**	**6.70**

Note: Q.C. — Quick Connect Blocks in black, red, white, blue, green and yellow available on special order from factory.

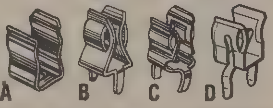
Bakelite In-Line Fuseholders

Assembled with 19" lead and fuse as listed.

Stock No.	Mfr.'s Type	Fuse Type	EACH		
			1-99	100-499	500-999
845-4250	155009A	SFE9	**2.60**	**2.16**	**1.94**
845-4251	155014A	SFE14	**2.60**	**2.16**	**1.94**
845-4252	155020A	SFE20	**3.01**	**2.50**	**2.14**

Fuse Clips

Fits 3 AG, Traditional ¼" (dia.) PC Type, and 2 AG or 5 mm (dia.) PC Type.



Stock No.	Mfr.'s Type	Fig.	For	EACH*		
				10-90	100-490	500-990
845-4236	101002	A	3AG	**.12**	**.11**	**.09**
845-0868	102071	B	3AG	**.13**	**.10**	**.09**
845-0869	102074	B	3AG	**.14**	**.13**	**.11**
845-4238	102078	C	3AG	**.18**	**.15**	**.13**
845-4239	105002	A	5AG	**.15**	**.14**	**.12**
845-4243†	122083	B	3AG	**.53**	**.47**	**.40**
845-4244†	122087	B	3AG	**.41**	**.35**	**.30**
845-6062†	111501	D	2AG	**.12**	**.11**	**.09**

***Sold in multiples of 10 only.** †Suitable for current up to 10 amps.

International Shock-Safe Fuseholders

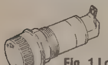


Fig. 1 Low-Profile Fingergrip Knob

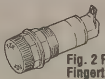


Fig. 2 Rear-Mount Fingertip Knob

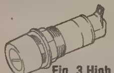


Fig. 3 High Profile Screwdriver Slot Knob

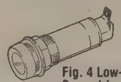


Fig. 4 Low-Profile Screwdriver Slot Knob

Shock-safe design per IEC Standards 65 and 257. Universal fuseholder body accepts 3AG, 5 × 20 mm, and 2AG fuse sizes depending on knob selected. Choice of three terminal styles — dual purpose 3/16" solder/quick-connect, 3/16" NEMA quick-connect, and 1/4" NEMA/DIN quick-connect. UL recognized, CSA certified, VDE approved and SEMKO approved.

For 3AG Fuses

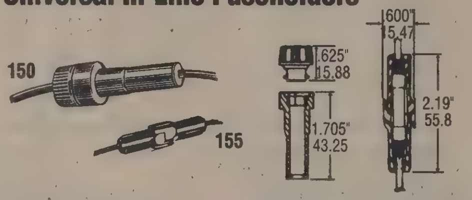
Stock No.	Mfr.'s Type	Fig.	Terminal	EACH		
				1-99	100-499	500-999
845-4800	3453-LF1	1	3/16"*	**1.57**	**1.37**	**1.23**
845-4802	3453-LF7	1	1/4"‡	**2.47**	**2.18**	**1.95**
845-4803	3453-RF1	2	3/16"*	**2.49**	**2.17**	**1.96**
845-4808	3453-HS7	3	1/4"‡	**2.50**	**2.18**	**1.96**
845-4809	3453-LS1	4	3/16"*	**2.37**	**2.07**	**1.86**
845-4810	3453-LS3	4	3/16"†	**2.37**	**2.07**	**1.86**
845-4811	3453-LS7	4	1/4"‡	**2.50**	**2.18**	**1.96**

For 5 × 20 Fuses

Stock No.	Mfr.'s Type	Fig.	Terminal	1-99	100-499	500-999
845-4812	3455-LF1	1	3/16"*	**2.67**	**2.33**	**2.10**
845-4816	3455-RF3	2	3/16"†	**2.82**	**2.46**	**2.21**
845-4821	3455-LS1	4	3/16"*	**2.75**	**2.45**	**2.22**
845-4822	3455-LS3	4	3/16"†	**2.60**	**2.31**	**2.10**
845-4823	3455-LS7	4	1/4"‡	**2.74**	**2.44**	**2.21**

*Solder/Quick-Connect. †NEMA Quick Connect. ‡NEMA/DIN Quick Connect.

Universal In-Line Fuseholders



Type 155100. Supplied with an 8" loop of #14 AWG red vinyl insulated wire and two springs — one long spring for fuses through SFE9 and one short spring for SFE14 and SFE20. **Type 150145.** Supplied with a 15" loop of #14 AWG red vinyl insulated wire and three springs of different lengths to accommodate different sizes of ¼" fuses.

845-0100. Type 155100. **1-99**..........**EACH 1.97**
100-499..........**EACH 1.65** **500-999**..........**EACH 1.41**

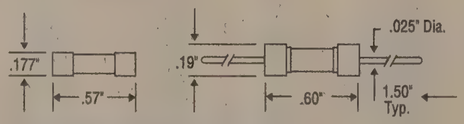
845-0145. Type 150145. **1-99**..........**EACH 2.99**
100-499..........**EACH 2.48** **500-999**..........**EACH 2.18**

2AG "Fast-Acting" and "Slo-Blo" Fuses

Subminiature Glass Body

229000 Series
225000 Series

230000 Series
224000 Series



2AG 225000 Series Fast-Acting Fuses

Stock No.	Mfr.'s Type	Amps	Volts	EACH*		
				5-95	100-495	500-Up
845-6001	225.125	⅛	250	**.56**	**.48**	**.41**
845-6002	225.250	¼	250	**.75**	**.66**	**.56**
845-6004	225.500	½	250	**.52**	**.45**	**.38**
845-6006	225001	1	250	**.51**	**.45**	**.38**
845-6007	22501.5	1½	250	**.32**	**.27**	**.24**
845-6008	225002	2	250	**.52**	**.45**	**.38**
845-6010	225003	3	250	**.38**	**.33**	**.28**
845-6012	225004	4	125	**.42**	**.36**	**.31**

2AG 224000 Series (Pigtail) Fast-Acting Fuses

Stock No.	Mfr.'s Type	Amps	Volts	5-95	100-495	500-Up
845-6016	224.375	⅜	250	**1.42**	**1.18**	**1.00**
845-6019	224.250	¼	250	**1.03**	**.86**	**.73**
845-6021	224.500	½	250	**.69**	**.60**	**.51**
845-6022	224.750	¾	250	**.69**	**.60**	**.51**
845-6023	224001	1	250	**.69**	**.60**	**.51**
845-6025	224002	2	250	**.47**	**.40**	**.35**
845-6027	224003	3	250	**.69**	**.60**	**.51**
845-6029	224004	4	125	**.69**	**.60**	**.51**
845-6030	224005	5	125	**.69**	**.60**	**.51**

***Sold only in multiples of 5.**

2AG Fast-Acting Type Electrical Characteristics

Rating	Blow Time
100%	4 hours, minimum
135%	1 hour, maximum
200%	10 seconds, maximum

2AG Slo-Blo Type Electrical Characteristics

Rating	Blow Time
110%	4 hours, minimum
135%	1 hour, maximum
200%	3 seconds, minimum 1 minute, maximum

2AG 229000 Series Slo-Blo Fuses

Stock No.	Mfr.'s Type	Amps	Volts	EACH*		
				5-95	100-495	500-Up
845-6034	229.250	¼	250	**.38**	**.34**	**.28**
845-6036	229.500	½	250	**.57**	**.50**	**.42**
845-6038	229001	1	250	**.38**	**.33**	**.28**
845-6039	22901.5	1½	250	**.52**	**.45**	**.38**
845-6040	229002	2	250	**.28**	**.25**	**.21**
845-6043	229003	3	250	**.57**	**.50**	**.42**
845-6045	229004	4	125	**.62**	**.54**	**.46**
845-6046	229005	5	125	**.62**	**.54**	**.46**
845-6047	229007	7	125	**.38**	**.34**	**.28**

2AG 230000 Series (Pigtail) Slo-Blo Fuses

Stock No.	Mfr.'s Type	Amps	Volts	5-95	100-495	500-Up
845-6048	230.250	¼	250	**.94**	**.83**	**.70**
845-6050	230.500	½	250	**.94**	**.83**	**.70**
845-6052	230001	1	250	**.85**	**.75**	**.66**
845-6054	230002	2	250	**.53**	**.46**	**.39**
845-6058	23003.5	3½	250	**.94**	**.83**	**.70**
845-6059	230004	4	125	**.58**	**.59**	**.43**
845-6060	230005	5	125	**1.04**	**.96**	**.76**

***Sold only in multiples of 5.**

The 2AG fuse provides the same performance characteristics as the universal standard 3AG design in less than one-third the space.

These subminiature fuses offer top quality, reliability, and space-saving protection for your new designs. Available with pigtail leads for direct soldering or for use with #111501 mating PCB fuse clips. The 2AG Series is UL and CSA approved.

Nano²™ Fuses

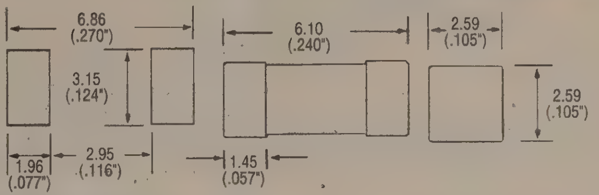
Nano²™ Very Fast-Acting Type Fuses

Recognized under the Components Program of Underwriters Laboratories and Certified by CSA. Approved by MITI from 1 through 5 amperes. **Operating Temperature:** –55°C to 125°C. **Shock:** MIL-STD-202, Method 213, Test Condition 1 (100 Gs peak for 6 milliseconds). **Vibration:** MIL-STD-202, Method 201 (10-55 Hz, .06 in. total excursion). **Salt Spray:** MIL-STD-202, Method 101, Test Conditions B (48 hours). **Insulation Resistance (After Opening):** MIL-STD-202, Method 302, Test Condition A, (10,000 ohms minimum.) **Resistance to Soldering Heat:** MIL-STD-202, Method 210, Test Conditions F (20 sec. at 260°C). **Thermal Shock:** MIL-STC-202, Method 107, Test Condition B (–65° to 125°C). **Moisture Resistance:** MIL-STD-202, Method 106, High Humidity (90-98 RH), Heat (65°C). **Materials:** Ceramic Body/Tin-Lead Alloy Plated Brass Caps. **Soldering Parameters. Wave Solder:** 500°F (260°C), 10 sec. **Infrared:** 500°F (260°C), 30 sec. **Solderability:** MIL-STD-202, Method 208. **Voltage Rating:** 125. **Agency File Numbers:** UL E10480, CSA LR 29862.

Stock No.	Mfr.'s Type	Ampere Rating	Nominal Resistance Cold Ohms	Nominal Melting I²t A² Sec.	PER PK./100		
					1-3	4-6	7-9
845-5010	R451.062	1/16	8.40	0.000370	**98.43**	**87.49**	**78.74**
845-5011	R451.125	1/8	2.65	0.00290	**98.43**	**87.49**	**78.74**
845-5012	R451.250	1/4	1.05	0.0165	**86.67**	**77.04**	**69.34**
845-5013	R451.375	3/8	0.610	0.0460	**86.67**	**77.04**	**69.34**
845-5014	R451.500	1/2	0.420	0.0950	**86.67**	**77.04**	**69.34**
845-5015	R451.750	3/4	0.245	0.265	**75.48**	**67.09**	**60.58**
845-5016	R451 001	1	0.165	0.550	**75.48**	**67.09**	**60.58**
845-5017	R451 01.5	1½	0.0610	1.45	**75.48**	**67.09**	**60.58**
845-5018	R451 002	2	0.037	0.55	**75.48**	**67.09**	**60.58**
845-5019	R451 02.5	2½	0.0280	0.960	**75.48**	**67.09**	**60.58**
845-5020	R451 003	3	0.0228	1.50	**75.48**	**67.09**	**60.58**
845-5021	R451 03.5	3½	0.0190	2.25	**75.48**	**67.09**	**60.58**
845-5022	R451 004	4	0.0163	3.15	**75.48**	**67.09**	**60.58**
845-5023	R451 005	5	0.0126	5.75	**75.48**	**67.09**	**60.58**
845-5024	R451 007	7	0.0086	9.20	**75.48**	**67.09**	**60.58**

Tape and Reel

Stock No.	Mfr.'s Type	Ampere Rating	Nominal Resistance Cold Ohms	Nominal Melting I²t A² Sec.	PER REEL/1000			
					1-4	5-9	10-24	25-Up
845-5025	R451.062	1/16	8.40	0.000370	**787.44**	**715.85**	**655.87**	**605.72**
845-5026	R451.125	1/8	2.65	0.00290	**787.44**	**715.85**	**655.87**	**605.72**
845-5027	R451.250	1/4	1.05	0.0165	**691.56**	**628.69**	**576.30**	**531.97**
845-5028	R451.375	3/8	0.610	0.0460	**691.56**	**628.69**	**576.30**	**531.97**
845-5029	R451.500	1/2	0.420	0.0950	**691.56**	**628.69**	**576.30**	**531.97**
845-5030	R451.750	3/4	0.245	0.265	**603.84**	**548.95**	**503.20**	**464.49**
845-5031	R451 001	1	0.165	0.550	**603.84**	**548.95**	**503.20**	**464.49**
845-5032	R451 01.5	1½	0.0610	1.45	**603.84**	**548.95**	**503.20**	**464.49**
845-5033	R451 002	2	0.0370	0.55	**603.84**	**548.95**	**503.20**	**464.49**
845-5034	R451 02.5	2½	0.0280	0.960	**603.84**	**548.95**	**503.20**	**464.49**
845-5035	R451 003	3	0.0228	1.50	**603.84**	**548.95**	**503.20**	**464.49**
845-5036	R451 03.5	3½	0.0190	2.25	**603.84**	**548.95**	**503.20**	**464.49**
845-5037	R451 004	4	0.0163	3.15	**603.84**	**548.95**	**503.20**	**464.49**
845-5038	R451 005	5	0.0126	5.75	**603.84**	**548.95**	**503.20**	**464.49**
845-5039	R451 007	7	0.0086	9.20	**603.84**	**548.95**	**503.20**	**464.49**



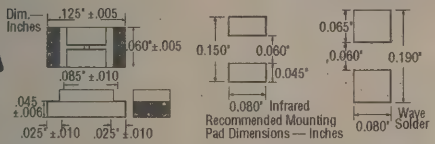
Nano²™ Slo-Blo® Type Fuses

Recognized under the Components Program of Underwriters Laboratories and Certified by CSA. **Interrupting Ratings:** 50 amperes at 125 VAC. 50 amperes at 125 VDC. **Operating Temperature:** –55°C to 125°C. **Shock:** MIL-STD-202, Method 201 (10-55 Hz, .06 in. total excursion). **Salt Spray:** MIL-STD-202, Method 101, Test Condition B (48 hours). **Insulation Resistance (after Opening):** MIL-STD-202, Method 302, Test Condition A, (10,000 ohms minimum). **Resistance to Soldering Heat:** MIL-STD-202, Method 210 (3 sec. at 260°C). **Thermal Shock:** MIL-STD-202, Method 107, Test Condition B (–65 to 125°C). **Moisture Resistance:** MIL-STD-202, Method 106, High Humidity (90-98 RH), Heat (65°). **Materials:** Ceramic Body/Tin-Lead Alloy Plated Brass Caps. **Soldering Parameters. Wave Solder:** 500°F (26°C), 3 seconds, max. **Infrared Reflow:** 446°F (230°C) max. **Solderability:** MIL-STD-202, Method 208. **Marking:** The 452 000 series Slo-Blo fuse marking includes the letter "T" to designate time delay characteristics. **Voltage Rating:** 125. **Agency File Numbers:** UL E10480, CSA LR 29862.

Stock No.	Mfr.'s Type	Ampere Rating	Nominal Resistance Cold Ohms	Nominal Melting I²t A² Sec.	PER PK./100		
					1-3	4-6	7-9
845-5040	R452 001	1	0.2600	2.29	**107.86**	**95.88**	**86.29**
845-5041	R452 01.5	1½	0.0930	4.41	**107.86**	**95.88**	**86.29**
845-5042	R452 002	2	0.0620	8.41	**107.86**	**95.88**	**86.29**
845-5043	R452 02.5	2½	0.0450	15.2	**107.86**	**95.88**	**86.29**
845-5044	R452 003	3	0.0350	21.2	**107.86**	**95.88**	**86.29**
845-5045	R452 03.5	3½	0.0240	31.8	**107.86**	**95.88**	**86.29**
845-5046	R452 004	4	0.0195	49.1	**107.86**	**95.88**	**86.29**
845-5047	R452 005	5	0.0140	58.2	**107.86**	**95.88**	**86.29**

Tape and Reel

Stock No.	Mfr.'s Type	Ampere Rating	Nominal Resistance Cold Ohms	Nominal Melting I²t A² Sec.	PER REEL/1000			
					1-4	5-9	10-24	25-Up
845-5048	R452 001	1	0.2600	2.29	**862.92**	784.47	719.10	663.78
845-5049	R452 01.5	1½	0.0930	4.41	**862.92**	784.47	719.10	663.78
845-5050	R452 002	2	0.0620	8.41	**862.92**	784.47	719.10	663.78
845-5051	R452 02.5	2½	0.0450	15.2	**862.92**	784.47	719.10	663.78
845-5052	R452 003	3	0.0350	21.2	**862.92**	784.47	719.10	663.78
845-5053	R452 03.5	3½	0.0240	31.8	**862.92**	784.47	719.10	663.78
845-5054	R452 004	4	0.0195	49.1	**862.92**	784.47	719.10	663.78
845-5055	R452 005	5	0.0140	58.2	**862.92**	784.47	719.10	663.78



ALF II SMF Very Fast-Acting Thin-Film Fuse

Recognized under the Components Program of Underwriters Laboratories and Certified by CSA. **Interrupting ratings:** 50 amperes to 125 VDC. **Operating Temperature:** –55°C to 125°C. **Vibration:** Withstands 10-55 Hz per MIL-STD-202F, method 201a and 10-2000 Hz at 20 Gs per MIL-STD-202F, Method 204D, Condition D. **Insulation Resistance (After Opening):** Exceeds 20 megohms. **Resistance to Solder Heat:** Withstands 60 seconds above 200°C up to 260°C, maximum. **Thermal Shock:** Withstands 5 cycles of –5° to 125°C. **Materials:** Epoxy Body/Nickel/Solder Coated Terminals. **Soldering Parameters. Wave Solder:** 500°F (260°C), 10 seconds, max. **Infrared:** 500°F (260°C), 30 seconds, max. **Voltage Rating:** to 125. **Agency File Numbers:** UL E10480, CSA LR 29862.

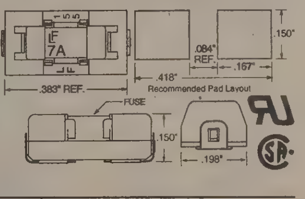
Stock No.	Mfr.'s Type	Ampere Rating	Nominal Resistance Cold Ohms	Nominal Melting I²t A² Sec.	Total I²t A² Sec.	PER PK./100		
						1-3	4-6	7-9
845-7000	R429.250S	1/4	0.570	280	0.00004	**55.00**	**48.89**	**44.00**
845-7001	R429.375S	3/8	0.240	220	0.00006	**55.00**	**48.89**	**44.00**
845-7002	R429.500S	1/2	0.100	220	0.0002	**55.00**	**48.89**	**44.00**
845-7003	R429.001S	1	0.075	220	0.005	**55.00**	**48.89**	**44.00**
845-7004	R429 1.25S	1¼	0.061	220	0.009	**55.00**	**48.89**	**44.00**
845-7005	R429 01.5S	1½	0.061	220	0.020	**55.00**	**48.89**	**44.00**
845-7006	R429 002S	2	0.042	160	0.040	**55.00**	**48.89**	**44.00**

Tape and Reel

Stock No.	Mfr.'s Type	Ampere Rating	Nominal Resistance Cold Ohms	Nominal Melting I²t A² Sec.	Total I²t A² Sec.	PER REEL/3000			
						1-4	5-9	10-24	25-Up
845-7008	R429.250S	1/4	0.570	280	0.00004	**1320.00**	**1200.00**	**1100.00**	**1015.38**
845-7009	R429.500S	1/2	0.240	220	0.0002	**1320.00**	**1200.00**	**1100.00**	**1015.38**
845-7010	R429.001S	1	0.100	220	0.005	**1320.00**	**1200.00**	**1100.00**	**1015.38**
845-7011	R429 1.25S	1¼	0.750	220	0.009	**1320.00**	**1200.00**	**1100.00**	**1015.38**
845-7012	R429 01.5S	1½	0.610	220	0.020	**1320.00**	**1200.00**	**1100.00**	**1015.38**
845-7013	R429 002S	2	0.042	160	0.040	**1320.00**	**1200.00**	**1100.00**	**1015.38**

Note: Measured at 10% rated current, 25°C. Measured at 100% rated current, 25°C. Total operating I²t at 50 A and 32 V. Current is limited to less than 50 A at 32 V due to internal fuse resistance.

Omni-Blok® SMF Fuse Block Molded Base and Fuse



Recognized under the Components Program of Underwriters Laboratories and Certified by CSA. **Electricals:** 7 amperes, 125 volts. **Molded Parts:** Thermoplastic (94 VO). **Terminals:** Tin/Lead Alloy Plated Beryllium Copper. **Ambient Temperature:** —55°C to 125°C. **Shock:** MIL-STD-202, Method 213, Test Condition 1 (100 Gs peak for 6 milliseconds). **Vibration:** MIL-STD-202, Method 201 (10-55Hz). **Thermal Shock:** MIL-STD-202, Method 107, Condition A (200 cycles — 30 minutes at –55°C, 30 minutes at 125°C). **Soldering Parameters (Fuse Installed). Infrared:** 500°F (260°C), 30 sec.; 445°F (230°C), 30 sec; **Solderability:** MIL-STD-202, Method 208. Each base comes with fuse.

Stock No.	Mfr.'s Type	Ampere Rating	PER PK./100		
			1-3	4-6	7-9
845-5060	154.062	1/16	**147.39**	**131.01**	**117.91**
845-5061	154.125	1/8	**147.39**	**131.01**	**117.91**
845-5062	154.250	1/4	**147.39**	**131.01**	**117.91**
845-5063	154.375	3/8	**147.39**	**131.01**	**117.91**
845-5064	154.500	1/2	**147.39**	**131.01**	**117.91**
845-5065	154.750	3/4	**131.79**	**111.29**	**100.16**
845-5066	154 001	1	**131.79**	**111.29**	**100.16**
845-5067	154 01.5	1½	**131.79**	**111.29**	**100.16**
845-5068	154 002	2	**131.79**	**111.29**	**100.16**
845-5069	154 02.5	2½	**131.79**	**111.29**	**100.16**
845-5070	154 003	3	**131.79**	**111.29**	**100.16**
845-5071	154 03.5	3½	**131.79**	**111.29**	**100.16**
845-5072	154 004	4	**131.79**	**111.29**	**100.16**
845-5073	154 005	5	**131.79**	**111.29**	**100.16**
845-5074	154 007	7	**131.79**	**111.29**	**100.16**

Note: See R451 Series for fuse replacements.

Tape and Reel

Stock No.	Mfr.'s Type	Ampere Rating	PER REEL/1500			
			1-4	5-9	10-24	25-Up
845-5075	154.062	1/16	**1179.12**	**1071.93**	**982.60**	**907.02**
845-5076	154.125	1/8	**1179.12**	**1071.93**	**982.60**	**907.02**
845-5077	154.250	1/4	**1179.12**	**1071.93**	**982.60**	**907.02**
845-5078	154.375	3/8	**1179.12**	**1071.93**	**982.60**	**907.02**
845-5079	154.500	1/2	**1179.12**	**1071.93**	**982.60**	**907.02**
845-5080	154.750	3/4	**1001.64**	**910.58**	**834.70**	**770.49**
845-5081	154 001	1	**1001.64**	**910.58**	**834.70**	**770.49**
845-5082	154 01.5	1½	**1001.64**	**910.58**	**834.70**	**770.49**
845-5083	154 002	2	**1001.64**	**910.58**	**834.70**	**770.49**
845-5084	154 02.5	2½	**1001.64**	**910.58**	**834.70**	**770.49**
845-5085	154 003	3	**1001.64**	**910.58**	**834.70**	**770.49**
845-5086	154 03.5	3½	**1001.64**	**910.58**	**834.70**	**770.49**
845-5087	154 004	4	**1001.64**	**910.58**	**834.70**	**770.49**
845-5088	154 005	5	**1001.64**	**910.58**	**834.70**	**770.49**
845-5089	154 007	7	**1001.64**	**910.58**	**834.70**	**770.49**

Slo-Blo®

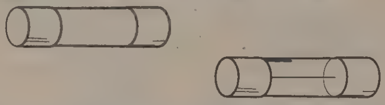
Stock No.	Mfr.'s Type	Ampere Rating	PER PK./100		
			1-3	4-6	7-9
845-5090	154 001T	1	**161.92**	**143.93**	**129.54**
845-5091	154 01.5T	1½	**161.92**	**143.93**	**129.54**
845-5092	154 002T	2	**161.92**	**143.93**	**129.54**
845-5093	154 02.5T	2½	**161.92**	**143.93**	**129.54**
845-5094	154 003T	3	**161.92**	**143.93**	**129.54**
845-5095	154 03.5T	3½	**161.92**	**143.93**	**129.54**
845-5096	154 004T	4	**161.92**	**143.93**	**129.54**
845-5097	154 005T	5	**161.92**	**143.93**	**129.54**

Note: See R452 Series for fuse replacements.

Tape and Reel

Stock No.	Mfr.'s Type	Ampere Rating	PER REEL/1500			
			1-4	5-9	10-24	25-Up
845-5098	154 001T	1	**1943.10**	**1766.45**	**1618.44**	**1494.69**
845-5099	154 01.5T	1½	**1943.10**	**1766.45**	**1618.44**	**1494.69**
845-5100	154 002T	2	**1943.10**	**1766.45**	**1618.44**	**1494.69**
845-5101	154 02.5T	2½	**1943.10**	**1766.45**	**1618.44**	**1494.69**
845-5102	154 003T	3	**1943.10**	**1766.45**	**1618.44**	**1494.69**
845-5103	154 03.5T	3½	**1943.10**	**1766.45**	**1618.44**	**1494.69**
845-5104	154 004T	4	**1943.10**	**1766.45**	**1618.44**	**1494.69**
845-5105	154 005T	5	**1943.10**	**1766.45**	**1618.44**	**1494.69**

5 × 20 mm Fuses — Low and High Breaking



According to IEC 127, rated 250 V. **Type FSF.** UL recognized, CSA accepted 32 mA-10 A, SEMKO, VDE, BEAB approved 32 mA-6.3 A. **Type FST.** UL recognized, CSA accepted 32 mA-16 A; BSI approved 125 mA-6.3 A; CB, BEAB, SEMKO, VDE approved 32 mA-6.3 A. **Breaking Capacity:** 35 A/250 V. **Type SP.** UL recognized, CSA accepted 500 mA-16 A, VDE, SEMKO, SEV approved 500 mA-6.3 A. Type SP 0001.1001-1012 becomes type SPT 0001.2501-2512 for time-lag high breaking fuses. All available pigtailed.

Low Breaking 5 × 20 mm Fuses

Amps	Fast Type FSF			Time Delay Type FST		
	Stock No.	Mfr.'s Type	EACH	Stock No.	Mfr.'s Type	EACH
100 mA	**798-0076**	0034.1506	**.47**	**798-0112**	0034.3107	**.54**
125 mA	**798-0078**	0034.1507	**.47**	**798-0114**	0034.3108	**.54**
160 mA	**798-0080**	0034.1508	**.47**	**798-0116**	0034.3109	**.54**
200 mA	**798-0082**	0034.1509	**.47**	**798-0118**	0034.3110	**.54**
250 mA	**798-0084**	0034.1510	**.47**	**798-0120**	0034.3111	**.54**
315 mA	**798-0086**	0034.1511	**.47**	**798-0122**	0034.3112	**.54**
400 mA	**798-0088**	0034.1512	**.47**	**798-0124**	0034.3113	**.54**
500 mA	**798-0090**	0034.1513	**.47**	**798-0126**	0034.3114	**.48**
630 mA	**798-0092**	0034.1514	**.47**	**798-0128**	0034.3115	**.48**
800 mA	**798-0094**	0034.1515	**.47**	**798-0130**	0034.3116	**.48**
1 A	**798-0096**	0034.1516	**.47**	**798-0132**	0034.3117	**.48**
1.25 A	**798-0098**	0034.1517	**.47**	**798-0134**	0034.3118	**.48**
1.6 A	**798-0099**	0034.1518	**.47**	**798-0136**	0034.3119	**.48**
2 A	**798-0100**	0034.1519	**.47**	**798-0138**	0034.3120	**.48**
2.5 A	**798-0102**	0034.1520	**.47**	**798-0140**	0034.3121	**.48**
3.15 A	**798-0104**	0034.1521	**.47**	**798-0142**	0034.3122	**.48**
4 A	**798-0106**	0034.1522	**.47**	**798-0144**	0034.3123	**.48**
5 A	**798-0108**	0034.1523	**.47**	**798-0146**	0034.3124	**.25**
6.3 A	**798-0110**	0034.1524	**.47**	**798-0148**	0034.3125	**.48**

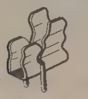
Quick-Acting High Breaking Fuses — Break at 1500 A/250 VAC

Amps	Fast Type SP		
	Stock No.	Mfr.'s Type	EACH
500 mA	**798-0150**	0001.1001	**.80**
630 mA	**798-0152**	0001.1002	**.80**
800 mA	**798-0154**	0001.1003	**.80**
1 A	**798-0156**	0001.1004	**.80**
1.25 A	**798-0158**	0001.1005	**.80**
1.6 A	**798-0160**	0001.1006	**.80**
2 A	**798-0162**	0001.1007	**.80**
2.5 A	**798-0164**	0001.1008	**.80**
3.15 A	**798-0166**	0001.1009	**.80**
4 A	**798-0168**	0001.1010	**.80**
5 A	**798-0170**	0001.1011	**.80**
6.3 A	**798-0172**	0001.1012	**.80**

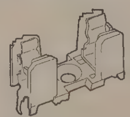
Fuse Kits

Type 0034.9856. Contains FSF assortment. 270 pcs.: 15 ea., 100 mA-10 A.
798-0528. Type 0034.9856. Fuse Kit .... **EACH 97.00**
Type 0034.9857. Contains FST assortment. 270 pcs.: 15 ea., 100 mA-10 A.
798-0530. Type 0034.9857. Fuse Kit .... **EACH 84.80**
Type 0034.9871. Contains SP/SPT assortment. 180 pcs.: 10 ea., 800 mA-10 A.
798-0532. Type 0034.9871. Fuse Kit .... **EACH 133.72**
Type 0034.9858. Contains FST/SP assortment. 270 pcs.: 15-30 ea., 500 mA-10 A.
798-0534. Type 0034.9858. Fuse Kit .... **EACH 119.48**

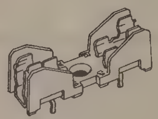
Open Design Fuse Clip/Blocks



1



2

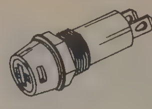


3

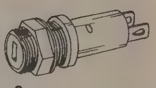
Built according to IEC 257, UL 512. UL recognized, CSA certified, VDE, SEMKO, and SEV approved at 250 V. Fig. 2 available with cover. Figs. 1 and 3 accept 5 × 20 mm or ¼" × 1¼" fuses, one fuse at a time per IEC 65. Kicked terminals for wave soldering.

Stock No.	Mfr.'s Type	Fig.	Fuse Size	Pin Spacing	EACH
798-0042	0751.0100	1	5 × 20 mm or ¼" × 1¼"	5 mm	**.48**
798-0362	0031.8201	2	5 × 20 mm	22.5 mm	**.48**
798-0364	0031.8211	2	5 × 20 mm	25.0 mm	**.48**
798-0366	0031.8221	2	5 × 20 mm	SMD	**.71**
798-0536	0031.8231	3	5 × 20 mm or ¼" × 1¼"	5 mm	**.82**

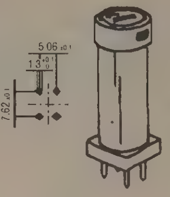
5 × 20 mm Fuseholders



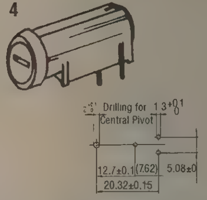
1



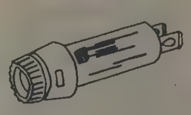
2



3



4



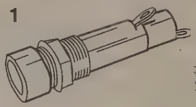
5

Fuseholders for 5 × 20 mm fuses according to IEC 257, UL 512. All UL recognized, CSA certified, VDE, SEMKO and SEV approved at 250 V. Panel mount styles have solder/quick-disconnect terminals. Various mounting styles for panel or PCB. IP 67 models are watertight.

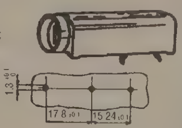
Type FPG UL/CSA 16 A/250 V, VDE/SEMKO/SEV 10 A/250 V

Stock No.	Mfr.'s Type	Fig.	Fuse Carrier	Terminals	Panel Mounting	EACH
798-0019	3101.0010	1	Slotted	Solder	Front	**2.17**
798-0017	3101.0015	1	Finger Grip	Solder	Front	**2.17**
798-0015	3101.0110	1	Slotted, IP 67	Solder	Front	**2.47**
798-0542	3101.0115	1	Finger Grip, IP 67	Solder	Front	**2.40**
798-0544	3101.0020	2	Slotted	Solder	Rear	**2.17**
798-0546	3101.0025	2	Finger Grip	Solder	Rear	**2.17**
798-0548	3101.0120	2	Slotted, IP 67	Solder	Rear	**2.47**
798-0550	3101.0125	2	Finger Grip, IP 67	Solder	Rear	**2.40**
798-0013	3101.0040	3	Slotted	Solder	PCB	**2.17**
798-0552	3101.0045	3	Finger Grip	Solder	PCB	**2.17**
798-0011	3101.0050	4	Slotted	Solder	PCB	**2.17**
798-0554	3101.0055	4	Finger Grip	Solder	PCB	**2.17**
798-0021	3101.0030	5	Slotted	Solder	Snap-in	**2.17**
798-0556	3101.0035	5	Finger Grip	Solder	Snap-in	**2.11**
798-0558	3101.0031	5	Slotted	Solder	Snap-in	**2.17**
798-0560	3101.0036	5	Finger Grip	Solder	Snap-in	**2.11**

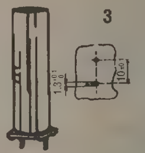
International Fuseholders



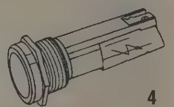
1



2



3



4

Fuseholders for 5 × 20 mm or ¼" × 1¼" fuses according to IEC 257, UL 512. All UL recognized; CSA certified. VDE, SEMKO, and SEV approved at 250 V. Various mounting styles for panel or PCB. All fuseholders complete with carriers except type FUL, ordered separately. IP 67 models are watertight.

Type FEU UL 20 A/250 V, CSA 16 A/250 V, VDE/SEMKO/SEV 10 A/250 V

Stock No.	Mfr.'s Type	Fig.	Fuse Carrier	Terminals	Panel Mounting	EACH
798-0570	0031.1706	1	Slotted, 5 × 20 mm	†	Screw-on	**1.75**
798-0572	0031.1699	1	Slotted, ¼" × 1¼"	†	Screw-on	**1.73**
798-0574	0031.1803	1	Finger Grip, 5 × 20 mm	‡	Screw-on	**1.70**
798-0576	0031.1804	1	Finger Grip, ¼" × 1¼"	‡	Screw-on	**2.48**
798-0578	0031.1767	1	Slotted, 5 × 20 mm	†	Screw-on	**1.70**
798-0580	0031.1768	1	Slotted, ¼" × 1¼"	†	Screw-on	**1.68**

Type FAU/FAC UL/CSA 16 A/250 V, VDE 10 A/250 V, SEMKO/SEV 6.3 A/250 V

Stock No.	Mfr.'s Type	Fig.	Fuse Carrier	Terminals	Panel Mounting	EACH
798-0582	0031.3821	2	Slotted, 5 × 20 mm	‡	PCB	**1.98**
798-0584	0031.3822	2	Slotted, ¼" × 1¼"	‡	PCB	**1.96**
798-0586	0031.3571	3	Slotted, 5 × 20 mm	‡	PCB	**1.76**
798-0588	0031.3581	3	Slotted, ¼" × 1¼"	‡	PCB	**1.74**

Type FUL UL/CSA 30 A/250 V, VDE/SEMKO/SEV 16 A/250 V

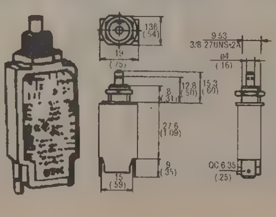
Stock No.	Mfr.'s Type	Fig.	Fuse Carrier	Terminals	Panel Mounting	EACH
798-0590	0031.2303	4	Holder Body Only, IP 67	‡	Screw-on	**3.67**
798-0592	0031.2308	4	Holder Body Only	†	Screw-on	**3.63**
798-0594	0031.2320	4	Carrier, ¼" × 1¼", IP 67	—	—	**2.49**
798-0596	0031.2321	4	Carrier, ¼" × 1¼"	—	—	**2.85**
798-0598	0031.2322	4	Carrier, 5 × 20 mm, IP 67	—	—	**3.30**
798-0600	0031.2323	4	Carrier/Slot, 5 × 20 mm	—	—	**2.77**

†Solder. ‡Quick Disconnect.

Circuit Breakers — *NEW* —

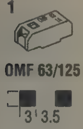
Circuit Breakers for Equipment — Single Pole Push to Reset

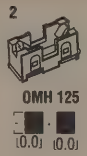
Central mount, 3/8-27" thread with hex nut. 6.3 × 0.8 mm quick connect terminals. Single pole. Push to reset. **Options Include:** Shunt terminal up to 6 A; silver contacts to meet UL 1077 up to 12 A ratings; and trip band indicator. Dust cover also available. Call for pricing.

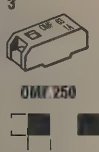


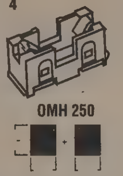
Stock No.	Mfr.'s Type	Amps	EACH
798-1000	T11-211-0, 5-200	0.5 mA	**6.28**
798-1002	T11-211-1, 0-200	1.0 A	**6.28**
798-1003	T11-211-1, 5-200	1.5 A	**6.28**
798-1004	T11-211-2, 0-200	2.0 A	**6.28**
798-1006	T11-211-3, 0-200	3.0 A	**6.28**
798-1008	T11-211-4, 0-200	4.0 A	**6.28**
798-1010	T11-211-5, 0-200	5.0 A	**6.28**
798-1012	T11-211-10-200	10.0 A	**6.28**

Surface Mount Fuse and Holder

1

OMF 63/125

2

OMH 125

3

OMF 250

4

OMH 250

OMF 63 V, 125 V and 250 V fast-acting surface mount fuses. OMF 63 V and 125 V blow in less than 10 milliseconds at 400%. Breaking capacity is 50 A AC/DC for the OMF 63 V; 300 A AC/400 A DC for the OMF 125 V. OMF 250 V blows in 300 seconds maximum at 200%. Breaking capacity is 100 A/250 V AC/DC. Made from UL 94V-0 thermoplastic for reflow, vapor-phase and wave soldering. Available in bulk (100 pcs.) OMH 125 V 031.7701.11 and 250 V 031.7702.11 fuseholder optional.

OMF 63 V

Stock No.	Mfr.'s Type	Fig.	Amps	EACH
798-0044	3402.0003.11	1	63 mA	**1.26**
798-0046	3402.0004.11	1	100 mA	**1.05**
798-0048	3402.0005.11	1	160 mA	**1.02**
798-0050	3402.0006.11	1	250 mA	**1.02**
798-0320	3402.0043.11	1	350 mA	**.90**
798-0322	3402.0044.11	1	375 mA	**.90**
798-0052	3402.0007.11	1	400 mA	**1.00**
798-0324	3402.0045.11	1	500 mA	**.78**
798-0054	3402.0008.11	1	630 mA	**.92**
798-0326	3402.0046.11	1	750 mA	**.78**
798-0056	3402.0009.11	1	1 A	**.87**
798-0058	3402.0010.11	1	1.25 A	**.92**
798-0328	3402.0047.11	1	1.5 A	**.78**
798-0060	3402.0011.11	1	1.6 A	**.89**
798-0062	3402.0012.11	1	2 A	**.87**
798-0064	3402.0013.11	1	2.5 A	**.92**
798-0066	3402.0014.11	1	3 A	**.74**
798-0330	3402.0048.11	1	3.15 A	**.78**
798-0332	3402.0015.11	1	3.5 A	**.89**
798-0334	3402.0016.11	1	4 A	**.92**
798-0336	3402.0017.11	1	5 A	**.84**
798-0074	0031.7701.11	2	5 A	**.88**

OMF 125 V

798-0416	3404.0003.11	1	63 mA	**1.19**
798-0418	3404.0004.11	1	100 mA	**1.00**
798-0420	3404.0005.11	1	160 mA	**.97**
798-0422	3404.0006.11	1	250 mA	**.97**
798-0424	3404.0043.11	1	350 mA	**.97**
798-0426	3404.0044.11	1	375 mA	**.97**
798-0428	3404.0007.11	1	400 mA	**.97**
798-0430	3404.0045.11	1	500 mA	**.87**
798-0432	3404.0008.11	1	630 mA	**.87**
798-0434	3404.0046.11	1	750 mA	**.84**
798-0436	3404.0009.11	1	1 A	**.84**
798-0438	3404.0010.11	1	1.25 A	**.84**
798-0440	3404.0047.11	1	1.5 A	**.84**
798-0442	3404.0011.11	1	1.6 A	**.84**
798-0444	3404.0012.11	1	2 A	**.84**
798-0446	3404.0013.11	1	2.5 A	**.84**
798-0448	3404.0014.11	1	3 A	**.84**
798-0450	3404.0048.11	1	3.15 A	**.84**
798-0452	3404.0015.11	1	3.5 A	**.84**
798-0454	3404.0016.11	1	4 A	**.84**
798-0456	3404.0017.11	1	5 A	**.84**
798-0074	0031.7701.11	2	5 A	**.84**

OMF 250 V

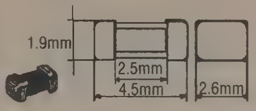
798-0338	3403.0012.11	3	400 mA	**1.19**
798-0340	3403.0013.11	3	500 mA	**1.23**
798-0342	3403.0014.11	3	630 mA	**1.19**
798-0344	3403.0015.11	3	800 mA	**1.19**
798-0346	3403.0016.11	3	1 A	**1.23**
798-0348	3403.0017.11	3	1.25 A	**1.23**
798-0350	3403.0018.11	3	1.6 A	**1.19**
798-0352	3403.0019.11	3	2 A	**1.19**
798-0354	3403.0020.11	3	2.5 A	**1.19**
798-0356	3403.0021.11	3	3.15 A	**1.23**
798-0358	3403.0022.11	3	4 A	**1.19**
798-0360	0031.7702.11	4	5 A	**.79**

Fuse Kit

Contains OMF 63 V assortment: 90 pcs.: 10 each 100 mA-5 A, 10 each OMF 63 holder. OMF 250 V assortment: 90 pcs.: 10 each 500 mA-4 A, 10 each OMF 250 holder.

798-0460. Type 0034.9877. Fuse Kit....................................**EACH 166.77**

Quick-Acting Surface Mount Fuse — 125 V



Quick-acting surface mount fuse built according to IEC 127-4. UL recognized, CSA certified. Breaks at 100 A/125 V AC/DC; low voltage drop. Material meets UL 94V-0 flammability.

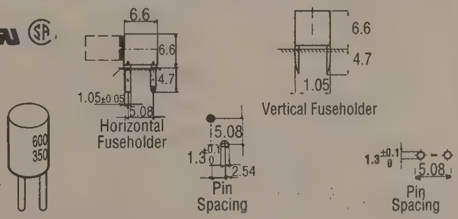
Stock No.	Mfr.'s Type	Amps	Voltage Drop	EACH
798-0400	3405.0917.11	800 mA	<130	**.48**
798-0402	3405.0918.11	1 A	<90	**.48**
798-0404	3405.0919.11	1.25 A	<130	**.48**
798-0406	3405.0920.11	1.6 A	<120	**.48**
798-0408	3405.0921.11	2 A	<120	**.48**
798-0410	3405.0922.11	2.5 A	<100	**.48**
798-0412	3405.0923.11	3.15 A	<80	**.48**
798-0414	3405.0924.11	4 A	<80	**.48**

Quick-Acting High Breaking Microfuse — 125 V

Fast-acting MSA 125 V fuse is according to IEC 127. Fuse breaks at 300 A/125 V AC. UL recognized 63 mA-10 A, CSA certified 63 mA-7 A.

Stock No.	Mfr.'s Type	Amps	EACH
798-0198	0034.4807	63 mA	**1.19**
798-0200	0034.4810	125 mA	**1.13**
798-0202	0034.4813	250 mA	**1.19**
798-0204	0034.4815	375 mA	**.88**
798-0206	0034.4817	500 mA	**.88**
798-0208	0034.4820	750 mA	**.85**
798-0210	0034.4822	1 A	**.88**
798-0212	0034.4824	1.5 A	**.85**
798-0214	0034.4826	2 A	**.82**
798-0216	0034.4827	2.5 A	**.88**
798-0218	0034.4828	3 A	**.88**
798-0220	0034.4830	3.5 A	**.88**
798-0222	0034.4831	4 A	**.88**
798-0224	0034.4832	5 A	**.82**
798-0226	0034.4833	7 A	**.88**
798-0228	0034.4834	10 A	**.88**
798-0230	0034.4835	12 A	**1.27**
798-0232	0034.4836	15 A	**1.27**

Quick-Acting Microfuse — 125 V



Fast-acting MSF 125 V built according to IEC 127. Breaks at 300 A/125 V. UL recognized (100 mA-5 A). CSA certified (100 mA-5 A), VDE approved. Material meets UL 94V-0 flammability. Microfuse FMS 125 V ordered separately below.

Stock No.	Mfr.'s Type	Amps	EACH
798-0234	0034.4209	100 mA	**2.16**
798-0236	0034.4210	125 mA	**2.10**
798-0238	0034.4211	160 mA	**1.93**
798-0240	0034.4212	200 mA	**2.04**
798-0242	0034.4213	250 mA	**1.93**
798-0244	0034.4214	315 mA	**2.04**
798-0246	0034.4215	400 mA	**2.04**
798-0248	0034.4216	500 mA	**1.93**
798-0250	0034.4217	630 mA	**2.04**
798-0252	0034.4220	800 mA	**2.04**
798-0254	0034.4221	1 A	**2.04**
798-0256	0034.4222	1.25 A	**1.93**
798-0258	0034.4223	1.6 A	**2.04**
798-0260	0034.4224	2 A	**2.04**
798-0262	0034.4225	2.5 A	**2.04**
798-0264	0034.4226	3.15 A	**1.93**
798-0266	0034.4227	4 A	**1.93**
798-0268	0034.4228	5 A	**2.04**

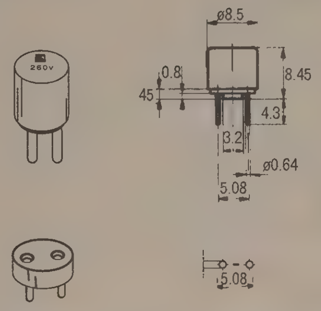
798-0462. Type 0031.7501. 125 V Vertical Fuseholder ....**EACH .60**
798-9990. Type 0031.7505. 125 V Horizontal Fuseholder ....**EACH .58**

Fuse Kit

Contains MSF 125 V assortment (black cap). 180 pcs: 10 each 50 mA-5 A, 20 each MSF holder.

798-0464. Type 0034.9875. Fuse Kit..**EACH 172.12**

Quick-Acting and Time-Lag Microfuses — 250 V



MSF/MST/MXT 250 V built according to IEC 127. MSF/MST 250 V breaks at 35 A/250 V AC. MXT 250 V breaks at 100 A/250 V AC. UL recognized CSA accepted (MSF 250 — 40 mA-5 A, MST 250 — 63 mA-6.3 A) (MXT 250 V — 800 mA-6.3 A). VDE approved (MSF 250 — 50 mA-3.15 A, MST 250 — 63 mA-4 A). Material meets UL 94V-0 flammability. Microfuse holder FMS 250 V ordered separately below.

MSF 250 V Quick-Acting

Stock No.	Mfr.'s Type	Amps	EACH
798-0270	0034.6003	80 mA	**.54**
798-0272	0034.6004	100 mA	**.40**
798-0274	0034.6005	125 mA	**.42**
798-0276	0034.6006	160 mA	**.42**
798-0278	0034.6007	200 mA	**.42**
798-0280	0034.6008	250 mA	**.40**
798-0282	0034.6009	315 mA	**.42**
798-0284	0034.6010	400 mA	**.17**
798-0286	0034.6011	500 mA	**.46**
798-0288	0034.6012	630 mA	**.55**
798-0290	0034.6013	800 mA	**.42**
798-0292	0034.6014	1 A	**.43**
798-0294	0034.6015	1.25 A	**.40**
798-0296	0034.6016	1.6 A	**.40**
798-0298	0034.6017	2 A	**.40**
798-0300	0034.6018	2.5 A	**.42**
798-0302	0034.6019	3.15 A	**.40**
798-0304	0034.6020	4 A	**.40**
798-0306	0034.6021	5 A	**.40**

MST 250 V Time-Lag

798-0466	0034.6604	80 mA	**.69**
798-0468	0034.6605	100 mA	**.61**
798-0470	0034.6606	125 mA	**.66**
798-0472	0034.6607	160 mA	**.50**
798-0474	0034.6608	200 mA	**.49**
798-0476	0034.6609	250 mA	**.44**
798-0478	0034.6610	315 mA	**.43**
798-0480	0034.6611	400 mA	**.43**
798-0482	0034.6612	500 mA	**.44**
798-0484	0034.6613	630 mA	**.44**
798-0486	0034.6614	800 mA	**.44**
798-0488	0034.6615	1 A	**.44**
798-0490	0034.6616	1.25 A	**.43**
798-0492	0034.6617	1.6 A	**.44**
798-0494	0034.6618	2 A	**.44**
798-0496	0034.6619	2.5 A	**.44**
798-0498	0034.6620	3.15 A	**.44**
798-0500	0034.6621	4 A	**.44**
798-0502	0034.6622	5 A	**.44**

MXT 250 V High Breaking Microfuse Time-Lag

798-0504	0034.6914	800 mA	**.57**
798-0506	0034.6915	1 A	**.51**
798-0508	0034.6916	1.25 A	**.51**
798-0510	0034.6917	1.6 A	**.51**
798-0512	0034.6918	2 A	**.51**
798-0514	0034.6919	2.5 A	**.51**
798-0516	0034.6920	3.15 A	**.51**
798-0518	0034.6921	4 A	**.53**
798-0520	0034.6922	5 A	**.53**
798-0522	0034.6923	6.3 A	**.53**

798-0524. Type 0031.7601. 250 V Fuseholder ....**EACH .60**

Fuse Kit

Contains MSF/MST 250 V assortment (black cap). 180 pcs.: 10 each 63 mA-5 A, 10 each MSF holder.

798-0526. Type 0034.9876. Fuse Kit..**EACH 116.00**

Cabinets, Enclosures, Fans and Motors

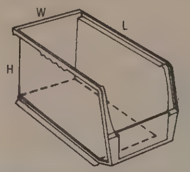
Manufacturers Index Page
Akro Mils 41
Altech Corp. 42, 43, 44, 45, 46, 47
Bud Industries 48-62
Comair Rotron 88-93
Davies 63
ebm Papst 94, 95, 96, 97
EG & G Rotron 98
Fan-S (Division of Qualtek) 99, 100
Globe Fans 101
Globe Motors 105
Hammond Mfg. 64-72
Howard Industries 102
Hurst Instruments 106
Interfan 103
ITT Pomona 73
Orion 104
PacTec 74, 75
Polycase 76, 77
Serpac 78
Zero PFT 79-87

Product Index Page
Accessories 48, 57, 58, 61, 62, 67, 70, 71, 72, 78, 85, 87, 89, 93, 96, 97, 99, 100, 101, 102, 103, 104
Add-A-Rack System 50
All American Rack 50
Axial Fans 94
Blowers, AC 88, 94, 96, 98, 102, 103, 104
Blowers, DC 91, 96, 97, 98, 104
Cabinet Blowers 61, 92
Cabinet Racks 52
Cable Management Rack 80
Casters 62, 71, 83, 87
Chassis 55, 57, 58, 60, 64, 79
Classic II Cabinet Racks 49
Connector/Interface Housings 75
Contempra II Rack 71
Datacom Cabinet Assembly 51
Desktop Enclosures 57, 67, 72, 86
Die-Cast Boxes 55, 58, 65, 70, 73
DIN Rail Mount Enclosures 43
Doors 49, 53, 71, 83, 85
Economizer Cabinet Racks 48, 71
Economizer Consoles 48
Electrical Product 41
Electronic Enclosures 44, 45, 46, 55, 57, 58, 59, 60, 63, 66, 74, 75, 76, 77, 78
Express Racks 81
Fan Accessories 89, 93, 96, 97, 99, 100, 101, 102, 103, 104
Fan Guards 100
Fan Trays 61, 87, 92
Fans AC 88, 89, 95, 96, 98, 101, 103
Fans DC 90, 91, 96, 98, 101, 103
Fiberglass Enclosures 70
Filter/Finger Guards 89, 93, 96, 97, 101, 102, 103, 104
Flame Retardant Boxes 66
Hand Held Boxes 57, 67, 75
Handles 62
Impellers 94
Inclined Panel Cabinet Racks 49, 50
Industrial Application Motors 105
Instrument Cases 64, 67
Keyboard Enclosures 57
Liquid Tight Strain Reliefs 47
Low Cost Cabinets 54
Low Priced Rack 52
Military Application Motors 105
Miniboxes 55
Mod-U-Serv 81
Modular Cabinets 41, 83, 84, 86
Moduline Chassis 79, 80
NEMA Cabinet Racks 71
NEMA Enclosures 58, 68, 69, 70
NEMA Wallmount Enclosures 69
Networking Frames 82
Non-Metallic Enclosures 42, 69
Panel Mounting Rails 62, 71
Panels 58, 61, 72, 85, 87
Patch Panel Brackets 51, 82
Phenolic Enclosures 63, 73
Plug-In Enclosures 77
Polystyrene and ABS Enclosures 58, 59, 63, 66, 67
Portable Cabinets 53, 54, 56
Potting Boxes 60, 63, 76, 77
Power Cords (For Fans) 93, 96, 97, 99, 101, 102, 103, 104
Power Outlet Strips 53, 87
Rak-Mount Chassis 56
Relay Racks 53, 85
Shelf Bins 41
Shelves 48, 51, 56, 72, 83, 85
Single Door Enclosures 68
Slimcab Desktop Cabinet 52
Sloping Panel Cabinets 52
Small Cabinets 52, 54, 57
Small Instrument Motors 106
Stackable Cabinets 41
Storage Bins 41
Stylist Cabinets 52
Temperature Controls 61
Tilt-A-View Cabinets 55
Tool Boxes 41
Unit Bearing Open Frame Fans 102
Upright Cabinet Racks 49, 50, 83
Utility Boxes 41, 60, 64
Utility Cabinets 55, 57, 64
Valu/Line Chassis 56
Wall Mount Cabinets 51, 82
Wall Mount Relay Rack 51
Watertight Enclosures 65, 70

Storage Products, Part Storage Cabinets and Tool Box

AkroBins

Polypropylene Storage Bins That Hang or Stack



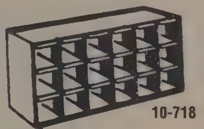
- **AkroBins Hang Securely from Louvered Panels**
- **Extra-Wide Stacking Ledge Assures Secure Stacking**
- **Large Label Slot for Clear Identification**
- **Reinforced Ribs Prevent Bins from Spreading When Loaded**

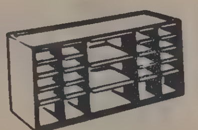
Cabinets

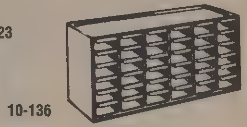
Stock No.	Mfr.'s Type	Inside Dimensions			Outside Dimensions			EACH
		L"	W"	H"	L"	W"	H"	
723-3021	30-210	4 3/4	3 7/16	2 13/16	5 3/8	4 1/8	3	.93
723-3022	30-220	6 3/4	3 7/16	2 13/16	7 3/8	4 1/8	3	1.68
723-3023	30-230	10 1/4	4 3/8	4 3/4	10 7/8	5 1/2	5	4.18
723-3025	30-235	10 1/4	10	4 3/4	10 7/8	11	5	6.25
723-3026	30-239	10	6 9/16	6 3/4	10 3/4	8 1/4	7	6.75
723-3024	30-240	14	6 9/16	6 3/4	14 3/4	8 1/4	7	8.00
723-3027	30-250	14	14 3/4	6 3/4	14 3/4	16 1/2	7	11.23
723-3060*	30-265	17 1/8	6 1/2	8 3/4	18	8 1/8	9	13.88
723-3065*	30-270	17 1/8	14 7/8	10 3/4	18	16 1/2	11	20.25

*Do not hang from louvered panels.

Stackable Plastic Frame Cabinets


10-718


10-523

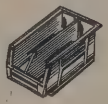

10-136

Series 2000. Stackable storage cabinets feature see-through styrene drawers, a polystyrene frame, pedestal base and recessed tray tops for stacking, and keyhole slots for wall mounting. Drawers have stop-tabs to prevent content spillage and come with dividers. Frame is lightweight, virtually unbreakable. **Dimensions:** 18 1/4 × 8 5/8 × 6 3/8".

Stock No.	Mfr.'s Type	No. of Drawers	Storage Capacity	EACH
723-1071	10-718	18	682 cu.*	21.65
723-1052	10-523	23*	685 cu.*	21.65
723-1013	10-136	36†	663 cu.*	21.65

*16 full size, 4 double deep, 3 double-wide double-deep. †Drawers do not have dividers.

Dividers

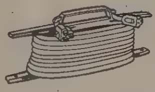


Divide bins front-to-back with these precision-molded bin dividers. Allows for better organization of contents and a more efficient use of space.

Stock No.	Mfr.'s Type	Fits Bin No.	PER PK./6
723-4400	40-210	30-210	4.31
723-4410	40-220	30-220	4.41
723-4420	40-230	30-230, 30-235	7.25
723-4430	40-239	30-239	2.72
723-4440	40-245	30-240, 30-250	10.03

Electrical Products

Portacord® Cord Holder



- **50 ft. Capacity**
- **15 1/2"L × 5 1/4"W × 3/4" Thick**

723-0305. 03-006 .... **EACH 1.98**

Clear Plastic Utility Boxes

Lightweight, rigid, scratch resistant, rugged clarified polypropylene boxes have rugged hinges and sturdy double thick walls and partitions.

Keep Box 05-206

- **Six Equal Compartments**
- **4 3/8"W × 2 5/8"L × 1"H**

723-0520. 05-206 .... **EACH 1.08**

Keep Box 05-406

- **Adjustable Partitions: 6-18 Compartments**
- **8 1/2"W × 4 3/4"L × 1 1/2"H**

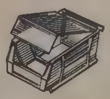
723-0540. 05-406 .... **EACH 3.21**

Keep Box 05-505

- **Perfect For Slides, Crafts, Hardware**
- **Adjustable Partitions: 5-15 Compartments**
- **11 1/2"W × 6 1/2"L × 2 3/8"H**

723-0550. 05-505 .... **EACH 5.22**

Lids



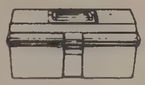
Made of see-through crystal styrene to keep contents dust-free and protected.

Stock No.	Mfr.'s Type	Fits Bin No.	EACH
723-2021	30-211	30-210	.75
723-2022	30-221	30-220	.80
723-2023	30-231	30-230	1.59

09 Series Tool Boxes

09-012

09-113

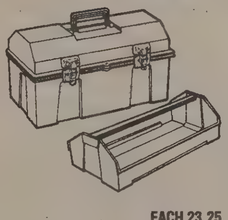

09-116

Made of tough polypropylene. Features lift-out trays, full-interlocking hinges (Model 09-012 has a living hinge and no tray), sure-lock latches, and a deep main storage compartment. Model 09-116 also has padlock eyes.

Stock No.	Mfr.'s Type	Color	Dimensions (L × W × H)	Storage Capacity	EACH
723-0912	09-012	Red	12 × 6 × 4"	160 cu.	2.88
723-0913	09-113	Red	13 × 7 × 6"	405 cu.	11.49
723-9900	09-116	Red	16 × 8 × 7"	630 cu.	21.35

Pro Line Tool Boxes — NEW —

19" Hip Roof Tool Box



- **Specially Designed to Hold Large Power Tools**
- **Tall Hip Roof**
- **Extra Deep Lift-Out Tray**
- **19"W × 9 1/2"D × 9 3/4"H**

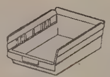
723-0941. 09-419 .... **EACH 23.25**

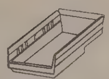
Shelf Bins

30-120

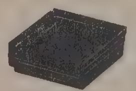
30-128

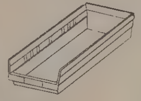
30-138


30-150


30-158

30-164


30-170


30-184

- **Molded of Durable Polypropylene For Years of Service**
- **Special Built-In Hanglock Allows Easy Access To Entire Bin**
- **Wide Label Holder Molder In**
- **Available In Red, Yellow, and Blue**

Stock No.	Mfr.'s Type	Outside Dim. W × L	Inside Dim. W × L	Divider No.	EACH
723-301X	30-110	2 3/4 × 11 5/8	1 5/8 × 10 1/4	NONE	1.26
723-312X	30-120	4 1/8 × 11 5/8	3 × 10 1/4	40-120	1.35
723-314X	30-128	4 1/8 × 17 7/8	3 × 16 1/2	40-120	1.83
723-305X	30-138	6 5/8 × 17 7/8	5 1/2 × 16 1/2	40-130	2.58
723-316X	30-150	8 3/8 × 11 5/8	7 1/8 × 10 1/4	40-150	2.59
723-307X	30-158	8 3/8 × 17 7/8	7 1/8 × 16 1/2	40-150	3.53
723-308X	30-164	6 5/8 × 23 5/8	5 1/2 × 22 1/8	40-130	5.15
723-309X	30-170	11 1/8 × 11 5/8	10 × 10 1/4	40-170	3.39
723-319X	30-178	11 1/8 × 17 7/8	10 × 16 1/2	40-170	5.44
723-315X	30-184	8 3/8 × 23 5/8	7 1/8 × 22 1/8	40-150	6.08

NOTE: Height on all Shelf Bins is 4 inches. To indicate color replace the "X" in the stock number with: 0-Yellow, 1-Blue, 2-Red.

Dividers For Above Shelf Bins

- **Dividers Available in Black Only**

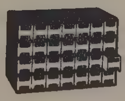
723-4023. 40-120 .... PER PK./24 6.61
723-4024. 40-130 .... PER PK./24 7.19
723-4025. 40-150 .... PER PK./24 16.75
723-4026. 40-170 .... PER PK./24 20.78

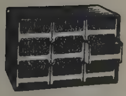
Modular Cabinet

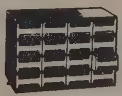
16-136

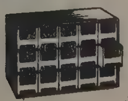
16-718

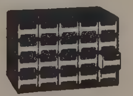
Frame Size: 18"W × 6"L


19-228


19-909


19-416


19-715


19-320

19-109

Frame Size: 17"W × 11"H × 11"L

Stores small parts, electronic components and things you need to locate instantly. Cabinets can be stacked horizontally or vertically wall mounted or placed on carts or shelves. Heavy duty steel frame with charcoal gray baked enamel finish, steel drawer supports, nesting "feet" for stability in stacking. Molded styrene drawers have transparent windows (models 16-136 and 16-718 in ABS plastic frames have all transparent drawers) and retaining tab to hold drawers open.

Stock No.	Mfr.'s Type	Cabinet Size			Drawers Per Cabinet	Drawer Dimensions			EACH
		W	H	D		W	H	D	
723-1713	16-136	18	9 1/2	6	36	2 5/8	1 1/8	5 3/4	38.53
723-1701	16-718	18	9	6	18	2 5/8	2 1/2	5 3/4	38.53
723-1990	19-909	17	11	11	9	5 3/16	3 1/16	10 9/16	72.09
723-1971	19-715	17	11	11	15	3 2/16	3 1/16	10 9/16	72.09
723-1941	19-416	17	11	11	16	4	2 1/8	10 9/16	72.09
723-1932	19-320	17	11	11	20	3 2/16	2 1/8	10 9/16	72.09
723-1922	19-228	17	11	11	28	2 3/16	2 1/16	10 9/16	72.09
723-1910	19-109	17	11	11	9	5 3/16	3 1/16	10 9/16	97.43

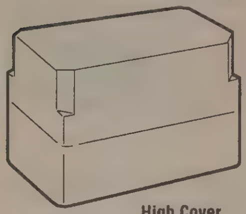
Cross Dividers

Stock No.	Mfr.'s Type	Fits Cabinet	PER PKG./25*
723-4050	40-901	16-718	5.73
723-4090	40-501	16-136	2.80
723-4220	40-228	19-228	8.04
723-4230	40-320	19-320	5.16
723-4240	40-416	19-416	6.31
723-4310	40-715	19-715	7.68
723-4330	40-909	19-909	8.29

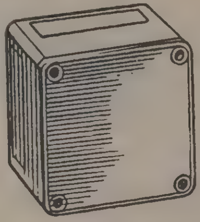
*Sold per package of 25 only.

Altech Corp.

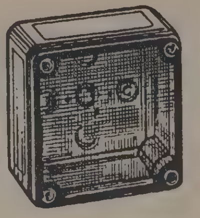
Industrial TK Series Enclosures



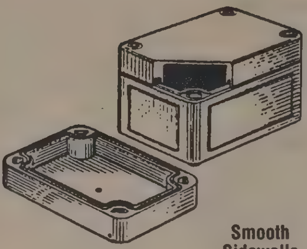
High Cover



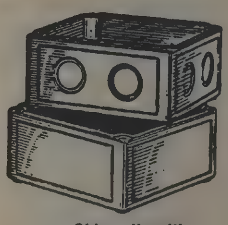
Standard Gray Cover



Transparent Cover



Smooth Sidewalls



Sidewalls with Knockouts

Whenever electrical and electronic components need to be housed in dustproof and watertight, completely insulated and corrosion-free enclosures, Altech/Spelsberg TK series enclosures offer solutions. Enhance the value of your products with their appealing design in a variety of sizes with standard gray or transparent covers in different heights. The exceptional possibilities of subsequent processing (drilling, milling, bonding, lacquering, fitting components) permit virtually all special requirements to be met.

Polycarbonate (PC) — Smooth Sidewalls, without Knockouts, NEMA 4X (IP66)
(PC) knockouts available.

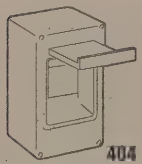
Stock No.	Mfr.'s Type	Cover Type	Dimensions L × D × H Inches	EACH
500-7701	120-401	gray	2.56 sq. × 2.24	**7.38**
500-7702	120-901	gray	2.56 sq. × 3.19	**9.09**
500-7703	130-001	transparent	2.56 sq. × 2.24	**7.38**
500-7704	130-501	transparent	2.56 sq. × 3.19	**9.09**
500-9701	120-402	gray	3.70 × 2.56 × 2.24	**9.09**
500-9702	120-902	gray	3.70 × 2.56 × 3.19	**11.25**
500-9703	130-002	transparent	3.70 × 2.56 × 2.24	**9.09**
500-9704	130-502	transparent	3.70 × 2.56 × 3.19	**11.25**
500-9901	120-403	gray	3.70 sq. × 2.24	**10.44**
500-9902	120-903	gray	3.70 sq. × 3.19	**13.05**
500-9903	130-003	transparent	3.70 sq. × 2.24	**10.44**
500-9904	130-503	transparent	3.70 sq. × 3.19	**13.05**
500-1110	120-404	gray	4.33 sq. × 2.50	**13.86**
500-1111	120-904	gray	4.33 sq. × 3.54	**16.47**
500-1112	130-004	transparent	4.33 sq. × 2.50	**13.86**
500-1113	130-504	transparent	4.33 sq. × 3.54	**16.47**
500-1309	120-409	gray	5.12 × 3.70 × 2.24	**13.05**
500-1310	120-909	gray	5.12 × 3.70 × 3.19	**15.75**
500-1311	130-009	transparent	5.12 × 3.70 × 2.24	**13.05**
500-1312	130-509	transparent	5.12 × 3.70 × 3.19	**15.75**
500-1317	120-405	gray	5.12 sq. × 2.95	**17.36**
500-1314	120-905	gray	5.12 sq. × 3.90	**20.70**
500-1315	130-005	transparent	5.12 sq. × 2.95	**17.36**
500-1316	130-505	transparent	5.12 sq. × 3.90	**20.70**
500-1811	120-406	gray	7.09 × 4.33 × 3.54	**23.40**
500-1812	120-906	gray	7.09 × 4.33 × 4.37	**26.99**
500-1813	130-006	transparent	7.09 × 4.33 × 3.54	**23.40**
500-1814	130-506	transparent	7.09 × 4.33 × 4.37	**26.99**
500-1818	120-407	gray	7.17 × 7.09 × 3.54	**30.41**
500-1819	120-907	gray	7.17 × 7.09 × 4.37	**33.75**
500-1820	130-007	transparent	7.17 × 7.09 × 3.54	**30.41**
500-1821	130-507	transparent	7.17 × 7.09 × 4.37	**33.75**
500-2518	120-408	gray	10.0 × 7.09 × 3.54	**40.81**
500-2519	120-908	gray	10.0 × 7.09 × 4.37	**44.08**
500-2520	130-008	transparent	10.0 × 7.09 × 3.54	**40.76**
500-2521	130-508	transparent	10.0 × 7.09 × 4.37	**44.08**
500-3825	120-412	gray	14.21 × 10 × 4.37	**93.57**
500-3826	120-912	gray	14.21 × 10 × 6.50	**113.38**
500-3827	130-012	transparent	14.21 × 10 × 4.37	**93.57**
500-3828	130-512	transparent	14.21 × 10 × 6.50	**113.38**

Polystyrene (PS) — Sidewalls with Knockouts, NEMA 4X (IP66)
Smooth sidewalls available.

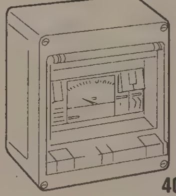
Stock No.	Mfr.'s Type	Cover Type	Side Knockouts	Dimensions Inches	EACH
500-7705	115-401	gray	4, Pg. 16	2.56 sq. × 2.24	**5.31**
500-7706	115-901	gray	4, Pg. 16	2.56 sq. × 3.19	**6.66**
500-8000	116-001	transparent	4, Pg. 16	2.56 sq. × 2.24	**6.03**
500-8001	116-501	transparent	4, Pg. 16	2.56 sq. × 3.19	**7.92**
500-6705	115-402	gray	6, Pg. 16	3.70 × 2.56 × 2.24	**6.03**
500-9706	115-902	gray	6, Pg. 16	3.70 × 2.56 × 3.19	**7.47**
500-8002	116-002	transparent	6, Pg. 16	3.70 × 2.56 × 2.24	**6.93**
500-8003	116-502	transparent	6, Pg. 16	3.70 × 2.56 × 3.19	**9.09**
500-9905	115-403	gray	7, Pg. 16	3.70 sq. × 2.24	**6.93**
500-9906	115-903	gray	7, Pg. 16	3.70 sq. × 3.19	**8.63**
500-8004	116-003	transparent	7, Pg. 16	3.70 sq. × 2.24	**8.01**
500-8005	116-503	transparent	7, Pg. 16	3.70 sq. × 3.19	**10.80**
500-1114	115-404	gray	7, Pg. 21/16	4.33 sq. × 2.60	**9.54**
500-1115	115-904	gray	7, Pg. 21/16	4.33 sq. × 3.54	**11.25**
500-8006	116-004	transparent	7, Pg. 21/16	4.33 sq. × 2.60	**10.80**
500-8007	116-504	transparent	7, Pg. 21/16	4.33 sq. × 3.54	**13.86**
500-1307	115-409	gray	10, Pg. 16/11	5.12 × 3.70 × 2.24	**9.09**
500-1308	115-909	gray	10, Pg. 16/11	5.12 × 3.70 × 3.19	**10.80**
500-8008	116-009	transparent	10, Pg. 16/11	5.12 × 3.70 × 2.24	**10.44**
500-8009	116-509	transparent	10, Pg. 16/11	5.12 × 3.70 × 3.19	**13.05**
500-1313	115-405	gray	7, Pg. 21/16	5.12 sq. × 2.95	**11.25**
500-1318	115-905	gray	7, Pg. 21/16	5.12 sq. × 3.09	**13.13**
500-8010	116-005	transparent	7, Pg. 21/16	5.12 sq. × 2.95	**13.05**
500-8011	116-505	transparent	7, Pg. 21/16	5.12 sq. × 3.09	**16.47**
500-1815	115-406	gray	12[1]	7.09 × 4.33 × 3.54	**14.75**
500-1816	115-906	gray	12[1]	7.09 × 4.33 × 4.37	**16.47**
500-8012	116-006	transparent	12[1]	7.09 × 4.33 × 3.54	**17.36**
500-8013	116-506	transparent	12[1]	7.09 × 4.33 × 4.37	**20.70**
500-1822	115-407	gray	12[2]	7.17 × 7.09 × 3.54	**18.09**
500-1823	115-907	gray	12[2]	7.17 × 7.09 × 4.37	**19.79**
500-8014	116-007	transparent	12[2]	7.17 × 7.09 × 3.54	**22.05**
500-8015	116-507	transparent	12[2]	7.17 × 7.09 × 4.37	**25.20**
500-2522	115-408	gray	16[3]	10.0 × 7.09 × 3.54	**25.20**
500-2523	115-908	gray	16[3]	10.0 × 7.09 × 4.37	**26.72**
500-8016	116-008	transparent	16[3]	10.0 × 7.09 × 3.54	**30.59**
500-8017	116-508	transparent	16[3]	10.0 × 7.09 × 4.37	**33.75**
500-3829	115-412	gray	26[4]	14.21 × 10 × 4.37	**54.43**
500-3830	115-912	gray	26[4]	14.21 × 10 × 6.50	**64.78**
500-8018	116-012	transparent	26[4]	14.21 × 10 × 4.37	**78.74**
500-8019	116-512	transparent	26[4]	14.21 × 10 × 6.50	**97.18**

1.) 4, Pg 21/16, 16, Pg 16; 2.) 8, Pg 21/16, 4, Pg 29/21; 3.) 12, Pg 21/16, 4, Pg 29/21; 4.) 32, Pg 16, 4, Pg 21/16, 6, Pg 29/21.

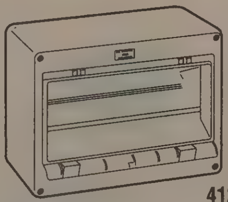
EK Series



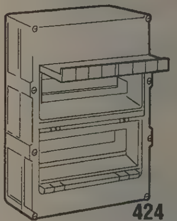
404



408



412



424

EK Quick Access Enclosures. Functional, attractive housings to protect DIN rail mounted components such as circuit breakers and other control devices. Transparent hinged cover provides easy access and visibility. Include removable busbar assemblies for ground and neutral and 35 mm DIN rail.

EK Polystyrene — Transparent Hinged Covers, with Knockouts, NEMA 4X (IP65)

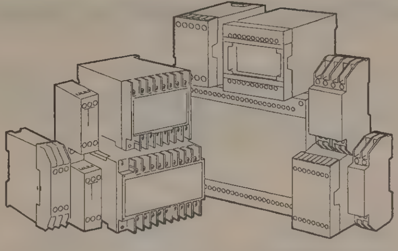
Stock No.	Mfr.'s Type	Side Knockouts	Dimensions W × D × H Inches	EACH
500-5404	542-404	4, Pg. 16, 1, Pg. 21/16	4.33 sq. × 7.09	**34.01**
500-5408	542-408	8, Pg. 16, 1, Pg. 21/16	7.17 × 7.09 × 4.33	**44.81**

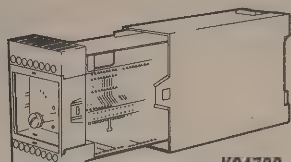
Stock No.	Mfr.'s Type	Side Knockouts	Dimensions W × D × H Inches	EACH
500-5412	542-412	8, Pg. 16, 2, Pg. 21/16[1]	10.0 × 7.09 × 4.33	**57.77**
500-5424	542-424	8, Pg. 16, 2, Pg. 29/21[2]	14.21 × 10 × 4.33	**96.27**

[1] Plus 1, Pg 29/21. [2] Short side has 4, Pg 16 and 1, Pg 29/21.

DIN Rail Mount Enclosures

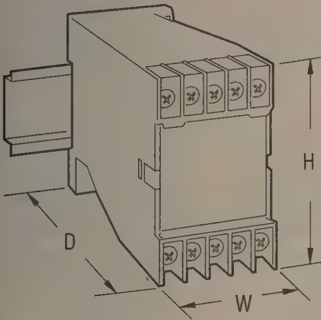
"Get the international look." Package your products and devices in attractive enclosures that come complete with four to 144 ready-to-wire terminals and integral PC board guides. Terminal-to-board connections can be made by wire jumpers, solder tabs and, on some enclosures, with card edge connectors or machine solderable terminals to reduce production time. These enclosures can be easily customized with logos or other imprints. Internationally accepted, they are molded of UL 94VO materials.





K04700

K70



- ► 6 to 32 Terminals
- ► Housing Material: Polycarbonate
- ► Cover Material: ABS
- ► Standard Color: Gray
- ► Terminals Rated 25 A (Pluggable to 10 A)
- ► Terminal Covers Optional

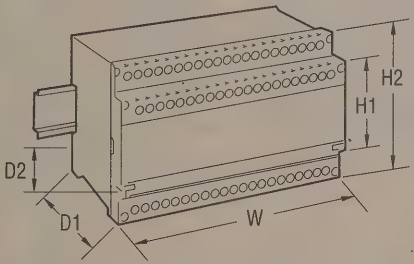
Cost effective kits have snap-on covers for easy insertion and removal of PC boards. Pressure plate terminals, fixed and pluggable terminal-to-board connections.

Stock No.	Mfr.'s Type	Max. # of Term.	Term.-to-Bd. Connection*	Housing Dim. mm			EACH
				W	H	D	
500-9000	90.001	8	WJ, FO	22.5	74.0	97.0	**11.18**
500-9001	90.010	10	WJ, MS	45.0	74.0	112.0	**14.24**
500-9002	90.020	12	WJ, FO	22.5	74.0	97.0	**13.03**
500-9003	90.030	12	WJ, MS	22.5	74.0	97.0	**13.29**
500-9004	90.040	12	WJ	55.0	74.0	114.0	**19.32**
500-9005	90.050	16	WJ, ST, CE	55.0	74.0	114.0	**26.82**
500-9006	90.060	20	WJ, FO	45.0	74.0	124.0	**26.19**
500-9007	90.070	20	WJ, FO	45.0	74.0	124.0	**30.00**
500-9008	90.080	20	WJ, FO	100.0	74.0	114.0	**28.60**
500-9009	90.090	20	WJ, ST, CE	100.0	74.0	114.0	**28.96**
500-9010	90.100	32	WJ, ST, CE	150.0	74.0	113.0	**41.82**

***Terminal-to-Board Connections:** WJ = Wire Jumper, SP = Solder Pin, MS = Machine Solderable Pins, CE = Card Edge (Pluggable), FO = Fast ON, ST = Solder Tab.

K04700

- ► 8 to 132 Terminals
- ► Housing Material: Polycarbonate
- ► Cover Material: Glass-filled Polycarbonate
- ► Std. Color: Black Housing, Tan Cover
- ► Terminals Rated 25 A (Pluggable to 10 A)
- ► Enclosures With Removable Cover Panels Are Available

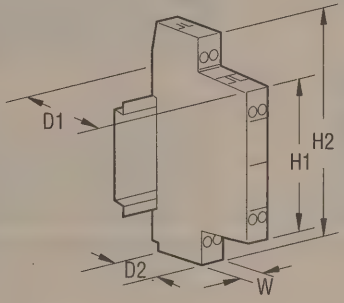


A wide range of sizes and cover designs. Pressure plate or cage clamp terminals, fixed and pluggable terminal-to-board connections. Pluggable connection helps to eliminate wiring mistakes.

Stock No.	Mfr.'s Type	Max. # of Term.	Term.-to-Bd. Connection*	Housing Dimensions mm					EACH
				W	H1	H2	D1	D2	
500-9023	90.230	10	WJ, FO	45.0	74.0	—	118.5	—	**16.01**
500-9029	90.290	16	MS	45.0	74.0	—	118.5	—	**25.42**
500-9032	90.320	16	CE	45.0	74.0	—	118.5	—	**24.53**
500-9035	90.350	20	WJ, ST, CE	100.0	74.0	—	118.5	—	**39.40**
500-9038	90.380	22	MS	75.0	74.0	—	118.5	—	**36.86**
500-9041	90.410	22	CE	75.0	74.0	—	118.5	—	**41.56**
500-9044	90.440	30	MS	100.0	74.0	—	118.5	—	**42.20**
500-9047	90.470	30	CE	100.0	74.0	—	118.5	—	**45.12**
500-9050	90.500	32	WJ, ST, CE	152.0	71.0	—	118.5	—	**52.11**
500-9053	90.530	42	WJ, ST, CE	200.0	73.0	—	118.5	—	**57.06**
500-9056	90.560	42	WJ, ST, CE	200.0	122.0	—	118.5	—	**61.64**
500-9068	90.680	66	WJ, CE	200.0	72.0	—	118.5	—	**93.93**
500-9071	90.710	66	WJ, ST, CE	200.0	123.0	—	118.5	—	**98.63**
500-9074	90.740	84	WJ, ST, CE	200.0	82.0	123.0	118.5	136.0	**100.54**
500-9077	90.770	132	WJ, ST, CE	200.0	82.0	123.0	118.5	136.0	**174.38**

***Terminal-to-Board Connections:** WJ = Wire Jumper, SP = Solder Pin, MS = Machine Solderable Pins, CE = Card Edge (Pluggable), FO = Fast ON, ST = Solder Tab.

K04070



- ► 4 to 6 Cage Clamp Terminals
- ► Housing Material: Polyamide
- ► Standard Color: Gray
- ► Terminals Rated 16 A
- ► Extended Length Pins Available

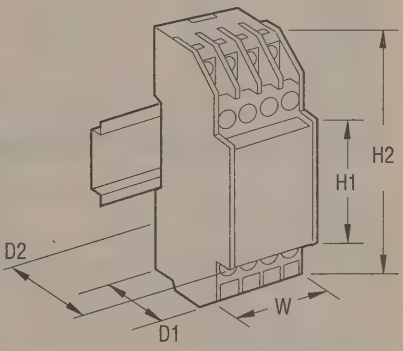
Compact, cost-effective snap together kits. Removable cage clamp terminals with dual solder pins are machine solderable. Horizontal and vertical PC board positions. Funnel shaped wire entries.

Stock No.	Mfr.'s Type	Max. # of Term.	Term.-to-Bd. Connection*	Housing Dimensions mm					EACH
				W	H1	H2	D1	D2	
500-9100	91.001	4	SP	12.5	60.0	—	60.0	—	**6.36**
500-9101	91.010	6	SP	12.5	60.0	75.0	60.0	31.0	**7.37**
500-9102	91.020	6	SP	20.5	60.0	—	60.0	—	**8.13**
500-9103	91.030	8	SP	12.5	60.0	90.0	60.0	31.0	**8.77**
500-9104	91.040	8	SP	28.5	60.0	—	60.0	—	**9.91**
500-9105	91.050	9	SP	20.5	60.0	75.0	60.0	31.0	**10.04**
500-9106	91.060	12	SP	20.5	60.0	90.0	60.0	31.0	**12.58**
500-9107	91.070	12	SP	28.5	60.0	75.0	60.0	31.0	**12.96**
500-9108	91.080	16	SP	28.5	60.0	90.0	60.0	31.0	**16.90**

***Terminal-to-Board Connections:** WJ = Wire Jumper, SP = Solder Pin, MS = Machine Solderable Pins, CE = Card Edge (Pluggable), FO = Fast ON, ST = Solder Tab.

KU4080

- ► 8 to 64 Terminals
- ► Integral Printed Circuit Board Guides
- ► Housing Material: Polycarbonate
- ► Standard Color: Gray
- ► Terminals Rated 10 A

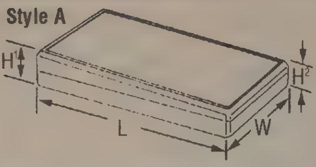


Versatile enclosures provide ample internal space for wiring and electronic components. Kits consist of snap-in double level terminals, cover and base, with integral PC board guides. Machine solderable pins, pressure plate terminals. Fit standard 45 mm DIN cutout in larger enclosures like Altech's EK Series nonmetallic enclosures.

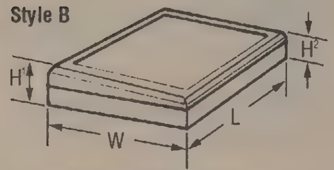
Stock No.	Mfr.'s Type	Max. # of Term.	Term.-to-Bd. Connection*	Housing Dimensions mm					EACH
				W	H1	H2	D1	D2	
500-9120	91.201	8†	WJ	17.5	44.6	89.7	48.0	57.7	**14.24**
500-9122	91.220	16	WJ, MS	35.3	44.6	89.7	48.0	58.0	**19.70**
500-9124	91.240	16†	WJ, MS	35.3	44.6	89.7	48.0	58.0	**19.70**
500-9126	91.260	32	WJ, MS	71.7	44.6	89.7	48.0	58.6	**31.01**
500-9128	91.280	32†	WJ, MS	71.7	44.6	89.7	48.0	58.6	**31.01**
500-9130	91.300	32	WJ, MS	140.0	44.6	88.6	48.0	59.5	**35.33**
500-9132	91.320	32†	WJ, MS	140.0	44.6	88.6	48.0	59.5	**35.33**
500-9134	91.340	32	WJ, MS	140.3	44.6	88.6	48.0	59.0	**35.33**
500-9136	91.360	32†	WJ, MS	140.3	44.6	88.6	48.0	59.0	**35.33**
500-9138	91.380	64	WJ, MS	140.3	44.6	88.6	48.0	59.0	**57.83**
500-9140	91.400	64†	WJ, MS	140.3	44.6	88.6	48.0	59.0	**57.83**

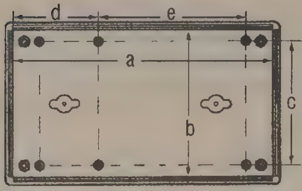
***Terminal-to-Board Connections:** WJ = Wire Jumper, SP = Solder Pin, MS = Machine Solderable Pins, CE = Card Edge (Pluggable), FO = Fast ON, ST = Solder Tab. †Right Angle Pins.

Style A



Style B





Slanted Series Electronic Enclosures

Convenient, easy to customize small ABS enclosure with a slanted top in two designs and three bottom heights. Style A has a 15° incline and Style B has an 8° incline. Top and bottom shells are joined by four self-cutting screws. Multiple mounting provisions for PC boards are provided. The inclined top surface is recessed to accept an aluminum panel of up to 1 mm (.04") thickness. **Standard Color:** Gray.

Style A

Stock No.	Mfr.'s Type	Outside Dimensions* — mm (In.)				Inside Dimensions — mm (In.)			EACH
		L	W	H^1	H^2	c	d	e	
500-1200	94.087	144.5 (5.69)	85.0 (3.35)	30.0 (1.18)	21.0 (0.83)	65.0 (2.56)	45.5 (1.79)	77.0 (3.03)	**7.53**
500-1202	94.088	144.5 (5.69)	85.0 (3.35)	36.0 (1.42)	27.0 (1.06)	65.0 (2.56)	45.5 (1.79)	77.0 (3.03)	**9.79**
500-1204	94.089	144.5 (5.69)	85.0 (3.35)	54.0 (2.13)	45.0 (1.77)	65.0 (2.56)	45.5 (1.79)	77.0 (3.03)	**11.12**

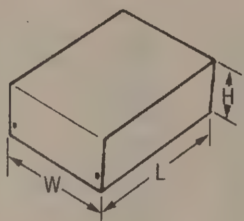
Style B

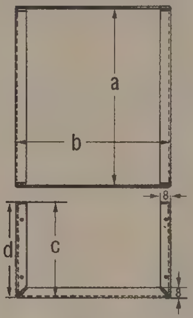
Stock No.	Mfr.'s Type	L	W	H^1	H^2	c	d	e	EACH
500-1206	94.090	144.5 (5.69)	85.0 (3.35)	32.0 (1.26)	21.0 (0.83)	65.0 (2.56)	45.5 (1.79)	77.0 (3.03)	**7.23**
500-1208	94.091	144.5 (5.69)	85.0 (3.35)	38.0 (1.50)	27.0 (1.06)	65.0 (2.56)	45.5 (1.79)	77.0 (3.03)	**9.00**
500-1210	94.095	144.5 (5.69)	85.0 (3.35)	56.0 (2.20)	45.0 (1.77)	65.0 (2.56)	45.5 (1.79)	77.0 (3.03)	**10.15**

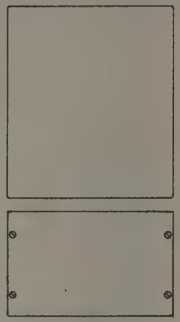
*Dimension a — Length 7 mm (.28"); Dimension b — Width 7 mm (.28").

Aluminum Series Electronic Enclosures

Small to medium size enclosures made of aluminum sheet metal, consisting of an anodized aluminum base with integral front and back panels and a black aluminum cover with integral front and side walls. The base and cover are joined together with four self-cutting screws on both front and back. Supplied as a kit, including screws. Surfaces are protected with a peel-off film.





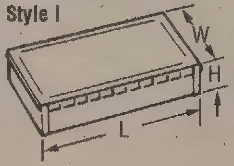


Stock No.	Mfr.'s Type	Outside Dimensions — mm (In.)			Inside Dimensions — mm (In.)				EACH
		L	W	H	a	b	c	d	
500-1212	94.456	87.0 (3.43)	160.0 (6.30)	100.0 (3.94)	81.0 (3.19)	157.0 (6.18)	96.5 (3.80)	98.0 (3.86)	**13.96**
500-1214	94.457	137.0 (5.39)	160.0 (6.30)	100.0 (3.94)	131.0 (5.16)	157.0 (6.18)	96.5 (3.80)	98.0 (3.86)	**17.48**
500-1216	94.458	187.0 (7.36)	160.0 (6.30)	100.0 (3.94)	181.0 (7.13)	157.0 (6.18)	96.5 (3.80)	98.0 (3.86)	**20.94**
500-1218	94.459	237.0 (9.33)	160.0 (6.30)	100.0 (3.94)	231.0 (9.09)	157.0 (6.18)	96.5 (3.80)	98.0 (3.86)	**24.46**
500-1220	94.460	287.0 (11.30)	160.0 (6.30)	100.0 (3.94)	281.0 (11.06)	157.0 (6.18)	96.5 (3.80)	98.0 (3.86)	**27.92**
500-1222	94.461	337.0 (13.27)	160.0 (6.30)	100.0 (3.94)	331.0 (13.03)	157.0 (6.18)	96.5 (3.80)	98.0 (3.86)	**31.41**
500-1224	94.462	387.0 (15.24)	160.0 (6.30)	100.0 (3.94)	381.0 (15.00)	157.0 (6.18)	96.0 (3.80)	98.0 (3.86)	**34.85**

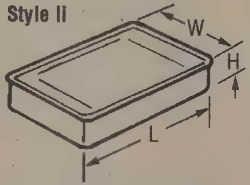
EMI/RFI Series Electronic Enclosures

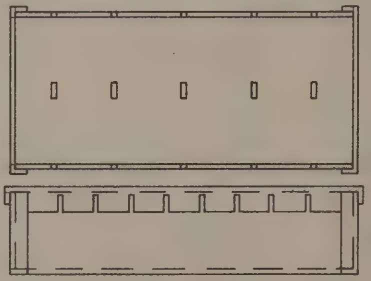
Use for RF frequency components such as filters, amplifiers, receivers, etc. and to keep radiation close to its source. ER-371 to ER-374 include dividers and have snap-on covers. ER-433 to ER-454 have deep drawn bottom shells and are used to hermetically seal RF emitting components. Cover is loose fitting; use adhesive or potting compound to attach securely. Both series are made of hot tin plated sheet metal.

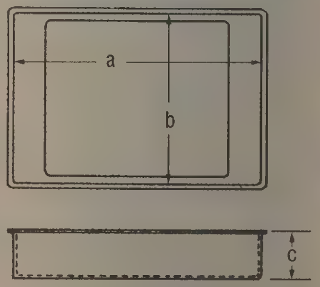
Style I



Style II







Style I

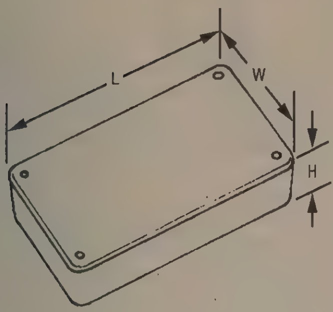
Stock No.	Mfr.'s Type	Outside Dimensions — mm (In.)			Inside Dimensions — mm (In.)			EACH
		L	W	H	a	b	c	
500-1226	94.495	54.0 (2.13)	50.0 (1.97)	26.0 (1.02)	50.0 (1.97)	46.0 (1.81)	24.0 (0.94)	**2.78**
500-1228	94.496	83.0 (3.27)	50.0 (1.97)	26.0 (1.02)	79.0 (3.11)	46.0 (1.81)	24.0 (0.94)	**3.78**
500-1230	94.497	106.0 (4.17)	50.0 (1.97)	26.0 (1.02)	102.0 (4.02)	46.0 (1.81)	24.0 (0.94)	**5.45**
500-1232	94.498	161.0 (6.34)	50.0 (1.97)	26.0 (1.02)	157.0 (6.18)	46.0 (1.81)	24.0 (0.94)	**6.42**

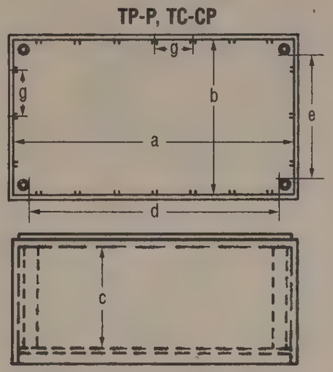
Style II

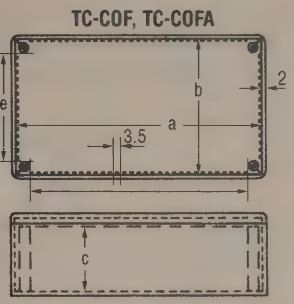
Stock No.	Mfr.'s Type	L	W	H	a	b	c	EACH
500-1234	94.518	51.0 (2.01)	31.5 (1.24)	9.5 (0.37)	47.0 (1.85)	28.0 (1.10)	6.0 (0.24)	**1.89**
500-1236	94.519	63.5 (2.50)	31.5 (1.24)	9.5 (0.37)	60.0 (2.36)	28.0 (1.10)	6.0 (0.24)	**1.89**
500-1238	94.522	51.0 (2.01)	31.5 (1.24)	13.0 (0.51)	47.0 (1.85)	28.0 (1.10)	9.5 (0.37)	**1.89**
500-1240	94.523	63.5 (2.50)	31.5 (1.24)	13.0 (0.51)	60.0 (2.36)	28.0 (1.10)	9.5 (0.37)	**1.89**
500-1242	94.526	51.0 (2.01)	31.5 (1.24)	17.5 (0.69)	47.0 (1.85)	28.0 (1.10)	14.0 (0.55)	**1.89**
500-1244	94.527	63.5 (2.50)	31.5 (1.24)	17.5 (0.69)	60.0 (2.36)	28.0 (1.10)	14.0 (0.55)	**1.89**

Altech/Teko electronic enclosures are intended to provide solutions for your packaging needs. Take advantage of our comprehensive line of electronic enclosures and select from over 350 standard models.

Top Cover Electronic Enclosures







Consist of ABS base, with integral printed circuit board guides and a cover which is mounted with four screws. ABS or aluminum covers. Supplied as a kit.

ABS Base, Medium Gray, Glossy Finish, Aluminum Cover, Square Corners; Cover Thickness: 1 mm (.04")

Stock No.	Mfr.'s Type	Outside Dimensions — mm (In.)			Inside Dimensions — mm (In.)					Aluminum Cover — mm (In.)		EACH
		L	W	H	c	d	e	f	g	a	b	
500-1330	94.001	85.0 (3.50)	56.0 (2.20)	35.5 (1.40)	26.5 (1.04)	67.0 (2.64)	38.0 (1.50)	10.5 (0.41)	15.0 (0.59)	80.0 (3.15)	51.0 (2.01)	2.22
500-1331	94.002	110.0 (4.40)	70.0 (2.76)	49.0 (1.93)	39.5 (1.56)	89.0 (3.50)	49.0 (1.93)	12.5 (0.49)	20.0 (0.79)	105.0 (4.13)	65.0 (2.56)	2.84
500-1332	94.003	160.0 (6.30)	96.0 (3.78)	61.0 (2.40)	51.0 (2.00)	141.0 (5.55)	77.0 (3.03)	13.0 (0.52)	21.5 (0.85)	155.0 (6.10)	91.0 (3.58)	4.43
500-1333	94.004	215.0 (8.46)	130.0 (5.12)	77.0 (3.03)	66.0 (2.60)	195.0 (7.68)	109.0 (4.29)	10.5 (0.41)	31.5 (1.24)	210.0 (8.27)	125.0 (4.92)	6.60

ABS Base and Cover, Dark Gray Base, Light Gray Cover, Glossy Finish, Square Corners, with Mounting Provisions for PC Boards

Stock No.	Mfr.'s Type	Outside Dimensions — mm (In.)			Inside Dimensions — mm (In.)					PCB Mtg. Prov. Cvr. — mm (In.)		EACH
		L	W	H	c	d	e	f	g	j	k	
500-1334	94.009	85.0 (3.35)	56.0 (2.20)	42.0 (1.65)	37.0 (1.47)	67.0 (2.64)	38.0 (1.50)	10.5 (0.41)	15.0 (0.59)	51.0 (2.01)	27.0 (1.06)	2.67
500-1335	94.010	110.0 (4.40)	70.0 (2.76)	54.0 (2.13)	50.0 (1.97)	89.0 (3.50)	49.0 (1.93)	12.5 (0.49)	20.0 (0.79)	66.5 (2.62)	31.0 (1.22)	3.42
500-1336	94.011	160.0 (6.30)	96.0 (3.78)	67.0 (2.64)	61.0 (2.40)	141.0 (5.55)	77.0 (3.03)	13.0 (0.52)	21.5 (0.85)	100.5 (3.94)	46.0 (1.81)	5.34
500-1337	94.012	215.0 (8.46)	130.0 (5.12)	83.0 (3.27)	77.0 (3.03)	195.0 (7.68)	109.0 (4.29)	10.5 (0.41)	31.5 (1.24)	128.0 (5.04)	66.0 (2.60)	7.95

ABS Base, Medium Gray, Glossy Finish, Aluminum Cover, Rounded Corners; Cover Thickness: 1 mm (.04")

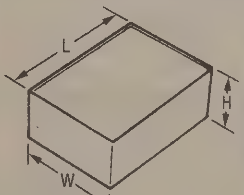
Stock No.	Mfr.'s Type	Outside Dimensions — mm (In.)			Inside Dimensions — mm (In.)					Aluminum Cover — mm (In.)		EACH
		L	W	H	c	d	e	f	g	a	b	
500-1338	94.029	100.0 (3.94)	55.0 (2.17)	25.0 (0.98)	20.5 (0.81)	80.0 (3.15)	35.0 (1.38)	3.5 (0.14)	—	95.0 (3.74)	50.0 (1.97)	4.32
500-1339	94.030	125.0 (4.92)	70.0 (2.76)	35.0 (1.83)	30.5 (1.20)	105.0 (4.13)	50.0 (1.97)	3.5 (0.14)	—	120.0 (4.72)	65.0 (2.56)	5.48
500-1340	94.031	160.0 (6.30)	95.0 (3.74)	45.0 (1.77)	40.0 (1.57)	140.0 (5.51)	75.0 (2.95)	3.5 (0.14)	—	155.0 (6.10)	90.0 (3.54)	6.31
500-1341	94.032	215.0 (8.46)	130.0 (5.12)	65.0 (2.56)	60.0 (2.36)	195.0 (7.68)	110.0 (4.33)	3.5 (0.14)	—	210.0 (8.27)	125.0 (4.92)	9.94

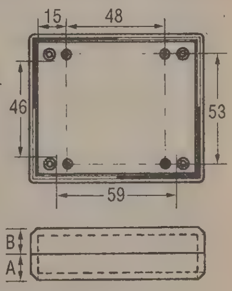
ABS Base and Cover, Medium Gray Base, Glossy Finish, Light Gray Cover, Rounded Corners

500-1342	94.021	100.0 (3.94)	55.0 (2.17)	29.0 (1.14)	24.5 (0.96)	80.0 (3.15)	35.0 (1.38)	3.5 (0.14)	—	—	—	5.21
500-1343	94.022	125.0 (4.92)	70.0 (2.76)	39.0 (1.54)	34.5 (1.36)	105.0 (4.13)	70.0 (2.76)	3.5 (0.14)	—	—	—	6.60
500-1344	94.023	160.0 (6.30)	95.0 (3.74)	49.0 (1.93)	44.5 (1.75)	140.0 (5.51)	75.0 (2.95)	3.5 (0.14)	—	—	—	7.60
500-1345	94.024	215.0 (8.46)	130.0 (5.12)	69.0 (2.72)	64.5 (2.54)	195.0 (7.68)	110.0 (4.33)	3.5 (0.14)	—	—	—	11.98

*Dimension a — Length 5 mm (.197"); Dimension b — Width 5 mm (.197").

Hand Held Series Electronic Enclosures





Consist of two half shells which are held together by 4 self-cutting screws. Four or more mounting provisions for PC boards are molded to bottom shell. Most HH Series enclosures are supplied with a .5 mm (.01") aluminum panel that fits into a recessed area in the cover. Supplied as a kit.

ABS Base and Cover, Black, Matte Finish, Aluminum Panel

Stock No.	Mfr.'s Type	Outside Dimensions — mm (In.)					Aluminum Panel Dimensions — mm (In.)			EACH
		L	W	H	A	B	Length	Width	Thickness	
500-1350	94.390	85.0 (3.35)	72.0 (2.83)	25.0 (0.98)	12.5 (0.49)	12.5 (0.49)	72.0 (2.83)	59.5 (2.34)	0.5 (0.02)	4.34
500-1351	94.391	85.0 (3.35)	72.0 (2.83)	30.5 (1.20)	18.0 (0.71)	12.5 (0.49)	72.0 (2.83)	59.5 (2.34)	0.5 (0.02)	4.59
500-1352	94.392	85.0 (3.35)	72.0 (2.83)	30.5 (1.20)	18.0 (0.71)	18.0 (0.71)	72.0 (2.83)	59.5 (2.34)	0.5 (0.02)	4.78

ABS Base and Cover, Light Gray, Matte Finish, Aluminum Panel

500-1353	94.395	144.5 (5.68)	85.0 (3.35)	25.0 (0.98)	12.5 (0.49)	12.5 (0.49)	131.5 (5.18)	72.0 (2.83)	0.5 (0.02)	7.53
500-1354	94.396	144.5 (5.68)	85.0 (3.35)	31.0 (1.22)	18.5 (0.73)	12.5 (0.49)	131.5 (5.18)	72.0 (2.83)	0.5 (0.02)	7.95
500-1355	94.397	144.5 (5.68)	85.0 (3.35)	37.0 (1.46)	18.5 (0.73)	18.5 (0.73)	131.5 (5.18)	72.0 (2.83)	0.5 (0.02)	9.23
500-1356	94.398	144.5 (5.68)	85.0 (3.35)	49.0 (1.93)	36.5 (1.44)	12.5 (0.49)	131.5 (5.18)	72.0 (2.83)	0.5 (0.02)	9.42
500-1357	94.399	144.5 (5.68)	85.0 (3.35)	55.0 (2.17)	36.5 (1.44)	18.5 (0.73)	131.5 (5.18)	72.0 (2.83)	0.5 (0.02)	9.79
500-1358	94.400	144.5 (5.68)	85.0 (3.35)	73.0 (2.87)	36.5 (1.44)	36.5 (1.44)	131.5 (5.18)	72.0 (2.83)	0.5 (0.02)	10.56

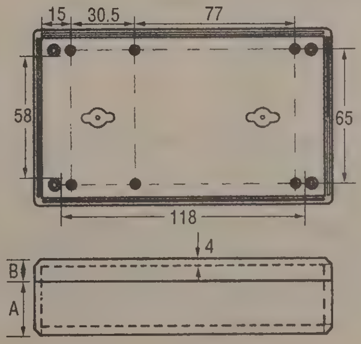
ABS Base and Cover, Light Gray, Matte Finish, No Aluminum Panel

500-1359	94.413	144.5 (5.68)	85.0 (3.35)	21.0 (0.83)	8.5 (0.33)	12.5 (0.49)	—	—	—	6.60
500-1360	94.414	144.5 (5.68)	85.0 (3.35)	27.0 (1.06)	8.5 (0.33)	18.5 (0.73)	—	—	—	7.40
500-1361	94.415	144.5 (5.68)	85.0 (3.35)	45.0 (1.77)	8.5 (0.33)	36.5 (1.44)	—	—	—	9.33

ABS Base and Cover, Light Gray, Glossy Finish, Built-In 9 V Battery Compartment

500-1362	94.407	144.5 (5.68)	85.0 (3.35)	31.0 (1.22)	12.5 (0.49)	18.5 (0.73)	131.5 (5.18)	72.0 (2.83)	0.5 (0.02)	9.06
500-1363	94.408	144.5 (5.68)	85.0 (3.35)	37.0 (1.46)	18.5 (0.73)	18.5 (0.73)	131.5 (5.18)	72.0 (2.83)	0.5 (0.02)	10.34
500-1364	94.409	144.5 (5.68)	85.0 (3.35)	55.0 (2.17)	36.5 (1.44)	18.5 (0.73)	131.5 (5.18)	72.0 (2.83)	0.5 (0.02)	10.95

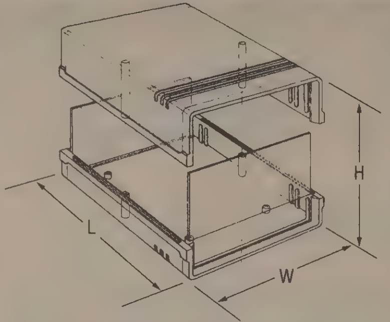
*Dimension a — Length 7 mm (.28"); Dimension b — Width 7 mm (.28").

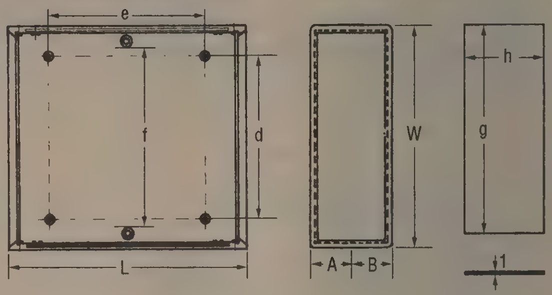


Front Panel Series Electronic Enclosures

- ► Standard Color: Gray; Black Available
- ► Non-Skid Feet

Consists of two ABS half shells plus front and rear 1 mm (.04") thick aluminum panels which are inserted vertically. Enclosures are complete with integral PC board guides and four PC board mounting provisions. Assembled with two self-cutting screws. Supplied as a complete kit with protective covers on aluminum surface. Some FP Series enclosures are equipped with a battery compartment. Easy to customize.





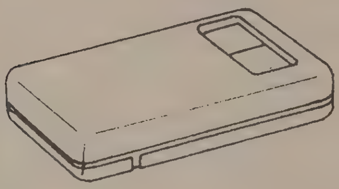
Stock No.	Mfr.'s Type	Outside Dimensions — mm (In.)					Inside Dimensions — mm (In.)			Front Panel Dim. — mm (In.)		EACH
		L	W	H	A	B	d	e	f	g	h	
500-1365	94.192	134.0 (5.28)	129.0 (5.08)	47.0 (1.85)	23.5 (0.93)	23.5 (0.93)	91.0 (3.58)	76.0 (2.99)	105.5 (4.15)	120.0 (4.72)	41.0 (1.61)	**9.93**
500-1366	94.193	134.0 (5.28)	129.0 (5.08)	54.0 (2.13)	23.5 (0.93)	30.5 (1.20)	91.0 (3.58)	76.0 (2.99)	105.5 (4.15)	120.0 (4.72)	48.0 (1.89)	**11.93**
500-1367	94.194	134.0 (5.28)	129.0 (5.08)	61.0 (2.40)	30.5 (1.20)	30.5 (1.20)	91.0 (3.58)	76.0 (2.99)	105.5 (4.15)	120.0 (4.72)	55.0 (2.16)	**13.00**
500-1368	94.198	173.0 (6.81)	154.0 (6.06)	47.0 (1.85)	23.5 (0.93)	23.5 (0.93)	111.0 (4.37)	115.0 (4.59)	127.0 (5.00)	145.0 (5.71)	41.0 (1.61)	**15.84**
500-1369	94.199	173.0 (6.81)	154.0 (6.06)	54.0 (2.13)	23.5 (0.93)	30.5 (1.20)	111.0 (4.37)	115.0 (4.59)	127.0 (5.00)	145.0 (5.71)	48.0 (1.89)	**16.19**
500-1370	94.200	173.0 (6.81)	154.0 (6.06)	61.0 (2.40)	30.5 (1.20)	30.5 (1.20)	111.0 (4.37)	115.0 (4.59)	127.0 (5.00)	145.0 (5.71)	55.0 (2.16)	**16.89**
500-1371	94.216	145.0 (5.71)	85.0 (3.35)	37.0 (1.46)	18.5 (0.73)	18.5 (0.73)	48.0 (1.89)	87.5 (3.44)	62.0 (2.44)	77.5 (3.05)	43.5 (1.71)	**9.07**
500-1372	94.217	145.0 (5.71)	85.0 (3.35)	49.0 (1.93)	18.5 (0.73)	30.5 (1.20)	48.0 (1.89)	87.5 (3.44)	62.0 (2.44)	77.5 (3.05)	43.5 (1.71)	**10.04**
500-1373	94.218	145.0 (5.71)	85.0 (3.35)	61.0 (2.40)	30.5 (1.20)	30.5 (1.20)	48.0 (1.89)	87.5 (3.44)	62.0 (2.44)	77.5 (3.05)	43.5 (1.71)	**11.27**

Enclosure with External Snap-On Battery Compartment Lid for 9 V Battery*

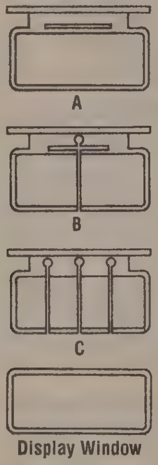
500-1374	94.222	145.0 (5.71)	85.0 (3.35)	49.0 (1.93)	30.5 (1.20)	18.5 (0.73)	48.0 (1.89)	87.5 (3.44)	62.0 (2.44)	77.5 (3.05)	43.5 (1.71)	**10.04**
500-1375	94.223	145.0 (5.71)	85.0 (3.35)	61.0 (2.40)	30.5 (1.20)	30.5 (1.20)	48.0 (1.89)	87.5 (3.44)	62.0 (2.44)	77.5 (3.05)	43.5 (1.71)	**11.27**

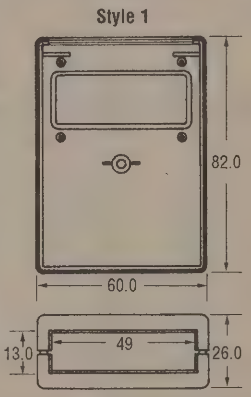
*Dimension a — Length 8 mm (.31"); Dimension b — Width 8 mm (.31"); Dimension c — Height 6 mm (.24").

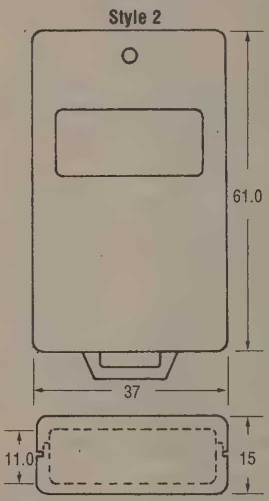
Mini Pocket Series Electronic Enclosures

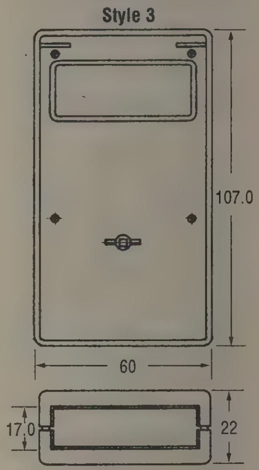


Available in three sizes with up to four push buttons with or without a clear front panel for infrared signals or a clear top plastic readout. Choose from gray or black ABS housings with blue, red or yellow push buttons. Two half shells assembled with one self-cutting screw. Styles 1 and 3 have four internal mounting provisions for PC boards. Stainless Steel clips are available.









Enclosure Supplied with 4 PCB Mounting Screws and External Snap-On Battery Compartment Lid*

Stock No.	Mfr.'s Type	Style No.	Description	Enclosure Color	Push Button Type(s)	Color of Push Buttons	Battery Type	EACH
500-1377	94.314	1	Clear Display Readout, Infrared Panel	Gray	—	—	9 V	**5.48**
500-1378	94.316	1	Infrared Panel and Push Button Set	Gray	A+B+C	Blue	9 V	**6.30**
500-1380	94.315	1	Clear Display Readout, Infrared Panel	Black	—	—	9 V	**5.48**
500-1381	94.317	1	Infrared Panel and Push Button Set	Black	A+B+C	Blue	9 V	**6.30**

Enclosure Supplied with Internal Battery Compartment

500-1382	94.304	2	Push Button	Gray	A	Red	12 V†	**2.28**
500-1383	94.306	2	Push Button	Gray	B	Red	12 V†	**2.28**
500-1384	94.308	2	Push Button	Gray	A	Blue	12 V†	**2.28**
500-1385	94.310	2	Push Button	Gray	B	Blue	12 V†	**2.28**
500-1386	94.305	2	Push Button	Black	A	Red	12 V†	**2.28**
500-1387	94.307	2	Push Button	Black	B	Red	12 V†	**2.28**
500-1388	94.309	2	Push Button	Black	A	Blue	12 V†	**2.28**
500-1389	94.311	2	Push Button	Black	B	Blue	12 V†	**2.28**

Enclosure Supplied with 4 PCB Mounting Screws and External Snap-On Battery Compartment Lid*

500-1390	94.318	3	Push Button Set	Black	A+B+C	Yellow	9 V	**5.55**

*Stainless Steel Clips Available, Order Separately Below. †**12 V Battery Dimensions:** Diameter — 9.91 mm (.39"); Length — 27.94 mm (1.10").

500-1391. 94.758. Stainless Steel Clip ....**EACH 1.33**

Liquid Tight Strain Reliefs (Cord Grips)

Altech Corp.

Seal cable entries and keep contaminants such as liquids, gases and solid materials from entering into enclosures. Provide strain relief to reduce stress on components and termination points. Available in Polyamide (PA) and Nickel Plated Brass (BN). For additional functions and colors, please contact Altech directly.

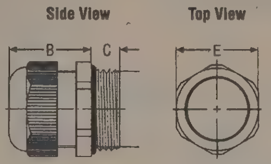
Standard Liquid Tight Strain Reliefs

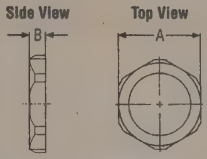
Suitable for most applications, widely used.

Straight-Through

Polyamide (PA)

- PG7 to PG48 and NPT3/8" to NPT3/4" Sizes with Integral Sealing Ridges
- PG29 to PG48 Sizes Have an Additional Preinstalled Polyethylene Seal Ring
- Standard Color: Light Gray





Cord Grips, Polyamide (PA) with Neoprene (NE) Sealing Sleeve

*Nearest US Drill Size.

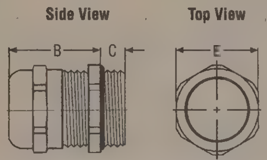
Stock No.	Mfr.'s Type	Thread Size	Cable Dia. mm (In.)	Mtg. Hole Dia. Drill Size*	Dimensions — mm (In.)			EACH
					B	C	E	
500-1245	80.000	PG7	2.0- 5.0 (0.08-0.20)	33/64	22.0 (0.87)	8.0 (0.32)	15.0 (0.59)	**.63**
500-1246	80.003	PG9	4.0- 8.0 (0.16-0.32)	39/64	25.5 (1.00)	8.0 (0.32)	19.0 (0.75)	**.70**
500-1247	80.005	PG11	5.0-10.0 (0.20-0.39)	3/4	28.5 (1.12)	8.0 (0.32)	22.0 (0.87)	**.84**
500-1248	80.007	PG13.5	6.0-12.0 (0.24-0.47)	53/64	29.7 (1.17)	9.0 (0.35)	24.0 (0.94)	**.92**
500-1249	80.009	PG16	10.0-14.0 (0.39-0.55)	29/32	32.0 (1.26)	10.0 (0.39)	27.0 (1.06)	**1.08**
500-1250	80.011	PG21	13.0-18.0 (0.51-0.71)	1 9/64	36.5 (1.44)	11.0 (0.43)	33.0 (1.30)	**1.49**
500-1251	80.013	PG29	18.0-25.0 (0.71-0.98)	1 31/64	43.5 (1.71)	11.0 (0.43)	42.0 (1.65)	**3.02**
500-1252	80.015	PG36	22.0-32.0 (0.87-1.30)	1 7/8	54.0 (2.13)	13.0 (0.51)	53.0 (2.09)	**9.54**
500-1253	80.017	PG42	30.0-38.0 (1.18-1.48)	2 5/32	53.5 (2.11)	13.0 (0.51)	60.0 (2.36)	**13.30**
500-1254	80.019	PG48	34.0-44.0 (1.34-1.73)	2 3/8	55.7 (2.19)	14.0 (0.55)	65.0 (2.56)	**16.82**
500-1255	80.020	NPT3/8"	3.0- 7.0 (0.12-0.28)	11/16	29.0 (1.14)	15.0 (0.59)	22.0 (0.87)	**.87**
500-1256	80.022	NPT1/2"	7.0-12.0 (0.28-0.47)	27/32	31.3 (1.23)	15.0 (0.59)	27.0 (1.06)	**1.03**
500-1257	80.024	NPT3/4"	9.0-16.0 (0.35-0.63)	1 1/16	36.7 (1.45)	15.0 (0.59)	33.0 (1.30)	**1.38**

Locknuts, Polyamide (PA), Color, Light Gray

Stock No.	Mfr.'s Type	Dim. — mm (In.)		EACH
		A	B	
500-1287	86.000	19.0 (0.75)	5.0 (0.20)	.12
500-1288	86.001	22.0 (0.87)	5.0 (0.20)	.12
500-1289	86.002	24.0 (0.94)	5.0 (0.20)	.14
500-1290	86.003	27.0 (1.06)	6.0 (0.24)	.16
500-1291	86.004	30.0 (1.18)	6.0 (0.24)	.18
500-1292	86.005	36.0 (1.42)	7.0 (0.28)	.30
500-1293	86.006	46.0 (1.81)	7.0 (0.28)	.51
500-1294	86.007	60.0 (2.36)	8.0 (0.31)	1.04
500-1295	86.008	65.0 (2.56)	8.0 (0.31)	1.22
500-1296	86.009	70.0 (2.76)	8.0 (0.31)	1.38
500-1297	86.061	24.0 (0.94)	6.0 (0.24)	.20
500-1298	86.062	27.0 (1.06)	6.0 (0.24)	.22
500-1299	86.063	32.0 (1.26)	6.0 (0.24)	.45

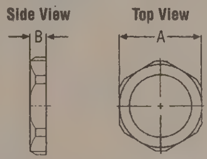
Cord Grips, Nickel Plated Brass (BN) with Neoprene (NE) Sealing Sleeve

- Preinstalled Perbunan (P) Seal Ring (O-Ring)



500-1258	80.100	PG7	2.0- 5.0 (0.08-0.20)	33/64	19.3 (0.76)	5.1 (0.20)	14.0 (0.55)	**1.81**
500-1259	80.103	PG9	4.0- 8.0 (0.16-0.32)	39/64	22.0 (0.87)	5.7 (0.22)	17.0 (0.67)	**1.91**
500-1260	80.105	PG11	5.0-10.0 (0.20-0.39)	3/4	22.5 (0.89)	6.0 (0.24)	20.0 (0.79)	**2.20**
500-1261	80.107	PG13.5	6.0-12.0 (0.24-0.47)	53/64	23.0 (0.91)	6.5 (0.26)	22.0 (0.87)	**2.50**
500-1262	80.109	PG16	10.0-14.0 (0.39-0.55)	29/32	24.5 (0.96)	6.5 (0.26)	24.0 (0.95)	**2.94**
500-1263	80.111	PG21	13.0-18.0 (0.51-0.71)	1 9/64	27.7 (1.09)	7.0 (0.28)	30.0 (1.18)	**4.77**
500-1264	80.113	PG29	18.0-25.0 (0.71-0.98)	1 31/64	32.0 (1.26)	8.0 (0.34)	40.0 (1.58)	**8.73**
500-1265	80.115	PG36	22.0-32.0 (0.87-1.30)	1 7/8	38.0 (1.50)	9.0 (0.35)	50.0 (1.97)	**13.50**
500-1266	80.117	PG42	30.0-38.0 (1.18-1.48)	2 5/32	39.3 (1.55)	10.0 (0.39)	57.0 (2.24)	**27.00**
500-1267	80.119	PG48	34.0-44.0 (1.34-1.73)	2 3/8	41.3 (1.63)	10.0 (0.39)	64.0 (2.52)	**33.00**
500-1268	80.120	NPT3/8"	2.0- 6.0 (0.08-0.24)	11/16	16.9 (0.67)	15.0 (0.59)	17.0 (0.66)	**2.40**
500-1269	80.122	NPT1/2"	6.0-12.0 (0.24-0.47)	27/32	24.5 (0.96)	13.0 (0.51)	24.0 (0.94)	**2.82**
500-1270	80.125	NPT3/4"	13.0-18.0 (0.51-0.71)	1 1/16	27.7 (1.09)	13.0 (0.51)	30.0 (1.18)	**6.20**

Locknuts, Nickel Plated Brass (BN)



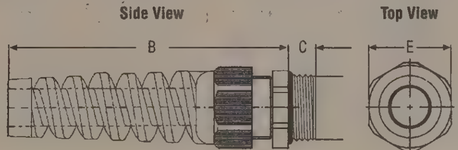
500-1300	86.500	15.0 (0.59)	2.8 (0.11)	.12
500-1301	86.501	18.0 (0.71)	2.8 (0.11)	.12
500-1302	86.502	21.0 (0.83)	3.0 (0.12)	.14
500-1303	86.503	23.0 (0.91)	3.0 (0.12)	.16
500-1304	86.504	26.0 (1.02)	3.0 (0.12)	.20
500-1305	86.505	32.0 (1.26)	3.5 (0.14)	.28
500-1306	86.506	41.0 (1.61)	4.0 (0.16)	.49
500-2307	86.507	51.0 (2.01)	5.0 (0.20)	.77
500-2308	86.508	60.0 (2.36)	5.0 (0.20)	1.62
500-2309	86.509	64.0 (2.52)	5.5 (0.22)	1.81
500-2310	86.541	19.0 (0.75)	3.5 (0.14)	.30
500-2311	86.542	24.0 (0.94)	3.5 (0.14)	.32
500-2312	86.543	30.0 (1.18)	4.6 (0.18)	.49

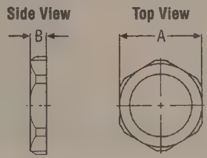
Bend Protection

Polyamide (PA)

- PG7 to PG21 Sizes with Integral Sealing Ridges
- Standard Color: Light Gray

Cord Grips have a "Pigtail" extension to increase the bending radius of the cable, preventing sharp bending and nicks.





Cord Grips, Polyamide (PA) with Neoprene (NE) Sealing Sleeve

500-1271	80.300	PG7	3.5- 6.5 (0.14-0.26)	33/64	60.0 (2.36)	8.0 (0.31)	15.0 (0.59)	**2.10**
500-1272	80.301	PG9	4.0- 8.0 (0.16-0.31)	39/64	72.0 (2.83)	8.0 (0.31)	19.0 (0.74)	**2.30**
500-1273	80.302	PG11	5.0-10.0 (0.20-0.39)	3/4	84.0 (3.30)	8.0 (0.31)	22.0 (0.86)	**2.70**
500-1274	80.303	PG13.5	6.0-12.0 (0.24-0.47)	53/64	95.5 (3.75)	9.0 (0.35)	24.0 (0.94)	**2.90**
500-1275	80.304	PG16	10.0-14.0 (0.39-0.55)	29/32	109.0 (4.29)	10.0 (0.39)	27.0 (1.06)	**3.10**
500-1276	80.305	PG21	13.0-18.0 (0.51-0.71)	1 9/64	128.0 (5.03)	11.0 (0.43)	33.0 (1.29)	**5.70**

Locknuts, Polyamide (PA), Color, Light Gray

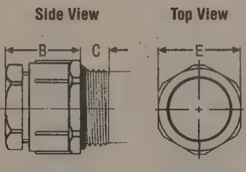
500-1287	86.000	19.0 (0.75)	5.0 (0.20)	.12
500-1288	86.001	22.0 (0.87)	5.0 (0.20)	.12
500-1289	86.002	24.0 (0.94)	5.0 (0.20)	.14
500-1290	86.003	27.0 (1.06)	6.0 (0.24)	.16
500-1291	86.004	30.0 (1.18)	6.0 (0.24)	.18
500-1292	86.005	36.0 (1.42)	7.0 (0.28)	.30

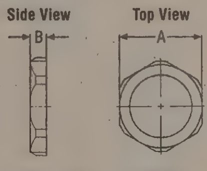
Economy Straight-Through Liquid Tight Strain Reliefs

Ideal for basic, strict budget requirements.

Polystyrene (PS)

- PG7 to PG48 Sizes
- Standard Color: Light Gray





Cord Grips, Polystyrene (PS) with Rubber (RU) Sealing Ring

*Nearest US Drill Size.

Stock No.	Mfr.'s Type	Thread Size	Cable Dia. mm (In.)	Mtg. Hole Dia. Drill Size*	Dimensions — mm (In.)			EACH
					B	C	E	
500-1277	80.600	PG7	5.0- 7.0 (0.20-0.28)	33/64	22.3 (0.88)	7.6 (0.30)	14.2 (0.56)	**.44**
500-1278	80.601	PG9	6.0- 8.0 (0.24-0.32)	39/64	23.0 (0.91)	8.2 (0.32)	20.8 (0.82)	**.50**
500-1279	80.602	PG11	8.0-10.0 (0.36-0.40)	3/4	24.9 (0.98)	8.2 (0.32)	24.9 (0.98)	**.59**
500-1280	80.603	PG13.5	10.0-12.0 (0.39-0.47)	53/64	26.0 (1.02)	9.4 (0.37)	26.8 (1.06)	**.66**
500-1281	80.604	PG16	12.0-14.0 (0.47-0.55)	29/32	28.8 (1.13)	11.3 (0.45)	29.4 (1.16)	**.76**

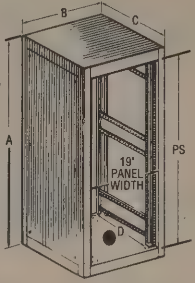
Locknuts, Polyamide (PA), Color, Light Gray

Stock No.	Mfr.'s Type	Dimensions — mm (In.)		EACH
		A	B	
500-1287	86.000	19.0 (0.75)	5.0 (0.20)	.12
500-1288	86.001	22.0 (0.87)	5.0 (0.20)	.12
500-1289	86.002	24.0 (0.94)	5.0 (0.20)	.14
500-1290	86.003	27.0 (1.06)	6.0 (0.24)	.16
500-1291	86.004	30.0 (1.18)	6.0 (0.24)	.18

Economizer Cabinet Racks

- 14 Gauge Welded Steel Frame
- Sides Removable From Outside
- Rear Door Included
- 8$\frac{1}{2}$" Dia. Opening In Bottom Panel For Cable Access
- Steel or Plexiglass Front Door Available: Order Separately
- 1 Pair of Adjustable Panel Rails Included
- Finish: Royal Blue or Sand Texture
- Available In 5 Panel Heights and 3 Depths
- Add-A-Racks Available
- Ventilated Version Available

Design Features. Furnished complete with sides, rear door and one pair of panel mounting rails. **Panel Mounting Rails:** 12 gauge steel. Fully adjustable, tapped 10-32 in front on E.I.A. universal spacing. Separate .281" diameter holes provided for mounting accessories. **Rear Door:** 20 gauge steel. Opens 180° to completely clear rear panel space. Can be hinged left or right. Key lock is standard. **Side Panels:** 20 gauge steel. Removable from outside for easy access. **Bottom:** Pierced for RC-7758 casters. Four 1.109" knockouts for cable access. Available in standard Bud finishes at no extra charge. (Also available in 24" width from factory).



Stock No.		Mfr.'s Type	Panel Space PS	Outside Height A	Outside Width B	Outside Depth C	Clear Inside Depth D	Est. Weight (Lbs.)	EACH
RB	S								
736Q9620	736Q9700	ER-16502	42"	47$\frac{5}{16}$"	22"	18$\frac{1}{2}$"	17"	110	545.05
736Q9621	736Q9701	ER-16503	52$\frac{1}{2}$"	57$\frac{13}{16}$"	22"	18$\frac{1}{2}$"	17"	124	599.50
736Q9622	736Q9702	ER-16504	61$\frac{1}{4}$"	66$\frac{9}{16}$"	22"	18$\frac{1}{2}$"	17"	139	643.60
736Q9623	736Q9703	ER-16505	70"	75$\frac{5}{16}$"	22"	18$\frac{1}{2}$"	17"	151	681.85
736Q9624	736Q9704	ER-16506	78$\frac{3}{4}$"	84$\frac{1}{16}$"	22"	18$\frac{1}{2}$"	17"	163	711.05
736Q9625	736Q9705	ER-16512	42"	47$\frac{5}{16}$"	22"	25$\frac{1}{2}$"	24"	128	617.05
736Q9626	736Q9706	ER-16513	52$\frac{1}{2}$"	57$\frac{13}{16}$"	22"	25$\frac{1}{2}$"	24"	145	644.00
736Q9627	736Q9707	ER-16514	61$\frac{1}{4}$"	66$\frac{9}{16}$"	22"	25$\frac{1}{2}$"	24"	162	704.45
736Q9628	736Q9708	ER-16515	70"	75$\frac{5}{16}$"	22"	25$\frac{1}{2}$"	24"	175	735.55
736Q9629	736Q9709	ER-16516	78$\frac{3}{4}$"	84$\frac{1}{16}$"	22"	25$\frac{1}{2}$"	24"	189	778.50
736Q9630	736Q9710	ER-16522	42"	47$\frac{5}{16}$"	22"	30$\frac{3}{4}$"	29$\frac{1}{4}$"	143	644.20
736Q9631	736Q9711	ER-16523	52$\frac{1}{2}$"	57$\frac{13}{16}$"	22"	30$\frac{3}{4}$"	29$\frac{1}{4}$"	160	674.05
736Q9632	736Q9712	ER-16524	61$\frac{1}{4}$"	66$\frac{9}{16}$"	22"	30$\frac{3}{4}$"	29$\frac{1}{4}$"	180	752.40
736Q9633	736Q9713	ER-16525	70"	75$\frac{13}{16}$"	22"	30$\frac{3}{4}$"	29$\frac{1}{4}$"	194	771.30
736Q9634	736Q9714	ER-16526	78$\frac{3}{4}$"	84$\frac{1}{16}$"	22"	30$\frac{3}{4}$"	29$\frac{1}{4}$"	209	840.50

Optional Accessories

Mounting Rails: One pair of mounting rails is provided. Some accessories may require two sets of rails. Refer to accessory chart to order extra sets. **Doors:** Rear door provided. Optional plexiglass and steel doors are available.

Steel Door

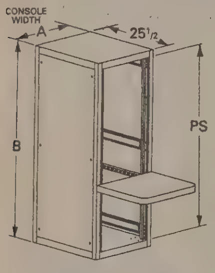
Stock No.	Mfr.'s Type	Fits Panel Space	EACH
736Q9610	ER-16532	42"	148.70
736Q9611	ER-16533	52$\frac{1}{2}$"	159.25
736Q9612	ER-16534	61$\frac{1}{4}$"	180.05
736Q9613	ER-16535	70"	190.30
736Q9614	ER-16536	78$\frac{3}{4}$"	197.05

Mounting Rails (Pair)

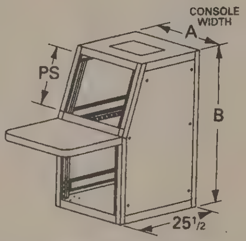
Stock No.	Mfr.'s Type	Fits Panel Space	EACH
736-9605	PMR-9450	42"	59.85
736-9606	PMR-9451	52$\frac{1}{2}$"	66.30
736-9607	PMR-9452	61$\frac{1}{4}$"	74.15
736-9608	PMR-9453	70"	81.10
736-9609	PMR-9454	78$\frac{3}{4}$"	86.00

Plexiglass Door

Stock No.	Mfr.'s Type	Fits Panel Space	EACH
736Q9163	V-9063-A	42"	349.40
736Q9164	V-9064-A	52$\frac{1}{2}$"	363.20
736Q9165	V-9065-A	61$\frac{1}{4}$"	407.75
736Q9166	V-9066-A	70"	450.50
736Q9167	V-9067-A	78$\frac{3}{4}$"	472.85



Vertical Cabinet Consoles



Inclined Cabinet Consoles

Economizer™ Consoles

- Constructed Out of Standard Economizer Products
- EIA 19" Panel Width
- Finish: Black Texture (BT), Sand Texture (S), or Royal Blue Texture (RB)
- Available In One, Two, or Three Bay Configurations
- 24" Clear Inside Depth
- 18" Deep, Antique White Desktops
- Each Cabinet Bay and Desktop Is Shipped Individually, Requiring Minor Assembly for Completion

Vertical Cabinet Consoles

One Bay

Stock No.*	Mfr.'s Type	A Console Width	B Outside Height	PS Panel Space	EACH
736Q350N	CV-17614	22"	66$\frac{9}{16}$"	61$\frac{1}{4}$"	990.50
736Q351N	CV-17615	22"	75$\frac{5}{16}$"	70"	1042.50
736Q352N	CV-17616	22"	84$\frac{1}{16}$"	78$\frac{3}{4}$"	1097.25

Two Bay

Stock No.*	Mfr.'s Type	A Console Width	B Outside Height	PS Panel Space	EACH
736Q353N	CV-17624	44"	66$\frac{9}{16}$"	61$\frac{1}{4}$"	1851.80
736Q354N	CV-17625	44"	75$\frac{5}{16}$"	70"	1920.65
736Q355N	CV-17626	44"	84$\frac{1}{16}$"	78$\frac{3}{4}$"	2005.65

Three Bay

Stock No.*	Mfr.'s Type	A Console Width	B Outside Height	PS Panel Space	EACH
736Q356N	CV-17634	66"	66$\frac{9}{16}$"	61$\frac{1}{4}$"	2587.30
736Q357N	CV-17635	66"	75$\frac{5}{16}$"	70"	2679.15
736Q410N	CV-17636	66"	84$\frac{1}{16}$"	78$\frac{3}{4}$"	2800.35

***Color Code:** 1 = BT, 2 = S, 3 = RB; insert the color number where the N appears in the stock number.

Inclined Cabinet Consoles

One Bay

Stock No.*	Mfr.'s Type	A Console Width	B Outside Height	PS Panel Space	EACH
736Q412N	CI-17714	22"	42$\frac{5}{16}$"	10$\frac{1}{2}$"	882.95
736Q413N	CI-17715	22"	45$\frac{11}{16}$"	14"	908.25
736Q414N	CI-17716	22"	50$\frac{3}{16}$"	19$\frac{1}{4}$"	938.55

Two Bay

Stock No.*	Mfr.'s Type	A Console Width	B Outside Height	PS Panel Space	EACH
736Q415N	CI-17724	44"	42$\frac{5}{16}$"	10$\frac{1}{2}$"	1743.30
736Q416N	CI-17725	44"	45$\frac{11}{16}$"	14"	1780.20
736Q417N	CI-17726	44"	50$\frac{3}{16}$"	19$\frac{1}{4}$"	1823.75

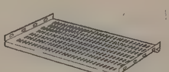
Three Bay

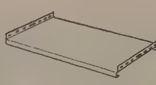
Stock No.*	Mfr.'s Type	A Console Width	B Outside Height	PS Panel Space	EACH
736Q418N	CI-17734	66"	42$\frac{5}{16}$"	10$\frac{1}{2}$"	2434.65
736Q419N	CI-17735	66"	45$\frac{11}{16}$"	14"	2483.25
736Q500N	CI-17736	66"	50$\frac{3}{16}$"	19$\frac{1}{4}$"	2540.10

***Color Code:** 1 = BT, 2 = S, 3 = RB; insert the color number where the N appears in the stock number.

Accessories

Stationary Shelves





Description: 16 ga. steel; supports 200 lbs.; flanged front and rear for added support; black texture finish; models to fit 19" and 24" panel widths, available in ventilated and non-ventilated versions (ventilated have 20% open area); hardware supplied. Also available in metallic gray and white textured.

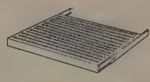
Non-Ventilated Shelves

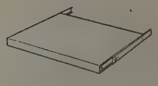
Stock No.	Mfr.'s Type	Cabinet Racks		Shelves		EACH
		Panel Width	Max. Clear Inside Depth	Width	Depth	
736-2379	SH-2379	19"	17"	17$\frac{29}{32}$"	14$\frac{1}{4}$"	46.75
736-2380	60-2380	19"	20$\frac{1}{2}$"	17$\frac{7}{8}$"	19$\frac{1}{4}$"	48.80
736-2381	60-2381	19"	24"	17$\frac{7}{8}$"	22$\frac{3}{4}$"	51.20
736-2382	SH-2382	19"	29$\frac{1}{4}$"	17$\frac{29}{32}$"	26$\frac{1}{2}$"	54.85
736-2479	SH-2479	24"	17"	22$\frac{29}{32}$"	14$\frac{1}{4}$"	54.55
736-2480	SH-2480	24"	20$\frac{1}{2}$"	22$\frac{29}{32}$"	17$\frac{3}{4}$"	56.95
736-2481	SH-2481	24"	24"	22$\frac{29}{32}$"	21$\frac{1}{4}$"	59.25
736-2482	SH-2482	24"	29$\frac{1}{4}$"	22$\frac{29}{32}$"	26$\frac{1}{2}$"	63.60

Ventilated Shelves

Stock No.	Mfr.'s Type	Panel Width	Max. Clear Inside Depth	Width	Depth	EACH
736-2383	SH-2383	19"	17"	17$\frac{29}{32}$"	14$\frac{1}{4}$"	48.80
736-2384	SH-2384	19"	20$\frac{1}{2}$"	17$\frac{29}{32}$"	17$\frac{3}{4}$"	51.10
736-2385	SH-2385	19"	24"	17$\frac{29}{32}$"	21$\frac{1}{4}$"	53.00
736-2386	SH-2386	19"	29$\frac{1}{4}$"	17$\frac{29}{32}$"	26$\frac{1}{2}$"	57.40
736-2483	SH-2483	24"	17"	22$\frac{29}{32}$"	14$\frac{1}{4}$"	57.25
736-2484	SH-2484	24"	20$\frac{1}{2}$"	22$\frac{29}{32}$"	17$\frac{3}{4}$"	59.70
736-2485	SH-2485	24"	24"	22$\frac{29}{32}$"	21$\frac{1}{4}$"	62.20
736-2486	SH-2486	24"	29$\frac{1}{4}$"	22$\frac{29}{32}$"	26$\frac{1}{2}$"	66.85

Sliding Shelves





Description: 16 ga. steel; flanged on all 4 sides for added support; black texture finish; models to fit 19" and 24" panel widths, available in ventilated and non-ventilated versions (ventilated have 20% open area); hardware supplied.

Non-Ventilated Shelves

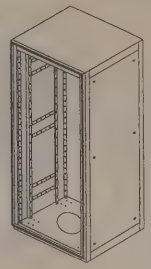
Stock No.	Mfr.'s Type	Cabinet Racks		Shelves				EACH
		Panel Width	Max. Clear Inside Depth	W	D	Load Rating (lbs.)	Travel	
736-2387	SH-2387	19"	17"	17"	14$\frac{1}{4}$"	140	9	90.35
736-2388	SH-2388	19"	20$\frac{1}{2}$"	17"	17$\frac{3}{4}$"	128	12	95.90
736-2389	SH-2389	19"	24"	17"	21$\frac{1}{4}$"	92	15	101.15
736-2390	SH-2390	19"	29$\frac{1}{4}$"	17"	26$\frac{1}{2}$"	70	19	108.20
736-2487	SH-2487	24"	17"	22"	14$\frac{1}{4}$"	140	9	98.55
736-2488	SH-2488	24"	20$\frac{1}{2}$"	22"	17$\frac{3}{4}$"	128	12	104.45
736-2489	SH-2489	24"	24"	22"	21$\frac{1}{4}$"	92	15	110.25
736-2490	SH-2490	24"	29$\frac{1}{4}$"	22"	26$\frac{1}{2}$"	70	19	117.75

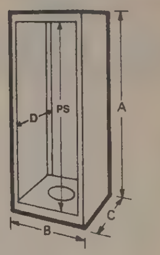
Ventilated Shelves

Stock No.	Mfr.'s Type	Panel Width	Max. Clear Inside Depth	W	D	Load Rating (lbs.)	Travel	EACH
736-2391	SH-2391	19"	17"	17"	14$\frac{1}{4}$"	140	9	91.80
736-2392	SH-2392	19"	20$\frac{1}{2}$"	17"	17$\frac{3}{4}$"	128	12	97.40
736-2393	SH-2393	19"	24"	17"	21$\frac{1}{4}$"	92	15	102.80
736-2394	SH-2394	19"	29$\frac{1}{4}$"	17"	26$\frac{1}{2}$"	70	19	110.00
736-2491	SH-2491	24"	17"	22"	14$\frac{1}{4}$"	140	9	100.40
736-2492	SH-2492	24"	20$\frac{1}{2}$"	22"	17$\frac{3}{4}$"	128	12	106.40
736-2493	SH-2493	24"	24"	22"	21$\frac{1}{4}$"	92	15	112.10

Classic II Cabinet Racks

Welded Frame: 14-gauge steel vertical rails, 16-gauge steel top and bottom. Uniquely designed, 16-gauge steel rail supports. Furnished complete with removable sides, rear door and one pair of panel mounting rails. **Panel Mounting Rails:** 12-gauge steel. Fully adjustable, tapped #10-32 in front on EIA universal spacing. Separate .281" diameter holes provided for mounting accessories. Two pairs furnished. **Side Panel:** 20-gauge steel. Removable from outside for easy access. **Bottom:** Pierced for RC-7758 casters, and with one 8½" diameter hole and four 1.109" knockouts for cable access. **Finishes:** Gray Textured (GT), Royal Blue Textured (RB) are standard. Available in other Bud textured finishes at no extra cost.





Non-Ventilated*

Stock No.		Mfr.'s Type	Panel Space (PS) Inches	Outside Height (A) Inches	Outside Width (B) Inches	Outside Depth (C) Inches	Clear Inside Depth (D) Inches	Est. Wt. Lbs.	EACH
RB	GT								
736Q9547	736Q9522	AGR 9522	42.00	47.31	22	18.50	17.00	110	607.85
736Q9548	736Q9523	AGR 9523	52.50	57.81	22	18.50	17.00	124	665.75
736Q9549	736Q9524	AGR 9524	61.25	66.56	22	18.50	17.00	139	748.85
736Q9550	736Q9525	AGR 9525	70.00	75.31	22	18.50	17.00	151	789.65
736Q9551	736Q9526	AGR 9526	78.75	84.06	22	18.50	17.00	163	856.25
736Q9552	736Q9532	AGR 9532	42.00	47.31	22	25.50	24.00	128	674.60
736Q9553	736Q9533	AGR 9533	52.50	57.81	22	25.50	24.00	145	716.45
736Q9554	736Q9534	AGR 9534	61.25	66.56	22	25.50	24.00	162	805.15
736Q9555	736Q9535	AGR 9535	70.00	75.31	22	25.50	24.00	175	859.60
736Q9556	736Q9536	AGR 9536	78.75	84.06	22	25.50	24.00	189	917.65
736Q9557	736Q9542	AGR 9542	42.00	47.31	22	30.75	29.25	143	686.00
736Q9558	736Q9543	AGR 9543	52.50	57.81	22	30.75	29.25	160	755.45
736Q9559	736Q9544	AGR 9544	61.25	66.56	22	30.75	29.25	180	854.00
736Q9560	736Q9545	AGR 9545	70.00	75.31	22	30.75	29.25	194	912.40
736Q9561	736Q9546	AGR 9546	78.75	84.06	22	30.75	29.25	209	983.90

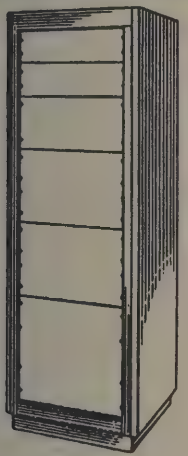
*__Note:__ Ventilated versions available.

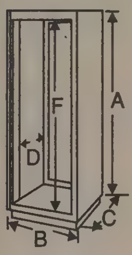
Front Doors (Rear doors included with rack)

Stock No.		Mfr.'s Type	Fits Racks With	Wt. Lbs.	EACH
RB	GT				
736Q9562	736Q0932	AGD-932	42" Panel Space	20	185.70
736Q9563	736Q0933	AGD-933	52½" Panel Space	23	197.70
736Q9564	736Q0934	AGD-934	61¼" Panel Space	26	224.00
736Q9565	736Q0935	AGD-935	70" Panel Space	28	237.00

*Order door to match color of rack.

Series 60 Upright Cabinet Racks





- 14 Gauge Welded Steel Frame
- Sides Removable From Inside
- Rear Door Comes Standard
- Open Bottom
- Steel and Plexiglass Front Door Available: Order Separately
- Add-a-Rack Available
- 2 Pairs of Adjustable Panel Mounting Rails Standard
- Finish: Royal Blue or Gray Textured
- Available in 7 Panel Heights and 3 Depths. Inclined Panel Racks also Available. See Below

These cabinet racks are proof of what Bud designers have striven for and achieved: quality enclosures that enhance the function, appearance and value of your products. All Series 60 Cabinet Racks include welded frame, sides, top and rear door.

Stock No.		Mfr.'s Type†	Ht. In.	P.S.* In.	Depth In.	Wt. Lbs.	EACH
RB	GT						
736Q8971	736Q8905	60-2301	40⅛	31½	22	137	822.20
736Q8972	736Q8910	60-2302	50⅝	42	22	162	930.55
736Q8973	736Q8915	60-2303	61⅛	52½	22	189	1017.25
736Q8974	736Q8920	60-2304	69⅞	61¼	22	215	1104.05
736Q8975	736Q8925	60-2305	78⅝	70	22	227	1177.55
736Q8976	736Q8935	60-2307	29⅝	21	25½	123	784.00
736Q8977	736Q8945	60-2308	40⅛	31½	25½	145	842.85
736Q8978	736Q8955	60-2311	69⅞	61¼	25½	216	1131.20
736Q8979	736Q8960	60-2312	78⅝	70	25½	231	1196.60
736Q8980	736Q8970	60-2313	87⅜	78¾	25½	263	1299.45

*Panel Space. †When ordering, specify color suffix; Louvered sides also available from factory.

Plexiglass Doors

- Fits Series 60 and 2000 Racks
- ⅛" Smoke Gray Plexiglass
- Frame is 1$\frac{13}{32}$" × 1⅛" Anodized Aluminum Extrusion With Longitudinal Grooves for Enhanced Appearance
- Door is Magnetically Held In Closed Position
- Easily Installed or Removed Through Use of Spring Pin Hinges
- Inner Surface of Door Is at Least 1½" From Front Panel
- Door Clears Panel Space When Opened 90° or More
- Installation Hardware Furnished

Stock No.	Mfr.'s Type	Upright Rack Vertical Panel Space	Weight Lbs.	EACH
736Q9160	V-9060-A	21"	11	285.00
736Q9161	V-9061-A	31½"	16	313.50
736Q9162	V-9062-A	35"	17	337.20
736Q9163	V-9063-A	42"	19	349.40
736Q9164	V-9064-A	52½"	20	363.20
736Q9165	V-9065-A	61¼"	23	407.75
736Q9166	V-9066-A	70"	24	450.50
736Q9167	V-9067-A	78¼"	26	472.85

Stock No.	Mfr.'s Type*	Inclined Vertical Panel Space	Weight Lbs.	EACH
736Q9168	V-9068-A	29¾"	14	310.05
736Q9169	V-9069-A	24½"	13	304.85
736Q9170	V-9070-A	22¾"	12	297.95

*See inclined units below and on next page.

Series 30 (Extra Deep) Upright Cabinet Racks

Stock No.		Mfr.'s Type	Outside Height	Outside Width	Outside Depth	Clear Inside Depth	Panel Space	Top Opening	Wt. Lbs.	EACH
RB	GT									
736Q8981	736Q2300	30-2300	29⅝"	24$\frac{1}{16}$"	30¾"	29¼"	21"	18$\frac{5}{16}$" × 25¾"	154	840.85
736Q8982	736Q2301	30-2301	40⅛"	24$\frac{1}{16}$"	30¾"	29¼"	31½"	18$\frac{5}{16}$" × 25¾"	174	920.00
736Q8983	736Q2302	30-2302	50⅝"	24$\frac{1}{16}$"	30¾"	29¼"	42"	18$\frac{5}{16}$" × 25¾"	202	1032.55
736Q8984	736Q2303	30-2303	61⅛"	24$\frac{1}{16}$"	30¾"	29¼"	52½"	18$\frac{5}{16}$" × 25¾"	225	1133.85
736Q9000	736Q2304	30-2304	69⅞"	24$\frac{1}{16}$"	30¾"	29¼"	61¼"	18$\frac{5}{16}$" × 25¾"	245	1213.05
736Q8986	736Q2305	30-2305	78⅝"	24$\frac{1}{16}$"	30¾"	29¼"	70"	18$\frac{5}{16}$" × 25¾"	268	1306.20
736Q8987	736Q2306	30-2306	87⅜"	24$\frac{1}{16}$"	30¾"	29¼"	78¾"	18$\frac{5}{16}$" × 25¾"	294	1396.90

*Supplied with plain sides and plain rear door.

Front Doors

Rear Door Supplied With Racks. Width: 18$\frac{15}{16}$"

Finish: Royal Blue or Gray Textured

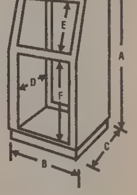
Height	Fits Upright Rack With This Panel Space	Wt. Lbs.	Plain				Louvered			
			Stock No.		Mfr.'s Type	EACH	Stock No.		Mfr.'s Type	EACH
			RB	GT			RB	GT		
21$\frac{7}{16}$"	21"	8	736Q8988	736Q2340	60-2340	134.30	736Q8995	736Q2540	60-2540	143.65
31$\frac{15}{16}$"	31½"	11½	736Q8989	736Q2341	60-2341	149.20	736Q8996	736Q2541	60-2541	158.50
42$\frac{7}{16}$"	42"	15½	736Q8990	736Q2342	60-2342	157.05	736Q8997	736Q2542	60-2542	166.60
52$\frac{15}{16}$"	52½"	19	736Q8991	736Q2343	60-2343	174.70	736Q8998	736Q2543	60-2543	184.10
61$\frac{11}{16}$"	61¼"	22¼	736Q8992	736Q2344	60-2344	214.30	736Q8999	736Q2544	60-2544	223.65
70$\frac{7}{16}$"	70"	25½	736Q8993	736Q2345	60-2345	223.30	736Q9000	736Q2545	60-2545	233.30
79$\frac{3}{16}$"	78¾"	29	736Q8994	736Q2346	60-2346	226.90	736Q9144	736Q2546	60-2546	236.40

Perforated Tops

Stock No.		Mfr.'s Type	Width	Depth	Fits Upright Rack With Overall Depth Of	Wt. Lbs.	EACH
RB	GT						
736-2370	736-2570	60-2370	21$\frac{15}{16}$"	17"	22"	6	54.85
736-2371	736-2571	60-2371	21$\frac{15}{16}$"	20½"	25½"	7	56.55

Series 60 Inclined Panel Cabinet Racks

Series 60 Inclined Panel Racks are similar to the upright models in style and construction and can be used in conjunction with them. The front is divided into upright and 20° inclined panel space. Two pairs of fully adjustable mounting rails are in the front upright and sloping panel area, and one pair in the rear. **Finish:** Royal blue or gray textured.



Inclined Panel Cabinet Racks

Stock No.		Mfr.'s Type*	Outside Height (A)	Outside Width (B)	Outside Depth (C)	Clear Inside Depth (D)	Inclined Panel Space (E)	Vertical Panel Space (F)	Top Opening	Wt. Lbs.	EACH
RB	GT										
736Q9143	736Q9150	60-2330	50⅝"	24$\frac{1}{16}$"	22"	20½"	10½"	29¾"	11$\frac{13}{16}$" × 18$\frac{5}{16}$"	155	936.05
736Q9002	736Q9151	60-2331	50⅝"	24$\frac{1}{16}$"	22"	20½"	15¾"	24½"	10" × 18$\frac{5}{16}$"	156	936.05
736Q9145	736Q9152	60-2332	50⅝"	24$\frac{1}{16}$"	22"	20½"	17½"	22¾"	9$\frac{7}{16}$" × 18$\frac{5}{16}$"	154	936.05

Series 30 (Extra Deep) Inclined Panel Cabinet Racks

736Q9153	736Q2330	30-2330	50⅝"	24$\frac{1}{16}$"	30¾"	29¼"	10½"	29¾"	20$\frac{9}{15}$" × 18$\frac{5}{16}$"	196	1037.90
736Q9005	736Q2331	30-2331	50⅝"	24$\frac{1}{16}$"	30¾"	29¼"	15¾"	24½"	18¾" × 18$\frac{5}{16}$"	196	1037.90
736Q9146	736Q2332	30-2332	50⅝"	24$\frac{1}{16}$"	30¾"	29¼"	17½"	22¾"	18$\frac{3}{16}$" × 18$\frac{5}{16}$"	196	1037.90

*Supplied with plain sides and plain rear door.

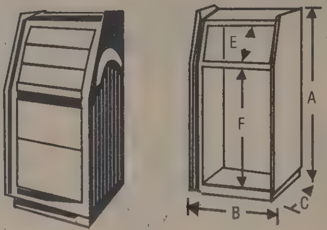
Perforated Tops

Stock No.		Mfr.'s Type	Width	Depth	Fits Inclined Panel Rack With This Top Opening	Wt. Lbs.	EACH
RB	GT						
736-2372	736-2572	60-2372	21$\frac{15}{16}$"	11$\frac{13}{16}$"	11$\frac{13}{16}$" × 18$\frac{5}{16}$"	3½	45.80
736-2373	736-2573	60-2373	21$\frac{15}{16}$"	10"	10" × 18$\frac{5}{16}$"	3½	42.90
736-2374	736-2574	60-2374	21$\frac{15}{16}$"	9$\frac{13}{32}$"	9$\frac{7}{16}$" × 18$\frac{5}{16}$"	3¼	38.35

*Order Perforated tops, sides and doors to match color of cabinet.

Series 2000 Inclined Panel Cabinet Racks

Series 2000 Inclined Panel Racks are similar to the upright models in style and construction and can be used in conjunction with them. The front is divided into upright and 20° inclined panel space. Two pairs of fully adjustable mounting rails are in the front upright and sloping panel area, and one pair in the rear. 24" panel space racks available on special request. Be sure to ask about our console availability using Bud Wedges and Add-A-Racks. We'll be happy to help you design the proper configuration. Available in Royal Blue (RB) or Gray textured (GT).



Series 2000 Inclined Panel Cabinet Racks

Stock No.		Mfr.'s Type	Outside Height (A) (In.)	Outside Width (B) (In.)	Outside Depth (C) (In.)	Clear Inside Depth (D) (In.)	Inclined Panel Space (E) (In.)	Vertical Panel Space (F) (In.)	Weight (Lbs.)	EACH
RB	GT									
736Q9053	736Q7102	SE-2064	51 1/4	24 3/16	23 7/8	20 1/2	10 1/2	29 1/4	163	**991.45**
736Q9054	736Q7110	SE-2065	51 1/4	24 3/16	23 7/8	20 1/2	15 3/4	24 1/2	161	**991.50**
736Q9055	736Q7122	SE-2066	51 1/4	24 3/16	23 7/8	20 1/2	17 1/2	22 3/4	164	**991.50**

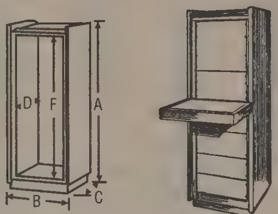
Series 30-2000 (Extra Deep) Inclined Panel Cabinet Racks

736Q9056	736Q7103	S30-2064	51 1/4	24 3/16	32 5/8	29 1/4	10 1/2	29 3/4	223	**1049.30**
736Q9057	736Q7104	S30-2065	51 1/4	24 3/16	32 5/8	29 1/4	15 3/4	24 1/2	223	**1049.45**
736Q9058	736Q7105	S30-2066	51 1/4	24 3/16	32 5/8	29 1/4	17 1/2	22 3/4	223	**1049.45**

*Supplied with plain sides and plain rear door.

Series 2000 Upright Cabinet Racks

- ► **14 Gauge Welded Steel Frame**
- ► **Sides Removable From Inside**
- ► **Rear Door Included**
- ► **Steel and Plexiglass Front Door Available: Order Separately**
- ► **Open Bottom**
- ► **2 Pair Adjustable Panel Mounting Rails Included**
- ► **Finish: Royal Blue (RB) or Gray Textured (GT)**
- ► **Available In 8 Panel Heights and 3 Depths; Inclined Panel Racks Also Available**
- ► **Add-A-Rack Available**



Here are electronic enclosures that do more than house equipment. The sheer square line of the Series 2000, its symmetrical styling is the result of experience and perception Bud designers have. All Series 2000 cabinet racks include welded frame and base, sides, top and rear door (louvered sides also available from factory).

Series 2000

Stock No.		Mfr.'s Type*	Outside Height (A) (In.)	Outside Width (B) (In.)	Outside Depth (C) (In.)	Clear Inside Depth (D) (In.)	Panel Space (F) (In.)	Weight (Lbs.)	EACH
RB	GT								
736Q9059	736Q3949	E-2000	30 1/4	24 3/16	23 7/8	20 1/2	21	119	**782.60**
736Q9060	736Q3954	E-2001	40 3/4	24 3/16	23 7/8	20 1/2	31 1/2	141	**838.50**
736Q9061	736Q3955	E-2002	44 1/4	24 3/16	23 7/8	20 1/2	35	149	**867.75**
736Q9062	736Q3962	E-2003	51 1/4	24 3/16	23 7/8	20 1/2	42	168	**945.05**
736Q9063	736Q3966	E-2004	61 3/4	24 3/16	23 7/8	20 1/2	52 1/2	195	**1043.60**
736Q9064	736Q3974	E-2005	70 1/2	24 3/16	23 7/8	20 1/2	61 1/4	216	**1141.85**
736Q9065	736Q3979	E-2006	79 1/4	24 3/16	23 7/8	20 1/2	70	233	**1197.80**
736Q9066	736Q3980	E-2007	88	24 3/16	23 7/8	20 1/2	78 3/4	260	**1298.95**
736Q9067	736Q3981	E-2008	30 1/4	24 3/16	27 3/8	24	21	129	**793.15**
736Q9068	736Q3982	E-2009	40 3/4	24 3/16	27 3/8	24	31 1/2	154	**867.75**
736Q9069	736Q4010	E-2010	44 1/4	24 3/16	27 3/8	24	35	159	**905.10**
736Q9070	736Q4017	E-2011	51 1/4	24 3/16	27 3/8	24	42	179	**995.45**
736Q9071	736Q4021	E-2012	61 3/4	24 3/16	27 3/8	24	52 1/2	215	**1117.30**
736Q9072	736Q4027	E-2013	70 1/2	24 3/16	27 3/8	24	61 1/4	234	**1182.00**
736Q9073	736Q4030	E-2014	79 1/4	24 3/16	27 3/8	24	70	244	**1224.45**
736Q9074	736Q4034	E-2015	88	24 3/16	27 3/8	24	78 3/4	268	**1325.75**

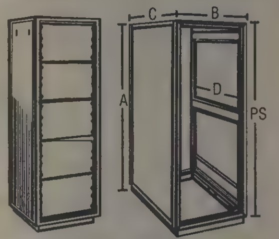
Series 30-2000 (Extra Deep) Upright Cabinet Racks

736Q9075	736Q4000	E30-2000	30 1/4	24 3/16	32 5/8	29 1/4	21	150	**851.85**
736Q9076	736Q4001	E30-2001	40 3/4	24 3/16	32 5/8	29 1/4	31 1/2	175	**918.90**
736Q9077	736Q4002	E30-2002	44 1/4	24 3/16	32 5/8	29 1/4	35	180	**972.60**
736Q9078	736Q4003	E30-2003	51 1/4	24 3/16	32 5/8	29 1/4	42	217	**1037.25**
736Q9079	736Q4004	E30-2004	61 3/4	24 3/16	32 5/8	29 1/4	52 1/2	248	**1158.25**
736Q9080	736Q4005	E30-2005	70 1/2	24 3/16	32 5/8	29 1/4	61 1/4	259	**1233.30**
736Q9081	736Q4006	E30-2006	79 1/4	24 3/16	32 5/8	29 1/4	70	303	**1324.65**
736Q9082	736Q4007	E30-2007	88	24 3/16	32 5/8	29 1/4	78 3/4	307	**1413.40**

*Supplied with plain sides and plain rear door.

All American Rack

- ► **14 Gauge Welded Steel Frame**
- ► **Sides Removable From Outside, No Screws**
- ► **Rear Door Included**
- ► **Steel and Plexiglass Front Door Available: Order Separately**
- ► **Open Bottom**
- ► **2 Pair Adjustable Panel Mounting Rails Included**
- ► **Finish: White Textured Frame With Sand Textured Sides, Rear Door, and Top**
- ► **Available In 5 Panel Heights and 2 Depths**
- ► **Add-A-Rack Available**



The All-American Rack features a unique combination of steel and aluminum components which provide an optimum blend of strength and economy. The frame is constructed of heavy-duty aluminum extrusions with die-cast aluminum corner brackets and steel supports. The sides, top and doors can be removed from the outside in seconds to provide complete interior accessibility. Available in five panel heights and a choice of 24" or 30" depths, the All-American Rack also offers a wide range of accessories including plexiglass doors for front or rear. An Add-A-Rack system, used to combine two or more racks into one integral system, is also available. For complete engineering data, Form No. AA-87, and to order, contact your local Allied facility.

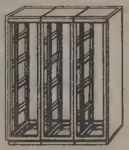
Stock No.	Mfr.'s Type	Outside Height (A) (In.)	Outside Width (B) (In.)	Outside Depth (C) (In.)	Clear Inside Depth (D) (In.)	Panel Space (PS) (In.)	Clear Top Opening (In.)	Weight (Lbs.)	EACH
736Q0412	AA-16412	48 13/16	23 5/8	26 1/2	24	42	19 × 21 7/8	155	**1067.60**
736Q0413	AA-16413	59 5/16	23 5/8	26 1/2	24	52 1/2	19 × 21 7/8	174	**1118.45**
736Q0414	AA-16414	68 1/16	23 5/8	26 1/2	24	61 1/4	19 × 21 7/8	196	**1208.10**
736Q0415	AA-16415	76 13/16	23 5/8	26 1/2	24	70	19 × 21 7/8	212	**1251.75**
736Q0416	AA-16416	85 9/16	23 5/8	26 1/2	24	78 3/4	19 × 21 7/8	228	**1360.65**
736Q0422	AA-16422	48 13/16	23 5/8	31 3/4	29 1/4	42	19 × 27 1/8	170	**1115.35**
736Q0423	AA-16423	59 5/16	23 5/8	31 3/4	29 1/4	52 1/2	19 × 27 1/8	191	**1203.90**
736Q0424	AA-16424	68 1/16	23 5/8	31 3/4	29 1/4	61 1/4	19 × 27 1/8	215	**1272.65**
736Q0425	AA-16425	76 13/16	23 5/8	31 3/4	29 1/4	70	19 × 27 1/8	233	**1341.40**
736Q0426	AA-16426	85 9/16	23 5/8	31 3/4	29 1/4	78 3/4	19 × 27 1/8	250	**1423.45**

NOTE: Rear door provided. Optional doors can be used front or rear.

Optional Accessories

Fits	Plexiglass Doors			Steel Doors		
	Stock No.	Mfr.'s Type	EACH	Stock No.	Mfr.'s Type	EACH
AA-16412, AA16422	736Q0722	AA-16722	**307.20**	736-0727	AA-16702	**316.40**
AA-16413, AA16423	736Q0723	AA-16723	**330.80**	736-0728	AA-16703	**340.70**
AA-16414, AA16424	736Q0724	AA-16724	**349.20**	736-0729	AA-16704	**359.70**
AA-16415, AA16425	736Q0725	AA-16725	**359.75**	736-0730	AA-16705	**370.55**
AA-16416, AA16426	736Q0726	AA-16726	**386.10**	736-0731	AA-16706	**397.65**

Add-A-Rack System



For Series 60, Series 30 and Series 2000 Cabinet Racks

Used to combine two or more enclosures into one integral system. **Design Features.** Assembly consists of a welded frame, top, bottom and rear door. Aluminum extrusions are included for Series 2000. **Bonus Features.** The advantage of using this system is economy. When developing a band of enclosures, costs can be dramatically reduced by using one complete unit and several Add-A-Rack assemblies to obtain the optimum width. **Finishes:** Order the same color as the cabinet rack.

Series 60/30

Stock No.		Mfr.'s Type	Use With Rack	Depth Inside (In.)	EACH
RB	GT				
736Q9083	736Q2307	60-2500	60-2300	20 1/2	**624.00**
736Q9084	736Q2308	60-2501	60-2301	20 1/2	**683.75**
736Q9085	736Q2309	60-2502	60-2302	20 1/2	**765.05**
736Q9086	736Q2310	60-2503	60-2303	20 1/2	**857.25**
736Q9087	736Q2311	60-2504	60-2304	20 1/2	**924.00**
736Q9088	736Q2312	60-2505	60-2305	20 1/2	**997.60**
736Q9089	736Q2320	60-2506	60-2306	20 1/2	**1088.95**
736Q9091	736Q2314	60-2508	60-2308	24	**713.70**
736Q9092	736Q2315	60-2509	60-2309	24	**770.40**
736Q9093	736Q2316	60-2510	60-2310	24	**842.50**
736Q9094	736Q2317	60-2511	60-2311	24	**922.95**

Series 60/30 (continued)

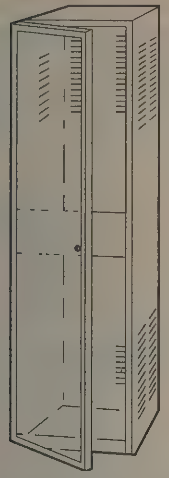
Stock No.		Mfr.'s Type	Use With Rack	Depth Inside (In.)	EACH
RB	GT				
736Q9095	736Q2318	60-2512	60-2312	24	**1008.75**
736Q9096	736Q2319	60-2513	60-2313	24	**1113.50**
736Q9097	736Q2500	30-2500	30-2300	29 1/4	**678.35**
736Q9098	736Q2501	30-2501	30-2301	29 1/4	**740.75**
736Q9099	736Q2502	30-2502	30-2302	29 1/4	**871.20**
736Q9101	736Q2503	30-2503	30-2303	29 1/4	**956.70**
736Q9102	736Q2504	30-2504	30-2304	29 1/4	**1035.15**
736Q9103	736Q2505	30-2505	30-2305	29 1/4	**1126.05**
736Q9104	736Q2506	30-2506	30-2306	29 1/4	**1236.65**
736Q9105	736Q2530	60-2530	60-2330	20 1/2	**775.00**
736Q9106	736Q2531	60-2531	60-2331	20 1/2	**775.00**
736Q9107	736Q2532	60-2532	60-2332	20 1/2	**775.00**
736Q9108	736Q2533	30-2530	30-2330	29 1/4	**875.10**
736Q9109	736Q2534	30-2531	30-2331	29 1/4	**875.05**
736Q9110	736Q2535	30-2532	30-2332	29 1/4	**875.05**

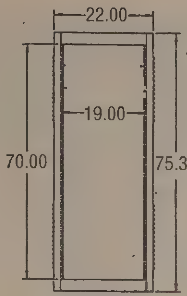
Series 2000

736Q9111	736Q2536	AE-2032	E-2000	20 1/2	**625.55**
736Q9112	736Q2537	AE-2033	E-2001	20 1/2	**681.40**
736Q9113	736Q2538	AE-2034	E-2002	20 1/2	**710.75**
736Q9114	736Q2539	AE-2035	E-2003	20 1/2	**785.35**
736Q9115	736Q2550	AE-2036	E-2004	20 1/2	**885.65**

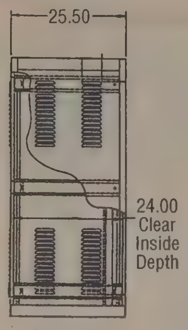
Series 2000 (continued)

Stock No.		Mfr.'s Type	Use With Rack	Depth Inside (In.)	EACH
RB	GT				
736Q9116	736Q2551	AE-2037	E-2005	20 1/2	**984.80**
736Q9117	736Q2552	AE-2038	E-2006	20 1/2	**962.25**
736Q9118	736Q2553	AE-2039	E-2007	20 1/2	**1143.20**
736Q9119	736Q2554	AE-2040	E-2008	24	**660.05**
736Q9120	736Q2556	AE-2041	E-2009	24	**708.95**
736Q9121	736Q2557	AE-2042	E-2010	24	**747.85**
736Q9122	736Q2558	AE-2043	E-2011	24	**836.75**
736Q9123	736Q2559	AE-2044	E-2012	24	**960.40**
736Q9124	736Q2560	AE-2045	E-2013	24	**1032.70**
736Q9125	736Q2561	AE-2046	E-2014	24	**1067.20**
736Q9126	736Q2562	AE-2047	E-2015	24	**1174.55**
736Q9127	736Q2563	A30-2032	E30-2000	29 1/4	**701.15**
736Q9128	736Q2564	A30-2033	E30-2001	29 1/4	**755.00**
736Q9129	736Q2565	A30-2034	E30-2002	29 1/4	**814.85**
736Q9130	736Q2566	A30-2035	E30-2003	29 1/4	**880.25**
736Q9131	736Q2567	A30-2036	E30-2004	29 1/4	**961.95**
736Q9132	736Q2568	A30-2037	E30-2005	29 1/4	**1037.05**
736Q9133	736Q2569	A30-2038	E30-2006	29 1/4	**1148.95**
736Q9134	736Q2580	A30-2039	E30-2007	29 1/4	**1247.05**
736Q9135	736Q2581	ASE-2084	SE-2064	20 1/2	**810.10**
736Q9136	736Q2582	ASE-2085	SE-2065	20 1/2	**810.10**
736Q9137	736Q2583	ASE-2086	SE-2066	20 1/2	**810.10**
736Q9138	736Q2584	A30-2084	S30-2064	29 1/4	**867.50**
736Q9139	736Q2585	A30-2085	S30-2065	29 1/4	**867.50**
736Q9140	736Q2586	A30-2086	S30-2066	29 1/4	**867.50**

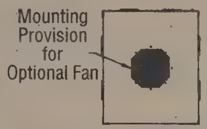




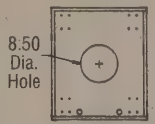
Front View W/O Door



Side View



Top View



Bottom View

Datacom Cabinet Assembly

The Bud DC-8002-S Datacom Cabinet Consists of:

- ER-16615: Economizer Cabinet Rack, Louvered Side Panels and Rear Door, Ventilated Top Suitable for FN-1282, Exhaust Fan, Cable Access In Bottom
- Installed V-9066-L Locking Plexiglas Front Door
- Installed Extra Pair of PMR-9453 Panel Mounting Rails
- Included Two SH-2385-BT Ventilated Shelves
- Other Sizes and Colors Available Upon Request
- -S Is for Sand Texture

Datacom Cabinet Assembly

736Q8002. DC-8002-S. 19" × 70" Panel Size. 22"W × 75.31"H × 25.50"D	EACH 1081.45

Optional Accessories

736-2381. 60-2381. Stationary Shelf, Non-Vented Black	EACH 51.20
736-2385. SH-2385. Stationary Shelf, Vented	EACH 53.00
736-2389. SH-2389. Sliding Shelf, Non-Vented	EACH 101.15
736-2393. SH-2393. Sliding Shelf, Vented	EACH 102.80
736-4402. POS-9-S. Power Outlet Strip, Surge Suppressed	EACH 107.80
736-1932. POS-193-S. Rackmount Power Outlet Strip, Surge Suppressed	EACH 133.80
736-2399. FN-1282. 10" Exhaust Fan	EACH 119.20
736-6001. RC-7758. Casters, Swivel	EACH 13.90
736-7761. RC-7761. Caster, Swivel, Locking	EACH 32.70
736-7762. RC-7762. Caster, Swivel, Non-Locking	EACH 28.30
736-2400. RL-7770. Leveler Kit	EACH 38.85
736-2401. GB-2244. Grounding Bar	EACH 153.45

Wall Mount Cabinets

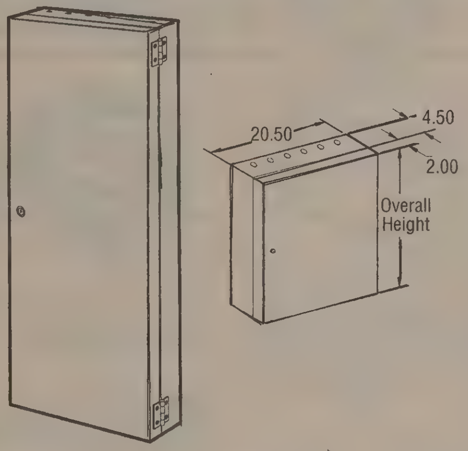
- Welded Heavy Duty 16-Gauge Steel Construction
- Integral 19" EIA Panel Mounting Rails in Both the Rear and Center Sections
- Six Knockouts in Both the Top and Bottom of the Rear Section Provide Access for Cabling
- Lockable Front Door for Security With or Without Plexiglass Panel
- Durable Black Texture Powder Coat Finish Is Standard
- Available in Both Two Section (Style A) and Three Section (Style B) Versions; The Three Section Cabinets Have a Ventilated Swing Frame Center Section
- Removable Hinges Allow for Both Left Hand and Right Hand Applications

Steel Door

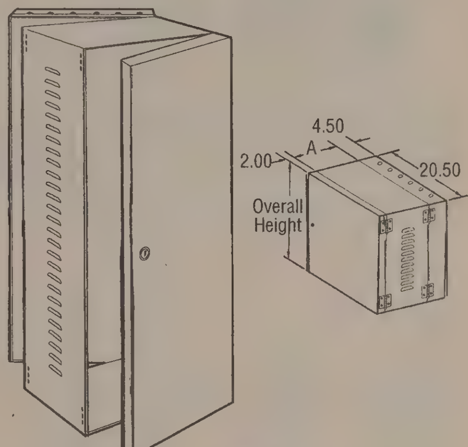
Stock No.	Mfr.'s Type	Style	Panel Space	Overall Height	A	EACH
736Q3800	WM-5402	A	21"	24.00"	—	**218.40**
736Q3805	WM-5404	A	45"	48.50"	—	**293.20**
736Q3810	WM-5412	B	21"	24.00"	11.00"	**340.25**
736Q3815	WM-5414	B	45"	48.50"	11.00"	**435.38**
736Q3820	WM-5422	B	21"	24.00"	16.00"	**422.75**
736Q3825	WM-5424	B	45"	48.50"	16.00"	**456.89**

Plexiglass Door

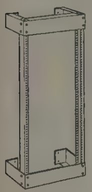
Stock No.	Mfr.'s Type	Style	Panel Space	Overall Height	A	EACH
736Q3827	WM-5432	A	21"	24.00"	—	**243.70**
736Q3828	WM-5434	A	45"	48.50"	—	**360.05**
736Q3829	WM-5442	B	21"	24.00"	11.00"	**397.30**
736Q3831	WM-5444	B	45"	48.50"	11.00"	**538.10**
736Q3832	WM-5452	B	21"	24.00"	16.00"	**397.85**
736Q3833	WM-5454	B	45"	48.50"	16.00"	**559.70**



Style A



Style B



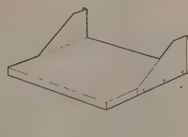
Wall Mount Relay Rack

These racks provide open relay and distribution rack provisions when floor mounting space is not available. They feature 19" wide panel space, with mounting holes tapped with #12-24 thread on EIA universal spacing on both front and rear flanges, and are constructed of standard natural finish aluminum with heavy gauge aluminum wall mounting brackets. Includes all assembly and panel mounting hardware except for wall attachment fasteners.

Stock No.	Mfr.'s Type	Panel Space	Depth	EACH
736Q3830	WRR-1233	31½" × 19"	8"	**187.35**
736Q3831	WRR-1234	31½" × 19"	12"	**216.85**
736Q3832	WRR-1235	31½" × 19"	18"	**231.45**
736Q3835	WRR-1243	70" × 19"	8"	**248.25**
736Q3833	WRR-1244	70" × 19"	12"	**305.40**
736Q3834	WRR-1245	70" × 19"	18"	**324.85**

Relay Rack Shelves

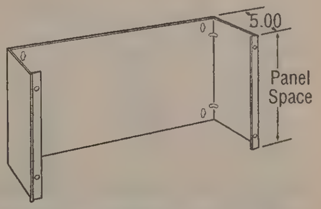
Stock No.	Mfr.'s Type*	Fits Rack Width	Depth	EACH
736-1278	SA-1278-MG	19"	16"	**82.80**
736-1279	SA-1279-MG	19"	20"	**89.20**



*MG = Metallic Gray.

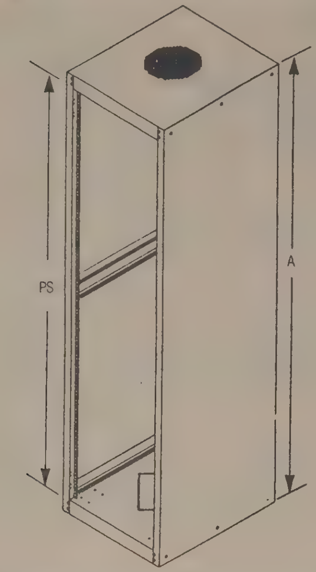
Hinged Patch Panel Brackets

- Wall or 19" Rack Mountable
- Heavy Duty Construction
- Integral Heavy Duty Hinge
- Available In Black Finish
- Two Depths and Six Heights
- Three Cabling Knockouts In Rear Panel



These wall or rack mounted brackets accommodate all popular patch panel sizes and allow ready access to the rear of the panel.

Stock No.	Mfr.'s Type	Depth	Panel Space	EACH
736-3840	HWB-1790	5"	3.50"	**29.00**
736-3845	HWB-1791	5"	5.25"	**35.60**
736-3850	HWB-1792	5"	7.00"	**38.70**
736-3855	HWB-1793	5"	8.75"	**41.50**
736-3860	HWB-1794	5"	10.50"	**49.40**
736-3865	HWB-1795	5"	12.25"	**53.60**
736-3866	HWB-2790	8"	3.50"	**37.90**
736-3867	HWB-2791	8"	5.25"	**41.60**
736-3868	HWB-2792	8"	7.00"	**47.10**
736-3869	HWB-2793	8"	8.75"	**55.60**
736-3870	HWB-2794	8"	10.50"	**61.40**
736-3871	HWB-2795	8"	12.25"	**70.20**



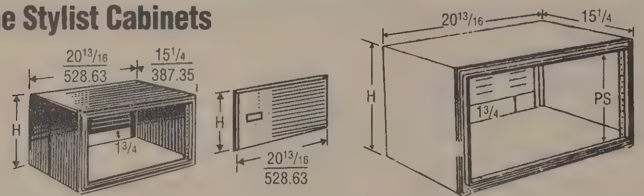
LPR Series — Low Priced Rack

Design Features. Shipped ready-to-assemble complete with 16 gauge top and bottom, 18 gauge sides, assembly hardware and other features as described below. Integral, full height panel mounting rails with EIA Universal Spaced Mounting Holes. Recessed 1.00" at front of cabinet only. Welded-in support rails for optional adjustable panel mounting rails. Large 10" square and standard 1.109" knockouts in bottom for cable access. Bottom pierced for RC-7758 Casters or RL-7770 Leveler Kit. Top is ventilated and pierced to accept FN-1282 Exhaust Fan. Easily assembled with standard phillips screwdriver in minutes. **Accessories.** Basic rack accepts many optional accessories including standard Economizer Cabinet Rack doors (mounted front or rear.) When used with optional adjustable panel mounting rails, rack accepts all other standard BUD accessories. **Materials:** 16 gauge steel base and top; 18 gauge steel sides; 16 gauge steel support rails. **Finish:** Texture Paint — Royal Blue (RB) and Sand (S); Available in other BUD textured finishes at no additional cost. **Shipping:** Shipped knockdown in one carton.

Stock No.		Mfr.'s Type	Panel Space (PS) (In.)	Outside Height (A) (In.)	EACH
RB	S				
736Q9033	736Q9034	LPR-8212	42.00	47.312	**404.40**
736Q9035	736Q9036	LPR-8213	52.50	57.812	**448.50**
736Q9037	736Q9038	LPR-8214	61.25	66.562	**475.40**
736Q9039	736Q9040	LPR-8215	70.00	75.312	**505.25**
736Q9041	736Q9042	LPR-8216	78.75	84.062	**540.00**

Fits Rack	Optional Mounting Rails			Optional Steel Door				Optional Econoglass Door with Key Lock		
	Stock No.	Mfr.'s Type	PER PAIR	Stock No.		Mfr.'s Type	EACH	Stock No.	Mfr.'s Type	EACH
				RB	S					
LPR-8212	**736-9605**	PMR-9450	**59.85**	**736Q9043**	**736Q9610**	ER-16532	**148.70**	**736Q9048**	V-9763-L	**133.20**
LPR-8213	**736-9606**	PMR-9451	**66.30**	**736Q9044**	**736Q9611**	ER-16533	**159.25**	**736Q9049**	V-9764-L	**153.15**
LPR-8214	**736-9607**	PMR-9452	**74.15**	**736Q9045**	**736Q9612**	ER-16534	**180.05**	**736Q9050**	V-9765-L	**182.15**
LPR-8215	**736-9608**	PMR-9453	**81.10**	**736Q9046**	**736Q9613**	ER-16535	**190.30**	**736Q9051**	V-9766-L	**200.30**
LPR-8216	**736-9609**	PMR-9454	**86.00**	**736Q9047**	**736Q9614**	ER-16536	**197.05**	**736Q9052**	V-9767-L	**221.90**

The Stylist Cabinets



Heavy-Load-Bearing Cabinets
Decorative aluminum extrusion trim with black insert frames the front of the cleanly designed cabinet. Square corners enhance the unit's contemporary styling and, in turn, enhance the appearance and marketability of your product. **Design Features.** 16 gauge steel. Rear fitted with louvered panel; 1¾" high opening for cable access. Front and rear openings accept 19" panels or Stylist doors. Self-adhesive feet furnished. **Bonus Features.** Full-width box flanges at top and bottom eliminate tilt and sway even when unit is loaded to its full 500-pound capacity. Cold-rolled steel structure is self supporting, no internal framework. Bustle-type door allows placement of panel behind door for meters, knobs, etc. **Finishes:** Royal blue textured (RB) or gray textured (GT).

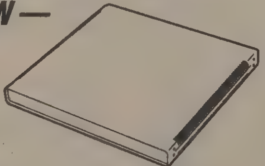
Cabinets

Stock No.		Mfr.'s Type	Overall Height (H) (In.)	Panel Space (PS) (In.)	Wt. (Lbs.)	EACH
GT	RB					1-9
736Q6401	736Q6402	S-1639	7 1/16	5 1/4	23	**191.55**
736Q6400	736Q6405	S-1640	8 13/16	7	26 3/4	**199.35**
736Q6410	736Q6415	S-1641	10 9/16	8 3/4	29	**211.20**
736Q6420	736Q6425	S-1642	12 5/16	10 1/2	31	**217.60**
736Q6428	736Q6430	S-1643	14 1/16	12 1/4	33	**231.50**
736Q6433	736Q6435	S-1644	15 13/16	14	35 1/4	**237.30**
736Q6440	736Q6445	S-1645	17 9/16	15 3/4	37 1/4	**249.60**

Doors

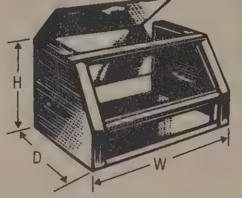
Stock No.		Mfr.'s Type	Height (In.)	Wt. (Lbs.)	Fits Cabinet	EACH
GT	RB					1-9
736-7031	736-7032	SD-539	5 1/4	3 1/2	S-1639	**54.10**
736-7030	736-7035	SD-540	7	4 3/4	S-1640	**55.60**
736-7040	736-7045	SD-541	8 3/4	5 1/2	S-1641	**59.80**
736-7050	736-7055	SD-542	10 1/2	6 1/4	S-1642	**62.40**
736-7058	736-7060	SD-543	12 1/4	7	S-1643	**64.10**
736-7063	736-7065	SD-544	14	7 3/4	S-1644	**68.40**
736-7070	736-7075	SD-545	15 3/4	8 1/2	S-1645	**72.70**

SLIMCAB™ Desktop Cabinet *— NEW —*



- **Offers a 1 U (1.75") High Panel Space Cabinet Suitable for Desktop and/or Rack Mount Use**
- **All Aluminum Construction; Available in One Height (1.75"), Two Widths (8.5" and 17.0"), Two Depths (8.0" and 16.0")**
- **Sides Are Vented to Aid in Cooling of Internal Components**
- **Optional Mounting Brackets Allow Cabinet to Be Mounted Into a Standard 19" Panel Space Rack**
- **Finishes: Available in Sand Texture (S) or Smooth Black (B)**

Stock No.		Mfr.'s Type	Description	Size (In.)	EACH
S	B				
736-1121	736-1127	CS-11221	Cabinet	8.5 × 8.0	**63.40**
736-1122	736-1128	CS-11223	Cabinet	17.0 × 8.0	**83.40**
736-1123	736-1129	CS-11225	Cabinet	8.5 × 16.0	**83.10**
736-1124	736-1131	CS-11227	Cabinet	17.0 × 16.0	**112.50**
736-1126	736-1132	CS-11230	Bracket	—	**18.40**



Sloping Panel Prestige Cabinets

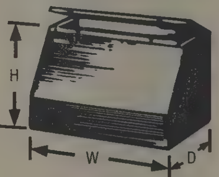
Design Features. 16 gauge steel. Safety-shielded slot handles. **Bonus Features.** Perforated hinged top opens completely. Remove 19" panels by simply removing panel trim bar. **Finish:** Metallic gray (MG).

Stock No.	Mfr.'s Type	Size H × D (In.)	EACH
			1-14
736Q1815	C-1557	14 25/32 × 16 1/4	**214.50**
736Q1816	C-1555	11 29/32 × 14 3/16	**188.80**

Small Cabinets

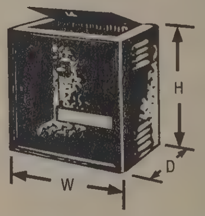
Sloping Panel Cabinets

Design Features. 9 sizes, each with removable front panel. **Bonus Features.** Hinged top opens completely for access to components mounted on chassis. **Finish:** Metallic gray (MG).



Stock No.	Mfr.'s Type	Size H × W × D (In.)	Wt. (Lbs.)	EACH
				1-9
736-1855	C-1584	6 1/2 × 7 1/16 × 7 5/16	2 3/4	**42.00**
736-1865	C-1585	6 1/2 × 9 1/16 × 7 5/16	2 1/2	**40.50**
736-1875	C-1586	6 1/2 × 11 1/16 × 7 5/16	3 3/4	**45.30**
736-1935	C-1892	8 × 13 1/16 × 8 1/2	5 1/2	**49.20**
736-1945	C-1893	10 × 18 1/16 × 10 1/2	12 1/2	**72.50**
736-1885	C-1587	8 × 8 1/16 × 8	4	**45.70**
736-1895	C-1588	8 × 10 1/16 × 8	4 1/2	**50.90**
736-1955	C-1894	8 × 14 1/16 × 8	6	**44.75**
736-1965	C-1896	9 × 18 1/16 × 8 3/16	9 3/4	**62.40**

Cabinet Racks



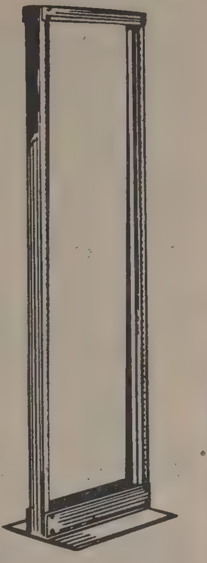
Deluxe

Design Features. All-welded 16 gauge steel construction. Front uprights are contoured. Ten sizes. All models have hinged top with sliding flush latch. Top cover clearance, 10¼" × 15½". 19" wide panel space. Mounting rails tapped 10-32 on EIA universal spacing. **Finish:** Metallic gray (MG).

Stock No.	Mfr.'s Type	Height (In.)	Panel Space (In.)	Wt. (Lbs.)	EACH
					1-9
736Q3052	CR-1726	8 13/16	7	28	**145.10**
736Q3132	CR-1741	10 9/16	8 3/4	30	**159.35**
736Q3122	CR-1740	12 5/16	10 1/2	34	**163.90**
736Q3142	CR-1742	14 1/16	12 1/4	37	**176.05**
736Q3112	CR-1739	15 13/16	14	40	**222.40**
736Q3152	CR-1743	19 5/16	17 1/2	47	**234.15**
736Q3062	CR-1727	22 13/16	21	51	**251.20**

Letter "Q" In Stock Number Indicates Direct Factory Shipment To You

Open Relay Racks



Design Features: Heavy-duty racks capable of being bolted to overhead or floor (RR-1265). Base, two 1/4" angles, 3 1/2" × 4 7/8" × 20 3/8" cross bars, 1/8" × 2 3/32" × 1 9/16" angles. Uprights, 3" × 1 9/32". Panel mounting holes drilled and tapped 12-24. Base is 20 3/8" × 12 3/4". Available in steel and/or aluminum. **Note:** Drawing does not show overhead plates.

Steel — 19" Panel Space; Black Textured

Stock No.	Mfr.'s Type	Panel Space Inches	Height Inches	EACH
736Q1290	RR-1265	19	72 1/4	215.20
736Q1291	RR-1269	19	82 3/4	225.95
736Q1292	RR-1270	19	107 1/4	249.00

Aluminum — No Finish

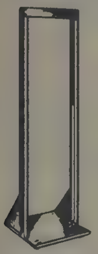
Stock No.	Mfr.'s Type	Panel Space Inches	Height Inches	EACH
736-1294	ARR-1272	19	84	200.90

Steel — 23" Panel Space; Black Textured

Stock No.	Mfr.'s Type	Panel Space Inches	Height Inches	EACH
736Q1296	RR-1290	23	72 1/4	229.80
736Q1297	RR-1291	23	82 3/4	241.80
736Q1298	RR-1292	23	107 1/4	265.45

Aluminum — No Finish

Stock No.	Mfr.'s Type	Panel Space Inches	Height Inches	EACH
736-1299	ARR-1293	23	72	218.25
736-1200	ARR-1294	23	84	228.35
736-1201	ARR-1295	23	108	246.60



Telecom/Open Relay Racks

Ideal for installations where easy access to components is a top priority. Each built for years of solid, trouble-free service, as well as obvious ease of service where frequency attention is desired (i.e. telephone switching systems, etc.)

RR-1263 Series

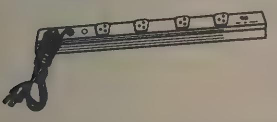
Design Features: Exceptionally strong structure made up of chassis-type base and supporting angles. Uprights, 7/64"; steel channels, 3" deep; top plate, 1 1/8" × 3 1/8". Rails tapped 10-32 on E.I.A. universal spacing. Base is 19 31/32" × 22" and drilled for RC-7758 casters. Shipped knocked down. **Finishes:** Metallic gray (MG) and black textured (BT).

Stock No.		Mfr.'s Type	Panel Space Inches	Overall H × W Inches	Wt. Lbs.	EACH
BT	MG					
736-6350	736-6352	RR-1363	36 3/4 × 19	40 7/8 × 19 7/8	36	155.70
736-6330	736-6332	RR-1264	66 1/2 × 19	70 3/8 × 19 7/8	46	175.80
736-6360	736-6362	RR-1364	71 3/4 × 19	75 7/8 × 19 7/8	48	179.70
736-6370	736-6372	RR-1366	77 × 19	81 1/8 × 19 7/8	49	183.60

Deluxe Relay Racks

Versatile, economical enclosures house a wide range of electronic equipment and control system. **Design Features:** Well-ventilated racks take 19" panels. Rear door has two black thermoplastic catches. If casters are required, specify RC-7758. Top, bottom, sides and rear door, 16 gauge steel. Shipped knocked down. **Bonus Features:** Contoured front vertical members include 7/64" panel mounting supports drilled and tapped 10-32 on E.I.A. universal spacing. **Finishes:** Royal blue textured (RB) and metallic gray (MG).

Stock No.		Mfr.'s Type	Panel Space Inches	Height Inches	Width Inches	Depth Inches	Wt. Lbs.	EACH
RB	MG							
736Q3190	736Q3191	CR-1774	36 3/4 × 19	42 1/16	22	17 1/8	78	417.25
736Q3184	736Q3182	CR-1771	42 × 19	47 5/16	22	17 1/8	85	466.70
736Q3194	736Q3192	CR-1772	61 1/4 × 19	66 9/16	22	17 1/8	111	525.15
736Q3224	736Q3222	CR-1780	70 × 19	75 5/16	22	17 1/8	121	611.90
736Q3198	736Q3199	CR-1773	77 × 19	82 5/16	22	17 1/8	130	625.20
736Q3203	736Q3204	CR-2074	36 3/4 × 19	42 1/16	22	22 1/8	91	493.00
736Q3205	736Q3206	CR-2071	42 × 19	47 5/16	22	22 1/8	101	513.25
736Q3207	736Q3208	CR-2072	61 1/4 × 19	66 9/16	22	22 1/8	130	621.80
736Q3262	736Q3264	CR-2075	70 × 19	75 5/16	22	22 1/8	142	678.60
736Q3211	736Q3212	CR-2073	77 × 19	82 5/16	22	22 1/8	151	737.55

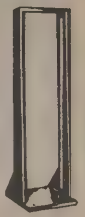


Power Outlet Strips

- ► Approved for 125 VAC, 15 Amp
- ► Six Foot Power Cord
- ► Standard and Surge Suppressed Models Available
- ► Components UL Approved

No. of Outlets	Length Inches	Standard			Surge Suppressed		
		Stock No.	Mfr.'s Type	EACH	Stock No.	Mfr.'s Type	EACH
4	17 1/2	736-1009	POS-4	79.25	736-4400	POS-4-S	99.70
6	12 1/4	736-1010	POS-6	55.90	736-1011	POS-66	76.55
7	48	736-1012	POS-7	79.35	736-4401	POS-7-S	99.70
9	60	736-1013	POS-9	90.80	736-4402	POS-9-S	107.80
11	72	736-1014	POS-11	95.05	736-4404	POS-11-S	113.55

RR-1367 Series Open Relay Racks



Design Features: Extra-sturdy racks made of 14 and 12 gauge steel. 8" deep welded "U" member and triangular bracket hold uprights to base (12 gauge). Panel mounting rails tapped 10-32 on E.I.A. universal spacing. Chassis type base, 20 7/8" × 26", drilled for RC-7758 casters. Racks may be bolted together in Add-A-Rack fashion. Shipped knocked down. **Finishes:** Metallic gray (MG) and black textured (BT).

Stock No.		Mfr.'s Type	Panel Space Inches	Height Inches	Base Width Inches	Wt. Lbs.	EACH
BT	MG						
736Q1368	736Q1367	RR-1367	61 1/4 × 19	64 5/8	20 7/8	74	320.05
736Q1370	736Q1369	RR-1368	70 × 19	73 3/8	20 7/8	77	340.50
736Q6380	736Q6382	RR-1369	77 × 19	80 3/8	20 7/8	81	351.80

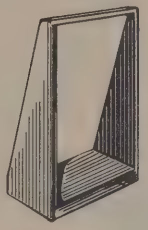
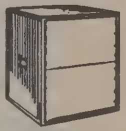


Table Top Relay Rack

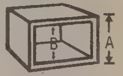
Design Features: Chassis-type base holds heavy components for table mounting applications. Supporting angles provide strength, rigidity. Panel mounting rails tapped 10-32 on E.I.A. universal spacing. Standard 19" panel fits flush with front. Base 20 3/8" × 12". Shipped knocked down. **Finishes:** Metallic gray (MG) and black textured (BT).

Stock No.		Mfr.'s Type	Wt. Lbs.	EACH
MG	BT			
736-6200	736-6301	RR-1248	15	95.35
736-6203	736-6311	RR-1249	18	104.25

Classic II Portable Cabinets and Cabinet Doors



Whether used independently or as a companion to the Classic II cabinet rack, the design of this distinctive cabinet harmonizes perfectly with the most sophisticated systems. While it's portable, it is equally effective for permanent installations. **Design Features:** Top, bottom and side panels .060 aluminum. Frame, 6063-T5 aluminum extrusions. Accommodates 19" panels. Doors and panels not included but are available. 1/8" aluminum alloy doors attach to mounting rails. Black thermoplastic flush-type latch. **Bonus Features:** Recessed brushed chrome handles are attached to two steel flanges extending the length of the cabinet. This added support assures carrying safety. Two 16 gauge steel vertically adjustable chassis supports included. Shipped completely assembled. **Finishes:** Royal Blue (RB) or Gray Textured (GT).



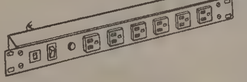
Classic II Portable Cabinets

Stock No.		Mfr.'s Type	Height Inches	Panel Space Inches	Wt. Lbs.	EACH
RB	GT					
736Q0610	736Q0505	AGC-9267	7 1/16	5 1/4	28	388.70
736Q0611	736Q0508	AGC-9268	8 13/16	7	30	401.00
736Q0612	736Q0511	AGC-9269	10 9/16	8 3/4	32	406.65
736Q0613	736Q0514	AGC-9270	12 5/16	10 1/2	33	417.80
736Q0614	736Q0517	AGC-9271	14 1/16	12 1/4	34	429.15
736Q0615	736Q0581	AGC-9272	15 13/16	14	35	440.45
736Q0616	736Q0584	AGC-9273	17 9/16	15 3/4	36	450.85
736Q0617	736Q0587	AGC-9274	19 5/16	17 1/2	37	464.90
736Q0618	736Q0590	AGC-9275	21 1/16	19 1/4	39	475.90
736Q0619	736Q0593	AGC-9276	22 13/16	21	40	477.45
736Q0620	736Q0594	AGC-9277	24 9/16	22 3/4	41	494.55
736Q0621	736Q0595	AGC-9278	26 5/16	24 1/2	42	508.75
736Q0622	736Q0602	AGC-9279	28 1/16	26 1/4	43	527.45
736Q0623	736Q0605	AGC-9280	29 13/16	28	45	531.10

Classic II Cabinet Doors

Fit front or rear. No doors supplied. Doors available in white textured (WH) only.

Stock No.	Mfr.'s Type	Height Inches	Fits Cabinet	Wt. Lbs.	EACH
736-0367	AGD-367	5 1/4	AGC-9267	1 3/4	46.35
736-0368	AGD-368	7	AGC-9268	2	54.75
736-0369	AGD-369	8 3/4	AGC-9269	2 3/4	60.85
736-0370	AGD-370	10 1/2	AGC-9270	3	66.05
736-0371	AGD-371	12 1/4	AGC-9271	3 1/2	68.60
736-0372	AGD-372	14	AGC-9272	4	77.35
736-0373	AGD-373	15 3/4	AGC-9273	4 3/4	86.65
736-0374	AGD-374	17 1/2	AGC-9274	5	90.35
736-0375	AGD-375	19 1/4	AGC-9275	5 1/2	96.25
736-0376	AGD-376	21	AGC-9276	6 1/4	100.60
736-0377	AGD-377	22 3/4	AGC-9277	6 3/4	105.15
736-0378	AGD-378	24 1/2	AGC-9278	7 1/4	112.55
736-0379	AGD-379	26 1/4	AGC-9279	7 1/2	115.70
736-0380	AGD-380	28	AGC-9280	8	122.20

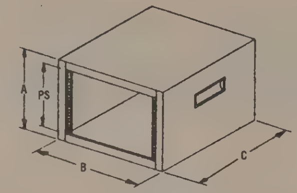


Rackmount Power Outlet Strips

- ► For 19" Panel Width Applications
- ► 1.75" High × 2.37" Deep
- ► Fifteen Foot Power Cord
- ► Available in Black Finish
- ► Components UL Approved

Stock No.	Mfr.'s Type	No. of Outlets	Outlet Location	Surge Protected	EACH
736-1929	POS-192	6	Front	No	111.70
736-1930	POS-193	6	Rear	No	115.20
736-1932	POS-193-S	6	Rear	Yes	113.80

Econocab



Low-Cost Cabinets

This new portable cabinet offers the same built-in quality as other Bud cabinets at economy pricing not found anywhere else in the industry. **Design Features.** All welded 18 gauge steel construction. Stationary panel mounting rails resulting in a 14.5" clear inside depth. Accepts standard 19" wide panels. Available in 5 panel space heights. Snap-in handles, feet and all panel mounting hardware are included. **Finish:** Standard finishes are black textured (BT) or sand textured (S). Special colors are available on request.

Stock No.		Mfr.'s Type	Height (A) (In.)	Width (B) (In.)	Depth (C) (In.)	Panel Space (PS) (In.)	Weight (Lbs.)	EACH
BT	S							
736-9012	**736-9013**	EC-9902	9¹/16	21¹/16	15¹/2	7	14	**138.35**
736-9014	**736-9015**	EC-9903	10¹³/16	21¹/16	15¹/2	8³/4	14³/4	**141.05**
736-9016	**736-9017**	EC-9904	12⁹/16	21¹/16	15¹/2	10¹/2	15¹/2	**144.55**
736-9018	**736-9020**	EC-9905	14⁵/16	21¹/16	15¹/2	12¹/4	16¹/4	**152.05**
736-9021	**736-9022**	EC-9906	16¹/16	21¹/16	15¹/2	14	17	**156.75**

Small Portable Cabinets

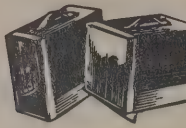


Fig. A

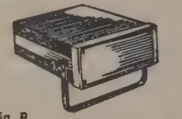


Fig. B

Fig. C

Fig. A. The Showcase. The design of this Bud unit makes it perfect for your portable instrumentation, yet the versatile, lightweight Showcase will do an effective job as a desktop instrument case, in systems or racks. Compounding its versatility is the fact that the Showcase comes in 10 sizes. **Design Features.** Top, sides and bottom, .050 aluminum; front panel, .090; rear panel, .050. Extruded aluminum frame. Side gussets provide added strength. Strong, flexible handle is recessed and secured firmly into top for safe handling. Ventilation slots under handle. **Bonus Features.** Use with chassis or PC boards. Front panel and chassis may be loaded from front or rear. Comes with front and rear panels and bail. **Finishes:** Two color combinations — black textured (BT) body with white frame or royal blue textured (RB) with white frame. Indicate color when ordering.

Stock No.		Mfr.'s Type	Height (In.)	Width (In.)	Depth (In.)	Panel Space (In.)				EACH
BT	RB					Front		Rear		
736Q9023	**736Q1800**	BB-1800	6⁷/16	5¹/2	11	6³/16	5¹/4	6	5⁵/32	**121.95**
736Q9024	**736Q1801**	BB-1801	6⁷/16	8⁵/16	11	6³/16	8³/64	6	7³¹/32	**127.25**
736Q9025	**736Q1802**	BB-1802	8³/16	5¹/2	11	7¹⁵/16	5¹/4	7⁷/8	5⁵/32	**129.50**
736Q9026	**736Q1803**	BB-1803	8³/16	8⁵/16	11	7¹⁵/16	8³/64	7⁷/8	7³¹/32	**131.70**
736Q9027	**736Q1804**	BB-1804	8³/16	11¹/16	11	7¹⁵/16	10⁵³/64	7⁷/8	10⁷/8	**143.65**
736Q9028	**736Q1805**	BB-1805	9¹⁵/16	5¹/2	11	9¹¹/16	5¹/4	9¹/2	5⁵/32	**133.45**
736Q9029	**736Q1806**	BB-1806	9¹⁵/16	8⁵/16	11	9¹¹/16	8³/64	9¹/2	7³¹/32	**138.65**
736Q9030	**736Q1807**	BB-1807	9¹⁵/16	8⁵/16	15	9¹¹/16	8³/64	9¹/2	7³¹/32	**148.50**
736Q9031	**736Q1808**	BB-1808	9¹⁵/16	11¹/16	11	9¹¹/16	10⁵³/64	9¹/2	10⁷/8	**144.40**
736Q9032	**736Q1809**	BB-1809	9¹⁵/16	11¹/16	15	9¹¹/16	10⁵³/64	9¹/2	10⁷/8	**153.15**

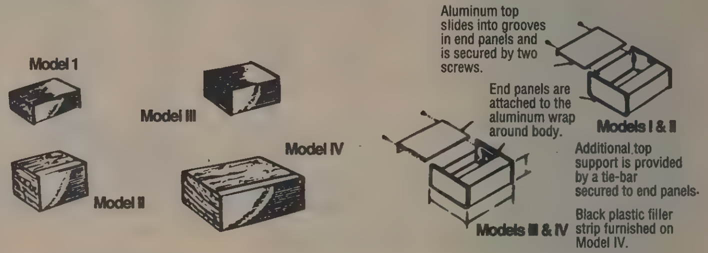
Fig. B. The TR Series. With the TR, you'll give your instrumentation a look that sets it far apart from the conventional. Its styling and versatility makes the TR ideal for your application whether it be a portable enclosure, a desk top instrument case or in systems. **Design Features.** Top and bottom, .050 aluminum; front panel, .090 aluminum. Extruded aluminum frame. Corner gussets for added support. Carrying handle may be used as tilting bail. Front panel, self-adhesive rubber feet and handle/bail included. **Bonus Features.** Since chassis is reversible, two configurations are possible with one unit. Top and bottom easily removed for access to dust-free interior. Will accommodate an accessory chassis or ¹/16" thick PC boards. **Finish:** Royal Blue textured (RB) body with white frame, and bail.

Stock No.	Mfr.'s Type	Height (In.)	Width (In.)	Depth (In.)	Panel Space (In.)	EACH
736Q6100	TR-6100	3¹/2	8⁵/16	10³/4	3¹/4 × 8³/64	**166.10**
736Q6101	TR-6101	5¹/4	8⁵/16	13¹/4	5 × 8³/64	**177.85**
736Q6102	TR-6102	7	11¹/16	13¹/4	6³/4 × 10⁵³/64	**203.55**
736Q6103	TR-6103	8	12	18³/4	7³/4 × 11³/64	**246.30**

Fig. C. Shadow Cabinets. Design Features. Tops, sides and bottom, 18 gauge steel panels, 16 gauge steel. Front, rear panels and bottom removable. Rubber feet furnished. **Bonus Features.** Recessed front panel and beveled edges of body provide handsome styling and, too, prevent accidental movement of controls, knobs, switches, etc. **Finish:** Metallic Gray (MG).

Stock No.	Mfr.'s Type	Overall Size (In.)			Front Panel Space (In.)	Use Bud Alum. Chassis	EACH
		Width	Height	Depth			
736-2140	SB-2140	14¹/4	8	10	12¹³/16 × 9⁹/16	AC-424	**85.65**
736-2141	SB-2141	13¹/4	7¹/2	9	11¹³/16 × 6¹/16	AC-407	**71.70**
736-2142	SB-2142	17	9¹/2	11	15⁹/16 × 8¹/16	AC-411	**96.40**
736-2143	SB-2143	15¹/2	6	9	14¹/16 × 4⁹/16	AC-409	**68.95**

Contempo Series Small Cabinets


Model I
Model III
Model IV
Model II
Aluminum top slides into grooves in end panels and is secured by two screws.
End panels are attached to the aluminum wrap around body.
Models I & II
Additional top support is provided by a tie-bar secured to end panels.
Black plastic filler strip furnished on Model IV.
Models III & IV

Small Cabinets

Here's a versatile line of Bud enclosures you can use for any number of applications, and their versatility is equalled by functional, modern styling. **Design Features.** Body, .062 aluminum; end panels, ⁵/16" molded cycolac plastic. **Bonus Features.** 22 sizes in four styles. Supplied with tie-bar, screws and four self-adhesive rubber feet. Top slides into grooves in end panels and is secured with two screws. Black plastic filler supplied on model IV only. **Finish:** The letter "B" in the prefix designates black pebble end panels with smooth gray body. The letter "W" in the prefix designates woodgrain finish on end panels and top, with smooth eggshell white body.

Contempo Series Model I

Inside Height: 2¹/8". **Outside Height:** 2⁷/16". **Inside Depth:** 5⁹/16". **Outside Depth:** 5¹⁵/16".

Stock No.	Mfr.'s Type	Inside Width (In.)	Outside Width (In.)	Weight (Ozs.)	EACH
736-1650	JB-1650	3	4¹/8	11	**23.50**
736-1651	JB-1651	4¹/16	5³/16	13	**24.60**
736-1652	JB-1652	5¹/16	6³/16	15	**25.80**
736-1653	JB-1653	6¹/16	7³/16	16	**27.90**
736-1654	JB-1654	7¹/8	8¹/4	18	**31.10**
736-1655	JB-1655	9¹/4	10³/8	21	**39.70**
736-1700	JW-3200	3	4¹/8	11	**24.40**
736-1701	JW-3201	4¹/16	5³/16	13	**25.60**
736-1702	JW-3202	5¹/16	6³/16	15	**27.20**
736-1703	JW-3203	6¹/16	7³/16	16	**29.70**
736-1704	JW-3204	7¹/8	8¹/4	18	**33.50**
736-1705	JW-3205	9¹/4	10³/8	21	**43.40**

Contempo Series Model II

Inside Height: 3". **Outside Height:** 3¹/4". **Inside Depth:** 6³/4". **Outside Depth:** 7".

736-1660	LB-1660	3³/16	4¹/8	13	**24.90**
736-1661	LB-1661	4¹/4	5³/16	14	**25.80**
736-1662	LB-1662	5¹/4	6³/16	15	**28.40**
736-1663	LB-1663	6¹/4	7³/16	17	**33.30**
736-1664	LB-1664	7⁵/16	8¹/4	19	**37.20**
736-1665	LB-1665	9⁷/16	10³/8	24	**46.10**
736-1710	LW-3210	3³/16	4¹/8	13	**28.40**
736-1711	LW-3211	4¹/4	5³/16	14	**29.00**
736-1712	LW-3212	5¹/4	6³/16	15	**31.90**
736-1713	LW-3213	6¹/4	7³/16	17	**35.80**
736-1714	LW-3214	7⁵/16	8¹/4	19	**40.80**
736-1715	LW-3215	9⁷/16	10³/8	24	**48.90**

Contempo Series Model III

Inside Height: 4³/16". **Outside Height:** 4⁷/16". **Inside Depth:** 6⁵/16". **Outside Depth:** 6⁹/16".

736-1670	MB-1670	4¹/4	5³/16	16	**29.30**
736-1671	MB-1671	5¹/4	6³/16	18	**30.80**
736-1672	MB-1672	6¹/4	7³/16	20	**34.60**
736-1673	MB-1673	7⁵/16	8¹/4	22	**39.10**
736-1674	MB-1674	9⁷/16	10³/8	27	**40.95**
736-1675	MB-1675	11⁷/16	12³/8	32	**50.75**
736-1720	MW-3220	4¹/4	5³/16	16	**35.10**
736-1721	MW-3221	5¹/4	6³/16	18	**36.70**
736-1722	MW-3222	6¹/4	7³/16	20	**37.70**
736-1723	MW-3223	7⁵/16	8¹/4	22	**40.70**
736-1724	MW-3224	9⁷/16	10³/8	27	**48.90**
736-1725	MW-3225	11⁷/16	12³/8	32	**58.00**

Contempo Series Model IV

Inside Height: 4³/16". **Outside Height:** 4⁷/16". **Inside Depth:** 10¹/4". **Outside Depth:** 10¹/2".

736-1680	DB-1680	7⁵/16	8⁵/16	32	**50.35**
736-1681	DB-1681	9⁵/16	10⁵/16	37	**53.80**
736-1682	DB-1682	11⁵/16	12⁵/16	44	**58.80**
736-1683	DB-1683	13⁵/16	14⁵/16	48	**63.55**
736-1730	DW-3230	7⁵/16	8⁵/16	32	**56.40**
736-1731	DW-3231	9⁵/16	10⁵/16	37	**61.45**
736-1732	DW-3232	11⁵/16	12⁵/16	44	**68.05**
736-1733	DW-3233	13⁵/16	14⁵/16	48	**78.50**

Special Capabilities for Custom Enclosures

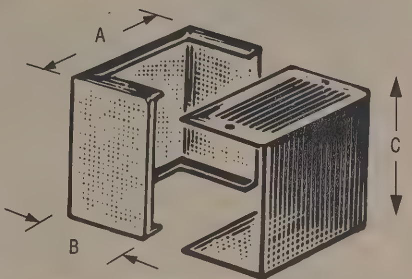
When precision products need to look their innovative best, take a look at Bud. High quality special enclosures create a distinctively functional advantage for sophisticated technical products. Bud, the best known and most preferred line of standard cabinets and enclosures for the electronics industry, has some very special fabrication capabilities that make unique products look as good as they perform.

The Bud reputation for customer service means more than quality products. From design assistance through fabrication and finishing to silk screening and engraving, Bud concentrates of the efficient, economical solution to unique application problems. Bud, the single source for factory value added, extends the industry's finest service policy through a national network of trained sales representatives and Allied. When precision products need to look their innovative best, depend on Bud.

Custom fabrication is standard at Bud. With nearly 3000 standard products in the Bud line, many times our engineers can modify a standard enclosure to meet your special needs. This can even further reduce costs and speed delivery. And, with Bud's extensive tool and die inventory, customers rarely pay tooling charges normally associated with custom fabrication.

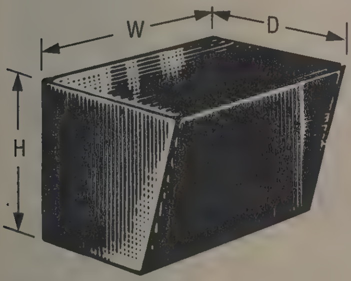
Aluminum 2-Piece Miniboxes

Self-contained units for use where shielding as well as protection from dust and dirt is desired. May be used for phono amplifiers, VHF and UHF converters, low-pass TVI filters, test and measurement units, etc. Two-piece construction permits installation of components or wiring modifications. Flanges assure low RF leakage and provide high rigidity. Choice of snap-lock fastening or screw fastening; all hardware supplied. Made of high-quality aluminum — Smooth Gray (SG) or Natural Finish (NF). Easy to cut, punch and drill.



Size A × C × B In.	SG				NF			
	Stock No.	Mfr.'s Type	EACH 1-5	EACH 6-99	Stock No.	Mfr.'s Type	EACH 1-5	EACH 6-99
$2\frac{3}{4} \times 2\frac{1}{8} \times 1\frac{5}{8}$	**736-3633**	CU-2100-B	**5.10**	**4.25**	**736-3651**	CU-3000-A	**3.30**	**2.75**
$3\frac{1}{4} \times 2\frac{1}{8} \times 1\frac{5}{8}$	**736-3634**	CU-2101-B	**5.20**	**4.35**	**736-3652**	CU-3001-A	**3.80**	**3.20**
$4 \times 2\frac{1}{8} \times 1\frac{5}{8}$	**736-3635**	CU-2102-B	**5.40**	**4.50**	**736-3653**	CU-3002-A	**4.10**	**3.40**
$4 \times 2\frac{1}{4} \times 2\frac{1}{4}$	**736-3636**	CU-2103-B	**5.50**	**4.60**	**736-3654**	CU-3003-A	**4.40**	**3.65**
$5 \times 2\frac{1}{4} \times 2\frac{1}{4}$	**736-3637**	CU-2104-B	**6.30**	**5.25**	**736-3655**	CU-3004-A	**5.30**	**4.40**
$5 \times 4 \times 3$	**736-3638**	CU-2105-B	**8.20**	**6.85**	**736-3656**	CU-3005-A	**6.80**	**5.65**
$5\frac{1}{4} \times 3 \times 2\frac{1}{8}$	**736-3639**	CU-2106-B	**6.70**	**5.55**	**736-3657**	CU-3006-A	**5.40**	**4.45**
$6 \times 5 \times 4$	**736-3640**	CU-2107-B	**11.50**	**9.65**	**736-3658**	CU-3007-A	**9.70**	**8.15**
$7 \times 5 \times 3$	**736-3641**	CU-2108-B	**11.20**	**9.40**	**736-3659**	CU-3008-A	**8.70**	**7.25**
$8 \times 6 \times 3\frac{1}{2}$	**736-3642**	CU-2109-B	**22.50**	**18.85**	**736-3660**	CU-3009-A	**13.70**	**11.45**
$10 \times 6 \times 3\frac{1}{2}$	**736-3643**	CU-2110-B	**23.90**	**19.95**	**736-3661**	CU-3010-A	**17.20**	**14.35**
$12 \times 7 \times 4$	**736-3644**	CU-2111-B	**31.50**	**26.35**	**736-3662**	CU-3011-A	**21.80**	**18.20**
$12 \times 2\frac{1}{2} \times 2\frac{1}{4}$	**736-3647**	CU-2114-B	**15.70**	**13.10**	—	—	—	—

Cowl-Type Miniboxes



Projecting cover on this enclosure reduces glare on front panel from overhead light source. It also supplies protection for controls and dials. Cover has two box braces to which bottom is attached, with sheet metal screws. Made of .040 aluminum alloy. Available in either Natural Aluminum or Metallic Gray finish. See tables below.

Metal Gray

Stock No.	Mfr.'s Type	Base Dimensions H × W × D In.	Overall Dim. When Assembled H × W × D In.	EACH 1-5	EACH 6-99
736-6900	SC-2130	$5\frac{15}{16} \times 9\frac{13}{16} \times 5\frac{3}{16}$	6 × 10 × 7	**48.50**	**40.50**
736-6901	SC-2131	$6\frac{15}{16} \times 11\frac{13}{16} \times 5\frac{15}{16}$	7 × 12 × 8	**56.90**	**47.45**
736-6902	SC-2132	$2\frac{15}{16} \times 7\frac{13}{16} \times 4$	3 × 8 × 5	**32.30**	**27.00**

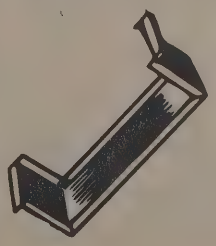
Natural Aluminum

Stock No.	Mfr.'s Type	Base Dimensions H × W × D In.	Overall Dim. When Assembled H × W × D In.	EACH 1-5	EACH 6-99
736-6904	SC-3030	$5\frac{15}{16} \times 9\frac{13}{16} \times 5\frac{3}{16}$	6 × 10 × 7	**30.50**	**25.50**
736-6905	SC-3031	$6\frac{15}{16} \times 11\frac{13}{16} \times 5\frac{15}{16}$	7 × 12 × 8	**39.70**	**33.10**
736-6906	SC-3032	$2\frac{15}{16} \times 7\frac{13}{16} \times 4$	3 × 8 × 5	**21.10**	**17.60**

Panel-Mounting Chassis

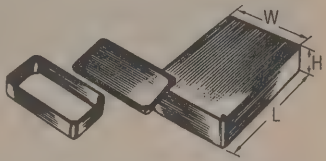
Use where depth is limited or for access from front. .050" aluminum, reinforced corners, with flanges. Natural finish. Fits 19" panel space. Other sizes available on special order only.

Stock No.	Mfr.'s Type	Ht. In.	Wt. Lbs.	EACH 1-5	EACH 6-49	EACH 50-99
736-2277	CB-1370	$1\frac{3}{4}$	$\frac{3}{4}$	**22.60**	**18.90**	**17.00**
736-2278	CB-1371	$3\frac{1}{2}$	$1\frac{1}{4}$	**23.90**	**19.95**	**17.95**
736-2279	CB-1372	$5\frac{1}{4}$	$1\frac{1}{2}$	**29.70**	**24.80**	**22.30**

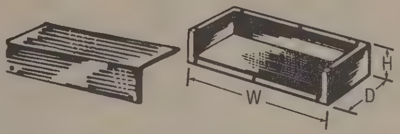


Econoboxes

Versatile die-cast utility boxes for applications requiring a sturdy structure. Especially desirable for concealed or other interior use where safety enclosure is required. Feature close-fitting flanged lids fastened to bosses in the body. The close fit of the lids and the thickness of the aluminum alloy combine to provide excellent screening properties. Cast of LM-380 aluminum.



Stock No.	Mfr.'s Type	Thickness In.	L × W × H In.	EACH 1-5
736-3593	CU-123	$\frac{1}{16}$	$3\frac{5}{8} \times 1\frac{1}{2} \times 1\frac{7}{32}$	**8.10**
736-3600	CU-124	$\frac{1}{16}$	$4\frac{3}{8} \times 2\frac{3}{8} \times 1\frac{7}{32}$	**8.50**
736-3601	CU-234	$\frac{3}{32}$	$4\frac{11}{16} \times 3\frac{11}{16} \times 2\frac{7}{32}$	**13.60**
736-3602	CU-247	$\frac{3}{32}$	$7\frac{3}{8} \times 4\frac{11}{16} \times 2\frac{7}{32}$	**23.10**
736-3604	CU-347	$\frac{3}{32}$	$7\frac{3}{8} \times 4\frac{11}{16} \times 3\frac{3}{32}$	**27.10**



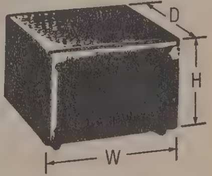
Converta Boxes

Converta Boxes made of tough 0.050 gauge aluminum with welded base and two-sided cover attached by self-tapping screws (included). Zinc plated and clear chromate. Mount sensitive components, controls to any surface of these enclosures.

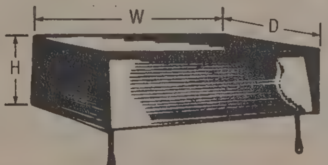
Stock No.	Mfr.'s Type	Size H × W × D In.	Wt. Lbs.	EACH 1-5	EACH 6-99
736-3603	CU-341-A	$1\frac{1}{2} \times 4 \times 3$	$\frac{1}{2}$	**11.70**	**9.75**
736-3605	CU-452-A	2 × 5 × 4	$\frac{3}{4}$	**12.70**	**10.60**
736-3608	CU-482-A	2 × 8 × 4	$1\frac{1}{4}$	**14.40**	**12.00**
736-3611	CU-592-A	$2\frac{1}{2} \times 9\frac{1}{2} \times 5$	$1\frac{3}{4}$	**15.80**	**13.20**
736-3612	CU-622-A	$2\frac{1}{2} \times 12 \times 6$	$2\frac{1}{4}$	**20.80**	**17.40**
736-3613	CU-712-A	$2\frac{1}{2} \times 15 \times 7$	3	**28.60**	**23.90**

Contour Utility Cabinets

Made of 20-gauge steel. Rounded contoured corners, flanged panels have rounded corners. Rear panel is louvered. Solid front panel. Both front and rear panels attached with four 6-32 screws each. Body in gray textured finish; panels are white textured finish providing handsome appearance. **Shipping Weight:** CU-463 — $1\frac{1}{2}$ lbs.; CU-465 — 2 lbs.; CU-585 — 3 lbs.; CU-587 — $3\frac{1}{2}$ lbs.; CU-7125 — 5 lbs.; CU-7127 — $5\frac{3}{4}$ lbs.



Stock No.	Mfr.'s Type	Size In. H × W × D	EACH 1-5
736-3606	CU-463	$4\frac{1}{4} \times 6\frac{1}{4} \times 3\frac{3}{4}$	**35.80**
736-3607	CU-465	$4\frac{1}{4} \times 6\frac{1}{4} \times 5\frac{3}{4}$	**42.60**
736-3609	CU-585	$5\frac{1}{4} \times 8\frac{1}{4} \times 5\frac{3}{4}$	**44.80**
736-3610	CU-587	$5\frac{1}{4} \times 8\frac{1}{4} \times 7\frac{3}{4}$	**49.10**
736-3669	CU-7125	$7\frac{1}{4} \times 12\frac{1}{4} \times 5\frac{3}{4}$	**50.90**
736-3670	CU-7127	$7\frac{1}{4} \times 12\frac{1}{4} \times 7\frac{3}{4}$	**54.90**

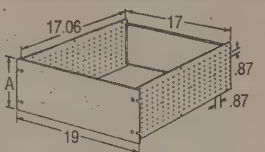


Tilt-A-View Cabinets

Present selective angles of viewing for accurate reading of meters, dials and recorders. Viewpoints are obtained with the slanted front face and vertical rear face. The 2" detachable legs allow changing the position of the cabinet to a desired angle. Two-piece 18-gauge steel construction. Lower and upper portions of cabinet fastened with sheet metal screws. Gray textured cover (GT) with white textured body (WH).

Stock No.	Mfr.'s Type	Size H × W × D In.	Wt. Lbs.	EACH 1-24	EACH 25-49	EACH 50-Up
736-7700	TV-2155	$4\frac{1}{2} \times 15 \times 10$	8	**62.15**	**55.95**	**46.60**
736-7701	TV-2156	$6\frac{1}{2} \times 16 \times 12$	11	**73.70**	**66.35**	**55.30**
736-7702	TV-2157	$8\frac{1}{2} \times 17 \times 14$	15	**88.60**	**79.75**	**66.45**

Rak•Mount Chassis



- **Front Panels: 1/8" Thick Mill Finish Aluminum with "Surface Shield" Protection**
- **Side and Rear Panels: .090" Aluminum**
- **Finish: Natural; Other Finishes Available On Request**
- **Shipped Unassembled with All Necessary Assembly Hardware**

Side Panel mounting holes are punched on 7/8" grid to allow total flexibility in mounting of components. Rear Panel is fully adjustable from front to rear. Standard 19" Front Panels feature "Surface Shield" protection which provides surface for laying out drilling and punching protection which provides surface for laying out drilling and punching positions. **Optional Accessories.** Internal Chassis — .090" aluminum, natural finish. Can be mounted vertically or horizontally. Handles — chrome plated steel. Solid top or bottom cover — .050" aluminum, natural finish. Can also be used on bottom as full depth chassis for mounting components. Ventilated top or bottom cover — .050" aluminum, natural finish, 1/8 × 3/4" slots for maximum ventilation. Slides — two-piece slide, 20" long with 15" travel. Friction disconnect allows removal of chassis from cabinet or rack. Supplied in pairs, order mounting brackets separately.

Stock No.	Mfr.'s Type	Height (A) (In.)	EACH
736-4212	RM-14212	5 1/4	**54.10**
736-4213	RM-14213	7	**61.95**
736-4214	RM-14214	8 3/4	**74.40**
736-4215	RM-14215	10 1/2	**87.85**

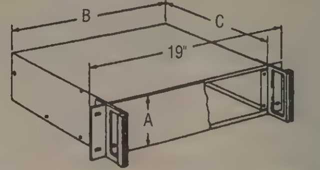
Optional Accessories

Fits Chassis	Internal Chassis			Handles		
	Stock No.	Mfr.'s Type	EACH	Stock No.	Mfr.'s Type	PER PAIR
RM-14212	**736-4242**	C-14242	**18.20**	**736-4360**	H-9160-B*	**10.30**
RM-14213	**736-1424**	C-14243	**21.20**	**736-4311**	H-9111	**14.00**
RM-14214	**736-4244**	C-14244	**24.30**	**736-4312**	H-9112	**18.00**
RM-14215	**736-4245**	C-14245	**27.30**	**736-4313**	H-9113	**20.80**

*Sold each not pairs.

736-1425. TBC-14252. Solid Top or Bottom Cover. ....**EACH 29.60**
736-1426. TBC-14262. Ventilated Top or Bottom Cover....................**EACH 33.10**
736-0922. AS-5002-A. Slides (Pair). ....**PER PAIR 45.70**
736-5104. BAS-5104. Slide Brackets 4 Required ....**EACH 8.10**

"Valu/Line" Series — NEW —



- **White Painted Aluminum Chassis**
- **Natural Aluminum Front Panel**
- **Detachable Rackmount Brackets**
- **Some Sizes Available without Handles**
- **Shipped Knockdown**

Panel Height (A) (In.)	Width (B) (In.)	Depth (C) (In.)	Without Handles			With Handles		
			Stock No.	Mfr.'s Type	EACH	Stock No.	Mfr.'s Type	EACH
1 3/4	8 1/2	8	**736-4150**	NHC-14150	**54.70**	—	—	—
1 3/4	17	8	**736-4154**	NHC-14151	**71.25**	**736-4164**	NHC-14097	**114.00**
1 3/4	17	13	**736-4155**	NHC-14152	**84.75**	**736-4165**	NHC-14098	**127.50**
3 1/2	8 1/2	8	**736-4156**	NHC-14153	**65.80**	—	—	—
3 1/2	17	8	**736-4157**	NHC-14154	**80.50**	**736-4166**	NHC-14099	**81.00**
3 1/2	12 3/4	13	—	—	—	**736-9989**	NHC-14100	**149.50**
3 1/2	17	13	**736-4158**	NHC-14155	**103.45**	**736-4451**	NHC-14101	**157.70**
5 1/4	12 3/4	13	—	—	—	**736-4452**	NHC-14102	**162.25**
5 1/4	17	13	**736-4159**	NHC-14156	**121.65**	**736-4453**	NHC-14103	**162.60**
7	17	13	**736-4160**	NHC-14157	**144.20**	**736-4454**	NHC-14104	**170.70**
8 3/4	17	13	—	—	—	**736-4455**	NHC-14105	**178.85**
10 1/2	17	13	—	—	—	**736-4456**	NHC-14106	**187.05**
10 1/2	17	15	—	—	—	**736-4457**	NHC-14107	**200.05**
12 1/4	17	15	—	—	—	**736-4458**	NHC-14108	**223.85**
14	17	15	—	—	—	**736-4459**	NHC-14109	**235.95**

Bails

Stock No.	Mfr.'s Type	Width (In.)	EACH	
			1-9	10-24
736-1422	BC-14210	10	**13.40**	**11.20**
736-1423	BC-14215	15 1/2	**16.40**	**13.70**

Shelves

Desk Top Drawer

Type DD-2363. Front panel height, 3 1/2". Hinged panel top is plastic laminate bonded to aluminum. Front panel latch locks and releases drawer and top. Mount to "U" braces in cabinet. **Panel Finishes:** White textured (WH) and Metallic Gray (MG). Specify color suffix when ordering. **Size Inside:** 16 9/16" × 3" × 14 7/8". **Weight:** 19 lbs.
736Q9008. DD-2363. WH. **1-2**....................**EACH 232.45**
3-4....................**EACH 216.95** **5-Up**....................**EACH 193.70**
736Q9019. DD-2363. MG. **1-2**....................**EACH 232.40**
3-4....................**EACH 216.95** **5-Up**....................**EACH 193.70**

Sliding Desk Tops

Type 60-2361. 1 3/4" panel space and 15 1/8" × 17 3/8" inside. Working Area, 11" × 17 5/8". Formica surface. **Panel Finishes:** White textured (WH) and Metallic Gray (MG). Specify color suffix when ordering. **Weight:** 9 1/4 lbs.
736Q9009. 60-2361. WH. **1-2** ....**EACH 117.65**
3-4....................**EACH 109.75** **5-Up**....................**EACH 98.00**
736Q9006. 60-2361. MG. **1-2**....................**EACH 117.65**
3-4....................**EACH 109.75** **5-Up**....................**EACH 98.00**

Shelf Assembly

19" panel space. Can be attached over panel; mounting brackets slip into slides. Shelf, 16 gauge steel; supports, 1/8" steel. **Height:** 7 1/8". **Finishes:** Gray textured (GT) and Royal Blue (RB).

Stock No.		Mfr.'s Type	Width (In.)	Depth (In.)	Weight (Lbs.)	EACH
GT	RB					1-24
736-6565	**736-6560**	SA-1719	22	16	13 1/4	**76.80**
736-6575	**736-6570**	SA-1720	22	20	15 1/4	**77.50**

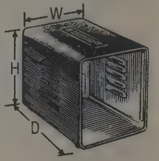
Adjustable Slide Drawer

Type D-1721. 19" panel space. **Front Panel:** 8 3/4" high. Slide mechanism adjusts from 16 1/2" to 24 1/4"; can be installed in cabinet with depth up to 25 1/2". **Size Inside:** 16 5/8" × 6 3/8" × 16 3/16". **Finishes:** White textured (WH) and Metallic Gray (MG). Specify color suffix when ordering. **Weight:** 19 1/2 lbs.
736Q9010. D-1721. WH. **1-9**....................**EACH 186.35**
10-14....................**EACH 167.70** **15-Up**....................**EACH 149.10**
736Q9100. D-1721. MG. **1-9** ....**EACH 186.35**
10-14....................**EACH 167.70** **15-Up**....................**EACH 149.10**

Drawer

Type 60-2368. Slides out 16". 18 gauge steel with 11 gauge panel, brackets. **Size inside:** 16 9/16" × 6 5/16" × 19 3/16". 8 3/4" panel space. **Panel Finishes:** White textured (WH) and Metallic Gray (MG). Specify color suffix when ordering. **Weight:** 24 1/2 lbs.
736Q9011. 60-2368. WH. **1-2** ....**EACH 205.60**
3-4....................**EACH 191.95** **5-Up**....................**EACH 171.35**
736Q9060. 60-2368. MG. **1-2**....................**EACH 205.60**
3-4....................**EACH 191.95** **5-Up**....................**EACH 171.35**

Portacabs



Design Features. .050" aluminum. Front panel recessed 1/2" and fits contour of cabinet. Louvered sides. Welded back has opening. Four plastic feet furnished. **Bonus Features.** Designed for bench or portable use. Light weight, yet strong. Reinforced flexible metal handle recessed to permit stacking. **Finish:** Metallic Gray (MG).

Stock No.	Mfr.'s Type	Depth (In.)	Width (In.)	Height (In.)	Recommended Bud Chassis (In.)	Panel Space (In.)	Rear Opening (In.)	Louvers Per Side	EACH
736-8210	WA-1540	8	6 1/8	8	AC-402 5 × 7 × 2	5 59/64 × 7 51/64	2 × 4 1/2	1 Set	**56.40**
736-8215	WA-1541	12	8 1/8	9	AC-407 7 × 11 × 2	7 59/64 × 8 51/64	2 × 6 1/2	2 Sets	**77.80**
736-8220	WA-1542	8	10 1/8	8	AC-406 7 × 9 × 2	9 59/64 × 7 51/64	2 × 8 1/2	1 Set	**66.25**
736-8225	WA-1543	18	11 1/8	11	AC-416 10 × 17 × 3	10 59/64 × 10 51/64	2 × 9 1/2	3 Sets	**106.25**
736-8230	WA-1544	18	14 1/8	12	AC-420 13 × 17 × 3	13 59/64 × 11 51/64	2 × 12 1/2	3 Sets	**129.20**

Sliding Shelves

Description. 16 gauge steel. Flanged on all 4 sides for added support. Black texture finish. Models to fit 19" and 24" panel widths, available in ventilated and non-ventilated versions (ventilated have 20% open area). Hardware supplied.

Non-Ventilated Shelves

Stock No.	Mfr.'s Type	Cabinet Racks		Shelves				EACH
BT		Panel Width (In.)	Max. Clear Inside Depth (In.)	Width (In.)	Depth (In.)	Load Rating	Travel (In.)	
736-2387	SH-2387	19	17	17	14 1/4	140	9	**90.35**
736-2388	SH-2388	19	20 1/2	17	17 3/4	128	12	**95.90**
736-2389	SH-2389	19	24	17	21 1/4	92	15	**101.15**
736-2390	SH-2390	19	29 1/4	17	26 1/2	70	19	**108.20**
736-2487	SH-2487	24	17	22	14 1/4	140	9	**98.55**
736-2488	SH-2488	24	20 1/2	22	17 3/4	128	12	**104.45**
736-2489	SH-2489	24	24	22	21 1/4	92	15	**110.25**
736-2490	SH-2490	24	29 1/4	22	26 1/2	70	19	**117.75**

Ventilated Shelves

736-2391	SH-2391	19	17	17	14 1/4	140	9	**91.80**
736-2392	SH-2392	19	20 1/2	17	17 3/4	128	12	**97.40**
736-2393	SH-2393	19	24	17	21 1/4	92	15	**102.80**
736-2394	SH-2394	19	29 1/4	17	26 1/2	70	19	**110.00**
736-2491	SH-2491	24	17	22	14 1/4	140	9	**100.40**
736-2492	SH-2492	24	20 1/2	22	17 3/4	128	12	**106.40**
736-2493	SH-2493	24	24	22	21 1/4	92	15	**112.10**
736-2494	SH-2494	24	29 1/4	22	26 1/2	70	19	**119.90**

Stationary Shelves

Description. 16 gauge steel. Supports 200 lbs. Flanged front and rear for added support. Black texture finish. Models to fit 19" and 24" panel widths, available in ventilated and non-ventilated versions (ventilated have 20% open area). Hardware supplied.

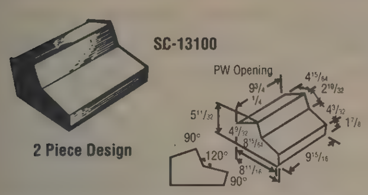
Non-Ventilated Shelves

Stock No.	Mfr.'s Type	Cabinet Racks		Shelves		EACH
BT		Panel Width (In.)	Max. Clear Inside Depth (In.)	Width (In.)	Depth (In.)	
736-2379	SH-2379	19	17	17 29/32	14 1/4	**46.75**
736-2380	60-2380	19	20 1/2	17 7/8	19 1/4	**48.80**
736-2381	60-2381	19	24	17 7/8	22 3/4	**51.20**
736-2382	SH-2382	19	29 1/4	17 29/32	26 1/2	**54.85**
736-2479	SH-2479	24	17	22 29/32	14 1/4	**54.55**
736-2480	SH-2480	24	20 1/2	22 29/32	17 3/4	**56.95**
736-2481	SH-2481	24	24	22 29/32	21 1/4	**59.25**
736-2482	SH-2482	24	29 1/4	22 29/32	26 1/2	**63.60**

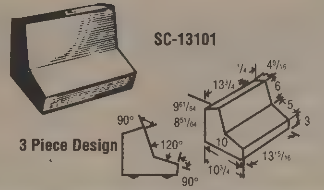
Ventilated Shelves

736-2383	SH-2383	19	17	17 29/32	14 1/4	**48.80**
736-2384	SH-2384	19	20 1/2	17 29/32	17 3/4	**51.10**
736-2385	SH-2385	19	24	17 29/32	21 1/4	**53.00**
736-2386	SH-2386	19	29 1/4	17 29/32	26 1/2	**57.40**
736-2483	SH-2483	24	17	22 29/32	14 1/4	**57.25**
736-2484	SH-2484	24	20 1/2	22 29/32	17 3/4	**59.70**
736-2485	SH-2485	24	24	22 29/32	21 1/4	**62.20**
736-2486	SH-2486	24	29 1/4	22 29/32	26 1/2	**66.85**

Compucab Series Small Cabinets



2 Piece Design

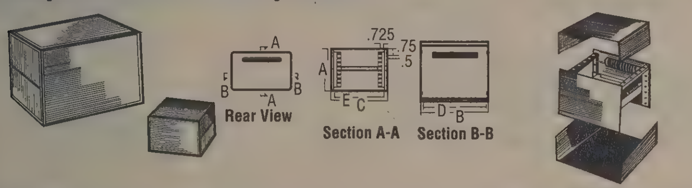


3 Piece Design

Another best-seller from Bud and for good reason. These standard dual-slope enclosures have that custom-designed keyboard styling and, equally important, they can be used for a variety of instruments. **Design Features:** Base and side, .090 aluminum; back panel and cover, .050 aluminum; rubber feet furnished; two configurations. **Shipping Weight:** SC-13100 — 3 lbs. 4 oz.; SC-13101 — 7 lbs. **Bonus Feature:** Maximum visibility, no exposed screws on front panel area. Knockouts in louvered rear panel. **Finish:** Base — black textured (BT); cover — smooth white.

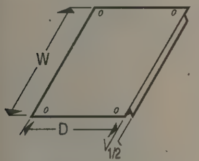
Stock No.	Mfr.'s Type	Dimensions in Inches						EACH	
		A	B	C	PW	PH	PD	1-14	15-25
736-7025	SC-13100	5 11/16	10	8 11/16	9 3/4	1 7/8	4 3/32	**60.30**	**54.25**
736-7026	SC-13101	9 61/64	14	10 3/4	13 3/4	3	5	**117.30**	**105.55**

Champion Series Desktop Cases



Design Features: Top, bottom, front and rear panels, .050 aluminum. Ventilation slots in bottom and rear panel. Easily assembled with eight self-threading screws. No screws on front or rear panels. Designed to allow for maximum interior space. Removable top and bottom provide easy access to components. Four self-adhesive rubber feet provided. **Finishes:** Two color combinations — sand textured (S) or black textured (BT) top and bottom, both with smooth white front and rear panels.

Stock No.		Mfr.'s Type	A Ht. In.	B Wth. In.	C Dth. In.	D Clear Inside Width In.	E Clear Inside Depth In.	Wt. Lbs.	EACH	
ST	BT								1-5	6-24
736-1202	**736-1302**	CS-11202	4	6	6	5 3/8	5 1/8	1.5	**56.40**	**47.05**
736-1204	**736-1304**	CS-11204	4	9	8	8 3/8	7 1/8	2.0	**62.80**	**52.40**
736-1206	**736-1306**	CS-11206	4	12	8	11 3/8	7 1/8	2.5	**66.50**	**55.50**
736-1208	**736-1308**	CS-11208	6	9	8	8 3/8	7 1/8	2.5	**70.60**	**58.90**
736-1210	**736-1310**	CS-11210	6	12	8	11 3/8	7 1/8	3.0	**71.80**	**59.90**
736-1212	**736-1312**	CS-11212	6	12	10	11 3/8	9 1/8	3.5	**77.30**	**64.50**
736-1214	**736-1314**	CS-11214	8	9	8	8 3/8	7 1/8	3.0	**75.40**	**62.90**
736-1216	**736-1316**	CS-11216	8	12	10	11 3/8	9 1/8	4.0	**84.60**	**70.60**



Chassis Kit

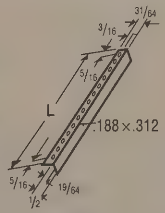
- ► **17/32" Clearance Between Chassis and Front and Rear Panels**
- ► **Chassis May Be Moved to Front or Back by 1/2" Allowing Maximum Clearance for Components and Wire Routing**
- ► **1/2" Flange on Front and Rear of Chassis Provides Increased Stiffness**

Complete with 1 chassis, 2 support angles, 8 screws, and 8 clip nuts. Made of .050 aluminum; natural finish.

Stock No.	Mfr.'s Type	Fits	Width In.	Depth In.	EACH	
					1-5	6-24
736-1242	CSC-11242	CS-11202	5 1/4	4 1/16	**18.10**	**15.10**
736-1244	CSC-11244	CS-11204, 08, 14	8 1/4	6 1/16	**19.20**	**16.00**
736-1246	CSC-11246	CS-11206, 10	11 1/4	6 1/16	**21.60**	**18.00**
736-1248	CSC-11248	CS-11212, 16	11 1/4	8 1/16	**24.50**	**20.45**

Support Angle Kit

- ► **Support Angles Attach With Only Two Screws Per Angle**
- ► **Component Mounting Holes Punched On 1/2" Centers**
- ► **Angles May Be Adjusted Up and Down at 1/2" Increments**
- ► **Support Angles, Attached to Front and Rear Panels, Allow Easy Assembly of Interior Components Before Attaching Top and Bottom**



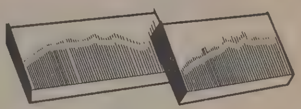
Complete with 2 support angles, 4 screws, and 4 clip nuts. Made of .050 aluminium, natural finish.

Stock No.	Mfr.'s Type	Fits	Length In.	PER PAIR	
				1-5	6-24
736-1262	CSA-11262	CS-11202	5 1/8	**10.90**	**9.10**
736-1264	CSA-11264	CS-11204, 06, 08, 10, 14	7 1/8	**11.30**	**9.45**
736-1266	CSA-11266	CS-11212, 16	9 1/8	**11.50**	**9.60**

Type CSH-11280 Hardware Kit. Contains additional hardware for component mounting. Complete with 4 #6-32 × 5/16" screws and 4 #6-32 clip nuts.

736-1280. CSH-11280. **1-5** .... **EACH 3.70**
6-24 .... **EACH 3.10**

Keyboard Enclosures

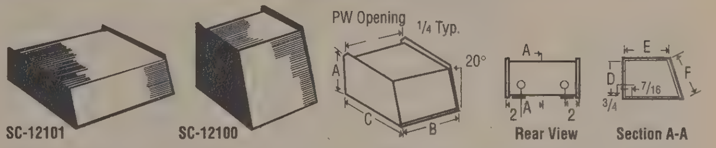


Lightweight, aluminum enclosures designed exclusively to house the most popular keyboard units available on the market today. These models have a gray textured base; .050 aluminum, white enamel finished cover; two rear knockouts; and four flat, self-adhesive black rubber feet.

Stock No.	Mfr.'s Type	Dia. Rear Knockouts In.	Angle Oper. Surface	Overall Width In.	Overall Depth In.	Overall Height In.	Inner Front Height In.	Inner Depth In.	Inner Back Height In.	EACH	
										1-14	15-24
736-3200	KB-13200	1/2	7°46'	7 7/32	5 3/4	2 15/32	1 1/2	5 1/2	2 1/4	**44.50**	**37.15**
736-3201	KB-13201	7/8	7°40'	12 27/32	7	2 3/4	1 1/2	6 1/2	2 3/8	**69.05**	**62.15**
736-3202	KB-13202	7/8	7°32'	17 15/32	9	3	1 1/2	8 1/2	2 5/8	**84.25**	**75.85**

Base cover attach: four 6-32 × 3/8" flat head, pozidrive, zinc-plated screws receptacles.

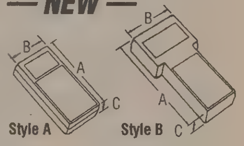
Small Cabinets/Slope Enclosures



Slope Enclosures. The clean, contemporary design of both units gives you excellent visibility of panel mounted components. **2 Piece Design:** Base — .090" aluminum; Cover — .050 aluminum. Rubber feet furnished. **Shipping Weight:** SC-12100 — 1 lb. 4 oz.; SC-12101 — 3 lbs. 8 oz. **Finish:** Base — black textured (BT); cover — smooth white.

Stock No.	Mfr.'s Type	Dimensions in Inches							EACH	
		A	B	C	PW	D	E	F	1-3	4-14
736-7000	SC-12100	4 1/4	4 15/16	5	4 3/4	3 7/8	3 1/16	4 1/8	**37.30**	**31.15**
736-7001	SC-12101	3 1/4	11 15/16	10	11 3/4	2 7/8	8 7/16	3 1/16	**55.95**	**50.35**

GRABBERS™ Hand Held Plastic Boxes — *NEW* —



These handheld enclosures are ideal for portable test and recording equipment. Made of UL94V-0 rated ABS material. The two styles available are Style A which is rectangular and Style B which is T-shaped.

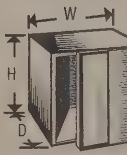
Versions within each style include a display area with or without an LCD cutout, and with or without a 9-volt/AA battery compartment. **Finish:** Light gray. **Optional Accessories:** Wallmount/tilt stand and cover sealing neoprene gasket.

Boxes

Stock No.	Mfr.'s Type	Style	Size A × B × C	EACH
736-3400	HH-3400-BC	A/Solid/Battery	7.09 × 3.94 × 1.57	**15.30**
736-3401	HH-3401-BC	A/Cutout/Battery	7.09 × 3.94 × 1.57	**15.10**
736-3402	HH-3420	B/Solid Display	9.33 × 5.16 × 1.71	**19.00**
736-3403	HH-3420-BC	B/Solid/Battery	9.33 × 5.16 × 1.71	**19.90**
736-3404	HH-3421	B/Cutout Display	9.33 × 5.16 × 1.71	**18.50**
736-3405	HH-3421-BC	B/Cutout/Battery	9.33 × 5.16 × 1.71	**19.50**

Accessories

736-3406. HH-3440-TS. Optional Tilt Stand .... **EACH .90**
736-3407. HH-3441-G. Optional Gasket .... **EACH 1.00**



Metal Utility Cabinets

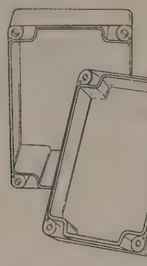
General-purpose cabinets for small area housings. Two removable panels, both front and rear, provide easy access to inside. Steel cabinets in Smooth Gray (SG) finish; aluminum cabinets in Natural Aluminum (NA) or Smooth Gray (SG) finish.

Steel

Stock No.	Mfr.'s Type	Size H × W × D In.	Wt. Lbs.	EACH		
SG				1-5	6-49	50-99
736-3625	CU-883	4 × 4 × 2	3/4	**12.20**	**10.15**	**9.15**
736-3614	CU-728	4 × 5 × 3	1	**12.40**	**10.40**	**9.35**
736-3616	CU-729	5 × 6 × 4	1 3/4	**15.80**	**13.15**	**11.85**
736-3627	CU-1098	6 × 6 × 6	2 1/4	**24.20**	**20.15**	**18.15**
736-3630	CU-1099	9 × 6 × 5	3	**26.20**	**21.85**	**19.15**
736-3618	CU-879	10 × 8 × 7	3 1/4	**39.60**	**33.05**	**29.75**
736-3620	CU-880	10 × 10 × 8	6 1/4	**51.00**	**42.60**	**38.35**
736-3631	CU-1124	12 × 7 × 6	5	**39.40**	**32.90**	**29.60**
736-3622	CU-881	12 × 11 × 8	8 1/2	**57.50**	**48.00**	**43.20**
736-3624	CU-882	15 × 9 × 7	8 1/4	**56.30**	**47.05**	**42.35**

Aluminum

Mfr.'s Type	Size H × W × D In.	NA				SG			
		Stock No.	EACH			Stock No.	EACH		
			1-5	6-49	50-99		1-5	6-49	50-99
AU-1083	4 × 4 × 2	**736-1008**	**10.20**	**8.50**	**7.65**	—	**14.30**	**11.95**	**10.75**
AU-1028	4 × 5 × 3	**736-1000**	**12.10**	**10.10**	**9.10**	**736-1001**	**17.10**	**14.20**	**12.80**
AU-1029	5 × 6 × 4	**736-1002**	**14.10**	**11.75**	**10.60**	**736-1003**	**20.00**	**16.70**	**15.05**
AU-1039	6 × 6 × 6	**736-1004**	**20.60**	**17.20**	**15.50**	—	**29.90**	**25.00**	**22.50**
AU-1040	9 × 6 × 5	**736-1006**	**22.40**	**18.70**	**16.85**	**736-1007**	**32.10**	**26.80**	**24.10**



NEMA 4X Sealed Polycarbonate and ABS Enclosures

- Designed to IP 65 of IEC 529 and NEMA 4X
- Wall Mounting Holes and Cover Attaching Screws Are Outside the Sealing Area, Preventing Ingress of Moisture and Dust
- Internal Bosses Allow Mounting of PCBs Horizontally or for Connection of Terminals, Etc., into Threaded Brass Inserts
- Internal Guide Slots for Mounting PCB Assemblies Vertically
- Cover Screws Are M-4 Stainless Steel, Non-Magnetic and Fasten into Threaded Brass Inserts
- The Polycarbonate Material Has an Operating Temperature of –40°C to +100°C
- ABS Material Has an Operating Temperature of –20°C to +80°C

These polycarbonate and high-impact ABS molded enclosures meet NEMA 4X specifications and are ideal for use in the electrical and electronic industries. Available in six sizes, these molded enclosures are offered in three different versions:

- Light Gray Polycarbonate Body and Clear Polycarbonate Cover
- Light Gray Polycarbonate Body and Cover
- Dark Gray ABS Body and Cover

Polycarbonate, an engineering thermoplastic, features good electrical insulation and heat resistance. The high-impact ABS material is easily drilled and punched. These enclosures are ideal for circuit enclosures and junction boxes. **Wall Thickness:** .118".

Light Gray Polycarbonate Body and Cover

Stock No.	Mfr.'s Type	Weight Oz. (approx.)	External Dimensions In.			EACH
			Length	Width	Height	
736-1320	PN-1320	2.5	2.56	2.28	1.38	7.40
736-1321	PN-1321	4.0	4.53	2.56	1.57	10.30
736-1322	PN-1322	5.0	4.53	2.56	2.17	11.10
736-1323	PN-1323	5.5	4.53	3.54	2.17	12.80
736-1324	PN-1324	10.0	6.73	4.76	2.17	17.90
736-1325	PN-1325	15.5	8.74	5.75	2.17	23.70
736-1338	PN-1327	13.0	6.73	4.76	3.15	19.40

Polycarbonate Light Gray Body and Clear Cover

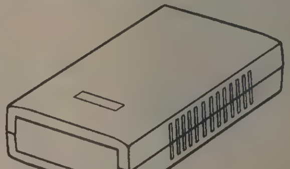
Stock No.	Mfr.'s Type	Weight Oz. (approx.)	External Dimensions In.			EACH
			Length	Width	Height	
736-1326	PN-1320-C	2.5	2.56	2.28	1.38	7.70
736-1327	PN-1321-C	4.0	4.53	2.56	1.57	10.60
736-1328	PN-1322-C	5.0	4.53	2.56	2.17	11.40
736-1329	PN-1323-C	5.5	4.53	3.54	2.17	13.20
736-1330	PN-1324-C	10.0	6.73	4.76	2.17	18.50
736-1331	PN-1325-C	15.5	8.74	5.75	2.17	24.30
736-1339	PN-1327-C	13.0	6.73	4.76	3.15	19.40

Dark Gray ABS Cover and Body

Stock No.	Mfr.'s Type	Weight Oz. (approx.)	External Dimensions In.			EACH
			Length	Width	Height	
736-1332	PN-1320-DG	2.5	2.56	2.28	1.38	5.90
736-1333	PN-1321-DG	4.0	4.53	2.56	1.57	7.20
736-1334	PN-1322-DG	5.0	4.53	2.56	2.17	8.10
736-1335	PN-1323-DG	5.5	4.53	3.54	2.17	9.80
736-1336	PN-1324-DG	10.0	6.73	4.76	2.17	14.20
736-1337	PN-1325-DG	15.5	8.74	5.75	2.17	19.20
736-1340	PN-1327-DG	13.0	6.73	4.76	3.15	13.40

Polystyrene and ABS Molded Enclosures

- Designed to IP 54 of IEC 529
- Two Part Design with Tongue and Groove Joint Between Top and Bottom Covers and Specially Designed End Panels of the Same Material
- Internal Guide Slots Provided for Vertical Mounting of PCBs
- Internal Bosses Provided for Horizontal Mounting of PCBs
- Top and Bottom Covers Are Lightly Textured Providing a Scratch-Resistant, High Quality Finish
- Four M-3 Screws Are Countersunk in the Bottom Cover and Thread into Brass Inserts to Secure the Top Cover and End Panels
- Polystyrene Top and Bottom Covers Are Molded in Dark Gray with End Panels in Light Gray
- ABS Top and Bottom Covers Are Molded in Light Gray with End Panels in Dark Gray



This line of molded enclosures is ideally suited for instrumentation and telecommunications equipment from hand-held to desk top sizes. Available in twelve sizes in either high-impact polystyrene, which is flame retardant to UL94-VO, or high-impact ABS.

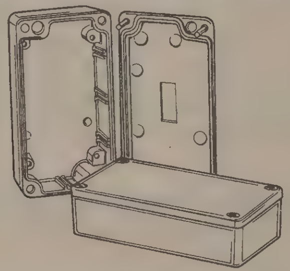
Stock No.	Mfr.'s Type	External Dimensions In.			EACH
		Length	Width	Height	
736-1900	PI-1900*	3.54	1.97	0.63	3.20
736-1901	PI-1901*	3.54	1.97	0.94	3.50
736-1902	PI-1902*	3.54	1.97	1.26	3.70
736-1903	PI-1903*	4.72	2.36	1.18	5.80
736-1904	PI-1904*	4.72	2.36	1.57	6.60
736-1905	PI-1905*	4.72	2.36	1.97	7.80
736-1906	PI-1906*	5.91	3.15	1.18	8.30
736-1907	PI-1907*	5.91	3.15	1.77	9.90

Stock No.	Mfr.'s Type	External Dimensions In.			EACH
		Length	Width	Height	
736-1908	PI-1908*	5.91	3.15	2.36	11.40
736-1909	PI-1909*	7.48	3.94	1.57	13.20
736-1910	PI-1910*	7.48	3.94	2.36	14.60
736-1911	PI-1911*	7.48	3.94	3.15	16.60
736-1912	PI-1900-LG†	3.54	1.97	0.63	2.90
736-1913	PI-1901-LG†	3.54	1.97	0.94	3.20
736-1914	PI-1902-LG†	3.54	1.97	1.26	3.30
736-1915	PI-1903-LG†	4.72	2.36	1.18	5.20

Stock No.	Mfr.'s Type	External Dimensions In.			EACH
		Length	Width	Height	
736-1916	PI-1904-LG†	4.72	2.36	1.57	6.30
736-1917	PI-1905-LG†	4.72	2.36	1.97	7.00
736-1918	PI-1906-LG†	5.91	3.15	1.18	7.40
736-1919	PI-1907-LG†	5.91	3.15	1.77	8.80
736-1920	PI-1908-LG†	5.91	3.15	2.36	10.00
736-1921	PI-1909-LG†	7.48	3.94	1.57	11.20
736-1922	PI-1910-LG†	7.48	3.94	2.36	12.70
736-1923	PI-1911-LG†	7.48	3.94	3.15	14.30

*Polystyrene. †ABS.

Sealed Die-Cast Aluminum Enclosures



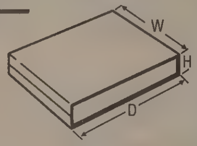
- Designed to IP 65 of IEC 529 and NEMA 4
- Wall Mounting Holes and Cover Attaching Screws Are Outside the Sealing Area Thus Preventing Ingress of Moisture and Dust
- Cover Incorporates a Recessed Neoprene Gasket
- Internal Guide Slots for Mounting PCB Assemblies Vertically
- Internal Bosses for Mounting PCBs Horizontally or for Connecting Terminals, Ground, Etc.
- Screw Holes for Cover Mounting Are Roll Threaded and Screws Are Captivated and Recessed

Die cast in aluminum alloy and resistant to atmospheric and marine corrosion, these enclosures are ideal for housing sensitive electronic assemblies and pneumatic, hydraulic and electrical devices in both commercial and industrial environments. **Specifications. Body and Cover:** Aluminum Alloy #A380. **Gasket:** Neoprene. **Cover Screws:** M-4 Stainless Steel, non-magnetic. **Ground Screw and Washer:** Copper-plated. **Finish:** Natural finish or Gray (add suffix G).

Stock No.	Mfr.'s Type	Wt. Oz.*	External Dim. In.			Wall Thickness In.	EACH
			Length	Width	Height		
736-1300	AN-1300	5	3.54	1.42	1.18	.130	10.60
736-1301	AN-1301	5	2.52	2.28	1.38	.138	6.30
736-1303	AN-1302	8	4.53	2.56	1.18	.134	9.20
736-1305	AN-1303	12	4.53	2.56	2.17	.130	11.20
736-1307	AN-1304	14	4.53	3.54	2.17	.130	13.10
736-1309	AN-1305	24	5.83	4.25	2.95	.130	23.40
736-1311	AN-1306	24	6.73	4.76	2.17	.130	23.80
736-1313	AN-1307	30	8.74	5.75	2.17	.130	25.10

*Approximate.

Plasticase — *NEW* —



- Impact Resistant ABS
- Molded in Card Guides and Mounting Bosses
- Available in Four Versions

Version 1

Dark gray UL94V-O flame retardant polystyrene plastic covers with light gray plastic end panels.

736-1140. PC-11480. 1.38" × 5.51" × 4.33" (H × W × D)..................**EACH 9.80**
736-1141. PC-11481. 1.57" × 8.86" × 6.50" (H × W × D)..................**EACH 19.40**
736-1142. PC-11482. 2.56" × 10.24" × 7.09" (H × W × D)................**EACH 25.00**

Version 2

Dark gray UL94V-O flame retardant polystyrene plastic covers with natural finish aluminum end panels.

736-1143. PC-11480-A. 1.38" × 5.51" × 4.33" (H × W × D)..............**EACH 13.50**
736-1144. PC-11481-A. 1.57" × 8.86" × 6.50" (H × W × D)..............**EACH 24.50**
736-1145. PC-11482-A. 2.56" × 10.24" × 7.09" (H × W × D)............**EACH 32.80**

Version 3

Light gray high impact ABS plastic covers with black plastic end panels.

736-1146. PC-11480-LG. 1.38" × 5.51" × 4.33" (H × W × D)............**EACH 9.10**
736-1147. PC-11481-LG. 1.57" × 8.86" × 6.50" (H × W × D)............**EACH 17.60**
736-1148. PC-11482-LG. 2.56" × 10.24" × 7.09" (H × W × D)..........**EACH 23.00**

Version 4

Light gray high impact ABS plastic covers with natural finish aluminum end panels.

736-1149. PC-11480-LGA. 1.38" × 5.51" × 4.33" (H × W × D) ....**EACH 12.80**
736-1151. PC-11481-LGA. 1.57" × 8.86" × 6.50" (H × W × D) ....**EACH 22.80**
736-1152. PC-11482-LGA. 2.56" × 10.24" × 7.09" (H × W × D) ....**EACH 31.20**

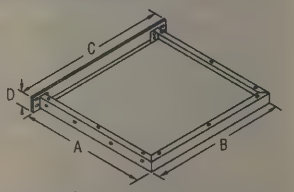
23" Aluminum Panels

⅛" thick (3003-H-14). Painted flat black.

Stock No.	Mfr.'s Type	Weight Lbs. (approx.)	Height In.	EACH
736-4441	PA-2441	.50	1¾	11.75
736-4442	PA-2442	1.00	3½	15.30
736-4443	PA-2443	1.50	5¼	19.60
736-4444	PA-2444	2.00	7	24.40
736-4445	PA-2445	2.38	8¾	30.40

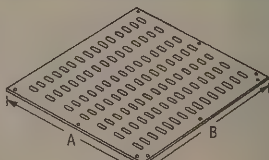
Small Rack Mount Chassis

Eight new sizes of aluminum rackmount chassis. 1U and 2U versions, each in two different depths and widths. Adaptable for slide mounting. Panels are .100" thick aluminum. Chassis are .050" thick aluminum.



Stock No.	Mfr.'s Type	Weight Oz. (approx.)	A In.	B In.	C In.	D In.	EACH
736-1401	CH-14401	1.50	8	17	19	1.719	41.60
736-1403	CH-14402	2.50	16	17	19	1.719	60.00
736-1405	CH-14403	2.00	8	17	19	3.469	61.40
736-1407	CH-14404	3.00	16	17	19	3.469	78.80
736-1409	CH-14411	2.00	8	22	24	1.719	52.00
736-1411	CH-14412	3.00	16	22	24	1.719	75.20
736-1413	CH-14413	2.75	8	22	24	3.469	70.70
736-1415	CH-14414	3.75	16	22	24	3.469	91.10

Small Rack Mount Chassis Covers

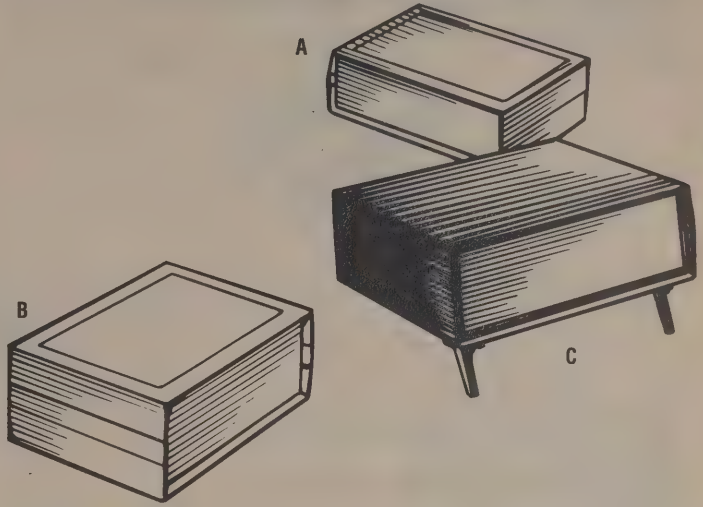


Ventilated chassis covers in .050" thick aluminum.

Stock No.	Mfr.'s Type	Weight Oz. (approx.)	A In.	B In.	EACH
736-1417	CH-14431	8.5	8	17	16.50
736-1418	CH-14432	17.0	16	17	26.40
736-1419	CH-14433	10.5	8	22	18.10
736-1420	CH-14434	21.0	16	22	33.30

Plasticase

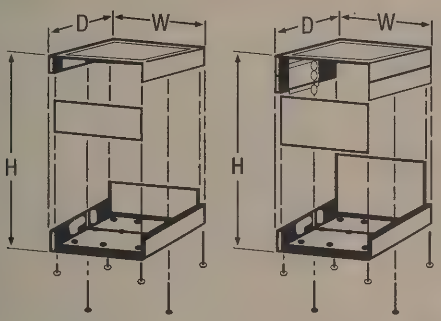
Offering 3 styles and 10 sizes of these sturdy enclosures constructed of high quality impact resistant ABS material. Molded-in card guides — Styles A and B — and mounting bosses — all styles — provide a variety of mounting options. Housing design allows complete accessibility to internal components.



Design Features for Styles A and B
- ▶ Impact Resistant ABS
- ▶ Molded-In Card Guides and Mounting Bosses
- ▶ Easy to Assemble — Comes Complete with Stainless Steel Screws and Rubber Feet
- ▶ Finish — Double-Textured PC Bone Gray
- ▶ Shipped Assembled

Stock No.	Mfr.'s Type	Style	H Height In.	W Width In.	D Depth In.	Panel Size (.094" Thick) H × W In.	EACH 1-9	EACH 10-24
736-1402	PC-11402	A	1.53	5.08	5.30*	1.31 × 4.75*	**13.30**	**11.10**
736-1404	PC-11404	A	1.55	6.33	9.62	1.33 × 5.99	**19.60**	**16.35**
736-1406	PC-11406	A	2.52	6.12	6.32	2.31 × 5.75	**17.00**	**14.20**
736-1408	PC-11408	A	2.52	8.10	6.32	2.31 × 7.75	**20.40**	**17.00**
736-1410	PC-11410	B	3.30	6.12	6.32	3.09 × 5.75	**21.00**	**17.50**
736-1412	PC-11412	B	3.30	8.10	6.32	3.09 × 7.75	**24.30**	**20.30**
736-1414	PC-11414	B	4.04	6.12	6.32	3.83 × 5.75	**22.10**	**18.45**
736-1416	PC-11416	B	4.04	8.10	6.32	3.83 × 7.75	**25.80**	**21.55**

*Panel Thickness is .062".



Accessories for Styles A and B

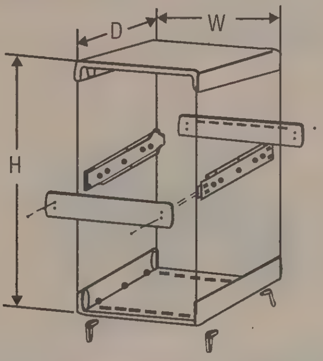
Handle/Bail Kits. Features 3 locking positions. Heavy-duty chrome plated steel. Kit includes molded ABS attachment buttons, mounting screws and over-size rubber feet.

Stock No.	Mfr.'s Type	Fits	EACH 1-9	EACH 10-24
736-1496	HB-11496	PC-11406, PC-11410, PC-11414	**17.00**	**14.20**
736-1498	HB-11498	PC-11408, PC-11412, PC-11416	**20.40**	**17.00**

NOTE: Handle/Bail Kits available for PC-11402 and PC-11404 on special request.

Design Features for Style C

- ▶ Impact Resistant ABS with Aluminum Front and Rear Panels
- ▶ Internal Steel Channels Provide Extra Strength and Ease of Assembly
- ▶ Formed Guide Tabs Accept Vertical or Horizontal Circuit Boards
- ▶ Finish: Black with Clear Anodized Aluminum Front and Rear Panels
- ▶ Shipped Assembled

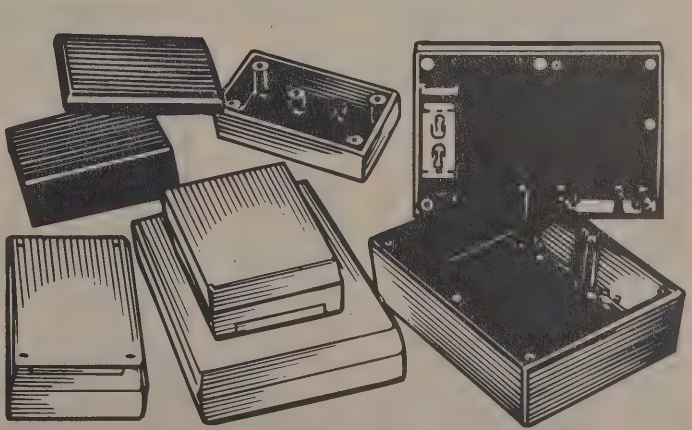


Stock No.	Mfr.'s Type	H Height In.	W Width In.	D Depth In.	Panel Size (.047" Thick) H × W In.	EACH 1-9	EACH 10-24
736-1432*	PC-11432	1.61	3.54	5.71	1.42 × 3.28	**21.00**	**17.50**
736-1438†	PC-11438	4.02	9.72	8.66	3.83 × 9.46	**52.90**	**44.15**

*No feet. †Folding type plastic feet supplied.

PlastiBox

Available in 3 styles and a variety of sizes, these functional utility enclosures are made from UL rated high-impact ABS with scratch resistant finish. All PlastiBox models come with vertical card guides and are bossed for mounting horizontal circuit cards.



Three styles Are Offered To Meet Your Specific Needs:
- ▶ Textured Body with Smooth Top for Silk Screening Capabilities — Prefix PS
- ▶ Textured Body with Textured Top — Prefix PT
- ▶ Textured Body with Smooth Top and 9-Volt Battery Compartment — Prefix PBS

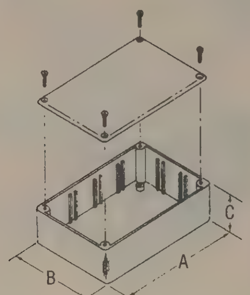
Stock No.	Mfr.'s Type	Outside Length In.	Outside Width In.	Outside Height In.	Useable Inside Dimensions Length	Useable Inside Dimensions Width	Useable Inside Dimensions Height	EACH 1-9	EACH 10-25
736-1101	PS-11301-G	$3\frac{5}{8}$	$2\frac{1}{4}$	1	$3\frac{1}{4}$	$1\frac{7}{8}$	$\frac{3}{4}$	**5.40**	**4.50**
736-1102	PT-11308-G	$3\frac{5}{8}$	$2\frac{1}{4}$	$1\frac{1}{2}$	$3\frac{1}{4}$	$1\frac{7}{8}$	$1\frac{1}{4}$	**5.40**	**4.50**
736-1103	PS-11317-G	$4\frac{3}{8}$	$3\frac{1}{4}$	$1\frac{1}{2}$	4	$2\frac{3}{4}$	$1\frac{1}{4}$	**6.70**	**5.60**
736-1104	PBS-11319-G	$4\frac{3}{8}$	$3\frac{1}{4}$	$1\frac{1}{2}$	3	$2\frac{3}{4}$	$1\frac{1}{4}$	**7.80**	**6.50**
736-1105	PS-11325-G	$5\frac{5}{8}$	$3\frac{1}{4}$	$1\frac{1}{2}$	$5\frac{1}{4}$	$2\frac{3}{4}$	$1\frac{1}{4}$	**7.50**	**6.25**
736-1106	PBS-11327-G	$5\frac{5}{8}$	$3\frac{1}{4}$	$1\frac{1}{2}$	$4\frac{1}{4}$	$2\frac{3}{4}$	$1\frac{1}{4}$	**10.30**	**8.60**
736-1107	PS-11333-G	$6\frac{7}{8}$	$4\frac{7}{8}$	$1\frac{1}{2}$	$6\frac{1}{2}$	$4\frac{1}{2}$	$1\frac{1}{4}$	**9.80**	**8.20**
736-1108	PT-11372-G	$3\frac{5}{8}$	$2\frac{1}{4}$	$2\frac{1}{2}$	$3\frac{1}{4}$	$1\frac{7}{8}$	$2\frac{1}{4}$	**5.70**	**4.75**
736-1109	PT-11380-G	$4\frac{3}{8}$	$3\frac{1}{4}$	$2\frac{1}{2}$	4	$2\frac{3}{4}$	$2\frac{1}{4}$	**7.30**	**6.10**
736-1111	PT-11388-G	$5\frac{5}{8}$	$3\frac{1}{4}$	$2\frac{1}{2}$	$5\frac{1}{4}$	$2\frac{3}{4}$	$2\frac{1}{4}$	**9.80**	**8.20**
736-1112	PT-11396-G	$6\frac{7}{8}$	$4\frac{7}{8}$	$2\frac{1}{2}$	$6\frac{1}{2}$	$4\frac{1}{2}$	$2\frac{1}{4}$	**10.80**	**9.00**

All models are available in 2 molded-in colors, black and gray. All PlastiBox models come with four Non-Skid Feet which mount on bottom of enclosure for table top use. Allied stock is gray. Black available from factory.

Bud Plastic Enclosures — The Utilibox Series

Bud's Utilibox Series is the ultimate value in plastic utility boxes. Now available in 3 styles and 13 sizes.

Style A



- KJB Cycolac Thermoplastic with Flammability Rating of 94-VO at .080" Thickness and Continuous Use Temperature of 70°C
- Card Guides Accept .062" Thick Cards
- Comes with Close Fitting Interlocking Lid and Assembly Hardware
- Finish — Black Is Standard; Special Colors and Finishes Are Available Upon Request

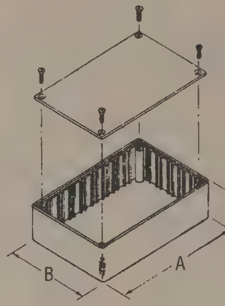
Stock No.	Mfr.'s Type	Dimensions In.*			Weight Ozs.	EACH	
		A	B	C		1-5	6-99
736-3589	CU-281	4½	3	1¾	4.5	9.90	8.25
736-3590	CU-282	4½	4½	2¼	6.5	7.60	6.35
736-3591	CU-283	6	4½	2¼	8.5	9.20	7.70
736-3592	CU-284	7½	4½	2¼	10.5	10.60	8.85

*Dimensions are ±.010".

With Mounting Brackets

Two styles of mounting brackets, depending on size of Utilibox needed. To order, add suffix -MB to Utilibox catalog number. Brackets are fastened to Utilibox at the factory and shipped as one unit.

Style B

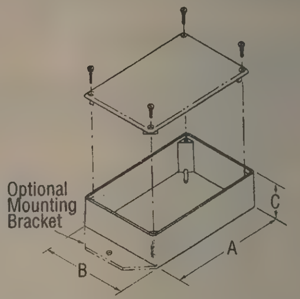


- Impact Resistant ABS
- Cover Panel — .050" Aluminum
- Card Guides Spaced at .53" Centers Allow Flexibility of Component Placement or Creation of Compartments for Potting; Guides Accept .062" Thick Cards
- Finish — Black Body with Anodized Aluminum Cover Panel
- Shipped Assembled

Stock No.	Mfr.'s Type	Dimensions In.*			Weight Ozs.	EACH	
		A	B	C		1-5	6-99
736-1490	CU-1490	3.54	1.77	1.18	1.50	5.40	4.50
736-1491	CU-1491	4.33	2.17	1.38	3.00	6.20	5.15
736-1493	CU-1493	6.10	3.54	1.97	5.00	11.20	9.35
736-1495	CU-1495	8.66	5.32	2.95	7.50	21.70	18.10

*Dimensions are ±.010".

Style C



- KJB Cycolac Plastic with 94V-O Flammability Rating at .080" Thickness and Continuous Use Temperature of 70°C
- Comes with Close-Fitting Interlocking Lid and Assembly Hardware
- Lid Includes Special Corner Flange for Optional Bonding
- Finish — Mar-Resistant Black Textured Is Standard; Special

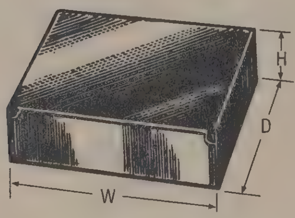
Stock No.	Mfr.'s Type	Dimensions In.*			Weight Ozs.	EACH	
		A	B	C		1-5	6-99
736-1382	CU-382	3¼	2⅜	1	2.00	4.60	3.85
736-1383	CU-383	4⅛	2¾	1	3.00	4.90	4.10
736-1384	CU-384	3¼	3¼	1¼	3.00	5.00	4.15
736-1385	CU-385	4½	3¼	1¼	3.50	5.90	4.95
736-1386	CU-386	5½	3¾	1¼	4.50	6.80	5.70
736-1388	CU-387	5½	4¼	1¾	5.60	7.20	6.00

*Dimensions are ±.010".

With Mounting Brackets

Optional molded-in mounting brackets are available for all sizes of Style C. To order, add suffix -MB to catalog number.

Aluminum Chassis



Aluminum Chassis

Offer outstanding strength and rigidity for construction of amplifiers, meters and other components. Made from one piece of sheet metal. Welded on government-approved spot welders developed for aluminum. All sides folded in at the bottom for additional support assuring strength and durability. Natural finish aluminum alloy 5005 H-14. .040" Aluminum.

Stock No.	Mfr.'s Type	Size W × D × H In.	Weight Lbs.	EACH	
				1-5	6-49
736-0015*	AC-415†	10 × 17 × 2	1¼	26.50	22.15
736-0016*	AC-416†	10 × 17 × 3	2	31.00	25.85
736-0027*	AC-427†	10 × 17 × 4	3½	44.70	37.35
736-0018*	AC-418†	12 × 17 × 3	2¾	32.80	27.35
736-0019*	AC-419†	13 × 17 × 2	2½	33.50	27.90
736-0020*	AC-420†	13 × 17 × 3	2¾	38.70	32.35
736-0028*	AC-428†	13 × 17 × 4	3¾	47.00	39.20
736-0205	AC-1405	4 × 6 × 1½	¼	8.90	7.45
736-0213	AC-1413	6 × 8 × 2	½	11.30	9.40
736-0218	AC-1418	8 × 10 × 2½	1	18.30	15.30
736-0219	AC-1419	8 × 12 × 2½	1	22.70	18.90
736-0222*	AC-1422	10 × 17 × 5	2½	52.10	43.50
736-0226*	AC-1426	13 × 17 × 5	3½	60.00	50.10
736-0227*	AC-1427	14 × 17 × 3	3	43.70	36.45
736-0228*	AC-1428	15 × 17 × 4	3½	59.30	49.50
736-0229*	AC-1429	15 × 17 × 6	4⅛	84.00	70.15
736-0230*	AC-1430	17 × 17 × 3	3¼	50.90	42.50
736-0231*	AC-1431	17 × 17 × 4	4	59.60	49.75

Aluminum Chassis (continued)

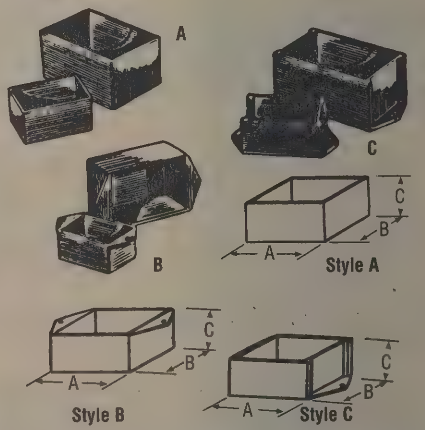
Stock No.	Mfr.'s Type	Size W × D × H In.	Weight Lbs.	EACH	
				1-5	6-49
736-0031	AC-431	4 × 6 × 2	½	9.10	7.60
736-0030	AC-430	4 × 6 × 3	½	11.20	9.30
736-0002	AC-402	5 × 7 × 2	½	9.90	8.20
736-0029	AC-429	5 × 7 × 3	¾	12.70	10.60
736-0003	AC-403	5 × 9½ × 2	½	12.00	9.95
736-0021	AC-421	5 × 9½ × 3	¾	15.10	12.60
736-0004	AC-404	5 × 10 × 3	¾	15.20	12.65
736-0005	AC-405	7 × 7 × 2	½	10.40	8.60
736-0006	AC-406	7 × 9 × 2	½	12.50	10.40
736-0007	AC-407	7 × 11 × 2	¾	14.50	12.05
736-0008	AC-408	7 × 12 × 3	1	19.20	16.05
736-0009	AC-409	7 × 13 × 2	¾	15.80	13.25
736-0011*	AC-411	7 × 15 × 3	1½	25.00	20.85
736-0024*	AC-424	8 × 12 × 3	1½	23.00	19.20
736-0012*	AC-412†	8 × 17 × 3	1¾	26.00	21.80
736-0013*	AC-413	10 × 12 × 3	1½	29.20	24.45
736-0014*	AC-414	10 × 14 × 3	1¾	29.70	24.90

*.050" Aluminum. †Prepunched for easy assembly of chassis

Chassis Bottom Plates — .040" Aluminum

Stock No.	Mfr.'s Type	Fits Chassis		Weight Ozs.	EACH	
		Width In.	Depth In.		1-5	6-49
736-1505	BPA-1505	4	6	2	4.60	3.85
736-1589	BPA-1589	5	7	2	4.50	3.75
736-1590	BPA-1590	5	9½	2	4.60	3.85
736-1591	BPA-1591	5	10	4	4.50	3.75
736-1513	BPA-1513	6	8	3	6.50	5.35
736-1592	BPA-1592	7	7	3	4.50	3.75
736-1593	BPA-1593	7	9	4	5.50	4.60
736-1594	BPA-1594	7	11	4	5.70	4.75
736-1595	BPA-1595	7	12	5	6.30	5.25
736-1596	BPA-1596	7	13	8	7.50	6.30
736-1516	BPA-1516	7	15	8	8.20	6.90
736-1518	BPA-1518	8	10	4	8.00	6.65
736-1519	BPA-1519	8	12	6	9.70	8.10
736-1520	BPA-1520	8	17	8	10.00	8.40
736-1523	BPA-1523	10	12	8	9.70	8.10
736-1524	BPA-1524	10	14	8	9.70	8.10
736-1597	BPA-1597	10	17	10	10.30	8.65
736-1528	BPA-1528	12	17	12	13.90	11.65
736-1598	BPA-1598	13	17	14	14.30	11.90
736-1529	BPA-1529	14	17	15	14.70	12.30
736-1530	BPA-1530	15	17	16	18.40	15.35
736-1531	BPA-1531	17	17	17	20.40	17.05

Potting Boxes



Available in 3 styles and six sizes, these low cost enclosures are made of tough, lightweight CYCOLAC ABS thermoplastic. **Flammability Rating:** 94V-0 at .062" thickness and continuous use temperature of 70°C. Optional close-fitting covers are available in all sizes. **Finish:** Black.

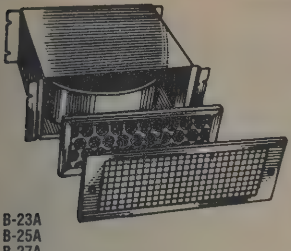
Potting Boxes

Stock No.	Mfr.'s Type	Style	Dimensions In.			Cover	PER PK./10
			A	B	C		
736-1558	PB-1558	A	2	1½	1	H	11.60
736-1559	PB-1559	A	3	2	1½	G	16.90
736-1550	PB-1558-TF	B	2	1½	1	H	12.70
736-1551	PB-1559-TF	B	3	2	1½	G	18.20
736-1552	PB-1558-BF	C	2	1½	1	F	12.70
736-1553	PB-1559-BF	C	3	2	1½	G	18.20

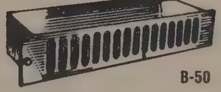
Cover

Stock No.	Mfr.'s Type	Cover Style	PER PK./10
736-1554	PBC-1558-C	F	6.70
736-1556	PBC-1559-C	G	7.80
736-1535	PBC-1558-CN	H	6.70

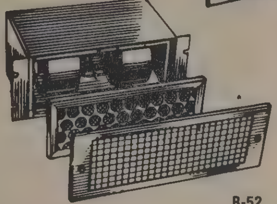
Blowers



B-23A
B-25A
B-27A



B-50



B-52
B-54

Design Features. Panel Heights: 3 1/2", 5 1/4" and 7". All units are 19" panel width with standard EIA notching for rack mounting. Dust filters removed through front panel, no tools needed. All U.L. approved. Guaranteed for 20,000 hours continuous service. 115 volts.

Model B-23A. Two-speed blower requires minimum panel space. Pressurizes or evacuates cabinet as desired. 1400/1150 RPM, 150/60 watt-shaded pole motor. Permanently lubricated ball-bearings. 24" long, 3-wire power cord. 18 lbs.

Model B-25A. Two-speed motor delivers turbulent air distribution to eliminate hot spots in cabinet. Recommended for minimum back pressure. 1135/675 RPM, 410/225 watt-shaded pole motor. Permanently lubricated ball-bearings. 24" long, 3-wire power cord. 30 lbs.

Model B-27A. Two-speed packaged blower. Noise level lower than found in comparable models with equal CFM. Recommended for use where densely packed electronic components require maximum cooling. 1350/850 RPM, 580/370 watt-shaded pole motor. Permanently lubricated ball-bearings. 24" long, 3-wire power cord. 34 lbs.

Model B-52. Designed for applications requiring higher back pressure. Two extra-wide, small-diameter centrifugal blower wheels supply a large volume of clean filtered air to pressurize enclosure. 3000 RPM shaded-pole motor. 70 watts. Permanently lubricated ball-bearings. 24" long, 2-wire power cord. 16 lbs.

Model B-54. Quiet, efficient with dual, slow-speed, low-velocity centrifugal blower wheels. Noise level below average DB level found in most business offices. 1550 RPM, fan-cooled, rubber-mounted 95 watt shaded-pole motor. Permanently lubricated ball-bearings. 24" long, 3-wire power cord. 22 lbs.

Model B-50. Requires only 3 1/2" panel height. Low audible noise level. Air stream delivered vertically through a 12 1/2" wide opening. Air velocity and pressure cool densely packed electronic equipment. 3100 RPM shaded-pole motor. 80 watts. Permanently lubricated ball-bearings. 24" long, 3-wire power cord. 13 lbs.

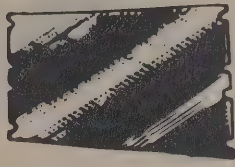
Blowers

Stock No.	Mfr.'s Type	Panel Space In.	Depth In.	Air CFM		Motor RPM	EACH
				High	Low		1-9
736-1150	B-23A	3 1/2 × 19	12	180	130	1400/1150	**346.05**
736-1110	B-25A	5 1/4 × 19	14 1/2	350	215	1135/675	**457.90**
736-1160	B-27A	7 × 19	14 1/2	550	345	1350/850	**468.80**
736-1130	B-50	3 1/2 × 19	6 3/8	150	—	3100	**318.95**
736-1170	B-52	5 1/4 × 19	9	125	—	3000	**363.60**
736-1180	B-54	7 × 19	10 3/16	300	—	1550	**363,55**

Filters

736-1100. BF-24. Used with B-23A or B-50	EACH 7.00
736-1120. BF-26. Used with B-25A	EACH 7.60
736-1161. BF-28. Used with B-27A	EACH 6.10
736-1171. BF-53. Used with B-52	EACH 5.40
736-1181. BF-55. Used with B-54	EACH 5.60

Steel, Standard Aluminum and Hard Aluminum Panels



Available in 11 gauge steel; 1/8" and 3/16" aluminum alloy. Steel, standard and hard aluminum (6061-T6) panels come in 19" widths. Note: For metallic gray replace "N" with "5"; for white replace "N" with "7".

1/8" Aluminum (3003-H14)

Stock No.	Mfr.'s Type	Height In.	Weight Lbs.	EACH		
				1-5	6-49	50-99
736-511N	PA-1101	1 3/4	3/8	**10.60**	**8.90**	**8.00**
736-512N	PA-1102	3 1/2	3/4	**14.80**	**12.35**	**11.10**
736-513N	PA-1103	5 1/4	1 1/8	**20.30**	**16.90**	**15.20**
736-514N	PA-1104	7	1 3/4	**25.30**	**21.15**	**19.05**
736-515N	PA-1105	8 3/4	2	**30.60**	**25.60**	**23.05**
736-516N	PA-1106	10 1/2	2 1/2	**38.90**	**32.50**	**29.25**
736-517N	PA-1107	12 1/4	2 3/4	**42.70**	**35.60**	**32.05**
736-518N	PA-1108	14	3 1/4	**47.50**	**39.60**	**35.65**
736-519N	PA-1109	15 3/4	3 5/8	**52.80**	**44.00**	**39.60**
736-520N	PA-1110	17 1/2	4	**53.95**	**48.45**	**43.60**
736-521N	PA-1111	19 1/4	4 1/4	**57.00**	**52.35**	**47.10**
736-534N	PA-1112	21	5	**59.20**	**53.30**	**47.35**

6061-T6 Aluminum 19" Panels 1/8" Thick

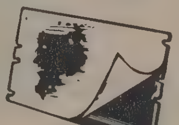
Stock No.	Mfr.'s Type	Height In.	Weight Lbs.	1-5	6-49	50-99
736-341N	PA-1131	1 3/4	3/8	**16.50**	**13.70**	**12.35**
736-342N	PA-1132	3 1/2	3/4	**23.70**	**19.80**	**17.80**
736-343N	PA-1133	5 1/4	1 1/8	**34.60**	**28.90**	**26.00**
736-344N	PA-1134	7	1 3/4	**45.50**	**38.05**	**34.25**
736-345N	PA-1135	8 3/4	2	**56.10**	**46.85**	**42.15**
736-346N	PA-1136	10 1/2	2 1/2	**68.80**	**57.50**	**51.75**
736-347N	PA-1137	12 1/4	2 3/4	**70.05**	**66.05**	**59.45**
736-348N	PA-1138	14	3 1/4	**74.50**	**67.05**	**59.60**
736-349N	PA-1139	15 3/4	3 5/8	**85.55**	**77.00**	**68.45**
736-351N	PA-1140	17 1/2	4	**94.15**	**84.75**	**75.30**
736-352N	PA-1141	19 1/4	4 1/4	**103.10**	**92.80**	**82.50**
736-353N	PA-1142	21	5	**111.90**	**100.70**	**89.50**

11 Gauge Steel

Stock No.	Mfr.'s Type	Height In.	Weight Lbs.	1-5	6-49	50-99
736-322N	PS-1250	1 3/4	1 1/4	**9.60**	**8.00**	**7.20**
736-323N	PS-1251	3 1/2	2 1/4	**11.60**	**9.70**	**8.75**
736-324N	PS-1252	5 1/4	3 1/4	**18.20**	**15.10**	**13.45**
736-325N	PS-1253	7	4 1/4	**20.10**	**16.80**	**15.10**
736-326N	PS-1254	8 3/4	6	**24.30**	**20.25**	**18.25**
736-327N	PS-1255	10 1/2	7	**27.10**	**22.60**	**20.35**
736-328N	PS-1256	12 1/4	8 1/4	**31.00**	**25.95**	**23.35**
736-329N	PS-1257	14	9 1/2	**36.50**	**30.50**	**27.45**
736-330N	PS-1258	15 3/4	10 3/4	**39.40**	**32.85**	**29.55**
736-331N	PS-1259	17 1/2	11 3/4	**42.30**	**35.40**	**31.85**
736-332N	PS-1260	19 1/4	13	**50.50**	**42.15**	**37.95**
736-333N	PS-1261	21	14 1/4	**52.00**	**43.45**	**39.10**

Accessories — Standard Panels

► **For All Cabinets, Cabinet Racks, Relay Racks and Small Enclosures, Where Applicable**



Surface Shield 19" Aluminum Panels (3003-H14)

Mill finish aluminum alloy panels. White, pressure-sensitive paper on one side protects and provides surface for laying out drilling space or punching position. Available in 1/8" and 3/16" thickness, 19" width.

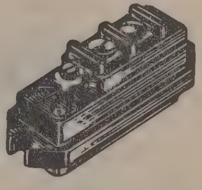
1/8" Panels

Stock No.	Mfr.'s Type	Height In.	EACH	
			1-5	6-49
736-7200	SFA–1831	1 3/4	**9.50**	**7.95**
736-7201	SFA–1832	3 1/2	**13.90**	**11.55**
736-7202	SFA–1833	5 1/4	**17.80**	**14.90**
736-7203	SFA–1834	7	**22.80**	**19.05**
736-7204	SFA–1835	8 3/4	**25.00**	**20.85**
736-7205	SFA–1836	10 1/2	**32.40**	**27.00**
736-7206	SFA–1837	12 1/4	**37.50**	**31.30**
736-7207	SFA–1838	14	**42.40**	**35.40**
736-7208	SFA–1839	15 3/4	**47.80**	**39.90**
736-7209	SFA–1840	17 1/2	**52.60**	**43.90**
736-7210	SFA–1841	19 1/4	**58.40**	**48.80**
736-7211	SFA–1842	21	**63.90**	**53.35**

3/16" Panels

Stock No.	Mfr.'s Type	Height In.	EACH	
			1-5	6-49
736-7212	SFA–3161	1 3/4	**15.20**	**12.70**
736-7213	SFA–3162	3 1/2	**21.30**	**17.80**
736-7214	SFA–3163	5 1/4	**28.00**	**23.40**
736-7215	SFA–3164	7	**35.40**	**29.55**
736-7216	SFA–3165	8 3/4	**41.50**	**34.65**
736-7217	SFA–3166	10 1/2	**48.60**	**40.65**
736-7218	SFA–3167	12 1/4	**51.45**	**46.30**
736-7219	SFA–3168	14	**58.60**	**52.75**
736-7220	SFA–3169	15 3/4	**65.50**	**58.90**
736-7221	SFA–3170	17 1/2	**68.50**	**61.65**
736-7222	SFA–3171	19 1/4	**79.80**	**71.80**
736-7223	SFA–3172	21	**86.40**	**77.75**

Accessories —
Tem-Stat Temperature Controls



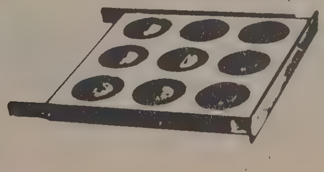
Prevent shut-downs caused by over-heating of electronic or electrical equipment in enclosures. Units react quickly to gradual or sudden temperature changes. **TS-15.** Contacts close when temperature reaches designated setting. Contacts remain closed until there is a 10° ±5°F drop in temperature. **TS-22.** Contacts open when temperature reaches designated setting. Contacts remain open until there is a 10° ±5°F drop in temperature. Can also be used for temperature control in convection and radiant heating applications. U.L. and C.S.A. listed. **Temperature Range:** 80°-170°F. **Temperature Accuracy:** ±8°F.

UL Electrical Ratings

Cycles	Full Load Amps	Locked Rotor Amps	Pilot Duty VA	Volts
6,000	5.0	35.0	—	12 VDC
30,000	6.0	36.0	—	120 VAC
30,000	3.0	18.0	—	240 VAC
100,000	4.0	24.0	125	120 VAC
100,000	2.0	12.0	125	240 VAC

736-1015. TS-15. Contact Type Normally open; Closed on temperature rise	EACH 23.70
736-1022. TS-22. Contact Type Normally closed; Open on temperature rise	EACH 23.70

Fan Tray Assembly



Fan Tray Assembly — FT-1170. Includes 9-position fan tray with preassembled front panel; a 9-outlet daisy chain cord and 6-foot power cord; adjustable support angles. **Materials:** Fan tray and support angles — 16-gauge steel; front panel — 12-gauge steel. **Finish:** Fan Tray, front panel, white textured (WH) or metallic gray (MG).

Fans — FN-1280. Order separately. Can be mounted in any pattern to suit individual cooling requirements. Each fan supplied with one hardware cloth finger guard. **Specifications:** 110-volt, AC; 105 CFM; –20°C to +60°C temperature range; UL approved. Optional Wire Form Finger Guard — FG-1281.

736-9635. Model FT-1170. Fan Tray Assembly	EACH 156.30
736-9636. Model FG-1281. Finger Guard	EACH 9.40
736-9637. Model FN-1280. Fans	EACH 37.50

Caster

Heavy duty double level post swivel caster with 2" ball cushion rubber wheel. Riveted axle. Black steel hood 3/8"-16 × 1" threaded steel pin.

Stock No.	Mfr.'s Type	Load Rating	Weight Each	EACH
736-7775	RC-7775	75 lbs.	9½ oz.	**11.20**

Swivel Caster

Type RC-7758. Heavy-duty casters with very sturdy construction for heavy loads. For use with Series 60 cabinets. Ball bearing wheels are hard tread composition for longer wear. Self-lubricating for convenience. **Wheel Diameter:** 2½". **Height:** 3¼". **Weight:** 1.5 lbs.

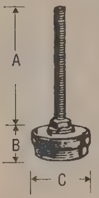
736-6001. 1-5 .... EACH 13.90
6-49 .... EACH 11.60
50-Up .... EACH 10.45

Locking Casters

- 4.00" Diameter × 1.25" Wide Wheels
- Wheel Material: Hard Tread Rubber
- Load Rating: 240 Lbs./Caster
- Ball-Bearing Swivel Type Casters
- Comes with Formed 12 Gauge Adapter Mounting Bracket
- Mounts In All Cabinet Racks Which Presently Accept RC-7758 Caster
- Comes with All Necessary Mounting Hardware
- Increases Overall Height Of Cabinet Rack By Approximately 4 Inches

Stock No.	Mfr.'s Type	Description	EACH
736-7761 736-7762	RC-7761 RC-7762	Swivel caster with brake Swivel caster only	**32.70** **28.30**

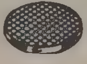
Stem Levelers



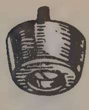
Stem levelers. Nickel-plated steel cap and stem; 3/8-16 thread. **Base:** RL-7766 — rubber; RL-7767 — white nylon; RL-7771 — gray non-skid rubber. RL-7766 and RL-7767 furnished with 2 height-adjusting nuts.

Stock No.	Mfr.'s Type	A In.	B In.	C In.	EACH 1-5	EACH 6-49
736-6005	RL-7766	3	1	1⅝	**5.60**	**4.65**
736-6006	RL-7767	3	⅜	1⅝	**3.90**	**3.25**
736-6008	RL-7771	2	¾	1⅝	**3.10**	**2.60**

Rubber and Plastic Feet


F-8038

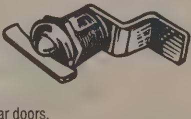
F-9653


F-7264-A
F-7800-A

F-3581
F-3599

F-8038. Self-adhesive sponge rubber pad. Can be applied to any surface. 3/8" diameter × 1/8" thick.
736-8038. F-8038 .... **EACH .16**
F-9653. Top-grade rubber, fits into 7/16" hole. Press-fit holds it firmly in place.
736-9653. F-9653 .... **EACH .30**
F-7264-A. Made of high grade black plastic supplied with mounting hardware. Plastic portion is 3/4" diameter × 3/8" high.
736-7264. F-7264-A .... **EACH .60**
F-7800-A. Made of high grade black plastic supplied with mounting hardware. Plastic portion is 7/8" diameter × 1/2" high.
736-7800. F-7800-A .... **EACH .60**
F-3581. Rubber feet with self-adhesive backing. Can be applied to any surface. 1/2" sq. × 7/32" high.
736-3581. F-3581 .... **EACH .30**
F-3599. Rubber feet with self-adhesive backing. Can be applied to any surface. 13/16" sq. × 5/16" high.
736-3599. F-3599 .... **EACH .40**

Non-Locking Latch Handle



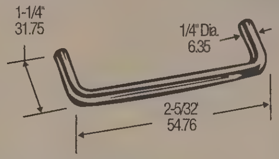
Interchangeable with existing key lock. LH-9358 used on 60, All American and Economizer, front and rear doors and 2000 rear doors.

736-9358 .... **EACH 14.30**

Handles

Styled for all types of applications, designed for long wear; quality construction equals that of high priced counterparts. Skin packed in pairs. Bulk available on special order.

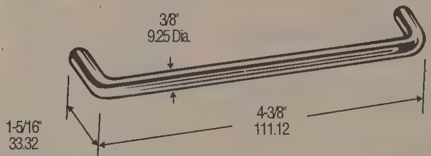
Types H-9166 and H-9168 Brass Handle



1/4" (6.35 mm) diameter handle with chrome-plate finish. 1" (25.4 mm) hand clearance. Includes two screws. **Sold per pair.**

Stock No.	Mfr.'s Type	Mtg. Ctrs. In.	Mtg. Ctrs. mm	PER PAIR 1-5	PER PAIR 6-49
736-4366	H-9166	1 29/32	49.21	**11.00**	**9.25**
736-4368	H-9168	3	76.20	**10.30**	**8.50**

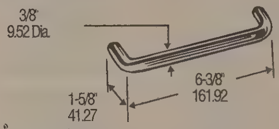
Steel Handle Types H-9111 and H-9112



3/8" (9.52 mm) diameter steel chrome-plated handle. 1" (25.4 mm) hand clearance, two screws included. **Sold per pair.**

736-4311	H-9111	4	101.60	**14.00**	**11.70**
736-4312	H-9112	6	152.40	**18.00**	**15.05**

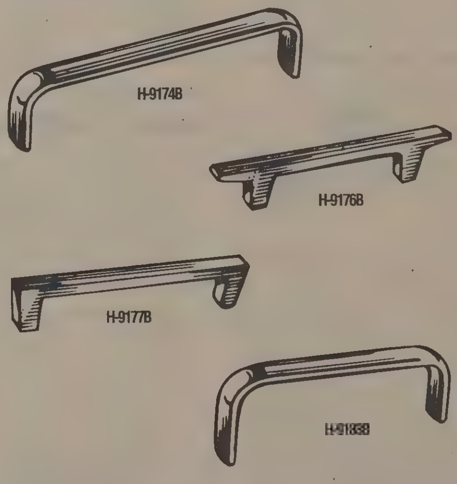
Steel Handle Type H-9110



3/8" (9.52 mm) diameter steel chrome-plated handle. 1¼" (31.7 mm) hand clearance. Includes two screws. **Sold per pair.**

736-4310	H-9110	6	152.40	**23.00**	**19.30**

Die Cast Aluminum Handles



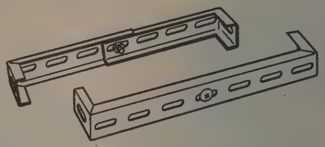
H-9174B. Clear anodized. 4" mounting center. Two 8-32 screws. 1 3/32" hand clearance. **H-9176B.** Clear anodized. 3¼" mounting center. Overall length 5". Two 8-32 screws. 3/4" hand clearance. **H-9177B.** Clear anodized. 4⅜" mounting center. Two 8-32 screws. 3/4" hand clearance. **H-9183B.** Clear anodized. 4 9/16" mounting center. Two 8-32 screws. 1 3/32" hand clearance.

Stock No.	Mfr.'s Type	EACH 1-5	EACH 6-99
736-4374	H-9174B	**9.90**	**8.30**
736-4376	H-9176B	**11.20**	**9.40**
736-4377	H-9177B	**11.20**	**9.40**
736-4383	H-9183B	**13.90**	**11.65**

Additional handles and sizes available on Special Order.

Open Relay Rack Support Brackets

— NEW —

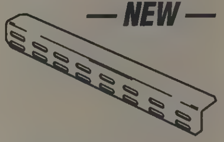


- Supports Top of Open Racks
- Adjustable Lengths
- Two Bracket Pairs Per Package
- Available in Metallic Gray Finish

Stock No.	Mfr.'s Type	Length In.	PER PAIR
736-1760	MB-1760	6-11	**28.80**
736-1761	MB-1761	12-17	**34.60**

Chassis Support Brackets

— NEW —



- Heavy Gauge Steel
- Available in Black Finish
- Requires Two Pairs of Panel Mounting Rails Per Cabinet Rack

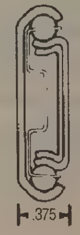
Stock No.	Mfr.'s Type	Length In.	EACH
736-1352	CSB-1352	13	**26.80**
736-1353	CSB-1353	16	**29.00**
736-1354	CSB-1354	23	**31.40**
736-1355	CSB-1355	28	**34.50**

Panel Mounting Rails

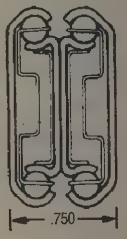
Use on Bud cabinet racks Series 60, Series 2000, Valurack, All American Rack, Classic II Racks, Economizer and Style B Jaguar. 12 gauge steel. **Finish:** Black. Hardware furnished.

Stock No.	Mfr.'s Type	Fits Cabinet Rack with Panel Space	PER PAIR
736-2002	PMR-2002	35	**51.20**
736-9306	PMR-9306	77	**85.65**
736-2004	PMR-9448	21	**48.55**
736-9615	PMR-9449	31½	**55.20**
736-9605	PMR-9450	42	**59.85**
736-9606	PMR-9451	52½	**66.30**
736-9607	PMR-9452	61¼	**74.15**
736-9608	PMR-9453	70	**81.10**
736-9609	PMR-9454	78¾	**86.00**

Sliding Mechanisms



A



B

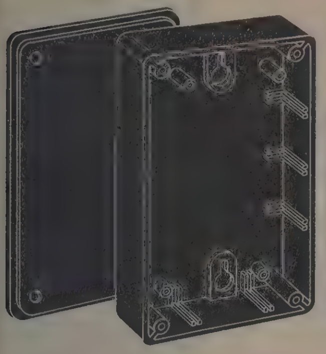
Fig. A. Two-piece slide with stationary delrin balls at front of the cabinet member for stabilization in closed position. 3/4 extension, friction disconnect. Recommended for light load requirements. Max. chassis width 17". **Mounting Provisions (Not Included):** Two BAS-5100 front mounting and two BAS-5101 rear mounting brackets required per pair of slides to attach slides to E.I.A. rails, one NAS-5110 bar nut required with each mounting bracket.

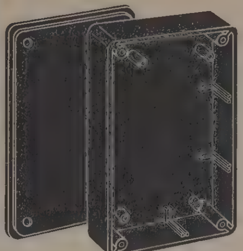
Stock No.	Mfr.'s Type	Slide Length In.	Travel In.	Load Wt. Lbs.	Ship Wt. Lbs.	PER PAIR
736-0900	AS-5000-A	12	8	140	1.3	**33.15**
736-0901	AS-5001-A	16	12	120	1.7	**43.45**
736-0922	AS-5002-A	20	15	92	2.3	**45.70**
736-0923	AS-5004-A	26	19	70	2.9	**48.35**

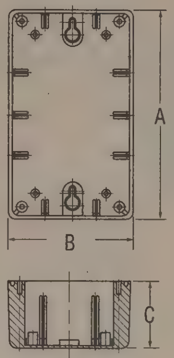
Fig. B. Three-piece slide, recommended for light loads. Positive stop at full extension. Front disconnect allows removal and reinsertion of chassis members without using tools. Full extension. **Mounting Provisions (Not Included):** 2 each BAS-5102 front mounting brackets required per pair to attach slides to E.I.A. rails, 1 each NAS-5110 bar nut used with each mounting bracket. **Maximum Chassis Width:** 17".

736-0907	AS-5040-A	12	12⅞	119	2.5	**91.85**
736-0908	AS-5041-A	16	16⅞	106	3.3	**97.70**
736-0909	AS-5042-A	20	20⅞	91	4.2	**103.55**
736-0924	AS-5044-A	26	26⅞	73	5.6	**109.30**

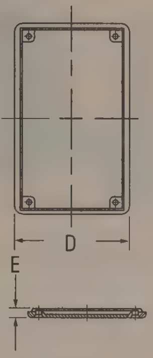
ABS Instrument Cases


Model 250

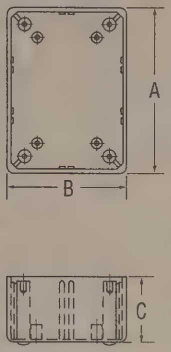

Model 225



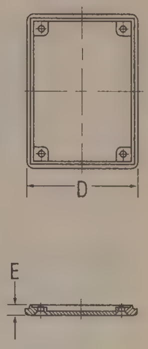
Model 250 Case



Model 251 Cover



Model 225 Case



Model 226 Cover

Molded Plastic Cases and Matching Plastic Covers for Mounting Test Equipment. Meters Fit into Cases with Flanges. Engineering Drawing Available Upon Request.

- ► Satin Finish
- ► Available in Flame Retardant ABS (An Improved Thermoplastic with a Flammability Rating of 94 V-0 at .058"
- ► Four Plain Holes for Self Tapping Screws
- ► Partitions: Guides Can Be Used for Partitioning of Electric Components
- ► Printed Circuit Boards (for Model 225): Two Guides on Long Side; One Guide on Short Side; Guides Accept .062" Thick Cards
- ► Printed Circuit Boards (for Model 250): Three Guides on Long Size; Two Guides on Short Side; Guides Accept .062" Thick Cards
- ► Typical Wall Thickness: .080"

Cases

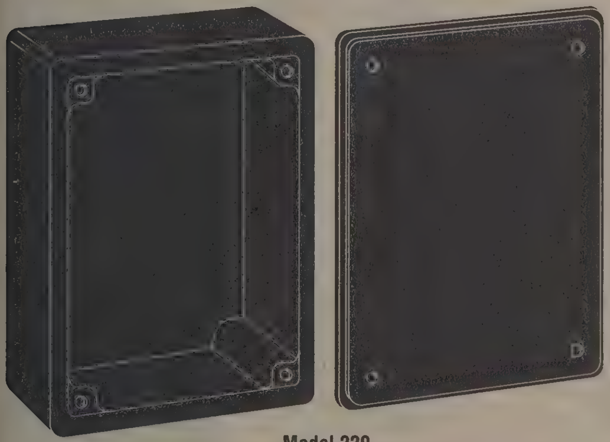
Stock No.	Mfr.'s Type	Outside Dimensions			Case Mounting Holes	Hardware	EACH		
		A Length	B Width	C Depth			1-49	50-249	250-999
543-0225	225	4	$2\frac{7}{8}$	$1\frac{9}{16}$	.099 × $\frac{5}{16}$ — 4 Plain Holes	$\frac{1}{2}$" No. 4*	**1.45**	**1.20**	**1.00**
543-0350	250	$6\frac{1}{4}$	$3\frac{3}{4}$	2	.120 × $\frac{11}{32}$ — 4 Plain Holes	$\frac{1}{2}$" No. 6*	**3.35**	**3.05**	**2.75**

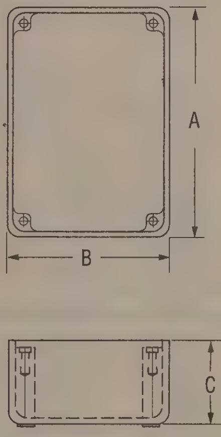
*Self Tapping Screws. †Counter Sunk Holes. **Hardware Not Included.**

Covers

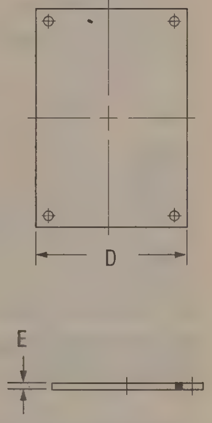
Stock No.	Mfr.'s Type	Outside Dim.		EACH		
		D Width	E Depth	1-49	50-249	250-999
543-0226	226†	$2\frac{59}{64}$	$\frac{1}{4}$	**.90**	**.75**	**.65**
543-0351	251†	$3\frac{47}{64}$	$\frac{1}{8}$	**1.80**	**1.60**	**1.45**

General Purpose Phenolic


Model 220



Model 220 Case



Model 221 Cover

- ► Glossy Black — Provide High Luster Finish
- ► Mar and Scratch Resistant
- ► Resistant to Most Chemicals
- ► Heat Resistant to 475°F
- ► Typical Wall Thickness: .080"

Cases

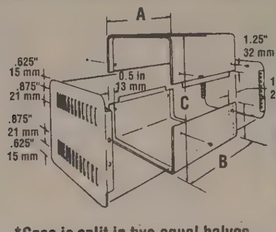
Stock No.	Mfr.'s Type	Outside Dimensions			Case Mounting Holes	Hardware	EACH		
		A Length	B Width	C Depth			1-49	50-249	250-999
543-0212	210A	$3\frac{1}{2}$	$2\frac{1}{2}$	$1\frac{1}{4}$	4-40 × $\frac{5}{16}$ — 4Threaded Holes	4-40 × $\frac{1}{2}$ Screw	**1.85**	**1.65**	**1.50**
543-0220	220	4	$2\frac{7}{8}$	$1\frac{9}{16}$	4-36 × $\frac{5}{16}$ — 4 Threaded Holes	4-36 × $\frac{1}{2}$ Screw	**1.65**	**1.50**	**1.35**
543-0201	220A	4	$2\frac{7}{8}$	$1\frac{9}{16}$	4-40 × $\frac{5}{16}$ — 4 Threaded Holes	4-40 × $\frac{1}{2}$ Screw	**1.65**	**1.50**	**1.35**
543-2200	220B	4	$2\frac{7}{8}$	$1\frac{9}{16}$	.099 × $\frac{5}{16}$ — 4 Plain Holes	$\frac{1}{2}$" No. 4*	**1.35**	**1.20**	**1.05**
543-0230	230	5	$4\frac{1}{4}$	$1\frac{3}{4}$	.099 × $\frac{5}{16}$ — 4 Plain Holes	$\frac{1}{2}$" No. 4*	**3.05**	**2.75**	**2.45**
543-0203	230A	5	$4\frac{1}{4}$	$1\frac{3}{4}$	6-32 × $\frac{5}{16}$ — 4 Brass Female Inserts	6-32 × $\frac{3}{8}$ Screw	**3.95**	**3.55**	**3.20**
543-0240	240	$6\frac{1}{4}$	$3\frac{3}{4}$	2	.113 × $\frac{1}{2}$ — 4 Plain Holes	$\frac{1}{2}$" No. 6	**3.00**	**2.70**	**2.45**
543-0202	240B	$6\frac{1}{4}$	$3\frac{3}{4}$	2	6-32 × $\frac{5}{16}$ — 4 Brass Female Inserts	6-32 × $\frac{3}{8}$ Screw	**4.20**	**3.75**	**3.40**
543-0260	260	$6\frac{13}{16}$	$5\frac{9}{32}$	$2\frac{5}{16}$	.089 × $\frac{1}{2}$ — 4 Plain Plastic Holes	$\frac{1}{2}$" No. 4*	**4.70**	**4.20**	**3.80**
543-0204	260K	$6\frac{13}{16}$	$5\frac{9}{32}$	$2\frac{5}{16}$	6-32 × $\frac{5}{16}$ — 4 Brass Female Inserts	6-32 × $\frac{3}{8}$ Screw	**5.35**	**4.85**	**4.35**
543-0280	280	$8\frac{7}{16}$	$7\frac{7}{16}$	$3\frac{1}{64}$	6-32 × $\frac{1}{4}$ — 6 Brass Female Inserts	6-32 × $\frac{3}{8}$ Screw	**9.10**	**8.20**	**7.35**

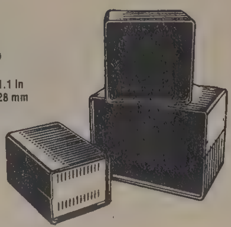
*Self Tapping Screws. †Counter Sunk Holes. **Hardware Not Included.**

Covers

Stock No.	Mfr.'s Type	Outside Dim.		EACH		
		D Width	E Depth	1-49	50-249	250-999
543-0211	211	$1\frac{9}{64}$	$\frac{1}{32}$	**.64**	**.58**	**.52**
543-0221	221	$2\frac{19}{64}$	$\frac{1}{32}$	**.66**	**.59**	**.54**
543-0221	221	$2\frac{19}{64}$	$\frac{1}{32}$	**.66**	**.59**	**.54**
543-0221	221	$2\frac{19}{64}$	$\frac{1}{32}$	**.66**	**.59**	**.54**
543-0231	231	4	$\frac{1}{32}$	**1.22**	**1.10**	**.99**
543-0231	231	4	$\frac{1}{32}$	**1.22**	**1.10**	**.99**
543-0241	241†	$3\frac{47}{64}$	$\frac{1}{4}$	**2.58**	**2.32**	**2.09**
543-0241	241†	$3\frac{47}{64}$	$\frac{1}{4}$	**2.58**	**2.32**	**2.09**
543-0261	261†	$5\frac{17}{64}$	$\frac{1}{4}$	**3.72**	**3.35**	**3.02**
543-0261	261†	$5\frac{17}{64}$	$\frac{1}{4}$	**3.72**	**3.35**	**3.02**
543-0281	281†	$7\frac{7}{64}$	$\frac{1}{8}$	**6.30**	**5.67**	**5.10**

1401 Series Instrument Cases





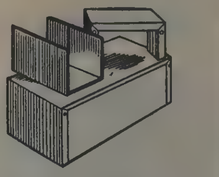
*Case is split in two equal halves

This 20-gauge CRS case has a sand-colored baked-on textured finish and .064"-thick aluminum (1 satin black, 1 sand) panels. The rear panel is vented top and bottom, 6-32 Phillips nickel-plated screws and self-adhesive rubber feet included.

Stock No.	Mfr.'s Type	Dimensions (Inches)			EACH
		A	B	C	
806-3014	1401AAA	4	6	4.0	42.00
806-3015	1401AA	6	6	5.0	40.09
806-1200	1401A	6	10	5.0	38.18
806-1202	1401C	8	10	9.0	55.36
806-1204	1401E	8	8	8.0	51.55
806-1206	1401G	10	12	9.0	69.09
806-1208	1401K	10	14	6.5	64.91
806-1210	1401P	14	10	5.0	63.00

Note: Additional standard sizes available from factory.

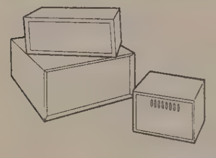
1411 Series Aluminum Cases

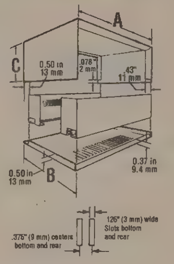


Constructed of .040" thick aluminum. ASA 61 gray, baked-on enamel finish (outside only). Four self-tapping screws included.

Stock No.	Mfr.'s Type	Dimensions (Inches)			EACH	
		L	W	H	1-5	6-49
806-0011	1411B	2.7	2.2	1.6	5.13	4.19
806-0012	1411C	3.2	2.2	1.1	5.36	4.46
806-0013	1411D	3.2	2.2	1.6	5.44	4.53
806-0014	1411F	4.0	2.2	3.0	6.28	5.23
806-0015	1411G	4.0	2.2	1.6	5.63	4.69
806-0016	1411H	4.0	2.2	2.2	5.96	4.97
806-0017	1411K	5.0	2.2	2.2	6.36	5.30
806-0018	1411L	5.0	4.0	3.0	7.35	6.12
806-0019	1411M	6.0	3.0	3.0	7.56	6.30
806-0020	1411N	5.0	3.0	2.2	7.20	6.00
806-0021	1411P	6.0	5.0	4.0	9.45	7.88
806-0022	1411Q	7.0	5.0	3.0	9.89	8.24
806-0023	1411R	8.0	6.0	3.5	11.57	9.64
806-0024	1411S	8.0	4.0	3.0	9.87	8.22
806-0025	1411T	10.0	2.2	1.6	9.42	8.75
806-0026	1411U	10.0	6.0	3.5	13.55	11.29
806-0027	1411W	12.0	3.0	2.2	13.78	11.48
806-0028	1411X	12.0	7.0	4.0	18.19	15.15
806-0029	1411Z	17.0	5.0	4.0	21.06	17.55

Ventilated Low Profile Instrument Case



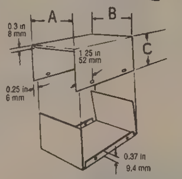


- 20 Gauge CRS Enclosure Finished in Sand Textured Paint
- .064" Thick Aluminum Panels Front and Rear
- Front Panel Is Satin Black, Rear Panel Matches Case Color

Stock No.	Mfr.'s Type	Dimensions (Inches)			EACH
		A	B	C	
806-3006	1426K	6.0	5.0	4.0	36.27
806-3007	1426M	8.0	6.0	4.0	38.18
806-3008	1426O	10.0	7.0	4.0	40.09
806-3009	1426Q	11.0	11.7	5.5	51.55
806-3010	1426S	12.0	6.0	4.0	55.36
806-3011	1426V	12.0	8.0	4.0	51.55
806-3012	1426W	12.0	10.0	4.0	55.36
806-3013	1426Y	12.0	6.0	5.5	57.27

1454 Series Cases

- 20-Gauge CRS
- Sloping or Vertical Front Panels
- 6-32 Nickel-Plated Screws Furnished

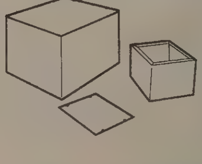


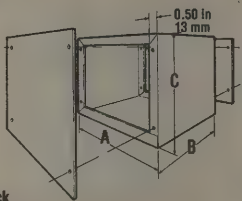
The 1454 series small cases are made of 20-gauge CRS. These cases have semigloss sand-colored panels with textured black covers. 6-32 Phillips nickel-plated screws and self-adhesive rubber feet are included. Reversing the case provides a choice of sloping or vertical front panels.

Stock No.	Mfr.'s Type	Dimensions (Inches)			EACH	
		A	B*	C	1-5	6-49
806-1250	1454C	4.0	2.5	2.0	12.41	10.50
806-1255	1454E	4.0	5.0	2.0	13.36	11.31
806-1260	1454F	4.0	6.0	3.0	14.32	12.12
806-1265	1454H	5.0	7.5	2.5	15.27	12.92
806-1270	1454K	8.0	3.5	2.5	16.23	13.73
806-1275	1454L	5.0	6.0	4.0	15.27	12.92
806-1280	1454P	10.0	5.0	3.5	19.09	16.15

*Models with "B" dimension less than 5 Inches have only one hole per side, center in "B".

Metal Utility Case



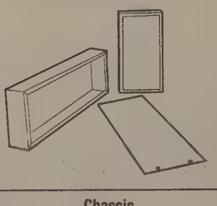


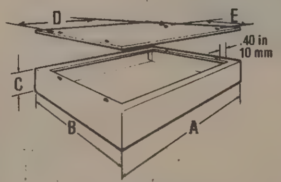
- Series A-E = 20 Ga. .036" Thick
- Series F-J = 18 Ga. .048" Thick
- ASA 61 Gray Baked Enamel
- Self Tapping Screws Included

Stock No.	Mfr.'s Type	Dimensions (Inches)			EACH
		A	B	C	
806-3016	1415A	4	2	4	10.27
806-3017	1415B	4	3	5	12.71
806-3018	1415C	6	4	5	13.10
806-3019	1415D	6	6	6	16.53
806-3020	1415E	9	5	6	23.84
806-3021	1415F	10	7	8	30.47
806-3022	1415G	12	6	7	33.43
806-3023	1415H	8	10	10	41.20
806-3024	1415I	12	8	11	34.02
806-3025	1415J	7	9	15	44.60

Heavy Duty Chassis Cover and Cover Plates

- Spot Welded Heavy Duty Construction Chassis
- Aluminum Models Are Natural Finish
- Cover Plates Are Punched with 4 Holes (No Hardware Provided)

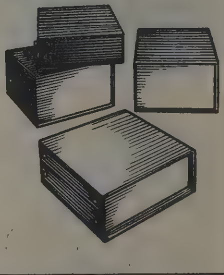




Dimensions (Inches)					Gauge	Chassis			Cover		
A	B	C	D	E		Stock No.	Mfr.'s Type	EACH	Stock No.	Mfr.'s Type	EACH
4.0	4	2	3.62	3	.040	806-3026	1444-6	7.52	806-1400	1434-6	3.93
6.0	4	2	5.62	3	.040	806-3027	1444-8	7.83	806-1401	1434-8	4.05
8.0	4	1	7.62	3	.040	806-3028	1444-9	8.42	806-1402	1434-10	4.21
8.0	4	2	7.62	3	.040	806-3029	1444-10	9.56	806-1402	1434-10	4.21
7.0	5	2	6.62	3	.040	806-3030	1444-12	7.98	806-1403	1434-12	5.00
9.0	5	2	8.62	3	.040	806-3031	1444-14	8.71	806-1404	1434-14	5.11
10.0	6	1	9.62	4	.040	806-3032	1444-15	9.43	806-1405	1434-16	5.19
10.0	6	2	9.62	4	.040	806-3033	1444-16	11.78	806-1405	1434-16	5.19
13.5	5	2	13.12	3	.040	806-3034	1444-18	11.78	806-1406	1434-18	7.33
17.0	4	3	16.62	3	.040	806-3035	1444-20	15.23	806-1407	1434-20	7.45
12.0	8	2	11.62	6	.051	806-3036	1444-22	15.67	806-1408	1434-22	6.87
12.0	8	3	11.62	6	.051	806-3037	1444-24	15.94	806-1408	1434-22	6.87
16.0	8	2	15.62	6	.051	806-3038	1444-26	16.51	806-1409	1434-26	9.20
16.0	8	3	15.62	6	.051	806-3039	1444-28	19.42	806-1409	1434-26	9.20
12.0	10	2	11.62	8	.051	806-3040	1444-29	19.42	806-1410	1434-29	8.59
17.0	10	2	16.62	8	.051	806-3041	1444-30	18.44	806-1411	1434-30	10.39
17.0	10	3	16.62	8	.051	806-3042	1444-32	20.03	806-1411	1434-30	10.39
17.0	10	4	16.62	8	.051	806-3043	1444-33	30.14	806-1411	1434-30	10.39

Metal Instrument Cases

Low Profile Instrument Case

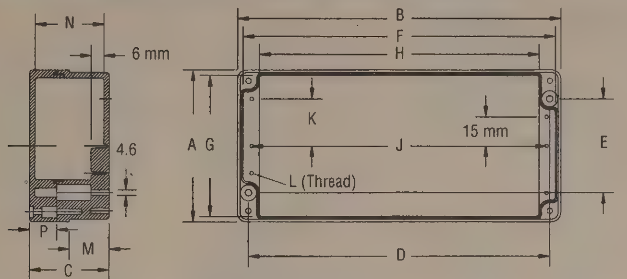


- 20 Gauge CRS Case With Gulf Blue Baked-On Textured Finish
- .064" Thick Aluminum Panels (One Satin Black and One Smoke White For Each Case)
- Symmetrical Design So Either End Can Be Front
- 6-32 Phillips Nickel Plated Screws and Self-Adhesive Rubber Feet Included

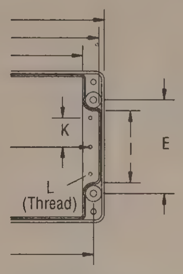
Stock No.	Mfr.'s Type	Dimensions (Inches)			EACH
		W	L	H	
806-2090	1458A3B	4	4	3	28.35
806-2091	1458B4B	6	4	4	31.48
806-2092	1458C3B	6	6	3	32.23
806-2093	1458C4B	6	6	4	33.60
806-2094	1458D3B	8	8	3	35.05
806-2095	1458D4B	8	8	4	38.09
806-2096	1458D5B	8	8	5	39.61
806-2097	1458E3B	8	10	3	38.09
806-2098	1458E4B	8	10	4	41.14
806-2099	1458E5B	8	10	5	42.67
806-2100	1458G3B	10	8	3	42.67
806-2101	1458G4B	10	8	4	42.67
806-2102	1458G5B	10	8	5	44.18

RFI/EFI — Watertight Rolec Diecast Aluminum "Conform" Enclosure

— NEW —



Model 082 and 083

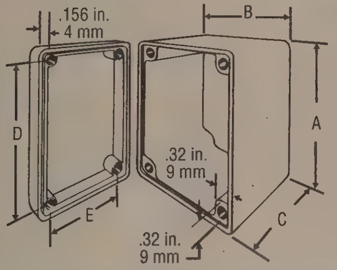


Model 123 and 162

A high quality diecast aluminum enclosure with a patented internal metal to metal, tongue and groove joining system for excellent EMI and RFI protection. This system provides inherently better shielding by eliminating the problems associated with conductive gaskets and allows the use of our neoprene gasketing to ensure an IP65, NEMA 4 seal. Finished in a stone grey, baked enamel paint.

Stock No.	Mfr.'s Type	Dimensions (Inches)															EACH
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	P	
806-1750	R111-082-000	3.3	5.2	1.8	4.5	2.1	4.7	2.9	3.9	2.0	4.2	1.0	M4	0.9	1.5	0.6	**35.01**
806-1751	R110-082-000	3.3	5.2	2.7	4.5	2.1	4.7	2.9	3.9	2.0	4.2	1.0	M4	1.8	2.4	0.6	**37.58**
806-1752	R111-083-000	3.3	7.2	1.8	6.5	2.1	6.7	2.9	5.9	2.0	6.2	1.0	M4	0.9	1.5	0.6	**38.39**
806-1753	R110-083-000	3.3	7.2	2.7	6.5	2.1	6.7	2.9	5.9	2.0	6.2	1.0	M4	1.8	2.4	0.6	**40.61**
806-1754	R111-123-000	5.0	9.0	3.6	8.2	3.3	8.4	4.4	7.3	2.6	7.7	1.0	M6	1.3	2.1	0.8	**64.57**
806-1755	R110-123-000	5.0	9.0	3.6	8.2	3.3	8.4	4.4	7.3	2.6	7.7	1.0	M6	2.5	3.3	0.8	**75.85**
806-1756	R111-162-000	5.0	10.6	2.6	9.6	4.4	10.0	6.0	8.8	3.6	9.2	1.5	M6	1.3	2.5	0.8	**90.98**
806-1757	R110-162-000	6.6	10.6	4.0	9.6	4.4	10.0	6.0	8.8	3.6	9.2	1.5	M6	2.9	3.7	0.8	**99.83**

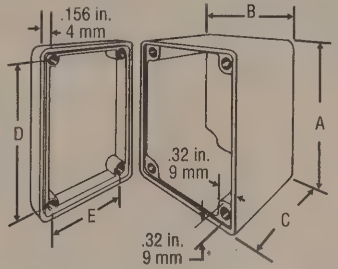
1590 Diecast Aluminum Boxes



These diecast aluminum alloy boxes with tumbled surface come drilled and tapped with countersunk lid and four 6-32 × 1/2 phillips screws (models "D" and "E" have two additional center posts and six screws). These boxes are excellent for RF/audio connectors because of their RF shielding capabilities due to an interlocking flange in the lid. The aluminum alloy allows for easy drilling and punching with the durability of metal.

Stock No.	Mfr.'s Type	Dimensions (Inches)					EACH	
		A	B	C	D	E	1-9	10-99
806-1530	1590A	3.62	1.50	1.07	3.24	1.12	**7.00**	**5.83**
806-1531	1590B	4.37	2.37	1.07	3.99	1.99	**8.00**	**6.67**
806-1532	1590BB	4.68	3.68	1.18	4.31	3.31	**8.56**	**7.14**
806-1533	1590C	4.68	3.68	2.06	4.31	3.31	**11.70**	**9.75**
806-1534	1590D	7.39	4.70	2.06	7.00	4.31	**19.16**	**15.97**
806-1630	1590E	7.39	4.70	3.06	7.00	4.31	**20.20**	**17.08**
806-1536	1590F	7.39	7.37	2.50	7.00	7.00	**27.56**	**22.97**
806-1537	1590LB	1.98	1.98	1.07	1.60	1.60	**7.22**	**6.02**
806-0701	1590S	4.33	3.23	1.58	3.96	2.85	**10.56**	**8.80**
806-0702	1590T	4.72	3.15	2.17	4.35	2.78	**10.90**	**9.08**
806-0703	1590U	4.72	4.72	2.17	4.35	4.35	**16.00**	**13.33**
806-0704	1590V	4.72	4.72	3.54	4.35	4.35	**22.00**	**18.33**

1590 Painted Aluminum Boxes



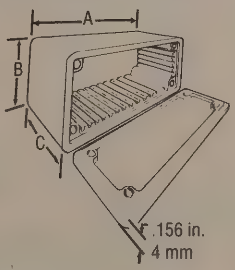
Same boxes as Diecast, except exterior painted with a durable, black textured baked enamel finish. Natural interior finish (to insure shielding/grounding properties). Other color painted boxes available — call your nearest Allied facility.

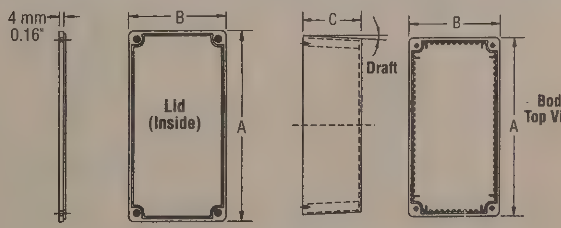
Stock No.	Mfr.'s Type	Dimensions (Inches)					EACH	
		A	B	C	D	E	1-9	10-99
806-3044	1590ABK	3.62	1.50	1.07	3.24	1.12	**9.45**	**7.88**
806-3045	1590BBK	4.37	2.37	1.07	3.99	1.99	**10.80**	**9.00**
806-3046	1590BBBK	4.68	3.68	1.18	4.31	3.31	**13.52**	**11.27**
806-3047	1590CBK	4.68	3.68	2.06	4.31	3.31	**15.21**	**12.68**
806-3048	1590DBK	7.39	4.70	2.06	7.00	4.31	**22.99**	**19.16**
806-3049	1590EBK	7.39	4.70	3.06	7.00	4.31	**24.60**	**20.50**
806-3050	1590FBK	7.39	7.37	2.50	7.00	7.00	**33.07**	**27.56**
806-3051	1590LBBK	1.98	1.98	1.07	1.60	1.60	**9.70**	**8.12**
806-3052	1590SBK	4.33	3.23	1.58	3.96	2.85	**13.73**	**11.44**
806-3053	1590TBK	4.72	3.15	2.17	4.35	2.78	**20.96**	**17.46**
806-3054	1590UBK	4.72	4.72	2.17	4.35	4.35	**19.20**	**16.00**
806-3055	1590VBK	4.72	4.72	3.94	4.35	4.35	**26.40**	**22.00**

PC Card Diecast Boxes

- **Internal Slots on 0.2" Centers Hold 0.062" Thick PC Cards or Dividers**

Diecast boxes come with 3 mm slot head screws, countersunk into lid and threaded in tapped holes. Rated to 600°C (112°F). Interlocking flange lid. Factory Stock in painted gray — optional lid gaskets available to provide seal against moisture.





Note: Assembled height=dimension "C" + 0.16" (4.0 mm)

Boxes

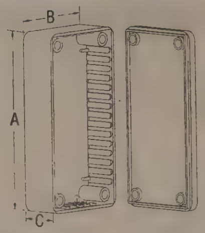
Stock No.	Mfr.'s Type	Dimensions (Inches)			EACH
		A	B	C	
806-5045	1590L	4.00	2.00	0.84	**8.04**
806-5046	1590M	4.40	2.44	1.06	**9.68**
806-5047	1590N	4.75	2.56	1.40	**10.96**
806-5048	1590P	6.00	3.15	1.84	**14.30**
806-5049	1590R	7.50	4.33	2.22	**22.28**

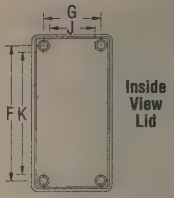
Lid Gasket

Stock No.	Mfr.'s Type	EACH
806-4140	1590LG	**4.86**
806-4141	1590MG	**6.02**
806-4142	1590NG	**6.89**
806-4143	1590PG	**7.94**
806-4144	1590RG	**8.93**

Flame Retardant ABS Boxes

- ► Carries a UL Flammability Rating of 94 V-0 at 1.47 mm Thickness and a Continuous Use Temperature Rating of 60°C
- ► Comes in Colors: Blue, Black, Gray, and Beige
- ► Interlocking Flange on the Lid
- ► Comes with M3 × .5 × 10 mm, Phillips Head Screws, Countersunk lid, and Tapped Integral Brass Bushings
- ► Integral Card Guides Accept .062" P.C. Cards
- ► Cat. No. 1591E Has Removable Center Brace
- ► Comes with FRABS Lid in Matching Color. Optional Clear Plastic or Metal Lids Are Available
- ► EMI/RFI Shielding Factory Stock in Black
- ► Lid Adds 4.0 mm/.156" to Overall Height



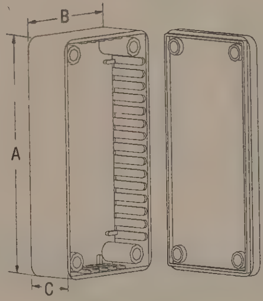


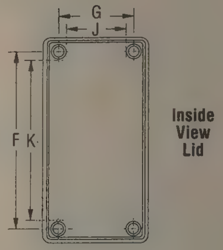
Black		Blue		Grey		Beige		Dimensions (Inches)					EACH
Stock No.	Mfr.'s Type	Stock No.	Mfr.'s Type	Stock No.	Mfr.'s Type	Stock No.	Mfr.'s Type	A	B	C	J	K	
806-1595	1591LBK	**806-1549**	1591LBU	**806-1559**	1591LGY	**806-4178**	1591LBG	3.3	2.2	1.4	1.3	2.5	**5.29**
806-1590	1591ABK	**806-1550**	1591ABU	**806-1560**	1591AGY	**806-1566**	1591ABG	3.9	2.0	0.8	1.1	3.9	**4.93**
806-1591	1591BBK	**806-1551**	1591BBU	**806-1561**	1591BGY	**806-1567**	1591BBG	4.4	2.4	1.1	1.6	3.5	**5.33**
806-1592	1591CBK	**806-1552**	1591CBU	**806-1562**	1591CGY	**806-1568**	1591CBG	4.7	2.6	1.4	1.6	3.9	**5.67**
806-1593	1591DBK	**806-1553**	1591DBU	**806-1563**	1591DGY	**806-1569**	1591DBG	5.9	3.1	1.8	2.3	5.0	**8.40**
806-1594	1591EBK	**806-1554**	1591EBU	**806-1564**	1591EGY	**806-1570**	1591EBG	7.5	4.4	2.2	3.8	6.6	**10.08**
806-0501	1591GBK	**806-0508**	1591GBU	**806-0516**	1591GGY	**806-0523**	1591GBG	4.8	3.7	1.2	2.8	3.9	**6.72**
806-0502	1591HBK	**806-0509**	1591HBU	**806-0517**	1591HGY	**806-0524**	1591HBG	6.5	2.8	1.0	1.9	5.7	**6.68**
806-0503	1591SBK	**806-0510**	1591SBU	**806-0518**	1591SGY	**806-0525**	1591SBG	4.3	3.2	1.6	2.4	3.5	**7.18**
806-0504	1591TBK	**806-0512**	1591TBU	**806-0519**	1591TGY	**806-0526**	1591TBG	4.7	3.2	2.2	2.3	3.9	**7.94**
806-0505	1591UBK	**806-0513**	1591UBU	**806-0520**	1591UGY	**806-0527**	1591UBG	4.7	4.7	2.2	3.9	3.9	**8.51**
806-0506	1591VBK	**806-0514**	1591VBU	**806-0521**	1591VGY	**806-0528**	1591VBG	4.7	4.7	3.5	3.9	3.9	**10.19**
—	—	—	—	**806-4175**	1591XFGY	—	—	9.8	2.5	7.8	—	—	**17.83**
—	—	—	—	**806-4176**	1591XJGY	—	—	2.2	1.7	2.2	—	—	**3.13**
—	—	—	—	**806-4177**	1591XPGY	—	—	5.6	1.2	3.1	—	—	**4.73**

1591 Styrene Plastic Cases

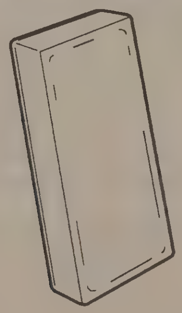
- ► A Rugged Small Case Molded in High Impact Styrene Plastic
- ► Comes with Four Self-Tapping #4 × ½ Flat Head Screws Countersunk into the Lid
- ► Standard Stock Items Available in Black
- ► Custom Colors Available
- ► Lid Adds 4.0 mm/.156" to Overall Depth of Box

Stock No.	Mfr.'s Type	Dimensions (Inches)					PC Card Clearance		Color	EACH
		A	B	C	F	G	J	K		
806-1605	1591LSBK	3.34	2.20	1.38	2.79	1.65	1.34	2.48	Black	**3.32**
806-1600	1591ASBK	3.93	1.97	0.82	3.38	1.42	1.10	3.90	Black	**3.09**
806-1601	1591BSBK	4.41	2.44	1.06	3.85	1.89	1.57	3.54	Black	**3.34**
806-1602	1591CSBK	4.72	2.55	1.41	4.17	2.00	1.62	3.86	Black	**3.55**
806-1603	1591DSBK	5.90	3.14	1.80	5.35	2.59	2.28	5.04	Black	**5.25**
806-1604	1591ESBK	7.47	4.33	2.24	6.92	3.78	3.46	6.61	Black	**6.30**
806-0601	1591GSBK	4.75	3.69	1.18	4.17	3.11	2.80	3.86	Black	**4.20**
806-0602	1591HSBK	6.52	2.78	0.98	5.94	2.20	1.89	5.63	Black	**4.18**
806-0603	1591SSBK	4.33	3.23	1.58	3.78	2.67	2.36	3.46	Black	**4.49**
806-0604	1591TSBK	4.72	3.15	2.17	4.17	2.60	2.28	3.86	Black	**4.96**
806-0605	1591USBK	4.72	4.72	2.17	4.17	4.17	3.85	3.86	Black	**5.31**
806-0606	1591VSBK	4.72	4.72	3.54	4.17	4.17	3.85	3.86	Black	**6.36**





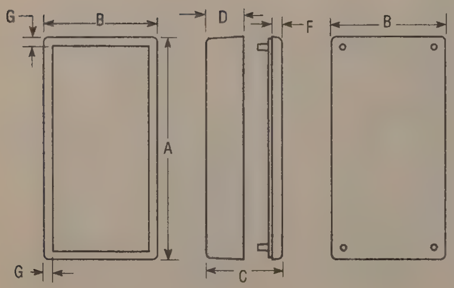
1599 Hand Held Plastics



- ► Molded in a Flame Retardant ABS High Impact Plastic — Meets UL 94 V-0. Finish Is a Light Texture to Resist Scratching. Available in Black or Gray
- ► Includes Integral Brass Inserts and Machine Screws (M3 Slot Head). This Provides Extra Strength for Repeated Assembly and Disassembly
- ► Recessed Top Panel Ideal for Membrane Display
- ► Extra Deep Top and Ultra Shallow Base Designed to Both Enhance Aesthetics and Improve Flexibility
- ► Twelve PCB Bosses (Six in Both Top and Bottom) and Vertical Mounting Slots Are Molded in

Black		Grey		Dimensions (Inches)						EACH	
Stock No.	Mfr.'s Type	Stock No.	Mfr.'s Type	A	B	C	D	F	G	1-9	10-99
806-3000	1599BBK	**806-3003**	1599BGY	5.12	2.56	0.98	0.69	0.28	0.25	**8.06**	**6.72**
806-3001	1599EBK	**806-3004**	1599EGY	6.70	3.35	1.38	1.03	0.32	0.27	**9.77**	**8.14**
806-3002	1599HBK	**806-3005**	1599HGY	8.66	4.33	1.77	1.38	0.36	0.30	**12.01**	**10.01**

806-4200. 1599 Clip. Belt/Pocket Clip. **1-9**...EACH 2.52
10-99 ....EACH 2.10

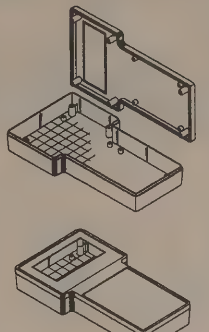


- ► Molded in High Impact Polystyrene with Self Tapping Screws. Finish Is a Light Texture to Resist Scratching. Available in Gray Only
- ► Perfect for Applications Where Economy Is Important and Where Repetitive Assembly and Disassembly Is Not Important
- ► Recessed Top Panel Ideal for Membrane Display
- ► Extra Deep Top and Ultra Shallow Base Designed to Both Enhance Aesthetics and Improve Flexibility
- ► Twelve PCB Bosses (Six in Both Top and Bottom) and Vertical Mounting Slots Are Molded in

Stock No.	Mfr.'s Type	Dimensions (Inches)						EACH	
		A	B	C	D	F	G	1-9	10-99
806-3525	1599BSGY	5.12	2.56	0.98	0.69	0.28	0.25	**6.17**	**5.15**
806-3526	1599ESGY	6.70	3.35	1.38	1.03	0.32	0.27	**7.12**	**5.93**
806-3527	1599HSGY	8.66	4.33	1.77	1.38	0.36	0.30	**8.30**	**6.91**

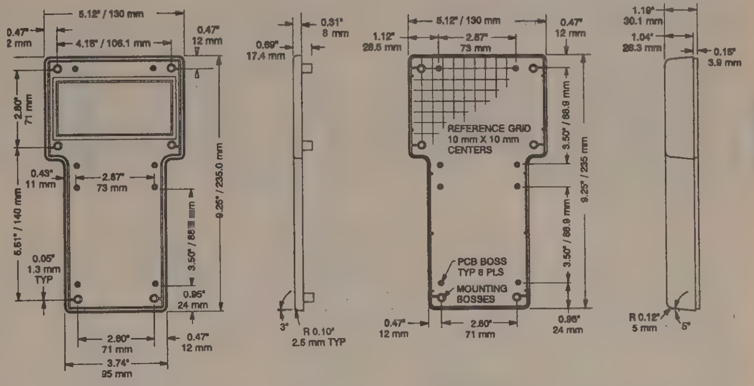
806-4200. 1599 Clip. Belt/Pocket Clip. **1-9**...EACH 2.52
10-99 ....EACH 2.10

1592 T-Case Hand Held Display Cases



The "T" case is available with two different types of displays. The solid display has an area of 4.8" × 3.4" that will accommodate display boards up to 4.6" × 2.37". The clear polycarbonate lens has an area of 4.0" × 1.77" and a plain mylar mask kit which allows the installation of a wide variety of display boards with the protection of the clear lens and dressed by the mylar frame. The lens can be easily glued snugly into the case and provides protection from dust and dirt. The back of the case has been designed to accommodate a magnetic strip which will allow an operator to affix the case to a suitable work surface. The finish is a light texture which will resist wear but allow high quality silk screening or pad printing. The "T" case is molded in flame-retardant ABS with a UL rating of VO and is stocked in grey or black.

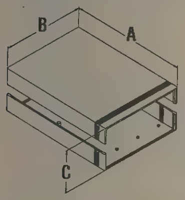
806-6010. 1592ETSDGY. Solid Display	EACH 18.19
806-6020. 1592ETSDBK. Solid Display	EACH 18.19
806-6030. 1592ETCDGY. Open Display and Clear Lens Kit	EACH 22.68
806-6040. 1592ETCDBK. Open Display and Clear Lens Kit	EACH 22.68
806-6050. 1592ETG. 30" Gasket Material	EACH 1.60
806-6060. 1592ETRF. Bag of 6 Rubber Feet	EACH 1.91
806-6070. 1592ETM. 3" × 3" Magnetic Strip Material	EACH 4.58
806-6075. 1592ETV. Velcro Holding Strip	EACH 2.67



Lid (Inside)

Body (Inside)

Plastic Instrument Cases



Two piece tongue and groove construction. Front and rear panels are 0.064" brushed aluminum. Case halves are secured by machine screws threaded into tapped integral bushings. Polystyrene version case halves secured with self tapping #4 × 5/8" screws. EMI/RFI Shielded Version the same as FRABS style box.

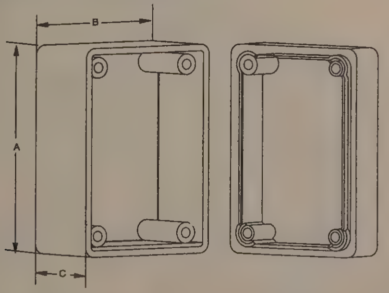
Flame Retardant ABS Version

Black		Blue		Dimensions			EACH
Stock No.	Mfr.'s Type	Stock No.	Mfr.'s Type	A	B	C	
806-5050	1598ABK	**806-5150**	1598ABU	6.1	3.6	1.4	**9.72**
806-5051	1598BBK	**806-5151**	1598BBU	5.2	5.2	2.0	**10.67**
806-4152	1598BBBK	**806-4715**	1598BBBU	7.0	6.0	1.4	**10.54**
806-5052	1598CBK	**806-5152**	1598CBU	7.0	6.0	2.0	**13.36**
806-5053	1598DBK	**806-5153**	1598DBU	7.0	7.9	2.5	**16.30**
806-5054	1598EBK	**806-5154**	1598EBU	6.3	6.3	3.4	**16.02**
806-5055	1598FBK	**806-5155**	1598FBU	9.8	6.3	1.6	**17.14**
806-5056	1598GBK	**806-5156**	1598GBU	9.8	6.3	2.9	**20.08**
806-5057	1598HBK	**806-5157**	1598HBU	11.0	7.9	1.6	**21.06**
806-5058	1598JBK	**806-5158**	1598JBU	11.0	7.9	2.9	**26.10**

Polystyrene Version

Stock No.	Mfr.'s Type	Dimensions			EACH
		A	B	C	
806-4153	1598ASGY	6.1	3.6	1.4	**7.12**
806-4154	1598BSGY	5.2	5.2	2.0	**8.00**
806-4155	1598BBSGY	7.0	6.0	1.4	**8.86**
806-4156	1598CSGY	7.0	6.0	2.0	**9.37**
806-4157	1598DSGY	7.0	7.9	2.5	**11.21**
806-4158	1598ESGY	6.3	6.3	3.4	**11.19**
806-4159	1598FSGY	9.8	6.3	1.6	**10.94**
806-4160	1598GSGY	9.8	6.3	2.9	**12.83**
806-4161	1598HSGY	11.0	7.9	1.6	**12.79**
806-4162	1598BJSGY	11.0	7.9	2.9	**14.93**

General Purpose Plastic Cases



A medium impact FRABS carries a flammability rating of 94 V-0 at .05" thickness. Lid is secured with four machine screws threaded into tapped integral brass bushing. Stocked in black, beige and blue. Also available in grey. Optional PC Card Guides, replacement screws, watertight gasket kit and belt clip available. Factory stock in EMI/RFI shielded FRABS in black and watertight FRABS in black.

Black		Blue		Beige		Dimensions			EACH
Stock No.	Mfr.'s Type	Stock No.	Mfr.'s Type	Stock No.	Mfr.'s Type	A	B	C	
806-0607	1594ABK	**806-0612**	1594ABU	**806-0617**	1594ABG	2.2	2.2	1.1	**7.25**
806-0608	1594BBK	**806-0613**	1594BBU	**806-0618**	1594BBG	3.2	2.2	1.1	**7.83**
806-0609	1594CBK	**806-0614**	1594CBU	**806-0619**	1594CBG	4.1	2.6	1.3	**8.78**
806-0610	1594DBK	**806-0615**	1594DBU	**806-0620**	1594DBG	5.2	2.6	1.7	**9.41**
806-0611	1594EBK	**806-0616**	1594EBU	**806-0621**	1594EBG	6.5	4.1	2.1	**12.18**

High Impact Polystyrene Version

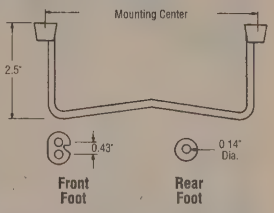
Countersunk lid is secured with self tapping #4 × 1" slotted screws. Stocked in Grey.

Stock No.	Mfr.'s Type	Dimensions			EACH
		A	B	C	
806-4310	1594ASGY	2.2	2.2	1.1	**4.54**
806-4311	1594BSGY	3.2	2.2	1.1	**4.77**
806-4312	1594CSGY	4.1	2.6	1.3	**5.21**
806-4313	1594DSGY	5.2	2.6	1.7	**5.54**
806-4314	1594ESGY	6.5	4.1	2.1	**7.25**

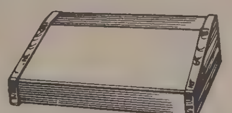
Bails (Tilt Stands) — *NEW* —

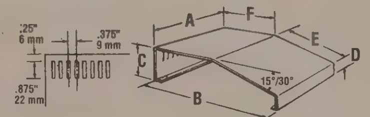
- ► **Bail Locks in Elevated or Folded Position**
- ► **Four Screw-On Nylon Feet (.6" High) Provided**
- ► **Bail Is .18" Diameter Chromated Steel**

806-1427. 1427D5. 5.5" Mounting Center	EACH 10.52
806-1428. 1427D7. 7.0" Mounting Center	EACH 11.57
806-1429. 1427D10. 10.0" Mounting Center	EACH 12.24



Desk Top Consoles Pre-Assembled

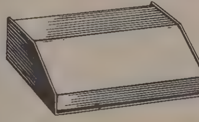


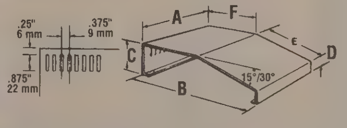


These walnut cases are made with solid oiled walnut side panels mounted on a ventilated steel base. Hardware and rubber feet are supplied. Panels are finished with satin off-white complete with rubber feet and necessary hardware.

Stock No.	Mfr.'s Type	Angle	Dimensions (Inches)						EACH
			A	B	C	D	E	F	
806-4119	CE2WHCWW	15°	4.0	5.5	2.0	1.1	3.3	2.2	**38.18**
806-4120	FH2WHCWW	15°	6.5	8.5	2.0	1.1	3.3	5.2	**45.82**
806-4121	KH3WHCWW	15°	10.0	8.3	3.0	1.3	6.3	2.2	**53.45**
806-4122	PH3WHCWW	15°	14.0	8.3	3.0	1.3	6.3	2.2	**57.27**
806-4123	PL3WHCWW	15°	14.0	11.3	3.0	1.3	6.3	5.2	**63.00**
806-4124	CE3WHCWW	30°	4.0	5.5	3.0	1.1	3.7	2.2	**45.82**
806-4125	PK4WHCWW	30°	14.0	10.2	4.0	1.1	3.7	5.2	**64.91**

Assembled 1456 Metal Consoles



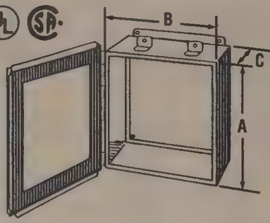


This case is formed .081" aluminum and has a textured baked-on blue enamel finish. The panel is aluminum and is finished with an off-white finish. The panel and the case are packaged together.

Stock No.*	Mfr.'s Type	Angle	Dimensions (Inches)						EACH
			A	B	C	D	E	F	
806-1348	CE2WHBU	15°	4.0	5.5	2.0	1.1	3.3	2.2	**19.09**
806-1344	FE2WHBU	15°	6.5	5.5	2.0	1.1	3.3	2.2	**21.00**
806-1346	KE3WHBU	30°	10.0	5.5	3.0	1.1	3.7	2.2	**26.73**
806-1350	PH3WHBU	15°	14.0	8.3	3.0	1.3	6.3	2.2	**38.18**
806-1352	PL3WHBU	15°	14.0	11.3	3.0	1.3	6.3	5.2	**45.82**
806-1354	FG4WHBU	30°	6.5	7.2	4.0	1.1	5.7	2.2	**24.82**
806-1356	KK4WHBU	30°	10.0	10.2	4.0	1.1	5.7	5.2	**38.18**
806-1358	PK4WHBU	30°	14.0	10.2	4.0	1.1	5.7	5.2	**45.82**

Note: Additional standard sizes available from factory.

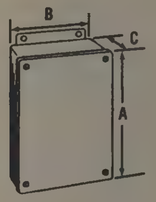
NEMA Type 12 Hinged Cover



- Suitable for Transformer or Instrument Housings
- Protects from Dust, Dirt, Oil and Water
- Used as Electrical Junction, Terminal Wiring Boxes
- For Mounting Pneumatic or Hydraulic Instrument or as a Junction Point for Control Tubing
- Inner Panel Included
- Recoatable ASA 61 Grey Finish

Stock No.	Mfr.'s Type	Box Size (In.)			Panel Size (In.)		Shipping Weight (Lbs.)	EACH
		A	B	C	Length	Width		
806-1500	1414PHG	8	6	3.5	6.75	4.88	6.0	46.04
806-1505	1414PHI	10	8	4.0	8.75	6.88	10.0	57.60
806-1510	1414PHK	12	10	5.0	10.75	8.88	13.0	73.96
806-1514	1414PHA	4	4	3.0	No Panel		2.0	29.83
806-1515	1414PHM6	14	12	6.0	12.87	10.87	19.0	93.75
806-1516	1414PHC	6	4	3.0	4.87	2.87	3.0	36.88
806-1517	1414PHE	6	6	4.0	4.87	4.87	4.7	43.09
806-1518	1414PHO6	16	14	6.0	14.87	12.87	23.0	111.62
806-1519	1414PHM8	14	12	8.0	12.87	10.87	20.0	103.35
806-1520	1414PHO10	16	14	10.0	14.87	12.87	25.0	134.00

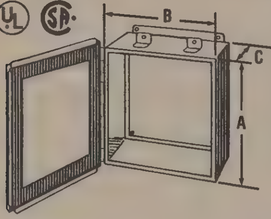
NEMA Type 12 Screw Cover



- Protects from Dust, Dirt, Oil and Water
- Used as Electrical Junction, Terminal Wiring Boxes
- For Mounting Pneumatic or Hydraulic Instrument or as a Junction Point for Control Tubing
- Inner Panel Included

Stock No.	Mfr.'s Type	Box Size (In.)			Panel Size (In.)		Shipping Weight (Lbs.)	EACH
		A	B	C	Length	Width		
806-1521	1414SCA	4	4	3.0	No Panel		2	30.76
806-1522	1414SCC	6	4	3.0	4.87	2.87	3	38.06
806-1523	1414SCG	8	6	3.5	6.75	4.87	6	47.49
806-1524	1414SCE	6	6	4.0	4.87	4.87	5	44.46
806-1525	1414SCI	10	8	4.0	8.75	6.87	10	59.52
806-1526	1414SCK	12	10	5.0	10.75	8.87	14	76.42
806-1527	1414SCM6	14	12	6.0	12.75	10.87	19	96.84
806-1528	1414SCO6	16	14	6.0	14.75	12.87	24	115.28
806-1529	1414SCM8	14	12	8.0	12.75	10.87	22	135.67
806-1540	1414SCO10	16	14	10.0	14.75	12.87	29	184.80

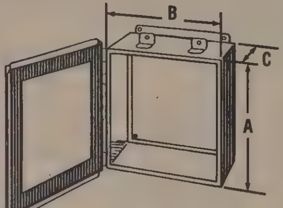
NEMA Type 4 Hinged Cover



- Protects from Dust, Dirt, Oil and Water
- Used as Electrical Junction, Terminal Wiring Boxes
- For Mounting Pneumatic or Hydraulic Instrument or as a Junction Point for Control Tubing
- Inner Panel Included
- ASA 61 Grey Finish

Stock No.	Mfr.'s Type	Box Size (In.)			Panel Size (In.)		Shipping Weight (Lbs.)	EACH
		A	B	C	Length	Width		
806-1541	1414N4PHA	4	4	3.0	No Panel		2	42.67
806-1542	1414N4PHC	6	4	3.0	4.88	2.88	3	50.95
806-1543	1414N4PHG	8	6	3.5	6.75	4.88	6	63.16
806-1544	1414N4PHE	6	6	4.0	4.88	4.88	5	59.41
806-1545	1414N4PHI	10	8	4.0	8.75	6.88	10	78.97
806-1546	1414N4PHI6	10	8	6.0	8.75	6.88	12	88.57
806-1547	1414N4PHK	12	10	5.0	10.75	8.88	15	101.37
806-1548	1414N4PHL6	12	12	6.0	10.75	8.88	25	107.58
806-1571	1414N4PHM6	14	12	6.0	12.75	10.88	21	128.02
806-1572	1414N4PHO6	16	14	6.0	14.75	12.88	26	152.11
806-1573	1414N4PHM8	14	12	8.0	12.75	10.88	22	137.85
806-1574	1414N4PHO10	16	14	10.0	14.75	12.88	28	179.91

NEMA Type 4X Stainless Steel Type 304 with Hinged Cover

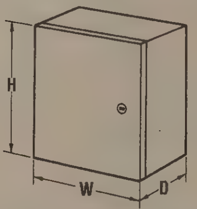


- Perfect for Applications Where Serious Corrosion Exists
- Protects from Dirt, Dust, Oil and Water
- Provides Protection Where Equipment May Be Hosed Down or Very Wet
- Inner Panel Included
- Brushed Stainless Finish

Stock No.	Mfr.'s Type	Box Size (In.)			Panel Size (In.)		Mtg. Ctrs. (In.)		Shipping Weight (Lbs.)	EACH
		A	B	C	Length	Width	E	D		
806-3110	1414N4PHSSC4	6	4	4.0	4.88	2.88	6.75	2	5	146.78
806-3111	1414N4PHSSE	6	6	4.0	4.88	4.88	6.75	4	6	165.31
806-3112	1414N4PHSSG	8	6	3.5	6.75	4.88	8.75	4	6	184.34
806-3113	1414N4PHSSG4	8	6	4.0	6.75	4.88	8.75	4	7	183.68
806-3114	1414N4PHSSI	10	8	4.0	8.75	6.88	10.75	6	10	227.96
806-3115	1414N4PHSSK	12	10	5.0	10.75	8.88	12.75	8	15	319.75
806-3116	1414N4PHSSL6	12	12	6.0	10.75	10.88	12.75	10	20	352.67
806-3117	1414N4PHSSM6	14	12	6.0	12.75	10.88	14.75	10	21	385.85
806-3118	1414N4PHSSO6	16	14	6.0	14.75	12.88	16.75	12	26	460.29
806-3119	1414N4PHSSM8	14	12	8.0	12.75	10.88	14.75	10	22	409.45
806-3120	1414N4PHSSO10	16	14	10.0	14.75	12.88	16.75	12	28	510.98

Series 2000 Single Door Enclosures

The Series 2000 enclosures offers the latest in enclosure technology and design for improved aesthetics, convenience and value. Available in two finishes, these enclosures provide flexibility for electrical and electronic applications with UL and CSA listings. Perfect for equipment protection from dust, dirt, oil, water and other contaminants. Simply pick the series that matches your protection level. Also available in 304 stainless steel — call Allied for details.



NEMA 12 — Oil and Dust Tight

Stock No.	Mfr.'s Type	Box Size (Inches)			EACH
		H	W	D	
806-3150	2R12126	12	12	6	155.44
806-3151	2R16126	16	12	6	165.92
806-3152	2R16166	16	16	6	178.74
806-3153	2R20166	20	16	6	191.56
806-3154	2R20206	20	20	6	206.71
806-3155	2R20168	20	16	8	202.04
806-3156	2R24168	24	16	8	216.03
806-3157	2R16208	16	20	8	202.04
806-3158	2R20208	20	20	8	218.36
806-3159	2R24208	24	20	8	234.07

NEMA 4 — Watertight

Stock No.	Mfr.'s Type	H	W	D	EACH
806-3170	2P12126	12	12	6	169.13
806-3171	2P16126	16	12	6	180.52
806-3172	2P16166	16	16	6	194.48
806-3173	2P20166	20	16	6	208.41
806-3174	2P20206	20	20	6	224.90
806-3175	2P20168	20	16	8	219.83
806-3176	2P24168	24	16	8	235.03
806-3177	2P16208	16	20	8	219.83
806-3178	2P20208	20	20	8	237.58
806-3179	2P24208	24	20	8	255.31

Steel Inner Panels

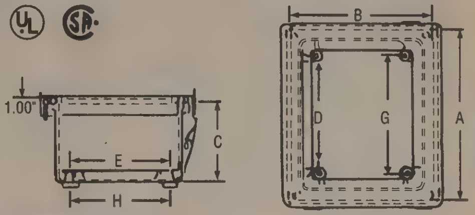
Stock No.	Mfr.'s Type	Inner Panel (Inches)		EACH
		H	W	
806-3160	18P0909	9	9	12.99
806-3161	18P1309	13	9	17.77
806-3162	18P1313	13	13	21.55
806-3163	18P1713	17	13	25.98
806-3164	18P1717	17	17	31.39
806-3163	18P1713	17	13	25.98
806-3166	18P2113	21	13	30.21
806-3163	18P1713	13	17	25.98
806-3164	18P1717	17	17	31.39
806-3169	18P2117	21	17	40.65

Steel Inner Panels

Stock No.	Mfr.'s Type	H	W	EACH
806-3160	18P0909	9	9	12.99
806-3161	18P1309	13	9	17.77
806-3162	18P1313	13	13	21.55
806-3163	18P1713	17	13	25.98
806-3164	18P1717	17	17	31.39
806-3163	18P1713	17	13	25.98
806-3166	18P2113	21	13	30.21
806-3163	18P1713	13	17	25.98
806-3164	18P1717	17	17	31.39
806-3169	18P2117	21	17	40.65

NEMA Type Enclosures and NEMA Wallmount Enclosures

PJ Series Non-Metallic Enclosures NEMA Type 4, 4X



Designed to insulate and house electrical and electronic controls, instruments or components. Enclosure is constructed of strain molded fiberglass reinforced polyester with a matching cover. Features JIC sizing, continuous steel hinge where provided, captive stainless steel cover screws and stainless steel mounted hardware. These enclosures are especially well suited to higher temperature or corrosive environments. Fiberglass material is easily punched, drilled or sawed.

Snap Latch

Stock No.	Mfr.'s Type	Overall Dimensions (In.) A	B	C	Panel Size (In.) D	E	Mtg. Ctr. (In.) G	H	EACH
806-1580	PJ664L	7.04	7.04	4.13	4.88	4.88	5.01	5.01	**55.80**
806-1581	PJ864L	8.94	7.06	4.13	6.75	4.88	5.01	6.89	**58.19**
806-1582	PJ1086L	11.08	9.20	6.13	8.75	6.88	7.01	8.89	**62.41**
806-1583	PJ12106L	13.08	11.20	6.13	10.75	8.88	9.01	10.89	**75.08**
806-1584	PJ14126L	15.08	13.20	6.13	12.75	10.88	11.01	12.89	**88.12**
806-1585	PJ16148L	17.22	15.34	8.13	14.75	12.88	13.01	14.89	**100.57**
806-1586	PJ18168L	19.34	17.34	8.13	16.88	14.88	14.97	16.97	**127.06**
806-1587	PJ20168L	20.94	16.94	8.13	18.44	14.44	14.54	18.54	**185.30**

Hinged Screw Cover

Stock No.	Mfr.'s Type	Overall Dimensions (In.) A	B	C	Panel Size (In.) D	E	Mtg. Ctr. (In.) G	H	EACH
806-4130	PJ664H	7.04	7.04	4.13	4.88	4.88	5.01	5.01	**45.83**
806-4131	PJ864H	8.94	7.06	4.13	6.75	4.88	5.01	6.89	**48.18**
806-4132	PJ1086H	11.08	9.20	6.13	8.75	6.88	7.01	8.89	**53.21**
806-4133	PJ12106H	13.08	11.20	6.13	10.75	8.88	9.01	10.89	**65.92**
806-4134	PJ14126H	15.08	13.20	6.13	12.75	10.88	11.01	12.89	**75.41**
806-4135	PJ16148H	17.22	15.34	8.13	14.75	12.88	13.01	14.89	**87.86**
806-4136	PJ18168H	19.34	17.34	8.13	16.88	14.88	14.97	16.97	**114.32**
806-4137	PJ20168H	20.94	16.94	8.13	18.44	14.44	14.54	18.54	**169.98**

Optional Panel

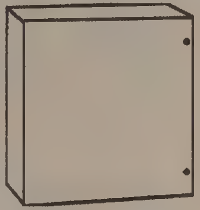
Stock No.	Mfr.'s Type	Panel Size (In.) D	E	EACH
806-1588	14R0505	4.88	4.88	**3.22**
806-1589	14R0705	6.75	4.88	**4.34**
806-1575	14R0907	8.75	6.88	**5.07**
806-1576	14R1109	10.75	8.88	**6.86**
806-1577	14R1311	12.75	10.88	**9.01**
806-1578	14R1513	14.75	12.88	**11.94**
806-1579	P1868	16.88	14.88	**31.91**
806-1599	P2068	18.44	14.44	**31.91**

Optional Panel

Stock No.	Mfr.'s Type	Panel Size (In.) D	E	EACH
806-1588	14R0505	4.88	4.88	**3.22**
806-1589	14R0705	6.75	4.88	**4.34**
806-1575	14R0907	8.75	6.88	**5.07**
806-1576	14R1109	10.75	8.88	**6.86**
806-1577	14R1311	12.75	10.88	**9.01**
806-1578	14R1513	14.75	12.88	**11.94**
806-1579	P1868	16.88	14.88	**31.91**
806-1599	P2068	18.44	14.44	**31.91**

Eclipse NEMA 12 Wallmount Enclosures

— NEW —

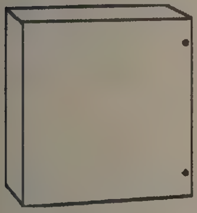


The Eclipse Wallmount Enclosure offers a panel larger than standard NEMA enclosures, superior value and a modern look. Available in standard sizes from 12 × 12 × 6 to 60 × 36 × 12, some sizes with 16" and 20" deep versions, the Eclipse will suit most any wallmount requirement. This NEMA 12 version is suitable for indoor industrial environments and is offered in recoatable beige. See Eclipse Inner Panels on this page to order "EP" panel. Contact Allied for sizes, accessories and window door versions not listed here.

Stock No.	Mfr.'s Type	Dimensions (In.) H × W × D	Use with Panel	EACH
806Q2130	ESD12126CG	12 × 12 × 6	EP1212	**117.23**
806Q2131	ESD16126CG	16 × 12 × 6	EP1612	**125.13**
806Q2132	ESD16166CG	16 × 16 × 6	EP1616	**138.80**
806Q2133	ESD20166CG	20 × 16 × 6	EP2016	**144.47**
806Q2134	ESD20206CG	20 × 20 × 6	EP2020	**155.89**
806Q2135	ESD16208CG	16 × 20 × 8	EP1620	**152.37**
806Q2136	ESD20168CG	20 × 16 × 8	EP2016	**152.37**
806Q2137	ESD20208CG	20 × 20 × 8	EP2020	**164.67**
806Q2138	ESD24168CG	24 × 16 × 8	EP2416	**162.92**
806Q2139	ESD24208CG	24 × 20 × 8	EP2420	**171.24**

Eclipse NEMA 4 Wallmount Enclosures

— NEW —

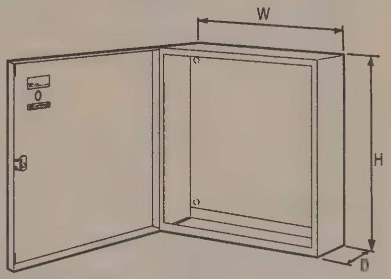


The Eclipse Wallmount Enclosure offers a panel larger than standard NEMA enclosures, superior value and a modern look. Available in standard sizes from 12 × 12 × 6 to 60 × 36 × 12, some sizes with 16" and 20" deep versions, the Eclipse will suit most any wallmount requirement. This NEMA 4 version has stainless steel hinges and high solids epoxy palm finish which makes this version suitable for both indoor and outdoor applications. Offered in ASA 61 gray. See Eclipse Inner Panels on this page to order "EP" panel. Contact Allied for sizes, accessories and window door versions not listed here.

Stock No.	Mfr.'s Type	Dimensions (In.) H × W × D	Use with Panel	EACH
806Q2140	EN4SD12126GY	12 × 12 × 6	EP1212	**117.23**
806Q2141	EN4SD16126GY	16 × 12 × 6	EP1612	**125.13**
806Q2142	EN4SD16166GY	16 × 16 × 6	EP1616	**138.80**
806Q2143	EN4SD20166GY	20 × 16 × 6	EP2016	**144.47**
806Q2144	EN4SD20206GY	20 × 20 × 6	EP2020	**155.89**
806Q2145	EN4SD16208GY	16 × 20 × 8	EP1620	**152.37**
806Q2146	EN4SD20168GY	20 × 16 × 8	EP2016	**152.37**
806Q2147	EN4SD20208GY	20 × 20 × 8	EP2020	**164.67**
806Q2148	EN4SD24168GY	24 × 16 × 8	EP2416	**162.92**
806Q2149	EN4SD24208GY	24 × 20 × 8	EP2420	**171.24**

NOTE: Stainless steel version also available, call Allied for more information.

NEMA 1 Wallmount Enclosures

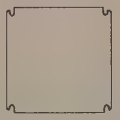


Enclosures are designed for indoor use to house controls, instruments and components not requiring oil-tight or dust-tight protection. The inner panel is included. The enclosure is finished in ANSI/ASA 61 gray recoatable baked enamel inside and out. The inner panel is finished in white baked enamel.

Stock No.	Mfr.'s Type	Dimensions H	W	D	EACH
806Q4060	N1A16127	16	12	7	**117.43**
806Q4061	N1A16167	16	16	7	**132.82**
806Q4062	N1A16207	16	20	7	**148.21**
806Q4063	N1A20167	20	16	7	**148.21**
806Q4064	N1A20207	20	20	7	**166.48**
806Q4065	N1A24167	24	16	7	**163.54**
806Q4066	N1A24207	24	20	7	**184.69**
806Q4067	N1A24247	24	24	7	**205.75**
806Q4068	N1A30207	30	20	7	**211.99**
806Q4069	N1A30247	30	24	7	**237.22**
806Q4070	N1A36247	36	24	7	**268.78**
806Q4071	N1A36307	36	30	7	**312.80**
806Q4072	N1A16129	16	12	9	**127.14**
806Q4073	N1A20169	20	16	9	**160.84**
806Q4074	N1A20209	20	20	9	**180.42**
806Q4075	N1A20249	20	24	9	**199.96**
806Q4076	N1A24209	24	20	9	**200.06**
806Q4077	N1A24249	24	24	9	**222.59**
806Q4078	N1A30249	30	20	9	**229.53**
806Q4079	N1A30249	30	24	9	**256.02**
806Q4080	N1A242012	24	20	12	**215.39**
806Q4081	N1A242412	24	24	12	**255.98**
806Q4082	N1A302412	30	24	12	**293.83**
806Q4083	N1A363012	36	30	12	**382.08**
806Q4084	N1A423012	42	30	12	**554.23**
806Q4085	N1A423612	42	36	12	**632.02**
806Q4086	N1A483612	48	36	12	**670.59**

Eclipse Inner Panels

— NEW —



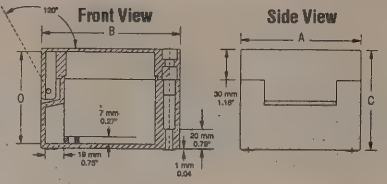
These larger than standard NEMA panels are designed with corner notches for easy installation and are finished in white.

Stock No.	Mfr.'s Type	Dimension (In.) H × W	EACH
806-2150	EP1212	10.2 × 10.2	**5.51**
806-2151	EP1612	14.2 × 10.2	**7.11**
806-2152	EP1616	14.2 × 14.2	**18.37**
806-2153	EP1620	14.2 × 18.2	**21.78**

Stock No.	Mfr.'s Type	Dimension (In.) H × W	EACH
806-2154	EP2016	18.2 × 14.2	**26.14**
806-2155	EP2020	18.2 × 18.2	**25.18**
806-2156	EP2416	22.2 × 14.2	**33.39**
806-2157	EP2420	22.2 × 18.2	**38.17**

Fiberglass Enclosures

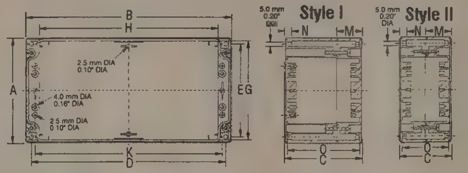
Two Piece molded fiberglass reinforced polyester construction. Comes with recessed neoprene gasket to meet NEMA type 1, 2, 3, 3R, 12, 13, 4, 4X and 5. Also, meets IEC 529, IP66. All metal parts are made of stainless steel Optional accessories include inner panels and external mounting feet. Designed for use as instrument enclosures, electrical junction boxes or terminal wiring enclosures. Provides outstanding Protection against dust, oil and pressurized water. Impervious to atmospheric and marine corrosion. **Finish:** Light Beige.

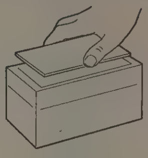


Stock No.	Mfr.'s Type	Dimensions (Inches)			EACH
		A	B	C	
806-0120	R130-120-000	4.7	5.5	3.9	**55.19**
806-0122	R130-122-000	4.7	7.9	3.9	**62.55**
806-0124	R130-124-000	4.7	10.2	3.9	**70.24**
806-4195	R130-160-000	6.3	7.1	3.9	**78.07**
806-4169	R130-162-000	6.3	10.2	3.9	**96.60**
806-4196	R130-164-000	6.3	13.4	3.9	**115.38**
806-4170	R130-200-000	7.9	8.7	4.7	**112.23**
806-4197	R130-202-000	7.9	12.6	4.7	**135.07**

Polycarbonate Water and Oil Tight Cases

Technocases are molded in a two piece high impact, smooth (ideal for labels, silk screens, decals, etc.) polycarbonate material with recessed gasket ideal for dust, water and oil tight applications. Polycarbonate material is rated UL94 V2. Units come complete with recessed polyurethane gasket, captive stainless steel screws and snap on screw covers for a clean finished appearance. ABS style watertight cases available from factory stock. **ABS Style:** 210 and 211 Series — Polycarbonate lid; 205 and 206 Series — Polycarbonate with transparent lid. **Finish:** Light Beige.





Polycarbonate

Stock No.	Mfr.'s Type	Style	Dimensions (Inches)			EACH
			A	B	C	
806-3125	R210-080-000	I	3.15	3.15	2.36	**19.98**
806-3126	R211-080-000	II	3.15	3.15	3.15	**21.02**
806-3127	R210-082-000	I	3.15	4.72	2.36	**21.31**
806-3128	R211-082-000	II	3.15	4.72	3.15	**22.80**
806-3129	R210-084-000	I	3.15	6.30	2.36	**25.22**
806-3130	R211-084-000	II	3.15	6.30	3.15	**26.85**
806-3131	R210-086-000	I	3.15	9.45	2.36	**29.15**
806-3132	R211-086-000	II	3.15	9.45	3.15	**31.07**
806-3133	R210-120-000	II	4.72	4.72	2.36	**28.79**
806-3135	R211-120-000	I	4.72	4.72	3.54	**30.70**
806-3136	R210-122-000	II	4.72	7.87	2.36	**33.01**
806-3137	R211-122-000	I	4.72	7.77	3.54	**35.29**
806-3138	R210-124-000	II	4.72	9.45	2.36	**34.98**
806-3139	R211-124-000	I	4.72	9.45	3.54	**37.18**
806-3140	R210-160-000	II	6.30	6.30	2.36	**38.51**
806-3141	R211-160-000	I	6.30	6.30	3.54	**40.59**
806-3142	R210-162-000	II	6.30	9.45	2.36	**43.10**
806-3143	R211-162-000	I	6.30	9.45	3.54	**47.32**

Polycarbonate With Transparent Lid

Stock No.	Mfr.'s Type	Style	Dimensions (Inches)			EACH
			A	B	C	
806-6500	R205-080-000	I	3.15	3.15	2.36	**20.68**
806-6501	R206-080-000	II	3.15	3.15	3.15	**21.86**
806-6502	R205-082-000	I	3.15	4.72	2.36	**22.13**
806-6503	R206-082-000	II	3.15	4.72	3.15	**23.78**
806-6504	R205-084-000	I	3.15	6.30	2.36	**27.92**
806-6505	R206-084-000	II	3.15	6.30	3.15	**28.05**
806-6506	R205-086-000	I	3.15	9.45	2.36	**30.44**
806-6507	R206-086-000	II	3.15	9.45	3.15	**32.95**
806-6508	R205-120-000	II	4.72	4.72	2.36	**29.94**
806-6509	R206-120-000	I	4.72	4.72	3.54	**30.85**
806-6510	R205-122-000	II	4.72	7.87	2.36	**34.31**
806-6511	R206-122-000	I	4.72	7.87	3.54	**35.53**
806-6512	R205-124-000	II	4.72	9.45	2.36	**36.28**
806-6513	R206-124-000	I	4.72	9.45	3.54	**38.57**
806-6514	R205-160-000	II	6.30	6.30	2.36	**39.98**
806-6515	R206-160-000	I	6.30	6.30	3.54	**42.07**
806-6516	R205-162-000	II	6.30	9.45	2.36	**44.86**
806-6517	R206-162-000	I	6.30	9.45	3.54	**47.34**

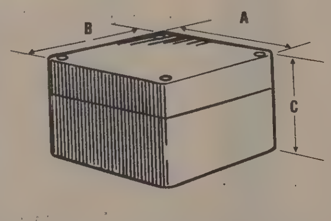
Accessories

- ► **Recessed Front Plates: Top and Bottom Are Recessed 0.8 mm To Accept Optional, Self Adhesive, Anodized Aluminum Front Plates**
- ► **Mounting Feet: Optional External Mounting Feet for 90 Degree To 90 Degree Adjustable Mounting**
- ► **Hinges: Unique Internal Hinges Are Completely Hidden From View When The Case Is Closed and Can Be Installed At Any Time**

Type/ Size	Front Plates			Mounting Feet			Internal Hinges		
	Stock No.	Mfr.'s Type	EACH	Stock No.	Mfr.'s Type	PER SET/4	Stock No.	Mfr.'s Type	PER SET/2
080	**806-6518**	R542-000-080	**2.83**	**806-6527**	R541-000-000	**2.21**	**806-6528**	R546-000-000	**1.94**
082	**806-6519**	R542-000-082	**3.69**	**806-6527**	R541-000-000	**2.21**	**806-6528**	R546-000-000	**1.94**
084	**806-6520**	R542-000-084	**4.41**	**806-6527**	R541-000-000	**2.21**	**806-6528**	R546-000-000	**1.94**
086	**806-6521**	R542-000-086	**8.15**	**806-6527**	R541-000-000	**2.21**	**806-6528**	R546-000-000	**1.94**
120	**806-6522**	R542-000-120	**5.50**	**806-6527**	R541-000-000	**2.21**	**806-6528**	R546-000-000	**1.94**
122	**806-6523**	R542-000-122	**7.65**	**806-6527**	R541-000-000	**2.21**	**806-6528**	R546-000-000	**1.94**
124	**806-6524**	R542-000-124	**10.25**	**806-6527**	R541-000-000	**2.21**	**806-6528**	R546-000-000	**1.94**
160	**806-6525**	R542-000-160	**8.02**	**806-6527**	R541-000-000	**2.21**	**806-6528**	R546-000-000	**1.94**
162	**806-6526**	R542-000-162	**13.19**	**806-6527**	R541-000-000	**2.21**	**806-6528**	R546-000-000	**1.94**

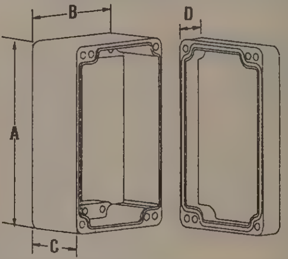
ROLEC® Enclosures Aluminum NEMA 4X Enclosures

Enclosure Material: Aluminum G Al Si 12/DIN 1725. **Lid Screws:** Made of stainless steel. **Degree of Protection:** IP 65/DIN 40 050 (Watertight) Meet NEMA/EEMAC Type 1, 2, 3R, 4, 4X, 5, 12, 13 requirements. **External Mounting:** Special developed external mounting foot made from zinc-diecast. Can be turned through 90°. The fastening holes have engagement lugs for this purpose. **Internal Mounting:** All sizes with inner blind holes. An internal panel made of zinc-plated steel-plate is available. **Color:** Baked enamel finish, beige RAL 7032, Pantone No. 413. Special paint finishes are available in quantity on special request. **Gasket:** Oil and petroleum resistant Neoprene gasket.



Stock No.	Mfr.'s Type	Dimensions (Inches)			EACH	
		A	B	C	1-5	6-99
806-0003	R100-060-000	2.6	2.0	1.6	**15.07**	**12.91**
806-0004	R100-062-000	2.6	2.6	1.6	**17.33**	**14.85**
806-0005	R100-064-000	2.6	3.9	1.6	**20.86**	**17.88**
806-0006	R100-080-000	3.1	3.1	2.4	**25.38**	**21.76**
806-0007	R100-082-000	3.1	4.7	2.4	**33.24**	**28.49**
806-0008	R100-084-000	3.1	6.3	2.4	**37.83**	**32.43**
806-0009	R100-102-000	3.9	5.9	3.1	**44.18**	**37.86**
806-0010	R100-104-000	3.9	7.9	3.1	**55.69**	**47.74**
806-0037	R100-120-000	4.7	4.7	3.9	**58.67**	**50.29**
806-0038	R100-160-000	6.3	6.3	3.9	**76.97**	**65.97**

Watertight Diecast Enclosures



Watertight diecast comes with interlocking flange lid with recessed screws and neoprene gasket. Finished in natural aluminum.

Stock No.	Mfr.'s Type	Dimensions (Inches)				EACH
		A	B	C	D	
806-4145	1590Z110	2.95	3.14	1.57	0.47	**42.10**
806-4146	1590Z120	4.92	3.14	1.69	0.61	**55.02**
806-4147	1590Z130	6.89	3.14	1.57	0.47	**60.77**
806-4148	1590Z135	6.89	3.14	1.57	0.79	**63.64**
806-4149	1590Z150	8.70	4.74	2.40	0.81	**114.68**
806-4150	1590Z160	8.70	4.74	2.40	0.81	**118.09**

NEMA 12 Series 1200 Rack — *NEW* —

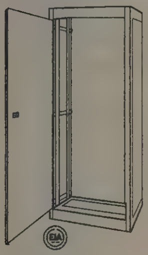
Full featured NEMA 12 rack 19" and 24" applications in harsh industrial environments. Extremely sturdy 14 gauge frame. Offered in 2 panel heights, 24" panel width (adaptable to 19"), and 31.50" deep. Aesthetic styling makes the Series 2000 an attractive addition to any environment. The package is finished in light beige. **Package Includes the Following Components and Hardware:** One Series 2000 frame with closed top; One pair of side panels with oil tight quarter turn latches; Two 3 pt. latched oil tight solid doors; and two removable reinforced lifting eyebolts.

Stock No.*	Mfr.'s Type	Panel Height Units	Outside Dimensions	EACH
806Q1700	2M772832DAP3	40	77 × 28 × 32	**2003.18**
806Q1702	2M862832DAP3	45	86 × 28 × 32	**2156.60**

Note: More sizes available — contact Allied for more information. *In order to mount 19" accessories in a 24" cabinet, you will require a 19/24" Adapter Kit (Mfr.'s Type 2MAK1924) available on this page. This will allow additional wiring/cabling space on both sides of the rack mounted equipment.

Series 2000 Caster Assembly
Casters and adapter base provide heavy duty caster capabilities. Complete assembly of four casters mounts to enclosure frame without drilling or punching. Wheels are 3" non-static, rockite with ball bearing pivot. **Total Load Capacity:** 1080 lbs.
806Q1719. 2MCRS28. Fits 28" Wide Enclosures..**EACH 320.01**

Contempra II Rack



Full featured rack which will completely service most 19" and 24" applications. Extremely sturdy 14 gauge frame. Three panel heights, 19" and 24" panel widths, and 23.63" and 31.50" depths provide a broad spectrum of stand alone enclosures sizes allowing for complete design flexibility. Aesthetic styling makes the Contempra II an attractive addition to any environment. The package is finished with light beige frame and body (top, sides, door). **Package Includes the Following Components and Hardware:** One Contempra II frame; One pair of side panels; One solid door; One solid top; Four full length, black, punched combination rails; Four adjustable leveling feet; Clip nuts (type 10-32).

Stock No.	Mfr.'s Type	Panel Height Units	Rack Space Dimensions (In.)	EACH
806Q4106	C2RR196323CG1	36	19 × 63.00 × 23.63	**1220.10**
806Q1716	C2RR196331CG1	36	19 × 63.00 × 31.50	**1353.11**
806Q4107	C2RR197023CG1	40	19 × 70.00 × 23.63	**1327.14**
806Q1717	C2RR197031CG1	40	19 × 70.00 × 31.50	**1463.59**
806Q4108	C2RR197823CG1	45	19 × 78.75 × 23.63	**1435.95**
806Q1718	C2RR197831CG1	45	19 × 78.75 × 31.50	**1582.01**
806Q1720	C2RR246323CG1*	36	24 × 63.00 × 23.63	**1335.93**
806Q1722	C2RR246331CG1*	36	24 × 63.00 × 31.50	**1476.75**
806Q1724	C2RR247023CG1*	40	24 × 70.00 × 23.63	**1450.88**
806Q1726	C2RR247031CG1*	40	24 × 70.00 × 31.50	**1598.20**
806Q1728	C2RR247823CG1*	45	24 × 78.75 × 23.63	**1571.19**
806Q1730	C2RR247831CG1*	45	24 × 78.75 × 31.50	**1729.49**

Note: More sizes available — contact Allied for more information. *In order to mount 19" accessories in a 24" cabinet, you will require a 19/24" Adapter Kit (Mfr.'s Type 2MAK1924) available on this page. This will allow additional wiring/cabling space on both sides of the rack mounted equipment.

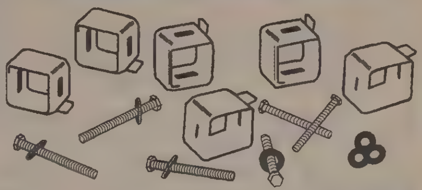
Casters for Contempra II Racks
Set of four. No drilling required as casters fit into built-in caster mounts. Feature ball bearing, swivel, hard composition wheels. **Capacity:** 700 lbs. per set.
806Q1731. 1425BM..**PER SET/4 201.33**

Contempra II Flush Plexiglass Doors

Constructed of sturdy aluminum frame with smoked grey plexiglass. Can fit either front or back of frame. Reversible for either right or left hand mounting. Quick release hinge design allows for easy installation and removal. **Features:** Lockable latch. **Finish:** Black.

Stock No.	Mfr.'s Type	Panel Height Units	Dimensions In.	EACH
806Q1732	C2DF1963PBK1	36	19 × 63.00	**325.48**
806Q1734	C2DF1970PBK1	40	19 × 70.00	**374.87**
806Q1736	C2DF1978PBK1	45	19 × 78.75	**394.42**
806Q1738	C2DF2463PBK1	36	24 × 63.00	**358.04**
806Q1740	C2DF2470PBK1	40	24 × 70.00	**412.35**
806Q1742	C2DF2478PBK1	45	24 × 78.75	**438.43**

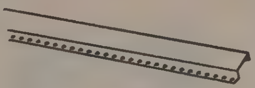
24" to 19" Adapter Kit (For Contempra II and Series 2000)



Adapts 24" panel width cabinets to 19" panel width mounting. Provides additional wiring space along both sides of the rack mounted equipment. **Finish:** Black BK3. **Kit Includes:** Six adapter brackets and the required hardware to mount one pair of rails.

806-1703. 2MAK1924. 19 to 24" Adapter kit..**EACH 148.84**

Combination and Accessory Rails (For Contempra II and Series 2000)



Combination rails allow front panel mounting and side accessory mounting. Accessory rails for side, accessory mounting only. Sold in pairs. Available in black painted (BK3) or zinc plated (ZPL) finishes. Punched and tapped rails available. Punched rails are 14 gauge steel with full EIA spacing to be used with 10-32 clip nuts which are provided. Tapped rails are 12 gauge steel tapped 10-32 and spaced with full EIA centers.

806-1704. CAR63PBK3. Black Punched Accessory Rails ....**PER PAIR 75.62**
806-1705. CAR63TZPL. Plated Tapped Accessory Rails............................**PER PAIR 124.86**
806-1706. CAR70PBK3. Black Punched Accessory Rails ....**PER PAIR 81.84**
806-1707. CAR70TZPL. Plated Tapped Accessory Rails............................**PER PAIR 132.31**
806-1708. CAR78PBK3. Black Punched Accessory Rails ....**PER PAIR 87.52**
806-1709. CAR78TZPL. Plated Tapped Accessory Rails............................**PER PAIR 142.90**
806-1710. CCR63PBK3. Black Punched Combination Rails.......................**PER PAIR 75.62**
806-1711. CCR63TZPL. Plated Tapped Combination Rails.........................**PER PAIR 124.86**
806-1712. CCR70PBK3. Black Punched Combination Rails.......................**PER PAIR 87.84**
806-1713. CCR70TZPL. Plated Tapped Combination Rails.........................**PER PAIR 132.31**
806-1714. CCR78PBK3. Black Punched Combination Rails.......................**PER PAIR 87.52**
806-1715. CCR78TZPL. Plated Tapped Combination Rails.........................**PER PAIR 142.90**

REFK Economy Racks

A knock-down cabinet that couldn't be simpler to assemble — only one bolt in each corner locks the cabinet sides to the top or bottom. The strength comes from the interlocking structure. The two combination panel-accessory rails are fully adjustable. Four adjustable leveling glides are standard on all models. All cabinets are shipped complete except for front and back doors or panels. **Color:** GY2 gray or CG1 contempra gray. **Depth:** 24.5".

Gray		Contempra Gray		Panel Height (Inches)	EACH
Stock No.	Mfr.'s Type	Stock No.	Mfr.'s Type		
806Q2000	REFK1903524GY2	**806Q4090**	REFK1903524CG1	35	**423.39**
806Q2001	REFK1904224GY2	**806Q4091**	REFK1904224CG1	42	**455.33**
806Q2002	REFK1904924GY2	**806Q4092**	REFK1904924CG1	49	**519.24**
806Q2003	REFK1906324GY2	**806Q4093**	REFK1906324CG1	63	**575.16**
806Q2004	REFK1907024GY2	**806Q4094**	REFK1907024CG1	70	**639.08**

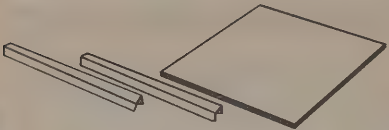
Casters for REFK Racks
Nylon casters. Twin swivel wheels with zinc axles and hoods, 2.37" wheel dia. with 2.75" mounted height. 5/16-18 threaded system. **Capacity:** 400 lbs. per set.
806Q3108. 1425P. Nylon Caster Set...**PER SET/4 78.72**

Louvered REFK Rack Doors

Flush louvered doors that provide 2-point keyed locking, recessed handles. Instant removal by means of spring-loaded hinge pins. The flush doors fit either side of the Economy racks, fill the panel space and close flush with the cabinet frame. **Color:** GY2 gray or CG1 contempra gray.

Gray		Contempra Gray		Panel Height (Inches)	EACH
Stock No.	Mfr.'s Type	Stock No.	Mfr.'s Type		
806Q3080	RSDL19035GY2	**806Q4100**	RSDL19035CG1	35	**126.80**
806Q3081	RSDL19042GY2	**806Q4102**	RSDL19042CG1	42	**144.90**
806Q3082	RSDL19049GY2	**806Q4103**	RSDL19049CG1	49	**163.07**
806Q3083	RSDL19063GY2	**806Q4104**	RSDL19063CG1	63	**194.10**
806Q3084	RSDL19070GY2	**806Q4105**	RSDL19070CG1	70	**207.05**

Note: Solid doors are also available — contact Allied for more information.

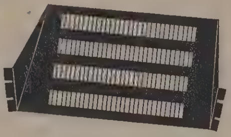


Pull-Out Rack Chassis Shelf

This shelf can be used as a permanently mounted support shelf between rack accessory rails or as a pull-out chassis. Accepts optional slides for pull-out application. **Material:** Shelf — 18 gauge; Brackets — 14 gauge. Available in 3 depths. **Finish:** White. Occupies 1U (1.75") of rail space. Also available in 24". Contact Allied for more information.

806-1744.	RASC1912WH2.	19" Shelf/Chassis	**EACH 66.04**
806-1746.	RASC1916WH2.	19" Shelf/Chassis	**EACH 74.20**
806-1748.	RASC1922WH2.	19" Shelf/Chassis	**EACH 84.60**

Rack Modem Shelf Unit — Ventilated

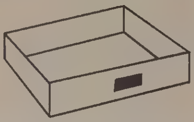


- **An Economical Internal or External Shelf or Work Space**
- **14 Ga. Steel**
- **15" Depth**
- **Panel Height: 5.25" (3 Units)**
- **Textured Black Finish**
- **Mounting Hardware Not Included — Please Order Separately**

Stock No.	Mfr.'s Type	EACH
806-5024	RASV190515BK1	**78.26**

Rack Storage Drawer Kit

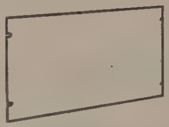
— NEW —



Complete drawer kit with slides and lock. Rear support brackets included for 16" and 22" depths. Available in three depths. **Finish:** CGI Contempra Gray, with a white interior. Also available in 24". Contact Allied for more information.

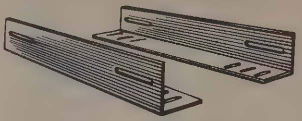
Stock No.	Mfr.'s Type	Units	Description	EACH
806Q2110	RDRW1900312CG1	2	19 × 3.50 × 11.3 drawer	**186.27**
806Q2111	RDRW1900316CG1	2	19 × 3.50 × 15.3 drawer	**202.57**
806Q2112	RDRW1900322CG1	2	19 × 3.50 × 21.3 drawer	**211.88**
806Q2113	RDRW1900512CG1	3	19 × 5.25 × 11.3 drawer	**237.49**
806Q2114	RDRW1900516CG1	3	19 × 5.25 × 15.3 drawer	**251.46**
806Q2115	RDRW1900522CG1	3	19 × 5.25 × 21.3 drawer	**253.79**
806Q2116	RDRW1900712CG1	4	19 × 7.00 × 11.3 drawer	**260.78**
806Q2117	RDRW1900716CG1	4	19 × 7.00 × 15.3 drawer	**270.04**
806Q2118	RDRW1900722CG1	4	19 × 7.00 × 21.3 drawer	**272.42**
806Q2119	RDRW1900812CG1	5	19 × 8.75 × 11.3 drawer	**288.72**
806Q2120	RDRW1900816CG1	5	19 × 8.75 × 15.3 drawer	**293.37**
806Q2121	RDRW1900822CG1	5	19 × 8.75 × 21.3 drawer	**305.02**
806Q2122	RDRW1901012CG1	6	19 × 10.50 × 11.3 drawer	**305.02**
806Q2123	RDRW1901016CG1	6	19 × 10.50 × 15.3 drawer	**314.33**
806Q2124	RDRW1901022CG1	6	19 × 10.50 × 21.3 drawer	**323.64**
806Q2125	RDRW1901212CG1	7	19 × 12.25 × 11.3 drawer	**395.82**
806Q2126	RDRW1901216CG1	7	19 × 12.25 × 15.3 drawer	**402.81**
806Q2127	RDRW1901222CG1	7	19 × 12.25 × 21.3 drawer	**414.45**

Blank Rack Panels



Panels are made from high quality aluminum, .125". **Color:** CG2 — Gray; BK2 — Black. Also available in 24". Contact Allied for more information.

Gray		Black		Panel Height (Inches)	EACH
Stock No.	Mfr.'s Type	Stock No.	Mfr.'s Type		
806-4013	PBPA19001CG2	**806-3090**	PBPA19001BK2	1.75	**9.90**
806-4014	PBPA19003CG2	**806-3091**	PBPA19003BK2	3.50	**14.59**
806-4015	PBPA19005CG2	**806-3092**	PBPA19005BK2	5.25	**20.85**
806-4016	PBPA19007CG2	**806-3093**	PBPA19007BK2	7.00	**26.05**
806-4017	PBPA19008CG2	**806-3094**	PBPA19008BK2	8.75	**30.82**
806-4018	PBPA19010CG2	**806-3095**	PBPA19010BK2	10.50	**34.73**
806-4019	PBPA19012CG2	**806-3096**	PBPA19012BK2	12.25	**41.66**
806-4020	PBPA19014CG2	**806-3097**	PBPA19014BK2	14.00	**46.88**
806-4021	PBPA19015CG2	**806-3098**	PBPA19015BK2	15.75	**50.36**
806-4022	PBPA19017CG2	**806-3099**	PBPA19017BK2	17.50	**57.33**
806-4023	PBPA19019CG2	**806-3100**	PBPA19019BK2	19.25	**66.43**
806-4024	PBPA19021CG2	**806-3101**	PBPA19021BK2	21.00	**71.21**
806-4025	PBPA19022CG2	**806-3102**	PBPA19022BK2	22.75	**75.55**
806-4026	PBPA19024CG2	**806-3103**	PBPA19024BK2	24.50	**82.50**
806-4027	PBPA19026CG2	**806-3104**	PBPA19026BK2	26.25	**88.88**
806-4028	PBPA19028CG2	**806-3105**	PBPA19028BK2	28.00	**94.65**
806-4029	PBPA19029CG2	**806-3106**	PBPA19029BK2	29.75	**98.99**
806-4030	PBPA19031CG2	**806-3107**	PBPA19031BK2	31.50	**101.62**

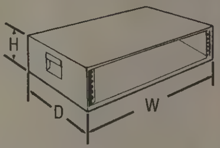


Adjustable Rack Support Angles

Angles mount on rack accessory rails with either leg used as support depending on requirements. Slots allow up/down or front/back adjustments. Made of 14 gauge steel with dimensions of 1.75" × 1.75". Available in 3 depths. **Finish:** White. Sold in Pairs. Occupies 1U (1.75") of rail space. Mounting hardware not included, please order separately.

Stock No.	Mfr.'s Type	Description	PER PAIR
806-2061	RASA12WH2	12" deep angle	**24.83**
806-2062	RASA16WH2	16" deep angle	**27.07**
806-2063	RASA22WH2	22" deep angle	**30.55**

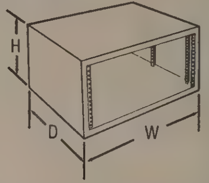
RCBS Series Table Top Racks



An economical table top rack constructed in 18 gauge steel. With fixed panel rails, recessed side lifting handles and rubber feet. Accepts standard 19" panels. **Finish:** CG1 Contempra Gray enamel.

Stock No.	Mfr.'s Type	Panel Ht. (Inches)	Dimensions (Inches)			EACH
			H	W	D	
806-4000	RCBS1900313CG1	3.50	4.50	20	13	**100.79**
806-4001	RCBS1900513CG1	5.25	6.25	20	13	**108.42**
806-4002	RCBS1900713CG1	7.00	8.00	20	13	**117.27**
806-4003	RCBS1900813CG1	8.75	9.75	20	13	**132.86**
806-4004	RCBS1901013CG1	10.50	11.50	20	13	**138.99**
806-4005	RCBS1901213CG1	12.25	13.25	20	13	**151.20**
806-4006	RCBS1901413CG1	14.00	15.00	20	13	**189.37**

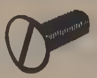
RCHS Series Table Top Racks



Heavy duty table top rack constructed in 18 gauge steel. With fixed punched rails front and rear to accept 19" and rail mount accessories. **Finish:** CG1 Contempra Gray.

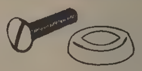
Stock No.	Mfr.'s Type	Panel Ht. (Inches)	Dimensions (Inches)			EACH
			H	W	D	
806Q4007	RCHS1900817CG1	8.75	10.75	21	17.5	**195.39**
806Q4008	RCHS1901017CG1	10.50	12.50	21	17.5	**225.96**
806Q4009	RCHS1901417CG1	14.00	16.00	21	17.5	**231.34**
806Q4010	RCHS1901717CG1	17.50	19.50	21	17.5	**240.22**
806Q4011	RCHS1902217CG1	22.75	24.75	21	17.5	**261.88**
806Q4012	RCHS1902817CG1	28.00	30.00	21	17.5	**307.47**

Rack Panel Mounting Hardware (Screws and Washers)



1421 E25B

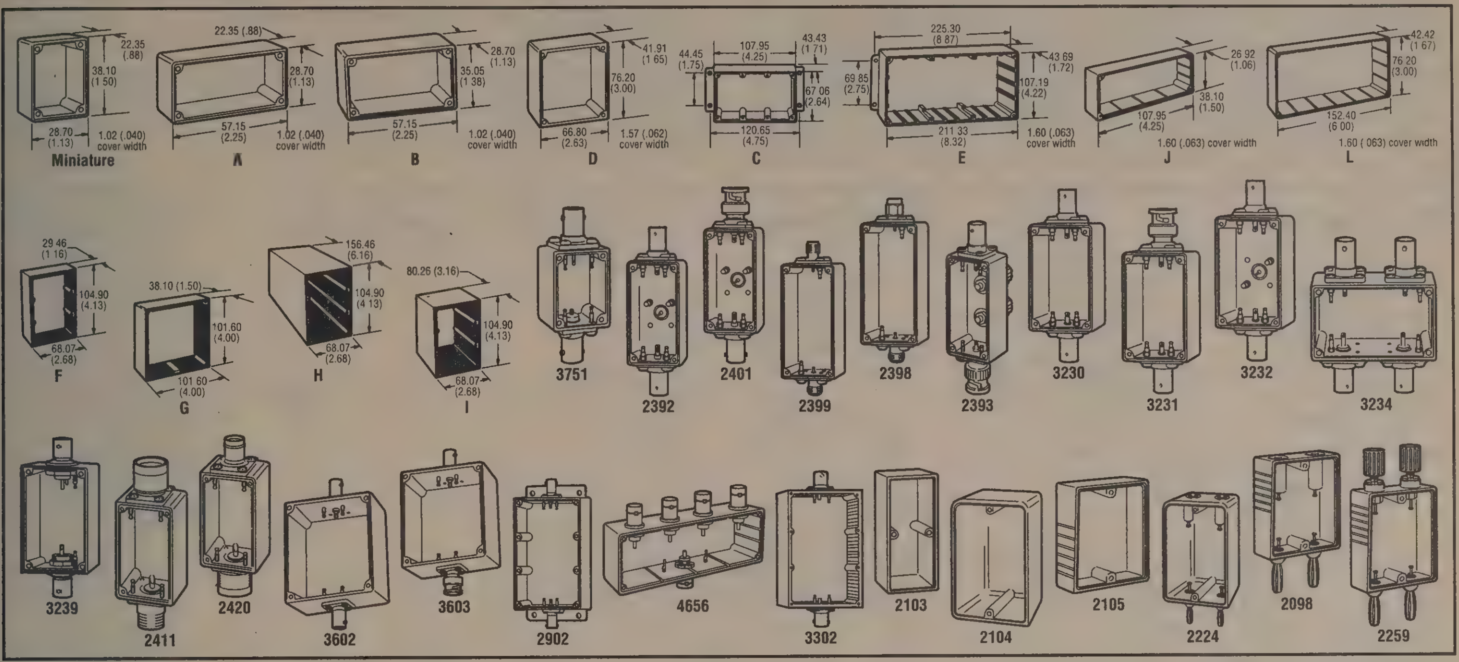
1421 G



1421 A

1421 E25W

Stock No.	Mfr.'s Type	Description	Quantity Per Pack	PER PACK
806-5064	1421E25B	Nickel plated 10-32 × .5" countersunk, slotted, oval-head screw	25	**4.14**
806-5065	1421E100B	Nickel plated 10-32 × .5" countersunk, slotted, oval-head screw	100	**9.86**
806-5066	1421A25B	Nickel plated 10-32 × .75" countersunk, slotted, oval-head screw	25	**4.70**
806-5067	1421A100B	Nickel plated 10-32 × .75" countersunk, slotted, oval-head screw	100	**17.53**
806-5069	1421G	Nickel plated 10-32 × .37" slotted, binding-head screw with flat nylon washer	8	**3.18**
806-5070	1421A	10-32 × .75" Phillips, oval-head screw with plastic cup washer	4	**3.02**
806-5073	1421E25W	Nickel plated metal cup washer for countersunk 10-32 screws	25	**3.32**
806-5074	1421E100W	Nickel plated metal cup washer for countersunk 10-32 screws	100	**12.91**
806-5075	1421A25W	Black plastic cup washer for countersunk 10-32 screws	25	**8.26**
806-5076	1421A100W	Black plastic cup washer for countersunk 10-32 screws	100	**31.85**



Aluminum Enclosures

Die Cast Aluminum Enclosures

- ► **Nominal Impedance: 50 Ohms**
- ► **Rating: 500 VRMS Max., +150°C (+302°F) Max. Except for Models 2399 and 2398 Which Are 335 VRMS Max. and Model 2411 Which Is 1000 VRMS**

Die Cast Aluminum Boxes
These boxes are available either with a blue baked enamel finish or with no finish at all. When used with the included cover, the boxes provide excellent RFI/EMI protection. Blue baked enamel per Federal Standard 595 #295109 over primer wash per DOD-P-15328 or no finish. **Cover:** Aluminum 1100-H14, with clear anodized finish per MIL-A-8625. Includes screws.

Miniature, A, B, D, C, E, J and L Box Size. Housing: Die cast aluminum, alloy A380 or A384. **F, G, H and I Box Size.** These boxes are slotted to accept two .062" circuit boards and shielding dividers. **Housing:** Extruded aluminum, alloy 6063-T5 or equivalent.

Stock No.	Mfr.'s Type	Box Size	Finish	EACH
885-3753	3753	Miniature	Blue Baked Enamel	**6.40**
885-3754	3754	Miniature	None	**6.15**
885-2397	2397	A	Blue Baked Enamel	**6.40**
885-2400	2400	A	None	**5.90**
885-0550	2417	B	Blue Baked Enamel	**6.60**
885-2428	2428	B	None	**6.25**
885-3601	3601	D	Blue Baked Enamel	**11.70**
885-3606	3606	D	None	**11.40**
885-0665	2901	C	Blue Baked Enamel	**16.25**
885-2906	2906	C	None	**13.75**
885-4227	4226	E	Blue Baked Enamel	**42.00**
885-5186	5186	E	None	**39.20**
885-6016	4655	J	Blue Baked Enamel	**20.10**
885-6015	5255	J	None	**18.10**
885-4903	4903	L	Blue Baked enamel	**24.10**
885-5203	5203	L	None	**23.60**
885-3301	3301	F	Blue Baked Enamel	**25.30**
885-3306	3306	F	None	**23.20**
885-0001	3311	G	Blue Baked Enamel	**30.20**
885-3316	3316	G	None	**28.60**
885-3742	3742	H	Blue Baked Enamel	**37.25**
885-3743	3743	H	None	**34.60**
885-4641	4641	I	Blue Baked Enamel	**70.00**

Miniature Size Box, BNC Female Each End
See Model 3753 for housing dimensions. **1st End:** BNC female with solder turret terminal screws. **2nd End:** Same as first end. Supplied with cover and cover screws.
885-3751. Model 3751 .... **EACH 24.70**

Size A Box, BNC Female "T"
See Model 2397 for housing dimensions. **1st End:** BNC female with solder turret terminal screws. **Center:** Same as first end. **2nd End:** Same as first end. Supplied with cover and cover screws.
885-2392. Model 2392 .... **EACH 31.20**

Size A Box, "T" Two BNC Females to BNC Male
See Model 2397 for housing dimensions. **1st End:** BNC male with solder turret terminal screws. **Center:** BNC female with solder turret terminal screws. **2nd End:** Same as center. Supplied with cover and cover screws.
885-2401. Model 2401 .... **EACH 33.45**

Size A Box, SMA Female Each End
See Model 2397 for housing dimensions. **1st End:** SMA female with solder turret terminal screws. Gold plated per requirements of MIL-C-39012. **2nd End:** Same as first end. Supplied with cover and cover screws.
885-2399. Model 2399 .... **EACH 50.00**

Size A Box, SMA Male to SMA Female
See Model 2397 for housing dimensions. **1st End:** SMA male with solder turret terminal screw. Gold plated per requirements of MIL-C-39012. **2nd End:** SMA female with solder turret terminal screw. Gold plated per requirements of MIL-C-39012. Supplied with cover and cover screws.
885-2398. Model 2398 .... **EACH 81.00**

Size A Box, BNC Female to BNC Male with Binding Posts
See Model 2397 for housing dimensions. **1st End:** BNC female with solder turret terminal screws. **Center:** Double binding post with solder turret terminals. Brass, bright tin plated. Accepts standard banana plugs. Polycarbonate insulation. One black and one red. **2nd End:** BNC male with solder turret terminal screws. Supplied with cover and cover screws.
885-2393. Model 2393 .... **EACH 40.00**

Size B Box, BNC Female Each End
See Model 2417 for housing dimensions. **1st End:** BNC female with solder turret terminal screws. **2nd End:** Same as first end. Supplied with cover and cover screws.
885-3230. Model 3230 .... **EACH 20.15**

Size B Box, BNC Male to BNC Female
See Model 2417 for housing dimensions. **1st End:** BNC male with solder turret terminal screws. **2nd End:** BNC female with solder turret terminal screws. Supplied with cover and cover screws.
885-3231. Model 3231 .... **EACH 24.35**

Size B Box, BNC Female "T"
See Model 2417 for housing dimensions. **1st End:** BNC female with solder turret terminal screws. **Center:** Same as first end. **2nd End:** Same as first end. Supplied with cover and cover screws.
885-3232. Model 3232 .... **EACH 32.25**

Size B Box, Cross Connections
See Model 2417 for housing dimensions. **1st End:** BNC females with solder turret terminal screws. **2nd End:** Same as first end. Supplied with cover and cover screws.
885-3234. Model 3234 .... **EACH 34.05**

Size B Box, Isolated BNC Female Each End
See Model 2417 for housing dimensions. **1st End:** Isolated BNC female with solder turret terminal screws. **2nd End:** Same as first end. Supplied with cover and cover screws.
885-3239. Model 3239 .... **EACH 33.60**

Size B Box, Type "N" Male to Type "N" Female
See Model 2417 for housing dimensions. **1st End:** Type "N" male with solder turret terminal screws. **2nd End:** Type "N" female with solder turret terminal screws. Supplied with cover and cover screws.
885-2411. Model 2411 .... **EACH 40.00**

Size B Box, BNC Female to Type "N" Male
See Model 2417 for housing dimensions. **1st End:** BNC female with solder turret terminal screws. **2nd End:** Type "N" male with solder turret terminal screws. Supplied with cover and cover screws.
885-2420. Model 2420 .... **EACH 40.00**

Size D Box, BNC Female Each End
See Model 3601 for housing dimensions. **1st End:** BNC female with solder turret terminal screws. **2nd End:** Same as first end. Supplied with cover and cover screws.
885-3602. Model 3602 .... **EACH 26.85**

Size D Box, BNC Female to BNC Male
See Model 3601 for housing dimensions. **1st End:** BNC female with solder turret terminal screws. **2nd End:** BNC male with solder turret terminal screws. Supplied with cover and cover screws.
885-3603. Model 3603 .... **EACH 31.10**

Size C Box, BNC Female Each End
See Model 2901 for housing dimensions. **1st End:** BNC female with solder turret terminal screws. **2nd End:** Same as first end. Supplied with cover and cover screws.
885-2902. Model 2902 .... **EACH 32.35**

Size J Box, Five BNC Females
See Model 4655 for housing dimensions. **1st End:** Four BNC Females. **2nd End:** BNC female with solder turret terminal screws. Supplied with cover and cover screws.
885-4656. Model 4656 .... **EACH 47.00**

Size F Box, BNC Female Each End
See Model 3301 for housing dimensions. **1st End:** BNC female with solder turret terminal screws. **2nd End:** Same as first end. Supplied with cover and cover screws.
885-3302. Model 3302 .... **EACH 43.00**

Phenolic Boxes

Phenolic Box, Queen Size

Housing: Phenolic, black. **Cover:** XP laminated paper base phenolic, black. Includes 2 #2-56 cover screws. **Rating:** +150°C (+302°F) max.
885-2103. Model 2103 .... **EACH 3.10**

Component Mounting Box, Double Banana Jack to Double Banana Plug

See Model 2104 for housing dimensions. **1st End:** Double banana jack. Brass, bright tin plated. 2nd End: Double banana plug. Brass body, beryllium copper spring, nickel plated. Supplied with cover and cover screws. Rating: 5000 VDC, 15 amps, +150°C (+302°F) max.
885-2224. Model 2224 .... **EACH 11.50**

Phenolic Box, King Size

Housing: Phenolic, black. **Cover:** XP laminated paper base phenolic, black. Includes 2 #2-56 cover screws. **Rating:** +150°C (+302°F) max.
885-2104. Model 2104 .... **EACH 3.10**

Component Mounting Box, Double Banana Jack to Double Banana Plug

See Model 2105 for housing dimensions. **1st End:** Double banana jack. Brass, bright tin plated. **2nd End:** Double banana plug. Brass body, beryllium copper spring, nickel plated. Supplied with cover and cover screws. **Rating:** 5000 VDC, 15 amps, +150°C (+302°F) max.
885-2098. Model 2098 .... **EACH 12.15**

Phenolic Box, Junior Size

Housing: Phenolic, black. **Cover:** XP laminated paper base phenolic, black. Includes 2 #2-56 cover screws. **Rating:** +150°C (+302°F) max.
885-2105. Model 2105 .... **EACH 3.10**

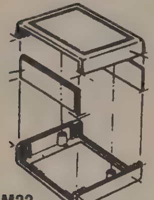
Component Mounting Box, Binding Posts to Double Banana Plug

See Model 2105 for housing dimensions. **1st End:** Double binding post. Brass, bright tin plated. Accepts standard banana plugs. Polycarbonate insulation. One black and one red. **2nd End:** Double banana plug. Brass body, beryllium copper spring, nickel plated. Supplied with cover and cover screws. **Rating:** 2500 VDC, 15 amps, +115°C (+239°F) max.
885-2259. Model 2259 .... **EACH 15.15**

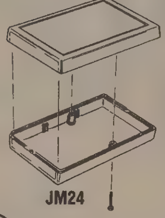
PacTec is the recognized leader in electronics packaging for technology. All enclosure kits are molded in medium impact, ABS, 94HB — 1/8" thick material. PacTec provides built in mounting features which save design and assembly steps and extra hardware. All standard kits are individually packaged and include all necessary component parts and all necessary assembly hardware to build a prototype unit. The standard kits are available in Black and PC Bone; Gray and Tan are available by request on some items. To order a desired color, insert the number of the color where the "N" appears in the Allied stock number — 1=Black; 2=PC Bone; 3=Tan and 4=Gray. All products are available in UL94 V-0 flame retardant material, and can be shielded for EMI/RFI. PacTec enclosures are easily and economically modified using our unique insert tooling methods, or machined secondarily by request as a special order. All PacTec products can be screen printed for custom identification, or have a custom membrane switch or overlay provided.

PacTec has released over 80 new models. PacTec is the company that originated the concept of standard plastic enclosure designs that can be modified and customized. PacTec offers expert design and packaging engineering assistance to help users obtain a custom appearance and special features, for a reasonable cost. Contact your local Allied representative for details and a copy of the latest PacTec Catalog.

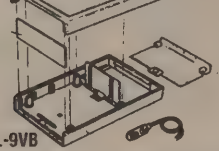
HM/JM Series



JM22



JM24



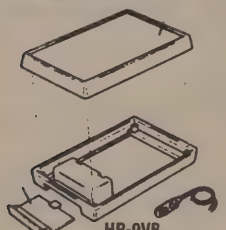
HML-9VB

For applications in the 2 sq." to 10 sq." the JM and HM are an ideal choice. The JM22, 42 series consists of four pieces — top and bottom cover, front and rear panel. JM24 is 2 pieces — top and bottom cover. The HM and HML series are 3 pieces — top and bottom cover, and 1 panel. The covers and panels can be inexpensively custom molded or modified to your specifications. **Additional Options Available:** Belt clip.

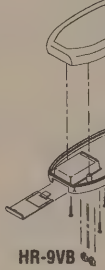
Stock No.*	Mfr.'s Type	Outside Dimensions (In.)			EACH	
		Height	Width	Length	1-24	25-Up
508-110N	JM12-IE†	0.80	1.60	2.40	**2.95**	**2.71**
508-250N	JM22†	1.00	2.40	2.27	**3.09**	**2.84**
508-120N	JM22-IE†	1.00	2.40	2.27	**2.99**	**4.13**
508-275N	JM24†	1.00	2.40	3.80	**3.89**	**3.58**
508-130N	JM42†	1.00	3.80	2.40	**4.65**	**4.28**
508-700N	HM	0.90	2.40	3.80	**3.79**	**3.49**
508-150N	HM-2AAA†	1.00	2.40	3.80	**3.99**	**3.67**
508-720N	HM-9VB	1.00	2.75	4.60	**3.99**	**3.67**
508-140N	HM-ET†	1.20	2.40	3.80	**4.75**	**4.37**
508-160N	HM-ET-9VB†	1.30	2.40	3.80	**5.20**	**4.78**
508-740N	HML	0.90	2.75	4.60	**4.29**	**3.95**
508-170N	HML-EB†	1.00	2.75	4.60	**4.85**	**4.46**
508-920N	HML-ET†	1.40	2.75	4.60	**5.75**	**5.29**
508-930N	HML-ET-9VB†	1.50	2.75	4.60	**6.75**	**6.21**

*Insert color where N appears in Stock No. — 1=Black, 2=PC Bone, 3=Tan, 4=Gray. †Available in Black and PC Bone only.

HP/HPL Series



HP-9VB



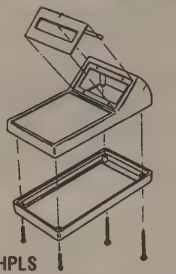
HR-9VB

The HP and HPL are ideally suited for 20" sq. to 30" sq. PCB applications. The series is a 2 piece assembly, consisting of top and bottom covers. **Additional Options Available:** Height expanders and belt clips.

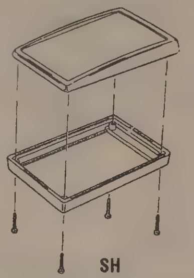
Stock No.*	Mfr.'s Type	Outside Dimensions (In.)			EACH	
		Height	Width	Length	1-24	25-Up
508-780N	HP	1.12	3.60	5.75	**6.55**	**6.03**
508-791N	HP-LP†	0.81	3.60	5.75	**6.23**	**5.73**
508-800N	HP-9VB	1.29	3.60	5.75	**7.42**	**6.83**
508-515N	HP-4AA†	1.29	3.60	5.75	**7.75**	**7.13**
508-840N	HPL	1.12	4.00	7.50	**9.48**	**8.72**
508-860N	HPL-9VB	1.29	4.00	7.50	**10.35**	**9.52**
508-520N	HPL-4AA†	1.29	4.20	5.75	**10.57**	**9.72**
508-122N	HR-9VB†	0.95	3.25	5.98	**7.42**	**6.83**

*Insert color where N appears in Stock No. — 1=Black, 2=PC Bone, 3=Tan, 4=Gray. †Available in Black and PC Bone only.

HPS/HPLS Series



HPLS



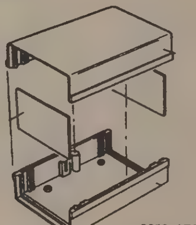
SH

For applications requiring 20"-30" sq. in PCB space. The HPS, HPLS and SH kits are composed of 3 pieces. The HP and HPLS include display panel. **Additional Options Available:** Expander piece for extra height, display panel bezels, belt clips and wrist straps.

Stock No.*	Mfr.'s Type	Outside Dimensions (In.)			EACH	
		Height	Width	Length	1-24	25-Up
508-820N	HPS	1.12/1.92	3.60	5.75	**9.64**	**8.87**
508-850N	HPS-LP†	0.81/1.61	3.60	5.75	**9.15**	**8.42**
508-830N	HPS-9VB	1.12/1.92	3.60	5.75	**10.50**	**9.66**
508-870N	HPS-4AA†	1.12/1.92	3.60	5.75	**10.83**	**9.96**
508-880N	HPLS	1.12/1.92	4.00	7.50	**10.35**	**9.52**
508-890N	HPLS-9VB	1.29/2.26	4.00	7.50	**11.21**	**10.31**
508-901N	HPLS-4AA†	1.29/2.26	4.00	7.50	**11.53**	**10.61**
508-109N	HPLS-48	1.73/2.56	4.17	8.50	**13.77**	**12.39**
508-516N	SH†	1.12	3.68	5.75	**6.55**	**6.03**
508-517N	SH-LP†	0.81	3.60	5.75	**6.23**	**5.73**
508-518N	SH-9VB†	1.29	3.60	5.75	**7.42**	**6.83**
508-519N	SH-4AA†	1.29	3.60	5.75	**7.75**	**7.13**

*Insert color where N appears in Stock No. — 1=Black, 2=PC Bone, 3=Tan, 4=Gray. †Available in Black and PC Bone only.

CM/EE Series



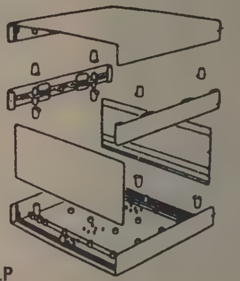
CM3-150

CM Series are suitable for PCB areas of 20" sq. to 70" sq. CM Series is composed of four pieces — top, bottom, front and rear panels. **Additional Options Available:** Bail stand, height expander strips and standard venting on top and bottom.

Stock No.*	Mfr.'s Type	Outside Dimensions (In.)			EACH	
		Height	Width	Length	1-24	25-Up
508-199N	CM3-100†	1.20	3.33	5.25	**9.29**	**8.55**
508-112N	CM3-150	1.75	3.33	5.25	**10.24**	**9.42**
508-123N	CM5-125	1.50	5.08	5.25	**10.62**	**9.77**
508-404N	CM5-200	2.25	5.08	5.25	**12.19**	**11.21**
508-405N	CM6-150	1.70	6.08	6.25	**13.40**	**12.33**
508-406N	CM6-225	2.50	6.08	6.25	**14.73**	**13.55**
508-400N	CM6-300	3.25	6.08	6.25	**16.09**	**14.80**
508-104N	CM6-X375	4.00	6.08	6.25	**18.50**	**17.02**
508-105N	CM6-X450	4.75	6.08	6.25	**19.98**	**18.38**
508-415N	CM59-135†	1.56	5.57	8.78	**15.98**	**9.70**
508-411N	CM69-120	1.38	6.33	9.50	**13.95**	**12.88**
508-412N	CM69-180	1.99	6.33	9.50	**15.95**	**14.67**
508-413N	CM69-240	2.59	6.33	9.50	**17.95**	**16.51**
508-408N	CM69-300†	3.20	6.08	6.25	**19.95**	**18.20**
508-102N	CM79-125†	1.25	7.45	9.36	**17.71**	**16.29**
508-416N	CM86-175†	2.00	8.08	6.25	**13.50**	**12.42**
508-407N	CM86-225	2.50	8.08	6.25	**14.95**	**13.75**
508-106N	CM86-X300	3.25	8.08	6.25	**20.52**	**18.88**
508-107N	CM86-X325	3.50	8.08	6.25	**21.14**	**19.45**
508-108N	CM86-X375	4.00	8.08	6.25	**21.80**	**20.06**
508-461N	EE59-135†	1.56	5.57	8.78	**15.98**	**14.70**

*Insert color where N appears in Stock No. — 1=Black, 2=PC Bone, 3=Tan, 4=Gray. †Available in Black and PC Bone only.

C and CL Series



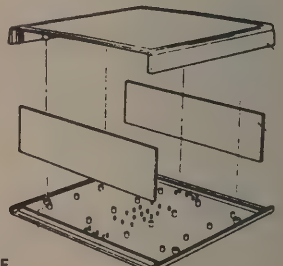
CLLP

C, CL and CLLP enclosures are modular units with expandable sides. By changing the side expanders, filler panels, spacers and panels, you can build more than 64 different models from a C, CL or CLLP unit. There are handles (H) and bail (B) variations for each basic case. **Additional Options Available:** Vents.

Stock No.*	Mfr.'s Type	Outside Dimensions (In.)			EACH	
		Height	Width	Length	1-24	25-Up
508-151N	C-23	2.40/3.69	8.50	9.25	**32.50**	**29.90**
508-103N	CB-23	2.40/3.69	8.50	9.25	**36.50**	**33.58**
508-100N	CH-23	2.40/3.69	8.50	9.25	**39.95**	**36.75**
508-200N	CL-45	4.50/5.76	12.50	11.63	**39.95**	**36.75**
508-203N	CLB-45	4.50/5.76	12.50	11.63	**43.50**	**40.02**
508-201N	CLH-45	4.50/5.76	12.50	11.63	**53.00**	**48.76**
508-600N	CLLP-34	3.50/4.26	12.50	11.63	**43.50**	**40.02**
508-610N	CLLPB-34	3.50/4.26	12.50	11.63	**46.50**	**42.78**
508-620N	CLLPH-34	3.50/4.26	12.50	11.63	**49.95**	**45.95**

*Insert color where N appears in Stock No. — 1=Black, 2=PC Bone; 3=Tan; 4=Gray. Available in all colors.

CF Series



CF

CF Series are composed of 4 pieces — top cover, bottom cover and 2 end panels. This series offers options which include: bail tilt stands, and a standard venting pattern. Additionally extra height expanders, which provide further .125", is available for all CF models. The series is best suitable for 76" sq. in PCB applications.

Stock No.*	Mfr.'s Type	Outside Dimensions (In.)			EACH	
		Height	Width	Length	1-24	25-Up
508-650N	CF-125	1.65	8.36	9.11	**19.98**	**18.38**
508-660N	CF-175	2.15	8.36	9.11	**20.98**	**19.30**
508-670N	CF-225†	2.65	8.36	9.11	**23.50**	**21.62**
508-680N	CF-275	3.45	8.36	9.11	**24.50**	**22.54**
508-690N	CF-325	3.65	8.36	9.11	**26.98**	**24.07**

*Insert color where N appears in Stock No. — 1=Black, 2=PC Bone, 3=Tan, 4=Gray. †Available in Black and PC Bone only.

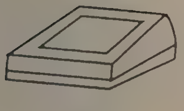
Electronic Enclosure Kits

PACTEC Corp.

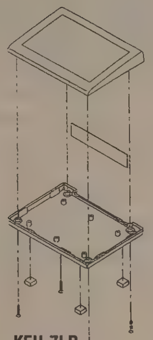
PacTec is the recognized leader in electronics packaging for technology. All enclosure kits are molded in medium impact, ABS, 94HB — 1/8" thick material. PacTec provides built in mounting features which save design and assembly steps and extra hardware. All standard kits are individually packaged and include all necessary component parts and all necessary assembly hardware to build a prototype unit. The standard kits are available in Black and PC Bone; Gray and Tan are available by request on some items. To order a desired color, insert the number of the color where the "N" appears in the Allied stock number — 1=Black; 2=PC Bone; 3=Tan and 4=Gray. All products are available in UL94 V-0 flame retardant material, and can be shielded for EMI/RFI. PacTec enclosures are easily and economically modified using our unique insert tooling methods, or machined secondarily by request as a special order. All PacTec products can be screen printed for custom identification, or have a custom membrane switch or overlay provided.

PacTec has released over 80 new models. PacTec is the company that originated the concept of standard plastic enclosure designs that can be modified and customized. PacTec offers expert design and packaging engineering assistance to help users obtain a custom appearance and special features, for a reasonable cost. Contact your local Allied representative for details and a copy of the latest PacTec Catalog.

KE/KEU Series



KEU-7/10



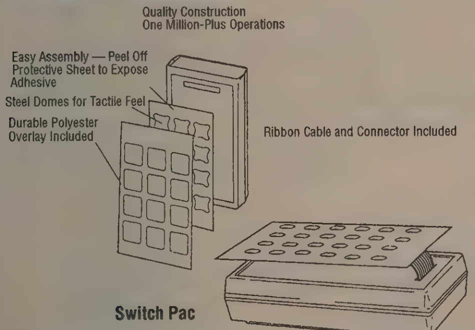
KEU-7LP

KE, KEU Sloped top stylized keyboard enclosures are composed of four pieces — top cover, bottom cover, aluminum keyboard panel and rear aluminum I/O panel. Newly designed 'LP' versions have a molded in, recessed keyboard panel and a matching color I/O panel in KJW 94 VO material.

Stock No.*	Mfr.'s Type	Outside Dimensions (In.)			EACH	
		Height	Width	Length	1-24	25-Up
508-153N	KEU-5LP	1.59	5.40	5.42	7.95	7.31
508-630N	KEU-7	3.10	7.00	5.00	14.95	13.75
508-210N	KEU-7LP†	2.60	7.00	5.00	9.95	9.15
508-640N	KEU-10	4.20	10.00	8.03	24.95	22.95
508-124N	KEU-10LP†	2.70	10.00	8.03	12.95	11.91
508-114N	KE-12†	2.79	12.08	8.68	13.50	12.42
508-131N	KE-17†	2.79	17.08	8.68	29.95	27.55
508-141N	KE-20	2.79	20.08	8.68	35.50	32.66

*Insert color where N appears in Stock No. — 1=Black, 2=PC Bone. †Available in Black and PC Bone only.

Switch Pac Series


Quality Construction
One Million-Plus Operations
Easy Assembly — Peel Off Protective Sheet to Expose Adhesive
Steel Domes for Tactile Feel
Durable Polyester Overlay Included
Ribbon Cable and Connector Included

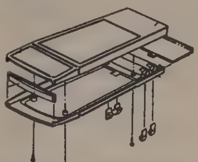
Switch Pac

Switch Pacs include 1 enclosure with 9VB compartment, standard membrane switch with ribbon connector, blank overlay, and a user diagram. Membrane switches utilize a durable steel dome design for tactile feel, and are made to withstand one million operations. Switches include flexible ribbon cable and connector. The polyester overlay is ready for you to create switch legends, graphics, transfer type, screen printing, typewriting or hand printing. Custom printed overlays and switches are available through Allied.

Stock No.*	Mfr.'s Type	Outside Dimensions (In.)			EACH	
		Height	Width	Length	1-24	25-Up
508-5001	K-HM-9VB-SP	1.95	3.34	3.34	15.50	14.26
508-154N	K-HML-9VB-SP	3.34	3.50	1.95	19.63	18.06
508-162N	K-HP-9VB-SP	5.23	4.60	3.08	25.81	23.75
508-1711	K-HPS-9VB-SP	3.08	3.08	3.08	29.10	26.77
508-1811	K-HPLS-9VB-SP	.48	4.28	4.28	29.70	27.32
508-115N	K-HPL-9VB-SP	3.48	6.98	6.98	29.90	27.51
508-116N	K-RC24-9VB-SP	2.11	3.93	3.93	17.10	15.73
508-121N	K-RC37-2AA-SP	2.33	3.98	3.98	19.63	18.06

*Insert color where N appears in Stock No. — 1=Black, 2=PC Bone. Available in Black only.

WM/RC Series



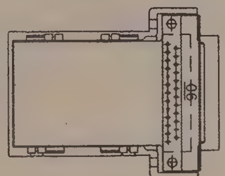
RC37-2AA

The RC unit is a low profile, hand held device with a ruby lens for remote control type applications. The RC unit consists of 3 pieces — top and bottom cover, standard front panel or ruby lens. The WM Series is a new vertical and horizontal wall mountable housing, snap together top with a recess for a display area.

Stock No.*	Mfr.'s Type	Outside Dimensions (In.)			EACH	
		Height	Width	Length	1-24	25-Up
508-142N	RC24-9VB	0.90	2.70	4.60	5.95	5.47
508-521N	RC37-2AA	0.80	2.75	6.50	5.95	5.47
508-164N	RCS24-9VB-2AA	0.90	2.50	4.60	8.30	7.64
508-143N	RF37	5.83	2.95	6.77	6.55	6.03
508-163N	WM46	1.00	5.25	3.75	6.95	4.85

*Insert color where N appears in Stock No. — 1=Black, 2=PC Bone. Available in Black and PC Bone only.

CN Series — Snap Together



Connector/Interface housings feature top and bottom covers that snap together, molded-in connector openings, and customization options for top, bottom, sides and ends. PacTec offers 27 variations of these standard connector enclosures. The height for the body of the housings is .080", the body width is 1.67" and the length varies depending on end.

Small 1.5" Center

Stock No.*	Mfr.'s Type	Standard Ends	EACH	
			1-24	25-Up
508-117N	CNS-0000	2 Blank ends	2.08	1.91
508-118N	CNS-0101	DB-9 — DB-9	2.08	1.91
508-119N	CNS-0103	DB-9 — DB-25	2.08	1.91
508-125N	CNS-0407	DB-9 w/ears – RJ-11/45	2.08	1.91
508-126N	CNS-0303	DB-25 — DB-25	2.08	1.91
508-127N	CNS-0607	DB-25 w/ears — RJ-11/45	2.08	1.91
508-128N	CNS-0307	DB-25 — RJ-11/45	2.08	1.91

Medium 2.0" Center

Stock No.*	Mfr.'s Type	Standard Ends	EACH 1-24	EACH 25-Up
508-135N	CNM-0000	2 Blank ends	2.13	1.96
508-136N	CNM-0101	DB-9 — DB-9	2.13	1.96
508-137N	CNM-0103	DB-9 — DB-25	2.13	1.96
508-138N	CNM-0407	DB-9 w/ears — RJ-11/45	2.13	1.96
508-139N	CNM-0303	DB-25 — DB-25	2.13	1.96
508-146N	CNM-0607	DB-25 w/ears — RJ-11/45	2.13	1.96
508-147N	CNM-0307	DB-25 — RJ-11/45	2.13	1.96

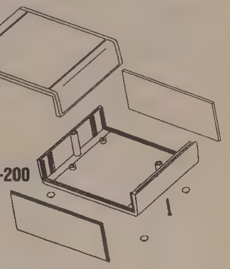
Long 2.5" Center

Stock No.*	Mfr.'s Type	Standard Ends	EACH 1-24	EACH 25-Up
508-157N	CNL-0000	2 Blank ends	2.18	2.01
508-158N	CNL-0101	DB-9 — DB-9	2.18	2.01
508-159N	CNL-0103	DB-9 — DB-25	2.18	2.01
508-168N	CNL-0407	DB-9 w/ears — RJ-11/45	2.18	2.01
508-169N	CNL-0303	DB-25 — DB-25	2.18	2.01
508-173N	CNL-0607	DB-25 w/ears — RJ-11/45	2.18	2.01
508-174N	CNL-0307	DB-25 — RJ-11/45	2.18	2.01

*Insert color where N appears in Stock No. — 1=Black, 2=PC Bone. Available in Black and PC Bone only.

LH Series

The LH Series features a low profile, light textured surface, rounded corners, radiused sides and flush panels. LH Series is composed of four pieces — top, bottom, front and rear panels. The LH is ideally suited for 13" sq. to 56" sq.

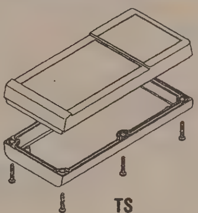


LH64-200

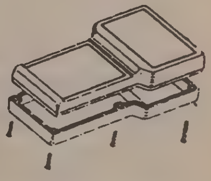
Stock No.*	Mfr.'s Type	Outside Dimensions (In.)			EACH	
		Height	Width	Length	1-24	25-Up
508-182N	LH43-100	1.00	3.08	4.07	5.95	5.47
508-183N	LH55-130	1.50	5.08	5.07	10.62	9.77
508-184N	LH55-200	2.25	5.08	5.07	12.19	11.21
508-185N	LH64-130	1.50	6.08	4.26	10.09	9.28
508-186N	LH64-200	2.25	6.08	4.26	11.58	10.65
508-187N	LH84-130	1.50	8.08	4.26	13.98	12.86
508-192N	LH84-200	2.25	8.08	4.26	15.98	14.70
508-193N	LH96-130	1.50	9.08	6.26	20.42	18.79
508-194N	LH96-200	2.25	9.08	6.26	22.10	20.33

*Insert color where N appears in Stock No. — 1=Black, 2=PC Bone. Available in Black and PC Bone only.

T Series — NEMA 4X



TS



TT

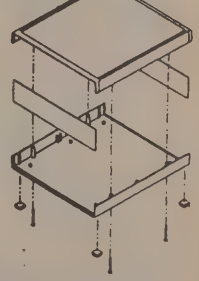
The T Series styles are 2 pieces — top and bottom cover. **Additional Options Available:** Provisions for 9VB and gasketing to NEMA 4X.

Stock No.*	Mfr.'s Type	Outside Dimensions (In.)			EACH	
		Height	Width	Length	1-24	25-Up
508-195N	TS	1.35	3.29	7.29	9.48	8.72
508-197N	TT	1.80	4.44/3.29	8.52	9.95	9.15

*Insert color where N appears in Stock No. — 1=Black, 2=PC Bone. †Available in Black and PC Bone only.

DM/CML Series

PacTec new larger enclosures offer high style and flexibility. The DM and CML Series are a four piece series, offering top and bottom covers, and 2 end panels. Handles and tilt bails are available. The handle version of the DM Series can be used as a tilt stand or for carrying.

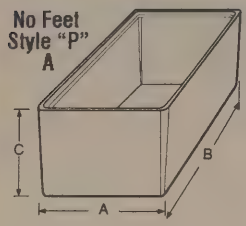


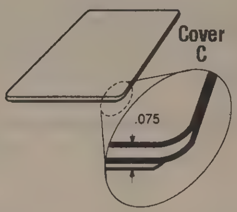
DM

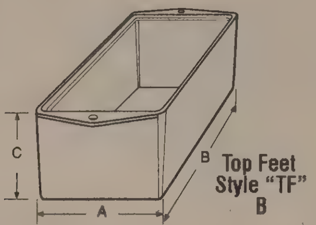
Stock No.*	Mfr.'s Type	Outside Dimensions (In.)			EACH	
		Height	Width	Length	1-24	25-Up
508-703N	DM-2	2.38	10.40	11.46	28.50	26.22
508-510N	DM-3	3.38	10.40	11.46	29.95	27.55
508-513N	DM-4	4.48	10.40	11.46	33.50	30.82
508-462N	CML912-200	2.25	9.33	11.80	25.50	23.46

*Insert color where N appears in Stock No. — 1=Black, 2=PC Bone. Available in Black and PC Bone only.

Textured Enclosures







- ► New Sizes Added
- ► Ideal for Potting and Encapsulating
- ► 2 Styles — Plain or Top Mounting Feet
- ► U/L 94V-0 Flame Retardant ABS
- ► Textured Finish
- ► Exact Fitting, Flush Mount Covers
- ► Stocked in Black

Boxes

Plain (A)		Top Feet (B)*		Size — Inches			EACH			
Stock No.	Mfr.'s Type	Stock No.	Mfr.'s Type	A	B	C	1-9	10-49	50-99	100
883-0915	P-1175TX	883-0421	TF-1175TX	1.000	1.00	0.75	.69	.58	.51	.42
883-0925†	P-1218TX	883-0934†	TF-1218TX	1.250	1.50	0.80	.80	.67	.59	.49
883-0900	P-1521TX	883-0905	TF-1521TX	1.500	2.00	1.00	.90	.76	.66	.55
883-0927†	P-1741TX	883-0936†	TF-1741TX	1.750	4.00	1.00	1.16	.96	.86	.72
883-0901	P-2215TX	883-0906	TF-2215TX	2.000	2.00	1.50	1.02	.87	.77	.63
883-0902	P-2309TX	883-0907	TF-2309TX	2.000	3.00	.90	1.13	.93	.83	.69
883-0903	P-2315TX	883-0908	TF-2315TX	2.000	3.00	1.50	1.27	1.06	.93	.78
883-0916	P-2420TX	883-0918	TF-2420TX	2.125	4.00	2.00	1.99	1.85	1.64	1.48
883-0904	P-3315TX	883-0909	TF-3315TX	3.000	3.00	1.50	1.72	1.43	1.25	1.04

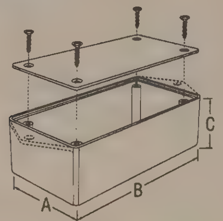
*There is no additional charge for the top feet style. †New sizes.

Covers (C)

Stock No.	Mfr.'s Type	Size — Inches		EACH			
		A	B	1-9	10-49	50-99	100
883-0917	C-0101-N	1.000	1.00	.36	.31	.26	.22
883-0926*	C-1201-N	1.250	1.50	.44	.38	.32	.27
883-0911	C-1502-N	1.500	2.00	.52	.45	.38	.32
883-0928*	C-1704-N	1.750	4.00	.68	.57	.49	.41
883-0912	C-0202-N	2.000	2.00	.60	.50	.43	.36
883-0913	C-0203-N	2.000	3.00	.66	.55	.47	.39
883-0919	C-0204-N	2.125	4.00	1.04	.86	.69	.57
883-0914	C-0303-N	3.000	3.00	.92	.78	.66	.55

*New sizes.

Select Series



- ► 2 Styles — Plain or Top Mounting Foot
- ► Includes Screw-On Cover and Hardware; Cover Is Close-Fitting Interlocking Design
- ► U/L 94V-0 Flame Retardant ABS
- ► Stocked In Black

Plain		Top Feet		Sizes — Inches			EACH			
Stock No.	Mfr.'s Type	Stock No.	Mfr.'s Type	A	B	C	1-9	10-49	50-99	100
883-1200	TS-1741P	883-1210	TS-1741TF	2.000	1.75	1.00	2.21	1.83	1.60	1.33
883-1202	TS-2309P	883-1212	TS-2309TF	3.000	2.00	0.90	2.11	1.75	1.53	1.27
883-1204	TS-2315P	883-1214	TS-2315TF	3.000	2.00	1.50	2.28	1.90	1.65	1.38
883-1206	TS-2420P	883-1216	TS-2420TF	2.125	4.00	2.00	3.12	2.61	2.25	1.88
883-1208	TS-3315P	883-1218	TS-3315TF	3.000	3.00	1.50	3.40	3.07	2.68	2.36

Bottom Foot Style

- ► Ideal for Potting and Encapsulating
- ► U/L 94V-0 Flame Retardant ABS
- ► Exact Fitting Covers, Glue-On
- ► Stocked in Black

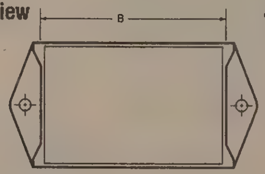
Boxes

Stock No.	Mfr.'s Type	Size — Inches			EACH			
		A	B	C	1-9	10-49	50-99	100
883-0422	BF-010175	1.00	1.00	.75	.76	.64	.55	.46
883-0432	BF-150201	1.50	2.00	1.00	.90	.76	.66	.55
883-0442	BF-020215	2.00	2.00	1.50	1.23	1.02	.91	.75
883-0452	BF-020315	2.00	3.00	1.50	1.43	1.20	1.06	.88
883-0462	BF-030315	3.00	3.00	1.50	1.91	1.67	1.47	1.22

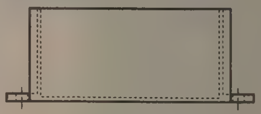
Covers

Stock No.	Mfr.'s Type	A	B	C	1-9	10-49	50-99	100
883-0470	C-0101	1.00	1.00	—	.36	.31	.26	.22
883-0471	C-1502	1.50	2.00	—	.52	.45	.38	.32
883-0472	C-0202	2.00	2.00	—	.60	.50	.43	.36
883-0473	C-0203	2.00	3.00	—	.66	.55	.47	.39
883-0474	C-0303	3.00	3.00	—	.92	.78	.66	.55

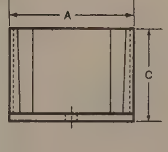
Top View



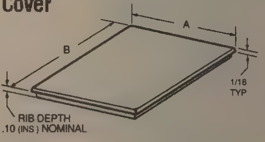
Side View

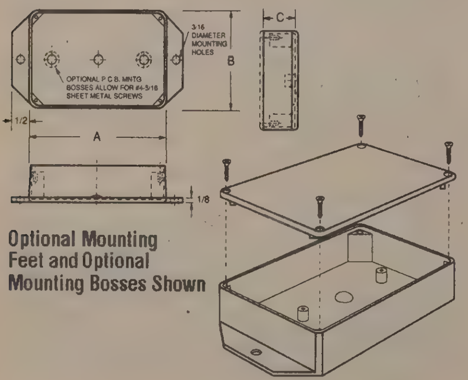


End View



Cover




3/16 DIAMETER MOUNTING HOLES
OPTIONAL P.C.B. MNTG BOSSES ALLOW FOR #4-5/16 SHEET METAL SCREWS
B
C
1/2
A
1/8

Optional Mounting Feet and Optional Mounting Bosses Shown

Low Profile Enclosures

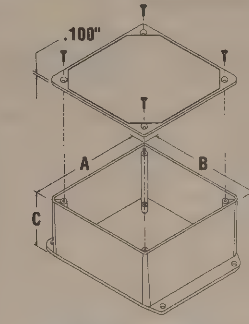
- ► New Items Added
- ► 3 Styles — with Molded-On Mounting Feet or without or with Internal P/C bd. Mounting Bosses and Feet
- ► U/L 94V-0 Flame Retardant ABS
- ► Screw-On Covers Included
- ► Textured Surface and Contemporary Low Profile Styling
- ► Standard Colors Are Black or Light Gray

Plain		Mounting Foot*		Mtg. Bosses and Feet		Sizes — Inches			EACH			
Stock No.	Mfr.'s Type	Stock No.	Mfr.'s Type	Stock No.	Mfr.'s Type	A	B	C	1-9	10-49	50-99	100
883-102N	LP-20	883-112N	LP-20F	883-122N†	LP-20FMB	3.250	2.375	1.080	2.59	2.42	2.33	2.20
883-103N	LP-30	883-113N	LP-30F	883-123N†	LP-30FMB	4.125	2.750	1.080	2.77	2.58	2.49	2.36
883-108N†	LP-35	883-118N†	LP-35F	883-128N†	LP-35FMB	4.250	3.000	1.375	3.30	3.08	2.96	2.80
883-1040	LP-40	883-114N	LP-40F	883-124N†	LP-40FMB	3.250	3.250	1.330	2.85	2.67	2.57	2.43
883-105N	LP-50	883-115N	LP-50F	883-125N†	LP-50FMB	4.500	3.250	1.330	3.36	3.14	3.02	2.86
883-109N†	LP-55	883-119N†	LP-55F	883-129N†	LP-55FMB	5.000	3.500	1.500	3.89	3.62	3.49	3.29
883-106N	LP-60	883-116N	LP-60F	883-126N†	LP-60FMB	5.500	3.750	1.330	3.90	3.63	3.51	3.31
883-107N	LP-70	883-117N	LP-70F	883-127N†	LP-70FMB	5.500	4.250	1.750	3.99	3.72	3.60	3.40

*Mtg. foot style slightly higher. **To Specify Color (In Place Of N):** Black — 0; light gray — 2. †New items. LPs 35, 55, 70 include mtg. bosses.

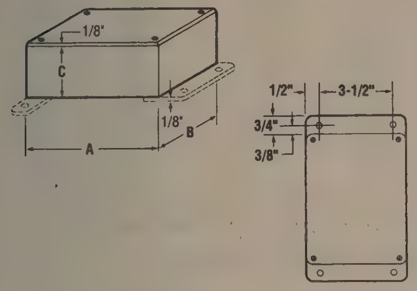
Designers Choice Enclosures

- ▶ 2 Styles — with Molded on Mounting Feet or Without Mounting Feet
- ▶ UL 94-5VA Flame Retardant ABS — Black Only
- ▶ UL 94 V-0 Flame Retardant ABS — Gray Only
- ▶ Heavy Duty Design, .100" Wall Thickness
- ▶ Screw-On Covers Included
- ▶ Brass Inserts for Unlimited Cover Removing and Refastening
- ▶ Textured Surface
- ▶ Covers Available with Smooth Recessed Area
- ▶ Standard Colors Are Black or Light Gray



Plain			Mounting Foot*			Sizes (In.)			EACH			
Stock No.		Mfr.'s Type	Stock No.		Mfr.'s Type							
Light Gray	Black		Light Gray	Black		A	B	C	1-9	10-49	50-99	100
883-2500	883-2520	DC-34	883-2540	883-2560	DC-34F	3.10	4.60	1.77	5.68	4.80	4.21	3.69
883-2505	883-2525	DC-44	883-2545	883-2565	DC-44F	4.60	4.60	2.25	6.22	5.25	4.64	4.06
883-2510	883-2530	DC-46	883-2550	883-2570	DC-46F	4.60	6.11	2.25	7.17	6.05	5.35	4.68
883-2515	883-2535	DC-47	883-2555	883-2575	DC-47F	4.60	7.61	2.25	8.60	7.33	6.43	5.65

*Mounting foot style slightly higher. Standard cover is textured. To order the smooth recessed cover add -R to the stock number. There is no additional charge for this option.



General Purpose Enclosures

- ▶ 4 Sizes — with or without Mounting Feet
- ▶ UL 94 V-0 Flame Retardant ABS
- ▶ Screw-On Covers Included
- ▶ Brass Inserts for Unlimited Cover Removing and Refastening
- ▶ Standard Color Is Black

Stock No.*	Mfr.'s Type	Sizes (In.)			EACH			
		A	B	C	1-9	10-49	50-99	100
883-0600	EP-6	4.50	3.00	1.75	5.51	4.66	4.09	3.58
883-0601	EP-7	4.50	4.50	2.25	6.04	5.10	4.50	3.94
883-0602	EP-8	6.00	4.50	2.25	6.96	5.87	5.19	4.54
883-0603	EP-9	7.50	4.50	2.25	8.35	7.12	6.24	5.49
883-1600	EP-6/F	4.50	3.00	1.75	6.64	5.79	5.01	4.50
883-1601	EP-7/F	4.50	4.50	2.25	7.16	6.23	5.42	4.86
883-1602	EP-8/F	6.00	4.50	2.25	8.09	7.00	6.11	5.46
883-1603	EP-9/F	7.50	4.50	2.25	9.48	8.25	7.16	6.42

*/F are with mounting feet.

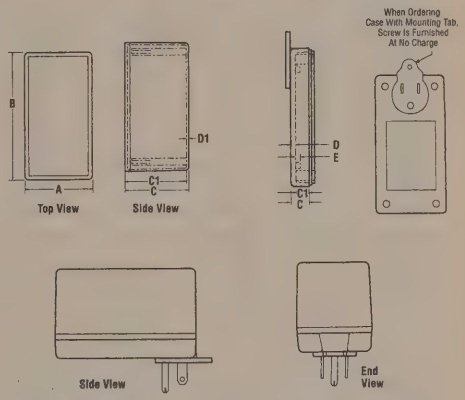
Versatile Power Supply Styled Plug-In Enclosures

- ▶ UL Recognized Component Listed
- ▶ Design Permits PCB to Be Soldered Directly to Blades and Ground Pin
- ▶ Choice of Textured (-T) or Recessed (-R) Top Surface
- ▶ Optional Hole in the Top Surface for Snap-In Female Receptacle -0, -1 or -2 For Number of Receptacle Holes
- ▶ Standard Color Is Black and P.C. Bone

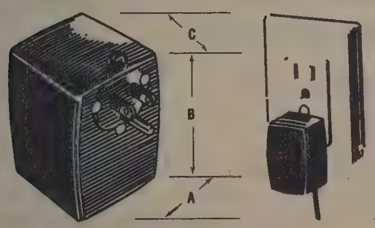
Stock No.		Mfr.'s Type	Sizes (In.)			EACH			
P.C. Bone	Black		A	B	C	1-9	10-49	50-99	100
883-2580	883-2585	PM-2425T-0-3X-WT	2.125	4.000	2.000	4.34	4.06	3.79	3.51
883-2587	883-2590	PM-2425R-0-3X-WT	2.125	4.000	2.000	4.34	4.06	3.79	3.51

Desktop Style

Stock No.	Mfr.'s Type	Sizes (In.)			EACH			
		A	B	C	1-9	10-49	50-99	100
883-2595	DT-2425T-0	2.125	4.000	2.000	3.67	3.39	3.20	3.00
883-3000	DT-2425R-0	2.125	4.000	2.000	3.67	3.39	3.20	3.00


When Ordering Case With Mounting Tab, Screw Is Furnished At No Charge
B
A
Top View
D1
C1
C
Side View
D
E
C1
C
Side View
End View

Universal Plug-In Modules

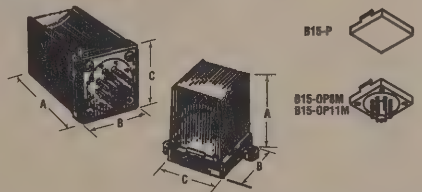


- ▶ ABS CYCOLAC® Flame Retardant Material (UL 94 V-0)
- ▶ UL Recognized Components
- ▶ 2 or 3 Pole Grounded Base
- ▶ Easily Drilled or Punched

Stock No.*	Mfr.'s Type	Sizes (In.)			EACH			
		A	B	C	1-9	10-49	50-99	100
883-0500	M-0202-7	2.00	2.00	1.75	3.39	2.89	2.50	2.05
883-0505	M-0203-6	3.00	3.00	1.00	3.39	2.89	2.50	2.05
883-0510	M-0203-10	2.00	3.00	1.75	3.61	3.08	2.65	2.19
883-0515	M-0203-13	2.00	3.00	2.25	3.77	3.20	2.77	2.28

*All items come standard in black, but are available in beige from factory.

Type 15



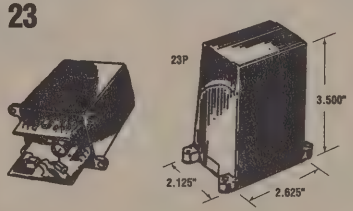
- ▶ 2 Styles — Plain or Mounting Feet
- ▶ 4 Standard Snap-In Bases
- ▶ Flame-Retardant 6/6 NYLON (UL 94 V-2)
- ▶ Internal Slots for PC Boards

Stock No.	Mfr.'s Type	Sizes (In.)			EACH			
		A	B	C	1-9	10-49	50-99	100
883-0010	15-F2	2.00	1.625	1.625	1.67	1.41	1.21	1.00
883-0020	15-P2	2.00	1.625	1.625	1.67	1.41	1.21	1.00
883-0030	15-F3	3.00	1.625	1.625	2.01	1.68	1.47	1.22
883-0040	15-P3	3.00	1.625	1.625	2.01	1.68	1.47	1.22

Plain and Plug Type Bases

Stock No.	Mfr.'s Type	Description	EACH			
			1-9	10-49	50-99	100
883-0050	B15-P	Plain Base	.53	.43	.38	.33
883-0060	B15-0P8M	8-Pin	1.74	1.44	1.25	1.20
883-0070	B15-0P11M	11-Pin	2.17	1.69	1.51	1.32

Type 23

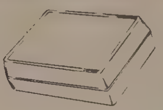


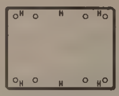
- ▶ Flame Retardant POLYPROPYLENE (UL 94 V-2)
- ▶ Internal Slots for PC Boards
- ▶ 6 Standard Bases

Stock No.	Mfr.'s Type	Enclosure Description	EACH			
			1-9	10-49	50-99	100
883-0220	23P	Plain	2.57	2.19	1.96	1.62

Stock No.	Mfr.'s Type	Base Description	EACH			
			1-9	10-49	50-99	100
883-0250	B23PH	Plain	.78	.64	.57	.47
883-0260	B230P-8	8-Pin	2.17	1.79	1.65	1.47
883-0270	B230P-11	11-Pin	2.45	1.91	1.77	1.59
883-0090	B23RP-12	12-Pin	3.36	2.77	2.49	2.05

S-Series Enclosures





Applications
- Industrial Test Equipment
- Computer Interface
- Field Measurement
- Industrial Control
- Telecommunications
- Prototype Enclosure

Options. I designates: A recessed top .015 typical to accept graphic or membrane labels and a user customization area.

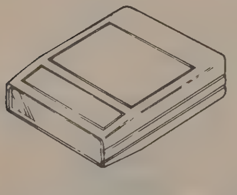
Features
- Hi-Impact ABS, 94HB
- 5 Standard Colors Black, Gray, Blue, White, Almond
- Circuit Board Bosses

Accessories
- Feet
- Prototyping Grid and Clad Board
- Pocket Clip
- Perimeter Seal (Not All Enclosures)

Stock No.*	Mfr.'s Type	Overall Dimensions			EACH
		W	L	H	
882-003X	031	3.250	4.380	0.910	5.42
882-203X	032	3.250	4.380	1.410	5.86
882-303X	033	3.250	4.380	1.910	6.18
882-X051	051	3.260	5.625	0.910	7.01
882-X052	052	3.260	5.625	1.410	7.58
882-X053	053	3.260	5.625	1.910	8.01
882-210X	071	4.890	6.895	0.920	9.89
882-310X	072	4.890	6.895	1.435	10.70
882-410X	073	4.890	6.895	1.925	11.27
882-530X	091	6.340	9.520	0.910	16.20
882-600X	093	6.340	9.500	1.910	16.20
882-X111	111	2.275	3.610	1.510	4.15
882-X112	112	2.290	3.640	2.015	4.44
882-X113	113	2.275	3.680	2.510	4.68
882-X131	131	3.250	4.380	1.510	5.42
882-X132	132	3.250	4.380	2.010	5.86
882-X133	133	3.250	4.380	2.510	6.18
882-X151	151	3.260	5.630	1.505	7.01
882-X152	152	3.260	5.630	2.005	7.58
882-X153	153	3.260	5.630	2.500	8.01
882-X171	171	4.885	6.885	1.510	9.89
882-X172	172	4.885	6.885	2.025	10.70
882-X173	173	4.885	6.885	2.520	11.27
882-X191	191	6.340	9.500	1.510	16.20
882-602X	193	6.340	9.500	2.505	18.63
882-X163	031-I	3.250	4.380	0.910	5.42
882-X054	051-I	3.260	5.625	0.910	7.01
882-X164	071-I	4.890	6.895	0.920	9.89
882-X165	072-I	4.890	6.895	1.435	10.70
882-X166	073-I	4.890	6.895	1.925	11.27
882-X167	091-I	6.340	9.520	0.910	16.20
882-601X	093-I	6.340	9.500	1.910	16.20
882-X110	110-I	2.275	3.620	1.010	3.51
882-X141	131-I	3.250	4.380	1.510	5.42
882-X121	151-I	3.260	5.630	1.505	7.01
882-X161	171-I	4.885	6.885	1.510	9.89
882-X162	172-I	4.885	6.885	2.025	10.70
882-X168	173-I	4.885	6.885	2.520	11.27
882-603X	182-I	5.960	13.960	2.010	18.63
882-X169	191-I	6.340	9.500	1.510	16.20

Insert color where X appears in Stock No.: 0=Gray, 1=Black, 2=White, 3=Almond, 4=Blue.

M-Series Enclosures



Features
- Interlocking Assembly
- Interchangeable Front Panel
- Battery Access
- Durable ABS UL 94HB
- 5 Standard Colors Black, Gray, Blue, White, Almond

Accessories
- Clear Front Panel
- Transparent Red Panel
- Infrared Front Panel

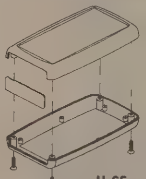
Stock No.*	Mfr.'s Type	Overall Dimensions			EACH
		W	L	H	
882-X042	M-4	2.200	2.800	0.710	6.88
882-X058	M-6	2.400	4.155	0.860	8.68
882-X060	M-8	2.400	6.974	0.860	10.42

*Insert color where X appears in Stock No.: 0=Gray, 1=Black, 2= White, 3=Almond, 4=Blue.

H-Series Enclosures

— NEW —

- Infrared or Clear Face Plate Options
- Dedicated 9 V or AA Battery Compartment
- Clam Shell with Access Panel
- Clam Shell Only
- 5 Standard Colors: Black, Gray, Almond
- Hi-Impact ABS, 94HB

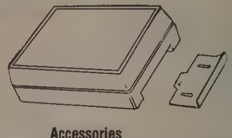


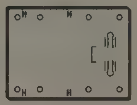
H-65

Stock No.*	Mfr.'s Type	Description	Overall Dimensions			EACH
			W	L	H	
882-060X	H-65	Clam shell only	2.75	4.94	0.94	9.99
882-062X	H-65,9V	With 9 V battery compartment	2.75	4.94	0.94	9.99
882-061X	H-65,AA	With AA battery compartment	2.75	4.94	0.94	9.99
882-063X	H-65,AC	With access door (no battery compartment)	2.75	4.94	0.94	9.99

*Insert color where X appears in Stock No.: 0=Gray, 1=Black, 3=Almond.

S-Series Enclosures — 9 Volt





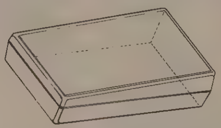
Applications
- Industrial Test Equipment
- Computer Interface
- Field Measurement
- Industrial Control
- Telecommunications
- Prototype Enclosure

Features
- Hi-Impact ABS, 94HB
- 5 Standard Colors Black, Gray, Blue, White, Almond
- Circuit Board Bosses

Accessories
- Perimeter Seal
- Grid and Clad Prototyping Circuit Boards
- Press In Feet
- Pocket Clip

Stock No.*	Mfr.'s Type	Overall Dimensions			EACH
		W	L	H	
882-X211	211	2.610	4.115	1.510	5.18
882-X231	231	3.250	4.380	1.515	6.47
882-X232	232	3.250	4.380	2.015	6.88
882-X233	233	3.250	4.380	2.515	7.21
882-X251	251	3.250	5.635	1.510	8.05
882-X252	252	3.250	5.635	2.015	8.62
882-X253	253	3.250	5.635	2.515	9.03
882-X271	271	4.880	6.876	1.510	10.91
882-X272	272	4.880	6.876	2.020	11.72
882-X273	273	4.880	6.876	2.515	11.94
882-X274	211-I	2.610	4.115	1.525	5.18
882-X321	231-I	3.250	4.380	1.515	6.47
882-X521	251-I	3.250	5.635	1.510	8.05
882-X721	271-I	4.880	6.876	1.510	10.91
882-X275	272-I	4.880	6.876	2.020	11.72
882-X276	273-I	4.880	6.876	2.515	11.94

*Insert color where X appears in Stock No.: 0=Gray, 1=Black, 2=White, 3=Almond, 4=Blue.



Slant-Series Enclosures

Features
- Hi-Impact ABS, 94HB
- 5 Standard Colors Black, Gray, Blue, White, Almond
- Circuit Board Bosses

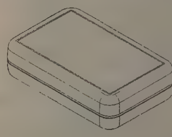
Stock No.*	Mfr.'s Type	Overall Dimensions			EACH
		W	L	H	
882-X055	05-S	3.260	5.635	0.900	7.01
882-X077	07-S	4.880	6.895	1.865	12.84
882-X056	15-S	3.260	5.635	1.500	7.01
882-604X	17-S	4.885	6.885	2.450	12.84

Slant 9-V Series Enclosures

882-X057	25-S	3.250	5.635	1.500	8.05
882-X509	27-S	4.880	6.876	2.450	14.52

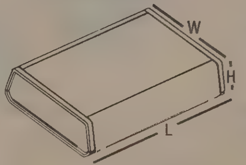
*Insert color where X appears in Stock No.: 0=Gray, 1=Black, 2=White, 3=Almond, 4=Blue.

C-Series Enclosures



Applications
- Security
- Personal Communications
- Computer Interface
- Field Measurement
- Industrial Control
- Telecommunications
- Prototype Enclosure

882-610X. Model C-4. 1.375 × 2.125 × 0.580. (L × W × H) .... **EACH 2.81**
882-620X. Model C-6. 1.613 × 2.263 × 0.753. (L × W × H) .... **EACH 2.81**
882-630X. Model C-8. 1.850 × 2.400 × 0.925. (L × W × H) .... **EACH 2.81**



A-Series Enclosures

- Clam Shell
- Interchangeable End Panels
- Hi-Impact ABS, 94HB
- Colors: Black, Gray, Almond

Accessories
- Press on Feet
- Infrared Panels
- Transparent Red Panels
- Aluminum Panels
- 9 V Access Panels

A-Series

Stock No.*	Mfr.'s Type	Overall Dimensions			EACH
		W	L	H	
882-430X	A-20	2.600	4.250	0.875	5.89
882-002X	A-21	2.600	4.250	1.125	6.10
882-007X	A-27	3.350	5.310	1.500	12.84
882-008X	A-31	5.100	5.300	1.710	12.84
882-009X	A-41	5.000	7.100	1.300	14.70
882-420X	A-42	5.000	7.100	1.620	16.54

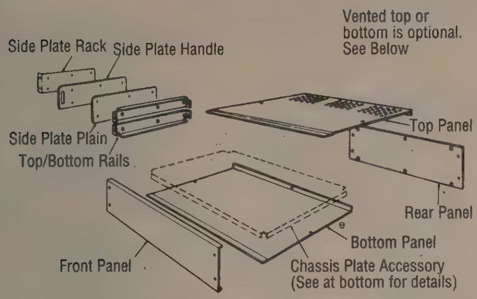
A-Series 9V

882-500X	A-219V	2.600	4.250	1.125	7.80
882-501X	A-279V	3.350	5.310	1.500	14.52
882-502X	A-319V	5.100	5.300	1.710	14.52
882-503X	A-419V	5.000	7.100	1.300	16.20
882-504X	A-429V	5.000	7.100	1.620	18.82

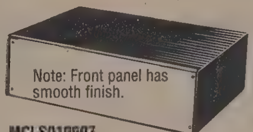
*Insert color where X appears in Stock No.: 0=Gray, 1=Black, 3=Almond.

Need Larger Quantity Prices? Call 1-800-433-5700 For Prompt Handling

PFT Features



- ▶ .062 Aluminum Chassis/.125 Aluminum Side Panels
- ▶ Texture Finish
- ▶ Knockdown Construction
- ▶ Accessibility to Internal Components
- ▶ Replacement Parts Available
- ▶ Modularity Allows For Ease of Modifications
- ▶ Chassis Consists of One Front Panel, One Rear Panel, One Top Panel, One Bottom Panel, Four/Top Bottom Rails, and Hardware.


Note: Front panel has smooth finish.

MCLS010907

Standard Colors

Color Exterior, Rear Panels	Color Code	Fed. Std.
Dark Grey	(C)	595A-26081
Sky Blue*	(B)	595A-25109
Black	(A)	595A-27038
Tan	(T)	595A-23448
Royal Blue	(R)	595A-25045
Front Panels		
Light Grey	(G)	595A-26493
Off White*	(W)	595A-27722
Tan	(T)	595A-23448
Black	(A)	595A-27038
Ash White	(H)	595A-26622

*Sky Blue and Off White in Allied stock; other standard colors from factory slight lead time.

Mod-U-Line Cabinet Less Sides (MCLS)

1 Inch MCLS

Stock No.*	Mfr.'s Type	Size			Matching Panel	EACH		
		H(")	W(")	D(")		1-9	10-24	25-Up
724-1000	MCLS010907BW	$1\frac{9}{16}$	$8\frac{5}{8}$	$6\frac{7}{8}$	A	38.70	34.85	31.35
724-1001	MCLS011707BW	$1\frac{9}{16}$	$16\frac{5}{8}$	$6\frac{7}{8}$	A	42.25	38.05	34.25
724-1002	MCLS011709BW	$1\frac{9}{16}$	$16\frac{5}{8}$	$8\frac{7}{8}$	B	44.20	39.80	35.80
2 Inch MCLS								
724-1003	MCLS020809BW	$2\frac{7}{16}$	$8\frac{3}{16}$	$8\frac{7}{8}$	C	37.00	33.30	30.00
724-1004	MCLS021709BW	$2\frac{7}{16}$	$16\frac{5}{8}$	$8\frac{7}{8}$	C	51.65	46.50	41.85
724-1005	MCLS021712BW	$2\frac{7}{16}$	$16\frac{5}{8}$	$11\frac{7}{8}$	D	55.05	49.55	44.60
3 Inch MCLS								
724-1006	MCLS030707BW	$3\frac{5}{16}$	$6\frac{5}{8}$	$6\frac{7}{8}$	E	38.30	34.50	31.05
724-1007	MCLS030907BW	$3\frac{5}{16}$	$8\frac{5}{8}$	$6\frac{7}{8}$	E	38.45	34.60	31.15
724-1008	MCLS030909BW	$3\frac{5}{16}$	$8\frac{5}{8}$	$8\frac{7}{8}$	F	40.30	36.30	32.65
724-1009	MCLS031207BW	$3\frac{5}{16}$	$11\frac{5}{8}$	$6\frac{7}{8}$	E	42.35	38.15	34.30
724-1010	MCLS031209BW	$3\frac{5}{16}$	$11\frac{5}{8}$	$8\frac{7}{8}$	F	44.40	40.00	36.00
724-1011	MCLS031212BW	$3\frac{5}{16}$	$11\frac{5}{8}$	$11\frac{7}{8}$	G	47.45	42.70	38.45
724-1012	MCLS031707BW	$3\frac{5}{16}$	$16\frac{5}{8}$	$6\frac{7}{8}$	E	47.85	43.10	38.75
724-1013	MCLS031709BW	$3\frac{5}{16}$	$16\frac{5}{8}$	$8\frac{7}{8}$	F	49.20	44.30	39.85
724-1014	MCLS031712BW	$3\frac{5}{16}$	$16\frac{5}{8}$	$11\frac{7}{8}$	G	55.40	49.90	44.90
724-1015	MCLS031714BW	$3\frac{5}{16}$	$16\frac{5}{8}$	$13\frac{7}{8}$	H	59.50	53.55	48.20
5 Inch MCLS								
724-1016	MCLS050707BW	$5\frac{5}{16}$	$6\frac{5}{8}$	$6\frac{7}{8}$	J	39.05	35.15	31.65
724-1017	MCLS050907BW	$5\frac{5}{16}$	$8\frac{5}{8}$	$6\frac{7}{8}$	J	40.05	36.05	32.45
724-1018	MCLS050909BW	$5\frac{5}{16}$	$8\frac{5}{8}$	$8\frac{7}{8}$	K	41.90	37.75	33.95
724-1019	MCLS050912BW	$5\frac{5}{16}$	$8\frac{5}{8}$	$11\frac{7}{8}$	M	44.40	40.00	36.00
724-1020	MCLS051207BW	$5\frac{5}{16}$	$11\frac{5}{8}$	$6\frac{7}{8}$	J	45.10	40.60	36.55
724-1021	MCLS051209BW	$5\frac{5}{16}$	$11\frac{5}{8}$	$8\frac{7}{8}$	K	47.65	42.90	38.60
724-1022	MCLS051212BW	$5\frac{5}{16}$	$11\frac{5}{8}$	$11\frac{7}{8}$	M	49.55	44.60	40.15
724-1023	MCLS051707BW	$5\frac{5}{16}$	$16\frac{5}{8}$	$6\frac{7}{8}$	J	49.55	44.60	40.15
724-1024	MCLS051709BW	$5\frac{5}{16}$	$16\frac{5}{8}$	$8\frac{7}{8}$	K	53.35	48.20	43.40
724-1025	MCLS051712BW	$5\frac{5}{16}$	$16\frac{5}{8}$	$11\frac{7}{8}$	M	62.45	56.20	50.60
724-1026	MCLS051714BW	$5\frac{5}{16}$	$16\frac{5}{8}$	$13\frac{7}{8}$	N	64.30	57.90	52.10
7 Inch MCLS								
724-1027	MCLS070912BW	$6\frac{13}{16}$	$8\frac{5}{8}$	$11\frac{7}{8}$	Q	51.05	45.95	41.35
724-1028	MCLS071209BW	$6\frac{13}{16}$	$11\frac{5}{8}$	$8\frac{7}{8}$	P	52.85	47.60	42.80
724-1029	MCLS071212BW	$6\frac{13}{16}$	$11\frac{5}{8}$	$11\frac{7}{8}$	Q	60.20	54.20	48.80
724-1030	MCLS071709BW	$6\frac{13}{16}$	$16\frac{5}{8}$	$8\frac{7}{8}$	P	60.80	54.75	49.25
724-1031	MCLS071712BW	$6\frac{13}{16}$	$16\frac{5}{8}$	$11\frac{7}{8}$	Q	69.20	62.30	56.05
724-1032	MCLS071714BW	$6\frac{13}{16}$	$16\frac{5}{8}$	$13\frac{7}{8}$	R	72.75	65.50	58.95
8 Inch MCLS								
724-1033	MCLS081712BW	$8\frac{9}{16}$	$16\frac{5}{8}$	$11\frac{7}{8}$	S	80.15	72.15	64.95
724-1034	MCLS081714BW	$8\frac{9}{16}$	$16\frac{5}{8}$	$11\frac{7}{8}$	T	87.40	78.70	70.80
10 Inch MCLS								
724-1035	MCLS101714BW	$10\frac{9}{16}$	$16\frac{5}{8}$	$13\frac{7}{8}$	V	92.85	83.60	75.20

*Allied stocks sky blue with white front panels only.

Mod-U-Line Side Panels (Priced As Pairs)

NOTE: Must be specified with the cabinet at left.

Stock No.*	Mfr.'s Type	Panel Type	Fits Cabinet	PER PAIR		
				1-9	10-24	25-Up
724-1036	SPP0107B	Plain	A	10.95	9.85	8.90
724-1037	SPR0107B	Rack	A	11.45	10.30	9.30
724-1038	SPP0109B	Plain	B	12.15	10.95	9.85
724-1039	SPR0109B	Rack	B	11.45	10.30	9.30
724-1040	SPP0209B	Plain	C	12.90	11.65	10.45
724-1041	SPR0209B	Rack	C	13.65	12.30	11.05
724-1042	SPP0212B	Plain	D	16.30	14.70	13.20
724-1043	SPR0212B	Rack	D	16.90	15.20	13.70
724-1044	SPP0307B	Plain	E	12.70	11.45	10.30
724-1045	SPH0307B	Handle	E	13.65	12.30	11.05
724-1046	SPR0307B	Rack	E	13.20	11.90	10.70
724-1047	SPP0309B	Plain	F	14.05	12.60	11.35
724-1048	SPH0309B	Handle	F	16.05	14.45	13.00
724-1049	SPR0309B	Rack	F	15.30	13.80	12.40
724-1050	SPP0312B	Plain	G	18.80	16.95	15.25
724-1051	SPH0312B	Handle	G	19.85	17.90	16.10
724-1052	SPR0312B	Rack	G	19.15	17.25	15.55
724-1053	SPR0314B	Plain	H	20.35	18.35	16.50
724-1054	SPH0314B	Handle	H	20.70	18.65	16.80
724-1055	SPR0314B	Rack	H	20.35	18.35	15.55
724-1056	SPP0507B	Plain	J	15.70	14.15	12.75
724-1057	SPH0507B	Handle	J	16.10	14.50	13.05
724-1058	SPR0507B	Rack	J	16.30	14.70	13.20
724-1059	SPP0509B	Plain	K	18.15	16.35	14.70
724-1060	SPH0509B	Handle	K	18.75	16.90	15.20
724-1061	SPR0509B	Rack	K	19.00	17.10	15.40
724-1062	SPP0512B	Plain	M	23.60	21.25	19.15
724-1063	SPH0512B	Handle	M	25.30	22.80	20.50
724-1064	SPR0512B	Rack	M	24.45	22.00	19.80
724-1065	SPP0514B	Plain	N	25.15	22.65	20.40
724-1066	SPH0514B	Handle	N	26.40	23.80	21.40
724-1067	SPR0514B	Rack	N	26.85	24.20	21.75
724-1068	SPP0709B	Plain	P	21.40	19.30	17.35
724-1069	SPH0709B	Handle	P	24.45	22.00	19.80
724-1070	SPR0709B	Rack	P	21.50	19.35	17.45
724-1071	SPP0712B	Plain	Q	29.00	26.10	23.50
724-1072	SPH0712B	Handle	Q	31.25	28.15	25.35
724-1073	SPR0712B	Rack	Q	29.70	26.75	24.05
724-1074	SPP0714B	Plain	R	31.45	28.30	25.50
724-1075	SPH0714B	Handle	R	33.20	29.90	26.90
724-1076	SPR0714B	Rack	R	38.05	34.25	30.85
724-1077	SPP0812B	Plain	S	35.25	31.75	28.55
724-1078	SPH0812B	Handle	S	37.60	33.85	30.45
724-1079	SPR0812B	Rack	S	35.25	31.75	28.55
724-1080	SPP0814B	Plain	T	39.40	35.50	31.95
724-1081	SPH0814B	Handle	T	43.05	38.75	34.90
724-1082	SPR0814B	Rack	T	40.25	36.25	32.60
724-1083	SPP1014B	Plain	V	46.85	42.20	37.95
724-1084	SPH1014B	Handle	V	50.65	45.60	41.05
724-1085	SPR1014B	Rack	V	47.80	43.05	38.75

*Stocked in sky blue only.

Mod-U-Line Venting

Moduline cabinets can be ordered with 3 venting options. Specify a vented top panel use part number suffix "**VT**". Use "**VB**" to order an MCLS with vented bottom panel. When both top and bottom panels are to be vented, use suffix "**VTB**". In each case a 1" wide strip of ventilation holes .125" dia. on .25" centers is provided. Ventilation can be provided to customer specifications.

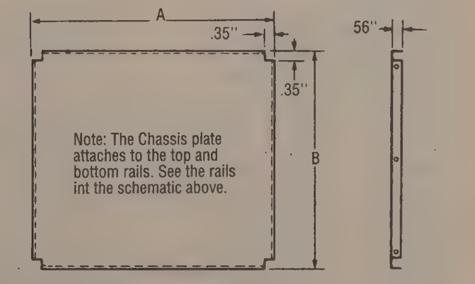
Modifications

PFT does a significant amount of modifications to its standard moduline chassis and modubox instrument cases.

- ▶ 25 Piece Min. Quantity
- ▶ Cut Outs, Rounds, Squares
- ▶ Connector Openings
- ▶ Press in Studs, Standoffs
- ▶ Weld in Studs, Standoffs
- ▶ Silkscreening
- ▶ Special Paint Capability
- ▶ Dimensional Changes
- ▶ Lead Times Generally 5-6 Weeks After Receipt of Order

Mod-U-Line Chassis Plates

Stock No.	Mfr.'s Type	A Width	B Length	EACH
724-1120	CP0707	6.63	5.12	12.10
724-1121	CP0809	8.19	7.12	12.10
724-1122	CP0907	8.63	5.12	13.65
724-1123	CP0909	8.63	7.12	14.45
724-1124	CP0912	8.63	10.12	18.70
724-1125	CP1207	11.63	5.12	16.00
724-1126	CP1209	11.63	7.12	18.70
724-1127	CP1212	11.63	10.12	23.50
724-1128	CP1707	16.63	5.12	18.05
724-1129	CP1709	16.63	7.12	20.70
724-1130	CP1712	16.63	10.12	23.85
724-1131	CP1714	16.63	12.12	26.15



Note: The Chassis plate attaches to the top and bottom rails. See the rails int the schematic above.

NOTE: The chassis plate is typically used as a substrate to mount power supplies and printed circuit boards.

PFT, Inc. manufactures economical, high-quality desk top and wall mount cabinets, vertical enclosures, chassis products, small instrument boxes, and a variety of data comm products.

PFT has the capability to complete modifications, including hole punching, silkscreening, or size changes. Modifications can be completed on quantities as few as 25 pieces.

Cable Management Rack

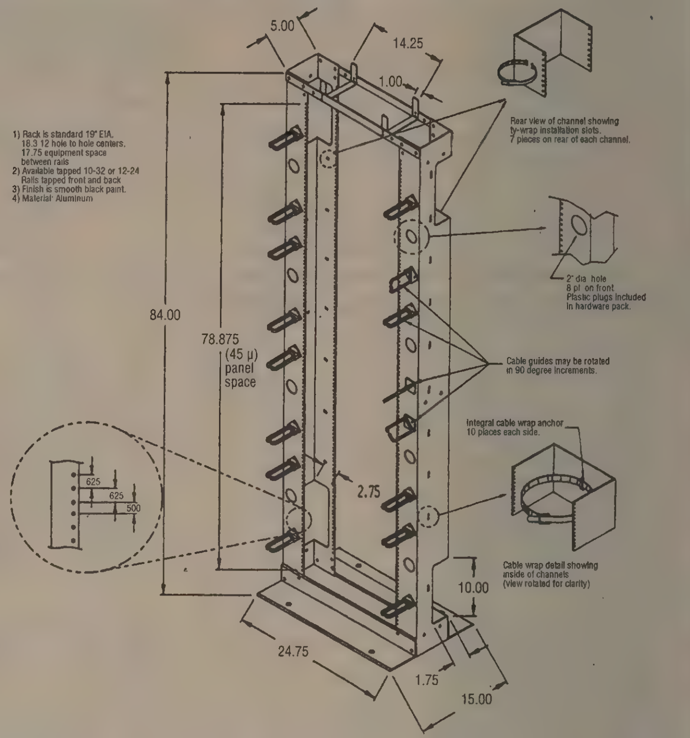
- **Drilled and Tapped with 10/32" or 12/24" Mounting Holes per EIA Universal Spacing on Both Front and Rear Flanges**
- **Designed for 19" Rack Equipment, 45 Rack Units in An Overall Height of 84 Inches**
- **All Aluminum construction with Black Polyurethane Finish**
- **Double Bolted Design at Front and Rear; Top and Bottom for Extra Rigidity and to Assure Squareness**
- **A PFT Proprietary Designed Hanger Which Allows for 45 Degree Rotation**
- **All Assembly Hardware Plus Accessory Pack that Includes: 20 Cable Ties, 16 Cable Hangers, 40 Cuphead Screws, Grommeting for Cutouts and Plastic Plugs for 2" Diameter Holes**
- **Lance Mechanism for Attaching Ties Inside the Channel**
- **Cable Tie Slots on Rear of Unit for Additional Cable Management Capability**
- **Large Round Cable Access Cutouts on Rear of Unit**
- **Round Cable Access Holes on Front of Unit**

Now available from PFT — a unique Cable Management Rack that combines all the attributes of a relay rack, raceway and cable routing into one complete unit. This rack features PFT's new proprietary cable management hanger, which is mountable in 45 degree increments.

This all aluminum Cable Management Rack allows mounting of a variety of standard 19" wide patch panels, hubs, concentrators and other data comm equipment in a single rack with built in cable ties, cable hangers and provisions for organized routing of wire and cable. Each rack is shipped knock down for exceptional freight savings in a single carton.

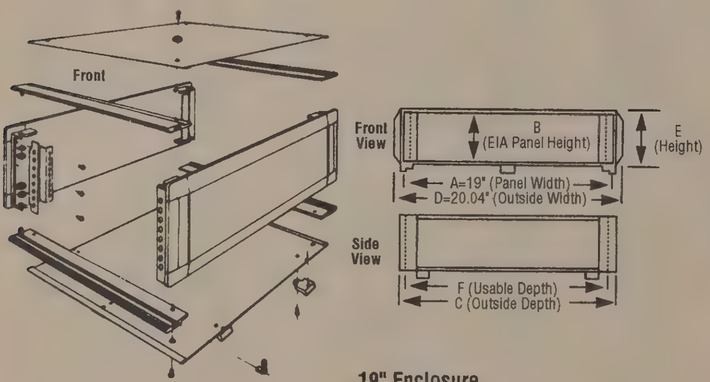
Model CMS1977A. 19" × 77" Cable Management Rack featuring 10/32" tapped mounting holes. **Finish:** black.
724Q3000. Model CMS1977A .... **EACH 312.15**

Model CMST1977A. 19" × 77" Cable Management Rack featuring 12/24" tapped mounting holes. **Finish:** black.
724Q3005. Model CMST1977A .... **EACH 312.15**

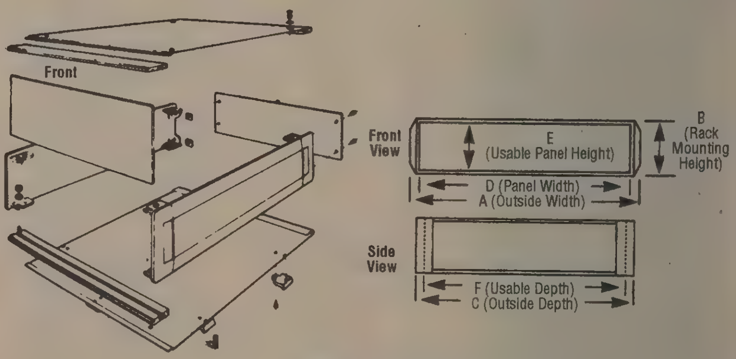

5.00
14.25
1.00
1) Rack is standard 19" EIA. 18.3 12 hole to hole centers. 17.75 equipment space between rails
2) Available tapped 10-32 or 12-24 Rails tapped front and back
3) Finish is smooth black paint.
4) Material: Aluminum
Rear view of channel showing ty-wrap installation slots. 7 pieces on rear of each channel.
2" dia hole 8 pl on front Plastic plugs included in hardware pack.
84.00
78.875 (45 µ) panel space
Cable guides may be rotated in 90 degree increments.
Integral cable wrap anchor 10 places each side.
625
625
500
2.75
Cable wrap detail showing inside of channels (view rotated for clarity)
10.00
24.75
1.75
15.00

VIP Mini Cab Series

— NEW —



19" Enclosure



6 Way Enclosure

ZERO PFT's VIP Series is ideal for housing electronic equipment and instrumentation. The VIP Series are available in many sizes and colors and can be customized by adding a variety of standard accessories. With the VIP Series, you'll have front office good looks, plus the durability you need for field and laboratory applications. All VIP Series are designed lightweight and strong, using die castings, extrusions and fabricated aluminum sections.

19" Enclosures

- **Self-Retracting Handles**
- **Shipped Pre-Assembled**
- **Top and Bottom Ventilation**
- **Tit Stands Optional**
- **UPS Shippable**

19" MiniCab Enclosure System with Formed Sides, Handles and Feet

Stock No.	Mfr.'s Type	Color	Dimensions (±0.031") A	B	C	D	E	F	EACH
724Q7101	190517-2-1	Two tone blue	19	5.25	17.9	20.04	6.03	17.2	**238.85**
724Q7105	190517-2-5	Black	19	5.25	17.9	20.04	6.03	17.2	**238.85**
724Q7100	190517-2-0	Off white	19	5.25	17.9	20.04	6.03	17.2	**238.85**
724Q7111	190817-2-1	Two tone blue	19	8.75	17.9	20.04	9.53	17.2	**256.75**
724Q7115	190817-2-5	Black	19	8.75	17.9	20.04	9.53	17.2	**256.75**
724Q7110	190817-2-0	Off white	19	8.75	17.9	20.04	9.53	17.2	**256.75**

6 Way Enclosures

- **3 Standard Colors Available**
- **Shipped Knocked-Down**
- **19" Rack Mount Options Available**

Chassis with Plain Sides, Less Handles

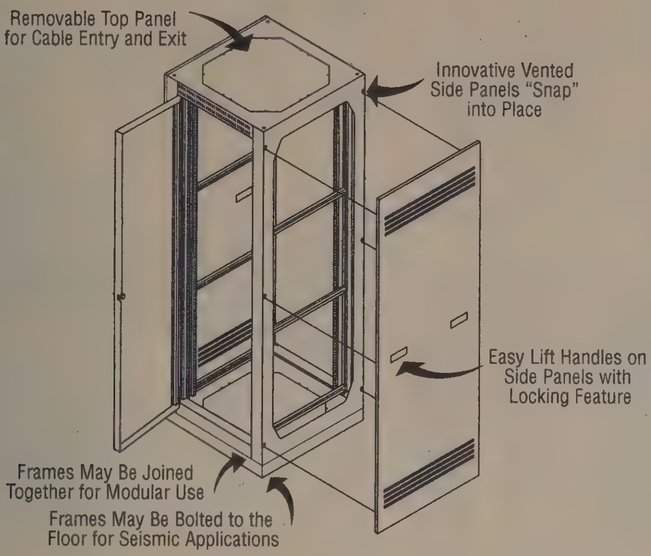
Stock No.*	Mfr.'s Type	Dimensions (±0.031") A	B	C	D	E	F	EACH
724-721N	170316-1	16.88	3.50	16.7	15.98	3.15	15.07	**193.55**
724-731N	170512-1	16.88	5.25	12.7	15.98	4.90	11.07	**193.55**
724-741N	170516-1	16.88	5.25	16.7	15.98	4.98	15.07	**196.75**
724-751N	170716-1	16.88	7.00	16.7	15.98	6.65	15.07	**200.15**
724-761N	170822-1	16.88	8.75	22.7	15.98	8.40	21.07	**218.00**

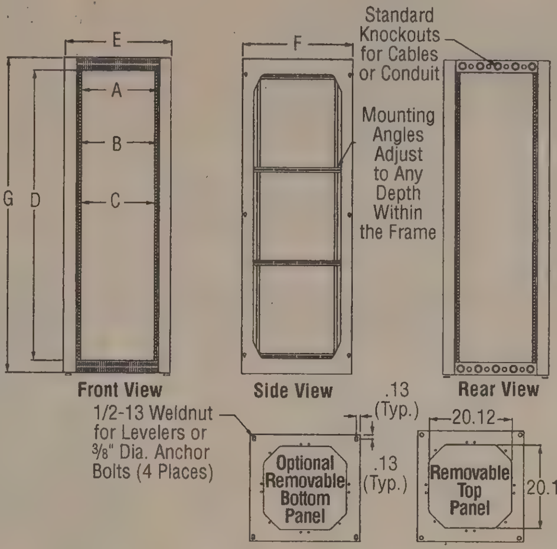
Chassis with Formed Sides and Handles

724-771N	170316-2	16.88	3.50	16.7	15.98	3.15	15.07	**224.00**
724-781N	170512-2	16.88	5.25	12.7	15.98	4.90	11.07	**224.00**
724-791N	170516-2	16.88	5.25	16.7	15.98	4.98	15.07	**227.75**
724-800N	170716-2	16.88	7.00	16.7	15.98	6.65	15.07	**230.60**
724-810N	170822-2	16.88	8.75	22.7	15.98	8.40	21.07	**248.85**

*Insert color where N appears in Stock No.: 1=Two tone blue, 5=Black, 0=Off white.

Express Racks


Removable Top Panel for Cable Entry and Exit
Innovative Vented Side Panels "Snap" into Place
Easy Lift Handles on Side Panels with Locking Feature
Frames May Be Joined Together for Modular Use
Frames May Be Bolted to the Floor for Seismic Applications


E
F
A
B
C
G
D
Standard Knockouts for Cables or Conduit
Mounting Angles Adjust to Any Depth Within the Frame
Front View
Side View
Rear View
1/2-13 Weldnut for Levelers or 3/8" Dia. Anchor Bolts (4 Places)
.13 (Typ.)
.13 (Typ.)
20.12
20.12
Optional Removable Bottom Panel
Removable Top Panel

- ► **Sturdy Welded Construction**
- ► **Additional Space Inside Frame Sides for Cabling**
- ► **12 Gauge Steel Equipment Mounting Angles Are Tapped with #10-32 Thread in E.I.A.RS 310-D Universal Pattern**
- ► **Locking Door with "Slam Latch" Provides Quick Access and Security**
- ► **Optional Panels with Fans, Vents or Conduit Knockouts Available**
- ► **Optional Caster Base Available in 12 Gauge Steel with 3" Casters**
- ► **Many Standard Optional PFT Accessories Fit the Express Rack**
- ► **Doors Can Easily Be Changed From Left to Right Opening with Quick-Release Pin Feature**
- ► **Available in Computer White or Black**
- ► **Estimated Shipping Weight: 220 Lbs.-270 Lbs.**

Express Rack Complete Package (XA1907025)

Each unit includes frame XA1907025 with 2 sets of adjustable mounting rails, solid top panel, 2 vented side panels, locking solid rear door, locking front plexiglass door and one set of leg levelers.

Stock No.	Mfr.'s Type	Color	Dimensions							EACH
			A	B	C	D	E	F	G	
724Q7025	XA1907025A	Black	19.125	18.313	17.813	70.063	25.75	26.75	76.263	**1020.45**
724Q7026	XA1907025I	Computer white	19.125	18.313	17.813	70.063	25.75	26.75	76.263	**1020.45**

Express Rack Complete Package (XA1907030)

Each unit includes frame XA1907030 with 2 sets of adjustable mounting rails, solid top panel, 2 vented side panels, locking solid rear door, locking front plexiglass door and one set of leg levelers.

724Q7030	XA1907030A	Black	19.125	18.313	17.813	70.063	25.75	31.75	76.263	**1054.50**
724Q7031	XA1907030I	Computer white	19.125	18.313	17.813	70.063	25.75	31.75	76.263	**1054.50**

Express Rack Complete Package (XA1907825)

Each unit includes frame XA1907825 with 2 sets of adjustable mounting rails, solid top panel, 2 vented side panels, locking solid rear door, locking front plexiglass door and one set of leg levelers.

724Q7825	XA1907825A	Black	19.125	18.313	17.813	78.813	25.75	26.75	85.013	**1056.25**
724Q7826	XA1907825I	Computer white	19.125	18.313	17.813	78.813	25.75	26.75	85.013	**1056.25**

Express Rack Complete Package (XA1907830)

Each unit includes frame XA1907830 with 2 sets of adjustable mounting rails, solid top panel, 2 vented side panels, locking solid rear door, locking front plexiglass door and one set of leg levelers.

Stock No.	Mfr.'s Type	Color	Dimensions							EACH
			A	B	C	D	E	F	G	
724Q7830	XA1907830A	Black	19.125	18.313	17.813	78.813	25.75	31.75	85.013	**1091.05**
724Q7831	XA1907830I	Computer white	19.125	18.313	17.813	78.813	25.75	31.75	85.013	**1091.05**

Accessories

724Q2519.	XCB2519A. Caster base with 4 casters	**EACH 149.15**
724Q2520.	XCB2519I. Caster base with 4 casters	**EACH 149.15**
724Q2521.	XCB3019A. Caster base with 4 casters	**EACH 168.50**
724Q2522.	XCB3019I. Caster base with 4 casters	**EACH 168.50**
724-5027.	ES1922SA. 22" D solid shelf (for 25" D unit)	**EACH 39.65**
724-2523.	ES1922SI. 22" D solid shelf (for 25" D unit)	**EACH 39.65**
724-5028.	ES1922PA. 22" D perf. shelf (for 25" D unit)	**EACH 47.80**
724-2524.	ES1922PI. 22" D perf. shelf (for 25" D unit)	**EACH 47.80**
724-2525.	ES1925SA. 25" D solid shelf (for 30" D unit)	**EACH 38.00**
724-2526.	ES1925SI. 25" D solid shelf (for 30" D unit)	**EACH 38.00**
724-2527.	ES1925PA. 25" D perf. shelf (for 30" D unit)	**EACH 47.35**
724-2528.	ES1925PI. 25" D perf. shelf (for 30" D unit)	**EACH 47.35**
724Q2529.	XTP2FA. Top panel with 2 fans	**EACH 140.10**
724Q2530.	XTP2FI. Top panel with 2 fans	**EACH 140.10**
724Q2531.	XTP4FA. Top panel with 4 fans	**EACH 166.50**
724Q2532.	XTP4FI. Top panel with 4 fans	**EACH 166.50**
724Q3558.	TS08201. CPU tower shelf kit	**EACH 215.65**

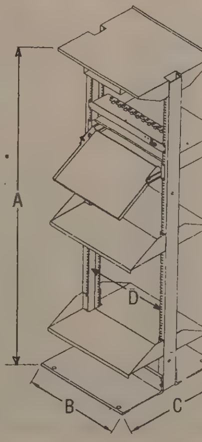
A=Black. I=Computer white.

Mod-U-Serv

Mod-U-Serv

- ► **Upright Channels are Drilled and Tapped with Universal EIA Spacing**
- ► **12-24 Tapped Mounting Holes**
- ► **23" Free Standing Base for Extra Stability**
- ► **Constructed of an Extruded Aluminum Base and Upright Channels with Steel Shelves**
- ► **Baked on Paint Finish**
- ► **Shipped Knockdown in One Carton**
- ► **Exceptional Freight Savings**
- ► **Organizes Servers or Towers**
- ► **Full Line of Accessories Available**
- ► **All Shelves Fully Adjustable**

Heavy duty extruded aluminum construction in a pre-designed configuration is ideal for mounting and protecting sensitive communication equipment such as monitors, CPUs, file servers, keyboards, etc. The 23" rack mount width has plenty of room to house the most popular sizes and styles of gear.



MST2356DI. Each Unit Includes: 1 monitor shelf with switch compartment; 8 CPU shelves which mount back to back; 1 surge protected rack mount outlet strip; 1 sliding keyboard shelf; 2 heavy duty extruded aluminum bases (extra deep to allow a freestanding unit); 2 heavy duty extruded aluminum drilled and tapped upright channels. **MST2356TI. Each Unit Includes:** 1 monitor shelf with switch compartment; 4 CPU shelves which mount back to back; 1 surge protected rack mount outlet strip; 1 sliding keyboard shelf; 2 heavy duty extruded aluminum drilled and tapped upright channels; 2 heavy duty extruded aluminum bases (extra deep to allow a free standing unit).

Stock No.	Mfr.'s Type	Height (A) (In.)	Width (B) (In.)	Depth (C) (In.)	Inside Width (D) (In.)	EACH
724Q2356	MST2536DI	61.00	24.18	23.00	21.81	**790.00**
724Q2357	MST2536TI	61.00	24.18	23.00	21.81	**753.25**

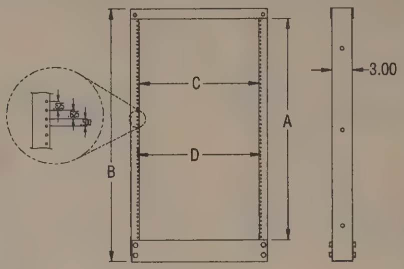
Mod-U-Serv Casters

- ► **Locking Caster Kit Rated for 200 Lbs. Per Caster**
- ► **Includes 2 Locking and 2 Non-Locking Casters**

724-2358. MSCA200L .... **PER SET/4 89.80**

Universal Networking Frames

- ► Available with $^{10}/_{32}$" or $^{12}/_{24}$" Tapped Holes
- ► Mounting Holes on Both Front and Rear Flanges
- ► All-Aluminum Construction
- ► Hole Patterns per Universal EIA Spacing
- ► All Sizes Able to Ship Via UPS
- ► Available in 19" or 23" Rack Mount Widths
- ► Equipped with Two $^3/_{16}$" × $1^1/_4$" Cross Bars Across the Top of the Unit

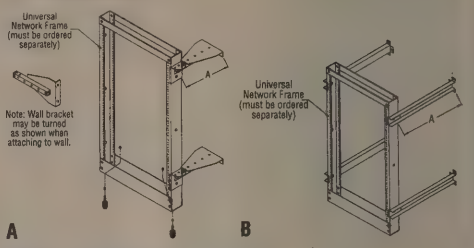


PFT Universal Networking Frames are used in conjunction with either the Swing Gate Bracket or Stationary Wall Bracket Kits. These frames utilize the same innovative features offered in other PFT Networking Frames.

Stock No.	Mfr.'s Type*	A Vertical Opening	B Overall Height	C Inside Width	D Hole-Hole Centers	E Overall Width	Rack Units	EACH
724-4000†	UR 1931A	31.620	36.62	17.81	18.31	20.38	18U	**124.90**
724-4002†	UR 1931U	31.620	36.62	17.81	18.31	20.38	18U	**116.95**
724-4004†	UR 1942A	42.125	47.12	17.81	18.31	20.38	24U	**133.15**
724-4006†	UR 1942U	42.125	47.12	17.81	18.31	20.38	24U	**124.90**
724-4008†	UR 1961A	61.375	66.38	17.81	18.31	20.38	35U	**147.60**
724-4010†	UR 1961U	61.375	66.38	17.81	18.31	20.38	35U	**137.90**
724-4012†	UR 1970A	70.125	75.12	17.81	18.31	20.38	40U	**158.85**
724-4014†	UR 1970U	70.125	75.12	17.81	18.31	20.38	40U	**148.20**
724-4016†	UR 1978A	78.875	83.87	17.81	18.31	20.38	45U	**167.15**
724-4018†	UR 1978U	78.875	83.87	17.81	18.31	20.38	45U	**158.10**
724-4020†	UR 2331A	31.620	36.62	21.81	22.31	24.38	18U	**139.10**
724-4022†	UR 2331U	31.620	36.62	21.81	22.31	24.38	18U	**130.05**
724-4024†	UR 2342A	42.125	47.12	21.81	22.31	24.38	24U	**147.00**
724-4026†	UR 2342U	42.125	47.12	21.81	22.31	24.38	24U	**137.90**
724-4028‡	URT 1931A	31.620	36.62	17.81	18.31	20.38	18U	**124.90**
724-4030‡	URT 1931U	31.620	36.62	17.81	18.31	20.38	18U	**116.95**
724-4032‡	URT 1942A	42.125	47.12	17.81	18.31	20.38	24U	**133.15**
724-4034‡	URT 1942U	42.125	47.12	17.81	18.31	20.38	24U	**124.90**
724-4036‡	URT 1961A	61.375	66.38	17.81	18.31	20.38	35U	**147.80**
724-4038‡	URT 1961U	61.375	66.38	17.81	18.31	20.38	35U	**137.90**
724-4040‡	URT 1970A	70.125	75.12	17.81	18.31	20.38	40U	**158.85**
724-4042‡	URT 1970U	70.125	75.12	17.81	18.31	20.38	40U	**148.20**
724-4044‡	URT 1978A	78.875	83.87	17.81	18.31	20.38	45U	**167.15**
724-4046‡	URT 1978U	78.875	83.87	17.81	18.31	20.38	45U	**156.10**
724-4048‡	URT 2331A	31.620	36.62	21.81	22.31	24.38	18U	**139.10**
724-4050‡	URT 2331U	31.620	36.62	21.81	22.31	24.38	18U	**130.05**
724-4052‡	URT 2342A	42.125	47.12	21.81	22.31	24.38	24U	**147.00**
724-4054‡	URT 2342U	42.125	47.12	21.81	22.31	24.38	24U	**137.90**

*A=Black polyurethane finish; U=Popular mill finish. †$^{10}/_{32}$". ‡$^{12}/_{24}$".

Bracket Kits


Universal Network Frame (must be ordered separately)
A
Note: Wall bracket may be turned as shown when attaching to wall.
Universal Network Frame (must be ordered separately)
A
A
B

Swing Gate Bracket Kits — Fig. A

- ► Ball Casters for Weight Support
- ► 180° Rotation with Five Locking Pivot Points
- ► Universal Mounting for Right or Left Hand Hinging
- ► Polyurethane Baked Finish
- ► Packed as Pairs

PFT Swing Gate Bracket Kits offer you an economical method for wall mounting a Universal Networking Frame while providing a hinging mechanism for swinging the frame out for maintenance and installation purposes.

Stock No.	Mfr.'s Type	Depth Range Front of Frame to Wall	PER PAIR
724-4060	SGBK 57S*	11.25" - 15.25"	**71.00**
724-4161	SGBK 57A†	11.25" - 15.25"	**71.00**

Stationary Wall Bracket Kits — Fig. B

- ► Four Heavy Duty 14 Gauge Brackets for Wall Mounting
- ► Hardware to Mount to Universal Rack Included
- ► Side Mount to Allow Hanging of Racks Together
- ► Polyurethane Baked Finish

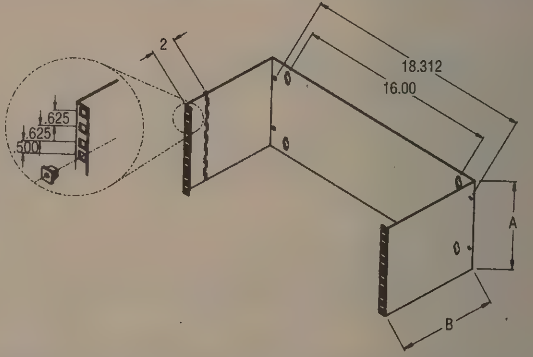
PFT Stationary Wall Bracket Kits offer you a cost-effective method of wall mounting a Universal Networking Frame with enough working space for repair and installation.

724-4165	SWB 18S*	21"	**52.00**
724-4166	SWB 18A†	21"	**52.00**
724-4167	SWB 12S*	15"	**46.45**
724-4168	SWB 12A†	15"	**46.45**

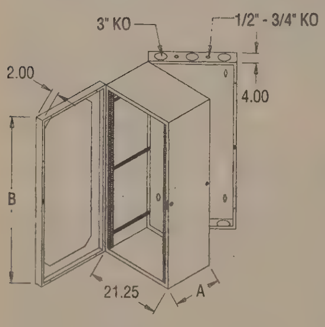
*Silver. †Black.

Wall Mount Patch Panel Brackets

- ► Manufactured with 16 Gauge Steel
- ► Finished with a Black Polyurethane Baked Paint
- ► Designed for 19" Patch Panel Mounting
- ► Accepts Either 12-24 or 10-32 Screw Size



Stock No.	Mfr.'s Type	Height A	Depth B	Rack Units	Color	EACH
724-4070	WPB 190304A	3.50	4.00	2	Black	**19.89**
724-4072	WPB 190504A	5.25	4.00	3	Black	**21.93**
724-4074	WPB 190704A	7.00	4.00	4	Black	**23.89**
724-4076	WPB 190308A	3.50	8.00	2	Black	**20.40**
724-4078	WPB 190508A	5.25	8.00	3	Black	**22.86**
724-4080	WPB 190708A	7.00	8.00	4	Black	**24.99**



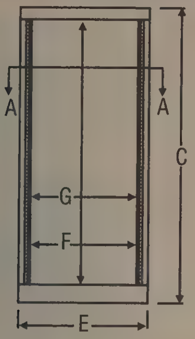
Wall Mount Cabinets

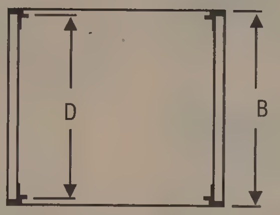
- ► Unique Universal Mounting Rails Featuring Both $^{10}/_{32}$" and $^{12}/_{24}$" Tapped Holes (Fully Adjustable Front to Back)
- ► Designed for 19" Rack Equipment
- ► Manufactured with Heavy Duty 14 and 16 Gauge Steel
- ► Locking Doors and Universal Hinging
- ► Knock Outs in Both Top and Bottom for Wire and Cable Access
- ► Packed One per Carton and available for Immediate Shipment
- ► Powder Coat Finish
- ► Shipped Fully Assembled
- ► Equipped with Fan Cover Plate Top and Bottom
- ► Order WCF250 Fan Separately

Stock No.	Mfr.'s Type*	Depth A	Height B	Rack Units	EACH
724Q2000	WC192110PLA	10.15	23.62	12	**430.00**
724Q2005	WC192110PSA	10.15	23.62	12	**419.05**
724Q2010	WC192110SLA	10.15	23.62	12	**381.35**
724Q2020	WC192110SSA	10.15	23.62	12	**370.35**
724Q2025	WC192114PLA	14.15	23.62	12	**436.75**
724Q2030	WC192114PSA	14.15	23.62	12	**425.80**
724Q2035	WC192114SLA	14.15	23.62	12	**388.10**
724Q2040	WC192114SSA	14.15	23.62	12	**377.15**
724Q2045	WC194510PLA	10.15	48.12	26	**528.30**
724Q2050	WC194510PSA	10.15	48.12	26	**609.90**
724Q2055	WC194510SLA	10.15	48.12	26	**562.80**
724Q2060	WC194510SSA	10.15	48.12	26	**549.85**
724Q2065	WC194514PLA	14.15	48.12	26	**643.00**
724Q2070	WC194514PSA	14.15	48.12	26	**624.55**
724Q2075	WC194514SLA	14.15	48.12	26	**577.50**
724Q2080	WC194514SSA	14.15	48.12	26	**564.60**

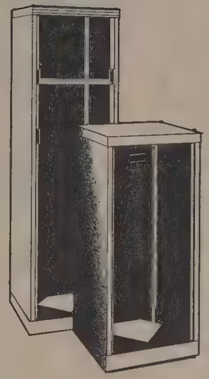
*In the Mfr.'s Type Number: "PLA" is a cabinet that is painted black with plexiglass doors and louvered cabinet sides; "PSA" is a cabinet that is painted black with plexiglass doors and solid cabinet sides; "SLA" is a cabinet that is painted black with a solid steel door and louvered cabinet sides; "SSA" is a cabinet that is painted black with a solid steel door and solid cabinet sides.

Economy Vertical Enclosures





Section A-A



Stock No.	Mfr.'s Type	Description	Qty. to Order	Dimensions A	B	C	D	E	F	G	Weight Lbs.	EACH
EVE 196122 BLACK												
724-5048	EVESP6122PA	Side Panel (Pair)	1 Pr.	61.375	23.39	66.38	21.80	21.57	18.31	17.87	70	**289.15**
724-5044	EVETB1922S0A	Solid Top/Open Bottom	1 Set	61.375	23.39	66.38	21.80	21.57	18.31	17.87	28	**121.45**
724-1223	VMR61	Vertical Mounting Rails	2 Sets	61.375	23.39	66.38	21.80	21.57	18.31	17.87	9	**44.70**
EVE 197018 BLACK												
724-5050	EVESP7018PA	Side Panel (Pair)	1 Pr.	70.125	19.39	75.12	17.80	21.57	18.31	17.87	76	**294.15**
724-5041	EVETB1918S0A	Solid Top/Open Bottom	1 Set	70.125	19.39	75.12	17.80	21.57	18.31	17.87	22	**121.45**
724-1224	VMR70	Vertical Mounting Rails	2 Sets	70.125	19.39	75.12	17.80	21.57	18.31	17.87	10	**48.30**
EVE 197022 BLACK												
724-5053	EVESP7022PA	Side Panel (Pair)	1 Pr.	70.125	23.39	75.12	21.80	21.57	18.31	17.87	82	**321.20**
724-5044	EVETB1922S0A	Solid Top/Open Bottom	1 Set	70.125	23.39	75.12	21.80	21.57	18.31	17.87	28	**129.75**
724-1224	VMR70	Vertical Mounting Rails	2 Sets	70.125	23.39	75.12	21.80	21.57	18.31	17.87	10	**48.30**
EVE 197718 BLACK												
724-5055	EVESP7718PA	Side Panel (Pair)	1 Pr.	77.125	19.39	82.12	17.80	21.57	18.31	17.87	78	**342.55**
724-5041	EVETB1918S0A	Solid Top/Open Bottom	1 Set	77.125	19.39	82.12	17.80	21.57	18.31	17.87	22	**121.45**
724-2224	VMR77	Vertical Mounting Rails	2 Sets	77.125	19.39	82.12	17.80	21.57	18.31	17.87	11	**58.05**
EVE 197722 BLACK												
724-5058	EVESP7722PA	Side Panel (Pair)	1 Pr.	77.125	23.39	82.12	21.80	21.57	18.31	17.87	84	**379.90**
724-5044	EVETB1922S0A	Solid Top/Open Bottom	1 Set	77.125	23.39	82.12	21.80	21.57	18.31	17.87	28	**121.45**
724-2224	VMR77	Vertical Mounting Rails	2 Sets	77.125	23.39	82.12	21.80	21.57	18.31	17.87	11	**58.05**

Note: All dimensions are in inches.

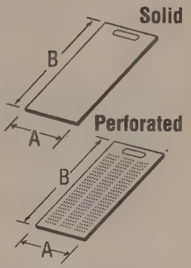
Doors For Economy Vertical Enclosures

Stock No.	Mfr.'s Type	Description*	Use With	Weight Lbs.	EACH
724-5008	EVESD1970PA	1	EVE197018 or EVE197022	30	**125.80**
724-5009	EVESD1970LA	2		30	**151.15**
724Q5010	EVELD1970PA	3		30	**217.55**
724Q5011	EVELD1970LA	4		30	**246.70**
724-5012	EVESD1977PA	1	EVE197718 or EVE197722	40	**163.95**
724-5013	EVESD1977LA	2		40	**181.90**
724Q5014	EVELD1977PA	3		40	**284.20**
724Q5015	EVELD1977LA	4		40	**312.30**

Note: Plexi glass doors also available for all models. *1 — solid short door; 2 — louvered short door; 3 — solid long door; 4 — louvered long door.

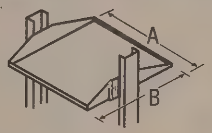
Equipment Shelves

- ▶ 16 Gauge Cold Rolled Steel
- ▶ Smooth Black Finish in Stock
- ▶ Rated at 200 Lbs. Capacity
- ▶ Mounts to EVE Vertical Rails
- ▶ Hardware Included in Pack
- ▶ Perforated Shelves Have Three 5" Wide Bands of .250" Diamond Shaped Perforations on .50" Centers
- ▶ 1" × 6" Obround Cable Opening in Rear



Stock No.	Mfr.'s Type	Description	A Width In.	B Depth In.	EACH
724-5025	ES1918SA	Solid	17.72	18.16	**35.35**
724-5026	ES1918PA	Perforated	17.72	18.16	**42.60**
724-5027	ES1922SA	Solid	17.72	22.16	**39.65**
724-5028	ES1922PA	Perforated	17.72	22.16	**47.80**

Center Weight Equipment Shelves



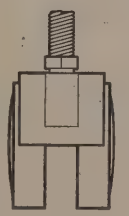
- ▶ 16 Gauge Steel
- ▶ Rated for 50 Lbs. Capacity
- ▶ Rated for 75 Lbs. Capacity with Optional Mounting Brackets (Included with Each Shelf)
- ▶ 10-32 Mounting Hardware Included

Stock No.	Mfr.'s Type	Description	A Width	B Depth	EACH
724-5016	CWS1919SA	Solid	19	19	**54.40**
724-3045	CWS1919PA	Perforated	19	19	**65.55**
724-3050	CWS2319SA	Solid	23	19	**54.40**
724-3055	CWS2319PA	Perforated	23	19	**77.85**
724-5018	CWS2419SA	Solid	24	19	**72.05**
724-5019	CWS2419PA	Perforated	24	19	**65.55**

Casters

MNFCA75L

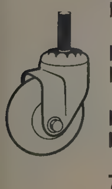
- ▶ 2" Diameter
- ▶ Matte Black Plastic Caster and Cover
- ▶ Each Caster Rated for 75 Lbs.
- ▶ Each Kit Includes Four Locking Casters and Special Mounting Hardware
- ▶ Sold in Set of 4



724-5031. MNFCA75L ....**PER SET 47.70**

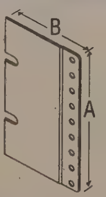
EVECA150

- ▶ 2 Locking and 2 Non-Locking Casters Included in Each Kit
- ▶ Stemmed Caster with 1/2-13 Thread
- ▶ Mounts Directly to EVE Bottom, No Hardware Required
- ▶ 140 Lb. Capacity
- ▶ Sold in Set of 4



724-5032. EVECA150............**PER SET 41.50**

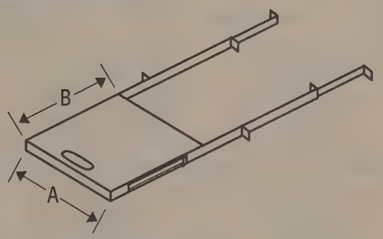
Conversion Adapter Brackets



- ▶ 19" - 24" Rack Mount
- ▶ 14 Gauge Steel
- ▶ Zinc Plated
- ▶ 10/32 Tapped Holes
- ▶ Hole Pattern Meets EIA Standard

Stock No.	Mfr.'s Type	A In.	B In.	Rack Units	EACH
724-5020	AB01	1.719	3.125	1U	**10.70**
724-5021	AB02	3.469	3.125	2U	**13.20**
724-5022	AB03	5.219	3.125	3U	**15.65**
724-5023	AB04	6.969	3.125	4U	**18.10**
724-5024	AB05	8.719	3.125	5U	**20.45**

Sliding Shelves

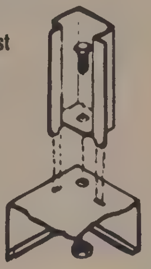


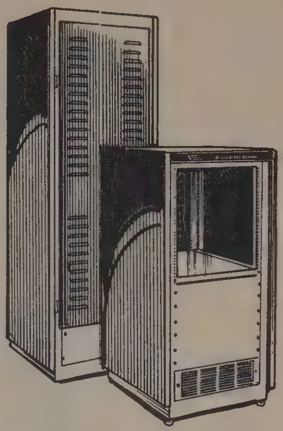
- ▶ 16 Gauge Cold Rolled Steel
- ▶ Smooth Ash White Finish in Stock
- ▶ Rated for 85 Lbs. Capacity
- ▶ Slides Have Lock Out Feature
- ▶ Brackets, Hardware, Slides, and Shelf Included in Kit

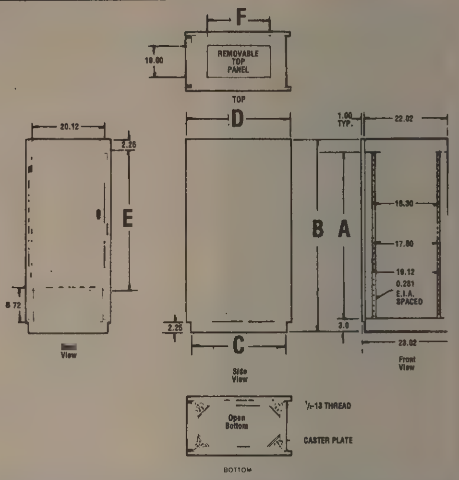
Stock No.	Mfr.'s Type	A Width In.	B Depth In.	EACH
724-5029	SS1914SH	16.75	14	**110.65**
724-5030	SS1916SH	16.75	16	**112.30**

PFT Special Features

- Rack Ships Knockdown in Four Cartons
- Frame Is 14 Gauge Steel; Corner Posts Are 13 Gauge Steel
- Removable Side Panels Made from 18 Gauge Steel
- Lift-Off Rear Door; 18 Gauge Steel Mounts L.H. Side of Frame
- Royal Blue Texture Finish on Rear Door and Side Panels
- Ash White Texture Finish on the Frame
- Multi-Bay Capability
- Knockdown Concept Saves Up to 66% on Freight Cost







Unique Corner Post Design.
PFT combines two unique design features to provide strength and rigidity associated only with expensive welded units. Interlocking tab and slot construction in the corner joints omits torsional movement of the corner posts. A heavy-gauge mounting plate is welded (slightly recessed) into the top and bottom of each corner post. Thus, when the corner bolt is tightened, the cabinet base (or top) flexes slightly, ensuring that the joint is always preloaded in tension, providing additional rigidity.

I. Modular Vertical Enclosure 19"W × 42"H × 25"D

Stock No.	Mfr.'s Type	Description	Color	Shipping Weight	EACH
724-0005	MVETB1925LOH	Louvered top/open bottom	Ash white	55 lbs.	**284.45**
724-0006	MVECP42PH	Corner post pack	Ash white	32 lbs.	**142.50**
724-0007	MVESD1942PRH	Solid rear door	Royal blue/Ash white	20 lbs.	**94.70**
724-0008	MVESP4225PR	Side panel pack (1pr.)	Royal blue	48 lbs.	**172.40**

II. Modular Vertical Enclosure 19"W × 42"H × 30"D

Stock No.	Mfr.'s Type	Description	Color	Shipping Weight	EACH
724-0009	MVETB1930LOH	Louvered top/open bottom	Ash white	55 lbs.	**311.75**
724-0006	MVECP42PH	Corner post pack	Ash white	32 lbs.	**142.50**
724-0007	MVESD1942PRH	Solid rear door	Royal blue/Ash white	20 lbs.	**114.60**
724-0012	MVESP4230PR	Side panel pack (1pr.)	Royal blue	58 lbs.	**180.50**

III. Modular Vertical Enclosure 19"W × 61"H × 25"D

Stock No.	Mfr.'s Type	Description	Color	Shipping Weight	EACH
724-0005	MVETB1925LOH	Louvered top/open bottom	Ash white	55 lbs.	**284.45**
724-0014	MVECP61PH	Corner post pack	Ash white	43 lbs.	**184.35**
724-0015	MVESD1961PRH	Solid rear door	Royal blue/Ash white	28 lbs.	**114.60**
724-0016	MVESP6125PR	Side panel pack (1pr.)	Royal blue	68 lbs.	**192.60**

IV. Modular Vertical Enclosure 19"W × 61"H × 30"D

Stock No.	Mfr.'s Type	Description	Color	Shipping Weight	EACH
724-0009	MVETB1930LOH	Louvered top/open bottom	Ash white	55 lbs.	**311.75**
724-0014	MVECP61PH	Corner post pack	Ash white	43 lbs.	**184.35**
724-0015	MVESD1961PRH	Solid rear door	Royal blue/Ash white	28 lbs.	**114.60**
724-0020	MVESP6130PR	Side panel pack (1pr.)	Royal blue	80 lbs.	**241.25**

V. Modular Vertical Enclosure 19"W × 70"H × 25"D

Stock No.	Mfr.'s Type	Description	Color	Shipping Weight	EACH
724-0005	MVETB1925LOH	Louvered top/open bottom	Ash white	55 lbs.	**284.45**
724-0022	MVECP70PH	Corner post pack	Ash white	48 lbs.	**194.10**
724-0023	MVESD1970PRH	Solid rear door	Royal blue/Ash white	30 lbs.	**122.25**
724-0024	MVESP7025PR	Side panel pack (1pr.)	Royal blue	78 lbs.	**225.10**

VI. Modular Vertical Enclosure 19"W × 70"H × 30"D

Stock No.	Mfr.'s Type	Description	Color	Shipping Weight	EACH
724-0009	MVETB1930LOH	Louvered top/open bottom	Ash white	55 lbs.	**311.75**
724-0022	MVECP70PH	Corner post pack	Ash white	48 lbs.	**194.10**
724-0023	MVESD1970PRH	Solid rear door	Royal blue/Ash white	30 lbs.	**122.25**
724-0028	MVESP7030PR	Side panel pack (1pr.)	Royal blue	96 lbs.	**273.70**

VII. Modular Vertical Enclosure 19"W × 77"H × 25"D

Stock No.	Mfr.'s Type	Description	Color	Shipping Weight	EACH
724-0005	MVETB1925LOH	Louvered top/open bottom	Ash white	55 lbs.	**284.85**
724-0030	MVECP77PH	Corner post pack	Ash white	55 lbs.	**229.40**
724-0031	MVESD1977PRH	Solid rear door	Royal blue/Ash white	30 lbs.	**157.80**
724-0032	MVESP7725PR	Side panel pack (1pr.)	Royal blue	85 lbs.	**292.70**

VIII. Modular Vertical Enclosure 19"W × 77"H × 30"D

Stock No.	Mfr.'s Type	Description	Color	Shipping Weight	EACH
724-0009	MVETB1930LOH	Louvered top/open bottom	Ash white	55 lbs.	**311.75**
724-0030	MVECP77PH	Corner post pack	Ash white	55 lbs.	**229.40**
724-0031	MVESD1977PRH	Solid rear door	Royal blue/Ash white	30 lbs.	**122.25**
724-0036	MVESP7730PR	Side panel pack (1pr.)	Royal blue	105 lbs.	**355.75**

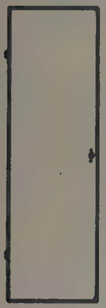
Also available in 24" sizes. Ask your Allied sales representative.

Plexidoors

- ► Lift Off Hinge Design
- ► 3/16" Thick Acrylic Plexiglass
- ► Full Length Magnetic Strip
- ► Smoked Plexiglass Style In Stock
- ► Mounts On Either Side Of Frame
- ► Panel Clearance Of .88 Is Provided; VMR Rail Series Should Be Used If A Bezel or Knob Exceeding .88 Exists On The Rack Mount Equipment.

Stock No.	Mfr.'s Type	A Width In.	B Height In.	EACH
724-1204	PD1942NS	20.12	43.63	**217.55**
724-1202	PD1961NS	20.12	62.88	**228.20**
724-1203	PD1970NS	20.12	71.63	**254.10**
724-1305	PD1977NS	20.12	78.63	**306.15**

Solid Long Doors



- ► 18 Gauge Cold Rolled Steel
- ► Lift Off Hinge Design
- ► Panel Clearance 1.38" Provided
- ► Door Mounts to Left Corner Post Only
- ► Can Be Used As A Front or A Rear Door
- ► Latch, Adhesive-Backed Gasketing, 5/32 Allen Wrench, and All Hardware Provided In Pack
- ► Textured Royal Blue Finish In Stock

Stock No.	Mfr.'s Type*	A Width In.	B Height In.	EACH
724-1212	1942PR	20.12	43.63	**165.16**
724-1210	1961PR	20.12	62.88	**185.75**
724-1211	1970PR	20.12	71.63	**208.45**
724-1213	1977PR	20.12	78.63	**268.40**

*Add MVELD before manufacturer's type number.

Louvered Short Doors

- ► 18 Gauge Cold Rolled Steel
- ► Louver Size Is .625" × 4.50"; Opening .250"
- ► Lift Off Hinge Design
- ► Panel Clearance 1.38" Provided
- ► Door Mounts to Left Corner Post Only
- ► Louvered Door Packs Are Short Doors and Include 8.72" × 19.00" Access Panel
- ► Latch, Adhesive-Backed Gasketing, 5/32 Allen Wrench, and All Hardware Provided In Pack
- ► Textured Royal Blue Finish In Stock

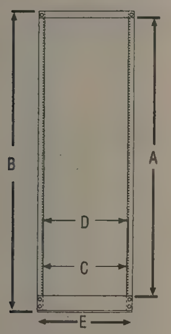
Stock No.	Mfr.'s Type	A Width In.	B Height In.	EACH
724-1207	MVESD1942LRH	20.12	34.88	**129.25**
724-1205	MVESD1961LRH	20.12	54.13	**144.35**
724-1206	MVESD1970LRH	20.12	62.88	**163.75**
724-1214	MVESD1977LRH	20.12	69.88	**197.15**

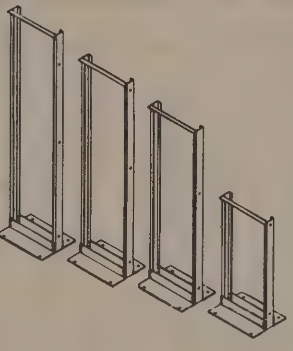
Identification Strip

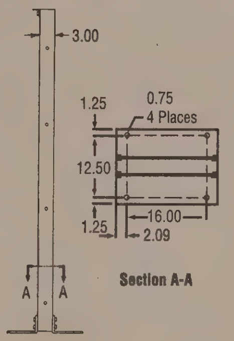
- ► Royal Blue Formica to Accent Side Panels
- ► Other Standard Colors Available
- ► Strip Fits Into Aluminum Extrusion
- ► Ideal For Silkscreening

Stock No.	Mfr.'s Type	Description	EACH
724-0001	ID01	Single Bay	**5.40**
724-0002	ID02	Double Bay	**5.90**
724-0003	ID03	Triple Bay	**12.35**

Modular Relay Racks







Section A-A

PFT Special Features

- ► Heavy Duty Aluminum Extrusion Construction Utilizing 6061-T6 Aluminum Alloy
- ► 10-32 Dia. Tapped Holes On Front and Rear Flanges
- ► EIA Hole Spacing Full Height Of Vertical Uprights
- ► Available In Smooth Black Oven Baked Finish
- ► Designed For Multi-Bay Configurations
- ► Able To Ship Via UPS for Economical Freight Costs
- ► Designed to Accommodate A Variety Of PFT Accessories

Each PFT Modular Relay Rack Consists Of:

- ► 2 Fully Tapped Vertical Uprights
- ► 2 Mounting Bases (Front and Rear)
- ► Top Angle
- ► Assembly Hardware

Now available from PFT — Modular Relay Racks that are UPS shippable! These all aluminum open frame racks are available in 19" and 24" rack mount widths with standard EIA hole spacing. PFT Modular Relay Racks are ideal for mounting electronic and test equipment, patch panels, shelves, data-communications and telecommunications products as well as other cabling and rack mount products. PFT Modular Relay Racks offer an economical alternative to your rack mount needs at a fraction of the cost of a fully enclosed vertical enclosure. These racks are ideal when a fully enclosed cabinet is not required. All PFT Modular Relay Racks are shipped unassembled for a significant freight savings. Assembly is easily accomplished in a matter of minutes using standard socket or adjustable wrenches. Racks are designed to bolt to the floor for extra stability.

How To Order. Step One: Select the width, height and depth Modular Rack desired. **Step Two:** Refer to the dimensional chart below to obtain Allied part # and cost. **Step Three:** Refer to accessory items needed to compliment your Modular Relay Rack.

Stock No.	Mfr.'s Type	A	B	C	D	E	Rack Units	EACH
724-1978	MNF1978A	78.125	84.00	17.81	18.31	20.18	45U	**186.10**
724-1970	MNF1970A	70.125	75.25	17.81	18.31	20.18	40U	**176.80**
724-1961	MNF1961A	61.375	66.50	17.81	18.31	20.18	35U	**164.70**
724-1942	MNF1942A	42.125	47.25	17.81	18.31	20.18	24U	**148.35**

All dimensions in inches. Note: 24" rack mount widths are available at slight leadtime. Contact your local Allied sales office for more details.

Cup Head Screws

- ► 10/32 Cup Head Screws
- ► Nickel Plated with Nylon Washer
- ► Twenty Per Kit

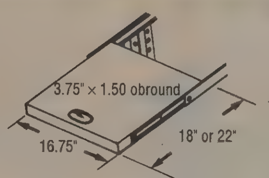
Model CHS 1032F. 10/32 × 5/8" long.
724-1256. CHS 1032F..........**PER PK./20 3.80**
Model CHS 1032K. 10/32 × 1 1/8" long.
724-1253. CHS 1032K..........**PER PK./20 3.80**

Multi-Bay Joining Kit

- ► Used to Join Modular Relay Racks Together to Form Double Bays, Triple Bays, Etc.

724-0100. JK05..........**EACH 7.05**

Sliding Shelves



- ► 16 Gauge Cold Rolled Steel
- ► Smooth Ash White Finish In Stock
- ► Rated For 85 Lbs. Capacity
- ► Slides Have Lock Out Feature
- ► Brackets, Hardware, Slides, and Shelf Included In Pack

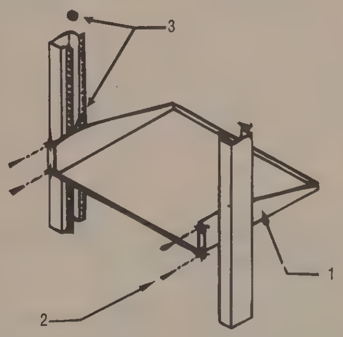
Stock No.	Mfr.'s Type	A Width In.	B Height In.	EACH
724-1301	SS1918SH	16.75	18	**116.25**
724-1302	SS1922SH	16.75	22	**130.15**

Louvered Long Doors

- ► 18 Gauge Cold Rolled Steel
- ► Louver Size Is .625" × 4.50"; Opening .250"
- ► Lift Off Hinge Design
- ► Panel Clearance 1.38" Provided
- ► Door Mounts to Left Corner Post Only
- ► Can Be Used As A Front or A Rear Door
- ► Latch, Adhesive-Backed Gasketing, 5/32 Allen Wrench, and All Hardware Provided In Pack
- ► Textured Royal Blue Finish In Stock with An Access Panel In Ash White

Stock No.	Mfr.'s Type	A Width In.	B Height In.	EACH
724Q1207	MVESD1942LR	20.12	43.63	**113.30**
724Q1205	MVESD1961LR	20.12	62.88	**130.15**
724Q1206	MVESD1970LR	20.12	71.63	**145.75**
724Q1214	MVESD1977LR	20.12	78.63	**206.25**

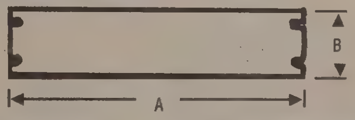
Cantilevered Equipment Shelf



- ► 16 Gauge Solid Steel Shelf
- ► Mounts to Front Vertical Uprights Of Rack
- ► Rated For 50 Lb. Load Capacity
- ► Smooth Black Polyurethane Finish
- ► Mounting Hardware Included

For 19" Wide Relay Rack
724-1913. CS1914SA..........**EACH 42.25**

Flat Filler Panels

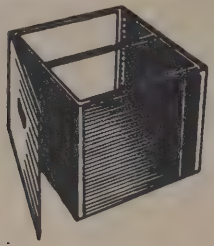


- ► .125" Thick Aluminum
- ► Textured Black Finish In Stock

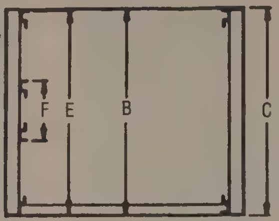
19" Panels

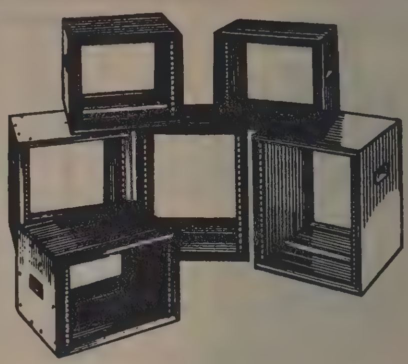
Stock No.	Mfr.'s Type	A Width In.	B Height In.	Color	EACH
724-1901	FL1901A	19	1.75	Black	**7.75**
724-1903	FL1903A	19	3.50	Black	**9.75**
724-1905	FL1905A	19	5.25	Black	**13.50**
724-1907	FL1907A	19	7.00	Black	**15.35**
724-1908	FL1908A	19	8.75	Black	**19.15**
724-1910	FL1910A	19	10.50	Black	**22.95**

PFT Mod-U-Desk Racks



Top View





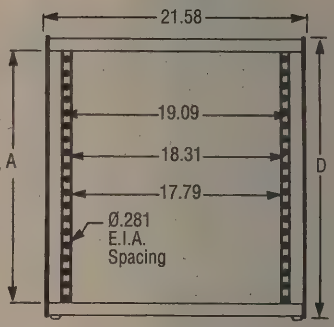
Design Features

- Knockdown — Assembles in Minutes
- Able to Ship Via UPS
- Top, Bottom, and Internal Side Panels Made from .060" Aluminum
- External Dress Sides — .125 Aluminum
- .060 Internal Cross Bars Are Zinc Plated with Gold Chromate Finish
- .060 Mounting Rails Are Adjustable Front to Back on 1" Increments
- ABS Plastic Handles Provided
- Non-Marring Rubber Feet
- Black Oxide Screws for Assembly
- 16 Clip Nuts and Cup Head Screws Are Provided

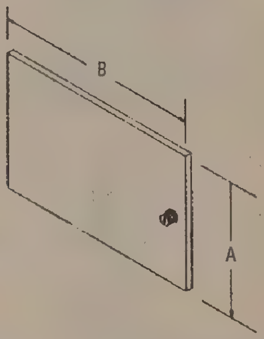
Stock No.*	Mfr.'s Type	A Vertical Opening	B Internal Depth	C Overall Depth	D Overall Height	E Maximum Rail Spacing	F Minimum Rail Spacing	EACH
724-1912	MDR 191217 PRR	12.38	17.25	17.50	14.62	17	5	**281.15**
724-1915	MDR 191517 PRR	15.88	17.25	17.50	18.12	17	5	**304.15**
724-1919	MDR 191917 PRR	19.38	17.25	17.50	21.62	17	5	**328.45**
724-1922	MDR 192217 PRR	22.88	17.25	17.50	25.12	17	5	**370.55**
724-1923	MDR 191223 PRR	12.38	23.25	23.50	14.62	23	11	**324.70**
724-1924	MDR 191523 PRR	15.88	23.25	23.50	18.12	23	11	**353.40**
724-1925	MDR 191923 PRR	19.38	23.25	23.50	21.62	23	11	**389.85**
724-1926	MDR 192223 PRR	22.88	23.25	23.50	25.12	23	11	**430.70**

***Stocked in royal blue only. Other colors also available. (Off white, black, ash white, blue, light grey, charcoal, and tan). See color chart on page 79.** Top and bottom panels can be vented. PFT standard venting consists of 2-3.375" strips of .125" × .375" obround holes on .250" centers.

Front View



PFT Door Packs



- 18 Gauge Steel
- Formed Door Flush Mount to Front Surface
- Push Button Handle with Lock
- Mounting Rails, Hardware and Hinge Included

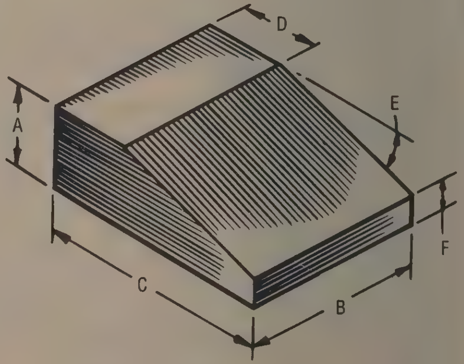
Stock No.	Mfr.'s Type	Dim. In. A	Dim. In. B	Door Type	EACH
724-4500	MDRFD1909R	9	19	Steel	**97.05**
724-4501	MDRFD1912R	12	19	Steel	**101.25**
724-4502	MDRFD1915R	15	19	Steel	**104.85**
724-4503	MDRFD1919R	19	19	Steel	**109.50**
724-4504	MDRFD1922R	22	19	Steel	**113.05**
724-4505	MDRPD1912	12	19	Plexiglass	**105.75**
724-4506	MDRPD1915	15	19	Plexiglass	**109.35**
724-4507	MDRPD1919	19	19	Plexiglass	**114.00**
724-4508	MDRPD1922	22	19	Plexiglass	**117.50**

Note: Equipment must be installed 2" deep into cabinet to allow for door mounting hardware. All dimensions approximate.

PFT Modubox Enclosures

- EPA Approved Polyurethane Finishes
- Venting, Cutouts, Other Modifications, and Silkscreening Available

Construction. Modubox enclosures are of high quality construction. Each enclosure has two parts — a sturdy texture painted wrapper of .090" aluminum and a smooth finished insert of .062" aluminum. The inserts are typically modified with cut-outs and silkscreening. Part numbers reflect the basic shapes offered. **MBK:** Modubox Keyboard style. **MBS:** Modubox Sloped front style. **MBL:** Modubox Linear (rectangular) style. Part numbers follow the rough outside dimensions. For example, an MBS030706BW is a sloped front Modubox 3" high, 7" wide, and 6" deep with a blue wrapper and white insert.



Stock No.	Mfr.'s Type	Size						EACH		
		Base			Insert					
		A	B	C	D	E	F	1-9	10-24	25-Up
724-1086	MBK020505BW	$1\frac{13}{16}$	$4\frac{13}{16}$	$4\frac{15}{16}$	1.05	15	1.05	**16.20**	**14.60**	**13.15**
724-1087	MBS030406BW	$2\frac{3}{4}$	$4\frac{1}{4}$	$6\frac{13}{16}$	—	15	1.10	**16.20**	**14.60**	**13.15**
724-1088	MBK020706BW	$2\frac{15}{16}$	$6\frac{1}{2}$	$5\frac{13}{16}$	2.91	35	.50	**16.90**	**15.25**	**13.75**
724-1089	MBS030706BW	$3\frac{1}{8}$	$6\frac{3}{4}$	$5\frac{3}{8}$	—	15	1.68	**18.05**	**16.25**	**14.65**
724-1090	MBS050606BW	$4\frac{13}{16}$	$5\frac{13}{16}$	$5\frac{13}{16}$	4.46	75	—	**19.85**	**17.90**	**16.10**
724-1091	MBL040610BW	$3\frac{13}{16}$	$5\frac{13}{16}$	$9\frac{13}{16}$	9.81	90	3.81	**23.40**	**21.10**	**19.00**
724-1092	MBS041211BW	$3\frac{13}{16}$	$11\frac{13}{16}$	$10\frac{13}{16}$	9.73	75	—	**35.90**	**32.35**	**29.10**
724-1093	MBS041010BW	$3\frac{1}{2}$	10	10	8.00	50	1.06	**34.20**	**30.80**	**27.75**
724-1094	MBK051010BW	$4\frac{13}{16}$	$9\frac{13}{16}$	$9\frac{13}{16}$	1.94	21	1.78	**35.90**	**32.35**	**29.10**
724-1095	MBK061210BW	$5\frac{3}{4}$	$11\frac{13}{16}$	$9\frac{15}{16}$	3.03	23	2.82	**41.25**	**37.15**	**33.45**
724-1096	MBK031011BW	$2\frac{13}{16}$	$9\frac{13}{16}$	$10\frac{13}{16}$	5.03	13	1.48	**49.25**	**44.35**	**39.90**
724-1097	MBK031311BW	$2\frac{13}{16}$	$12\frac{13}{16}$	$10\frac{13}{16}$	5.03	13	1.48	**35.90**	**32.35**	**29.10**
724-1098	MBK031711BW	$2\frac{13}{16}$	$16\frac{13}{16}$	$10\frac{13}{16}$	5.03	13	1.48	**44.90**	**40.45**	**36.40**
724-1099	MBK032011BW	$2\frac{13}{16}$	$19\frac{13}{16}$	$10\frac{13}{16}$	5.03	13	1.48	**49.25**	**44.35**	**39.90**

Note: Sky blue wrapper/off white insert in Allied stock. Other colors from factory with slight additional lead time. See color chart and modifications, page 79.

PFT Modular Vertical Enclosure Accessories

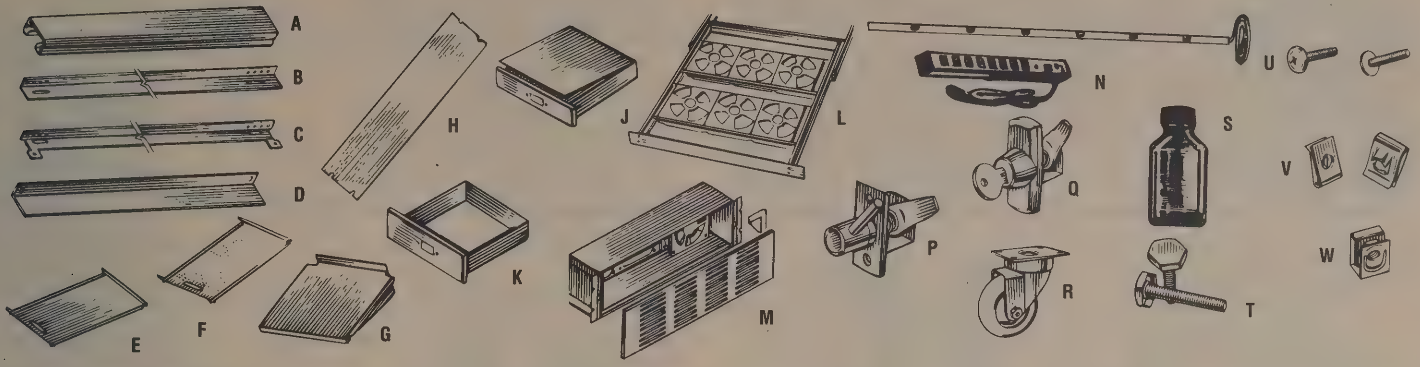


Fig. A — Horizontal Mounting Rail Kit

16 gauge cold rolled steel channels. Used in conjunction with 90° tapped mounting rails, multi-formed rails and vertical conversion rail kits. Zinc plated with gold chromate finish. Sold in pairs.

Stock No.	Mfr.'s Type	Rail Length (In.)	Cabinet Depth (In.)	PER PAIR
724-1220	HMR25	20.25	25	**28.45**
724-1221	HMR30	26.25	30	**30.85**

Fig. B — 90° Tapped Mounting Rail Kit

12 gauge cold rolled steel. Must be used in conjunction with horizontal mounting rail kits. Zinc plated with gold chromate finish. Fully adjustable from front to rear of cabinet. Sold in pairs.

Stock No.	Mfr.'s Type	Rail Length (In.)	Cabinet Height (In.)	PER PAIR
724-1222	VMR42	42.06	42	**42.25**
724-1223	VMR61	61.31	61	**44.70**
724-1224	VMR70	70.06	70	**48.30**
724-2224	VMR77	77.06	77	**58.05**

Fig. C — Vertical Corner Tapped Mounting Rail Kit

12 gauge cold rolled steel. Zinc plated with gold chromate finish. Vertical tapped rails permit use of cup head screws without clip nuts or cage nuts. 10-32 tapped holes. Rails attach to inside of MVE corner post. Sold in pairs.

Stock No.	Mfr.'s Type	Rail Length (In.)	Cabinet Height (In.)	PER PAIR
724-3505	CTR35	34.93	35	**37.50**
724-1225	CTR42	41.93	42	**42.25**
724-1226	CTR61	61.18	61	**45.90**
724-1227	CTR70	69.93	70	**49.60**
724-2227	CTR77	76.93	77	**60.40**

Fig. D — Equipment Mounting Angle Kit

11 gauge cold rolled steel. Zinc plated with gold chromate finish. Rated for 400 lb. load capacity. Attach directly to MVE corner posts. Sold in pairs.

Stock No.	Mfr.'s Type	Rail Length (In.)	Cabinet Depth (In.)	PER PAIR
724-1228	EMA25	20.25	25	**21.95**
724-1229	EMA30	26.31	30	**25.30**

Fig. E and F — Equipment Shelves: Solid and Perforated

16 gauge cold rolled steel. Smooth ash white finish in stock. Rated at 200 lbs. capacity. Mounts to MVE cabinet corner posts. Hardware included in pack. Perforated shelves have three 5" wide bands of .250" diamond shaped perforations on .50" centers. 1" × 6" obround cable opening in rear.

Stock No.	Mfr.'s Type*	Depth (In.)	Width (In.)	Cabinet Depth (In.)	EACH
724-1230	ESI925SH	24.50	17.72	25	**38.00**
724-1231	ESI925PH	24.50	17.72	25	**47.35**
724-1232	ESI930SH	30.50	17.72	30	**49.70**
724-1233	ESI930PH	30.50	17.72	30	**59.20**
724-3506	ES2425SH	24.50	22.72	25	**49.65**
724-3507	ES2425PH	24.50	22.72	25	**60.25**
724-3508	ES2430SH	30.50	22.72	30	**62.10**
724-3509	ES2430PH	30.50	22.72	30	**72.60**

*SH=solid shelf type, PH=perforated shelf type.

Fig. G — Fixed Writing Shelf

16 gauge cold rolled steel. Smooth ash white finish in stock. Rated at 200 lbs. capacity. Uses 7" of panel opening space. 14 gauge brackets and hardware included. Mounts to MVE cabinet corner posts.

Stock No.	Mfr.'s Type	Width (In.)	Depth (In.)	EACH
724-1234	FWS19	22.00	16.25	**89.50**
724-3500	FWS24	26.00	16.25	**115.85**

Fig. H — Flat Filler Panels

.125" thick aluminum. Textured ash white finish in stock. Solid or perforated.

Stock No.	Mfr.'s Type	Approx. Height (In.)	Actual Height (In.)	Actual Width (In.)	EACH
724-1235	FL1901H	1.75	1.71	19.00	**7.75**
724-1236	FL1903H	3.50	3.46	19.00	**9.75**
724-1237	FL1905H	5.25	5.21	19.00	**13.05**
724-1238	FL1907H	7.00	6.96	19.00	**15.35**
724-1239	FL1908H	8.75	8.71	19.00	**19.15**
724-1240	FL1910H	10.00	10.46	19.00	**22.95**

Fig. J and K — Sliding Drawers

18 gauge cold rolled steel. Ash white finish in stock. Rated for 200 lbs. capacity. All front panels to standard 19" EIA specifications. Brackets, slides, and hardware included. Writing shelf size is 16.25" wide by 15.00" deep.

Stock No.	Mfr.'s Type	With Writing Shelf	Approx. Height (In.)	Actual Width (In.)	Actual Depth (In.)	EACH
724-1241	SD1903WH	Yes	3.43	15.67	16.00	**186.10**
724-1242	SD1907OH	No	6.93	15.67	16.00	**186.10**
724-1243	SD1910OH	No	10.43	15.67	16.00	**192.30**

Fig. L — 630 CFM Fan Tray Assembly

Uses 1.75" of panel space. Designed for front mount racking into any standard 19" or 24" EIA rack. To mount in 24" rack use AB360 adapter bracket. Exhausts air through the top of the MVE. Specify louvered top panel if this fan tray assembly is desired. 6' long 115 V power cord. Consists of 6 — 105 CFM muffin fans. 18" actual depth/17" actual width.

724Q1244. FN630 ....**EACH 419.25**

Fig. M — 315 CFM Fan Assembly

Draws air into the equipment rack. Consists of three 105 CFM muffin fans. Fans mounted into a painted housing. Utilizes washable air filter. 5.22" × 19.00" stainless steel grill. 6' long 115 V power cord. Rack mountable on front or rear of any 19" or 24" standard EIA rack. To mount in 24" rack use AB315 adapter bracket.

724-1245. FN315..**EACH 244.60**

Fig. N — Electrical Outlet Strips

Components all UL approved. 15 A, 125 V receptacles. 6' power cord. Attach to MVE corner posts. OS2406 has on/off switch.

Stock No.	Mfr.'s Type	Length (In.)	No. of Outlets	EACH
724-6030	OS2406	24.00	6	**87.60**
724-1246	OS6006	60.00	6	**118.00**
Rack Mount Power Strips				
724-3501	PS1906	—	6	**110.60**
724-3010	PS1910S*	—	10	**152.85**

*With surge.

Fig. P — T-Door Handle

Fits in all PFT long and short door series. Zinc plated knurled handle.

724-1247. TDH01 ....**EACH 9.70**

Fig. Q — Lock Assembly

Fits in all PFT long and short door series. Chrome plated steel. Keyed alike. Latch can be adjusted to create vibration-free environment.

724-1248. LK01 ....**EACH 20.60**

Fig. R — Casters

3$^{1}/_{2}$" diameter. Hard rubber wheels. Each caster rated at 200 lbs. capacity. Sold in sets of four.

724-1249. CA200 ....**PK./4 43.65**

Fig. S — Touch Up Paint

One ounce bottle with applicator brush. No mixing required. Quick drying.

Stock No.	Mfr.'s Type	Color	EACH
724-1250	TUBR	Royal Blue	**10.10**
724-1251	TUBH	Ash White	**10.10**
724-1257	TUBB	Sky Blue	**10.10**
724-1258	TUBW	Off White	**10.10**

Fig. T — Leg Levelers

Threaded steel construction. Nickel plated. 3" tall. Sold as a set of four.

724-1252. LL03S..**PK./4 9.40**

Fig. U — Cup Head Screws

10-32 cup head screws. Nickel plated or black oxide with nylon washer. Twenty per pack.

Stock No.	Mfr.'s Type	Size	PER PK./20
724-1256	CHS1032F	10-32 × $^{5}/_{8}$" long	**3.80**
724-1253	CHS1032K	10-32 × 1$^{1}/_{8}$" long	**3.80**
724-3503	CHS1032FA	10-32 × $^{5}/_{8}$" long — black oxide	**3.80**
724-3504	CHS1032KA	10-32 × 1$^{1}/_{8}$" long — black oxide	**3.80**

Fig. V — Clip Nuts

10-32 U type clip nut. Used in conjunction with CHS1032F and CHS1032K screws. Used in conjunction with .281" EIA holes on MVE cabinet corner posts. Twenty per pack.

724-1254. CLP1032 ....**PK./20 5.55**

Fig. W — Cage Nuts

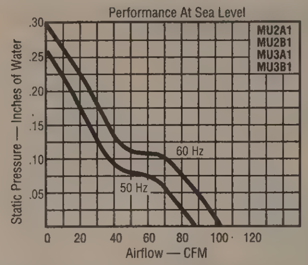
10-32 clip nut for heavy duty applications. Used in conjunction with .281" EIA holes on MVE cabinet corner posts. Twenty per pack.

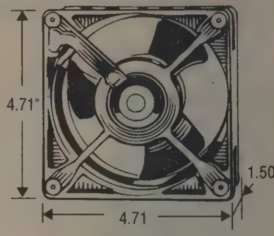
724-1255. CAG1032..**PK./20 14.45**

Muffin® AC Fans

The most requested cooling fan available. At 105 CMF (free air), this 4.71" square × 1.50" deep fan is available in either sintered bronze sleeve or stainless steel ball bearings. UL recognized and CSA certified. Flame retardant plastic housing and propeller. Impedance protected. Terminal versions only.

Stock No.	Mfr.'s Type	Part No.	Type of Bearing	AC Volts	RPMs	CFM	EACH		
							1-9	10-24	25-Up
599-0150	MU2A1	028021	Sleeve	115	2650/3100	88/105	**23.61**	**21.48**	**19.71**
599-0155	MU3A1	028023	Sleeve	220/230	2650/3100	88/105	**24.23**	**22.05**	**20.23**
599-0160	MU2B1	028027	Ball	115	2650/3100	88/105	**35.88**	**32.66**	**29.90**
599-0165	MU3B1	028029	Ball	220/230	2650/3100	88/105	**36.50**	**33.23**	**30.42**

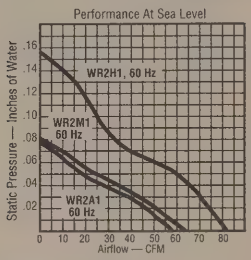


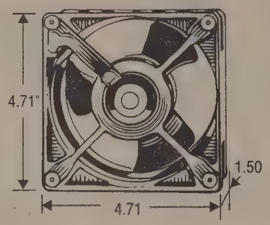


Whisper® AC Fans

The silent airmover, from 57 to 80 CFM, this fan is similar in construction and bearing design to the Muffin®. UL recognized and CSA certified. Impedance protected. Acoustic rated as low as 30 dBA. Terminal versions only.

Stock No.	Mfr.'s Type	Part No.	Type of Bearing	AC Volts	RPMs	CFM	EACH		
							1-9	10-24	25-Up
599-0170	WR2A1	027117	Sleeve	115	1640/1660	55/57	**24.98**	**22.72**	**20.80**
599-0175	WR2H1	027119	Sleeve	115	2100/2400	70/80	**26.21**	**23.87**	**21.84**
599-0176	WR2M1	028291	Sleeve	115	2000/1960	63/63	**27.46**	**25.96**	**23.80**
599-0177	WR3A1	028171	Sleeve	220/230	1590/2000	53/62	**27.46**	**24.96**	**22.88**



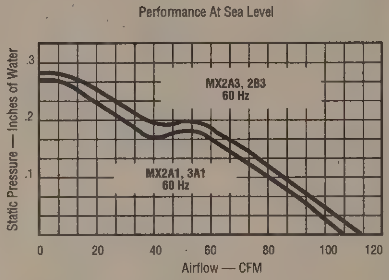


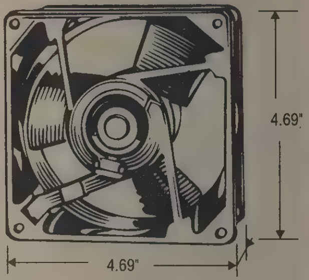
Muffin® XL AC Fans

The zinc diecast, plastic, propeller partner to the Muffin employs identical bearing systems and features the unique Feathered Edge™ propeller. UL recognized, CSA certified, VDE approved. Reverse flow models have airflow entering motor-strut side, exits propeller side.

Stock No.	Mfr.'s Type	Part No.	Type of Bearing	AC Volts	RPMs	CFM	EACH		
							1-9	10-24	25-Up
599-0180	MX2A1*	028318	Sleeve	115	2700/3100	92/108	**24.86**	**22.62**	**20.75**
599-0185	MX2A3	028316	Sleeve	115	2700/3100	98/115	**24.86**	**22.62**	**20.75**
599-0190	MX2B3	028422	Ball	115	2700/3100	98/115	**37.75**	**34.32**	**31.46**
599-0191	MX3A1*	028326	Sleeve	220/230	2700/3100	92/108	**25.69**	**23.35**	**21.42**
599-0192	MX3A3	028324	Sleeve	220/230	2700/3100	98/115	**25.69**	**23.35**	**21.42**
599-0193	MX3B3	028423	Ball	220/230	2700/3100	98/115	**38.38**	**34.89**	**31.98**

*Reverse flow models.

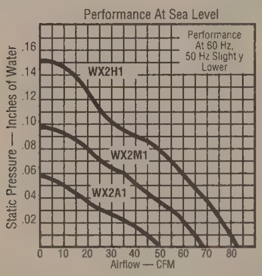


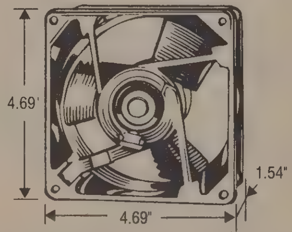


Whisper® XL AC Fans

The zinc diecast partner to the Whisper® featuring the Feathered Edge™ plastic propeller. Uses sintered bronze sleeve bearings for long, quiet life. UL recognized, CSA certified and VDE approved. Impedance protected.

Stock No.	Mfr.'s Type	Part No.	Type of Bearing	AC Volts	RPMs	CFM	EACH		
							1-9	10-24	25-Up
599-0195	WX2A1	028778	Sleeve	115	1450/1500	48/50	**27.14**	**24.70**	**22.62**
599-0200	WX2H1	028858	Sleeve	115	2200/2500	70/83	**26.42**	**24.02**	**22.05**
599-0205	WX2M1	028322	Sleeve	115	1900/2000	65/70	**26.62**	**24.23**	**22.20**



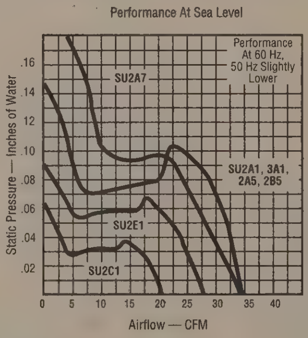


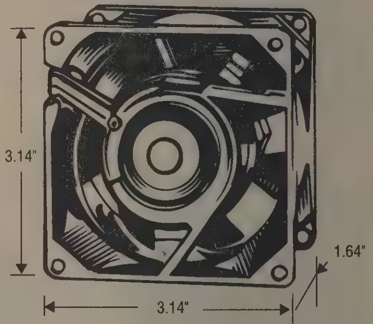
Sprite® AC Fans

The run-away favorite of small tubeaxial fans. Only 3.14" square × 1.645" deep, this airmover uses sintered bronze sleeve or stainless steel bearings. UL recognized, CSA certified, and VDE approved. Terminal or leadwire versions, as well as reverse flow models, are all available.

Stock No.	Mfr.'s Type	Part No.	Type of Bearing	AC Volts	RPMs	CFM	EACH		
							1-9	10-24	25-Up
599-0210	SU2A1†	028267	Sleeve	115	2750/3250	28/34	**24.13**	**21.94**	**20.12**
599-0220	SU2C1†	028270	Sleeve	115	1750/1900	17/20	**25.38**	**23.09**	**21.16**
599-0225	SU2E1†	028275	Sleeve	115	2200/2600	23/27	**26.21**	**23.89**	**21.84**
599-0230	SU2G1†	028278	Sleeve	115	2700/3150	27/32	**25.06**	**22.83**	**20.90**
599-0235	SU3A1†	028269	Sleeve	220/230	2750/3250	28/34	**25.17**	**22.88**	**21.01**
599-0240	SU2A5‡	028279	Sleeve	115	2750/3250	28/34	**25.69**	**23.35**	**21.42**
599-0245	SU2B5‡	028410	Ball	115	2750/3250	28/34	**36.92**	**33.59**	**30.78**
599-0250	SU2A7*†	030272	Sleeve	115	2780/3350	27/33	**24.13**	**21.94**	**20.12**
599-0255	SU2E7*†	030271	Sleeve	115	2370/2750	23/27	**30.38**	**27.85**	**25.70**

*Reverse flow model. †With leadwires. ‡With terminals.

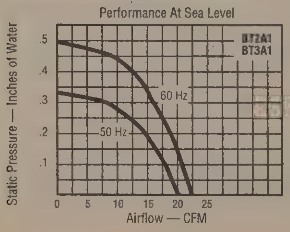


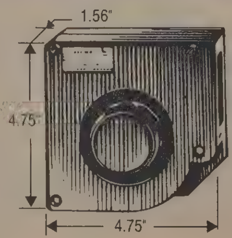


Biscuit® AC Blowers

The integral motor centrifugal blower producing 22 CFM (free air). 4.75" square × 1.56" deep, with sintered bronze sleeve bearings. UL94V-0 plastic housing, UL94V-2 propeller. UL recognized and CSA certified. Impedance protected.

Stock No.	Mfr.'s Type	Part No.	Type of Bearing	AC Volts	RPMs	CFM	EACH		
							1-9	10-24	25-Up
599-0260	BT2A1	028448	Sleeve	115	2500/2700	20/22	**32.97**	**30.00**	**27.51**
599-0265	BT3A1	028449	Sleeve	220/230	2500/2700	20/22	**33.70**	**30.63**	**28.08**



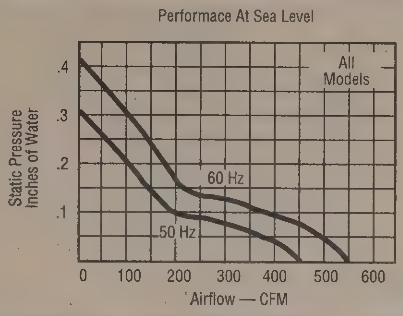


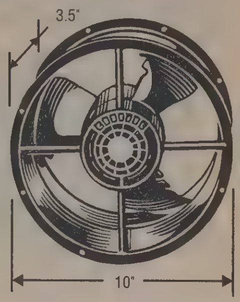
Caravel® AC Fans

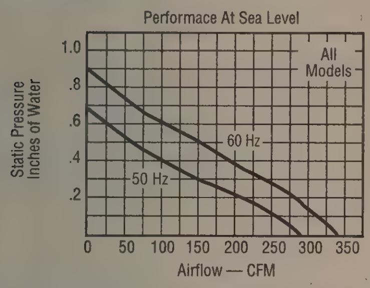
Features Feathered Edge™ blade design for low noise. Auto reset thermal protector. 9.688" mounting center holes. For ambient of –30° to +60°C. Die-cast aluminum housing. **Weight:** 4.4 lbs. (2 kg). Ball bearing, UL recognized, CSA certified.

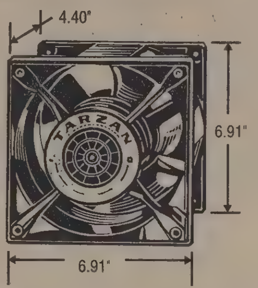
Stock No.	Mfr.'s Type	Part No.	AC Volts	RPM	CFM	EACH		
						1-9	10-24	25-Up
599-0270*	CL2L2	020188	115	1400/1650	455/550	**62.50**	**56.84**	**52.10**
599-0275†	CL2T2	020189	115	1400/1650	455/550	**64.38**	**58.71**	**53.82**
599-0280*	CL3L2	020190	220/230	1400/1650	455/550	**63.96**	**58.19**	**53.30**
599-0285†	CL3T2	020191	220/230	1400/1650	455/550	**66.04**	**60.06**	**55.07**

*With Leadwire. †With .110" Solder Terminals.









Tarzan® AC Fans

Features auto reset thermal protector. 6" mounting hole centers. For ambients of –18° to +60°C. Flame retardant black phenolic housing. **Weight:** 5 lbs. (2.27 kg). Ball bearing, UL recognized, CSA certified.

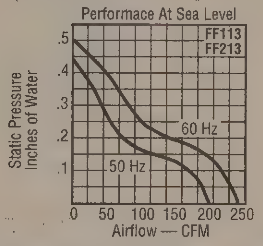
Stock No.	Mfr.'s Type	Part No.	AC Volts	RPM	CFM	EACH		
						1-9	10-24	25-Up
599-0290†	TN3A2	020174	115	2820/3350	280/340	**86.63**	**78.78**	**72.23**
599-0295†	TN3A3	020172	220/230	2820/3350	280/340	**88.30**	**80.29**	**73.58**
599-0300*	TN3C2	020169	115	2820/3350	280/340	**84.66**	**76.96**	**70.56**

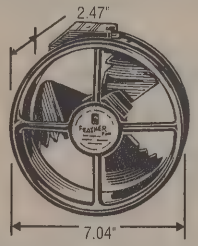
*With Leadwire. †With Terminals.

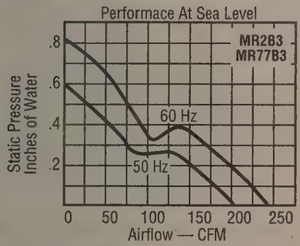
Feather® AC Fans

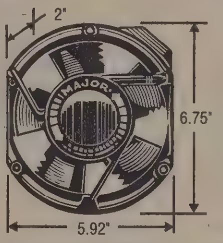
Features Feathered Edge™ blade design for low noise and auto reset thermal protector. For ambients of –54° to +65°C. Flame retardant black polycarbonate housing. **Weight:** 1.5 lbs. (0.68 kg). Ball bearing, UL recognized, CSA certified.

Stock No.	Mfr.'s Type	Part No.	AC Volts	RPM	CFM	EACH		
						1-9	10-24	25-Up
599-0310	FF113	026165	115	2700/3200	200/245	**87.15**	**79.25**	**72.64**
599-0315	FF213	026166	220/230	2700/3200	200/245	**95.26**	**86.63**	**79.40**









Major® AC Fans

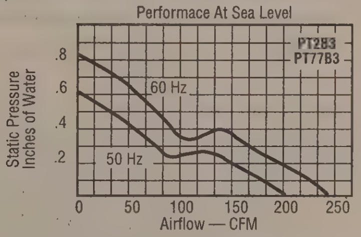
Features Feathered Edge™ blade design for low noise and auto reset thermal protector. For ambients of –10° to +70°C. Die-cast aluminum housing. UL recognized, CSA certified, VDE approved. **Weight:** 1.84 lbs. (0.84 kg). Ball bearing.

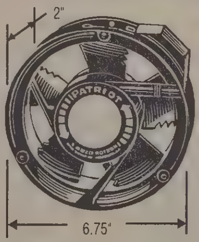
Stock No.	Mfr.'s Type	Part No.	AC Volts	RPM	CFM	EACH		
						1-9	10-24	25-Up
599-0320	MR2B3	028245	115	2850/3350	200/240	**59.07**	**53.72**	**49.24**
599-0325	MR77B3	028309	220/230	2850/3350	200/240	**61.15**	**55.59**	**50.96**

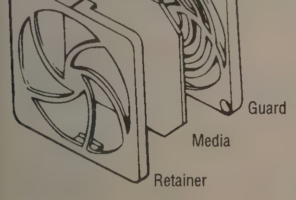
Patriot® AC Fans

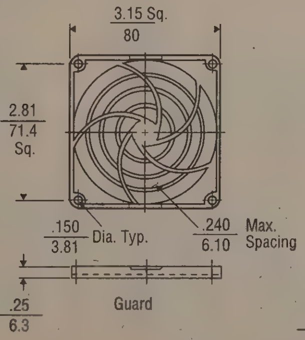
Features Feathered Edge™ blade design for low noise and auto reset thermal protector. For ambients of –10° to +70°C. Die-cast aluminum housing. UL approved, CSA certified, VDE approved. **Weight:** 1.84 lbs. (0.84 kg). Ball bearing.

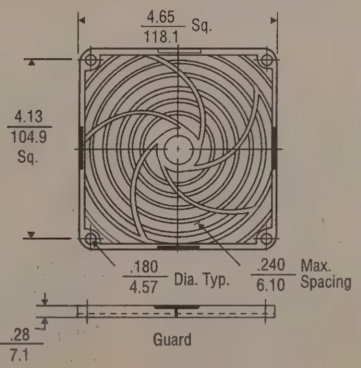
Stock No.	Mfr.'s Type	Part No.	AC Volts	RPM	CFM	EACH		
						1-9	10-24	25-Up
599-0330	PT2B3	028254	115	2850/3350	200/240	**59.07**	**53.72**	**49.24**
599-0335	PT77B3	028312	220/230	2850/3350	200/240	**61.15**	**55.59**	**50.69**











Filter Guard Assemblies

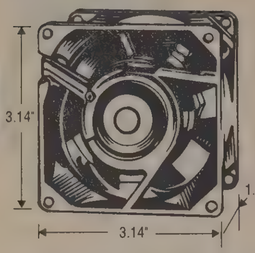
Type 554141. For Flight 80, Sprint DC Sprite Fans.

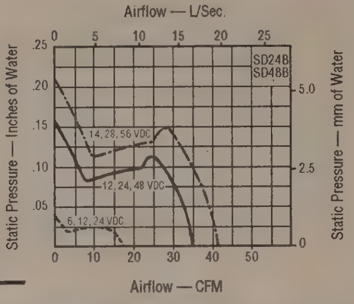
599-0480. 554141. **1-9**	EACH 2.65
10-47	EACH 2.31
48-99	EACH 2.10
100-199	EACH 1.94
200-Up	EACH 1.84

Type 554148. For Flight 120, Muffin DC, Muffin XL DC, Whisper, Whisper XL, Muffin, and Muffin XL Fans.

599-0485. 554148. **1-9**	EACH 3.36
10-47	EACH 3.10
48-99	EACH 2.84
100-199	EACH 2.63
200-Up	EACH 2.45

Sprite® DC Brushless Fan





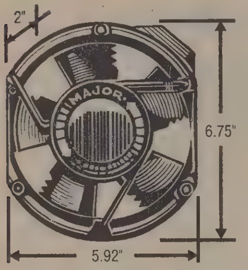
— NEW —

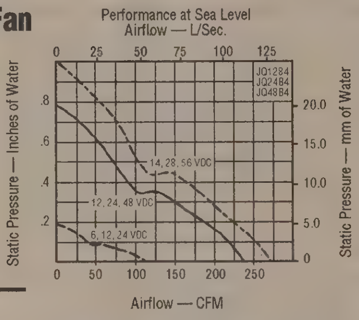
- ► Size: 3.14" Square × 1.645" Deep (79.8 mm × 41.8 mm)
- ► 17 to 35 CFM (8.0 to 16.5 L/Sec.)
- ► 24 and 48 VDC (Nominal)
- ► Low Noise Level
- ► Weight: 18 Oz. (.51 Kg)
- ► Operating Temperature Range: –10°C to +70°C
- ► UL Yellow Card Recognized — File No. E31293
- ► CSA Certified — File No. LR52898
- ► TUV Approved to IEC 950, VDE 0730; License R9071193

Stock No.	Mfr.'s Type	Part No.	Type of Bearing	Nominal VDC	VDC Range	RPM	CFM	EACH		
								1-9	10-19	20-Up
599-0600*	SD24B1	028934	Ball	24	12-28	3500	35	**25.46**	**23.34**	**21.55**
599-0612†	SD24B2	032002	Ball	24	12-28	3500	35	**27.19**	**24.92**	**23.00**
599-0610*	SD48B1	028935	Ball	48	24-56	3500	35	**25.46**	**23.34**	**21.55**
599-0614†	SD48B2	032003	Ball	48	24-56	3500	35	**27.19**	**24.92**	**23.00**

*Leadwires. †Terminal.

Major® DC (Quiet) Brushless Fan



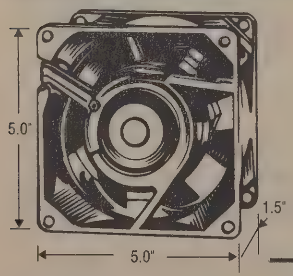


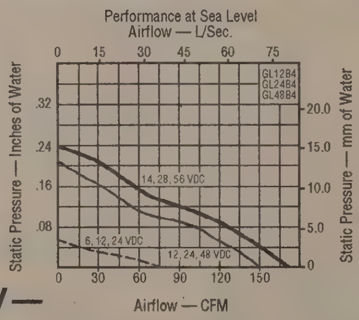
— NEW —

- ► Size: 6.75" × 5.92" × 2.00" Deep (171.5 mm × 150.4 mm × 50.8 mm)
- ► 100 to 260 CFM (47.2 to 123 L/Sec.)
- ► 12, 24 and 48 VDC (Nominal)
- ► Feathered Edge™ for Lower Noise
- ► Weight: 1.84 Lbs. (.84 Kg)
- ► Operating Temperature Range: –10°C to +70°C
- ► UL Yellow Card Recognized — File No. E31293
- ► CSA Certified — File No. LR52898
- ► TUV Approved to IEC 950, VDE 0730; License R97152 and R97188

Stock No.	Mfr.'s Type	Part No.	Type of Bearing	Nominal VDC	VDC Range	RPM	CFM	EACH		
								1-9	10-19	20-Up
599-0635	JQ12B4	031089	Ball	12	9-14	3500	235	**64.91**	**59.50**	**54.92**
599-0620	JQ24B4	031090	Ball	24	12-28	3500	235	**64.91**	**59.50**	**54.92**
599-0630	JQ48B4	031091	Ball	48	24-56	3500	235	**64.91**	**59.50**	**54.92**

Galaxy® DC Tubeaxial Fan



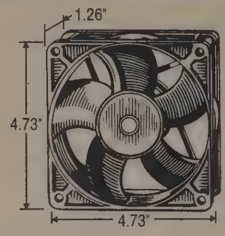


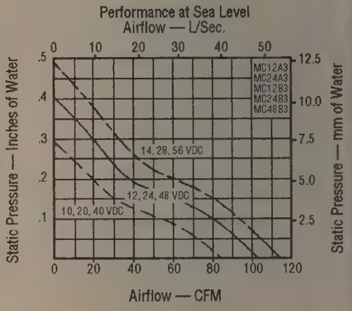
— NEW —

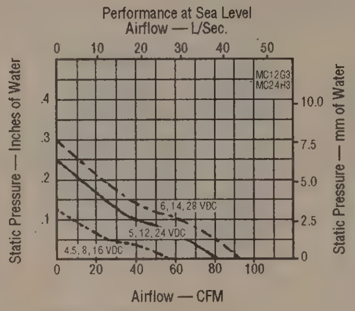
- ► Size: 5.0" Square × 1.5" Deep (127 mm × 38.1 mm)
- ► 90 to 165 CFM (42 to 77.9 L/Sec.)
- ► 12, 24 and 48 VDC (Nominal)
- ► Feathered Edge™ for Lower Noise
- ► Operating Temperature Range: –10°C to +70°C
- ► Weight: 1 Lb., 6 Oz. (.62 Kg)
- ► High Reliability Ball Bearings
- ► Available with ThermaPro-V
- ► UL Yellow Card Recognized — File No. E31293
- ► CSA Certified — File No. LR52898
- ► TUV Approved — R9472046

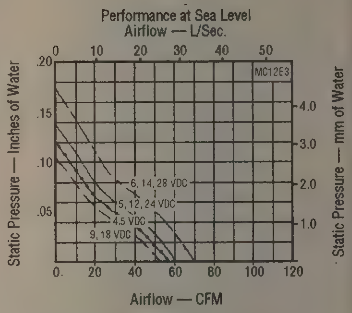
Stock No.	Mfr.'s Type	Part No.	Type of Bearing	Nominal VDC	VDC Range	RPM	CFM	EACH		
								1-9	10-19	20-Up
599-0655	GL12B4	031074	Ball	12	6-14	3250	150	**45.90**	**42.08**	**38.84**
599-0640	GL24B4	031075	Ball	24	12-28	3250	150	**45.90**	**42.08**	**38.84**
599-0650	GL48B4	031076	Ball	48	24-56	3250	150	**45.90**	**42.08**	**38.84**

Muffin® DC Brushless Fan







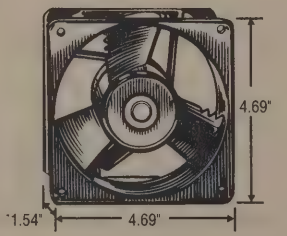


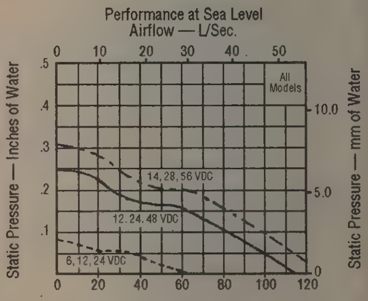
- ► Size: 4.73" Square × 1.26" Deep (120 mm × 32 mm)
- ► 50 to 112 CFM (24 to 48.1 L/Sec.)
- ► 5, 12, 24 and 48 VDC (Nominal)
- ► Low Noise Level
- ► High Reliability Ball or Sleeve Bearing
- ► Weight: 8.5 Oz. (.24 Kg)
- ► Operating Temperature Range: –10°C to +70°C
- ► UL Yellow Card Recognized — File No. E31293
- ► CSA Certified — File No. LR52898
- ► TUV Approved to IEC 950, VDE 0730; License R997229

Stock No.	Mfr.'s Type	Part No.	Type of Bearing	Nominal VDC	VDC Range	RPM	CFM	EACH		
								1-9	10-19	20-Up
599-0065	MC12A3	032207	Sleeve	12	6-14	3700	102	**19.24**	**17.52**	**16.07**
599-0560*	MC12B3	032489	Ball	12	6-14	3700	102	**20.25**	**18.56**	**17.14**
599-0070	MC12E3	032140	Sleeve	12	6-14	2150	58	**19.24**	**17.52**	**16.07**
599-0075	MC12G3	032141	Sleeve	12	6-14	2850	80	**19.24**	**17.52**	**16.07**
599-0670*	MC24A3	032208	Sleeve	24	12-28	3700	102	**17.84**	**16.35**	**15.10**
599-0680*	MC24B3	030572	Ball	24	12-28	3700	102	**20.25**	**18.36**	**17.14**
599-0690*	MC24H3	030577	Ball	24	12-28	2850	80	**20.25**	**18.36**	**17.14**
599-0066*	MC48B3	030573	Ball	48	22-56	3700	102	**20.25**	**18.36**	**17.14**

***NEW ITEM.**

Muffin® XL DC Brushless Fan



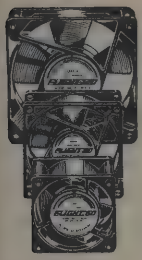


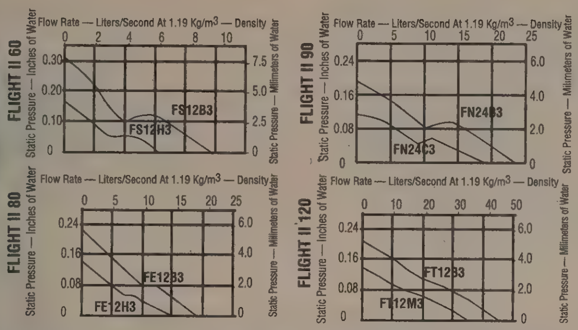
- ► Size: 4.69" Square × 1.54" Deep (119.1 mm × 39.1 mm)
- ► 40 to 120 CFM (18.9 to 56.6 L/Sec.)
- ► 12, 24 and 48 VDC (Nominal)
- ► Feathered Edge™ for Lower Noise
- ► Weight: 21.5 Oz. (.61 Kg)
- ► Operating Temperature Range: –10°C to +70°C
- ► UL Yellow Card Recognized — File No. E31293
- ► CSA Certified — File No. LR52898
- ► TUV Approved to IEC 950, VDE 0730; License R9071193

Stock No.	Mfr.'s Type	Part No.	Type of Bearing	Nominal VDC	VDC Range	RPM	CFM	EACH		
								1-9	10-19	20-Up
599-0120†	MD12B1	028865	Ball	12	6-14	3100	110	**43.58**	**39.62**	**37.49**
599-0288‡	MD12B2	028868	Ball	12	6-14	3100	110	**40.41**	**37.04**	**34.19**
599-0125†	MD24B1	028866	Ball	24	12-28	3100	110	**43.58**	**39.62**	**37.49**
599-0720‡*	MD24B2	028869	Ball	24	12-28	3100	110	**40.41**	**37.04**	**34.19**
599-0130†	MD48B1	028867	Ball	48	24-56	3100	110	**43.58**	**39.62**	**37.49**
599-0730‡*	MD48B2	028870	Ball	48	24-56	3100	110	**40.41**	**37.04**	**34.19**

†Leadwires. ‡Terminal. ***NEW ITEM.**

FLIGHT® II DC Fans



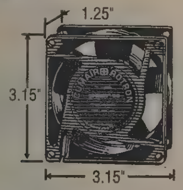

FLIGHT II 60
Flow Rate — Liters/Second At 1.19 Kg/m³ — Density
Static Pressure — Inches of Water
Static Pressure — Millimeters of Water
FS12B3
FS12H3
FLIGHT II 90
FN24B3
FN24C3
FLIGHT II 80
FE12B3
FE12H3
FLIGHT II 120
FT12B3
FT12M3

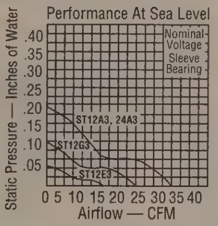
Solid-state circuitry for brushless electronic commutation. Features stainless steel ball bearings, 100% dielectric (tested at 600 VAC/1 sec., 500 microamps maximum leakage), low noise, electronic locked rotor protection, and polarity protection. UL recognized and CSA certified. **Operating Temperature Range:** –10 to +60°C. 12/24 VDC nominal. **Venturi:** PBT with glass; black; meets UL94V-0. **Propeller:** PBT; black; meets UL94V-0. Designed to EMI standards per FCC Part 15, Subpart J of Docket 20780, Class A and B radiated and conducted emissions, and per VDE Specification 0871/6.78 for category A and B requirements. **FLIGHT 60.** 8 to 21 CFM (3.7 to 9.9 L/Sec.); 2.36" square × 1.00" deep; 3.5 oz. (.10 kg). **FLIGHT 80.** 20 to 40 CFM (9 to 19 L/Sec.); 3.15" square × 1.00" deep; 4.3 oz. (.12 kg). **FLIGHT® II 90.** 20 to 50 CFM (9 to 24 L/Sec.); 3.62" square × 1.0" deep (92 mm × 25.4 mm); 4.9 oz. (.14 kg). **FLIGHT 120.** 45 to 95 CFM (21.2 to 44.8 L/Sec.); 4.73" square × 1.00" deep; 7.1 oz. (.20 kg).

Stock No.	Mfr.'s Type	Part No.	DCV Range	RPMs	Nominal CFM*	EACH		
						1-9	10-24	25-Up
599-0005	FS12B3	031156	6-14	5000	18	**16.25**	**15.35**	**14.30**
599-0010	FS24B3	031157	12-28	5000	18	**16.25**	**15.35**	**14.30**
599-0015	FS12H3	031158	9-14	3630	13	**16.25**	**15.35**	**14.30**
599-0020	FS24H3	031159	18-28	3630	13	**16.25**	**15.35**	**14.30**
599-0025	FE12B3	031162	6-14	3700	37	**17.30**	**16.30**	**15.25**
599-0030	FE24B3	031163	12-28	3700	37	**17.30**	**16.30**	**15.25**
599-0035	FE12H3	031164	9-14	2800	29	**17.30**	**16.30**	**15.25**
599-0040	FE24H3	031165	18-28	2800	29	**17.30**	**16.30**	**15.25**
599-0031	FN12B3	031168	6-14	2900	46	**18.15**	**17.05**	**16.00**
599-0032	FN24B3	031169	8-28	2900	46	**18.15**	**17.05**	**16.00**
599-0033	FN12C3	031170	6-14	2350	38	**18.15**	**17.05**	**16.00**
599-0034	FN24C3	031171	8-28	2350	38	**18.15**	**17.05**	**16.00**
599-0045	FT12B3	031174	6-14	3000	90	**20.75**	**19.40**	**18.25**
599-0050	FT24B3	031175	12-28	3000	90	**20.75**	**19.40**	**18.25**
599-0055	FT12M3	031176	9-14	2000	60	**20.75**	**19.40**	**18.25**
599-0060	FT24M3	031177	18-28	2000	60	**20.75**	**19.40**	**18.25**

*CFM (Airflow) will vary proportional to voltage.

SPRINT® DC Fans



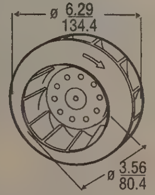


Sprint fans feature low noise, electronic locked rotor protection or impedance protection, and polarity protection. 12 to 39 CFM (8.0 to 18 L/Sec.); 12 or 24 VDC nominal. For ambients of –10°C to +70°C. Encased in a black plastic UL94V-0 housing. Meets FCC and VDE EMI requirements. 3.15" square × 1.25" deep; 6.3 oz. (.18 kg). 2.812" mounting hole centers. Features sleeve bearing models, with stainless steel ball bearing models available.

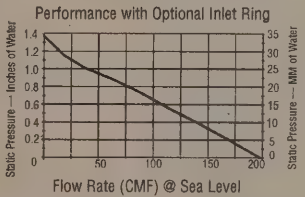
Stock No.	Mfr.'s Type	Part No.	DCV Range	RPMs	Nominal CFM*	EACH		
						1-9	10-24	25-Up
599-0080	ST12A3	032107	9-14	3400	34	**17.47**	**15.91**	**14.56**
599-0085	ST12G3	032126	10-14	2500	25	**17.47**	**15.91**	**14.56**
599-0090	ST12E3	032162	10-14	1700	16	**17.47**	**15.91**	**14.56**
599-0095	ST24A3	032127	18-28	3400	34	**17.47**	**15.91**	**14.56**

*CFM (Airflow) will vary proportional to voltage.

Diplomat™ DC



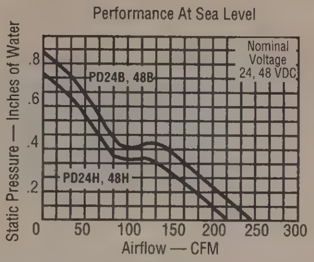
- **RPMs: 3400**
- **CFM: 200**

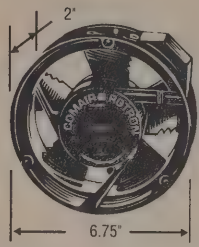


Brushless electronic commutation by dependable solid state circuitry. Stainless steel ball bearings. Electronic locked rotor protection, polarity protected, and automatic restart. **Impeller:** Polycarbonate, black, UL94V-0 flammability rating. **Motor Base:** Diecast aluminum. **Operating Temperature Range:** –10°C +70°C. UL, CSA, and TÜV (VDE) pending.

Stock No.	Mfr.'s Type	Part No.	Voltage Range	Nominal Voltage	EACH		
					1-9	10-24	25-Up
599-0540	DDF12B1	031604	6-14	12 VDC	**90.00**	**81.90**	**75.15**
599-0545	DDF24B1	031605	12-28	24 VDC	**90.00**	**81.90**	**75.15**
599-0550	DDF48B1	031598	24-56	48 VDC	**90.00**	**81.90**	**75.15**

Patriot® DC Fans



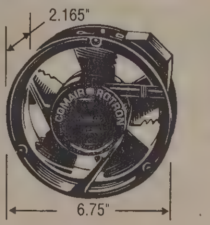


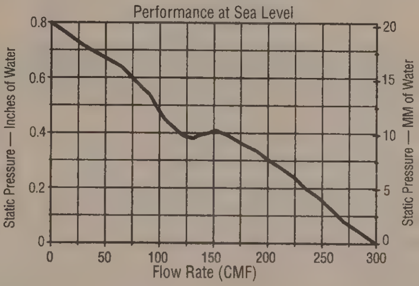
Features the famous Feathered Edge™ blade design for lower noise level. Electronic locked rotor protection; polarity protected. 6.375" mounting hole centers. For ambients of –10°C to +70°C. Cased in a die-cast aluminum housing. Meets FCC and VDE/EMI requirements. UL Yellow Card Recognized; CSA Certified. **Weight:** 1.84 lbs. (.84 kg).

Stock No.	Mfr.'s Type	Part No.	DCV Range	RPMs	Nominal CFM*	EACH		
						1-9	10-24	25-Up
599-0100	PD24B2	032032	12-28	3350	240	**68.43**	**62.24**	**61.58**
599-0105	PD48B2	032033	24-56	3350	240	**79.90**	**70.30**	**61.85**
599-0110	PD24H2	032016	12-28	3000	210	**84.66**	**76.20**	**68.58**
599-0115	PD48H2	032017	24-56	3100	210	**69.50**	**64.16**	**59.58**

*Airflow will vary proportional to voltage.

Falcon® DC and AC



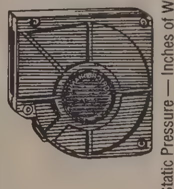


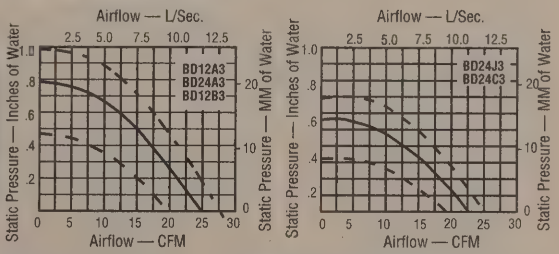
- **RPMs: 3400; CFM: 300**
- **DC Version: Brushless Electronic Commutation Provided by Dependable Solid State Circuitry**
- **AC Version: 2 Pole Permanent Split Capacitor, 1 Phase, 50/60 Hz, Stainless Steel Ball Bearings**
- **DC Version: Dielectric Tested At 600 VAC/1 Sec./500 Microamps Maximum Leakage**
- **AC Version: Dielectric Tested At 1800 VAC/1 Sec./500 Microamps Maximum Leakage**
- **DC Version: Electronic Locked Rotor Protection, Polarity Protected**
- **AC Version: Impedance Protected, Automatic Restart Capability**
- **AC Version: Dry Film Capacitor**

Featuring Feathered Edge™ blade design for lower noise with rugged die-cast aluminum housing. **Operating Temperature Range:** –10°C to +70°C.

Stock No.	Mfr.'s Type	Part No.	Voltage Range	Nominal Voltage	EACH		
					1-9	10-24	25-Up
599-0510	FD12B3	031654	6-14	12 VDC	**95.64**	**87.03**	**79.86**
599-0515	FD24B3	031653	12-28	24 VDC	**95.64**	**87.03**	**79.86**
599-0520	FD48B3	031652	24-56	48 VDC	**95.64**	**87.03**	**79.86**
599-0525	FA2B32	031659	—	115 VAC	**78.62**	**71.54**	**65.65**
599-0530	FA77B3	031660	—	230 VAC	**78.62**	**71.54**	**65.65**

Biscuit® DC Brushless Blowers



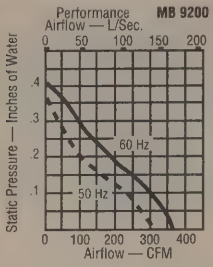

Airflow — L/Sec.
Static Pressure — Inches of Water
Static Pressure — MM of Water
BD12A3
BD24A3
BD12B3
BD24J3
BD24C3
Airflow — CFM

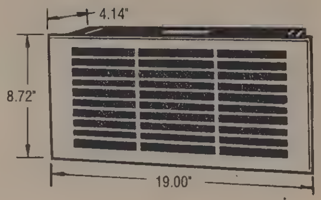
- **Size: 4.75" Square × 1.22" Deep**
- **8 to 28 CFM (8.5 to 13.2 L/Sec.)**
- **12, 24, and 48 VDC (Nominal)**
- **High Reliability Ball or Sleeve Bearings**
- **Low Noise Level**
- **Operating Temp. Range: –10°C to +70°C**
- **Weight: 10 Oz. (.28 Kg)**
- **UL Yellow Card Recognized File No. E31293**
- **CSA Certified — File No. LR52898**
- **TUV Approved to IEC 950, VDE 0730**
- **RPM: 2650 to 03050**

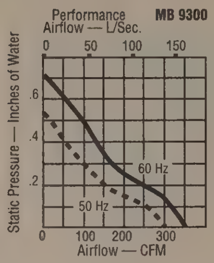
Stock No.	Mfr.'s Type	Part No.	VDC Range	EACH		
				1-9	10-24	25-Up
599-0321	BD12A3	032176	9-14	**32.76**	**29.80**	**27.30**
599-0322	BD24A3	032179	18-28	**32.76**	**29.80**	**27.30**
599-0324	BD24J3	032230	18-28	**32.76**	**29.80**	**27.30**
599-0326*	BD12B3	030619	9-14	**36.92**	**33.59**	**30.78**
599-0327*	BD24B3	030621	18-28	**36.92**	**33.59**	**30.78**
599-0328*	BD24C3	030623	18-28	**36.92**	**33.59**	**30.78**

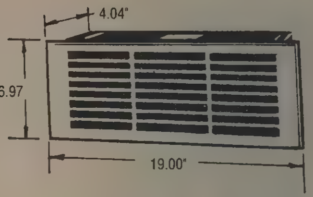
*Tachometer output model.

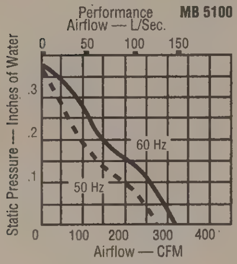
Modulair™ Cabinet Blowers

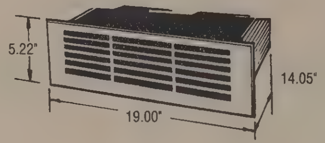


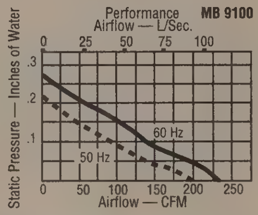


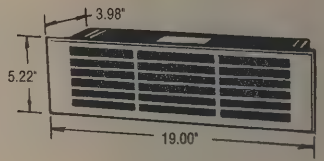












Designed for use in EIA 19" racks. Each blower includes grill, cleanable air filter, and finger guards. **Model MB 5100.** Powered by 2 Feather fans; continuous duty life of 6 years at 25°C. **Model MB 9100.** Powered by 3 Muffin fans; continuous duty life of 10 years at 25°C. **Model MB 9200.** Powered by 2 Feather fans; continuous duty life of 6 years at 25°C. **Model MB 9300.** Powered by 2 Major fans; continuous duty life of 5 years at 70°C.

MB 9200 AC

Stock No.	Mfr.'s Type	Bearing Type	Volts/Hz	RPM	CFM	EACH		
						1	2-5	6-9
599-0350	024488	Ball	115/60	2830/3350	310/370	**261.00**	**232.42**	**213.52**
599-0351	024489	Ball	220/60	2830/3350	310/370	**248.18**	**227.50**	**210.00**

MB 5100 AC

Stock No.	Mfr.'s Type	Bearing Type	Volts/Hz	RPM	CFM	1	2-5	6-9
599-0340	020099	Ball	11˜5/60	2830/3350	275/320	**263.03**	**239.14**	**219.19**
599-0341	020100	Ball	220/60	2830/3350	275/320	**260.36**	**236.68**	**216.99**

MB 9300 AC

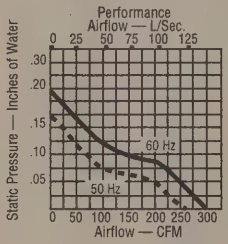
Stock No.	Mfr.'s Type	Bearing Type	Volts/Hz	RPM	CFM	EACH		
						1	2-5	6-9
599-0355	027384	Ball	115/60	2850/3350	300/350	**238.04**	**216.41**	**198.40**
599-0356	029069	Ball	220/60	2850/3350	300/350	**255.78**	**241.24**	**229.00**

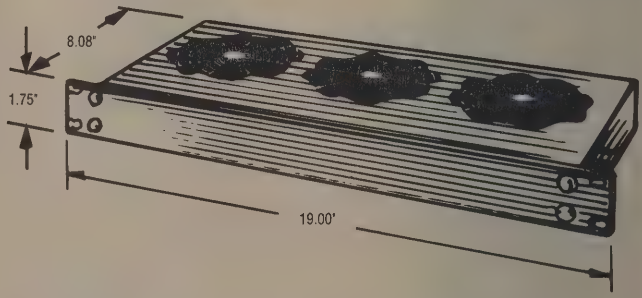
MB 9100 AC

Stock No.	Mfr.'s Type	Bearing Type	Volts/Hz	RPM	CFM	1	2-5	6-9
599-0345	024475	Sleeve	115/60	2700/3100	200/235	**176.93**	**160.86**	**147.47**
599-0346	024476	Sleeve	220/60	2700/3100	200/235	**165.70**	**151.90**	**140.21**

MB 100 Cabinet Blowers

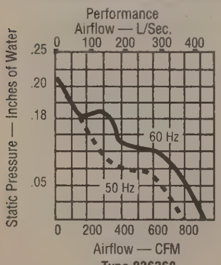
- **Performance Of 3 Muffin® Fans**
- **Fits EIA 19" Rack Cabinets**
- **Sleeve Bearings**



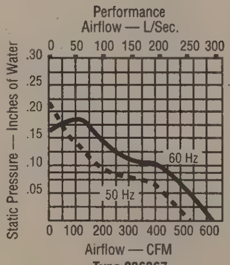


Stock No.	Mfr.'s Type	No. of Fans	RPM	CFM	EACH		
					1	2-5	6-9
599-0313	031038	3	2700/3100	250/300	**194.88**	**177.19**	**162.44**

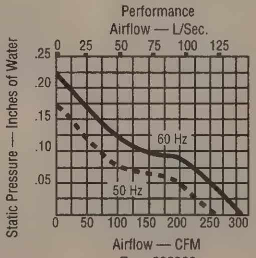
MB 1000 Cabinet Blowers



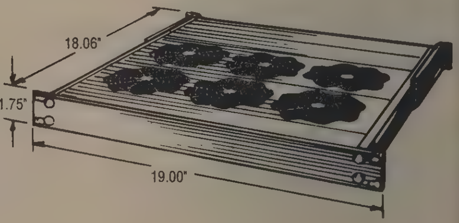
Type 036368



Type 036367



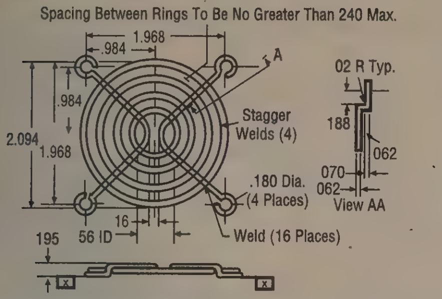
Type 036366



- **Muffin® Fans**
- **Fits EIA 19" Rack Cabinets**
- **Sleeve Bearings**

Stock No.	Mfr.'s Type	No. of Fans	RPM	CFM	EACH		
					1	2-5	6-9
599-0366	036368	3	2700/3100	250/300	**295.47**	**268.64**	**246.23**
599-0367	036367	6	2700/3100	530/600	**345.65**	**316.85**	**292.47**
599-0368	036366	9	2700/3100	800/900	**414.29**	**379.76**	**350.55**

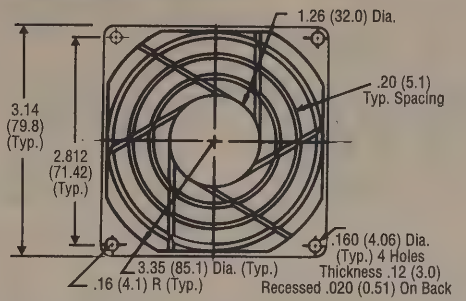
Finger Guard (60 mm)



For Flight 60. Meets U.L. 0.250 dia. plug gage test finish — bright nickel chrome 0.0005 min. 0.010 over wire dia. max. at butt joints, 0.005 max. depth of serration on wire. **Ribs:** 0.062 dia. **Rings:** 0.062 dia. Surface X to be flat within 0.060.

599-0460. Type 572621. **1-47**	**EACH 2.76**
48-99	**EACH 2.42**
100-Up	**EACH 2.21**

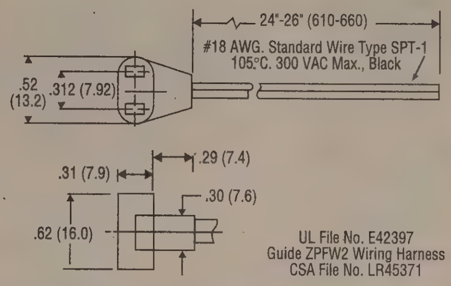
Finger Guard (80 mm)



For Flight 80, Sprint DC, and Sprite. Meets U.L., CSA 0.250/6.35 spacing. Made of Fiberite RTP 305 glass reinforced polycarbonate or GE Valox 420 polyester rated UL 94V-0.

599-0400. Type 550648. **1-47**	**EACH 1.10**
48-99	**EACH .94**
100-Up	**EACH .79**

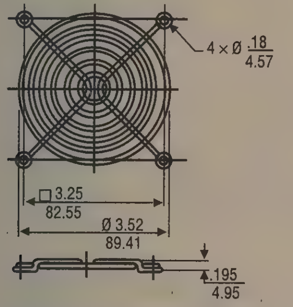
Plug and Cord



For Sprite, Whisper, Whisper XL, Muffin, Muffin XL, Skeleton, Major, Patriot, Caravel, Tarzan, and Biscuit. U.L. File #E42397. GUIDE ZPFW2 wiring harness. CSA File #LR45371.

599-0440. Type 428056. **1-47**	**EACH 1.40**
48-99	**EACH 1.22**
100-Up	**EACH 1.05**

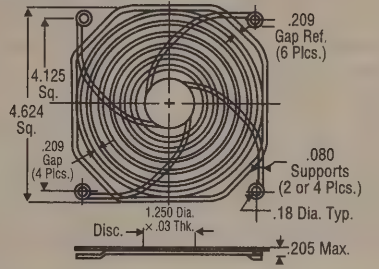
Finger Guard (90 mm)



For Flight 90. Welded steel wire, nickel chrome finish. Meets U.L., CSA 0.259/6.35 spacing.

599-0465. Type 554172. **1-47**	**EACH 1.86**
48-99	**EACH 1.66**
100-Up	**EACH 1.47**

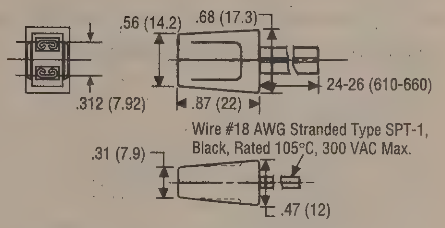
Finger Guard (120 mm)



For Flight 120, Muffin DC, Muffin XL DC, Whisper, Whisper XL, Muffin, Muffin XL, and Skeleton. Meets U.L., CSA 0.250/6.35 spacing. **Center Disc:** 0.03 (0.76) thk. **C.R.S. Wire Rings:** 0.062 (1.57) dia. steel. **Support:** 0.080 (2.03) dia. steel. **Finish:** Bright zinc plate with chromate treatment.

599-0415. Type 552934. **1-47**	**EACH 2.48**
48-99	**EACH 2.10**
100-Up	**EACH 1.94**

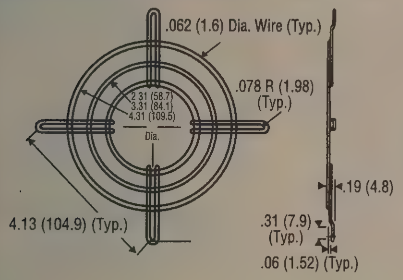
Plug and Cord



For Sprite, Whisper XL, Muffin XL, Skeleton, Major, Patriot, Caravel, Tarzan, and Biscuit. U.L. File #E42397. GUIDE ZPFW2 wiring harness. CSA File #LR45371.

599-0445. Type 550440. **1-47**	**EACH 1.74**
48-99	**EACH 1.55**
100-Up	**EACH 1.37**

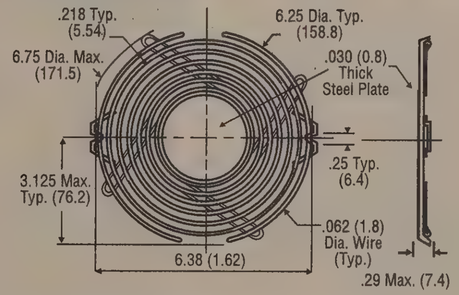
Finger Guard (120 mm)



For Flight 120, Muffin DC, Muffin XL DC, Whisper, Whisper XL, Muffin, Muffin XL, and Skeleton. Welded steel wire, bright zinc plated.

599-0470. Type 476042. **1-47**	**EACH 1.74**
48-99	**EACH 1.55**
100-Up	**EACH 1.37**

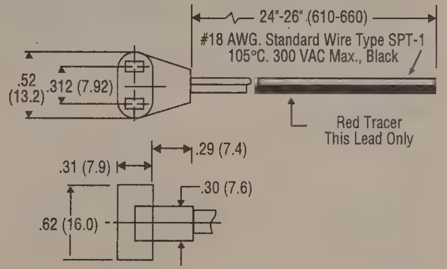
Finger Guard (6")



For Major DC and Major. Welded steel wire, bright zinc plated.

599-0390. Type 550272. **1-47**	**EACH 3.97**
48-99	**EACH 3.47**
100-Up	**EACH 3.20**

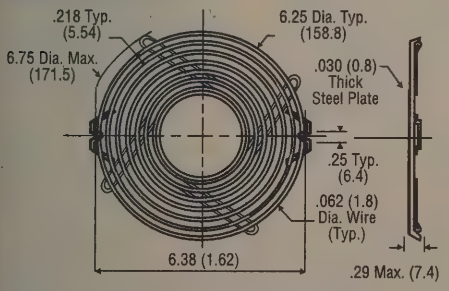
Plug and Cord


24"-26" (610-660)
#18 AWG. Standard Wire Type SPT-1 105°C. 300 VAC Max., Black
.52 (13.2)
.312 (7.92)
Red Tracer This Lead Only
.29 (7.4)
.31 (7.9)
.30 (7.6)
.62 (16.0)

For Muffin XL DC. Polarized with red tracer.

599-0450. Type 571064. **1-47**	**EACH 2.10**
48-99	**EACH 1.84**
100-Up	**EACH 1.68**

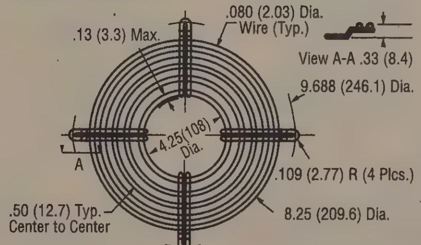
Finger Guard (6")



For Patriot DC and Patriot. Welded steel wire, bright zinc plated.

599-0410. Type 551199. **1-47**	**EACH 3.53**
48-99	**EACH 3.10**
100-Up	**EACH 2.84**

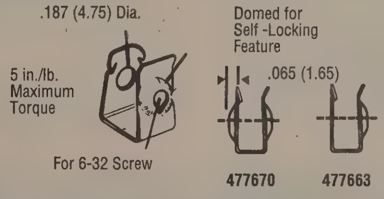
Finger Guard (10")



For Caravel. Made of steel wire with bright zinc finish. Mountings using #8 machine screws in the 4 legs equally spaced on 9.688 (246.1) dia.

599-0380. Type 476323. **1-47**	**EACH 4.83**
48-99	**EACH 4.41**
100-Up	**EACH 4.04**

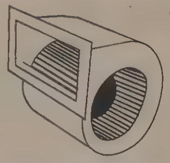
Mounting Clips

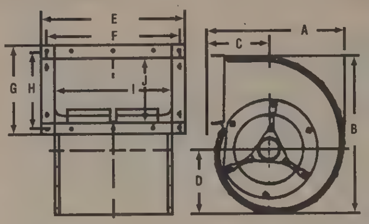


For Major DC, Patriot DC, Whisper, Muffin, Major, and Patriot. 0.017 (0.43) thick tempered spring steel finished in black phosphate with oil dip. Fits over flanges from 0.22 (5.59) to 0.30 (7.62). 5 in./lb. max. torque.

599-0425. Type 477663 (Flush). **1-47**	**EACH .18**
48-99	**EACH .17**
100-Up	**EACH .15**
599-0430. Type 477670 (Standoff). **1-47**	**EACH .25**
48-99	**EACH .23**
100-Up	**EACH .21**

Dual Inlet Centrifugal Blowers





Dual inlet blowers offer a large discharge from a quiet, compact unit. The external rotor motor is inside the forward curved impeller. 115 VAC, 50/60 Hz. See wiring diagram A.

Dimensions

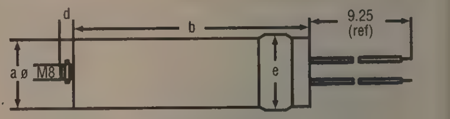
Mfr.'s Type	Dimensions (Inches)									
	A	B	C	D	E	F	G	H	I	J
D2E097-BE	6.38	6.50	3.39	2.68	7.09	6.61	3.94	3.47	5.75	2.64
D2E133-DB	8.03	8.39	3.80	3.68	10.63	10.00	5.59	4.96	9.13	4.02
D4E146-AA	8.11	8.62	3.81	3.86	10.63	10.00	5.59	4.96	9.13	4.02

Stock No.	Mfr.'s Type	Flange	Rotation*	CFM @ 0"	dBA	Watts	Wt. Lbs.	Cap. (µf)	EACH		
									1-9	10-24	25-49
600-2002	D2E097-BE11-77	Yes	L	156	49	54	3.5	8	**126.11**	**115.60**	**106.71**
600-2004	D2E133-DB21-47	Yes	R	353	55	195	9.0	16	**187.31**	**171.70**	**158.49**
600-2006	D4E146-AA25-34	Yes	L	400	50	120	8.5	8	**195.65**	**179.35**	**165.55**

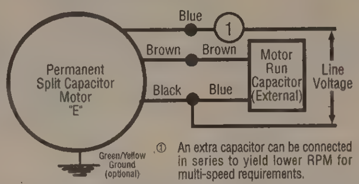
*Rotation as viewed from side opposite the lead exit.

Capacitors and Wiring Diagrams

Capacitors

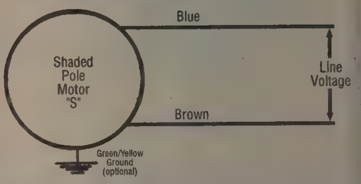


Motor Wiring Diagrams
A. PSC "Type E" Motor


Blue
①
Brown
Brown
Motor Run Capacitor (External)
Line Voltage
Black
Blue
Permanent Split Capacitor Motor "E"
Green/Yellow Ground (optional)

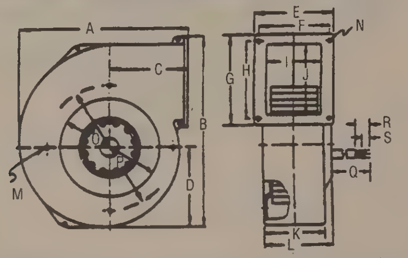
① An extra capacitor can be connected in series to yield lower RPM for multi-speed requirements.

B. Shaded Pole Motor



Stock No.	Mfr.'s Type	Size (µf)	Temperature Range (°C)	Dimensions (Inches)				EACH
				a	b	d	e	
600-2022	2161-4-7320	4	–25-+85	1.2	3.9	0.51	1.32	**20.59**
600-2024	2163-4-7320	6	–25-+85	1.4	3.9	0.51	1.52	**24.94**
600-2026	2164-4-7320	7	–25-+85	1.6	3.9	0.51	1.72	**26.61**
600-2028	2165-4-7320	8	–25-+85	1.4	3.9	0.51	1.52	**28.37**
600-2030	2166-4-7320	10	–25-+85	1.4	3.9	0.51	1.52	**35.70**
600-2032	2168-4-7320	16	–25-+85	1.8	6.3	0.51	1.90	**53.32**
600-2034	2169-4-7320	20	–25-+85	1.8	6.3	0.51	1.90	**67.13**

Single Inlet Centrifugal Blowers



ebm's single inlet blowers are supplied with an external rotor motor located inside the forward curved impeller which provides users with an efficient, reliable, space saving design. Easy mounting is provided using the discharge flange or four tapped holes around the inlet. The housing is electrically grounded to the motor. 115 VAC, 50/60 Hz.

Dimensions

Mfr.'s Type	Notes	Dimensions (Inches)																		
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
G2S097-DB	1	5.63	5.39	2.95	2.44	—	—	—	—	1.57	1.81	1.57	1.57	N/A	N/A	3.15	3.78	11.8	2.36	.315
G2E120-AR		6.85	7.48	3.23	3.23	4.53	3.94	3.26	2.68	2.99	1.97	3.23	3.86	M4	.276	3.94	5.20	17.7	3.35	.236
G2E140-AC	2	8.90	10.28	4.05	4.21	5.12	4.53	4.70	4.13	3.70	3.62	3.94	3.94	M4	.248	4.65	6.22	17.7	3.35	.236
G4E160-AB	2	8.90	10.28	4.05	4.21	5.12	4.53	4.70	4.13	3.70	3.62	3.94	3.94	M4	.248	5.12	6.89	17.7	3.35	.236

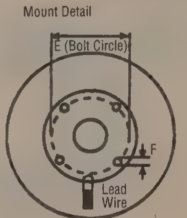
Note 1: Sheet metal housing. **Note 2:** Sheet metal housing available on special order.

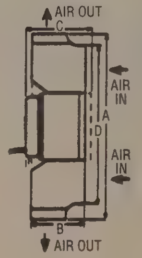
Stock No.	Mfr.'s Type	CFM @ 0"	dBA	Watts	Wt. Lbs.	Cap. (µf)	Wiring Diagram	EACH		
								1-9	10-24	25-49
600-2012	G2S097-DB61-08	29	45	33	2.0	—	B	**100.18**	**91.74**	**82.66**
600-2014	G2E120-AR54-43	152	62	100	4.5	6	A	**138.53**	**126.99**	**117.22**
600-2016	G2E140-AC13-42	251	67	200	7.5	16	A	**181.37**	**166.26**	**153.47**
600-2018	G4E160-AB15-09	262	67	90	7.0	7	A	**216.73**	**191.17**	**172.05**

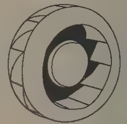
*Rotation as viewed from side opposite the lead exit.

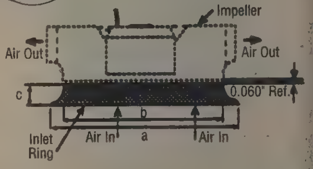
Backward Curved Motorized Impellers

The narrow profile of backward curved motorized impellers provides excellent space utilization. The impellers can be used in either evacuating or pressurizing applications and can be mounted horizontally or vertically. Impellers do not require a scrollhousing although an inlet ring is recommended on air inflow. 115 VAC, 50/60 Hz. See wiring diagram A.









Dimensions

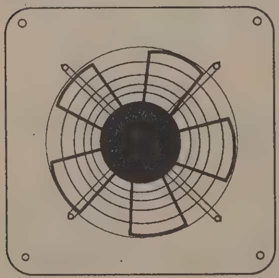
Mfr.'s Type	Dimensions (Inches)						No. of Holes
	A	B	C	D	E	F	
R2E133-AA	5.24	2.34	3.58	3.56	2.13	M4	4 × 90°
R2E175-AE	6.89	1.85	2.15	5.16	2.28	M4	4 × 90°
R2E190-AE	7.48	2.46	2.70	5.16	2.28	M4	4 × 90°
R2E220-AA	8.66	2.48	2.80	6.26	2.28	M4	4 × 90°
R2E225-AK	8.94	3.50	4.29	6.02	2.28	M4	4 × 90°

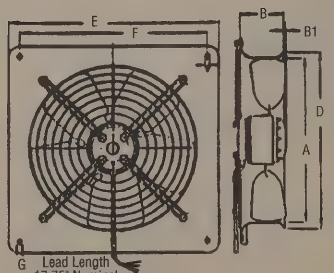
Stock No.	Mfr.'s Type	CFM @ 0"	dBA	Watts	Wt. Lbs.	Cap. (µf)	Impeller Material	EACH		
								1-9	10-24	25-49
600-4202	R2E133-AA30-13	180	53	35	2.0	4	Plastic	**73.07**	**66.98**	**61.83**
600-4204	R2E175-AE47-16	280	65	70	3.0	6	Galv. Steel	**84.57**	**77.52**	**71.56**
600-4206	R2E190-AE50-29	365	62	85	3.0	8	Plastic	**78.26**	**71.74**	**66.22**
600-4208	R2E220-AA44-23	530	70	100	3.5	10	Plastic	**86.79**	**79.56**	**73.44**
600-4211	R2E225-AR05-17	710	77	200	6.0	16	Plastic	**132.60**	**122.40**	**113.66**

Inlet Rings

Stock No.	Mfr.'s Type	Impeller Number	Dimensions (Inches)			EACH		
			a	b	c	1-9	10-24	25-49
600-4222	9566-2-4013	133	5.08	3.43	0.51	**5.40**	**5.00**	**4.50**
600-4224	9588-2-4013	175 and 190	7.28	5.12	0.67	**7.40**	**6.90**	**6.17**
600-4226	9597-2-4013	225	8.27	5.87	1.10	**12.05**	**11.05**	**10.20**
600-4228	9609-2-4013	220	9.96	6.10	0.79	**14.19**	**13.01**	**12.00**

Axial Fans





Lead Length 17.75" Nominal

Dimensions

Mfr.'s Type	Dimensions (Inches)						
	A	B	B1	D	E	F	G
W2E200-DE	7.87	2.40	0.79	7.99	12.28	10.24	0.28
W2E250-DB	10.00	2.52	1.06	10.12	14.57	12.60	0.28
W2E300-DA	12.05	3.27	0.47	12.87	16.93	14.96	0.35
W2E350-DA	14.09	3.54	0.87	15.35	19.09	17.13	0.35

Stock No.	Mfr.'s Type	CFM @ 0"	dBA	Watts	Wt. Lbs.	Cap. (µf)	Wiring Diagram	EACH
								1-9
600-4702	W2E200-DE63-51	520	69	87	7.0	8	A	**152.44**
600-4704	W2E250-DB13-51	1060	71	190	9.0	16	A	**174.88**
600-4706	W2E300-DA05-51	1620	73	230	11.6	16	A	**218.28**
600-4708	W4E350-DA20-51	2040	69	215	15.2	20	A	**258.34**

900 Series AC Fans

Fans are made of plastic with plastic impeller. Leads stripped and tinned. Mount either face using two .146" (3.7 mm) holes. 900 are air intake-over struts. 950 and 970 are air exhaust-over struts. Phase shift capacitors required and must be ordered separately.

With Housing

Stock No.	Mfr.'s Type	Curve	Type of Bearing	AC Volts	Hertz	Watts	CFM at 0"	dBA	Max. Temp.	Weight (Oz.)	Features	Approvals* UL	Approvals* CSA	Approvals* VDE	EACH 1-9	EACH 10-24	EACH 25-Up
600-9190	900	1	Sleeve	24	60/50	2.7	19	17	85	5	1	✔	✔	✔	29.12	26.69	24.64
				42	60/50	7.5	26	27	55								
600-9200	950	2	Sleeve	24	60/50	7.0	39	35	70	5	2	✔	✔	✔	33.57	30.77	28.40

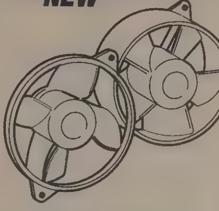
Without Housing

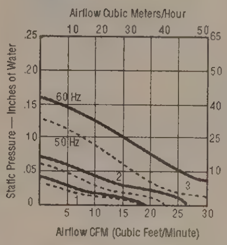
Stock No.	Mfr.'s Type	Curve	Type of Bearing	AC Volts	Hertz	Watts	CFM at 0"	dBA	Max. Temp.	Weight (Oz.)	Features	Approvals* UL	Approvals* CSA	Approvals* VDE	EACH 1-9	EACH 10-24	EACH 25-Up
600-9210	971TR	†	Sleeve	12	60/50	7.0	15	17	70	4	1	✔	✔	✔	29.12	26.69	24.64
600-9220	970T	†	Sleeve	24	60/50	7.0	21	29	70	4	1	✔	✔	✔	31.81	29.15	26.91

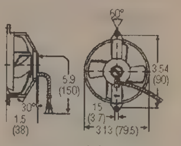
*UL Yellow Card E38324, CSA File 27697, VDE File 6617; 1176 (8550N, 8556N). †Airflow and noise performance can only be measured in each specific installation and application. **Features:** ¹5.9" AWG 24 Leads. ²4.9" AWG 24 Leads.

600-9330. LZ351. Phase Shift Capacitor for Fan Model 900, 5-6 mfd/70 VAC. **1-10** .... **EACH 7.40**
10-24 .... **EACH 6.83** **25-Up** .... **EACH 6.34**
600-9340. LZ352. Phase Shift Capacitor for Fan Models 950 and 970T, 15 mfd/63 VAC. **1-10** .... **EACH 11.96**
10-24 .... **EACH 10.98** **25-Up** .... **EACH 10.20**
600-9350. LZ353. Phase Shift Capacitor for Fan Model 971TR, 68 mfd/35 VAC. **1-10** .... **EACH 9.69**
10-24 .... **EACH 8.94** **25-Up** .... **EACH 8.31**

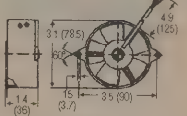
— NEW —



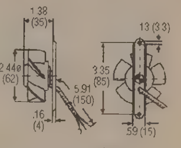

Airflow Cubic Meters/Hour
10 20 30 40 50
Static Pressure — Inches of Water
.25 .20 .15 .10 .05 0
Static Pressure Pascals (Pa)
65 50 40 25 10
60 Hz
50 Hz
1
2
3
5 10 15 20 25 30
Airflow CFM (Cubic Feet/Minute)



900

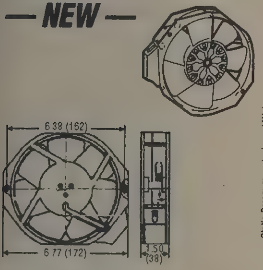


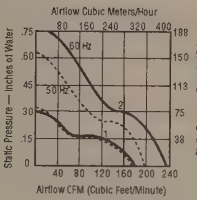
950



971TR, 970T

— NEW —





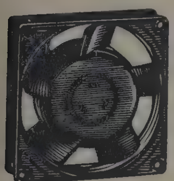
W2E142 Series AC Fans

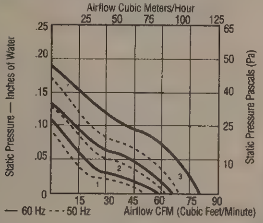
Fans are made of aluminum. Mounting is from either face using four .169" (4.3 mm) holes. Motor is a PSC external rotor motor. Air exhaust-over struts.

Stock No.	Mfr.'s Type	Curve	Type of Bearing	AC Volts	Hertz	Watts	CFM at 0"	dBA	Max. Temp.	Weight (Oz.)	Features	Approvals* UL	Approvals* CSA	Approvals* VDE	EACH 1-9	EACH 10-24	EACH 25-Up
600-9230	W2E142-CC13-16	1	Ball	115	60/50	16	175	54	48°C	32	¹	✔	✔		89.76	82.28	75.95
600-9240	W2E142-CC15-16	1	Ball	230	60/50	16	175	54	48°C	32	¹	✔	✔		89.76	82.28	75.95
600-9996	W2E142-BB05-01	2	Ball	115	60/50	26	236	62	56°C	32	¹	✔	✔	✔	82.06	75.22	69.44
600-9250	W2E142-BB05-87	2	Ball	115	60/50	26	236	62	56°C	32	²	✔	✔	†	89.76	82.28	75.95
600-9260	W2E142-BB01-01	2	Ball	230	60/50	26	236	62	56°C	32	¹	✔	✔	✔	82.06	75.22	69.44
600-6270	W2E142-BB01-87	2	Ball	230	60/50	26	236	62	56°C	32	²	✔	✔	†	89.76	82.28	75.95

*UL Yellow Card E54522, CSA File LR43145, VDE File 836 or 1718 (†VDE File 1168). **Features:** ¹.110" Terminals. ²Terminals, Hall Effect.

Models 3906 and 3906L Fans

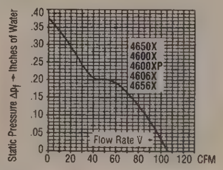



Airflow Cubic Meters/Hour
25 50 75 100 125
Static Pressure — Inches of Water
.25 .20 .15 .10 .05 0
Static Pressure Pascals (Pa)
65 50 40 25 10
1
2
3
15 30 45 60 75 90
— 60 Hz - - - 50 Hz
Airflow CFM (Cubic Feet/Minute)

1 in. flat axial fans. Metal fan housing, impeller of fiberglass reinforced plastic (PC). Internal rotor shaded pole motor. Counterclockwise rotation viewed from rotor, air output over struts. Elec. connection with LZ120 plug and cord set, or soldered. Mass 10 oz. (280 g). **Dimensions:** 3.62" × 3.62" × .98" (92 mm × 92 mm × 25 mm).

Stock No.	Mfr.'s Type	AC V/Hz	dB (Noise)	RPM	CFM	EACH 1-9	EACH 10-24	EACH 25-49
600-3906	3906	115/60	40	3150	41	38.30	35.10	32.40
600-3907	3906L	115/60	27	1850	23	40.99	37.57	34.68

Models 4600X/4606X/4650X/4656X/4600XP Fans

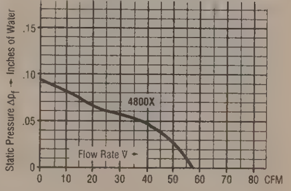


Metal housing and impeller. Shaded pole motor. Clockwise rotation viewed from rotor, air input over struts. Elec. connection with LZ 120 plug and cord set, or soldered. Mass 19.8 oz. (550 g). **Dimensions:** 4.68" × 4.68" × 1.5" (119 mm × 119 mm × 38 mm).

Stock No.	Mfr.'s Type	AC V/Hz	dB (Noise)	RPM	CFM	EACH 1-9	EACH 10-24	EACH 25-49
600-4600	4600X	115/60	50	3100	105.9	20.31	18.62	17.18
600-4506	4606X	115/60	51	3100	105.9	34.50	31.84	28.74
600-4650	4650X	230/60	50	3100	105.9	23.01	21.23	20.50
600-4657	4656N	230/60	51	3100	105.9	36.45	33.64	30.36
600-4601*	4600XP	115/60	50	3100	105.9	27.60	25.47	22.99

*5 year warranty.

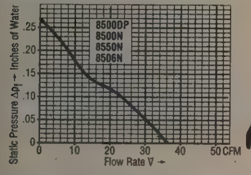
Model 4800X Fan

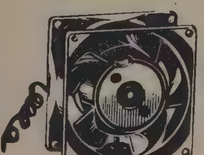

Static Pressure Δpf → Inches of Water
.15 .10 .05 0
4800X
Flow Rate V̇ →
0 10 20 30 40 50 60 70 80 CFM

Metal housing and impeller. Shaded pole motor. Clockwise rotation viewed from rotor, air input over struts. Elec. connection with LZ 120 plug and cord set, or soldered. Mass 18.7 oz. (520 g). **Dimensions:** 4.68" × 4.68" × 1.5" (119 mm × 119 mm × 38 mm).

Stock No.	Mfr.'s Type	AC V/Hz	dB (Noise)	RPM	CFM	EACH 1-9	EACH 10-24	EACH 25-49
600-4800	4800X	115/60	32	1800	58.9	23.10	21.32	19.24

Models 8500N/8506N/8550N/8500DP Fans



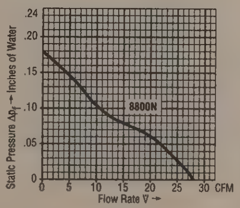


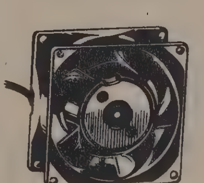
Metal housing and impeller. Shaded pole motor. Clockwise rotation viewed from rotor; air output over struts. Elec. connection via 2 leads AWG 18, 12 in. (310 mm). Mass 17.3 oz. (480 g). **Dimensions:** 3.13" × 3.13" × 1.5" (80 mm × 80 mm × 38 mm).

Stock No.	Mfr.'s Type	AC V/Hz	dB (Noise)	RPM	CFM	EACH 1-9	EACH 10-24	EACH 25-49
600-8500	8500N	115/60	34	3150	35.9	21.10	20.06	18.50
600-8506	8506N	115/60	35	3300	35.9	37.50	34.61	31.24
600-8550	8550N	230/60	34	3150	35.9	22.81	20.91	19.30
600-8501*	8500DP	115/60	34	3150	35.9	27.63	25.33	23.39

*5 year warranty.

Model 8800N Fan

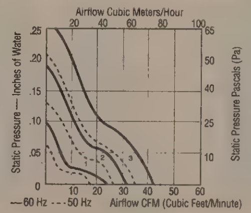


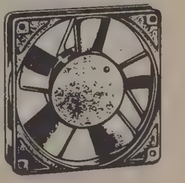


Metal housing and impeller. Shaded pole motor. Clockwise rotation viewed from rotor, air input over struts. Elec. connection via 2 leads AWG 18, TR 64, 17 in. (440 mm). Mass 17.3 oz. (480 g). **Dimensions:** 3.13" × 3.13" × 1.5" (80 mm × 80 mm × 38 mm).

Stock No.	Mfr.'s Type	AC V/Hz	dB (Noise)	RPM	CFM	EACH 1-9	EACH 10-24	EACH 25-49
600-8800	8800N	115/60	28	2550	27.7	23.73	21.76	20.09

Models 9906 and 9906L Fans

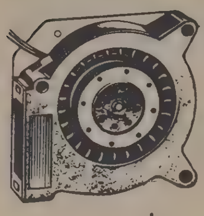


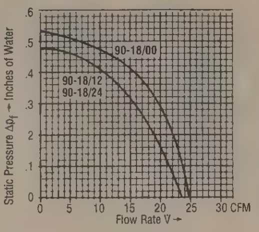


Metal fan housing, impeller of fiberglass reinforced plastic (PC). Internal rotor shaded pole motor. Counterclockwise rotation viewed from rotor, air output over struts. Elec. connection with LZ 120 plug and cord set, or soldered. Mass 11.5 oz. (320 g). Ball bearing. **Dimensions:** 4.69" × 4.69" × 1.0" (119 mm × 119 mm × 25 mm).

Stock No.	Mfr.'s Type	AC V/Hz	dB (Noise)	RPM	CFM	EACH 1-9	EACH 10-24	EACH 25-49
600-9899	9906	115/60	42	2850	79	39.87	36.55	33.74
600-9890	9906L	115/60	35	2100	59	42.56	39.02	36.01

Models RL90-18/00, RL90-18/14N and RL90-18/12N Blowers


A



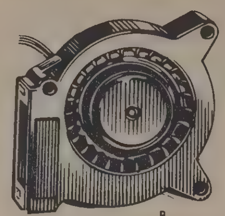

B

Fig. A. Model RL90-18/00 Blower

Housing of fiberglass reinforced plastic (PC) and metal plate, impeller of fiberglass reinforced plastic (PA). Shaded pole motor. Clockwise rotation viewed from rotor, air output through housing window. Elec. connection via 2 leads AWG 18, TR 64, 12 in. (310 mm). **Mass:** 24.5 oz. (680 g). **Dimensions:** 4.75" × 4.75" × 1.45" (121 mm × 121 mm × 37 mm).

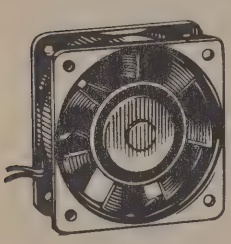
Stock No.	Mfr.'s Type	AC V/Hz	dB (Noise)	RPM	CFM	EACH		
						1-9	10-24	25-49
600-1005	RL90-18/00	115/60	51	2600	23.5	46.46	42.59	39.31

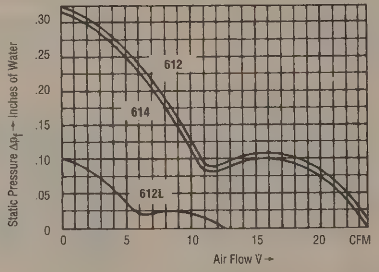
Fig. B. Model RL90-18/14N or 18/12N Blower

Housing of fiberglass reinforced plastic (PC) or metal plate, impeller of fiberglass reinforced plastic (PA). Electronically commutated DC motor. Clockwise rotation viewed from rotor, air output through housing window. Elec. connection via 2 leads AWG 22, TR 64, 12 in. (210 mm). **Mass:** 23.8 oz. (660 g). Ball bearing. **Dimensions:** 4.75" × 4.75" × 1.45" (121 mm × 121 mm × 38 mm).

Stock No.	Mfr.'s Type	DC Volts	dB (Noise)	RPM	CFM	EACH		
						1-9	10-24	25-49
600-9018	RL90-18/14N	24	58	2500	24	61.57	56.44	52.10
600-1016	RL90-18/12N	12	58	2500	24	61.57	56.44	52.10

600 Series Multifans

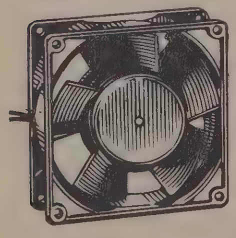


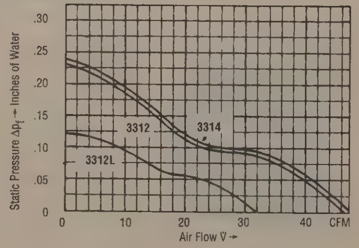


Fan of fiberglass reinforced plastic. PBTP housing, PA impeller. Electronically commutated DC motor. Clockwise rotation viewed from rotor, air output over struts. Elec. connection via 2 leads AWG 22, TR 64, 12 in. (310 mm). **Mass:** 3 oz. (85 g). Ball bearing. **Dimensions:** 2.44" × 2.44" × 1.0" (62 mm × 62 mm × 25 mm).

Stock No.	Mfr.'s Type	DC Volts	dB (Noise)	RPM	CFM	EACH		
						1-9	10-24	25-49
600-0811	612L	12	26	3000	12.3	28.00	25.67	23.70
600-0812	612	12	40	5300	23.3	22.44	20.57	18.99
600-0814	614	24	40	5300	23.3	22.44	20.57	18.99

3300 Series Multifans



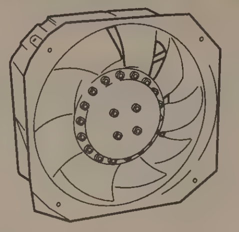


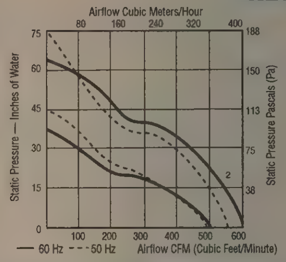
Fan of fiberglass reinforced plastic. PBTP housing, PA impeller. Electronically commutated DC motor. Clockwise rotation viewed from rotor, air output over struts. Elec. connection via 2 leads AWG 22, TR 64, 12 in. (310 mm). **Mass:** 6.8 oz. (190 g). Ball bearing. **Dimensions:** 3.62" × 3.62" × 1.26" (92 mm × 92 mm × 32 mm).

Stock No.	Mfr.'s Type	DC Volts	dB (Noise)	RPM	CFM	EACH		
						1-9	10-24	25-49
600-3312	3312	12	37	3000	47	28.10	25.75	23.77
600-3314	3314	24	37	3000	47	28.10	25.75	23.77
600-3311	3312L	12	29	2150	33	28.10	25.75	23.77

W2E200-HH Series AC Fans

— NEW —

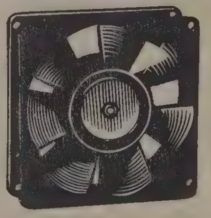


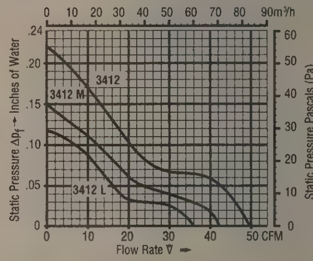

Airflow Cubic Meters/Hour
80
160
240
320
400
Static Pressure — Inches of Water
75
60
45
30
15
0
188
150
113
75
38
Static Pressure Pascals (Pa)
2
100
200
300
400
500
600
— 60 Hz - - - 50 Hz
Airflow CFM (Cubic Feet/Minute)

Mounting: From either face using four .177" (4.5 mm) holes. **Weight:** 42 oz. (1200 g). **Housing:** Aluminum. **Capacitor:** Included; mounted on unit within envelope. **Bearings:** Double-shielded ball. **Options:** Grill guard #78128-2-4039. **Dimensions:** 8.86" × 8.86" × 3.15". **AC Fan.** Ball bearing, all metal, air exhaust — over struts. Terminal block.

Stock No.	Mfr.'s Type	Type of Bearing	AC Volts	Hertz	Watts	CFM @ 0 (In.)	dBA	Temp. Max. °C	Wt. Oz.	EACH		
										1-9	10-24	25-49
600-0200	W2E200-HH82-01	Ball	115	60/50	60	500	56	75	42	125.83	115.35	106.47
600-0205	W2E200-HH64-01	Ball	230	60/50	60	500	56	75	42	125.83	115.35	106.47
600-0210	W2E200-HH86-01	Ball	115	60/50	80	607	61	75	42	125.83	115.35	106.47
600-0215	W2E200-HH38-01	Ball	230	60/50	80	607	61	75	42	125.83	115.35	106.47

Model 3400 Series Fans

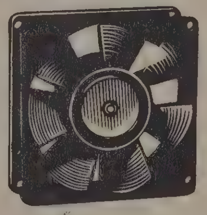


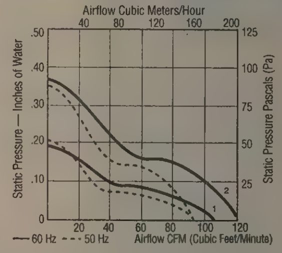


Fan of fiberglass reinforced plastic. PBTP housing, PA impeller. Electronically commutated external rotor DC motor. Clockwise rotation viewed from rotor, air output over struts. Elec. connection via 2 leads AWG 22, TR 64, 12 in. (310 mm). **Mass:** 150 g. **Dimensions:** 3.62" × 3.62" × 1.26" (119 mm × 119 mm × 32 mm).

Stock No.	Mfr.'s Type	DC Volts	dB (Noise)	RPM	CFM	EACH		
						1-9	10-24	25-49
600-3415	3412	12	36	3050	49.4	21.51	19.72	18.20
600-3413	3412M	12	32	2650	42.4	21.51	19.72	18.20
600-3412	3412L	12	27	2200	35.8	21.51	19.72	18.20

W2K121 Series Fans




Airflow Cubic Meters/Hour
40
80
120
160
200
Static Pressure — Inches of Water
.50
.40
.30
.20
.10
0
125
100
75
50
25
Static Pressure Pascals (Pa)
2
1
20
40
60
80
100
120
— 60 Hz - - - 50 Hz
Airflow CFM (Cubic Feet/Minute)

Housing is metal with plastic impellers. Connection terminates with two flat pins, .118" × .02". Air exhaust — over struts. Mounting is either face using four .169" (4.3 mm) holes. **Dimensions:** 5.00" × 5.00" × 1.50" (127 mm × 127 mm × 38 mm).

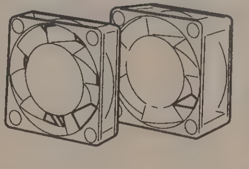
Stock No.	Mfr.'s Type	AC Volts	dB (Noise)	Bearing Type	CFM	EACH		
						1-9	10-24	25-49
600-0902	W2K121-AA15-13	115	47	Ball	121	52.21	47.86	44.16
600-0904	W2K121-AA15-39	115	47	Sleeve	121	36.45	33.42	30.84
600-0906	W2K121-AA15-01	115	47	Ball	121	52.21	47.86	44.16
600-0908	W2K121-AA15-03	115	47	Sleeve	121	34.87	31.97	29.51
600-0910	W2K121-AA01-13	230	47	Ball	121	52.21	47.86	44.16
600-0912	W2K121-AA01-39	230	47	Sleeve	121	34.87	31.97	29.51
600-0914	W2K121-AA01-01	230	47	Ball	121	52.21	47.86	44.16
600-0916	W2K121-AA01-03	230	47	Sleeve	121	34.87	31.97	29.51

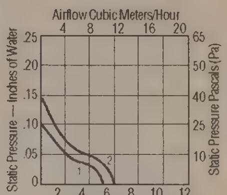
Accessories

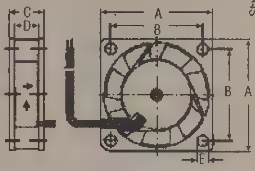
Stock No.	Mfr.'s Type	Description	Fits Series	EACH
600-5508	LZ22N	Metal Finger Guard	8000	2.58
600-5500	LZ23	Metal Finger Guard	3000	3.40
600-5506	LZ24	Metal Finger Guard	6000	6.31
600-5507	LZ28	Metal Finger Guard	800	2.38
600-5504	LZ30	Metal Finger Guard	2500S/4000	2.78
600-5512	LZ30P	Plastic Finger Guard	2500S/4000	2.58
600-5501	LZ40	Hardware	2500S/4000	1.27
600-5503	LZ40N	Screen	2500S/4000	7.69
600-5502	LZ60	Filter	2500S/4000	3.82
600-5505	LZ120	Plug and Cord Set	300/4000/6000	2.45

400 Series Brushless DC Fans

Fans are made of plastic with a plastic impeller. **Color Coded Lead Wires:** Red (+); Black (–). Air exhaust-over struts. They can be mounted from either face using four holes. 12.2" AWG 26 leads.




Airflow Cubic Meters/Hour
4
8
12
16
20
Static Pressure — Inches of Water
.25
.20
.15
.10
.05
0
65
50
40
25
10
Static Pressure Pascals (Pa)
1
2
2
4
6
8
10
12
Airflow CMF (Cubic Feet/Minute)



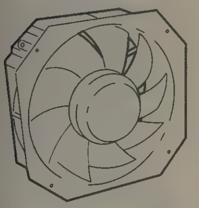
Dimensions

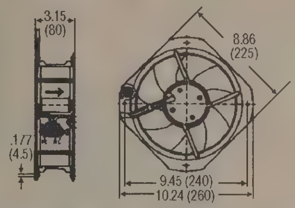
Mfr.'s Type	A		B		C		D		E	
	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm
412F/414F	1.57	40	1.26	32	.39	10	.24	6	.14	3.5

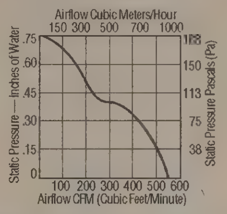
Mfr.'s Type	A		B		C		D		E	
	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm
412/414	1.57	40	1.26	32	.79	20	.63	16	.17	4.3

Stock No.	Mfr.'s Type	Curve	Type of Bearing	DC Volts	DC Voltage Range	Watts	CFM at 0"	dBA	Max. Temp.	Weight (Oz.)	Approvals*			EACH		
											UL	CSA	VDE	1-9	10-24	25-Up
600-9280	412F	1	Sleeve	12	6 to 15	0.7	5	26	70°C	2	✓	✓	✓	**15.47**	**14.28**	**13.26**
600-9290	412FH	2	Sleeve	12	6 to 15	0.8	6	28	70°C	2	✓	✓	✓	**16.23**	**14.99**	**13.92**
600-9300	414F	1	Sleeve	24	12 to 30	0.7	5	26	70°C	2	✓	✓	✓	**15.47**	**14.28**	**13.26**
600-9310	412	2	Sleeve	12	6 to 15	0.9	6	26	70°C	2	✓	✓	✓	**16.23**	**14.99**	**13.92**
600-9320	414	2	Sleeve	24	12 to 30	0.9	6	26	70°C	2	✓	✓	✓	**16.23**	**14.99**	**13.92**

*UL Yellow Card E38324, CSA File 27697, VDE File 3072.





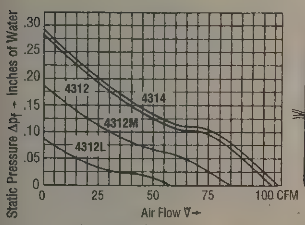


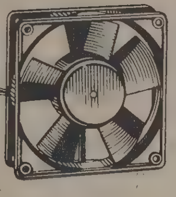
W1G200 Series Brushless DC Fans

Fans are made of aluminum. They have terminal block connections and can be mounted from either face using four .177" (4.5 mm) holes. They have a metal impeller, air exhaust, and over struts. **Approvals:** Pending.

Stock No.	Mfr.'s Type	Type of Bearing	DC Volts	DC Voltage Range	Watts	CFM at 0"	dBA	Max. Temp.	Weight (Oz.)	EACH
600-9170	W1G200-HH19-01	Ball	24	18 to 28	51	550	61	60°C	42	**261.51**
600-9180	W1G200-HH01-01	Ball	48	36 to 56	51	550	61	60°C	42	**284.58**

4300 Series Multifans

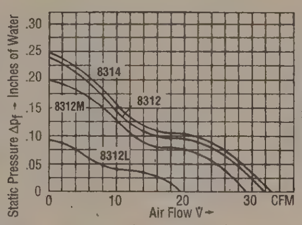


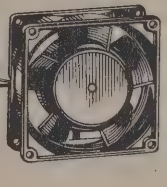


Fan of fiberglass reinforced plastic. PBTP housing, PA impeller. Electronically commutated DC motor. Clockwise rotation viewed from rotor, air output over struts. Elec. connection via 2 leads AWG 22, TR 64, 12 in. (310 mm). **Mass:** 8 oz. (220 g). Ball bearing. **Dimensions:** 4.68" × 4.68" × 1.26" (119 mm × 119 mm × 32 mm).

Stock No.	Mfr.'s Type	Volts DC	dB (Noise)	RPM	CFM	EACH		
						1-9	10-24	25-49
600-4312	4312	12	45	2800	100.0	**28.25**	**26.07**	**23.53**
600-4314	4314	24	45	2800	100.0	**25.13**	**23.04**	**21.26**
600-4310	4312L	12	30	1550	55.9	**25.13**	**23.04**	**21.26**
600-4311	4312M	12	40	2300	82.4	**28.25**	**26.07**	**23.53**

8300 Series Multifans

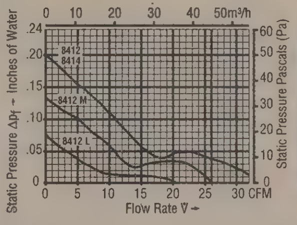


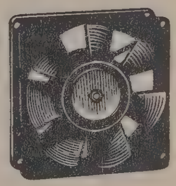


Fan of fiberglass reinforced plastic. PBTP housing, PA impeller. Electronically commutated DC motor. Clockwise rotation viewed from rotor, air output over struts. Elec. connection via 2 leads AWG 22, TR 64, 12 in. (310 mm). **Mass:** 6.1 oz. (170 g). Ball bearing. **Dimensions:** 3.13" × 3.13" × 1.26" (80 mm × 80 mm × 32 mm).

Stock No.	Mfr.'s Type	Volts DC	dB (Noise)	RPM	CFM	EACH		
						1-9	10-24	25-49
600-8312	8312	12	36	3300	31.8	**27.73**	**25.42**	**23.46**
600-8314	8314	24	36	3300	31.8	**27.73**	**25.42**	**23.46**
600-8310	8312L	12	26	2000	18.8	**27.73**	**25.42**	**23.46**
600-8311	8312M	12	34	3000	28.3	**27.73**	**25.42**	**23.46**

8400 Series Fans

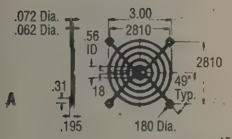




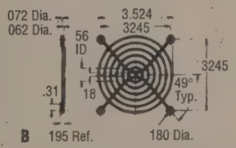
Fan of fiberglass reinforced plastic. PBTP housing, PA impeller. Electronically commutated external rotor DC motor, with electronic protection against blocking and reverse polarity. Air exhaust over struts. Counterclockwise rotation viewed from rotor. Elec. connection via 2 leads AWG 22, TR 64, 310 mm (12.2 in.). **Mass:** 145 g. **Dimensions:** 3¹/₈" × 3¹/₈" × 1" (80 mm × 80 mm × 25 mm).

Stock No.	Mfr.'s Type	Volts DC	dB (Noise)	RPM	CFM	EACH		
						1-9	10-24	25-49
600-8412	8412L	12	21	2000	20.6	**16.41**	**15.05**	**13.89**
600-8413	8412M	12	29	2600	26.5	**20.49**	**18.79**	**17.34**
600-8410	8412	12	35	3150	32.8	**20.49**	**18.79**	**17.34**
600-8414	8414	24	35	3150	32.8	**20.49**	**18.79**	**17.34**

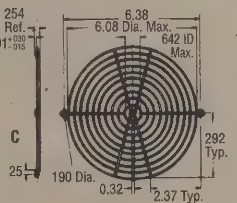
Accessories



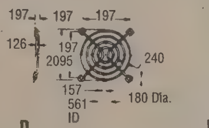
A



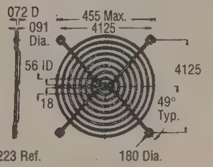
B



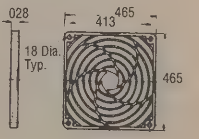
C



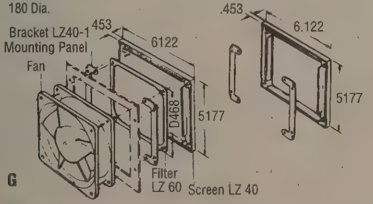
D



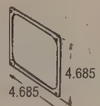
E



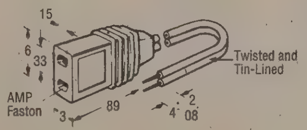
F



G



H



J

K

Finger Guards

Fig. A — LZ 22 N. Welded, nickel chrome-plated steel wire, .062 in. (1.6 mm) diameter. For series 8000.
600-5508. LZ 22 N .... **EACH 2.58**
Fig. B — LZ 23. Welded, nickel chrome-plated steel wire, .062 in. (1.6 mm) diameter. For series 3000.
600-5500. LZ 23 .... **EACH 3.40**
Fig. C — LZ 24. Welded, nickel chrome-plated steel wire, .072 in. (1.8 mm) diameter. For series 6000.
600-5506. LZ 24 .... **EACH 6.31**
Fig. D — LZ 28. Welded, chrome-plated steel wire, .063 in. (1.6 mm) dia. For 800 MULTIFAN.
600-5507. LZ 28 .... **EACH 2.38**
Fig. E — LZ 30. Welded, nickel chrome-plated steel wire, .072 in. (1.8 mm) diameter. For series 2500S, 4000 and model 5500S.
600-5504. LZ 30 .... **EACH 2.78**
Fig. F — LZ 30 P. Fiberglass reinforced plastic (PPO). For series 2500S, 4000 and model 5500S.
600-5512. LZ 30 P .... **EACH 2.58**

Fig. G — LZ 40 N Screen. Frame of black fiberglass reinforced plastic (PPO), fitted with stainless steel wire mesh. LZ 40-1 included for mounting. For series 2500S, 4000 and model 5500S.
600-5503. LZ 40 N .... **EACH 7.69**
Fig. H — LZ 60 Filter. Light metal frame with crimped-on aluminum mesh. Mesh size .003 in. (0.7 mm), wire dia. .012 in. (0.3 mm). For series 2500S, 4000 and model 5500S.
600-5502. LZ 60 .... **EACH 3.82**
Fig. J — LZ 120 Plug and Cord Set. 24 in. (610 mm) long. UL-approved. Connecting cable with molded plug. PVC, black. For series 3000, 4000 and 6000.
600-5505. LZ 120 .... **EACH 2.45**
Fig. K — LZ 210 Screw Clip. For mounting fans with self-tapping screw 6-32 UNC or 3.5 DIN 7970. Made of hardened and tempered steel, deburred surface lightly oiled. For series 2500S, 4000, 7000 and model 5500S. (Not for MULTIFAN series 4300).
600-5509. LZ 210 .... **EACH .37**

Custom Division Fan Selection Guide

Fan	Mfr.'s Type	Part No.*	Bearings	Volts	Hz	Watts	Line Amps	Locked Rotor Amps	Cap. Mfd.	PH.	RPM	CFM	L/Sec.	Max. Amb. °C
Spartan 4.687" × 4.687" sq. × 1.5" wide	682YF	020284 (M) 020027 (L) 020028 (T)	Ball	115	50/60	13.00	0.120	0.150	1.00	1	3250	113	53.0	100
	810DF	026985 (L) 026984 (T)	Ball	115	400	13.00	0.120	0.130	0.39	1	3750	132	62.0	100
	778YF	026983 (L) 026982 (T)	Ball	115	50/60/400	13.00	0.120	0.130	0.25	1	2250	75	35.0	90
	942WF	026987 (L) 026986 (T)	Ball	200	400	37.00	0.140	0.220	—	3	5300	185	87.0	72
	1395YF	026989 (L) 026988 (T)	Ball	115	400	45.00	0.390	0.410	0.50	1	5300	198	96.0	75
Saucer 7.044" round × 2.5" wide	340ZH	026990 (T)	Ball	115	50/60	24.00	0.210	0.310	2.00	1	3300	280	132.0	125
	650JH	026991 (T)	Ball	200	400	33.00	0.150	0.220	—	3	3970	330	142.0	125
	656JH	026992 (T)	Ball	115	400	34.00	0.270	0.400	—	3	3800	336	146.0	125
	654DH	026993 (T)	Ball	115	400	30.00	0.280	0.320	1.00	1	3600	310	146.0	125
	654DH	020596 (M)	Ball	115	400	30.00	0.280	0.320	1.00	1	3600	310	146.0	125
	340ZH	020743 (M)	Ball	115	50/60	24.00	0.210	0.310	2.00	1	3300	280	132.0	125
Aximax 1 1.75" round × 1.468" wide	623YH	026942 (T)	Ball	115	400	18.00	0.160	0.400	0.25	1	22000	21	10.0	125
	367JH	026943 (T)	Ball	200	400	18.00	0.100	0.300	—	3	22500	21	10.0	125
	464YH	026944 (T)	Ball	115	400	9.00	0.100	0.170	0.15	1	11100	10	4.7	125
Aximax 2 2.17" round × 1.16" wide	606NH	026958 (T)	Ball	115	50/60	7.00	0.060	0.060	1.00	1	3000	7	3.3	100
					400	10.00	0.090	0.090	1.00	1	4800	12	5.7	100
	464YH	026952 (T)	Ball	115	400	11.00	0.110	0.160	0.15	1	10200	28	13.0	125
	368YH	026948 (T)	Ball	115	400	38.00	0.330	0.450	0.50	1	20000	57	27.0	125
	367JH	026950 (T)	Ball	200	400	34.00	0.130	0.310	—	3	20500	57	27.0	125
	415YH**	026954 (T)	Ball	115	400	18.00	0.180	0.190	0.15	1	11000	32	15.0	100
	395JH**	026956 (T)	Ball	200	400	22.00	0.110	0.130	—	3	12000	34	16.0	125
Aximax 2H 2" round × 1.5" wide	415YH	027686 (L)	Ball	115	400	18.00	0.180	0.190	0.15	1	11000	32	15.0	100
	606NH	026959 (T)	Ball	115	50/60	7.00	0.060	0.060	1.00	1	3000	7	3.0	100
					400	10.00	0.090	0.090	1.00	1	4800	12	5.7	100
	464YH	026953 (T)	Ball	115	400	11.00	0.110	0.160	0.15	1	10200	28	13.0	125
	367JH	026951 (T)	Ball	200	400	34.00	0.130	0.310	—	3	20500	57	27.0	125
	368YH	026949 (T)	Ball	115	400	38.00	0.330	0.450	0.50	1	20000	57	27.0	125
	415YH	026955 (T)	Ball	115	400	18.00	0.180	0.190	0.15	1	11000	32	15.0	100
	395JH	026957 (T)	Ball	200	400	22.00	0.110	0.130	—	3	12000	34	16.0	125
Aximax 3 3" round × 2⁵⁄₁₆" wide	528YH	026963 (T)	Ball	115	400	135.00	1.200	2.100	2.00	1	22300	155	73.0	100
	422DH	026964 (T)	Ball	115	400	26.00	0.310	0.710	1.00	1	11200	76	56.0	125
	341JH	020372 (T)	Ball	200	400	125.00	0.430	1.730	—	3	22200	160	76.0	125
	599NH	026965 (T)	Ball	115	50/60	3.00	0.040	0.050	0.50	1	3300	21	10.0	125
	400YH**	026961 (T)	Ball	115	400	38.00	0.330	0.360	0.50	1	10700	75	35.0	100
	387JH**	026962 (T)	Ball	200	400	58.00	0.260	0.370	—	3	13700	97	46.0	100
	500JH**	020297 (T)	Ball	200	400	70.00	0.240	0.460	—	3	16200	114	54.0	100
Propimax 2 3.25" round × 1.31" wide	366ZH	026966 (T)	Ball	115	400	41.00	0.400	0.510	0.75	1	21000	120	57.0	100
	464ZH	026967 (T)	Ball	115	400	11.00	0.110	0.160	0.15	1	10500	58	27.0	125
	367JH	026968 (T)	Ball	200	400	34.00	0.130	0.290	—	3	20400	118	56.0	100
	704WH	026969 (T)	Ball	200	400	22.00	0.120	0.200	—	3	11300	64	43.0	100
	606NH	026970 (T)	Ball	115	50/60/400	6.50	0.060	0.060	1.00	1	3200	17	8.0	100
	415ZH**	026971 (T)	Ball	115	400	18.00	0.170	0.180	0.15	1	11600	65	31.0	100
	395JH**	026972 (T)	Ball	200	400	18.00	0.090	0.110	—	3	12100	64	30.0	125
Propimax 3 3.75" round × 1.73" wide	341JH	026974 (T)	Ball	200	400	80.00	0.320	1.700	—	3	22800	220	104.0	125
	409ZH	026973 (T)	Ball	115	400	105.00	1.000	2.000	2.50	1	21900	220	104.0	100
Propimax 3B 3.75" round × 1.73" wide	473JH	026976 (T)	Ball	200	400	62.00	0.280	0.750	—	3	10900	190	90.0	125
	718ZH	026977 (T)	Ball	115	400	27.00	0.310	0.480	0.25	1	7200	120	57.0	125
	754DH	026975 (T)	Ball	115	400	63.00	0.610	1.250	2.00	1	11100	190	90.0	115
	763ZH	026978 (T)	Ball	115	60	13.00	0.130	0.180	0.50	1	3450	56	26.0	125
	805ZH	026979 (T)	Ball	115	50/60/400	23.00	0.240	0.280	0.25	1	3300	52	25.0	100
	387JH	026981 (T)	Ball	200	400	69.00	0.300	0.360	—	3	8200	140	66.0	125
	400ZH	026980 (T)	Ball	115	400	37.00	0.330	0.340	0.50	1	5950	100	47.0	125
Propimax 3BM 3.75" round × 1.73" wide	473JH	021086 (M)	Ball	200	400	62.00	0.280	0.740	—	3	10900	190	89.0	125
	754DH	023303 (M)	Ball	115	400	63.00	0.610	1.250	2.00	1	11100	190	89.0	115
MIL 901 6.375" round × 2" wide	1790YF	033037 (L)	Ball	115	60	35.00	0.300	0.550	3.00	1	3250	225	106.0	125
Model D Blower	†	033461 (M)	Ball	115	60	138.00	1.200	2.400	4.00	1	3200	140	66.0	100
MIL 80 3.14" × 3.14" sq. × 1.5" wide	1891DF	033559 (L)	Ball	115	400	10.00	0.090	0.155	0.39	1	5650	58	28.0	125
	682ZF	033561 (L)	Ball	115	50/60	13.9/13.30	0.123/0.117	0.143/0.147	1.00	1	2915	28	13.5	100
	1891DF	033587 (T)	Ball	115	400	10.00	0.090	0.155	0.39	1	5650	58	28.0	125
	682ZF	033588 (T)	Ball	115	50/60	13.9/13.30	0.123/0.117	0.143/0.147	1.00	1	2915	28	13.5	100
	1891DF	033589 (M)	Ball	115	400	10.00	0.090	0.155	0.39	1	5650	58	28.0	125
	682ZF	033590 (M)	Ball	115	50/60	13.9/13.30	0.123/0.117	0.143/0.147	1.00	1	2915	28	13.5	100
Spartan ECDC 4.687" × 4.687" sq. × 1.5" wide	1940SF	011032 (T)	Ball	12 DC	—	7.56	0.540	2.400‡	—	—	3200	108	52.0	100
	1943SF	011035 (T)	Ball	26 DC	—	9.10	0.350	0.770‡	—	—	3200	108	52.0	100
	1928SF	011036 (T)	Ball	26 DC	—	11.70	0.450	1.470‡	—	—	3800	133	65.0	100
MIL 80 ECDC 3.14" × 3.14" sq. × 1.5" wide	1929SF	011066 (T)	Ball	12 DC	—	2.20	0.180	1.400‡	—	—	3200	30	14.4	100
	1930SF	011067 (T)	Ball	12 DC	—	3.20	0.270	2.300‡	—	—	3800	38	18.3	100
	1933SF	011068 (T)	Ball	12 DC	—	9.60	0.800	3.900‡	—	—	5800	60	28.8	75
	1934SF	011070 (T)	Ball	26 DC	—	3.10	0.120	0.630‡	—	—	3200	30	14.4	100
	1935SF	011064 (T)	Ball	26 DC	—	3.90	0.150	0.800‡	—	—	3800	38	18.3	100
	1936SF	011072 (T)	Ball	26 DC	—	10.40	0.400	2.600‡	—	—	6400	65	28.8	100
	1959SF	011073 (T)	Ball	48 DC	—	8.60	0.180	0.600‡	—	—	4200	43	18.3	100
Saucer ECDC 7.044" round × 2.5" wide	1950SF	011056 (T)	Ball	12 DC	—	9.60	0.800	4.000‡	—	—	3000	250	120.0	100
	1945SF	011058 (T)	Ball	26 DC	—	12.50	0.480	2.200‡	—	—	3200	270	130.0	100
	1960SF	011071 (T)	Ball	26 DC	—	20.80	0.800	3.200‡	—	—	3800	325	156.3	70
	1949SF	011075 (T)	Ball	48 DC	—	16.30	0.340	1.200‡	—	—	3200	270	130.0	100
	1974SF	011087 (T)	Ball	48 DC	—	24.00	0.500	2.700‡	—	—	3800	325	156.3	72

*(L)=leadwire models; (T)=terminal models; (M)=MS connector. **Altivar (high altitude motor). †DRFPI (X)/KS-505-CW-329XF. ‡Starting Amps.

Plastic Fan Filter Assemblies

Fig. A

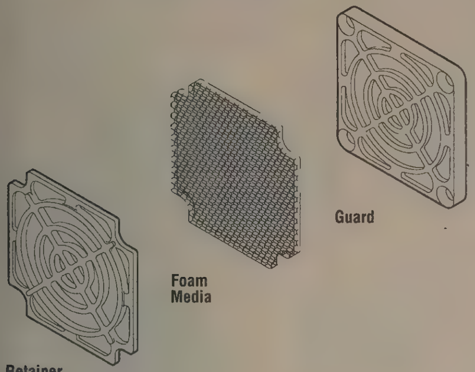
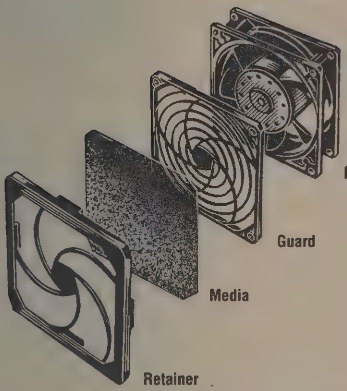


Fig. B



Fan-S offers a unique fan filter package consisting of a guard, foam filter media and media retainer, manufactured with UL listed 94-VO material for 80 mm - $3\frac{1}{8}$", 92 mm - $3\frac{5}{8}$" and 120 mm - $4\frac{1}{2}$" tubeaxial fans for the removal of dust and contaminating particles. Installation is quick and simple: four mounting screws secure the guard portion, then snap on the retainer and filter media with no extra hardware or brackets required.

The two major features of our filter package are safety and low down time. When the filter media requires maintenance, simply taking the retainer off, the media is exposed for cleaning or replacement thus leaving the guard attached to the fan assuring employee protection and eliminating possible damage of the fan component during handling. This leaves the fan operational during servicing thus eliminating down time.

40 mm — $1\frac{1}{2}$" — Fig. A

Stock No.	Mfr.'s Type	Description	Size (") H × W × T	MC	EACH 1-24	25-99	100-Up
609-0280	09150-F/30	Guard, Retainer, Media (30 PPI)	1.57 × 1.57 × .19	1.26	3.11	2.73	2.46
609-0281	09150-F/45	Guard, Retainer, Media (45 PPI)	1.57 × 1.57 × .19	1.26	3.11	2.73	2.46
609-0935	09150-F/60	Guard, Retainer, Media (60 PPI)	1.57 × 1.57 × .19	1.26	1.98	1.76	1.59
609-0936	09150-F/100	Guard, Retainer, Media (100 PPI)	1.57 × 1.57 × .19	1.26	1.98	1.76	1.59
609-0260	09150-G	Guard Only	1.57 × 1.57 × .19	1.26	1.15	1.02	.92
609-0285	09150-R	Retainer Only	1.57 × 1.57 × .19	—	1.15	1.02	.92
609-0282	09150-M/30†	Foam Media (30 PPI)	1.29 × 1.29 × .09	—	1.98	1.76	1.59
609-0283	09150-M/45†	Foam Media (45 PPI)	1.29 × 1.29 × .09	—	1.98	1.76	1.59

60 mm — $2\frac{1}{2}$" — Fig. A

Stock No.	Mfr.'s Type	Description	Size (mm) L × W × H	EACH 1-24	25-99	100-Up
609-0931	09250-F/30	Filter Assembly, Guard, Retainer, and Media, 30 Pores Per Inch	59.9 × 59.9 × 6.35	4.28	3.36	2.50
609-0932	09250-F/45	Filter Assembly, Guard, Retainer, and Media, 45 Pores Per Inch	59.9 × 59.9 × 6.35	4.28	3.36	2.50
609-0933	09250-F/60	Filter Assembly, Guard, Retainer, and Media, 60 Pores Per Inch	59.9 × 59.9 × 6.35	4.28	3.36	2.50
609-0934	09250-F/100	Filter Assembly, Guard, Retainer, and Media, 100 Pores Per Inch	59.9 × 59.9 × 6.35	4.28	3.36	2.50
609-0925	09250-G	Guard Only, Mounting Centers 1.97 inches	59.9 × 59.9 × 6.35	.92	.86	.74
609-0926	09250-R	Retainer Only	56.4 × 56.4 × 2.8	1.77	1.39	.85
609-0927*	09250-M/30	Foam Media, 30 Pores Per Inch	56.3 × 56.3 × 2.8	3.00	2.30	1.60
609-0928*	09250-M/45	Foam Media, 45 Pores Per Inch	56.3 × 56.3 × 2.8	3.15	2.30	1.60
609-0929*	09250-M/60	Foam Media, 60 Pores Per Inch	56.3 × 56.3 × 2.8	3.00	2.30	1.60
609-0930*	09250-M/100	Foam Media, 100 Pores Per Inch	56.3 × 56.3 × 2.8	3.15	2.30	1.60

80 mm — $3\frac{1}{8}$" — Fig. B

Stock No.	Mfr.'s Type	Description	Size (") H × W × T	MC	EACH 1-24	25-99	100-Up
609-5600	09325-F/30	Guard, Retainer, Media	3.29 × 3.29 × .39	2.81	3.40	2.65	2.42
609-5601	09325-F/45	Guard, Retainer, Media	3.29 × 3.29 × .39	2.81	3.40	2.65	2.42
609-5632	09325-F/60	Guard, Retainer, Media	3.29 × 3.29 × .39	2.81	3.40	2.65	2.42
609-5633	09325-F/100	Guard, Retainer, Media	3.29 × 3.29 × .39	2.81	3.40	2.65	2.42
609-5602	09325-G	Guard Only	3.15 × 3.15 × .26	2.81	1.10	.93	.85
609-5603	09325-R	Retainer Only	3.29 × 3.29 × .39	—	1.64	1.40	1.22
609-5604*	09325-M/30†	30 Pores Per Inch Media Only	—	—	2.10	1.69	1.57
609-5605*	09325-M/45†	45 Pores Per Inch Media Only	—	—	2.10	1.69	1.57

92 mm — $3\frac{5}{8}$" — Fig. B

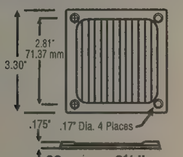
Stock No.	Mfr.'s Type	Description	Size (") H × W × T	MC	EACH 1-24	25-99	100-Up
609-5606	09362-F/30	Guard, Retainer, Media	3.80 × 3.80 × .39	3.25	3.68	2.83	2.39
609-5607	09362-F/45	Guard, Retainer, Media	3.80 × 3.80 × .39	3.25	3.68	2.83	2.39
609-5618	09362-F/60	Guard, Retainer, Media	3.80 × 3.80 × .39	3.25	3.68	2.83	2.39
609-5619	09362-F/100	Guard, Retainer, Media	3.80 × 3.80 × .39	3.25	3.68	2.83	2.39
609-5608	09362-G	Guard Only	3.62 × 3.62 × .25	3.25	1.13	.96	.88
609-5609	09362-R	Retainer Only	3.80 × 3.80 × .39	—	1.71	1.38	1.14
609-5610*	09362-M/30†	30 Pores Per Inch Media Only	—	—	2.58	2.13	1.84
609-5611*	09362-M/45†	45 Pores Per Inch Media Only	—	—	2.58	2.13	1.84

120 mm — $4\frac{1}{2}$" — Fig. B

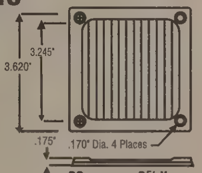
Stock No.	Mfr.'s Type	Description	Size (") H × W × T	MC	EACH 1-24	25-99	100-Up
609-5612	09450-F/30	Guard, Retainer, Media	4.87 × 4.87 × .42	4.13	4.35	3.67	2.89
609-5613	09450-F/45	Guard, Retainer, Media	4.87 × 4.87 × .42	4.13	4.35	3.67	2.89
609-0945	09450-F/60	Guard, Retainer, Media	4.87 × 4.87 × .42	4.13	4.35	3.67	2.89
609-5654	09450-F/100	Guard, Retainer, Media	4.87 × 4.87 × .42	4.13	4.35	3.67	2.89
609-5614	09450-G	Guard Only	4.65 × 4.65 × .28	4.13	1.47	1.23	1.10
609-5615	09450-R	Retainer Only	4.87 × 4.87 × .42	—	2.45	1.87	1.40
609-5616*	09450-M/30†	30 Pores Per Inch Media Only	—	—	3.63	2.68	2.20
609-5617*	09450-M/45†	45 Pores Per Inch Media Only	—	—	3.63	2.68	2.20

*Per pack of 5. †Also available in 60 mm and 100 mm.

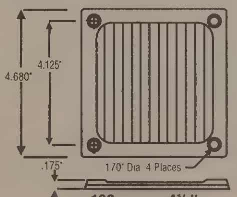
Aluminum Fan Filters



80 mm — $3\frac{1}{8}$"



92 mm — $3\frac{5}{8}$"



120 mm — $4\frac{1}{2}$"

These tested and proven filters provide maximum airflow with effective filtering. Mill and irridite finishes are offered to enhance EMI/RFI shielding as well as an anodized finish for aesthetic purposes. The tightly woven aluminum convoluted mesh screen is encased in a formed aluminum frame built for ruggedness and durability. The units are easily washed in a solvent or degreaser and can be mounted directly to the fan or to a panel.

80 mm — $3\frac{1}{8}$"

Stock No.	Mfr.'s Type	Finish	EACH 1-24	25-99	100-Up
609-5620	06325-B	Anodized (Black)	4.87	3.82	3.25
609-5621	06325-C	Iridite (Clear)	4.87	3.82	3.25
609-5622	06325-G	Iridite (Gold)	4.87	3.82	3.25
609-5623	06325-M	Mill (No Finish)	4.25	3.17	2.70

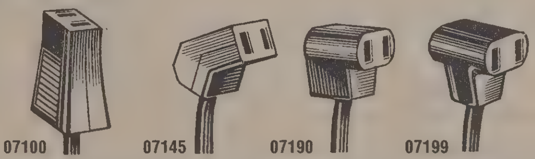
92 mm — $3\frac{5}{8}$"

Stock No.	Mfr.'s Type	Finish	EACH 1-24	25-99	100-Up
609-5624	06362-B	Anodized (Black)	5.23	4.18	3.59
609-5625	06362-C	Iridite (Clear)	5.23	4.18	3.59
609-5626	06362-G	Iridite (Gold)	5.23	4.18	3.59
609-5627	06362-M	Mill (No Finish)	4.47	3.50	2.98

120 mm — $4\frac{1}{2}$"

Stock No.	Mfr.'s Type	Finish	EACH 1-24	25-99	100-Up
609-5628	06450-B	Anodized (Black)	5.91	4.73	4.07
609-5629	06450-C	Iridite (Clear)	5.91	4.73	4.07
609-5630	06450-G	Iridite (Gold)	5.91	4.73	4.07
609-5631	06450-M	Mill (No Finish)	5.05	3.96	3.37

Fan Power Cords



Fan-S offers a complete line of high quality fan power cords designed to be used with tubeaxial fans. Available in four configurations. A strain relief is incorporated for added safety. Standard cord lengths are 12", 24", 36", 40", 50", 60" and 80".

Straight Style

Stock No.	Mfr.'s Type	Cord Length	EACH 1-24	25-99	100-Up
609-5640	07100-12	12'	1.79	1.52	1.30
609-5641	07100-24	24"	1.92	1.61	1.36
609-5642	07100-36	36"	2.42	1.82	1.47

45-Degree Style

Stock No.	Mfr.'s Type	Cord Length	EACH 1-24	25-99	100-Up
609-5643	07145-12	12"	1.79	1.48	1.28
609-5644	07145-24	24"	1.92	1.60	1.38
609-5645	07145-36	36"	2.04	1.73	1.46

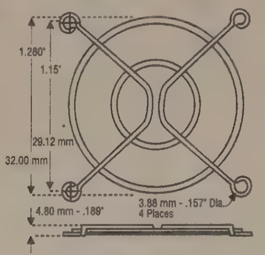
90-Degree Style

Stock No.	Mfr.'s Type	Cord Length	EACH 1-24	25-99	100-Up
609-5646	07190-12	12"	1.81	1.48	1.18
609-5647	07190-24	24"	1.92	1.61	1.36
609-5648	07190-36	36"	2.04	1.73	1.46

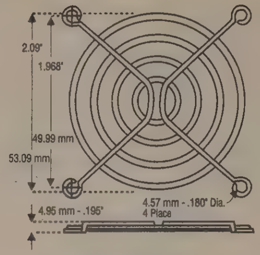
T-Plug Style

Stock No.	Mfr.'s Type	Cord Length	EACH 1-24	25-99	100-Up
609-5649	07199-12	12"	1.75	1.48	1.28
609-5650	07199-24	24"	1.94	1.55	1.38
609-5651	07199-36	36"	2.04	1.73	1.46

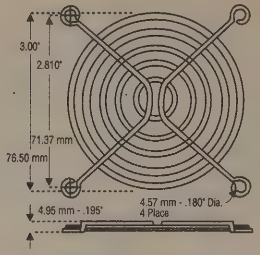
Wire Form Fan Guards



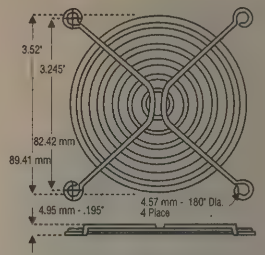
08149 — 40 mm - 1½"
Ribs — 1.60 mm/.063" Dia.; Rings — 1.60 mm/.063" Dia.



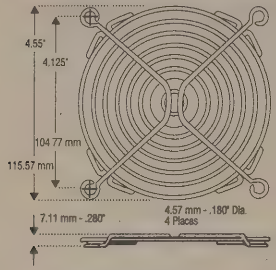
08147 — 60 mm - 2½"
Ribs — 1.60 mm/.063" Dia.; Rings — 1.60 mm/.063" Dia.



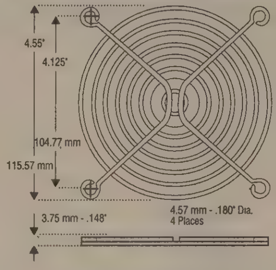
08172 — 80 mm - 3⅛"
Ribs — 1.60 mm/.063" Dia.; Rings — 1.60 mm/.063" Dia.



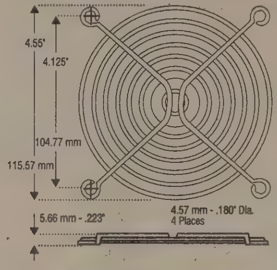
08174 — 92 mm - 3⅝"
Ribs — 1.60 mm/.063" Dia.; Rings — 1.60 mm/.063" Dia.



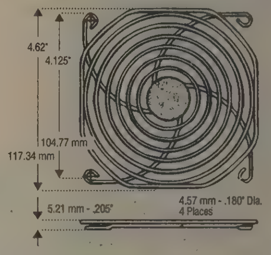
08128 — 120 mm - 4½"
Ribs — 2.31 mm/.091" Dia.; Rings — 1.80 mm/.071" Dia.



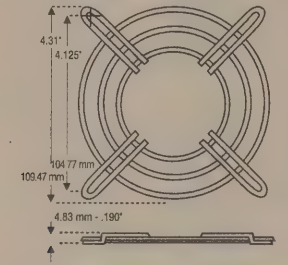
08129 — 120 mm - 4½"
Ribs — 2.31 mm/.091" Dia.; Rings — 1.80 mm/.071" Dia.



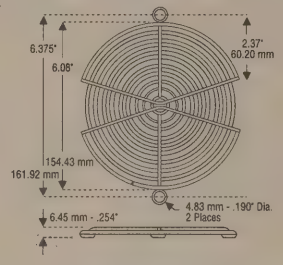
08170 — 120 mm - 4½"
Ribs — 1.80 mm/.071" Dia.; Rings — 1.80 mm/.071" Dia.



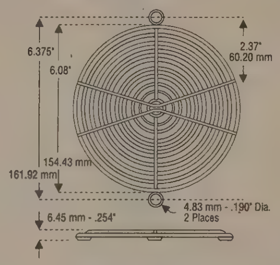
08141 — 120 mm - 4½"
Ribs — 2.03 mm/.080" Dia.; Rings — 1.60 mm/.063" Dia.



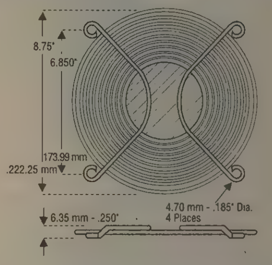
08146 — 120 mm - 4½"
Ribs — 1.60 mm/.063" Dia.; Rings — 1.60 mm/.063" Dia.



08125 — 150 mm - 6"
Ribs — 2.31 mm/.091" Dia.; Rings — 1.80 mm/.071" Dia.



08126 — 150 mm - 6"
Ribs — 2.31 mm/.091" Dia.; Rings — 1.80 mm/.071" Dia.



08127 — 254 mm - 10"
Ribs — 2.31 mm/.091" Dia.; Rings — 2.31 mm/.091" Dia.

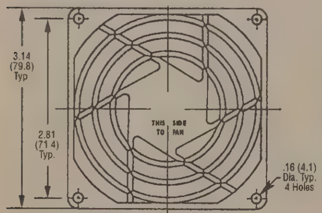
The 08 series wire form fan guards are designed for use with tubeaxial fan sizes 40 mm - 1½", 50 mm - 2", 60 mm - 2½", 80 mm - 3⅛", 92 mm - 3⅝", 120 mm - 4½", 127 mm - 5", 150 mm - 6" and 254 mm - 10". Our 3/16" and ¼" maximum ring spacing designs were developed to assist our customers in complying with domestic and international safety agency requirements that are in effect today or that may develop in the future. We maintain the highest level of quality control by insuring that we use only the highest grade of materials that must pass a very stringent level of incoming inspection prior to being accepted to our manufacturing inventory. All wire form fan guards are inspected during the manufacturing process to assure compliance to our rigid specifications. They receive an additional final inspection prior to shipment that insures compliance with both mechanical and esthetic parameters. **Specifications.** All guards are designed to ensure safe operation and comply with U.L., CSA and VDE requirements. Nickel chrome plating is standard finish for all wire formed guards. All wire form fan guards listed above are also available in zinc or black electro deposit.

Stock No.	Mfr.'s Type	Use with Fan Size		Mounting Hole Centers (In.)	EACH		
		mm	In.		1-24	25-99	100-Up
609-0240	08125	150	6	6.38	**5.49**	**4.38**	**3.77**
609-5506	08126	150	6	6.38	**5.32**	**4.25**	**3.66**
609-5525	08127	254	10	6.85	**9.01**	**7.24**	**6.22**
609-5530	08128	120	4½	4.13	**3.91**	**2.64**	**2.42**
609-5535	08129	120	4½	4.13	**3.37**	**2.53**	**2.02**
609-5540	08170	120	4½	4.13	**2.15**	**1.82**	**1.71**

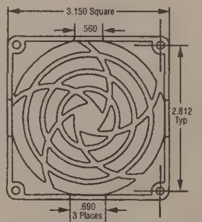
Stock No.	Mfr.'s Type	Use with Fan Size		Mounting Hole Centers (In.)	EACH		
		mm	In.		1-24	25-99	100-Up
609-5545	08172	80	3⅛	2.81	**1.75**	**1.46**	**1.27**
609-5555	08174	92	3⅝	3.25	**1.81**	**1.59**	**1.39**
609-5580	08141	120	4½	4.13	**2.38**	**1.98**	**1.78**
609-5590	08147	60	2½	1.97	**2.62**	**2.10**	**1.68**
609-5595	08149	40	1½	1.15	**2.28**	**1.95**	**1.56**
609-5581*	08146	120	4½	1.60	**1.69**	**1.45**	**1.26**

*Does not meet ¼" max. ring spacing.

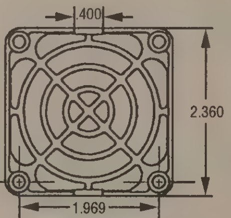
Plastic Fan Guards



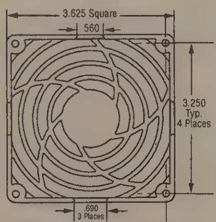
09080-G — 80 mm - 3⅛"
.120" Thick



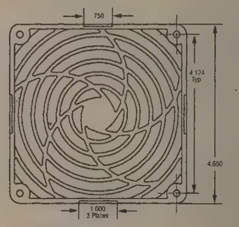
09325-G — 80 mm - 3⅛"
.257" Thick



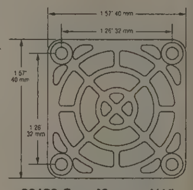
09250-G — 60 mm - 2½"
.250" Thick



09362-G — 92 mm - 3⅝"
.250" Thick



09450-G — 120 mm - 4½"
.279" Thick

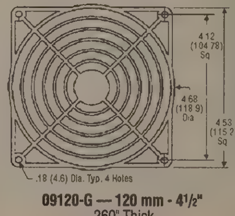


09150-G — 40 mm - 1½"
.250" Thick

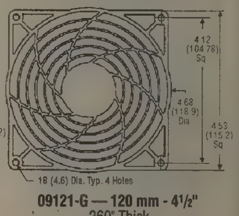
The 09 Series of plastic fan guards offer customers maximum airflow while meeting compliance to safety regulations. The guard attaches to either side of the tubeaxial fan without creating pure tones due to blade passing frequencies. Each guard was tooled with ring spacing that is in compliance with UL ¼" probe requirements. The material is UL rated 94 VO high impact plastic.

Stock No.	Mfr.'s Type	Fan Size		Mounting Hole Centers (In.)	EACH		
		mm	In.		1-24	25-99	100-Up
609-0250	09080-G	80	3⅛	2.810	**.87**	**.84**	**.72**
609-5602	09325-G	80	3⅛	2.810	**1.10**	**.93**	**.85**
609-0925	09250-G	60	2½	1.960	**.92**	**.86**	**.74**
609-5608	09362-G	92	3⅝	3.245	**1.13**	**.96**	**.88**

Stock No.	Mfr.'s Type	Fan Size		Mounting Hole Centers (In.)	EACH		
		mm	In.		1-24	25-99	100-Up
609-5614	09450-G	120	4½	4.124	**1.47**	**1.23**	**1.10**
609-0260	09150-G	40	1½	1.260	**1.13**	**1.02**	**.92**
609-0265	09120-G	120	4½	4.130	**1.02**	**.94**	**.86**
609-0270	09121-G	120	4½	4.130	**1.28**	**1.17**	**1.08**



09120-G — 120 mm - 4½"
.260" Thick



09121-G — 120 mm - 4½"
.260" Thick

AC and DC Cooling Fans

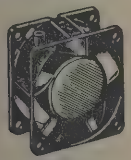
GLOBE MOTORS

The Globe Motors commercial cooling fan product line provides cooling solutions for industrial applications from office copiers, micro-computers and laboratory instrumentation to industrial control cabinets.

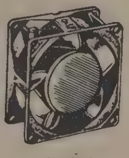
Through the use of CAD/CAM and strict statistical process controls (SPC), our fans have a life expectancy of 60,000 hours and a 0.005% field failure rate (50 parts per million).

Special care has been taken to design-in long operating life and low acoustical noise. All fans use precision, life-lubricated ball bearings.

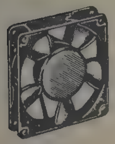
AC Cooling Fans


A24B12

A31B10


A31B15

A36B10


A47B10

A47B15

A59B15

Dimensions — Inches (mm): 2.36 sq. × 1.18 (60 sq. × 30)

Stock No.	Mfr.'s Type	Nominal Voltage VAC	Acoustic Noise dBA	RPM	CFM	EACH
965-0100	A24-B12A-15W3-000	115	28/29	2350/2900	8/10	**20.60**

Dimensions — Inches (mm): 3.15 sq. × 1.00 (80 sq. × 25)

965-0105	A31-B10A-15W3-000	115	37/40	2700/3250	17/20	**20.60**

Dimensions — Inches (mm): 3.15 sq. × 1.50 (80 sq. × 38) on all models

965-0110	A31-B15A-15T1-000	115	23/25	1750/2050	18/21	**20.60**
965-0115	A31-B15A-15T2-000	115	27/31	2200/2500	21/25	**20.60**
965-0120	A31-B15A-15T3-000	115	33/38	2750/3250	28/33	**20.60**
965-0125	A31-B15A-15W1-000	115	23/25	1750/2050	18/21	**20.60**
965-0130	A31-B15A-15W2-000	115	27/31	2200/2500	21/25	**20.60**
965-0135	A31-B15A-15W3-000	115	33/38	2750/3250	28/33	**20.60**
965-0140	A31-B15A-23W1-000	230	23/26	1900/2300	19/24	**20.60**
965-0145	A31-B15A-23W2-000	230	29/34	2300/2700	22/27	**20.60**
965-0150	A31-B15A-23W3-000	230	33/38	2750/3300	27/33	**20.60**

Dimensions — Inches (mm): 3.64 sq. × 1.00 (92 sq. × 25) on all models

965-0155	A36-B10A-15T1-000	115	22/25	1600/2000	18/23	**20.00**
965-0160	A36-B10A-15T2-000	115	30/35	2300/2700	25/30	**20.00**
965-0165	A36-B10A-15T3-000	115	33/38	2650/3200	29/36	**20.00**
965-0170	A36-B10A-23T1-000	230	22/26	1700/2250	20/25	**20.00**
965-0175	A36-B10A-23T2-000	230	30/35	2300/2700	25/30	**20.00**
965-0180	A36-B10A-23T3-000	230	34/39	2650/3200	30/36	**20.00**

Dimensions — Inches (mm): 4.69 sq. × 1.00 (119 sq. × 25) on all models

965-0185	A47-B10A-15T2-000	115	29/30	2050/2250	52/57	**20.25**
965-0190	A47-B10A-15T3-000	115	34/38	2550/2950	68/77	**20.25**
965-0195	A47-B10A-23T2-000	230	29/30	2050/2300	52/58	**20.25**
965-0200	A47-B10A-23T3-000	230	34/38	2500/2850	65/74	**20.25**

Dimensions — Inches (mm): 4.69 sq. × 1.50 (119 sq. × 38) on all models

965-0205	A47-B15A-15T1-000	115	28/28	1650/1650	53/53	**22.25**
965-0210	A47-B15A-15T2-000	115	40/43	2600/2900	85/95	**22.25**
965-0215	A47-B15A-15T3-000	115	42/46	2750/3200	90/105	**22.25**
965-0220	A47-B15A-23T1-000	230	28/28	1770/1770	58/58	**22.25**
965-0225	A47-B15A-23T2-000	230	40/43	2600/2850	85/95	**20.11**
965-0230	A47-B15A-23T3-000	230	43/47	2750/3150	90/105	**20.11**

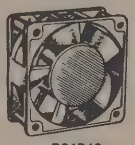
Dimensions — Inches (mm): 5.91 sq. × 6.78 × 1.50 Deep (150 sq. × 172 × 38) on all models

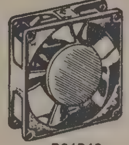
965-0235	A59-B15A-15T1-000*	115	35/38	1450/1720	86/105	**56.30**
965-0240	A59-B15A-15T2-000*	115	46/50	2360/2750	144/170	**56.30**
965-0245	A59-B15A-15T3-000*	115	52/56	2800/3370	178/215	**56.30**
965-0250	A59-B15A-23T1-000*	230	35/38	1450/1600	86/105	**56.30**
965-0255	A59-B15A-23T2-000*	230	46/50	2420/2800	144/170	**56.30**
965-0260	A59-B15A-23T3-000*	230	52/56	2870/3400	178/215	**56.30**

W=Lead wires. T=Terminals. ***Note Built-In Capacitor Values:** 115 VAC Series — 3.0 mF at 250 VAC; 230 VAC Series — 1.0 mF at 350 VAC.

DC Cooling Fans

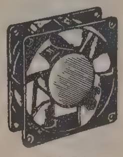
D24B08


D24B10


D31B10

D36B10

D47B10


D47B15

D59B20

D68B20

Dimensions — Inches (mm): 2.36 sq. × 0.79 (60 sq. × 20) on all models

Stock No.	Mfr.'s Type	Nominal Voltage VDC	Acoustic Noise dBA	RPM	CFM	EACH
965-0265	D24-B08A-04W3-000	12	22	3000	11	**20.25**
965-0270	D24-B08A-04W4-000	12	26	3800	14	**20.25**
965-0275	D24-B08A-05W3-000	24	22	3000	11	**20.25**
965-0280	D24-B08A-05W4-000	24	26	3800	14	**20.25**

Dimensions — Inches (mm): 2.36 sq. × 1.00 (60 sq. × 25) on all models

965-0286	D24-B10A-04W3-100	12	28	3600	17	**13.43**
965-0291	D24-B10A-04W4-100	12	33	4600	21	**13.43**
965-0296	D24-B10A-05W3-100	24	28	3600	17	**13.43**
965-0301	D24-B10A-05W4-100	24	33	4600	21	**13.43**

Dimensions — Inches (mm): 3.15 sq. × 1.00 (80 sq. × 25) on all models

965-0311	D31-B10A-04W2-100	12	25	2400	28	**14.28**
965-9998	D31-B10A-04W3-100	12	28	2700	32	**14.28**
965-0321	D31-B10A-05W2-100	24	25	2400	28	**14.28**
965-0326	D31-B10A-05W3-100	24	28	2700	32	**14.28**

Dimensions — Inches (mm): 3.62 sq. × 1.00 (92 sq. × 25) on all models

965-0351	D36-B10A-04W2-100	12	27	2100	34	**15.04**
965-0336	D36-B10A-04W3-100	12	28	2850	48	**15.04**
965-0341	D36-B10A-05W2-100	24	27	2100	34	**15.04**
965-0346	D36-B10A-05W3-100	24	37	2850	48	**15.04**

Dimensions — Inches (mm): 4.69 sq. × 1.00 (119 sq. × 25) on all models

965-0350	D47-B10A-04W2-000	12	34	1900	70	**20.60**
965-0355	D47-B10A-04W3-000	12	39	2400	90	**20.60**
965-0360	D47-B10A-05W2-000	24	34	1900	70	**20.60**
965-0365	D47-B10A-05W3-000	24	39	2400	90	**20.60**

Dimensions — Inches (mm): 4.69 sq. × 1.50 (119 sq. × 38) on all models

965-0410	D47-B15A-04T2-100	12	40	2650	97	**20.00**
965-0412	D47-B15A-04T3-100	12	42	2950	108	**20.00**
965-0414	D47-B15A-05T2-100	24	40	2650	97	**20.00**
965-0416	D47-B15A-05T3-100	24	42	2950	108	**20.00**
965-0418	D47-B15A-04W2-100	12	40	2650	97	**20.00**
965-0420	D47-B15A-04W3-100	12	42	2950	108	**20.00**
965-0422	D47-B15A-05W2-100	24	40	2650	97	**20.00**
965-0424	D47-B15A-05W3-100	24	42	2950	108	**20.00**

Dimensions — Inches (mm): 5.91 × 6.8 × 2 (150 × 172.7 × 50.8) on all models

965-0500	D59-B20A-04W4-000	12	54	3200	230	**56.27**
965-0510	D59-B20A-05W4-000	24	54	3200	230	**56.27**
965-0520	D59-B20A-07W4-000	48	54	3200	230	**56.27**

Dimensions — Inches (mm): 6.8 × 2 (172.7 × 50.8) on all models

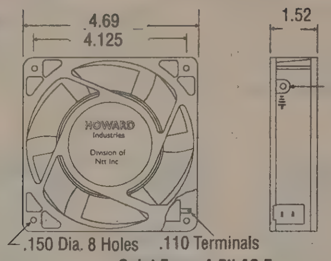
965-0600	D68-B20A-04W4-000	12	54	3200	230	**56.27**
965-0610	D68-B20A-05W4-000	24	54	3200	230	**56.27**
965-0620	D68-B20A-07W4-000	48	54	3200	230	**56.27**

Accessories

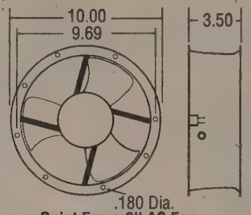
Stock No.	Mfr.'s Type	Description	For Globe Fan Series	EACH	
				1-49	50-Up
965-0012	FPC12	12" Power Cord/45° Connector	All	**1.39**	**1.28**
965-2444	FPC24	24" Power Cord/45° Connector	All	**1.52**	**1.40**
965-2446	FPC36	36" Power Cord/45° Connector	All	**1.76**	**1.61**
965-1012	RPC12	12" Power Cord/90° Connector	All	**1.39**	**1.28**
965-9924	RPC24	24" Power Cord/90° Connector	All	**1.52**	**1.39**
965-0112	SPC12	12" Power Cord/Straight Connector	All	**1.39**	**1.28**
965-0124	SPC24	24" Power Cord/Straight Connector	All	**1.52**	**1.39**
965-0212	TPC12	12" Power Cord/T-Head Connector	All	**1.39**	**1.28**
965-0224	TPC24	24" Power Cord/T-Head Connector	All	**1.52**	**1.39**
965-2428	PFA4730	30 PPI Filter	A47/D47	**2.91**	**2.67**

Stock No.	Mfr.'s Type	Description	For Globe Fan Series	EACH	
				1-49	50-Up
965-2445	PFA2445	45 PPI Filter	A24/D24	**2.52**	**2.31**
965-2424	PFA3630	30 PPI Filter	A36/D36	**2.73**	**2.50**
965-2434	PFG47	Black Plastic Finger Guard	4.69" Sq. Fan	**1.82**	**1.67**
965-2432	PFG36	Black Plastic Finger Guard	3.60" Sq. Fan	**1.63**	**1.50**
965-0031	PFG31	Black Plastic Finger Guard	3.15" Sq. Fan	**1.40**	**1.28**
965-2406	WFG47	Nickel Chrome Finger Guard	4.69" Sq. Fan	**2.00**	**1.84**
965-2400	WFG24	Nickel Chrome Finger Guard	2.36" Sq. Fan	**1.58**	**1.45**
965-2402	WFG31	Nickel Chrome Finger Guard	3.15" Sq. Fan	**1.71**	**1.57**
965-2414	WFG59	Nickel Chrome Finger Guard	5.91" × 6.78" Fan	**3.39**	**3.11**
—	—	—	—	—	—

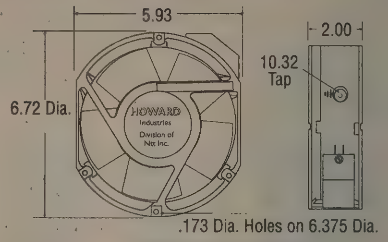
AC Fans



Quiet Force 4.5" AC Fan



Quiet Force 6" AC Fan


5.93
2.00
10.32 Tap
6.72 Dia.
HOWARD Industries Division of Nti Inc.
.173 Dia. Holes on 6.375 Dia.

Whirlwind 10" AC Fan

Designed for maximum performance with minimum noise. Sizes range from 4.69" square to 10" round with air flow ranges from 60 CFM to 560 CFM. Features include rugged cast aluminum venturis, impellers are made from thermoplastic with UL94VO rating. All fans are impedance or thermal protected and are UL and CSA approved. The 4.69" fans feature the Patented World Famous Unit Bearing design which will provide extremely quiet operation well in excess of 10 years. The 6" and 10" fans feature long life ball bearing design.

Quiet Force 4.5" AC Fans

- ► Ball Bearing Life Sleeve Bearing Prices
- ► Patented Unique Unit Bearing Design
- ► Normal Life Expectancy in Excess of 10 Years
- ► Rugged Die Cast Zinc Frame
- ► Polycarbonate Molded Impeller
- ► Ultra Quiet Operation
- ► All Supplied with .110 Quick Connect Terminals

Stock No.	Mfr.'s Type	Volts AC	Amps	CFM	db	EACH		
						1-24	25-49	50-Up
613-0350	3-15-2455	115	.26/.23	60/70	28	**23.63**	**21.81**	**20.25**
613-2460	3-15-2460	230	.13/.12	60/70	28	**24.06**	**22.20**	**20.62**
613-0340	3-15-3450	115	.29/.24	85/100	38	**23.80**	**21.97**	**20.44**
613-3451	3-15-3451	230	.16/.13	85/100	38	**23.97**	**22.13**	**20.55**
613-9996	3-15-4477	115	.38/.28	95/110	39	**26.27**	**24.24**	**22.51**
613-4487	3-15-4476	230	.19/.14	95/110	39	**26.27**	**24.24**	**22.51**

Quiet Force 6" AC Fans

- ► High Performance 260 CFM
- ► Permanent Split Capacitor Motor
- ► Ball Bearing Construction
- ► Cast Aluminum Housing
- ► Supplied with .110 Quick Connect Terminals

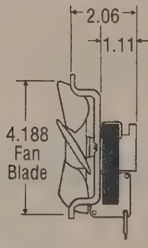
Stock No.	Mfr.'s Type	Volts AC	Amps	db	EACH		
					1-24	25-49	50-Up
613-5601	3-15-5601	115	.32/.28	48	**52.70**	**48.65**	**45.17**
613-5602	3-15-5602	230	.19/.17	48	**54.40**	**50.22**	**46.63**

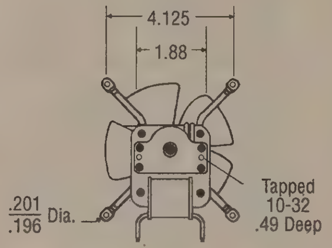
Whirlwind 10" AC Fan

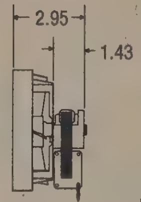
- ► High Performance 560 CFM
- ► 4 Pole Permanent Split Capacitor Motor
- ► Requires 50% Less Power to Operate
- ► Thermally Protected
- ► Ball Bearing Construction

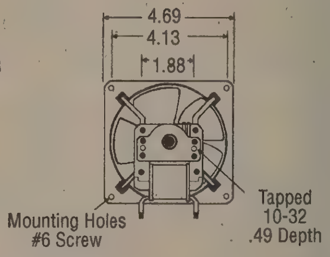
Stock No.	Mfr.'s Type	Volts AC	Amps	db	EACH		
613-0100	5-50-0100	115	.35	47	**71.40**	**65.91**	**61.19**
613-5100	5-50-5100	230	.19	47	**64.60**	**59.63**	**55.37**

Unit Bearing Open Frame Fans







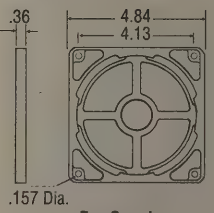


Stock No.	Mfr.'s Type	Voltage	Air Direction	Mount Type	FL Watts	FL Amps	RPM	dBA	CFM	EACH		
										1-24	25-49	50-Up
613-1636	3-90-8190	115	AA	Venturi	17/15	.37/.30	2650/3000	43/46	105	**16.15**	**14.90**	**13.84**
613-8191	3-90-8191	115	AO	Venturi	17/15	.37/.30	2650/3000	43/46	105	**23.63**	**21.81**	**20.29**
613-8193	3-90-8193	115	AA	Venturi	12/10	.27/.19	2150/1950	39/35	65	**21.93**	**20.24**	**18.80**

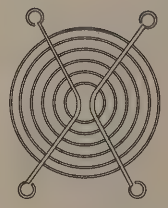
Accessories

Fan Guards

Stock No.	Mfr.'s Type	Fits These Models	EACH
613-0036	6-182-036	3" Mini Fans (2.81" Centers), Mini Open Frame Fans	**2.04**
613-0033	6-182-033	4.69" Fans (4.12" Centers), 4" Open Frame Fans	**3.15**
613-0085	6-182-085	4.69" Fans (4.12" Centers), 4" Open Frame Fans, .76 Overall Height	**4.60**
613-0079	6-182-079	6" Fans	**3.72**
613-0018	6-180-000	10" Fans	**4.52**



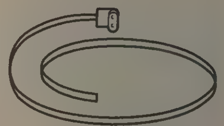
Fan Guard



Cord Sets

All UL and CSA approved.

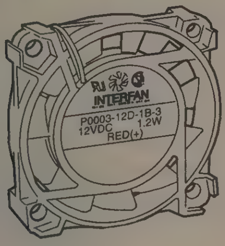
Stock No.	Mfr.'s Type	Description	EACH
613-9998	6-170-670	T-Plug configuration, 24" 2 conductor 18 gauge cable	**1.44**
613-0672	6-170-672	L-Plug configuration, 24" 2 conductor 18 gauge cable	**1.48**
613-0675	6-170-675	L-Plug configuration, 36" 2 conductor 18 gauge cable	**1.72**



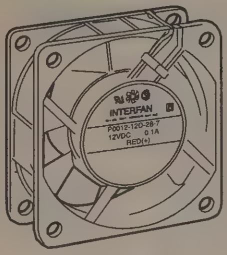
Filter Package

Stock No.	Mfr.'s Type	Description	EACH
613-8099	3-90-8099	Filter Package	**8.20**
613-8106	3-90-8106	Filter only	**2.18**

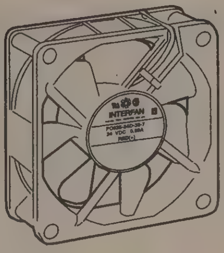
Fans, Blowers and Accessories



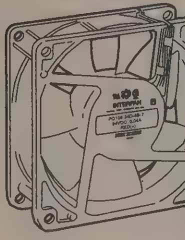
P0003-12D-1B-3



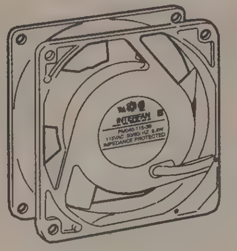
P0012-12D-2B-7
P0012-24D-2B-7



P0025-12D-3B-7
P0025-24D-3B-7



P0106-12D-4B-7
P0106-24D-4B-7



PM040-115-3B
PM040-230-3B

- ► **High-Quality, Dependable Products**
- ► **Long-Life, Ball Bearing Construction**
- ► **All Fans Meet Industry Standard Mounting Dimensions**
- ► **All Fans Are Designed to Meet or Exceed Domestic and International Safety Standards**

DC Fans

Stock No.	Mfr.'s Type	Voltage (V)	Airflow (CFM)	Input Current (mA)	Input Power (Watts)	Speed (RPM)	Noise Level (dBA)	Weight (Oz.)	Frame Size H × W × D Inches (mm)	Construction	Guard Filter Cord	EACH	
												1-24	25-Up
243-0010 **243-0020**	P0001-05D-1B-8 P0001-12D-1B-8	5 12	1.0 1.4	70 60	0.35 0.72	7700 11000	22 29	0.28	.98 × .98 × .39 (25 × 25 × 10)	Plastic housing and impeller, ball bearing, 28 AWG wire leads	—	**21.27** **21.27**	**19.63** **19.63**
243-0050	P0003-12D-1B-3	12	3.5	100	1.20	5200	30	0.70	1.6 × 1.6 × 0.4 (40 × 40 × 10)	Plastic housing and impeller, ball bearing, 26 AWG wire leads	243-5545	**17.27**	**15.94**
243-0060 **243-0070**	P0005-12D-1B-3 P0005-24D-1B-3	12 24	5.0	150 100	1.80 2.40	6000	34	1.20	1.6 × 1.6 × 0.8 (40 × 40 × 20)	Plastic housing and impeller, ball bearing, 26 AWG wire leads	243-5545	**17.27** **17.88**	**15.94** **16.51**
243-0080 **243-0090**	P0012-12D-2B-7 P0012-24D-2B-7	12 24	14.0	80 40	0.96	3000	24	3.20	2.4 × 2.4 × 1.0 (60 × 60 × 25)	Plastic housing and impeller, ball bearing, 26 AWG wire leads	243-5516	**17.51** **17.51**	**16.16** **16.16**
243-0100 **243-0110**	P0014-12D-2B-3 P0014-24D-2B-3	12 24	14.0	200 100	2.40	3700	30	1.50	2.5 × 2.5 × 0.6 (62 × 62 × 15)	Plastic housing and impeller, ball bearing, 26 AWG wire leads	243-5516	**18.65** **18.95**	**17.21** **17.50**
243-0120 **243-0130**	P0022-12D-3B-3 P0022-24D-3B-3	12 24	22.0	70	2.00	2250	33	5.30	3.6 × 3.6 × 0.6 (92 × 92 × 16)	Plastic housing and impeller, ball bearing, 24 AWG wire leads	243-5520	**19.99** **21.27**	**18.50** **19.63**
243-0140 **243-0150**	P0025-12D-3B-7 P0025-24D-3B-7	12 24	27.0	80 70	0.96 1.68	2150	23	3.60	3.2 × 3.2 × 1.0 (80 × 80 × 25)	Plastic housing and impeller, ball bearing, 24 AWG wire leads	243-5508	**16.46** **16.46**	**15.19** **15.19**
243-0160 **243-0170**	P0035-12D-3B-7 P0035-24D-3B-7	12 24	35.0	115 90	1.80 2.20	2950	32	3.60	3.2 × 3.2 × 1.0 (80 × 80 × 25)	Plastic housing and impeller, ball bearing, 24 AWG wire leads	243-5508	**16.46** **16.46**	**15.19** **15.19**
243-0180 **243-0190**	P0040-12D-3B P0040-24D-3B	12 24	40.0	180 115	2.70 2.80	3200 3250	45	9.00	3.6 × 3.6 × 1.0 (92 × 92 × 25)	Plastic housing and impeller, ball bearing, 24 AWG wire leads	243-5520	**26.83** **27.74**	**24.76** **25.61**
243-0200 **243-0210**	PM082-12D-3B PM082-24D-3B	12 24	82.0	560 300	6.70 7.20	3200 3250	45	9.00	4.7 × 4.7 × 1.0 (120 × 120 × 25)	Die cast aluminum housing, plastic impeller ball bearing, 24 AWG wire leads	243-5504 243-5502	**33.91** **34.85**	**31.31** **32.17**
243-0220 **243-0230**	P0106-12D-4B-7 P0106-24D-4B-7	12 24	108.0	550 310	6.60 7.44	2950	43	9.20	4.7 × 4.7 × 1.5 (120 × 120 × 38)	Plastic housing and impeller, ball bearing 24 AWG wire leads	243-5504 243-5502	**22.73** **22.73**	**20.98** **20.98**
243-0240 **243-0250** **243-0260**	P0106-12D-4BT-7 P0106-24D-4BT-7 P0106-48D-4BT-7	12 24 48	108.0	550 310 160	6.60 7.44 7.68	2950	43	9.20	4.7 × 4.7 × 1.5 (120 × 120 × 38)	Plastic housing and impeller, ball bearing, terminal block	243-5504 243-5502 243-5505	**22.73** **22.73** **22.73**	**20.98** **20.98** **20.98**
243-0270	PM106-24D-4B-7	24	100.0	300	7.20	2800	41	14.20	4.7 × 4.7 × 1.5 (120 × 120 × 38)	Aluminum alloy housing, plastic impeller ball bearing, 24 AWG wire leads	243-5504 243-5502	**22.73**	**20.98**
243-0280	PM106-48D-4BT-7	48	100.0	200	7.20	2700	41	14.20	4.7 × 4.7 × 1.5 (120 × 120 × 38)	Aluminum alloy housing, plastic impeller, ball bearing, terminal block	243-5504 243-5502 243-5505	**22.73**	**20.98**

AC Fans

Stock No.	Mfr.'s Type	Voltage (V)	Airflow (CFM)	Input Current (mA)	Input Power (Watts)	Speed (RPM)	Noise Level (dBA)	Weight (Oz.)	Frame Size H × W × D Inches (mm)	Construction	Guard Filter Cord	1-24	25-Up
243-0290	PM018-115-3B	115	18.0	—	8.50	2600	33	7.00	3.2 × 3.2 × 0.8 (80 × 80 × 20)	Die cast aluminum housing, plastic impeller, ball bearing 22 AWG wire leads	243-5508	**41.63**	**38.43**
243-0300 **243-0310**	PM024-115-3B PM024-230-3B	115 230	24.0	— —	7.00	3050 3100	36	8.00	3.2 × 3.2 × 1.0 (80 × 80 × 25)	Die cast aluminum housing, plastic impeller, ball bearing 24 AWG wire leads	243-5508	**33.91** **35.46**	**31.31** **32.73**
243-0320 **243-0330**	PM032-115-3B-7 PM032-230-3B-7	115 230	34.0	— —	6.90	3300	38	9.50	3.2 × 3.2 × 1.5 (80 × 80 × 38)	Aluminum alloy housing, plastic impeller, ball bearing, terminal block	243-5508 243-5505	**19.31** **19.31**	**17.83** **17.83**
243-0340 **243-0350**	PM040-115-3B PM040-230-3B	115 230	40.0	— —	9.50 11.00	3100	36	10.00	3.6 × 3.6 × 1.0 (92 × 92 × 25)	Die cast aluminum housing, plastic impeller, ball bearing, terminal block	243-5520 243-5505	**33.91** **35.46**	**31.31** **32.73**
243-0360 **243-0370**	PM058-115-4B PM058-230-4B	115 230	58.0	— —	11.00 14.50	2350 2500	39	10.00	4.7 × 4.7 × .8 (120 × 120 × 20)	Die cast aluminum housing, plastic impeller, ball bearing, 22 AWG wire leads	243-5504 243-5502 243-5530	**43.16** **44.71**	**39.84** **41.27**
243-0380 **243-0390**	PM074-115-4B PM074-230-4B	115 230	74.0	— —	11.50 12.00	2900	43	15.00	4.7 × 4.7 × 1.0 (120 × 120 × 25)	Die cast aluminum housing, plastic impeller, ball bearing, terminal block	243-5504 243-5502 243-5530 243-5505	**35.46** **37.01**	**32.72** **34.16**
243-0400 **243-0410**	PM106-115-4B-7 PM106-230-4B-7	115 230	102.0	—	13.00	3200	41	20.00	4.7 × 4.7 × 1.5 (120 × 120 × 38)	Die cast aluminum housing, plastic impeller, ball bearing, terminal block	243-5504 243-5502 243-5530 243-5505	**20.91** **20.91**	**19.30** **19.30**
243-0420 **243-0430**	MM235-115-6B MM235-230-6B	115 230	235.0	— —	38.00 37.50	3350	53	43.00	6.8 Dia × 2 (172 Dia × 55)	All metal, ball bearing, 20 AWG wire leads	243-5506	**83.25** **86.34**	**76.85** **79.70**

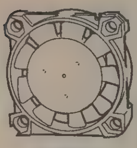
Radial Blowers

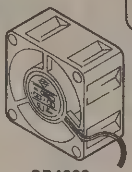
Stock No.	Mfr.'s Type	Voltage (V)	Airflow (CFM)	Input Current (mA)	Input Power (Watts)	Speed (RPM)	Noise Level (dBA)	Weight (Oz.)	Frame Size H × W × D Inches (mm)	Construction	Guard Filter Cord	1-24	25-Up
243-0440 **243-0450**	PMB24-115-4B PMB24-230-4B	115 230	24.0	— —	20.00	2300	53	23.00	4.8 × 4.8 × 1.5 (120 × 120 × 38)	Plastic housing, plastic wheel, ball bearing, 20 AWG wire leads	—	**53.35** **54.89**	**49.24** **50.67**

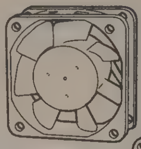
Accessories

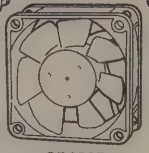
243-5502. 5502. Filter 4.68" × 4.68" × .18"	**EACH 4.90**
243-5504. 5504. Finger guard 4.12" × 4.12"	**EACH 3.00**
243-5505. 5505. Straight plug and 24" cord	**EACH 2.20**
243-5545. 5505-45D. 45 degree plug and 24" cord	**EACH 2.20**
243-5506. 5506. Finger guard 6.38" round	**EACH 6.20**
243-5508. 5508. Finger guard 2.81" round	**EACH 2.30**
243-5516. 5516. Finger guard mini 1.97" round	**EACH 2.40**
243-5520. 5520. Finger guard medium 3.25" round	**EACH 2.30**
243-5525. 40FP-45. Filter 40 mm	**EACH 1.60**
243-5530. 120FP-30. Filter 120 mm	**EACH 3.70**

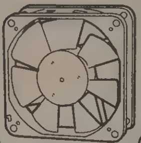
DC Cooling Fans

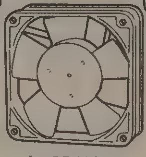

OD4010
2.5-5.0 CFM
1.57" × 0.39"
(40 × 10 mm)

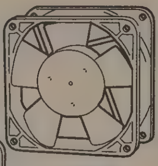

OD4020
4.5-7.5 CFM
1.57" × 0.78"
(40 × 20 mm)


OD6025
12-25 CFM
2.36" × 1"
(60 × 25 mm)


OD8025
22-40 CFM
3.15" × 1"
(80 × 25 mm)


OD9225
25-50 CFM
3.62" × 1"
(92 × 25 mm)


OD1225
45-86 CFM
4.72" × 1"
(120 × 25 mm)


OD1238
60-110 CFM
4.72" × 1.5"
(120 × 38 mm)

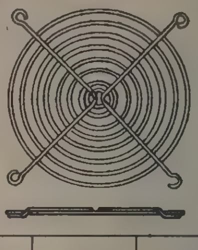
- ► **12" Wire Terminations**
- ► **Ball Bearing or Sleeve Bearing**
- ► **Brushless Motors Auto Restart**
- ► **Impedance and Polarity Protected**
- ► **Impeller and Frame Glassfiber Reinforced Thermoplastic UL94V-0**
- ► **UL, CSA, VDE, and TUV Standards**

Orion DC brushless fans are designed for maximum performance with a minimum of noise. Heavy duty motors are designed for extra long life. Ball bearing models have a 70,000 hour life expectancy. All DC fans available in 5 volts as special order.

Stock No.	Mfr.'s Type	VDC	RPM	CFM	Noise (dB)	EACH
						1-49
592-0610	OD4010-12HB	12	8000	5.0	31	**10.00**
592-0620	OD4010-12MB	12	6000	3.8	27	**10.00**
592-0630	OD4010-24HB	24	8000	5.0	31	**10.00**
592-0640	OD4010-24MB	24	6000	3.8	27	**10.00**
592-0650	OD4020-12HB	12	7000	7.5	30	**10.00**
592-0660	OD4020-12MB	12	5500	5.3	24	**10.00**
592-0670	OD4020-24HB	24	7000	7.5	30	**10.00**
592-0680	OD4020-24MB	24	5500	5.3	24	**10.00**
592-0690	OD6025-12HB	12	3800	25.0	30	**11.00**
592-0700	OD6025-12MB	12	3000	17.0	25	**11.00**
592-0710	OD6025-12LB	12	2500	14.0	20	**11.00**
592-0720	OD6025-24HB	24	3800	25.0	30	**11.00**
592-0730	OD6025-24MB	24	3000	17.0	25	**11.00**
592-0740	OD6025-24LB	24	2500	14.0	20	**11.00**
592-0750	OD6025-12HS*	12	3800	25.0	30	**8.50**
592-0760	OD6025-12MS*	12	3000	17.0	25	**8.50**
592-0770	OD6025-12LS*	12	2500	14.0	20	**8.50**
592-0780	OD6025-24HS*	24	3800	25.0	30	**8.50**
592-0790	OD6025-24MS*	24	3000	17.0	25	**8.50**
592-0800	OD6025-24LS*	24	2500	14.0	20	**8.50**
592-0810	OD8025-12HB	12	3300	40.0	33	**11.00**
592-0820	OD8025-12MB	12	2800	32.0	28	**11.00**
592-0830	OD8025-12LB	12	2000	22.0	21	**11.00**
592-0840	OD8025-24HB	24	3300	40.0	33	**11.00**
592-0850	OD8025-24MB	24	2800	32.0	27	**11.00**
592-0860	OD8025-24LB	24	2000	22.0	21	**11.00**
592-0870	OD8025-12HS*	12	3300	40.0	33	**8.50**
592-0880	OD8025-12MS*	12	2800	32.0	28	**8.50**
592-0890	OD8025-12LS*	12	2000	22.0	21	**8.50**
592-0900	OD8025-24HS*	24	3300	40.0	33	**8.50**
592-0910	OD8025-24MS*	24	2800	32.0	27	**8.50**
592-0920	OD8025-24LS*	24	2000	22.0	21	**8.50**
592-0930	OD9225-12HB	12	2800	50.0	33	**11.00**
592-0940	OD9225-24HB	24	3000	50.0	33	**11.00**
592-0950	OD1225-12HB†	12	3000	86.0	42	**19.00**
592-0960	OD1225-12HTB	12	3000	86.0	42	**19.00**
592-0970	OD1225-24HB	24	3000	86.0	42	**19.00**
592-0980	OD1225-24HTB	24	3000	86.0	42	**19.00**
592-0990	OD1238PT-12HB†‡	12	3100	110.0	44	**20.00**
592-1000	OD1238PT-12HTB	12	3100	110.0	44	**20.00**
592-1010	OD1238PT-24HB	24	3000	108.0	43	**20.00**
592-1020	OD1238PT-24HTB	24	3000	108.0	43	**20.00**

*Sleeve bearing. †Available in 38 volts and 48 volts as special order. ‡Aluminum frame versions available. T=Terminal.

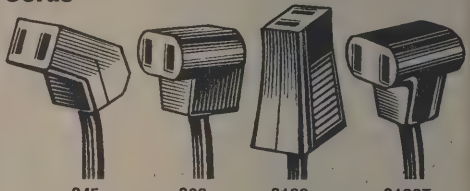
Finger Guards



Stock No.	Mfr.'s Type	Fan Size	Fits Models	EACH
				1-99
592-1030	G40-2	40 mm/1.57"	OD4010, 4020	**1.00**
592-1040	G60-4	60 mm/2.36"	OD6025	**1.20**
592-1050	G80-18	80 mm/3.15"	OA825, 80 OD8025	**1.20**
592-1060	G92-16	92 mm/3.62"	OA92, 938, OD9225	**1.20**
592-1070	G109-15A	120 mm/4.72"	OA125, 109, OD1225, 1238	**1.30**
592-1080	G119-8	127 mm/5.00"	OA119	**1.30**
592-1090	G172-10HA	172 mm/6.80"	OA162, 172	**1.70**

Black available on request.

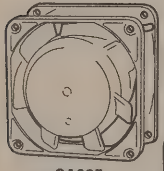
Cords

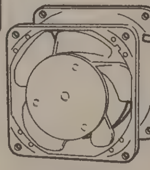


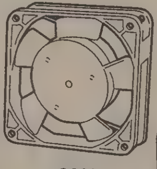
592-1130. C45-12. **1-99** .... **EACH 1.25**
592-1140. C45-24. **1-99** .... **EACH 1.32**
592-1150. C45-36. **1-99** .... **EACH 1.40**
592-1160. C90-12. **1-99** .... **EACH 1.25**
592-1170. C90-24. **1-99** .... **EACH 1.32**
592-1180. C90-36. **1-99** .... **EACH 1.40**
592-1100. C180-12. **1-99** .... **EACH 1.25**
592-1110. C180-24. **1-99** .... **EACH 1.32**
592-1120. C180-36. **1-99** .... **EACH 1.40**
592-1190. C180T-12. **1-99** .... **EACH 1.25**
592-1200. C180T-24. **1-99** .... **EACH 1.32**
592-1210. C180T-36. **1-99** .... **EACH 1.40**

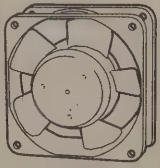
Custom lengths available on request.

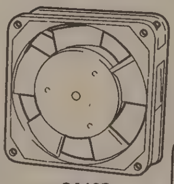
AC Cooling Fans — Heavy Duty Ball Bearing

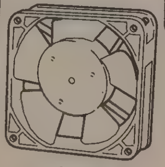

OA825
13-25 CFM
3.15" × 1"
(80 × 25 mm)

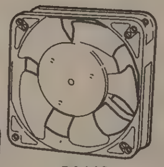

OA80
17-31 CFM
3.15" × 1.5"
(80 × 38 mm)

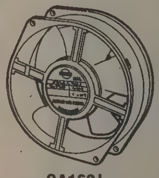

OA92
21-35 CFM
3.6" × 1"
(92 × 25 mm)

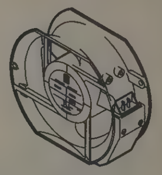

OA938
21-50 CFM
3.6" × 1.5"
(92 × 38 mm)


OA125
42-81 CFM
4.7" × 1"
(120 × 25 mm)


OA109
50-110 CFM
4.7" × 1.5"
(120 × 38 mm)


OA119
74-130 CFM
5" × 1.5"
(127 × 38 mm)


OA162‡
113-230 CFM
6.8" × 2"
(172 × 51 mm)


OA172
110-235 CFM
6.8" × 5.9" × 2"
(172 × 150 × 51 mm)

- ► **Aluminum Die Cast Frames**
- ► **Low Noise**
- ► **60,000 Hour Life Expectancy**
- ► **UL, CSA, TUV, and VDE Standards**
- ► **Super Efficient**

Orion heavy duty AC fans are in use worldwide in all types of applications. Designed and manufactured to exacting UL/CSA TUV and VDE standards. They have been designed for a life expectancy in excess of 60,000 hours.

Stock No.	Mfr.'s Type*	VAC	W	RPM	CFM	Noise (dB)	EACH
							1–49
592-0005	OA825AP-11-1WB	115	9	3000	25	28	**16.00**
592-0010	OA80AP-11-1WB	115	12	3000	31	29	**16.00**
592-0020	OA80AP-11-1TB	115	12	3000	31	29	**16.00**
592-0030	OA80AP-11-2WB	115	9	2300	23	22	**16.00**
592-0050	OA80AP-11-3WB	115	5	1600	17	18	**16.00**
592-0070	OA80AP-22-1WB	220	12	3000	31	29	**16.00**
592-0090	OA80AP-22-2WB	220	9	2300	23	22	**16.00**
592-0110	OA80AP-22-3WB	220	5	1600	17	18	**16.00**
592-0130	OA92AP-11-1WB	115	13	3000	35	30	**16.00**
592-0140	OA92AP-11-1TB	115	13	3000	35	30	**16.00**
592-0150	OA92AP-22-1WB	220	13	3000	35	30	**16.00**
592-0160	OA92AP-22-1TB	220	13	3000	35	30	**16.00**
592-0170	OA938AP-11-1WB	115	9	3100	50	32	**16.00**
592-0180	OA938AP-11-1TB	115	9	3100	50	32	**16.00**
592-0190	OA938AP-22-1WB	220	9	3100	50	32	**16.00**
592-0200	OA938AP-22-1TB	220	9	3100	50	32	**16.00**
592-0210	OA125AP-11-1WB	115	13	2900	81	37	**16.00**
592-0220	OA125AP-11-1TB	115	13	2900	81	37	**16.00**
592-0230	OA125AP-22-1WB	220	13	2900	81	37	**16.00**
592-0240	OA125AP-22-1TB	220	13	2900	81	37	**16.00**
592-0250	OA109AP-11-1WB	115	15	3000	110	42	**16.00**
592-0260	OA109AP-11-1TB	115	15	3000	110	42	**16.00**
592-0270	OA109AP-11-2WB	115	11	2300	71	35	**16.00**
592-0280	OA109AP-11-2TB	115	11	2300	71	35	**16.00**
592-0290	OA109AP-11-3WB	115	8	1600	50	26	**16.00**
592-0300	OA109AP-11-3TB	115	8	1600	50	26	**16.00**
592-0310	OA109AP-22-1WB	220	15	3000	110	42	**16.00**
592-0320	OA109AP-22-1TB	220	15	3000	110	42	**16.00**
592-0330	OA109AP-22-2WB	220	11	2300	71	35	**16.00**
592-0340	OA109AP-22-2TB	220	11	2300	71	35	**16.00**
592-0350	OA109AP-22-3WB	220	8	1600	50	26	**16.00**
592-0360	OA109AP-22-3TB	220	8	1600	50	26	**16.00**
592-0370	OA119AP-11-1WB	115	14	3000	130	39	**23.50**
592-0380	OA119AP-11-1TB	115	14	3000	130	39	**23.50**
592-0390	OA119AP-22-1WB	220	14	3000	130	39	**23.50**
592-0400	OA119AP-22-1TB	220	14	3000	130	39	**23.50**
592-0530	OA162AP-11-1WB	115	37	3000	230	52	**29.00**
592-0550	OA162AP-22-1WB	220	37	3000	230	52	**29.00**
592-0570	OA172SAN-11-1WB†	115	35	3500	235	50	**38.00**
592-0580	OA172SAN-11-1TB†	115	35	3500	235	50	**38.00**
592-0590	OA172SAN-22-1WB†	220	35	3500	235	50	**38.00**
592-0600	OA172SAN-22-1TB†	220	35	3500	235	50	**38.00**

*B=Ball bearing; T=Terminal; W=Wire; AP=Aluminum painted; AN=Aluminum die cast. †Also available with 6.8" round as special order. ‡With induction capacitor motor.

Globe Motor Division

Globe Motor Division approved modification centers in Dallas, Texas and San Jose, California are staffed with Globe factory-trained personnel, some of whom have been meeting customer needs for more than 20 years.

This experience allows us to provide additional services in the following areas:

- **Computerized Motor Performance Data Under Load and Temperature Conditions**
- **Machine Shop Capabilities**
- **Inventory Support For Small and Large Product Needs**
- **Custom Configuration Of Any Globe Motor**
- **Design Assistance**

While serving customers through 32 nationwide locations, we also provide engineering assistance though our Motorvation Hot Lines at **1-800-541-4105** or (in Texas only) **214-343-5000.**

Give us a call. Hundreds of satisfied customers do each day. We're the company that cares about your needs.

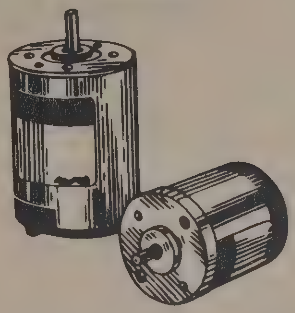
Motors for Industrial Applications

- **For Computer Peripherals, Machine Tools, Instrumentation, Robotics, Office Equipment and Medical Equipment**

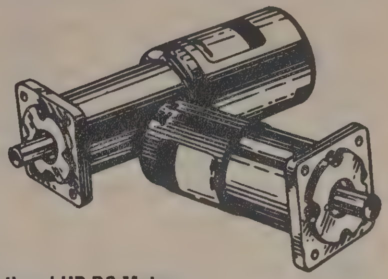
Manufacturers of everything from handheld tools to robotics are finding Globe is a competitive source for quality miniature motors, gearmotors and blowers.

When you need precise, reliable motion in minimum space, Globe can give you the design options and the quality you need to meet rigid material and testing standards.

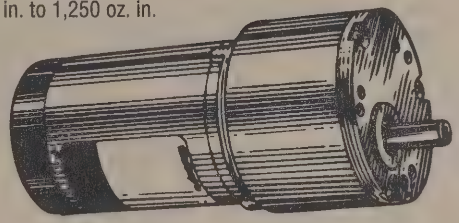
Strategically located distribution modification/assembly centers can make thousands of variations from our basic motor modules, including options in EMI filters, special mounting, tachometers, special couplings and lubrication. With 48-hour delivery of standard units direct from our distributors.



**Fractional HP DC
Planetary Gearmotors**
Standard Gear Ratios: from 4:1 to 46,656:1
Continuous Torque: from .75 oz. in. to 1,250 oz. in.

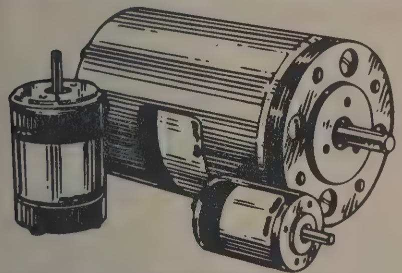


Fractional HP DC Motors
Continuous Torque: from .25 oz. in. to 43.0 oz. in.
Diameter: from 1.3" to 2.6"
VDC: 4, 6, 12, 24, 50, 115

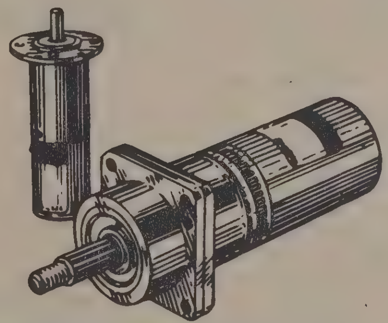


IM-13 Spur Gearmotors
Standard Gear Reduction: from 3.97:1 to 1,276:1
Continuous Torque: from 3.0 oz. in. to 60.0 oz. in.

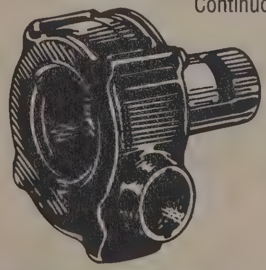
Motors for Military Applications

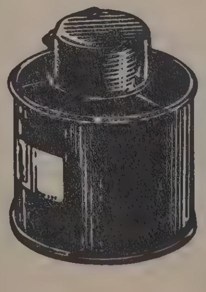


Fractional HP DC PM Motors
Continuous Torque: from 0.20 oz. in. to 16.0 oz. in.
Diameter: from .75" to 2.25"
VDC: 5, 12, 27, 50, 115



Fractional HP DC PM Gearmotors
Standard Gear Ratios: From 3.82:1 to 36,873:1
Continuous Torque: from 1.0 oz. in. to 550 lb. in.





Miniature Fans and Blowers
CFM: from 6 CFM to 600 CFM

- **For Missile Guidance and Control Systems, Missile Fin Actuation, Aircraft Instruments, Control Systems, Aircraft Actuation Systems, Land Track Vehicles-In-Line Fuel Pumps — Transfer and Bilge Pumps — Cabin Ventilation**

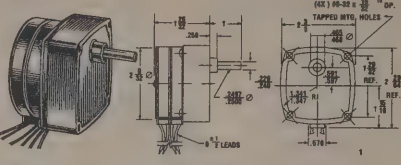
Globe can help you meet rigorous quality, material and testing standards for motors, gearmotors, and blowers.

We can give you custom capabilities and options in actuators (linear and rotary), pumps with leakproof magnetic couplings, torquers, and blowers.

Strategically-located distribution modification/assembly centers can make thousands of variations from our basic motor modules, including options in EMI filters, special mounting, tachometers, special couplings and lubrications, with 48-hour delivery of standard units direct from our distributors.

Stepping, Geared, SAS Series Motors

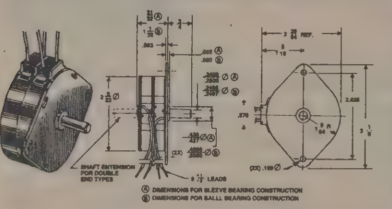
Geared SAS Series motors have step angles ranging from 0.0125 to 0.75 and torque ratings from 200 ounce inches (maximum gear train loading) to 35 ounce inches. All at 200 p/s. Gear trains are industrial quality throughout. Dual sleeve bearings. **Input Power:** 8 Watts. **Winding Resistance:** 36 ohms. **Weight:** 16 oz.



Stock No.	Mfr.'s Type	Step Angle	Output Speed @ 200 p/s (rpm)	Torque @ 200 p/s* (Oz.-In.)	Steps Per Rev.	EACH	
						1-24	25-Up
542-0005	SAS4004-001	.0125°	0.42	200†	28,800	**62.87**	**57.63**
542-0010	SAS4004-002	.0250°	0.83	200†	14,400	**62.87**	**57.63**
542-0015	SAS4004-009	.2000°	6.67	121	1,800	**45.25**	**41.48**
542-0020	SAS4004-014	.7500°	25.00	35	480	**40.06**	**36.72**

*Torque measured at nominal voltage with L/R drive. †Max. gear train loading.

Stepping, Direct Drive, SAS Series Motors

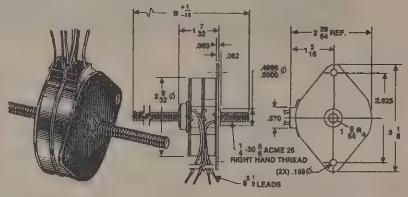

SHAFT EXTENSION FOR DOUBLE END TYPES
LEADS
Ⓐ DIMENSIONS FOR SLEEVE BEARING CONSTRUCTION
Ⓑ DIMENSIONS FOR BALL BEARING CONSTRUCTION

Industrial quality, economical SAS Series direct stepping motors have excellent torque/size ratio: 7.5 ounce inches at 4-5 p/s. Unipolar operation at 12 VDC is standard. Step angle is 7.5°. Dual sleeve bearings. 48 steps per revolution. **2-Phase Holding Torque (oz-in):** 10.5. **Winding Resistance:** 36 Ohms. **Weight:** 8 oz.

Stock No.	Mfr.'s Type	Steps Angle	Rated Torque @ 4-5 p/s (Oz.-In.)	Input Power (Watts)	Rotor Inertia (Oz.-In.)	EACH	
						1-24	25-Up
542-0025	SAS4003-002	7.5°	7.5	8	0.17	**34.12**	**31.28**

Stepping, Linear Actuator, SLS Series Actuator

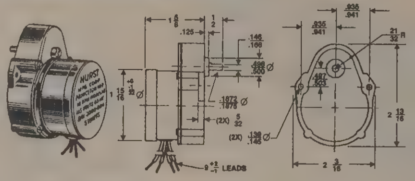
Stepping SLS Linear actuator has a reversible, permanent magnet rotor with unipolar operations. Rotor assembly features sintered bronze nut for extended life. Nut accepts ¼" diameter, .048 pitch Acme screw that provides linear motion for pushing, pulling, lifting and positioning applications. Standard 8" screw with maximum travel of 6.75" and maximum thrust of 15 pounds. Ball bearings. **Winding Resistance:** 25 ohms. **Weight:** 10.5 oz. (with screw).



Stock No.	Mfr.'s Type	Steps Inch	Max. Rec. Load	Input Power (Watts)	Nominal Voltage (DC)	EACH	
						1-24	25-Up
542-0030	SLS4014-002	1000	15 lbs.	11.5	12	**101.81**	**93.33**

Stepping, Geared, AS and ABS Series Motors

Geared AS and ABS stepping motors have a die cast housing, hardened steel gears and pinions running on ground, and hardened steel studs. No plastic or fiber parts are used. These dependable motors are used in precision instruments and computer peripherals. **Winding Resistance:** Models 3004-1001 and -008, 100 ohms; Models 3008-005, 53 ohms.

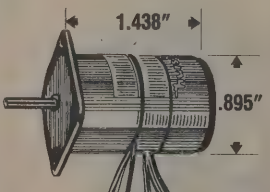


Stock No.	Mfr.'s Type	Steps Angle	Output Speed @ 200 p/s (rpm)	Torque @ 200 p/s* (Oz.-In.)	Input Power (Watts)	EACH	
						1-24	25-Up
542-0035	AS3004-001	.025°	0.83	150†	3.5	**60.83**	**55.76**
542-0040	ABS3008-003	.200°	6.70	86	4.5	**54.34**	**49.81**
542-0045	ABS3008-005	.750°	25.00	23	4.5	**55.64**	**51.00**
542-0050	AS3004-008	1.800°	60.00	5	3.5	**52.48**	**48.11**

*Torque measured at nominal voltage with L/R drive. †Max. gear train loading.

SUPERSMALL Synchronous Motor

This instrument-grade, SUPERSMALL, synchronous motor is reversible and operates at 720 rpm on 115 VAC, 60 Hz. It weighs just 2.1 ounces and is less than an inch in diameter.

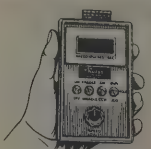


The new BA Series synchronous motor is a practical solution to control problems in equipment where space is at a premium. It also is suited to products employing variable frequency AC controls. **Note:** Capacitor is furnished with motor, 115 V.

Model: BA. **Speed at Output Shaft:** 720 rpm. **Rated Torque:** 0.625 oz-in. **Input Power:** 1.5 watts. **Capacitor Value:** 0.15 ±10%, 400 VDC. **Full Load Temperature Rise:** 30°C. **Weight:** 2.1 oz. **Shaft Bearing:** Sleeve.

542-0200. Type BA 4201-001. **1-24**	**EACH 45.25**
25-Up	**EACH 41.48**

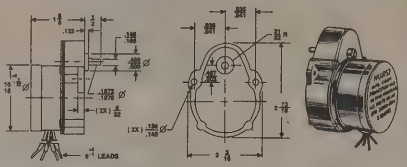
Stepping Motor Control with Display



Model EPC-015. General purpose controller with step frequency display. Operates from a single external 6-24 VDC power display. Will drive 4-phase stepping motors requiring up to 1.0 Amp per phase. Also includes adjustable step frequency, and phase driver disable control. Continuous, single step, or jog operation. Bi-directional control.

542-0060. **1-24**	**EACH 233.58**
25-Up	**EACH 214.12**

Synchronous, Geared, A and AB Series Motors

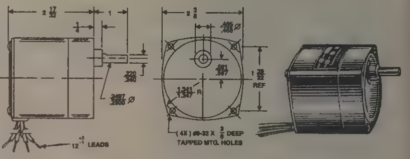


Permanent magnet, reversible, A and AB Series synchronous motors have gear trains engineered for heavy-duty industrial use. Both pinion and gear teeth are case hardened for wear resistance and rotate upon hardened and ground steel studs. No plastic or fiber parts are used. Capacitor furnished. **Weight:** 11 oz.

Stock No.	Mfr.'s Type	Shaft Speed (rpm)	Rated Torque (Oz.-In.)	Input Power (Watts)	Cap. Value (mfd)	EACH	
						1-9	10-Up
542-0075	A3002-001	1	150	3	.25	**46.18**	**42.33**
542-0080	A3002-003	2	131	3	.25	**53.41**	**48.96**
542-0085	A3002-005	4	110	3	.25	**55.27**	**50.66**
542-0090	AB3006-002	6	105	5	.50	**65.84**	**60.35**
542-0095	AB3006-004	10	88	5	.50	**51.19**	**46.92**
542-0100	AB3006-009	30	29	5	.50	**52.48**	**48.11**
542-0105	AB3006-013	60	16	5	.50	**49.15**	**45.15**

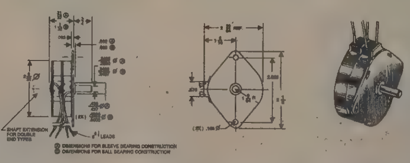
Synchronous, Geared, T Series Motors

Enclosed in a rugged die cast housing. T Series permanent magnet, reversible, synchronous motors have a rated torque of 233 ounce-inches (maximum gear train loading) at 2 rpm. Sleeve bearings. 24 poles. When operated at 60 Hz, rotor speed is 300 rpm. Capacitor is furnished. 115 V, 60 Hz.



Stock No.	Mfr.'s Type	Shaft Speed (rpm)	Rated Torque (Oz.-In.)	Input Power (Watts)	Cap. Value (mfd)	EACH	
						1-9	10-Up
542-0115	T2602-004	2	233	7	.68	**80.49**	**73.78**
542-0120	T2602-013	6	210	7	.68	**84.57**	**77.52**
542-0125	T2602-015	120	16	7	.68	**83.83**	**76.84**

Synchronous, Direct Drive, SA Series Motors

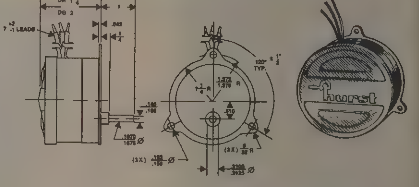


Compact, low cost SA Series direct drive, reversible AC, synchronous motors have a rotor speed of 300 rpm when operated at 60 Hz. Sleeve bearings. Full load temperature rise is 28°C. These permanent magnet motors are ideal for use where space is at a premium and dependable, long-life service is demanded. Capacitor furnished. **Weight:** 8 oz.

Stock No.	Mfr.'s Type	Shaft Speed (rpm)	Rated Torque (Oz.-In.)	Input Power (Watts)	Cap. Value (mfd)	EACH	
						1-9	10-Up
542-0130	SA4001-001	300	6	5	.50	**34.49**	**31.62**

Hysteresis Synchronous, Geared, Reversible, DA Series

Heavy duty DA Series gearmotors maintain timing accuracy and are available in shaft speeds from 1 to 120 rpm. Recommended for applications requiring high gear torque rating. Rated pull-out torque is as great as 100 ounce inches (maximum gear train loading) at 1 rpm. Capacitor furnished. All motors are 115V, 60 Hz models. **Temperature Rise:** 40°C above ambient. **Weight:** 14 oz.



Stock No.	Mfr.'s Type	Shaft Speed (rpm)	Rated Torque (Oz.-In.)	Input Power (Watts)	Cap. Value (mfd)	EACH	
						1-9	10-Up
542-0135	DA990182	1	100.00	5	.50	**61.94**	**56.78**
542-0140	DA990181	2	75.00	5	.50	**70.66**	**64.77**
542-0145	DA990184	4	37.50	5	.50	**71.59**	**65.62**
542-0150	DA990185	6	25.00	5	.50	**69.73**	**63.92**
542-0155	DA990195	30	5.00	5	.50	**66.02**	**60.52**
542-0160	DA990263	60	2.50	5	.50	**67.69**	**62.05**
542-0165	DA990200	120	1.25	5	.50	**64.17**	**58.82**

Section Index

Capacitors, Chokes and Inductors, Crystal and Filters

Page

Allied
- Electrolytic
  - MR Series 108
- Film
  - CF-KC Series 108
  - CF-MH Series 108
  - DEP Series 108
  - MDD Series 108
- Mica
  - CD Series 108

ASC
- Hardware 110
- Metallized
  - Polycarbonate
    - X465 Series 109
  - Polypropylene
    - X363 Series 109
    - X386S and X387S Series 110
- Motor Run 110

AVX
- Ceramic
  - Axial
    - SA Series 112
  - Chip
    - 0805,1206,1210 Series 112
    - VC Series 111
  - Kits 111
  - Radial
    - SR Series 112
- Tantalum
  - Chip
    - TAJ Series 112
  - Kit 111
  - Radial
    - TAP Series 111

Centralab — See Philips

Centuy Electronics — See Section 8

Corcom
- RFI Power Line Filters
  - A and AYO Series 140
  - B Series 138
  - Chameleon Series 140
  - EEA Series 139
  - H Series 138
  - J Series 139
  - K Series 138
  - P Series 140
  - R Series 138
  - W Series 139

Dale
- Molded Inductors 133
- Surface Mount Inductors 133

Fair-Rite
- EMI Beads on Leads 134
- EMI Kits 134
- EMI Shield Beads 134
- EMI Suppression Cores 134
- EMI Wound Shield Beads 134
- Surface Mount EMI Shield Beads 134

GE
- AC Capacitors
  - Oval 113, 114
  - Round 113
- DC Capacitors
  - Axial 114

J.W. Miller
- Chokes 135
- Ferrite Beads 135
- Ferrite Rods 135
- Inductors 135

Mallory
- AC Motor Start
  - PSU Series 118
- Aluminum Electrolytic Capacitors
  - Axial
    - SKA Series 117
    - TCG Series 117
  - Kits 119
  - Radial
    - SKR and TKR Series 116
  - Snap-In
    - LP and LPX Series 119
- Ceramic Capacitors
  - Kits 119
  - Radial
    - CK Series 118
- Computer Grade
  - CGH and CGS Series 115
- Hardware 115,118
- Polyester Film Capacitors
  - Metallized
    - 158X Series 118
    - 160 Series 117
    - 168 Series 118
    - Arc Suppressors 118
  - Radial
    - 158X Series 118
    - 160 Series 117
    - 168 Series 118
- Tantalum Capacitors
  - Axial
    - MTP Series 119
  - Kits 119
  - Radial
    - TDC Series 119

Mepco — See Philips

Murata
- Ceramic
  - Chip
    - GRM Series 121
  - Kits 121
  - Radial
    - DE Series 121
    - RPE Series 120
  - Resonators
    - CSA, CSB, and CST Series 121
- EMI Filters
  - Chips
    - BLM Series 136
- Inductors
  - BL Series 136
  - Kits 121
  - LQN Series 136
- Piezo Alarms
  - PKB and PKM Series 136

Nichicon
- Aluminum Electrolytic
  - Axial
    - TVX Series 122
  - Radial
    - UKL and UVX Series 122

NTE Electronics
- Kits 123

Ohmite
- Inductive Chokes 137

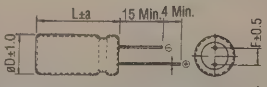
Philips
- Ceramic
  - Radial
    - CK and CN Series 124
    - CW Series 124
    - CY and CZ Series 124
    - DD Series 124
    - UK Series 124

Primary Power Components/Division of Qualtek
- EMI/RFI Power Line Filters 141

Raltron
- Clock Oscillators, TTL Compatible 142
- Microprocessor Crystal Units 142
- Tuning Fork Quartz Crystal Units 142

Sprague
- Aluminum ELectrolytic
  - Axial
    - 39D Series 130
    - 53D Series 132
    - 500D Series 132
    - 516D Series 131
    - 600D Series 131
    - TE Series 128
    - TVA Series 130
  - Chip
    - 518D Series 131
    - OS-CON Series 125
  - Powerlytic
    - 36D Series 132
    - 39D Series 130
  - Radial
    - 80D Series 132
    - 515D Series 131
    - 672D Series 131
- Ceramic
  - Chip
    - VJ Series 125
  - Radial
    - 1C Series 129
    - Cera-Mite 128
- Film Capacitors
  - Axial
    - 192P Series 131
    - 632P Series 128
  - Chip
    - MKT Series 125
- Hardware 132
- Mini-Reels 125
- Polyester
  - Axial
    - 430P Series 129
  - Radial
    - 225P Series 127
    - 715P Series 128
    - PS Series 127
- Storage Rack 125
- Tantalum Capacitors
  - Axial
    - 109D, 150D, and 173D Series 126
  - Chips
    - 293D Series 126
    - 595D Series 125
  - Radial
    - 199D Series 127

Radial Lead Electrolytic Capacitors



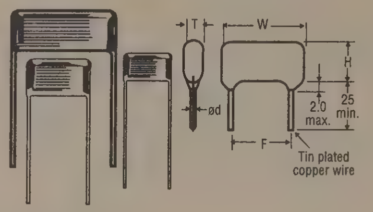
Compact, electrolytic capacitors for original equipment or replacement use in all kinds of communications equipment. **Operating Temperature:** –40° to +85°C. **Capacitance Tolerance:** ±20%. **Life:** 2000 hours at +85°C. **Rated Working Voltage Range:** 10 VDC to 100 VDC. **Capacitance Range:** 0.47 mfd to 10,000 mfd. Straight leads. Solvent proof type, long life. Also available are 105°C devices and 7 mm height devices, call Allied for more information.

Lead Spacing and Dia. — L ≤ 20.0 a = 1.5, L > 20.0 a = 2

Body Dia.	ØD	5.0	6.3	8.0	10.0	13.0	16.0	18.0
Lead Dia.	Ød	0.5	0.5	0.6	0.6	0.6	0.8	0.8
Lead Spacing	F	2.0	2.5	3.5	5.0	5.0	7.5	7.5

Stock No.	Mfr.'s Type	WV DC	Cap. µF	Dimensions (mm)		EACH		
				D	L	1-99	100-499	500-999
998-1327	10MR100	10	100	5.0	11.0	**.13**	**.12**	**.10**
998-1345	10MR220	10	220	6.3	11.0	**.16**	**.15**	**.12**
998-1378	10MR470	10	470	8.0	11.5	**.23**	**.20**	**.18**
998-1382	10MR1000	10	1000	10.0	16.0	**.31**	**.28**	**.24**
998-1385	10MR2200	10	2200	12.5	20.0	**.55**	**.49**	**.42**
998-1391	10MR4700	10	4700	13.0	25.0	**.90**	**.80**	**.69**
998-1398	10MR10000	10	10000	18.0	35.5	**1.93**	**1.65**	**1.41**
998-1356	16MR330	16	330	8.0	11.5	**.23**	**.20**	**.17**
998-1339	16MR470	16	470	8.0	11.5	**.31**	**.28**	**.23**
998-1341	16MR1000	16	1000	10.0	20.0	**.41**	**.36**	**.31**
998-1310	16MR2200	16	2200	12.5	25.0	**.77**	**.68**	**.59**
998-1389	16MR3300	16	3300	16.0	25.0	**.99**	**.89**	**.76**
998-1312	16MR4700	16	4700	16.0	31.5	**1.38**	**1.18**	**1.01**
998-1338	16MR6800	16	6800	18.0	35.5	**2.19**	**1.65**	**1.29**
998-1324	25MR47	25	47	5.0	11.0	**.13**	**.11**	**.10**
998-1358	25MR100	25	100	6.3	11.0	**.16**	**.15**	**.12**
998-1334	25MR220	25	220	8.0	11.5	**.24**	**.21**	**.19**
998-1357	25MR330	25	330	10.0	12.5	**.31**	**.28**	**.23**
998-1359	25MR470	25	470	10.0	16.0	**.39**	**.35**	**.30**
998-1383	25MR1000	25	1000	12.5	20.0	**.56**	**.49**	**.42**
998-1386	25MR2200	25	2200	13.0	25.0	**.99**	**.89**	**.76**
998-1390	25MR3300	25	3300	16.0	31.5	**1.48**	**1.26**	**1.09**
998-1392	25MR4700	25	4700	18.0	35.5	**1.94**	**1.65**	**1.41**
998-1362	35MR33	35	33	5.0	11.0	**.12**	**.11**	**.09**
998-1374	35MR100	35	100	8.0	11.5	**.20**	**.17**	**.15**
998-1335	35MR220	35	200	10.0	12.5	**.31**	**.28**	**.23**
998-1375	35MR330	35	330	10.0	16.0	**.39**	**.35**	**.31**
998-1380	35MR470	35	470	10.0	20.0	**.59**	**.52**	**.44**
998-1360	35MR1000	35	1000	12.5	25.0	**.81**	**.64**	**.56**
998-1387	35MR2200	35	2200	16.0	31.5	**1.48**	**1.26**	**1.09**
998-1363	35MR3300	35	3300	18.0	35.5	**2.10**	**1.65**	**1.41**
998-1307	50MR22	50	22	5.0	11.0	**.13**	**.12**	**.10**
998-1325	50MR47	50	47	6.3	11.0	**.16**	**.15**	**.12**
998-1352	50MR100	50	100	8.0	11.5	**.23**	**.20**	**.18**
998-1347	50MR220	50	220	10.0	16.0	**.49**	**.37**	**.30**
998-1376	50MR330	50	330	10.0	20.0	**.46**	**.41**	**.36**
998-1321	50MR470	50	470	12.5	20.0	**.63**	**.57**	**.49**
998-1384	50MR1000	50	1000	16.0	25.0	**1.05**	**.90**	**.78**
998-1343	50MR2200	50	2200	18.0	35.5	**1.79**	**1.54**	**1.33**
998-1369	63MR10	63	10	5.0	11.0	**.13**	**.12**	**.09**
998-1370	63MR22	63	22	6.3	11.0	**.20**	**.15**	**.12**
998-1371	63MR33	63	33	6.3	11.0	**.16**	**.15**	**.13**
998-1372	63MR47	63	47	8.0	11.5	**.24**	**.22**	**.18**
998-1373	63MR100	63	100	10.0	12.5	**.35**	**.32**	**.28**
998-1379	63MR220	63	220	10.0	20.0	**.62**	**.48**	**.38**
998-1394	63MR330	63	330	12.5	20.0	**.69**	**.58**	**.49**
998-1395	63MR470	63	470	12.5	25.0	**.98**	**.86**	**.75**
998-1329	100MR0R47	100	.47	5.0	11.0	**.14**	**.12**	**.10**
998-1397	100MR1R0	100	1	5.0	11.0	**.12**	**.11**	**.09**
998-1330	100MR2R2	100	2.2	5.0	11.0	**.12**	**.11**	**.09**
998-1331	100MR3R3	100	3.3	5.0	11.0	**.15**	**.12**	**.10**
998-1337	100MR4R7	100	4.7	5.0	11.0	**.13**	**.12**	**.10**

Type MDD Film Capacitors



- **Non-Inductive Construction**
- **Non-Combustible, Epoxy Coated**
- **Capacitance Tolerance: ±10%**
- **250 VDC Rated (130 VAC), 400 VDC (200 VAC), and 630 VDC (250 VAC)**
- **MDD Series Crosses to Panasonic ECQ-EXXXXKZ, S Series**

These resin coated metallized polyester film capacitors are rated 250 VDC and 130 VAC at 60 Hz. **Capacitance Tolerance:** ±10%. **Operating Temperature:** –40°C to +85°C. Non-inductive construction. Non-combustible and epoxy coated. **Insulation Resistance:** Less than 0.33 µF ≥10,000 MΩ × µF. **Dissipation Factor:** ≤1% at 1 kHz. **Stress Voltage Test:** Rated voltage × 1.5 for one minute.

250 VDC (130 VAC at 60 Hz)

Stock No.	Mfr.'s Type	Cap. Mfd.	Dimensions (mm)					EACH	
			W max.	T max.	H max.	d max.	F max.	1-99	100-499
998-2101	MDD-22E103K	0.010	12.5	5.0	9.0	0.6	10.0	**.19**	**.16**
998-2105	MDD-22E473K	0.047	12.5	5.0	9.5	0.6	10.0	**.15**	**.14**
998-1007	MDD-22E823K	0.082	12.5	5.5	10.5	0.6	10.0	**.20**	**.17**
998-2106	MDD-22E104K	0.100	12.5	5.5	11.0	0.6	10.0	**.18**	**.16**
998-1010	MDD-22E184K	0.180	17.5	6.0	11.0	0.6	15.0	**.28**	**.24**
998-2107	MDD-22E224K	0.220	17.5	6.5	12.5	0.6	15.0	**.27**	**.24**
998-2108	MDD-22E334K	0.330	23.0	6.0	12.0	0.8	20.0	**.33**	**.30**
998-2109	MDD-22E474K	0.470	23.0	7.0	13.0	0.8	20.0	**.42**	**.37**
998-2110	MDD-22E684K	0.680	23.0	8.5	14.0	0.8	20.0	**.52**	**.45**
998-1014	MDD-22E824K	0.820	31.0	7.5	13.5	0.8	27.5	**.55**	**.49**
998-2111	MDD-22E105K	1.000	31.0	8.5	14.0	0.8	27.5	**.60**	**.54**
998-2113	MDD-22E225K	2.200	31.0	10.5	20.5	0.8	27.5	**1.02**	**.90**

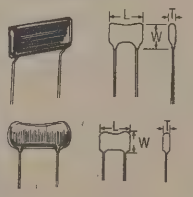
400 VDC/200 VAC

Stock No.	Mfr.'s Type	Cap. Mfd.	W max.	T max.	H max.	d max.	F max.	1-99	100-499
998-0401	MDD-22G103K	0.010	14.0	5.0	9.0	0.6	10.5	**.20**	**.18**
998-0402	MDD-22G123K	0.012	14.0	5.5	9.0	0.6	10.5	**.21**	**.19**
998-0403	MDD-22G153K	0.015	14.0	5.0	9.5	0.6	10.5	**.21**	**.19**
998-0405	MDD-22G223K	0.022	14.0	5.5	10.0	0.6	10.5	**.23**	**.20**
998-0409	MDD-22G473K	0.047	14.0	7.0	12.0	0.6	10.5	**.31**	**.29**
998-0413	MDD-22G104K	0.100	17.0	7.5	14.5	0.6	13.5	**.34**	**.31**
998-0417	MDD-22G224K	0.220	24.5	8.5	15.5	0.8	20.5	**.46**	**.41**
998-0421	MDD-22G474K	0.470	29.5	10.0	17.5	0.8	25.5	**.64**	**.57**
998-0423	MDD-22G684K	0.680	29.5	12.0	19.0	0.8	25.5	**.96**	**.85**
998-0425	MDD-22G105K	1.000	29.5	15.0	22.0	0.8	25.5	**1.29**	**1.10**

630 VDC/250 VAC

Stock No.	Mfr.'s Type	Cap. Mfd.	W max.	T max.	H max.	d max.	F max.	1-99	100-499
998-0601	MDD-22J103K	0.010	14.0	5.5	9.0	0.6	10.5	**.24**	**.21**
998-0603	MDD-22J153K	0.015	14.0	6.0	10.5	0.6	10.5	**.24**	**.21**
998-0604	MDD-22J183K	0.018	14.0	6.0	11.0	0.6	10.5	**.28**	**.23**
998-0605	MDD-22J223K	0.022	14.0	6.5	12.0	0.6	10.5	**.28**	**.23**
998-0607	MDD-22J333K	0.033	17.0	6.0	12.0	0.6	13.5	**.29**	**.26**
998-0609	MDD-22J473K	0.047	17.0	7.0	13.5	0.6	13.5	**.32**	**.29**
998-0612	MDD-22J823K	0.082	17.0	9.0	16.0	0.6	13.5	**.43**	**.37**
998-0613	MDD-22J104K	0.100	24.5	7.0	14.0	0.8	20.5	**.43**	**.37**
998-0616	MDD-22J184K	0.180	24.5	10.0	17.0	0.8	20.5	**.65**	**.59**
998-0617	MDD-22J224K	0.220	29.5	9.5	17.0	0.8	25.5	**.58**	**.53**

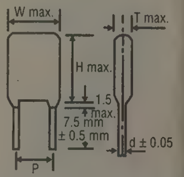
Dipped Mica Dielectric Capacitors



Dipped Mica Dielectric Capacitors in miniature styles (CD6 and CD7) use in delay lines and IF transformers. Other styles are larger and higher rated capacitors. All types feature a dipping process to impart high moisture and humidity resistance. All leads are copper weld for improved solderability. They are available in a wide range of sizes and ratings to meet application requirements. Units are marked with Manufacturers name or symbol, nominal capacitance in pF and percent tolerance, and DC working voltage. Miniature units (CD6 and CD7) are marked with capacitance in pF and tolerance letter designation. All have operating temperature range of –55°C to +125°C.

Stock No.	Mfr.'s Type	VDC	Cap. µF	Dimensions (In.)			EACH	
				L	W	T	1-99	100-499
862-3001	CD5CC020C03	300	2	0.270	0.190	0.110	**.48**	**.34**
862-3002	CD5CC030C03	300	3	0.270	0.190	0.110	**.48**	**.34**
862-3005	CD5CC050C03	300	5	0.270	0.190	0.110	**.48**	**.34**
862-3004	CD5CC060C03	300	6	0.270	0.190	0.110	**.48**	**.34**
862-3006	CD5CC070C03	300	7	0.270	0.190	0.110	**.48**	**.34**
862-3011	CD5CC100J03	300	10	0.270	0.190	0.110	**.46**	**.32**
862-3016	CD5EC240J03	300	24	0.270	0.190	0.110	**.43**	**.30**
862-3017	CD5EC270J03	300	27	0.270	0.190	0.110	**.46**	**.32**
862-3019	CD5EC330J03	300	33	0.270	0.190	0.110	**.54**	**.36**
862-3020	CD5EC360J03	300	36	0.270	0.190	0.110	**.54**	**.36**
862-3025	CD5EC560J03	300	56	0.270	0.190	0.110	**.65**	**.43**
862-3026	CD5EC620J03	300	62	0.270	0.190	0.110	**.67**	**.46**
862-3028	CD5EC750J03	300	75	0.270	0.190	0.110	**.78**	**.56**
862-3029	CD5EC820J03	300	82	0.270	0.190	0.110	**.81**	**.56**
862-3031	CD5FC101J03	300	100	0.270	0.190	0.110	**.90**	**.61**
862-3100	CD6CD010C03	500	1	0.265	0.135	0.095	**.78**	**.56**
862-3102	CD6CD030C03	500	3	0.265	0.135	0.095	**.78**	**.56**
862-3103	CD6CD040C03	500	4	0.265	0.135	0.095	**.78**	**.55**
862-3112	CD6CD180J03	500	18	0.265	0.135	0.095	**1.32**	**.90**
862-3122	CD6ED470J03	500	47	0.265	0.135	0.095	**.97**	**.71**
862-3155	CD7FC221J03	300	220	0.265	0.260	0.110	**1.53**	**1.10**
862-3169	CD7FA821J03	100	820	0.265	0.260	0.110	**3.28**	**2.21**
862-3211	CD10ED200J03	500	20	0.360	0.330	0.190	**.38**	**.27**
862-3227	CD10FD151J03	500	150	0.380	0.360	0.210	**.49**	**.33**
862-4000	CD15CD100J03	500	10	0.450	0.360	0.170	**.34**	**.23**
862-4002	CD15CD150J03	500	15	0.450	0.360	0.170	**.22**	**.20**
862-1512	CD15CD180J03	500	18	0.449	0.358	0.169	**.36**	**.24**
862-4004	CD15ED200J03	500	20	0.450	0.360	0.170	**.38**	**.30**
862-4005	CD15ED220J03	500	22	0.450	0.360	0.170	**.34**	**.23**
862-4006	CD15ED270J03	500	27	0.450	0.360	0.170	**.34**	**.23**
862-4009	CD15ED390J03	500	39	0.450	0.360	0.170	**.33**	**.27**
862-4010	CD15ED430J03	500	43	0.450	0.360	0.170	**.32**	**.22**
862-4012	CD15ED510J03	500	51	0.450	0.360	0.170	**.32**	**.22**
862-4013	CD15ED560J03	500	56	0.450	0.360	0.170	**.32**	**.22**
862-4018	CD15FD121J03	500	120	0.460	0.370	0.180	**.33**	**.22**
862-4023	CD15FD201J03	500	200	0.460	0.380	0.190	**.43**	**.28**
862-4024	CD15ED221J03	500	220	0.460	0.380	0.200	**.44**	**.30**
862-4026	CD15FD271J03	500	270	0.470	0.390	0.210	**.49**	**.33**
862-4027	CD15FD301J03	500	300	0.470	0.390	0.210	**.51**	**.34**
862-4063	CD19FD102J03	500	1000	0.650	0.520	0.220	**.74**	**.47**

Epoxy Coated Polyester Film Capacitors

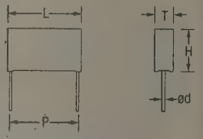


Design and Construction. Dielectric: Polyester film (polyethylene terepthalate film). **Electrode:** Aluminum foil — inductive wind — welded tabs. **Winding:** Fully automatic. **Terminals:** Copper plated steel wire with solder coat (straight leads). **Coverage:** Coated with epoxy resin (dipping method).

Rated Values and Characteristics
Nominal Capacitance: 0.001 mfd. to 0.47 mfd.
Capacitance Tolerance: ±10%. **Rated DC Voltage:** 100 V. **Temperature Range:** –40°C to +85°C. **Test Voltage:** 200% of rated DC voltage for 60 sec. **Insulation Resistance:** More than 9,000 M ohms, avg. 100,00 M ohms at 20°C. **Dissipation Factor (Tan Theta):** Below 0.8%, avg. 0.4% at 1,000 Hz, 20°C.

Stock No.	Mfr.'s Type	Cap. Mfd.	Dimensions (mm)					EACH	
			W max.	H max.	T max.	P max. ±1.0	d	1-99	100-499
998-0044	DEP100V102KB	0.0010	5.5	11.5	3.0	3.0	0.5	**.09**	**.07**
998-0045	DEP100V122KB	0.0012	5.5	11.5	3.0	3.0	0.5	**.06**	**.05**
998-0046	DEP100V152KB	0.0015	5.5	11.5	3.0	3.0	0.5	**.06**	**.04**
998-0047	DEP100V182KB	0.0018	5.5	11.5	3.0	3.0	0.5	**.09**	**.07**
998-0048	DEP100V222KB	0.0022	5.5	11.5	3.0	3.0	0.5	**.09**	**.07**
998-0049	DEP100V272KB	0.0027	5.5	11.5	3.0	3.0	0.5	**.09**	**.07**
998-0050	DEP100V332KB	0.0033	5.5	11.5	3.0	3.0	0.5	**.09**	**.07**
998-0051	DEP100V392KB	0.0039	5.5	11.5	3.0	3.0	0.5	**.09**	**.07**
998-0052	DEP100V472KB	0.0047	6.0	11.5	3.0	3.5	0.5	**.09**	**.07**
998-0053	DEP100V562KB	0.0056	6.0	11.5	3.0	3.5	0.5	**.09**	**.07**
998-0054	DEP100V682KB	0.0068	6.0	11.5	3.0	3.5	0.5	**.09**	**.07**
998-0055	DEP100V822KB	0.0082	6.5	12.0	3.5	3.5	0.5	**.09**	**.07**
998-0056	DEP100V103KB	0.0100	6.5	12.0	3.5	4.0	0.5	**.10**	**.08**
998-0058	DEP100V153KB	0.0150	7.0	12.0	3.5	4.0	0.5	**.10**	**.08**
998-0059	DEP100V183KB	0.0180	7.0	12.0	4.0	4.0	0.5	**.10**	**.09**
998-0060	DEP100V223KB	0.0220	8.0	12.0	4.0	4.0	0.5	**.11**	**.09**
998-0061	DEP100V273KB	0.0270	8.0	12.0	4.0	4.0	0.5	**.13**	**.10**
998-0062	DEP100V333KB	0.0330	9.0	12.5	4.5	6.0	0.5	**.13**	**.10**
998-0064	DEP100V473KB	0.0470	9.0	12.5	5.0	6.0	0.5	**.14**	**.11**
998-0065	DEP100V563KB	0.0560	9.5	12.5	5.0	6.0	0.5	**.15**	**.12**
998-0066	DEP100V683KB	0.0680	10.0	12.5	5.5	7.0	0.5	**.16**	**.12**
998-0067	DEP100V823KB	0.0820	10.5	12.5	6.0	7.0	0.5	**.18**	**.13**
998-0068	DEP100V104KB	0.1000	11.0	12.5	6.5	7.0	0.5	**.16**	**.14**
998-0070	DEP100V154KB	0.1500	12.5	13.5	7.5	7.0	0.6	**.16**	**.15**
998-0072	DEP100V224KB	0.2200	14.0	16.0	7.5	8.5	0.6	**.28**	**.24**
998-0074	DEP100V334KB	0.3300	15.0	20.0	8.0	9.5	0.6	**.31**	**.27**
998-0076	DEP100V474KB	0.4700	16.5	21.0	9.5	10.0	0.6	**.42**	**.31**

Type CF-KC Capacitors

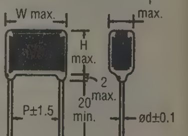


UL, CSA, VDE, SEMCO SEV, EI/FIMKO, DEMKO and NEMKO recognized for across-the-line, antenna-isolation and line-bypass capacitors. These metallized plastic film capacitors are non-inductively wound in a plastic case and sealed in resin. The radial leads are tin plated copper. Markings are on the top and side in approved standards. **Temperature Range:** –40°C to +85°C. **Rated Voltage:** 250 VAC. **Tolerance:** 20%. **Dissipation Factor:** 0.01 or less at 25°C (1 KHz).

Stock No.	Mfr.'s Type	Dimensions (mm)					EACH		
		T	H	L	P	ød	1-99	100-499	500-999
998-1100	CF-KC22E103M	4.5	11.0	17.5	15.0	0.6	**.52**	**.40**	**.36**
998-1106	CF-KC22E333M	6.0	13.5	17.5	15.0	0.6	**.56**	**.42**	**.33**
998-1112	CF-KC22E104M	9.0	17.0	18.0	15.0	0.8	**.68**	**.53**	**.41**
998-1118	CF-KC22E334M	9.5	18.5	30.5	27.5	0.8	**1.04**	**.82**	**.68**
998-1120	CF-KC22E474M	11.5	20.5	30.5	27.5	0.8	**1.41**	**1.04**	**.82**
998-1122	CF-KC22E684M	13.5	23.5	30.5	27.5	0.8	**1.80**	**1.35**	**1.05**
998-1124	CF-KC22E105M	16.5	27.0	30.5	27.5	0.8	**2.37**	**1.77**	**1.38**

Type CF-MH Film Capacitors

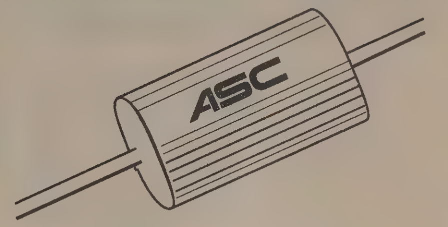
- **UL, CSA and European Safety Standard Film Capacitors**



UL, CSA, VDE, and SEMCO recognized for across-the-line. Type CF-MH capacitors are constructed of metallized plastic film enclosed in a noncombustible resin. **Temperature Range:** –40°C to +85°C. **Capacitance Range:** 0.01 µF to 0.22 µF. **Capacitance Tolerance:** ±20%. **Rated Voltage:** 250 VAC (50, 60 Hz). **Withstand Voltage:** Between terminals — 1000 VAC for 1 min; Between terminals and enclosure — 2000 VAC for 1 min. **Insulation Resistance:** Between terminals — more than 12,000 MΩ at 100 VDC after 1 min. **Dissipation Factor:** 1% or less than 1% (1 KHz 25°C).

Stock No.	Mfr.'s Type	Cap.	Dimensions (mm)					EACH	
			T	H	W	P	ød	1-99	100-499
998-0002	CF-MH22E103M	0.010	7.5	12.5	18.0	13.5	0.65	**.40**	**.32**
998-0003	CF-MH22E153M	0.015	7.5	14.0	18.0	13.5	0.65	**.47**	**.37**
998-0004	CF-MH22E223M	0.022	7.5	13.5	20.0	15.5	0.65	**.54**	**.41**
998-0005	CF-MH22E333M	0.033	8.5	16.0	20.0	15.5	0.65	**.64**	**.51**
998-0006	CF-MH22E473M	0.047	7.5	14.0	26.5	21.5	0.65	**.68**	**.55**
998-0008	CF-MH22E104M	0.100	8.5	16.0	31.5	26.5	0.80	**.85**	**.67**
998-0009	CF-MH22E154M	0.150	9.0	19.0	31.5	26.5	0.80	**1.04**	**.81**
998-0010	CF-MH22E224M	0.220	10.0	21.5	31.5	26.5	0.80	**1.32**	**.98**

X363 Metallized Polypropylene



- ► Long Stable Life
- ► Lowest Dissipation Factor
- ► Very High Insulation Resistance
- ► Fully Rated At 105°C

Non-inductive wound metallized polypropylene construction. Case is polyester tape wrap and epoxy end fill. Leads are solder coated or tinned solid wire. Excellent stability plus outstanding electrical properties make the X363 ideal for use in timing and integrating circuitry in instrumentation. The X363 exhibits negligible capacitance drift and electrical property degradation under environmental conditions normally requiring hermetically sealed encasements with other dielectrics. Temperature must be limited to 105°C. The X363 is ideal where close tolerance is required because of inherent stability with service conditions and life. The inherent long life characteristics and reliable performance capability of the X363 render it suitable for a wide variety of military applications where hermetic sealing or temperature capability higher than 105°C are not requirements. Markings include logo, capacitance, tolerance, and voltage. When space permits, capacitor type and EIA date code will be marked. 5% tolerance.

100 Volt DC

Stock No.	Mfr.'s Type	Mfd	Diameter	Length	EACH 1-99	EACH 100-499
225-1100	X363-.01-5-100	.010	0.156	0.438	1.52	1.13
225-1102	X363-.012-5-100	.012	0.156	0.438	1.52	1.13
225-1104	X363-.015-5-100	.015	0.156	0.438	1.52	1.13
225-1106	X363-.022-5-100	.022	0.172	0.438	1.55	1.15
225-1108	X363-.033-5-100	.033	0.203	0.438	1.55	1.15
225-1110	X363-.047-5-100	.047	0.219	0.438	1.57	1.17
225-1112	X363-.068-5-100	.068	0.219	0.500	1.59	1.18
225-1114	X363-.1-5-100	.100	0.250	0.500	1.65	1.21
225-1116	X363-.15-5-100	.150	0.250	0.563	1.67	1.23
225-1122	X363-.33-5-100	.330	0.297	0.688	1.78	1.33
225-1124	X363-.47-5-100	.470	0.344	0.688	1.43	1.05
225-1126	X363-.68-5-100	.680	0.359	0.813	1.93	1.42
225-1128	X363-1-5-100	1.000	0.422	0.813	1.92	1.44
225-1130	X363-1.5-5-100	1.500	0.453	0.938	3.14	2.32
225-1132	X363-3-5-100	3.000	0.531	1.250	3.24	2.40
225-1134	X363-4-5-100	4.000	0.609	1.250	3.66	2.85
225-1136	X363-5-5-100	5.000	0.672	1.250	4.10	3.26
225-1138	X363-8-5-100	8.000	0.750	1.500	5.80	4.60
225-1140	X363-10-5-100	10.000	0.828	1.500	6.88	5.40

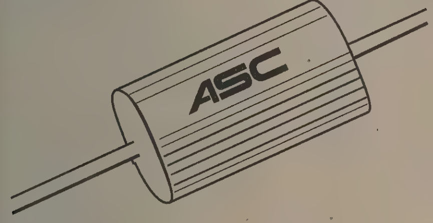
200 Volt DC

Stock No.	Mfr.'s Type	Mfd	Diameter	Length	EACH 1-99	EACH 100-499
225-1142	X363-.01-5-200	.010	0.188	0.438	1.52	1.13
225-1144	X363-.015-5-200	.015	0.219	0.438	1.52	1.13
225-1146	X363-.022-5-200	.022	0.203	0.500	1.55	1.15
225-1148	X363-.033-5-200	.033	0.234	0.500	1.55	1.15
225-1150	X363-.047-5-200	.047	0.250	0.563	1.57	1.17
225-1154	X363-.1-5-200	.100	0.281	0.688	1.63	1.20
225-1156	X363-.15-5-200	.150	0.328	0.688	1.65	1.21
225-1158	X363-.22-5-200	.220	0.391	0.688	1.69	1.24
225-1160	X363-.33-5-200	.330	0.406	0.813	1.77	1.32
225-1162	X363-.47-5-200	.470	0.422	0.938	1.87	1.38
225-1164	X363-.68-5-200	.680	0.500	0.938	1.86	1.38
225-1166	X363-1-5-200	1.000	0.516	1.250	1.90	1.42
225-1170	X363-1.5-5-200	1.500	0.609	1.250	2.99	2.21
225-1172	X363-2-5-200	2.000	0.688	1.250	2.62	1.94
225-1174	X363-3-5-200	3.000	0.734	1.500	3.18	2.36
225-1176	X363-5-5-200	5.000	0.844	1.750	4.74	3.69

400 Volt DC

Stock No.	Mfr.'s Type	Mfd	Diameter	Length	EACH 1-99	EACH 100-499
225-1178	X363-.01-5-400	.010	0.234	0.438	1.52	1.13
225-1180	X363-.015-5-400	.015	0.234	0.500	1.52	1.13
225-1182	X363-.022-5-400	.022	0.266	0.500	1.55	1.15
225-1184	X363-.033-5-400	.033	0.266	0.563	1.55	1.15
225-1186	X363-.047-5-400	.047	0.266	0.688	1.57	1.17
225-1190	X363-.1-5-400	.100	0.328	0.813	1.65	1.21
225-1192	X363-.15-5-400	.150	0.375	0.813	1.69	1.24
225-1194	X363-.22-5-400	.220	0.406	0.938	1.75	1.30
225-1196	X363-.33-5-400	.330	0.484	0.938	1.85	1.37
225-1198	X363-.47-5-400	.470	0.500	1.250	1.98	1.46
225-1200	X363-.68-5-400	.680	0.562	1.250	2.16	1.61
225-1202	X363-1-5-400	1.000	0.609	1.500	2.04	1.51
225-1204	X363-1.5-5-400	1.500	0.734	1.500	2.97	2.19
225-1206	X363-2-5-400	2.000	0.766	1.750	2.69	1.99
225-1208	X363-4-5-400	4.000	0.875	2.250	4.44	3.52
225-1210	X363-5-5-400	5.000	0.984	2.250	5.24	4.16

X465 Metallized Polycarbonate



- ► Round Axial Wrap And Fill Construction
- ► Cost Effective
- ► Miniature Size And Light Weight
- ► Rated Up To 125°C Without Derating

Non-inductive wound metallized polycarbonate construction with polyester tape wrap and epoxy end fill case. Leads are either solder coated or tinned solid wire. The X465 is ideal for circuits requiring NPO type characteristics. Rated up to 125°C without derating. Low dissipation factor makes polycarbonate ideal for pulse circuit applications up to 250 KHz. Stability and retrace capabilities of polycarbonate make this an excellent choice where long term precision is a requirement, such as timing, precision and other circuits requiring long term stability. Markings to include logo, capacitance, tolerance, voltage. Where space permits, capacitor type and EIA date code will be marked. 5% tolerance.

50 Volt DC

Stock No.	Mfr.'s Type	Mfd	Diameter	Length	EACH 1-99	EACH 100-499
225-3100	X465-.068-5-50	.0680	0.15	0.40	1.52	1.13
225-3102	X465-.1-5-50	.1000	0.15	0.40	1.55	1.15
225-3104	X465-.15-5-50	.1500	0.16	0.40	1.59	1.18
225-3106	X465-.22-5-50	.2200	0.15	0.53	1.67	1.23
225-3108	X465-.27-5-50	.2700	0.16	0.53	1.77	1.32
225-3110	X465-.33-5-50	.3300	0.18	0.53	1.77	1.32
225-3112	X465-.39-5-50	.3900	0.19	0.53	1.92	1.41
225-3114	X465-.47-5-50	.4700	0.20	0.53	2.04	1.50
225-3116	X465-.56-5-50	.5600	0.22	0.53	1.98	1.46
225-3118	X465-.68-5-50	.6800	0.24	0.53	2.10	1.56
225-3120	X465-1-5-50	1.0000	0.30	0.53	2.23	1.59
225-3122	X465-1.5-5-50	1.5000	0.28	0.65	3.22	2.39
225-3124	X465-2-5-50	2.0000	0.30	0.78	3.05	2.26
225-3126	X465-3-5-50	3.0000	0.37	0.78	3.69	2.74
225-3128	X465-4-5-50	4.0000	0.37	0.90	4.14	3.22
225-3130	X465-5-5-50	5.0000	0.36	1.15	5.09	3.96
225-3132	X465-10-5-50	10.0000	0.50	1.15	7.68	6.10

100 Volt DC

Stock No.	Mfr.'s Type	Mfd	Diameter	Length	EACH 1-99	EACH 100-499
225-3134	X465-.022-5-100	.0220	0.15	0.40	1.37	1.02
225-3136	X465-.033-5-100	.0330	0.15	0.40	1.48	1.10
225-3138	X465-.047-5-100	.0470	0.15	0.40	1.39	1.03
225-3140	X465-.056-5-100	.0560	0.16	0.40	1.48	1.10
225-3142	X465-.1-5-100	.1000	0.16	0.53	1.50	1.12
225-3146	X465-.22-5-100	.2200	0.22	0.53	1.45	1.08
225-3148	X465-.33-5-100	.3300	0.26	0.53	1.56	1.14
225-3154	X465-1-5-100	1.000	0.34	0.78	2.10	1.57
225-3160	X465-3-5-100	3.000	0.45	1.15	3.55	2.63
225-3162	X465-4-5-100	4.000	0.52	1.15	4.19	3.11
225-3164	X465-5-5-100	5.000	0.58	1.15	4.59	3.58

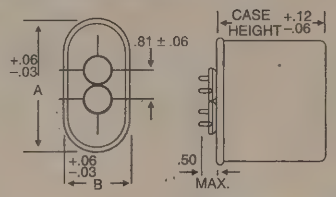
200 Volt DC

Stock No.	Mfr.'s Type	Mfd	Diameter	Length	EACH 1-99	EACH 100-499
225-3166	X465-.01-5-200	.0100	0.15	0.40	1.37	1.02
225-3168	X465-.015-5-200	.0150	0.15	0.40	1.37	1.02
225-3170	X465-.022-5-200	.0220	0.17	0.40	1.48	1.10
225-3172	X465-.033-5-200	.0330	0.15	0.53	1.48	1.10
225-3174	X465-.047-5-200	.0470	0.17	0.53	1.50	1.12
225-3176	X465-.068-5-200	.0680	0.21	0.53	1.45	1.08
225-3178	X465-.1-5-200	.1000	0.24	0.53	1.50	1.12
225-3180	X465-.15-5-200	.1500	0.29	0.53	1.63	1.20
225-3182	X465-.22-5-200	.2200	0.29	0.65	1.62	1.19
225-3184	X465-.33-5-200	.3300	0.33	0.78	1.79	1.33
225-3186	X465-.47-5-200	.4700	0.39	0.78	1.94	1.43
225-3190	X465-1-5-200	1.0000	0.43	1.15	2.21	1.63
225-3194	X465-2-5-200	2.0000	0.59	1.15	3.17	2.34
225-3198	X465-4-5-200	4.0000	0.60	1.90	4.70	3.66
225-3200	X465-5-5-200	5.0000	0.67	1.90	4.96	3.94

400 Volt DC

Stock No.	Mfr.'s Type	Mfd	Diameter	Length	EACH 1-99	EACH 100-499
225-3202	X465-.001-5-400	.0010	0.15	0.40	1.44	1.06
225-3206	X465-.0022-5-400	.0022	0.15	0.40	1.39	1.04
225-3210	X465-.0033-5-400	.0033	0.15	0.40	1.45	1.08
225-3212	X465-.0047-5-400	.0047	0.17	0.40	1.48	1.10
225-3214	X465-.0068-5-400	.0068	0.15	0.53	1.59	1.18
225-3216	X465-.01-5-400	.0100	0.17	0.53	1.61	1.19
225-3218	X465-.015-5-400	.0150	0.20	0.53	1.71	1.26
225-3220	X465-.022-5-400	.0220	0.24	0.53	1.66	1.23
225-3224	X465-.047-5-400	.0470	0.27	0.65	1.80	1.33
225-3226	X465-.068-5-400	.0680	0.28	0.78	1.85	1.36
225-3228	X465-.1-5-400	.1000	0.34	0.78	2.01	1.49
225-3230	X465-.15-5-400	.1500	0.85	0.90	2.20	1.64
225-3232	X465-.22-5-400	.2200	0.38	1.15	2.23	1.65
225-3234	X465-.33-5-400	.3300	0.46	1.15	2.60	1.92
225-3236	X465-.47-5-400	.4700	0.54	1.15	2.97	2.19
225-3238	X465-.68-5-400	.6800	0.57	1.40	3.89	2.62
225-3240	X465-1-5-400	1.0000	0.57	1.90	4.18	3.25
225-3244	X465-2-5-400	2.0000	0.81	1.90	6.98	5.54

X387S Metallized Polypropylene



- ► Motor Run Capacitors
- ► Extremely Low Losses and Heat Dissipation
- ► Non-PCB Oil Filled
- ► Self-Healing Ability
- ► UL Approved Internal Protection Device

ASC oil-filled capacitors employ high quality metallized polypropylene film dielectric. They are non-PCB oil-filled in metal cases designed for industrial applications, motor run applications in refrigeration and air conditioning equipment, power factor correction, power supplies, and general purpose AC applications. Non-inductive wound metallized polypropylene, oil-filled (non-toxic, disposable) construction. Non-corrosive seamless can, with double roll lock steel cover, suitable for outdoor applications. Terminals are tin plated, ¼ inch quick disconnect tines. Marking include logo, capacitance, tolerance, voltage, capacitor type, EIA date code. 10% tolerance.

330 Volts AC

Stock No.	Mfr.'s Type	MFD	Dim.		Case Height	EACH	
			A	B		1-99	100-499
225-2200	X387S-5-10-330	5.0	2.16	1.31	2.38	**5.46**	4.33
225-2202	X387S-6-10-330	6.0	2.16	1.31	2.38	**5.46**	4:33
225-2204	X387S-7.5-10-330	7.5	2.16	1.31	2.38	**5.74**	4.56
225-2206	X387S-10-10-330	10.0	2.16	1.31	2.88	**4.61**	3.66
225-2208	X387S-12.5-10-330	12.5	2.16	1.31	3.88	**4.98**	3.95
225-2210	X387S-15-10-330	15.0	2.91	1.91	2.88	**8.58**	6.81
225-2212	X387S-17.5-10-330	17.5	2.91	1.91	2.88	**9.28**	7.37
225-2214	X387S-20-10-330	20.0	2.91	1.91	2.88	**10.02**	7.95
225-2216	X387S-25-10-330	25.0	2.91	1.91	2.88	**11.14**	8.84
225-2218	X387S-27.5-10-330	27.5	2.91	1.91	3.88	**11.62**	9.22
225-2220	X387S-30-10-330	30.0	2.91	1.91	3.88	**12.24**	9.71
225-2222	X387S-35-10-330	35.0	2.91	1.91	3.88	**13.74**	10.90
225-2224	X387S-40-10-330	40.0	2.91	1.91	3.88	**14.86**	11.79
225-2226	X387S-45-10-330	45.0	2.91	1.91	4.75	**16.26**	12.90
225-2228	X387S-50-10-330	50.0	2.91	1.91	4.75	**17.02**	13.51
225-2230	X387S-55-10-330	55.0	3.66	1.97	4.75	**19.74**	15.67
225-2232	X387S-60-10-330	60.0	3.66	1.97	4.75	**19.56**	15.52

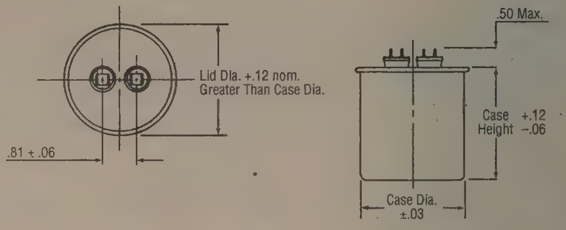
370 Volts AC

Stock No.	Mfr.'s Type	MFD	A	B	Case Height	1-99	100-499
225-2236	X387S-5-10-370	5.0	2.16	1.31	2.38	**3.93**	2.92
225-2238	X387S-7.5-10-370	7.5	2.16	1.31	2.88	**6.02**	4.78
225-2240	X387S-10-10-370	10.0	2.16	1.31	3.88	**5.04**	4.00
225-2242	X387S-12.5-10-370	12.5	2.16	1.31	3.88	**7.12**	5.65
225-2244	X387S-15-10-370	15.0	2.91	1.91	2.88	**8.68**	6.89
225-2248	X387S-20-10-370	20.0	2.91	1.91	3.88	**10.36**	8.22
225-2250	X387S-25-10-370	25.0	2.91	1.91	3.88	**11.44**	9.08
225-2252	X387S-30-10-370	30.0	2.91	1.91	3.88	**12.54**	9.95

440 Volts AC

Stock No.	Mfr.'s Type	MFD	A	B	Case Height	1-99	100-499
225-2262	X387S-5-10-440	5. 0	2.16	1.31	2.88	**5.94**	4.71
225-2264	X387S-7.5-10-440	7.5	2.16	1.31	3.88	**6.90**	5.48
225-2266	X387S-10-10-440	10.0	2.16	1.31	3.88	**6.00**	4.76
225-2268	X387S-12.5-10-440	12.5	2.91	1.91	2.88	**6.68**	5.30
225-2270	X387S-15-10-440	15.0	2.91	1.91	2.88	**9.36**	7.43
225-2272	X387S-17.5-10-440	17.5	2.91	1.91	3.88	**10.48**	8.32
225-2274	X387S-20-10-440	20.0	2.91	1.91	3.88	**10.96**	8.70
225-2276	X387S-25-10-440	25.0	2.91	1.91	4.75	**19.74**	15.68
225-2286	X387S-50-10-440	50.0	3.66	1.97	4.75	**19.90**	17.94

X386S Metallized Polypropylene



- ► Standard Operating Temperature Range: –40°C to +70°C
- ► Non-PCB Oil Filled
- ► Self-Healing Ability for Enhanced Reliability and Long Life
- ► Extremely Low Loss and Heat Dissipation
- ► Other Capacitance Values, Dual Capacitance Values, Tolerances, and Operating Temperature Ranges Available Upon Request
- ► UL Approved Internal Protective Device and CSA Approved

ASC oil-filled capacitors employ high quality metallized polypropylene film dielectric. They are non-PCB oil filled in metal cases designed for industrial applications, motor run applications in refrigeration and air conditioning equipment, power factor correction, power supplies, and general purpose AC applications. They use non-inductive wound metallized polypropylene and oil-filled construction. Short circuits are virtually eliminated due to the self-healing properties of the metallized polypropylene film. They are non-toxic and disposable. Non-corrosive seamless can, with double roll lock aluminum cover, suitable for outdoor applications. Terminals are four ¼" quick tines. 50% size and weight reduction over conventional designs. 10% tolerance. Other capacitance values, tolerances, temperature ranges, and dual capacitors available upon request. Call for price, delivery and minimums.

330 Volts

Stock No.	Mfr.'s Type	MFD	Dimensions		EACH
			Dia.	Height	
225-5000	X386S-15-10-330	15.0	1.75	2.88	**5.20**
225-5004	X386S-20-10-330	20.0	1.75	2.88	**6.07**
225-5006	X386S-25-10-330	25.0	1.75	2.88	**6.75**
225-5010	X386S-30-10-330	30.0	1.75	3.88	**7.42**
225-5012	X386S-35-10-330	35.0	1.75	3.88	**8.33**
225-5018	X386S-50-10-330	50.0	1.75	4.75	**10.31**
225-5020	X386S-55-10-330	55.0	2.00	4.75	**11.40**
225-5022	X386S-60-10-330	60.0	2.00	4.75	**11.85**

370 Volts

Stock No.	Mfr.'s Type	MFD	Dia.	Height	EACH
225-5028	X386S-20-10-370	20.0	1.75	3.88	**6.27**
225-5032	X386S-30-10-370	30.0	1.75	4.75	**7.60**
225-5034	X386S-35-10-370	35.0	2.00	4.75	**8.67**
225-5036	X386S-40-10-370	40.0	2.00	4.75	**9.91**
225-5038	X386S-45-10-370	45.0	2.00	4.75	**10.47**
225-5040	X386S-50-10-370	50.0	2.50	4.75	**11.00**
225-5044	X386S-60-10-370	60.0	2.50	4.75	**12.04**

440 Volts

Stock No.	Mfr.'s Type	MFD	Dia.	Height	EACH
225-5046	X386S-15-10-440	15.0	1.75	3.88	**8.50**
225-5050	X386S-20-10-440	20.0	1.75	3.88	**6.64**
225-5054	X386S-30-10-440	30.0	2.00	4.75	**8.91**
225-5058	X386S-40-10-440	40.0	2.00	4.75	**10.71**
225-5062	X386S-50-10-440	50.0	2.50	4.75	**12.05**

Hardware

- ► Round or Oval Bracket Style
- ► Economical and Easy to Use
- ► Made to Hold Above Capacitors Securely in Place

Designed in either oval or round bracket styles, these clamps will hold motor run capacitors securely and accurately in place. Made of coated steel, they will withstand vibration, corrosion, and dirty environments.

Round Style Brackets Type B

Stock No.	Mfr.'s Type	Cap. Size	EACH
225-0005	RS752001	1.75	**.79**
225-0010	RS752051	2.00	**1.03**

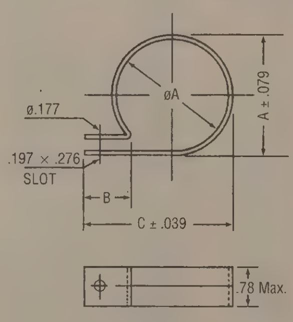
Round Style Brackets Type C

Stock No.	Mfr.'s Type	Cap. Size	EACH
225-0020	RS752002	1.75	**.87**
225-0025	RS752052	2.00	**.84**
225-0030	RS752152	2.50	**.90**

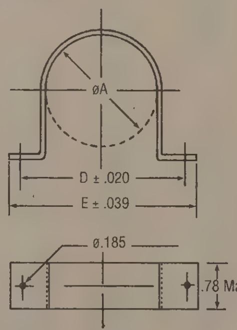
Oval Style

Stock No.	Mfr.'s Type	Cap. Size	EACH
225-0035	RK752301	1.25	**.54**
225-0045	RK752303	1.75	**.58**
225-0050	RK752304	2.00	**.84**

Round Style Brackets

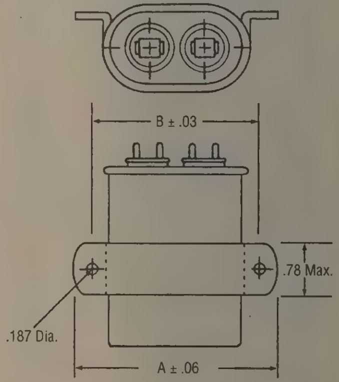


Type B



Type C

Oval Style Brackets



Specifications

Round Dia.	Mfr.'s Type		Dimensions				
	Type B	Type C	A	B	C	D	E
1.75	RS752001	RS752002	1.76	5.91	2.20	2.56	2.94
2.00	RS752051	RS752052	1.99	.630	2.44	2.75	3.13
2.50	—	RS752152	2.50	—	—	3.25	3.63

Oval Size	Mfr.'s Type	Mounting Dimensions	
		A	B
1.25	RK752301	2.94	2.56
1.75	RK752303	3.69	3.31
2.00	RK752304	4.44	4.06

Transient Voltage Suppressors — NEW —

- ▶ Small Size
- ▶ Low Voltage
- ▶ Excellent Clamping Ratio
- ▶ High Transient Current Capability
- ▶ Response Time: Less than 1 nsec

Typical Applications

- ▶ Computer ESD and I/O Protection
- ▶ Automotive Transient Protection
- ▶ ESD/EMP Protected Connectors
- ▶ Data Line Protection
- ▶ Telecommunication Transient Protection
- ▶ Avionic Transient Protection

0805 Surface Mount

Inductance (L)*: ≤1.5. **Dimensions. Length:** .079" ±.008" (2.01 ±0.2 mm). **Width:** .049" ±.008" (1.25 ±0.2 mm). **Thickness:** .040" max. (1.02 mm). **Land Length:** .028" max. (0.71 mm). **Termination Finish:** Pt/Pd/Ag.

Stock No.	Mfr.'s Type	Working Voltage V_{WM}* (V Max.)	Breakdown Voltage V_B* (V)	Clamping Voltage V_C* (V Max.)	Peak Current I_{peak}* (A Max.)	Transient Energy E_{trans}* (Joules Max.)	Cap. C* (pF Typ.)	PER PKG./100	
								1-9	10-24
213-5050	VC080505A150	5.6	7.6-9.3	15.5	40	0.1	1100	**41.00**	**33.00**
213-5055	VC080505C150	5.6	7.1-8.7	15.5	120	0.3	2750	**61.00**	**49.00**
213-5060	VC080514A300	14.0	16.5-20.3	30.0	40	0.1	430	**41.00**	**33.00**
213-5065	VC080514C300	14.0	15.9-19.4	30.0	120	0.3	1200	**61.00**	**49.00**
213-6070	VC080518A400	18.0	22.9-28.0	40.0	30	0.1	350	**61.00**	**49.00**
213-6075	VC080518C400	18.0	22.5-27.5	40.0	100	0.3	650	**61.00**	**49.00**
213-6080	VC080526A580	26.0	31.0-37.9	58.0	30	0.1	150	**41.00**	**33.00**
213-6085	VC080526C580	26.0	30.5-37.3	58.0	100	0.3	200	**61.00**	**49.00**

1206 Surface Mount

Inductance (L)*: ≤1.7. **Dimensions. Length:** .126" ±.008" (3.20 ±0.2 mm). **Width:** .063" ±.008" (1.60 ±0.2 mm). **Thickness:** .040" max. (1.02 mm). **Land Length:** .028" max. (0.71 mm). **Termination Finish:** Pt/Pd/Ag.

213-6090	VC120603A100	3.6	4.0-5.5	10.0	40	0.1	2000	**51.00**	**41.00**
213-6095	VC120605A150	5.6	7.6-9.3	15.5	40	0.1	1150	**51.00**	**41.00**
213-5070	VC120605D150	5.6	7.1-8.7	15.5	150	0.4	3000	**68.00**	**55.00**
213-5075	VC120614A300	14.0	16.5-20.3	30.0	40	0.1	600	**51.00**	**41.00**
213-5080	VC120614D300	14.0	15.9-19.4	30.0	150	0.4	1400	**68.00**	**55.00**
213-5085	VC120618A400	18.0	22.9-28.0	40.0	30	0.1	350	**51.00**	**41.00**
213-5090	VC120618D400	18.0	22.5-27.5	40.0	150	0.4	1000	**68.00**	**55.00**
213-5095	VC120626D580	26.0	30.5-37.3	58.0	120	0.4	550	**68.00**	**55.00**
213-5045	VC120630D650	30.0	36.0-45.0	65.0	120	0.4	500	**68.00**	**55.00**

V_{WM} — Maximum steady-state DC operating voltage the varistor can maintain and not exceed 50 μA leakage current. V_B — Voltage across the device measured at 1 mA DC current. V_C — Maximum peak voltage across the varistor measured at a specified pulse current and waveform(transient energy rating of 0.1 J=2 A, 8/20 μS pulse current and waveform; transient energy rating of 0.2 J=5 A, 8/20 μS pulse current and waveform; transient energy rating of ≥0.4 J=10 A, 8/20 μS pulse current and waveform); I_{peak} — Maximum peak current which may be applied with the specified waveform without device failure; E_{trans} — Maximum energy which may be dissipated with the specified waveform without device failure; C — Device capacitance measured with zero volt bias 0.5 Vrms and 1 kHz. L — Device inductance measured with a current edge rate of 100 mA/nS.

Surface Mount Ceramic Capacitor Kits

Large Surface Mount Ceramic Capacitor Kit

AVX multilayer ceramic chip capacitors in a sampler kit. Capacitance, voltage, tolerance, temperature coefficient, chip sizes and quantities of each part are listed in the table below. Quantities listed are for large kit.

881-6700..**EACH 300.00**

Small Surface Mount Ceramic Capacitor Kit

AVX multilayer ceramic chip capacitors in a sampler kit. Capacitance, voltage, tolerance, temperature coefficient, chip sizes and quantities of each part are listed in the table below. This kit contains 1/2 the quantity of each value listed.

881-6705..**EACH 170.00**

Mfr.'s Type	VDC	Cap. (pF)	Tol. %	Coeff.	Qty. Per Kit
08055C103KATMA	50	10000	10	X7R	100
08055C103MATMA	50	10000	20	X7R	50
12065C473KATMA	50	47000	10	X7R	50
12065C104KATMA	50	100000	10	X7R	100
12065C104MATMA	50	100000	20	X7R	50
12065E104MATMA	50	100000	20	Z5U	50
12105C104KATMA	50	100000	10	X7R	100
12065E104ZATMA	50	100000	+80/–20	Z5U	100
08051A100JATMA	100	10	5	NPO	50
08051A220JATMA	100	22	5	NPO	50
08051A470JATMA	100	47	5	NPO	50
08051A101JATMA	100	100	5	NPO	100
12061A471JATMA	100	470	5	NPO	50
12061A102JATMA	100	1000	5	NPO	50
12061C102KATMA	100	1000	10	X7R	50
12061C103MATMA	100	10000	20	X7R	50
12061C103KATMA	100	10000	10	X7R	100

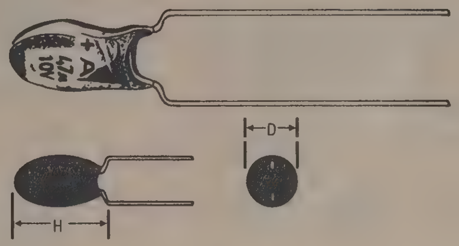
Surface Mount Tantalum Capacitor Kit

A sampler kit of surface mount tantalum chip capacitors. These chip capacitors are standard EIA surface mount technology. Capacitance, voltage, tolerance, and quantities of each part are listed in the table below.

881-6710. Surface Mount Tantalum Capacitor Kit..**EACH 100.00**

Mfr.'s Type	VDC	Cap. (μF)	Tol. %	Qty. Per Kit
TAJC226K006R	6	22.0	10	10
TAJD107K006R	6	100.0	10	10
TAJA225K010R	10	2.2	10	40
TAJB475K010R	10	4.7	10	40
TAJD476K010R	10	47.0	10	10
TAJA105K016R	16	1.0	10	40
TAJC106K016R	16	10.0	10	10
TAJD336K016R	16	33.0	10	10
TAJB225K020R	20	2.2	10	40
TAJD226K020R	20	22.0	10	10
TAJD106K025R	25	10.0	10	10
TAJB105K035R	35	1.0	10	40

Resin Dipped Radial Capacitors



TAP Series Solid Tantalum Resin Dipped Capacitors

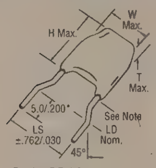
TAP is a professional device manufactured with a flame retardant coating and featuring ultra low leakage current and impedance, very small physical sizes and exceptional temperature stability. It is designed and conditioned to operate to +85°C without derating. The 15 case sizes with wide capacitance and working voltage ranges means the TAP can accommodate almost any requirement. Also available on Tape and Reel for auto insertion.

Case Dimensions — mm (Inches)

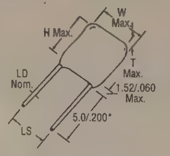
Case	H	D	Case	H	D
A	8.5 (0.33)	4.5 (0.18)	J	13.0 (0.51)	8.0 (0.31)
B	9.0 (0.35)	4.5 (0.18)	K	14.0 (0.55)	8.5 (0.33)
C	10.0 (0.39)	5.0 (0.20)	L	14.0 (0.55)	9.0 (0.35)
D	10.5 (0.41)	5.0 (0.20)	M	14.5 (0.57)	9.0 (0.35)
E	10.5 (0.41)	5.5 (0.22)	N	16.0 (0.63)	9.0 (0.35)
F	11.1 (0.45)	6.0 (0.24)	P	17.0 (0.67)	10.0 (0.39)
G	0.45 (11.1)	6.5 (0.26)	R	18.5 (0.73)	10.0 (0.39)
H	12.0 (0.47)	7.0 (0.28)	—	—	—

Stock No.	Mfr.'s Type	VDC	Cap μF	Tol %	Case Code	EACH		
						1-49	50-99	100-Up
881-7102	TAP685K006SCS	6	6.80	10	A	**.34**	**.28**	**.22**
881-7103	TAP106K006SCS	6	10.00	10	B	**.41**	**.34**	**.26**
881-7104	TAP156K006SCS	6	15.00	10	C	**.52**	**.42**	**.32**
881-7105	TAP226K006SCS	6	22.00	10	D	**.52**	**.42**	**.32**
881-7106	TAP336K006SCS	6	33.00	10	E	**.67**	**.56**	**.42**
881-7107	TAP476K006SCS	6	47.00	10	F	**.60**	**.51**	**.39**
881-7108	TAP686K006SCS	6	68.00	10	G	**.63**	**.53**	**.42**
881-7109	TAP107K006SCS	6	100.00	10	H	**1.66**	**1.32**	**1.05**
881-7115	TAP475K010SCS	10	4.70	10	A	**.33**	**.28**	**.22**
881-7117	TAP106K010SCS	10	10.00	10	C	**.43**	**.36**	**.27**
881-7118	TAP156K010SCS	10	15.00	10	D	**.50**	**.42**	**.32**
881-7119	TAP226K010SCS	10	22.00	10	E	**.57**	**.48**	**.36**
881-7121	TAP476K010SCS	10	47.00	10	G	**1.19**	**.94**	**.75**
881-7122	TAP686K010SCS	10	68.00	10	H	**1.66**	**1.32**	**1.10**
881-7123	TAP107K010CCS	10	100.00	10	K	**1.76**	**1.56**	**1.23**
881-7124	TAP227K010CCS	10	220.00	10	P	**4.18**	**3.48**	**2.78**
881-7129	TAP335K016SCS	16	3.30	10	A	**.30**	**.26**	**.20**
881-7130	TAP475K016SCS	16	4.70	10	B	**.40**	**.34**	**.27**
881-7131	TAP685K016SCS	16	6.80	10	C	**.46**	**.38**	**.30**
881-7132	TAP106K016SCS	16	10.00	10	D	**.46**	**.38**	**.30**
881-7133	TAP156K016SCS	16	15.00	10	E	**.60**	**.51**	**.40**
881-7134	TAP226K016SCS	16	22.00	10	F	**.60**	**.51**	**.40**
881-7135	TAP336K016SCS	16	33.00	10	F	**1.16**	**.91**	**.70**
881-7136	TAP476K016CCS	16	47.00	10	J	**1.70**	**1.50**	**1.25**
881-7137	TAP686K016CCS	16	68.00	10	L	**1.88**	**1.56**	**1.21**
881-7139	TAP157K016CCS	16	150.00	10	N	**4.12**	**3.43**	**2.75**
881-7140	TAP227K016CCS	16	220.00	10	R	**5.12**	**4.26**	**3.41**
881-7151	TAP476K020CCS	20	47.00	10	K	**1.97**	**1.57**	**1.21**
881-7153	TAP107K020CCS	20	100.00	10	N	**4.12**	**3.43**	**2.75**
881-7156	TAP225K025SCS	25	2.20	10	A	**.34**	**.29**	**.22**
881-7157	TAP335K025SCS	25	3.30	10	B	**.40**	**.34**	**.26**
881-7158	TAP475K025SCS	25	4.70	10	C	**.47**	**.39**	**.30**
881-7159	TAP685K025SCS	25	6.80	10	D	**.54**	**.45**	**.35**
881-7160	TAP106K025SCS	25	10.00	10	E	**.57**	**.48**	**.38**
881-7161	TAP156K025SCS	25	15.00	10	F	**1.28**	**1.02**	**.83**
881-7162	TAP226K025SCS	25	22.00	10	H	**1.65**	**1.31**	**1.05**
881-7163	TAP336K025CCS	25	33.00	10	J	**1.96**	**1.56**	**1.25**
881-7165	TAP686K025CCS	25	68.00	10	N	**4.12**	**3.43**	**2.75**
881-7170	TAP474K035SCS	35	.47	10	A	**.24**	**.19**	**.16**
881-7171	TAP684K035SCS	35	.68	10	A	**.31**	**.29**	**.24**
881-7172	TAP105K035SCS	35	1.00	10	A	**.27**	**.22**	**.18**
881-7173	TAP155K035SCS	35	1.50	10	A	**.37**	**.31**	**.25**
881-7174	TAP225K035SCS	35	2.20	10	B	**.40**	**.34**	**.26**
881-7175	TAP335K035SCS	35	3.30	10	C	**.54**	**.39**	**.30**
881-7176	TAP475K035SCS	35	4.70	10	E	**.50**	**.42**	**.35**
881-7177	TAP685K035SCS	35	6.80	10	F	**.57**	**.48**	**.38**
881-7178	TAP106K035SCS	35	10.00	10	F	**.91**	**.75**	**.59**
881-7179	TAP156K035SCS	35	15.00	10	H	**1.83**	**1.45**	**1.15**
881-7180	TAP226K035CCS	35	22.00	10	K	**1.83**	**1.45**	**1.15**
881-7182	TAP476K035CCS	35	47.00	10	N	**4.12**	**3.43**	**2.75**
881-7183	TAP104K050SCS	50	.10	10	A	**.34**	**.29**	**.23**
881-7186	TAP334K050SCS	50	.33	10	A	**.27**	**.22**	**.18**
881-7189	TAP105K050SCS	50	1.00	10	C	**.34**	**.29**	**.22**
881-7191	TAP225K050SCS	50	2.20	10	E	**.71**	**.51**	**.40**
881-7193	TAP475K050SCS	50	4.70	10	G	**.78**	**.64**	**.51**
881-7195	TAP106K050CCS	50	10.00	10	J	**2.32**	**1.94**	**1.50**
881-7197	TAP226K050CCS	50	22.00	10	L	**4.78**	**3.98**	**3.25**

Radial Leads/SkyCap



Style SR21



Styles SR15, SR20, SR30

Note: Coating Clean
.784/.031 Min.
Above Seating Plane

Dimensions: Millimeters (Inches)

*Lead Length Tolerance = +1.5 mm (.060")-0.
Also Available with lead length of 31.75 mm
(1.25") Minimum.

Radials

Mfr.'s Type	Size (In.)			
	T	W	H	LS
SR15	.100	.150	.150	.100
SR20	.125	.200	.200	.100
SR21	.125	.200	.300	.200
SR30	.150	.300	.300	.200

NOTE: Additional Values and Tolerances are available. Call your Local Allied Office for Price and Delivery.

General Information AVX SR Series

- Conformally Coated Radial Leaded MLC
- Temperature Coefficients: NPO, X7R, Z5U
- 50 V, 100 V (200 V, 300 V, 400 V, and 500 V Available on Request)
- Case Material: Epoxy (Flame Retardant to UL Bulletin 492, Par. 280)
- Lead Material: Solderable
- Cross to Kemet C3XX Series

X7R Characteristic

Stock No.	Mfr.'s Type	Voltage (V)	pF	EACH	
				1-24	25-99
881-3310	SR151C102KAA	100	1000	.12	.10
881-3341	SR211C102KAA	100	1000	.17	.14
881-3314	SR151C222KAA	100	2200	.15	.12
881-3316	SR151C332KAA	100	3300	.15	.12
881-3318	SR151C472KAA	100	4700	.17	.13
881-3420	SR151C103KAA	100	10000	.19	.14
881-3322	SR155C103KAA	50	10000	.14	.12
881-3353	SR211C103KAA	100	10000	.16	.14
881-3332	SR201C223KAA	100	22000	.19	.16
881-3334	SR201C333KAA	100	33000	.19	.17
881-3361	SR211C473KAA	100	47000	.21	.17
881-3336	SR201C473KAA	100	47000	.21	.17
881-3422	SR211C104KAA	100	100000	.23	.19
881-3340	SR205C104KAA	50	100000	.20	.18
881-3365	SR215C104KAA	50	100000	.23	.18
881-3382	SR305C474KAA	50	470000	.88	.72
881-3386	SR305C105KAA	50	1000000	1.18	1.08

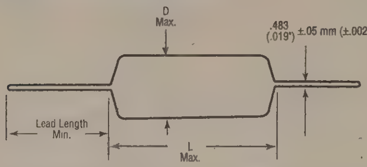
NPO Characteristic

Stock No.	Mfr.'s Type	Voltage (V)	pF	EACH	
				1-24	25-99
881-3400	SR151A100JAA	100	10	.20	.15
881-3500	SR151A100KAA	100	10	.15	.12
881-3401	SR151A220JAA	100	22	.20	.15
881-3402	SR151A330JAA	100	33	.20	.15
881-3403	SR151A470JAA	100	47	.20	.17
881-3404	SR151A680JAA	100	68	.20	.17
881-3405	SR151A101JAA	100	100	.20	.17
881-3406	SR151A221JAA	100	220	.24	.17
881-3407	SR151A331JAA	100	330	.24	.18
881-3408	SR151A471JAA	100	470	.26	.19
881-3409	SR151A681JAA	100	680	.29	.22
881-3410	SR201A102JAA	100	1000	.32	.24
881-3411	SR211A102JAA	100	1000	.29	.22

Z5U Characteristic

Stock No.	Mfr.'s Type	Voltage (V)	pF	1-24	25-99
881-3114	SR155E103MAA	50	10000	.14	.11
881-3133	SR201E104MAA	100	100000	.20	.16
881-3155	SR211E104MAA	100	100000	.21	.16
881-3136	SR205E104MAA	50	100000	.20	.16
881-3162	SR215E104MAA	50	100000	.15	.11
881-3140	SR205E224MAA	50	220000	.22	.17
881-3166	SR215E224MAA	50	220000	.22	.17
881-3142	SR205E334MAA	50	330000	.26	.19
881-3168	SR215E334MAA	50	330000	.26	.19
881-3206	SR305E105MAA	50	1000000	.47	.36

Axial Leads/SpinGuard



- Note: Sold in Multiples of 500 Pieces Only; Other Values, Tolerances and Voltages Available; Call for Price, Delivery, and Minimums

Axials

SpinGuard Conformal	D × l
SA10	.100 × .170
SA11	.120 × .170
SA20	.100 × .260
SA30	.150 × .290

NPO Characteristic

Stock No.	Mfr.'s Type	Voltage (V)	pF	PER PK./500	
				1-9	10-19
881-4011	SA102A100JAA	200	10	60.00	45.00
881-4015	SA102A220JAA	200	22	60.00	45.00
881-4017	SA102A330JAA	200	33	60.00	45.00
881-4019	SA102A470JAA	200	47	60.00	45.00
881-4021	SA102A680JAA	200	68	60.00	45.00
881-4023	SA102A101JAA	200	100	60.00	45.00
881-4024	SA101A221JAA	100	220	60.00	45.00
881-4029	SA101A331JAA	100	330	60.00	45.00
881-4031	SA101A471JAA	100	470	60.00	45.00
881-4033	SA101A681JAA	100	680	60.00	45.00
881-4120	SA105A102JAA	50	1000	60.00	45.00

X7R Characteristic

Stock No.	Mfr.'s Type	Voltage (V)	pF	1-9	10-19
881-4048	SA101C102KAA	100	1000	66.00	51.00
881-4051	SA101C222KAA	100	2200	66.00	51.00
881-4053	SA101C332KAA	100	3300	66.00	51.00
881-4055	SA101C472KAA	100	4700	66.00	51.00

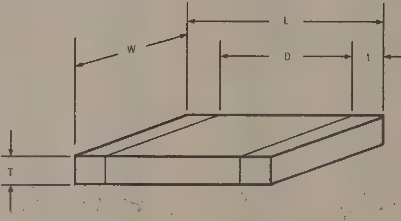
X7R Characteristic (continued)

Stock No.	Mfr.'s Type	Voltage (V)	pF	PER PK./500	
				1-9	10-19
881-4057	SA101C682KAA	100	6800	66.00	51.00
881-4059	SA105C103KAA	50	10000	66.00	51.00
881-4063	SA105C223KAA	50	22000	71.00	51.00
881-4071	SA205C333KAA	50	33000	86.00	57.00
881-4073	SA205C473KAA	50	47000	80.00	60.00
881-4064	SA115C104KAA	50	100000	81.00	54.00

Z5U Characteristic

Stock No.	Mfr.'s Type	Voltage (V)	pF	1-9	10-19
881-4091	SA101E103MAA	100	10000	41.00	31.00
881-4094	SA105E103MAA	50	10000	41.00	31.00
881-4098	SA105E473MAA	50	47000	41.00	31.00
881-4100	SA105E104MAA	50	100000	43.00	35.00
881-4101	SA115E224MAA	50	220000	80.00	67.00
881-4102	SA115E334MAA	50	330000	80.00	76.00
881-4125	SA305E474MAA	50	470000	102.00	94.15
881-4111	SA305E105MAA	50	1000000	119.00	109.85

AVX Ceramic Chip Capacitors



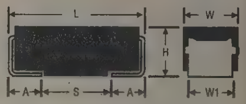
AVX ceramic surface mount capacitors, available in NPO, X7R and Z5U, have historically been one of the most reliable electronic components available. NPO and Z7R have temperature coefficients of –55°C to +125°C. NPO is the most popular formulation of the "temperature-compensating" EIA Class I ceramic materials. They show little capacitance change with frequency and dielectric absorption is typically less than 0.6% which is similar to mica and most films. The X7R is the most popular intermediate dielectric-constant formulation that is called "temperature-stable" in ceramics and fall into EIA Class II materials. Capacitance for X7R varies under the influence of electrical operating conditions such as voltage, frequency and time (approximately 5% change in 10 years). Z5U formulations are "general purpose" ceramics which are meant for use in limited temperature applications where small size and cost are important. They provide the highest capacitance density possible in a given size for the three most popular formulations. They show wide variations in electrical operating conditions. Despite their capacitance instability, Z5U formulations are very popular because of their small size, low ESL, low ESR and excellent frequency response. These features are particularly important for decoupling applications where only a minimum capacitance value is required.

Size	Dimensions (mm)				
	Length	Width	Thickness (Max.)	Terminal Width	
				Min.	Max.
	L	W	T	t	t
0805	2.0 ±0.2	1.2 ±0.2	1.27	0.25	0.71
1206	3.2 ±0.2	1.6 ±0.2	1.27	0.25	0.76
1210	3.2 ±0.2	2.5 ±0.2	1.70	0.25	0.75

Stock No.	Mfr.'s Type	Volt. (V)	Value (pF)	Temp. Coef.	PER PK./100		
					1-9	10-24	25-49
213-6511	12065C473KATMA	50	47000	X7R	11.00	9.00	8.00
213-6512	12065C104KATMA	50	100000	X7R	14.00	13.00	11.00
213-6513	12065C104MATMA	50	100000	X7R	13.00	12.00	10.00
213-6514	12065E104MATMA	50	100000	Z5U	11.00	10.90	9.00
213-6515	12065E104ZATMA	50	100000	Z5U	10.00	9.00	8.00
213-2000	12061A100JATMA	100	10	NPO	9.00	7.00	6.50
213-2002	12061A150JATMA	100	15	NPO	9.00	7.00	6.50
213-2004	12061A220JATMA	100	22	NPO	9.00	7.00	6.50
213-2006	12061A330JATMA	100	33	NPO	9.00	7.00	6.50
213-2008	12061A390JATMA	100	39	NPO	9.00	7.00	6.50
213-2010	12061A470JATMA	100	47	NPO	9.00	7.00	6.50
213-2012	12061A680JATMA	100	68	NPO	9.00	7.00	6.50
213-2014	12061A101JATMA	100	82	NPO	9.00	7.00	6.50
213-2016	12061A101JATMA	100	100	NPO	9.00	7.00	6.50
213-2018	12061A151JATMA	100	150	NPO	10.50	9.00	7.50

Stock No.	Mfr.'s Type	Volt. (V)	Value (pF)	Temp. Coef.	PER PK./100		
					1-9	10-24	25-49
213-2020	12061A221JATMA	100	220	NPO	10.50	9.00	7.50
213-2022	12061A331JATMA	100	330	NPO	10.50	9.00	7.50
213-2024	12061A471JATMA	100	470	NPO	10.50	9.00	7.50
213-2026	12061A681JATMA	100	680	NPO	11.50	10.00	8.50
213-2028	12061A102JATMA	100	1000	NPO	11.50	10.00	8.50
213-2030	12061C102JATMA	100	1000	X7R	11.50	10.00	8.50
213-6506	12061C102KATMA	100	1000	X7R	10.00	9.00	8.00
213-2032	12061C222JATMA	100	2200	X7R	11.50	10.00	8.50
213-2034	12061C332JATMA	100	3300	X7R	11.50	10.00	8.50
213-2036	12061C472JATMA	100	4700	X7R	11.50	10.00	8.50
213-2038	12061C103JATMA	100	10000	X7R	20.40	16.32	13.60
213-6510	12061C103KATMA	100	10000	X7R	11.00	10.00	9.00
213-6509	12061C103MATMA	100	10000	X7R	10.00	9.00	8.00
213-6516	12105C104KATMA	50	100000	X7R	25.00	23.00	18.00
213-6507	08055C103KATMA	50	10000	X7R	10.00	9.00	8.00
213-6508	08055C103MATMA	50	10000	X7R	9.50	8.50	7.50
213-2044	08051A100JATMA	100	10	NPO	12.00	10.00	8.00
213-2046	08051A150JATMA	100	15	NPO	12.00	10.00	8.00
213-2048	08051A220JATMA	100	22	NPO	12.00	10.00	8.00
213-2050	08051A330JATMA	100	33	NPO	12.00	10.00	8.00
213-2052	08051A470JATMA	100	47	NPO	12.00	10.00	8.00
213-2054	08051A680JATMA	100	68	NPO	12.00	10.00	8.00
213-2056	08051A101JATMA	100	100	NPO	12.00	10.00	8.00
213-2058	08051A151JATMA	100	150	NPO	12.00	10.00	8.00
213-2060	08051A221JATMA	100	220	NPO	12.00	10.00	8.00
213-2062	08051A331JATMA	100	330	NPO	12.00	10.00	8.00
213-2064	08051A471JATMA	100	470	NPO	12.00	10.00	8.00
213-2068	08051C222JATMA	100	2200	X7R	16.00	13.00	11.00
213-2074	08051C103JATMA	100	10000	X7R	16.00	13.00	11.00

AVX Tantalum Chip Capacitors



AVX offers solid tantalum capacitors in a wide range of sizes, styles and ratings to meet any design needs. The four case sizes offered here are the most popular and conform to EIA standard EIA-535BAAC. The TAJ Series is qualified as MIL-style CWR11. The TAJ Series is temperature rated at –55°C to +85°C.

How to Order (Commercial):

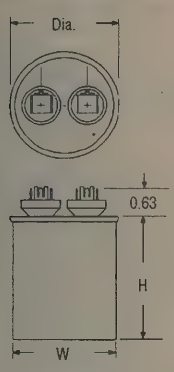
TAJ	B	335	M	016	R
Mfr.'s Type	Case Code	Cap Code	Tol. %	Volt DC	Packaging

Case Code	Dimensions					
	L	W	H	W1	A	S (min.)
A	3.2	1.6	1.6	1.2	0.8	1.1
B	3.5	2.8	1.9	2.2	0.8	1.4
C	6.0	3.2	2.6	2.2	1.3	2.9
D	7.3	4.3	2.9	2.4	1.3	4.4

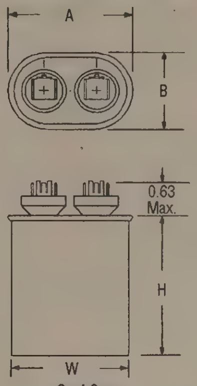
W1 dimensions applies to the termination width for "A" dimension area only.

Stock No.	Mfr.'s Type	Volt. (V)	Value (µF)	Tol. %	Size	PER PK./100		
						1-9	10-24	24-49
213-6110	TAJC226K006R	6	22.0	10	C	79.00	70.00	65.00
213-6114	TAJD107K006R	6	100.0	10	D	125.00	110.00	95.00
213-6175	TAJA225K010R	10	2.2	10	A	43.00	40.00	36.00
213-6116	TAJB475K010R	10	4.7	10	B	44.00	40.00	36.00
213-6121	TAJD476K010R	10	47.0	10	D	105.00	90.00	82.00
213-1000	TAJA105K016R	16	1.0	10	A	24.00	22.00	20.00
213-1002	TAJB225K016R	16	2.2	10	B	27.00	26.00	24.00
213-1004	TAJB335K016R	16	3.3	10	B	27.00	26.00	24.00
213-1008	TAJC106K016R	16	10.0	10	C	60.00	49.00	42.00
213-1010	TAJD226K016R	16	22.0	10	D	76.00	61.00	55.00
213-1012	TAJD336K016R	16	33.0	10	D	70.00	64.00	56.00
213-6137	TAJD226K020R	20	22.0	10	D	106.00	91.00	82.00
213-1014	TAJA474K025R	25	.47	10	A	33.00	26.00	23.00
213-6144	TAJD106K025R	25	10.0	10	D	102.00	88.00	61.00
213-1016	TAJA104K035R	35	.10	10	A	33.00	26.00	23.00
213-1018	TAJA224K035R	35	.22	10	A	33.00	26.00	23.00
213-1020	TAJA334K035R	35	.33	10	A	33.00	26.00	23.00
213-1024	TAJB105K035R	35	1.0	10	B	35.00	28.00	25.00
213-1026	TAJA104K050R	50	.10	10	A	52.00	41.00	36.00
213-1028	TAJB474K050R	50	.47	10	B	52.00	41.00	36.00
213-1034	TAJD475K050R	50	4.7	10	D	122.10	97.68	85.47

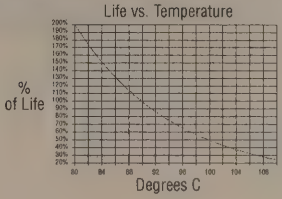
HID Lighting Capacitors — GEM III

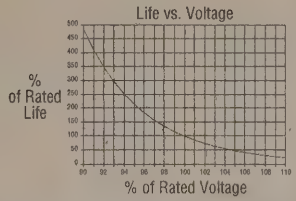


Round Case



Oval Case





Specifications. Available Capacitance Range: 5 to 60 µF. Capacitance Tolerance: ±3%. Leakage Current: 30 µA maximum. **Frequency:** 50/60 Hz. **Operating Temperature:** –40°C to +90°C. **Storage Temperature:** –40°C to +90°C. **Operating Life:** 60,000 hours with 90% survival. **Dissipation Factor:** 0.1% maximum.

Round Case

280 VAC

Stock No.	Mfr.'s Type	Cap. (µF)	Dimensions (In.)			EACH	
			Dia.	H	W	1-24	24-49
591-5500	97F6516	22.5	1.75	2.88	1.88	**20.33**	**12.98**
591-5505	97F6522	24.0	1.75	2.88	1.88	**20.82**	**13.29**
591-5510	97F6533	30.0	1.75	3.88	1.88	**23.59**	**15.06**
591-5515	97F6538	35.0	1.75	3.88	1.88	**25.57**	**16.32**
591-5520	97F6509	38.0	1.75	3.88	1.88	**26.85**	**17.14**
591-5525	97F6530	40.0	1.75	3.88	1.88	**27.64**	**17.64**
591-5530	97F6540	45.0	2.00	3.88	2.12	**37.76**	**24.10**
591-5535	97F6541	48.0	2.00	3.88	2.12	**31.98**	**20.41**

330 VAC

Stock No.	Mfr.'s Type	Cap. (µF)	Dia.	H	W	1-24	24-49
591-5540	97F6518	8.0	1.75	2.88	1.88	**14.61**	**9.32**
591-5545	97F6515	10.0	1.75	2.88	1.88	**15.59**	**9.95**
591-5550	97F6506	14.0	1.75	2.88	1.88	**17.57**	**11.21**
591-5555	97F6504	15.0	1.75	2.88	1.88	**19.15**	**12.22**
591-5560	97F6519	16.0	1.75	2.88	1.88	**18.46**	**11.78**
591-5565	97F6505	17.5	1.75	2.88	1.88	**19.25**	**12.29**
591-5570	97F6537	24.0	1.75	3.88	1.88	**22.61**	**14.43**
591-5575	97F6521	28.0	1.75	3.88	1.88	**24.38**	**15.56**

400 VAC

Stock No.	Mfr.'s Type	Cap. (µF)	Dia.	H	W	1-24	24-49
591-5580	97F6526	10.0	1.75	2.88	1.88	**15.89**	**10.14**
591-5585	97F6539	14.0	1.75	2.88	1.88	**28.38**	**18.11**
591-5590	97F6517	15.0	1.75	2.88	1.88	**18.55**	**11.84**

Oval Case

280 VAC

Stock No.	Mfr.'s Type	Cap. (µF)	Dimensions (In.)				EACH	
			A	B	H	W	1-24	24-49
591-0005	97F6801	6.0	2.16	1.31	2.12	2.06	**12.34**	**7.88**
591-0010	97F6857	8.0	2.16	1.31	2.88	2.06	**13.42**	**8.57**
591-0015	97F6858	10.0	2.16	1.31	2.88	2.06	**14.22**	**9.07**
591-0020	97F6871	12.0	2.16	1.31	3.88	2.06	**15.70**	**10.02**
591-0025	97F6805	10.0	2.69	1.56	2.12	2.58	**14.41**	**9.20**
591-0030	97F6860	15.0	2.69	1.56	2.88	2.58	**17.77**	**11.34**
591-0035	97F6812	17.5	2.69	1.56	2.88	2.58	**18.85**	**11.97**
591-0040	97F6861	20.0	2.69	1.56	3.88	2.58	**19.64**	**12.73**
591-0045	97F6855	22.5	2.69	1.56	3.88	2.58	**21.62**	**13.80**
591-0050	97F6873	24.0	2.69	1.56	3.88	2.58	**22.21**	**14.18**
591-0055	97F6868	26.0	2.69	1.56	2.88	2.58	**24.09**	**15.37**
591-0060	97F6824	28.0	2.69	1.56	3.88	2.58	**23.89**	**15.28**
591-0065	97F6846	29.0	2.69	1.56	3.88	2.58	**24.28**	**15.50**
591-0070	97F6854	34.0	2.69	1.56	3.88	2.58	**28.04**	**17.89**
591-0075	97F6869	42.0	2.69	1.56	3.88	2.58	**31.19**	**19.91**
591-0080	97F6862	20.0	2.91	1.91	2.88	2.81	**20.82**	**13.29**
591-0085	97F6864	24.0	2.91	1.91	2.88	2.81	**22.50**	**14.36**
591-0090	97F6823	28.0	2.91	1.91	2.88	2.81	**24.18**	**15.44**
591-0095	97F6865	35.0	2.91	1.91	3.88	2.81	**27.93**	**17.83**
591-0100	97F6866	40.0	2.91	1.91	3.88	2.81	**29.90**	**19.09**
591-0105	97F6850	45.0	2.91	1.91	3.88	2.81	**31.98**	**20.41**
591-0110	97F6836	48.0	2.91	1.91	3.88	2.81	**34.74**	**22.18**
591-0115	97F6872	48.0	3.66	1.97	2.88	3.56	**37.11**	**23.69**
591-0120	97F6867	52.0	3.66	1.97	3.88	3.56	**42.44**	**27.09**

330 VAC

Stock No.	Mfr.'s Type	Cap. (µF)	A	B	H	W	1-24	24-49
591-0125	97F6764	5.0	2.16	1.31	2.88	2.06	**12.43**	**7.94**
591-0130	97F6765	6.0	2.16	1.31	2.88	2.06	**12.83**	**8.19**
591-0135	97F6766	7.0	2.16	1.31	2.88	2.06	**13.42**	**8.57**
591-0140	97F6703	8.0	2.16	1.31	2.88	2.06	**13.91**	**8.88**
591-0145	97F6763	10.0	2.16	1.31	3.88	2.06	**15.39**	**9.83**
591-0150	97F6746	12.0	2.16	1.31	3.88	2.06	**16.38**	**10.46**
591-0155	97F6767	10.0	2.69	1.56	2.88	2.58	**16.19**	**10.33**
591-0160	97F6762	11.0	2.69	1.56	2.88	2.58	**16.78**	**10.71**
591-0165	97F6760	12.0	2.69	1.56	2.88	2.58	**17.18**	**10.96**
591-0170	97F6708	13.0	2.69	1.56	2.88	2.58	**17.67**	**11.28**
591-0175	97F6749	13.5	2.69	1.56	2.88	2.58	**17.86**	**11.40**
591-0180	97F6768	14.0	2.69	1.56	2.88	2.58	**17.86**	**11.40**
591-0185	97F6758	15.0	2.69	1.56	3.88	2.58	**19.54**	**12.47**

Oval Case (Continued)

330 VAC

Stock No.	Mfr.'s Type	Cap. (µF)	Dimensions (In.)				EACH	
			A	B	H	W	1-24	24-49
591-0190	97F6769	16.0	2.69	1.56	3.88	2.58	**19.94**	**12.73**
591-0200	97F6761	17.5	2.69	1.56	3.88	2.58	**20.63**	**13.17**
591-0205	97F6771	18.0	2.69	1.56	3.88	2.58	**20.82**	**13.29**
591-0210	97F6715	19.0	2.69	1.56	3.88	2.58	**21.32**	**13.61**
591-0215	97F6716	20.0	2.69	1.56	3.88	2.58	**21.81**	**13.92**
591-0220	97F6745	21.0	2.69	1.56	3.88	2.58	**22.21**	**14.18**
591-0225	97F6759	24.0	2.69	1.56	3.88	2.58	**25.37**	**16.19**
591-0230	97F6755	26.0	2.69	1.56	3.88	2.58	**26.25**	**16.76**
591-0235	97F6770	17.5	2.91	1.91	2.88	2.81	**20.73**	**13.23**
591-0240	97F6779	18.0	2.91	1.91	2.88	2.81	**21.13**	**13.48**
591-0245	97F6773	22.5	2.91	1.91	3.88	2.81	**24.18**	**15.44**
591-0250	97F6774	24.0	2.91	1.91	3.88	2.81	**24.87**	**15.88**
591-0255	97F6776	28.0	2.91	1.91	3.88	2.81	**26.74**	**17.07**
591-0260	97F6780	29.0	2.91	1.91	3.88	2.81	**27.24**	**17.39**
591-0265	97F6726	30.0	2.91	1.91	3.88	2.81	**27.64**	**17.64**
591-0270	97F6727	32.0	2.91	1.91	3.88	2.81	**28.53**	**18.21**
591-0275	97F6757	34.0	2.91	1.91	3.88	2.81	**31.09**	**19.85**
591-0280	97F6784	36.0	2.91	1.91	3.88	2.81	**31.88**	**20.35**
591-0285	97F6778	45.0	3.66	1.97	3.88	3.56	**39.19**	**25.01**

400 VAC

Stock No.	Mfr.'s Type	Cap. (µF)	A	B	H	W	1-24	24-49
591-0295	97F6601	10.0	2.16	1.31	3.88	2.06	**15.79**	**10.08**
591-0300	97F6606	10.0	2.69	1.56	2.88	2.58	**16.58**	**10.58**
591-0305	97F6659	12.0	2.69	1.56	3.88	2.58	**18.46**	**11.78**
591-0310	97F6698	13.0	2.69	1.56	3.88	2.58	**18.95**	**12.10**
591-0315	97F6602	15.0	2.69	1.56	3.88	2.58	**19.94**	**12.73**
591-0320	97F6660	12.0	2.91	1.91	2.88	2.81	**17.47**	**11.15**
591-0325	97F6661	14.0	2.91	1.91	2.88	2.81	**19.54**	**12.47**
591-0330	97F6621	15.0	2.91	1.91	2.88	2.81	**20.14**	**12.85**
591-0335	97F6658	18.0	2.91	1.91	2.88	2.81	**23.19**	**14.81**
591-0340	97F6622	24.0	2.91	1.91	3.88	2.81	**26.06**	**16.63**
591-0345	97F6623	24.0	3.66	1.97	2.88	3.56	**29.61**	**18.90**

480 VAC

Stock No.	Mfr.'s Type	Cap. (µF)	A	B	H	W	1-24	24-49
591-0350	97F6676	3.0	2.16	1.31	2.88	2.06	**12.04**	**7.69**
591-0355	97F6677	4.0	2.16	1.31	2.88	2.06	**12.74**	**8.13**
591-0360	97F6678	4.5	2.16	1.31	2.88	2.06	**13.03**	**8.32**
591-0365	97F6681	5.0	2.16	1.31	2.88	2.06	**13.42**	**8.57**
591-0370	97F6695	6.5	2.69	1.56	3.88	2.58	**15.10**	**9.64**
591-0375	97F6692	8.5	2.69	1.56	2.88	2.58	**18.75**	**11.97**
591-0380	97F6907	10.0	2.69	1.56	3.88	2.58	**19.50**	**12.44**
591-0385	97F6674	12.0	2.69	1.56	3.88	2.58	**20.23**	**12.92**
591-0390	97F6673	14.0	2.69	1.56	3.88	2.58	**23.10**	**14.74**
591-0395	97F6685	15.0	2.69	1.56	3.88	2.58	**23.89**	**15.25**
591-0400	97F6675	16.0	2.91	1.91	3.88	2.81	**24.09**	**15.37**
591-0405	97F6694	20.0	2.91	1.91	3.88	2.81	**26.55**	**16.95**
591-0410	97F6680	24.0	2.91	1.91	3.88	2.81	**30.60**	**19.53**
591-0415	97F6679	24.0	3.66	1.97	2.88	3.56	**33.60**	**21.11**

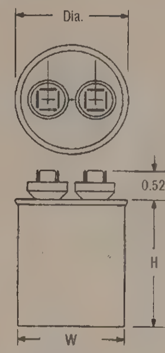
540 VAC

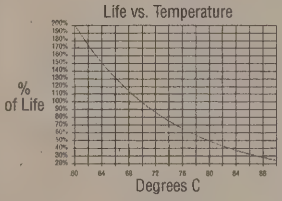
Stock No.	Mfr.'s Type	Cap. (µF)	A	B	H	W	1-24	24-49
591-0425	97F6924	13.0	2.69	1.56	3.88	2.58	**33.46**	**21.36**
591-0430	97F6920	16.0	2.69	1.56	3.88	2.58	**35.78**	**22.84**
591-0435	97F6935	10.5	2.91	1.91	2.88	2.81	**36.77**	**23.47**
591-0440	97F6919	16.0	2.91	1.91	3.88	2.81	**39.48**	**25.20**
591-0445	97F6933	18.0	2.91	1.91	3.88	2.81	**41.95**	**26.78**
591-0450	97F6951	22.5	2.91	1.91	4.75	2.81	**45.50**	**29.40**
591-0455	97F6921	26.0	2.91	1.91	4.75	2.81	**48.62**	**31.03**
591-0460	97F6956	22.5	3.66	1.97	3.88	3.56	**49.35**	**31.50**
591-0465	97F6934	26.0	3.66	1.97	3.88	3.56	**53.55**	**34.18**
591-0470	97F6923	32.0	3.66	1.97	3.88	3.56	**58.82**	**37.55**
591-0475	97F6940	35.0	3.66	1.97	4.75	3.56	**63.57**	**40.57**
591-0480	97F6952	36.0	3.66	1.97	4.75	3.56	**69.09**	**44.10**

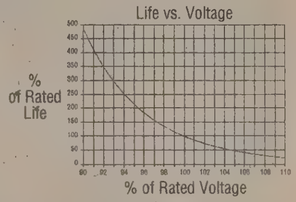
580 VAC

Stock No.	Mfr.'s Type	Cap. (µF)	A	B	H	W	1-24	24-49
591-0485	97F6930	10.0	2.69	1.56	3.88	2.58	**32.08**	**20.48**
591-0490	97F6948	14.5	2.69	1.56	3.88	2.58	**36.08**	**23.00**
591-0500	97F6931	20.0	2.91	1.91	4.75	2.81	**40.47**	**25.83**
591-0505	97F6946	21.0	2.91	1.91	4.75	2.81	**46.88**	**29.93**
591-0510	97F6945	24.0	2.91	1.91	4.75	2.81	**46.88**	**29.93**

GEM Series







► Metallized Film Capacitor **► UL Recognized**

Specifications. Available Capacitance Range: 2 to 120 µF. **Frequency:** 50/60 Hz. **Operating Temperature:** –40°C to +70°C. **Storage Temperature:** –40°C to +90°C. **Operating Life:** 60,000 hours with 94% survival. **Dissipation Factor:** 0.1% maximum. Part numbers that begin with 97F8 are Industrial capacitors and part numbers that begin with 97F5 and 97F9 are Motor Run capacitors.

Round Case

240 VAC

Stock No.	Mfr.'s Type	Cap. (µF)	Dimensions (In.)			EACH	
			Dia.	H	W	1-24	24-49
591-5600	97F8036	15.0	1.75	2.88	1.88	**17.97**	**11.47**
591-5605	97F8037	25.0	1.75	2.88	1.88	**22.70**	**14.49**
591-5610	97F8038	30.0	1.75	3.88	1.88	**25.07**	**16.00**
591-5615	97F8039	35.0	1.75	3.88	1.88	**27.34**	**17.45**
591-5620	97F8040	40.0	1.75	3.88	1.88	**29.61**	**18.90**
591-5625	97F8041	45.0	1.75	4.75	1.88	**31.88**	**20.35**
591-5630	97F8042	50.0	1.75	4.75	1.88	**34.25**	**21.86**
591-5635	97F8043	55.0	1.75	4.75	1.88	**36.42**	**23.25**
591-5640	97F8044	60.0	2.00	4.75	2.12	**39.97**	**25.52**
591-5645	97F8045	65.0	2.00	4.75	2.12	**42.15**	**26.90**
591-5650	97F8046	70.0	2.00	4.75	2.12	**44.32**	**29.29**
591-5655	97F8047	75.0	2.00	4.75	2.12	**46.48**	**29.27**
591-5660	97F8048	80.0	2.50	3.88	2.62	**51.72**	**33.01**
591-5665	97F8049	85.0	2.50	3.88	2.62	**53.99**	**34.46**
591-5670	97F8050	90.0	2.50	3.88	2.62	**56.16**	**35.85**
591-5675	97F8051	95.0	2.50	4.75	2.62	**58.93**	**37.61**
591-5680	97F8052	100.0	2.50	4.75	2.62	**61.10**	**39.00**
591-5685	97F8053	120.0	2.50	4.75	2.62	**69.78**	**44.54**

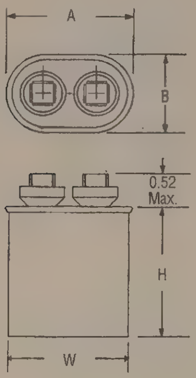
370 VAC

Stock No.	Mfr.'s Type	Cap. (µF)	Dia.	H	W	1-24	24-49
591-5690	97F9602	20.0	1.75	2.88	1.88	**19.10**	**12.19**
591-5695	97F9606	25.0	1.75	2.88	1.88	**21.13**	**13.48**
591-5700	97F9608	30.0	1.75	3.88	1.88	**23.29**	**14.89**
591-5705	97F9611	35.0	1.75	3.88	1.88	**25.81**	**16.47**
591-5710	97F9614	40.0	1.75	3.88	1.88	**27.84**	**17.77**
591-5715	97F9884	45.0	1.75	4.75	1.88	**31.19**	**19.91**
591-5720	97F9802	50.0	1.75	4.75	1.88	**33.21**	**21.20**
591-5725	97F9010	55.0	2.00	4.75	2.12	**37.11**	**23.69**
591-5730	97F5276	60.0	2.50	3.88	2.62	**42.04**	**26.84**
591-5735	97F9011	65.0	2.50	3.88	2.62	**44.51**	**28.41**
591-5795	97F9012	70.0	2.50	4.75	2.62	**47.47**	**30.30**

440 VAC

Stock No.	Mfr.'s Type	Cap. (µF)	Dia.	H	W	1-24	24-49
591-5740	97F9630	20.0	1.75	3.88	1.88	**19.99**	**12.76**
591-5745	97F9632	25.0	1.75	3.88	1.88	**23.14**	**14.77**
591-5750	97F9635	30.0	1.75	3.88	1.88	**25.46**	**16.25**
591-5755	97F9639	35.0	2.00	3.88	2.12	**41.71**	**26.62**
591-5760	97F9642	40.0	2.00	3.88	2.12	**31.14**	**19.88**
591-5765	97F9645	45.0	2.00	4.75	2.12	**35.58**	**22.71**
591-5770	97F5211	50.0	2.50	3.88	2.62	**39.88**	**25.45**
591-5775	97F9042	55.0	2.50	4.75	2.62	**42.24**	**26.96**
591-5780	97F9043	60.0	2.50	4.75	2.62	**44.51**	**28.41**
591-5785	97F5241	65.0	2.50	4.75	2.62	**46.88**	**29.93**
591-5790	97F5251	70.0	2.50	4.75	2.62	**49.15**	**31.37**

GEM Series



- ► Metallized Film Capacitor
- ► UL Recognized
- ► See Page 113 for Life Graphs

Specifications. Available Capacitance Range: 370 and 440 volts — 2 to 120 µF; 600 volts — 1.5 to 45 µF; 660 volts — 1.0 to 35 mF. **Frequency:** 50/60 Hz. **Operating Temperature:** –40°C to +70°C. **Storage Temperature:** –40°C to +90°C. **Operating Life:** 60,000 hours with 94% survival. **Dissipation Factor:** 0.1% maximum. Part numbers that begin with 97F8 or 27L6 are Industrial capacitors and part numbers that begin with 97F5 and 97F9 are Motor Run capacitors.

Oval Case

370 VAC

Stock No.	Mfr.'s Type	Cap. (µF)	Dimensions (In.)				EACH	
			A	B	H	W	1-24	24-49
591-0485	97F5503	3.0	2.16	1.31	2.12	2.06	**10.86**	**6.93**
591-0490	97F5704	4.0	2.16	1.31	2.12	2.06	**11.15**	**7.12**
591-0495	97F5705	5.0	2.16	1.31	2.12	2.06	**11.55**	**7.37**
591-0500	97F5706	6.0	2.16	1.31	2.12	2.06	**11.94**	**7.62**
591-0505	97F9001	7.5	2.16	1.31	2.88	2.06	**12.74**	**8.13**
591-0510	97F9002	10.0	2.16	1.31	2.88	2.06	**13.82**	**8.82**
591-0515	97F9003	12.5	2.16	1.31	3.88	2.06	**15.50**	**9.89**
591-0520	97F9004	15.0	2.16	1.31	3.88	2.06	**16.38**	**10.46**

440 VAC

591-0525	97F5437	3.0	2.16	1.31	2.12	2.06	**10.95**	**6.99**
591-0530	97F5337	4.0	2.16	1.31	2.88	2.06	**11.84**	**7.56**
591-0535	97F5339	5.0	2.16	1.31	2.88	2.06	**12.34**	**7.88**
591-0540	97F5436	6.0	2.16	1.31	2.88	2.06	**12.86**	**8.19**
591-0545	97F9036	7.5	2.16	1.31	3.88	2.06	**14.31**	**9.14**
591-0550	97F5300	10.0	2.16	1.31	3.88	2.06	**15.50**	**9.89**
591-0555	97F9080	12.5	2.16	1.31	4.75	2.06	**16.14**	**10.30**
591-0560	97F9625	15.0	2.16	1.31	4.75	2.06	**17.37**	**11.09**

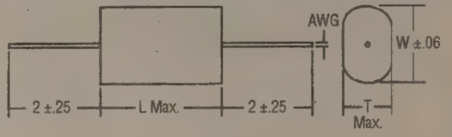
600 VAC

591-0565	97F8240	1.5	2.16	1.31	2.12	2.06	**10.46**	**6.68**
591-0570	97F8241	2.0	2.16	1.31	2.12	2.06	**10.95**	**6.99**
591-0575	97F8242	2.5	2.16	1.31	2.88	2.06	**11.55**	**7.37**
591-0580	97F8243	3.0	2.16	1.31	2.88	2.06	**11.94**	**7.62**
591-0585	97F8244	4.0	2.16	1.31	2.88	2.06	**12.63**	**8.06**
591-0590	97F8245	5.0	2.16	1.31	3.88	2.06	**14.02**	**8.95**
591-0595	97F8246	6.0	2.16	1.31	3.88	2.06	**14.71**	**9.37**
591-0600	97F8247	7.0	2.16	1.31	4.75	2.06	**15.99**	**10.21**
591-0605	97F8248	8.0	2.16	1.31	4.75	2.06	**16.58**	**10.58**
591-0610	97F8249	10.0	2.69	1.56	3.88	2.58	**20.43**	**13.04**
591-0615	97F8250	12.0	2.69	1.56	3.88	2.58	**22.41**	**14.30**
591-0620	97F8251	15.0	2.69	1.56	3.88	2.58	**24.48**	**15.62**
591-0625	97F8252	18.0	2.69	1.56	4.75	2.58	**27.24**	**17.39**
591-0630	97F8253	20.0	2.69	1.56	4.75	2.58	**28.53**	**18.21**
591-0635	97F8254	25.0	2.91	1.91	4.75	2.81	**35.53**	**22.68**
591-0640	97F8255	30.0	3.66	1.97	3.88	3.56	**43.63**	**27.85**
591-0645	97F8256	35.0	3.66	1.97	4.75	3.56	**48.66**	**31.06**
591-0650	97F8257	40.0	3.66	1.97	4.75	3.56	**52.11**	**33.26**
591-0655	97F8258	45.0	3.66	1.97	4.75	3.56	**55.47**	**35.41**

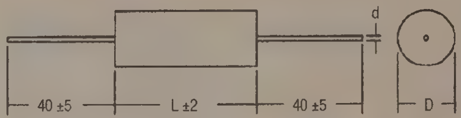
660 VAC

591-7000	27L6007	1.0	2.16	1.31	2.12	2.06	**7.42**	**5.94**
591-7005	27L6008	1.5	2.16	1.31	2.12	2.06	**8.01**	**6.41**
591-7010	27L6009	2.0	2.16	1.31	2.88	2.06	**8.53**	**6.83**
591-7015	27L6010	2.5	2.16	1.31	2.88	2.06	**9.04**	**7.23**
591-7020	27L6011	3.0	2.16	1.31	2.88	2.06	**11.61**	**9.29**
591-7025	27L6012	4.0	2.16	1.31	3.88	2.06	**11.76**	**9.41**
591-7030	27L6013	5.0	2.16	1.31	3.88	2.06	**13.60**	**10.88**
591-7035	27L6014	6.0	2.16	1.31	4.75	2.06	**14.92**	**11.94**
591-7040	27L6015	7.0	2.16	1.31	4.75	2.06	**15.80**	**12.64**
591-7045	27L6016	8.0	2.16	1.31	4.75	2.06	**16.61**	**13.29**
591-7050	27L6017	10.0	2.69	1.56	3.88	2.58	**19.77**	**15.81**
591-7055	27L6018	12.0	2.69	1.56	4.75	2.58	**22.05**	**17.64**
591-7060	27L6019	15.0	2.69	1.56	5.75	2.58	**25.80**	**20.64**
591-7065	27L6020	18.0	2.69	1.56	5.75	2.58	**30.06**	**24.05**
591-7070	27L6021	20.0	2.91	1.91	5.75	2.81	**31.90**	**25.52**
591-7075	27L6022	25.0	3.66	1.97	4.75	3.56	**36.46**	**29.17**
591-7080	27L6023	30.0	3.66	1.97	4.75	3.56	**40.72**	**32.57**
591-7085	27L6037	35.0	3.66	1.97	5.75	3.56	**44.32**	**35.46**

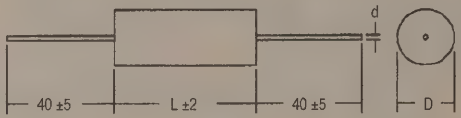
Snubber, High-Current DC and Switching Axial-Leaded Capacitors



40L Series

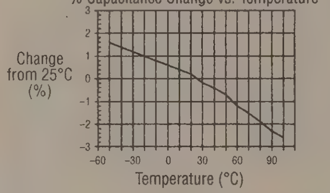


41L Series

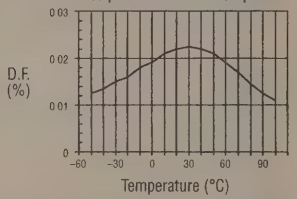


42L Series

% Capacitance Change vs. Temperature



% Dissipation Factor vs. Temperature



Specifications

40L Series. Available Capacitance Range: 0.47 to 6.8 µF. **Capacitance Tolerance:** ±10%. **Capacitance Variation with Temperature:** ±3% from –55°C to +105°C. **Operating Temperature:** –55°C to +105°C. **Storage Temperature:** –55°C to +105°C. **Dissipation Factor:** 0.1% maximum. **41L Series. Available Capacitance Range:** 0.68 to 3.0 µF. **Capacitance Tolerance:** ±5%. **Rated Voltage (VDC):** 250 V, 400 V, 600 V, 700 V. **Leads:** Tinned solid copper wire (medium lead content 5%). **Package Construction:** Polyester wrapping with epoxy resin end fill. **Flame Retardant:** Polyester coating as UL 510; epoxy resin as UL 94V1. **Operating Temperature:** –40°C to +70°C. **Storage Temperature:** –40°C to +85°C. **Dissipation Factor:** 5 × 10⁻⁴ at 1 KHz and 25°C. **42L Series. Available Capacitance Range:** 0.01 to 2.6 µF. **Capacitance Tolerance:** ±5%. **Rated Voltage (VDC):** 850 V, 1200 V, 2000 V, 3000 V. **Leads:** Tinned solid copper wire (medium lead content 5%). **Package Construction:** Polyester wrapping with epoxy resin end fill. **Flame Retardant:** Polyester coating as UL 510; epoxy resin as UL 94V1. **Operating Temperature:** –40°C to +70°C. **Storage Temperature:** –40°C to +85°C. **Dissipation Factor:** 5 × 10⁻⁴ at 1 KHz and 25°C.

40L Series — Oval Shape, Wrap and Fill

400 VDC

Stock No.	Mfr.'s Type	Cap. (µF)	Dimensions (In.)			EACH	
			T	W	L	1-24	24-49
591-8005	40L3472	0.47	0.28	0.47	1.25	**9.07**	**5.74**
591-8010	40L3682	0.68	0.30	0.53	1.25	**3.06**	**1.93**
591-8015	40L3101	1.00	0.39	0.59	1.25	**3.72**	**2.53**
591-8020	40L3151	1.50	0.48	0.69	1.25	**4.41**	**2.79**
591-8025	40L3201	2.00	0.48	0.69	1.25	**5.83**	**3.70**
591-8030	40L3221	2.20	0.56	0.83	1.25	**5.83**	**3.70**
591-8035	40L3331	3.30	0.69	0.93	1.25	**7.94**	**5.03**
591-8040	40L3471	4.70	0.64	0.88	1.75	**9.07**	**5.74**
591-8045	40L3681	6.80	0.67	0.90	2.25	**11.09**	**7.02**
591-8050	40L3100	10.00	0.70	1.05	2.25	**16.85**	**10.68**

600 VDC

591-8055	40L6472	0.47	0.46	0.69	1.25	**4.44**	**2.81**
591-8060	40L6682	0.68	0.55	0.79	1.25	**5.73**	**3.63**
591-8065	40L6101	1.00	0.67	0.91	1.25	**7.21**	**4.57**
591-8070	40L6151	1.50	0.73	0.97	1.50	**8.95**	**5.67**
591-8075	40L6221	2.20	0.64	0.88	2.20	**10.08**	**6.30**

41L Series — Round Shape, Wrap and Fill

250 VDC

Stock No.	Mfr.'s Type	Cap. (µF)	Dim. (In.)		EACH	
			D Max.	L	1-24	24-49
591-4005	41L2101	1.00	11.0	19	**1.50**	**1.00**
591-4010	41L2151	1.50	10.0	31	**2.30**	**1.54**
591-4015	41L2221	2.20	11.5	31	**2.23**	**1.49**
591-4020	41L2251	2.50	12.0	31	**2.25**	**1.51**
591-4025	41L2301	3.00	13.5	31	**2.49**	**1.67**
591-4030	41L2501	5.00	17.0	31	**3.68**	**2.46**
591-4035	41L2681	6.80	20.0	31	**4.84**	**3.24**
591-4040	41L2100	10.00	20.0	42	**6.29**	**4.21**
591-4045	41L2150	15.00	24.5	42	**9.92**	**6.64**
591-4050	41L2200	20.00	28.0	42	**15.00**	**10.04**
591-4055	41L2250	25.00	31.5	42	**16.34**	**10.94**
591-4060	41L2300	30.00	29.5	55	**19.12**	**12.80**

400 VDC

591-4065	41L4682	0.68	10.0	31	**1.69**	**1.13**
591-4070	41L4101	1.00	12.0	31	**2.06**	**1.38**
591-4075	41L4151	1.50	14.5	31	**2.37**	**1.59**
591-4080	41L4201	2.00	16.5	31	**3.27**	**2.19**
591-4085	41L4221	2.20	17.5	31	**3.51**	**2.35**
591-4090	41L4251	2.50	18.5	31	**3.61**	**2.41**
591-4100	41L4301	3.00	20.0	31	**3.87**	**2.59**
591-4105	41L4401	4.00	19.5	42	**4.21**	**2.82**
591-4110	41L4471	4.70	21.0	42	**4.48**	**3.01**
591-4115	41L4501	5.00	21.5	42	**4.72**	**3.16**
591-4120	41L4681	6.80	25.0	42	**6.78**	**4.54**
591-4125	41L4100	10.00	30.0	42	**8.95**	**5.99**
591-4130	41L4150	15.00	32.0	55	**10.29**	**6.89**

600 VDC

591-4135	41L6101	1.00	15.5	31	**3.51**	**2.35**
591-4140	41L6201	2.00	18.5	42	**3.99**	**2.67**
591-4145	41L6221	2.20	19.5	42	**4.19**	**2.80**
591-4150	41L6301	3.00	22.5	42	**4.24**	**2.84**
591-4155	41L6471	4.70	27.5	42	**8.47**	**5.67**
591-4160	41L6501	5.00	28.5	42	**7.87**	**5.27**
591-4165	41L6681	6.80	28.5	55	**8.59**	**5.75**
591-4170	41L6100	10.00	34.5	55	**9.44**	**6.32**

700 VDC

591-4175	41L7682	0.68	17.0	31	**3.63**	**2.43**
591-4180	41L7101	1.00	20.5	31	**3.75**	**2.51**
591-4185	41L7151	1.50	20.5	42	**3.99**	**2.67**
591-4190	41L7201	2.00	23.5	42	**4.11**	**2.75**
591-4195	41L7221	2.20	24.5	42	**4.31**	**2.88**
591-4200	41L7301	3.00	28.5	42	**4.36**	**2.92**
591-4205	41L7401	4.00	33.0	42	**6.41**	**4.29**
591-4210	41L7471	4.70	30.0	55	**8.83**	**5.91**
591-4215	41L7501	5.00	30.5	55	**8.11**	**5.43**

42L Series — Round Shape, Wrap and Fill

850 VDC

591-6005	42L1152	0.150	10.0	31	**3.17**	**2.12**
591-6010	42L1222	0.220	12.0	31	**3.39**	**2.27**
591-6015	42L1332	0.330	14.5	31	**3.73**	**2.49**
591-6020	42L1472	0.470	17.0	31	**4.28**	**2.87**
591-6025	42L1682	0.680	20.5	31	**4.91**	**3.29**
591-6030	42L1101	1.000	20.5	42	**5.74**	**3.84**
591-6035	42L1151	1.500	24.5	42	**7.21**	**4.83**
591-6040	42L1201	2.000	28.5	42	**8.49**	**5.69**
591-6045	42L1221	2.200	30.0	42	**8.62**	**5.77**
591-6050	42L1251	2.500	31.5	42	**9.92**	**6.64**

1200 VDC

591-6055	42L2102	0.100	14.0	31	**2.69**	**1.80**
591-6060	42L2152	0.150	17.0	31	**2.81**	**1.88**
591-6065	42L2222	0.220	20.5	31	**3.07**	**2.06**
591-6070	42L2332	0.330	19.5	42	**3.68**	**2.46**
591-6075	42L2472	0.470	23.0	42	**4.11**	**2.75**
591-6080	42L2682	0.680	27.5	42	**4.91**	**3.29**
591-6085	42L2101	1.000	33.5	42	**5.83**	**3.90**
591-6090	42L2121	1.200	29.0	55	**6.73**	**4.50**

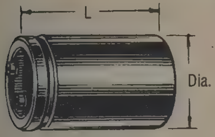
2000 VDC

591-6095	42L3223	0.022	10.5	31	**1.69**	**1.13**
591-6100	42L3333	0.033	12.5	31	**2.20**	**1.47**
591-6105	42L3473	0.047	14.5	31	**2.71**	**1.81**
591-6110	42L3683	0.068	17.0	31	**2.95**	**1.98**
591-6115	42L3102	0.100	20.5	31	**3.07**	**2.06**
591-6120	42L3152	0.150	19.5	42	**3.56**	**2.38**
591-6125	42L3222	0.220	23.5	42	**4.16**	**2.79**
591-6130	42L3332	0.330	28.5	42	**5.20**	**3.48**
591-6135	42L3472	0.470	33.5	42	**5.78**	**3.87**
591-6140	42L3562	0.560	29.0	55	**6.68**	**4.46**

3000 VDC

591-6145	42L4103	0.010	12.0	31	**1.82**	**1.22**
591-6150	42L4153	0.015	14.0	31	**2.25**	**1.51**
591-6155	42L4223	0.022	16.5	31	**2.69**	**1.80**
591-6160	42L4333	0.033	20.0	31	**3.05**	**2.04**
591-6165	42L4473	0.047	18.5	42	**3.36**	**2.25**
591-6170	42L4683	0.068	22.0	42	**3.92**	**2.62**
591-6175	42L4102	0.100	26.5	42	**4.57**	**3.06**
591-6180	42L4152	0.150	32.0	42	**5.32**	**3.56**

Computer Grade Capacitors

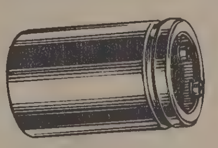


CGS Computer Grade Capacitors

High performance computer grade capacitor. Long life expectancy available in high or low post configurations. **Operating Temperature:** –40°C to + 85°C. Low ESR high ripple capabilities. **Voltage Range:** 10 WVDC 450 WVDC. **Tolerance:** –10% +75% up to 150 WVDC, –10% +50%, 200-450 WVDC.

Stock No.	Mfr.'s Type	WV DC	MFD	Case Size (In.) Dia. × L	EACH 1-24	25-49	50-99
857-0201	CGS183U010R2C	10	18000	$1\frac{3}{8} \times 2\frac{1}{8}$	**8.68**	**8.01**	**7.44**
857-0051	CGS153U016R2L	16	15000	$1\frac{3}{8} \times 2\frac{5}{8}$	**9.44**	**8.65**	**7.99**
857-0053	CGS233U016V3C	16	23000	$2 \times 3\frac{1}{8}$	**11.98**	**10.98**	**10.14**
857-0054	CGS253U016V2C	16	25000	$2 \times 2\frac{1}{8}$	**12.78**	**10.45**	**10.04**
857-0055	CGS343U016R4C	16	34000	$1\frac{3}{8} \times 4\frac{1}{8}$	**12.11**	**11.10**	**10.25**
857-0056	CGS383U016V3C	16	38000	$2 \times 3\frac{1}{8}$	**13.61**	**12.48**	**11.52**
857-0121	CGS503U016V3C	16	50000	$2 \times 3\frac{1}{8}$	**16.28**	**14.93**	**13.78**
857-0216	CGS553U016V3L	16	55000	$2 \times 3\frac{5}{8}$	**16.21**	**14.86**	**13.72**
857-0058	CGS703U016V4C	16	70000	$2 \times 4\frac{1}{8}$	**18.25**	**16.73**	**15.44**
857-0060	CGS114U016W4C	16	110000	$2\frac{1}{2} \times 4\frac{1}{8}$	**27.11**	**29.85**	**22.94**
857-0224	CGS214U016X5R	16	210000	$3 \times 5\frac{7}{8}$	**41.97**	**38.47**	**35.51**
857-0006	CGS562U025R3C	25	5600	$1\frac{3}{8} \times 3\frac{1}{8}$	**8.77**	**8.04**	**7.42**
857-0007	CGS892U025R3C	25	8900	$1\frac{3}{8} \times 3\frac{1}{8}$	**9.05**	**8.30**	**7.66**
857-0226	CGS103U025R3C	25	10000	$1\frac{3}{8} \times 3\frac{1}{8}$	**9.16**	**8.40**	**7.75**
857-0008	CGS123U025V3C	25	12000	$2 \times 3\frac{1}{8}$	**11.98**	**10.98**	**10.14**
857-0010	CGS203U025V3C	25	20000	$2 \times 3\frac{1}{8}$	**13.39**	**12.27**	**11.33**
857-0065	CGS283U025V3C	25	28000	$2 \times 3\frac{1}{8}$	**15.13**	**13.87**	**12.80**
857-0068	CGS573U025X5C	25	57000	$3 \times 5\frac{1}{8}$	**39.04**	**35.79**	**33.03**
857-0236	CGS653U025W4C	25	65000	$2\frac{1}{2} \times 4\frac{1}{8}$	**26.22**	**24.04**	**22.19**
857-0128	CGS153U030R4L	30	15000	$1\frac{3}{8} \times 4\frac{5}{8}$	**11.22**	**10.29**	**9.49**
857-0072	CGS303U030V4C	30	30000	$2 \times 4\frac{5}{8}$	**16.60**	**15.21**	**14.04**
857-0272	CGS103U035V2C	35	10000	$2 \times 2\frac{1}{8}$	**12.56**	**11.51**	**10.62**
857-0274	CGS123U035R4C	35	12000	$1\frac{3}{8} \times 4\frac{1}{8}$	**10.77**	**9.88**	**9.12**
857-0276	CGS213U035V3C	35	21000	$2 \times 3\frac{1}{8}$	**14.78**	**13.55**	**12.51**
857-0280	CGS703U035X4C	35	70000	$3 \times 4\frac{1}{8}$	**39.61**	**36.31**	**33.52**
857-0012	CGS222U040R2C	40	2200	$1\frac{3}{8} \times 2\frac{1}{8}$	**8.20**	**7.51**	**6.94**
857-0047	CGS272U040R2C	40	2700	$1\frac{3}{8} \times 2\frac{1}{8}$	**8.20**	**7.51**	**6.94**
857-0013	CGS422U040R3C	40	4200	$1\frac{3}{8} \times 3\frac{1}{8}$	**9.48**	**8.69**	**8.02**
857-0014	CGS512U040R3C	40	5100	$1\frac{3}{8} \times 3\frac{1}{8}$	**9.09**	**8.33**	**7.69**
857-0073	CGS602U040R3C	40	6000	$1\frac{3}{8} \times 3\frac{1}{8}$	**9.92**	**9.10**	**8.40**
857-0130	CGS902U040R4C	40	9000	$1\frac{3}{8} \times 4\frac{1}{8}$	**11.26**	**10.32**	**9.53**
857-0076	CGS932U040V3C	40	9300	$2 \times 3\frac{1}{8}$	**13.00**	**11.92**	**11.00**
857-0015	CGS113U040V3C	40	11000	$2 \times 3\frac{1}{8}$	**13.45**	**12.33**	**11.38**
857-0077	CGS133U040V4C	40	13000	$2 \times 4\frac{1}{8}$	**14.21**	**13.02**	**12.02**
857-0016	CGS173U040V4C	40	17000	$2 \times 4\frac{1}{8}$	**15.71**	**14.40**	**13.29**
857-0078	CGS203U040V5L	40	20000	$2 \times 5\frac{5}{8}$	**18.29**	**16.76**	**15.47**
857-0131	CGS223U040V3C	40	22000	$2 \times 3\frac{1}{8}$	**16.21**	**14.86**	**13.72**
857-0133	CGS353U040V5L	40	35000	$2 \times 5\frac{5}{8}$	**26.11**	**23.94**	**22.09**
857-0036	CGS403U040W4C	40	40000	$2\frac{1}{2} \times 4\frac{1}{8}$	**32.40**	**29.70**	**27.41**
857-0282	CGS473U040W4C	40	47000	$2\frac{1}{2} \times 4\frac{1}{8}$	**34.90**	**32.02**	**29.56**
857-0081	CGS162U050R2C	50	1600	$1\frac{3}{8} \times 2\frac{1}{8}$	**8.86**	**8.13**	**7.50**
857-0017	CGS222U050R2C	50	2200	$1\frac{3}{8} \times 2\frac{1}{8}$	**8.20**	**7.51**	**6.94**
857-0083	CGS292U050R3C	50	2900	$1\frac{3}{8} \times 3\frac{1}{8}$	**9.12**	**8.36**	**7.72**
857-0018	CGS412U050R3C	50	4100	$1\frac{3}{8} \times 3\frac{1}{8}$	**9.92**	**9.10**	**8.40**
857-0084	CGS492U050R3L	50	4900	$1\frac{3}{8} \times 3\frac{5}{8}$	**10.33**	**9.47**	**8.74**
857-0134	CGS502U050R3C	50	5000	$1\frac{3}{8} \times 3\frac{1}{8}$	**10.68**	**9.79**	**9.04**
857-0086	CGS652U050V3C	50	6500	$2 \times 3\frac{1}{8}$	**13.04**	**11.95**	**11.03**
857-0284	CGS682U050R3C	50	6800	$1\frac{3}{8} \times 3\frac{1}{8}$	**10.77**	**9.88**	**9.12**
857-0286	CGS752U050R4C	50	7500	$1\frac{3}{8} \times 4\frac{1}{8}$	**11.26**	**10.22**	**9.53**
857-0021	CGS962U050V4C	50	9600	$2 \times 4\frac{1}{8}$	**14.38**	**13.18**	**12.17**
857-0136	CGS103U050R4C	50	10000	$1\frac{3}{8} \times 4\frac{1}{8}$	**11.83**	**10.85**	**10.01**
857-0088	CGS153U050V4C	50	15000	$2 \times 4\frac{1}{8}$	**16.28**	**14.93**	**13.78**
857-0139	CGS203U050V4C	50	20000	$2 \times 4\frac{1}{8}$	**18.69**	**17.14**	**15.82**
857-0288	CGS483U050X4C	50	48000	$3 \times 4\frac{1}{8}$	**44.55**	**40.83**	**37.69**
857-0290	CGS603U050X5C	50	60000	$3 \times 5\frac{1}{8}$	**50.96**	**46.72**	**43.12**
857-0292	CGS104U050X8L	50	100000	$3 \times 8\frac{5}{8}$	**79.49**	**72.86**	**67.26**
857-0089	CGS152U075R3C	75	1500	$1\frac{3}{8} \times 3\frac{1}{8}$	**10.85**	**9.95**	**9.18**
857-0091	CGS292U075R3C	75	2900	$1\frac{3}{8} \times 3\frac{1}{8}$	**9.53**	**8.74**	**8.07**
857-0092	CGS422U075R4C	75	4200	$1\frac{3}{8} \times 4\frac{1}{8}$	**10.87**	**9.96**	**9.20**
857-0023	CGS482U075V3C	75	4800	$2 \times 3\frac{1}{8}$	**16.78**	**15.38**	**14.20**
857-0142	CGS103U075V3C	75	10000	$2 \times 3\frac{1}{8}$	**17.99**	**16.49**	**15.22**
857-0143	CGS103U075V4C	75	10000	$2 \times 4\frac{1}{8}$	**18.29**	**16.76**	**15.47**
857-0294	CGS153U075V5L	75	15000	$2 \times 5\frac{5}{8}$	**28.26**	**25.91**	**23.96**
857-0296	CGS253U075W5L	75	25000	$2\frac{1}{2} \times 5\frac{5}{8}$	**42.08**	**38.75**	**35.61**
857-0144	CGS373U075X5L	75	37000	$3 \times 5\frac{5}{8}$	**49.05**	**44.97**	**41.51**
857-0095	CGS122U100R3C	100	1200	$1\frac{3}{8} \times 3\frac{1}{8}$	**9.48**	**8.69**	**8.02**
857-0024	CGS402U100V4C	100	4000	$2 \times 4\frac{1}{8}$	**15.49**	**14.20**	**13.10**
857-0252	CGS902U100V5L	100	9000	$2 \times 5\frac{5}{8}$	**22.89**	**20.98**	**19.36**
857-0145	CGS103U100W4C	100	10000	$2\frac{1}{2} \times 4\frac{1}{8}$	**31.80**	**28.88**	**26.66**
857-0254	CGS153U100X4C	100	15000	$3 \times 4\frac{1}{8}$	**35.83**	**32.84**	**30.32**
857-0098	CGS401U150R2C	150	400	$1\frac{1}{8} \times 2\frac{1}{8}$	**8.64**	**7.92**	**7.31**
857-0100	CGS352U150V5L	150	3500	$2 \times 5\frac{5}{8}$	**20.21**	**18.53**	**17.10**
857-0101	CGS572U150X4C	150	5700	$3 \times 4\frac{1}{8}$	**32.94**	**30.19**	**27.87**
857-0146	CGS872U150X5R	150	8700	$3 \times 5\frac{7}{8}$	**43.66**	**40.02**	**36.94**
857-0102	CGS591T200R3C	200	590	$1\frac{3}{8} \times 3\frac{1}{8}$	**10.27**	**9.42**	**8.69**
857-0103	CGS102T200R4C	200	1000	$1\frac{3}{8} \times 4\frac{1}{8}$	**44.98**	**40.02**	**34.98**
857-0148	CGS272T200V4C	200	2700	$2 \times 4\frac{1}{8}$	**24.03**	**22.03**	**20.34**
857-0298	CGS462T200X4C	200	4600	$3 \times 4\frac{1}{8}$	**43.21**	**39.61**	**36.56**
857-0300	CGS502T200W5C	200	5000	$2\frac{1}{2} \times 5\frac{1}{8}$	**49.50**	**45.37**	**41.88**
857-0302	CGS742T200X5L	200	7400	$3 \times 5\frac{5}{8}$	**67.47**	**61.85**	**57.09**
857-0304	CGS772T200X5L	200	7700	$3 \times 5\frac{5}{8}$	**68.38**	**62.63**	**57.81**
857-0042	CGS201T250R2C	250	200	$1\frac{3}{8} \times 2\frac{1}{8}$	**9.38**	**8.60**	**7.94**
857-0306	CGS251T250R2C	250	250	$1\frac{3}{8} \times 2\frac{1}{8}$	**9.66**	**8.86**	**8.18**
857-0028	CGS551T250R4C	250	550	$1\frac{3}{8} \times 4\frac{1}{8}$	**12.43**	**11.39**	**10.51**
857-0030	CGS122T250V3C	250	1200	$2 \times 3\frac{1}{8}$	**17.90**	**16.41**	**15.14**
857-0149	CGS252T250V5L	250	2500	$2 \times 5\frac{5}{8}$	**27.69**	**25.38**	**23.43**
857-0308	CGS422T250W5L	250	4200	$2\frac{1}{2} \times 5\frac{5}{8}$	**50.48**	**46.27**	**42.71**
857-0150	CGS602T250X5L	250	6000	$3 \times 5\frac{5}{8}$	**61.20**	**56.10**	**51.78**
857-0152	CGS251T350R3C	350	250	$1\frac{3}{8} \times 3\frac{1}{8}$	**11.07**	**10.17**	**9.38**
857-0106	CGS381T350R4C	350	380	$1\frac{3}{8} \times 4\frac{1}{8}$	**13.32**	**12.21**	**11.27**
857-0310	CGS651T350V3C	350	650	$2 \times 3\frac{1}{8}$	**18.79**	**17.22**	**15.90**
857-0153	CGS102T350V4C	350	1000	$2 \times 4\frac{1}{8}$	**25.87**	**22.82**	**20.69**
857-0156	CGS332T350X5L	350	3300	$3 \times 5\frac{5}{8}$	**68.10**	**62.42**	**57.62**
857-0312	CGS750T450R2C	450	75	$1\frac{3}{8} \times 2\frac{1}{8}$	**8.99**	**8.25**	**7.61**
857-0107	CGS101T450R2C	450	100	$1\frac{3}{8} \times 2\frac{1}{8}$	**9.53**	**8.74**	**8.07**
857-0157	CGS141T450R3C	450	140	$1\frac{3}{8} \times 3\frac{1}{8}$	**11.09**	**10.24**	**9.50**
857-0260	CGS211T450R4C	450	210	$1\frac{3}{8} \times 4\frac{1}{8}$	**13.00**	**11.92**	**11.00**
857-0108	CGS321T450V3C	450	320	$2 \times 3\frac{1}{8}$	**22.22**	**20.37**	**18.87**
857-0159	CGS351T450R5C	450	350	$1\frac{3}{8} \times 5\frac{1}{8}$	**18.56**	**17.02**	**15.71**
857-0160	CGS401T450R5L	450	400	$1\frac{3}{8} \times 5\frac{5}{8}$	**18.34**	**16.81**	**15.52**
857-0161	CGS451T450V3C	450	450	$2 \times 3\frac{1}{8}$	**20.25**	**18.56**	**17.14**
857-0109	CGS481T450V4C	450	480	$2 \times 4\frac{1}{8}$	**21.46**	**19.67**	**18.16**
857-0162	CGS651T450V4C	450	650	$2 \times 4\frac{1}{8}$	**25.63**	**23.69**	**21.69**
857-0262	CGS801T450V4L	450	800	$2 \times 4\frac{5}{8}$	**30.80**	**27.57**	**25.45**
857-0264	CGS102T450W4C	450	1000	$2\frac{1}{2} \times 4\frac{1}{8}$	**44.60**	**40.88**	**37.74**
857-0164	CGS152T450X5C	450	1500	$3 \times 5\frac{1}{8}$	**52.26**	**47.91**	**44.22**
857-0166	CGS182T450X5R	450	1800	$3 \times 5\frac{7}{8}$	**58.53**	**53.65**	**49.52**
857-0268	CGS202T450X5C	450	2000	$3 \times 5\frac{1}{8}$	**63.33**	**58.05**	**53.76**
857-0165	CGS242T450X5L	450	2400	$3 \times 5\frac{5}{8}$	**84.57**	**77.52**	**71.56**

High Capacitance Computer Grade Capacitors



These computer grade capacitors have very high capacitance and high reliability. They are suitable for use in most AC drives and UPS applications. They have high ripple current. **Operating Temperature:** –40 to +85°C. **Tolerance:** –10% to +50%.

Stock No.	Mfr.'s Type	VDC	MFD	Dimensions Dia.	Length	EACH 1-24	25-49
857-1000	CGH172T250V2L	250	1700	2.000	2.625	**29.78**	**27.30**
857-1002	CGH292T250V3L	250	2900	2.000	3.625	**53.36**	**49.26**
857-1004	CGH412T250V4L	250	4100	2.000	4.625	**52.70**	**48.31**
857-1006	CGH502T250W3L	250	5000	2.500	3.625	**62.85**	**57.61**
857-1008	CGH532T250V5L	250	5300	2.000	5.625	**68.99**	**63.24**
857-1010	CGH702T250W4L	250	7000	2.500	4.625	**94.71**	**86.82**
857-1012	CGH742T250X3L	250	7400	3.000	3.625	**104.06**	**95.39**
857-1014	CGH902T250W5L	250	9000	2.500	5.625	**119.54**	**109.58**
857-1016	CGH103T250X4L	250	10000	3.000	4.625	**131.39**	**120.44**
857-1018	CGH133T250X5L	250	13000	3.000	5.625	**174.44**	**159.90**
857-1020	CGH223T250X8L	250	22000	3.000	8.625	**292.87**	**268.46**
857-1022	CGH102T350V2L	350	1000	2.000	2.625	**45.88**	**42.06**
857-1024	CGH172T350V3L	350	1700	2.000	3.625	**46.33**	**42.47**
857-1026	CGH242T350V4L	350	2400	2.000	4.625	**60.35**	**55.32**
857-1030	CGH312T350V5L	350	3100	2.000	5.625	**68.15**	**62.48**
857-1032	CGH382T350W4L	350	3800	2.500	4.625	**73.43**	**67.35**
857-1042	CGH102T450V3L	450	1000	2.000	3.625	**45.88**	**42.06**
857-1044	CGH142T450V4L	450	1400	2.000	4.625	**59.38**	**54.43**
857-1046	CGH172T450W3L	450	1700	2.500	3.625	**70.73**	**64.84**
857-1048	CGH182T450V5L	450	1800	2.000	5.625	**72.01**	**66.01**
857-1050	CGH242T450W4L	450	2400	2.500	4.625	**92.49**	**84.78**
857-1052	CGH252T450X3L	450	2500	3.000	3.625	**105.30**	**96.53**
857-1054	CGH312T450W5L	450	3100	2.500	5.625	**115.63**	**106.00**
857-1056	CGH362T450X4L	450	3600	3.000	4.625	**133.21**	**122.11**
857-1058	CGH462T450X5L	450	4600	3.000	5.625	**164.90**	**151.16**
857-1060	CGH772T450X8L	450	7700	3.000	8.625	**266.42**	**244.22**

Mounting Hardware

Mounting Rings

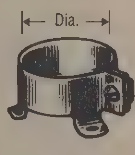
Weight: 1 oz.

Stock No.	Mfr.'s Type	Dia. (In.)	EACH 1-49	50-99	100-Up
852-7532	VR3A	$1\frac{3}{8}$-$1\frac{7}{16}$	**1.32**	**1.18**	**.89**
852-7535	VR6A	$1\frac{3}{4}$-$1\frac{13}{16}$	**1.73**	**1.33**	**1.06**
852-7536	VR8A	2-$2\frac{1}{16}$	**1.63**	**1.29**	**1.08**
852-7538	VR10A	$2\frac{1}{2}$-$2\frac{9}{16}$	**1.42**	**1.18**	**1.09**
852-7540	VR12A	3-$3\frac{1}{8}$	**2.05**	**1.64**	**1.09**

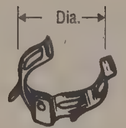
Universal Clamps

Weight: 1 oz.

Stock No.	Mfr.'s Type	Dia. (In.)	EACH 1-49	50-99	100-Up
852-6020	TH23	1-$1\frac{1}{16}$	**1.27**	**.96**	**.77**
852-6021	TH25	$1\frac{3}{8}$-$1\frac{7}{16}$	**1.27**	**.96**	**.77**

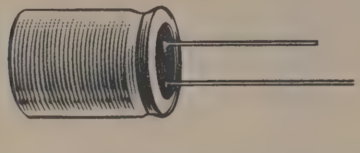


VR



TH

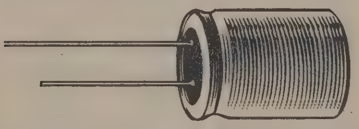
Type SKR Miniature Aluminum Electrolytic Capacitors



The SKR series is a radial lead, high CV miniature aluminum electrolytic capacitor which is smaller in case size than other general use products. This series is suitable for those electronic products requiring small size. It is suitable for consumer electronic equipment, such as stereo radios, TV sets, etc. The aluminum case is enclosed in a vinyl sleeve. **Tolerance:** ±20%. **Operating Temperature Range:** –40 ~ +85°C.

Stock No.	Mfr.'s Type	MFD	VDC	Size (mm)	EACH	
					1-49	50-99
852-1500	SKR470M1AD11	47	10	5 × 11	.15	.14
852-1502	SKR101M1AD11	100	10	5 × 11	.17	.16
852-1504	SKR221M1AE11V	220	10	6.3 × 11	.16	.11
852-1506	SKR471M1AF11V	470	10	8 × 11	.22	.18
852-1508	SKR102M1AG16V	1000	10	10 × 16	.33	.27
852-1510	SKR222M1AJ21V	2200	10	13 × 21	.69	.55
852-1512	SKR332M1AJ21V	3300	10	13 × 21	.88	.71
852-1514	SKR472M1AK25V	4700	10	16 × 25	1.12	.90
852-6022	SKR682M1AK32V	6800	10	16 × 32	1.65	1.32
852-6024	SKR103M1AL35V	10000	10	18 × 35	2.26	1.81
852-6026	SKR153M1AL42V	15000	10	18 × 42	2.82	2.25
852-1516	SKR220M1CD11	22	16	5 × 11	.10	.09
852-1518	SKR330M1CD11	33	16	5 × 11	.10	.09
852-1520	SKR470M1CD11	47	16	5 × 11	.10	.09
852-1522	SKR101M1CE11V	100	16	6.3 ×11	.14	.11
852-1524	SKR221M1CF11V	220	16	8 × 11	.23	.15
852-1526	SKR331M1CF11V	330	16	8 × 11	.29	.21
852-1528	SKR471M1CG13V	470	16	10 × 13	.33	.24
852-1530	SKR102M1CG21V	1000	16	10 × 21	.41	.33
852-1532	SKR222M1CJ21V	2200	16	13 × 21	.91	.75
852-1534	SKR332M1CJ26V	3300	16	13 × 26	.99	.81
852-1536	SKR472M1CK32V	4700	16	16 × 32	1.69	1.36
852-1538	SKR682M1CL35V	6800	16	16 × 35	2.29	1.83
852-1540	SKR103M1CL42V	10000	16	18 × 42	2.70	2.18
852-1542	SKR100M1ED11	10	25	5 × 11	.10	.07
852-1544	SKR220M1ED11	22	25	5 × 11	.10	.09
852-1546	SKR330M1ED11	33	25	5 × 11	.10	.09
852-1548	SKR470M1ED11	47	25	5 × 11	.10	.09
852-1550	SKR101M1EE11V	100	25	6.3 × 11	.22	.18
852-1552	SKR221M1EF11V	220	25	8 × 11	.24	.17
852-1554	SKR331M1EG13V	330	25	10 × 13	.34	.23
852-1556	SKR471M1EG16V	470	25	10 × 16	.40	.30
852-1558	SKR102M1EJ21V	1000	25	13 × 21	.69	.46
852-1560	SKR222M1EJ26V	2200	25	13 × 26	1.09	.80
852-1562	SKR332M1EK32V	3300	25	16 × 32	1.59	1.18
852-1564	SKR472M1EL35V	4700	25	18 × 35	1.97	1.53
852-1566	SKR100M1VD11	10	35	5 × 11	.20	.15
852-1568	SKR220M1VD11	22	35	5 × 11	.11	.09
852-1570	SKR330M1VD11	33	35	5 × 11	.11	.09
852-1572	SKR470M1VE11V	47	35	6.3 × 11	.14	.12
852-1574	SKR101M1VF11V	100	35	8 × 11	.25	.16
852-1576	SKR221MVG13V	220	35	10 × 13	.41	.27
852-1578	SKR331M1VG16	330	35	10 × 16	.41	.30
852-1580	SKR471M1VG21V	470	35	10 × 21	.52	.38
852-1582	SKR102M1VJ21V	1000	35	13 × 21	.93	.62
852-1584	SKR222M1VK32V	2200	35	16 × 32	1.78	1.19
852-1586	SKR332M1VL35V	3300	35	18 × 35	2.74	1.99
852-1588	SKR472M1VL42V	4700	35	18 × 42	3.13	2.30
852-1590	SKR010M1HD11	1	50	5 × 11	.11	.09
852-1592	SKR2R2M1HD11	2.2	50	5 × 11	.11	.09
852-1594	SKR3R3M1HD11	3.3	50	5 × 11	.11	.09
852-1596	SKR4R7M1HD11	4.7	50	5 × 11	.11	.09
852-1598	SKR100M1HD11	10	50	5 × 11	.11	.09
852-1600	SKR220M1HD11	22	50	5 × 11	.11	.09
852-1602	SKR330M1HE11V	33	50	6.3 × 11	.14	.10
852-1604	SKR470M1HE11V	47	50	6.3 × 11	.16	.12
852-1606	SKR101M1HF11V	100	50	8 × 11	.32	.24
852-1608	SKR221M1HG16V	220	50	10 × 16	.44	.32
852-1610	SKR331M1HG21V	330	50	10 × 21	.56	.41
852-1612	SKR471M1HJ21V	470	50	13 × 21	.98	.72
852-1614	SKR102M1HK25V	1000	50	16 × 25	1.33	.98
852-1616	SKR222M1HL35V	2200	50	18 × 35	2.42	1.77
852-1618	SKR332M1HL42V	3300	50	18 × 42	4.18	3.14
852-1620	SKR4R7M1JD11	4.7	63	5 × 11	.11	.09
852-1622	SKR100M1JD11	10	63	5 × 11	.11	.09
852-1624	SKR220M1JE11V	22	63	6.3 × 11	.33	.24
852-1626	SKR330M1JE11V	33	63	6.3 × 11	.15	.33
852-1628	SKR470M1JF11V	47	63	8 × 11	.23	.16
852-1630	SKR101M1JG13V	100	63	10 × 13	.36	.27
852-1632	SKR221M1JG21V	220	63	10 × 21	.54	.40
852-1634	SKR331M1JJ21V	330	63	13 × 21	.74	.57
852-1636	SKR471M1JJ26V	470	63	13 × 26	.98	.73
852-1638	SKR102M1JK3V	1000	63	16 × 32	1.80	1.35
852-1640	SKRR47M2AD11	0.47	100	5 × 11	.10	.08
852-1642	SKR010M2AD11	1	100	5 × 11	.10	.08
852-1644	SKR2R2M2AD11	2.2	100	5 × 11	.10	.08
852-1648	SKR4R7M2AD11	4.7	100	5 × 11	.10	.09
852-1650	SKR100M2AE11V	10	100	6.3 × 11	.15	.11
852-1652	SKR220M2AF11V	22	100	8 × 11	.23	.17
852-1654	SKR330M2AG13V	33	100	10 × 13	.38	.29
852-1656	SKR470M2AG16V	47	100	10 × 16	.39	.30
852-1658	SKR101M2AJ21V	100	100	13 × 21	.68	.51
852-1660	SKR221M2AK25V	220	100	16 × 25	1.29	.96
852-1662	SKR331M2AK25V	330	100	16 × 25	1.70	1.28
852-1664	SKR471M2AK32V	470	100	16 × 32	1.87	1.40
852-6028	SKR010M2DE11V	1	200	6.3 × 11	.18	.13
852-6030	SKR2R2M2DE11V	2.2	200	6.3 × 11	.18	.13
852-6032	SKR3R3M2DE11V	3.3	200	6.3 × 11	.20	.14
852-6034	SKR4R7M2DF11V	4.7	200	8 × 11	.29	.21
852-6036	SKR100M2DG13V	10	200	10 × 13	.39	.30
852-6038	SKR220M2DG21V	22	200	10 × 21	.59	.44
852-6040	SKR330M2DJ21V	33	200	13 × 21	.81	.61
852-6042	SKR470M2DJ21V	47	200	13 × 21	1.06	.80
852-6044	SKR101M2DK25V	100	200	16 × 25	1.78	1.34
852-6046	SKR221M2DL42V	220	200	18 × 42	3.56	2.64
852-6048	SKR010M2EE11V	1	250	6.3 × 11	.18	.13
852-6050	SKR2R2M2EE11V	2.2	250	6.3 × 11	.19	.14
852-6052	SKR3R3M2EF11V	3.3	250	8 × 11	.31	.24
852-6054	SKR4R7M2EF11V	4.7	250	8 × 11	.32	.24
852-6056	SKR100M2EG16V	10	250	10 × 16	.45	.34
852-6058	SKR220M2EJ21V	22	250	13 × 21	.87	.65
852-6060	SKR330M2EJ21V	33	250	13 × 21	.94	.70
852-6062	SKR470M2EJ26V	47	250	13 × 26	1.17	.88
852-6064	SKR101M2EK32V	100	250	16 × 32	2.18	1.64
852-6066	SKR010M2VF11V	1	350	8 × 11	.24	.18
852-6068	SKR2R2M2VF11V	2.2	350	8 × 11	.30	.22
852-6070	SKR3R3M2VG13V	3.3	350	10 × 13	.39	.30
852-6072	SKR4R7M2VG13V	4.7	350	10 × 13	.44	.33
852-6074	SKR100M2VG21V	10	350	10 × 21	.67	.50
852-6076	SKR220M2VJ21V	22	350	13 × 21	1.12	.84
852-6078	SKR330M2VJ26V	33	350	13 × 26	1.55	1.16
852-6080	SKR470M2VK25V	47	350	16 × 25	2.12	1.60
852-6082	SKR101M2VL35V	100	350	18 × 35	3.83	2.87
852-6084	SKR010M2WF11V	1	450	8 × 11	.28	.21
852-6086	SKR2R2M2WG13V	2.2	450	10 × 13	.40	.30
852-6088	SKR3R3M2WG16V	3.3	450	10 × 16	.44	.34
852-6090	SKR4R7M2WG18V	4.7	450	10 × 18	.57	.42
852-6092	SKR100M2WJ21V	10	450	13 × 21	.96	.72
852-6094	SKR220M2WK25V	22	450	16 × 25	1.79	1.35
852-6096	SKR330M2WK32V	33	450	16 × 32	2.40	1.80
852-6098	SKR470M2WL35V	47	450	18 × 35	3.22	2.42

Type TKR Miniature High Temperature Electrolytic Capacitors



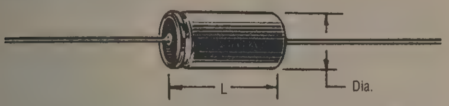
The TKR series is a radial lead, high temperature, general use miniature electrolytic capacitor. The TKR series is suitable for consumer electronic equipment, telecommunication equipment and general industry products requiring high temperatures. The aluminum case is enclosed in a vinyl sleeve. **Tolerance:** ±20%. **Operating Temperature Range:** –40 ~ +105°C.

Stock No.	Mfr.'s Type	MFD	VDC	Size (mm)	EACH	
					1-49	50-99
852-1700	TKR330M1CD11	33	16	5 × 11	.13	.10
852-1702	TKR470M1CD11	47	16	5 × 11	.12	.09
852-1704	TKR101M1CE11V	100	16	6.3 × 11	.14	.11
852-1706	TKR221M1CF11V	220	16	8 × 11	.24	.18
852-1708	TKR331M1CF11V	330	16	8 × 11	.35	.26
852-1710	TKR471M1CG13V	470	16	10 × 13	.36	.27
852-1712	TKR102M1CG21V	1000	16	10 × 21	.54	.40
852-1714	TKR222M1CJ21V	2200	16	13 × 21	.95	.71
852-1716	TKR332M1CJ26V	3300	16	13 × 26	1.27	.95
852-1718	TKR472M1CK32V	4700	16	16 × 32	2.07	1.55
852-1720	TKR682M1CL35V	6800	16	18 × 35	2.40	1.80
852-1722	TKR220M1ED11	22	25	5 × 11	.11	.08
852-1724	TKR330M1ED11	33	25	5 × 11	.13	.10
852-1726	TKR470M1ED11	47	25	5 × 11	.13	.10
852-1728	TKR101M1EE11V	100	25	6.3 × 11	.19	.14
852-1730	TKR221M1EF11V	220	25	8 × 11	.77	.57
852-1732	TKR331M1EG13V	330	25	10 × 13	.42	.32
852-1734	TKR471M1EG16V	470	25	10 × 16	.44	.33
852-1736	TKR102M1EJ21V	1000	25	13 × 21	.79	.59
852-1738	TKR222M1EJ26V	2200	25	13 × 26	1.28	.96
852-1740	TKR332M1EK32V	3300	25	16 × 32	2.14	1.65
852-1742	TKR472M1EL35V	4700	25	18 × 35	2.43	1.82
852-1744	TKR220M1VD11	22	35	5 × 11	.14	.11
852-1746	TKR330M1VD11	33	35	5 × 11	.13	.10
852-1748	TKR470M1VE11V	47	35	6.3 × 11	.18	.13
852-1750	TKR101M1VF11V	100	35	8 × 11	.25	.19
852-1752	TKR221M1VG13V	220	35	10 × 13	.36	.27
852-1754	TKR331M1VG16V	330	35	10 × 16	.48	.36
852-1756	TKR471M1VG21V	470	35	10 × 21	.57	.42
852-1758	TKR102M1VJ21V	1000	35	13 × 21	.98	.73
852-1760	TKR222M1VK32V	2200	35	16 × 32	1.83	1.37
852-1762	TKR332M1VL35V	3300	35	18 × 35	3.10	2.33
852-1764	TKR010M1HD11	1	50	5 × 11	.11	.08
852-1766	TKR2R2M1HD11	2.2	50	5 × 11	.11	.08
852-1768	TKR3R3M1HD11	3.3	50	5 × 11	.11	.08
852-1770	TKR4R7M1HD11	4.7	50	5 × 11	.11	.08
852-1772	TKR100M1HD11	10	50	5 × 11	.11	.08
852-1774	TKR220M1HD11	22	50	5 × 11	.14	.11
852-1776	TKR330M1HE11V	33	50	6.3 × 11	.21	.16
852-1778	TKR470M1HE11V	47	50	6.3 × 11	.21	.16
852-1780	TKR101M1HF11V	100	50	8 × 11	.30	.24
852-1782	TKR221M1HG16V	220	50	10 × 16	.45	.34
852-1784	TKR331M1HG21V	330	50	10 × 21	.67	.50
852-1786	TKR471M1HJ21V	470	50	13 × 21	.82	.61
852-1788	TKR102M1HK25V	1000	50	16 × 25	1.45	1.09
852-1789	TKR222M1HL35V	2200	50	18 × 35	2.74	2.05
852-1790	TKR010M2AD11	1	100	5 × 11	.12	.09
852-1791	TKR2R2M2AD11	2.2	100	5 × 11	.13	.10
852-1792	TKR3R3M2AD11	3.3	100	5 × 11	.13	.10
852-1793	TKR4R7M2AD11	4.7	100	5 × 11	.14	.11
852-1794	TKR100M2AE11V	10	100	6.3 × 11	.22	.16
852-1795	TKR220M2AF11V	22	100	8 × 11	.29	.21
852-1796	TKR330M2AG13V	33	100	10 × 13	.37	.27
852-1797	TKR470M2AG16V	47	100	10 × 16	.42	.32
852-1798	TKR101M2AJ21V	100	100	13 × 21	.67	.54
852-1799	TKR221M2AK25V	220	100	16 × 25	1.37	1.03
852-6102	TKR331M2AK25V	330	100	16 × 25	1.70	1.27
852-6104	TKR010M2DE11V	1	200	6.3 × 11	.18	.13
852-6106	TKR2R2M2DE11V	2.2	200	6.3 × 11	.18	.13
852-6108	TKR3R3M2DE11V	3.3	200	6.3 × 11	.21	.16
852-6110	TKR4R7M2DF11V	4.7	200	8 × 11	.31	.23
852-6112	TKR100M2DG13V	10	200	10 × 13	.43	.32
852-6114	TKR220M2DG21V	22	200	10 × 21	.61	.45
852-6116	TKR330M2DJ21V	33	200	13 × 21	1.01	.75
852-6118	TKR470M2DJ21V	47	200	13 × 21	1.14	.86
852-6120	TKR101M2DK25V	100	200	16 × 25	1.93	1.44
852-6122	TKR221M2DL42V	220	200	18 × 42	3.66	2.72
852-6124	TKR010M2EE11V	1	250	6.3 × 11	.18	.13
852-6126	TKR2R2M2EE11V	2.2	250	6.3 × 11	.21	.15
852-6128	TKR3R3M2EF11V	3.3	250	8 × 11	.35	.26
852-6130	TKR4R7M2EF11V	4.7	250	8 × 11	.34	.26
852-6132	TKR100M2EG16V	10	250	10 × 16	.49	.37
852-6134	TKR220M2EJ21V	22	250	13 × 21	.93	.70
852-6136	TKR330M2EJ21V	33	250	13 × 21	1.01	.76
852-6138	TKR470M2EJ26V	47	250	13 × 26	1.27	.94
852-6140	TKR101M2EK32V	100	250	16 × 32	2.36	1.74
852-6142	TKR101M2VL42V	100	300	18 × 42	3.82	2.90
852-6144	TKR010M2VF11V	1	350	8 × 11	.25	.18
852-6148	TKR2R2M2VF11V	2.2	350	8 × 11	.33	.24
852-6166	TKR3R3M2VG13V	3.3	350	10 × 13	.41	.30
852-6150	TKR4R7M2VG13V	4.7	350	10 × 13	.46	.34
852-6152	TKR100M2VG21V	10	350	10 × 21	.72	.54
852-6154	TKR220M2VJ26V	22	350	13 × 26	1.12	.86
852-6156	TKR330M2VK25V	33	350	16 × 25	1.67	1.25
852-6158	TKR470M2VK35V	47	350	16 × 35	2.18	1.64
852-6160	TKR010M2GF11V	1	400	8 × 11	.25	.18
852-6162	TKR2R2M2GG13V	2.2	400	18 × 13	.37	.28
852-6164	TKR3R3M2GG13V	3.3	400	10 × 13	.41	.32
852-6168	TKR4R7M2GG16V	4.7	400	10 × 16	.54	.40
852-6170	TKR100M2GJ21V	10	400	13 × 21	.91	.68
852-6172	TKR220M2GJ26V	22	400	13 × 26	1.46	1.09
852-6174	TKR330M2GK32V	33	400	16 × 32	1.85	1.43
852-6176	TKR470M2GL35V	47	400	18 × 35	2.52	1.89

Axial Electrolytic Capacitors and Polyester Radial Leads

Aluminum Electrolytic Capacitors

Type SKA Axial Miniature



The SKA series is an axial lead, general purpose, miniature electronic capacitor. This series is suitable for those electronic products requiring small size. It is suitable for consumer electronic equipment, such as stereo radios, TV sets, etc. The aluminum case is enclosed in a vinyl sleeve. **Tolerance:** ±20%. **Operating Temperature Range:** –40 ~ +85°C.

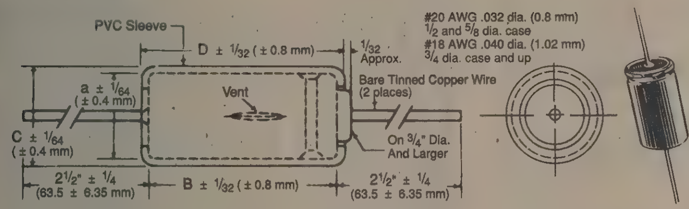
Stock No.	Mfr.'s Type	MFD	VDC	Case Size D × L (mm)	EACH		
					1-24	25-49	50-99
852-5000	SKA470M010	47	10	5 × 12.5	**.43**	**.40**	**.38**
852-5005	SKA101M010	100	10	6 × 16.0	**.48**	**.43**	**.37**
852-5010	SKA471M010	470	10	8 × 20.0	**.63**	**.56**	**.49**
852-5015	SKA102M010	1000	10	10 × 20.0	**.96**	**.85**	**.75**
852-5020	SKA222M010	2200	10	13 × 25.0	**1.37**	**1.23**	**1.07**
852-5025	SKA470M016	47	16	6 × 12.5	**.50**	**.42**	**.37**
852-5030	SKA101M016	100	16	6 × 16.0	**.51**	**.45**	**.39**
852-5035	SKA221M016	220	16	8 × 16.0	**.24**	**.22**	**.20**
852-5040	SKA331M016	330	16	8 × 20.0	**.28**	**.26**	**.24**
852-5045	SKA471M016	470	16	10 × 16.0	**.31**	**.28**	**.26**
852-5050	SKA102M016	1000	16	10 × 25.0	**.43**	**.39**	**.36**
852-5055	SKA222M016	2200	16	13 × 30.0	**.73**	**.67**	**.62**
852-5060	SKA332M016	3300	16	16 × 30.0	**1.05**	**.96**	**.89**
852-5065	SKA330M025	33	25	6 × 12.5	**.19**	**.17**	**.16**
852-5070	SKA470M025	47	25	6 × 12.5	**.19**	**.18**	**.16**
852-5075	SKA101M025	100	25	8 × 16.0	**.23**	**.21**	**.20**
852-5080	SKA221M025	220	25	8 × 20.0	**.29**	**.26**	**.24**
852-5085	SKA331M025	330	25	10 × 16.0	**.32**	**.29**	**.27**
852-5090	SKA471M025	470	25	10 × 20.0	**.38**	**.34**	**.32**
852-5095	SKA102M025	1000	25	13 × 25.0	**.60**	**.55**	**.50**
852-5100	SKA222M025	2200	25	16 × 30.0	**1.06**	**.97**	**.89**
852-5105	SKA220M035	22	35	6 × 12.5	**.19**	**.17**	**.16**
852-5110	SKA330M035	33	35	6 × 16.0	**.19**	**.18**	**.16**
852-5115	SKA470M035	47	35	6 × 16.0	**.21**	**.19**	**.18**
852-5120	SKA101M035	100	35	8 × 16.0	**.25**	**.23**	**.21**
852-5125	SKA221M035	220	35	10 × 16.0	**.33**	**.30**	**.28**
852-5130	SKA331M035	330	35	10 × 20.0	**.39**	**.35**	**.33**
852-5135	SKA471M035	470	35	10 × 25.0	**.46**	**.42**	**.39**
852-5140	SKA102M035	1000	35	13 × 30.0	**.76**	**.70**	**.65**
852-5145	SKA010M050	1	50	5 × 12.5	**.17**	**.16**	**.14**
852-5150	SKA2R2M050	2.2	50	5 × 12.5	**.17**	**.16**	**.14**
852-5155	SKA3R3M050	3.3	50	5 × 12.5	**.17**	**.16**	**.14**
852-5160	SKA4R7M050	4.7	50	5 × 12.5	**.17**	**.16**	**.14**
852-5165	SKA100M050	10	50	6 × 12.5	**.18**	**.16**	**.15**
852-5170	SKA220M050	22	50	6 × 16.0	**.20**	**.18**	**.16**
852-5175	SKA330M050	33	50	6 × 16.0	**.21**	**.20**	**.18**
852-5180	SKA470M050	47	50	8 × 16.0	**.24**	**.22**	**.20**
852-5185	SKA101M050	100	50	8 × 20.0	**.29**	**.27**	**.25**
852-5190	SKA221M050	220	50	10 × 20.0	**.39**	**.36**	**.33**
852-5195	SKA331M050	330	50	10 × 25.0	**.48**	**.44**	**.40**
852-5200	SKA471M050	470	50	13 × 25.0	**.63**	**.58**	**.53**
852-5205	SKA102M050	1000	50	16 × 30.0	**1.14**	**1.04**	**.96**
852-5210	SKA101M063	100	63	10 × 16.0	**.33**	**.30**	**.28**
852-5215	SKA221M063	220	63	10 × 25.0	**.51**	**.46**	**.43**
852-5220	SKA010M100	1	100	5 × 12.5	**.18**	**.17**	**.16**
852-5225	SKA3R3M100	3.3	100	6 × 12.5	**.21**	**.20**	**.18**
852-5230	SKA100M100	10	100	6 × 16.0	**.25**	**.23**	**.21**
852-5235	SKA220M100	22	100	8 × 16.0	**.27**	**.25**	**.23**
852-5240	SKA330M100	33	100	8 × 20.0	**.33**	**.31**	**.28**
852-5245	SKA470M100	47	100	10 × 20.0	**.43**	**.39**	**.36**
852-5250	SKA100M160	10	160	8 × 20.0	**.42**	**.39**	**.36**

TC Aluminum Electrolytic Capacitors

TG capacitors are single section metal tubulars with plastic insulating sleeve. Sizes are for bare unsleeved cans; add .015" to the diameter and .062" to the length to allow for plastic sleeve. TC capacitors have etched cathode construction and 2.25" min. tinned leads. **Specifications. Operating Temperature:** –40°C to +85°C. **Tolerance:** –10% to 75% up to 350 WVDC, –10% to +50% for 450 WVDC.

Stock No.	Mfr.'s Type	Cap. µF	WVDC	Case Size D × L (mm)	EACH		
					1-24	25-49	50-99
852-9039	TC50100	1000	50	0.875 × 2.625	**8.07**	**7.40**	**6.83**
852-9040	TC50200	2000	50	1.000 × 2.625	**10.50**	**9.61**	**8.86**
852-9042	TC50300	3000	50	1.000 × 3.625	**11.41**	**10.46**	**9.56**
852-9043	TC50500	5000	50	1.000 × 3.625	**12.72**	**11.66**	**10.76**
852-9067	TC493	100	150	0.750 × 1.625	**7.29**	**6.68**	**6.17**
852-9068	TC495	150	150	0.875 × 1.625	**7.46**	**6.83**	**6.31**
852-9070	TC499	300	150	1.000 × 2.125	**9.48**	**8.69**	**8.02**
852-9073	TC52	10	250	0.625 × 1.125	**6.95**	**6.38**	**5.88**
852-9076	TC55	20	250	0.750 × 1.125	**7.16**	**6.56**	**6.06**
852-9079	TC59	50	250	0.750 × 1.625	**7.51**	**6.89**	**6.36**
852-9048	TC1267	225	250	1.000 × 3.125	**9.33**	**8.55**	**7.89**
852-9086	TC62	10	350	0.625 × 1.375	**8.14**	**7.46**	**6.89**
852-9186	TC69	100	350	0.875 × 2.625	**9.94**	**9.27**	**8.54**
852-9088	TC695	2	450	0.625 × 1.125	**7.62**	**6.99**	**6.45**
852-9095	TC697	4	450	0.625 × 1.125	**7.86**	**7.21**	**6.65**
852-9089	TC72	10	450	0.875 × 1.375	**8.07**	**7.40**	**6.83**
852-9100	TC74	16	450	0.750 × 1.625	**6.71**	**6.15**	**5.68**
852-9101	TC75	20	450	0.875 × 1.625	**6.37**	**5.88**	**5.46**
852-9090	TC77	30	450	1.000 × 1.625	**7.42**	**6.80**	**6.28**
852-9103	TC78	40	450	1.000 × 2.125	**7.84**	**7.31**	**6.64**
852-9192	TC79	50	450	1.000 × 2.125	**9.92**	**9.10**	**8.40**
852-9190	TC80	80	450	1.000 × 3.125	**10.53**	**9.66**	**8.91**
852-9191	TC807	100	450	1.000 × 3.125	**15.76**	**14.45**	**13.34**

TCG Series

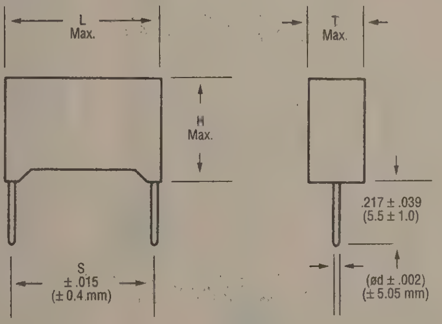


Long life, axial leads. The TCG is a small tubular axial version of the Mallory Type CG capacitor. The TCG features long life and low ESR and utilizes a PVC insulating sleeve as well as a safety vent on diameters .5 inches and larger. 7th digit of part number indicates tolerance. **Specifications. Capacitance Range:** 10 to 10,000 µF. **Voltage Range:** 10 to 450 WVDC. **Capacitance Tolerance:** T = –10%, +50%; U = –10%, +75%. **Operating Temperature:** –40°C to +85°C.

Stock No.	Mfr.'s Type	Cap. µF	WVDC	Case Size D × L (mm)	EACH		
					1-24	25-49	50-99
852-1212	TCG632U015L2L	6300	15	0.875 × 2.625	**6.05**	**5.54**	**5.12**
852-1214	TCG103U015N2L	10000	15	1.000 × 2.625	**6.77**	**6.21**	**5.73**
852-1220	TCG102U025N1C	1000	25	1.000 × 1.125	**5.08**	**4.66**	**4.30**
852-1222	TCG222U025J2L	2200	25	0.750 × 2.625	**4.86**	**4.45**	**4.11**
852-1224	TCG402U025L3C	4000	25	0.875 × 3.125	**6.55**	**6.00**	**5.54**
852-1230	TCG601U050L1G	600	50	0.875 × 1.375	**4.67**	**4.28**	**3.95**
852-1232	TCG122U050L2C	1200	50	0.875 × 2.125	**6.27**	**5.75**	**5.30**
852-1240	TCG101T250L2C	100	250	0.875 × 2.125	**4.77**	**4.37**	**4.03**
852-1242	TCG201T250N2L	200	250	1.000 × 2.625	**8.20**	**7.51**	**6.94**
852-1244	TCG200T350G1L	20	350	0.625 × 1.625	**5.77**	**5.29**	**4.88**
852-1243	TCG300T350G2C	30	350	0.625 × 2.125	**5.66**	**5.19**	**4.79**
852-1246	TCG500T350N1G	50	350	1.000 × 1.375	**6.34**	**5.81**	**5.37**
852-1248	TCG101T350N2C	100	350	1.000 × 2.125	**6.95**	**6.38**	**5.88**
852-1252	TCG161T350N2L	160	350	1.000 × 2.625	**8.40**	**7.70**	**7.11**
852-1250	TCG181T350N3C	180	350	1.000 × 3.125	**7.34**	**6.73**	**6.21**
852-1254	TCG100T450J1C	10	450	0.750 × 1.125	**6.08**	**5.57**	**5.05**
852-1256	TCG200T450N1C	20	450	1.000 × 1.125	**6.92**	**6.45**	**5.85**
852-1258	TCG500T450N2C	50	450	1.000 × 2.125	**10.88**	**9.96**	**9.18**

Metallized Polyester Radial Leads

Radial leaded. Non-Polar. **Specifications. Operating Temperature:** –55°C to +125°C with voltage derating above 85°C. **Voltage Range:** 63 VDC to 1000 VDC. **Capacitance Range:** 0.0022 µF to 10 µF.



63 VDC/40 VAC

Stock No.	Mfr.'s Type	Cap µF	Dimensions — Inches				Tolerance	EACH	
			L	T	H	S		1-99	100-499
852-0897	160474J63D	0.470	0.512	0.197	0.433	0.394	5%	**.67**	**.56**
852-0898	160474K63D	0.470	0.512	0.197	0.433	0.394	10%	**.55**	**.44**
852-0899	160105J63E	1.000	0.512	0.236	0.472	0.394	5%	**.87**	**.70**
852-0900	160105K63F	1.000	0.709	0.197	0.433	0.591	10%	**.82**	**.66**
852-0901	160155J63G	1.500	0.709	0.197	0.433	0.591	5%	**1.07**	**.86**

100 VDC/63 VAC

852-0903	160104K100C	0.100	0.512	0.157	0.374	0.394	10%	**.27**	**.22**
852-0905	160224J100D	0.220	0.512	0.197	0.433	0.394	5%	**.37**	**.30**
852-0904	160224K100D	0.220	0.512	0.197	0.433	0.394	10%	**.32**	**.26**
852-0905	160334K100F	0.330	0.709	0.197	0.433	0.591	10%	**.37**	**.30**
852-0906	160334J100F	0.330	0.709	0.197	0.433	0.591	5%	**.40**	**.32**
852-0910	160105K100H	1.000	0.709	0.295	0.531	0.591	10%	**.75**	**.60**
852-0911	160335K100O	3.300	1.043	0.394	0.748	0.886	10%	**1.45**	**1.16**
852-0913	160685K100Q	6.800	1.260	0.512	0.886	1.083	10%	**3.25**	**2.60**

250 VDC/160 VAC

852-0914	160333J250C	0.033	0.512	0.157	0.374	0.394	5%	**.34**	**.29**
852-0915	160473J250C	0.047	0.512	0.157	0.374	0.394	5%	**.26**	**.21**
852-0919	160104J250D	0.100	0.512	0.197	0.433	0.394	5%	**.41**	**.35**
852-0931	160224J250F	0.220	0.709	0.197	0.433	0.591	5%	**.42**	**.34**
852-0978	160105J250N	1.000	1.043	0.335	0.669	0.886	5%	**.89**	**.75**
852-0979	160225J250P	2.200	1.260	0.433	0.787	1.083	5%	**1.48**	**1.23**

400 VDC/200 VAC

852-0934	160223K400C	0.022	0.512	0.157	0.374	0.394	10%	**.32**	**.27**
852-0936	160273J400C	0.027	0.512	0.157	0.374	0.394	5%	**.61**	**.56**
852-0986	160333J400D	0.033	0.512	0.197	0.433	0.394	5%	**.30**	**.22**
852-0940	160224J400L	0.220	1.043	0.236	0.591	0.886	5%	**.54**	**.50**

630 VDC/220 VAC

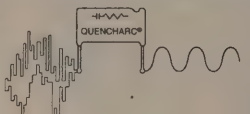
Stock No.	Mfr.'s Type	Cap µF	Dimensions — Inches				Tolerance	EACH	
			L	T	H	S		1-99	100-499
852-0933	160103J630C	.0100	0.512	0.157	0.374	0.394	5%	**.36**	**.30**
852-0936	160223K630E	.0220	0.512	0.236	0.472	0.394	10%	**.36**	**.30**
852-0981	160224J630N	0.220	1.043	0.335	0.669	0.886	5%	**.88**	**.81**
852-0929	160474J630Q	0.470	1.260	0.512	0.886	1.083	5%	**1.41**	**1.18**

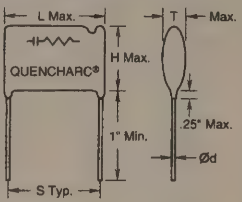
1000 VDC/250 VAC

852-0956	160222J1000C	.0022	0.512	0.157	0.374	0.394	5%	**.37**	**.32**
852-0968	160224J1000Q	0.220	1.260	0.512	0.886	1.083	5%	**1.82**	**1.46**

Q/QRL Series (QUENCHARC®) Metallized Polyester Arc Suppressor/Snubber Network

- ► **Noise and Arc Suppression**
- ► **RC Snubber Network**
- ► **Relay Contact Protection**
- ► **EMI/RFI Reduction**
- ► **Noise Reduction on Controllers/ Drivers**
- ► **Type QRL: UL/CSA Version**





"ARCING", "SPARKING", and "TRANSIENTS" often cause premature failures in relays, switches, thyristors, triacs, contactors, and related products. QUENCHARC® extends operating life when properly selected and applied. **General Specifications. Operating Temperature:** –55°C to +85°C at full rated voltage. **Voltage Range:** 200 VDC (125 VAC) to 600 VDC (250 VAC). **Capacitance Values:** 0.1, 0.5, 1.0 µF. **Resistor Values:** 22, 47, 100, 150, 200 ohms. **Tolerance at 100 KHz:** Capacitance — ±20%; Resistance: — ±10%. **Construction:** Metallized polyester in series with a carbon composition resistor. **Case:** Coated with a flame retardant epoxy. **Dielectric Withstand:** Units shall withstand a DC potential of 1.6 times the DC voltage rating. Testing conducted at +25°C. **Test Method and Performance. DC Life Test:** Units shall withstand a test potential of 125°C of the rated voltage for a period of 500 hours at 85°C. A failure shall consist of capacitance change >5% or a DF greater than original limits. **Long Term Stability:** The capacitance shall not change more than 2% when stored at ambient temperature and humidity for a period of two years or less.

200 VDC/125 VAC

Stock No.	Mfr.'s Type	Cap. µF	Resistor		Dimensions										EACH	
			Watts	Ohms ±10%	L Max.		T Max.		H Max.		S Typ.		ød		1-99	100-249
					In.	mm	In.	mm	In.	mm	In.	mm	In.	mm		
852-7500	504M02QA100	.50	1/2	100	1.080	27.4	.370	9.4	.640	16.3	.820	20.8	.032	.8	**2.74**	**2.52**
852-7502	504M02QA220	.50	1/2	220	1.080	27.4	.370	9.4	.640	16.3	.820	20.8	.032	.8	**2.74**	**2.52**
852-7504	105M02QB47	1.00	1/2	47	1.450	36.8	.390	9.9	.660	16.8	1.200	30.5	.032	.8	**3.28**	**3.01**

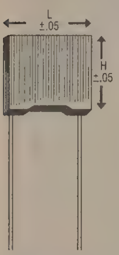
600 VDC/250 VAC

Stock No.	Mfr.'s Type	Cap. µF	Watts	Ohms ±10%	L In.	L mm	T In.	T mm	H In.	H mm	S In.	S mm	ød In.	ød mm	1-99	100-249
852-7506	104M06QC22	.10	1/2	22	1.080	.27.4	.390	9.9	.660	16.8	.820	20.8	.032	.8	**2.71**	**2.48**
852-7508	104M06QC47	.10	1/2	47	1.080	.27.4	.390	9.9	.660	16.8	.820	20.8	.032	.8	**2.71**	**2.29**
852-7510	104M06QC100	.10	1/2	100	1.080	.27.4	.390	9.9	.660	16.8	.820	20.8	.032	.8	**2.71**	**2.48**
852-7512	104M06QC150	.10	1/2	150	1.080	.27.4	.390	9.9	.660	16.8	.820	20.8	.032	.8	**2.71**	**2.48**

UL/CSA Recognized Across-the-Line Applications (Complies with UL1414/CSA-C22.2 No. 1)

Stock No.	Mfr.'s Type	Cap. µF	Watts	Ohms ±10%	L In.	L mm	T In.	T mm	H In.	H mm	S In.	S mm	ød In.	ød mm	1-99	100-249
852-7514	104MACQRL150*	.10	1/2	150	1.080	27.4	.440	11.2	.660	16.8	.820	20.8	.032	.8	**3.28**	**3.01**

*UL Recognized for 125 VAC across-the-line. UL File No. E33628. CSA Certified for 125 VAC across-the-line. CSA File No. LR32208.



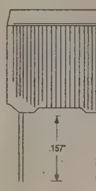
Series 158X Metallized Polyester Suppressors

- ► **Capacitance: .01 µF to 1.0 µF (Other Cap Values Available On Special Order)**
- ► **Voltage: 250 VAC**
- ► **Temperature: –55°C to +125°C (With Voltage Derating Above +85°C)**
- ► **International Agency Approvals Including UL1414 and CSA**
- ► **Short Leads Available As Special Order Item. Add "S" to Part Number (Lead Configuration .138" Min.)**
- ► **10% Tolerance Available as Special Order Item by Adding "K" to Mfr.'s Type**

The Series 158X is a radial leaded metallized polyester, AC line suppression capacitor, housed in a flame-retardant pre-molded plastic case with epoxy resin fill. **Temperature Range:** –55°C to +125°C with voltage derating above 85°C. **Capacitor Range:** 0.1 µF to 1.0 µF. **Lead Configuration:** .591" min. length. Suggested applications are energy storage, filtering, pulse discharge, discrimination, and suppression.

20% Tolerance, 250 WVDC

Stock No.	Mfr.'s Type	Cap. MFD	Dimensions (In.)			Lead Spac.	EACH	
			L	T	H		1-99	100-499
852-0474	158X103	.010	.699	.197	.472	.591	**.56**	**.51**
852-0483	158X333	.033	.699	.197	.472	.591	**.56**	**.51**
852-0484	158X473	.047	.699	.197	.492	.591	**.59**	**.54**
852-0475	158X104	.100	.699	.315	.591	.591	**.62**	**.57**
852-0478	158X224	.220	.984	.315	.689	.866	**1.06**	**.93**
852-0485	158X474	.470	1.180	.197	.866	1.083	**1.51**	**1.40**
852-0482	158X105	1.000	1.201	.630	1.102	1.083	**2.80**	**2.59**



Series 168 Metallized Polyester

- ► **Capacitance: .001 µF to 1.0 µF (Other Cap Values Available on Special Order)**
- ► **Voltage: 50 V, 63 V, and 100 V (250, 400 Voltages Available On Special Order)**
- ► **Temperature: –55°C to +125°C (With Voltage Derating Above +85°C)**

The Series 168 is a radial leaded metallized polyester self healing film capacitor. Non-inductively wound. Housed in a molded, flame-retardant case with epoxy fill. Temperature range is –55°C to 125°C with voltage derating above 85°C. Suggested applications are blocking, bypass, decoupling, smoothing, timing and tuning.

5% Tolerance, .197" Lead Spacing

Stock No.	Mfr.'s Type	Cap. MFD	WVDC	Dimen. (In.)			EACH	
				L	T	H	1-99	100-499
852-1615	168104J50A	.1000	50	.283	.098	.256	**.50**	**.41**
852-0433	168474J50H	.4700	50	.283	.177	.335	**.91**	**.72**
852-0434	168105J50G	1.0000	50	.283	.236	.433	**2.35**	**2.00**
852-0448	168473J63A	.0470	63	.283	.098	.256	**.26**	**.24**
852-0435	168104J63A	.1000	63	.283	.098	.256	**.38**	**.28**
852-0437	168224J63C	.2200	63	.283	.138	.295	**.75**	**.60**
852-0432	168474J63H	.4700	63	.283	.177	.335	**.67**	**.61**
852-0436	168102J100A	.0010	100	.283	.098	.256	**.42**	**.37**
852-0438	168222J100A	.0022	100	.283	.098	.256	**.42**	**.37**
852-0450	168332J100A	.0033	100	.283	.098	.256	**.32**	**.29**
852-0442	168103J100A	.0100	100	.283	.098	.256	**.37**	**.31**
852-0444	168223J100A	.0220	100	.283	.098	.256	**.41**	**.36**
852-0445	168104J100H	.1000	100	.283	.177	.335	**.58**	**.45**

Monolithic Ceramic Capacitors

CK06

CK05

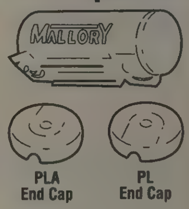
These Molded Case Monolithic Ceramic Capacitors are constructed to MIL-C-11015. **Tolerance:** ±10%. **Operating Temperature Range:** –55°C to +125°C. Capacitors are .09 ±.01" (2.29 ± .25 mm) thick; lead spacing is .2 ±.015" (5.08 ±.38 mm); lead length is 1.25" (31.75 mm) minimum. Made from ferroelectric, barium titanate material.

Stock No.	Mfr.'s Type	Cap. pF	WVDC	EACH			
				1-24	25-49	50-99	100-249
852-1161	CK05BX223K	22000	50	**.68**	**.47**	**.34**	**.29**
852-1163	CK05BX333K	33000	50	**.72**	**.50**	**.41**	**.36**
852-1165	CK05BX473K	47000	50	**.74**	**.51**	**.34**	**.29**
852-1170	CK05BX104K	100000	50	**.74**	**.51**	**.39**	**.29**
852-1147	CK05BX152K	1500	100	**.49**	**.34**	**.22**	**.19**
852-1149	CK05BX222K	2200	100	**.52**	**.37**	**.24**	**.21**
852-1150	CK05BX272K	2700	100	**.49**	**.34**	**.22**	**.21**
852-1151	CK05BX332K	3300	100	**.49**	**.34**	**.22**	**.18**
852-1153	CK05BX472K	4700	100	**.48**	**.33**	**.22**	**.18**
852-1155	CK05BX682K	6800	100	**.52**	**.35**	**.24**	**.21**
852-1156	CK05BX822K	8200	100	**.52**	**.35**	**.24**	**.21**
852-1157	CK05BX103K	10000	100	**.57**	**.39**	**.26**	**.22**
852-1121	CK05BX100K	10	200	**.49**	**.34**	**.22**	**.19**

Stock No.	Mfr.'s Type	Cap. pF	WVDC	EACH			
				1-24	25-49	50-99	100-249
852-1123	CK05BX150K	15	200	**.49**	**.34**	**.22**	**.19**
852-1125	CK05BX220K	22	200	**.47**	**.34**	**.21**	**.18**
852-1126	CK05BX270K	27	200	**.49**	**.34**	**.22**	**.19**
852-1127	CK05BX330K	33	200	**.49**	**.34**	**.22**	**.19**
852-1129	CK05BX470K	47	200	**.49**	**.34**	**.22**	**.19**
852-1133	CK05BX101K	100	200	**.49**	**.34**	**.22**	**.19**
852-1132	CK05BX121K	120	200	**.49**	**.34**	**.22**	**.19**
852-1134	CK05BX151K	150	200	**.49**	**.34**	**.22**	**.19**
852-1136	CK05BX181K	180	200	**.49**	**.34**	**.22**	**.19**
852-1137	CK05BX221K	220	200	**.52**	**.34**	**.22**	**.19**
852-1138	CK05BX271K	270	200	**.49**	**.34**	**.22**	**.19**
852-1139	CK05BX331K	330	200	**.49**	**.34**	**.22**	**.19**
852-1141	CK05BX471K	470	200	**.49**	**.34**	**.22**	**.19**
852-1142	CK05BX561K	560	200	**.49**	**.34**	**.22**	**.19**
852-1143	CK05BX681K	680	200	**.46**	**.31**	**.21**	**.17**
852-1144	CK05BX821K	820	200	**.49**	**.34**	**.22**	**.19**
852-1145	CK05BX102K	1000	200	**.47**	**.32**	**.22**	**.19**
852-1196	CK06BX224K	220000	50	**.99**	**.74**	**.60**	**.51**
852-1197	CK06BX474K	470000	50	**1.64**	**1.16**	**1.00**	**.91**
852-1198	CK06BX684K	680000	50	**4.07**	**2.65**	**1.68**	**1.40**
852-1194	CK06BX105K	1000000	50	**3.71**	**2.42**	**1.75**	**1.45**
852-1189	CK06BX473K	47000	100	**.68**	**.47**	**.38**	**.36**
852-1193	CK06BX104K	100000	100	**.79**	**.54**	**.39**	**.35**
852-1195	CK06BX103K	10000	200	**.53**	**.36**	**.26**	**.21**

PSU Series AC Motor Start Capacitors

- ► **For Motor Starting and Other Intermittent Duty AC Applications**
- ► **Dual Quick Connect Terminals**
- ► **Rugged Bakelite Case**
- ► **Compact Size; Easily Mounted**
- ► **Meets EIA RS-463 Type 2**



PLA End Cap **PL End Cap**

Temperature: Operating — –40°C to +65°C; Storage — –55°C to +85°C. **Voltage Range:** 110 to 330 VAC. **Capacitance Range:** 25 µF to 1200 µF. **Operating Frequency:** 50 to 60 Hz. **Power Factor:** 10% max. (12% ≤30 µF).

110/125 Volts

Stock No.	Mfr.'s Type	Cap. µF	Dia. (In.)	Length (In.)	EACH	
					1-24	25-49
852-3720	PSU8815	88-106	1.4375	2.750	**4.25**	**3.89**
852-3722	PSU10815	108-130	1.4375	2.750	**4.01**	**3.67**
852-3724	PSU12415	124-149	1.4375	2.750	**4.10**	**3.76**
852-3726	PSU13015	130-156	1.4375	2.750	**4.23**	**3.88**
852-3728	PSU14515	145-174	1.4375	2.750	**4.38**	**4.01**
852-3730	PSU16115	161-193	1.4375	2.750	**4.49**	**4.11**
852-3732	PSU18915A	189-227	1.4375	2.750	**5.59**	**4.59**
852-3734	PSU21615	216-259	1.4375	3.375	**4.99**	**4.57**
852-3736	PSU23315A	233-280	1.4375	3.375	**5.16**	**4.73**
852-3738	PSU24315A	243-292	1.4375	3.375	**5.25**	**4.83**
852-3740	PSU27015A	270-324	1.4375	3.375	**5.40**	**4.95**
852-3742	PSU34015	340-408	1.8125	3.375	**6.66**	**6.10**
852-3746	PSU37815	378-454	1.8125	3.375	**6.95**	**6.8**
852-3744	PSU40015	400-480	1.8125	3.375	**7.20**	**6.60**
852-3748	PSU43015A	430-516	1.8125	3.375	**7.42**	**6.80**
852-3750	PSU46015A	460-552	1.8125	3.375	**7.70**	**7.05**
852-3752	PSU54015B	540-648	1.8125	4.375	**8.66**	**7.94**
852-3754	PSU59015A	590-708	1.8125	4.375	**9.14**	**8.38**
852-3756	PSU70815	708-850	1.8125	4.375	**10.20**	**9.35**
852-3758	PSU80015	800-960	1.8125	4.375	**11.11**	**10.18**
852-3760	PSU100015A	1000-1200	2.0625	4.375	**13.19**	**12.09**

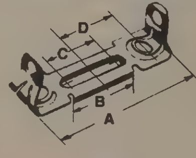
220/250 Volts

Stock No.	Mfr.'s Type	Cap. µF	Dia. (In.)	Length (In.)	1-24	25-49
852-3762	PSU6435	64-77	1.4375	3.375	**7.81**	**7.16**
852-3764	PSU8835	88-106	1.8125	3.375	**7.88**	**7.29**
852-3766	PSU10835A	108-130	1.8125	3.375	**8.70**	**7.97**
852-3768	PSU12435	124-149	1.8125	4.375	**9.46**	**8.67**
852-3770	PSU13035	130-156	1.8125	4.375	**9.77**	**8.96**
852-3772	PSU14535	145-174	1.8125	4.375	**10.33**	**9.60**
852-3774	PSU16135A	161-193	2.0625	4.375	**11.33**	**10.39**
852-3776	PSU21635A	216-259	2.0625	4.375	**13.43**	**12.44**
852-3780	PSU23335A	233-280	2.0625	4.375	**14.37**	**13.26**
852-3782	PSU27035A	270-324	2.0625	4.375	**15.63**	**14.33**

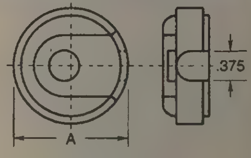
330 Volts

Stock No.	Mfr.'s Type	Cap. µF	Dia. (In.)	Length (In.)	1-24	25-49
852-3784	PSU2530	25-30	1.4375	3.375	**6.95**	**6.41**
852-3786	PSU3030	30-36	1.4375	3.375	**7.66**	**7.06**
852-3788	PSU3630	36-43	1.4375	3.375	**6.44**	**5.88**
852-3790	PSU5330B	53-64	1.8125	3.375	**7.66**	**6.97**
852-3792	PSU6430	64-77	1.8125	3.375	**8.29**	**7.55**
852-3794	PSU7230B	72-86	1.8125	4.375	**8.96**	**8.28**
852-3796	PSU8830A	88-106	1.8125	4.375	**10.01**	**9.06**
852-3798	PSU12430	124-149	2.5625	4.375	**13.39**	**12.27**
852-3800	PSU13030	130-156	2.0625	4.375	**12.74**	**11.84**
852-3802	PSU14530A	145-174	2.0625	4.375	**13.54**	**12.46**
852-3804	PSU16130	161-193	2.5625	4.375		
852-3806	PSU21630	216-259	2.5625	4.375	**18.64**	**17.09**

Mounting Accessories for PSU Series



Type HB



Type PL and PLA

Type HB Horizontal Mounting Bracket. HB brackets are used with PL or PLA end caps. The bracket is assembled to the motor or any suitable surface by two screws in line at any convenient position within the center-to-center dimension (C) shown in the chart. **Material:** .042 spring steel with black parkerized finish.

Stock No.	Mfr.'s Type	Dimensions (In.)				EACH		
		A	B	C*	D	1-49	50-99	100-Up
852-2501	HB2	3 3/8	1 11/64	7/8	1.258	**2.34**	**2.12**	**1.96**
852-3700	HB4	4 1/64	1 13/16	1 1/2	1 37/64	**2.43**	**2.21**	**2.02**
852-3702	HB8	5 1/64	2 23/32	1 25/32	2 5/64	**2.76**	**2.50**	**2.30**

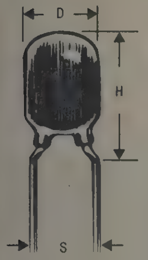
Type PL and PLA End Caps. PL and PLA end caps are usually used with HB type brackets. The drawing shown is type PL for use with the wiring through the bracket to the motor. For off motor mounting, use type PLA.

Wire Hole†		Wire Hole‡		Dim. (In.)	EACH		
Stock No.	Mfr.'s Type	Stock No.	Mfr.'s Type	A	1-49	50-99	100-Up
852-3704	PL3	852-3712	PLA3	1 7/16	**1.19**	**1.10**	**1.02**
852-3706	PL6	852-3714	PLA6	1 13/16	**1.34**	**1.21**	**1.12**
852-3708	PL8	852-3716	PLA8	2 1/16	**1.38**	**1.28**	**1.18**
852-3710	PL10	852-3718	PLA10	2 9/16	**2.42**	**2.19**	**2.01**

*C dimension = max. mounting hole center. Use 10-32" flat head screws.
†Toward Bracket. ‡Away From Bracket.

Tantalum and Radial Lead Electrolytic Capacitors

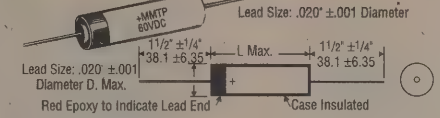
Epoxy Dipped Solid Tantalum Capacitors



Type TDC capacitors offer the long life electrical stability characteristics of solid tantalum at low cost. The tough epoxy coating provides uniform lead spacing and protection against mechanical damage and moisture. These capacitors are ideal for industrial and consumer applications where premium performance, minimum size, and low cost are essential. **Operating Temperature:** –55°C to +125°C (with voltage derating above 85°C). The TDC dip-coated solid tantalum capacitor has leads 0.187" maximum in length. A tolerance of ±20% is indicated by an "M" in the Mfr.'s type number; a tolerance of ±10% is indicated by a "K" in the Mfr.'s type number. **Leads Diameter:** .020" (.51 mm). **Leads Space S (Using Last 3 Letters in Mfr.'s Type):** NSE, NSF — .125" (3.17 mm); WSG — .250" (6.35 mm).

Stock No.	Mfr.'s Type	WVDC/ Surge VDC	Cap. µF	Case (In.)		EACH	
				D	H	1-49	50-99
852-5614	TDC226K010NSF	10/13	22	.250	.500	**.59**	**.53**
852-5656	TDC336K010NSF	10/13	33	.250	.500	**.69**	**.63**
852-5613	TDC476K010NSF	10/13	47	.250	.500	**1.35**	**1.23**
852-5657	TDC107M010WSG	10/13	100	.350	.650	**1.93**	**1.75**
852-5615	TDC107K010WSG	10/13	100	.350	.650	**1.29**	**1.17**
852-5616	TDC227K010WSG	10/13	220	.350	.650	**4.16**	**3.78**
852-5661	TDC106K015NSF	15/20	10	.250	.500	**.53**	**.49**
852-5618	TDC226K015NSF	15/20	22	.250	.500	**.64**	**.59**
852-5660	TDC226M015NSF	15/20	22	.250	.500	**.57**	**.52**
852-5619	TDC686K015WSG	15/20	68	.350	.650	**1.89**	**1.75**
852-5620	TDC686M015WSG	15/20	68	.350	.650	**1.84**	**1.66**
852-5617	TDC157K015WSG	15/20	150	.350	.650	**3.80**	**3.48**
852-5663	TDC225M025NSE	20/26	2.2	.175	.350	**.29**	**.27**
852-5622	TDC225K020NSE	20/26	2.2	.175	.350	**.29**	**.27**
852-5625	TDC475K020NSE	20/26	4.7	.175	.350	**.42**	**.38**
852-5665	TDC106K020NSF	20/26	10	.250	.500	**.52**	**.48**
852-5621	TDC156K020NSF	20/26	15	.250	.500	**.63**	**.57**
852-5623	TDC226M020NSF	20/26	22	.250	.500	**.97**	**.89**
852-5624	TDC336M020WSG	20/26	33	.350	.650	**1.40**	**1.29**
852-5667	TDC476K020WSG	20/26	47	.350	.650	**1.75**	**1.60**
852-5666	TDC476M020WSG	20/26	47	.350	.650	**1.73**	**1.58**
852-5672	TDC107K020WSG	20/26	100	.350	.650	**3.80**	**3.48**
852-5668	TDC107M020WSG	20/26	100	.350	.650	**3.73**	**3.42**
852-5669	TDC685K025NSF	25/32	6.8	.250	.500	**.56**	**.51**
852-5633	TDC685M025NSF	25/32	6.8	.250	.500	**.52**	**.48**
852-5632	TDC825K025NSF	25/32	8.2	.250	.500	**.57**	**.52**
852-5673	TDC106K025NSF	25/32	10	.250	.500	**.54**	**.49**
852-5670	TDC106M025NSF	25/32	10	.250	.500	**.56**	**.51**
852-5671	TDC226M025NSF	25/32	22	.250	.500	**1.31**	**1.20**
852-5627	TDC336K025WSG	25/32	33	.350	.650	**1.81**	**1.66**
852-5628	TDC336M025WSG	25/32	33	.350	.650	**1.73**	**1.58**
852-5629	TDC476K025WSG	25/32	47	.350	.650	**4.91**	**4.56**
852-5631	TDC686K025WSG	25/32	68	.350	.650	**5.35**	**4.97**
852-5677	TDC105K035NSE	35/46	1	.175	.350	**.95**	**.79**
852-5674	TDC105M035NSE	35/46	1	.175	.350	**.75**	**.69**
852-5635	TDC155K035NSE	35/46	1.5	.175	.350	**.35**	**.32**
852-5676	TDC225M035NSE	35/46	2.2	.175	.350	**.35**	**.32**
852-5637	TDC225K035NSE	35/46	2.2	.175	.350	**.39**	**.36**
852-5639	TDC335K035NSF	35/46	3.3	.250	.500	**.45**	**.42**
852-5690	TDC475K035NSF	35/46	4.7	.250	.500	**.48**	**.44**
852-5678	TDC475M035NSF	35/46	4.7	.250	.500	**.46**	**.43**
852-5681	TDC685K035NSF	35/46	6.8	.250	.500	**.56**	**.52**
852-5679	TDC685M035NSF	35/46	6.8	.250	.500	**.52**	**.48**
852-5683	TDC106K035NSF	35/46	10	.250	.500	**.78**	**.71**
852-5680	TDC106M035NSF	35/46	10	.250	.500	**.77**	**.70**
852-5636	TDC156K035WSG	35/46	15	.350	.650	**1.63**	**1.50**
852-5686	TDC226K035WSG	35/46	22	.350	.650	**1.75**	**1.60**
852-5682	TDC226M035WSG	35/46	22	.350	.650	**1.75**	**1.58**
852-5687	TDC476K035WSG	35/46	47	.350	.650	**3.78**	**3.47**
852-5684	TDC476M035WSG	35/46	47	.350	.650	**3.73**	**3.42**
852-5685	TDC104K050NSE	50/65	.10	.175	.350	**.27**	**.25**
852-5642	TDC104M050NSE	50/65	.10	.175	.350	**.25**	**.23**
852-5649	TDC334K050NSE	50/65	.33	.175	.350	**.21**	**.19**
852-5689	TDC474K050NSE	50/65	.47	.175	.350	**.33**	**.30**
852-5691	TDC105M050NSE	50/65	1	.175	.350	**.30**	**.28**
852-5643	TDC105K050NSE	50/65	1	.175	.350	**.34**	**.31**
852-5646	TDC225K050NSF	50/65	2.2	.250	.500	**.51**	**.47**
852-5651	TDC475K050NSF	50/65	4.7	.250	.500	**.70**	**.64**
852-5644	TDC106K050WSG	50/65	10	.350	.650	**1.97**	**1.81**
852-5645	TDC106M050WSG	50/65	10	.350	.650	**1.91**	**1.78**
852-5647	TDC226K050WSG	50/65	22	.350	.650	**4.40**	**4.03**

Type MTP Subminiature Capacitors

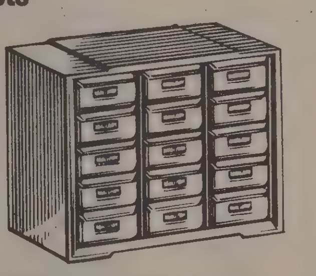


Case Code Dimensions

Case Code	Diameter	Length	Max. DCL at Max. WVDC in µA	
			+25°C	+85°C
A	.115"	.403"	2.0	6.0
B	.145"	.600"	2.0	8.0
C	.225"	.778"	2.0	10.0
D	.115"	.300"	2.0	6.0

Stock No.	Mfr.'s Type	WVDC @ 85°C	Cap µF	Max. DF @ 25°C	Case Code	EACH	
						1-24	25-49
852-0716	MTP157M006P1B	6	150	25	B	**9.98**	**9.21**
852-0720	MTP187M006P1B	6	180	26	B	**9.98**	**9.21**
852-0724	MTP477M006P1C	6	470	35	C	**17.65**	**16.29**
852-0730	MTP107M010P1B	10	100	21	B	**9.98**	**8.55**
852-0732	MTP127M010P1B	10	120	24	B	**9.98**	**8.66**
852-0736	MTP337M010P1C	10	330	27	C	**16.05**	**14.81**
852-0738	MTP226M015P1A	15	22	18	A	**7.85**	**7.25**
852-0750	MTP156M020P1A	20	15	16	A	**8.57**	**7.85**
852-0752	MTP476M020P1B	20	47	18	B	**10.87**	**9.98**
852-0754	MTP606M020P1B	20	60	18	B	**10.89**	**9.98**
852-0756	MTP157M020P1C	20	150	20	C	**19.25**	**17.65**
852-0758	MTP106M030P1A	30	10	14	A	**8.57**	**7.85**
852-0760	MTP456M030P1B	30	45	18	B	**10.89**	**9.98**
852-0762	MTP127M030P1C	30	120	21	C	**19.25**	**17.65**
852-0764	MTP475M035P1D	35	4.7	12	D	**7.34**	**6.78**
852-0766	MTP106M035P1A	35	10	14	A	**7.34**	**6.78**
852-0768	MTP107M035P1C	35	100	17	C	**16.50**	**15.30**
852-0770	MTP685M050P1A	50	6.8	14	A	**7.36**	**6.79**
852-0772	MTP306M050P1B	50	30	14	B	**9.38**	**8.66**
852-0774	MTP336M050P1B	50	33	18	B	**9.38**	**8.66**
852-0782	MTP106M060P1B	60	10	17	B	**9.98**	**9.21**
852-0786	MTP226M060P1B	60	22	10	B	**9.21**	**8.51**
852-0788	MTP476M060P1C	60	47	14	C	**16.50**	**15.30**
852-0790	MTP686M060P1C	60	68	14	C	**16.58**	**15.30**

Capacitor Kits In Plastic Storage Cabinets



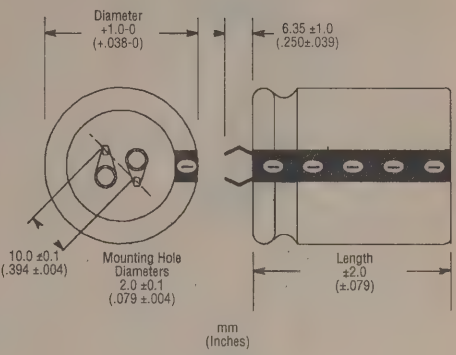
MONO151A Monolithic Capacitor Mallobin. A collection of Monolithic ceramic capacitors with voltages to 200 WVDC. Values from 10 pf to 1 µf.
852-2610. MONO151A .... **EACH 188.82**

TC151A. Assorted axial leaded aluminum electrolytic capacitors with voltages to 450 WVDC. Values from 20 µf to 200 µf.
852-2601. TC151A .... **EACH 66.15**

TDC151A. An assortment of epoxy dipped solid tantalum capacitors. Voltages to 50 WVDC. Values from .1 µf to 220 µf. **Tolerance:** ±10%.
852-2602. TDC151A .... **EACH 137.30**

TAC151A Solid Tantalum. An assortment of 78 axial leaded molded solid tantalum capacitors. Six each of 24 popular ratings from .1 µf to 47 µf. Voltages to 50 WVDC.
852-2620. TAC151A .... **EACH 180.00**

Radial Lead Snap-In Capacitors



This high capacitance general purpose aluminum electrolytic capacitor has radial snap-in leads. These are ideal for input filter in SMPS. PVC insulating sleeve. **Tolerance:** 20%. **Temperature Range:** –40 to +85°C.

Case Codes Dimensions

Diameter		Length					
mm	Inches	25 (1.00)	30 (1.18)	35 (1.38)	40 (1.57)	45 (1.77)	50 (2.00)
22	.87	A1	A3	A5	A7	A4	A9
25	1.00	C1	C3	C5	C7	C4	C9
30	1.18	E1	E3	E5	E7	E4	E9
35	1.38	H1	H3	H5	H7	H4	H9

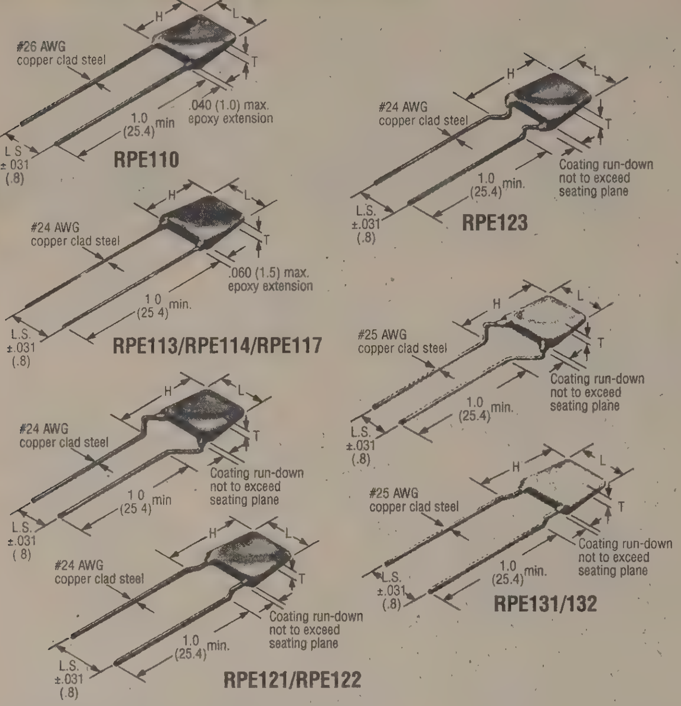
Stock No.	Mfr.'s Type	VDC	MFD	Size	EACH	
					1-24	25-49
852-1400	LPX391M200C1P3	200	390	25 × 25	**4.14**	**3.79**
852-1404	LPX471M200C3P3	200	470	25 × 30	**4.34**	**3.67**
852-1406	LPX561M200C5P3	200	560	25 × 35	**4.97**	**4.56**
852-1410	LPX821M200E5P3	200	820	30 × 35	**8.19**	**7.51**
852-1412	LPX102M200E7P3	200	1000	30 × 40	**9.74**	**8.93**
852-1414	LPX102M200H3P3	200	1000	35 × 30	**9.57**	**8.77**
852-1416	LPX122M200E4P3	200	1200	30 × 45	**10.24**	**9.37**
852-1418	LPX122M200H5P3	200	1200	35 × 35	**11.28**	**10.34**
852-1420	LPX152M200H7P3	200	1500	35 × 40	**12.78**	**11.71**
852-1424	LPX222M200H9P3	200	2200	35 × 50	**11.48**	**10.52**
852-1430	LPX331M250C3P3	250	330	25 × 30	**4.84**	**4.44**
852-1432	LPX471M250C5P3	250	470	25 × 35	**6.32**	**5.80**
852-1434	LPX471M250E3P3	250	470	30 × 30	**6.97**	**6.39**
852-1436	LPX561M250E3P3	250	560	30 × 30	**7.47**	**6.85**
852-1438	LPX561M250H1P3	250	560	35 × 25	**11.13**	**10.20**
852-1442	LPX681M250H3P3	250	680	35 × 30	**11.00**	**10.08**
852-1444	LPX102M250E4P3	250	1000	30 × 45	**11.89**	**10.90**
852-1446	LPX102M250H7P3	250	1000	35 × 40	**14.90**	**12.92**
852-1448	LPX122M250H4P3	250	1200	35 × 45	**14.78**	**13.55**
852-1450	LPX152M250H9P3	250	1500	35 × 50	**17.80**	**16.32**
852-1452	LPX121M350C1P3	350	120	25 × 25	**3.54**	**3.25**
852-1454	LPX331M350E5P3	350	330	30 × 35	**7.40**	**6.78**
852-2456	LPX391M350E7P3	350	390	30 × 40	**5.60**	**5.13**
852-1460	LPX561M350H7P3	350	560	35 × 40	**11.15**	**10.22**
852-1462	LPX681M350H4P3	350	680	35 × 45	**16.69**	**15.30**
852-1466	LPX221M400C7P3	400	220	25 × 40	**6.57**	**6.02**
852-1468	LPX331M400E7P3	400	330	30 × 40	**9.74**	**8.93**
852-1470	LPX391M400E4P3	400	390	30 × 40	**12.04**	**11.03**
852-1472	LPX471M400H7P3	400	470	35 × 40	**13.72**	**12.58**
852-1478	LPX820M450C1P3	450	82	25 × 25	**4.38**	**4.01**
852-1480	LPX101M450C3P3	450	100	25 × 30	**4.73**	**4.33**
852-1484	LPX221M450E7P3	450	220	30 × 40	**9.40**	**8.62**
852-1486	LPX271M450E4P3	450	270	30 × 45	**10.74**	**9.84**
852-1488	LPX331M450E9P3	450	330	30 × 50	**12.54**	**11.47**
852-1490	LPX331M450H7P3	450	330	35 × 40	**13.04**	**11.95**
852-1492	LPX391M450H4P3	450	390	35 × 45	**14.56**	**13.35**
852-1494	LPX471M450H9P3	450	470	35 × 50	**11.13**	**10.20**

Type LP Low Profile Snap-In

Aluminum electrolytic capacitors are designed for quick and easy snap-in insertion in PC board power supplies. Designed specifically for switching power supply applications. Can be utilized in other applications requiring high CV. Low ESR. High ripple capability. **Voltage:** 10 WVDC to 250 WVDC. **Tolerance:** ±20%. **Operating Temperature:** –40°C to +105°C. Lead spacing is 10 mm.

Stock No.	Mfr.'s Type	WVDC	MFD	Case Size Dia. × L (mm)	EACH		
					1-99	100-249	250-Up
852-3011	LP472M016A1P3	16	4700	22 × 25	**2.40**	**2.21**	**2.05**
852-3013	LP123M016E3P3	16	12000	30 × 30	**3.76**	**3.47**	**3.22**
852-3015	LP333M016H9P3	16	33000	35 × 50	**8.23**	**7.60**	**7.05**
852-3017	LP332M025A1P3	25	3300	22 × 25	**2.28**	**2.12**	**1.98**
852-3080	LP332M025C1P3	25	3300	25 × 25	**3.25**	**2.99**	**2.82**
852-3053	LP562M025E1P3	25	5600	30 × 25	**3.23**	**2.98**	**2.77**
852-3082	LP223M025H9P3	25	22000	35 × 50	**8.38**	**7.74**	**7.19**
852-3023	LP272M035C1P3	35	2700	25 × 25	**2.28**	**2.07**	**1.94**
852-3025	LP562M035E3P3	35	5600	30 × 30	**4.27**	**3.94**	**3.66**
852-3058	LP682M035E5P3	35	6800	30 × 35	**5.01**	**4.63**	**4.30**
852-3059	LP822M035H3P3	35	8200	35 × 30	**5.44**	**5.02**	**4.66**
852-3084	LP123M035H7P3	35	12000	35 × 40	**5.84**	**5.39**	**5.00**
852-3028	LP153M035H9P3	35	15000	35 × 50	**8.72**	**8.05**	**7.48**
852-3029	LP122M050A1P3	50	1200	22 × 25	**2.40**	**2.21**	**2.05**
852-3060	LP152M050A1P3	50	1500	22 × 25	**2.31**	**2.13**	**1.98**
852-3086	LP222M050E1P3	50	2200	30 × 25	**4.33**	**4.00**	**3.72**
852-3031	LP332M050C5P3	50	3300	25 × 35	**4.54**	**4.19**	**3.89**
852-3088	LP332M050E3P3	50	3300	30 × 30	**3.91**	**3.61**	**3.35**
852-3032	LP472M050H3P3	50	4700	35 × 30	**5.48**	**5.05**	**4.62**
852-3090	LP822M050H9P3	50	8200	35 × 50	**7.53**	**6.95**	**6.46**
852-3035	LP222M063E3P3	63	2200	30 × 30	**4.61**	**4.25**	**3.89**
852-3038	LP332M063H3P3	63	3300	35 × 30	**5.63**	**5.28**	**4.89**
852-3040	LP682M063H9P3	63	6800	35 × 50	**8.74**	**8.19**	**7.49**
852-3065	LP222M100H7P3	100	2200	35 × 40	**6.89**	**6.36**	**5.90**
852-3092	LP151M200C1P3	200	150	25 × 25	**3.54**	**3.26**	**2.99**
852-3067	LP221M200C1P3	200	220	25 × 25	**3.25**	**2.99**	**2.78**
852-3068	LP471M200H3P3	200	470	35 × 30	**5.68**	**5.24**	**4.87**
852-3069	LP561M200H3P3	200	560	35 × 30	**6.10**	**5.54**	**5.15**
852-3046	LP102M200H9P3	200	1000	35 × 50	**9.18**	**9.06**	**8.41**
852-3094	LP101M250A1P3	250	100	22 × 25	**2.62**	**2.42**	**2.24**
852-3078	LP221M250E1P3	250	220	30 × 25	**4.41**	**3.73**	**3.47**

RPE Radial Lead Ceramic Capacitors


H
L
T
#26 AWG copper clad steel
.040 (1.0) max. epoxy extension
1.0 (25.4) min
L.S. ±.031 (.8)
RPE110
#24 AWG copper clad steel
Coating run-down not to exceed seating plane
1.0 (25.4) min.
L.S. ±.031 (.8)
RPE123
#24 AWG copper clad steel
.060 (1.5) max. epoxy extension
1.0 (25.4) min.
L.S. ±.031 (.8)
RPE113/RPE114/RPE117
#25 AWG copper clad steel
Coating run-down not to exceed seating plane
1.0 (25.4) min.
L.S. ±.031 (.8)
#24 AWG copper clad steel
Coating run-down not to exceed seating plane
1.0 (25.4) min
L.S. ±.031 (.8)
#25 AWG copper clad steel
Coating run-down not to exceed seating plane
1.0 (25.4) min.
L.S. ±.031 (.8)
RPE131/132
#24 AWG copper clad steel
Coating run-down not to exceed seating plane
1.0 (25.4) min.
L.S. ±.031 (.8)
RPE121/RPE122

► **New Items Added — See RPE131 and RPE132**

These monolithic ceramic capacitors have industry standard sizes and an epoxy coating meeting UL94V-O. Leads are tinned copper clad steel wire. Additional values, voltages, temperature coefficients, tolerances and markings available, as well as additional lead spacing and tape and reel option available as custom order. Call for price and delivery.

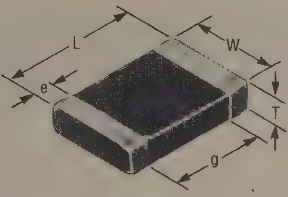
Dimensions (mm)

Type	H	L	T	LS
RPE110	3.1	3.5	2.5	2.5
RPE113	7.6	7.6	4.0	5.1
RPE114	10.2	10.2	4.0	5.1
RPE117	12.7	12.7	5.1	10.2
RPE121	6.4	5.1	3.2	2.5
RPE122	6.4	5.1	3.2	5.1
RPE123	7.0	7.6	3.2	5.1
RPE131	5.0	4.0	2.7	2.5
RPE132	5.0	4.0	2.7	5.1

Stock No.	Mfr.'s Type	VDC	Value (pF)	Tol. %	Temp. Coeff.	EACH 1-99	EACH 100-249
711-1500	RPE110COG100C050V	50	10	.25 pF	COG	**.10**	**.09**
711-1502	RPE110COG180J050V	50	18	5	COG	**.09**	**.08**
711-1504	RPE110COG220J050V	50	22	5	COG	**.09**	**.08**
711-1506	RPE110COG270J050V	50	27	5	COG	**.09**	**.08**
711-1508	RPE110COG330J050V	50	33	5	COG	**.10**	**.08**
711-1510	RPE110COG390J050V	50	39	5	COG	**.11**	**.09**
711-1512	RPE110COG470J050V	50	47	5	COG	**.10**	**.08**
711-1514	RPE110COG101J050V	50	100	5	COG	**.10**	**.08**
711-1516	RPE110COG181J050V	50	180	5	COG	**.11**	**.09**
711-1518	RPE110COG221J050V	50	220	5	COG	**.11**	**.09**
711-1520	RPE110COG271J050V	50	270	5	COG	**.10**	**.08**
711-1522	RPE110COG331J050V	50	330	5	COG	**.10**	**.08**
711-1524	RPE110COG391J050V	50	390	5	COG	**.10**	**.08**
711-1526	RPE110COG471J050V	50	470	5	COG	**.11**	**.09**
711-1528	RPE110COG102J050V	50	1000	5	COG	**.14**	**.12**
711-1530	RPE110X7R471K050V	50	470	10	X7R	**.11**	**.09**
711-1532	RPE110X7R102K050V	50	1000	10	X7R	**.10**	**.08**
711-1534	RPE110X7R103K050V	50	10000	10	X7R	**.11**	**.09**
711-1536	RPE110X7R223K050V	50	2200	10	X7R	**.10**	**.08**
711-1538	RPE110Z5U102M050V	50	1000	20	Z5U	**.12**	**.10**
711-1540	RPE110Z5U103M050V	50	10000	20	Z5U	**.12**	**.10**
711-1544	RPE113X7R474K050V	50	470000	10	X7R	**.55**	**.48**
711-1546	RPE113X7R105K050V	50	1000000	10	X7R	**.95**	**.74**
711-1548	RPE113Z5U105M050V	50	1000000	20	Z5U	**.85**	**.66**
711-1552	RPE114X7R155K050V	50	1500000	10	X7R	**1.80**	**1.40**
711-1554	RPE114X7R185K050V	50	1800000	10	X7R	**1.84**	**1.44**

Stock No.	Mfr.'s Type	VDC	Value (pF)	Tol. %	Temp. Coeff.	EACH 1-99	EACH 100-249
711-1558	RPE114Z5U225M050V	50	2200000	20	Z5U	**1.70**	**1.27**
711-1560	RPE114Z5U335M050V	50	3300000	20	Z5U	**1.76**	**1.37**
711-1564	RPE117X7R225K050V	50	2200000	10	X7R	**4.47**	**3.47**
711-1566	RPE117Z5U475M050V	50	4700000	20	Z5U	**2.29**	**1.78**
711-1568	RPE121COG151J050V	50	150	5	COG	**.10**	**.08**
711-1570	RPE121COG102J050V	50	1000	5	COG	**.12**	**.10**
711-1572	RPE121X7R103K050V	50	10000	10	X7R	**.10**	**.08**
711-1574	RPE121X7R473K050V	50	47000	10	X7R	**.11**	**.09**
711-1576	RPE121X7R104K050V	50	100000	10	X7R	**.13**	**.11**
711-1578	RPE121Z5U103M050V	50	10000	20	Z5U	**.11**	**.09**
711-1580	RPE121Z5U104M050V	50	100000	20	Z5U	**.11**	**.09**
711-1582	RPE121Z5U224M050V	50	220000	20	Z5U	**.14**	**.12**
711-1584	RPE121Z5U334M050V	50	330000	20	Z5U	**.22**	**.17**
711-1590	RPE122COG151J050V	50	150	5	COG	**.11**	**.09**
711-1592	RPE122COG331J050V	50	330	5	COG	**.11**	**.09**
711-1594	RPE122COG102J050V	50	1000	5	COG	**.11**	**.10**
711-1596	RPE122X7R471K050V	50	470	10	X7R	**.11**	**.09**
711-1598	RPE122X7R472K050V	50	4700	10	X7R	**.11**	**.09**
711-1600	RPE122X7R103K050V	50	10000	10	X7R	**.11**	**.09**
711-1602	RPE122X7R473K050V	50	47000	10	X7R	**.11**	**.09**
711-1604	RPE122X7R104K050V	50	100000	10	X7R	**.13**	**.11**
711-1606	RPE122Z5U103M050V	50	10000	20	Z5U	**.11**	**.09**
711-1608	RPE122Z5U104M050V	50	100000	20	Z5U	**.11**	**.10**
711-1610	RPE122Z5U224M050V	50	220000	20	Z5U	**.14**	**.11**
711-1612	RPE122Z5U334M050V	50	330000	20	Z5U	**.14**	**.12**
711-1614	RPE123Z5U474M050V	50	470000	20	Z5U	**.27**	**.22**
711-1616	RPE123Z5U105M050V	50	1000000	20	Z5U	**.33**	**.25**
711-1746	RPE131X7R102K050V	50	1000	10	X7R	**.09**	**.07**
711-1750	RPE131X7R103K050V	50	10000	10	X7R	**.09**	**.08**
711-1754	RPE131X7R104K050V	50	100000	10	X7R	**.12**	**.11**
711-1756	RPE131Z5U103M050V	50	10000	20	Z5U	**.11**	**.09**
711-1758	RPE131Z5U104M050V	50	100000	20	Z5U	**.10**	**.09**
711-1760	RPE132X7R102K050V	50	1000	20	X7R	**.10**	**.09**
711-1764	RPE132X7R103K050V	50	10000	20	X7R	**.10**	**.09**
711-1768	RPE132X7R104K050V	50	100000	20	X7R	**.12**	**.10**
711-1770	RPE132Z5U103M050V	50	10000	20	Z5U	**.11**	**.10**
711-1772	RPE132Z5U104M050V	50	100000	20	Z5U	**.10**	**.09**
711-1650	RPE110COG100C100V	100	10	.25 pF	COG	**.12**	**.09**
711-1652	RPE110COG120J100V	100	12	5	COG	**.10**	**.09**
711-1654	RPE110COG150J100V	100	15	5	COG	**.09**	**.08**
711-1656	RPE110COG180J100V	100	18	5	COG	**.09**	**.08**
711-1658	RPE110COG220J100V	100	22	5	COG	**.09**	**.08**
711-1660	RPE110COG270J100V	100	27	5	COG	**.09**	**.08**
711-1662	RPE110COG330J100V	100	33	5	COG	**.09**	**.08**
711-1664	RPE110COG390J100V	100	39	5	COG	**.09**	**.08**
711-1666	RPE110COG470J100V	100	47	5	COG	**.09**	**.08**
711-1668	RPE110COG101J100V	100	100	5	COG	**.09**	**.08**
711-1670	RPE110COG121J100V	100	120	5	COG	**.09**	**.08**
711-1672	RPE110COG151J100V	100	150	5	COG	**.09**	**.08**
711-1674	RPE110COG181J100V	100	180	5	COG	**.09**	**.08**
711-1676	RPE110COG221J100V	100	220	5	COG	**.10**	**.09**
711-1678	RPE110COG331J100V	100	330	5	COG	**.10**	**.09**
711-1680	RPE110COG391J100V	100	390	5	COG	**.12**	**.11**
711-1682	RPE110COG471J100V	100	470	5	COG	**.13**	**.12**
711-1684	RPE110X7R331K100V	100	330	10	X7R	**.09**	**.08**
711-1688	RPE110X7R102K100V	100	1000	10	X7R	**.09**	**.08**
711-1690	RPE110X7R222K100V	100	2200	10	X7R	**.09**	**.08**
711-1692	RPE110X7R332K100V	100	3300	10	X7R	**.10**	**.09**
711-1694	RPE110X7R472K100V	100	4700	10	X7R	**.10**	**.09**
711-1696	RPE110X7R103K100V	100	10000	10	X7R	**.10**	**.09**
711-1543	RPE113COG103J100V	100	10000	5	COG	**1.00**	**.78**
711-1700	RPE113X7R224K100V	100	220000	10	X7R	**.74**	**.61**
711-1706	RPE114X7R105K100V	100	1000000	10	X7R	**1.96**	**1.48**
711-1708	RPE114Z5U105M100V	100	1000000	20	Z5U	**1.40**	**1.09**
711-1710	RPE117Z5U225M100V	100	2200000	20	Z5U	**3.21**	**2.49**
711-1714	RPE121COG152J100V	100	1500	5	COG	**.23**	**.18**
711-1716	RPE121X7R103K100V	100	10000	10	X7R	**.10**	**.09**
711-1718	RPE121X7R104K100V	100	100000	10	X7R	**.20**	**.16**
711-1720	RPE121Z5U104M100V	100	100000	20	Z5U	**.16**	**.13**
711-1726	RPE122COG101J100V	100	100	5	COG	**.10**	**.09**
711-1728	RPE122COG471J100V	100	470	5	COG	**.11**	**.10**
711-1730	RPE122COG102J100V	100	1000	5	COG	**.13**	**.12**
711-1732	RPE122X7R102K100V	100	1000	10	X7R	**.11**	**.10**
711-1738	RPE122X7R223K100V	100	22000	10	X7R	**.12**	**.11**
711-1740	RPE122X7R104K100V	100	100000	10	X7R	**.20**	**.18**
711-1744	RPE122Z5U104M100V	100	100000	20	Z5U	**.16**	**.13**
711-1748	RPE131X7R102K100V	100	1000	10	X7R	**.10**	**.08**
711-1752	RPE131X7R103K100V	100	10000	10	X7R	**.10**	**.09**
711-1762	RPE132X7R102K100V	100	1000	20	X7R	**.10**	**.09**
711-1766	RPE132X7R103K100V	100	10000	20	X7R	**.10**	**.09**
711-1550	RPE114X7R104K500V	500	100000	10	X7R	**1.68**	**1.44**

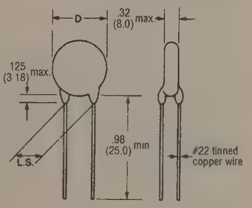
GRM Series Chip Capacitors



Non-polarized and miniature size chip capacitors have uniform dimensions and configuration. Flow and reflow solderable. Nickel barrier termination is highly resistant to metal migration. They have minimum series inductance.

Stock No.	Mfr.'s Type	EIA Size	Cap (pF)	WVDC	Tol. %	Length	Width	PER PK./100
231-1201	GRM39COG100C050AD	0603	10	50	.25PF	0.060	0.030	**9.00**
231-1203	GRM39COG150J050AD	0603	15	50	5	0.060	0.030	**9.00**
231-1205	GRM39COG180J050AD	0603	18	50	5	0.060	0.030	**9.00**
231-1207	GRM39COG220J050AD	0603	22	50	5	0.060	0.030	**9.00**
231-1327	GRM39COG270J050AD	0603	27	50	5	0.060	0.030	**9.00**
231-1209	GRM39COG330J050AD	0603	33	50	5	0.060	0.030	**9.00**
231-1211	GRM39COG470J050AD	0603	47	50	5	0.060	0.030	**9.00**
231-1215	GRM39COG680J050AD	0603	68	50	5	0.060	0.030	**9.00**
231-1217	GRM39COG820J050AD	0603	82	50	5	0.060	0.030	**9.00**
231-1219	GRM39X7R331K050AD	0603	330	50	10	0.060	0.030	**8.00**
231-1223	GRM39X7R471K050AD	0603	470	50	10	0.060	0.030	**8.00**
231-1225	GRM39X7R102K050AD	0603	1000	50	10	0.060	0.030	**8.00**
231-1227	GRM39X7R103K050AD	0603	10000	50	10	0.060	0.030	**8.00**
231-1226	GRM39X7R223K016AD	0603	22000	16	10	0.060	0.030	**8.00**
231-1231	GRM39X7R223K025AD	0603	22000	25	10	0.060	0.030	**8.00**
231-1233	GRM39X7R473K016AD	0603	47000	16	10	0.060	0.030	**8.00**
231-1235	GRM39Y5V103Z050AD	0603	10000	50	−20 +80	0.060	0.030	**9.00**
231-1234	GRM39Y5V473Z016AD	0603	47000	16	−20 +80	0.060	0.030	**9.00**
231-1239	GRM39Y5V473Z050AD	0603	47000	50	−20 +80	0.060	0.030	**9.00**
231-1238	GRM39Y5V104Z016AD	0603	100000	16	−20 +80	0.060	0.030	**9.00**
231-1242	GRM39Y5V104Z025AD	0603	100000	25	−20 +80	0.060	0.030	**9.00**
231-1243	GRM40COG100C050AD	0805	10	50	.25PF	0.080	0.050	**15.00**
231-1245	GRM40COG220J050AD	0805	22	50	5	0.080	0.050	**6.00**
231-1256	GRM40COG270J050AD	0805	27	50	5	0.080	0.050	**6.00**
231-1247	GRM40COG330J050AD	0805	33	50	5	0.080	0.050	**6.00**
231-1260	GRM40COG470J050AD	0805	47	50	5	0.080	0.050	**6.00**
231-1249	GRM40COG560J050AD	0805	56	50	5	0.080	0.050	**6.00**
231-1251	GRM40COG680J050AD	0805	68	50	5	0.080	0.050	**6.00**
231-1253	GRM40COG101J050AD	0805	100	50	5	0.080	0.050	**6.00**
231-1257	GRM40COG151J050AD	0805	150	50	5	0.080	0.050	**6.00**
231-1259	GRM40COG221J050AD	0805	220	50	5	0.080	0.050	**7.00**
231-1261	GRM40COG271J050AD	0805	270	50	5	0.080	0.050	**7.00**
231-1263	GRM40COG331J050AD	0805	330	50	5	0.080	0.050	**8.00**
231-1265	GRM40COG471J050AD	0805	470	50	5	0.080	0.050	**8.00**
231-1267	GRM40COG102J050BL	0805	1000	50	5	0.080	0.050	**8.00**
231-1269	GRM40X7R102J050AD	0805	1000	50	5	0.080	0.050	**5.00**
231-1271	GRM40X7R102J100AD	0805	1000	100	5	0.080	0.050	**6.00**
231-1273	GRM40X7R472K050BL	0805	4700	50	10	0.080	0.050	**7.00**
231-1275	GRM40X7R103K050AD	0805	10000	50	10	0.080	0.050	**6.00**
231-1277	GRM40X7R223K050BL	0805	22000	50	10	0.080	0.050	**7.00**
231-1279	GRM40X7R473K050BL	0805	47000	50	10	0.080	0.050	**20.00**
231-1281	GRM40X7R104K025BL	0805	100000	25	10	0.080	0.050	**15.00**
231-1294	GRM40Z5U104M050BL	0805	100000	50	20	0.080	0.050	**9.00**
231-1385	GRM42-6COG220J050AD	1206	22	50	5	0.125	0.063	**8.00**
231-1387	GRM42-6COG270J050AD	1206	27	50	5	0.125	0.063	**16.00**
231-1389	GRM42-6COG330J050AD	1206	33	50	5	0.125	0.063	**8.00**
231-1391	GRM42-6COG470J050AD	1206	47	50	5	0.125	0.063	**20.00**
231-1393	GRM42-6COG101J050AD	1206	100	50	5	0.125	0.063	**7.00**
231-1395	GRM42-6COG221J050AD	1206	220	50	5	0.125	0.063	**8.00**
231-1397	GRM42-6COG331J050AD	1206	330	50	5	0.125	0.063	**9.00**
231-1399	GRM42-6COG471J050AD	1206	470	50	5	0.125	0.063	**9.00**
231-1301	GRM42-6COG102J050AD	1206	1000	50	5	0.125	0.063	**13.00**
231-1303	GRM42-6COG222J050BL	1206	2200	50	5	0.125	0.063	**18.00**
231-1305	GRM42-6X7R102K050AD	1206	1000	50	10	0.125	0.063	**9.00**
231-1307	GRM42-6X7R103K050AD	1206	10000	50	10	0.125	0.063	**9.00**
231-1309	GRM42-6X7R473K050BL	1206	47000	50	10	0.125	0.063	**9.00**
231-1326	GRM42-6X7R104K050BL	1206	100000	50	10	0.125	0.063	**9.00**
231-1314	GRM42-6Y5V105Z016BL	1206	1000000	16	−20 +80	0.125	0.063	**24.00**
231-1315	GRM42-6Z5U103M050AD	1206	10000	50	20	0.125	0.063	**8.00**
231-1317	GRM42-6Z5U473M050AD	1206	47000	50	20	0.125	0.063	**18.00**
231-1319	GRM42-6Z5U104M050AD	1206	100000	50	20	0.125	0.063	**9.00**
231-1321	GRM42-2X7R104K050BL	1210	100000	50	10	0.125	0.100	**25.00**
231-1352	GRM42-2X7R224K050BL	1210	220000	50	10	0.125	0.100	**25.00**

Safety Ceramic Disc Capacitors

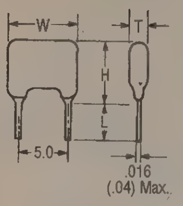


Safety recognized ceramic disc capacitors are 125 VAC rated and have −25°C to +85°C temperature characteristics. Used for across the line or line by-pass applications. Available in ammo pack for automatic insertion as custom order. Call for price and delivery.

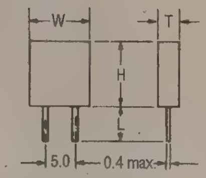
Stock No.	Mfr.'s Type	Cap (pF)	VAC	Tol. %	Dia.	L.S.	EACH	
							1-99	100-499
711-1400	DE7090B221KVA1-KC	220	125	10	.394	.300	**.16**	**.14**
711-1402	DE7090B102KVA1-KC	1000	125	10	.394	.300	**.16**	**.14**
711-1404	DE7100F222MVA1-KC	2200	125	20	.472	.300	**.21**	**.17**
711-1406	DE7120F332MVA1-KC	3300	125	20	.551	.394	**.25**	**.21**
711-1408	DE7150F472MVA1-KC	4700	125	20	.669	.394	**.30**	**.25**
711-1410	DE7150FZ103PVA1-KC	10000	125	−0 +100	.669	.394	**.33**	**.28**
711-1412	DE7150F103MVA1-KC	10000	125	20	.669	.394	**.35**	**.40**

Piezo Electric Ceramic Resonators

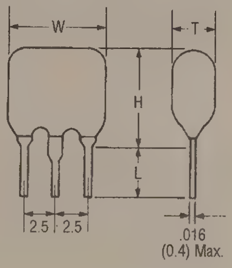
— NEW —



CSA Type



CSB Type



CST Type

Features of ceramic resonators include low cost, good stability, small size and rugged construction, and a wide frequency range. **Specifications. Frequency Range:** CSA Type — 1.26 to 32 MHz; CSB Type — 190 to 1250 KHz; CST Type — 1.80 to 25.99 MHz. **Frequency Tolerance:** ±0.5%. **Temperature Stability (−20°C to +80°C):** CSA Type — ±0.5%; CSB and CST Type — ±0.3%. **Time Stability (10 Years):** ±0.3%.

Stock No.	Mfr.'s Type	Dimensions			EACH	
		W	H	T	1-499	500-Up
711-2500	CST4.00MGW	10.0	5.0	5.0	**1.14**	**.71**
711-2501	CSA4.00MG	10.0	7.5	5.0	**.87**	**.52**
711-2502	CST6.00MGW	10.0	5.0	5.0	**1.12**	**.70**
711-2503	CSA6.00MG	10.0	5.0	5.0	**.87**	**.52**
711-2504	CST2.00MG	10.0	10.0	5.0	**2.09**	**1.31**
711-2505	CST8.00MTW	10.0	10.0	5.0	**1.33**	**.83**
711-2506	CSB1000J	5.0	6.0	2.2	**.95**	**.65**
711-2507	CSA8.00MTZ	10.0	10.0	5.0	**1.08**	**.65**
711-2508	CSA3.58MG	10.0	7.5	5.0	**.88**	**.53**
711-2509	CSA2.00MG	12.0	12.0	5.0	**1.40**	**.85**
711-2510	CSB500J	7.5	8.5	3.3	**.93**	**.63**
711-2511	CST12.00MTW	10.0	10.0	5.0	**1.52**	**.95**

Kits

These kits are specifically designed to aid the design engineer in prototyping applications. Each kit contains a wide selection of commonly used values and sizes that meet a variety of circuit design requirements.

Capacitors

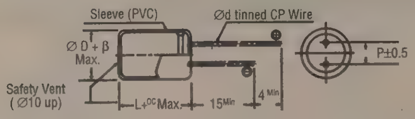
Stock No.	Mfr.'s Type	Description	Pieces Each	Values per Kit	Temp. Coefficient	Volts	EACH
711-2000	KIT-GRM36	GRM36 0402 Ceramic Chip	100 200 200	25 21 8	COG X7R Y5V	50 50 50	**600.00**
711-2002	KIT-GRM39	GRM39 0603 Ceramic Chip	50 50 50 50 50 50 50	13 15 11 3 8 10 4	COG COG X7R X7R Y5V Y5V Y5V	100 50 50 25 50 25 16	**340.00**
711-2004	KIT-GRM40	GRM40 0805 Ceramic Chip	50 100 100 100	29 22 6 1	COG X7R Z5U Y5V	50 50 50 25	**325.00**
711-2006	KIT-GRM42-6	GRM42-6 1206 Ceramic Chip	50 100 100	24 31 5	COG X7R Z5U	50 50 50	**365.00**
711-2008	KIT-RPE	Radial Lead Capacitors	50 50 50	16 8 4	COG X7R Z5U	50 100 100	**250.00**

Inductors

Stock No.	Mfr.'s Type	Description	Pieces Each	Values per Kit	Part Series	EACH
711-2010	KIT-EKLQ015A	Chip Inductors	50 40 30	14 7 9	LQN2A LQH3N LQH3C	**442.00**

UVX Series Radial Capacitors

UVX miniature electrolytic capacitor for general purpose features reduced case size anti-solvent through 100 volts. The VX series is most suitable for electronic equipment where a smaller case size is required. The small case size makes it ideal for use with high speed automatic insertion equipment. Load life of 2000 hours at 85°C. Units with Ø 6.3 mm or more are provided with our unique safety case vent. **Capacitance Tolerance:** ±20% at 120 Hz. 20°C. **Operating Temperature Range:** –40° approximately +85°C.

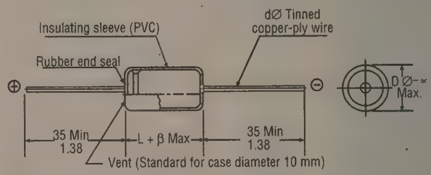


Stock No.	Mfr.'s Type	WVDC	µF	Case Size mm (D × L)	EACH			
					1-99	100-499	500-999	1000-Up
859-0500	UVX0J101MDA	6.3	100	5 × 11	.17	.13	.09	.08
859-0502	UVX0J221MEA	6.3	220	6.3 × 11	.24	.17	.14	.11
859-0504	UVX0J471MPA	6.3	470	8 × 11.5	.29	.22	.16	.13
859-0506	UVX0J102MPA	6.3	1000	10 × 12.5	.51	.38	.27	.22
859-0508	UVX0J222MHA	6.3	2200	12.5 × 20	.72	.54	.37	.31
859-0510	UVX1A220MDA	10.0	22	5 × 11	.14	.11	.08	.06
859-0512	UVX1A330MDA	10.0	33	5 × 11	.17	.12	.09	.07
859-0514	UVX1A470MDA	10.0	47	5 × 11	.17	.14	.09	.07
859-0518	UVX1A221MEA	10.0	220	6.3 × 11	.26	.19	.17	.14
859-0520	UVX1A331MPA	10.0	330	8 × 11.5	.30	.23	.16	.13
859-0522	UVX1A471MPA	10.0	470	8 × 12.5	.42	.32	.24	.19
859-0524	UVX1A102MPA	10.0	1000	10 × 16	.51	.38	.27	.22
859-0526	UVX1A222MHA	10.0	2200	12.5 × 20	.83	.62	.43	.35
859-0528	UVX1C100MDA	16.0	10	5 × 11	.14	.11	.08	.06
859-0530	UVX1C220MDA	16.0	22	5 × 11	.17	.12	.09	.07
859-0532	UVX1C330MDA	16.0	33	5 × 11	.17	.14	.09	.07
859-0534	UVX1C470MDA	16.0	47	5 × 11	.21	.16	.11	.09
859-0536	UVX1C101MEA	16.0	100	6.3 × 11	.27	.19	.14	.11
859-0538	UVX1C221MPA	16.0	220	8 × 11.5	.29	.22	.16	.13
859-0540	UVX1C331MPA	16.0	330	8 × 12.5	.42	.32	.23	.19
859-0542	UVX1C471MPA	16.0	470	10 × 12.5	.47	.36	.25	.20
859-0544	UVX1C102MPA	16.0	1000	10 × 20	.58	.45	.31	.26
859-0546	UVX1C222MHA	16.0	2200	12.5 × 25	1.32	.95	.66	.54
859-0548	UVX1C332MHA	16.0	3300	16 × 25	1.80	1.27	.89	.73
859-0550	UVX1C472MHA	16.0	4700	16 × 31.5	2.54	1.82	1.27	1.04

Stock No.	Mfr.'s Type	WVDC	µF	Case Size mm (D × L)	EACH			
					1-99	100-499	500-999	1000-Up
859-0552	UVX1E4R7MDA	25.0	4.7	5 × 11	.14	.11	.08	.06
859-0554	UVX1E100MAA	25.0	10	5 × 11	.17	.14	.09	.07
859-0556	UVX1E220MDA	25.0	22	5 × 11	.21	.16	.11	.09
859-0560	UVX1E470MDA	25.0	47	5 × 11	.27	.19	.14	.11
859-0562	UVX1E101MEA	25.0	100	6.3 × 11	.30	.22	.15	.13
859-0564	UVX1E221MPA	25.0	220	8 × 12.5	.42	.32	.25	.20
859-0566	UVX1E471MPA	25.0	470	10 × 16	.61	.47	.34	.28
859-0568	UVX1E102MHA	25.0	1000	12.5 × 20	.94	.71	.50	.41
859-0570	UVX1E222MHA	25.0	2200	16 × 25	1.80	1.27	.88	.72
859-0572	UVX1E472MHA	25.0	4700	18 × 35.5	3.32	2.37	1.65	1.35
859-0574	UVX1H010MDA	50.0	1	5 × 11	.14	.11	.09	.07
859-0576	UVX1H2R2MDA	50.0	2.2	5 × 11	.17	.13	.09	.07
859-0578	UVX1H4R7MDA	50.0	4.7	5 × 11	.21	.16	.11	.09
859-0580	UVX1H100MDA	50.0	10	5 × 11	.21	.16	.11	.09
859-0582	UVX1H220MDA	50.0	22	5 × 11	.27	.19	.14	.11
859-0584	UVX1H470MEA	50.0	47	6.3 × 11	.33	.22	.16	.13
859-0586	UVX1H101MPA	50.0	100	8 × 12.5	.40	.30	.23	.19
859-0588	UVX1H221MPA	50.0	220	10 × 16	.58	.45	.32	.26
859-0590	UVX1H471MHA	50.0	470	12.5 × 20	.95	.72	.50	.41
859-0592	UVX1H102MHA	50.0	1000	16 × 25	1.83	1.30	.91	.74
859-0595	UVX2A100MPA	100.0	10	6.3 × 11	.27	.20	.14	.11
859-0596	UVX2A220MPA	100.0	22	8 × 11.5	.30	.22	.16	.13
859-0597	UVX2A470MPA	100.0	47	10 × 16	.43	.33	.23	.19
859-0598	UVX2A101MHA	100.0	100	12.5 × 20	.63	.48	.37	.31
—	—	—	—	—	—	—	—	—

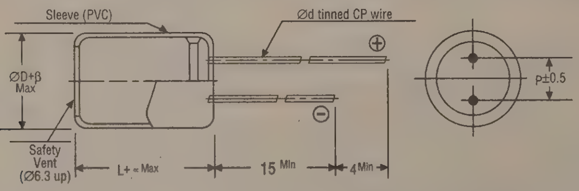
TVX Series Axial Capacitors

TVX Compact Series miniature aluminum electrolytic capacitors provide higher component density in solid-state circuitry. Features further miniaturization of both body length and diameter for greater CV density when compared to conventional type aluminum electrolytic lines. **Capacitance:** ±20%. **Operating Temperature Range:** –40°C approximately +85°C.



Stock No.	Mfr.'s Type	WVDC	µF	Case Size mm (D × L)	EACH			
					1-99	100-499	500-999	1000-Up
859-0104	TVX1A470MAA	10	47	6 × 12	.28	.20	.15	.12
859-0106	TVX1A101MAA	10	100	6 × 16	.34	.26	.18	.15
859-0108	TVX1A221MAA	10	220	8 × 16	.40	.29	.20	.17
859-0112	TVX1A102MCA	10	1000	10 × 26	.63	.48	.34	.28
859-0119	TVX1C330MAA	16	33	6 × 12	.30	.22	.16	.13
859-0120	TVX1C470MAA	16	47	6 × 12	.34	.26	.18	.15
859-0122	TVX1C101MAA	16	100	8 × 16	.38	.29	.20	.17
859-0124	TVX1C221MAA	16	220	8 × 16	.47	.35	.25	.20
859-0126	TVX1C471MAA	16	470	10 × 21	.53	.39	.28	.23
859-0128	TVX1C102MCA	16	1000	13 × 36	.91	.68	.49	.40
859-0130	TVX1C222MCA	16	2200	16 × 31.5	1.42	1.01	.73	.59
859-0132	TVX1C472MDA	16	4700	18 × 40	3.10	2.22	1.55	1.27
859-0133	TVX1C682MDA	16	6800	22 × 40	3.63	2.60	1.81	1.48
859-0134	TVX1C103MDA	16	10000	22 × 52	4.34	3.25	2.39	1.95
859-0136	TVX1E100MAA	25	10	5 × 12	.28	.21	.15	.12
859-0138	TVX1E220MAA	25	22	6 × 12	.31	.23	.16	.15
859-0140	TVX1E470MAA	25	47	6 × 16	.35	.26	.18	.15
859-0142	TVX1E101MAA	25	100	8 × 16	.40	.31	.21	.71
859-0144	TVX1E221MAA	25	220	8 × 20	.48	.36	.25	.20
859-0146	TVX1E471MCA	25	470	10 × 26	.78	.58	.41	.33
859-0148	TVX1E102MCA	25	1000	13 × 26	1.27	.91	.63	.53
859-0150	TVX1E222MCA	25	2200	16 × 41.5	2.49	1.77	1.24	1.01
859-0151	TVX1E332MOA	25	3300	18 × 40	3.15	2.47	1.81	1.48
859-0152	TVX1E472MCA	25	4700	22 × 40	3.63	2.60	1.80	1.48
859-0154	TVX1V100MAA	35	10	5 × 12	.28	.21	.15	.12
859-0156	TVX1V220MAA	35	22	6 × 12	.35	.26	.18	.15
859-0158	TVX1V470MAA	35	47	8 × 16	.35	.27	.18	.15

Stock No.	Mfr.'s Type	WVDC	µF	Case Size mm (D × L)	EACH			
					1-99	100-499	500-999	1000-Up
859-0160	TVX1V101MAA	35	100	8 × 20	.41	.31	.21	.17
859-0162	TVX1V221MAA	35	220	10 × 21	.57	.42	.29	.24
859-0164	TVX1V471MCA	35	470	13 × 26	.93	.70	.49	.40
859-0166	TVX1V102MCA	35	1000	13 × 31.5	1.46	1.04	.73	.59
859-0168	TVX1V222MCA	35	2200	16 × 34.5	2.92	2.08	1.45	1.19
859-0170	TVX1V472MDA	35	4700	22 × 52	4.22	3.17	2.32	1.90
859-0172	TVX1V103MDA	35	10000	30 × 61	8.27	6.20	4.55	3.73
859-0174	TVX1HR47MAA	50	.47	5 × 12	.30	.20	.15	.12
859-0175	TVX1H010MAA	50	1	5 × 12	.28	.21	.15	.12
859-0176	TVX1H2R2MAA	50	2.2	5 × 12	.28	.21	.15	.12
859-0177	TVX1H3R3MAA	50	3.3	5 × 12	.25	.13	.11	.10
859-0178	TVX1H4R7MAA	50	4.7	5 × 12	.28	.21	.15	.12
859-0179	TVX1H100MAA	50	10	6 × 12	.35	.26	.18	.16
859-0180	TVX1H220MAA	50	22	6 × 16	.35	.27	.18	.15
859-0182	TVX1H470MAA	50	47	8 × 16	.41	.31	.21	.17
859-0183	TVX1H101MAA	50	100	8 × 20	.54	.40	.28	.23
859-0184	TVX1H221MCA	50	220	10 × 26	.67	.50	.35	.28
859-0185	TVX1H331MCA	50	330	13 × 26	.93	.70	.49	.40
859-0186	TVX1H471MCA	50	470	13 × 26	1.27	.91	.63	.53
859-0187	TVX1H102MCA	50	1000	16 × 31.5	2.33	1.36	1.16	.95
859-0188	TVX1H222MCA	50	2200	22 × 40	4.07	3.05	2.13	1.74
859-0189	TVX1H332MDA	50	3300	22 × 52	4.98	3.73	2.63	2.15
859-0190	TVX1H472MDA	50	4700	25.4 × 52	6.12	4.59	3.38	2.76
859-0192	TVX2A100MAA	100	10	8 × 16	.35	.26	.18	.15
859-0194	TVX2A470MAA	100	47	10 × 21	.57	.42	.29	.24
859-0196	TVX2A101MCA	100	100	13 × 26	.93	.70	.49	.40
859-0198	TVX2A471MCA	100	470	16 × 41.5	2.92	2.08	1.45	1.19



UKL Series Radial Capacitors

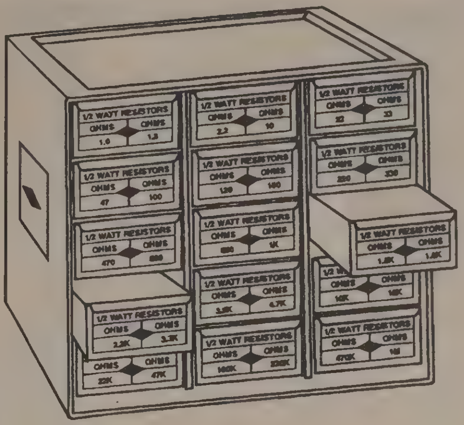
UKL low leakage current electrolytic capacitor has anti-solvent feature and small size. The UKL series will exhibit only a slight increase in leakage current when subjected to no load at high temperature or shelved for long periods of time at normal temperature. Standard units have capacitance tolerance of ±20% at 120 Hz 20°C. The Nichicon safety vent is standard on capacitors with diameters ≥6.3 mm. **Operating Temperature Range:** –40°C to approximately +105°C. **Leakage Current:** After one minute of application at rated voltage, leakage current will be no more than 0.002 CV or 0.2 µA, whichever is greater. Other values, tolerances and voltages available as custom orders. Call for pricing and delivery. Manufacturer's literature available upon request.

Stock No.	Mfr.'s Type	WVDC	µF	Case Size mm (D × L)	EACH			
					1-99	100-499	500-999	1000-Up
859-1002	UKL1A101MEAANA	10	100	6.3 × 11	.31	.24	.14	.12
859-1004	UKL1C100MDAANA	16	10	5 × 11	.22	.17	.11	.09
859-1008	UKL1C470MEAANA	16	47	6.3 × 11	.31	.24	.14	.12
859-1010	UKL1C101MPAANA	16	100	8 × 11.5	.32	.24	.16	.13
859-1012	UKL1C221MPAANA	16	220	8 × 11.5	.42	.32	.21	.18
859-1014	UKL1E4R7MDAANA	25	4.7	5 × 11	.21	.16	.11	.09
859-1016	UKL1E100MDAANA	25	10	5 × 11	.24	.18	.12	.10
859-1018	UKL1E220MDAANA	25	22	5 × 11	.29	.22	.14	.12
859-1020	UKL1E470MEAANA	25	47	6.3 × 11	.32	.24	.16	.13
859-1022	UKL1E101MPAANA	25	100	8 × 11.5	.37	.28	.19	.16

Stock No.	Mfr.'s Type	WVDC	µF	Case Size mm (D × L)	EACH			
					1-99	100-499	500-999	1000-Up
859-1026	UKL1V330MEAANA	35	33	6.3 × 11	.32	.24	.16	.13
859-1028	UKL1V470MPAANA	35	47	8 × 11.5	.32	.24	.16	.13
859-1030	UKL1V101MPAANA	35	100	8 × 11.5	.42	.32	.21	.18
859-1032	UKL1H010MDAANA	50	1	5 × 11	.21	.16	.11	.09
859-1034	UKL1H2R2MDAANA	50	2.2	5 × 11	.21	.16	.11	.09
859-1036	UKL1H3R3MDAANA	50	3.3	5 × 11	.21	.16	.11	.09
859-1038	UKL1H4R7MDAANA	50	4.7	5 × 11	.24	.18	.12	.10
859-1040	UKL1H100MDAANA	50	10	5 × 11	.29	.22	.14	.12
859-1042	UKL1H220MEAANA	50	22	6.3 × 11	.32	.24	.16	.13
859-1044	UKL1H470MPAANA	50	47	8 × 11.5	.37	.28	.19	.16

Resistor Kits and Capacitor Kits

- ▶ Each Kit Contains the Top 30 Most Popular Resistors or Capacitors for Group Specified
- ▶ Cabinets Stack Together to Build a Component Storage Center
- ▶ One Piece Frame Is Lightweight and Virtually Unbreakable
- ▶ Keyhole Slots for Wall Mounting
- ▶ Frame Measures 9 1/8"W × 7 1/2"H × 6 1/2"D
- ▶ Contains 15 Drawers, Each Divided in Half



Resistor Kits

RK-01 Metal Film 1/8-W Resistors, 6 Each

Ohms	Ohms	Ohms	Ohms	Ohms	Ohms	Ohms	Ohms	Ohms	Ohms
10	100	220	470	1.5K	2.2K	6.8K	20K	33K	220K
22	120	330	680	1.8K	3.3K	10K	22K	47K	330K
47	150	390	1K	2K	4.7K	15K	27K	100K	1M

635-0100..........**EACH 37.50**

RK-02 Metal Film 1/4-W Resistors, 4 Each

Ohms	Ohms	Ohms	Ohms	Ohms	Ohms	Ohms	Ohms	Ohms	Ohms
1.0	22	75	150	390	680	1.5K	2.7K	8.2K	33K
10	47	100	220	470	1K	2K	3.3K	10K	47K
15	56	120	330	560	1.2K	2.2K	4.7K	22K	100K

635-0110..........**EACH 30.00**

RK-03 Metal Film 1/2-W Resistors, 6 Each

Ohms	Ohms	Ohms	Ohms	Ohms	Ohms	Ohms	Ohms	Ohms	Ohms
1.0	10	47	150	470	1K	2.2K	4.7K	22K	220K
1.5	22	100	220	560	1.5K	3.3K	10K	47K	470K
2.2	33	120	330	680	1.8K	3.9K	15K	100K	1M

635-0120..........**EACH 45.00**

RK-04 Metal Oxide 1-W Resistors, 4 Each

Ohms	Ohms	Ohms	Ohms	Ohms	Ohms	Ohms	Ohms	Ohms	Ohms
22	1.5	4.7	24	68	150	470	1.5K	4.7K	100K
47	2.0	10	33	100	220	510	2K	10K	220K
1.0	2.2	22	47	120	330	1K	2.2K	47K	1M

635-0130..........**EACH 45.00**

RK-05 Metal Oxide 2-W Resistors, 2 Each

Ohms	Ohms	Ohms	Ohms	Ohms	Ohms	Ohms	Ohms	Ohms	Ohms
10	47	10	22	51	130	220	680	3.3K	18K
22	1.0	15	30	100	150	470	1K	5.6K	22K
33	4.7	20	47	120	200	560	1.5K	10K	100K

635-0140..........**EACH 37.50**

RK-06 Wire Wound 5-W Resistors, 2 Each

Ohms	Ohms	Ohms	Ohms	Ohms	Ohms	Ohms	Ohms	Ohms	Ohms
10	.33	1.5	3.3	5.0	8.2	22	39	150	1K
22	.47	2.2	3.9	5.1	10	27	47	220	4.7K
27	1.0	2.7	4.7	6.8	15	33	100	270	10K

635-0150..........**EACH 39.00**

RK-07 Wire Wound 10-W Resistors, 2 Each

Ohms	Ohms	Ohms	Ohms	Ohms	Ohms	Ohms	Ohms	Ohms	Ohms
.33	2.0	3.3	5.1	10	22	47	150	330	3.3K
1.0	2.2	3.9	6.8	12	27	68	180	1K	4.7K
1.5	2.7	4.7	8.2	15	33	100	220	2.2K	10K

635-0160..........**EACH 51.00**

RK-08 Wire Wound 25-W Resistors, 1 Each

Ohms	Ohms	Ohms	Ohms	Ohms	Ohms	Ohms	Ohms	Ohms	Ohms
1.0	2.0	3.0	4.7	8.2	20	39	100	220	1K
1.2	2.2	3.3	5.1	10	27	47	150	270	1.2K
1.5	2.7	3.9	6.8	15	30	75	180	470	1.5K

635-0170..........**EACH 37.50**

Capacitor Kits

CK-01 Aluminum Electrolytic Capacitors, 2 Each (*Denotes Axial Leads)

µf/Volts	µf/Volts	µf/Volts	µf/Volts	µf/Volts	µf/Volts	µf/Volts	µf/Volts	µf/Volts	µf/Volts
100/10*	47/25*	1000/25*	100/35*	.33/50	2.2/50*	10/50*	100/50*	1000/50*	100/63*
220/16*	100/25*	10/35*	.1/50	.47/50	3.3/50*	22/50*	220/50*	22/63*	1000/63*
22/25*	220/25*	47/35*	.22/50	1.0/50*	4.7/50*	47/50*	470/50*	47/63*	10/100*

635-0200..........**EACH 45.00**

CK-02 High Voltage Aluminum Electrolytic Capacitors, 1 Each (*Denotes Axial Leads)

µf/Volts	µf/Volts	µf/Volts	µf/Volts	µf/Volts	µf/Volts	µf/Volts	µf/Volts	µf/Volts	µf/Volts
1.0/160	4.7/160	33/160	100/160*	3.3/250	22/250	1.0/350	4.7/350*	47/350	4.7/450
2.2/160	10/160	47/160	1.0/250	4.7/250	33/250	2.2/350	10/350	100/350	10/450
3.3/160	22/160	100/160	2.2/250	10/250	47/250	3.3/350	33/350	1.0/450	10/450*

635-0210..........**EACH 45.00**

CK-03 Non-Polarized Aluminum Electrolytic Capacitors, 2 Each (*Denotes Axial Leads)

µf/Volts	µf/Volts	µf/Volts	µf/Volts	µf/Volts	µf/Volts	µf/Volts	µf/Volts	µf/Volts	µf/Volts
4.7/25	1.0/50*	3.3/50	4.7/50*	22/50	47/50*	2.2/100*	4.7/100	10/100*	33/100*
10/25	2.2/50	3.3/50*	10/50	22/50*	1.0/100	3.3/100	4.7/100*	22/100*	47/100*
1.0/50	2.2/50*	4.7/50	10/50*	47/50	2.2/100*	3.3/100*	10/100	33/100	100/100*

635-0220..........**EACH 45.00**

CK-04 Tantalum Capacitors, 2 Each

µf/Volts	µf/Volts	µf/Volts	µf/Volts	µf/Volts	µf/Volts	µf/Volts	µf/Volts	µf/Volts	µf/Volts
10/10	10/16	1.0/25	10/25	.22/35	1.0/35	4.7/35	22/35	.33/50	2.2/50
2.2/16	22/16	2.2/25	22/25	.47/35	2.2/35	6.8/35	.1/50	.47/50	4.7/50
4.7/16	10/20	4.7/25	.1/35	.68/35	3.3/35	10/35	22/50	1.0/50	10/50

635-0230..........**EACH 52.50**

CK-05 50 V Ceramic Disc Capacitors, 4 Each

pf	pf	pf	pf	pf	pf	pf	pf	pf	pf
1.0	6.0	15	33	56	100	470	1200	3300	22,000
2.0	10	18	39	68	120	680	1500	4700	47,000
5.0	12	22	47	82	330	1000	2200	10,000	100,000

635-0240..........**EACH 30.00**

CK-06 1000 V Ceramic Disc Capacitors, 4 Each

pf	pf	pf	pf	pf	pf	pf	pf	pf	pf
3.3	10	20	47	100	220	500	1000	4700	47,000
5.0	15	22	56	150	330	560	1500	5000	50,000
6.8	18	39	68	180	470	680	2200	10,000	100,000

635-0250..........**EACH 37.50**

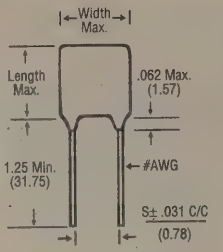
CK-07 Mylar/Film Capacitors, 1 Each; All Values Are Radial Lead

µf/Volts	µf/Volts	µf/Volts	µf/Volts	µf/Volts	µf/Volts	µf/Volts	µf/Volts	µf/Volts	µf/Volts
.01/50	.01/100	.047/100	.47/100	.33/250	.01/400	.0033/630	.015/630	.05/630	.15/630
.1/50	.022/100	.1/100	.047/250	1.0/250	.1/400	.0047/630	.022/630	.068/630	.22/630
.001/100	.033/100	.22/100	.1/250	1.5/250	.001/630	.01/630	.047/630	.1/630	.47/630

635-0260..........**EACH 48.00**

Series Capacitors

The CW-Series capacitors are designed to provide reliable temperature stable performance over an extremely wide temperature range in bypass, coupling and blocking operations. The CY- and CZ-Series capacitors are ideally suited for a wide range of non-critical general purpose bypass, coupling and filtering applications. **Note:** CN types have COG (NPO) temperature characteristic and are ideally suited for RC network, pulse and RF tuned circuit applications where extremely stable performance is required.



MONO-Kap® Ceramic Capacitors

Size Code*	Max. Length	Max. Width	Max. Thickness	Lead Space	Lead Diameter	Lead AWG
15	.150 (3.81)	.150 (3.81)	.100 (2.54)	.100 (2.54)	.020 (0.50)	24
20	.200 (5.08)	.200 (5.08)	.125 (3.17)	.100 (2.54)	.020 (0.50)	24
30	.300 (7.62)	.300 (7.62)	.150 (3.81)	.200 (5.08)	.020 (0.50)	24

*Size Chart. Code based on first 2 digits in Mfr.'s Type No.

CW Series — Temperature Stable and Epoxy Coated

Stock No.	Mfr.'s Type†	WVDC	Cap. (mfd)	EACH 1-499	EACH 500-999
748-2003	CW15C221K	50	220 pf	.45	.33
748-2008	CW15C471K	50	470 pf	.45	.33
748-2009	CW15C561K	50	560 pf	.45	.33
748-2010	CW15C681K	50	680 pf	.45	.33
748-2011	CW15C821K	50	820 pf	.45	.33
748-2012	CW15C102K	50	0.0010	.45	.33
748-2013	CW15C102M	50	0.0010	.47	.33
748-2017	CW15C222K	50	0.0022	.45	.33
748-2019	CW15C332K	50	0.0033	.45	.33
748-2021	CW15C472K	50	0.0047	.45	.33
748-2024	CW15C103K	50	0.0100	.45	.33
748-2025	CW15C103M	50	0.0100	.46	.31
748-2027	CW15C153K	50	0.0150	.47	.32
748-2030	CW20C223K	50	0.0220	.48	.31
748-2034	CW20C473K	50	0.0470	.51	.42
748-2035	CW20C473M	50	0.0470	.51	.42
748-2037	CW20C683K	50	0.0680	.52	.42
748-2039	CW20C104K	50	0.1000	.47	.33
748-2040	CW20C104M	50	0.1000	.47	.33
748-2043	CW30C154K	50	0.1500	.60	.50
748-2044	CW30C224K	50	0.2200	.73	.46
748-2050	CW15A471K	100	470 pf	.45	.35
748-2052	CW15A681K	100	680 pf	.45	.35
748-2054	CW15A102K	100	0.0010	.45	.35
748-2058	CW15A222K	100	0.0022	.45	.35
748-2060	CW15A332K	100	0.0033	.45	.35
748-2062	CW15A472K	100	0.0047	.46	.36
748-2066	CW15A103M	100	0.0100	.47	.37
748-2070	CW20A223K	100	0.0220	.52	.42
748-2072	CW20C333K	100	0.0330	.52	.42
748-2074	CW20A473K	100	0.0470	.55	.45
—	—	—	—	—	—

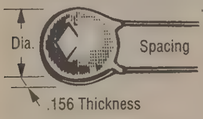
CY-CZ Series — General-Purpose Miniature Size Capacitors with High Capacitance, Epoxy Coated

Stock No.	Mfr.'s Type†	WVDC	Cap. (mfd)	EACH 1-499	EACH 500-999
748-4009	CY15C103M	50	0.0100	.60	.40
748-4012	CY15C223M	50	0.0220	.65	.49
748-4016	CY20C104M	50	0.1000	.65	.50
748-4018	CY20C104Z	50	0.1000	.46	.36
748-3001	CZ15C102M	50	0.0010	.49	.36
748-3002	CZ15C103Z	50	0.0100	.44	.34
748-3003	CZ20C473Z	50	0.0470	.46	.36
748-3004	CZ20C104M	50	0.1000	.45	.36
748-3005	CZ20C104Z	50	0.1000	.44	.34
748-4019	CY20C154M	50	0.1500	.50	.40
748-4020	CY20C224M	50	0.2200	.51	.41
748-3006	CZ20C224M	50	0.2200	.48	.38
748-3009	CZ30C334M	50	0.3300	.49	.39
748-4022	CZ30C474M	50	0.4700	.55	.45
748-4023	CY30C684M	50	0.6800	.68	.50
748-4024	CY30C105M	50	1.0000	.65	.55
748-3010	CZ30C474Z	50	0.4700	.54	.44
748-3011	CZ30C105M	50	1.0000	.60	.45
748-3008	CZ20A104M	100	0.1000	.50	.40
748-4041	CZ30A224M	100	0.2200	.65	.55

CN Series — Ultra Stable COG (NPO) Rated

Stock No.	Mfr.'s Type†	WVDC	Cap. (mfd)	EACH 1-499	EACH 500-999
748-1022	CN15C101K	50	100 pf	.46	.36
748-1020	CN30C103K	50	0.0100	.75	.65
748-1021	CN30C103J	50	0.0100	.89	.79
748-1001	CN15A100K	100	10 pf	.48	.38
748-1002	CN15A150K	100	15 pf	.48	.38
748-1003	CN15A220K	100	22 pf	.48	.38
748-1004	CN15A330K	100	33 pf	.48	.38
748-1005	CN15A470K	100	47 pf	.48	.38
748-1006	CN15A680K	100	68 pf	.48	.38
748-1023	CN15A101J	100	100 pf	.50	.40
748-1007	CN15A101K	100	100 pf	.45	.35
748-1008	CN15A151K	100	150 pf	.49	.39
748-1009	CN15A221K	100	220 pf	.50	.40
748-1012	CN15A331K	100	330 pf	.50	.40
748-1011	CN20A471K	100	470 pf	.54	.44
748-1024	CN20A102J	100	0.0010	.54	.44
748-1013	CN20A102K	100	0.0010	.52	.42
748-1014	CN20A152K	100	0.0015	.57	.47
748-1015	CN30A222K	100	0.0022	.58	.48
748-1016	CN30A332K	100	0.0033	.78	.68
748-1018	CN30A682J	100	0.0068	3.70	3.00
748-1025	CN30A103K	100	0.0100	.90	.80

†Last letter of Mfr.'s Type No. indicates tolerance: K — ±10%; M — ±20%; P — +100%, –0%; J — ±5%.

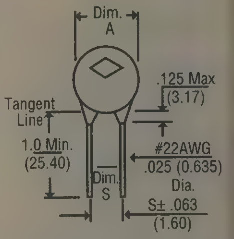


UK Miniature Disc Capacitors

Philips Ultra-Kap capacitors provide many advantages when compared to ordinary ceramic capacitors. Their unique semiconductor design allows for the maximum in capacitance while retaining the miniature size required for today's low voltage applications. Dissipation factor at 1 kHz, 5-10%. **Tolerance:** ±20%. Tinned wire leads #22 AWG. **Weight:** 1 ounce.

Stock No.	Mfr.'s Type	WVDC	Cap. (µF)	Size In. Max. Dia. × Spacing	EACH 1-499
748-6057	UK12-503	12	.050	.256 × .250	.55
748-6055	UK12-104	12	.100	.310 × .250	.52
748-6060	UK16-103	16	.010	.197 × .250	.50
748-6067	UK16-503	16	.050	.256 × .250	.60
748-6061	UK16-104	16	.100	.310 × .375	.55
748-6110	UK25-103	25	.010	.197 × .250	.50
748-6113	UK25-223	25	.022	.256 × .250	.54
748-6122	UK25-503	25	.050	.290 × .250	.60
748-6111	UK25-104	25	.100	.490 × .375	.55
748-6165	UK50-103	50	.010	.197 × .250	.50
748-6170	UK50-104	50	.100	.590 × .375	.69
748-6180	UK50-223	50	.022	.256 × .250	.60
748-6190	UK50-473	50	.047	.394 × .375	.62
748-6195	UK50-503	50	.050	.394 × .375	.62

Capacitors



Philips General Purpose capacitors provide a wide choice of 1000 volt DC rated units for general purpose applications. These high dielectric ceramic discs offer small physical size, tighter tolerances and a rugged humidity resistant coating. Capacitors are primarily designed for non-critical coupling, bypass and filter applications found in all types of entertainment, industrial and medical equipment. **Capacitance Tolerance:** ±10%, (*) ±20% or (†) +100 –0% (GMV) or (‡) +80 –20% as listed. **Working Voltage:** 1000 volts DC except (‡) 500 DC. **Dielectric Strength:** 200% of rated working voltage. **Operating Temperature Range:** –55°C to +85°C. **Encapsulation:** Phenolic coated. Insulation **Resistance:** 10,000 megohms minimum. Tested at 500 volts DC maximum. Centralab diamond, capacitance value, capacitance tolerance or code letter (D = ±0.5 pf, K = ±10%, M = ±20%, P = +100 –0%) working voltage and EIA temperature characteristic code as space permits.

Code	Dim. A In.	Dim. A mm	Dim. S In.	Dim. S mm	Thk. In.	Thk. mm
A	.197	7.37	.250	6.35	.177	4.50
B	.290	7.74	.250	6.35	.177	4.50
C	.394	10.29	.250	6.35	.177	4.50
D	.472	12.70	.250	6.35	.177	4.50
E	.256	6.50	.250	6.35	.177	4.50
F	.310	7.87	.250	6.35	.177	4.50
G	.750	19.05	.375	9.52	.177	4.50
H	.930	23.62	.375	9.52	.177	4.50

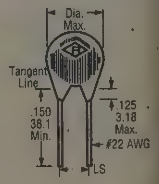
Stock No.	Mfr.'s Type	Cap. (pF)	Size Code	EIA TC Code	EACH 1-499	EACH 500-999	EACH 1000-Up
748-0050	DD-050	5	A	S2L	.49	.33	.06
748-0100	DD-100	10	E	S2L	.49	.33	.06
748-0150	DD-150	15	E	S2L	.49	.33	.06
748-0180	DD-180	18	B	S2L	.49	.33	.06
748-0200	DD-200	20	B	S2L	.49	.33	.06
748-0220	DD-220	22	B	S2L	.49	.33	.06
748-0250	DD-250	25	F	S2L	.49	.33	.06
748-0270	DD-270	27	F	S2L	.49	.33	.06
748-0300	DD-300	30	C	S2L	.49	.33	.06
748-0330	DD-330	33	C	S2L	.49	.33	.06
748-0390	DD-390	39	C	S2L	.49	.33	.06
748-0470	DD-470	47	C	S2L	.49	.33	.06
748-0500	DD-500	50	E	S3N	.49	.33	.06
748-0560	DD-560	56	E	S3N	.49	.33	.06
748-0680	DD-680	68	E	S3N	.49	.33	.06
748-0820	DD-820	82	E	S3N	.49	.33	.06
748-0101	DD-101	100	B	S3N	.45	.31	.05
748-0121	DD-121	120	B	S3N	.49	.33	.06
748-0151	DD-151	150	F	S3N	.49	.33	.06
748-0181	DD-181	180	C	S3N	.49	.33	.06
748-0201	DD-201	200	C	S3N	.49	.33	.06
748-0221	DD-221	220	E	Z5F	.49	.33	.06
748-0251	DD-251	250	E	Z5F	.49	.33	.06
748-0271	DD-271	270	E	Z5F	.49	.33	.06
748-0301	DD-301	300	E	Z5F	.49	.33	.06
748-0331	DD-331	330	E	Z5F	.49	.33	.06
748-0391	DD-391	390	E	Z5F	.49	.33	.06
748-0471	DD-471	470	B	Z5F	.49	.33	.06
748-0501	DD-501	500	B	Z5F	.49	.33	.06
748-0561	DD-561	560	B	Z5F	.49	.33	.06
748-0681	DD-681	680	B	Z5R	.49	.33	.06
748-0751	DD-751	750	B	Z5R	.49	.33	.06
748-0821	DD-821	820	B	Z5R	.49	.33	.06
748-0102	DD-102	1000	C	Z5F	.49	.33	.06
748-0152	DD-152	1500	C	Z5R	.50	.33	.07
748-0202	DD-202	2000*	F	Z5U	.50	.33	.07
748-0222	DD-222	2200*	F	Z5U	.50	.33	.07
748-0302	DD-302	3000*	C	Z5U	.50	.33	.07
748-0392	DD-392	3900*	C	Z5U	.52	.35	.08
748-0472	DD-472	4700*	C	Z5U	.52	.35	.08
748-0502	DD-502	5000†	C	Z5U	.54	.36	.09
748-0682	DD-682	6800*	D	Z5U	.54	.36	.10
748-0103	DD-103	10000†	D	Z5U	.60	.40	.13
748-0153	DD-153	15000‡	E	Z5U	.60	.40	.13
748-0203	DD-203	20000‡	G	Z5U	.60	.40	.13
748-0303	DD-303	30000‡	G	Z5U	1.10	.85	.52
748-0503	DD-503	50000‡	H	Z5U	1.25	1.05	.67

Low-Voltage Ceramics Disc Capacitors

Working Voltage: 50 VDC to 100 VDC. Tolerance of type CK is –20% to +80%. Tolerance of type DC is ±20%. **Dielectric Strength:** 250% of rated marking voltage. **Operating Temperature Range:** –55° to +80°C. All have Z5V characteristic +22% to –82% max. capacitance change from +25°C reading over temperature range of +10°C to +85°C. **Weight:** 2 oz.

Stock No.	Mfr.'s Type	WVDC	Cap. (µF)	Size In. Max. Dia. × Max. Thick.	EACH 1-499	EACH 500-999	EACH 1000-Up
748-6385	CK-502	50	.005	.197 × .157	.49	.20	.07
748-6365	CK-103	50	.010	.256 × .157	.49	.20	.07
748-6373	CK-203	50	.020	.290 × .157	.61	.45	.15
748-6389	CK-503	50	.050	.398 × .157	.58	.30	.16
748-6369	CK-104	50	.100	.590 × .218	1.01	.90	.60
748-6430	DC-103	100	.010	.310 × .157	.48	.20	.07

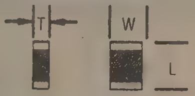
Series DD High-Voltage Disc Ceramics

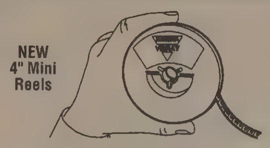


Designed for non-critical coupling, by-pass and filter applications. **Operating Temperature Range:** –55° to +85°C. Tinned wire leads. **Encapsulation:** Phenolic coated. **Dielectric Strength:** 200% of rated working voltage. These high dielectric ceramic discs offer small size, tighter tolerances and a rugged humidity resistant coating. **Weight:** 2 oz.

Stock No.	Mfr.'s Type	WVDC	Cap. (pF)	% Tol.	Size In. D × T × Spac.	EACH 1-499	EACH 500-999	EACH 1000-Up
748-0865	DD30-101	3000	100	±20	.350 × .236 × .250	.73	.40	.30
748-0867	DD30-102	3000	1000	±20	.430 × .236 × .250	.73	.40	.30
748-0912	DD30-502	3000	5000	±20	.730 × .236 × .375	.86	.60	.44
748-0977	DD60-501	6000	500	±20	.660 × .313 × .375	1.20	1.00	.79
748-0944	DD60-102	6000	1000	±20	.660 × .313 × .375	1.15	1.00	.60
748-0955	DD60-202	6000	2000	±20	.760 × .313 × .375	1.32	1.10	.89

Ceramic Chip Capacitors





Style VJ0603

Specifications. Dimensions (L × W): 0.063' × 0.031" (1.6 mm × 0.8 mm). **Thickness (T):** 0.035" (0.9 mm) max. **Termination:** Nickel-Barrier. **Temperature Coefficient:** NPO/COG — Ultra-stable ±30 ppm/°C; X7R — Semi-stable ±15%. **Temperature Range:** -55°C to +125°C. **Tolerance:** NPO/COG — ±0.5 pF under 10 pF, ±5% over 10 pF; X7R — ±10%.

NPO/COG (50 V)

Stock No.	Mfr.'s Type	Cap. (pF)	Reel Qty.	PER REEL
692-5225	VJ0603A100JXAMX	10	500	**28.00**
692-5227	VJ0603A150JXAMX	15	500	**28.00**
692-5229	VJ0603A220JXAMX	22	500	**28.00**
692-5231	VJ0603A820JXAMX	82	500	**28.00**

X7R (50 V)

Stock No.	Mfr.'s Type	Cap. (pF)	Reel Qty.	PER REEL
692-5223	VJ0603Y102KXAMX	1000	500	**27.00**
692-5224	VJ0603Y103KXAMX	0.010 µF	500	**27.00**

Style VJ0805

Specifications. Dimensions (L × W): 0.080" × 0.050" (2.0 mm × 1.2 mm). **Thickness (T):** 0.051" (1.3 mm) max. **Termination:** Nickel-Barrier. **Temperature Coefficient:** NPO/COG — Ultra-stable ±30 ppm/°C; X7R — Semi-stable ±15%. **Temperature Range:** –55°C to +125°C. **Tolerance:** NPO/COG — ±0.5 pF under 10 pF, ±5% over 10 pF; X7R — ±10%.

NPO/COG (50 V)

Stock No.	Mfr.'s Type	Cap. (pF)	Reel Qty.	PER REEL
692-5213	VJ0805A100JXAMX	10	500	**28.00**
692-5215	VJ0805A101JXAMX	100	500	**28.00**
692-5217	VJ0805A271JXAMX	270	500	**40.00**
692-5219	VJ0805A471JXAMX	470	500	**40.00**
692-5221	VJ0805A821JXAMX	820	500	**50.00**

X7R (50 V)

Stock No.	Mfr.'s Type	Cap. (pF)	Reel Qty.	PER REEL
692-5201	VJ0805Y102KXAMX	1000	500	**25.00**
692-5203	VJ0805Y222KXAMX	2200	500	**25.00**
692-5205	VJ0805Y332KXAMX	3300	500	**25.00**
692-5207	VJ0805Y472KXAMX	4700	500	**25.00**
692-5209	VJ0805Y103KXAMX	0.010 µF	500	**25.00**
692-5211	VJ0805Y104KXAMX	0.100 µF	500	**40.00**

Style VJ1206

Specifications. Dimensions (L × W): 0.126" × 0.063" (3.2 mm × 1.6 mm). **Thickness (T):** 0.059" (1.5 mm) max. **Termination:** Nickel-Barrier. **Temperature Coefficient:** NPO/COG — Ultra-stable ±30 ppm/°C; X7R — Semi-stable ±15%; Z5U — General purpose +22%, –56%. **Temperature Range:** NPO/COG and X7R — –55°C to +125°C; Z5U — +10°C to +85°C. **Tolerance:** NPO/COG — ±0.5 pF under 10 pF, ±5% over 10 pF; X7R — ±10%; Z5U — ±20%.

NPO/COG (50 V)

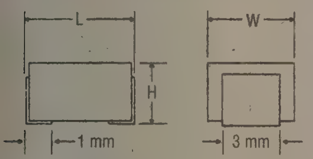
Stock No.	Mfr.'s Type	Cap. (pF)	Reel Qty.	PER REEL
692-5185	VJ1206A100JXAMX	10	500	**32.00**
692-5187	VJ1206A220JXAMX	22	500	**32.00**
692-5189	VJ1206A470JXAMX	47	500	**32.00**
692-5191	VJ1206A820JXAMX	82	500	**32.00**
692-5193	VJ1206A101JXAMX	100	500	**32.00**
692-5195	VJ1206A121JXAMX	120	500	**32.00**
692-5197	VJ1206A471JXAMX	470	500	**40.00**
692-5199	VJ1206A821JXAMX	820	500	**50.00**

X7R (50 V)

Stock No.	Mfr.'s Type	Cap. (pF)	Reel Qty.	PER REEL
692-5175	VJ1206Y102KXAMX	1000	500	**27.00**
692-5177	VJ1206Y272KXAMX	2700	500	**27.00**
692-5179	VJ1206Y223KXAMX	0.022 µF	500	**34.00**
692-5181	VJ1206Y104KXAMX	0.100 µF	500	**40.00**

Z5U (50 V

Stock No.	Mfr.'s Type	Cap. (pF)	Reel Qty.	PER REEL
692-5183	VJ1206U104MXAMX	0.100 µF	500	**50.00**



Metalized Polyester Film Capacitors

Series MKT1824

Specifications. Terminations: Tinned nickel silver (Cu/Ni/Zn). **Temperature Range:** –55°C to +100°C. **Tolerance:** ±5%. **Permissible AC Voltage:** At 63 VDC — 40 VAC at 60 Hz RMS; At 40 VDC — 25 VAC at 60 Hz RMS.

Dimensions (mm)

Case Code	L	W	H
A	7.2	4.9	3.1

Case Code	L	W	H
B	7.2	6.8	4.0

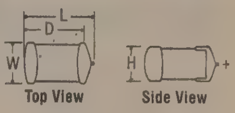
40 V

Stock No.	Mfr.'s Type	Cap. (µF)	Case Code	Reel Qty.	PER REEL
692-5109	MKT1824-468/044M	0.680	B	50	**325.00**
692-5111	MKT1824-510/044M	1.000	B	50	**355.00**

63 V

Stock No.	Mfr.'s Type	Cap. (µF)	Case Code	Reel Qty.	PER REEL
692-5101	MKT1824-310/064M	0.010	A	50	**95.00**
692-5103	MKT1824-347/064M	0.047	A	50	**95.00**
692-5105	MKT1824-410/064M	0.100	A	50	**99.00**
692-5107	MKT1824-433/064M	0.330	B	50	**150.00**

Tantalum Capacitors



Type 595D

Specifications. Temperature Range: –55°C to +85°C (+125°C with voltage derating). **Terminals:** 60/40 tin lead SnPb. **Tolerance:** ±10%.

Dimensions (mm)

Case Code	L	W	D	H
A	3.7	1.8	2.9	1.4
B	4.0	2.6	3.2	1.6
C	7.1	3.2	6.0	2.5

Case Code	L	W	D	H
D	7.5	4.3	6.4	2.8
R	7.2	6.0	6.2	3.5
—	—	—	—	—

6.3 V

Stock No.	Mfr.'s Type	Cap. (µF)	Case Code	Reel Qty.	PER REEL
692-5151	595D156X96R3A2M	15	A	250	**165.00**
692-5167	595D227X96R3D2M	220	D	100	**208.00**

10 V

Stock No.	Mfr.'s Type	Cap. (µF)	Case Code	Reel Qty.	PER REEL
692-5149	595D106X9010A2M	10	A	250	**165.00**
692-5159	595D686X9010C2M	68	C	100	**125.00**
692-5165	595D157X9010D2M	150	D	100	**208.00**
692-5173	595D337X9010R2M	330	R	100	**425.00**

16 V

Stock No.	Mfr.'s Type	Cap. (µF)	Case Code	Reel Qty.	PER REEL
692-5147	595D475X9016A2M	4.7	A	250	**165.00**
692-5155	595D106X9016B2M	10	B	250	**208.00**
692-5157	595D156X9016B2M	15	B	250	**208.00**
692-5163	595D107X9016D2M	100	D	100	**208.00**

20 V

Stock No.	Mfr.'s Type	Cap. (µF)	Case Code	Reel Qty.	PER REEL
692-5145	595D335X9020A2M	3.3	A	250	**165.00**
692-5153	595D475X9020B2M	4.7	B	250	**208.00**

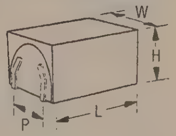
25 V

Stock No.	Mfr.'s Type	Cap. (µF)	Case Code	Reel Qty.	PER REEL
692-5161	595D336X9025D2M	33	D	100	**213.00**
692-5171	595D686X9025R2M	68	R	100	**425.00**

35 V

Stock No.	Mfr.'s Type	Cap. (µF)	Case Code	Reel Qty.	PER REEL
692-5143	595D105X9035A2M	1.0	A	250	**165.00**
692-5169	595D336X9035R2M	33	R	100	**425.00**

Solid Aluminum Capacitor OS-CON®



Type 94SM

Specifications. Life: 1000 hours at +105°C and rated voltage applied. **Leakage Current (After 2 Minutes):** Case Code A and B — 0.03 CV or 1.0 µA whichever is greater; Case Code C, D and E — 0,05 CV. **Temperature Range:** –55°C to +105°C. **Tolerance:** ±20%. **Reverse Voltage:** 20% of rated voltage. **Frequency Range:** 10 KHz to 10 MHz. **OS-CON:** Organic Semiconductor Electrolyte.

Dimensions (mm)

Case Code	L	W	D	P
A	7.3	4.6	4.6	3.6
B	7.3	5.6	5.6	4.4
C	9.0	7.0	7.0	5.5

Case Code	L	W	D	P
D	12.0	7.0	7.0	5.5
E	13.0	8.8	8.8	7.0
—	—	—	—	—

6.3 V

Stock No.	Mfr.'s Type	Cap. (µF)	Max. ESR (Ω)*	Case Code	Reel Qty.	PER REEL
692-5129	94SM336X06R3CM	33	0.150	C	200	**400.00**

10 V

Stock No.	Mfr.'s Type	Cap. (µF)	Max. ESR (Ω)*	Case Code	Reel Qty.	PER REEL
692-5115	94SM475X0010AM	4.7	0.600	A	200	**242.00**
692-6121	94SM106X0010BM	10	0.400	B	200	**285.00**
692-5127	94SM226X0010CM	22	0.150	C	200	**400.00**
692-5135	94SM476X0010DM	47	0.125	D	200	**565.00**
692-5141	94SM107X0010EM	100	0.080	E	100	**465.00**

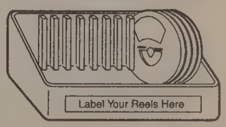
16 V

Stock No.	Mfr.'s Type	Cap. (µF)	Max. ESR (Ω)*	Case Code	Reel Qty.	PER REEL
692-5119	94SM475X0016BM	4.7	0.400	B	200	**285.00**

20 V

Stock No.	Mfr.'s Type	Cap. (µF)	Max. ESR (Ω)*	Case Code	Reel Qty.	PER REEL
692-5113	94SM105X0020AM	1.0	0.700	A	200	**242.00**
692-5117	94SM225X0020BM	2.2	0.500	B	200	**285.00**
692-5123	94SM475X0020CM	4.7	0.150	C	200	**400.00**
692-5125	94SM106X0020CM	10	0.150	C	200	**400.00**
692-5131	94SM226X0020DM	22	0.125	D	200	**565.00**
692-5133	94SM336X0020DM	33	0.125	D	200	**565.00**
692-5137	94SM476X0020EM	47	0.080	E	100	**465.00**
692-5139	94SM686X0020EM	68	0.080	E	100	**465.00**

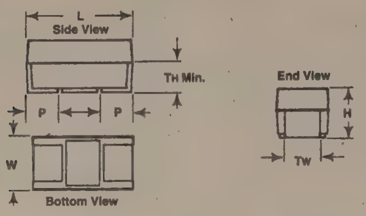
4" Reel Storage Rack



- ► Holds 23 Reels (8 mm Only)
- ► Sits on Benchtop
- ► Includes Label Holder
- ► Black Conductive Plastic

692-5300. 970 300..**EACH 45.00**

Type 293D Solid Tantalum Chip Capacitors



Dimensions

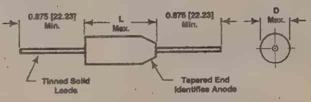
Case Code	EIA Size	L	W	H	P	T_W	T_H (Min.)
A	3216	.126 ±.008 (3.2 ±.20)	.063 ±.008 (1.6 ±.20)	.063 ±.008 (1.6 ±.20)	.031±.012 (.80 ±.30)	.047±.004 (1.2 ±.10)	.028 (.7)
B	3228	.138 ±.008 (3.5 ±.20)	.110 ±.008 (2.8 ±.20)	.075 ±.008 (1.9 ±.20)	.031±.012 (.80 ±.30)	.087±.004 (2.2 ±.10)	.028 (.7)
C	6032	.236 ±.012 (6.0 ±.30)	.126 ±.012 (3.2 ±.30)	.098 ±.012 (2.5 ±.30)	.051±.012 (1.3 ±.30)	.087±.004 (2.2 ±.10)	.039 (1.0)
D	7343	.287 ±.012 (7.3 ±.30)	.170 ±.012 (4.3 ±.30)	.110 ±.012 (2.8 ±.30)	.051±.012 (1.3 ±.30)	.095±.004 (2.4 ±.10)	.039 (1.0)

- Molded Case Available In Four Case Codes (Also Available in Case Codes E and R As Special Order)
- Compatible with All Popular "High Volume" Automatic Pick and Place Equipment
- Optical Character Recognition Qualified
- Meets IEC Specification QC300801/US0001 and EIA 535BAAC
- 8 mm, 12 mm Tape Available Per EIA-481-1 and Reeling Per IEC 286-3; 13" (330 mm) Standard; 7" (178 mm) or Full Reels Available
- ±10% Tolerance

Performance/Electrical Characteristics. Operating Temperature: –55°C to +85°C (to +125°C with voltage derating.) **Capacitance Range:** 0.1 µF to 470 µF. **Capacitance Tolerance:** ±20%, ±10% standard. **Voltage Rating:** 4 WVDC to 50 WVDC. **Resistance to Solder Heat:** 260°C ±5°C for 30 ±.5 seconds. **Coefficient Thermal Expansion:** 75 × 10^6 inch/inch/°C. **Molded Body:** Semiconductor grade molding material. **Compliant Terminals:** 60/40 SnPb finish, standard. **Automatic Redundant Screening:** Capacitance, DF, DCL and ESR.

Stock No.	Mfr.'s Type	WVDC	Cap. (µF)	Case Code	PER PK./100	
					1-9	10-Up
926-1055	293D685X96R3B2T	6.3	6.80	B	**25.00**	**18.00**
926-1053	293D105X9010A2T	10	1.00	A	**21.00**	**18.00**
926-1051	293D475X9010B2T	10	4.70	B	**30.34**	**24.28**
926-1069	293D106X9010C2T	10	10.00	C	**50.00**	**42.58**
926-1027	293D226X9010C2T	10	22.00	C	**48.96**	**39.17**
926-1066	293D336X9010D2T	10	33.00	D	**60.00**	**54.31**
926-1067	293D476X9010D2T	10	47.00	D	**60.00**	**54.31**
926-1049	293D105X9016A2T	16	1.00	A	**26.01**	**23.12**
926-1047	293D335X9016B2T	16	3.30	B	**30.34**	**26.97**
926-1031	293D106X9016B2T	16	10.00	B	**34.93**	**31.05**
926-1068	293D106X9016C2T	16	10.00	C	**50.00**	**42.58**
926-1065	293D226X9016D2T	16	22.00	D	**54.31**	**42.58**
926-1064	293D336X9016D2T	16	33.00	D	**54.31**	**42.58**
926-1029	293D476X9016D2T	16	47.00	D	**62.48**	**49.49**
926-1045	293D105X9020A2T	20	1.00	A	**26.01**	**23.12**
926-1043	293D225X9020B2T	20	2.20	B	**30.34**	**26.97**
926-1063	293D106X9020D2T	20	10.00	D	**54.31**	**42.58**
926-1062	293D226X9020D2T	20	22.00	D	**54.31**	**42.58**
926-1041	293D474X9025A2T	25	0.47	A	**26.01**	**23.12**
926-1039	293D105X9025B2T	25	1.00	B	**30.34**	**26.97**
926-1061	293D475X9025C2T	25	4.70	C	**54.13**	**42.18**
926-1060	293D106X9025D2T	25	10.00	D	**54.13**	**42.18**
926-1059	293D156X9025D2T	25	15.00	D	**54.13**	**42.18**
926-1033	293D226X9025D2T	25	22.00	D	**62.48**	**55.53**
926-1037	293D104X9035A2T	35	0.10	A	**26.01**	**23.12**
926-1035	293D105X9035B2T	35	1.00	B	**30.34**	**26.97**
926-1070	293D685X9035D2T	35	6.80	D	**54.13**	**42.18**
926-1058	293D106X9035D2T	35	10.00	D	**54.13**	**42.18**
926-1057	293D105X9050C2T	50	1.00	C	**60.00**	**42.08**
926-1056	293D475X9050D2T	50	4.70	D	**67.83**	**54.26**

173D Series Tantalum Capacitors



Solid tantalum capacitors are designed for auto, industrial and consumer electronic equipment. Made of precision-molded thermosetting flame-retardant epoxy resin. Supplied lead taped. **Temperature Range:** –55° to +85°C. **Capacitance Tolerance:** ±10%. **Leakage Current:** Type suffix U, 0.5 µA; type suffix V, 0.7 to 1 µA; type suffix W, 1.4 to 2 µA; type suffix X, 2.4 to 5 µA. **Dissipation Factor:** (A + 25°C) 6 through 20 WVDC capacitors, 4 to 6%; 25 through 50 WVDC capacitors, 3 to 4%.

Dimensions

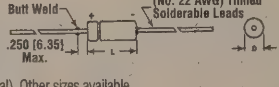
Case Code	D (Max.)	L (Max.)	Lead Diameter
U	0.095 (2.41)	0.260 (6.60)	0.020 (0.51)
V	0.110 (2.79)	0.290 (7.37)	0.020 (0.51)
W	0.180 (4.57)	0.345 (8.76)	0.020 (0.51)
X	0.180 (4.57)	0.420 (10.67)	0.020 (0.51)

10% Tolerance

Stock No.	Mfr.'s Type	WVDC	Cap., µF	Case Code	EACH	
					1-99	100-499
926-1149	173D686X9006X	6	68	X	**.55**	**.47**
926-1151	173D106X9010V	10	10	V	**.26**	**.21**

Stock No.	Mfr.'s Type	WVDC	Cap., µF	Case Code	EACH	
					1-99	100-499
926-1153	173D226X9010W	10	22	W	**.65**	**.50**
926-3053	173D476X9010X	10	47	X	**.65**	**.44**
926-1155	173D225X9015U	15	2.2	U	**.35**	**.28**
926-1157	173D685X9015V	15	6.8	V	**.40**	**.30**
926-1159	173D156X9015W	15	15	W	**.60**	**.47**
926-1161	173D336X9015X	15	33	X	**.80**	**.60**
926-1163	173D475X9020V	20	4.7	V	**.40**	**.30**
926-1165	173D226X9020X	20	22	X	**.70**	**.60**
926-1167	173D105X9025U	25	1.0	U	**.35**	**.30**
926-1169	173D225X9025V	25	2.2	V	**.40**	**.30**
926-3099	173D335X9025V	25	3.3	V	**.40**	**.30**
926-3102	173D685X9025W	25	6.8	W	**.60**	**.50**
926-1171	173D106X9025W	25	10	W	**.63**	**.50**
926-1173	173D126X9025X	25	12	X	**.75**	**.64**
926-3109	173D156X9025X	25	15	X	**.75**	**.64**
926-1175	173D104X9035U	35	0.10	U	**.35**	**.28**
926-3119	173D334X9035U	35	0.33	U	**.35**	**.28**
926-1177	173D474X9035U	35	0.47	U	**.33**	**.26**
926-1179	173D105X9035V	35	1.0	V	**.35**	**.28**
926-1181	173D225X9035W	35	2.2	W	**.70**	**.60**
926-3140	173D475X9035W	35	4.7	W	**.70**	**.60**
926-3143	173D685X9035X	35	6.8	X	**.79**	**.65**
926-1183	173D106X9035X	35	10	X	**.75**	**.55**
926-1185	173D104X9050U	50	0.10	U	**.45**	**.34**
926-1187	173D224X9050U	50	0.22	U	**.45**	**.34**
926-1189	173D105X9050V	50	1.0	V	**.45**	**.35**
926-3173	173D225X9050W	50	2.2	W	**.60**	**.52**
926-1191	173D475X9050X	50	4.7	X	**.90**	**.70**

109D Series Sintered-Anode Tantalex® Tantalum Electrolytic Capacitors



109D series fills the basic requirements for applications in the industrial, automotive and telecommunications design field. Meet requirements of Military Specification, MIL-C 39006, Style CLR65 (E Seal). Other sizes available.

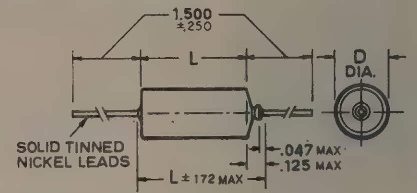
Dimensions

Case Code	Bare Tube		With Plastic-Film Insulating Sleeve	
	D ±0.016	L ±0.016	D ±0.016	L (Max.)
C	0.187 (.475 ±.406)	0.453 (11.51 ±.406)	0.203 ± 0.031 (5.16 + 0.787 ±.406)	0.515 (13.08)
F	0.281 (7.14 ±.406)	0.640 (16.26 ±.406)	0.296 ± 0.031 (7.52 + 0.787 ±.406)	0.703 (17.86)
T	0.375 (9.53 ±.406)	0.765 (19.43 ±.406)	0.390 ± 0.031 (9.91 + 0.787 ±.406)	0.828 (21.03)

10% Tolerance

Stock No.	Mfr.'s Type	WVDC	Cap., µF	Case Code	EACH	
					1-24	25-49
926-1091	109D127X9010C2	10	120	C	7.45	6.29
926-1093	109D477X9010F2	10	470	F	9.38	8.36
926-1095	109D107X9015C2	15	100	C	7.44	6.29
926-1097	109D397X9015F2	15	390	F	8.36	7.25
926-1099	109D827X9015T2	15	820	T	12.22	10.59
926-1103	109D567X9025T2	25	560	T	12.22	10.59
926-1107	109D336X9050C2	50	33	C	6.29	5.45
926-1109	109D127X9050F2	50	120	F	8.30	7.62
926-1113	109D126X9075C2	75	12	C	6.29	5.45
926-1115	109D156X9075C2	75	15	C	6.29	5.45
926-1119	109D476X9075F2	75	47	F	8.36	7.25
926-1123	109D826X9075F2	75	82	F	8.36	7.25
926-1125	109D187X9075T2	75	180	T	12.84	11.12
926-1129	109D106X9100C2	100	10	C	6.87	5.96
926-1133	109D396X9100F2	100	39	F	8.98	7.78
926-1137	109D686X9100T2	100	68	T	12.84	11.12
926-1141	109D175X9150C2	150	1.7	C	10.29	8.92
926-1145	109D226X9150F2	150	22	F	13.45	11.66

Type 150D Axial Solid Tantalum Capacitors



- Hermetically Sealed Metal Cases
- Recommended for Industrial, Military, and Commercial Applications
- Capacitors Listed Have Outer Plastic-Film Insulation
- Capacitors Listed Have Capacitance Tolerance of ±10%
- Operating Temperature Range: –80°C to +85°C; to +125°C with Voltage Derating

Dimensions

Size	D	L
A	0.135"	0.286"
B	0.185"	0.474"
R	0.289"	0.686"
S	0.351"	0.786"

For quantities in excess of 100 pieces, call for pricing and delivery at 1-800-433-5700.

6 WVDC, 8 VDC Surge

Stock No.	Mfr.'s Type	µF	Size Code	EACH	
				1-24	25-49
926-1524	150D226X9006B2	22	B	**.74**	**.59**
926-1528	150D476X9006B2	47	B	**.74**	**.59**
926-1529	150D566X9006B2	56	B	**.75**	**.63**
926-1536	150D227X9006S2	220	S	**3.23**	**2.98**

10 WVDC, 13 VDC Surge

Stock No.	Mfr.'s Type	µF	Size Code	1-24	25-49
926-1555	150D475X9010A2	4.7	A	**.44**	**.35**
926-1565	150D336X9010B2	33	B	**.74**	**.59**
926-1566	150D396X9010B2	39	B	**.74**	**.59**
926-1571	150D107X9010R2	100	R	**1.35**	**1.25**

15 WVDC, 20 VDC Surge

Stock No.	Mfr.'s Type	µF	Size Code	1-24	25-49
926-1584	150D105X9015A2	1	A	**.78**	**.62**
926-1588	150D225X9015A2	2.2	A	**.39**	**.36**
926-1590	150D335X9015A2	3.3	A	**.59**	**.45**
926-1592	150D475X9015B2	4.7	B	**.60**	**.55**
926-1596	150D106X9015B2	10	B	**.60**	**.55**
926-1598	150D156X9015B2	15	B	**.69**	**.58**
926-1600	150D226X9015B2	22	B	**.71**	**.66**
926-1610	150D157X9015S2	150	S	**3.90**	**3.57**

20 WVDC, 23 VDC Surge

Stock No.	Mfr.'s Type	µF	Size Code	1-24	25-49
926-1639	150D105X9020A2	1	A	**.43**	**.36**
926-1643	150D225X9020A2	2.2	A	**.44**	**.35**
926-1650	150D825X9020B2	8.2	B	**.69**	**.57**
926-1651	150D106X9020B2	10	B	**.73**	**.56**
926-1653	150D156X9020B2	15	B	**.73**	**.56**
926-1655	150D226X9020R2	22	R	**1.31**	**1.21**
926-1656	150D276X9020R2	27	R	**1.38**	**1.23**
926-1658	150D396X9020R2	39	R	**1.38**	**1.23**
926-1659	150D476X9020R2	47	R	**1.38**	**1.23**
926-1661	150D686X9020S2	68	S	**4.00**	**3.23**
926-1663	150D107X9020S2	100	S	**4.00**	**3.23**

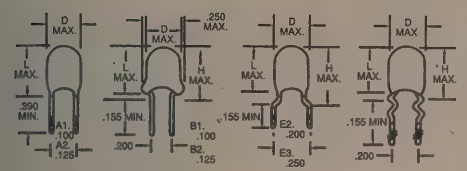
35 WVDC, 46 VDC Surge

Stock No.	Mfr.'s Type	µF	Size Code	1-24	25-49
926-1668	150D103X9035A2	.01	A	**2.56**	**2.17**
926-1680	150D104X9035A2	.1	A	**.43**	**.38**
926-1684	150D224X9035A2	.22	A	**.40**	**.34**
926-1686	150D334X9035A2	.33	A	**.40**	**.34**
926-1688	150D474X9035A2	.47	A	**.40**	**.34**
926-1692	150D105X9035A2	1	A	**.45**	**.40**
926-1693	150D125X9035B2	1.2	B	**.63**	**.58**
926-1696	150D225X9035B2	2.2	B	**.95**	**.78**
926-1698	150D335X9035B2	3.3	B	**.84**	**.69**
926-1700	150D475X9035B2	4.7	B	**.84**	**.69**
926-1701	150D565X9035B2	5.6	B	**.95**	**.78**
926-1702	150D685X9035B2	6.8	B	**.95**	**.78**
926-1704	150D106X9035R2	10	R	**1.75**	**1.43**
926-1706	150D156X9035R2	15	R	**2.24**	**1.43**
926-1708	150D226X9035R2	22	R	**1.93**	**1.58**
926-1710	150D336X9035S2	33	S	**4.31**	**3.52**
926-1711	150D396X9035S2	39	S	**4.31**	**3.52**
926-1712	150D476X9035S2	47	S	**4.76**	**3.89**

50 WVDC, 65 VDC Surge

Stock No.	Mfr.'s Type	µF	Size Code	1-24	25-49
926-1729	150D104X9050A2	.1	A	**.51**	**.43**
926-1737	150D474X9050A2	.47	A	**.54**	**.45**
926-1741	150D105X9050A2	1	A	**.54**	**.45**
926-1747	150D335X9050B2	3.3	B	**.88**	**.72**
926-1749	150D475X9050B2	4.7	B	**1.14**	**.88**
926-1753	150D106X9050R2	10	R	**2.00**	**1.64**
926-1755	150D156X9050R2	15	R	**1.81**	**1.48**
926-1757	150D226X9050R2	22	S	**4.83**	**3.95**

Type 199D Tantalex® Resin-Coated Solid-Tantalum Capacitors



Designed for use in entertainment and commercial equipment and many other minimum-cost applications. Priced competitively with any other capacitor of this type, domestic or offshore. Capacitors listed below are standard stock items; numbers ending with A1 have lead spacing of .100". Other lead styles available on special order. Drawing above shows those styles available. **Tolerance:** ±20% and ±10%; for ±5% tolerance, change 9th character in Mfr.'s Type from 0 to 5; prices available on request. **Operating Temperature Range:** –55°C to +85°C.

Code	Terminal Codes Available	Dimensions		
		D	L	H
A	A1, B1, E2, E3, G2	.177"	.280"	.340"
B	A1, B1, E2, E3, G2	.196"	.300"	.360"
C	A1, B1, E2, E3, G2	.216"	.360"	.420"
D	A1, B1, E2, E3, G2	.236"	.400"	.460"
E	E2	.340"	.492"	.552"
F	E2	.380"	.650"	.710"

Tolerance: ±10%

Stock No.	Mfr.'s Type	WVDC	Cap., µF	Case Code	EACH	
					1-99	100-249
926-5366	199D475X9010AA1	10	4.7	A	.30	.19
926-5368	199D226X9010CA1	10	22	C	.52	.41
926-5370	199D107X9010EE2	10	100	E	1.75	1.36
926-5364	199D227X9010FE2	10	220	F	4.01	3.10
926-5376	199D335X9016AA1	16	3.3	A	.27	.21
926-5378	199D156X9016CA1	16	15	C	.56	.43
926-5372	199D226X9016DA2	16	22	D	.56	.43

Tolerance: ±10% (continued)

Stock No.	Mfr.'s Type	WVDC	Cap., µF	Case Code	EACH	
					1-99	100-249
926-5380	199D686X9016EE2	16	68	E	1.73	1.35
926-5390	199D106X9020CA2	20	10	C	.52	.41
926-5392	199D156X9020DA1	20	15	D	.57	.44
926-5398	199D225X9025AA2	25	2.2	A	.31	.24
926-5402	199D685X9025CA1	25	6.8	C	.50	.39
926-5400	199D106X9025CA2	25	10	C	.56	.43
926-5404	199D336X9025EE2	25	33	E	1.73	1.35
926-5406	199D686X9025FE2	25	68	F	4.01	3.12
926-5408	199D104X9035AA2	35	0.1	A	.24	.19
926-5422	199D154X9035AA1	35	0.15	A	.24	.19
926-5533	199D224X9035AA1	35	0.22	A	.24	.19
926-5426	199D334X9035AA1	35	0.33	A	.24	.19
926-5428	199D684X9035AA1	35	0.68	A	.24	.19
926-5410	199D105X9035AA2	35	1	A	.24	.19
926-5430	199D155X9035AA1	35	1.5	A	.34	.27
926-5432	199D225X9035BA1	35	2.2	B	.37	.29
926-5434	199D335X9035BA1	35	3.3	B	.44	.34
926-5436	199D475X9035CA1	35	4.7	C	.46	.36
926-5412	199D475X9035CA2	35	4.7	C	.46	.36
926-5414	199D685X9035DA2	35	6.8	D	.52	.41
926-5416	199D106X9035DE4	35	10	D	.83	.65
926-5438	199D156X9035EE2	35	15	E	1.64	1.27
926-5444	199D104X9050AA1	50	0.1	A	.24	.19
926-5446	199D224X9050AA1	50	0.22	A	.24	.19
926-5448	199D334X9050AA1	50	0.33	A	.24	.19
926-5450	199D474X9050AA1	50	0.47	A	.31	.24
926-9998	199D105X9050BA1	50	1	B	.31	.24
926-5454	199D225X9050CA1	50	2.2	C	.56	.43
926-5440	199D475X9050DA2	50	4.7	D	.71	.55
926-5442	199D106X9050FE4	50	10	F	2.05	1.59

Tolerance: ±20%

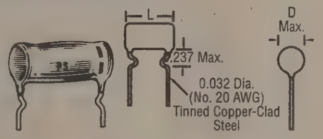
926-1914	199D475X06R3AA1	6.3	4	A	40	.16
926-1916	199D106X06R3BA1	6.3	10	B	.30	.24
926-1920	199D476X06R3DA1	6.3	47	D	.46	.37
926-1924	199D227X06R3EE2	6.3	220	E	2.11	1.80
926-1925	199D337X06R3FE2	6.3	330	F	3.11	2.54
926-1929	199D106X0010BA1	10	10	B	.30	.24
926-1933	199D476X0010DA1	10	47	D	.92	.75
926-1935	199D107X0010EE2	10	100	E	1.97	1.53
926-1936	199D157X0010EE2	10	150	E	2.77	2.16
926-1937	199D227X0010FE2	10	220	F	4.07	3.10
926-1938	199D225X0016AA1	16	2.2	A	.13	.12

Tolerance: ±20% (continued)

Stock No.	Mfr.'s Type	WVDC	Cap., µF	Case Code	EACH	
					1-99	100-249
926-1940	199D475X0016BA1	16	4.7	B	.35	.27
926-1941	199D685X0016BA1	16	6.8	B	.40	.30
926-1942	199D106X0016CA1	16	10	C	.62	.51
926-1943	199D156X0016CA1	16	15	C	.42	.34
926-1944	199D226X0016DA1	16	22	D	.55	.41
926-1945	199D336X0016DA1	16	33	D	.98	.75
926-1947	199D686X0016EE2	16	68	E	1.94	1.00
926-1948	199D107X0016FE2	16	100	E	3.20	2.62
926-1949	199D157X0016FE2	16	150	F	4.12	3.79
926-1953	199D106X0020CA1	20	10	C	.71	.51
926-1954	199D156X0020DA1	20	15	D	.72	.61
926-1959	199D107X0020FE2	20	100	F	5.53	3.84
926-1960	199D105X0025AA1	25	1	A	.29	.25
926-1961	199D155X0025AA1	25	1.5	A	.26	.23
926-1962	199D225X0025AA1	25	2.2	A	.34	.22
926-1963	199D335X0025BA1	25	3.3	B	.48	.34
926-1964	199D475X0025BA1	25	4.7	B	.58	.40
926-1965	199D685X0025CA1	25	6.8	C	1.02	.73
926-1966	199D106X0025CA1	25	10	C	.76	.53
926-1967	199D156X0025DA1	25	15	D	1.29	1.16
926-1968	199D226X0025DA1	25	22	D	1.59	1.35
926-1970	199D476X0025EE2	25	47	E	3.14	2.88
926-1972	199D104X0035AA1	35	0.1	A	.31	.21
926-1974	199D224X0035AA1	35	0.22	A	.31	.21
926-1975	199D334X0035AA1	35	0.33	A	.31	.21
926-1976	199D474X0035AA1	35	0.47	A	.25	.21
926-1977	199D684X0035AA1	35	0.68	A	.21	.16
926-1978	199D105X0035AA1	35	1	A	.27	.21
926-1980	199D225X0035BA1	35	2.2	B	.45	.34
926-1982	199D335X0035BA1	35	3.3	B	.50	.40
926-1983	199D475X0035CA1	35	4.7	C	.63	.43
926-1984	199D685X0035DA1	35	6.8	D	.66	.49
926-1985	199D106X0035DA1	35	10	D	.98	.56
926-1986	199D156X0035EE2	35	15	E	1.06	.88
926-1987	199D226X0035EE2	35	22	E	1.96	1.57
926-1988	199D336X0035FE2	35	33	F	3.09	2.56
926-1989	199D476X0035FE2	35	47	F	4.69	3.99
926-1990	199D104X0050AA1	50	0.1	A	.27	.21
926-1992	199D224X0050AA1	50	0.22	A	.29	.21
926-1996	199D105X0050BA1	50	1	B	.35	.28
926-2002	199D106X0050FE2	50	1	F	2.32	1.87
926-1998	199D225X0050CA1	50	2.2	C	.55	.41
926-2000	199D475X0050DA1	50	4.7	D	.99	.70
926-2001	199D685X0050FE2	50	6.8	F	1.91	1.57
926-2004	199D226X0050FE2	50	22	F	6.56	4.60

Type PS Orange Drop Dipped Tubular Capacitors

- **Double Dipped In Bright Orange Epoxy Resin — Beats Heat and Humidity**
- **Crimped Wire Leads for Correct Spacing When Mounted on Printed Wiring Boards**
- **Dual Dielectric (Polyester Film-Paper) Solidly Impregnated with Exclusive HCX — Produces Rock-Hard Capacitor Section**
- **Other Values and Voltages Available Upon Request**



200 WVDC

Stock No.	Mfr.'s Type	Cap. (µF)	Dimensions (In.)		EACH	
			L	D	1-24	25-49
926-2104	2PSP10	0.1000	1.20	0.40	.96	.78
926-2107	2PSP22	0.2200	1.20	0.50	1.16	.84
926-2110	2PSP47	0.4700	1.60	0.55	1.20	.96

400 WVDC

926-2112	4PSS10	0.0100	0.70	0.35	.62	.54
926-2118	4PSS33	0.0330	0.90	0.40	.69	.49
926-2124	4PSP10	0.1000	1.20	0.52	.70	.55
926-2127	4PSP22	0.2200	1.60	0.60	1.21	.99
926-2128	4PSP25	0.2500	1.60	0.65	1.38	1.08

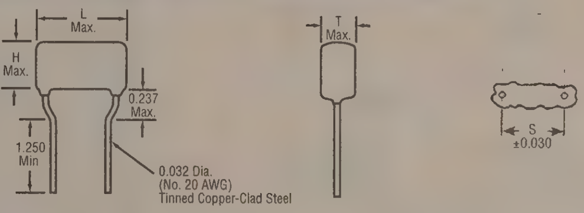
600 WVDC

926-2129	6PSD10	0.0010	0.70	0.30	.81	.53
926-2133	6PSD20	0.0020	0.70	0.33	.82	.53
926-2134	6PSD22	0.0022	0.70	0.33	.84	.53
926-2136	6PSD27	0.0027	0.70	0.35	.97	.69
926-2138	6PSD33	0.0033	0.70	0.35	1.07	.71
926-2142	6PSD50	0.0050	0.70	0.38	.88	.73
926-2149	6PSS10	0.0100	0.90	0.40	.94	.60
926-2150	6PSS12	0.0120	0.90	0.40	1.06	.63
926-2151	6PSS15	0.0150	0.90	0.40	1.06	.66
926-2152	6PSS20	0.0200	0.90	0.45	1.12	.88
926-2153	6PSS22	0.0220	0.90	0.45	1.12	.92
926-2157	6PSS33	0.0330	1.20	0.45	1.28	1.06
926-2159	6PSS39	0.0390	1.20	0.55	1.40	.87
926-2161	6PSS47	0.0470	1.20	0.55	1.45	.90
926-2162	6PSS50	0.0500	1.20	0.55	1.60	1.05
926-2168	6PSP10	0.1000	1.20	0.65	1.82	1.27
926-2169	6PSP15	0.1500	1.60	0.70	2.46	1.79
926-2170	6PSP20	0.2000	1.60	0.80	3.44	2.07
926-2171	6PSP22	0.2200	1.60	0.80	3.54	2.31
926-2172	6PSP25	0.2500	1.60	0.80	3.50	2.09
926-2173	6PSP33	0.3300	1.81	0.89	4.32	2.84

1000 WVDC

926-2183	10PSS10	0.0100	0.90	0.48	1.86	1.09
926-2185	10PSS22	0.0220	1.20	0.58	2.37	1.34
926-2191	10PSP10	0.1000	1.60	0.85	3.17	1.90

Type 225P Orange Drop® Polyester Capacitors



Type 225 capacitors are designed for PC boards and are furnished with radial leads to facilitate insertions. Used in TV sets, radios, instruments and commercial electronic equipment. Sections are wound from polyester film and thin gauge foil. Wax-free conformal epoxy coating protects against moisture. For operation up to 85°C. **Tolerance:** ±10%.

100 WVDC

Stock No.	Mfr.'s Type	Cap. (µF)	Dimensions (Inches)				EACH	
			L	S	H	T	1-24	25-49
926-2250	225P10291WD3	0.0010	0.70	0.375	0.35	0.25	.68	.43
926-2256	225P33291WD3	0.0033	0.70	0.375	0.35	0.25	.52	.40
926-2257	225P39291WD3	0.0039	0.70	0.375	0.35	0.25	.52	.40
926-2258	225P47291WD3	0.0047	0.70	0.375	0.35	0.25	.43	.36
926-2259	225P56291WD3	0.0056	0.70	0.375	0.35	0.25	.52	.43
926-2260	225P68291WD3	0.0068	0.70	0.375	0.35	0.25	.52	.43
926-2262	225P10391WD3	0.0100	0.70	0.375	0.35	0.25	.53	.44
926-2266	225P22391WD3	0.0220	0.70	0.375	0.35	0.25	.52	.40
926-2270	225P47391WD3	0.0470	0.70	0.375	0.42	0.30	.56	.45
926-2274	225P10491WD3	0.1000	0.70	0.375	0.55	0.40	.65	.54
926-2278	225P22491XD3	0.2200	0.80	0.375	0.70	0.46	1.00	.81
926-2279	225P27491XD3	0.2700	0.80	0.375	0.74	0.49	1.16	.96
926-2280	225P33491XD3	0.3300	0.80	0.375	0.77	0.52	1.19	.95
926-2282	225P47491XD3	0.4700	0.80	0.375	0.86	0.60	1.74	1.34
926-2284	225P68491YD3	0.6800	1.25	0.719	0.90	0.58	2.15	1.66
926-2286	225P10591YD3	1.0000	1.25	0.719	0.98	0.72	2.80	.96

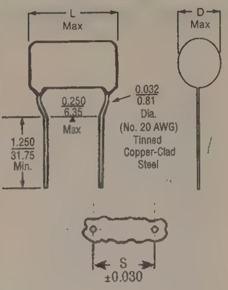
200 WVDC

926-2293	225P10392XD3	0.0100	0.80	0.375	0.58	0.28	.59	.47
926-2299	225P10492XD3	0.1000	0.80	0.375	0.71	0.37	.73	.59
926-2300	225P15492XD3	0.1500	0.80	0.375	0.74	0.41	.82	.64
926-2301	225P22492XD3	0.2200	0.80	0.375	0.77	0.48	.94	.75
926-2302	225P33492YD3	0.3300	1.25	0.719	0.71	0.41	1.23	.82
926-2303	225P47492YD3	0.4700	1.25	0.719	0.83	0.50	1.76	1.30

400 WVDC

926-2311	225P10394XD3	0.0100	0.80	0.375	0.58	0.28	.62	.47
926-2317	225P10494XD3	0.1000	0.80	0.375	0.84	0.52	1.02	.72
926-2319	225P22494YD3	0.2200	1.25	0.719	0.89	0.56	1.76	1.30
926-2320	225P33494YD3	0.3300	1.25	0.719	0.99	0.72	2.32	1.84
926-2321	225P47494YD3	0.4700	1.25	0.719	1.14	0.84	4.79	3.56

Type 715P Orange Drop Polypropylene Dipped Tubulars



- **Conformly Coated With Flame-Retardant Epoxy Which Provides Protection From Humidity and Mechanical Damage**
- **Furnished With 1.250" Long "Hockeystick" Crimped Leads**

Operating Temperature Range: –55° to +85°C; to +105°C with 50% voltage derating. **Capacitance Tolerance:** ±5%. **Dielectric Strength:** Unit rated up to 800 volts shall withstand a d-c potential of 250% of rated voltage for not more than 5 seconds. Units rated above 800 volts — 200%.

Dimensions (In Inches)

Size Code	L	S
J	0.75	0.375
K	0.95	0.375

Size Code	L	S
L	1.30	0.719
M	1.70	1.094

200 WVDC

Stock No.	Mfr.'s Type	Cap. (µF)	Size Code	Dim. D	EACH 1-49	EACH 50-99
926-7188	715P10352JD3	0.0100	J	0.25	.45	.36

400 WVDC

Stock No.	Mfr.'s Type	Cap. (µF)	Size Code	Dim. D	EACH 1-49	EACH 50-99
926-7189	715P47254JD3	0.0047	J	0.34	.45	.36
926-7190	715P68254JD3	0.0068	J	0.29	.45	.36
926-7191	715P22354KD3	0.0220	K	0.33	.57	.46
926-7192	715P47354LD3	0.0470	L	0.37	.71	.57
926-7193	715P68354LD3	0.0680	L	0.42	.77	.62
926-7194	715P10454LD3	0.1000	L	0.48	.84	.67

600 WVDC

Stock No.	Mfr.'s Type	Cap. (µF)	Size Code	Dim. D	EACH 1-49	EACH 50-99
926-7100	715P10256JD3	0.0010	J	0.35	.47	.36
926-7102	715P22256JD3	0.0022	J	0.33	.47	.36
926-7103	715P33256JD3	0.0033	J	0.32	.50	.38
926-7104	715P47256JD3	0.0047	J	0.34	.49	.38
926-7105	715P68256JD3	0.0068	J	0.38	.52	.41
926-7120	715P10356KD3	0.0100	K	0.36	.57	.44
926-7121	715P15356KD3	0.0150	K	0.42	.73	.57
926-7122	715P22356KD3	0.0220	K	0.48	.60	.47
926-7195	715P33356LD3	0.0330	L	0.76	.69	.55
926-7123	715P47356KD3	0.0470	K	0.50	.75	.58
926-7125	715P10456LD3	0.1000	L	0.71	1.18	.92
926-7127	715P22456MD3	0.2200	M	0.83	1.98	1.54

800 WVDC

Stock No.	Mfr.'s Type	Cap. (µF)	Size Code	Dim. D	EACH 1-49	EACH 50-99
926-7196	715P68258LD3	0.0068	L	0.29	.65	.52
926-7197	715P10358LD3	0.0100	L	0.33	.67	.54
926-7140	715P15358LD3	0.0150	L	0.38	1.11	.86
926-7142	715P33358LD3	0.0330	L	0.51	1.18	.92
926-7198	715P47358MD3	0.0470	M	0.50	1.33	1.06
926-7144	715P10458MD3	0.1000	M	0.67	1.98	1.54

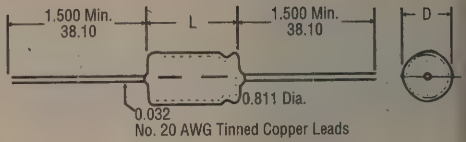
1200 WVDC

Stock No.	Mfr.'s Type	Cap. (µF)	Size Code	Dim. D	EACH 1-49	EACH 50-99
926-7161	715P473512MD3	0.0470	M	0.74	1.96	1.52

1600 WVDC

Stock No.	Mfr.'s Type	Cap. (µF)	Size Code	Dim. D	EACH 1-49	EACH 50-99
926-7199	715P102516LD3	0.0010	L	0.29	.65	.52
926-7200	715P152516LD3	0.0015	L	0.32	.65	.52
926-7180	715P222516LD3	0.0022	L	0.32	.75	.58
926-7181	715P332516LD3	0.0033	L	0.41	.86	.69
926-7182	715P472516LD3	0.0047	L	0.43	.86	.67
926-7183	715P682516LD3	0.0068	L	0.52	.97	.75
926-7184	715P103516LD3	0.0100	L	0.60	1.29	1.01
926-7186	715P223516MD3	0.0220	M	0.60	1.98	1.54
926-7187	715P333516MD3	0.0330	M	0.82	3.17	2.84

Type TE LITTL-LYTIC Axial Electrolytic Capacitors



- **Proven Dependable Performance in Industrial and Electronic Equipment With Either Transistor or Modified Electron-Tube Circuits**
- **All Terminal Connections Welded, Eliminating Possibility of "Open" or Intermittent Contacts Occasionally Found in Pressure Joints of Conventional Capacitors**
- **Superior in Size, Performance Characteristics, Shelf Life, Construction, Reliability**
- **Metal-Encased, With Plastic Outer Insulating Sleeve**
- **Excellent Circuit Performance When Used as Coupling Capacitors**
- **Minimum Drain and Long Battery Life When Used in Battery Bypass Applications**
- **Better Performance Under Life Test Than Most Miniature Aluminum Electrolytic Capacitors**

Dimensions (In Inches)

Size Code	D	L
BA	0.260	0.536
BB	0.260	0.723
CB	0.322	0.723
CC	0.322	0.848
DB	0.385	0.723

Size Code	D	L
DC	0.385	0.848
DD	0.385	0.973
DF	0.385	1.286
DH	0.385	1.536
—	—	—

25 WVDC

Stock No.	Mfr.'s Type	Cap. (MF)	Size Code	EACH 1-24	EACH 25-99	EACH 100-499
926-0326	TE1202	5	BA	1.38	1.05	.85
926-0328	TE1204	10	BB	1.38	1.05	.85
926-0330	TE1205	15	BB	1.38	1.05	.85
926-0334	TE1207	25	CB	1.41	1.08	.87
926-0336	TE1209	50	CC	1.41	1.08	.87
926-0338	TE1211	100	DD	1.67	1.23	1.00

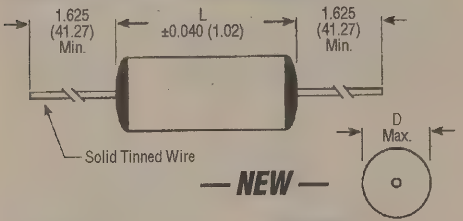
50 WVDC

Stock No.	Mfr.'s Type	Cap. (MF)	Size Code	EACH 1-24	EACH 25-99	EACH 100-499
926-0344	TE1300	1	BA	1.42	1.05	.85
926-0348	TE1304	10	CB	1.62	1.08	.87
926-0350	TE1304.2	15	CB	1.45	1.10	.87
926-0354	TE1305.5	25	CC	1.41	1.08	.87
926-0356	TE1307	50	DD	1.67	1.24	1.01
926-0358	TE1309	100	DH	1.83	1.39	1.14

100 WVDC

Stock No.	Mfr.'s Type	Cap. (MF)	Size Code	EACH 1-24	EACH 25-99	EACH 100-499
926-0370	TE1400	1	BA	1.38	1.05	.85
926-0372	TE1404	5	CC	1.40	1.07	.87
926-0374	TE1407	10	DC	1.53	1.17	.94

Type 632P Film Capacitors



— NEW —

- **Metalized Polycarbonate, Wrap-and-Fill**
- **Superior Performance**
- **High Efficiency**
- **High Stability**
- **High Reliability**
- **Rugged Construction**
- **Small Size**

Operating Temperature: –55°C to +125°C. **Capacitance Range:** 0.001 µF to 10.0 µF. **Capacitance Tolerance:** ±10%, ±5%. **DC Voltage Rating:** 50 WVDC to 400 WVDC. **Dissipation Factor:** 0.25% maximum.

Stock No.	Mfr.'s Type	Cap. (µF)	Case Size D × L	EACH 1-49	EACH 50-99	EACH 100-499
926-6722	632P103X5050	.01	.17 × 0.44	2.06	1.72	1.47
926-6724	632P104X5050	.1	.19 × 0.56	2.12	1.77	1.52
926-6725	632P105X5050	1	.31 × 0.75	3.53	2.94	2.52
926-6728	632P106X5050	10	.60 × 1.31	15.65	13.04	11.18
926-6729	632P154X5050	.15	.23 × 0.44	2.20	1.84	1.57
926-6730	632P155X5050	1.5	.35 × 0.75	4.16	3.47	2.97
926-6731	632P205X5050	2	.40 × 0.75	4.53	3.77	3.23
926-6732	632P223X5050	.022	.17 × 0.44	1.84	1.53	1.31
926-9980	632P224X5050	.22	.23 × 0.56	2.51	2.09	1.79
926-6734	632P225X5050	2.2	.40 × 0.75	5.06	4.22	3.61
926-6735	632P333X5050	.033	.17 × 0.44	1.92	1.60	1.37
926-6736	632P334X5050	.33	.25 × 0.56	3.61	2.18	1.87
926-6737	632P473X5050	.047	.17 × 0.44	.192	1.60	1.37
926-6738	632P474X5050	.47	.31 × 0.56	2.67	2.23	1.91
926-6739	632P475X5050	4.7	.45 × 1.25	6.87	5.73	4.91
926-6740	632P684X5050	.68	.31 × 0.56	3.06	2.55	2.19
926-6741	632P102X9200	.001	.17 × 0.44	1.54	1.29	1.10
926-6742	632P105X5200	1	.55 × 1.00	6.41	5.34	4.58
926-6743	632P475X9050	4.7	.45 × 1.25	5.98	4.98	4.27

Cera-Mite® Ceramic Capacitors

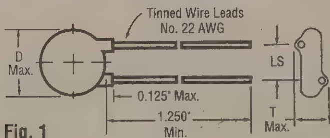


Fig. 1

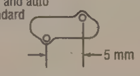


Fig. 2

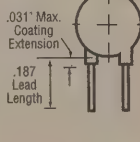


Fig. 3

Dimensions (In Inches)

Size Code	Maximum Diameter	Maximum Thickness	Std. Lead Spacing
C	0.250	0.156	0.250
E	0.290	0.156	0.250
F	0.370	0.156	0.250
G	0.440	0.156	0.250
H	0.490	0.156	0.250
J	0.560	0.156	0.375
L	0.680	0.156	0.375
M	0.760	0.156	0.375
P	0.890	0.156	0.375
Q	0.920	0.200	0.375
R	0.510	0.220	0.250
W	0.700	0.220	0.375
X	0.770	0.220	0.375

Tolerance Codes

Code	Tolerance	Code	Tolerance
J	±5%	Y	+50, –20%
K	±10%	Z	+80, –20%
M	±20%	—	—

Tiny, tough and dependable. Fine replacement for molded micas and tubular ceramics. Heavy moisture-proof insulating coat. For 85°C use.

Stock No.	Mfr.'s Type	Cap. (pF)	VDC	Fig./ Size Code	Tol. Code	EACH 1-24	EACH 25-49	EACH 50-99
926-3203	TST10	100	100	2/C	K	.19	.15	.12
926-3205	TST47	470	100	2/C	K	.16	.12	.10
926-3206	TSD10	1000	100	2/C	M	.17	.14	.11
926-3209	TGS10	10000	100	1/H	Y	.15	.11	.09
926-3214	TGS50	50000	100	1/R	M	.73	.57	.46
926-3215	TGP10	100000	100	1/W	M	.93	.73	.59
926-3216	5TSD10	1000	500	1/E	K	.17	.14	.11
926-3218	5TSD22	2200	500	1/F	K	.20	.16	.13
926-3222	5TSS10	10000	500	1/J	M	.38	.30	.24
926-3224	5HKSS10	10000	500	1/G	Z	.20	.16	.13
926-3226	5GAS50	50000	500	1/P	M	.55	.43	.35
926-3228	5GAP10	100000	500	1/X	M	1.31	1.02	.83
926-3229	5HKP10	100000	500	1/Q	Z	1.19	.92	.76
926-3251	5GAD33	3300	1000	1/E	M	.29	.23	.19
926-3253	5GAD50	5000	1000	1/F	M	.20	.15	.12
926-3255	5GAD82	8200	1000	1/H	M	.29	.23	.19
926-3256	5GAS10	10000	1000	1/H	M	.36	.25	.20
926-3257	5HKZS10	10000	1000	1/H	Z	.25	.19	.16
926-3258	5HKS10	10000	1000	1/J	Z	.30	.24	.19
926-3260	5GAS20	20000	1000	1/L	M	.35	.27	.22
926-3261	10HKS50	50000	1000	1/X	Z	1.11	.86	.70
926-3262	10GAP10	100000	1000	1/Q	M	1.37	1.07	.87
926-3265	30GAQ15	15	3000	1/E	M	.35	.27	.22
926-3266	30GAQ22	22	3000	1/E	M	.29	.21	.17
926-3268	30GAQ33	33	3000	1/E	M	.29	.23	.19
926-3272	30GAT10	100	3000	1/E	M	.29	.23	.19
926-3274	30GAT22	220	3000	1/E	M	.29	.23	.19
926-3278	30GAT47	470	3000	1/E	M	.29	.23	.19
926-3280	30GAD10	1000	3000	1/E	M	.29	.23	.19
926-3282	30GAD22	2200	3000	1/G	M	.34	.26	.21
926-3286	30GAD47	4700	3000	1/J	M	.53	.41	.34
926-3287	30GAD68	6800	3000	1/L	M	.64	.50	.41
926-3289	30GAS10	10000	3000	1/P	M	.91	.71	.58
926-3290	30GASS10	10000	3000	1/M	M	.66	.51	.42

Temperature Stable

Use where minimum capacitance change with temperature is an important consideration. Rated 1000 WVDC.

Stock No.	Mfr.'s Type	Cap. (pF)	VDC	Fig./ Size Code	Tol. Code	EACH 1-24	EACH 25-49	EACH 50-99
926-3304	10TSQ10	10	1000	1/C	K	.17	.14	.11
926-3305	10TSQ25	25	1000	1/E	K	.22	.17	.14
926-3316	10TST10	100	1000	1/C	K	.18	.14	.11
926-3321	10TST22	220	1000	1/C	K	.19	.15	.12
926-3333	10TSD10	1000	1000	1/E	K	.17	.14	.11

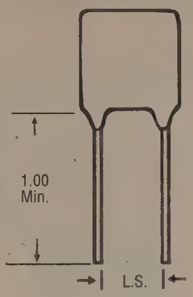
Hypercon® Ceramic Discs

Ultraminiature discs for transistorized circuitry, bypass and coupling. Especially suited for any low voltage use where high capacitance and low power factors are important.

Stock No.	Mfr.'s Type	Cap.	VDC	Fig./ Size Code	Tol. Code	EACH 1-24	EACH 25-49	EACH 50-99
926-3401	HY110	.1 µF	12	1/G	M	.20	.16	.13
926-3405	HY520	.01 µF	25	1/C	Z	.17	.14	.11
926-3406	HY820	.01 µF	25	1/C	M	.15	.12	.10
926-3408	HY525	.022 µF	25	1/E	Z	.17	.14	.11
926-3416	HY550	.1 µF	25	1/H	Z	.23	.18	.15
926-3418	HY850	.1 µF	25	1/G	M	.26	.20	.17
926-3421	HMMD22	.0022 µF	100	2/C	M	.19	.14	.11
926-3424	HMMS10	.01 µF	100	2/E	M	.28	.26	.20

Monolythic Ceramic Capacitors

Conformal-coated radial lead capacitors. Capacitors listed are 500 WVDC to 100 WVDC. **Size:** .200" W × .250" H × .125" T. Lead length is 1.0" min. Additional values, voltages, tolerances, temperature characteristics, lead styles and sizes available as special order. Call for price and delivery. Manufacturer's literature available upon request.



Temperature — COG

Stock No.	Mfr.'s Type	WVDC	Cap pF	Tol.	L.S. (In.)	EACH 1-49	EACH 50-99	EACH 100-499
926-2658	1C10C0G100J050B	50	10	5	0.100	.35	.28	.25
926-2660	1C10C0G101J050B	50	100	5	0.100	.35	.27	.25
926-2662	1C10C0G102J050B	50	1000	5	0.100	.41	.38	.28
926-2664	1C10C0G220J050B	50	22	5	0.100	.36	.33	.24
926-2666	1C10C0G330J050B	50	33	5	0.100	.36	.33	.24
926-2668	1C10C0G331J050B	50	330	5	0.100	.41	.37	.31
926-2670	1C10C0G470J050B	50	47	5	0.100	.38	.35	.28
926-2672	1C10C0G471J050B	50	470	5	0.100	.41	.37	.31
926-2674	1C20C0G101J050B	50	100	5	0.200	.14	.12	.10
926-2676	1C20C0G102J050B	50	1000	5	0.200	.13	.12	.09
926-2678	1C20C0G220J050B	50	22	5	0.200	.14	.12	.10
926-2680	1C20C0G222J050B	50	2200	5	0.200	.19	.17	.14
926-2682	1C20C0G330J050B	50	33	5	0.200	.14	.12	.10
926-2684	1C20C0G331J050B	50	330	5	0.200	.14	.14	.12
926-2686	1C20C0G471J050B	50	470	5	0.200	.14	.14	.12
926-2400	1C10C0G100J100B	100	10	5	0.100	.12	.11	.10
926-2402	1C10C0G220J100B	100	22	5	0.100	.16	.14	.12
926-2404	1C10C0G330J100B	100	33	5	0.100	.16	.14	.12
926-2406	1C10C0G470J100B	100	47	5	0.100	.16	.14	.12
926-2408	1C10C0G101J100B	100	100	5	0.100	.16	.14	.12
926-2410	1C10C0G221J100B	100	220	5	0.100	.16	.14	.12
926-2412	1C10C0G331J100B	100	330	5	0.100	.16	.14	.12
926-2414	1C10C0G471J100B	100	470	5	0.100	.16	.14	.12
926-2416	1C10C0G102J100B	100	1000	5	0.100	.20	.17	.15
926-2418	1C10C0G222J100B	100	2200	5	0.100	.24	.21	.18
926-2420	1C10C0G332J100B	100	3300	5	0.100	.35	.31	.27
926-2450	1C20C0G100J100B	100	10	5	0.200	.16	.14	.12
926-2452	1C20C0G220J100B	100	22	5	0.200	.16	.14	.12
926-2454	1C20C0G330J100B	100	33	5	0.200	.16	.14	.12
926-2456	1C20C0G470J100B	100	47	5	0.200	.16	.14	.12
926-2458	1C20C0G101J100B	100	100	5	0.200	.16	.14	.12
926-2460	1C20C0G221J100B	100	220	5	0.200	.16	.14	.12
926-2462	1C20C0G331J100B	100	330	5	0.200	.16	.14	.12
926-2464	1C20C0G471J100B	100	470	5	0.200	.16	.14	.12
926-2466	1C20C0G102J100B	100	1000	5	0.200	.18	.16	.14
926-2468	1C20C0G222J100B	100	2200	5	0.200	.24	.20	.18
926-2470	1C20C0G332J100B	100	3300	5	0.200	.35	.31	.27
926-2500	1C25C0G100J100B	100	10	5	0.250	.16	.14	.12
926-2502	1C25C0G330J100B	100	33	5	0.250	.16	.14	.12
926-2504	1C25C0G470J100B	100	47	5	0.250	.16	.14	.12
926-2506	1C25C0G101J100B	100	100	5	0.250	.16	.14	.13
926-2508	1C25C0G221J100B	100	220	5	0.250	.16	.14	.13
926-2510	1C25C0G331J100B	100	330	5	0.250	.16	.14	.13
926-2512	1C25C0G471J100B	100	470	5	0.250	.16	.14	.13
926-2514	1C25C0G102J100B	100	1000	5	0.250	.19	.16	.13
926-2516	1C25C0G222J100B	100	2200	5	0.250	.24	.21	.18
926-2518	1C25C0G332J100B	100	3300	5	0.250	.35	.31	.27
926-2548	1C30C0G100J100B	100	10	5	0.300	.16	.14	.12
926-2550	1C30C0G220J100B	100	22	5	0.300	.16	.14	.12
926-2552	1C30C0G330J100B	100	33	5	0.300	.16	.14	.12
926-2554	1C30C0G470J100B	100	47	5	0.300	.16	.14	.12
926-2556	1C30C0G101J100B	100	100	5	0.300	.16	.14	.12
926-2558	1C30C0G221J100B	100	220	5	0.300	.16	.14	.12
926-2560	1C30C0G331J100B	100	330	5	0.300	.16	.14	.12
926-2562	1C30C0G471J100B	100	470	5	0.300	.16	.14	.12
926-2564	1C30C0G102J100B	100	1000	5	0.300	.16	.14	.12
926-2566	1C30C0G222J100B	100	2200	5	0.300	.24	.21	.18
926-2568	1C30C0G332J100B	100	3300	5	0.300	.35	.31	.27

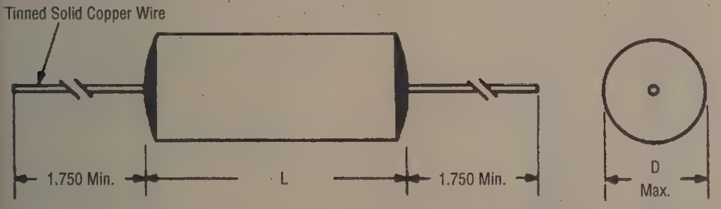
Temperature — X7R

Stock No.	Mfr.'s Type	WVDC	Cap pF	Tol.	L.S. (In.)	EACH 1-49	EACH 50-99	EACH 100-499
926-2630	1C10X7R102K050B	50	1000	10	0.100	.09	.08	.06
926-2632	1C10X7R103K050B	50	10000	10	0.100	.09	.08	.07
926-2634	1C10X7R104K050B	50	100000	10	0.100	.12	.11	.09
926-2638	1C10X7R473K050B	50	47000	10	0.100	.12	.11	.10
926-2640	1C20X7R102K050B	50	1000	10	0.200	.12	.11	.10
926-2644	1C20X7R103K050B	50	10000	10	0.200	.12	.11	.10
926-2405	1C20X7R104K050B	50	100000	10	0.200	.12	.11	.10
926-2648	1C20X7R222K050B	50	2200	10	0.200	.12	.11	.10
926-2642	1C25X7R103K050B	50	10000	10	0.250	.12	.11	.10
926-2656	1C30X7R103K050B	50	10000	10	0.300	.12	.11	.10
926-2422	1C10X7R102K100B	100	1000	10	0.100	.15	.13	.11
926-2424	1C10X7R222K100B	100	2200	10	0.100	.15	.13	.11
926-2426	1C10X7R332K100B	100	3300	10	0.100	.15	.13	.11
926-2428	1C10X7R472K100B	100	4700	10	0.100	.15	.13	.11
926-2430	1C10X7R103K100B	100	10000	10	0.100	.15	.13	.11
926-2432	1C10X7R223K100B	100	22000	10	0.100	.15	.13	.11
926-2434	1C10X7R333K100B	100	33000	10	0.100	.15	.13	.11
926-2436	1C10X7R473K100B	100	47000	10	0.100	.15	.13	.11
926-2438	1C10X7R104K100B	100	100000	10	0.100	.15	.14	.12
926-2472	1C20X7R102K100B	100	1000	10	0.200	.13	.11	.10
926-2474	1C20X7R222K100B	100	2200	10	0.200	.15	.14	.12
926-2476	1C20X7R332K100B	100	3300	10	0.200	.13	.11	.10
926-2478	1C20X7R472K100B	100	4700	10	0.200	.15	.14	.12
926-2480	1C20X7R103K100B	100	10000	10	0.200	.13	.11	.10
926-2482	1C20X7R223K100B	100	22000	10	0.200	.15	.14	.12
926-2484	1C20X7R333K100B	100	33000	10	0.200	.15	.14	.12
926-2486	1C20X7R473K100B	100	47000	10	0.200	.15	.14	.12
926-2488	1C20X7R104K100B	100	100000	10	0.200	.19	.15	.12
926-2520	1C25X7R102K100B	100	1000	10	0.250	.15	.14	.12
926-2522	1C25X7R222K100B	100	2200	10	0.250	.28	.24	.22
926-2524	1C25X7R332K100B	100	3300	10	0.250	.15	.13	.12
926-2526	1C25X7R472K100B	100	4700	10	0.250	.15	.13	.12
926-2528	1C25X7R103K100B	100	10000	10	0.250	.15	.13	.12
926-2530	1C25X7R223K100B	100	22000	10	0.250	.15	.13	.12
926-2532	1C25X7R333K100B	100	33000	10	0.250	.15	.13	.12
926-2534	1C25X7R473K100B	100	47000	10	0.250	.15	.13	.12
926-2536	1C25X7R104K100B	100	100000	10	0.250	.16	.15	.12
926-2570	1C30X7R102K100B	100	1000	10	0.300	.15	.13	.12
926-2572	1C30X7R222K100B	100	2200	10	0.300	.20	.17	.15
926-2574	1C30X7R332K100B	100	3300	10	0.300	.16	.14	.12
926-2576	1C30X7R472K100B	100	4700	10	0.300	.16	.14	.12
926-2578	1C30X7R103K100B	100	10000	10	0.300	.15	.13	.12
926-2580	1C30X7R223K100B	100	22000	10	0.300	.16	.14	.12
926-2582	1C30X7R333K100B	100	33000	10	0.300	.15	.13	.12
926-2584	1C30X7R473K100B	100	47000	10	0.300	.16	.14	.12
926-2586	1C30X7R104K100B	100	100000	10	0.300	.16	.14	.12

Temperature — Z5U

926-2600	1C10Z5U103M050B	50	10000	20	0.100	.08	.07	.06
926-2602	1C10Z5U104M050B	50	100000	20	0.100	.08	.07	.06
926-2604	1C10Z5U224M050B	50	220000	20	0.100	.16	.13	.11
926-2606	1C10Z5U333M050B	50	33000	20	0.100	.10	.08	.07
926-2608	1C10Z5U334M050B	50	330000	20	0.100	.20	.16	.13
926-2610	1C20Z5U103M050B	50	1000	20	0.200	.08	.07	.06
926-9200	1C20Z5U104M050B	50	100000	20	0.200	.07	.06	.05
926-9212	1C20Z5U224M050B	50	220000	20	0.200	.17	.15	.12
926-9214	1C20Z5U334M050B	50	330000	20	0.200	.20	.18	.15
926-9216	1C25Z5U103M050B	50	1000	20	0.250	.10	.09	.07
926-4243	1C25Z5U223M050B	50	22000	20	0.250	.11	.10	.08
926-2618	1C25Z5U333M050B	50	33000	20	0.250	.12	.10	.09
926-2620	1C25Z5U473M050B	50	47000	20	0.250	.12	.11	.09
926-2622	1C25Z5U104M050B	50	100000	20	0.250	.09	.08	.07
926-2624	1C25Z5U224M050B	50	220000	20	0.250	.16	.15	.12
926-2626	1C25Z5U334M050B	50	330000	20	0.250	.20	.18	.15
926-2440	1C10Z5U103M100B	100	10000	20	0.100	.14	.12	.10
926-2442	1C10Z5U223M100B	100	22000	20	0.100	.14	.12	.10
926-2444	1C10Z5U333M100B	100	33000	20	0.100	.14	.12	.10
926-2446	1C10Z5U473M100B	100	47000	20	0.100	.14	.12	.10
926-2448	1C10Z5U104M100B	100	100000	20	0.100	.14	.12	.10
926-2490	1C20Z5U103M100B	100	1000	20	0.200	.14	.12	.10
926-2492	1C20Z5U104M100B	100	10000	20	0.200	.14	.12	.10
926-2494	1C20Z5U223M100B	100	22000	20	0.200	.14	.12	.10
926-2496	1C20Z5U333M100B	100	33000	20	0.200	.14	.12	.10
926-2498	1C20Z5U473M100B	100	47000	20	0.200	.14	.12	.10
926-2538	1C25Z5U103M100B	100	10000	20	0.250	.14	.12	.10
926-2540	1C25Z5U223M100B	100	22000	20	0.250	.14	.12	.10
926-2542	1C25Z5U333M100B	100	33000	20	0.250	.15	.13	.11
926-2544	1C25Z5U473M100B	100	47000	20	0.250	.15	.13	.11
926-2546	1C25Z5U104M100B	100	100000	20	0.250	.15	.13	.11
926-2588	1C30Z5U103M100B	100	10000	20	0.300	.14	.12	.10
926-2590	1C30Z5U223M100B	100	22000	20	0.300	.14	.12	.10
926-2592	1C30Z5U333M100B	100	33000	20	0.300	.14	.12	.10
926-2594	1C30Z5U473M100B	100	47000	20	0.300	.14	.12	.10
926-2596	1C30Z5U104M100B	100	10000	20	0.300	.14	.12	.10

Metallized Polyester Film Capacitors



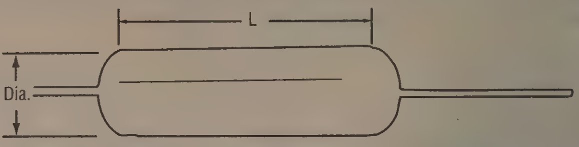
Economical capacitors with extensive ratings and rugged construction in a small size. Solid tinned wire leads are 1.75" long min. 10% tolerance. -55°C to +85°C operating temperature.

Stock No.	Mfr.'s Type	WVDC	Cap. µF	Size (In.) Dia.	Size (In.) Length	EACH 1-49	EACH 50-99	EACH 100-499
926-2020	430P106X9050	50	10	0.647	1.500	3.30	3.00	2.75
926-2022	430P224X9100	100	.22	0.228	0.750	1.37	1.24	1.14
926-2024	430P334X9100	100	.33	0.264	0.750	1.39	1.26	1.16
926-2026	430P105X9100	100	1	0.286	1.250	1.51	1.37	1.26
926-2028	430P205X9100	100	2	0.393	1.250	2.06	1.87	1.72
926-2030	430P705X9100	100	7	0.633	1.500	4.16	3.75	3.43
926-2032	430P104X9200	200	.1	0.221	0.750	1.31	1.19	1.09
926-2034	430P224X9200	200	.22	0.295	0.750	1.33	1.21	1.11
926-2036	430P474X9200	200	.47	0.321	1.000	1.39	1.26	1.16
926-2038	430P684X9200	200	.68	0.375	1.000	1.71	1.56	1.43
926-2040	430P105X9200	200	1	0.380	1.250	1.82	1.65	1.51
926-2042	430P205X9200	200	2	0.469	1.500	2.47	2.24	2.06
926-2044	430P405X9200	200	4	0.580	1.750	2.69	2.45	2.24
926-2046	430P104X9400	400	.1	0.310	0.750	1.35	1.22	1.12
926-2048	430P104X9600	600	.1	0.365	1.000	1.69	1.54	1.41
926-2050	430P224X9600	600	.22	0.385	1.500	2.20	2.00	1.84
926-2052	430P474X9600	600	.47	0.497	1.750	2.59	2.36	2.16

Type TVA ATOM Axial Tubular Electrolytic Capacitors

Polarized Single Units

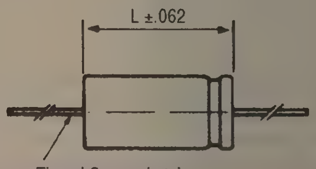
Smallest standard tubular capacitors available. High dependability with lower leakage currents and long shelf life. Withstands high temperatures, ripple currents, and surge voltages. Capacitors rated at 100 WVDC or less operate at –40° to +85°C; above 100 WVDC, –20° to +85°C. Metal case with thermoplastic outer insulating sleeve. **Note:** Sizes subject to change without notice.



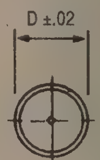
Stock No.	Mfr.'s Type	WVDC	µF	Case D × L (In.)	EACH				
					1-24	25-49	50-249	250-499	500-Up
926-0111	TVA1129.5	10	5000	1 × 2 5/32	2.06	1.89	1.74	1.62	1.51
926-0117	TVA1150	16	50	5/16 × 23/32	.85	.78	.72	.67	.63
926-0118	TVA1160	16	100	3/8 × 27/32	.87	.80	.74	.68	.64
926-0120	TVA1160.4	16	175	3/8 × 31/32	.87	.80	.74	.68	.64
926-0122	TVA1161	16	250	3/8 × 1 9/32	.95	.88	.80	.74	.69
926-0123	TVA1161.1	16	300	3/8 × 1 17/32	.95	.88	.80	.74	.69
926-0124	TVA1162	16	500	7/16 × 1 17/32	1.00	.92	.85	.79	.73
926-0127	TVA1163	16	1000	1/2 × 1 13/16	1.13	1.05	.96	.89	.83
926-0129	TVA1175.2	16	1500	3/4 × 1 21/32	1.41	1.29	1.19	1.11	1.03
926-0131	TVA1175	16	3000	7/8 × 1 29/32	1.87	1.73	1.58	1.47	1.37
926-0133	TVA1175.5	16	5000	1 × 2 5/32	3.08	2.86	2.60	2.42	2.26
926-0136	TVA1175.8	16	10000	1 1/4 × 2 11/16	3.71	3.43	3.14	2.91	2.72
926-0141	TVA1203.3	25	8	1/4 × 17/32	.85	.78	.72	.67	.63
926-0142	TVA1204	25	10	1/4 × 17/32	.85	.78	.72	.67	.63
926-0143	TVA1204.2	25	15	1/4 × 23/32	.85	.78	.72	.67	.63
926-0144	TVA1204.5	25	20	5/16 × 23/32	.85	.78	.72	.67	.63
926-0145	TVA1205.1	25	30	5/16 × 23/32	.85	.78	.72	.67	.63
926-0148	TVA1206	25	50	5/16 × 27/32	.85	.78	.72	.67	.63
926-0149	TVA1206.1	25	75	3/8 × 27/32	.87	.80	.74	.68	.64
926-0150	TVA1207	25	100	3/8 × 31/32	.87	.80	.74	.68	.64
926-0152	TVA1207.7	25	200	3/8 × 1 17/32	.95	.87	.80	.74	.69
926-0153	TVA1208	25	250	7/16 × 1 17/32	1.00	.92	.85	.79	.73
926-0155	TVA1208.6	25	350	7/16 × 1 17/32	1.06	.97	.89	.83	.78
926-0158	TVA1209	25	500	1/2 × 1 9/16	1.30	1.19	1.10	1.02	.95
926-0160	TVA1211	25	1000	3/4 × 1 21/32	1.50	1.38	1.27	1.18	1.10
926-0162	TVA1213	25	2000	1 × 1 29/32	2.06	1.89	1.74	1.62	1.51
926-0170	TVA1229	35	5500	1 × 3 13/32	4.12	3.77	3.48	3.23	3.02
926-0171	TVA1300	50	1	1/4 × 17/32	.85	.78	.72	.67	.63
926-0172	TVA1301	50	2	1/4 × 17/32	.85	.78	.72	.67	.63
926-0173	TVA1302	50	3	1/4 × 17/32	.85	.78	.72	.67	.63
926-0174	TVA1302.7	50	4	1/4 × 17/32	.85	.78	.72	.67	.63
926-0175	TVA1303	50	5	1/4 × 23/32	.85	.78	.72	.67	.63
926-0176	TVA1303.1	50	6	1/4 × 23/32	.85	.78	.72	.67	.63
926-0177	TVA1303.2	50	8	1/4 × 23/32	.85	.78	.72	.67	.63
926-0178	TVA1305	50	15	5/16 × 23/32	.85	.78	.72	.67	.63
926-0179	TVA1305.5	50	20	5/16 × 27/32	.85	.78	.72	.67	.63
926-0180	TVA1306	50	25	5/16 × 27/32	.85	.78	.72	.67	.63
926-0181	TVA1306.2	50	35	3/8 × 27/32	.87	.80	.74	.68	.64
926-0182	TVA1306.5	50	40	3/8 × 31/32	.87	.80	.74	.68	.64
926-0183	TVA1308	50	50	3/8 × 31/32	.87	.80	.74	.68	.64
926-0186	TVA1310	50	100	3/8 × 1 17/32	.95	.87	.80	.74	.69
926-0187	TVA1310.1	50	120	7/16 × 1 9/32	1.00	.92	.85	.79	.73
926-0189	TVA1311	50	150	7/16 × 1 17/32	1.00	.92	.85	.79	.73
926-0190	TVA1311.5	50	200	1/2 × 1 5/16	1.06	.97	.89	.83	.78
926-0191	TVA1312	50	250	1/2 × 1 5/16	1.13	1.04	.96	.89	.83
926-0192	TVA1312.1	50	300	1/2 × 1 9/16	1.30	1.19	1.10	1.02	.95
926-0195	TVA1315	50	500	3/4 × 1 1/2	1.50	1.38	1.27	1.18	1.10
926-0196	TVA1315.2	50	600	3/4 × 1 1/2	1.87	1.72	1.58	1.47	1.37
926-0197	TVA1315.4	50	800	7/8 × 1 21/32	1.87	1.72	1.58	1.47	1.37
926-0198	TVA1316	50	1000	7/8 × 1 29/32	2.06	1.89	1.74	1.62	1.51
926-0199	TVA1318	50	1500	15/16 × 2 5/32	2.89	2.65	2.45	2.27	2.12
926-0202	TVA1318.4	50	3000	1 1/4 × 2 11/16	4.43	4.06	3.75	3.48	3.25
926-0207	TVA1319.5	75	500	1 × 2 21/32	2.06	1.89	1.74	1.62	1.51
926-0208	TVA1319.7	75	1000	1 × 2 21/32	3.43	3.15	2.90	2.70	2.52
926-0209	TVA1319.9	75	2000	1 3/8 × 2 3/8	4.91	4.50	4.16	3.86	3.60
926-0210	TVA1333	100	4	5/16 × 23/32	.85	.78	.72	.67	.63
926-0212	TVA1337	100	10	3/8 × 27/32	.87	.80	.74	.68	.64
926-0215	TVA1340	100	25	3/8 × 1 17/32	.95	.87	.80	.74	.69
926-0217	TVA1343	100	50	1/2 × 1 9/16	1.06	.97	.89	.83	.78
926-0219	TVA1345	100	75	1/2 × 1 13/16	1.13	1.04	.96	.89	.83
926-0221	TVA1346	100	100	3/4 × 1 13/32	1.41	1.29	1.19	1.11	1.03
926-0222	TVA1347	100	150	3/4 × 1 21/32	1.69	1.55	1.43	1.33	1.24
926-0224	TVA1349	100	250	7/8 × 1 29/32	2.06	1.89	1.74	1.62	1.51
926-0225	TVA1350	100	300	1 × 1 29/32	3.25	2.98	2.75	2.55	2.38
926-0226	TVA1376	100	500	1 1/8 × 2 5/32	3.43	3.15	2.90	2.70	2.52
926-0229	TVA1400	150	1	1/4 × 17/32	.85	.78	.72	.67	.63
926-0232	TVA1402	150	4	5/16 × 27/32	.87	.80	.74	.68	.64
926-0233	TVA1403	150	5	5/16 × 27/32	.87	.80	.74	.68	.64
926-0235	TVA1405	150	8	3/8 × 27/32	.95	.87	.80	.74	.69
926-0236	TVA1406	150	10	3/8 × 31/32	.95	.87	.80	.74	.69
926-0238	TVA1409	150	16	3/8 × 1 17/21	1.00	.92	.85	.79	.73
926-0239	TVA1410	150	20	3/8 × 1 17/32	1.06	.97	.89	.83	.78
926-0240	TVA1411	150	25	7/16 × 1 9/32	1.06	.97	.89	.83	.78
926-0243	TVA1413	150	40	1/2 × 1 17/32	1.41	1.29	1.19	1.11	1.03
926-0244	TVA1414	150	50	1/2 × 1 13/16	1.41	1.29	1.19	1.11	1.03
926-0245	TVA1415	150	60	3/4 × 1 13/32	1.87	1.72	1.58	1.47	1.37
926-0248	TVA1420	150	100	7/8 × 1 21/32	2.06	1.89	1.74	1.62	1.51
926-0250	TVA1423	200	150	1 × 2 5/32	3.19	2.92	2.70	2.51	2.34
926-0251	TVA1425	300	150	1 1/8 × 2 11/16	3.82	3.50	3.23	3.00	2.80
926-0255	TVA1434	1	200	1/4 × 23/32	.85	.78	.72	.67	.63
926-0256	TVA1435	2	200	5/16 × 23/32	.87	.80	.74	.68	.64
926-0259	TVA1438	5	200	3/8 × 27/32	.95	.87	.80	.74	.69
926-0265	TVA1442.2	25	200	1/2 × 1 35/64	1.41	1.29	1.19	1.11	1.03
926-0266	TVA1442.3	30	200	1/2 × 1 13/16	1.69	1.55	1.43	1.33	1.24
926-0268	TVA1443	50	200	3/4 × 1 21/32	1.87	1.72	1.58	1.47	1.37
926-0269	TVA1445	100	200	7/8 × 25/32	2.80	2.57	2.37	2.20	2.05
926-0271	TVA1500.1	2	250	3/8 × 23/32	.87	.80	.74	.68	.64
926-0272	TVA1500.2	3	250	3/8 × 27/32	.95	.87	.80	.74	.69
926-0273	TVA1501	4	250	3/8 × 31/32	.95	.87	.80	.74	.69
926-0275	TVA1503	8	250	3/8 × 1 17/32	1.06	.97	.89	.83	.78
926-0276	TVA1504	10	250	7/16 × 1 9/32	1.06	.97	.89	.83	.78
926-0277	TVA1505	12	250	7/16 × 1 17/32	1.30	1.19	1.10	1.02	.95
926-0278	TVA1508	20	250	1/2 × 1 13/16	1.41	1.29	1.19	1.11	1.03
926-0279	TVA1510	30	250	13/16 × 1 13/32	1.87	1.72	1.58	1.47	1.37
926-0280	TVA1511	40	250	7/8 × 1 13/32	2.06	1.89	1.74	1.62	1.51
926-0281	TVA1512	50	250	7/8 × 1 13/32	2.69	2.47	2.28	2.11	1.97
926-0283	TVA1522	100	250	1 × 1 29/32	3.15	2.89	2.67	2.48	2.31
926-0284	TVA1525	150	250	1 1/8 × 2 5/32	3.80	3.49	3.22	2.99	2.79
926-0285	TVA1526	160	250	1 × 2 5/32	3.52	3.23	2.98	2.77	2.58
926-0287	TVA1528.5	300	250	1 1/4 × 3 5/32	4.90	4.49	4.14	3.85	3.59
926-0288	TVA1528.7	400	250	1 1/4 × 3 11/16	5.47	5.01	4.63	4.30	4.01
926-0289	TVA1528.9	500	250	1 3/8 × 3 11/16	7.71	7.07	6.53	6.06	5.66
926-0290	TVA1529	600	250	1 3/8 × 4 5/32	7.20	6.60	6.09	5.65	5.28
926-0300	TVA1613	60	350	7/8 × 2 1/4	3.00	2.75	2.54	2.36	2.20
926-0301	TVA1620	100	350	1 × 2 5/8	4.08	3.74	3.45	3.21	2.99
926-0302	TVA1709	20	450	7/8 × 1 5/8	2.73	2.50	2.31	2.14	2.00
926-0303	TVA1711	30	450	7/8 × 1 7/8	3.43	3.15	2.90	2.70	2.52
926-0304	TVA1712	40	450	7/8 × 2 1/8	3.13	2.87	2.65	2.46	2.30
926-0306	TVA1716	80	450	1 × 2 5/8	4.06	3.72	3.44	3.19	2.98
926-0305	TVA1718	100	450	1 1/4 × 3 1/4	5.25	4.81	4.44	4.12	3.85
926-0307	TVA1803.1	16	475	7/8 × 1 5/8	2.74	2.52	2.32	2.16	2.01
926-0308	TVA1906	20	500	7/8 × 2 1/8	2.91	2.67	2.46	2.29	2.14
926-0310	TVA1907	30	500	1 × 2 1/8	3.17	2.91	2.68	2.49	2.33
926-0309	TVA1908	40	500	1 × 2 3/8	3.67	3.37	3.11	2.89	2.69
926-0291	TVA1960	4	600	13/16 × 2 3/8	7.14	6.54	6.04	5.61	5.24
926-0293	TVA1963	10	600	1 1/16 × 3 3/16	6.44	5.90	5.45	5.06	4.72
926-0295	TVA1966	20	600	1 1/16 × 3 7/8	6.64	6.09	5.62	5.22	4.87
—	—	—	—	—	—	—	—	—	—

Type 39D Powerlytic Axial Electrolytic Capacitors

The 39D series is recommended for replacement applications and is designed for applications requiring large capacitance in small physical case size. Welds at all critical anode and cathode terminals eliminate riveted or pressure connections to assure freedom from open circuits even when operated in the microvolt or millivolt signal range. Improved molded phenolic end seals with pressure-sensitive safety vent. Service life of 10 years of more in normal circuit applications. Capacitors have outer plastic-film insulation. –20°C to +85°C operating temperature. **Capacitance Tolerance:** 10-75 WVDC — –10%, +75%; 250 WVDC — –10%, 50%. Other voltages, capacitance values, and specs available as custom order. Call for price and delivery. Manufacturer literature available upon request.



Tinned Copper Leads



Stock No.	Mfr.'s Type	WVDC	Cap. µF	Dia. (In.)	Len. (In.)	EACH	
						1-24	25-49
926-1002	39D128G015FL4	15	1200	0.687	2.250	2.78	2.55
926-1004	39D808G015JT4	15	8000	1.062	3.750	3.99	3.66
926-1006	39D507G025HE4	25	500	0.937	1.250	2.56	2.35
926-1008	39D108G025GL4	25	1000	0.812	2.250	3.10	2.84
926-1010	39D228G025HP4	25	2200	0.937	2.750	3.25	2.98
926-1012	39D408G025JS4	25	4000	1.062	3.250	6.21	5.70
926-1014	39D478G025JT4	25	4700	1.062	3.750	3.99	3.66
926-1020	39D118G030GP4	30	1100	0.812	2.750	2.78	2.55
926-1022	39D308G030JS4	30	3000	1.062	3.250	3.69	3.38
926-1026	39D108G040GP4	40	1000	0.812	2.750	3.25	2.98
926-1028	39D207G050FJ4	50	200	0.690	1.750	2.67	2.45
926-1030	39D257G050HE4	50	250	0.937	1.250	2.80	2.57
926-1040	39D157G075FJ4	75	150	0.687	1.750	2.50	2.29
926-1044	39D108G075JP4	75	1000	1.062	2.750	3.62	3.32
926-1046	39D506F250JE4	250	50	1.062	1.250	3.08	2.82
926-1048	39D107F250HL4	250	100	0.937	1.250	4.90	4.49
926-1050	39D157G250JL4	250	150	1.062	2.250	5.38	4.93
926-1052	39D207F250JP4	250	200	1.062	2.250	4.17	3.83
926-1054	39D307F250JT4	250	300	1.062	3.750	5.10	4.68
926-1032	39D507G050GL4	50	500	0.812	2.250	3.08	2.82
926-1034	39D807G050HL4	50	800	0.937	2.250	3.04	2.79
926-1036	39D118G050HP4	50	1100	0.937	2.750	4.17	3.83
926-1038	39D238G050JT4	50	2300	1.062	3.750	3.99	3.66

515D Series Radial Capacitors

These miniature radial lead aluminum capacitors feature high CV per case size, low cost, solvent resistant construction, and low profile ratings. **Capacitance Tolerance:** ±20%. **Operating Temperature:** –40°C to +85°C. Supplied with uncut leads. Additional values, voltages, packaging and lead configuration available as special orders. Also available in both tape and reel packaging and tape and ammo box packaging as special order. Call for price and delivery.

Stock No.	Mfr.'s Type	Cap. (µF)	WVDC	Size (mm) D × L	EACH 1-99	EACH 100-249
926-3724	515D107M010JA6A	100	10	5.0 × 11.0	**.13**	**.07**
926-3726	515D106M016JA6A	10	16	5.0 × 11.0	**.12**	**.07**
926-3728	515D106M016HW6A	10	16	4.0 × 7.0	**.16**	**.09**
926-3730	515D226M016JA6A	22	16	5.0 × 11.0	**.13**	**.07**
926-3732	515D476M016JA6A	47	16	5.0 × 11.0	**.13**	**.08**
926-3734	515D107M016AA6A	100	16	6.3 × 11.0	**.15**	**.10**
926-3736	515D227M016BB6A	220	16	8.0 × 11.5	**.21**	**.11**
926-3738	515D477M016CC6A	470	16	10.0 × 12.5	**.38**	**.19**
926-3742	515D475M035HW6A	4.7	35	4.0 × 7.0	**.19**	**.10**
926-3744	515D106M035JW6A	10	35	5.0 × 7.0	**.21**	**.11**
926-3746	515D105M050JA6A	1	50	5.0 × 11.0	**.14**	**.07**
926-3748	515D106M050JA6A	10	50	5.0 × 11.0	**.16**	**.08**
926-3750	515D106M050AW6A	10	50	6.3 × 7.0	**.23**	**.11**
926-3752	515D226M050JA6A	22	50	5.0 × 11.0	**.19**	**.10**
926-3754	515D476M050AA6A	47	50	6.3 × 11.0	**.22**	**.10**
926-3756	515D107M050BB6A	100	50	8.0 × 11.5	**.38**	**.18**
926-3758	515D227M050CD6A	220	50	10.0 × 16.0	**.56**	**.27**
926-3760	515D108M050EK6A	1000	50	16.0 × 25.0	**1.50**	**.72**
926-3762	515D106M063JA6A	10	63	5.0 × 11.0	**.16**	**.08**
926-3764	515D476M063BB6A	47	63	8.0 × 11.0	**.27**	**.13**
926-3766	515D107M063CC6A	100	63	10.0 × 12.5	**.38**	**.19**
926-3768	515D477M063DK6A	470	63	12.5 × 25.0	**1.25**	**.60**
926-3770	515D105M100JA6A	1	100	5.0 × 11.0	**.14**	**.07**
926-3772	515D225M100JA6A	2.2	100	5.0 × 11.0	**.14**	**.07**

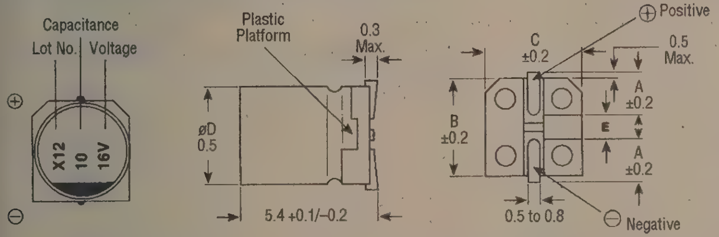
516D Series Axial Capacitors

These miniature axial lead aluminum capacitors feature high CV per case size, low cost, and solvent resistant construction. **Capacitance Tolerance:** ±20%. **Operating Temperature:** –40°C to +85°C. Additional values, voltages, packaging and lead configuration available as special orders. Call for price and delivery.

Stock No.	Mfr.'s Type	Cap. (µF)	WVDC	Size (mm) D × L	EACH 1-99	EACH 100-249
926-3774	516D107M6R3JL6A	100	6.3	5.0 × 12.0	**.34**	**.16**
926-3776	516D107M010LL6A	100	10	6.3 × 12.0	**.34**	**.16**
926-3778	516D337M010MM6A	330	10	8.0 × 16.0	**.40**	**.19**
926-3780	516D108M010NP6A	1000	10	10.0 × 21.0	**.65**	**.31**
926-3500	516D107M016LM6A	100	16	6.3 × 16.0	**.35**	**.17**
926-3502	516D227M016MM6A	220	16	8.0 × 16.0	**.40**	**.19**
926-3504	516D477M016MN6A	470	16	8.0 × 20.0	**.52**	**.25**
926-3506	516D106M025JL6A	10	25	5.0 × 12.0	**.27**	**.14**
926-3508	516D226M025JL6A	22	25	5.0 × 12.0	**.29**	**.14**
926-3782	516D336M025JL6A	33	25	5.0 × 12.0	**.34**	**.16**
926-3510	516D476M025LL6A	47	25	6.3 × 16.0	**.33**	**.16**
926-3512	516D107M025LM6A	100	25	6.3 × 16.0	**.40**	**.20**
926-3514	516D226M035JL6A	22	35	5.0 × 12.0	**.34**	**.16**
926-3516	516D107M050MM6A	100	50	8.0 × 16.0	**.53**	**.25**
926-3518	516D106M063JL6A	10	63	5.0 × 12.0	**.34**	**.17**
926-3520	516D476M063MM6A	47	63	8.0 × 16.0	**.40**	**.19**

518D Series Aluminum Capacitors

— NEW —



- **Chip Type with 5.5 (.217") Height**
- **Designed for Surface Mounting on High Density PC Board**
- **Applicable to Automatic Insertion Machine Using Carrier Tape**
- **Load Life of 2000 Hours at +85°C**

Specifications. Operating Temperature: –40°C to +85°C. **Capacitance Range:** 1 µF to 100 µF. **Capacitance Tolerance:** ±20% @ 120 Hz, +20°C. **Voltage Rating:** 6.3 WVDC to 50 WVDC.

Stock No.	Mfr.'s Type	Cap. (µF)	WVDC	Nom. Case Size D × L	Dimensions (mm) øD	A	B	C	E	PER PK./100
926-8500	518D105M050HX7S	1.0	50	4.0 × 5.5	4.0	1.8	4.3	4.3	1.0	**31.00**
926-8502	518D225M050HX7S	2.2	50	4.0 × 5.5	4.0	1.8	4.3	4.3	1.0	**31.00**
926-8504	518D475M025HX7S	4.7	25	4.0 × 5.5	4.0	1.8	4.3	4.3	1.0	**31.00**
926-8506	518D475M035HX7S	4.7	35	4.0 × 5.5	4.0	1.8	4.3	4.3	1.0	**31.00**
926-8508	518D106M016HX7S	10.0	16	4.0 × 5.5	4.0	1.8	4.3	4.3	1.0	**31.00**
926-8510	518D106M050AX7S	10.0	50	6.3 × 5.5	6.3	2.4	6.6	6.6	2.2	**36.00**
926-8512	518D226M016JX7S	22.0	16	5.0 × 5.5	5.0	2.1	5.3	5.3	1.3	**34.00**
926-8514	518D226M025AX7S	22.0	25	6.3 × 5.5	6.3	2.4	6.6	6.6	2.2	**36.00**
926-8516	518D226M035AX7S	22.0	35	6.3 × 5.5	6.3	2.4	6.6	6.6	2.2	**36.00**
926-8518	518D336M6R3JX7S	33.0	6.3	5.0 × 5.5	5.0	2.1	5.3	5.3	1.3	**36.00**
926-8520	518D336M025AX7S	33.0	25	6.3 × 5.5	6.3	2.4	6.6	6.6	2.2	**34.00**
926-8522	518D476M6R3JX7S	47.0	6.3	5.0 × 5.5	5.0	2.1	5.3	5.3	1.3	**36.00**
926-8524	518D476M010AX7S	47.0	10	6.3 × 5.5	6.3	2.4	6.6	6.6	2.2	**36.00**
926-8526	518D476M016AX7S	47.0	16	6.3 × 5.5	6.3	2.4	6.6	6.6	2.2	**36.00**
926-8528	518D107M6R3AX7S	100.0	6.3	6.3 × 5.5	6.3	2.4	6.6	6.6	2.2	**36.00**
926-8530	518D107M016AX7S	100.0	16	6.3 × 5.5	6.3	2.4	6.6	6.6	2.2	**36.00**

600D Series High Reliability Axial Capacitors

These high reliability miniature axial lead aluminum capacitors feature a wide temperature range, a unique Teflon end seal for long life, high vibration capability, a life test of 2000 hours @ +125°C and have an polyester insulating outer sleeve. They are a foil tantalum replacement. **Capacitance Tolerance (8th character):** F — –10% to +50%; G — –10% to +75%. Additional values, voltages, tolerances, and Military version (MIL-C-39018/01) as special order. Call for price and delivery.

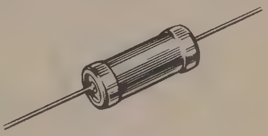
Stock No.	Mfr.'s Type	Cap. (µF)	WVDC	Size (mm) D × L	EACH 1-99	EACH 100-499
926-3550	600D227G010DE4	220	10	9.53 × 28.58	**2.64**	**2.19**
926-3552	600D107G020DD4	100	20	9.53 × 23.81	**2.58**	**2.14**
926-3554	600D826G030DD4	82	30	9.53 × 23.81	**3.52**	**2.92**
926-3556	600D157G030DG4	150	30	9.53 × 34.93	**2.90**	**2.41**
926-3558	600D107G040DG4	100	40	9.53 × 34.93	**3.06**	**2.55**
926-3560	600D217G040DL4	210	40	9.53 × 55.56	**4.18**	**3.47**
926-3562	600D226G050KD4	22	50	7.14 × 23.81	**2.52**	**2.09**
926-3564	600D476G050DE4	47	50	9.53 × 28.58	**2.66**	**2.20**
926-3566	600D107F050DG4	100	50	9.53 × 35.00	**2.90**	**2.41**
926-3568	600D107G050DJ4	100	50	9.53 × 41.28	**3.08**	**2.56**
926-3570	600D157G050DL4	150	50	9.53 × 55.56	**4.18**	**3.47**
926-3572	600D187G050DX4	180	50	9.53 × 68.26	**3.82**	**3.18**
926-3578	600D126F075KD4	12	75	7.14 × 23.81	**2.52**	**2.09**
926-3580	600D226F075DD4	22	75	9.53 × 23.81	**2.50**	**2.08**
926-3582	600D476F075DG4	47	75	9.53 × 34.93	**2.84**	**2.36**
926-3584	600D686F075DJ4	68	75	9.53 × 41.28	**3.02**	**2.50**
926-3586	600D127F075DX4	120	75	9.53 × 68.26	**4.32**	**3.59**
926-3588	600D476F100DL4	47	100	9.53 × 55.56	**3.32**	**2.76**
926-3590	600D475F150KD4	4.7	150	7.14 × 23.81	**2.72**	**2.25**
926-3592	600D825F150DD4	8.2	150	9.53 × 23.81	**2.88**	**2.39**
926-3594	600D126F150DE4	12	150	9.53 × 28.60	**2.66**	**2.20**
926-3596	600D226F150DJ4	22	150	9.53 × 41.30	**3.02**	**2.50**
926-3598	600D336F150DL4	33	150	9.53 × 55.50	**4.18**	**3.47**
926-3600	600D566F150DX4	56	150	9.53 × 68.26	**4.32**	**3.59**
926-3602	600D396F200DX4	39	200	9.53 × 68.26	**4.32**	**3.59**
926-3604	600D565F250DD4	5.6	250	9.53 × 23.80	**2.88**	**2.39**
926-3606	600D685F250DE4	6.8	250	9.53 × 28.60	**2.35**	**1.95**
926-3608	600D106F250DG4	10	250	9.53 × 35.00	**3.06**	**2.55**
926-3610	600D126F250DJ4	12	250	9.53 × 41.28	**3.65**	**3.04**
926-3612	600D226F250DL4	22	250	9.53 × 55.50	**3.93**	**2.93**
926-3614	600D276F250DX4	27	250	9.53 × 68.20	**4.32**	**3.59**

672D Series Radial Capacitors

The 672D series is a miniature aluminum capacitor with radial leads. They feature minimal ESR change, high ripple current capability and are original SMPS output capacitors. **Capacitance Tolerance:** –10% to +100%. **Operating Temperature Range:** –40°C to +105°C. Supplied with polyester insulating sleeve with resin end seal and cut leads. Negative lead is 0.281" long and the positive lead is 0.375" long. Additional values and voltages are available as special orders. Call for price and delivery.

Stock No.	Mfr.'s Type	Cap. (µF)	WVDC	Size (mm) D × L	EACH 1-99	EACH 100-499
926-3800	672D687H6R3DM5C	680	6.3	12.5 × 26.5	**1.21**	**1.03**
926-3802	672D477H012DM5C	470	12.0	12.5 × 26.5	**1.27**	**1.09**
926-3804	672D108H015ET5C	1000	15.0	16.0 × 33.5	**1.74**	**1.52**
926-3806	672D107H020CG5C	100	20.0	10.0 × 20.0	**.95**	**.85**
926-3808	672D337H020DM5C	330	20.0	12.5 × 26.5	**1.25**	**1.06**
926-3810	672D477H020EK5C	470	20.0	16.0 × 25.0	**1.51**	**1.31**
926-3812	672D476H025CC5C	47	25.0	10.0 × 13.0	**.92**	**.79**
926-3814	672D686H025CD5C	68	25.0	10.0 × 16.0	**.96**	**.82**
926-3816	672D477H025DS5C	470	25.0	12.5 × 42.5	**1.53**	**1.33**
926-3818	672D476H040CD5C	47	40.0	10.0 × 16.0	**.94**	**.80**
926-3820	672D227H040EK5C	220	40.0	16.0 × 25.0	**1.72**	**1.49**
926-3822	672D337H040ET5C	330	40.0	16.0 × 33.5	**1.74**	**1.52**
926-3824	672D397H040DS5C	390	40.0	12.5 × 42.5	**1.53**	**1.33**
926-3826	672D226H050CD5C	22	50.0	10.0 × 16.0	**.94**	**.80**
926-3828	672D686H060DM5C	68	50.0	12.5 × 26.5	**1.16**	**1.00**
926-3830	672D826H075EK5C	82	75.0	16.0 × 25.0	**1.46**	**1.25**
926-3832	672D475H200CG5C	4.7	200.0	10.0 × 20.0	**1.00**	**.85**

192P Pacer Filmite "E" Axial Capacitors



Extended foil film sections are terminated in end caps with wire leads, to assure the best possible non-inductive section. Protected by heat shrinkable plastic sleeve or epoxy coating. Designed for operation to 85°C. **Tolerance:** ±10%

80 WVDC

Stock No.	Mfr.'s Type	Cap. (µF)	Dim. (In.) Dia.	Dim. (In.) Length	EACH 1-49	EACH 50-99	EACH 100-499
926-4007	192P103X9080	0.0100	0.185	0.500	**.57**	**.51**	**.39**
926-4015	192P473X9080	0.0470	0.229	0.687	**.51**	**.41**	**.34**
926-4019	192P104X9080	0.1000	0.315	0.645	**.59**	**.47**	**.39**
926-4022	192P224X9080	0.2200	0.343	0.770	**.90**	**.72**	**.60**

200 WVDC

Stock No.	Mfr.'s Type	Cap. (µF)	Dim. (In.) Dia.	Dim. (In.) Length	EACH 1-49	EACH 50-99	EACH 100-499
926-4040	192P102X9200	0.0010	0.153	0.437	**.49**	**.39**	**.29**
926-4047	192P562X9200	0.0056	0.185	0.562	**.41**	**.34**	**.29**
926-4041	192P682X9200	0.0068	0.185	0.562	**.31**	**.26**	**.22**
926-4052	192P103X9200	0.0100	0.185	0.625	**.54**	**.45**	**.34**
926-4055	192P223X9200	0.0220	0.229	0.687	**.62**	**.51**	**.37**
926-4059	192P473X9200	0.0470	0.315	0.645	**.40**	**.33**	**.28**
926-4063	192P104X9200	0.1000	0.343	0.770	**.80**	**.65**	**.46**
926-4067	192P224X9200	0.2200	0.343	1.332	**.62**	**.52**	**.44**

400 WVDC

Stock No.	Mfr.'s Type	Cap. (µF)	Dim. (In.) Dia.	Dim. (In.) Length	EACH 1-49	EACH 50-99	EACH 100-499
926-4077	192P222X9400	0.0022	0.185	0.562	**.41**	**.34**	**.29**
926-4085	192P103X9400	0.0100	0.250	0.687	**.55**	**.46**	**.39**

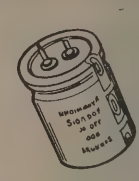
Snap Lock Aluminum Capacitors

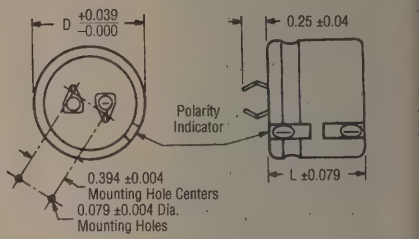
Ideally suited for use in input and output filters, power supplies, computer equipment and other industrial or commercial applications. The 80D series is a two pin snap-in/lock-in capacitor. The snap-lock terminals securely snap into and hold onto a PC board for soldering and physical stability. It has high ripple capability. Capacitors have PVC insulating sleeve with resin end seal to withstand halogenated cleaning solvents.* Leads are tinned copper-clad steel. The capacitance tolerance is –10% to +30%. The operating temperature is –40°C to +85°C. Other capacitance values, voltages, and sizes available as custom order. Call for price and delivery.

*Not available on 22 mm dia. size.

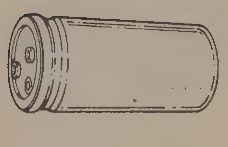
Stock No.	Mfr.'s Type	WVDC	Cap µF	Size (mm)		EACH	
				Dia.	Len.	1-40	50-99
926-4101	80D392P016HA2D	16	3900	22.0	25.0	**2.21**	**1.83**
926-4102	80D103P016JC5D	16	10000	25.0	35.0	**3.24**	**2.92**
926-4104	80D153P016JE5D	16	15000	25.0	50.0	**3.71**	**3.33**
926-4106	80D333P016ME5D	16	33000	35.0	50.0	**5.84**	**5.35**
926-4107	80D272P025HA2D	25	2700	22.0	25.0	**1.53**	**1.38**
926-4109	80D332P025HB2D	25	3300	22.0	30.0	**1.39**	**1.28**
926-4112	80D682P025KB5D	25	6800	30.0	30.0	**2.91**	**2.61**
926-4116	80D103P025JE5D	25	10000	25.0	50.0	**3.84**	**3.54**
926-4114	80D103P025MB5D	25	10000	35.0	30.0	**4.96**	**4.44**
926-4118	80D153P025KE5D	25	15000	30.0	50.0	**4.65**	**4.17**
926-4120	80D223P025ME5D	25	22000	35.0	50.0	**5.40**	**4.95**
926-4122	80D472P035KB5D	35	4700	30.0	30.0	**2.96**	**2.00**
926-4124	80D682P035KC5D	35	6800	30.0	35.0	**3.75**	**3.36**
926-4126	80D103P035MC5D	35	10000	35.0	35.0	**5.05**	**4.53**
926-4128	80D123P035KE5D	35	12000	35.0	35.0	**4.54**	**4.09**
926-4130	80D153P035ME5D	35	15000	35.0	50.0	**5.84**	**5.35**

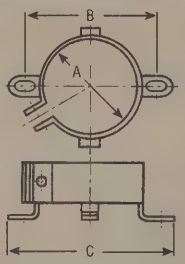
Stock No.	Mfr.'s Type	WVDC	Cap µF	Size (mm)		EACH	
				Dia.	Len.	1-40	50-99
926-4136	80D332P050JD5D	50	3300	25.0	40.0	**3.48**	**3.13**
926-4138	80D332P050KB5D	50	3300	30.0	40.0	**3.09**	**2.78**
926-4140	80D472P050KD5D	50	4700	30.0	40.0	**4.32**	**3.88**
926-4142	80D682P050KE5D	50	6800	30.0	50.0	**5.14**	**4.62**
926-4146	80D332P063MB5D	63	3300	35.0	30.0	**4.51**	**4.05**
926-4148	80D472P063KE5D	63	4700	30.0	50.0	**5.08**	**4.66**
926-4150	80D221P200KA5D	200	220	30.0	25.0	**2.95**	**2.65**
926-4152	80D331P200KC5D	200	330	30.0	35.0	**3.35**	**3.01**
926-4154	80D471P200KD5D	200	470	30.0	40.0	**4.67**	**4.19**
926-4156	80D821P200ME5D	200	820	35.0	50.0	**5.60**	**5.13**
926-4158	80D102P200ME5D	200	1000	35.0	50.0	**5.64**	**5.17**
926-4160	80D122P200ME5D	200	1200	35.0	50.0	**6.40**	**5.87**
926-4162	80D101P250JA5D	250	100	25.0	25.0	**2.58**	**2.32**
926-4164	80D221P250JD5D	250	220	25.0	40.0	**3.78**	**3.40**
926-4166	80D681P250ME5D	250	680	35.0	50.0	**6.36**	**5.83**
—	—	—	—	—	—	—	—




D +0.039 −0.000
0.25 ±0.04
Polarity Indicator
L ±0.079
0.394 ±0.004 Mounting Hole Centers
0.079 ±0.004 Dia. Mounting Holes

36D Series Powerlytic Electrolytic Capacitors





Excellent for use in power supply filters, computer related equipment, and other industrial or commercial applications. They have high capacitance per case size, high ripple current, low leakage current, long shelf life and operating life. Low screw insert terminals. **Operating Temperature:** 36D and 36DX — –40°C to +85°C; 36DE — –40°C to +95°C. **Capacitance Tolerance:** 10-100 VDC — –10% to +75%; 200-450 VDC — –10% to +50%. Other capacitance values, voltages, and sizes available as custom order. Call for price and delivery.

Stock No.	Mfr.'s Type	WVDC	Cap µF	Size (In.)		EACH	
				Dia.	Len.	1-40	50-99
926-4180	36D133G015AC2A	15	13000	1.453	4.250	**7.33**	**6.71**
926-4182	36D213G015BB2A	15	21000	2.078	3.250	**11.93**	**10.93**
926-4184	36D272G025AA2A	25	2700	1.453	2.250	**5.27**	**4.83**
926-4186	36D552G025AB2A	25	5500	1.453	3.250	**6.18**	**5.66**
926-4188	36D552G040AC2A	40	5500	1.453	4.250	**7.36**	**6.75**
926-4190	36D842G040BB2A	40	8400	2.078	3.250	**10.22**	**9.41**
926-4192	36D123G040BC2A	40	12000	2.078	4.250	**11.26**	**10.32**
926-4194	36D132G050AA2A	50	1300	1.453	2.250	**5.40**	**4.95**

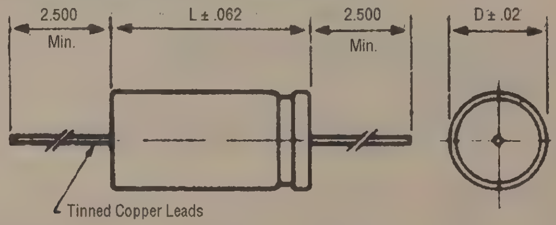
Stock No.	Mfr.'s Type	WVDC	Cap µF	Size (In.)		EACH	
				Dia.	Len.	1-40	50-99
926-4196	36D262G050AB2A	50	2600	1.453	3.250	**6.49**	**5.95**
926-4198	36D392G050AC2A	50	3900	1.453	4.250	**7.66**	**7.02**
926-4200	36D522G050AE2A	50	5200	1.453	5.250	**8.72**	**7.99**
926-4202	36D602G050BB2A	50	6000	2.078	3.250	**11.26**	**10.32**
926-4204	36D902G050BC2A	50	9000	2.078	4.250	**11.54**	**10.57**
926-4206	36D153G050CC2A	50	15000	2.578	4.250	**16.97**	**15.66**
926-4208	36D392G075BB2A	75	3900	2.078	4.250	**12.41**	**11.37**
926-4210	36D103G075CC2A	75	10000	2.578	4.250	**16.25**	**14.89**
926-4212	36D172G100AB2A	100	1700	1.453	3.250	**7.12**	**6.53**
926-4214	36D191F350AB2A	350	190	1.453	3.250	**6.22**	**5.70**
926-4216	36DE233G010AA2A	10	23000	1.453	2.250	**6.14**	**5.63**
926-4218	36DE403G025BB2A	25	40000	2.078	3.250	**12.93**	**11.85**
926-4220	36DE243G040BB2A	40	24000	2.078	3.250	**11.63**	**10.66**
926-4222	36DX752G015AA2A	15	7500	1.453	2.250	**5.40**	**4.95**
926-4224	36DX153G015AB2A	15	15000	1.453	3.250	**6.40**	**5.87**
926-4226	36DX223G015AC2A	15	22000	1.453	4.250	**7.33**	**6.71**
926-4230	36DX503G015BC2A	15	50000	2.078	4.250	**9.24**	**8.47**
926-4232	36DX452G025AA2A	25	4500	1.453	2.250	**5.27**	**4.83**
926-4234	36DX902G025AB2A	25	9000	1.453	3.250	**6.18**	**5.66**
926-4236	36DX133G025AC2A	25	13000	1.453	4.250	**7.05**	**6.46**
926-4238	36DX203G025AF2A	25	20000	1.453	5.750	**7.85**	**7.19**
926-4240	36DX303G025BC2A	25	30000	2.078	4.250	**10.57**	**9.69**
926-4242	36DX503G025CC2A	25	50000	2.578	4.250	**16.69**	**15.30**
926-4244	36DX402G030AA2A	30	4000	1.453	2.250	**5.16**	**4.73**
926-4246	36DX802G030AB2A	30	8000	1.453	3.250	**6.18**	**5.66**
926-4248	36DX183G030AF2A	30	18000	1.453	5.750	**8.70**	**7.97**
926-4250	36DX292G040AA2A	40	2900	1.453	2.250	**5.29**	**4.85**
926-4252	36DX582G040AB2A	40	5800	1.453	3.250	**6.40**	**5.87**
926-4254	36DX872G040AC2A	40	8700	1.453	4.250	**7.36**	**6.75**
926-4256	36DX203G040BC2A	40	20000	2.078	4.250	**11.26**	**10.32**
926-4258	36DX343G040CC2A	40	34000	2.578	4.250	**15.39**	**14.11**
926-4260	36DX242G050AA2A	50	2400	1.453	2.250	**5.40**	**4.95**
926-4262	36DX482G050AB2A	50	4800	1.453	3.250	**6.49**	**5.95**
926-4264	36DX722G050AC2A	50	7200	1.453	4.250	**7.66**	**7.02**

Stock No.	Mfr.'s Type	WVDC	Cap µF	Size (In.)		EACH	
				Dia.	Len.	1-40	50-99
926-4266	36DX163G050BC2A	50	16000	2.078	4.250	**11.54**	**10.57**
926-4268	36DX243G050BF2A	50	24000	2.078	5.750	**16.34**	**14.98**
926-4270	36DX403G050CF2A	50	40000	2.578	5.750	**21.27**	**19.50**
926-4272	36DX413G050DC2A	50	41000	3.078	4.250	**23.16**	**21.23**
926-4274	36DX142G075AA2A	75	1400	1.453	2.250	**5.34**	**4.90**
926-4276	36DX103G075BC2A	75	10000	2.078	4.250	**12.61**	**11.56**
926-4278	36DX173G075CC2A	75	17000	2.578	4.250	**16.25**	**14.89**
926-4280	36DX422G075AC2A	75	4200	1.453	4.250	**7.88**	**7.23**
926-4282	36DX172G100AB2A	100	1700	1.453	3.250	**7.12**	**6.53**
926-4284	36DX851F200AC2A	200	850	1.453	4.250	**6.58**	**6.04**
926-4286	36DX202F200BC2A	200	2000	2.078	4.250	**11.91**	**10.92**
926-4288	36DX282F200BC2A	200	2800	2.078	4.250	**14.87**	**13.64**
926-4290	36DX342F200CC2A	200	3400	2.578	4.250	**18.21**	**16.70**
926-4292	36DX742F200DF2A	200	7400	3.078	5.750	**34.61**	**31.72**
926-4294	36DX501F250AB2A	250	500	1.453	3.250	**5.81**	**5.32**
926-4296	36DX103F250DJ2A	250	10000	3.078	8.750	**57.90**	**53.08**
926-4298	36DX261F350AB2A	350	260	1.453	3.250	**6.21**	**5.70**
926-4300	36DX332F350DF2A	350	3300	3.078	5.750	**40.75**	**37.35**
926-4302	36DX372F350DF2A	350	3700	3.078	5.750	**45.75**	**41.94**
926-4304	36DX231F450AC2A	450	230	1.453	4.250	**7.12**	**6.53**
926-4306	36DX202F450DF2A	450	2000	3.078	5.750	**41.36**	**37.91**
926-4308	36DX312F450DJ2A	450	3100	3.078	8.750	**58.23**	**53.38**
926-4310	36DX352F450DJ2A	450	3500	3.078	8.750	**63.96**	**58.63**

Mounting Brackets

Stock No.	Mfr.'s Type	Type	Dimensions			EACH
			A	B	C	1-24
926-4586	4586-97A	2 Feet	1.375 (35.0)	1.781 (45.0)	2.218 (56.0)	**1.10**
926-4588	4586-48	3 Feet	2.000 (51.0)	2.500 (64.0)	2.875 (73.0)	**1.48**
926-4584	4586-1	3 Feet	2.500 (64.0)	3.000 (76.0)	3.375 (86.0)	**1.53**
926-4582	4586-2	3 Feet	3.000 (76.0)	3.500 (89.0)	3.875 (98.0)	**1.73**

Type 53D Tubular Axial Electrolytic Capacitors

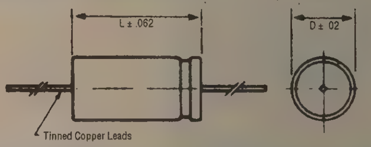


This general purpose capacitor has rugged construction and large CV ratings in an axial leaded capacitor. Replacement for the 39D series. Recommended for new designs. Service life of 10 years or more in normal circuit applications. Capacitors have outer PVC film insulation. –40°C to +85°C operating temperature. –10% to +50% capacitance tolerance. Other voltages, capacitance values, and specs available as custom order. Call for price and delivery. Manufacturer literature available upon request.

Stock No.	Mfr.'s Type	VDC	Cap µF	Size (In.)		EACH	
				Dia.	Len.	1-24	25-49
926-1100	53D692G016HJ6	16	6900	0.885	1.641	**3.21**	**2.94**
926-1102	53D103G016HL6	16	10000	0.885	2.141	**3.62**	**3.32**
926-1104	53D282G025GJ6	25	2800	0.760	1.641	**2.74**	**2.52**
926-1106	53D432G025HJ6	25	4300	0.885	1.641	**3.08**	**2.82**
926-1108	53D622G025HL6	25	6200	0.885	2.141	**3.67**	**3.37**
926-1110	53D113G025JP6	25	11000	1.010	2.641	**4.47**	**4.10**
926-1112	53D112G035GE6	35	1100	0.760	1.141	**2.47**	**2.26**
926-1114	53D212G035GJ6	35	2100	0.760	1.641	**2.84**	**2.60**
926-1116	53D322G035HJ6	35	3200	0.885	1.641	**3.43**	**3.15**
926-1118	53D472G035HL6	35	4722	0.885	2.141	**3.39**	**3.11**
926-1120	53D832G035JP6	35	8300	1.010	2.641	**4.73**	**4.33**
926-1122	53D102G050GE6	50	1000	0.760	1.141	**2.86**	**2.62**
926-1126	53D192G050HJ6	50	1900	0.885	1.641	**3.15**	**2.89**

Stock No.	Mfr.'s Type	VDC	Cap µF	Size (In.)		EACH	
				Dia.	Len.	1-24	25-49
926-1128	53D282G050HL6	50	2800	0.885	2.141	**3.39**	**3.11**
926-1130	53D382G050JL6	50	3800	1.010	2.141	**5.19**	**4.76**
926-1132	53D502G050JP6	50	5000	1.010	2.641	**5.45**	**5.00**
926-1134	53D102G063GJ6	63	1000	0.760	1.641	**2.74**	**2.52**
926-1136	53D222G063HL6	63	2200	0.885	2.141	**3.67**	**3.37**
926-1138	53D351F200JL6	200	350	1.010	2.141	**5.93**	**5.44**
926-1140	53D461F200JP6	200	460	1.010	2.641	**6.77**	**6.21**
926-1142	53D560F250GE6	250	56	0.760	1.141	**2.37**	**2.18**
926-1144	53D101F250GJ6	250	100	0.760	1.641	**3.02**	**2.77**
926-1146	53D131G250HJ6	250	130	0.885	1.641	**3.25**	**2.98**
926-1148	53D101F400JL6	400	100	1.010	2.141	**4.36**	**4.00**
926-1150	53D141F400JS6	400	140	1.010	3.141	**4.64**	**4.25**
926-1152	53D151F400JS6	400	150	1.010	3.141	**6.68**	**6.12**

Type 500D General Purpose Miniature Aluminum Capacitors



General purpose miniature axial leaded electrolytic capacitors. Increased CV efficiency. **Operating Temperature:** Up to 250 VDC — –40°C to +85°C; Over 250 VDC — –20°C to +85°C. 20% capacitance tolerance. Other voltages, capacitance values, and specs available as custom order. Call for price and delivery. Manufacturer literature available upon request.

Stock No.	Mfr.'s Type	VDC	Cap µF	Size (mm)		EACH	
				Dia.	Len.	1-24	25-49
926-1200	500D107M016CB2	16	100	8.0	17.5	**.87**	**.80**
926-1202	500D227M016CC2A	16	220	8.0	20.5	**.87**	**.80**
926-1204	500D477M016DD2A	16	470	9.5	24.0	**1.00**	**.92**
926-1206	500D108M016DH2	16	1000	9.5	38.0	**1.13**	**1.04**
926-1208	500D226M025BA2A	25	22	6.3	13.0	**.85**	**.78**
926-1210	500D476M025BB2A	25	47	6.3	17.5	**.85**	**.78**
926-1212	500D227M025DC2A	25	220	9.5	20.5	**.95**	**.87**
926-1214	500D128M025EH2A	25	1200	11.0	38.0	**1.41**	**1.29**
926-1216	500D106M050BA2A	50	10	6.3	13.0	**.85**	**.78**
926-1218	500D107M050DC2A	50	100	9.5	20.5	**.95**	**.87**
926-1220	500D157M050DD2A	50	150	9.5	24.0	**1.00**	**.92**
926-1222	500D227M050DF2A	50	220	9.5	32.0	**1.06**	**.97**
926-1224	500D337M050EF2A	50	330	11.0	32.0	**1.30**	**1.19**
926-1226	500D477M050FH2A	50	470	12.5	38.0	**1.50**	**1.38**
926-1228	500D158M050GK2A	50	1500	16.0	44.5	**2.06**	**1.89**
926-1230	500D106M100CB2A	100	10	8.0	17.5	**.87**	**.80**

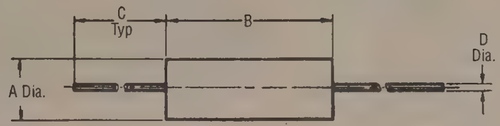
A COMPANY OF VISHAY DALE

Molded Inductors

Flame-retardant coating, precision performance, excellent reliability and sturdy construction. Epoxy molded construction provides superior moisture protection. Wide inductance range in a small package. IMS-5 offers electromagnetic shielding.

Dimensions

Mfr.'s Type	Tol.	A	B	C	D
IM-2	Max. Min.	.105 (2.67) .085 (2.16)	.260 (6.60) .240 (6.10)	1.626 (41.30) 1.250 (31.75)	.0215 (0.546) .0185 (0.470)
IM-4	Max. Min.	.165 (4.19) .145 (3.68)	.385 (9.78) .365 (9.27)	1.625 (41.28) 1.250 (31.75)	.0270 (0.686) .0230 (0.584)
IMS-5		.162 ± .010	.410 ± .020	1.438 ± .1881	.025 ± .002

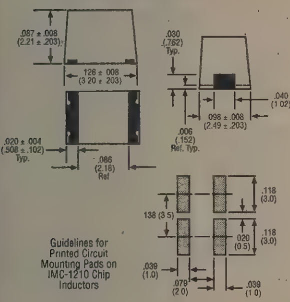


Stock No.	Mfr.'s Type	Ind (µH)	Tol.	Current DC mA	Core	EACH 1-24	25-49	50-99	100-249
895-6000	IM-2	.10	10%	1350	Phenolic	.53	.36	.29	.27
895-6002	IM-2	.15	10%	1200	Phenolic	.53	.36	.29	.27
895-6004	IM-2	.27	10%	960	Phenolic	.53	.36	.29	.27
895-6006	IM-2	.47	10%	650	Phenolic	.53	.36	.29	.27
895-6008	IM-2	.56	10%	545	Phenolic	.53	.36	.29	.27
895-6010	IM-2	.82	10%	415	Phenolic	.53	.36	.29	.27
895-6012	IM-2	1	10%	385	Phenolic	.53	.36	.29	.27
895-6014	IM-2	1.5	10%	535	Iron	.66	.44	.36	.33
895-6016	IM-2	2.7	10%	355	Iron	.66	.44	.36	.33
895-6018	IM-2	4.7	10%	230	Iron	.66	.44	.36	.33
895-6020	IM-2	5.6	10%	185	Iron	.66	.44	.36	.33
895-6022	IM-2	8.2	10%	155	Iron	.66	.44	.36	.33
895-6024	IM-2	10	10%	130	Iron	.66	.44	.36	.33
895-6026	IM-2	15	10%	150	Iron	.66	.44	.36	.33
895-6028	IM-2	27	10%	135	Iron	.66	.44	.36	.33
895-6030	IM-2	47	10%	110	Ferrite	.71	.47	.39	.35
895-6032	IM-2	56	10%	100	Ferrite	.71	.47	.39	.35
895-6034	IM-2	82	10%	88	Ferrite	.82	.55	.45	.41
895-6036	IM-2	100	10%	84	Ferrite	.82	.55	.45	.41
895-6038	IM-2	150	10%	61	Ferrite	.82	.55	.45	.41
895-6040	IM-2	270	10%	47	Ferrite	.88	.59	.48	.44
895-6042	IM-2	470	10%	36	Ferrite	.88	.59	.48	.44
895-6044	IM-2	560	10%	35	Ferrite	.88	.59	.48	.44
895-6046	IM-2	820	10%	29	Ferrite	1.04	.69	.57	.52
895-6048	IM-2	1000	10%	28	Ferrite	1.04	.69	.57	.52
895-6102	IM-4	.22	20%	1810	Phenolic	.65	.43	.35	.33
895-6110	IM-4	1.0	10%	785	Phenolic	.52	.35	.28	.26
895-6112	IM-4	1.5	10%	600	Phenolic	.52	.35	.28	.26
895-6114	IM-4	2.2	10%	435	Phenolic	.52	.35	.28	.26
895-6116	IM-4	4.7	10%	260	Phenolic	.52	.35	.28	.26
895-6118	IM-4	5.6	10%	495	Phenolic	.62	.41	.34	.31
895-6122	IM-4	10	10%	290	Iron	.62	.41	.34	.31
895-6124	IM-4	15	10%	240	Iron	.62	.41	.34	.31
895-6126	IM-4	22	10%	175	Iron	.62	.41	.34	.31
895-6128	IM-4	47	5%	170	Iron	.63	.42	.35	.32
895-6130	IM-4	56	5%	164	Iron	.63	.42	.35	.32
895-6134	IM-4	100	5%	133	Iron	.67	.45	.37	.34
895-6136	IM-4	150	5%	114	Iron	.67	.45	.37	.34
895-6138	IM-4	220	5%	103	Iron	.79	.53	.43	.40
895-6140	IM-4	470	5%	100	Iron	.85	.57	.47	.43
895-6142	IM-4	560	5%	85	Iron	.85	.57	.47	.43
895-6144	IM-4	750	5%	79	Iron	.89	.59	.48	.44
895-6146	IM-4	820	5%	77	Iron	.89	.59	.48	.44
895-6148	IM-4	1000	5%	74	Iron	.89	.59	.48	.44
895-6150	IM-4	1500	5%	59	Iron	1.00	.66	.54	.50
895-6204	IMS-5	.22	10%	1100	Phenolic	1.01	.67	.55	.50
895-6206	IMS-5	.27	10%	855	Phenolic	1.01	.67	.55	.50
895-6210	IMS-5	.47	10%	565	Phenolic	.93	.62	.51	.46
895-6214	IMS-5	.68	10%	420	Phenolic	.93	.62	.51	.46
895-6218	IMS-5	1	10%	1070	Iron	1.15	.76	.63	.57
895-6222	IMS-5	2.2	10%	650	Iron	1.09	.72	.59	.54
895-6226	IMS-5	3.9	10%	450	Iron	1.09	.72	.59	.54
895-6230	IMS-5	5.6	10%	335	Iron	1.09	.72	.59	.54
895-6232	IMS-5	6.8	10%	280	Iron	1.09	.72	.59	.54
895-6234	IMS-5	8.2	10%	250	Iron	1.09	.72	.59	.54
895-6236	IMS-5	10	10%	220	Iron	1.09	.72	.59	.54
895-6238	IMS-5	15	10%	315	Ferrite	1.07	.72	.59	.54
895-6240	IMS-5	22	10%	290	Ferrite	1.07	.72	.59	.54
895-6242	IMS-5	27	10%	260	Ferrite	1.07	.72	.59	.54
895-6244	IMS-5	39	10%	205	Ferrite	1.07	.72	.59	.54
895-6246	IMS-5	47	10%	195	Ferrite	1.07	.72	.59	.54
895-6248	IMS-5	56	10%	190	Ferrite	1.07	.72	.59	.54
895-6250	IMS-5	68	10%	170	Ferrite	1.07	.72	.59	.54
895-6252	IMS-5	82	10%	180	Ferrite	1.07	.72	.59	.54
895-6254	IMS-5	100	10%	160	Ferrite	1.07	.72	.59	.54
895-6256	IMS-5	150	10%	140	Ferrite	1.07	.72	.59	.54
895-6258	IMS-5	220	10%	125	Ferrite	1.12	.75	.61	.56
895-6260	IMS-5	270	10%	115	Ferrite	1.12	.75	.61	.56
895-6262	IMS-5	390	10%	105	Ferrite	1.12	.75	.61	.56
895-6266	IMS-5	560	10%	90	Ferrite	1.26	.84	.69	.63
895-6268	IMS-5	680	10%	80	Ferrite	1.26	.84	.69	.63
895-6272	IMS-5	1000	10%	70	Ferrite	1.26	.84	.69	.63
895-6276	IMS-5	2200	10%	50	Ferrite	1.26	.84	.69	.63
895-6278	IMS-5	2700	10%	40	Ferrite	1.32	.88	.72	.66
895-6280	IMS-5	3900	10%	35	Ferrite	1.32	.88	.72	.66
895-6282	IMS-5	4700	10%	31	Ferrite	1.32	.88	.72	.66
895-6284	IMS-5	5600	10%	28	Ferrite	1.47	.98	.80	.73
895-6286	IMS-5	6800	10%	27	Ferrite	1.47	.98	.80	.73
895-6288	IMS-5	8200	10%	26	Ferrite	1.69	1.12	.92	.84
895-6290	IMS-5	10000	10%	24	Ferrite	1.69	1.12	.92	.84
895-6292	IMS-5	15000	10%	22	Ferrite	2.08	1.38	1.13	1.04
895-6294	IMS-5	22000	10%	17	Ferrite	2.37	1.58	1.29	1.19
895-6296	IMS-5	27000	10%	16	Ferrite	2.37	1.58	1.29	1.19
895-6298	IMS-5	39000	10%	15	Ferrite	2.63	1.75	1.43	1.31
895-6304	IMS-5	68000	10%	12	Ferrite	3.24	2.16	1.77	1.62
895-6306	IMS-5	82000	10%	11	Ferrite	3.97	2.64	2.16	1.98
895-6308	IMS-5	100000	10%	11	Ferrite	3.97	2.64	2.16	1.98
—	—	—	—	—	—	—	—	—	—

Molded Surface Mount Inductors

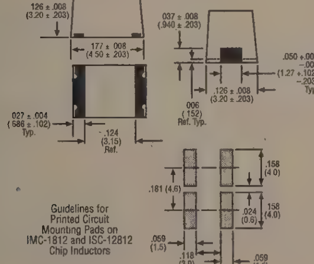
Molded construction provides superior strength and moisture resistance. Printed marking. Compatible with vapor phase and infra-red reflow soldering.

IMC-1210/ISC-1210



Guidelines for Printed Circuit Mounting Pads on IMC-1210 Chip Inductors

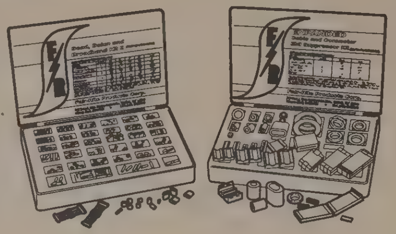
IMC-1812/ISC-1812



Guidelines for Printed Circuit Mounting Pads on IMC-1812 and ISC-12812 Chip Inductors

Stock No.	Mfr.'s Type	Ind (µH)	Tol.	Current DC mA	Q Min.	EACH 1-24	25-49	50-99
895-6340	IMC-1210	.10	20%	450	30	.93	.62	.51
895-6345	IMC-1210	.15	20%	548	30	.93	.62	.51
895-6351	IMC-1210	.39	20%	450	30	.93	.62	.51
895-6353	IMC-1210	.47	20%	450	30	.67	.44	.36
895-6350	IMC-1210	.33	20%	450	30	.67	.44	.36
895-6355	IMC-1210	1	10%	400	30	.67	.44	.36
895-6357	IMC-1210	1.5	10%	370	30	.67	.44	.36
895-6352	IMC-1210	2.7	10%	290	30	.67	.44	.36
895-6359	IMC-1210	3.9	10%	250	30	.67	.44	.36
895-6354	IMC-1210	4.7	10%	220	30	.67	.44	.36
895-6361	IMC-1210	5.6	10%	217	30	.67	.44	.36
895-6356	IMC-1210	8.2	10%	170	30	.67	.44	.36
895-6358	IMC-1210	10	10%	150	30	.67	.44	.36
895-6360	IMC-1210	15	10%	164	30	.70	.47	.38
895-6362	IMC-1210	22	10%	145	30	.70	.47	.38
895-6364	IMC-1210	39	10%	104	30	.70	.47	.38
895-6366	IMC-1210	56	10%	87	30	.70	.47	.38
896-6368	IMC-1210	82	10%	79	30	.70	.47	.38
895-6370	IMC-1210	100	10%	73	20	.70	.47	.38
895-6550	ISC-1210	.010	20%	810	50	1.03	.69	.56
895-6552	ISC-1210	.047	20%	495	40	1.03	.69	.56
895-6554	ISC-1210	.10	20%	450	36	1.03	.69	.56
895-6556	ISC-1210	.15	20%	600	40	1.03	.69	.56
895-6558	ISC-1210	.39	20%	465	40	.67	.44	.36
895-6560	ISC-1210	.47	20%	460	40	.67	.44	.36
895-6562	ISC-1210	1.0	10%	400	30	.67	.44	.36
895-6564	ISC-1210	1.5	10%	370	30	.67	.44	.36
895-6566	ISC-1210	2.7	10%	290	30	.67	.44	.36
895-6568	ISC-1210	3.3	10%	270	30	.67	.44	.36
895-6570	ISC-1210	3.9	10%	250	30	.67	.44	.36
895-6572	ISC-1210	4.7	10%	220	30	.67	.44	.36
895-6574	ISC-1210	5.6	10%	210	30	.67	.44	.36
895-6576	ISC-1210	8.2	10%	195	30	.67	.44	.36
895-6578	ISC-1210	10	10%	185	30	.67	.44	.36
895-6580	ISC-1210	15	10%	165	30	1.23	.82	.67
895-6582	ISC-1210	22	10%	150	30	1.23	.82	.67
895-6584	ISC-1210	39	10%	105	30	1.23	.82	.67
895-6586	ISC-1210	56	10%	95	30	1.23	.82	.67
895-6588	ISC-1210	82	10%	85	30	1.23	.82	.67
895-6590	ISC-1210	100	10%	85	30	1.23	.82	.67
895-6400	IMC-1812	.10	20%	450	30	.60	.40	.33
895-6402	IMC-1812	.22	20%	450	30	.60	.40	.33
895-6406	IMC-1812	.47	20%	355	30	.60	.40	.33
895-6410	IMC-1812	.68	10%	270	30	.60	.40	.33
895-6412	IMC-1812	1.0	10%	450	50	.60	.40	.33
895-6414	IMC-1812	1.5	10%	410	50	.60	.40	.33
895-6416	IMC-1812	2.2	10%	380	50	.60	.40	.33
895-6418	IMC-1812	3.3	10%	355	50	.60	.40	.33
895-6420	IMC-1812	4.7	10%	315	50	.60	.40	.33
895-6422	IMC-1812	5.6	10%	300	50	.60	.40	.33
895-6424	IMC-1812	6.8	10%	285	50	.60	.40	.33
895-6426	IMC-1812	10	10%	250	50	.60	.40	.33
895-6428	IMC-1812	15	10%	200	50	.63	.42	.35
895-6430	IMC-1812	33	10%	160	50	.63	.42	.35
895-6432	IMC-1812	47	10%	140	50	.63	.42	.35
895-6434	IMC-1812	56	10%	135	50	.75	.50	.41
895-6436	IMC-1812	68	10%	130	50	.75	.50	.41
895-6438	IMC-1812	100	10%	110	50	.75	.50	.41
895-6440	IMC-1812	220	10%	100	40	.75	.50	.41
895-6442	IMC-1812	390	10%	80	40	1.02	.68	.56
895-6446	IMC-1812	1000	10%	30	30	1.02	.68	.56
895-6498	ISC-1812	.10	20%	450	30	.83	.56	.45
895-6899	ISC-1812	.15	20%	450	30	.83	.56	.45
895-6501	ISC-1812	.47	20%	370	30	.67	.44	.36
895-6503	ISC-1812	1.0	10%	150	30	.67	.44	.36
895-6502	ISC-1812	1.2	10%	145	30	.67	.44	.36
895-6505	ISC-1812	1.5	105	140	30	.67	.44	.36
895-6507	ISC-1812	4.7	10%	92	30	.67	.44	.36
895-6508	ISC-1812	5.6	10%	86	30	.67	.44	.36
895-6509	ISC-1812	10	10%	70	50	.67	.44	.36
895-6511	ISC-1812	15	10%	60	50	.93	.62	.51
895-6513	ISC-1812	56	10%	39	50	1.00	.67	.55
895-6515	ISC-1812	82	10%	34	50	1.00	.67	.55
895-6517	ISC-1812	100	10%	32	50	1.00	.67	.55
895-6519	ISC-1812	560	10%	18	40	1.60	1.07	.87
895-6521	ISC-1812	1000	10%	15	40	1.60	1.07	.87

EMI Suppression Evaluation Kits



Engineering Evaluation Kits
In order to assist the design engineer concerned with EMI suppression, Fair-rite was the first ferrite manufacturer to offer engineering evaluations kits. These kits are designed to reflect the different mechanical and frequency requirements of all types of suppression applications. Each kit contains a sampling of suppression cores for use in the original design phase or in situations where a retrofit proves necessary. All are in clear plastic cases with blue foam packing.

Bead, Balun and Broadband Kit II
This kit is the latest version of the first engineering kit introduced in 1978. It has an assortment of 34 parts, consisting of small shield beads, bead on leads and multi-aperture cores. To obtain optimum performance over a broad frequency spectrum, samples are supplied in four Fair-Rite materials.
589-0001. 0199000011..........**EACH 80.00**

Expanded Cable and Connector EMI Suppressor Kit
This is our most popular engineering kit. As the name implies, this kit provides a broad sampling of suppression cores in 43 and 44 material, specifically designed to attenuate EMI between all types of cable connected systems. To assemble the split cable suppression cores, nylon cases and steel clips are included in this kit.
589-0002. 0199000005..........**EACH 80.00**

Expanded Bead-On-Lead EMI Suppressor Kit
Twenty-four wired beads in three basic design geometries are included in the evaluation kit. These beads are supplied in three suppressor materials — 73, 43, and 61.
589-0003. 0199000010..........**EACH 80.00**

Fair-Rite EMI Suppressor Retro Kit
This evaluation kit contains two sets each of ten different split cable suppression cores in 43 material, installed in their appropriate nylon cases. This evaluation kit will prove particularly useful in new and existing designs, that use flat or round connecting cables, where EMI attenuation is required.
589-0004. 0199000008..........**EACH 80.00**

Fair-Rite Surface Mount Bead Kit
This engineering kit of surface mount suppression cores, contains an assortment of ten SM Beads and two Common-Mode SM Beads in appropriate materials to provide maximum attenuation over a wide frequency range.
589-0005. 0199000014..........**EACH 50.00**

Surface Mount EMI Shield Bead

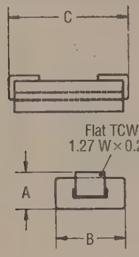


Fig. 1

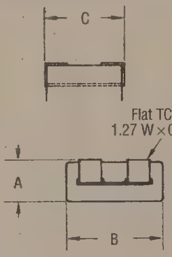


Fig. 2

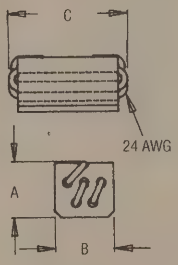


Fig. 3

These surface mountable ferrite beads in type 43 and 44 material are constructed with a solid flat copper conductor having a 30-60 μ inch nickel barrier and a minimum 95/5 tin/lead coating thickness of 200 μ inch. They offer a high current carrying capacity with low dc resistance compared with plated beads. Impedance values listed below are controlled to ±20% @ 100 MHz.

Stock No.	Mfr.'s Type	Fig.	Imp. (Ω) ±20% @ 100 MHz	Dimensions (In.)			PER PKG./100	
				A	B	C	1-24	25-49
589-0500	2743019447	1	47	0.112	0.120	0.184	**17.12**	**14.27**
589-0505	2743021447	1	95	0.112	0.120	0.359	**17.38**	**14.48**
589-0510	2744041447	2	33	0.112	0.220	0.185	**26.10**	**21.75**
589-0515	2744045447	2	60	0.112	0.220	0.335	**27.30**	**22.75**
589-0520	2744555576	3	600	0.197	0.197	0.433	**31.50**	**26.25**

Wound EMI Shield Beads

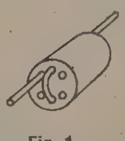


Fig. 1

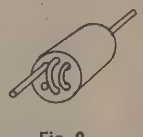


Fig. 2

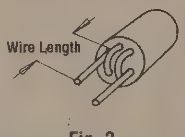


Fig. 3

These 6 hole ferrite beads wound with various configurations offer very high impedance in a small package. Supplied in type 43 material wound with #24 AWG tinned copper wire (95/5 tin/lead coating) maximum suppression is obtained between 25 and 250 MHz. **Wire Length:** 1.500" (38 mm) nominal.

Stock No.	Mfr.'s Type	Fig.	Min. Imp. (Ω) @ 50 MHz	Min. Imp. (Ω) @ 100 MHz	Turns	PER PKG./100	
						1-24	25-49
589-0600	2943666661	1	320	375	1½	**25.50**	**21.25**
589-0605	2943666671	2	680	580	2½	**25.50**	**21.25**
589-0610	2943666631	3	800	550	3	**26.10**	**21.75**

EMI Suppression Cores with Cases

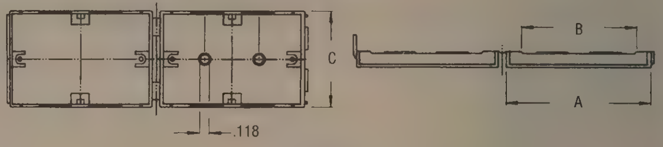


Fig. 1

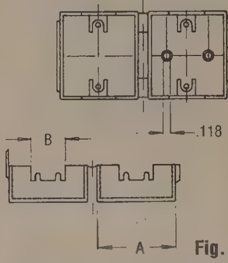


Fig. 2

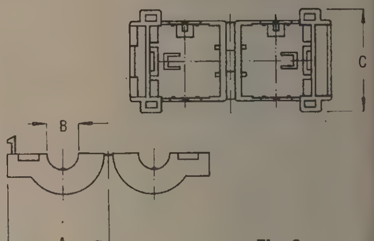


Fig. 3

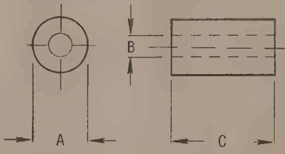
These ferrite suppressors, designed to accommodate various size cables, are available for both flat ribbon cable and round bundled cables. The cases are designed to grip and center the ferrite suppressors on the cable. Ferrites are supplied in type 43 material (2 per unit) and the cases in nylon 6/6. Flammability rating by UL 94-V2. Impedance values listed below are controlled to ±20% @ 100 MHz.

Flat Cable Cores with Cases

Stock No.	Mfr.'s Type	Fig.	Imp. (Ω) ±20% @ 100 MHz	Dimensions (In.)			EACH	
				A	B	C	1-24	25-49
589-0100	0443166651	1	225	1.950	1.350	1.270	**3.32**	**3.19**
589-0110	0443163951	1	235	2.670	2.070	1.270	**4.60**	**3.96**
589-0120	0443164051	1	215	3.180	2.580	1.270	**5.44**	**4.68**

Round Cable Cores with Cases

Stock No.	Mfr.'s Type	Fig.	Imp. (Ω) ±20% @ 100 MHz	A	B	C	1-24	25-49
589-0200	0443164251	2	275	0.705	0.275	1.272	**2.04**	**1.75**
589-0210	0443167251	2	225	0.870	0.402	1.272	**2.44**	**2.10**
589-0220	0443164151	2	250	1.142	0.528	1.280	**3.58**	**3.08**
589-0230	0443625006	3	113	0.972	0.299	0.898	**1.70**	**1.46**
589-0240	0443665806	3	88	1.035	0.362	0.843	**1.56**	**1.34**
589-0250	0443800506	3	75	1.169	0.504	0.811	**1.64**	**1.41**
589-0260	0443806406	3	90	1.350	0.591	0.835	**1.90**	**1.63**

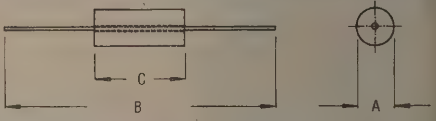


EMI Shield Beads

These ferrite beads, supplied in type 43 material are designed for attenuation of unwanted high frequency signals in circuits. Useful for suppression in the 25 to 250 MHz range. Impedance values listed below are controlled to ±20% @ 100 MHz.

Stock No.	Mfr.'s Type	Imp. (Ω) ±20% @ 100 MHz	Dimensions (In.)			Qty. Per Pkg.	PER PKG.	
			A	B	C		1-24	25-49
589-0300	2643000101	40	0.138	0.051	0.128	1000	**30.20**	**26.03**
589-0305	2643000301	60	0.138	0.051	0.236	1000	**36.80**	**31.72**
589-0310	2643000801	92	0.296	0.094	0.297	500	**39.60**	**34.13**
589-0315	2643002402	43	0.380	0.197	0.190	500	**44.00**	**37.93**
589-0320	2643540002	250	0.562	0.250	1.125	1	**.66**	**.56**
589-0325	2643665702	200	0.687	0.375	1.125	1	**.76**	**.65**
589-0330	2643102002	235	1.020	0.505	1.125	1	**1.82**	**1.56**
589-0335	2643801002	47	1.142	0.748	0.295	1	**.70**	**.60**
589-0340	2643804502	100	1.225	0.750	0.627	1	**1.30**	**1.08**
589-0345	2643802702	80	1.400	0.900	0.500	1	**1.34**	**1.15**
589-0350	2643803802	108	2.400	1.400	0.500	1	**3.12**	**2.68**

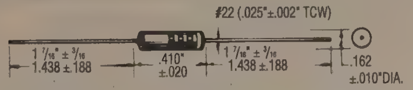
EMI Beads on Leads



These ferrite devices consist of beads assembled on #22AWG tinned copper wire (95/5 tin/lead coating) and are useful in automated circuit assembly. They are supplied in type 43 material. Impedance increases with "C" dimension listed below. Impedance values listed below are controlled to ±20% @ 100 MHz.

Stock No.	Mfr.'s Type	Imp. (Ω) ±20% @ 100 MHz	Dimensions (In.)			PER PKG./100	
			A	B	C	1-24	25-49
589-0400	2743001112	68	0.138	2.440	0.175	**10.14**	**8.45**
589-0405	2743015112	82	0.138	2.440	0.206	**10.14**	**8.45**
589-0410	2743003112	100	0.138	2.440	0.263	**10.14**	**8.45**
589-0415	2743002112	133	0.138	2.440	0.350	**10.14**	**8.45**
589-0420	2743008112	180	0.138	2.440	0.450	**10.44**	**8.70**
589-0425	2743009112	220	0.138	2.440	0.545	**10.76**	**8.97**

Subminiature Shielded RF Inductors



Epoxy molded and shielded for minimum coupling in high-density package. Meet electrical and environmental requirements of MIL-C-15305C, Grade 1 (resistance to moisture and immersion). Class B (–55° to +125°). For altitudes to 70,000 feet. **Tolerance:** ±10%. Less than 3% coupling. Low DC resistance. **Dielectric Strength:** 700 V RMS. **Size:** 0.162 ±.010 dia. × 0.410" ±.020 long. AWG #22 leads. **Weight Per 100:** 3½ oz.

Stock No.	Mfr.'s Type	Ind. µH	Q	@ MHz	MIL Type	EACH	
						1-99	100-249
871-3030	9250-331	.33	46	25.000	MS-75087-7	**2.76**	**2.07**
871-3060	9250-102	1.00	47	25.000	MS-75088-1	**2.89**	**2.17**
871-3065	9250-222	2.20	44	7.900	MS-75088-5	**2.89**	**2.17**
871-3070	9250-332	3.30	44	7.900	MS-75088-7	**2.89**	**2.17**
871-3110	9250-472	4.70	44	7.900	MS-75088-9	**2.89**	**2.17**
871-3130	9250-103	10.00	49	7.900	MS-75088-13	**2.89**	**2.17**
871-3150	9250-223	22.00	45	2.500	MS-75089-3	**2.89**	**2.17**
871-3155	9250-273	27.00	45	2.500	MS-75089-4	**2.89**	**2.17**
871-3170	9250-473	47.00	50	2.500	MS-75089-7	**3.18**	**2.38**
871-3175	9250-563	56.00	50	2.500	MS-75008-8	**3.18**	**2.38**
871-3180	9250-683	68.00	50	2.500	MS-75089-9	**3.18**	**2.38**
871-3200	9250-104	100.00	50	2.500	MS-75089-11	**3.47**	**2.60**
871-3210	9250-224	220.00	55	.790	MS-75089-15	**3.47**	**2.60**
871-3220	9250-334	330.00	55	.790	MS-75089-17	**3.47**	**2.60**
871-3225	9250-474	470.00	60	.790	MS-75008-19	**3.47**	**2.60**
871-3250	9250-105	1000.00	60	.790	MS-75089-23	**3.47**	**2.60**
871-3270	9250-225	2200.00	45	.250	MS-75089-27	**3.98**	**2.98**
871-3275	9250-336	33.00k	27	.079	MS-75008-41	**4.76**	**3.57**

Heavy Duty Hash Chokes

High current hash filter chokes, molded powdered iron or ferrite form for relatively high inductance. Core is 1¼" long (31.75 mm). **Tolerance:** ±20%.

Stock No.	Mfr.'s Type	Ind. µH	Ohms Max.	Amperes	Diameter		EACH	
					In.	mm	1-99	100-249
871-5240	5240	40.0	.082	3.0	5/16	7.938	**2.40**	**1.80**
871-5248	5248	68.0	.054	5.0	17/32	13.394	**2.89**	**2.17**
871-5250	5250	100.0	.216	2.0	3/8	9.525	**2.89**	**2.17**
871-5252	5252	125.0	.080	3.5	1/2	12.700	**3.18**	**2.38**
871-5254	5254	250.0	.170	2.5	7/16	11.113	**3.18**	**2.38**
871-5256	5256	500.0	.260	2.0	9/16	14.287	**3.18**	**2.38**

Subminiature RF Chokes

► **Moisture Resistant**

Iron core RF chokes are designed to meet demand for high-reliability ultraminiature components. Suited to network and filter design, delay lines, and computer applications.

Stock No.	Mfr.'s Type	Ind. µH	Q Min.	Ohms	Max MA	EACH	
						1-99	100-249
871-6105	70F107AP*	.1	49	.013	3992	**1.02**	**.77**
871-6110	70F106A1	1.0	41	.048	2041	**1.02**	**.77**
871-6115	70F226A1	2.2	43	.156	1132	**1.24**	**.93**
871-6120	70F336A1	3.3	40	.240	912	**1.24**	**.93**
871-6125	70F566A1	5.6	41	.492	637	**1.24**	**.93**
871-6130	70F826A1	8.2	37	.744	518	**1.51**	**1.13**
871-6135	70F105A1	10.0	36	1.560	277	**1.51**	**1.13**
871-6140	70F185A1	18.0	52	2.280	229	**1.51**	**1.13**
871-6145	70F275A1	27.0	49	2.640	213	**1.51**	**1.13**
871-6150	70F475A1	47.0	44	3.360	188	**1.64**	**1.23**
871-6155	70F685A1	68.0	42	4.200	169	**1.51**	**1.13**
871-6160	70F104A1	100.0	25	7.680	139	**1.64**	**1.23**
871-6165	70F224A1	220.0	46	11.500	114	**1.64**	**1.23**
871-6170	70F334A1	330.0	41	13.900	103	**1.64**	**1.23**
871-6175	70F474A1	470.0	35	16.300	95	**1.64**	**1.23**
871-6180	70F684A1	680.0	37	19.800	87	**1.73**	**1.30**
871-6185	70F103A1	1000.0	30	24.000	79	**1.73**	**1.30**
871-6190	70F223A1	2200.0	40	45.600	57	**1.80**	**1.35**
871-6195	70F253A1	2500.0	48	45.600	57	**1.80**	**1.35**
871-6200	70F473A1	4700.0	49	64.800	48	**1.96**	**1.47**
871-6205	70F102A1	10000.0	41	101.000	38	**1.84**	**1.38**
871-6210	70F101AF†	100000.0	48	278.000	29	**3.11**	**2.33**

*Phenolic core. † Ferrite core.

Molded RF Chokes

Size: 156 ±.010. **Diameter:** 375 ±.010 length. Leads AWG #22TCW; 1.438 ±.188 length. Meets MIL-C-15305, Grade 1, Class A.

Stock No.	Mfr.'s Type	MS Type	Measured on 260 A Q-Meter			EACH	
			Inductance MicroHenries	Min. Q	Testing Frequency	1-99	100-249
871-6220	9310-02*	18130-2	.22 ± 20%	50	25.0 MHz	**.93**	**.70**
871-6225	9310-06*	18130-4	.47 ± 20%	45	25.0 MHz	**.93**	**.70**
871-6230	9310-10*	18130-7	.82 ± 10%	50	25.0 MHz	**.93**	**.70**
871-6235	9310-12*	18130-8	1.00 ± 10%	50	25.0 MHz	**.93**	**.70**
871-6240	9310-16*	18130-10	1.50 ± 10%	33	7.9 MHz	**.93**	**.70**
871-6245	9310-20*	18130-12	2.20 ± 10%	33	7.9 MHz	**.93**	**.70**
871-6250	9310-24*	18130-14	3.30 ± 10%	33	7.9 MHz	**.93**	**.70**
871-6255	9310-26*	18130-15	3.90 ± 10%	33	7.9 MHz	**.93**	**.70**
871-6260	9310-28*	18130-16	4.70 ± 10%	33	7.9 MHz	**.93**	**.70**
871-6265	9310-36†	18130-20	10.0 ± 10%	55	7.9 MHz	**1.13**	**.85**
871-6270	9310-40†	18130-22	15.0 ± 10%	65	2.5 MHz	**1.13**	**.85**
871-6275	9310-44†	18130-24	22.0 ± 10%	75	2.5 MHz	**1.13**	**.85**
871-6280	9310-52†	18130-26	33.0 ± 10%	65	2.5 MHz	**1.31**	**.98**

*Phenolic core material. †Iron core material.

RF Chokes With Axial Leads

These chokes cover an inductance range form 1 microhenry to 50 millihenries. Either single layer or 3-pi universal winding is used to insure low distributed capacity. Chokes are wounded on low-loss molded phenolic or powdered iron core forms and are impregnated with a moisture and fungus-resistant varnish. Leads are 1½" (38.1mm) long.

Single Layer Windings

Phenolic Core: 3/16" (4.76 mm) diameter × 3/4" (19.05 mm) long. **Tolerance:** ±10% –20%.

Stock No.	Mfr.'s Type	Ind. µH	Q Min.	Ohms	Max MA	Diameter In.	EACH	
							1-99	100-249
871-3482	4602*	1.0	60	.050	2000	.270	**1.00**	**.75**
871-3485	4604	1.5	58	.093	1800	.270	**1.00**	**.75**
871-3495	4608	3.9	60	.450	1000	.270	**1.00**	**.75**
871-3508	4612	10.0	36	1.500	500	.270	**1.00**	**.75**

Iron Core: 7/32" (5.55 mm) diameter × 7/8" (22.22 mm) long. **Tolerance:** ±5%.

871-3524	4622	10.0	69	.110	1500	.290	**1.36**	**1.02**
871-3526	4624	15.0	62	.170	1000	.290	**1.36**	**1.02**
871-3530	4626	24.0	65	.340	800	.290	**1.36**	**1.02**
871-3535	4628	39.0	70	.650	600	.290	**1.36**	**1.02**
871-3538	4629	55.0	72	1.000	500	.290	**1.36**	**1.02**
871-3550	4632	100.0	107	3.000	400	.290	**1.38**	**1.03**

3-Section Windings

Phenolic Core: 3/16" (4.76 mm) diameter × 3/4" (19.05 mm) long. **Tolerance:** ±5%.

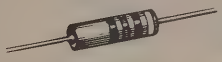
871-3582	4652	1,000	59	19.000	160	.563	**3.69**	**2.77**

Iron Core: 7/32" (5.55 mm) × 7/8" (22.22 mm) long. **Tolerance:** ±5%.

871-3584	4662	1,000	83	8.600	160	.469	**3.69**	**2.77**
871-3586	4664	1,500	82	11.000	160	.469	**3.42**	**2.57**
871-3592	4672	10,000	68	50.000	100	.594	**3.42**	**2.57**

Ferrite Core: 1/4" (6.35 mm) diameter × 7/8" (22.22 mm) long. **Tolerance:** ±5%.

871-3992	6302	2,500	106	9.000	160	.469	**2.69**	**2.02**
871-3996	6304	5,000	91	14.000	160	.531	**3.04**	**2.28**
871-4000	6306	10,000	108	31.000	100	.531	**3.13**	**2.35**
871-4004	6308	25,000	102	82.000	65	.531	**3.24**	**2.43**
871-4008	6310	50,000	113	127.000	65	.625	**3.24**	**2.43**



Molded RF Chokes

Phenolic Core: .095" (2.41 mm) diameter × .25" (6.35 mm) long. **Tolerance:** ±10%.

Stock No.	Mfr.'s Type	Ind. µH	Q Min.	Ohms	Max MA	EACH	
						1-99	100-249
871-0095	9230-94	.10	40	.07	1100	**1.07**	**.80**
871-0100	9230-00	.15	38	.10	1100	**1.07**	**.80**
871-0105	9230-04	.22	33	.14	935	**1.07**	**.80**
871-0110	9230-10	.39	30	.30	640	**1.07**	**.80**
871-0115	9230-12	.47	30	.35	590	**1.07**	**.80**
871-0120	9230-14	.56	30	.50	495	**1.07**	**.80**
871-0130	9230-20	1.00	25	1.00	350	**1.07**	**.80**

Iron Core: .095" (2.41 mm) diameter × .25" (6.35 mm) long. **Tolerance:** ±10%.

871-0140	9230-32	3.30	45	.85	380	**1.44**	**1.08**
871-0145	9230-34	3.90	45	1.00	350	**1.44**	**1.08**
871-0150	9230-36	4.70	45	1.20	320	**1.44**	**1.08**
871-0155	9230-44	10.00	55	3.70	180	**1.62**	**1.22**
871-0160	9230-52	22.00	50	3.30	190	**1.64**	**1.23**

Ferrite Core: .095" (2.41 mm) diameter × .25" (6.35 mm) long. **Tolerance:** ±10%.

871-0165	9230-56	33.00	45	3.40	187	**1.76**	**1.32**
871-0168	9230-58	39.00	45	3.60	180	**1.76**	**1.32**
871-0170	9230-60	47.00	50	4.50	165	**1.76**	**1.32**
871-0175	9230-64	68.00	50	6.70	135	**1.76**	**1.32**
871-0180	9230-68	100.00	30	8.00	125	**1.76**	**1.32**
871-0185	9230-70	120.00	30	13.00	97	**1.87**	**1.40**
871-0190	9230-76	220.00	30	21.00	73	**1.87**	**1.40**
871-0195	9230-84	470.00	30	42.00	50	**1.93**	**1.45**
871-0020	9230-92	1000.00	30	72.00	38	**1.93**	**1.40**

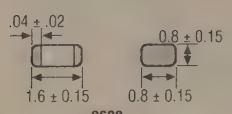
5500/5600 Series

High saturation flux density ferrite rods (5500) and ferrite bobbin (5600). Chokes are ideal for all EMI/RFI filtering applications. They are also suitable for energy storage inductors in switching power supplies. Covered with shrink tubing and varnish impregnated. Printed Circuit mounting.

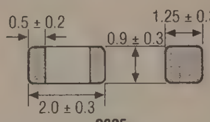
Stock No.	Mfr.'s Type	LuH ±10%	R, dc Max. Ohms	I, dc Max. Amps	EACH	
					1-99	100-249
871-7000	5502	10	.017	9.0	**4.27**	**3.20**
871-7005	5512	68	.034	7.3	**6.16**	**4.62**
871-7010	5513	100	.038	6.8	**6.73**	**5.05**
871-7015	5520	100	.027	10.0	**8.40**	**6.30**
871-7020	5606	250	.173	2.9	**8.11**	**6.08**
871-7025	5607	500	.378	2.0	**8.11**	**6.08**
871-7030	5608	1000	.801	1.3	**8.69**	**6.52**
871-7035	5622	500	.090	5.0	**21.00**	**15.75**
871-7040	5626	100	.018	14.0	**24.62**	**18.47**
871-7045	5631	5000	.714	2.2	**26.80**	**20.10**

*Inductance measured @ 1 kHz with zero amps DC current. Typical inductance change is less than 5% @ maximum rated current. Leads: 1: long. Tinned with 1/8" of body.

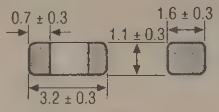
BLM__A Series Surface Mount EMI Filters — *NEW* —



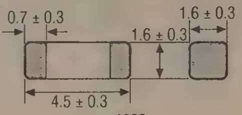
0603



0805



1206



1806

BLM _ _A Series

- **Suitable for Flow and Reflow Soldering**
- **Wide Temperature Range**
- **High Z Characteristics**
- **For I/O Ports, DC Power Lines, and Signal Lines**

The BLM _ _ A Series ferrite beads provide outstanding electrical characteristics in packages as small as 0603. For noise applications covering a wide frequency range.

Stock No.	Mfr.'s Type	EIA Size	Typ. Imp. @ 100 MHz	Ohms Max.	Current (mA)	EACH 1-499	EACH 500-4999	EACH 5000-10000
711-2525	BLM11A102SPB	0603	1000	1.00	100	**.19**	**.12**	**.11**
711-2527	BLM11A121SPB	0603	120	0.20	200	**.18**	**.11**	**.10**
711-2529	BLM11A221SPB	0603	220	0.30	200	**.27**	**.17**	**.15**
711-2531	BLM11A601SPB	0603	600	0.70	200	**.18**	**.11**	**.10**
711-2547	BLM21A102SPB	0805	1000	0.60	200	**.21**	**.13**	**.12**
711-2549	BLM21A121SPB	0805	120	0.06	200	**.19**	**.12**	**.11**
711-2555	BLM21A401SPB	8805	400	1.00	200	**.36**	**.21**	**.20**
711-2557	BLM21A601RPB	0805	600	1.50	200	**.31**	**.19**	**.17**
711-1121	BLM21A601SPB	0805	600	1.50	200	**.29**	**.18**	**.10**
711-2575	BLM31A260SPB	1206	26	0.02	500	**.24**	**.15**	**.14**
711-1123	BLM31A700SPB	1206	70	0.50	200	**.32**	**.22**	**.14**
711-1127	BLM31A601SPB	1206	600	1.00	200	**.34**	**.28**	**.19**
711-1129	BLM41A800SPB	1806	80	0.30	500	**.29**	**.21**	**.19**
711-1131	BLM41A151SPB	1806	150	0.70	200	**.30**	**.25**	**.19**

BLM _ _ B Series

- **Designed to Reduce Noise Above Operating Temperature**
- **High Impedance Characteristics**
- **Suitable for Flow and Reflow Soldering**
- **For Computers and Peripheral Equipment**
- **For Consumer Products**
- **For High Speed Circuits**
- **Suitable for Circuits with Unstable Ground**

The BLM _ _ B Series ferrite beads have developed to pass signal frequencies from 10 MHz to 100 MHz while exhibiting high impedance characteristics to reduce EMI noise above these specific frequencies.

711-2535	BLM11B141SPB	0603	140	0.70	200	**.31**	**.19**	**.17**
711-2537	BLM11B421SPB	0603	420	0.70	200	**.21**	**.31**	**.12**
711-2539	BLM11B601SPB	0603	600	—	200	**.18**	**.11**	**.10**
711-2541	BLM11B750SPB	0603	75	0.60	200	**.31**	**.19**	**.17**
711-2561	BLM21B050SPB	0805	5	0.20	500	**.19**	**.12**	**.11**
711-2563	BLM21B102SPB	0805	1000	0.80	200	**.21**	**.13**	**.12**
711-2565	BLM21B201SPB	0805	200	0.70	210	**.31**	**.19**	**.17**
711-2567	BLM21B222SPB	0805	2200	0.80	200	**.31**	**.19**	**.17**
711-2569	BLM21B601SPB	0805	600	—	200	**.19**	**.12**	**.11**
711-2571	BLM21B751SPB	0805	750	0.70	200	**.24**	**.14**	**.13**
711-1125	BLM31B601SPB	1206	600	1.00	200	**.34**	**.28**	**.19**

BLM _ _ P Series

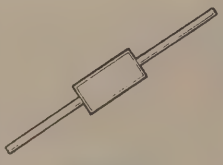
- **Suitable High Frequency Noise Suppression Over Wide Frequency Range**
- **Current Rating Up to 6 Amps**
- **Small Package Size — EIA STD 0603/0805/1206 and 1806**
- **Nickel Barrier Terminations Provide Excellent Solder Heat Resistance**
- **Low DCR**
- **For High Current DC Power Lines**
- **For Circuits Where a Stable Ground Is Unavailable**

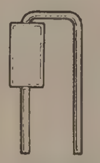
The BLM _ _ B Series ferrite beads offer high frequency noise suppression with the capability of handling large currents for DC power line applications.

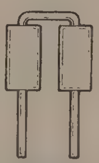
711-2545	BLM11P600SPB	0603	60	0.20	500	**.33**	**.20**	**.19**
711-2573	BLM21P300SPB	0805	30	0.03	3000	**.25**	**.15**	**.14**
711-2583	BLM31P500SPB	1206	50	0.03	3000	**.39**	**.23**	**.21**
711-2589	BLM41P600SPB	1806	60	0.01	6000	**.47**	**.28**	**.26**
711-2590	BLM41P750SPB	1806	75	0.03	3000	**.45**	**.26**	**.24**
711-2561	BLM41P800SPB	1806	80	0.15	1000	**.33**	**.20**	**.18**

Bead Inductors

Ferrite beads are used for noise suppression in car radios, digital control equipment and for the prevention of spurious oscillation in radio frequency amplifiers. Ferrite bead inductors are devices which can effectively be used on printed circuit boards where high component density is essential. Applications include micro computer, switching regulators, digital control equipment, car radio, car stereos, etc. Tape and reel in axial and radial versions available as well as ammo pack as custom order. Call for price and delivery.


BL01RN-A62


BL02RN1-R62


BL02RN2-R62

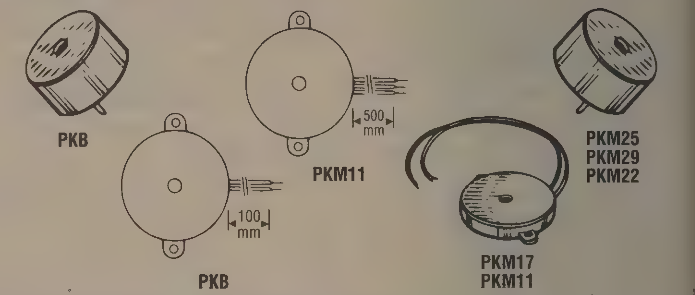
Stock No.	Mfr.'s Type	Lead Length	Rated Current	Beads Form	Lead Style	Supplied As	EACH 1-99	EACH 100-249
711-0500	BL01RN1-A62	.787"	7	Single	Axial	Bulk	**.35**	**.24**
711-0510	BL02RN1-R62	.394"	7	Single	Radial	Bulk	**.33**	**.22**
711-0515	BL02RN2-R62	.394"	7	Double	Radial	Bulk	**.40**	**.31**
711-0520	BL03RN2-R62	.394"	6	Double	Radial	Bulk	**.46**	**.31**

High Frequency Chip Inductors

These chip inductors consist of air-core chip inductors using subminiature alumina core as a bobbin. The self-resonant frequency characteristics yield the high Q and highly stable inductance at high frequencies that make these inductors ideal for use in the high frequency circuits of video and communications equipment. The outstanding solder heat resistance means both flow and reflow soldering methods can be used.

Stock No.	Mfr.'s Type	Nominal Value nH	Nominal Q	DC Res. Max.	Self-Resonant Freq. (MHz) Min.	Current (mA)	EACH 1-99	EACH 100-249
711-0300	LQN2A10NM04M0	10	30	.25	1000	770	**.32**	**.26**
711-0302	LQN2A18NM04M0	18	40	.25	1000	680	**.32**	**.26**
711-0304	LQN2A22NM04M0	22	35	.25	1000	410	**.32**	**.26**
711-0306	LQN2A33NM04M0	33	40	.25	900	490	**.32**	**.26**
711-0308	LQN2A39NM04M0	39	40	.25	900	370	**.32**	**.26**
711-0310	LQN2A47NM04M0	47	40	.30	600	550	**.32**	**.26**
711-0312	LQN2A56NM04M0	56	40	.30	800	340	**.32**	**.26**
711-0314	LQN2A68NM04M0	68	40	.30	500	500	**.32**	**.26**
711-0316	LQN2A82NM04M0	82	40	.30	600	300	**.32**	**.26**
711-0318	LQN2AR10K04M0	100	30	.40	400	380	**.32**	**.26**
711-0320	LQN2AR12K04M0	120	30	.40	350	410	**.32**	**.26**
711-0322	LQN2AR15K04M0	150	30	.50	300	400	**.32**	**.26**
711-0324	LQN2AR18K04M0	180	30	.50	300	370	**.32**	**.26**
711-0326	LQN2AR22K04M0	220	30	.50	280	360	**.32**	**.26**

Piezo-Alarms



PC Mountable Piezo-Alarms with Internal Circuitry

These PC mountable piezo-alarms are completely self-contained requiring only a DC voltage source for operation. Providing the use with high audio outputs while requiring very low input power, they can be operated over a broad range of input voltages. Their small size, high reliability and low cost make them ideal for data processing equipment, electronic instrumentation, medical equipment, automatic control devices and cash registers.

Stock No.	Mfr.'s Type	Sound Level dB	Freq. (Hz)	Current (mA)	Oper. Volt (p-p)	EACH 1-99	EACH 100-249
711-0140	PKB24SPC-3601*	90	3.6K	16	3 to 15	**2.10**	**1.75**
711-0145	PKB8-4AO	70	3.8K	13	3 to 20	**4.40**	**3.50**

Internal Drive Piezo-Alarms

These piezo-alarms are completely self-contained requiring only a DC voltage source for operation. Providing the user with surprisingly high audio outputs while requiring very low input power, they can be operated over a broad range of input voltages. -20°C to +60°C. Case material is Noryl and is rated UL-V1. Producing an extremely clear and penetrating sound which is audible through surrounding noises, the audio output reaches long distances. These units have compact size, light weight, no electrical noise, very low power consumption and operate over a broad voltage range. Wide application ranges including fire alarms, burglar alarms, gas detectors, automotive alarms, toys, games, machines, electrical appliances, automatic control devices, conveyors and medical equipment. 24 AWG leads.

711-0120	PKB5-3AO	85	2.8K	12	3 to 20	**5.45**	**4.50**
711-0125	PKB5-3BO	85	2.8K	6	1 to 9	**5.75**	**4.87**
711-0130	PKB6-5AO	85	4.7K	12	1.5 to 20	**4.75**	**4.00**

Self-Drive Piezo-Alarms

As the use of microprocessors in consumer products has become increasingly popular, so too has the use of piezo-alarms as the accepted means of audio alarm generation. Their ability to be driven be ICs, small size, low cost and high reliability, make them ideal for such applications. These units are equipped with a feedback tab for use with self-oscillating circuit designs. By utilizing the feedback, the part's individual resonant frequency is found to optimize sound pressure level. All mechanical and electrical components are designed to be compatible with most standard PC board assembly and wave soldering techniques. These units feature a unit with low cost and high sound pressure level in a small size with low input voltage and low current consumption. Some of the many applications are clocks, office equipment, machine tools, toys, games, automatic controlling devices, instrumentation, calculators, home appliances and smoke alarms. **Operating Temperature:** –30°C to +70°C. **Operating Voltage:** 3 to 20 V.

711-0160	PKM25-6AO	85	6.8K	10	3 to 20	**2.40**	**1.92**
711-0165	PKM25SP-3701*	60	3.7K	20	3 to 20	**2.55**	**2.03**
711-0170	PKM11-6AO	75	6.5K	8	3 to 15	**2.35**	**1.96**
711-0175	PKM29-3AO	85	3.4K	20	4.5 to 18	**2.61**	**2.08**

*Also available as washable parts with tape covering the sound emitting hole and epoxy seal at the case bottom as custom order. Call for price and delivery.

External Drive Piezo-Alarms

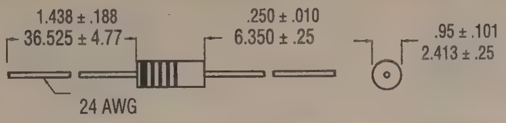
These piezo-alarms have no "feedback" tab and is particularly suited for the generation of both single tones and the unusual sound effects that are possible with specifically designed driving circuits. These sounds include musical melodies, insect sounds, etc. All mechanical and electrical components are designed to be compatible with most standard PC board assembly and wave soldering techniques. Rugged construction, low cost and high reliability with variable tone outputs along with no EMI output make this unit extremely useful for musical toys, home appliances, communications equipment, computer peripherals and office equipment and instrumentation. This external drive unit has no internal circuitry.

Stock No.	Mfr.'s Type	Sound Level dB	Freq. (Hz)	Current (mA)	Oper. Volt (p-p)	Cap (pF)	EACH 1-99	EACH 100-249
711-0100	PKM22EPP-4001	75	4K	1	3 to 30	12,000	**.85**	**.75**
711-0105	PKM17EPP-4001*	72	4K	1	3 to 20	7,000	**.85**	**.75**
711-0110	PKM11-4AO	75	4096	1	3 to 25	10,000	**.85**	**.76**

*Without Mounting Ears.

J Series

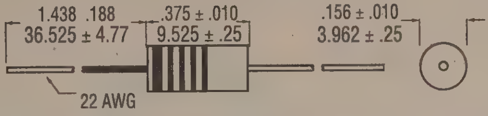
Axial leaded molded RF chokes. Color coded in accordance with Mil-C-15305. 10% Tolerance.



Stock No.	Mfr.'s Type	Inductance (µH)	MS Part Designation	Q Min.	Rated DC Current mA	EACH			
						1-24	25-49	50-99	100-249
290-1000	JM100K	0.1	75083-1	40	1350	**1.03**	**.98**	**.93**	**.89**
290-1002	JM120K	0.12	75083-2	4	1270	**1.03**	**.98**	**.93**	**.89**
290-1004	JM150K	0.15	75083-3	38	1200	**1.03**	**.98**	**.93**	**.89**
290-1006	JM180K	0.18	75083-4	3	1105	**1.03**	**.98**	**.93**	**.89**
290-1008	JM220K	0.22	75083-5	33	1025	**1.03**	**.98**	**.93**	**.89**
290-1010	JM270K	0.27	75083-6	33	960	**1.03**	**.98**	**.93**	**.89**
290-1012	JM330K	0.33	75083-7	30	815	**1.03**	**.98**	**.93**	**.89**
290-1014	JM390K	0.39	75083-8	30	700	**1.03**	**.98**	**.93**	**.89**
290-1016	JM470K	0.47	75083-9	30	650	**1.03**	**.98**	**.93**	**.89**
290-1018	JM560K	0.56	75083-10	30	545	**1.03**	**.98**	**.93**	**.89**
290-1020	JM680K	0.68	75083-11	28	495	**1.03**	**.98**	**.93**	**.89**
290-1022	JM101K	1	75083-13	25	385	**1.03**	**.98**	**.93**	**.89**
290-1024	JM121K	1.2	75084-1	25	590	**1.18**	**1.13**	**1.06**	**1.01**
290-1026	JM151K	1.5	75084-2	28	535	**1.18**	**1.13**	**1.06**	**1.01**
290-1028	JM181K	1.8	75084-3	30	455	**1.18**	**1.13**	**1.06**	**1.01**
290-1030	JM221K	2.2	75084-4	30	395	**1.18**	**1.13**	**1.06**	**1.01**
290-1032	JM271K	2.7	75084-5	37	355	**1.18**	**1.13**	**1.06**	**1.01**
290-1034	JM331K	3.3	75084-6	45	270	**1.18**	**1.13**	**1.06**	**1.01**
290-1036	JM391K	3.9	75084-7	45	250	**1.18**	**1.13**	**1.06**	**1.01**
290-1038	JM471K	4.7	75084-8	45	230	**1.18**	**1.13**	**1.06**	**1.01**
290-1040	JM561K	5.6	75084-9	50	185	**1.18**	**1.13**	**1.06**	**1.01**
290-1042	JM681K	6,8	75084-10	50	180	**1.18**	**1.13**	**1.06**	**1.01**
290-1044	JM102K	10	75084-12	55	130	**1.27**	**1.21**	**1.13**	**1.09**
290-1046	JM152K	15	75084-14	45	150	**1.27**	**1.21**	**1.13**	**1.09**
290-1048	JM222K	22	75084-16	50	140	**1.27**	**1.21**	**1.13**	**1.09**
290-1050	JM472K	47	75085-3	45	110	**1.43**	**1.37**	**1.28**	**1.23**
290-1052	JM682K	68	75085-5	50	92	**1.47**	**1.40**	**1.31**	**1.26**
290-1054	JM103K	100	75085-7	50	84	**1.47**	**1.40**	**1.31**	**1.26**
290-1056	JM153K	150	75085-9	30	61	**1.65**	**1.57**	**1.48**	**1.41**
290-1058	JM223K	220	75085-11	30	52	**1.65**	**1.57**	**1.48**	**1.41**
290-1060	JM473K	470	75085-15	30	36	**1.78**	**1.70**	**1.60**	**1.53**
290-1062	JM104K	1000	75085-19	30	28	**2.22**	**2.11**	**1.99**	**1.90**

K Series

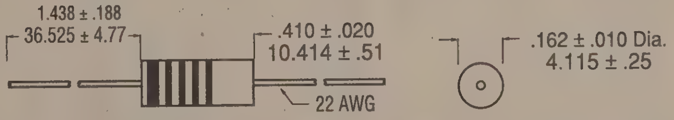
Axial leaded molded RF chokes. Color coded in accordance with Mil-C-15305. Last letter in part number determines tolerance. J = 5%; K = 10%; M = 20%.



Stock No.	Mfr.'s Type	Inductance (µH)	MS Part Designation	Q Min.	Rated DC Current mA	EACH			
						1-24	25-49	50-99	100-249
290-1064	KM150M	0.15	18130-1	50	2450	**1.43**	**1.37**	**1.28**	**1.23**
290-1066	KM220M	0.22	18130-2	50	1900	**1.43**	**1.37**	**1.28**	**1.23**
290-1068	KM330M	0.33	18130-3	45	1400	**1.37**	**1.30**	**1.22**	**1.17**
290-1070	KM470M	0.47	18130-4	45	1225	**1.37**	**1.30**	**1.22**	**1.17**
290-1072	KM560K	0.56	18130-5	50	1220	**1.37**	**1.30**	**1.22**	**1.17**
290-1074	KM820K	0.82	18130-7	50	900	**.92**	**.87**	**.82**	**.79**
290-1076	KM101K	1	18130-8	50	830	**.92**	**.87**	**.82**	**.79**
290-1078	KM121K	1.2	18130-9	33	650	**.92**	**.87**	**.82**	**.79**
290-1080	KM151K	1.5	18130-10	33	600	**.92**	**.87**	**.82**	**.79**
290-1082	KM221K	2.2	18130-12	33	435	**.92**	**.87**	**.82**	**.79**
290-1084	KM227K	2.7	18130-13	33	385	**.92**	**.87**	**.82**	**.79**
290-1086	KM331K	3.3	18130-14	33	300	**.92**	**.87**	**.82**	**.79**
290-1088	KM391K	3.9	18130-15	33	280	**.92**	**.87**	**.82**	**.79**
290-1090	KM471K	4.7	18130-16	33	260	**.92**	**.87**	**.82**	**.79**
290-1092	KM561K	5.6	14046-1	50	495	**1.08**	**1.03**	**.97**	**.93**
290-1094	KM681K	6.8	14046-2	50	395	**1.08**	**1.03**	**.97**	**.93**
290-1096	KM102K	10	14046-4	55	290	**1.08**	**1.03**	**.97**	**.93**
290-1098	KM152K	15	14046-6	65	240	**1.08**	**1.03**	**.97**	**.93**
290-1100	KM222K	22	14046-8	75	175	**1.08**	**1.03**	**.97**	**.93**
290-1102	KM332K	33	14046-10	65	165	**1.17**	**1.11**	**1.04**	**1.00**
290-1104	KM472J	47	90538-4	55	170	**1.22**	**1.16**	**1.09**	**1.04**
290-1106	KM822J	82	90538-10	50	143	**1.22**	**1.16**	**1.09**	**1.04**
290-1108	KM103J	100	90538-12	50	133	**1.22**	**1.16**	**1.09**	**1.04**
290-1110	KM223J	220	90538-20	65	103	**1.30**	**1.24**	**1.16**	**1.11**
290-1112	KM243J	240	90538-21	65	101	**1.30**	**1.24**	**1.16**	**1.11**
—	—	—	—	—	—	—	—	—	—

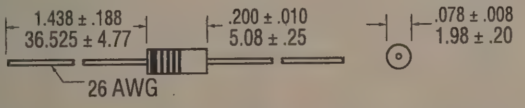
Q Series

Axial leaded RF shielded choke. Color coded in accordance with Mil-C-15305. 10% Tolerance.



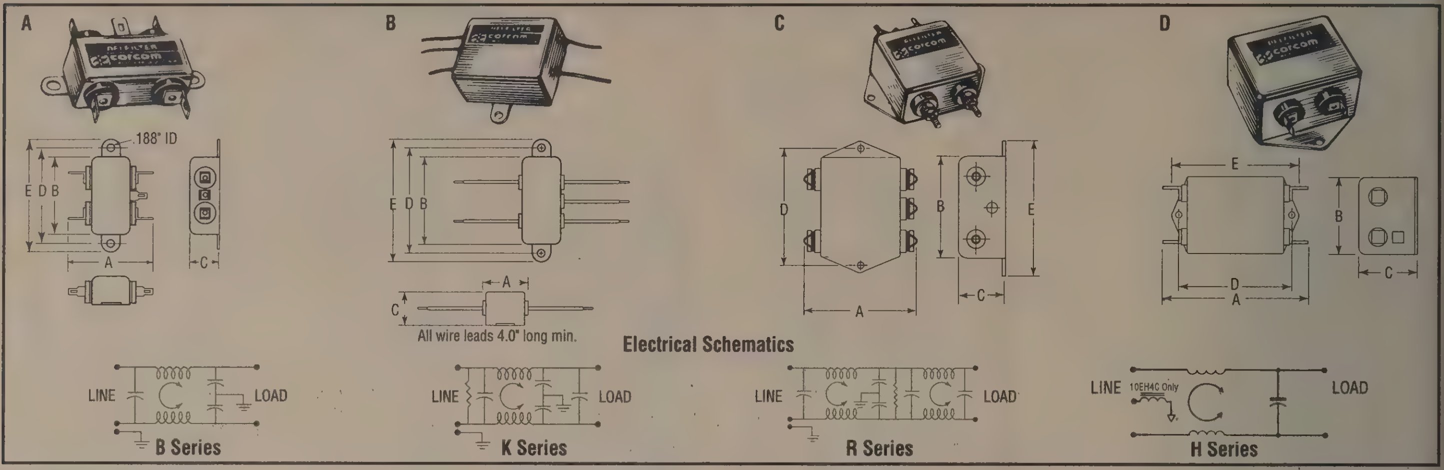
Stock No.	Mfr.'s Type	Inductance (µH)	MS Part Designation	Q Min.	Rated DC Current mA	EACH			
						1-24	25-49	50-99	100-249
290-1113	QS100K	0.1	MS75087-1	50	1790	**2.78**	**2.65**	**2.49**	**2.39**
290-1115	QS150K	0.15	MS75087-3	51	1470	**2.78**	**2.65**	**2.49**	**2.39**
290-1117	QS220K	0.22	MS75087-5	49	1100	**2.65**	**2.52**	**2.37**	**2.27**
290-1119	QS330K	0.33	MS75087-7	46	780	**2.65**	**2.52**	**2.37**	**2.27**
290-1121	QS470K	0.47	MS75087-9	44	565	**2.65**	**2.52**	**2.37**	**2.27**
290-1123	QS680K	0.68	MS75087-11	42	420	**2.63**	**2.51**	**2.36**	**2.26**
290-1128	QS101K	1	MS75088-1	44	1070	**2.98**	**2.84**	**2.67**	**2.56**
290-1125	QS151K	1.5	MS75088-3	44	815	**2.98**	**2.84**	**2.67**	**2.56**
290-1127	QS221K	2.2	MS75088-5	44	650	**2.98**	**2.84**	**2.67**	**2.56**
290-1129	QS331K	3.3	MS75088-7	44	480	**2.98**	**2.84**	**2.67**	**2.56**
290-1131	QS471K	4.7	MS75088-9	44	380	**3.00**	**2.86**	**2.69**	**2.57**
290-1133	QS681K	6.8	MS75088-11	50	280	**3.00**	**2.86**	**2.69**	**2.57**
290-1135	QS102K	10	MS75088-13	50	220	**3.00**	**2.86**	**2.69**	**2.57**
290-1137	QS152K	15	MS75089-1	45	315	**3.07**	**2.92**	**2.75**	**2.63**
290-1139	QS222K	22	MS75089-3	45	290	**3.07**	**2.92**	**2.75**	**2.63**
290-1141	QS332K	33	MS75089-5	45	240	**3.07**	**2.92**	**2.75**	**2.63**
290-1130	QS472K	47	MS75089-7	50	195	**3.07**	**2.92**	**2.75**	**2.63**
290-1143	QS682K	68	MS75089-9	50	170	**3.07**	**2.92**	**2.75**	**2.63**
290-1132	QS103K	100	MS75089-11	50	160	**3.07**	**2.92**	**2.75**	**2.63**
290-1145	QS153K	150	MS75089-13	55	140	**3.07**	**2.92**	**2.75**	**2.63**
290-1134	QS223K	220	MS75089-15	55	125	**3.07**	**2.92**	**2.75**	**2.63**
290-1147	QS333K	330	MS75089-17	55	110	**3.55**	**3.38**	**3.18**	**3.04**
290-1149	QS473K	470	MS75089-19	60	92	**3.55**	**3.38**	**3.18**	**3.04**
290-1151	QS683K	680	MS75089-21	60	80	**3.55**	**3.38**	**3.18**	**3.04**
290-1136	QS104K	1000	MS75089-23	60	70	**3.55**	**3.38**	**3.18**	**3.04**
290-1153	QS154K	1500	MS75089-25	45	55	**3.55**	**3.38**	**3.18**	**3.04**
290-1155	QS224K	2200	MS75089-27	45	50	**4.10**	**3.90**	**3.67**	**3.51**
290-1157	QS334K	3300	MS75089-29	45	40	**4.10**	**3.90**	**3.67**	**3.51**
290-1159	QS474K	4700	MS75089-31	45	31	**4.82**	**4.59**	**4.31**	**4.13**
290-1161	QS684K	6800	MS75089-33	40	27	**4.82**	**4.59**	**4.31**	**4.13**
290-1163	QS105K	10000	MS75089-35	40	24	**4.82**	**4.59**	**4.31**	**4.13**
—	—	—	—	—	—	—	—	—	—

H Series



Axial leaded molded RF chokes. Color coded in accordance with Mil-C-15305. 10% Tolerance.

Stock No.	Mfr.'s Type	Inductance (µH)	Test Frequency (Mhz)	Q Min.	Rated DC Current mA	EACH			
						1-24	25-49	50-99	100-249
290-1114	HM100K	0.1	25	35	895	**2.07**	**1.97**	**1.85**	**1.77**
290-1116	HM101K	1	25	40	435	**2.27**	**2.16**	**2.03**	**1.94**
290-1118	HM121K	1.2	7.9	35	410	**2.27**	**2.16**	**2.03**	**1.94**
290-1120	HM471K	4.7	7.9	55	150	**2.57**	**2.44**	**2.30**	**2.20**
290-1122	HM102K	10	2.5	45	95	**2.47**	**2.35**	**2.21**	**2.11**
290-1124	HM472K	47	2.5	45	76	**2.27**	**2.16**	**2.03**	**1.94**
290-1126	HM103K	100	2.5	45	52	**2.72**	**2.59**	**2.43**	**2.33**



B Series Filters

1 to 20 Amps; 115/250 Volts AC; 50-60 Hz

B Series RFI power line filters are general purpose low cost filters which provide effective line-to-ground RFI filtering in most applications. **Maximum Leakage Current (Line-To-Ground):** .5 mA at 115 VAC 60 Hz, 1.0 mA at 250 VAC 50 Hz. **Hipot Rating (1 Minute):** Line-to-ground — 2250 VDC; Line-to-line — 1450 VDC. **Operating Frequency:** 50-60 Hz. **Rated Voltage:** 115/250 VAC. Low leakage models and higher maximum line amp units available as custom order.

Stock No.	Mfr.'s Type	Fig.	Dimensions — Inches (mm)					Max. Line Amp	EACH			
			A	B	C	D	E		1-24	25-49	50-99	100-499
851-0290	1VB1	A	2.25 (57.2)	1.82 (46.2)	0.66 (16.8)	2.125 (53.98)	2.53 (64.3)	1	12.26	8.58	7.80	7.15
851-0302	1VB3	B	0.96 (24.4)	1.82 (46.2)	0.66 (16.8)	2.125 (53.98)	2.53 (64.3)	1	13.31	9.32	8.47	7.77
851-0304	2VB1	A	2.25 (57.2)	1.82 (46.2)	0.66 (16.8)	2.125 (53.98)	2.53 (64.3)	2	11.03	7.72	7.02	6.43
851-0301	3VB1	A	2.61 (66.3)	1.82 (46.2)	0.78 (19.8)	2.125 (53.98)	2.53 (64.3)	3	12.74	8.92	8.11	7.43
851-0303	3VB3	B	1.32 (33.5)	1.82 (46.2)	0.78 (19.8)	2.125 (53.98)	2.53 (64.3)	3	13.83	9.68	8.80	8.07
851-0311	5VB1	A	2.61 (66.3)	1.82 (46.2)	0.78 (19.8)	2.125 (53.98)	2.53 (64.3)	5	11.80	8.26	7.51	6.88
851-0313	5VB3	B	1.32 (33.5)	1.82 (46.2)	0.78 (19.8)	2.125 (53.98)	2.53 (64.3)	5	12.74	8.92	8.11	7.43
851-0321	10VB1	A	2.61 (66.3)	1.82 (46.2)	1.16 (29.5)	2.125 (53.98)	2.53 (64.3)	10	13.29	9.30	8.45	7.75
851-0314	20VB1	A	3.36 (85.3)	2.07 (52.6)	1.16 (29.5)	2.375 (60.33)	2.81 (71.4)	20	21.43	15.00	13.64	12.50

K Series Filters

1 to 20 Amps; 115/250 Volts AC, 50-60 Hz

K Series RFI filters are general purpose filters which provide line-to-line filtering in addition to normal line-to-ground attenuation of RFI. Particularly suited where pulsed, continuous and/or intermittent RF interference is present in your application. **Maximum Leakage Current (Line-To-Ground):** .5 mA at 115 VAC 60 Hz, 1.0 mA at 250 VAC 50 Hz. **Hipot Rating (1 Minute):** Line-to-ground — 2250 VDC; Line-to-line — 1450 VDC. **Operating Frequency:** 50-60 Hz. Low leakage models and higher maximum line amp units available as custom order.

Stock No.	Mfr.'s Type	Fig.	Dimensions — Inches (mm)					Max. Line Amp	EACH			
			A	B	C	D	E		1-24	25-49	50-99	100-499
851-0319	1VK1	A	3.10 (78.7)	2.07 (52.6)	0.91 (23.1)	2.375 (60.33)	2.81 (71.4)	1	16.40	11.48	10.44	9.57
851-0322	2VK1	A	3.10 (78.7)	2.07 (52.6)	0.91 (23.1)	2.375 (60.33)	2.81 (71.4)	2	14.09	9.86	8.96	8.22
851-0324	2VK3	B	1.81 (46.0)	2.07 (52.6)	0.91 (23.1)	2.375 (60.33)	2.81 (71.4)	2	15.51	10.86	9.87	9.05
851-0323	3VK1	A	3.10 (78.7)	2.07 (52.6)	0.91 (23.1)	2.375 (60.33)	2.81 (71.4)	3	16.77	11.74	10.67	9.78
851-0320	3VK3	B	1.81 (46.0)	2.07 (52.6)	0.91 (23.1)	2.375 (60.33)	2.81 (71.4)	3	17.63	12.34	11.22	10.28
851-0325	5VK1	A	3.10 (78.7)	2.07 (52.6)	0.91 (23.1)	2.375 (60.33)	2.81 (71.4)	5	14.34	10.04	9.13	8.37
851-0326	5VK3	B	1.81 (46.0)	2.07 (52.6)	0.91 (23.1)	2.375 (60.33)	2.81 (71.4)	5	16.49	11.54	10.49	9.62
851-0330	10VK1	A	3.35 (85.1)	2.07 (52.6)	1.16 (29.5)	2.375 (60.33)	2.81 (71.4)	10	15.43	10.80	9.82	9.00
851-0331	20VK1	A	3.35 (85.1)	2.56 (65.0)	1.53 (38.9)	2.938 (74.63)	3.35 (85.1)	20	23.97	16.78	15.25	13.98
851-0346	20VK6	C	3.46 (87.9)	2.56 (65.0)	1.53 (38.9)	2.938 (74.63)	3.35 (85.1)	20	27.71	19.40	17.64	16.17

R Series Filters

1 to 10 Amps; 115/250 Volts AC, 50-60 Hz

The dual-T filter design of the R Series makes these filters effective with low impedance motor loads. The 1- and 3-amp versions have an insertion loss as low as 54 dB at 150 kHz. These dual-section filters provide positive RFI control of line-to-line as well as line-to-ground noise. Small in size, designed for computer peripheral and a wide variety of other critical applications. **Maximum Leakage Current (Line-To-Ground):** .5 mA at 115 VAC 60 Hz, 1.0 mA at 250 VAC 50 Hz. **Hipot Rating (1 Minute):** Line-to-ground — 2250 VDC; Line-to-line — 1450 VDC. Low leakage models and higher maximum line amp units available as custom order.

Stock No.	Mfr.'s Type	Fig.	Dimensions — Inches (mm)					Max. Line Amp	EACH			
			A	B	C	D	E		1-24	25-49	50-99	100-499
851-0351	1VR1	D	3.35 (85.1)	1.81 (46.0)	1.16 (29.5)	2.375 (60.33)	2.78 (70.6)	1	23.49	16.44	14.95	13.70
851-0350	1VR3	B	2.07 (52.6)	1.81 (46.0)	1.16 (29.5)	2.375 (60.33)	2.78 (70.6)	1	24.80	17.36	15.78	14.47
851-0352	2VR1	D	3.35 (85.1)	1.81 (46.0)	1.16 (29.5)	2.375 (60.33)	2.78 (70.6)	2	21.29	14.90	13.55	12.42
851-0353	3VR1	D	3.85 (97.8)	2.07 (52.6)	1.16 (29.5)	2.938 (74.63)	3.35 (85.1)	3	22.83	15.98	14.53	13.32
851-0354	5VR1	D	3.85 (97.8)	2.07 (52.6)	1.16 (29.5)	2.938 (74.63)	3.35 (85.1)	5	21.46	15.02	13.65	12.52
851-0360	10VR1	D	3.85 (97.8)	2.07 (52.6)	1.53 (38.9)	2.938 (74.63)	3.35 (85.1)	10	22.51	15.76	14.33	13.13

H Series Filters

†

3 to 10 Amps; 115/250 Volts AC, 50-60 Hz

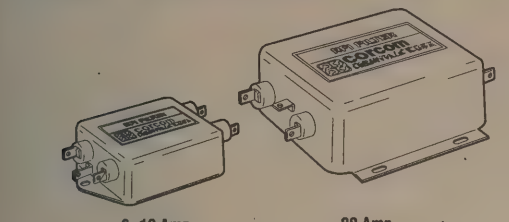
All H Series filters are for use in both patient care equipment and nonpatient equipment and meet UL 544 requirements. In addition, the 10EH4C incorporates a separate ground circuit inductor to isolate the equipment chassis from power line ground at RF frequencies. **Maximum Leakage Current (Line-To-Ground):** .2 µA at 120 VAC, 60 Hz; 5 µA at 250 VAC, 50 Hz. **Hipot Rating (1 Minute):** Line-to-ground — 1500 VAC; Line-to-line — 1450 VDC. **Operating Frequency:** 50/60 Hz. **Rated Voltage:** 120/250 VAC.

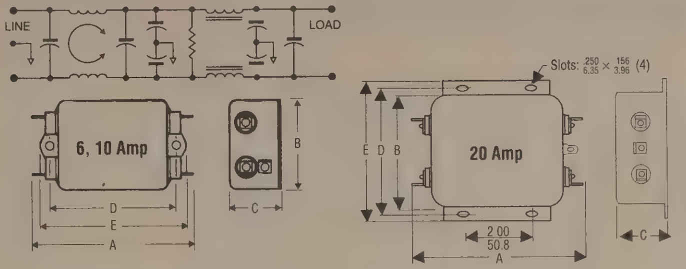
†All SEV Approved except 10EH Series.

Stock No.	Mfr.'s Type	Fig.	Dimensions — Inches (mm)					Max. Line Amp	EACH			
			A	B	C	D	E		1-24	25-49	50-99	100-499
851-0430	3EH1	A	2.25 (57.2)	1.82 (46.1)	0.66 (16.7)	2.125 (53.98)	2.53 (64.2)	3	11.77	8.24	7.49	6.87
851-0432	3EH3	B	0.96 (24.4)	1.82 (46.1)	0.66 (16.7)	2.125 (53.98)	2.53 (64.2)	3	13.43	9.40	8.55	7.83
851-0434	6EH1	A	2.25 (57.2)	1.82 (46.1)	0.66 (16.7)	2.125 (53.98)	2.53 (64.2)	6	12.03	8.42	7.65	7.02
851-0436	6EH3	B	0.96 (24.4)	1.82 (46.1)	0.66 (16.7)	2.125 (53.98)	2.53 (64.2)	6	13.69	9.58	8.71	7.98
851-0438	10EH1	A	2.25 (57.2)	1.82 (46.1)	0.66 (16.7)	2.125 (53.98)	2.53 (64.2)	10	12.40	8.68	7.89	7.23
851-0440	10EH3	B	0.96 (24.4)	1.82 (46.1)	0.66 (16.7)	2.125 (53.98)	2.53 (64.2)	10	14.06	9.84	8.95	8.20
851-0442	10EH4	D	2.62 (66.5)	1.19 (30.2)	0.81 (20.6)	1.575 (40.01)	1.98 (50.3)	10	16.09	11.26	10.24	9.38
851-0444	10EH4C	D	2.62 (66.5)	1.19 (30.2)	0.81 (20.6)	1.575 (40.01)	1.98 (50.3)	10	19.60	13.72	12.47	11.43

W Series

1 to 10 Amps; 115/250 Volts, 50-60 Hz





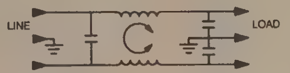
Typical Dimensions. Fastons: .250/6.35 (4) Holes: .07/1.8 Dia. Mounting Holes: .188/4.78 Dia. (2) Solder Tabs: .07 × .16/1.8 × 4.1

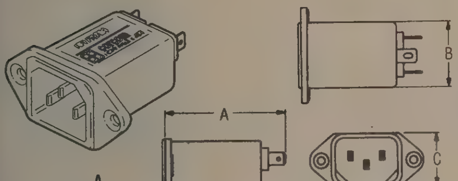
The W series filters will protect equipment from malfunctions due to conducted interference coming into the equipment from the line, especially line-to-line noise and transients. In addition, the W series filters combine line-to-ground interference rejection filters with additional circuitry designed to reduce line-to-line transients. They are also effective to control emissions in equipment using SCR and T2L circuits, for compliance with FCC Part 15, Subpart J, and VDE 0871, Level A, down 150 KHz. The W series provides an N=4 line-to-ground impedance for common mode and an N=5 impedance for line-to-line differential mode interference. They are designed for use when equipment impedance at RF frequencies is high. The two-stage construction provides excellent suppression at high frequency. The W series filters are particularly effective when applied in equipment using switching power supplies.

Stock No.	Mfr.'s Type	Dimensions — Inches (mm)					Max. Line Amp	EACH			
		A	B	C	D	E		1-24	25-49	50-99	100-499
851-0419	6VW1	3.86 (98.0)	2.08 (52.8)	1.53 (38.9)	2.938 (74.63)	3.34 (84.8)	6	**31.37**	**21.96**	**19.96**	**18.30**
851-0420	10VW1	3.86 (98.0)	2.08 (52.8)	1.53 (38.9)	2.938 (74.63)	3.34 (84.8)	10	**36.00**	**25.20**	**22.91**	**21.00**
851-0421	20VW1	5.23 (132.8)	3.38 (85.9)	1.53 (38.9)	3.750 (95.25)	4.20 (106.7)	20	**73.37**	**51.36**	**46.69**	**42.80**

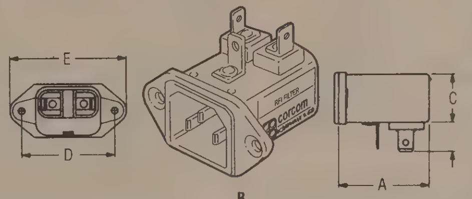
EEA Series Filters

1 to 10 Amps; 115/250 Volts, 50-60 Hz
Note: Specify line cord #GA400 below to mate with IEC connector.

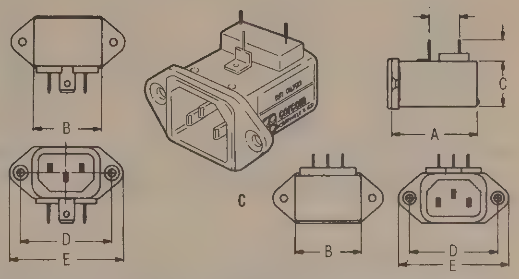




A



B



C

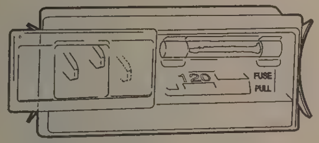
The EEA Series are a new generation of compact RFI filters with IEC socket. Totally new in design in both the internal structure and manufacturing process make this new series cost effective and compact. The EEA series supercedes the EF series by providing superior performance, particularly in the common mode at low frequencies. Mechanically, its slimmer size makes it compatible with all similar filters in the market. Quarter inch fastons in line in the EEA1 offer versatility when behind the panel room exists. The EEA2 with the quarter inch fastons at a right angle to the IEC connector allow for a shorter tip-to-tip length. The P style models are PC board mountable offering compact size and direct to board connection. Models with 4-inch wire leads available as custom order parts. **Maximum Leakage Current (Line-to-Ground):** 0.25 mA at 120 VAC 60 Hz; 0.42 mA at 250 VAC 50 Hz. **Hipot Rating (1 Minute):** Line-to-ground — 2250 VDC; Line-to-line — 1450 VDC. Uses line cord GA400 below.

Stock No.	Mfr.'s Type	Fig.	Dimensions — Inches (mm)					Max. Line Amp	EACH			
			A	B	C	D	E		1-24	25-49	50-99	100-499
851-0450	1EEA1	A	2.12 (53.8)	1.11 (28.2)	0.81 (20.6)	1.575 (40.01)	1.98 (50.3)	1	**11.77**	**8.24**	**7.49**	**6.87**
851-0452	1EEA2	B	1.54 (39.2)	1.11 (28.2)	0.81 (20.6)	1.575 (40.01)	1.98 (50.3)	1	**13.37**	**9.36**	**8.51**	**7.80**
851-0454	1EEAP	C	1.54 (39.2)	1.11 (28.2)	0.81 (20.6)	1.575 (40.01)	1.98 (50.3)	1	**14.43**	**10.10**	**9.18**	**8.42**
851-0456	3EEA1	A	2.12 (53.8)	1.11 (28.2)	0.81 (20.6)	1.575 (40.01)	1.98 (50.3)	3	**9.51**	**6.66**	**6.05**	**5.55**
851-0458	3EEA2	B	1.54 (39.2)	1.11 (28.2)	0.81 (20.6)	1.575 (40.01)	1.98 (50.3)	3	**10.40**	**7.28**	**6.62**	**6.07**
851-0460	3EEAP	C	1.54 (39.2)	1.11 (28.2)	0.81 (20.6)	1.575 (40.01)	1.98 (50.3)	3	**11.20**	**7.84**	**7.13**	**6.53**
851-0462	6EEA1	A	2.12 (53.8)	1.11 (28.2)	0.81 (20.6)	1.575 (40.01)	1.98 (50.3)	6	**8.89**	**6.22**	**5.65**	**5.18**
851-0464	6EEA2	B	1.54 (39.2)	1.11 (28.2)	0.81 (20.6)	1.575 (40.01)	1.98 (50.3)	6	**9.66**	**6.76**	**6.15**	**5.63**
851-0466	6EEAP	C	1.54 (39.2)	1.11 (28.2)	0.81 (20.6)	1.575 (40.01)	1.98 (50.3)	6	**10.43**	**7.30**	**6.64**	**6.08**
851-0468	10EEA1	A	2.12 (53.8)	1.11 (28.2)	0.81 (20.6)	1.575 (40.01)	1.98 (50.3)	10	**9.66**	**6.76**	**6.15**	**5.63**
851-0470	10EEA2	B	1.54 (39.2)	1.11 (28.2)	0.81 (20.6)	1.575 (40.01)	1.98 (50.3)	10	**10.40**	**7.28**	**6.62**	**6.07**
851-0472	10EEAP	C	1.54 (39.2)	1.11 (28.2)	0.81 (20.6)	1.575 (40.01)	1.98 (50.3)	10	**11.20**	**7.84**	**7.13**	**6.53**

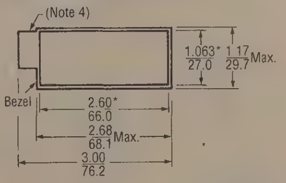
851-0415. GA400. **1-24**..............................**EACH 11.91** **25-49**..............................**EACH 8.34** **50-99**..............................**EACH 7.58** **100-499**..............................**EACH 6.95**

J Series — Voltage Selecting and Fused Connector

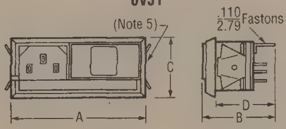
6 Amps; 100-240 Volts AC, 50-60 Hz
Note: Specify line cord GA400 above to mate with IEC connector.



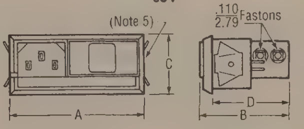
Mounting Diagram
Recommended Panel Cutout

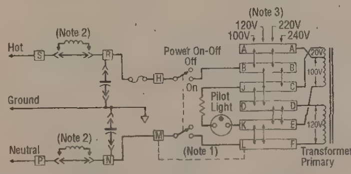


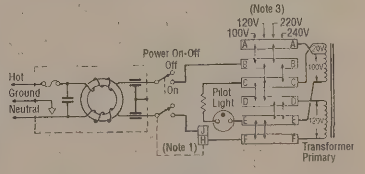
6VJ1



6J4





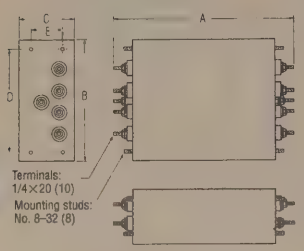


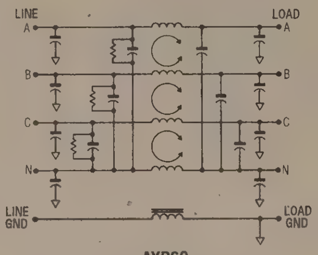
Note 1. Jumper required if only SPST Power Switch is used Note 2 Jumpers required if no input filtering is used. Note 3: Use only 120V and 240V positions for 2-volt selection units
Note 4: Fuse cover door shown in open position. Note 5: Standard units mount in panel thickness of .060-.090".

J Series Voltage Selecting and Fused Connector is designed for the equipment manufacturer who markets a product worldwide. While incorporating a fuse holder and a standard IEC power line connector, the J Series also features a unique voltage selector card which enables an easy means to change transformer primary connections. Integral fuse holder, line side, accepts .25" × 1.25" fuse. Meets UL/IEC requirements per CEE publication 22 Type VI. Connector back terminals suitable for soldering, wire wrapping or crimp-on lugs such as MOLEX #2123. **Maximum Leakage Current (Line-to-Ground):** at 250 VAC 50 Hz, 5 microamps (6VJ1); 0.5 mA (6J4). **Hipot Rating (1 Minute):** Line-to-ground — 2000 VAC (6VJ1) and 2250 VDC (6J4); Line-to-line — 2150 VDC (6VJ1) and 1450 VDC (6J4). Construction meets IEC 161 category 10/70/21. The J1 version is unfiltered while the J4 model houses a built-in filter.

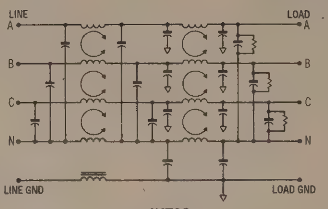
Stock No.	Mfr.'s Type	Dimensions — Inches (mm)			Max. Line Amp	EACH			
		A	B	C		1-24	25-49	50-99	100-499
851-0410	6VJ1	2.68 (68.1)	1.52 (38.6)	1.17 (29.7)	6	**13.91**	**9.74**	**8.85**	**8.12**
851-0414	6J4	2.75 (69.9)	1.87 (47.5)	1.17 (29.7)	6	**25.14**	**17.60**	**16.00**	**14.67**

A Series 3-Phase RFI Power Line Filters





AYP6C



AYT6C

- ▶ Effective For Both Balanced and Unbalanced Three Phase Loads
- ▶ Ground Choke Included
- ▶ Made to IEC 380 Specifications
- ▶ Shielded Construction
- ▶ Both Common Mode and Differential Mode Suppression From 50 kHz to 30 MHz

The A series 3-phase filters are designed for 3-phase, four wire, WYE applications providing filtering in each of the three lines plus the neutral and ground line. These standard, high performance RFI power line filters may be used on a 3-phase DELTA system. The dual stage AYT provides higher performance while the single stage AYP is good for lower noise environments. The mounting brackets and the end bell kits are sold separately. The end bell mounting kit is available in two sizes. Maximum leakage current, each line-to-ground at 120 VAC/60 Hz is 1.4 mA and at 250 VAC/60 Hz is 3.4 mA. Phase-to-phase rated voltage is 440 VAC. Phase to neutral/ground is 250 VAC.

Case Dimensions

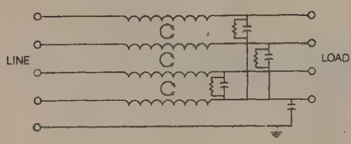
Mfr.'s Type	A* Max.	B Max.	C Max.	D ±.030 (±.76)	E ±.015 (±.38)
20AYP6C	8.82 (224.0)	5.57 (141.5)	2.56 (65.0)	4.616 (117.2)	1.50 (38.1)
30AYP6C	8.82 (224.0)	5.57 (141.5)	2.56 (65.0)	4.616 (117.2)	1.50 (38.1)
45AYP6C	9.43 (239.5)	6.92 (175.8)	4.82 (122.4)	5.950 (151.1)	3.75 (95.3)
60AYP6C	9.43 (239.5)	6.92 (175.8)	4.82 (122.4)	5.950 (151.1)	3.75 (95.3)
20AYT6C	13.82 (351.0)	5.57 (141.5)	2.56 (65.0)	4.616 (117.2)	1.50 (38.1)
30AYT6C	13.82 (351.0)	5.57 (141.5)	2.56 (65.0)	4.616 (117.2)	1.50 (38.1)
45AYT6C	13.83 (351.3)	6.92 (175.8)	4.82 (122.4)	5.950 (151.1)	3.75 (95.3)
60AYT6C	13.83 (351.3)	6.92 (175.8)	4.82 (122.4)	5.950 (151.1)	3.75 (95.3)

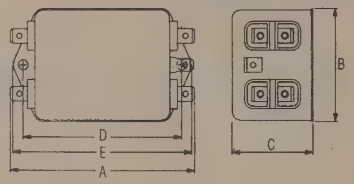
*For end bell covering terminals and connections, add the following: 20 A and 30 A — 5.57 (141.48); 45 A and 60 A — 6.45 (163.83).

Stock No.	Mfr.'s Type	Amps	EACH	
			1-9	10-24
851-0700	20AYP6C	20	**202.60**	**184.18**
851-0702	30AYP6C	30	**207.94**	**189.04**
851-0704	45AYP6C	45	**255.92**	**232.65**
851-0706	60AYP6C	60	**282.58**	**256.89**
851-0750	20AYT6C	20	**266.56**	**242.33**
851-0752	30AYT6C	30	**271.92**	**247.20**
851-0754	45AYT6C	45	**319.90**	**290.82**
851-0756	60AYT6C	60	**346.54**	**315.04**

Stock No.	Mfr.'s Type	Description	Amps	EACH	
				1-9	10-24
851-0775	AA400	Mounting Bracket	20/30	**10.20**	**9.27**
851-0776	AA405	Mounting Bracket	45/60	**15.00**	**13.64**
851-0777	AA406	End Bell Kit *	20/30	**100.00**	**90.91**
851-0778	AA407	End Bell Kit	45/60	**120.00**	**109.09**
851-0780	AA401	KEPS Nuts for 10 Filters	—	**10.00**	**9.09**
851-0781	AA402	KEPS Nuts for 25 Filters	—	**20.00**	**18.18**
—	—	—	—	—	—
—	—	—	—	—	—

AYO Low Current 3-Phase RFI Filters



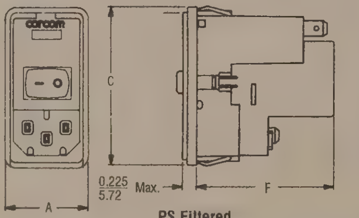


The AYO series RFI filters are designed for 3-phase, four wire, WYE applications providing filtering in each of the three lines plus neutral. These lower current RFI filters provide filtering to industrial 3-phase applications. The maximum leakage current in each line to ground 120 VAC/60 Hz is 2.0 mA on the 3, 6, and 10 amp models and 3.5 mA on the 20 amp model. For 250 VAC/60 Hz, it is 3.0 mA on the 3, 6, and 10 amp models and 5.5 mA on the 20 amp model. The rated voltage phase-to-phase is 440 VAC and phase-to-neutral is 250 VAC.

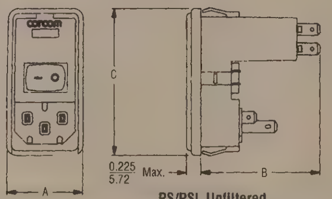
Stock No.	Mfr.'s Type	Amps	Dimensions					EACH	
			A Max.	B Max.	C Max.	D ±.015 (±.38)	E Max.	1-9	10-24
851-0800	3AY01	3	3.37	2.07	1.53	2.938	3.35	**26.63**	**20.71**
851-0802	6AY01	6	(85.6)	(52.5)	(38.7)	(74.63)	(85.1)	**29.49**	**22.93**
851-0804	10AY01	10	3.37	2.07	1.53	2.938	3.35	**35.20**	**27.38**
851-0806	20AY01	20	(85.6)	(52.5)	(38.7)	(74.63)	(85.1)	**41.43**	**32.22**

P Series Adaptable Power Entry Modules

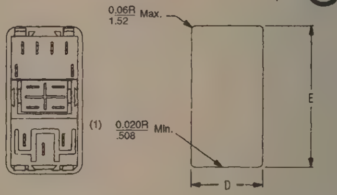
- ▶ IEC Power Line Connector
- ▶ Both North American and European Fusing Capabilities
- ▶ Optional DPST On/Off Switch
- ▶ Snap In or Mounting Ears

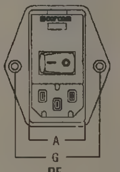


PS Filtered



PS/PSL Unfiltered





PE

The P series power entry module offers full flexibility of design in the most compact package. The Chameleon has two filter options (7th character in part number). The S models offer protection for general purpose applications where line-to-ground and line-to-line noise must be controlled and are designed to meet low leakage requirements of SEV and VDE portable equipment. The H models offer susceptibility protection without leakage current associated with the line-to-ground capacitors and are designed to allow equipment to meet UL544 for patient care and non-patient care equipment. These power entry modules provides a dual voltage selector which is integrated with the fuse holder. P series product with an "S" in the fifth digit are specifically designed for jumper type applications associated with switching mode power supplies. P series product with an "X" in the fifth digit are designed for dual primary transformer applications. The fuse holder can hold one or two 1/4" × 1 1/4" or 5 × 20 mm fuses. Maximum leakage current, each line-to-ground at 120 VAC/60 Hz in H models is 2 μA, and in S models is 0.25 mA. For 250 VAC/60 Hz the H models maximum is 5 μA and the S models maximum is 0.50 mA. Terminals are 0.187" × 0.032" faston tabs. For those models with a switch, the switch is double insulated and rated for 10,000 operations at full load with a 51 amp in-rush capability. A conversion clip is provided for single fuse operation. Extenders are available to fit existing panel cutouts as special order items.

Case Dimensions

Mfr.'s Type	A Max.	B Max.	C Max.	D (.008-.000)	E (.008-.000)	F Max.	G Max.
PS	1.24 (31.49)	1.93 (49.02)	2.31 (58.67)	1.060 (26.93)	2.201 (55.91)	2.13 (54.10)	–
PSL	1.24 (31.49)	1.93 (49.02)	2.31 (58.67)	1.12 (28.45)	2.201 (55.91)	2.13 (54.10)	–
PE	1.12 (28.5)	—	—	—	—	—	1.575 (40.0)

Stock No.	Mfr.'s Type	EACH			
		1-9	10-24	25-49	50-99
851-0100	PS000S000	**12.14**	**9.44**	**8.50**	**7.73**
851-0102	PS000D000	**12.43**	**9.67**	**8.70**	**7.91**
851-0104	PS00SS000	**12.43**	**9.67**	**8.70**	**7.91**
851-0106	PS00SD000	**12.71**	**9.89**	**8.90**	**8.09**
851-0108	PS00XS000	**12.29**	**9.56**	**8.60**	**7.82**
851-0110	PS00XD000	**12.71**	**9.89**	**8.90**	**8.09**
851-0112	PS0S0S000	**15.14**	**11.78**	**10.60**	**9.64**
851-0114	PS0SSD000	**15.71**	**12.22**	**11.00**	**10.00**
851-0116	PS0SSS000	**15.57**	**12.11**	**10.90**	**9.91**
851-0118	PS0SSD000	**15.71**	**12.22**	**11.00**	**10.00**
851-0120	PS0SXS000	**15.57**	**12.11**	**10.90**	**9.91**
851-0122	PS0SXD000	**15.71**	**12.22**	**11.00**	**10.00**
851-0124	PS000SS60	**18.57**	**14.44**	**13.00**	**11.82**
851-0126	PS00SDS60	**18.57**	**14.44**	**13.00**	**11.82**

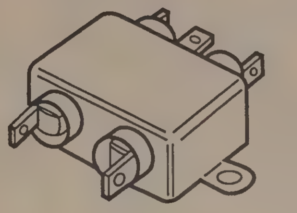
Stock No.	Mfr.'s Type	EACH			
		1-9	10-24	25-49	50-99
851-0128	PS0SXSS60	**18.57**	**14.44**	**13.00**	**11.82**
851-0130	PSLS0SS60	**22.29**	**17.33**	**15.60**	**14.18**
851-0132	PS00XSH60	**18.57**	**14.44**	**13.00**	**11.82**
851-0134	PS0SSSH60	**21.43**	**16.67**	**15.00**	**13.64**
851-0136	PS000SS30	**19.86**	**15.44**	**13.90**	**12.64**
851-0138	PS00SSS60	**18.57**	**14.44**	**13.00**	**11.82**
851-0140	PS0SXSS30	**22.71**	**17.67**	**15.90**	**14.45**
851-0142	PSLS0SS30	**23.57**	**18.33**	**16.50**	**15.00**
851-0144	PS000SH30	**19.86**	**15.44**	**13.90**	**12.64**
851-0146	PS0SSSH30	**22.71**	**17.67**	**15.90**	**14.45**
851-0148	PE0S0SS30	**23.71**	**20.10**	**16.60**	**15.09**
851-0150	PE0SSSSX0	**25.14**	**20.85**	**17.60**	**16.00**
851-0152	PE0SSSH60	**22.43**	**19.05**	**15.70**	**14.27**
—	—	—	—	—	—

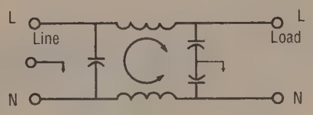
851 Series General Purpose Filters

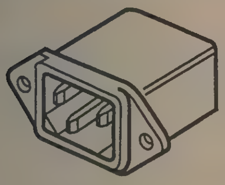
A compact general purpose filter designed to provide effective EMI suppression which can be used in a wide variety of electrical and electronic equipment.

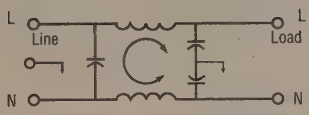
Stock No.	Mfr.'s Type	Corcom P/N	Amp Rating	Size L × W × H	EACH 1-24	EACH 25-99
689-3302	851-02/001	2VB1/2EB1	2	2.13 × 2.54 × 0.63	**5.80**	**5.35**
689-3303	851-03/003	3VB1/3EB1	3	2.25 × 2.50 × 0.75	**7.47**	**6.89**
689-3301	851-03/004*	3VB3/3EB3	3	1.31 × 2.50 × 0.75	**7.42**	**6.80**
689-3304	851-05/005	5VB1/5EB1	5	2.52 × 2.50 × 0.75	**6.47**	**5.97**
689-3305	851-05/006*	5VB3/5EB3	5	1.31 × 2.50 × 0.75	**7.12**	**6.57**
689-3306	851-10/007	10VB1/10EB1	10	2.52 × 2.50 × 1.18	**8.39**	**7.74**
689-3307	851-10/009*	10VB6	10	2.64 × 2.50 × 1.18	**11.30**	**10.43**
689-3321	851-20/011**	20VB6	20	3.35 × 2.75 × 1.13	**13.07**	**12.06**

*Leads Without Fastons. **Stud Terminals Without Fastons.









857 Series Compact IEC General Purpose Filters

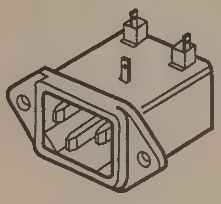
A compact and reliable general purpose IEC connector filter designed to provide effective EMI filtration at a low price.

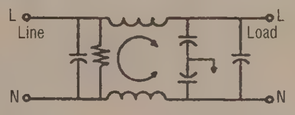
Stock No.	Mfr.'s Type	Corcom P/N	Amp Rating	Size L × W × H	EACH 1-24	EACH 25-99
689-3308	857-01/005	1EEA1/1EF1F	1	2.10 × 2.05 × 0.82	**5.07**	**4.68**
689-3310	857-03/017	3EEA1/3EF1F	3	2.10 × 2.05 × 0.82	**5.07**	**4.68**
689-3312	857-06/027	6EEA1/6EF1F	6	2.10 × 2.05 × 0.82	**5.07**	**4.68**
689-3314	857-10/033	10EEA1/10EF1F	10	2.10 × 2.05 × 0.82	**5.07**	**4.68**

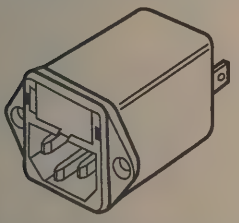
857 Series Right Angle IEC General Purpose Filters

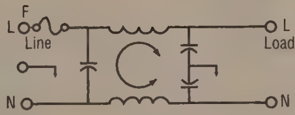
A compact general purpose right angle IEC connector filter designed to provide effective EMI suppression and easy installation.

Stock No.	Mfr.'s Type	Corcom P/N	Amp Rating	Size L × W × H	EACH 1-24	EACH 25-99
689-4170	857-01/046	1EF2	1	1.70 × 1.99 × 1.34	**6.51**	**5.66**
689-4172	857-03/047	3EF2	3	1.70 × 1.99 × 1.34	**6.51**	**5.66**
689-4174	857-06/048	6EF2	6	1.70 × 1.99 × 1.34	**6.51**	**5.66**
689-4176	857-10/049	—	10	1.70 × 1.99 × 1.34	**7.57**	**6.58**









860 Series Fused General Purpose Filters

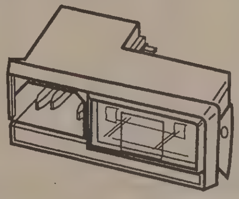
A general purpose filter with a fused IEC connector providing effective EMI suppression of both common and differential mode noise.

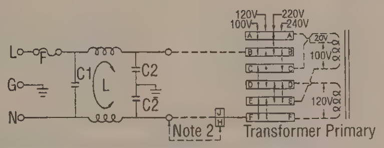
Stock No.	Mfr.'s Type	Corcom P/N	Amp Rating	Size L × W × H	EACH 1-24	EACH 25-99
689-3328	860-02/001	—	2	2.54 × 1.73 × 1.29	**10.70**	**9.88**
689-3329	860-04/002	—	4	2.54 × 1.73 × 1.29	**10.70**	**9.88**
689-3330	860-04/003	—	4	2.54 × 1.73 × 1.29	**10.70**	**9.88**
689-3332	860-06/005	—	6	2.54 × 1.73 × 1.29	**10.70**	**9.88**

861 Series Multi-Function Module Filter

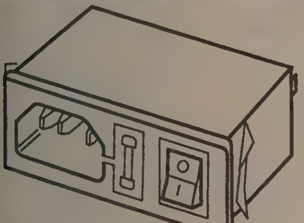
A multi-function power entry module filter that incorporates an IEC connector, a single fuse holder, and a voltage selector switch providing space savings.

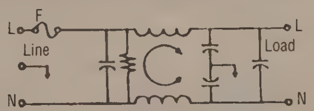
Stock No.	Mfr.'s Type	Corcom P/N	Amp Rating	Size L × W × H	EACH 1-24	EACH 25-99
689-4148	861-06/001	6J4	6	29.7 × 68 × 47.5	**13.89**	**13.39**





862 Series Multi-Function Module Filters





862-06/001
Without Power Switch

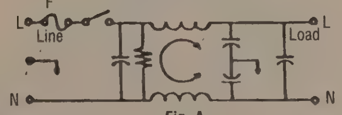


Fig. A

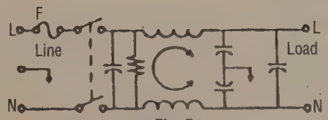


Fig. B

For Transformer With Two Separate Windings

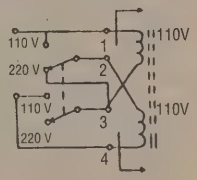


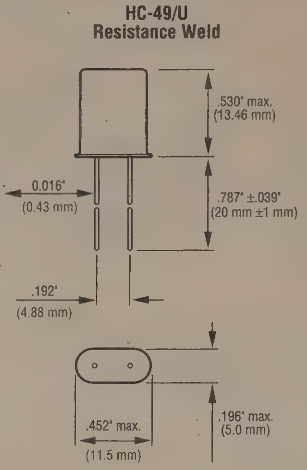
Fig. C

A multi-function power entry module filter that incorporates an IEC connector, a fuse holder with optional power ON/OFF switch, and voltage selector switch.

Stock No.	Mfr.'s Type	Electrical Schematic	Amp Rating 115-250	Size L × W × H	IEC Conn	Fuse Holder	Power Switch	Voltage Selector	EACH* 1-24	EACH* 25-99
689-3334	862-06/001	A	6 – 6	2.65 × 2.17 × 1.04	Yes	Yes	No	No	**13.77**	**12.71**
689-3336	862-06/002	A	6 – 6	2.65 × 2.17 × 1.04	Yes	Yes	SP[1]	No	**15.23**	**14.06**
689-3338	862-06/003	B	6 – 4	2.65 × 2.17 × 1.04	Yes	Yes	DP[2]	No	**17.67**	**16.31**
689-3340	862-06/007	C	6 – 6	2.65 × 2.17 × 1.04	Yes	Yes	No	Yes	**18.90**	**17.45**

[1] Single Pole. [2] Double Pole. *Transformer Not Included.

Microprocessor Crystal Units



Specifications

- Nominal Frequency: Type A HC-49/U — 1.800 MHz - 300.000 MHz; Type B HC-33/U — 1.000 MHz - 4.000 MHz; Type C HC-45/U — 3.579545 MHz - 300.000 MHz
- Frequency Tolerance at 25°C: ±30 ppm Typ. (±50 ppm Max.)
- Frequency Stability Over Temperature –20°C to +70°C: ±50 ppm Typ. (±100 ppm Max.)
- Aging: ±5 ppm/Year
- Load Capacitance: 12 to 32 pF
- Shunt Capacitance: 7 pF Max.
- Drive Level: 1 mW

Part Numbering System

Example: A-3.579545-18

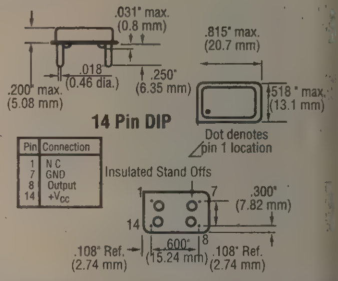
Example: A-32.400-18-FUND

A	3.579545	18	Optional
Holder Type A — HC-49/U B — HC-33/U C — HC-45/U C - SMD — HC-45/U SMD	Frequency (in MHz)	• Load Capacitance (12 pF - 32 pF) For Parallel Resonance • S — For Series Resonance	3RD — Third Pin SL — Plastic Sleeve SP — Plastic Spacer FUND — Fundamental (For over 20 MHz Only) 30T — 3rd Overtone 50T — 5th Overtone 70T — 7th Overtone 90T — 9th Overtone

Stock No.	Mfr.'s Type	Freq. (MHz)	Holder	Ω*	EACH	
					1-99	100-Up
996-0100	A-1.000-18	1.000000	HC49/U	—	8.07	7.26
996-0110	A-1.8432-18	1.843200	HC49/U	700	2.51	2.26
996-0120	A-2.4576-18	2.457600	HC49/U	400	2.21	1.99
996-0130	A-3.579545-18	3.579545	HC49/U	180	1.17	1.05
996-0140	A-3.6864-18	3.686400	HC49/U	160	1.20	1.08
996-0150	A-4.000-18	4.000000	HC49/U	100	1.20	1.08
996-0160	A-4.096-18	4.096000	HC49/U	100	1.20	1.08
996-0170	A-4.194304-18	4.194304	HC49/U	100	1.20	1.08
996-0180	A-6.000-18	6.000000	HC49/U	50	1.20	1.08
996-0190	A-6.144-18	6.144000	HC49/U	50	1.20	1.08
996-0200	A-7.3728-18	7.372800	HC49/U	40	1.20	1.08
996-0210	A-8.000-18	8.000000	HC49/U	35	1.20	1.08
996-0220	A-9.8304-18	9.830400	HC49/U	35	1.20	1.08
996-0230	A-11.0592-18	11.059200	HC49/U	30	1.20	1.08
996-0240	A-12.0000-18	12.000000	HC49/U	30	1.20	1.08
996-0250	A-12.288-18	12.288000	HC49/U	30	1.30	1.17
996-0260	A-14.31818-18	14.318180	HC49/U	25	1.30	1.17
996-0270	A-14.7456-18	14.745600	HC49/U	25	1.30	1.17
996-0280	A-15.000-18	15.000000	HC49/U	25	1.30	1.17
996-0290	A-16.000-18	16.000000	HC49/U	25	1.30	1.17
996-0300	A-18.432-18	18.432000	HC49/U	20	1.30	1.17
996-0310	A-20.000-18	20.000000	HC49/U	20	1.30	1.17
996-0320	A-24.000-18	24.000000	HC49/U	20	1.30	1.17
996-0330	A-24.5760-18	24.576000	HC49/U	40	1.30	1.17

*Maximum Equivalent Series Resistance (Ω).

Clock Oscillators — TTL Compatible



Pin	Connection
1	N C
7	GND
8	Output
14	+V$_{CC}$

Specifications

- Package: 14 Pin DIP
- Frequency Range: 250 KHz to 80 MHz
- Frequency Stability*: ±100 ppm
- Temperature Range: Operating — 0° to +70°C
- Input: Current (Max.) — 60 mA - 250 KHz to 2.999 MHz, 35 mA - 3 MHz to 31.999 MHz, 45 mA - 32 MHz to 80 MHz, Symmetry — 40 to 60% Normal, 45 to 55% Tight @ 1.4 VDC; Voltage — 5 VDC ±0.5 VDC
- Output: Rise and Fall Time — ±15 ns Max. - Under 9 MHz, ±10 ns Max. - 9 MHz to 32 MHz, ±6 ns Max. - 32 MHz to 80 MHz; Logic "0" — 0.4 V Max., Sink to 16 mA; Logic "1" — +2.4 V Min., Source 0.4 mA
- Output Load: 1 to 10 TTL Loads

Mechanical

- Gross Leak Test: All Units 100% Leak Tested in Deionized H_2O; Mass Spectrometer Leak Rate Less Than 2×10^{-8} Atoms cc/sec. of Helium
- Seal Strength: 9 kgs Max. Force Perp. to Top and Bottom
- Bend Test: Will Withstand Max. Bend 90° Ref. to Base 2×
- Marking Ink: Epoxy, Heat Cured
- Solvent Resistance: Isopropyl Alcohol, Trichloroethane, Freon

Environmental

- Temperature Cycle: ±5 ppm Max., 0 to 120°C, 3 Cycles, 2 Hours Max. Each, 25 ±2°C Ref
- Shock: 1000Gs 0.35 m Sec, Half Sine Wave, 3 Shocks Each Plane
- Vibration: 10+55Hz, 1.50 mm D.A., 55-2000 Hz, 35Gs
- Duration: 12 Hours
- Humidity: 85% Relative Humidity, at +85°C, 250 Hours
- Hermetically Sealed Package

*Frequency stability inclusive of room tolerance, temperature stability over 0°C to +70°C, ±10% power supply variation, aging, shock and vibration.

Part Numbering System

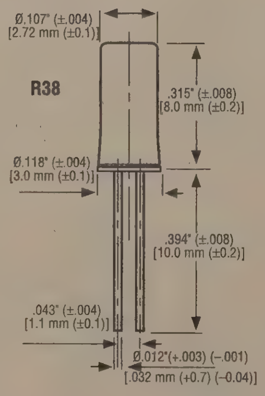
Example: CO1100-4.000-T

Example: CO12100-28.000

CO1	100	4.000	Optional
Family CO1 — TTL, Full Size CO13 — TTL, Half Size CO6 — H CMOS, Full Size CO12 — H CMOS, Half Size	Frequency Stability 100 — 100 ppm 050 — 50 ppm 025 — 25 ppm	Frequency (in MHz)	Symmetry N — Normal (40 - 60%) (Usually Omitted) T — Tight (45 - 55%

Stock No.	Mfr.'s Type	Freq. (MHz)	Holder (DIP)	EACH	
				1-99	100-Up
996-1100	CO1100-1.8432	1.843200	14 Pin	3.93	3.29
996-1110	CO1100-3.579545	3.579545	14 Pin	3.34	2.80
996-1120	CO1100-4.000	4.000000	14 Pin	3.34	2.80
996-1130	CO1100-10.000	10.000000	14 Pin	3.34	2.80
996-1140	CO1100-11.0592	11.059200	14 Pin	3.34	2.80
996-1150	CO1100-14.31818	14.318180	14 Pin	3.34	2.80
996-1160	CO1100-18.432	18.432000	14 Pin	3.34	2.80
996-1170	CO1100-24.000	24.000000	14 Pin	3.34	2.80
996-1180	CO1100-32.000	32.000000	14 Pin	3.34	2.80
996-1190	CO1100-36.000	36.000000	14 Pin	3.77	3.39
996-1200	CO1100-40.000	40.000000	14 Pin	3.77	3.39
996-1210	CO1100-48.000	48.000000	14 Pin	3.77	3.39
996-1220	CO1100-50.000	50.000000	14 Pin	3.77	3.39
996-1230	CO1100-66.666	66.666000	14 Pin	3.82	3.46
996-1240	CO1100-80.000	80.000000	14 Pin	6.56	5.63

Tuning Fork Quartz Crystal Units 32.768 KHz



Specifications

- Holder Type/Item: R38
- Nominal Frequency 24°C: 32.768 KHz ±20 ppm
- Turnover Temperature: 24°C ± 4°C
- Parabolic Curvature Constant: –0.035 ppm/°C Typ.
- Quality Factor: 80,000 Typ./50,000 Min.
- Equivalent Series Resistance R_1: 18K Ω Typ.
- Motional Capacitance C_1: 0.0035 pF Typ.
- Shunt Capacitance C_0: 1.7 pF Typ.
- Capacitance Ratio: 490 Typ.
- Motional Inductance L_1: 7 mH Typ.
- Aging (First Year): ±3 ppm
- Operating Temperature Range: –10°C to +60°C
- Storage Temperature Range: –30°C to +100°C

Type R38-32.768. Tuning fork quartz crystal units.
996-2000. R38-32.768. **1-24**........**EACH .50** **25-49**..**EACH .35**

Also Available:

- Microprocessor Crystal Units HC-49 Short (AT Strip)
- Microprocessor Crystal Units Surface Mount — TT-SMD

- Clock Oscillators — Dual Output
- Clock Oscillators — Enable/Disable
- Clock Oscillators — ECL Compatible
- Clock Oscillators — HCMOS Compatible
- Voltage Controlled Crystal Oscillators — VCXO
- Temperature Compensated Crystal Oscillators — TCXO

- Monolithic Crystal Filters

- Ceramic Resonators — 200 to 800 KHz, 2.000 to 12.000 MHz

Raltron manufactures one of the most complete product lines of frequency management components including high quality crystal units, oscillators, filters, and ceramic resonators both through-hole and surface mount.

Because the product line is so complete, the inventory so large, Raltron and Allied can offer pricing that is always competitive, and often far lower than the competition.

Connectors

Page

- **2 mm Connectors**
  - **3M**
    - High Density Connector System ... 148
  - **AMP®**
    - Ribbon Cable Connectors ... 182
- **Adapters — See Connector Types**
- **Alligator Clips**
  - **Alectron** ... 159
  - **ITT Pomona** ... 264
- **Audio Connectors, Plugs and Jacks**
  - **Alectron** ... 159
  - **ITT Pomona** ... 262
  - **Neutrik** ... 282, 283
  - **NTT/Smith** ... 285
  - **Switchcraft** ... 292, 293, 294
  - **Wire Pro** ... 316
- **Audio Extension Cables**
  - **Alectron** ... 159
- **Backplane Connectors**
  - **Harting**
    - DIN ... 260
    - VME ... 261
- **Banana Plugs and Jacks**
  - **Alectron** ... 159
  - **ITT Pomona** ... 263, 264
  - **Johnson** ... 266
  - **Mueller** ... 281
  - **NTT/Smith** ... 285, 286
- **Binding Posts**
  - **Alectron** ... 159
  - **ITT Pomona** ... 263
  - **Johnson** ... 266
  - **Mueller** ... 281
  - **NTT/Smith** ... 285, 286
  - **Superior Electric** ... 291
- **Breadboards, Solderless**
  - **3M** ... 153
- **Cable, Flat/Ribbon**
  - **AMP®** ... 184, 185
  - **Amphenol** ... 227
  - **Thomas & Betts** ... 297
- **Cable Assemblies**
  - **AIM**
    - Category 5 ... 157, 158
    - Color-Coded Coaxial ... 157
  - **AMP®**
    - Fiber Optic ... 207
    - SCSI ... 179
  - **Berg**
    - GPIB Shielded ... 246
  - **Cinch**
    - Circular DIN ... 253
- **Card Edge Connectors**
  - **3M** ... 147
  - **AMP®**
    - Flat/Ribbon Cable ... 182
    - Eurocard ... 213
    - Standard Edge ... 213
  - **Berg** ... 244
  - **Cinch** ... 256
  - **Thomas & Betts** ... 301, 303, 308
  - **Wire Pro** ... 315
- **Category 5 Product**
  - **AIM** ... 157, 158
  - **AMP®** ... 204
  - **Bomar** ... 250
- **Circular Connectors**
  - **AMP®** ... 171, 172, 173
    - Accessories ... 171, 172, 173
    - Cable Clamps ... 171, 173
    - Contacts ... 171, 172
    - DINs ... 179
  - **Amphenol**
    - Power Connectors ... 216, 217, 218, 219, 220, 221
      - Accessories ... 222
      - Crimp Version ... 221
      - Miniature Solder ... 221
  - **Amphenol-Tuchel**
    - DINs ... 223
    - Environmentally Sealed ... 223
  - **Cinch**
    - DINs ... 253
  - **Lumberg**
    - DINs ... 269
  - **Neutrik**
    - DINs ... 283
  - **Switchcraft**
    - DINs ... 292, 294
  - **Wire Pro**
    - DINs (Mini Hex Series) ... 315
- **Coaxial/RF Connectors**
  - Between Series Adapters
    - **AIM** ... 154, 155
    - **Bomar** ... 250
    - **ITT Pomona** ... 262
    - **M/A-COM** ... 270, 271
  - BNC Attenuator Pads
    - **AIM** ... 154
    - **ITT Pomona** ... 262
  - BNC Connectors and Adapters
    - **AIM** ... 154
      - Tooling ... 154
    - **Alectron** ... 159
    - **AMP®** ... 186, 187, 188, 189
      - Tooling ... 189
    - **Amphenol** ... 229, 230, 231
      - Tooling ... 230
    - **Bomar** ... 249, 250
    - **Cambridge** ... 251

Page

- **Coaxial/RF Connectors (Continued)**
    - **ITT Pomona** ... 262, 264
    - **Kings** ... 267
    - **M/A-COM** ... 270, 271
    - **Mueller** ... 281
  - Boots and Hoods
    - **Cambridge** ... 251
  - Coaxial Wall Plates
    - **AIM** ... 155
  - F-Series Connectors and Adapters
    - **AIM** ... 154, 155
    - **Bomar** ... 249, 250
  - Kits (Coaxial Connector)
    - **AMP®** ... 187, 215
    - **ITT Pomona** ... 262
  - MHV Connectors
    - **Amphenol** ... 231
    - **Kings** ... 267
  - Mini-Subminiature Coaxial Connectors
    - **Johnson** ... 265
  - N-Type Connectors and Adapters
    - **AIM** ... 155
    - **AMP®** ... 189
    - **Amphenol** ... 229, 232
    - **Bomar** ... 250
    - **ITT Pomona** ... 262
    - **Kings** ... 267
    - **M/A-COM** ... 270, 271
  - RCA-Series Adapters
    - **AIM** ... 155
    - **Bomar** ... 250
  - SHV Connectors
    - **AMP®** ... 189
    - **Kings** ... 267
  - SMA Connectors and Adapters
    - **AIM** ... 155
    - **AMP®** ... 190
    - **Amphenol** ... 228
    - **Bomar** ... 250
    - **ITT Pomona** ... 262
    - **Johnson** ... 265
    - **M/A-COM** ... 270, 271
  - SMB Connectors and Adapters
    - **AMP®** ... 190
    - **Amphenol** ... 228
    - **Johnson** ... 265
    - **M/A-COM** ... 270
  - SMC Connectors
    - **M/A-COM** ... 270
  - Strippers
    - **AIM** ... 154
  - TNC
    - **Amphenol** ... 231
    - **Bomar** ... 250
    - **Cambridge** ... 251
    - **Kings** ... 267
    - **M/A-COM** ... 270, 271
  - Triaxial Connectors
    - **ITT Pomona** ... 262
  - Twin-Ax Connectors
    - **AIM** ... 155
    - **Amphenol** ... 229, 230
    - **Bomar** ... 249
    - **Cambridge** ... 251
  - UHF Connectors and Adapters
    - **AIM** ... 155
    - **Alectron** ... 159
    - **AMP®** ... 189
    - **Amphenol** ... 229, 232
    - **Bomar** ... 250
    - **ITT Pomona** ... 262
- **Communication (IDC) Connectors**
  - **3M** ... 152
- **Conduit/Tubing and Fittings**
  - **Thomas & Betts** ... 306, 307
- **DIN Connectors**
  - **AMP®** ... 179, 181, 213
  - **Amphenol** ... 223
  - **Cinch** ... 253
  - **Harting** ... 260
  - **Lumberg** ... 269
  - **Neutrik** ... 283
  - **Robinson Nugent** ... 290
  - **Switchcraft** ... 292, 294
  - **Thomas & Betts** ... 303
- **D Subminiature Connectors (D-Subs)**
  - Crimp Type
    - **AIM** ... 156
      - Contacts ... 156
      - Tooling ... 156
    - **AMP®** ... 175, 176
      - Contacts ... 175
      - Tooling ... 175
    - **Cinch** ... 252, 253
    - **Northern Technologies** ... 284
    - **Thomas & Betts**
      - Fine Pitch ... 295
    - **Wire Pro** ... 314
  - Dust Caps
    - **Cinch** ... 253
  - Filtered
    - **AMP®** ... 180, 181
    - **Amphenol** ... 224
  - Flat Cable/Ribbon Cable
    - **3M** ... 147
    - **AMP®** ... 182
    - **Amphenol** ... 225
    - **Berg** ... 245
    - **Thomas & Betts** ... 295, 298, 299

Page

- **D Subminiature Connectors (D-Subs) (Continued)**
  - Hardware
    - **AIM** ... 156
    - **AMP®** ... 178
    - **Amphenol** ... 225
    - **Northern Technologies** ... 284
    - **Thomas & Betts** ... 299
    - **Wire Pro** ... 314
  - High Density
    - **AIM** ... 156
      - Contacts ... 156
      - Tooling ... 156
    - **AMP®** ... 176
      - Contacts ... 176
      - Tooling ... 176
    - **Northern Technologies** ... 284
  - Hoods (Backshells)
    - **3M** ... 147
    - **AIM** ... 156
    - **AMP®** ... 178
    - **Amphenol** ... 225
    - **Cinch** ... 253
    - **Northern Technologies** ... 284
    - **Thomas & Betts** ... 299
    - **Wire Pro** ... 314
  - IDC D-Subs
    - **3M** ... 147
    - **AMP®** ... 176, 182
    - **Berg** ... 245
    - **Thomas & Betts** ... 295, 298, 299
  - Kits
    - **AMP®** ... 176, 178, 215
  - PC Board D-Subs
    - **AMP®** ... 176, 177
    - **Amphenol** ... 224, 225
    - **Berg** ... 245
    - **Cinch** ... 252
    - **Thomas & Betts** ... 302
  - Solder Type
    - **AIM** ... 156
    - **AMP®** ... 175
    - **Amphenol** ... 225
    - **Cinch** ... 252
    - **Northern Technologies** ... 284
- **Data Connectors**
  - **AMP®** ... 205
- **Electrical Coating**
  - **3M** ... 152
- **Electrical Connectors**
  - **3M** ... 152
  - **Harting** ... 258, 259, 260
  - **Superior Electric** ... 291
- **Environmental Sealed Connectors**
  - **Amphenol** ... 223
- **Ferrules**
  - **Altech** ... 162
- **Fiber Optic Products**
  - **3M** ... 145
  - **AMP®** ... 206, 207
- **Filtered Connectors**
  - **AMP®** ... 180, 181
  - **Amphenol** ... 224
  - **Bomar** ... 250
- **Flat Cable/Ribbon Cable Connectors**
  - **3M** ... 146, 147, 148
  - **AMP®** ... 182, 183
  - **Amphenol** ... 225, 226, 228
  - **Berg** ... 244, 245
  - **Harting** ... 261
  - **Molex/Waldom** ... 280
  - **Robinson Nugent** ... 289, 290
  - **Thomas & Betts** ... 295, 297, 298, 299, 300, 301
  - **Wire Pro** ... 315
- **GPIB Cable Assemblies**
  - **Berg** ... 246
- **Headers — See PC Board Connectors**
- **Heat Shrinkable Tubing**
  - **Thomas & Betts** ... 307
- **High Current Connectors**
  - **AMP®** ... 174
  - **Anderson** ... 233
  - **Molex/Waldom** ... 276
- **I/O Connectors**
  - **Harting** ... 261
  - **Molex/Waldom** ... 280
- **IDT Connector System**
  - **Lumberg** ... 268, 269
- **Industrial Connectors**
  - **Harting** ... 258, 259, 260
  - **Neutrik** ... 282, 283
- **Industry Standard Tooling**
  - **AMP®** ... 215
- **Interconnective Connectors**
  - **3M**
    - Intra Connectors ... 149
    - Plug Connectors ... 147
  - **Berg**
    - Bergcon Connectors
      - Crimp-to-Wire Receptacles ... 243
      - Housings ... 243
      - Jumpers ... 243
    - Minitek II System
      - Crimp-to-Wire Housings ... 246
      - Headers ... 246
      - Vertical Card Connectors ... 246
  - **Molex/Waldom**
    - Crimp Connector Housings ... 276
    - KK-Series
      - Headers ... 277

Connectors (Continued)

Page

- **Interconnective Connectors (Continued)**
  - Kits ... 277
  - Terminals Housings ... 277
  - **Wire Pro**
    - Strip Connectors ... 316
    - "Tiny Tim" Connectors ... 316
- **Interphase Modules**
  - **Altech** ... 170
  - **Curtis** ... 257
  - **Weco** ... 312
- **Intra Connectors**
  - **3M** ... 149
- **Jumper Wires**
  - **3M** ... 153
- **Jumpers, Unshielded**
  - **Alectron** ... 159
- **Kits**
  - **3M**
    - Fiber Optic Splice ... 145
    - Insulated Terminals ... 151
    - Jumper Wire ... 153
  - **AMP®**
    - Coaxial Connectors ... 215
    - D-Subs ... 176, 178, 215
    - Flat Cable Termination ... 182
    - Heat Shrink Tubing ... 215
    - Local Area Network ... 215
    - Mate-N-Lok® Connectors ... 191
    - Modular ... 204, 215
    - Premise Wiring ... 187, 215
    - Terminals ... 204, 215
  - **ITT Pomona**
    - Universal Adapter ... 262
  - **Molex/Waldom**
    - K.K.® PC Board Connectors ... 277
    - Nylon Connectors ... 275
    - Solderless Terminals ... 279
  - **NTT/Smith**
    - Universal Test Lead ... 286
- **Lug, One Hole**
  - **Thomas & Betts** ... 307
- **Modular Connectors**
  - **AMP®** ... 204, 205
  - **Amphenol**
    - Filtered ... 224
  - **Berg** ... 245
  - **Bomar** ... 250
  - **Molex/Waldom** ... 278
- **Patch Cords**
  - **Alectron** ... 159
  - **Neutrik** ... 283
  - **NTT/Smith** ... 286
- **PC Board Connectors**
  - BNCs
    - **AMP®** ... 188, 189
    - **Amphenol** ... 231
    - **Bomar** ... 249, 250
  - Card Edge
    - **AMP®** ... 213
    - **Cinch** ... 256
    - **Thomas & Betts** ... 303
  - D-Subs
    - **AMP®** ... 176, 177
    - **Amphenol** ... 224, 225
    - **Berg** ... 245
    - **Cinch** ... 252
    - **Thomas & Betts** ... 316
  - DINs
    - **AMP®** ... 171, 181, 213
    - **Cinch** ... 253
    - **Harting** ... 260
    - **Robinson Nugent** ... 290
    - **Switchcraft** ... 294
    - **Thomas & Betts** ... 303
  - DIP-Plugs
    - **3M** ... 146
    - **AMP®** ... 182
    - **Thomas & Betts** ... 301
  - Headers
    - **3M** ... 146, 148
    - **Altech** ... 166, 169
    - **AMP®** ... 183, 192, 194, 196, 198, 200, 201
    - **Amphenol** ... 228
    - **Berg** ... 242, 244
    - **Molex/Waldom** ... 276, 277
    - **Robinson Nugent** ... 289
    - **Thomas & Betts** ... 295, 296, 298
  - I/O Connectors
    - **Harting** ... 261
    - **Molex/Waldom** ... 280
  - Interconnective
    - **AMP®**
      - Commercial Mate-N-Lok® ... 191, 192
      - Miniature Rectangular ... 192
      - MT Receptacle Connectors ... 201
      - MTA ... 196, 197, 198, 199
      - MTE Interconnection System ... 202
      - Universal Mate-N-Lok® ... 193, 194
  - Memory Card Connectors
    - **AMP®** ... 214
  - Modular Connectors
    - **AMP®** ... 205
    - **Amphenol** ... 224
    - **Berg** ... 245
    - **Molex/Waldom** ... 278
  - PC Plugs and Connectors
    - **Wire Pro** ... 315
  - Pin and Receptacles
    - **Mill-Max** ... 274

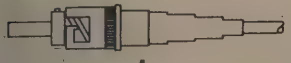
Page

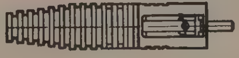
- **PC Board Connectors (Continued)**
  - Pin and Socket Connectors
    - **AMP®**
      - V.35 Series ... 179
  - Receptacles
    - **AMP®**
      - AMPMODU® ... 203
      - MTA and CST Series ... 197, 199
  - SMA Connectors
    - **Amphenol** ... 228
  - SMB Connectors
    - **AMP®** ... 190
  - Sockets — See Main Listing of Sockets
  - Terminal Blocks
    - **Altech** ... 164, 165, 166, 167, 168, 169
    - **Augat** ... 235
    - **Curtis** ... 257
    - **Lumberg** ... 268
    - **Thomas & Betts** ... 308
    - **WAGO** ... 309
    - **Weco** ... 310, 311
  - Transition Connectors
    - **Thomas & Betts** ... 301
- **PCMCIA Connector System**
  - **AMP®** ... 214
- **Pin and Socket Connectors**
  - **AMP®**
    - Mate-N-Lok® Connectors
      - Commercial ... 191, 192
        - Contacts ... 191
        - Kit (Connector) ... 191
        - Tooling ... 191
      - Universal ... 193, 194
        - Contacts ... 193
        - Strain Reliefs ... 193
        - Tooling ... 193
      - Universal Mate-N-Lok® II ... 194
    - Miniature Rectangular ... 192
      - Contacts ... 192
      - Strain Reliefs ... 192
    - Soft Shell Pin and Socket Connectors ... 195
      - Contacts ... 195
      - Tooling ... 195
  - **Molex/Waldom**
    - Mini-Fit Jr. Series
      - Pin and Socket Connectors ... 278
    - Nylon Housing Connectors ... 275, 276, 279
      - Connector Kit ... 275
- **Plug and Socket Connectors**
  - **Beau**
    - Plugs and Sockets ... 241
  - **Cinch**
    - "Jones" Plugs and Sockets ... 255
  - **Wire Pro**
    - Plug and Socket Connectors ... 316
- **Power Connectors**
  - **AMP®** ... 171, 172, 173, 174
  - **Amphenol** ... 216, 217, 218, 219, 220, 221
  - **Arrow Hart** ... 234
  - **Harting** ... 258, 259, 260
  - **Molex/Waldom** ... 275, 276, 279
  - **Switchcraft** ... 294
- **Power Cord Connectors**
  - **Thomas & Betts** ... 306, 307
- **SCSI (Small Computer Systems Interface) Products**
  - **AMP®**
    - Cable Assemblies ... 179
    - Connectors ... 179
    - Terminators ... 179
  - **Harting**
    - IDC ... 261
  - **Molex/Waldom** ... 280
  - **Robinson Nugent** ... 290
  - **Thomas & Betts**
    - Connectors ... 295
    - Terminators ... 303
- **Shunts**
  - **3M** ... 149
  - **AMP®** ... 200
  - **Berg** ... 243
  - **Molex/Waldom** ... 276
- **Sockets**
  - **3M**
    - ZIP-DIP ... 149
  - **AMP®**
    - DIP ... 211
    - PGA ... 212
    - PLCC ... 212
    - SIMM ... 212
    - SOJ ... 212
  - **Augat**
    - DIP ... 236, 237
    - Jumper Assemblies ... 238
    - PGA/PGMA ... 237
    - PLCC ... 237
    - Plug Adapter Assemblies ... 238
    - SIP ... 236
    - SOJ ... 238
    - Solderless Sockets ... 238
    - Transistors ... 238
  - **Berg**
    - DIP ... 247
    - PGA ... 247
    - PLCC ... 248
    - ZIF ... 248
  - **Lumberg**
    - Relay ... 269
  - **Mill-Max**
    - DIP ... 272, 273

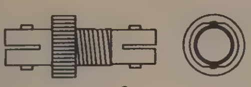
Page

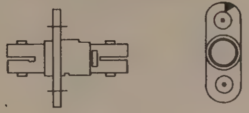
- **Sockets (Continued)**
  - PGA ... 272
  - Strip ... 273
  - Transistor ... 273
  - **Molex/Waldom**
    - SIMM ... 280
  - **Robinson Nugent**
    - DIM ... 290
    - DIP ... 287, 288
    - PGA ... 288
    - PLCC ... 288
    - Strip ... 287
  - **Thomas & Betts**
    - DIP ... 300
    - SIP ... 300
  - **Wire Pro**
    - Relay ... 316
- **Surface Mount Connectors**
  - **AMP®** ... 202
  - **Augat** ... 238
  - **Berg** ... 242
- **Tapes — Cold Shrink**
  - **AMP®** ... 210
- **Terminal Blocks/Strips and Accessories**
  - **Altech**
    - Accessories ... 160, 161, 162
    - DIN Rail ... 160, 161
    - Eurostrip ... 163
    - Panel Mount ... 163, 167, 168, 169
    - PC Board ... 164, 165, 166
    - Pluggable ... 164, 165, 166, 167, 168, 169
  - **AMP®**
    - FLEXI-BLOCK™ System ... 214
  - **Augat**
    - EURO ... 235
    - PC Board ... 235
  - **Beau** ... 239, 240, 241
    - Eurostyle ... 239
  - **Cinch** ... 254
    - Lug Type Terminal Strips ... 254
  - **Curtis** ... 257
  - **Lumberg** ... 268
  - **Thomas & Betts**
    - Barrier ... 308
    - Euro-Style ... 308
    - Pluggable ... 308
  - **WAGO**
    - DIN Rail ... 309
    - PC Board ... 309
  - **Weco**
    - Ceramic ... 312
    - DIN Rail ... 313
    - Modules ... 312
    - PC Board ... 310, 311
    - Sockets Terminals Strips ... 312
- **Terminators**
  - **AMP®** ... 179
  - **Thomas & Betts** ... 303
- **Test Adapter, Connector**
  - **ITT Pomona** ... 264
- **Test Clips**
  - **3M** ... 153
  - **Alectron** ... 159
- **Test Jacks**
  - **AMP®** ... 211
  - **Johnson** ... 266
- **Test Prods, Probes, and Leads**
  - **NTT/Smith** ... 286
- **Tip Plugs and Jacks**
  - **ITT Pomona** ... 264
  - **Johnson** ... 266
  - **NTT/Smith** ... 285
- **Tubing/Conduit and Fittings**
  - **Thomas & Betts** ... 306, 307
- **Two-Way Connectors**
  - **Thomas & Betts** ... 307
- **V.35 Connectors**
  - **AMP®** ... 179
- **VME Connectors**
  - **Harting** ... 261
- **Voice and Data Connectors and Adapters**
  - Data Connectors (IBM Style)
    - **AMP®** ... 205
  - Modular Connectors
    - **AMP®** ... 204, 205
    - **Berg** ... 245
    - **Bomar** ... 250
    - **Molex/Waldom** ... 278
- **Weathertight Connectors**
  - **Switchcraft** ... 292
- **Wire Nut Connectors**
  - **3M** ... 152
- **Wire Duct**
  - **Weco** ... 313
- **Wire Terminals and Splices**
  - **3M** ... 150, 151, 152
    - Kits ... 151
    - Tools ... 151
  - **AMP®** ... 208, 209, 210
    - Kits ... 210
    - Tooling ... 208, 209
  - **Molex/Waldom** ... 279
    - Kits ... 279
  - **Thomas & Betts** ... 304, 305
    - Tooling ... 305
- **Wiring Devices**
  - **Arrow Hart** ... 234

ST* Connectors


A


B


C


D

The 3M™ ST* Connector product line provides high repeatability and low light loss for premises, LAN and telco applications. The improved 3M connector design is compatible with the AT&T ST* connector product line as well as the Premise Distribution System (PDS) components and other ST* connector products. The 3M products are supplied with a high quality PC finish on zirconia ceramic ferrules.

Bayonet-Style Connectors — Fig. A

Stock No.	Mfr.'s Type	Description	Termination Style	Fiber Size	EACH	
					1-24	25-49
617-6901	6901	Multimode	Crimplok™	125 μM	**8.64**	**8.02**
617-8300	6100	Multimode	Hotmelt	125 μM	**7.85**	**7.29**
617-8302	6105	Multimode	Epoxy	125 μM	**7.85**	**7.29**
617-8304	6106	Multimode	Epoxy	140 μM	**23.24**	**21.86**
617-8306	8106	Single-mode	Epoxy	126 μM	**15.70**	**14.43**
617-8308	8107	Single-mode	Epoxy	127 μM	**15.70**	**14.43**

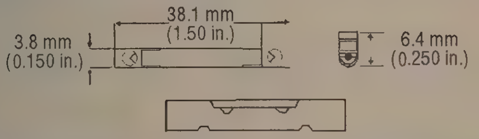
Push-Pull Style Connectors — Fig. B

Stock No.	Mfr.'s Type	Description	Termination Style	Fiber Size	1-24	25-49
617-8310	6102-H	Multimode	Hotmelt	125 μM	**9.66**	**8.97**
617-8312	8103	Single-mode	Epoxy	126 μM	**17.42**	**16.18**
617-8314	8104	Single-mode	Epoxy	127 μM	**17.42**	**16.18**

ST* Couplings

Stock No.	Mfr.'s Type	Description	Fig.	EACH	
				1-24	25-49
617-8316	6110	Multimode, threaded	C	**4.25**	**3.93**
617-8318	6111	Multimode, flanged	D	**4.93**	**4.56**
617-8320	8110	Single-mode, threaded	C	**18.00**	**15.70**
617-8322	8111	Single-mode, flanged	D	**18.00**	**15.70**

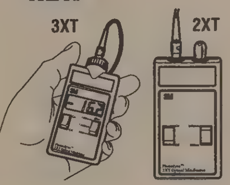
Fibrlok II Optical Fiber Splice



Fibrlok provides a precise, simple and low cost method of splicing fiber. For use with single-mode or multi-mode fiber. The inexpensive assembly tool turns any craft person into a splicing expert.

617-2529. 2529. Universal Optical Fiber Splice	EACH	**10.99**
617-2501. 2501. Assembly Tool	EACH	**76.89**
617-2530. 2529-K. Splice Kit (60 Splices and 1 tool)	EACH	**1211.14**

Photodyne™ 2XT Optical Mini-Source and 3XT Optical Mini Meter — *NEW* —



The 3M brand Photodyne™ 2XT Optical Mini-Source and 3XT Optical Mini-Meter can be combined to provide complete optical power measurement capabilities. Using the latest in cost-effective design technology, the units perform a variety of measurements:

- ► **Attenuation Testing**
- ► **Return Loss Measurement**
- ► **Link Conformance Testing**
- ► **Fiber Identification**
- ► **Single-Mode or Multiple Use**
- ► **Compact, Lightweight**

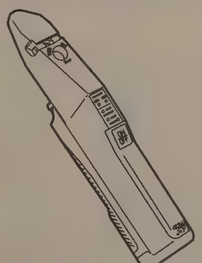
Mini-Optical Sources

617-8364. 2XT-8513-T. 850 nm/1300 nm Operating Wavelength. LED Source	EACH	**677.85**
617-8365. 2XT-1315-C. 1300 nm/1550 nm Operating Wavelength. LED Source	EACH	**1254.99**

Mini-Optical Meter

617-8366. 3XT. 850 nm/1300 nm/1550 nm Calibration Wavelengths. GE Sensor	EACH	**369.92**

Photodyne™ 8000XGT Fiber Identifier — *NEW* —



- ► **Greater Than –50 dBm Sensitivity @ 1550 nm**
- ► **Low Insertion Loss at 1550 nm On All Fiber Types**
- ► **Automatic Self-Test After Each Fiber Insertion**
- ► **Can Be Used on 250 μM, 900 μM Ribbon, and 3 mm Jacketed Cable**
- ► **1 KHz and 2 KHz Tone Detection**
- ► **Field Rugged Injection Molded Case**

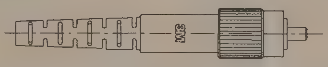
617-8351. 8000XGT	EACH	**1544.20**

Field Termination Kits

Field termination kits provide everything needed for an organized, quick installation.

617-6950. 6950. "Crimplok™" Field Termination Kit	EACH	**516.46**
617-6952. 6350-HM. "Hotmelt" Termination Kit	EACH	**903.77**
617-8380. 8250. "Epoxy" ST Termination Kit	EACH	**1549.37**
617-8400. 8350. "Epoxy" SC/FC PC3 Termination Kit	EACH	**1549.37**

FC/PC3 Connectors



The new 3M brand FC/PC Connector has been designed to combine the best features of the 3M FC/PC 1 (field mountability) and the 3M FC/PC 2 (pull-proof design) into one versatile connector design that is fully compatible with all FC Connectors adhering to the NTT specification. The FC/PC 3 incorporates 3M pre-radiused PC zirconia ceramic technology to provide high optical performance and minimize reflected power to –50 dB on factory polished cable assemblies. The ferrule is independent of the backbone so that a pull on the jacketed connectorized cable will not cause the ferrule to break optical contact with a second ferrule in a connection.

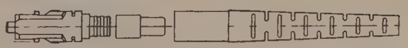
FC/PC3 Connector

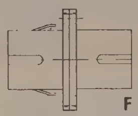
Stock No.	Mfr.'s Type	Description	Termination Style	Fiber Size	EACH	
					1-24	25-49
617-8334	6200	Multimode	Hotmelt	125 μM	**10.52**	**9.77**
617-8336	6202	Multimode	Epoxy	125 μM	**10.52**	**9.77**
617-8338	8203	Single-mode	Epoxy	126 μM	**12.56**	**11.66**
617-8340	8204	Single-mode	Epoxy	127 μM	**12.56**	**11.66**

FC/PC3 Couplings Square Flanged (Not Shown)

Stock No.	Mfr.'s Type	Description	Termination Style	Fiber Size	1-24	25-49
617-8342	6210	Multimode	—	—	**26.68**	**24.77**
617-8344	8210	Single-mode	—	—	**28.25**	**26.23**

SC Connectors


E


F

3M has simplified the design of the SC connector to enhance performance and cable retention, and provide a readily field mountable connector. The connector is fully compliant to the NTT, JIS, ISO/IEC, and TIA/EIA component and ISO/IEC, CENELEC, ANSI, TIA/EIA-568A and BICSI system and cabling level standards. The 3M SC Connector has a rectangular push-pull coupling mechanism for easy insertion and high repeatability.

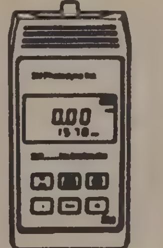
SC Connectors — Fig. E

Stock No.	Mfr.'s Type	Description	Termination Style	Fiber Size	EACH	
					1-24	25-49
617-6900	6900	Multimode	Crimplok™	125 μM	**10.20**	**9.48**
617-8324	6300	Multimode	Hotmelt	125 μM	**9.42**	**8.75**
617-8326	6306	Multimode	Epoxy	125 μM	**9.42**	**8.75**
617-8328	8306	Single-mode	Epoxy	126 μM	**11.77**	**10.93**
617-8330	8307	Single-mode	Epoxy	127 μM	**11.77**	**10.93**

SC Standard Density Coupling — Fig.F

Stock No.	Mfr.'s Type	Description	Termination Style	Fiber Size	1-24	25-49
617-8332	8310	Multi/Single-mode	—	—	**14.13**	**13.12**

Photodyne™ 17XTG/I Hand-Held Fiber Optic Power Meter and 7XT Light Source — *NEW* —



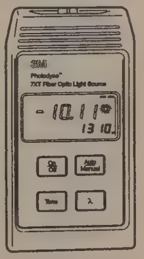
Photodyne™ 17XTG/I Power Meter

- ► **Single-Mode, Multimode Use**
- ► **LAN Applications**
- ► **Link Commissioning**
- ► **Maintenance and Restoration**
- ► **Engineering and Testing**

Photodyne™ 17XTG/I Hand-Held Fiber Optic Power Meter is a convenient, practical test instrument available to fiber optic service technicians, engineers, and field crews.

617-8362. 17XTG-2021-01. Power Meter with FC Connector	EACH	**1351.82**
617-8363. 17XTG-2041-01. Power Meter with ST Connector	EACH	**1351.82**
617-8367. 17XTG-2058-01. Power Meter with SC Connector	EACH	**1351.82**

Photodyne™ 7XT Light Source

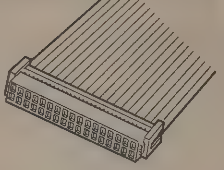

3M
Photodyne™
7XT Fiber Optic Light Source
-10.11
13 10

- ► **Attenuation Testing**
- ► **Return Loss Measurement**
- ► **Link Conformance Testing**
- ► **Fiber Identification**

Photodyne™ 7XT Light Source is used as a stand alone light source, or in conjunction 5with the 17XTG/I Power Meter, to provide a variety of measurements on fiber optic connectors.

617-8368. 7XT-1315-C-01. Light Source with SC Connector	EACH	**3655.38**
617-8369. 7XT-1315-J-01. Light Source with FC Connector	EACH	**3655.38**
617-8371. 7XT-1315-T-01. Light Source with ST Connector	EACH	**3655.38**

Socket Connectors



These connectors terminate to 25 or 28 AWG solid/stranded and 30 AWG solid wire, and are compatible with most headers on a 0.1" × 0.1" grid. Dual and center bump polarity. 30 μ gold on wiping surface, beryllium copper contacts.

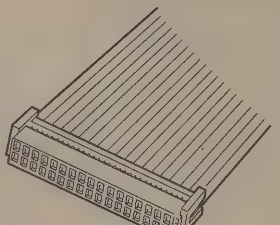
Connectors

Stock No.	Mfr.'s Type	No. of Contacts	EACH 1-24	EACH 25-49	EACH 50-99	EACH 100-499
617-4000	3473-6600	10	2.03	1.83	1.54	1.47
617-4001	3385-6600	14	2.35	2.12	1.91	1.79
617-4002	3452-6600	16	2.56	2.31	2.08	1.94
617-4003	3421-6600	20	2.83	2.55	2.30	2.15
617-4004	3399-6600	26	3.66	3.30	2.97	2.78
617-4005	3419-6600	30	4.20	3.78	3.40	3.19
617-4006	3414-6600	34	4.76	4.29	3.86	3.62
617-4007	3417-6600	40	5.60	5.04	4.54	4.25
617-4008	3425-6600	50	6.99	6.29	5.66	5.31
617-4009	3334-6600	60	8.65	7.79	7.01	6.57

Clip-On Strain Relief

Stock No.	Mfr.'s Type	No. of Contacts	EACH 1-24	EACH 25-49	EACH 50-99	EACH 100-499
617-4010	3448-3010	10	.25	.23	.21	.19
617-4011	3448-3014	14	.25	.23	.21	.19
617-4012	3448-3016	16	.25	.23	.21	.19
617-4013	3448-3020	20	.25	.23	.21	.19
617-4014	3448-3026	26	.25	.23	.21	.19
617-4015	3448-3030	30	.33	.30	.27	.25
617-4016	3448-3034	34	.29	.26	.24	.22
617-4017	3448-3040	40	.29	.26	.24	.22
617-4018	3448-3050	50	.29	.26	.24	.22
617-4019	3448-3060	60	.40	.35	.32	.30

89-Series
.100" × .100"
IDC Socket Connectors



- ► Pre-Assembled Connector Body
- ► Pin One Indicated With A Red Stripe
- ► Double-Recessed Cover Supports Cable Termination From Either Side Of Connector
- ► UL 94V-0, Gray
- ► 28 AWG Stranded
- ► Contact Plating: Wipe Area — 30 μ" Gold; Under Plate — 100 μ" Nickel
- ► Polarizing Center Bump
- ► UL File No.: E68080; CSA File No. LR40971

These high-quality, standard-performance IDC sockets minimize applied assembly costs without sacrificing reliability.

Connectors

Stock No.	Mfr.'s Type	No. of Contacts	EACH 1-99	EACH 100-499	EACH 500-999	EACH 1000-4999
617-8900	89110-0101	10	.33	.30	.27	.24
617-8902	89114-0101	14	.47	.43	.38	.33
617-8904	89116-0101	16	.54	.49	.44	.38
617-8906	89120-0101	20	.67	.61	.55	.48
617-8908	89124-0101	24	.80	.73	.66	.57
617-8910	89126-0101	26	.87	.80	.71	.62
617-8912	89130-0101	30	1.00	.92	.82	.72
617-8914	89134-0101	34	1.14	1.04	.93	.81
617-8916	89136-0101	36	1.20	1.10	.98	.86
617-8918	89140-0101	40	1.34	1.22	1.09	.95
617-8920	89144-0101	44	1.47	1.35	1.20	1.05
617-8922	89150-0101	50	1.67	1.53	1.37	1.19
617-8924	89160-0101	60	2.01	1.84	1.64	1.29

Strain Reliefs and Accessories

Stock No.	Mfr.'s Type	Description	EACH 1-99	EACH 100-499
617-8926	3448-89110	10 Pos. Strain Relief	.13	.10
617-8928	3448-89114	14 Pos. Strain Relief	.13	.10
617-8930	3448-89116	16 Pos. Strain Relief	.13	.10
617-8932	3448-89120	20 Pos. Strain Relief	.13	.10
617-8934	3448-89124	24 Pos. Strain Relief	.13	.10
617-8936	3448-89126	26 Pos. Strain Relief	.13	.10
617-8938	3448-89130	30 Pos. Strain Relief	.13	.10
617-8940	3448-89134	34 Pos. Strain Relief	.13	.10
617-8942	3448-89136	36 Pos. Strain Relief	.13	.10
617-8944	3448-89140	40 Pos. Strain Relief	.13	.10
617-8946	3448-89144	44 Pos. Strain Relief	.13	.10
617-8948	3448-89150	50 Pos. Strain Relief	.13	.10
617-8950	3448-89160	60 Pos. Strain Relief	.13	.10
617-8952	3490-89110	Pull Tab 10-20 Position	.15	.11
617-8954	3490-89124	Pull Tab 24-36 Position	.21	.16
617-8956	3490-89140	Pull Tab 40-60 Position	.23	.17
617-8958	3435-0	Keying Plug	.09	.07

Click Headers

(Optional ejector latches supplied as a separate item.) Durable, fully-shrouded housing protects .025" square pins with 30 μ gold plating. The ejector latches provide secure retention and removal.. Available right angle and straight pin models.

Right Angle, .112" Solder Pins For .062" Board

Stock No.	Mfr.'s Type	No. of Contacts	EACH 1-24	EACH 25-49	EACH 50-99	EACH 100-499
617-4040	3793-5002	10	1.59	1.38	1.26	1.17
617-4021	3314-5002	14	1.71	1.52	1.39	1.30
617-4022	3408-5002	16	1.77	1.58	1.45	1.34
617-4023	3428-5002	20	1.98	1.76	1.61	1.50
617-4024	3429-5002	26	2.33	2.10	1.89	1.77
617-4025	3440-5002	30	2.68	2.39	2.19	2.04
617-4026	3431-5002	34	3.02	2.69	2.45	2.29
617-4027	3432-5002	40	3.45	3.11	2.80	2.62
617-4028	3433-5002	50	4.16	3.75	3.37	3.16
617-4029	3372-5002	60	5.12	4.56	4.18	3.89

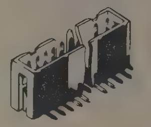
Straight, .112" Solder Pins For .062" Board

Stock No.	Mfr.'s Type	No. of Contacts	EACH 1-24	EACH 25-49	EACH 50-99	EACH 100-499
617-4041	3793-6002	10	1.59	1.38	1.26	1.17
617-4031	3314-6002	14	1.71	1.52	1.40	1.30
617-4032	3408-6002	16	1.77	1.58	1.45	1.30
617-4033	3428-6002	20	1.89	1.69	1.55	1.44
617-4034	3429-6002	26	2.33	2.10	1.89	1.77
617-4035	3440-6002	30	2.68	2.39	2.19	2.04
617-4036	3431-6002	34	3.02	2.69	2.45	2.29
617-4037	3432-6002	40	3.45	3.11	2.80	2.62
617-4038	3433-6002	50	4.16	3.75	3.37	3.16
617-4039	3372-6002	60	5.12	4.56	4.18	3.89

Ejector Latches

Stock No.	Mfr.'s Type	Description	EACH 1-99	EACH 100-499
617-4060	3505-2	Ejector Latches/Retainer Clip Short	.11	.10
617-4061	3505-3	Ejector Latches/Retainer Clip Long	.11	.10

Low Profile Headers



Units have same specifications as CLICK series headers, except these are low profile. Available in right angle and straight pin models.

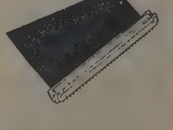
Right Angle, .112" Solder Pins For .062" Board

Stock No.	Mfr.'s Type	No. of Contacts	EACH 1-24	EACH 25-49	EACH 50-99	EACH 100-499
617-4062	2510-5002UB	10	1.56	1.40	1.19	1.12
617-4064	2516-5002UB	16	1.69	1.50	1.37	1.29
617-4065	2520-5002UB	20	1.77	1.58	1.45	1.34
617-4066	2526-5002UB	26	1.87	1.67	1.53	1.42
617-4068	2534-5002UB	34	2.25	2.00	1.84	1.71
617-4069	2540-5002UB	40	2.41	2.15	1.97	1.83
617-4070	2550-5002UB	50	3.00	2.70	2.43	2.28

Straight, .112" Solder Pins For .062" Board

Stock No.	Mfr.'s Type	No. of Contacts	EACH 1-24	EACH 25-49	EACH 50-99	EACH 100-499
617-4072	2510-6002UB	10	1.33	1.19	1.09	1.02
617-4074	2516-6002UB	16	1.54	1.37	1.26	1.17
617-4075	2520-6002UB	20	1.60	1.43	1.31	1.22
617-4076	2526-6002UB	26	1.71	1.52	1.40	1.30
617-4077	2530-6002UB	30	1.98	1.76	1.61	1.50
617-4078	2534-6002UB	34	2.06	1.84	1.68	1.56
617-4079	2540-6002UB	40	2.21	1.97	1.80	1.68
617-4080	2550-6002UB	50	2.73	2.43	2.23	2.07

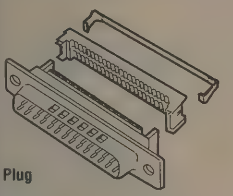
.100" × .100" PCB Connectors

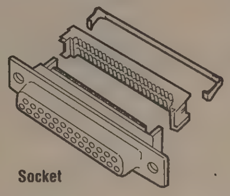


Fits standard .100" × .100" header layout. Two row style uses less board area than 4-row design. **Accommodates Wire Sizes:** 26 AWG solid or stranded; 28 AWG solid or stranded; 30 AWG solid. **Current Rating:** 1 amp. **Insulation Resistance:** >1 × 10^9 ohms @ 500 VDC. **Temperature Rating:** –55°F to +105°F.

Stock No.	Mfr.'s Type	No. of Contacts	EACH 1-24	EACH 25-49	EACH 50-99	EACH 100-499
617-6030	3910-000T	10	1.77	1.58	1.45	1.34
617-6035	3914-000T	14	2.00	1.78	1.63	1.52
617-6040	3916-000T	16	2.04	1.82	1.67	1.55
617-6045	3920-000T	20	2.12	1.89	1.73	1.61
617-6050	3924-000T	24	2.39	2.13	1.96	1.82
617-6055	3926-000T	26	2.50	2.23	2.04	1.90
617-6060	3930-000T	30	2.70	2.43	2.21	2.05
617-6065	3934-000T	34	2.81	2.50	2.29	2.13
617-6070	3936-000T	36	3.12	2.78	2.55	2.37
617-6075	3940-000T	40	3.20	2.86	2.62	2.43
617-6080	3950-000T	50	3.74	3.34	3.06	2.84
617-6085	3960-000T	60	4.49	4.01	3.67	3.41

"D" Subminiature Connectors





Connectors are fully compatible with all .050" spaced flat cables with 26 and 28 AWG solid/stranded or 30 AWG solid wire. The low profile tin-plated metal shell ensures long-term reliability and EMI/ESD reduction. Pins and wiping leaf are plated with 30 µ gold. **Mounting Style:** 6000 Series — through hole; 6003 Series — 4-40 threaded insert.

Pin Version

Stock No.	Mfr.'s Type	No. of Contacts	EACH			
			1-24	25-49	50-99	100-499
617-4200	8209-6000	9	5.01	4.51	4.06	3.81
617-5200	8209-6003	9	6.14	5.65	5.13	4.66
617-4201	8215-6000	15	5.70	5.13	4.62	4.33
617-5201	8215-6003	15	6.82	6.08	5.58	5.18
617-4202	8225-6000	25	6.47	5.83	5.24	4.91
617-5202	8225-6003	25	7.39	6.65	6.00	5.59
617-4203	8237-6000	37	8.36	7.53	6.77	6.35
617-5203	8237-6003	37	9.13	8.14	7.46	6.94

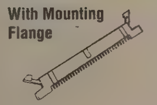
Socket Version

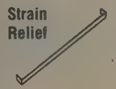
Stock No.	Mfr.'s Type	No. of Contacts	1-24	25-49	50-99	100-499
617-4204	8309-6000	9	5.14	4.63	4.17	3.90
617-5204	8309-6003	9	6.26	5.83	5.30	4.76
617-4205	8315-6000	15	5.91	5.32	4.79	4.49
617-5205	8315-6003	15	7.03	6.27	5.75	5.34
617-4206	8325-6000	25	6.57	5.92	5.32	4.99
617-5206	8325-6003	25	7.47	6.87	6.24	5.67
617-4207	8337-6000	37	8.49	7.64	6.88	6.45
617-5207	8337-6003	37	9.13	8.14	7.46	6.94

Strain Reliefs

Stock No.	Mfr.'s Type	No. of Contacts	1-24	25-49	50-99	100-499
617-3409	3448-8D09A	9	.25	.22	.20	.19
617-3415	3448-8D15A	15	.33	.30	.27	.25
617-3425	3448-8D25A	25	.25	.22	.20	.19
617-3437	3448-8D37A	37	.39	.35	.32	.30

.100" × .100" Plug Connectors





Plug connectors are made of polybutylene terephthalate, with a flammability rating; UL 94-VO. Connectors accommodate 26-28 AWG, solid or stranded, or 30 AWG wire. (Adhesive cover comes with connector; strain reliefs, ejector latches, and polarization keys optional.)

With Mounting Flange

Stock No.	Mfr.'s Type	No. of Contacts	EACH			
			1-24	25-49	50-99	100-499
617-3810	4620-6000	20	5.14	4.63	4.17	3.90
617-3811	4626-6000	26	5.85	5.21	4.78	4.44
617-3812	4634-6000	34	7.26	6.54	5.88	5.51
617-3813	4640-6000	40	8.05	7.18	6.58	6.12
617-3814	4650-6000	50	8.72	7.85	7.07	6.62

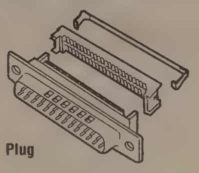
Without Mounting Flange

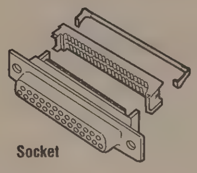
Stock No.	Mfr.'s Type	No. of Contacts	1-24	25-49	50-99	100-499
617-3815	4620-6001	20	5.14	4.58	4.20	3.90
617-3816	4626-6001	26	5.85	5.21	4.78	4.44
617-3817	4634-6001	34	7.26	6.47	5.93	5.51
617-3818	4640-6001	40	8.05	7.18	6.58	6.12
617-3819	4650-6001	50	8.72	7.85	7.07	6.62

Strain Reliefs and Accessories

Stock No.	Mfr.'s Type	Description	EACH			
			1-24	25-49	50-99	100-499
617-3820	3448-4620	20 Pos. Strain Relief	.41	.37	.34	.31
617-3821	3448-4626	26 Pos. Strain Relief	.41	.37	.34	.31
617-3822	3448-4634	34 Pos. Strain Relief	.41	.37	.34	.31
617-3823	3448-4640	40 Pos. Strain Relief	.41	.37	.34	.31
617-3824	3448-4650	50 Pos. Strain Relief	.45	.41	.37	.35
617-3825	3518	Polarization Key	.13	.12	.11	.10
617-3826	3505-16	Short Latch	.15	.13	.12	.11
617-3827	3505-17	Long Latch	.17	.15	.14	.13

Series 89
D-Sub Connectors





- ► Pre-Assembled One-Piece Body
- ► For 26 and 28 AWG Solid or Stranded
- ► UL 94V-0, Gray
- ► Mounting Style: Through-Hole
- ► Contact Plating: Wipe Area: 15 µ" Average Gold Over Nickel
- ► Accepts .050" Flat Ribbon Cable and Discrete Wire

These standard-performance D-Sub Connectors are designed to reduce costs and save assembly time.

Plugs

Stock No.	Mfr.'s Type	No. of Contacts	EACH			
			1-24	25-49	50-99	100-499
617-8960	89809-8000	9	2.50	2.32	2.13	1.97
617-8962	89815-8000	15	3.22	2.99	2.74	2.53
617-8964	89825-8000	25	3.48	3.23	2.96	2.74
617-8966	89837-8000	37	4.72	4.38	4.02	3.71

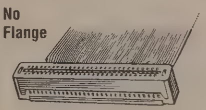
Sockets

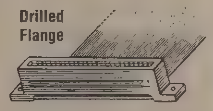
Stock No.	Mfr.'s Type	No. of Contacts	1-24	25-49	50-99	100-499
617-8968	89909-8000	9	2.30	2.14	1.96	1.81
617-8970	89915-8000	15	2.86	2.66	2.44	2.25
617-8972	89925-8000	25	3.12	2.90	2.66	2.45
617-8974	89937-8000	37	4.22	3.92	3.59	3.32

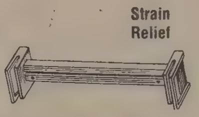
Strain Reliefs

Stock No.	Mfr.'s Type	No. of Contacts	1-24	25-49	50-99	100-499
617-3409	3448-8D09A	9	.25	.22	.20	.19
617-3415	3448-8D15A	15	.33	.30	.27	.25
617-3425	3448-8D25A	25	.25	.22	.20	.19
617-3437	3448-8D37A	37	.39	.35	.32	.30

Card Edge Connectors







Rugged overall construction and bifurcated beryllium copper contacts, plated with 30 µ" gold, in the card wiping area, provide high reliability in performance and assembly. All sizes are available with slotted flange, hole flange or without flange.

With Drilled Flange

Stock No.	Mfr.'s Type	No. of Contacts	EACH			
			1-24	25-49	50-99	100-499
617-4105	3462-0000	26	5.47	5.15	4.76	4.16
617-4106	3463-0000	34	6.37	5.73	5.29	4.84
617-4107	3464-0000	40	7.80	6.95	6.38	5.93
617-4108	3415-0000	50	8.03	7.16	6.56	6.10

Without Mounting Flange

Stock No.	Mfr.'s Type	No. of Contacts	1-24	25-49	50-99	100-499
617-4113	3461-0001	20	4.62	4.16	3.74	3.51
617-4114	3462-0001	26	5.47	4.93	4.43	4.16
617-4115	3463-0001	34	6.37	5.74	5.16	4.84
617-4116	3464-0001	40	7.80	6.95	6.38	5.93
617-4117	3415-0001	50	8.03	7.16	6.56	6.10

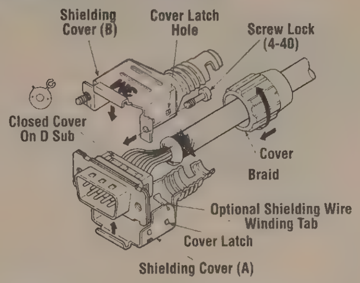
Without Flange/with Strain Relief

Stock No.	Mfr.'s Type	No. of Contacts	1-24	25-49	50-99	100-499
617-4131	3461-0003	20	5.57	4.97	4.56	4.23
617-4132	3462-0003	26	6.49	5.79	5.30	4.93
617-4133	3463-0003	34	7.34	6.55	6.00	5.58
617-4134	3464-0003	40	8.82	7.86	7.21	6.70
617-4135	3415-0003	50	9.01	8.11	7.30	6.84

Strain Relief and Polarizing Key

Stock No.	Mfr.'s Type	Description	EACH			
			1-24	25-49	50-99	100-499
617-4174	3448-55	Type 3462 Card Edge Conn.	.84	.77	.72	.67
617-4175	3448-56	Type 3463 Card Edge Conn.	.84	.77	.72	.67
617-4176	3448-57	Type 3464 Card Edge Conn.	.84	.77	.72	.67
617-4177	3448-58	Type 3415 Card Edge Conn.	.84	.77	.72	.67
617-4178	3448-31	Type 3666 Card Edge Conn.	.84	.77	.72	.67

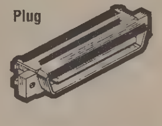
"D" Subminiature Junction Shells for EMI/ESD Protection



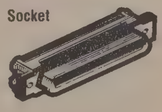
Designed for use with 3659 and 3759 Round-Jacketed Flat Cable.

Stock No.	Mfr.'s Type	No. of Contacts	EACH			
			1-24	25-49	50-99	100-499
617-4208	3357-9209	9	2.77	2.49	2.24	2.10
617-4209	3357-9215	15	3.33	3.00	2.70	2.53
617-4210	3357-9225	25	3.68	3.31	2.98	2.68
617-4211	3357-9237	37	5.14	4.63	4.16	3.90

"D" Ribbon Connectors



All Plastic
These connectors are available in bail mount, screw mount, and combination mount. Those with type number suffix 1000 are combination; with 1001 bail mount; with 1002 screw mount.



Metal Faced
These connectors are available in bail mount, screw mount, and combination mount. Those with type number suffix 2000 are combination; with 2001 bail mount; with 2002 screw mount.

Plug Version

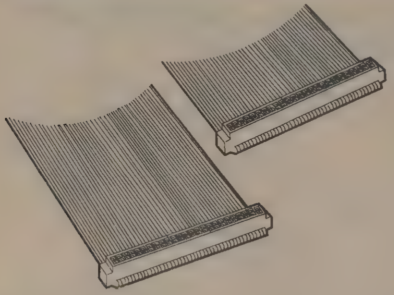
Stock No.	Mfr.'s Type	No. of Contacts	Description	EACH			
				1-24	25-49	50-99	100-499
617-4141	3548-1000	24	All Plastic	5.22	4.65	4.27	3.97
617-4142	3548-1001	24	All Plastic	5.45	4.86	4.45	4.14
617-4143	3548-1002	24	All Plastic	5.55	4.95	4.54	4.22
617-4144	3366-1000	36	All Plastic	6.43	5.73	5.25	4.88
617-4145	3366-1001	36	All Plastic	6.74	6.07	5.46	5.12
617-4146	3366-1002	36	All Plastic	6.89	6.14	5.63	5.23
617-4147	3564-1000	50	All Plastic	7.65	6.89	6.20	5.81
617-4148	3564-1001	50	All Plastic	8.26	7.44	6.69	6.27
617-4149	3564-1002	50	All Plastic	8.47	7.63	6.86	6.43
617-1500	3564-2000	50	Metal-Faced	8.72	7.85	7.24	6.62
617-1505	3564-2001	50	Metal-Faced	9.44	8.50	7.65	7.17

Socket Version

Stock No.	Mfr.'s Type	No. of Contacts	Description	1-24	25-49	50-99	100-499
617-1510	3573-2000	14	Metal-Faced	5.49	4.90	4.49	4.17
617-1512	3573-2002	14	Metal-Faced	5.80	5.17	4.74	4.41
617-4153	3549-1000	24	All Plastic	5.22	4.55	4.29	3.97
617-4154	3549-1001	24	All Plastic	5.45	4.86	4.45	4.14
617-4155	3549-1002	24	All Plastic	5.55	4.95	4.54	4.22
617-1514	3549-2000	24	Metal-Faced	6.47	5.77	5.29	4.91
617-1516	3549-2002	24	Metal-Faced	6.99	6.23	5.71	5.31
617-4156	3367-1000	36	All Plastic	6.43	5.73	5.25	4.88
617-4157	3367-1001	36	All Plastic	6.74	6.06	5.59	5.12
617-4158	3367-1002	36	All Plastic	6.89	6.14	5.63	5.23
617-1518	3367-2000	36	Metal-Faced	7.26	6.47	5.93	5.51
617-1520	3367-2002	36	Metal-Faced	7.80	6.95	6.38	5.93
617-4159	3565-1000	50	All Plastic	7.65	6.89	6.20	5.81
617-4160	3565-1001	50	All Plastic	8.26	7.36	6.75	6.27
617-4161	3565-1002	50	All Plastic	8.47	7.63	6.90	6.43
617-1522	3565-2000	50	Metal-Faced	8.72	7.77	7.12	6.62
617-1524	3565-2002	50	Metal-Faced	9.44	8.42	7.72	7.17

Strain Reliefs

Stock No.	Mfr.'s Type	Description	EACH			
			1-24	25-49	50-99	100-499
617-4180	3448-60	Strain Relief/ 14 Contact Ribbon Conn.	.34	.32	.30	.29
617-4181	3448-61	Strain Relief/ 24 Contact Ribbon Conn.	.36	.34	.31	.30
617-4182	3448-62	Strain Relief/ 36 Contact Ribbon Conn.	.38	.35	.33	.32
617-4183	3448-63	Strain Relief/ 50 Contact Ribbon Conn.	.40	.37	.34	.33



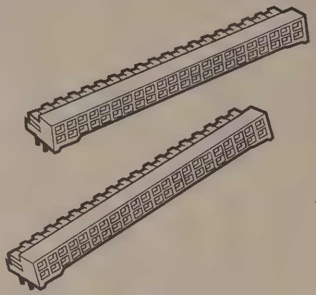
2 mm Wiremount Sockets and Accessories

- ► For Use with 1MM Pitch Cable
- ► Industry Standard Compatible
- ► Mates with 2mm × 2mm Grid Pin Strips
- ► Low Profile
- ► Preassembled Covers
- ► Flammability Rating: UL94V-0
- ► Color: Gray
- ► Contact Material: Beryllium Copper

Stock No.	Mfr.'s Type	No. of Contacts	Description	Contact Plating	EACH 1-24	EACH 25-49	EACH 50-99
617-3850	152244-0100-GB	44	Socket	30µ" Gold	4.47	3.99	3.66
617-3852	152250-0100-GB	50	Socket	30µ" Gold	4.68	4.17	3.83
617-3854	3448-152244	44	Strain Relief	—	.33	.30	.27
617-3856	3448-152250	50	Strain Relief	—	.33	.30	.27

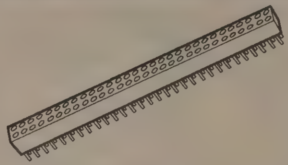
Keying Plug
617-3858. 3435-152200 ....PER SET/10 .82

2 mm Right Angle Boardmount Sockets



- ► High Temperature Dielectric
- ► IR, Vapor and Wave Solder Compatible
- ► Minimizes PC Board Space
- ► Mates With 2.5" Hard Disk Drives For Direct Connect Applications
- ► Mates with Pin Headers for Board Stacking Applications
- ► End-to-End Stackable
- ► Color: Natural
- ► Contact Material: Beryllium Copper

Stock No.	Mfr.'s Type	No. of Contacts	Description	Contact Plating	EACH 1-24	EACH 25-49	EACH 50-99
617-3878	150210-5002-TB	10	Right angle socket	30µ" Gold	1.87	1.67	1.53
617-3880	150220-5002-TB	20	Right angle socket	30µ" Gold	3.12	2.78	2.55
617-3882	150226-5002-TB	26	Right angle socket	30µ" Gold	4.06	3.62	3.32
617-3884	150230-5002-TB	30	Right angle socket	30µ" Gold	4.68	4.17	3.83
617-3886	150240-5002-TB	40	Right angle socket	30µ" Gold	6.24	5.56	5.10
617-3888	150244-5002-TB	44	Right angle socket	30µ" Gold	6.86	6.12	5.61
617-3890	150250-5002-TB	50	Right angle socket	30µ" Gold	7.80	7.02	6.38
617-3892	150260-5002-TB	60	Right angle socket	30µ" Gold	9.36	8.35	7.65

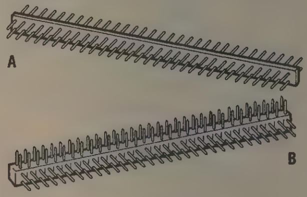


2 mm Vertical Boardmount Sockets

- ► High Temperature Dielectric
- ► IR, Vapor and Wave Solder Compatible
- ► Industry Standard Compatible
- ► Minimizes PC Board Stacking Heights
- ► End Stackable and Side Stackable
- ► Color: Natural
- ► Contact Material: Beryllium Copper

Stock No.	Mfr.'s Type	No. of Contacts	Description	Contact Plating	EACH 1-24	EACH 25-49	EACH 50-99
617-3860	150210-6002-TB	10	Vertical Socket	30µ" Gold	1.29	1.15	1.06
617-3862	150212-6002-TB	12	Vertical Socket	30µ" Gold	1.54	1.37	1.26
617-3864	150220-6002-TB	20	Vertical Socket	30µ" Gold	2.58	2.30	2.11
617-3866	150226-6002-TB	26	Vertical Socket	30µ" Gold	3.35	2.99	2.74
617-3868	150230-6002-TB	30	Vertical Socket	30µ" Gold	3.87	3.45	3.16
617-3870	150240-6002-TB	40	Vertical Socket	30µ" Gold	5.16	4.60	4.22
617-3872	150244-6002-TB	44	Vertical Socket	30µ" Gold	5.68	5.06	4.64
617-3874	150250-6002-TB	50	Vertical Socket	30µ" Gold	6.45	5.75	5.27
617-3876	150260-6002-TB	60	Vertical Socket	30µ" Gold	7.74	6.90	6.33

2 mm Pin Strip Headers

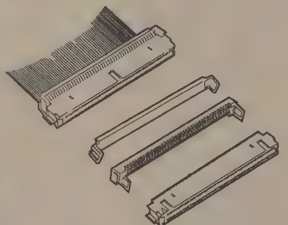


- ► Industry Standard Compatible
- ► High Temperature Dielectric
- ► IR, Vapor, and Wave Solder Compatible
- ► Maximizes Use of PC Board Space
- ► Mates With Boardmount and Wiremount Products
- ► End-to-End and Side-to-Side Stackable
- ► Contact Plating: 30µ" Gold

Stock No.	Mfr.'s Type	No. of Contacts	Description	Fig.	Pin Length	Tail Length	EACH 1-24	EACH 25-49	EACH 50-99
617-3894	151210-8322-TB	10	Dual row straight	A	.130"	.118"	1.04	.93	.85
617-3896	151210-7422-TB	10	Dual row right angle	B	.152"	.118"	1.17	1.04	.95
617-3898	151212-8322-TB	12	Dual row straight	A	.130"	.118"	1.25	1.11	1.02
617-3900	151212-7422-TB	12	Dual row right angle	B	.152"	.118"	1.41	1.26	1.16
617-3902	151220-8322-TB	20	Dual row straight	A	.130"	.118"	2.08	1.85	1.70
617-3904	151220-7422-TB	20	Dual row right angle	B	.152"	.118"	2.35	2.10	1.92
617-3906	151226-8322-TB	26	Dual row straight	A	.130"	.118"	2.70	2.41	2.21
617-3908	151226-7422-TB	26	Dual row right angle	B	.152"	.118"	3.06	2.73	2.50
617-3910	151230-8322-TB	30	Dual row straight	A	.130"	.118"	3.12	2.78	2.55
617-3912	151230-7422-TB	30	Dual row right angle	B	.152"	.118"	3.52	3.13	2.87
617-3914	151240-8322-TB	40	Dual row straight	A	.130"	.118"	4.16	3.71	3.40
617-3916	151240-7422-TB	40	Dual row right angle	B	.152"	.118"	4.70	4.19	3.84
617-3920	151244-8322-TB	44	Dual row straight	A	.130"	.118"	4.58	4.08	3.74
617-3922	151244-7422-TB	44	Dual row right angle	B	.152"	.118"	5.16	4.60	4.22
617-3924	151250-8322-TB	50	Dual row straight	A	.130"	.118"	5.20	4.64	4.25
617-3926	151250-7422-TB	50	Dual row right angle	B	.152"	.118"	5.87	5.23	4.80
617-3928	151260-8322-TB	60	Dual row straight	A	.130"	.118"	4.99	4.45	4.08
617-3930	151260-7422-TB	60	Dual row right angle	B	.152"	.118"	5.87	5.23	4.80

Mini Flat Cable Connectors

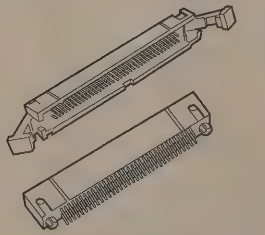
.050" × .100" Mini Wire Mount Sockets with Strain Relief



- ► Rugged Tripolarized Mating System
- ► Hill-n-Dale Design Provides Integral Strain Relief
- ► Insert Molded BeCu Contacts for Superior Strength and Reliability
- ► Flammability Rating: UL 94V-0
- ► Color: Gray
- ► Contact Material: Beryllium Copper
- ► Wire Accommodation: 30 AWG Solid
- ► UL File No.: E68080
- ► CSA File No.: LR 40971

Stock No.	Mfr.'s Type	No. of Contacts	EACH 1-24	EACH 25-49	EACH 50-99
617-3932	82020-6006	20	5.99	5.34	4.90
617-3934	82026-6006	26	7.03	6.27	5.75
617-3936	82036-6006	36	8.69	7.75	7.11
617-3938	82040-6006	40	9.38	8.37	7.67
617-3940	82050-6006	50	11.05	9.95	9.03
617-3942	82060-6006	60	12.71	11.33	10.39
617-3944	82068-6006	68	14.06	12.54	11.49
617-3946	82080-6006	80	16.10	14.35	13.16
617-3948	82100-6006	100	19.47	17.36	15.91

.050" × .100" Mini, Latch/Eject Headers Straight, Four Wall

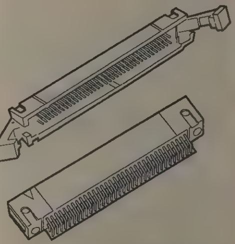


- ► 50 Mil × 100 Mil Doubles Board Density
- ► Latch and Eject for Rugged Applications
- ► Tripolarization to Mini Socket — High Walls to Protect Pins
- ► Two Row Design Saves Board Space
- ► Color: Gray
- ► Flammability Rating: UL 94V-0
- ► Contact Material: Copper Alloy
- ► UL File No.: E68080
- ► CSA File No.: LR 40971

.062" Solder Tail, Screw Mount

Stock No.	Mfr.'s Type	No. of Contacts	EACH 1-24	EACH 25-49	EACH 50-99
617-3950	81020-620200	20	5.85	5.21	4.78
617-3952	81026-620200	26	6.66	5.93	5.44
617-3954	81036-620200	36	8.45	7.53	6.90
617-3956	81040-620200	40	9.07	7.90	7.24
617-3958	81050-620200	50	10.46	9.33	8.55
617-3960	81060-620200	60	12.27	10.94	10.03
617-3962	81068-620200	68	13.56	12.09	11.09
617-3964	81080-620200	80	15.50	13.82	12.67
617-3966	81100-620200	100	18.70	16.67	15.28

.050" × .100" Mini, Latch/Eject Headers Right Angle, Four Wall



- ► 50 Mil × 100 Mil Doubles Board Density
- ► Latch and Eject for Rugged Applications
- ► Tripolarization to Mini Socket — High Walls to Protect Pins
- ► Two Row Design Saves Board Space
- ► Color: Gray
- ► Flammability Rating: UL 94V-0
- ► Contact Material: Copper Alloy
- ► UL File No.: E68080
- ► CSA File No.: LR 40971

.062" Solder Tail

Stock No.	Mfr.'s Type	No. of Contacts	EACH 1-24	EACH 25-49	EACH 50-99
617-3968	81020-520203	20	6.32	5.64	5.17
617-3970	81026-520203	26	7.32	6.53	5.98
617-3972	81036-520203	36	8.94	7.97	7.31
617-3974	81040-520203	40	9.55	8.51	7.80
617-3976	81050-520203	50	11.15	9.94	9.11
617-3978	81060-520203	60	12.75	11.37	10.42
617-3980	81068-520203	68	14.04	12.52	11.47
617-3982	81080-520203	80	15.97	14.24	13.06
617-3984	81100-520203	100	19.20	17.12	15.69

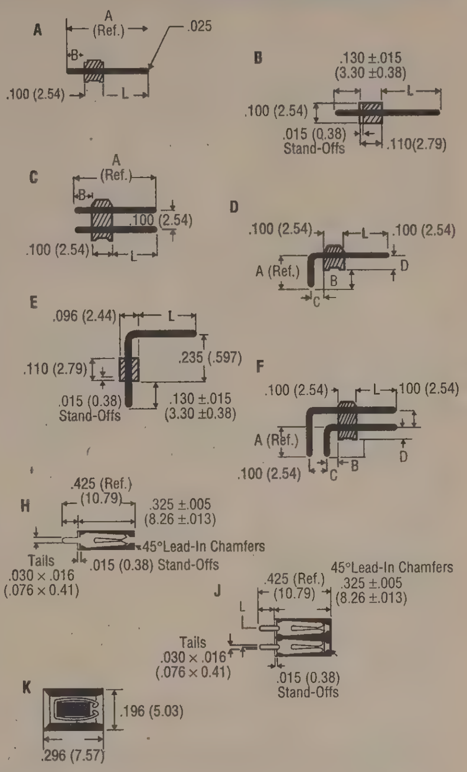
PC Board Connectors, Unprotected Headers, Socket Strips and Shunts

Finish Options

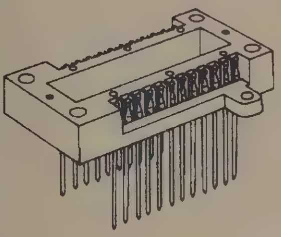
- ► 100-Microinch 90/10 Solder Plate on Posts and Tails
- ► 10-Microinch Selective Gold Over 50-Microinch Nickel on Contact Post; 100-Microinch 90/10 Solder Plate on Tail Portion

Description	Fig.	Dimensions					Solder Plated			Gold Plated		
		L In.	A (ref)	B In.	C In.	D In.	Stock No.	Mfr.'s Type	EACH	Stock No.	Mfr.'s Type	EACH
Straight Single-Row Male	A	.235	.445	.110	—	—	617-5001	929834-01-36	.77	617-5002	929647-01-36	1.25
Straight Single-Row Male	A	.235	.480	.145	—	—	—	—	—	617-5004	929647-09-36	1.64
Straight Single-Row Male	A	.235	.545	.210	—	—	617-5007	929834-02-36	1.29	617-5008	929647-02-36	2.14
Straight Single-Row Male	A	.235	.745	.410	—	—	617-5011	929834-03-36	1.35	617-5012	929647-03-36	2.56
Straight Single-Row Male	A	.235	.845	.510	—	—	617-5013	929834-04-36	1.39	617-5014	929647-04-36	2.79
Straight Single-Row Male	A	.235	.945	.610	—	—	617-5015	929834-05-36	1.39	—	—	—
Straight Single-Row Male	A	.235	1.245	.910	—	—	617-5019	929834-07-36	1.58	617-5020	929647-07-36	3.68
Straight Single-Row Male	A	.318	.528	.110	—	—	617-5021	929700-01-36	.77	617-5022	929705-01-36	1.50
Straight Single-Row Male	A	.318	1.128	.710	—	—	617-5027	929700-06-36	1.56	617-5028	929705-06-36	3.81
Straight Polarized Male	B	.295	.300	—	—	—	617-5155	929400-01-36	1.00	617-5157	929450-01-36	1.87
Straight Dual-Row Male*	C	.235	.445	.110	—	—	617-5030	929836-01-36	1.81	617-5031	929665-01-36	2.85
Straight Dual-Row Male*	C	.235	.480	.145	—	—	617-5032	929836-09-36	2.23	617-5033	929665-09-36	3.95
Straight Dual-Row Male*	C	.235	.545	.210	—	—	617-5036	929836-02-36	2.75	617-5037	929665-02-36	4.35
Straight Dual-Row Male*	C	.235	.645	.310	—	—	617-5038	929836-08-36	2.79	617-5039	929665-08-36	4.62
Straight Dual-Row Male*	C	.235	.745	.410	—	—	617-5040	929836-03-36	2.83	—	—	—
Straight Dual-Row Male*	C	.235	.845	.510	—	—	617-5042	929836-04-36	2.87	617-5043	929665-04-36	5.68
Straight Dual-Row Male*	C	.235	.945	.610	—	—	—	—	—	617-5045	929665-05-36	6.14
Straight Dual-Row Male*	C	.318	.528	.110	—	—	617-5050	929710-01-36	2.08	617-5051	929715-01-36	3.64
Straight Dual-Row Male*	C	.318	.828	.410	—	—	—	—	—	617-5055	929715-03-36	6.66
Straight Dual-Row Male*	C	.318	1.128	.710	—	—	—	—	—	617-5057	929715-06-36	7.70
Right-Angle Single-Row Male*	D	.235	.180	.105	.070	.075	—	—	—	617-5091	929648-01-36	1.66
Right-Angle Single-Row Male*	D	.318	.180	.105	.070	.075	617-5116	929730-01-36	.89	—	—	—
Right-Angle Polarized Male	E	.295	3.600	—	—	—	617-5158	929500-01-36	1.04	617-5159	929550-01-36	2.31
Right-Angle Double-Row Male*	F	.235	.180	.105	.070	.075	617-5125	929838-01-36	2.04	617-5126	929667-01-36	3.77
Right-Angle Double-Row Male*	F	.235	.215	.140	.070	.075	617-5127	929838-04-36	2.43	617-5128	929667-04-36	6.01
Right-Angle Double-Row Male*	F	.235	.480	.405	.070	.075	—	—	—	617-5132	929667-02-36	7.78
Right-Angle Double-Row Male*	F	.318	.180	.105	.070	.075	—	—	—	617-5136	929745-01-36	4.47
Straight Single-Row Female	H	.125	—	—	—	—	617-5161	929974-01-36	1.10	617-5162	929850-01-36	2.00
Straight Dual-Row Female*	J	.125	—	—	—	—	617-5164	929975-01-36	1.95	617-5165	929852-01-36-10	3.64
Shunts Shorting Jumpers	K	—	—	—	—	—	617-5167	929950-00	.10	617-5168	929955-06‡	.15
Shunts Shorting Jumpers	K	—	—	—	—	—	—	—	—	617-5169	929957-08‡	.19

*(.1" × .1" MATRIX). ‡929955-06 = 10 μin. gold, 929957-08 = 30 μin. gold.



ZIP DIP Sockets



Designed for applications where field replacement or programming of DIPs is required. The patented ZIP (zero insertion pressure) feature uses screwdriver rotation of a cam for security against vibration or accidental unloading. Leads are on .100" centers.

Wire-Wrap

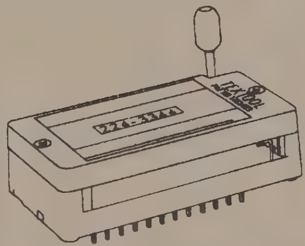
Stock No.	Mfr.'s Type	No. of Leads	Plating	EACH		
				1-4	5-9	10-24
617-6300	2-14-3592-00-06-02	14	Gold	10.51	9.70	9.01
617-6310	2-14-3592-00-06-05	14	Tin	9.18	8.47	7.87
617-6320	2-16-3593-00-06-02	16	Gold	11.43	10.55	9.79
617-6330	2-16-3593-00-06-05	16	Tin	9.92	9.15	8.50
617-6340	2-18-3594-00-06-02	18	Gold	12.35	11.39	10.58
617-6350	2-18-3594-00-06-05	18	Tin	10.63	9.81	9.11
617-6360	2-20-3595-00-06-02	20	Gold	12.99	11.99	11.13
617-6370	2-20-3595-00-06-05	20	Tin	11.14	10.28	9.54
617-6380	2-24-3597-00-06-02	24	Gold	14.79	13.65	12.68
617-6390	2-24-3597-00-06-05	24	Tin	12.82	11.83	10.99
617-6400	2-28-3598-00-06-02	28	Gold	16.94	15.63	14.51
617-6410	2-28-3598-00-06-05	28	Tin	14.28	13.19	12.24
617-6420	2-40-3599-00-06-02	40	Gold	22.44	20.71	19.23
617-6430	2-40-3599-00-06-05	40	Tin	18.65	17.21	15.98
617-6440	2-64-5119-00-06-02	64	Gold	33.46	30.88	28.68
617-6450	2-64-5119-00-06-05	64	Tin	27.37	25.27	23.46

Solder Tail

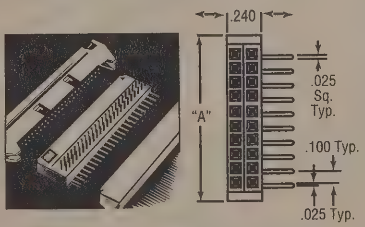
Stock No.	Mfr.'s Type	No. of Leads	Plating	1-4	5-9	10-24
617-6305	2-14-3592-06-06-02	14	Gold	9.49	8.76	8.13
617-6315	2-14-3592-06-06-05	14	Tin	8.56	7.89	7.33
617-6325	2-16-3593-06-06-02	16	Gold	10.27	9.48	8.80
617-6335	2-16-3593-06-06-05	16	Tin	9.18	8.47	7.87
617-6345	2-18-3594-06-06-02	18	Gold	11.04	10.18	9.46
617-6355	2-18-3594-06-06-05	18	Tin	9.83	9.07	8.42
617-6365	2-20-3595-06-06-02	20	Gold	11.58	10.69	9.92
617-6375	2-20-3595-06-06-05	20	Tin	10.22	9.43	8.76
617-6385	2-24-3597-06-06-02	24	Gold	13.11	12.10	11.23
617-6395	2-24-3597-06-06-05	24	Tin	11.48	10.59	9.84
617-6405	2-28-3598-06-06-02	28	Gold	14.91	13.76	12.78
617-6415	2-28-3598-06-06-05	28	Tin	13.01	12.00	11.15
617-6425	2-40-3599-06-06-02	40	Gold	19.55	18.05	16.76
617-6435	2-40-3599-06-06-05	40	Tin	16.83	15.54	14.43
617-6445	2-64-5119-06-06-02	64	Gold	28.83	26.61	24.71
617-6455	2-64-5119-06-06-05	64	Tin	24.48	22.60	20.98

Programming ZIP DIP Sockets

Designed for applications where field replacement or programming of DIPs is required. The patented ZIP (zero insertion pressure) feature uses screwdriver rotation of a cam for security against vibration or accidental unloading. Leads are .100" centers.



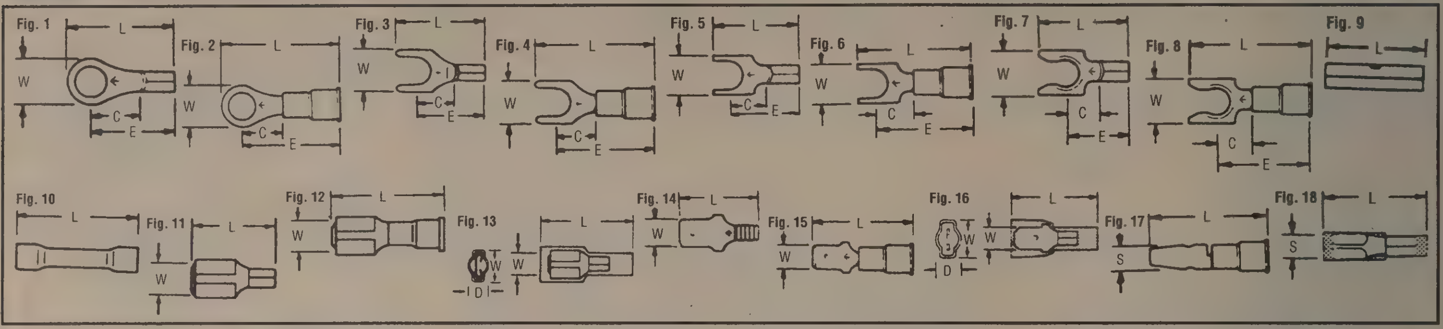
Stock No.	Mfr.'s Type	No. of Leads	Plating	EACH		
				1-4	5-9	10-24
617-6200	2-14-3339-00-06-02	14	Gold	9.58	8.84	8.22
617-6205	2-14-3339-00-06-05	14	Tin	8.57	7.91	7.35
617-6210	2-16-3340-00-06-02	16	Gold	10.41	9.61	8.92
617-6215	2-16-3340-00-06-05	16	Tin	9.25	8.54	7.93
617-6220	2-18-3341-00-06-02	18	Gold	11.24	10.37	9.63
617-6225	2-18-3341-00-06-05	18	Tin	9.93	9.17	8.51
617-6230	2-20-3342-00-06-02	20	Gold	12.06	11.13	10.33
617-6235	2-20-3342-00-06-05	20	Tin	10.61	9.79	9.09
617-6240	2-24-3344-00-06-02	24	Gold	13.67	12.62	11.72
617-6245	2-24-3344-00-06-05	24	Tin	11.99	11.06	10.27
617-6250	2-28-3345-00-06-02	28	Gold	15.37	14.19	13.18
617-6255	2-28-3345-00-06-05	28	Tin	13.35	12.32	11.44
617-6260	2-40-3346-00-06-02	40	Gold	20.34	18.77	17.43
617-6265	2-40-3346-00-06-05	40	Tin	17.45	16.10	14.95
617-6270	2-64-4493-00-06-02	64	Gold	35.21	32.50	30.18
617-6275	2-64-4493-00-06-05	64	Tin	30.57	28.21	26.20



Intra Connectors

The Intra-Connector allows access to previously inaccessible lines. In use, the connector is interjected between mating system connectors to provide external pin contacts that can be probed individually or connected to another cable assembly; pins also can be used to facilitate daisy chaining from a single connector end.

Stock No.	Mfr.'s Type	No. of Contacts	Dim. "A"	EACH		
				1-9	10-24	25-49
617-7920	922576-20	20	1.160	10.33	9.73	9.04
617-7926	922576-26	26	1.460	11.92	11.22	10.42
617-7934	922576-34	34	1.860	13.87	13.06	12.13
617-7940	922576-40	40	2.160	15.46	14.56	13.52
617-7950	922576-50	50	2.660	16.90	15.95	14.81
617-7960	922576-60	60	3.160	20.10	18.93	17.58



Highland™ Terminals and Splices. Provide a variety of design features assuring consistently effective, reliable performance, and easy installation. Highland™ terminals and splices are packaged in economical quantities of 25 and 50 and feature convenient zipper type reclosure bags allowing for multiple closings and reopenings.

Non-Insulated Ring Tongue Terminals — Fig. 1

Stock No.	Mfr.'s Type	AWG	Stud Size	W	C	L	E	Package of	PER PKG.	
									1-4	5-9
617-1400	R18-4C	22-18	4	.25	.22	.60	.47	100	**5.83**	**4.80**
617-1401	R18-6L	22-18	6	.25	.22	.60	.47	50	**3.68**	**2.97**
617-1402	R18-8L	22-18	8	.31	.33	.74	.58	50	**3.68**	**2.97**
617-1403	R18-10L	22-18	10	.31	.33	.74	.58	50	**3.68**	**2.97**
617-1404	R14-4C	16-14	4	.25	.22	.60	.47	100	**5.83**	**4.80**
617-1405	R14-6L	16-14	6	.25	.22	.60	.47	50	**3.68**	**2.97**
617-1406	R14-8L	16-14	8	.31	.33	.74	.58	50	**3.68**	**2.97**
617-1407	R14-10L	16-14	10	.33	.29	.70	.54	50	**3.68**	**2.97**
617-1408	R10-6L	12-10	6	.38	.29	.73	.54	50	**3.68**	**2.97**
617-1409	R10-8Q	12-10	8	.38	.29	.73	.54	25	**2.48**	**2.04**
617-1410	R10-10Q	12-10	10	.38	.29	.73	.54	25	**2.48**	**2.04**
617-1411	R10-14Q	12-10	1/4"	.53	.44	.96	.69	25	**2.48**	**2.04**

Vinyl Insulated Ring Tongue Terminals — Fig. 2

Stock No.	Mfr.'s Type	AWG	Stud Size	W	C	L	E	Package of	PER PKG.	
									1-4	5-9
617-1412	RV18-6L	22-18	6	.25	.22	.80	.67	50	**6.96**	**5.73**
617-1413	RV18-8L	22-18	8	.31	.33	.93	.78	50	**6.96**	**5.73**
617-1414	RV18-10L	22-18	10	.31	.33	.93	.78	50	**6.96**	**5.73**
617-1415	RV18-14L	22-18	1/4"	.47	.40	1.08	.85	50	**8.96**	**7.38**
617-1416	RV18-516L	22-18	5/16"	.47	.40	1.08	.85	50	**8.96**	**7.38**
617-1417	RV14-6L	16-14	6	.25	.22	.80	.67	50	**6.96**	**5.73**
617-1418	RV14-8L	16-14	8	.25	.22	.80	.67	50	**6.96**	**5.73**
617-1419	RV14-10L	16-14	10	.33	.29	.90	.74	50	**6.96**	**5.73**
617-1420	RV14-14L	16-14	1/4"	.47	.40	1.08	.85	50	**8.96**	**7.38**
617-1421	RV14-516L	16-14	5/16"	.47	.40	1.08	.85	50	**8.96**	**7.38**
617-1422	RV10-8Q	12-10	8	.38	.29	1.03	.84	25	**4.94**	**4.00**
617-1423	RV10-10Q	12-10	10	.38	.29	1.03	.84	25	**4.94**	**4.00**
617-1424	RV10-14Q	12-10	1/4"	.53	.44	1.26	.99	25	**5.83**	**4.80**
617-1425	RV10-38Q	12-10	3/8"	.54	.44	1.26	.99	25	**5.83**	**4.80**
617-1426	RV10-516Q	12-10	15/16"	.53	.44	1.26	.99	25	**5.83**	**4.80**

Non-Insulated Fork Terminals — Fig. 3

Stock No.	Mfr.'s Type	AWG	Stud Size	W	C	L	E	Package of	PER PKG.	
									1-4	5-9
617-1427	F14-6L	16-14	6	.34	29	.70	54	50	**3.68**	**2.97**
617-1428	F14-8L	16-14	8	.34	29	.70	54	50	**3.68**	**2.97**
617-1429	F14-10L	16-14	10	.34	29	.70	54	50	**3.68**	**2.97**
617-1430	F10-8Q	12-10	8	.38	29	.73	54	25	**2.55**	**2.06**
617-1431	F10-10Q	12-10	10	.38	29	.73	54	25	**2.55**	**2.06**

Vinyl Insulated Fork Terminals — Fig. 4

Stock No.	Mfr.'s Type	AWG	Stud Size	W	C	L	E	Package of	PER PKG.	
									1-4	5-9
617-1432	FV14-6L	16-14	6	.34	.29	.90	.74	50	**6.96**	**5.73**
617-1433	FV14-8L	16-14	8	.34	.29	.90	.74	50	**6.96**	**5.73**
617-1434	FV14-10L	16-14	10	.34	.29	.90	.74	50	**6.96**	**5.73**
617-1435	FV10-6Q	12-10	6	.38	.29	1.03	.84	25	**4.80**	**3.96**
617-1436	FV10-8Q	12-10	8	.38	.29	1.03	.84	25	**4.80**	**3.96**
617-1437	FV10-10Q	12-10	10	.38	.29	1.03	.84	25	**4.80**	**3.96**

Non-Insulated Block Fork Terminals — Fig. 5

Stock No.	Mfr.'s Type	AWG	Stud Size	W	C	L	E	Package of	PER PKG.	
									1-4	5-9
617-1438	BF18-6L	22-18	6	.25	.25	.65	.50	50	**3.57**	**2.94**
617-1439	BF18-8L	22-18	8	.30	.25	.65	.50	50	**3.57**	**2.94**
617-1440	BF18-10C	22-18	10	.30	.25	.65	.50	100	**5.83**	**4.80**
617-1441	BF14-6L	16-14	6	.25	.25	.65	.50	50	**3.57**	**2.94**
617-1442	BF14-8L	16-14	8	.30	.25	.65	.50	50	**3.57**	**2.94**
617-1443	BF14-10L	16-14	10	.30	.25	.65	.50	50	**3.57**	**2.94**
617-1444	BF10-6L	12-10	6	.32	.29	.73	.54	50	**3.57**	**2.94**
617-1445	BF10-8Q	12-10	8	.32	.29	.73	.54	25	**2.48**	**2.04**
617-1446	BF10-10Q	12-10	10	.32	.29	.73	.54	25	**2.48**	**2.04**

Vinyl Insulated Block Fork Terminals — Fig. 6

Stock No.	Mfr.'s Type	AWG	Stud Size	W	C	L	E	Package of	PER PKG.	
									1-4	5-9
617-1447	BFV18-6L	22-18	6	.25	.25	.85	.70	50	**6.96**	**5.73**
617-1448	BFV18-8L	22-18	8	.30	.25	.85	.70	50	**6.96**	**5.73**
617-1449	BFV18-10C	22-18	10	.30	.25	.85	.70	100	**12.30**	**10.13**
617-1450	BFV14-6L	16-14	6	.25	.25	.85	.70	50	**6.96**	**5.73**
617-1451	BFV14-8L	16-14	8	.30	.25	.85	.70	50	**6.96**	**5.73**
617-1452	BFV14-10L	16-14	10	.30	.25	.85	.70	50	**6.96**	**5.73**
617-1453	BFV10-6L	12-10	6	.32	.29	1.03	.84	50	**8.52**	**7.02**
617-1454	BFV10-8Q	12-10	8	.32	.29	1.03	.84	25	**4.80**	**3.96**
617-1455	BFV10-10Q	12-10	10	.32	.29	1.03	.84	25	**4.80**	**3.96**

Non-Insulated Locking Fork Terminals — Fig. 7

Stock No.	Mfr.'s Type	AWG	Stud Size	W	C	L	E	Package of	PER PKG.	
									1-4	5-9
617-1456	LF18-4L	22-18	4	.25	.25	.68	.50	50	**3.57**	**2.94**
617-1457	LF18-6L	22-18	6	.25	.25	.68	.50	50	**3.57**	**2.94**
617-1458	LF18-8L	22-18	8	.30	.25	.68	.50	50	**3.57**	**2.94**
617-1459	LF14-6L	16-14	6	.25	.25	.68	.50	50	**3.57**	**2.94**
617-1460	LF14-8L	16-14	8	.30	.25	.68	.50	50	**3.57**	**2.94**
617-1461	LF14-10L	16-14	10	.32	.25	.68	.50	50	**3.57**	**2.94**
617-1462	LF10-6Q	12-10	6	.28	.28	.73	.50	25	**2.48**	**2.04**
617-1463	LF10-8Q	12-10	8	.32	.28	.73	.54	25	**2.48**	**2.04**
617-1464	LF10-10Q	12-10	10	.32	.28	.73	.54	25	**2.48**	**2.04**
617-1465	LF10-14Q	12-10	1/4"	.43	.44	.94	.54	25	**2.48**	**2.04**

Vinyl Insulated Locking Fork Terminals — Fig. 8

Stock No.	Mfr.'s Type	AWG	Stud Size	W	C	L	E	Package of	PER PKG.	
									1-4	5-9
617-1466	LFV18-4L	22-18	4	.25	.25	.88	.70	50	**6.96**	**5.73**
617-1467	LFV18-6L	22-18	6	.25	.25	.88	.70	50	**6.96**	**5.73**
617-1468	LFV18-8L	22-18	8	.30	.25	.88	.70	50	**6.96**	**5.73**
617-1469	LFV14-6L	16-14	6	.25	.25	.88	.70	50	**6.96**	**5.73**
617-1470	LFV14-8L	16-14	8	.30	.25	.88	.70	50	**6.96**	**5.73**
617-1471	LFV14-10L	16-14	10	.32	.25	.88	.70	50	**6.96**	**5.73**
617-1472	LFV10-8Q	12-10	8	.32	.28	1.03	.83	25	**4.80**	**3.96**
617-1473	LFV10-10Q	12-10	10	.32	.28	1.03	.83	25	**4.80**	**3.96**
617-1474	LFV10-14Q	12-10	1/4"	.43	.44	1.24	.83	25	**4.80**	**3.96**

Non-Insulated Butt Splices — Fig. 9

Stock No.	Mfr.'s Type	AWG	Stud Size	W	C	L	Package of	PER PKG.	
								1-4	5-9
617-1475	BS18L	22-18	—	—	—	.56	50	**3.57**	**2.94**
617-1476	BS14L	16-14	—	—	—	.56	50	**3.57**	**2.94**
617-1477	BS10Q	12-10	—	—	—	.56	25	**2.48**	**2.04**

Vinyl Insulated Butt Splices — Fig. 10

Stock No.	Mfr.'s Type	AWG	Stud Size	W	C	L	Package of	PER PKG.	
								1-4	5-9
617-1478	BSV18L	22-18	—	—	—	1.02	50	**6.96**	**5.73**
617-1479	BSV14L	16-14	—	—	—	1.02	50	**6.96**	**5.73**
617-1480	BSV10Q	12-10	—	—	—	1.05	25	**4.80**	**3.96**

Non-Insulated Female Disconnects — Fig. 11

Stock No.	Mfr.'s Type	AWG	Mates With Male Tab	L	W	D	Package of	PER PKG.	
			Width (W) × Thickness					1-4	5-9
617-1481	FD18-187L	22-18	.187 × .020	.58	—	—	50	**3.57**	**2.94**
617-1482	FD18-250L	22-18	.250 × .032	.66	—	—	50	**3.57**	**2.94**
617-1483	FD14-187L	16-14	.187 × .020	.58	—	—	50	**3.57**	**2.94**
617-1484	FD14-250L	16-14	.250 × .032	.66	—	—	50	**3.57**	**2.94**
617-1485	FD10-250Q	12-10	.250 × .032	.66	—	—	25	**2.48**	**2.04**

Vinyl Insulated Female Disconnects — Fig. 12

Stock No.	Mfr.'s Type	AWG	Mates With Male Tab	L	W	D	Package of	PER PKG.	
			Width (W) × Thickness					1-4	5-9
617-1486	FDV18-187L	22-18	.187 × .020	.78	—	—	50	**6.96**	**5.73**
617-1487	FDV18-250L	22-18	.250 × .032	.87	—	—	50	**6.96**	**5.73**
617-1488	FDV14-187L	16-14	.187 × .020	.78	—	—	50	**6.96**	**5.73**
617-1489	FDV14-250L	16-14	.250 × .032	.87	—	—	50	**6.96**	**5.73**
617-1490	FDV10-250Q	12-10	.250 × .032	.96	—	—	25	**4.80**	**3.96**

Fully Insulated Nylon Female Disconnects — Fig. 13

Stock No.	Mfr.'s Type	AWG	Mates With Male Tab	L	W	D	Package of	PER PKG.	
			Width (W) × Thickness					1-4	5-9
617-1491	FDI18-187L	22-18	.187 × .020	.81	.30	.23	50	**10.09**	**8.31**
617-1492	FDI18-250L	22-18	.250 × .032	.91	.37	.23	50	**10.09**	**8.31**
617-1493	FDI14-187L	16-14	.187 × .020	.81	.30	.23	50	**10.09**	**8.31**
617-1494	FDI14-250L	16-14	.250 × .032	.91	.37	.23	50	**10.09**	**8.31**
617-1495	FDI10-250Q	12-10	.250 × .032	.99	.39	.32	25	**6.96**	**5.73**

Non-Insulated Male Tabs — Fig. 14

Stock No.	Mfr.'s Type	AWG	Mates With Male Tab	L	W	D	Package of	PER PKG.	
			Width (W) × Thickness					1-4	5-9
617-1496	MT18-187L	22-18	.187 × .020	.64	—	—	50	**3.57**	**2.94**
617-1497	MT18-250L	22-18	.250 × .032	.73	—	—	50	**3.57**	**2.94**
617-1498	MT14-187L	16-14	.187 × .020	.64	—	—	50	**3.57**	**2.94**
617-1499	MT14-250L	16-14	.250 × .032	.73	—	—	50	**3.57**	**2.94**
617-1600	MT10-250Q	12-10	.250 × .032	.75	—	—	25	**2.48**	**2.04**

Vinyl Insulated Male Tabs — Fig. 15

Stock No.	Mfr.'s Type	AWG	Mates With Male Tab	L	W	D	Package of	PER PKG.	
			Width (W) x Thickness					1-4	5-9
617-1601	MTV18-187L	22-18	.187 × .020	.85	—	—	50	**6.96**	5.73
617-1602	MTV18-250L	22-18	.250 × .032	.93	—	—	50	**6.96**	5.73
617-1603	MTV14-187L	16-14	.187 × .020	.85	—	—	50	**6.96**	5.73
617-1604	MTV14-250L	16-14	.250 × .032	.93	—	—	50	**6.96**	5.73
617-1605	MTV10-250Q	12-10	.250 × .032	1.05	—	—	25	**4.80**	3.96

Fully Insulated Nylon Male Tabs — Fig. 16

Stock No.	Mfr.'s Type	AWG	Mates With Male Tab	L	W	D	Package of	PER PKG.	
			Width (W) × Thickness					1-4	5-9
617-1606	MTI18-187L	22-18	.187 × .020	.87	.37	.30	50	**10.09**	**8.31**
617-1607	MTI18-250L	22-18	.250 × .032	.98	.44	.30	50	**10.09**	**8.31**
617-1608	MTI14-187L	16-14	.187 × .020	.87	.37	.30	50	**10.09**	**8.31**
617-1609	MTI14-250L	16-14	.250 × .032	.98	.44	.30	50	**10.09**	**8.31**
617-1610	MTI10-250Q	12-10	.250 × .032	1.05	.47	.39	25	**6.96**	**5.73**

Vinyl Insulated Snap Plug — Fig. 17

Stock No.	Mfr.'s Type	AWG	Snap Dia.	W	C	L	Package of	PER PKG.	
								1-4	5-9
617-1611	SPV18-156L	22-18	.156	—	—	.85	50	**4.80**	**3.96**
617-1612	SPV14-156L	16-14	.156	—	—	.85	50	**4.80**	**3.96**

Vinyl Insulated Nylon Snap Receptacle — Fig. 18

Stock No.	Mfr.'s Type	AWG	Snap Dia.	W	C	L	Package of	PER PKG.	
								1-4	5-9
617-1613	SRI18-156L	22-18	.156	—	—	1.02	50	**5.83**	**4.80**
617-1614	SRI14-156L	16-14	.156	—	—	1.02	50	**5.83**	**4.80**

Scotchlok™ Insulated Terminals

Feature funnel entry construction to prevent strand hang up and crimp ridge for proper toll location. All terminal barrels feature "U" grooves for maximum conductor retention.

A

Ring Tongue

C

Locking Fork

E

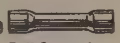
Fully Insulated Female Disconnect

G

Fully Insulated Male Disconnect

B

Block Fork

D

Butt Connector

F

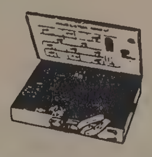
Male Disconnect

H

Stock No.	Mfr.'s Type	Fig.	Wire Size	Stud Size	Description	PER PKG.
617-2100	MV18-2R/SK	A	22-18	2	Vinyl Insulated, Brazed Seam — PK./1000	**132.98**
617-2105	MV18-4R/SX	A	22-18	4	Vinyl Insulated, Brazed Seam — PK./100	**29.72**
617-2110	MV18-6R/SX	A	22-18	6	Vinyl Insulated, Brazed Seam — PK./100	**29.72**
617-2115	MV18-8R/LX	A	22-18	8	Vinyl Insulated, Brazed Seam — PK./100	**30.00**
617-2120	MV18-10R/LX	A	22-18	10	Vinyl Insulated, Brazed Seam — PK./100	**30.00**
617-2135	MV14-4R/SX	A	16-14	4	Vinyl Insulated, Brazed Seam — PK./100	**30.00**
617-2140	MV14-6R/SX	A	16-14	6	Vinyl Insulated, Brazed Seam — PK./100	**30.00**
617-2150	MV14-8R/LX	A	16-14	8	Vinyl Insulated, Brazed Seam — PK./100	**30.00**
617-2160	MV14-10R/LX	A	16-14	10	Vinyl Insulated, Brazed Seam — PK./100	**30.00**
617-2165	MV14-14R/SX	A	16-14	1/4	Vinyl Insulated, Brazed Seam — PK./100	**36.52**
617-2185	MV10-6RX	A	12-10	6	Vinyl Insulated, Brazed Seam — PK./50	**19.27**
617-2190	MV10-8RX	A	12-10	8	Vinyl Insulated, Brazed Seam — PK./50	**19.45**
617-2195	MV10-10RX	A	12-10	10	Vinyl Insulated, Brazed Seam — PK./50	**19.45**
617-2200	MV10-14R/SX	A	12-10	1/4	Vinyl Insulated, Brazed Seam — PK./50	**23.03**
617-2205	MV10-516R/SX	A	12-10	5/16	Vinyl Insulated, Brazed Seam — PK./50	**22.82**
617-2225	MV18-6FB/SK	B	22-18	6	Vinyl Insulated, Brazed Seam — PK./1000	**150.00**
617-2230	MV18-6FBX	B	22-18	6	Vinyl Insulated, Brazed Seam — PK./100	**30.00**
617-2235	MV18-8FBX	B	22-18	8	Vinyl Insulated, Brazed Seam — PK./100	**30.00**
617-2240	MV18-10FBX	B	22-18	10	Vinyl Insulated, Brazed Seam — PK./100	**29.72**
617-2245	MV14-4FB/SK	B	16-14	4	Vinyl Insulated, Brazed Seam — PK./1000	**132.98**
617-2250	MV14-6FB/SK	B	16-14	6	Vinyl Insulated, Brazed Seam — PK./1000	**132.98**
617-2255	MV14-6FBX	B	16-14	6	Vinyl Insulated, Brazed Seam — PK./100	**30.00**
617-2260	MV14-8FBX	B	16-14	8	Vinyl Insulated, Brazed Seam — PK./100	**30.00**
617-2265	MV14-10FBX	B	16-14	10	Vinyl Insulated, Brazed Seam — PK./100	**30.00**
617-2270	MV10-6FBX	B	12-10	6	Vinyl Insulated, Brazed Seam — PK./50	**19.27**
617-2275	MV10-8FBX	B	12-10	8	Vinyl Insulated, Brazed Seam — PK./50	**19.45**

Stock No.	Mfr.'s Type	Fig.	Wire Size	Stud Size	Description	PER PKG.
617-2280	MV10-10FBX	B	12-10	10	Vinyl Insulated, Brazed Seam — PK./50	**19.45**
617-2290	MVU18-6FLK	C	22-18	6	Vinyl Insulated, Butted Seam — PK./1000	**122.85**
617-2291	MV18-6FLX	C	22-18	6	Vinyl Insulated, Brazed Seam — PK./100	**30.54**
617-2295	MVU18-8FLK	C	22-18	8	Vinyl Insulated, Butted Seam — PK./1000	**122.85**
617-2296	MV18-8FLX	C	22-18	8	Vinyl Insulated, Brazed Seam — PK./100	**30.54**
617-2301	MV18-10FLX	C	22-18	10	Vinyl Insulated, Brazed Seam — PK./100	**30.54**
617-2310	MVU14-6FLK	C	16-14	6	Vinyl Insulated, Butted Seam — PK./1000	**122.85**
617-2311	MV14-6FLX	C	16-14	6	Vinyl Insulated, Brazed Seam — PK./100	**30.54**
617-2315	MVU14-8FLK	C	16-14	8	Vinyl Insulated, Butted Seam — PK./1000	**122.85**
617-2316	MV14-8FLX	C	16-14	8	Vinyl Insulated, Brazed Seam — PK./100	**30.54**
617-2320	MVU14-10FLK	C	16-14	10	Vinyl Insulated, Butted Seam — PK./1000	**122.85**
617-2321	MV14-10FLX	C	16-14	10	Vinyl Insulated, Brazed Seam — PK./100	**30.54**
617-2336	MV10-8FLX	C	12-10	8	Vinyl Insulated, Brazed Seam — PK./50	**20.76**
617-2341	MV10-10FLX	C	12-10	10	Vinyl Insulated, Brazed Seam — PK./50	**20.76**
617-2346	MV10-14FLX	C	12-10	1/4	Vinyl Insulated, Brazed Seam — PK./50	**24.83**
617-2350	MVU18BCK	D	22-18	—	Vinyl Insulated, Butted Seam — PK./1000	**120.80**
617-2351	MV18BCX	D	22-18	—	Vinyl Insulated, Seamless — PK./100	**31.09**
617-2355	MVU14BCK	D	16-14	—	Vinyl Insulated, Butted Seam — PK./1000	**120.80**
617-2356	MV14BCX	D	16-14	—	Vinyl Insulated, Seamless — PK./100	**31.09**
617-2361	MV10BCX	D	12-10	—	Vinyl Insulated, Seamless — PK./50	**22.59**
617-2362	MNG18BCMX	D	22-18	—	Nylon Insulated, with Insulation Grip — PK./25	**17.31**
617-2363	MNG14BCMX	D	16-14	—	Nylon Insulated, with Insulation Grip — PK./25	**17.31**
617-2364	MNG10BCMX	D	12-10	—	Nylon Insulated, with Insulation Grip — PK./25	**20.47**
617-2365	MNU18-187DFIX	E	22-18	—	Nylon,.187" Width, Butted Seam — PK./100	**35.80**
617-2371	MNU18-250DFIK	E	22-18	—	Nylon,.250" Width, Butted Seam — PK./1000	**173.02**
617-2375	MNU14-187DFIX	E	16-14	—	Nylon,.187" Width, Butted Seam — PK./100	**35.80**
617-2381	MNU14-250DFIK	E	16-14	—	Nylon,.250" Width, Butted Seam — PK./1000	**173.02**
617-2387	MNI10-250DFDK	E	12-10	—	Nylon,.250" Width, Butted Seam — PK./500	**102.08**
617-2396	MNG18-250DMX	F	22-18	—	Nylon,.250" Width, with Insul. Grip — PK./100	**49.00**
617-2401	MNG14-187DMX	F	16-14	—	Nylon,.187" Width, with Insul. Grip — PK./100	**49.00**
617-2406	MNG14-250DMX	F	16-14	—	Nylon,.250" Width, with Insul. Grip — PK./100	**49.41**
617-2411	MNG10-250DMX	F	12-10	—	Nylon,.250" Width, with Insul. Grip — PK./50	**28.05**
617-2415	MNG18-187DMIX	G	22-18	—	Nylon,.187" Width, Fully Insul. — PK./100	**52.43**
617-2420	MNG18-250DMIX	G	22-18	—	Nylon,.250" Width, Fully Insul. — PK./100	**52.43**
617-2425	MNG14-187DMIX	G	16-14	—	Nylon,.187" Width, Fully Insul. — PK./100	**52.43**
617-2430	MNG14-250DMIX	G	16-14	—	Nylon,.250" Width, Fully Insul. — PK./100	**52.43**
617-2436	MNG10-250DMIX	G	12-10	—	Nylon,.250" Width, Fully Insul. — PK./50	**30.75**
617-2466	MN14CEC/STK	H	22-14	—	Nylon, Steel Insert — PK./1000	**86.09**
617-2471	MN10CEC/STK	H	18-10	—	Nylon, Steel Insert — PK./1000	**114.87**

Insulated Terminal Kit



Kit contains an assortment of 3M's most popular terminals for wire sizes 12-22 AWG. **Features:** 650 assorted terminals (14 sizes), 200 cable ties (100 Ea., 2 sizes) 1 wire marker dispenser, 1 crimp tool, 1 reusable metal box, and reordering card.

617-2300. 923000-I. (STK-1) .... **EACH 120.77**

Crimping Tools

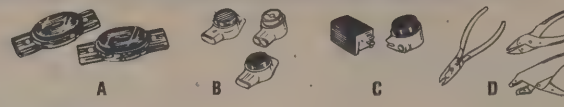
TH-440 Scissors

TH-450 Scissors

TR-490 Ratchet

617-2450. TH-440. For 22-10 AWG .... **EACH 20.11**
617-2455. TH-450. For 26-6 AWG .... **EACH 35.04**
617-2460. TR-490 .... **EACH 164.69**

Scotchlok® IDC Communications Connectors



For Inline Splicing — Fig. A

Stock No.	Mfr.'s Type	Color	Description	Wire Range AWG*	PER PKG./100	
					1-9	10-24
617-4750	U1B	Blue	Full Pair	16-19	113.66	106.08
617-4755	U1R	Red	Full Pair	19-24	118.03	110.16

For Pigtail Splicing/Butt Splicing — Fig. B

Stock No.	Mfr.'s Type	Color	Description	Wire Range AWG*	1-9	10-24
617-4765	UAL	Gray	2-3 Wire	17-20 Aluminum 19-24 Copper	16.00	14.12
617-4770	UR	Red	2-3 Wire	19-26	13.00	11.90
617-4775	UY	Yellow	2-3 Wire	22-26	11.00	10.20

For Bridging/Top Splicing — Fig. C

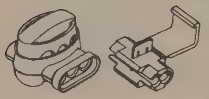
Stock No.	Mfr.'s Type	Color	Description	Wire Range AWG*	1-9	10-24
617-4780	UB	Blue	—	22-26	15.00	13.60
617-4785	UG	Green	—	19-26	15.00	13.60

*Solid.

Crimping Tools — Fig. D

Stock No.	Mfr.'s Type	Description	EACH
617-4790	E-9BM	Heavy duty for all types	58.77
617-4795	E-9E	For UAL, UR, UY, UB	23.06
617-4800	E-9Y	With wire cutter and insulated handle for UB, UG, UR, UY	24.25

IDC Electrical Connectors

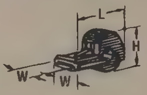


No strip, no twist — just squeeze. These IDC connectors have productivity built right in, reducing wire waste on the job. No special tools are needed. Make quick work of tap, inline and pigtail connections. Connectors are constructed of flame retardant materials. For use on copper conductors only.

Stock No.	Mfr.'s Type	Description	Color	Wire AWG	No. of Pieces Per Pack	PER PACK	
						1-9	10-24
617-4761	314	2 and 3 wire pigtail with moisture sealant	Blue	22-14	50	23.79	20.12
617-4762	314U	2 and 3 wire pigtail without moisture sealant	Blue	22-14	50	18.07	15.29
617-4515	557	Pigtail	Red	22-16	100	17.55	14.85
617-4510	558	Tap	Red	22-16	100	18.31	15.49
617-4500	560	Tap and parallel	Blue	18-14	100	11.34	9.89
617-4758	567	Tap and run	Brown	18-14 (Tap) 12-10 (Run)	100	27.50	23.27
617-4756	804	Tap with moisture sealant	Blue	18-16	250	51.00	47.36
617-4505	905	Pigtail, tap and run	Red	22-18 (Tap) 12-10 (Run)	50	6.24	5.68

Female T-Tap Disconnect

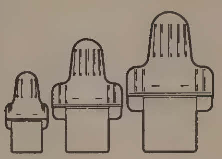
- **Nylon Insulated**
- **Self Stripping**



T-Tap Disconnects assure a fully insulated connection when used with a fully insulated .250" male disconnect terminal.

Stock No.	Mfr.'s Type	Wire Size	Mates with Male Tab (With Thickness)	Dimensions			PER PKG./50	
				L	H	W	1-9	10-24
617-2437	951	22-18	.250 × .032	0.73	0.44	0.150	10.82	8.90
617-2440	952	18-14	.250 × .032	0.73	0.44	0.150	10.82	8.90
617-2445	953	12	.250 × .032	0.73	0.44	0.150	12.93	10.56

Scotchlok™ 2 Wire Connectors



- **Rounded Wings Make Twisting Easier**
- **Unique Design Incorporates a Long, Flexible Skirt and Rigid Top; Flexible Skirt Covers Over-Strips and Protects Conductors, and Yet Conforms to Take Up Less Room In a Box**
- **Unique Spring Grip Expands to Accept a Wide Range of Wire Sizes**
- **Rated to 600 Volts**

3M Scotchlok™ 2 wire connectors make wiring faster and easier.

Stock No.	Mfr.'s Type	Description	Wire Range Capabilities*	Pack Qty.	PER PACK	
					1-9	10-24
617-4743	O/B	Orange/Blue; Nut Style	A	100	7.91	7.21
617-4744	R/Y	Red/Yellow; Wing Style	B	100	10.76	9.80
617-4745	B/G	Blue/Gray; Wing Style	C	50	14.10	12.83

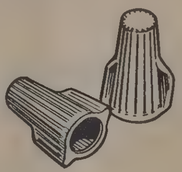
*A — 2#22-12 AWG; B — 2#18-12, 8 AWG, 4#14-12 AWG, 3#12-10 AWG, 6#14 AWG, 5#12 AWG; C — 2#8 AWG, 4#14-10 AWG, 3#12-10 AWG, 6#14-12 AWG, 5#12-10 AWG.

Electrical Spring Connectors

Scotchlok™

The original color-coded wire connectors, featuring three-part construction with live spring action for outstanding performance. Flexible vinyl insulator won't cut or abrade wire. Steel inner shell allows for spring expansion/contraction to compensate for heat rise. Flared design aids wire insulation.

Stock No.	Mfr.'s Type	Color	Wire Range Capabilities*	Conn. Per Box	PER BOX/100	
					1-9	10-24
617-4525	Y	Yellow	D	100	9.99	8.45
617-4530	R	Red	E	100	13.01	11.01
617-4535	G	Gray	F	100	27.99	23.67



Hyflex®

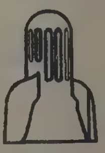
Spins on quickly and tightens down easily.

Stock No.	Mfr.'s Type	Color	Wire Range Capabilities*	PER BOX/100	
				1-9	10-24
617-4537	212	Tan	G	9.23	7.81

Ranger®

Connectors have wings on bottom for easy torquing.

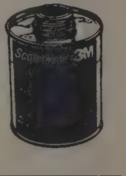
— NEW —



Stock No.	Mfr.'s Type	Color	Wire Range Capabilities*	PER BOX/100	
				1-9	10-24
617-4759	312	Yellow	H	9.99	8.45
617-4757	512	Red	I	13.01	11.01

*D — 5-8#22, 4-6#20, 2-5#18, 2-3#16, 1-3#14, 1-2#12, 1#10; E — 9#18, 4-6#16, 2-5#14 and #12, 1-3#10; F — 4-7#14, 2-6#12, 2-4#10 and 2#8; G — 1#16 to 1#22, 3#12 and 4#14; H — 5-7#22, 3-6#20, 2-6#18 and #16, 1-4#14 and 1-3#12; I — 2-10#18, 2-7#16, 1-6#4, 1-5#12, 1-3#10, 1-2#8 and 1#6.

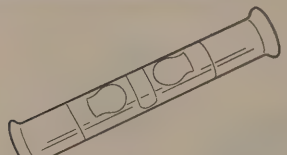
Scotchkote® Electrical Coating



Provides fast-drying extra coating protection for a tough outer seal on electrical insulation subjected to abnormal weathering or moisture conditions. Non-aerosol. Resistant to oil, moisture and aliphatic hydrocarbons. 16 oz. container with brush-top applicator.

617-4740. SCOTCHKOTE..**EACH 16.57**

Solder Splice Connectors



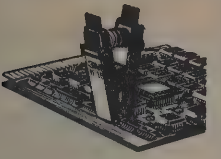
- **Aerospace**
- **Automotive**
- **Military**
- **Appliance**
- **Marine**
- **Off-Road Vehicles**

A unique one-step system for reliable splicing, the 3M Solder Splice Connector represents a breakthrough in wire splicing and connecting technology. In one easy step, multiple wires can be soldered, insulated and environmentally sealed. This system does not require a crimp tool, just a standard heat gun designed for solder-type connectors. The 3M Solder Splice is ideal for harness fabrication in a variety of industries. Series 200X is insulated with a flame retardant, heat shrinkable sleeve of 3M's new flexible THV fluoropolymer. Series 100X has an outer layer tube of tinted, translucent, polyolephin, heat shrinkable tubing lined with hot melt sealant, which provides both insulation and a moisture seal.

Stock No.	Mfr.'s Type	Color	Wire AWG	EACH	
				1-24	25-49
617-4749	SSC 2000	White	28-20	.74	.68
617-4751	SSC 1000	Clear	28-20	.38	.35
617-4746	SSC 2001	Red	24-14	.76	.70
617-4752	SSC 1001	Red	24-14	.40	.36

Stock No.	Mfr.'s Type	Color	Wire AWG	EACH	
				1-24	25-49
617-4747	SSC 2002	Blue	22-10	.80	.73
617-4753	SSC 1002	Blue	22-10	.46	.42
617-4748	SSC 2003	Yellow	20-8	.91	.84
617-4754	SSC 1003	Yellow	20-8	.60	.55

SOIC* Test Clips

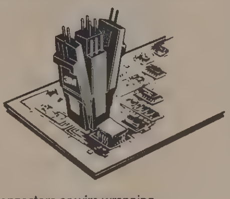


Now normally hard-to-access SOICs can be connected to test probes quickly and easily without the risk of shorting out chips or damaging other board components. SOIC test clips are available in different pin sizes to accommodate a wide range of requirements. Industry standard .025" square contact pins on .050" centers are staggered to permit easy attachment of IDC socket connectors or wire wrapping and help prevent shorting of adjacent probes. With these smaller test clips, you can stack SOICs as close as .050" end-to-end. Like our other test clips, the SOIC series features heavy duty helical compression springs that provide firm, positive contact pressure, an insulating contact comb to prevent accidental shorts and a patented wiping action to ensure integrity in testing. The steel hinge pin and tough glass-filled polyester body, UL rated 94V-0, provide long service life. Available in gold or alloy 764, SOIC test clips from 3M offer solutions for all your test and prototype needs.

*SOIC (Small Outline Integral Circuits).

Stock No.	Mfr.'s Type	Description	EACH			
			1-9	10-24	25-49	50-99
617-4300	923660-16	16 Pin, Wide, Alloy	**8.97**	**8.44**	**7.84**	**7.32**
617-4301	923660-18	18 Pin, Wide, Alloy	**10.03**	**9.45**	**8.78**	**8.19**
617-4302	923660-20	20 Pin, Wide, Alloy	**10.19**	**9.60**	**8.92**	**8.32**
617-4303	923660-24	24 Pin, Wide, Alloy	**11.29**	**10.62**	**9.86**	**9.21**
617-4304	923660-28	28 Pin, Wide, Alloy	**12.20**	**11.49**	**10.67**	**9.96**
617-4305	923665-16	16 Pin, Wide, Gold	**9.97**	**9.38**	**8.71**	**8.13**
617-4306	923665-18	18 Pin, Wide, Gold	**11.14**	**10.48**	**9.73**	**9.08**
617-4307	923665-20	20 Pin, Wide, Gold	**11.33**	**10.67**	**9.91**	**9.25**
617-4308	923665-24	24 Pin, Wide, Gold	**12.53**	**11.80**	**10.96**	**10.23**
617-4309	923665-28	28 Pin, Wide, Gold	**13.55**	**12.76**	**11.85**	**11.06**
617-4310	923650-08	8 Pin, Narrow, Alloy	**7.85**	**7.39**	**7.17**	**6.41**
617-4311	923650-14	14 Pin, Narrow, Alloy	**8.47**	**7.97**	**7.40**	**6.91**
617-4312	923650-16	16 Pin, Narrow, Alloy	**8.97**	**8.44**	**7.84**	**7.32**
617-4313	923655-08	8 Pin, Narrow, Gold	**8.73**	**8.22**	**7.64**	**8.22**
617-4314	923655-14	14 Pin, Narrow, Gold	**9.41**	**8.87**	**8.24**	**7.69**
617-4315	923655-16	16 Pin, Narrow, Gold	**9.97**	**9.39**	**8.72**	**8.14**

PLCC* Surface Mount Test Clips

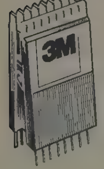


Our Surface Mount Test Clip is truly the state-of-the-art for testing Plastic Leaded Chip Carrier (PLCC) style integrated circuits. The unique action wedge design — with all four sides opening simultaneously — provides a faster and easier attachment to the PLCC. The helical compression spring and insulating contact combs ensure integrity in contact when testing. Our narrow body design allows components to be tested with as little as .100" lead-to lead spacing, side stackable at .200" lead-to-lead spacing. Probe access points are immediately visible for fast and safe individual lead testing, while staggered contact rows on .100" centers allow for easy probe attachment and help prevent accidental shorting of adjacent probes. Industry standard .025" square contact pins permit easy attachment of female socket connectors or wire wrapping.

*PLCC (Plastic Leaded Chip Carrier).

Stock No.	Mfr.'s Type	Description	EACH		
			1-9	10-24	25-49
617-4316	923670-20	20 Pin, Alloy	**25.01**	**21.86**	**20.40**
617-4317	923670-28	28 Pin, Alloy	**26.68**	**23.33**	**21.77**
617-4318	923670-44	44 Pin, Alloy	**34.48**	**30.15**	**28.14**
617-4319	923670-68	68 Pin, Alloy	**40.05**	**35.02**	**32.68**
617-4320	923675-20	20 Pin, Gold	**27.79**	**24.31**	**22.68**
617-4321	923675-28	28 Pin, Gold	**33.16**	**29.17**	**27.23**
617-4322	923675-44	44 Pin, Gold	**37.13**	**32.47**	**30.30**
617-4324	923675-52	52 Pin, Gold	**39.38**	**34.43**	**32.14**
617-4323	923675-68	68 Pin, Gold	**44.19**	**38.63**	**36.05**
617-4325	923675-84	84 Pin, Gold	**39.38**	**34.43**	**32.14**

DIP Test Clips



The narrow-nose design makes it easy to attach on high-density boards, fits onto ICs with only 0.1" between leads and adjacent components. "Duck bill" contacts are flat, won't roll off IC leads. Open-nose construction enables probe at IC leg. Pin rows are offset for easy attachment of probes. "Contact comb" construction separates contacts with precision. No shorts. Heavy duty, industrial-grade springs for firm contact pressure. Steel pivot pin. The standard models have "nail-head" leads which keep probes and test leads from sliding off. The connector–compatible models have headless leads .025" long to allow attachment of cable assemblies. Leads are .031" in diameter on .100" centers on both models.

Gold-Plated Contacts

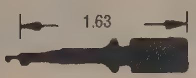
Standard		Connector-Compatible		DIP Compatibility	EACH		
Stock No.	Mfr.'s Type	Stock No.	Mfr.'s Type		1-9	10-24	25-49
617-0058	923743-08	**617-1058**	923739-08	8-pin	**8.35**	**7.87**	**7.30**
617-0060	923743-14	**617-1060**	923739-14	14-pin	**8.63**	**8.13**	**7.55**
617-0066	923743-16	**617-1066**	923739-16	16-pin	**8.91**	**8.40**	**7.88**
617-0068	923743-18	**617-1068**	923739-18	18-pin	**12.90**	**12.15**	**11.28**
617-0070	923743-20	**617-1070**	923739-20	20-pin	**13.59**	**12.79**	**11.88**
617-0074	923743-24	**617-1074**	923739-24	24-pin	**18.64**	**17.55**	**16.29**
617-0078	923743-28	**617-1078**	923739-28	28-pin	**22.89**	**21.55**	**20.01**
617-0090	923743-40	**617-1090**	923739-40	40-pin	**27.25**	**25.66**	**23.83**

Alloy 770 Contacts

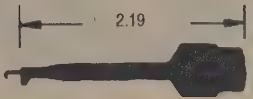
617-0008	923695	**617-1008**	923690-08	8-pin	**6.46**	**6.09**	**5.66**
617-0014	923698	**617-1014**	923690-14	14-pin	**6.68**	**6.30**	**5.85**
617-0016	923700	**617-1016**	923690-16	16-pin	**6.78**	**6.39**	**5.94**
617-0017	923702	**617-1017**	923690-16LSI	16-LSI	**12.57**	**11.83**	**10.99**
617-0018	923703	**617-1018**	923690-18	18-pin	**10.27**	**9.67**	**8.98**
617-0020	923704	**617-1020**	923690-20	20-pin	**10.84**	**10.22**	**9.49**
617-0022	923705	**617-1022**	923690-22	22-pin	**14.05**	**13.23**	**12.28**
617-0024	923714	**617-1024**	923690-24	24-pin	**14.85**	**13.98**	**12.98**
617-0028	923718	**617-1028**	923690-28	28-pin	**18.31**	**17.23**	**16.00**
617-0036	923720	**617-1036**	923690-36	36-pin	**20.59**	**19.38**	**18.00**
617-0040	923722	**617-1040**	923690-40	40-pin	**21.74**	**20.46**	**19.00**
617-0048	923724	**617-1048**	923690-48	48-pin	**29.78**	**28.04**	**26.04**
617-0064	923726	**617-1064**	923690-64	64-pin	**34.38**	**32.36**	**31.39**

Probe-It Clips

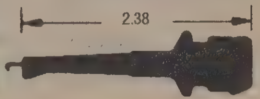
Mico Probe-It



Mini Probe-It



Standard Probe-It

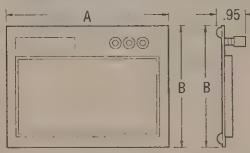


Probe-its provide a fast, easy method of testing individual component leads and minimize accidental shorts. Excellent for use with test clips.

Stock No.	Mfr.'s Type	Description	EACH		
			1-24	25-49	50-99
617-0102	923832-BK-B	Micro Probe-it, Black	**1.28**	**1.18**	**1.09**
617-0104	923832-BU-B	Micro Probe-it, Blue	**1.28**	**1.18**	**1.09**
617-0106	923832-GN-B	Micro Probe-it, Green	**1.28**	**1.18**	**1.09**
617-0108	923832-RD-B	Micro Probe-it, Red	**1.28**	**1.18**	**1.09**
617-0110	923832-WT-B	Micro Probe-it, White	**1.28**	**1.18**	**1.09**
617-0112	923832-YL-B	Micro Probe-it, Yellow	**1.28**	**1.18**	**1.09**
617-0114	923837-BK-B	Mini Probe-it, Black	**1.23**	**1.13**	**1.05**
617-0118	923837-GN-B	Mini Probe-it, Green	**1.23**	**1.13**	**1.05**
617-0120	923837-RD-B	Mini Probe-it, Red	**1.23**	**1.13**	**1.05**
617-0122	923837-WT-B	Mini Probe-it, White	**1.23**	**1.13**	**1.05**
617-0124	923837-YL-B	Mini Probe-it, Yellow	**1.23**	**1.13**	**1.05**
617-0126	923842-BK-B	Standard Probe-it, Black	**2.52**	**2.16**	**1.98**
617-0128	923842-RD-B	Standard Probe-it, Red	**2.52**	**2.16**	**1.98**
617-0103	923847-BK-B	Maxi Probe-it, Black	**2.15**	**1.98**	**1.84**
617-0105	923847-RD-B	Maxi Probe-it, Red	**2.15**	**1.98**	**1.84**

617-0107. 923848-C. Micro Probe-it, Assortment........**PER PK./6 7.59**
617-0109. 923850-C. Mini Probe-it, Assortment........**PER PK./6 7.27**

Solderless Breadboards (300 Series)

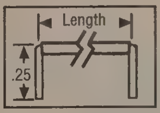


- **Simply Plug in Components and Interconnect with Ordinary 22-Gauge Solid Wire; Time Consuming Soldering Is Eliminated and All Components Can Be Used Again and Again**
- **Alpha-Numeric Identification Along the Strips Allows for Fast and Easy Layout Designs and Project Applications; Every Tie-Point Position on the Strip Can Quickly Be Identified By a Letter and Number Combination**
- **3M Jumper Wires Are Included**
- **DIPs of all Sizes and a Wide Variety of Discrete Components with Lead Diameters of Up to .032" Can Be Used**
- **The Sturdy Metal Base Plate Serves as a Ground Plane to Help Minimize Noise and Voltage Spikes in Today's High-Speed Circuits**
- **By Jumping Across the Center Area, Full-Length Distribution Buses Can Be Created Vertically**
- **Use the 5-Way Binding Posts for Easy Connection to Ground, Power Supply, and Other External Equipment**

3M Series 300 Breadboards incorporate state-of-the-art techniques in design and fabrication to yield a circuit-building system with unparalleled flexibility and reliability. A voltage distribution system is integrated with the basic component breadboarding matrix, and 5-way binding posts provide the interface for connections from the power supply, signal generators or other external equipment. All models incorporate the 3M laboratory-proven multi-tie-point terminal design for convenient, solderless, plug-in circuit building. Each terminal position contains electrically connected tie-points spaced on a continuous .100" matrix to accept any component with .100" lead spacing as well as components whose leads can be dressed to fit. The surface of the steel base is high gloss baked enamel for protection. Rubber feet prevent sliding during bench work..

Stock No.	Mfr.'s Type	Model	DIP Capacity Up To	Total Tie Points	No. of Binding Posts	Dim.* (In.)		EACH	
						A	B	1-4	5-9
617-3301	922306	306	6-14 Pin	610	2	5.40	4.00	**13.34**	**11.15**
617-3302	922309	309	9-14 Pin	840	3	7.00	4.00	**19.52**	**16.60**
617-3318	922318	318	18-14 Pin	1824	3	7.75	6.25	**36.60**	**30.60**
617-3338	922327	327	27-14 Pin	2712	4	8.00	9.25	**46.30**	**39.36**
617-3303	922336	336	36-14 Pin	3648	4	10.25	9.25	**68.98**	**57.66**
617-3304	922345	345	45-14 Pin	4520	4	12.44	9.75	**92.65**	**77.47**
617-3305	922354	354	54-14 Pin	5424	4	14.69	9.75	**102.95**	**87.52**

Jumper Wires



- **For Quick, Neat Circuit Connections**

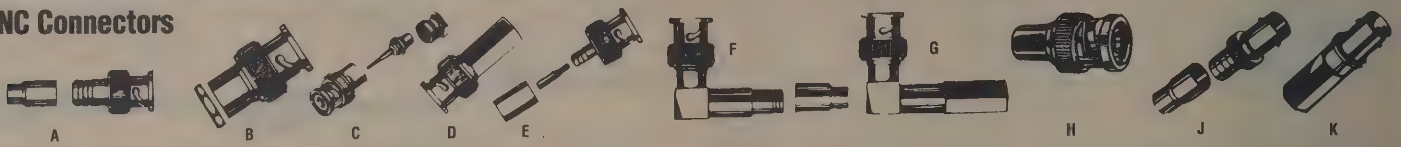
Speed your circuit building even more. Each wire is stripped ¼" and bent 90° on both ends for easy insertion. All Jumper Wires are PVC insulated #22 AWG solid, tinned copper and are recommended for use with all solderless breadboarding units from ESM.

Stock No.	Mfr.'s Type	Length Inches	Color	Pkg. Qty.	PER PKG.			
					1-9	10-24	25-49	50-99
617-3451	923345-01	0.1	(No Insulation)	200	**4.77**	**4.07**	**3.76**	**3.49**
617-3452	923345-02	0.2	Red	200	**4.77**	**4.07**	**3.76**	**3.49**
617-3453	923345-03	0.3	Orange	200	**4.77**	**4.07**	**3.76**	**3.49**
617-3454	923345-04	0.4	Yellow	200	**4.77**	**4.07**	**3.76**	**3.49**
617-3455	923345-05	0.5	Green	200	**4.77**	**4.07**	**3.76**	**3.49**
617-3456	923345-06	0.6	Blue	150	**4.77**	**4.07**	**3.76**	**3.49**
617-3457	923345-07	0.7	Violet	150	**4.77**	**4.07**	**3.76**	**3.49**
617-3458	923345-08	0.8	Gray	150	**4.77**	**4.07**	**3.76**	**3.49**
617-3459	923345-09	0.9	White	150	**4.77**	**4.07**	**3.76**	**3.49**
617-3460	923345-10	1.0	Brown	100	**4.77**	**4.07**	**3.76**	**3.49**
617-3461	923345-20	2.0	Red	100	**4.77**	**4.07**	**3.76**	**3.49**
617-3462	923345-30	3.0	Orange	75	**4.77**	**4.07**	**3.76**	**3.49**
617-3463	923345-40	4.0	Yellow	75	**4.77**	**4.07**	**3.76**	**3.49**
617-3464	923345-50	5.0	Green	75	**4.77**	**4.07**	**3.76**	**3.49**

Jumper Wire Kit. 14 different lengths, 25 pieces of each. Compartmented box.
617-3501. 923351. **1-9**........**EACH 21.41**
10-24........**EACH 18.19**

NOTE: These connectors meet or exceed MIL spec, but are intended for commercial use only.

BNC Connectors



Stock No.	Mfr.'s Type	Fig.	For RG/U Cable	Description	EACH 1-24	EACH 25-99	EACH 100-499
510-9000	27-9000	A	59, 62	2-pc. Crimp	**2.00**	**1.80**	**1.54**
510-9001	27-9001	A	58	2-pc. Crimp	**2.00**	**1.80**	**1.54**
510-9002	27-9002	A	6	2-pc. Crimp	**2.30**	**2.07**	**1.86**
510-9009	27-9009	A	59, 62 Teflon	2-pc. Crimp	**2.20**	**1.98**	**1.78**
510-9200	27-9200	A	58A/U	2-pc. Crimp	**2.60**	**2.34**	**2.11**
510-9204	27-9204	A	58 Teflon	2-pc. Crimp	**2.60**	**2.34**	**2.11**
510-9207	27-9207	A	58 Thin Net	2-pc. Crimp	**2.60**	**2.34**	**2.11**
510-9020	27-9020	B	59, 62 (UG260/U)	6-pc. Solder	**2.20**	**1.89**	**1.62**
510-9021	27-9021	B	58 (UG88/U)	6-pc. Solder	**2.20**	**1.89**	**1.62**
510-9022	27-9022	C	58	3-pc. Crimp or Solder	**3.10**	**2.79**	**2.51**
510-9023	27-9023	C	58, 62	3-pc. Crimp or Solder	**3.19**	**2.88**	**2.60**
510-9025	27-9025	C	59, 62 Teflon	3-pc. Crimp or Solder	**3.10**	**2.79**	**2.51**
510-9050	27-9050	D	59, 62	Twist-on plug	**2.00**	**1.80**	**1.54**
510-9051	27-9051	D	58	Twist-on plug	**2.00**	**1.80**	**1.54**
510-9052	27-9052	D	6	Twist-on plug	**2.20**	**1.98**	**1.78**
510-9054	27-9054	D	59, 62 Teflon	Twist-on plug	**2.60**	**2.34**	**2.11**
510-9059	27-9059	D	58 Teflon	Twist-on plug	**2.60**	**2.34**	**2.11**
510-9202	27-9202	D	58A/U	Twist-on plug	**2.70**	**2.43**	**2.19**
510-9206	27-9206	D	58 Thin Net	Twist-on plug	**2.70**	**2.43**	**2.19**
510-9100	27-9100	E	59, 62	Commercial-MIL 3 pc.	**1.79**	**1.61**	**1.38**
510-9101	27-9101	E	58	Commercial-MIL 3 pc.	**1.79**	**1.61**	**1.38**

Stock No.	Mfr.'s Type	Fig.	For RG/U Cable	Description	EACH 1-24	EACH 25-99	EACH 100-499
510-9102	27-9102	E	6	Commercial-MIL 3-pc.	**2.30**	**2.07**	**1.86**
510-9103	27-9103	E	59, 62 Teflon	Commercial-MIL 3-pc.	**2.30**	**2.07**	**1.86**
510-9293	27-9293	E	11	3-pc. Crimp	**3.50**	**3.15**	**2.83**
510-9104	27-9104	E	Belden 8281/Alpha 9207	Commercial-MIL 3-pc.	**2.30**	**2.07**	**1.86**
510-9105	27-9105	E	174, 179, 187, 188, 316	Commercial-MIL 3-pc.	**2.40**	**2.16**	**1.94**
510-9201	27-9201	E	58A/U	Commercial-MIL 3-pc.	**2.60**	**2.34**	**2.11**
510-9205	27-9205	E	58 Teflon	Commercial-MIL 3-pc.	**2.30**	**2.07**	**1.86**
510-9208	27-9208	E	58 Thin Net	Commercial-MIL 3-pc.	**2.60**	**2.34**	**2.11**
510-9004	27-9004	F	59, 62	Crimp Type Right Angle	**3.40**	**3.06**	**2.75**
510-9056	27-9056	G	59, 62	Twist-on Right Angle	**3.50**	**3.15**	**2.83**
510-9057	27-9057	G	59, 62 Teflon	Twist-on Right Angle	**3.50**	**3.15**	**2.83**
510-9036	27-9036	G	58	Twist-on Right Angle	**4.20**	**3.78**	**3.40**
510-9007	27-9007	H	75 Ohm	BNC Terminator	**3.00**	**2.70**	**2.43**
510-9008	27-9008	H	50 Ohm	BNC Terminator	**3.00**	**2.70**	**2.43**
510-9093	27-9093	H	93 Ohm	BNC Terminator	**3.00**	**2.70**	**2.43**
510-9003	27-9003	J	59, 62	2-pc. Crimp Jack	**2.40**	**2.16**	**1.94**
510-9013	27-9013	J	6	2-pc. Crimp Jack	**2.50**	**2.25**	**2.02**
510-9014	27-9014	J	58	2-pc. Crimp Jack	**2.50**	**2.25**	**2.02**
510-9015	27-9015	J	59, 62 Teflon	2-pc. Crimp Jack	**2.50**	**2.25**	**2.02**
510-9053	27-9053	K	59, 62	Twist-on Jack	**2.60**	**2.34**	**2.11**
510-9031	27-9031	K	58	Twist-on Jack	**3.50**	**3.15**	**2.83**

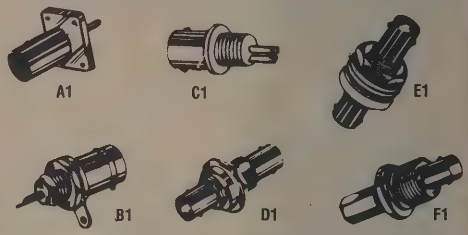
BNC Attenuator Pads — 50 Ohm Impedance

Stock No.	Mfr.'s Type	Description	EACH 1-24	EACH 25-99	EACH 100-499
510-9303	27-9300-3	3DB	**9.50**	**8.55**	**7.69**
510-9306	27-9300-6	6DB	**9.50**	**8.55**	**7.69**

Stock No.	Mfr.'s Type	Description	EACH 1-24	EACH 25-99	EACH 100-499
510-9310	27-9300-10	10DB	**9.50**	**8.55**	**7.69**
510-9320	27-9300-20	20DB	**9.50**	**8.55**	**7.69**

BNC Chassis Mounts

Stock No.	Mfr.'s Type	Fig.	For RG/U Cable	Description	EACH 1-24	EACH 25-99	EACH 100-499
510-8450	27-8450	A1	—	UG-290/U Panel Jack	**3.00**	**2.70**	**2.43**
510-8460	27-8460	B1	—	UG-1094/U 3/8" Diameter	**1.47**	**1.33**	**1.13**
510-8461	27-8461	C1	—	3/8" Diameter Isolated	**3.40**	**3.06**	**2.75**
510-8470	27-8470	D1	—	UG-492 1/2" Diameter Dual	**4.50**	**4.05**	**3.64**
510-8471	27-8471	E1	—	UG-492 Isolated 1/2" + 5/8" Dual	**5.10**	**4.59**	**4.13**
510-8475	27-8475	F1	58	5/8" Twist-on Chassis Mount	**4.50**	**4.05**	**3.64**
510-8476	27-8476	F1	59, 62	5/8" Twist-on Chassis Mount	**4.50**	**4.05**	**3.64**



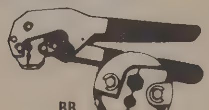
BNC Adapters

Stock No.	Mfr.'s Type	Description	EACH 1-24	EACH 25-99	EACH 100-499
510-7365	25-7365	BNC Female to UHF Female	**4.40**	**3.96**	**3.56**
510-7420	25-7420	UG-255 BNC Male to UHF Female	**3.30**	**2.97**	**2.67**
510-7430	25-7430	UG-914 BNC Female to Female Splice	**2.20**	**1.98**	**1.78**
510-7500	25-7500	BNC Male to Female	**2.30**	**2.07**	**1.86**
510-7510	25-7510	BNC Male to RCA Female	**2.10**	**1.89**	**1.62**

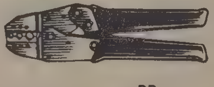
Stock No.	Mfr.'s Type	Description	EACH 1-24	EACH 25-99	EACH 100-499
510-8100	27-8100	BNC Female to F Male	**2.50**	**2.25**	**2.02**
510-8110	27-8110	BNC Female to RCA Male	**2.50**	**2.25**	**2.02**
510-8120	27-8120	BNC Female to UHF Male	**3.20**	**2.88**	**2.59**
510-8130	27-8130	UG-491 BNC Male to BNC Male	**4.30**	**3.87**	**3.48**
510-8140	27-8140	UG-274 BNC "T" 2 Female, 1 Male	**3.90**	**3.51**	**3.16**
510-8141	27-8141	BNC "T" 3 Female	**6.30**	**5.67**	**5.10**

Stock No.	Mfr.'s Type	Description	EACH 1-24	EACH 25-99	EACH 100-499
510-8142	27-8142	BNC "T" 3 Male	**8.40**	**7.56**	**6.80**
510-8150	27-8150	UG-306 BNC Right Angle Female to Male	**4.90**	**4.41**	**3.97**
510-8250	27-8250	BNC Female to TNC Male	**4.10**	**3.69**	**3.32**
510-3835	29-3835	BNC Female to SMA Female	**8.80**	**7.92**	**7.13**
510-3855	29-3855	BNC Female/SMA Male	**8.80**	**7.92**	**7.13**
—	—	—	—	—	—
—	—	—	—	—	—

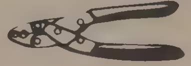
Crimping Tools



BB



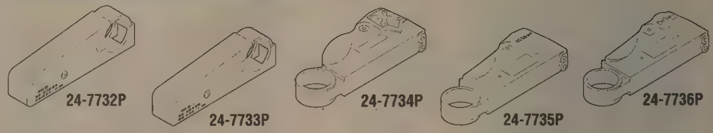
DD



CC

Stock No.	Mfr.'s Type	Fig.	Description	EACH
510-7710	24-7710	BB	For RG-6, RG-59	**33.00**
510-7711	24-7711P	BB	For RG-8, RG-11, RG-213	**47.00**
510-7700	24-7700	CC	For RG-6, RG-59	**8.50**
510-8786	24-8786P	DD	RG-6, RG-58	**47.50**
510-8789	24-8789P	DD	RG-58, RG-59, RG-62	**47.50**
510-8856	24-8856P	DD	RG-6, RG-8, 59, 62	**47.50**
510-8857	24-8857P	DD	RG-58, 58A, 139, 179, 185, 188	**47.50**
510-8858	24-8858P	DD	RG-58, 58A, 59 Teflon, 62 Teflon	**47.50**
510-8859	24-9912P	DD	RG-174, 179, 187, 188, 316, Beldon 89907	**47.50**

Prestige® Co-Ax Strippers



Cassette Series

Stock No.	Mfr.'s Type	Description	EACH
510-7732	24-7732P	2-step for RG-6, 58, 59, 62	**33.90**
510-7733	24-7733P	3-step for RG-6, 58, 69, 62	**35.90**
510-9732	99-7732B	Replacement cassette for 2-step	**12.00**
510-9733	99-7733B	Replacement cassette for 3-step	**12.00**

Blade Series

- ► **Does Two Cuts in One Motion**
- ► **Adjustable Blades**

510-7734	24-7734P	Universal with switchable V-block, for RG-6, 58, 59, 62	**25.50**
510-7735	24-7735P	For standard and teflon RG-58, 59, 62	**25.50**
510-7736	24-7736P	For standard and teflon RG-59, 62, 8281	**25.50**
510-9734	99-7734	Replacement blades for 24-7734P, Set/2	**2.00**

Coaxial Connectors

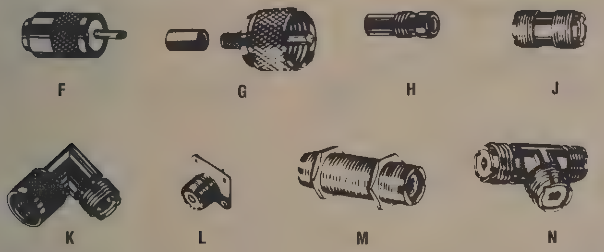
Note: These connectors meet or exceed MIL spec, but are for commercial use only.

Twin-Ax Series Connectors

Gold pins on male connectors and gold contact points on female connectors.

Stock No.	Mfr.'s Type	Fig.	Description	EACH 1-24	EACH 25-99	EACH 100-499
510-9080	27-9080	A	Male Connector for PVC Cable	**5.90**	**5.31**	**4.78**
510-9087	27-9087	A	Male Connector for Teflon Cable	**7.50**	**6.75**	**6.08**
510-9081	27-9081	B	Female Inline Splice	**6.50**	**5.85**	**5.27**
510-9084	27-9084	C	Female to Male Rt. Angle Adapter	**10.00**	**9.00**	**8.10**
510-9085	27-9085	D	"T" Adapter — All Female	**13.00**	**11.70**	**10.53**
510-9086	27-9086	E	Terminator — 100 Ohm	**12.00**	**10.80**	**9.72**

UHF Series Connectors



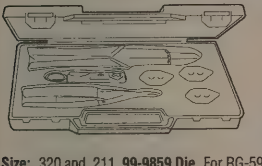
Stock No.	Mfr.'s Type	Fig.	MIL Type	Description	EACH 1-24	EACH 25-99	EACH 100-499
510-7300	25-7300	F	PL-259	For RG/U 8, 11, 213, 214	**1.58**	**1.42**	**1.22**
510-7305	25-7305	F	Deluxe PL-259	Hi-Temp Insulation for RG/U 8, 11, 213, 214	**1.89**	**1.71**	**1.46**
510-7306	25-7306	G	—	Crimp-On for RG/U 8	**3.20**	**2.88**	**2.59**
510-7307	25-7307	G	—	Crimp-On for RG/U 58	**2.10**	**1.89**	**1.62**
510-7308	25-7308	G	—	Crimp-On for RG/U 59	**2.21**	**1.99**	**1.70**
510-7310	25-7310	H	UG-175	Reducer for RG58 with PL-259	**.42**	**.38**	**.32**
510-7320	25-7320	H	UG-176	Reducer for RG59 with PL-259	**.42**	**.38**	**.32**
510-7330	25-7330	J	PL-258	Female-Female Inline Splice	**1.68**	**1.52**	**1.30**
510-7340	25-7340	K	M-359	Right Angle Female to Male	**4.30**	**3.87**	**3.48**
510-7350	25-7350	L	SO-239	Female Chassis Mount	**1.47**	**1.33**	**1.13**
510-7351	25-7351	M	UG-363/U	Double Female Feed-Thru	**5.10**	**4.59**	**4.13**
510-7354	25-7354	N	—	"T" Adapter 3 Female	**5.50**	**4.95**	**4.46**

UHF Series Adapters

Stock No.	Mfr.'s Type	Description	EACH 1-24	EACH 25-99	EACH 100-499
510-8200	27-8200	UHF Female to F Male	**2.70**	**2.43**	**2.19**
510-8210	27-8210	UHF Female to RCA Male	**2.70**	**2.43**	**2.19**
510-4140	29-4140	UHF Female to Mini UHF Male	**5.00**	**4.50**	**4.05**
510-3845	29-3845	UHF Male to SMA Female	**8.80**	**7.92**	**7.13**
510-7550	25-7550	UHF Male to F Female	**2.60**	**2.34**	**2.11**
510-4145	29-4145	UHF Male to Mini UHF Female	**5.50**	**4.95**	**4.46**

RCA-Series, F-Series and N Series Adapters

Stock No.	Mfr.'s Type	MIL Type	Description	EACH 1-24	EACH 25-99	EACH 100-499
510-7530	25-7530	—	RCA Male to F Female	**1.16**	**1.04**	**.89**
510-7560	25-7560	—	RCA Female to 3.5 mm Male	**1.68**	**1.52**	**1.30**
510-7570	25-7570	—	RCA Female to F Female	**1.68**	**1.52**	**1.30**
510-7580	25-7580	—	RCA Female to F Male	**1.47**	**1.33**	**1.13**
510-7600	25-7600	—	Rt. Angle F Female to F Male	**1.26**	**1.14**	**.97**
510-8014	26-8014	UG-83/U	N Female to UHF Male	**7.40**	**6.66**	**5.99**
510-8018	26-8018	UG-606/U	N Female to BNC Female	**7.40**	**6.66**	**5.99**
510-8017	26-8017	UG-349/U	N Female to BNC Male	**7.40**	**6.66**	**5.99**
510-8015	26-8015	UG-146/U	N Male to UHF Female	**7.40**	**6.66**	**5.99**
510-8016	26-8016	UG-201/U	N Male to BNC Female	**7.40**	**6.66**	**5.99**
510-3840	29-3840	—	N Male to SMA Female	**8.80**	**7.92**	**7.13**
510-8020	26-8020	—	N Male to F Female	**6.60**	**5.94**	**5.35**

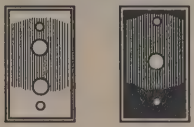


Coaxial Ratchet Crimp Tool Kit

Model 24-8802K standard crimp tool kit for Aim and Cambridge connectors includes all parts listed. **24-9958P Tool with Die.** For RG-58, RG-58 TFE, RG-141, RG-142, 223, 400, RG-303, and RG-55. Crimps 3 piece BNC-TNC and Mini UHF Connectors. **Die Size:** .213 and .060. **99-9959 Die.** For RG-59, 62, RG-450 Proflex, and RG-8X. Crimps 3 piece BNC-TNC and Mini UHF connectors. **Die Size:** .255 and .060. **99-9858 Die.** For RG-58, RG-59 TFE, and RG-58 TFE. Crimps two piece BNC-TNC connectors. **Die Size:** .320 and .211. **99-9859 Die.** For RG-59 and RG-62. Crimps two piece BNC-TNC connectors. **Die Size:** .320 and .250.

510-8802. Model 24-8802K..**EACH 150.00**

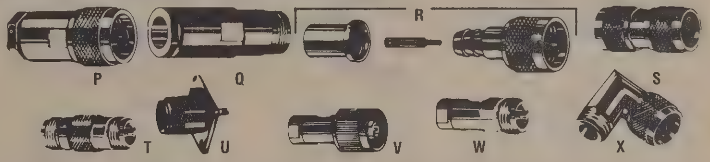
Coaxial Wall Plates



For Coaxial Connectors

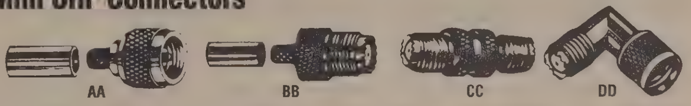
Stock No.	Mfr.'s Type	Description	EACH 1-24	EACH 25-99	EACH 100-499
510-3210	27-9088	Single ¾" Hole	**2.30**	**2.07**	**1.86**
510-3212	27-8481	Single ⅝" Hole	**2.30**	**2.07**	**1.86**
510-3215	27-8478	Single ½" Hole	**2.30**	**2.07**	**1.86**
510-3217	27-8483	Single ⅜" Hole	**2.30**	**2.07**	**1.86**
510-3200	27-9089	Dual ¾" Hole	**2.30**	**2.07**	**1.86**
510-3205	27-8479	Dual ½" Hole	**2.30**	**2.07**	**1.86**
510-3207	27-8484	Dual ⅜" Hole	**2.30**	**2.07**	**1.86**
510-3208	27-8485	Blank Plate	**2.30**	**2.07**	**1.86**

N Series (Ethernet) Connectors



Stock No.	Mfr.'s Type	Fig.	MIL Type	Description	EACH 1-24	EACH 25-99	EACH 100-499
510-8000	26-8000	P	UG-21B/U	Male for RG/U 8, 11, 213, 214	**4.90**	**4.41**	**3.97**
510-8002	26-8002	Q	UG-23B/U	Female for RG/U 8, 11, 213, 214	**5.50**	**4.95**	**4.46**
510-8005	26-8005	R	—	Male Crimp for RG/U 8, 11, 213	**3.30**	**2.97**	**2.67**
510-8009	26-8009	S	UG-57B/U	Inline Splice — Plug to Plug	**6.50**	**5.85**	**5.27**
510-8010	26-8010	T	UG-29B/U	Inline Splice — Jack to Jack	**5.20**	**4.68**	**4.21**
510-8011	26-8011	U	UG-58B/U	Female Chassis Mount	**2.50**	**2.25**	**2.03**
510-8023	26-8023	V	—	Male N Terminator — 50 Ohms	**7.40**	**6.66**	**5.99**
510-8024	26-8024	W	—	Female N Terminator — 50 Ohms	**7.40**	**6.66**	**5.99**
510-8012	26-8012	X	UG-27/U	Right Angle Female to Male	**6.90**	**6.21**	**5.59**

Mini UHF Connectors

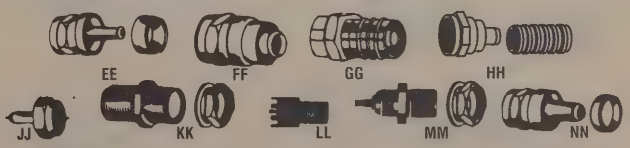


Stock No.	Mfr.'s Type	Fig.	Description	EACH 1-24	EACH 25-99	EACH 100-499
510-4010	29-4010	AA	Male — 3 Piece Crimp On for RG58/U	1.89	1.71	1.46
510-4030	29-4030	BB	Female — 3 Piece Crimp On for RG58/U	3.00	2.70	2.43
510-4110	29-4110	CC	Double Female Adapter	3.20	2.88	2.59
510-4130	29-4130	DD	Right Angle Adapter Female to Male	4.80	4.32	3.89

SMA Connectors

510-3102. 29-3100. Crimp Male for RG/U 58A, 141. **1-24**..**EACH 6.50**
25-99..**EACH 5.85** **100-499**..**EACH 5.27**
510-3103. 29-3103. Crimp Male for RG/U 174, 188, 316. **1-24**..**EACH 6.50**
25-99..**EACH 5.85** **100-499**..**EACH 5.27**

"F" Series Connectors



Stock No.	Mfr.'s Type	Fig.	Description	EACH 1-24	EACH 25-99	EACH 100-499	EACH 500-999
510-7010	25-7010 (F-59)	EE	For RG-59 Separate ¼" Ring (incl.)	**.21**	**.19**	**.16**	**.15**
510-7050	25-7050 (F-59A)	FF	For RG-59 Attached ⅛" Ring	**.22**	**.20**	**.17**	**.16**
510-7030	25-7030 (F-59 ALM)	GG	For RG-59 Up to 70% Braid	**.31**	**.28**	**.23**	**.21**
510-7035	25-7035	HH	For RG-59, 62 Teflon	**.57**	**.52**	**.44**	**.40**
510-7100	25-7100 (F-59T)	JJ	½ Watt 5% Terminator	**.45**	**.40**	**.34**	**.31**
510-7210	25-7210 (F-81NW)	KK	¾ Incline Splice	**.42**	**.38**	**.32**	**.29**
510-7650	25-7650 (F-61PC)	LL	PC Board Adapter	**.63**	**.57**	**.49**	**.44**
510-7660	25-7660 (F-61AD)	MM	Chassis Mount with Nut/Washer	**.63**	**.57**	**.49**	**.44**
510-7150	25-7150 (F-56)	NN	For RG-6 Separate ¼" Ring (incl.)	**.28**	**.25**	**.21**	**.19**
510-7160	25-7160 (F-56A)	FF	For RG-6 Attached ¼" Ring (incl.)	**.32**	**.29**	**.24**	**.22**
510-7032	25-7032 (F-56 ALM)	GG	For RG-6 Up to 70% Braid	**.34**	**.31**	**.26**	**.24**

97 Series Fixed Contact Solder Type

Contact: Gold plated on nickel. Thermoplastic insulator UL94/V-0 flame retardant.

Male — Plugs

Stock No.	Mfr.'s Type	No. of Contacts	EACH 1-24	EACH 25-99	EACH 100-499
510-2000	40-9709M	9	.53	.48	.40
510-2002	40-9715M	15	.84	.76	.65
510-2004	40-9725M	25	.63	.57	.54
510-2006	40-9737M	37	1.37	1.23	1.05
510-2008	40-9750M	50	3.70	3.33	3.00

Female — Receptacles

Stock No.	Mfr.'s Type	No. of Contacts	EACH 1-24	EACH 25-99	EACH 100-499
510-2001	40-9709S	9	.53	.48	.40
510-2003	40-9715S	15	.95	.85	.73
510-2005	40-9725S	25	.74	.67	.57
510-2007	40-9737S	37	2.10	1.89	1.62
510-2009	40-9750S	50	3.90	3.51	3.16

98 Series Housings for Crimp Contacts

Copper alloy, tabbed with gold plating on nickel. Thermoplastic insulator.

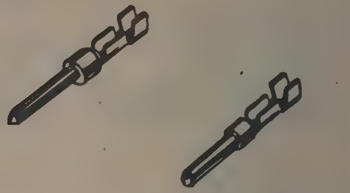
Plugs

Stock No.	Mfr.'s Type	No. of Contacts	EACH 1-24	EACH 25-99	EACH 100-499
510-2100	40-9809M	9	.74	.67	.57
510-2102	40-9815M	15	.84	.76	.65
510-2104	40-9825M	25	.84	.76	.65

Receptacles

Stock No.	Mfr.'s Type	No. of Contacts	EACH 1-24	EACH 25-99	EACH 100-499
510-2101	40-9809S	9	.74	.67	.57
510-2103	40-9815S	15	.84	.76	.65
510-2105	40-9825S	25	.84	.76	.65

Contacts

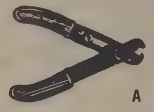


Stock No.	Mfr.'s Type	Description	PER PKG./100 1-9	PER PKG./100 10-24	PER PKG./100 25-99
510-2110	40-9856M	Male for Plugs	7.00	6.30	5.67
510-2115	40-9866S	Female for Receptacles	7.00	6.30	5.67

For High Density Housings

Stock No.	Mfr.'s Type	Description	PER PKG./100 1-9	PER PKG./100 10-24	PER PKG./100 25-99
510-2310	40-9428M	Male for Plugs	6.00	5.40	4.86
510-2315	40-9428F	Female for Receptacles	6.00	5.40	4.86

Crimping Tools for D-Sub Contacts*


A

B

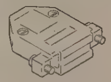
Stock No.	Mfr.'s Type	Fig.	Description	EACH 1-9	EACH 10-24	EACH 25-99
510-2150	24-7373P	A	D-Sub and Terminals	15.50	13.95	12.55
510-2155	24-8644P	B	10-22 AWG Non-Insulated Terminals, D-Sub Mini Pins and Sockets	50.49	42.75	36.06
510-2156	99-8644	—	Die Set Only for 24-8644	20.00	18.00	16.20

*Two crimps are required for high density contacts.

Insertion/Extraction Tool

510-2117. 40-9865. For Standard Contacts. **1-24** .... EACH 3.50
25-99 .... EACH 3.15 **100-499** .... EACH 2.83
510-2317. 40-9427T. For High Density Contacts. **1-24** .... EACH 4.50
25-99 .... EACH 4.05 **100-499** .... EACH 3.64

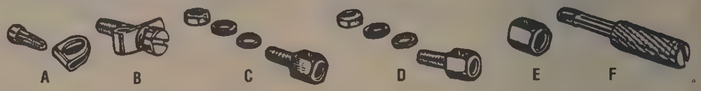
Multi-Colored D-Sub Hoods Deluxe Plastic HX-Series



Includes hardware and set screw to hold cable (9V-0).

Stock No.	Mfr.'s Type	Description	Color	EACH 1-24	EACH 25-99	EACH 100-499
510-4700	40-9709HX-BK	For 9 Pin	Black	1.26	1.14	.97
510-4705	40-9709HX-BU	For 9 Pin	Blue	1.26	1.14	.97
510-4710	40-9709HX-RE	For 9 Pin	Red	1.26	1.14	.97
510-4715	40-9709HX-GN	For 9 Pin	Green	1.26	1.14	.97
510-4720	40-9709HX-YE	For 9 Pin	Yellow	1.26	1.14	.97
510-4730	40-9715HX-BU	For 15 Pin	Blue	1.26	1.14	.97
510-4735	40-9715HX-RE	For 15 Pin	Red	1.26	1.14	.97
510-4740	40-9715HX-GN	For 15 Pin	Green	1.26	1.14	.97
510-4750	40-9725HX-BK	For 25 Pin	Black	1.26	1.14	.97
510-4755	40-9725HX-BU	For 25 Pin	Blue	1.26	1.14	.97
510-4760	40-9725HX-RE	For 25 Pin	Red	1.26	1.14	.97
510-4765	40-9725HX-GN	For 25 Pin	Green	1.26	1.14	.97
510-4770	40-9725HX-YE	For 25 Pin	Yellow	1.26	1.14	.97

D-Sub Hardware



Hardware (1 Set Per Package)

Stock No.	Mfr.'s Type	Fig.	Description	PER SET/2 1-24	PER SET/2 25-99	PER SET/2 100-499
510-2500	40-98440M	A	Male Screw Retainer	.63	.57	.49
510-2502	40-98441M	B	Male Screw Retainer	.21	.19	.16
510-2504	40-98440F	C	Female Screw Lock*	.74	.67	.57
510-2506	40-98442F	D	Female Screw Lock†	.62	.57	.49
510-2508	40-98443N	E	Hex Stand Off	.32	.29	.24
510-2510	40-9844T	F	Thumbscrew	.63	.57	.49

*.30" thread length. †.50" thread length.

Bulk Hardware (50 Sets of 2 Per Package)

Stock No.	Mfr.'s Type	Fig.	Description	PER PKG./50 SETS 1-4	PER PKG./50 SETS 5-9	PER PKG./50 SETS 10-24
510-2501	40-98440M-C	A	Male Screw Retainer	25.00	22.50	20.25
510-2503	40-98441M-C	B	Male Screw Retainer	4.13	3.44	2.95
510-2505	40-98440F-C	C	Female Screw Lock	28.00	25.20	22.68
510-2507	40-98442F-C	D	Female Screw Lock	25.20	22.68	20.42
510-2509	40-98443N-C	E	Hex Stand Off	8.70	7.83	7.05
510-2511	40-9844T-C	F	Thumbscrew	23.00	20.70	18.63

Housings for Crimp Contacts

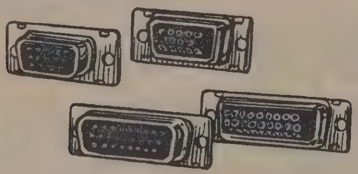
Plugs

Stock No.	Mfr.'s Type	No. of Contacts	EACH 1-24	EACH 25-99	EACH 100-499
510-2300	40-9415HDM	15HD	2.30	2.07	1.86

Receptacles

Stock No.	Mfr.'s Type	No. of Contacts	EACH 1-24	EACH 25-99	EACH 100-499
510-2301	40-9415HDS	15HD	2.50	2.25	2.02

High Density D-Sub Miniature Connectors



Fixed Contact Solder Type

Male — Plugs

Stock No.	Mfr.'s Type	No. of Contacts	EACH 1-24	EACH 25-99	EACH 100-499
510-2200	40-9515HDM	15HD	2.90	2.61	2.35
510-2202	40-9526HDM	26HD	5.00	4.50	4.05

Female — Receptacles

Stock No.	Mfr.'s Type	No. of Contacts	EACH 1-24	EACH 25-99	EACH 100-499
510-2201	40-9515HDS	15HD	3.10	2.79	2.51
510-2203	40-9526HDS	26HD	5.50	4.95	4.45

Hoods (Backshells)

A

B

C

D

E

► Include Hardware

Standard Plastic (H Series) — Fig. A

Stock No.	Mfr.'s Type	Description	EACH 1-24	EACH 25-99	EACH 100-499
510-2400	40-9709H	For 9 Pin	.53	.48	.40
510-2405	40-9715H	For 15 Pin	.63	.57	.49
510-2410	40-9725H	For 25 Pin	.53	.48	.40
510-2415	40-9737H	For 37 Pin	1.26	1.14	.97
510-2420	40-9750H	For 50 Pin	1.26	1.14	.97

Deluxe Plastic (HX Series) — Fig. B

Stock No.	Mfr.'s Type	Description	EACH 1-24	EACH 25-99	EACH 100-499
510-2425	40-9709HX	For 9 Pin	.95	.85	.73
510-2430	40-9715HX	For 15 Pin	.95	.85	.73
510-2435	40-9725HX	For 25 Pin	.95	.85	.73

Metallized Plastic (HS Series) — Fig. C

Stock No.	Mfr.'s Type	Description	EACH 1-24	EACH 25-99	EACH 100-499
510-2440	40-9709HS	For 9 Pin	.95	.85	.73
510-2445	40-9715HS	For 15 Pin	1.05	.95	.81
510-2450	40-9725HS	For 25 Pin	1.05	.95	.81

Heavy Duty Metal (HM Series) — Fig. D

Stock No.	Mfr.'s Type	Description	EACH 1-24	EACH 25-99	EACH 100-499
510-2455	40-9709HM	For 9 Pin	2.21	1.99	1.70
510-2460	40-9715HM	For 15 Pin	3.00	2.70	2.43
510-2465	40-9725HM	For 25 Pin	3.00	2.70	2.43

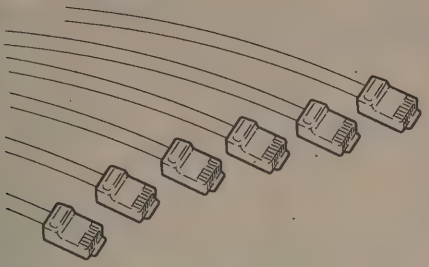
Plastic Quick Assembly (HQ Series) — Fig. E

Stock No.	Mfr.'s Type	Description	EACH 1-24	EACH 25-99	EACH 100-499
510-2470	40-9709HQP	For 9 Pin	1.68	1.52	1.30
510-2475	40-9715HQP	For 15 Pin	1.68	1.52	1.30
510-2480	40-9725HQP	For 25 Pin	1.89	1.71	1.46

Category 5 and BNC-BNC (Color-Coded Cable Assemblies)

Category 5 Cables
Colored Cable (No Boots)

MADE IN U. S. A.

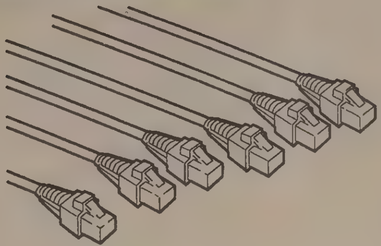


Round UTP 24 AWG. Stranded PVC cable wired to 568B/WECO/AT&T/258A configuration.

Stock No.	Mfr.'s Type	Color	Length	EACH 1-24	25-49	50-99
510-0400	73-6670-3	Gray	3 ft.	4.50	3.75	3.21
510-0402	73-6671-3	Black	3 ft.	4.50	3.75	3.21
510-0404	73-6672-3	Blue	3 ft.	4.50	3.75	3.21
510-0406	73-6673-3	Green	3 ft.	4.50	3.75	3.21
510-0408	73-6674-3	Red	3 ft.	4.50	3.75	3.21
510-0410	73-6675-3	Yellow	3 ft.	4.50	3.75	3.21
510-0411	73-6676-3	White	3 ft.	4.50	3.75	3.21
510-0412	73-6670-7	Gray	7 ft.	5.97	4.97	4.26
510-0414	73-6671-7	Black	7 ft.	5.97	4.97	4.26
510-0416	73-6672-7	Blue	7 ft.	5.97	4.97	4.26
510-0418	73-6673-7	Green	7 ft.	5.97	4.97	4.26
510-0420	73-6674-7	Red	7 ft.	5.97	4.97	4.26
510-0422	73-6675-7	Yellow	7 ft.	5.97	4.97	4.26
510-0423	73-6676-7	White	7 ft.	5.97	4.97	4.26
510-0424	73-6670-15	Gray	15 ft.	8.90	7.42	6.36
510-0426	73-6671-15	Black	15 ft.	8.90	7.42	6.36
510-0428	73-6672-15	Blue	15 ft.	8.90	7.42	6.36
510-0430	73-6673-15	Green	15 ft.	8.90	7.42	6.36
510-0432	73-6674-15	Red	15 ft.	8.90	7.42	6.36
510-0434	73-6675-15	Yellow	15 ft.	8.90	7.42	6.36
510-0435	73-6676-15	White	15 ft.	8.90	7.42	6.36
510-0436	73-6670-25	Gray	25 ft.	12.58	10.48	8.98
510-0438	73-6671-25	Black	25 ft.	12.58	10.48	8.98
510-0440	73-6672-25	Blue	25 ft.	12.58	10.48	8.98
510-0442	73-6673-25	Green	25 ft.	12.58	10.48	8.98
510-0444	73-6674-25	Red	25 ft.	12.58	10.48	8.98
510-0446	73-6675-25	Yellow	25 ft.	12.58	10.48	8.98
510-0447	73-6676-25	White	25 ft.	12.58	10.48	8.98
510-0448	73-6670-50	Gray	50 ft.	21.76	18.13	15.54
510-0450	73-6671-50	Black	50 ft.	21.76	18.13	15.54
510-0452	73-6672-50	Blue	50 ft.	21.76	18.13	15.54
510-0454	73-6673-50	Green	50 ft.	21.76	18.13	15.54
510-0456	73-6674-50	Red	50 ft.	21.76	18.13	15.54
510-0458	73-6675-50	Yellow	50 ft.	21.76	18.13	15.54
510-0459	73-6676-50	White	50 ft.	21.76	18.13	15.54

Category 5 Cables
Colored Cable with Colored Boots

MADE IN U. S. A.

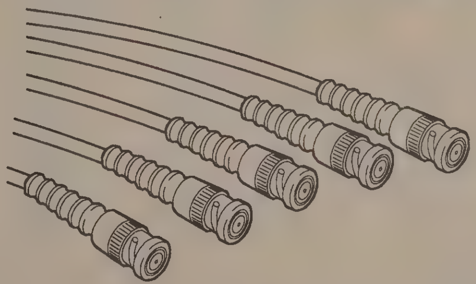


Round UTP 24 AWG. Stranded PVC cable wired to 568B/WECO/AT&T/258A configuration.

Stock No.	Mfr.'s Type	Color	Length	EACH 1-24	25-49	50-99
510-0460	73-6680-3	Gray	3 ft.	4.96	4.13	3.54
510-0462	73-6691-3	Black	3 ft.	4.96	4.13	3.54
510-0464	73-6692-3	Blue	3 ft.	4.96	4.13	3.54
510-0466	73-6693-3	Green	3 ft.	4.96	4.13	3.54
510-0468	73-6694-3	Red	3 ft.	4.96	4.13	3.54
510-0470	73-6695-3	Yellow	3 ft.	4.96	4.13	3.54
510-0471	73-6696-3	White	3 ft.	4.96	4.13	3.54
510-0472	73-6680-7	Gray	7 ft.	6.43	5.36	4.59
510-0474	73-6691-7	Black	7 ft.	6.43	5.36	4.59
510-0476	73-6692-7	Blue	7 ft.	6.43	5.36	4.59
510-0478	73-6693-7	Green	7 ft.	6.43	5.36	4.59
510-0480	73-6694-7	Red	7 ft.	6.43	5.36	4.59
510-0482	73-6695-7	Yellow	7 ft.	6.43	5.36	4.59
510-0483	73-6696-17	White	7 ft.	6.43	5.36	4.59
510-0484	73-6680-15	Gray	15 ft.	9.36	7.80	6.69
510-0486	73-6691-15	Black	15 ft.	9.36	7.80	6.69
510-0488	73-6692-15	Blue	15 ft.	9.36	7.80	6.69
510-0490	73-6693-15	Green	15 ft.	9.36	7.80	6.69
510-0492	73-6694-15	Red	15 ft.	9.36	7.80	6.69
510-0494	73-6695-15	Yellow	15 ft.	9.36	7.80	6.69
510-0495	73-6696-15	White	15 ft.	9.36	7.80	6.69
510-0496	73-6680-25	Gray	25 ft.	13.04	10.86	9.31
510-0498	73-6691-25	Black	25 ft.	13.04	10.86	9.31
510-0500	73-6692-25	Blue	25 ft.	13.04	10.86	9.31
510-0502	73-6693-25	Green	25 ft.	13.04	10.86	9.31
510-0504	73-6694-25	Red	25 ft.	13.04	10.86	9.31
510-0506	73-6695-25	Yellow	25 ft.	13.04	10.86	9.31
510-0507	73-6696-25	White	25 ft.	13.04	10.86	9.31
510-0508	73-6680-50	Gray	50 ft.	22.22	18.51	15.87
510-0510	73-6691-50	Black	50 ft.	22.22	18.51	15.87
510-0511	73-6692-50	Blue	50 ft.	22.22	18.51	15.87
510-0512	73-6693-50	Green	50 ft.	22.22	18.51	15.87
510-0514	73-6694-50	Red	50 ft.	22.22	18.51	15.87
510-0516	73-6695-50	Yellow	50 ft.	22.22	18.51	15.87
510-0517	73-6696-50	White	50 ft.	22.22	18.51	15.87

BNC-BNC Cable Assemblies
RG-58AU Thin Ethernet
50 Ohm 95% Braid and
100% Foil Shield Cable 20 GA Stranded

MADE IN U. S. A.

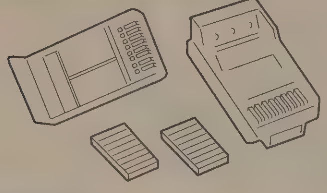


- Belden 9907 Equivalent in Colors
- All Assemblies Made with American Made Cambridge Connectors

Stock No.	Mfr.'s Type	Color	Length	EACH 1-24	25-49	50-99
510-0518	73-6340-3	Black	3 ft.	8.08	6.73	5.77
510-0520	73-6361-3	Blue	3 ft.	8.08	6.73	5.77
510-0522	73-6362-3	Green	3 ft.	8.08	6.73	5.77
510-0524	73-6363-3	Red	3 ft.	8.08	6.73	5.77
510-0526	73-6364-3	Yellow	3 ft.	8.08	6.73	5.77
510-0528	73-6340-6	Black	6 ft.	9.27	7.73	6.62
510-0530	73-6361-6	Blue	6 ft.	9.27	7.73	6.62
510-0532	73-6362-6	Green	6 ft.	9.27	7.73	6.62
510-0534	73-6363-6	Red	6 ft.	9.27	7.73	6.62
510-0536	73-6364-6	Yellow	6 ft.	9.27	7.73	6.62

Stock No.	Mfr.'s Type	Color	Length	EACH 1-24	25-49	50-99
510-0538	73-6340-10	Black	10 ft.	10.92	9.10	7.80
510-0540	73-6361-10	Blue	10 ft.	10.92	9.10	7.80
510-0542	73-6362-10	Green	10 ft.	10.92	9.10	7.80
510-0544	73-6363-10	Red	10 ft.	10.92	9.10	7.80
510-0546	73-6364-10	Yellow	10 ft.	10.92	9.10	7.80
510-0548	73-6340-25	Black	25 ft.	17.07	14.23	12.20
510-0550	73-6361-25	Blue	25 ft.	17.07	14.23	12.20
510-0552	73-6362-25	Green	25 ft.	17.07	14.23	12.20
510-0554	73-6363-25	Red	25 ft.	17.07	14.23	12.20
510-0556	73-6364-25	Yellow	25 ft.	17.07	14.23	12.20

Category 5 Plug — For Stranded or Solid Cable

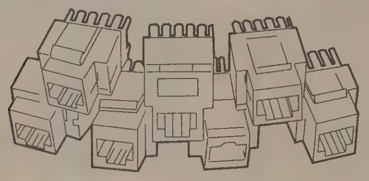


- 50 Micron Gold Plate
- Quick Snap with Strain Relief
- 8-Conductor (RJ-45)

510-8500. 32-2198UL. **1-24**	EACH 1.50
25-99	EACH 1.35
100-499	EACH 1.22

Multi-Colored Keystone Jacks

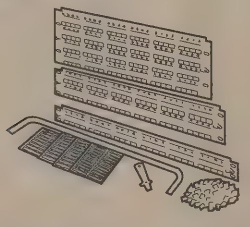
110 Type, 8 Conductor, RJ-45 Category 5 Rated



- 50 Micron Gold Plated Contacts/PC Board Type
- 568B/ATT

Stock No.	Mfr.'s Type	Color	EACH 1-24	EACH 25-49	EACH 50-99
510-8508	30-7411B	Black	10.80	9.72	8.74
510-8509	30-7412B	Blue	10.80	9.72	8.74
510-8510	30-7413B	Green	10.80	9.72	8.74
510-8511	30-7414B	Red	10.80	9.72	8.74
510-8512	30-7415B	Yellow	10.80	9.72	8.74
510-8513	30-7416B	White	10.80	9.72	8.74
510-8514	30-7417B	Orange	10.80	9.72	8.74
510-8515	30-7418B	Ivory	10.80	9.72	8.74

Patch Panels and Mini Panel



Category 5 Patch Panels

100 megabit, comes with stuffer caps, 94V-0 Black ABS/110 termination, insertion tool, 50 micron gold plated contacts, and icons. 568B wiring.

Stock No.	Mfr.'s Type	No. of Ports	Size In.	EACH
510-8539	30-7422B	12	1½ × 19	140.00
510-8540	30-7424B	24	1½ × 19	240.00
510-8541	30-7448B	48	3 × 19	480.00
510-8542	30-7496B	96	7 × 19	940.00

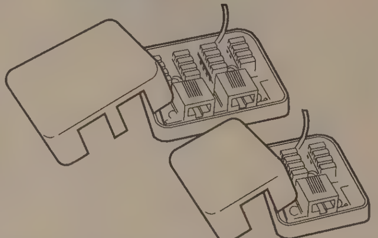
12 Port Mini Panel

Vertical mount with bracket.

510-8543. 30-8412b .... EACH 170.00

Surface Mount Boxes with PC Board

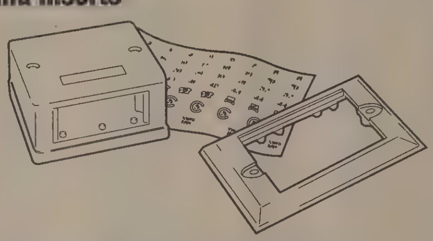
Meets CAT 5 Requirements



- Suitable for 22-26 AWG Wire Stranded or Solid Cable
- 30 Microinch Gold Plated Contacts and ABS Material UL94V0

Stock No.	Mfr.'s Type	Description	EACH 1-24	EACH 25-49
510-8516	30-8198	Krone type, single outlet 8 cond.	6.90	6.21
510-8517	30-8298	Krone type, dual outlet 8 cond.	11.00	9.90
510-8518	30-5198B	Type 110, unshielded single outlet 8 cond.	10.70	9.63
510-8519	30-5298B	Type 110, unshielded dual outlet 8 cond.	16.10	14.49
510-8520	30-5199B	Type 110, shielded single outlet 8 cond.	12.20	10.98
510-8521	30-5299B	Type 110, shielded dual outlet 8 cond.	18.40	16.56

Surface Mount Box, Single Gang Wallplate, and Inserts



Surface Mount Box, Single Gang Wallplate

Stock No.	Mfr.'s Type	Description	EACH 1-24	EACH 25-49	EACH 50-99
510-8522	30-5000	Surface mount box*	3.40	3.06	2.75
510-8523	30-5100	Single gang wallplate*	2.30	2.07	1.86

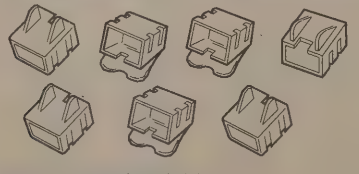
*Complete with identification sheet.

Inserts

Stock No.	Mfr.'s Type	Insert type	EACH 1-24	EACH 25-49	EACH 50-99
510-8524	30-5201	For single keystone jack	.90	.81	.73
510-8525	30-5201A	For single keystone jack*	.90	.81	.73
510-8526	30-5202	For duplex keystone jack	.90	.81	.73
510-8527	30-5202A	For duplex keystone jack*	.90	.81	.73
510-8528	30-5206	For single BNC jack	.90	.81	.73
510-8529	30-5207	For duplex BNC jacks	.90	.81	.73
510-8530	30-5208	For single ST fiber jack	.90	.81	.73
510-8531	30-5209	For duplex ST fiber jacks	.90	.81	.73
510-8532	30-5212	For two DB-9 connectors	2.10	1.89	1.70
510-8533	30-5214	For one DB-25 connector	2.10	1.89	1.70
510-8534	30-5210	For "F" type jack	.90	.81	.73
510-8535	30-5217	For dual BNC angled piece**	1.70	1.53	1.38
510-8536	30-5204	Blank insert ½"	.90	.81	.73
510-8537	30-5203	Blank insert 1"	.90	.81	.73
510-8538	30-5216	Blank insert 2"	2.10	1.89	1.70

*With Icon application. **For wallplates only.

Field Installable 2-Pc. Plastic Snap Together Colored Snagless Boots



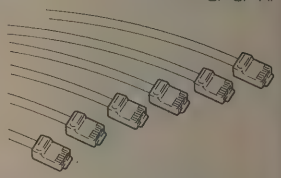
- Quick Snap with Internal Strain Relief
- For 8 Conductor Modular Plugs

Stock No.	Mfr.'s Type	Color	EACH 1-99	EACH 100-499	EACH 500-999
510-8501	30-5900BK	Black	.30	.27	.24
510-8502	30-5900BU	Blue	.30	.27	.24
510-8503	30-5900GN	Green	.30	.27	.24
510-8504	30-5900RE	Red	.30	.27	.24
510-8505	30-5900YE	Yellow	.30	.27	.24
510-8506	30-5900WH	White	.30	.27	.24
510-8507	30-5900GY	Gray	.30	.27	.24

Category 5 Cables Colored Cable (No Boots)

MADE IN U. S. A.

Round UTP 24 AWG. Stranded PVC cable wired to 568B/WECO/AT&T/258A configuration.

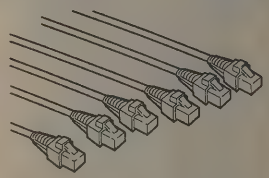


Stock No.	Mfr.'s Type	Color	Length Ft.	EACH 1-24	EACH 25-49	EACH 50-99
510-0400	73-6670-3	Gray	3	4.50	3.75	3.21
510-0402	73-6671-3	Black	3	4.50	3.75	3.21
510-0404	73-6672-3	Blue	3	4.50	3.75	3.21
510-0406	73-6673-3	Green	3	4.50	3.75	3.21
510-0408	73-6674-3	Red	3	4.50	3.75	3.21
510-0410	73-6675-3	Yellow	3	4.50	3.75	3.21
510-0411	73-6676-3	White	3	4.50	3.75	3.21
510-0412	73-6670-7	Gray	7	5.97	4.97	4.26
510-0414	73-6671-7	Black	7	5.97	4.97	4.26
510-0416	73-6672-7	Blue	7	5.97	4.97	4.26
510-0418	73-6673-7	Green	7	5.97	4.97	4.26
510-0420	73-6674-7	Red	7	5.97	4.97	4.26
510-0422	73-6675-7	Yellow	7	5.97	4.97	4.26
510-0423	73-6676-7	White	7	5.97	4.97	4.26
510-0424	73-6670-15	Gray	15	8.90	7.42	6.36
510-0426	73-6671-15	Black	15	8.90	7.42	6.36
510-0428	73-6672-15	Blue	15	8.90	7.42	6.36
510-0430	73-6673-15	Green	15	8.90	7.42	6.36
510-0432	73-6674-15	Red	15	8.90	7.42	6.36
510-0434	73-6675-15	Yellow	15	8.90	7.42	6.36
510-0435	73-6676-15	White	15	8.90	7.42	6.36
510-0436	73-6670-25	Gray	25	12.58	10.48	8.98
510-0438	73-6671-25	Black	25	12.58	10.48	8.98
510-0440	73-6672-25	Blue	25	12.58	10.48	8.98
510-0442	73-6673-25	Green	25	12.58	10.48	8.98
510-0444	73-6674-25	Red	25	12.58	10.48	8.98
510-0446	73-6675-25	Yellow	25	12.58	10.48	8.98
510-0447	73-6676-25	White	25	12.58	10.48	8.98
510-0448	73-6670-50	Gray	50	21.76	18.13	15.54
510-0450	73-6671-50	Black	50	21.76	18.13	15.54
510-0452	73-6672-50	Blue	50	21.76	18.13	15.54
510-0454	73-6673-50	Green	50	21.76	18.13	15.54
510-0456	73-6674-50	Red	50	21.76	18.13	15.54
510-0458	73-6675-50	Yellow	50	21.76	18.13	15.54
510-0459	73-6676-50	White	50	21.76	18.13	15.54

Category 5 Cables Colored Cable with Colored Boots

MADE IN U. S. A.

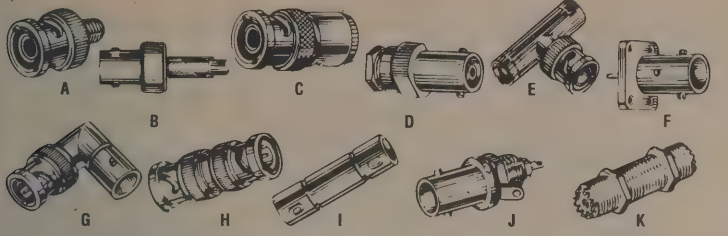
Round UTP 24 AWG. Stranded PVC cable wired to 568B/WECO/AT&T/258A configuration.



Stock No.	Mfr.'s Type	Color	Length Ft.	EACH 1-24	EACH 25-49	EACH 50-99
510-0460	73-6680-3	Gray	3	4.96	4.13	3.54
510-0462	73-6691-3	Black	3	4.96	4.13	3.54
510-0464	73-6692-3	Blue	3	4.96	4.13	3.54
510-0466	73-6693-3	Green	3	4.96	4.13	3.54
510-0468	73-6694-3	Red	3	4.96	4.13	3.54
510-0470	73-6695-3	Yellow	3	4.96	4.13	3.54
510-0471	73-6696-3	White	3	4.96	4.13	3.54
510-0472	73-6680-7	Gray	7	6.43	5.36	4.59
510-0474	73-6691-7	Black	7	6.43	5.36	4.59
510-0476	73-6692-7	Blue	7	6.43	5.36	4.59
510-0478	73-6693-7	Green	7	6.43	5.36	4.59
510-0480	73-6694-7	Red	7	6.43	5.36	4.59
510-0482	73-6695-7	Yellow	7	6.43	5.36	4.59
510-0483	73-6696-7	White	7	6.43	5.36	4.59
510-0484	73-6680-15	Gray	15	9.36	7.80	6.69
510-0486	73-6691-15	Black	15	9.36	7.80	6.69
510-0488	73-6692-15	Blue	15	9.36	7.80	6.69
510-0490	73-6693-15	Green	15	9.36	7.80	6.69
510-0492	73-6694-15	Red	15	9.36	7.80	6.69
510-0494	73-6695-15	Yellow	15	9.36	7.80	6.69
510-0495	73-6696-15	White	15	9.36	7.80	6.69
510-0496	73-6680-25	Gray	25	13.04	10.86	9.31
510-0498	73-6691-25	Black	25	13.04	10.86	9.31
510-0500	73-6692-25	Blue	25	13.04	10.86	9.31
510-0502	73-6693-25	Green	25	13.04	10.86	9.31
510-0504	73-6694-25	Red	25	13.04	10.86	9.31
510-0506	73-6695-25	Yellow	25	13.04	10.86	9.31
510-0507	73-6696-25	White	25	13.04	10.86	9.31
510-0508	73-6680-50	Gray	50	22.22	18.51	15.87
510-0510	73-6691-50	Black	50	22.22	18.51	15.87
510-0511	73-6692-50	Blue	50	22.22	18.51	15.87
510-0512	73-6693-50	Green	50	22.22	18.51	15.87
510-0514	73-6694-50	Red	50	22.22	18.51	15.87
510-0516	73-6695-50	Yellow	50	22.22	18.51	15.87
510-0517	73-6696-50	White	50	22.22	18.51	15.87

Coaxial and Audio Connectors, Patch Cords, Jumpers and Extension Cables ALECTRON

Coaxial Connectors



BNC Bayonet-Coupled Connectors

Rated: 500 volts peak; 500 volts (RMS) dielectric. **Impedance:** 50 ohms, VSWR, 1.25:1 maximum (straight plug and jack). Cable retention strength equal to cable braid. Center contact is soldered; braid may be soldered or crimped. Delrin dielectric. Connector is brass, center pin is silver plated; other parts nickel-plated. **Note:** These connectors are made to commercial standards — not for MIL use.

BNC Bayonet-Coupled Connectors

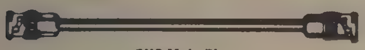
Stock No.	Mfr.'s Type	Fig.	Similar to UG Type	Description	Use with RG Type Cable	Length In.	EACH	
							1-99	100-499
283-7131	SWH-104-N	A	—	Crimp plug	58, 58A, 58C, 141	31/32	**1.44**	**1.19**
283-7133	SWH-304	B	—	Crimp jack	58, 58A, 58C, 141	1 5/8	**1.62**	**1.36**
283-7101	SWH-108	C	88/U	Clamp plug	55, 58	31/32	**1.55**	**1.30**
283-7110	SWH-163	D	89/U	Clamp jack	55, 58	1 1/8	**1.98**	**1.67**
283-7107	SWH-115	E	274/U	"T" adapter	—	1 9/32	**4.09**	**3.43**
283-7102	SWH-156	F	290/U	Panel receptacle	—	1 1/32	**2.10**	**1.77**
283-7109	SWH-110	G	306/U	Angle adapter	—	1	**4.09**	**3.43**
283-7106	SWH-105	H	491A/U	Adapter	—	1 5/16	**3.42**	**2.88**
283-7105	SWH-155	I	914/U	Adapter	—	1 11/32	**1.83**	**1.55**
283-7104	SWH-126	J	1094/U	Bkhd. adapter	—	1 1/16	**1.41**	**1.15**

UHF Coaxial Connectors

Low in cost, general-purpose connectors. For applications up to 300 MHz, and where constant impedance match is not necessarily required. **Rated:** 500 volts peak.

283-6209	SWH-174	K	363/U	Straight adapter	—	2	**2.60**	**2.18**

Coaxial Cable Shielded Standard Patch Cords

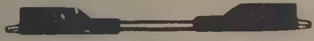


BNC Male Plug

Shielded standard patch cords. All leads use RG-58C/U coaxial cable.

Stock No.	Mfr.'s Type	Length Ft.	Color	EACH	
				1-99	100-999
283-1650	SM-1650	1	Black	**4.59**	**4.05**
283-1652	SM-1652	3	Black	**5.05**	**4.45**
283-1654	SM-1654	5	Black	**6.16**	**5.55**

Unshielded Jumpers



Type A — Standard Alligator Clip
Type B — Mini Alligator Clip

Unshielded jumper cords with choice of standard or miniature alligator clip styles. All leads are #18 AWG 20,000-volt insulated wire. Cadmium-plated steel clips; vinyl plastic boots. Have No. 20, 5000-volt insulation.

Stock No.	Mfr.'s Type	Type	Length Ft.	Color	EACH	
					1-99	100-999
283-9683	EH-1683	A	1	Red	**1.47**	**1.16**
283-9684	EH-1684	A	1	Black	**1.63**	**1.29**
283-9685	EH-1685	A	3	Red	**1.56**	**1.32**
283-9686	EH-1686	A	3	Black	**1.56**	**1.32**
283-9687	EH-1687	A	5	Red	**1.33**	**1.17**
283-9690	EH-1690	A	5	Black	**1.86**	**1.65**
283-9688	EH-1688	B	1	Red	**1.14**	**.95**
283-9689	EH-1689	B	1	Black	**1.14**	**.95**
283-9691	EH-1691	B	3	Red	**1.67**	**1.48**
283-9692	EH-1692	B	3	Black	**1.69**	**1.38**

Audio Extension Cables

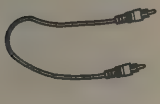


Fig. 1

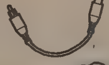


Fig. 2

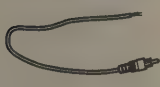


Fig. 3

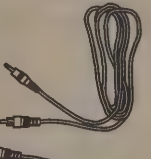


Fig. 4

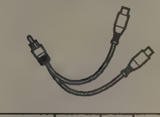


Fig. 5

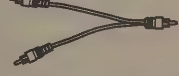
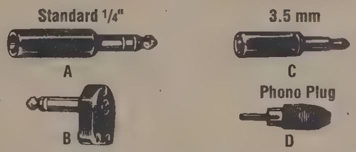


Fig. 6

Stock No.	Mfr.'s Type	Fig.	Description	Length	EACH	
					1-99	100-999
283-9000	9000	1	Phono plug/plug	1 1/2'	**1.30**	**1.09**
283-9001	9001	1	Phono plug/plug	3'	**1.48**	**1.19**
283-9002	9002	1	Phono plug/plug	6'	**1.72**	**1.38**
283-9005	9005	1	Phono plug/plug	12'	**2.37**	**1.92**
283-9006	9006	2	Phono plug/jack	3'	**1.79**	**1.44**
283-9007	9007	2	Phono plug/jack	6'	**1.55**	**1.24**
283-9012	9012	3	Phono plug/tinned leads	3'	**1.19**	**.96**
283-9013	9013	3	Phono plug/tinned leads	6'	**1.42**	**1.13**
283-9037	9037	4	3.5 mm plug/phono plug	6'	**1.64**	**1.31**
283-9040	9040	5	Phono plug/2 jacks	4"	**2.03**	**1.61**
283-9041	9041	6	Phono plug/2 plugs	4"	**2.08**	**1.70**

Phone Plugs



Standard 1/4" Type — 2 Cond. Mate with Jacks JR-1804/SJ210

Stock No.	Mfr.'s Type	Fig.	Color	Description	EACH	
					1-99	100-999
283-3001	PP-3001	A	Black	2 cond. screw terminal	**.81**	**.72**
283-3002	PP-3002	A	Red	2 cond. screw terminal	**.81**	**.72**
283-3003	PP-3003	A	Metal	2 cond. screw terminal	**1.39**	**1.22**
283-1060	SP-1060	B	Black	Right angle type 2 cond. solder terminal	**.60**	**.53**
283-0053	WTN-1080	A	Black	3 cond. solder terminal	**1.22**	**.98**

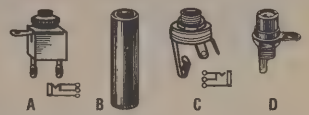
Miniature and Sub-Miniature Types — 2 Cond. Mate with Jacks SJ-M44/SJ-M44-2

283-0072	JR-1013	C	Black	2 cond. solder terminal	**.47**	**.40**
283-0071	JR-1013	C	Red	2 cond. solder terminal	**.47**	**.40**
283-0080	FP-008	C	Metal	2 cond. solder terminal	**.48**	**.39**

Phono Plugs

283-0010	JR-1624R	D	Red	Mates with phono jack	**.36**	**.31**
283-0012	JR-1624B	D	Black	Mates with phono jack	**.36**	**.31**
283-0016	FP-001F	D	White	Mates with phono jack	**.27**	**.22**

Phone Jacks



Nickel-plated brass and brass springs for long life and trouble-free plug mating. Extra-heavy duty insulators prevent breakdowns.

Miniature and Sub-Miniature Types

Stock No.	Mfr.'s Type	Fig.	Description	EACH	
				1-99	100-999
283-0440	SJ-M44*	—	2 cond. closed circuit	**.76**	**.70**
283-0441	SJ-M44-2*	—	2 cond. open circuit	**1.00**	**.89**
283-0251	JY2501-02-020	A	2 cond. closed circuit†	**.55**	**.48**

Standard 1/4" Type

283-2030	SJ-203*	B	2 cond. extension	**1.77**	**1.57**
283-2080	SJ-208*	—	3 cond. closed circuit	**.91**	**.80**
283-2110	JR-1804*	—	2 cond. open circuit	**.67**	**.60**
283-2100	SJ-210*	C	2 cond. closed circuit	**.69**	**.61**
283-2090	SJ-209*	—	3 cond. open circuit	**1.44**	**1.27**

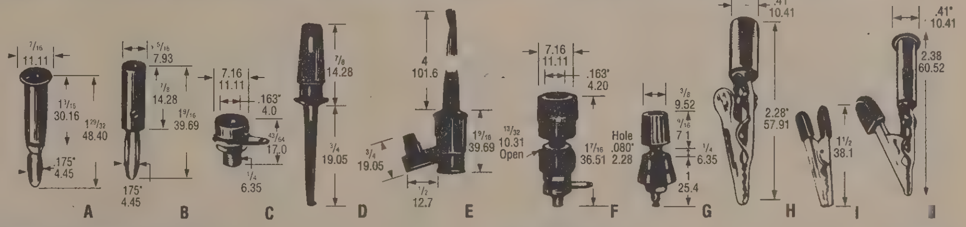
***Color:** Metal. †2.5 mm black.

Phono Jack — Fig. D

Stock No.	Mfr.'s Type	Description	EACH	
			1-99	100-999
283-1021	JR-1611‡	Phono jack. front mount in 3/8" hole	**.55**	**.48**
283-1022	JR-1611•	Front mount in 3/8" hole	**.58**	**.51**

‡White thermoplastic insulation. •Black thermoplastic insulation.

Banana Plugs and Jacks, Grabbers, Binding Posts and Alligator Clips



Banana Plugs and Jacks

All are machined of top-quality materials and carefully inspected. Plugs have sufficient spring tension to assure good holding power and low contact resistance. **Note:** These connectors are made to commercial standards — not for MIL use. Figure A and B mate with Figure E, F, or G.

Stock No.	Mfr.'s Type	Fig.	Color	EACH	
				1-99	100-999
283-0411	FP-041A	A	Red	**.41**	**.36**
283-0412	FP-041B	A	Black	**.41**	**.36**
283-5560	JR-2505R	B	Red	**.79**	**.71**
283-5563	JR-2505B	B	Black	**.79**	**.71**
283-0423	FP-042C	B	Yellow	**.36**	**.32**
283-0424	FP-042D	B	Green	**.36**	**.32**
283-0425	FP-042E	B	Blue	**.36**	**.32**
283-3511	ST-351A	C	Red	**.60**	**.53**
283-3512	ST-351B	C	Black	**.70**	**.62**

Grabbers

For making rapid and reliable tests on many types of equipment. Molded from rugged thermoplastic for strength and longevity.

283-8162	R8-16F	D	Black	**.73**	**.62**
283-8161	R8-16DR	D	Red	**.84**	**.76**
283-1631	R8-16CR	E	Red	**1.87**	**1.53**
283-1632	R8-16CB	E	Black	**1.87**	**1.53**

Binding Posts

*No solder tab.

Stock No.	Mfr.'s Type	Fig.	Color	EACH	
				1-99	100-999
283-1183	WTN-1052R-1	F	Red	**.83**	**.74**
283-1184	WTN-1052R-1	F	Black	**.83**	**.74**
283-1233	WTN-1052R-1(NT)	F*	Red	**.85**	**.68**
283-1234	WTN-1052B-1(NT)	F*	Black	**.85**	**.68**
283-1141	R1-14A	G	Red	**1.24**	**1.00**
283-1142	R1-14B	G	Black	**1.24**	**1.00**

Insulated-Barrel Alligator Clips

Made of cadmium-plated steel. Jaws open 5/16".

Stock No.	Mfr.'s Type	Fig.	Barrel Color	Size In.	EACH	
					1-99	100-999
283-3751	270-375SR	H	Red	2 7/16	**.46**	**.38**
283-3752	270-375SB	H	Black	2 7/16	**.43**	**.35**

Alligator Clips

283-3741	270-374R	I	Red	1 1/2	**.13**	**.11**
283-3742	270-374B	I	Black	1 1/2	**.40**	**.32**
283-3471	270-347R	J	Red	2 3/8	**.21**	**.18**
283-3472	270-347B	J	Black	2 3/8	**.21**	**.20**

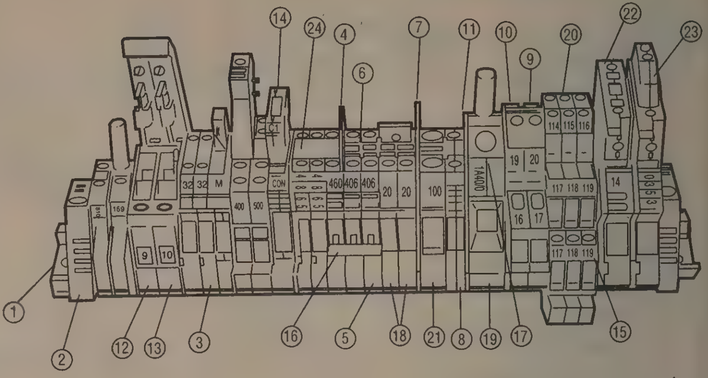
DIN Rail Mount Terminal Blocks

Standard terminal blocks feature a universal foot for mounting on 35 mm or 32 mm DIN rail. Ground Blocks are designed for either 35 or 32 mm rail, as indicated by the suffix in the Mfr.'s Type No. High density design features screw-cage clamps for reliable connections. **Material:** Polyamide 6.6. **Ratings:** 600 V or 300 V. UL, CSA, IEC/VDE.

Select the appropriate terminal block for your application from TABLE I using the SELECTOR ILLUSTRATION (SI#) shown opposite. Choose the accessories required for each terminal block selection from TABLE II, also using the SELECTOR ILLUSTRATION.

SI#
1. DIN Rail, 35 mm Slotted
2. End Stop
3. TRK1.5 Knife Disconnect
4. Separator
5. RK2.5 Feed-Through
6. Internal Jumper
7. Isolation Partition
8. SL2.5/35 Ground
9. RKD4 Double Level, 6 mm
10. RKD2.5 Double Level, 5 mm
11. End Plate
12. STK1 Fuse Block²
13. STK1/LEDU Fuse Block² with LED
14. TRK1.5/DS Diode Plug Disconnect
15. SB Marking Tags‡
16. External Jumper
17. BR Marking Tag‡
18. RK2.5-4 Feed-Through
19. RK16 Feed-Through
20. RKT2.5 Triple Level
21. RK6-10 Feed-Through
22. SIK10/Z Fuse Block³
23. SIK10Z/LEDGT Fuse Block³ with LED Plug
24. TM Jumper Cover*

*Also serves as a Top Marking Strip.
‡Marking Tags, Ferrules, Crimping Tools are shown on next two pages.



SELECTOR ILLUSTRATION (SI)
Terminal blocks and Accessories, by number as they are shown on this and next page. Use with Tables I and II. Definitions are listed at left.

Table I. Terminal Blocks for 35 and 32 mm DIN Rail

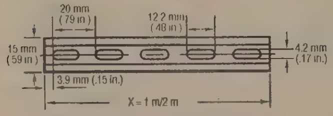
Stock No.	Mfr.'s Type	Part No.	SI#	Function	Amp/Volt	Wire Size (AWG)	Height mm	Height In.	Thickness mm	Thickness In.	SB5	SB6	BR5	BR6	EACH
502-1019	RK2.5	1296.2	5	Feed-Through	20.0 A/600 V	22-12	47	1.85	5.0	0.20	X		X		**1.02**
502-2000	RK2.5-4	1001.2	18	Feed-Through	40.0 A/600 V	22-10	47	1.85	6.0	0.24		X		X	**1.08**
502-2002	RK6-10	1005.2	21	Feed-Through	65.0 A/600 V	22-6	47	1.85	8.0	0.32		X		X	**1.59**
502-2004	RK16	1050.2	19	Feed-Through	85.0 A/600 V	12-4	58	2.28	12.0	0.47		X		X	**3.52**
502-2005	RK35	1052.2	†	Feed-Through	115.0 A/600 V	10-2	71	2.80	16.0	0.63		X		X	**4.87**
502-2006	RKD4	1020.2	9	Double Level	30.0 A/300 V	22-10	60	2.36	6.0	0.26		X		X	**2.64**
502-2015	RKD2.5	1206.2	10	Double Level	20.0 A/300 V	22-12	60	2.36	5.0	0.20	X		X		**2.59**
502-5000	RKT2.5	1261.2	20	Triple Level	20.0 A/300 V	22-12	58	2.28	5.0	0.20	X		X		**3.87**
502-2008	TRK1.5/STB	1391.2	3	Knife Disconnect¹	15.0 A/600 V	22-12	42	1.65	6.5	0.26		X		X	**3.50**
502-2010	STK1	2190.2	12	Fuse²	6.3 A/600 V	22-12	42	1.65	8.0	0.32		X		X	**5.20**
502-2012	STK1/LEDU	2457.2	13	Fuse with LED² 110 VAC	6.3 A/600 V	22-12	42	1.65	8.0	0.32		X		X	**11.96**
502-2013	STK1/LEDG	2449.2	13	Fuse with LED² 24 VDC	6.3 A/600 V	22-12	42	1.65	8.0	0.32		X		X	**10.52**
502-2014	SIK10/Z	1102.2	22	Fuse³	16.0 A/600 V	22-12	69	2.72	10.0	0.39		X		X	**7.35**
502-1652	SIK10/Z/LEDGT	1109.2	23	Fuse with LED³ 24 VDC	16.0 A/600 V	22-12	69	2.72	10.0	0.39		X		X	**11.97**
502-1650	SIK10/Z/LEDJU	1110.2	23	Fuse with LED³ 110 VC	16.0 A/600 V	22-12	69	2.72	10.0	0.39		X		X	**11.97**
502-1654	SL2.5/35	1056.2	8	Ground 35 mm DIN Rail	Ground	22-12	47	1.85	6.0	0.24		X		X	**4.09**
502-2016	SL4/35	1212.2	8	Ground 35 mm DIN Rail	Ground	22-10	47	1.85	8.0	0.32		X		X	**4.19**
502-1656	SL10/35	1213.2	8	Ground 35 mm DIN Rail	Ground	20-6	47	1.85	10.0	0.39		X		X	**4.55**
502-2017	SL2.5/32	1055.2	†	Ground 32 mm DIN Rail	Ground	22-12	52	2.05	6.0	0.24		X		X	**4.09**
502-2018	SL4/32	1065.2	†	Ground 32 mm DIN Rail	Ground	22-10	52	2.05	8.0	0.32		X		X	**4.19**
502-1658	SL10/32	1066.2	†	Ground 32 mm DIN Rail	Ground	20-6	52	2.05	10.0	0.39		X		X	**4.55**

Mini Terminal Blocks for 15 mm DIN Rail

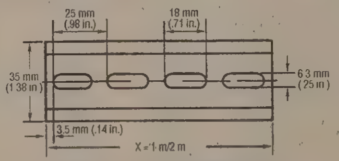
Stock No.	Mfr.'s Type	Part No.	SI#	Function	Amp/Volt	Wire Size (AWG)	Height mm	Height In.	Thickness mm	Thickness In.	SB5	SB6	BR5	BR6	EACH
502-5002	SRK2.5/15	1035.2	†	Feed-Through	20.0 A/300 V	22-14	30	1.18	5.0	0.20	X		X		**.99**
502-5004	RK1.5-4/15	1010.2	†	Feed-Through	30.0 A/300 V	22-10	35	1.38	6.0	0.24		X		X	**.99**
502-5006	SL4/15	1064.2	†	Ground for 15 mm DIN Rail	Ground	22-10	32	1.26	7.0	0.28		X		X	**3.04**
502-5008	TRK1.5/15STB	1393.2	†	Knife Disconnect¹	15.0 A/300 V	22-12	39	1.54	6.0	0.24		X		X	**3.50**
502-5010	STKI/15	2191.2	†	Fuse²	6.3 A/600 V	22-12	34	1.39	8.0	0.32		X		X	**5.20**
502-5012	STKI/15/LEDG	2459.2	†	Fuse with LED² 24 VDC	6.3 A/600 V	22-12	34	1.39	8.0	0.32		X		X	**10.40**
502-5014	STKI/15/LEDU	2467.2	†	Fuse with LED² 110 VAC	6.3 A/600 V	22-12	34	1.39	8.0	0.32		X		X	**11.96**

¹With 2 Sockets. ²5 × 20 mm. ³1/4 × 1¹/4". †Not Shown in Selector Illustration (SI). ‡Marking Tags are shown on next page.

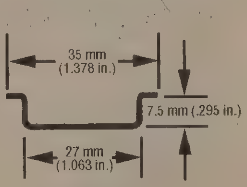
DIN Rail



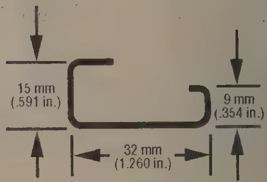
TS15 x 5.5-P1 (2092.0/1m)



TS35 x 15-P1 (2095.0/1m)
TS32 x 15-P1 (2093.0/1m)
TS35 x 7.5-P1 (2094.0/1m) Shown



TS35 x 7.5

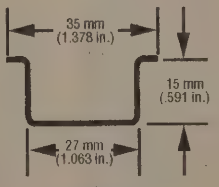


TS32 x 15

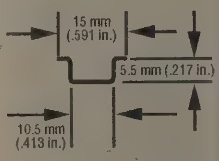
DIN Rail is slotted for easy mounting.
Material: Steel, zinc plated, yellow chromated. **Standard Length:** 1 m (3 ft., 3 in.).

Stock No.	Mfr.'s Type	Part No.	SI#	Size	EACH
502-2020	TS35 x 7.5-P1	2094.0/1m	1	35 × 7.5 mm (1.38 × .29 in.)	**6.67**
502-5016	TS35 x 15-P1	2095.0/1m	†	35 × 15 mm (1.38 × .59 in.)	**11.07**
502-2022	TS32 x 15-P1	2093.0/1m	†	32 × 15 mm (1.26 × .59 in.)	**9.69**
502-5018	TS15 x 5.5-P1	2092.0/1m	†	15 × 5.5 mm (.59 × .22 in.)	**4.78**

†Not Shown in Selector Illustration (SI).



TS35 x 15



TS15 x 5.5

DIN Rail Mount Terminal Blocks

Table II. Accessories for Selected 35 and 32 mm DIN Rail Mount Terminal Blocks by Type

Description	SI#	Type RK2.5			Type RK2.5-4			Type RK6-10			Type RK16			Type RK35		
		Stock No.	Mfr.'s Type	EACH	Stock No.	Mfr.'s Type	EACH	Stock No.	Mfr.'s Type	EACH	Stock No.	Mfr.'s Type	EACH	Stock No.	Mfr.'s Type	EACH
End Plate	11	502-2024	2001.2	.48	502-2024	2001.2	.48	502-2024	2001.2	.48	502-2026	2104.2	.59	502-4426	2116.2	.72
Isolation Partition	7	502-2032	2002.2	.61	502-2032	2002.2	.61	502-2034	2105.2	.93	502-2034	2105.2	.93	502-4428	2117.2	.87
Separator	4	502-2038	2566.2	.14	502-2036	2003.2	.13	502-2036	2003.2	.13	502-2036	2003.2	.13	—	—	—
End Stop/35 mm	2	502-2040	2005.2	.70	502-2040	2005.2	.70	502-2040	2005.2	.70	502-2040	2005.2	.70	502-2040	2005.2	.70
End Stop/32 mm	—	502-2042	2004.2	.72	502-2042	2004.2	.72	502-2042	2004.2	.72	502-2042	2004.2	.72	502-2042	2004.2	.72
Internal Jumper (2 Poles)	6	502-2202	2567.0	.64	502-2044	2019.0	.75	502-2052	2060.0	1.17	502-2060	2112.0	1.26	—	—	—
Internal Jumper (3 Poles)	6	502-2204	2568.0	1.13	502-2046	2020.0	1.06	502-2054	2061.0	1.61	502-2062	2113.0	1.79	—	—	—
Internal Jumper (4 Poles)	6	502-2206	2569.0	1.45	502-2048	2021.0	1.37	502-2056	2062.0	1.97	502-2064	2114.0	2.21	—	—	—
Internal Jumper (10 Poles)	6	502-2208	2570.0	3.45	502-2050	2022.0	3.29	502-2058	2063.0	4.70	502-2066	2115.0	5.09	—	—	—
External Jumper (2 Poles)	16	502-4420	8879.0	1.15	502-2076	2064.0	.40	502-2082	2067.0	.43	—	—	—	—	—	—
External Jumper (3 Poles)	16	502-4422	8880.0	1.18	502-2078	2065.0	.53	502-2084	2068.0	.57	—	—	—	—	—	—
External Jumper (4 Poles)	16	502-4424	8881.0	2.33	502-2080	2066.0	.63	502-2086	2069.0	.63	—	—	—	—	—	—
Jumper Cover	24	502-5020	8884.0	3.11	502-5020	8884.0	3.11	502-5020	8884.0	3.11	—	—	—	—	—	—

Description	SI#	Type RKD4			Type RKD2.5			Type TRK1.5/STB			Type STK1			Type RKT2.5		
		Stock No.	Mfr.'s Type	EACH	Stock No.	Mfr.'s Type	EACH	Stock No.	Mfr.'s Type	EACH	Stock No.	Mfr.'s Type	EACH	Stock No.	Mfr.'s Type	EACH
End Plate	11	502-2027	2101.2	.73	502-2027	2101.2	.73	—	—	—	502-4430	2046.2	.48	502-5024	2699.2	.84
Isolation Partition	7	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Separator	4	502-2038	2566.2	.16	502-2038	2566.2	.16	—	—	—	—	—	—	—	—	—
End Stop/35 mm	2	502-2040	2005.2	.70	502-2040	2005.2	.70	502-2040	2005.2	.70	502-2040	2005.2	.70	502-2040	2005.2	.70
End Stop/32 mm	—	502-2042	2004.2	.72	502-2042	2004.2	.72	502-2042	2004.2	.72	502-2042	2004.2	.72	502-2042	2004.2	.72
Internal Jumper (2 Poles)	6	502-2068	2087.0	.83	502-2202	2567.0	.68	—	—	—	—	—	—	502-5026	2422.0	.69
Internal Jumper (3 Poles)	6	502-2070	2088.0	1.25	502-2204	2568.0	1.20	—	—	—	—	—	—	502-5028	2423.0	1.20
Internal Jumper (4 Poles)	6	502-2072	2089.0	1.60	502-2206	2569.0	1.54	—	—	—	—	—	—	502-5030	2424.0	1.55
Internal Jumper (10 Poles)	6	502-2074	2090.0	3.78	502-2208	2570.0	3.66	—	—	—	—	—	—	502-5032	2425.0	3.67
External Jumper (2 Poles)	16	502-2076	2064.0	.40	—	—	—	502-2076	2064.0	.40	502-2082	2067.0	.40	—	—	—
External Jumper (3 Poles)	16	502-2078	2065.0	.53	—	—	—	502-2078	2065.0	.53	502-2084	2068.0	.53	—	—	—
External Jumper (4 Poles)	16	502-2088	2066.0	.63	—	—	—	502-2080	2066.0	.63	502-2086	2069.0	.63	—	—	—
Jumper Cover	24	502-5022	8885.0	2.92	—	—	—	—	—	—	—	—	—	—	—	—

Table II. Accessories for 15 mm DIN Rail Mount Mini Terminal Blocks by Type

Description	SI#	Type SRK2.5/15			Type RK1.5-4/15			Type TRK1.5/15/STB			Type STKI/15		
		Stock No.	Mfr.'s Type	EACH	Stock No.	Mfr.'s Type	EACH	Stock No.	Mfr.'s Type	EACH	Stock No.	Mfr.'s Type	EACH
End Plate	—	502-5034	2427.2	.31	502-5048	2738.2	.41	—	—	—	502-4430	2046.2	.48
Isolation Partition	—	502-5036	2428.2	.46	502-5050	2071.2	.46	—	—	—	—	—	—
Separator	—	—	—	—	502-2038	2566.2	.16	—	—	—	—	—	—
End Stop/15 mm	—	502-5052	2074.2	.44	502-5052	2074.2	.44	502-5052	2074.2	.44	502-5052	2074.2	.44
Internal Jumper (2 Poles)	—	502-5026	2422.0	.69	502-2068	2087.0	.83	—	—	—	—	—	—
Internal Jumper (3 Poles)	—	502-5028	2423.0	1.20	502-2070	2088.0	1.24	—	—	—	—	—	—
Internal Jumper (4 Poles)	—	502-5030	2424.0	1.55	502-2072	2089.0	1.60	—	—	—	—	—	—
Internal Jumper (10 Poles)	—	502-5032	2425.0	3.67	502-2074	2090.0	3.78	—	—	—	—	—	—
External Jumper (2 Poles)	—	—	—	—	502-2076	2064.0	.40	502-2076	2064.0	.40	502-2082	2067.0	.40
External Jumper (3 Poles)	—	—	—	—	502-2078	2065.0	.53	502-2078	2065.0	.53	502-2084	2068.0	.53
External Jumper (4 Poles)	—	—	—	—	502-2080	2066.0	.63	502-2080	2066.0	.63	502-2086	2069.0	.63

Marking Tags

Give a professional look to every job, large or small, standard or special with Altech's comprehensive Marking System. Marked terminal blocks increase wiring efficiency, save installation time and make wire hook-up, system modifications and troubleshooting quick and easy.

SB and BR

Push-on tags are available in two widths and fit most DIN rail mount and panel mount terminal blocks. They can be inserted individually or in strips of ten to speed installation. BR Tags are extra large for multiple digits or large markings. They are available blank for hand marking or imprinted. Standard tags are white with black imprint, marked consecutively or with identical numbers, horizontal (FW) or vertical (FS). Refer to Table I on page 160 to determine which tag can be used on each terminal block type. A package contains 10 strips of 10 tags.

TM

Top marking strips snap onto the tops of terminal block assemblies to provide a wide surface for multi-character markings. They can also be used as protective covers for internal jumpers. Strips are supplied blank for hand marking or computer imprinted labels. Supplied in .5 m (19.7") lengths, which cut easily.

SB5 — SI# 15

Horizontal		Vertical		ID	PER PK./100
Stock No.	Mfr.'s Type	Stock No.	Mfr.'s Type		
502-2210	SB5/10	502-2210	SB5/10	Blank	3.84
502-2212	SB5/10FW	502-5080	SB5/10FS	1-10	3.84
502-2214	SB5/10FW	502-5082	SB5/10FS	11-20	3.84
502-2216	SB5/10FW	502-5084	SB5/10FS	21-30	3.84
502-2218	SB5/10FW	502-5086	SB5/10FS	31-40	3.84
502-2220	SB5/10FW	502-5088	SB5/10FS	41-50	3.84

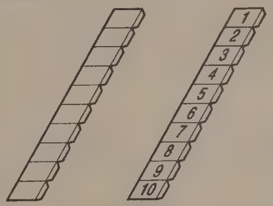
SB6 — SI# 15

502-2100	SB6/10	502-2100	SB6/10	Blank	3.84
502-2102	SB6/10FW	502-5092	SB6/10FS	1-10	3.84
502-2104	SB6/10FW	502-5094	SB6/10FS	11-20	3.84
502-2106	SB6/10FW	502-5096	SB6/10FS	21-30	3.84
502-2222	SB6/10FW	502-5098	SB6/10FS	31-40	3.84
502-2224	SB6/10FW	502-5100	SB6/10FS	41-50	3.84

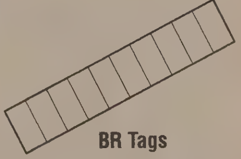
BR — SI# 17

502-4260. BR10/5. Blank........................**PER PK./100 3.47**

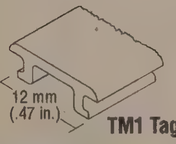
502-2226. BR12/6. Blank........................**PER PK./100 3.47**



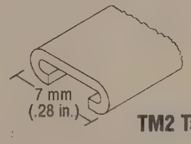
SB Tags



BR Tags



TM1 Tag



TM2 Tag

TM (1 meter strip) — SI# 24

502-5020. TM1. Blank 12 mm (.47").................**EACH 3.11**

502-5022. TM2. Blank 7 mm (.28").....................**EACH 3.11**

Marking Pen

502-5106. BS 1. Waterproof, Black Ink..............**EACH 6.46**

Ferrules

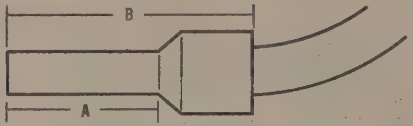


Fig. 1 — Insulated

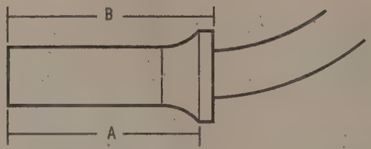


Fig. 2 — Uninsulated

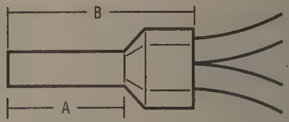


Fig. 3 — Dual Wire Insulated

Insure reliable electrical connections and prevent fraying and breaking of wire strands when terminating conductors in screw clamp terminal blocks. Insulated ferrules have molded-on plastic sleeves and prevent conductor breakage due to bending, wire stress or vibration.

Dual wire insulated ferrules provide reliable connection of multiple wires into the same terminal block clamp and simplify jumping between terminal blocks. All ferrules are packaged in 100/piece standard packs.

Ferrules, Insulated — Fig. 1. Sleeve: Tin-Plated Copper. **Tube:** Polypropylene.

Stock No.	Mfr.'s Type	Color	Wire Size AWG	Strip Length A	Ferrule Length B	Use with Crimping Tool	PER PK./100
502-5200	H0.25/10	Lt. Blue	24	0.24"	0.39"	PZU6	**8.40**
502-5202	H0.25/12	Lt. Blue	24	0.31"	0.47"	PZU6	**8.40**
502-5204	H0.34/10	Turq.	22	0.24"	0.39"	PZU6	**8.40**
502-5206	H0.34/12	Turq.	22	0.31"	0.48"	PZU6	**8.40**
502-5208	H0.50/12	Orange	20	0.24"	0.47"	PZU6	**8.40**
502-2110	H0.50/14	Orange	20	0.31"	0.55"	PZU6	**8.40**
502-5210	H0.75/12	White	20	0.24"	0.47"	PZU6	**8.40**
502-2112	H0.75/14	White	20	0.31"	0.55"	PZU6	**8.40**
502-5212	H1.0/12	Yellow	18	0.24"	0.47"	PZU6	**9.50**
502-2114	H1.0/14	Yellow	18	0.31"	0.55"	PZU6	**10.50**
502-2116	H1.5/14	Red	16	0.31"	0.55"	PZU6	**10.50**
502-5214	H1.5/16	Red	16	0.39"	0.63"	PZU6	**11.60**
502-5216	H1.5/24	Red	16	0.71"	0.94"	PZU6	**11.60**
502-2118	H2.5/14	Blue	14	0.31"	0.55"	PZU6	**12.00**
502-5218	H2.5/18	Blue	14	0.47"	0.71"	PZU6	**21.00**
502-5220	H2.5/24	Blue	14	0.71"	0.94"	PZU6	**22.00**
502-2120	H4.0/18	Gray	12	0.39"	0.71"	PZU6	**18.00**
502-5223	H4.0/20	Gray	12	0.47"	0.79"	PZU6	**19.00**
502-5226	H4.0/26	Gray	12	0.71"	1.02"	PZU6	**26.00**
502-5228	H6.0/20	Black	10	0.47"	0.79"	PZU6	**24.00**
502-5230	H6.0/26	Black	10	0.71"	1.02"	PZU6	**28.00**
502-5232	H10.0/22	Ivory	8	0.47"	0.87"	PZU16	**26.00**
502-5234	H10.0/28	Ivory	8	0.71"	1.10"	PZU16	**33.00**
502-5236	H16.0/22	Green	6	0.47"	0.87"	PZU16	**30.00**
502-5238	H16.0/28	Green	6	0.71"	1.10"	PZU16	**41.00**
502-5240	H25.0/30	Brown	4	0.71"	1.18"	PZU35	**71.00**
502-5242	H25.0/38	Brown	4	0.87"	1.50"	PZU35	**76.00**
502-5244	H35.0/30	Beige	2	0.71"	1.18"	PZU35	**102.00**
502-5246	H35.0/39	Beige	2	0.98"	1.54"	PZU35	**117.00**
502-5248	H50.0/38	Olive	1	0.79"	1.50"	PZU50	**134.00**
502-5250	H70.0/37	Yellow	2/0	0.79"	1.46"	†	**150.00**
502-5252	H95.0/44	Red	3/0	0.98"	1.73"	†	**165.00**
502-5254	H120.0/48	Blue	4/0	1.06"	1.89"	†	**182.00**
502-5256	H150.0/58	Yellow	250MCM	1.26"	2.28"	†	**191.00**

†Consult Altech.

Ferrule Box Assortment

Circular plastic box, supplied with five different size ferrules. Clear rotary cover allows for easy dispensing. Box Contains: 50 each, H0.5/14 Orange; 100 each, H0.75/14 White; 100 each, H1.0/12 Yellow; 100 each, H1.5/14 Red; 50 each, H2.5/14 Blue.

502-5316. 2884.9 .... **EACH 43.00**

Ferrules, Uninsulated — Fig. 2. Tin-Plated Copper.

Stock No.	Mfr.'s Type	Color	Wire Size AWG	Strip Length A	Ferrule Length B	Use with Crimping Tool	PER PK./100
502-2150	H0.50/6	—	20	0.24"	0.24"	PZU6	**4.20**
502-5258	H0.75/6	—	20	0.24"	0.24"	PZU6	**4.20**
502-2152	H0.75/10	—	20	0.39"	0.39"	PZU6	**5.30**
502-5260	H1.0/6	—	18	0.24"	0.24"	PZU6	**5.30**
502-2154	H1.0/10	—	18	0.39"	0.39"	PZU6	**5.30**
502-2156	H1.5/7	—	16	0.28"	0.28"	PZU6	**5.30**
502-5262	H1.5/10	—	16	0.39"	0.39"	PZU6	**5.30**
502-2158	H2.5/7	—	14	0.28"	0.28"	PZU6	**6.30**
502-5264	H2.5/12	—	14	0.47"	0.47"	PZU6	**7.40**
502-2160	H4.0/9	—	12	0.35"	0.35"	PZU6	**6.30**
502-2161	H4.0/12	—	12	0.47"	0.47"	PZU6	**7.30**
502-5266	H6.0/12	—	10	0.47"	0.47"	PZU6	**10.50**
502-5268	H6.0/15	—	10	0.59"	0.59"	PZU6	**11.60**
502-5270	H10.0/12	—	8	0.47"	0.47"	PZU16	**12.60**
502-5272	H10.0/15	—	8	0.59"	0.59"	PZU16	**12.60**
502-5274	H10.0/18	—	8	0.71"	0.71"	PZU16	**13.70**
502-5276	H16.0/12	—	6	0.47"	0.47"	PZU16	**15.80**
502-5278	H16.0/15	—	6	0.59"	0.59"	PZU16	**17.90**
502-5280	H16.0/18	—	6	0.71"	0.71"	PZU16	**21.00**
502-5282	H25.0/15	—	4	0.59"	0.59"	PZU35	**32.60**
502-5284	H25.0/18	—	4	0.71"	0.71"	PZU35	**39.90**
502-5286	H35.0/18	—	2	0.71"	0.71"	PZU35	**47.00**
502-5288	H50.0/32	—	1	1.26"	1.26"	PZU50	**71.30**
502-5290	H70.0/26	—	2/0	1.02"	1.02"	†	**88.00**
502-5292	H95.0/30	—	3/0	1.18"	1.18"	†	**115.00**
502-5294	H120.0/32	—	4/0	1.26"	1.26"	†	**140.00**
502-5296	H150.0/38	—	250MCM	1.50"	1.50"	†	**170.00**
502-5298	H185.0/40	—	350MCM	1.57"	1.57"	†	**202.00**

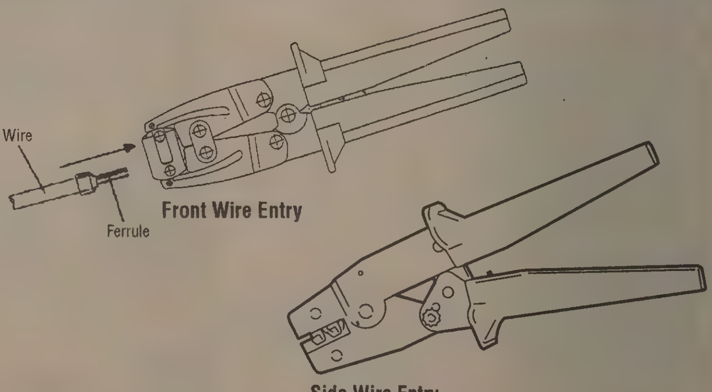
Dual Wire Ferrules, Insulated — Fig. 3. Sleeve: Tin-Plated Copper. **Tube:** Polypropylene. Each dual wire ferrule accepts 2 wires of equal or different size.

502-4262	HH2x0.5/15	White	2/22	0.43"	0.59"	PZU6	**10.00**
502-4264	HH2x0.75/15	Gray	2/20	0.43"	0.59"	PZU6	**11.00**
502-5300	HH2x0.75/17	Gray	2/20	0.51"	0.67"	PZU6	**11.40**
502-4266	HH2x1.0/15	Red	2/18	0.43"	0.59"	PZU6	**13.00**
502-5302	HH2x1.0/17	Red	2/18	0.51"	0.67"	PZU6	**14.00**
502-4268	HH2x1.5/16	Black	2/16	0.47"	0.63"	PZU6	**15.00**
502-5304	HH2x1.5/20	Black	2/16	0.63"	0.79"	PZU6	**16.00**
502-4270	HH2x2.5/19	Blue	2/14	0.56"	0.75"	PZU6	**22.00**
502-5306	HH2x2.5/22	Blue	2/14	0.67"	0.87"	PZU6	**25.00**
502-4272	HH2x4.0/23	Gray	2/12	0.63"	0.91"	PZU16	**27.00**
502-5310	HH2x6.0/26	Yellow	2/10	0.75"	1.02"	PZU16	**30.00**
502-5312	HH2x10.0/26	Red	2/8	0.75"	1.02"	PZU35	**36.00**
502-5314	HH2x16.0/26	Blue	2/6	0.75"	1.02"	PZU35	**44.00**

Crimping Tools

Universal ferrule crimpers crimp insulated and uninsulated ferrules. Front or side conductor entry, positive ratcheting with spring return. Comfort grip plastic handles with hardened steel frames. Contact Altech for more tools.

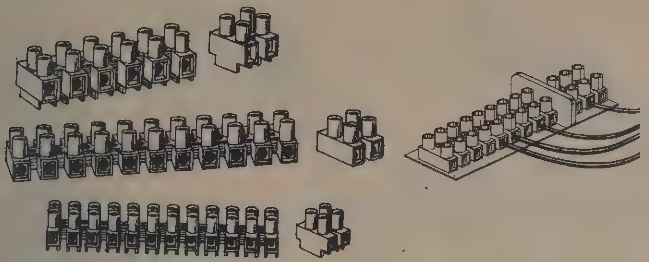
Stock No.	Mfr.'s Type	AWG	Wire Entry	Ferrule Size	EACH
502-4276	PZU6	26-10	Front	.25-6 mm²	**223.41**
502-5317	PZU16	8-6	Front	10-16 mm²	**229.50**
502-5318	PZU35	4-2	Side	25 mm², 35 mm²	**226.22**
502-5320	PZU50	1	Side	50 mm²	**226.22**



Front Wire Entry

Side Wire Entry

Eurostrips®



Compact, easy to use double row tubular screw terminal strips are a safe, cost effective alternative to barrier strips. Ideal for HVAC, appliance, power distribution and more. Dead front design. Supplied with wire protector. White polymide 6.6 housing. Strips are easily cut to the desired number of poles.

TS1.5 Flat Base

300 V, 15 A, 20-14 AWG. **Pole Spacing:** 8 mm (.32"). **Mounting Hole Diameter:** 2.8 mm (.11"). **Width:** 18.2 mm (.72").

Stock No.	Mfr.'s Type	Part No.	No. of Poles	Length mm (In.)	EACH
502-1402	TS1.5/2WP	40.002	2	15.0 (0.59)	**.41**
502-1403	TS1.5/3WP	40.003	3	23.0 (0.91)	**.61**
502-1404	TS1.5/4WP	40.004	4	31.5 (1.24)	**.82**
502-1405	TS1.5/5WP	40.005	5	39.5 (1.55)	**1.02**
502-1406	TS1.5/6WP	40.006	6	47.5 (1.87)	**1.23**
502-1407	TS1.5/7WP	40.007	7	55.5 (2.19)	**1.43**
502-1408	TS1.5/8WP	40.008	8	64.0 (2.52)	**1.64**
502-1409	TS1.5/9WP	40.009	9	72.0 (2.84)	**1.84**
502-1410	TS1.5/10WP	40.010	10	80.0 (3.15)	**2.05**
502-1411	TS1.5/11WP	40.011	11	88.5 (3.48)	**2.25**
502-1412	TS1.5/12WP	40.012	12	96.5 (3.80)	**2.25**

TS2.5 Flat Base

300 V, 30 A, 18-12 AWG. **Pole Spacing:** 10 mm (.39"). **Mounting Hole Diameter:** 3.5 mm (1.4"). **Width:** 22.3 mm (.88").

502-1422	TS2.5/2WP	40.202	2	17.0 (0.67)	**.42**
502-1423	TS2.5/3WP	40.203	3	27.0 (1.06)	**.63**
502-1424	TS2.5/4WP	40.204	4	37.0 (1.46)	**.84**
502-1425	TS2.5/5WP	40.205	5	47.0 (1.85)	**1.05**
502-1426	TS2.5/6WP	40.206	6	57.0 (2.24)	**1.26**
502-1427	TS2.5/7WP	40.207	7	67.0 (2.64)	**1.47**
502-1428	TS2.5/8WP	40.208	8	77.0 (3.03)	**1.68**
502-1429	TS2.5/9WP	40.209	9	87.0 (3.43)	**1.89**
502-1430	TS2.5/10WP	40.210	10	97.0 (3.82)	**2.10**
502-1431	TS2.5/11WP	40.211	11	107.0 (4.21)	**2.31**
502-1432	TS2.5/12WP	40.212	12	117.0 (4.61)	**2.31**

TS6 Flat Base

300 V, 30 A, 18-10 AWG. **Pole Spacing:** 12 mm (.47"). **Mounting Hole Diameter:** 4.2 mm (.17"). **Width:** 23 mm (.91").

502-1442	TS6/2WP	40.402	2	20.0 (0.79)	**.55**
502-1443	TS6/3WP	40.403	3	32.0 (1.26)	**.83**
502-1444	TS6/4WP	40.404	4	44.0 (1.73)	**1.11**
502-1445	TS6/5WP	40.405	5	56.0 (2.21)	**1.39**
502-1446	TS6/6WP	40.406	6	68.0 (2.68)	**1.66**
502-1447	TS6/7WP	40,407	7	80.0 (3.15)	**1.94**
502-1448	TS6/8WP	40.408	8	92.0 (3.62)	**2.22**
502-1449	TS6/9WP	40.409	9	104.0 (4.10)	**2.49**
502-1450	TS6/10WP	40.410	10	116.0 (4.57)	**2.77**
502-1451	TS6/11WP	40.411	11	128.0 (5.04)	**3.05**
502-1452	TS6/12WP	40.412	12	140.0 (5.51)	**3.05**

TSF6 Standoff Feet

600 V, 30 A, 18-10 AWG. **Pole Spacing:** 12 mm (.47"). **Mounting Hole Diameter:** 4.2 mm (.16"). **Width:** 23.0 mm (.91").

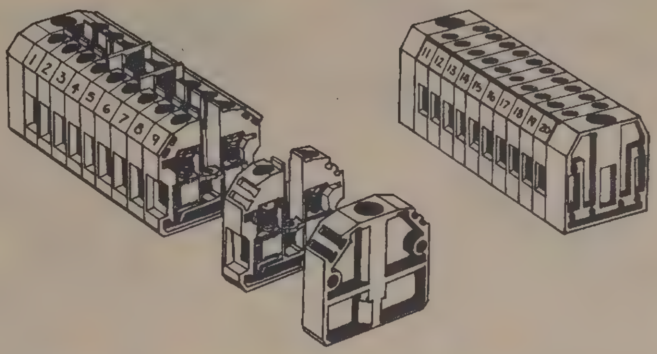
502-1482	TSF6/2WP	40.502	2	20.0 (0.79)	**.57**
502-1483	TSF6/3WP	40.503	3	32.0 (1.26)	**.86**
502-1484	TSF6/4WP	40.504	4	44.0 (1.73)	**1.14**
502-1485	TSF6/5WP	40.505	5	56.0 (2.20)	**1.43**
502-1486	TSF6/6WP	40.506	6	68.0 (2.68)	**1.72**
502-1487	TSF6/7WP	40.507	7	80.0 (3.15)	**2.00**
502-1488	TSF6/8WP	40.508	8	92.0 (3.62)	**2.29**
502-1489	TSF6/9WP	40.509	9	104.0 (4.10)	**2.57**
502-1490	TSF6/10WP	40.510	10	116.0 (4.57)	**2.86**
502-1491	TSF6/11WP	40.511	11	128.0 (5.04)	**3.15**
502-1492	TSF6/12WP	40.512	12	140.0 (5.51)	**3.15**

TSF16 Standoff Feet

600 V, 63 A, 14-6 AWG. **Pole Spacing:** 15 mm (.59"). **Mounting Hole Diameter:** 4 mm (.16"). **Width:** 26.5 mm (1.04").

502-1533	TSF16/2WP	40.702	2	25.0 (0.98)	**1.36**
502-1535	TSF16/3WP	40.703	3	40.0 (1.58)	**2.04**
502-1537	TSF16/4WP	40.704	4	55.0 (2.17)	**2.72**
502-1541	TSF16/5WP	40.705	5	70.5 (2.28)	**3.40**
502-1539	TSF16/9WP	40.709	9	131.0 (5.16)	**6.12**
502-1542	TSF16/12WP	40.712	12	176.0 (6.93)	**7.48**

Panel Mount Terminal Blocks



- ► **High Density, 50 or 60 Terminations Per Foot**
- ► **Screw-Cage Clamp**
- ► **Accepts Standard Marking Tags**

Compact and convenient to use where space is a constraint. Cost effective sectional design allows for changing requirements. Order preassembled or easily snap together single pole components to form multipole assemblies. Mounting sections snap onto ends of assembly or between terminal block components to provide additional mounting points.

BKA assemblies accept external jumpers while RKB4 assemblies feature an internal bussing provision to distribute power selectively or throughout the assembly.

BKA2.5 Terminal Block Components (1 Pole) and Assemblies (2 Poles and Up)

300 V, 20 A, 22-12 AWG. **Pole Spacing:** 5 mm (.197"). 22 mm (.87") wide × 23 mm (.91") high.

Stock No.	Mfr.'s Type	Part No.	No. of Poles	Length mm (In.)	EACH
502-1551	BKA2.5/1	1320.2	1*	5.0 (.197)	**.59**
502-1552	BKA2.5/2	1321.2	2	24.5 (.960)	**1.86**
502-1553	BKA2.5/3	1322.2	3	29.6 (1.17)	**3.10**
502-1554	BKA2.5/4	1323.2	4	34.6 (1.36)	**3.02**
502-1555	BKA2.5/5	1324.2	5	39.8 (1.57)	**3.60**
502-1556	BKA2.5/6	1325.2	6	44.9 (1.77)	**4.18**
502-1558	BKA2.5/8	1326.2	8	55.1 (2.17)	**5.34**
502-1560	BKA2.5/10	1327.2	10	65.3 (2.57)	**6.50**
502-1562	BKA2.5/12	1328.2	12	75.5 (2.97)	**7.66**
502-1564	BKA2.5/14	1330.2	14	85.7 (3.37)	**8.82**
502-1566	BKA2.5/16	1332.2	16	95.8 (3.77)	**9.98**
502-1568	BKA2.5/18	1333.2	18	106.2 (4.18)	**11.14**
502-1570	BKA2.5/20	1334.2	20	116.2 (4.57)	**12.30**
502-1574	BKA2.5/24	1335.2	24	136.7 (5.38)	**14.78**

BKA4 Terminal Block Components (1 Pole) and Assemblies (2 Poles and Up)

300 V, 20 A, 22-10 AWG. **Pole Spacing:** 6 mm (.236"). 22 mm (.87") wide × 23 mm (.91") high.

502-1501	BKA4/1	2158.2	1*	5.0 (0.20)	**.57**
502-1510	BKA4/2	2170.2	2	26.5 (1.04)	**1.84**
502-1511	BKA4/3	2171.2	3	32.6 (1.25)	**2.41**
502-1513	BKA4/4	2172.2	4	38.6 (1.52)	**2.98**
502-1515	BKA4/5	2173.2	5	44.8 (1.76)	**3.55**
502-1514	BKA4/6	2174.2	6	50.9 (2.00)	**4.12**
502-1516	BKA4/8	2175.2	8	63.1 (2.48)	**5.26**
502-1518	BKA4/10	2176.2	10	75.3 (2.96)	**6.40**
502-1520	BKA4/12	2177.2	12	87.5 (3.44)	**7.54**
502-1524	BKA4/14	1036.2	14	99.7 (3.93)	**8.55**
502-1526	BKA4/16	1037.2	16	111.9 (4.40)	**9.77**
502-1528	BKA4/18	1038.2	18	124.1 (4.89)	**10.98**
502-1530	BKA4/20	2179.2	20	136.3 (5.36)	**12.23**
502-1531	BKA4/24	1039.2	24	160.7 (6.33)	**14.66**

Mounting Section for BKA Components

502-1502	EH2	2136.2	—	—	**.32**

RKB4 Terminal Block Components (1 Pole) and Assemblies (2 Poles and Up)

300 V, 20 A, 22-10 AWG. **Pole Spacing:** 6 mm (.236"). 27 mm (1.06") wide × 23 mm (.91") high.

502-1579	RKB4/1	1018.2	1*	6.0 (.236)	**.99**
502-1582	RKB4/2	8852.2	2	26.5 (1.04)	**3.05**
502-1583	RKB4/3	8853.2	3	32.6 (1.28)	**4.07**
502-1584	RKB4/4	8854.2	4	38.7 (1.52)	**5.07**
502-1585	RKB4/5	8855.2	5	44.8 (1.76)	**6.08**
502-1586	RKB4/6	8856.2	6	50.9 (2.00)	**7.09**
502-1587	RKB4/7	8857.2	7	57.0 (2.24)	**8.09**
502-1588	RKB4/8	8858.2	8	63.1 (2.48)	**8.58**
502-1589	RKB4/9	8859.2	9	69.2 (2.72)	**10.11**
502-1590	RKB4/10	8860.2	10	75.3 (2.96)	**11.11**
502-1591	RKB4/11	8861.2	11	81.4 (3.20)	**12.13**
502-1592	RKB4/12	8862.2	12	87.5 (3.44)	**13.13**

Mounting Section for RKB Components

502-1599	EH1	2135.2	—	—	**.51**

*Order mounting sections separately.

Note: For individual jumpers see DIN Rail Mount Terminal Blocks and Accessories Table II, Type RKD4.

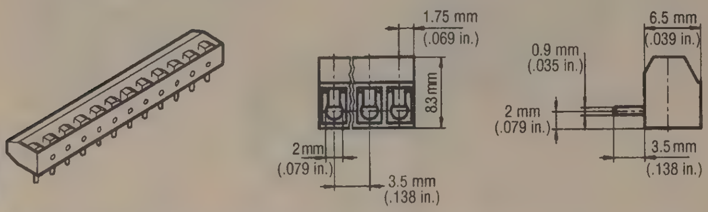
Printed Circuit Board Terminal Blocks

Fixed — Tubular Screw Clamp Design

- Front, Top Wire Entry
- Up to 15 A, 300 V, 28-14 AWG
- Modular and Single Mold
- Standard Color: Gray

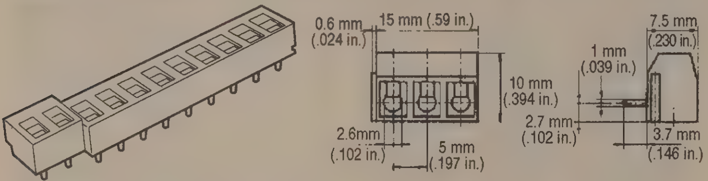
Use for cost sensitive applications where infrequent wire terminations are expected. UL, CSA, IEC/VDE.

Top Wire Entry



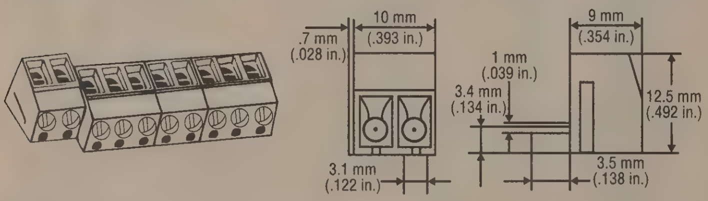
AK555. 3.5 mm (.138") pin spacing, 6 A, 300 V, 28-16 AWG.
6.5 mm (.26") high, with wire protector. Subminiature design provides small footprint and the highest circuit density available. 0.9 mm (.035") dia. round pins. **Color:** Gray.

Stock No.	Mfr.'s Type	Poles*	Part No.	Length mm (In.)	EACH
					1-99
502-4300	AK555/2WP	2	29.102	7.00 (0.280)	.42
502-4302	AK555/3WP	3	29.103	10.50 (0.410)	.63
502-4304	AK555/4WP	4	29.104	14.00 (0.550)	.84
502-4306	AK555/5WP	5	29.105	17.50 (0.690)	1.05
502-4308	AK555/6WP	6	29.106	21.00 (0.830)	1.25
502-4310	AK555/7WP	7	29.107	24.50 (0.970)	1.46
502-4312	AK555/8WP	8	29.108	28.00 (1.100)	1.67
502-4314	AK555/10WP	10	29.110	35.00 (1.380)	2.09
502-4316	AK555/12WP	12	29.112	42.00 (1.650)	2.51



AK505. 5 mm (.197") pin spacing, 15 A, 300 V, 22-14 AWG.
7.5 mm (.80") high, with wire protector. 1 mm (.039") dia. round pins. **Color:** Gray.

502-5400	AK505/2WP	2	30.752	10.00 (0.394)	.43
502-5402	AK505/3WP	3	30.753	15.00 (0.591)	.64
502-5404	AK505/4WP	4	30.754	20.00 (0.788)	.86
502-5406	AK505/5WP	5	30.755	25.00 (0.985)	1.08
502-5408	AK505/6WP	6	30.756	30.00 (1.182)	1.29
502-5410	AK505/7WP	7	30.757	35.00 (1.379)	1.51
502-5412	AK505/8WP	8	30.758	40.00 (1.576)	1.72
502-5414	AK505/9WP	9	30.759	45.00 (1.773)	1.94
502-5416	AK505/10WP	10	30.760	50.00 (1.970)	2.15
502-5418	AK505/11WP	11	30.761	55.00 (2.170)	2.37
502-5420	AK505/12WP	12	30.762	60.00 (2.364)	2.58



AK105. 5 mm (.197") pin spacing, 15 A, 300 V, 22-14 AWG.
9 mm (.35") high, wire protector. 1 mm (.039") dia. round pins. **Color:** Gray.

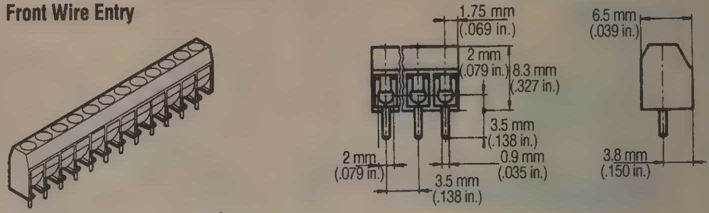
502-4040	AK105/2WP	2	30.052	10.00 (0.394)	.55
502-4042	AK105/3WP	3	30.053	15.00 (0.591)	.83
502-4044	AK105/4WP	4	30.054	20.00 (0.788)	1.10
502-4046	AK105/5WP	5	30.055	25.00 (0.985)	1.38
502-4048	AK105/6WP	6	30.056	30.00 (1.182)	1.66
502-4050	AK105/7WP	7	30.057	35.00 (1.379)	1.93
502-4052	AK105/8WP	8	30.058	40.00 (1.576)	2.21
502-4054	AK105/9WP	9	30.059	45.00 (1.773)	2.48
502-4056	AK105/10WP	10	30.060	50.00 (1.970)	2.76
502-4058	AK105/12WP	12	30.062	60.00 (2.364)	3.31

AKZ125. 5.08 mm (.20") pin spacing, 15 A, 300 V, 22-14 AWG.
9 mm (.35") high, wire protector. 1 mm (.039") dia. round pins. **Color:** Gray.

502-4060	AKZ125/2WP	2	30.252	10.16 (0.400)	.52
502-4062	AKZ125/3WP	3	30.253	15.24 (0.600)	.78
502-4064	AKZ125/4WP	4	30.254	20.32 (0.801)	1.04
502-4068	AKZ125/5WP	5	30.255	25.40 (1.001)	1.31
502-4070	AKZ125/6WP	6	30.256	30.48 (1.201)	1.57
502-4072	AKZ125/7WP	7	30.257	35.56 (1.401)	1.83
502-4074	AKZ125/8WP	8	30.258	40.64 (1.601)	2.09
502-4076	AKZ125/9WP	9	30.259	45.72 (1.801)	2.35
502-4078	AKZ125/10WP	10	30.260	50.80 (2.001)	2.61
502-4060	AKZ125/12WP	12	30.262	60.92 (2.402)	3.13

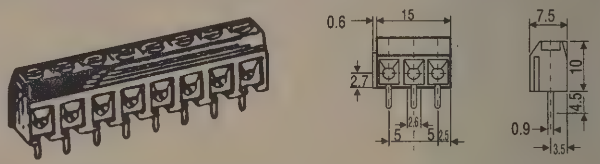
*Available in up to 24 poles by special order.

Front Wire Entry



AK550. 3.5 mm (.138") pin spacing, 6 A, 300 V, 28-16 AWG.
8.3 mm (.33") high, with wire protector. Subminiature design provides small footprint and the highest circuit density available. 0.9 mm (.035") dia. round pins. **Color:** Gray.

Stock No.	Mfr.'s Type	Poles*	Part No.	Length mm (In.)	EACH
					1-99
502-4282	AK550/2WP	2	29.002	7.00 (0.280)	.41
502-4284	AK550/3WP	3	29.003	10.50 (0.410)	.62
502-4286	AK550/4WP	4	29.004	14.00 (0.550)	.82
502-4288	AK550/5WP	5	29.005	17.50 (0.690)	1.02
502-4290	AK550/6WP	6	29.006	21.00 (0.830)	1.23
502-4292	AK550/7WP	7	29.007	24.50 (0.970)	1.44
502-4294	AK550/8WP	8	29.008	28.00 (1.100)	1.69
502-4296	AK550/10WP	10	29.010	35.00 (1.380)	2.05
502-4298	AK550/12WP	12	29.012	42.00 (1.650)	2.46

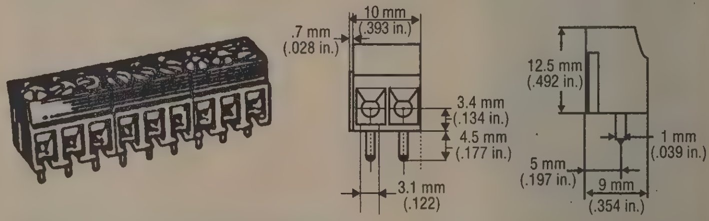


AK500. 5 mm (.197") pin spacing, 15 A, 300 V, 22-14 AWG.
10 mm (.398") high, with wire protector. 0.9 mm (.035") dia. round pins. **Color:** Gray.

502-0302	AK500/2WP	2	30.702	10.00 (0.394)	.39
502-0303	AK500/3WP	3	30.703	15.00 (0.591)	.59
502-0304	AK500/4WP	4	30.704	20.00 (0.788)	.79
502-0305	AK500/5WP	5	30.705	25.00 (0.985)	.98
502-0306	AK500/6WP	6	30.706	30.00 (1.182)	1.18
502-0307	AK500/7WP	7	30.707	35.00 (1.379)	1.37
502-0308	AK500/8WP	8	30.708	40.00 (1.576)	1.57
502-0309	AK500/9WP	9	30.709	45.00 (1.773)	1.77
502-0310	AK500/10WP	10	30.710	50.00 (1.970)	1.96
502-0312	AK500/12WP	12	30.712	60.00 (2.364)	2.36

AKZ500. 5.08 mm (.20") pin spacing, 15 A, 300 V, 22-14 AWG.
10 mm (.398") high, with wire protector. 0.9 mm (.035") dia. round pins. **Color:** Gray.

502-0402	AKZ500/2WP	2	34.102	10.16 (0.400)	.39
502-0403	AKZ500/3WP	3	34.103	15.24 (0.600)	.59
502-0404	AKZ500/4WP	4	34.104	20.32 (0.801)	.79
502-0405	AKZ500/5WP	5	34.105	25.40 (1.001)	.98
502-0406	AKZ500/6WP	6	34.106	30.48 (1.201)	1.18
502-0407	AKZ500/7WP	7	34.107	35.56 (1.401)	1.37
502-0408	AKZ500/8WP	8	34.108	40.64 (1.601)	1.57
502-0409	AKZ500/9WP	9	34.109	45.72 (1.801)	1.77
502-0410	AKZ500/10WP	10	34.110	50.80 (2.001)	1.96
502-0412	AKZ500/12WP	12	34.112	60.96 (2.402)	2.36



AK100. 5 mm (.197") pin spacing, 15 A, 300 V, 22-14 AWG.
12.5 mm (.49") high, with wire protector. 1 mm (.039") dia. round pins. **Color:** Gray.

502-0102	AK100/2WP	2	30.002	10.00 (0.394)	.39
502-0103	AK100/3WP	3	30.003	15.00 (0.591)	.59
502-0104	AK100/4WP	4	30.004	20.00 (0.788)	.79
502-0105	AK100/5WP	5	30.005	25.00 (0.985)	.98
502-0106	AK100/6WP	6	30.006	30.00 (1.182)	1.18
502-0107	AK100/7WP	7	30.007	35.00 (1.379)	1.37
502-0108	AK100/8WP	8	30.008	40.00 (1.576)	1.57
502-0109	AK100/9WP	9	30.009	45.00 (1.773)	1.77
502-0110	AK100/10WP	10	30.010	50.00 (1.970)	1.96
502-0112	AK100/12WP	12	30.012	60.00 (2.364)	2.36

AKZ120. 5.08 mm (.20") pin spacing, 15 A, 300 V, 22-14 AWG.
12.5 mm (.49") high, with wire protector. 1 mm (.039") dia. round pins. **Color:** Gray.

502-0202	AKZ120/2WP	2	30.202	10.16 (0.400)	.39
502-0203	AKZ120/3WP	3	30.203	15.24 (0.600)	.59
502-0204	AKZ120/4WP	4	30.204	20.32 (0.801)	.79
502-0205	AKZ120/5WP	5	30.205	25.40 (1.001)	.98
502-0206	AKZ120/6WP	6	30.206	30.48 (1.201)	1.18
502-0207	AKZ120/7WP	7	30.207	35.56 (1.401)	1.37
502-0208	AKZ120/8WP	8	30.208	40.64 (1.601)	1.57
502-0209	AKZ120/9WP	9	30.209	45.72 (1.801)	1.77
502-0210	AKZ120/10WP	10	30.210	50.80 (2.001)	1.96
502-0212	AKZ120/12WP	12	30.212	60.96 (2.402)	2.36

*Available in up to 24 poles by special order.

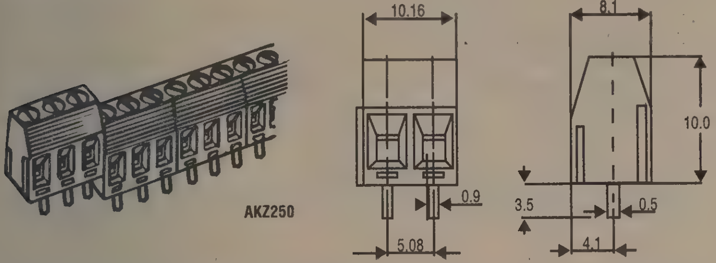
Printed Circuit Board Terminal Blocks

Fixed — Screw-Cage Clamp Design

- ► Front, Top, 45° Wire Entry
- ► Up to 15 A, 300 V, 26-12 AWG
- ► Single, Double Levels
- ► Modular Construction

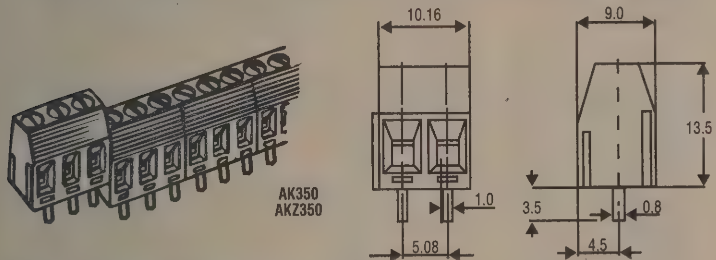
Ideal for industrial applications where frequent wire terminations occur. UL, CSA, IEC/VDE.

Front Wire Entry



AKZ250. 5.08 mm (.200") pin spacing, 10 A, 300 V, 26-14 AWG†.
10 mm (.39") high. 0.5 × 0.9 mm (.019 × .035") rectangular pins. **Color:** Green. †UL®/CSA Pending.

Stock No.	Mfr.'s Type	Poles	Part No.	Length mm (In.)	EACH	
					1-99	100-499
502-6000	AKZ250/2	2	32.402	10.16 (0.400)	**.55**	**.48**
502-6002	AKZ250/3	3	32.403	15.24 (0.600)	**.82**	**.73**
502-6004	AKZ250/4	4	32.404	20.32 (0.801)	**1.09**	**.96**
502-6006	AKZ250/5	5	32.405	25.40 (1.001)	**1.37**	**1.21**
502-6008	AKZ250/6	6	32.406	30.48 (1.201)	**1.64**	**1.44**
502-6010	AKZ250/7	7	32.407	35.56 (1.401)	**1.98**	**1.67**
502-6012	AKZ250/8	8	32.408	40.64 (1.601)	**2.18**	**1.93**
502-6014	AKZ250/9	9	32.409	45.72 (1.801)	**2.39**	**2.15**
502-6016	AKZ250/10	10	32.410	50.80 (2.001)	**2.73**	**2.41**
502-6018	AKZ250/12	12	32.412	60.96 (2.402)	**3.28**	**2.89**



AK350. 5 mm (.197") pin spacing, 15 A, 300 V, 22-12 AWG.
13.5 mm (.53") high. 0.8 × 1.0 mm (.032 × .039") rectangular pins. **Color:** Green.

502-0580	AK350/2	2	32.002	10.00 (0.394)	**.67**	**.57**
502-0582	AK350/3	3	32.003	15.00 (0.591)	**1.01**	**.87**
502-0584	AK350/4	4	32.004	20.00 (0.788)	**1.30**	**1.14**
502-0586	AK350/5	5	32.005	25.00 (0.985)	**1.63**	**1.43**
502-0588	AK350/6	6	32.006	30.00 (1.182)	**2.01**	**1.72**
502-0590	AK350/7	7	32.007	35.00 (1.379)	**2.28**	**2.01**
502-0592	AK350/8	8	32.008	40.00 (1.576)	**2.60**	**2.29**
502-0594	AK350/9	9	32.009	45.00 (1.773)	**3.01**	**2.59**
502-0596	AK350/10	10	32.010	50.00 (1.970)	**3.34**	**2.87**
502-0598	AK350/12	12	32.012	60.00 (2.364)	**4.01**	**3.43**

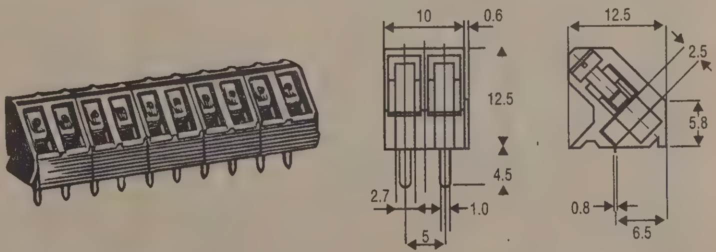
AKZ350. 5.08 mm (.20") pin spacing, 15 A, 300 V, 22-12 AWG.
13.5 mm (.53") high. 0.8 × 1.0 mm (.032 × .039") rectangular pins. **Color:** Green.

502-0602	AKZ350/2	2	32.052	10.16 (0.400)	**.67**	**.57**
502-0603	AKZ350/3	3	32.053	15.24 (0.600)	**1.01**	**.87**
502-0604	AKZ350/4	4	32.054	20.32 (0.800)	**1.30**	**1.14**
502-0605	AKZ350/5	5	32.055	25.40 (1.001)	**1.63**	**1.43**
502-0606	AKZ350/6	6	32.056	30.48 (1.201)	**2.01**	**1.72**
502-0607	AKZ350/7	7	32.057	35.56 (1.401)	**2.28**	**2.01**
502-0608	AKZ350/8	8	32.058	40.64 (1.601)	**2.60**	**2.29**
502-0609	AKZ350/9	9	32.059	45.72 (1.801)	**3.01**	**2.59**
502-0610	AKZ350/10	10	32.060	50.80 (2.001)	**3.34**	**2.87**
502-0612	AKZ350/12	12	32.062	60.96 (2.402)	**4.01**	**3.43**

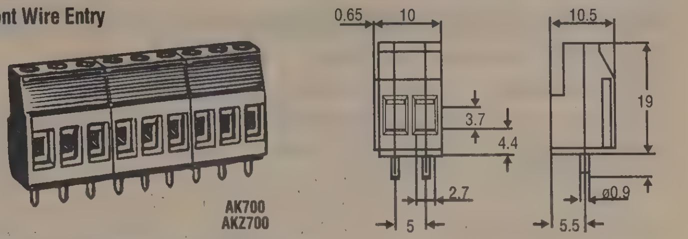
45° Wire Entry

AK300. 5 mm (.197") pin spacing, 15 A, 300 V, 22-12 AWG.
12.5 mm (.49") high. 0.8 × 1.0 mm (.032 × .039") rectangular pins. **Color:** Gray.

Stock No.	Mfr.'s Type	Poles	Part No.	Length mm (In.)	EACH	
					1-99	100-499
502-0502	AK300/2	2	30.602	10.00 (0.394)	**.67**	**.60**
502-0503	AK300/3	3	30.603	15.00 (0.591)	**1.04**	**.89**
502-0504	AK300/4	4	30.604	20.00 (0.788)	**1.39**	**1.18**
502-0505	AK300/5	5	30.605	25.00 (0.985)	**1.74**	**1.48**
502-0506	AK300/6	6	30.606	30.00 (1.182)	**2.08**	**1.78**
502-0507	AK300/7	7	30.607	35.00 (1.379)	**2.43**	**2.07**
502-0508	AK300/8	8	30.608	40.00 (1.576)	**2.78**	**2.32**
502-0509	AK300/9	9	30.609	45.00 (1.773)	**3.12**	**2.67**
502-0510	AK300/10	10	30.610	50.00 (1.970)	**3.35**	**2.96**
502-0512	AK300/12	12	30.612	60.00 (2.364)	**4.02**	**3.55**



Front Wire Entry

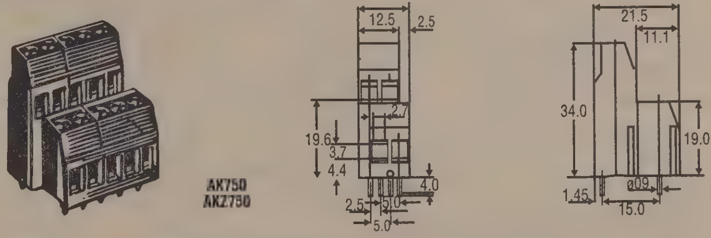


AK700. 5 mm (.197") pin spacing, 15 A, 300 V, 22-12 AWG.
19 mm (.75") high. 0.9 × 0.9 mm (.035 × .035") square pins. **Color:** Green.

Stock No.	Mfr.'s Type	Poles	Part No.	Length mm (In.)	EACH	
					1-99	100-499
502-0702	AK700/2	2	30.802	10.00 (0.394)	**1.10**	**.98**
502-0703	AK700/3	3	30.803	15.00 (0.591)	**1.71**	**1.42**
502-0704	AK700/4	4	30.804	20.00 (0.788)	**2.21**	**1.96**
502-0705	AK700/5	5	30.805	25.00 (0.985)	**2.84**	**2.37**
502-0706	AK700/6	6	30.806	30.00 (1.182)	**3.32**	**2.93**
502-0707	AK700/7	7	30.807	35.00 (1.379)	**3.98**	**3.39**
502-0708	AK700/8	8	30.808	40.00 (1.576)	**4.54**	**3.91**
502-0709	AK700/9	9	30.809	45.00 (1.773)	**5.11**	**4.34**
502-0710	AK700/10	10	30.810	50.00 (1.970)	**5.68**	**4.84**
502-0712	AK700/12	12	30.812	60.00 (2.364)	**6.81**	**5.81**

AKZ700. 5.08 mm (.20") pin spacing, 15 A, 300 V, 22-12 AWG.
19 mm (.75") high. 0.9 × 0.9 mm (.035 × .035") square pins. **Color:** Green.

502-0802	AKZ700/2	2	30.852	10.16 (0.400)	**1.10**	**.98**
502-0803	AKZ700/3	3	30.853	15.24 (0.600)	**1.71**	**1.42**
502-0804	AKZ700/4	4	30.854	20.32 (0.801)	**2.21**	**1.96**
502-0805	AKZ700/5	5	30.855	25.40 (1.001)	**2.84**	**2.37**
502-0806	AKZ700/6	6	30.856	30.48 (1.201)	**3.32**	**2.93**
502-0807	AKZ700/7	7	30.857	35.56 (1.401)	**3.98**	**3.39**
502-0808	AKZ700/8	8	30.858	40.64 (1.601)	**4.54**	**3.91**
502-0809	AKZ700/9	9	30.859	45.72 (1.801)	**5.11**	**4.34**
502-0810	AKZ700/10	10	30.860	50.80 (2.001)	**5.68**	**4.84**
502-0812	AKZ700/12	12	30.862	60.96 (2.402)	**6.81**	**5.81**



AK750. 5 mm (.197") pin spacing, 15 A, 300 V, 22-12 AWG.
Double level, 2nd level offset 2.5 mm (.10") left, 34 mm (1.34") high. 0.9 × 0.9 (.035 × .035") square pins. **Color:** Green.

502-0904	AK750/4	4	31.004	12.50 (0.493)	**1.58**	**1.39**
502-0906	AK750/6	6	31.006	17.50 (0.690)	**2.36**	**2.08**
502-0908	AK750/8	8	31.008	22.50 (0.887)	**3.15**	**2.78**
502-0910	AK750/10	10	31.010	27.50 (1.084)	**3.93**	**3.47**
502-0912	AK750/12	12	31.012	32.50 (1.281)	**4.73**	**4.17**
502-0914	AK750/14	14	31.014	37.50 (1.478)	**5.69**	**4.81**
502-0916	AK750/16	16	31.016	42.50 (1.675)	**6.50**	**5.51**
502-0918	AK750/18	18	31.018	47.50 (1.872)	**7.31**	**6.09**
502-0920	AK750/20	20	31.020	52.50 (2.069)	**8.13**	**6.79**
502-0924	AK750/24	24	31.024	62.50 (2.463)	**9.75**	**8.26**

AKZ750. 5.08 mm (.20") pin spacing, 15 A, 300 V, 22-12 AWG.
Double level, 2nd level offset 2.5 mm (.10") left, 34 mm (1.34") high. 0.9 × 0.9 (.035 × .035") square pins. **Color:** Green.

502-1604	AKZ750/4	4	34.004	12.70 (0.500)	**1.58**	**1.39**
502-1606	AKZ750/6	6	34.006	17.78 (0.700)	**2.36**	**2.08**
502-1608	AKZ750/8	8	34.008	22.85 (0.900)	**3.15**	**2.78**
502-1610	AKZ750/10	10	34.010	27.94 (1.100)	**3.93**	**3.47**
502-1612	AKZ750/12	12	34.012	33.02 (1.300)	**4.73**	**4.17**
502-1614	AKZ750/14	14	34.014	38.10 (1.500)	**5.69**	**4.81**
502-1616	AKZ750/16	16	34.016	43.18 (1.700)	**6.50**	**5.51**
502-1618	AKZ750/18	18	34.018	48.26 (1.900)	**7.31**	**6.09**
502-1620	AKZ750/20	20	34.020	53.34 (2.100)	**8.13**	**6.79**
502-1622	AKZ750/22	22	34.022	58.42 (2.300)	**8.94**	**7.45**
502-1624	AKZ750/24	24	34.024	63.50 (2.500)	**9.75**	**8.26**

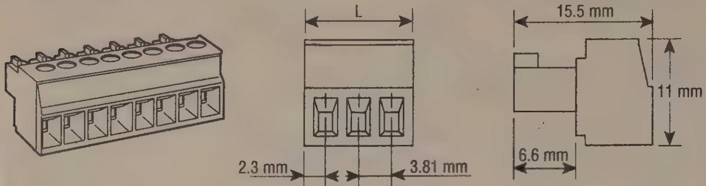
Printed Circuit Board Terminal Blocks

Mini Pluggable — Screw Cage Clamp Design

- ► **Single Mold Construction**
- ► **Low Profile Design**
- ► **Standard Color: Green**

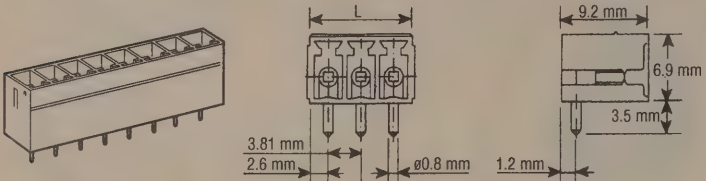
Miniature two piece, plug and header designs speed and simplify board and device replacement where space is limited.

Horizontal and vertical Mini Headers offer different wire entry options and enhance plug accessibility. Closed end design helps prevent misplugging. Optional keying is available.



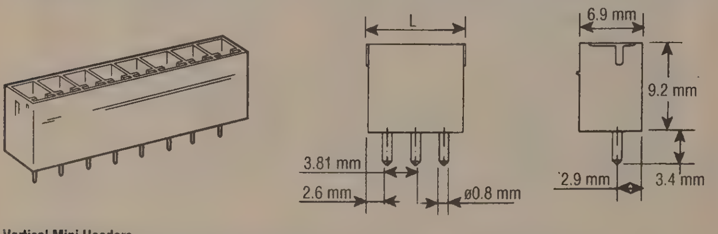
Mini Plug
AKZ1550 Plug. 3.81 mm (.150") pole spacing. 8 A, 300 V, 28-16 AWG.
Wire entry in same direction as plug-in. Mate with STLZ1550 and STLZ1555 mini headers. **Color:** Green.

Stock No.	Mfr.'s Type	Poles	Part No.	Length mm (In.)	EACH 1-99	EACH 100-499
502-7000	AKZ1550/2	2	36.302	8.41 (0.33)	**1.11**	**1.00**
502-7002	AKZ1550/3	3	36.303	12.22 (0.48)	**1.67**	**1.50**
502-7004	AKZ1550/4	4	36.304	16.03 (0.63)	**2.22**	**2.00**
502-7006	AKZ1550/5	5	36.305	19.84 (0.78)	**2.78**	**2.50**
502-7008	AKZ1550/6	6	36.306	23.65 (0.93)	**3.33**	**3.00**
502-7010	AKZ1550/7	7	36.307	27.46 (1.08)	**3.89**	**3.50**
502-7012	AKZ1550/8	8	36.308	31.27 (1.23)	**4.44**	**4.00**
502-7014	AKZ1550/9	9	36.309	35.08 (1.38)	**5.00**	**4.50**
502-7016	AKZ1550/10	10	36.310	38.89 (1.53)	**5.55**	**5.00**
502-7018	AKZ1550/11	11	36.311	42.70 (1.68)	**6.11**	**5.49**
502-7020	AKZ1550/12	12	36.312	46.51 (1.83)	**6.66**	**5.99**
502-7022	AKZ1550/13	13	36.313	50.32 (1.98)	**7.22**	**6.49**
502-7024	AKZ1550/14	14	36.314	54.13 (2.13)	**7.77**	**6.99**
502-7026	AKZ1550/15	15	36.315	57.94 (2.28)	**8.33**	**7.49**
502-7028	AKZ1550/16	16	36.316	61.75 (2.43)	**8.88**	**7.99**



Horizontal Mini Header
STLZ1550 Header. 3.81 mm (.150") pin spacing. 8 A, 300 V.
Closed ends. 0.8 × 0.8 mm (.032 × .032") square pins. **Color:** Green. Mate with AKZ1550 mini plug.

502-7030	STLZ1550/2-w	2	36.402	9.01 (0.35)	**.43**	**.38**
502-7032	STLZ1550/3-w	3	36.403	12.82 (0.50)	**.64**	**.58**
502-7034	STLZ1550/4-w	4	36.404	16.63 (0.65)	**.85**	**.77**
502-7036	STLZ1550/5-w	5	36.405	20.44 (0.80)	**1.07**	**.96**
502-7038	STLZ1550/6-w	6	36.406	24.25 (0.95)	**1.28**	**1.15**
502-7040	STLZ1550/7-w	7	36.407	28.06 (1.10)	**1.49**	**1.34**
502-7042	STLZ1550/8-w	8	36.408	31.87 (1.25)	**1.70**	**1.53**
502-7044	STLZ1550/9-w	9	36.409	35.56 (1.40)	**1.92**	**1.73**
502-7046	STLZ1550/10-w	10	36.410	39.49 (1.55)	**2.13**	**1.92**
502-7048	STLZ1550/11-w	11	36.411	43.30 (1.70)	**2.34**	**2.11**
502-7050	STLZ1550/12-w	12	36.412	47.11 (1.85)	**2.56**	**2.30**
502-7052	STLZ1550/13-w	13	36.413	50.92 (2.00)	**2.77**	**2.49**
502-7054	STLZ1550/14-w	14	36.414	54.73 (2.15)	**2.98**	**2.68**
502-7056	STLZ1550/15-w	15	36.415	58.54 (2.30)	**3.20**	**2.88**
502-7060	STLZ1550/16-w	16	36.416	62.35 (2.45)	**3.41**	**3.07**



Vertical Mini Headers
STLZ1555 Header. 3.81 mm (.150") pin spacing. 8 A, 300 V.
Closed ends. 0.8 × 0.8 mm (.032 × .032") square pins. **Color:** Green. Mate with AKZ1550 mini plug.

502-7062	STLZ1555/2-w	2	36.452	9.01 (0.35)	**.43**	**.38**
502-7064	STLZ1555/3-w	3	36.453	12.82 (0.50)	**.64**	**.58**
502-7066	STLZ1555/4-w	4	36.454	16.63 (0.65)	**.85**	**.77**
502-7068	STLZ1555/5-w	5	36.455	20.44 (0.80)	**1.07**	**.96**
502-7070	STLZ1555/6-w	6	36.456	24.25 (0.95)	**1.28**	**1.15**
502-7072	STLZ1555/7-w	7	36.457	28.06 (1.10)	**1.49**	**1.34**
502-7074	STLZ1555/8-w	8	36.458	31.87 (1.25)	**1.70**	**1.53**
502-7076	STLZ1555/9-w	9	36.459	35.56 (1.40)	**1.92**	**1.73**
502-7078	STLZ1555/10-w	10	36.460	39.49 (1.55)	**2.13**	**1.92**
502-7080	STLZ1555/11-w	11	36.461	43.30 (1.70)	**2.34**	**2.11**
502-7082	STLZ1555/12-w	12	36.462	47.11 (1.85)	**2.56**	**2.30**
502-7084	STLZ1555/13-w	13	36.463	50.92 (2.00)	**2.77**	**2.49**
502-7086	STLZ1555/14-w	14	36.464	54.73 (2.15)	**2.98**	**2.68**
502-7088	STLZ1555/15-w	15	36.465	58.54 (2.30)	**3.20**	**2.88**
502-7090	STLZ1555/16-w	16	36.466	62.35 (2.45)	**3.41**	**3.07**

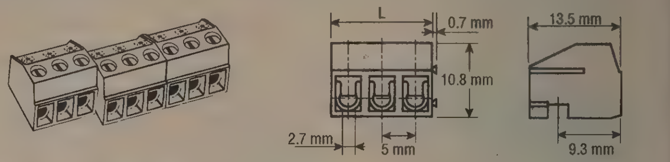
Printed Circuit Board Terminal Blocks

Econo Pluggable — Tubular Screw Clamp Design

- ► **10 A, 300 V, 22-14 AWG**
- ► **Standard Color: Gray**

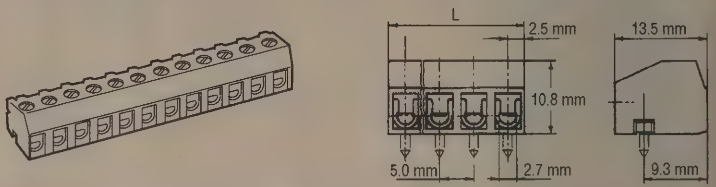
Cost effective plug and header design for light duty applications where infrequent multiple wire-to-board connections will be made. UL, CSA, IEC/VDE. Please contact Altech for pole positions not shown.

Straight open pin headers feature break-away construction and are supplied in lengths up to 24 poles.



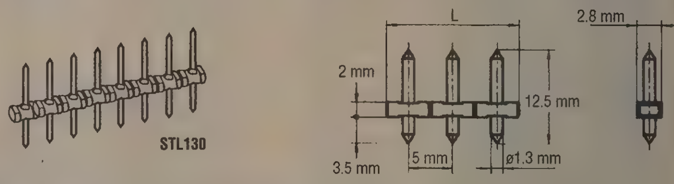
AK130 Plug. 5 mm (.197") pin spacing. 10 A, 300 V, 22-14 AWG.
Wire entry perpendicular to plug in direction, modular construction, interlock 2 and 3 pole modules to create multipole assemblies. 10.8 mm (.43") high. **Color:** Gray. Mate with STL130, STL132 straight pin headers (right angle headers are available).

Stock No.	Mfr.'s Type	Poles	Part No.	Length mm (In.)	EACH 1-99	EACH 100-499
502-4002	AK130/2WP	2	30.302	10.00 (0.39)	**.66**	**.56**
502-4004	AK130/3WP	3	30.303	15.00 (0.59)	**.96**	**.84**
502-4006	AK130/4WP	4	30.304	20.00 (0.79)	**1.28**	**1.12**
502-4008	AK130/5WP	5	30.305	25.00 (0.99)	**1.60**	**1.40**
502-4010	AK130/6WP	6	30.306	30.00 (1.18)	**1.92**	**1.69**
502-4012	AK130/7WP	7	30.307	35.00 (1.38)	**2.24**	**1.97**
502-4014	AK130/8WP	8	30.308	40.00 (1.58)	**2.55**	**2.25**
502-4016	AK130/9WP	9	30.309	45.00 (1.77)	**2.87**	**2.54**



AK132 Plug. 5 mm (.197") pin spacing. 10 A, 300 V, 22-14 AWG.
Wire entry perpendicular to plug in direction, single mold construction. 10.8 mm (.43") high. **Color:** Gray. Mate with STL130, STL132 straight pin headers.

502-6100	AK132/2WP	2	30.322	10.00 (0.39)	**.63**	**.55**
502-6102	AK132/3WP	3	30.323	15.00 (0.59)	**.95**	**.83**
502-6104	AK132/4WP	4	30.324	20.00 (0.79)	**1.27**	**1.11**
502-6106	AK132/5WP	5	30.325	25.00 (0.99)	**1.58**	**1.39**
502-6108	AK132/6WP	6	30.326	30.00 (1.18)	**1.90**	**1.67**
502-6110	AK132/7WP	7	30.327	35.00 (1.38)	**2.21**	**1.95**
502-6112	AK132/8WP	8	30.328	40.00 (1.58)	**2.53**	**2.23**
502-6114	AK132/9WP	9	30.329	45.00 (1.77)	**2.85**	**2.51**
502-6116	AK132/10WP	10	30.330	50.00 (1.97)	**3.16**	**2.79**
502-6118	AK132/12WP	12	30.332	60.00 (2.36)	**3.80**	**3.34**
502-6120	AK132/14WP	14	30.334	70.00 (2.76)	**4.43**	**3.90**
502-6122	AK132/15WP	15	30.335	75.00 (2.95)	**4.74**	**4.18**



STL130 Pin Header. 5 mm (.197") pin spacing. 10 A, 300 V.
Open pin type. Can be supplied in strips up to 24 poles. 1.3 mm (.05") dia. round pins. Mate with AK130, AK132 plugs.

502-4018	STL130/2	2	30.352	10.00 (0.39)	**.20**	**.17**
502-4020	STL130/3	3	30.353	15.00 (0.59)	**.30**	**.26**
502-4022	STL130/4	4	30.354	20.00 (0.79)	**.39**	**.34**
502-4024	STL130/5	5	30.355	25.00 (0.99)	**.49**	**.43**
502-4026	STL130/6	6	30.356	30.00 (1.18)	**.59**	**.52**
502-4028	STL130/7	7	30.357	35.00 (1.38)	**.68**	**.60**
502-4030	STL130/8	8	30.358	40.00 (1.58)	**.79**	**.69**
502-4032	STL130/9	9	30.359	45.00 (1.77)	**.89**	**.78**
502-6200	STL130/10	10	30.360	50.00 (1.97)	**.98**	**.86**
502-6204	STL130/12	12	30.362	60.00 (2.36)	**1.17**	**1.03**
502-6206	STL130/14	14	30.364	70.00 (2.76)	**1.33**	**1.19**
502-6208	STL130/15	15	30.365	75.00 (2.95)	**1.43**	**1.28**
502-4034	STL130/24	24	30.374	120.00 (4.72)	**2.33**	**2.07**

STL132 Pin Header. 5 mm (.197") Pin Spacing. 10 A, 300 V.
Open pin type. Can be supplied in strips up to 24 poles. 1.0 mm (.04") dia. round pins (boardside). Smaller pin diameter for 1.0 mm (.04") through-holes. Mate with AK130, AK132 Plugs.

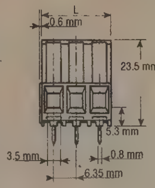
502-6124	STL132/2	2	32.502	10.00 (0.39)	**.20**	**.17**
502-6126	STL132/3	3	32.503	15.00 (0.59)	**.30**	**.26**
502-6128	STL132/4	4	32.504	20.00 (0.79)	**.39**	**.34**
502-6130	STL132/5	5	32.505	25.00 (0.99)	**.49**	**.43**
502-6132	STL132/6	6	32.506	30.00 (1.18)	**.59**	**.52**
502-6134	STL132/7	7	32.507	35.00 (1.38)	**.68**	**.60**
502-6136	STL132/8	8	32.508	40.00 (1.58)	**.79**	**.69**
502-6138	STL132/9	9	32.509	45.00 (1.77)	**.89**	**.78**
502-6140	STL132/10	10	32.510	50.00 (1.97)	**.98**	**.86**
502-6142	STL132/12	12	32.512	60.00 (2.36)	**1.17**	**1.03**
502-6144	STL132/14	14	32.514	70.00 (2.76)	**1.33**	**1.19**
502-6146	STL132/15	15	32.515	75.00 (2.95)	**1.43**	**1.28**
502-6148	STL132/24	24	32.524	120.00 (4.72)	**2.35**	**2.07**

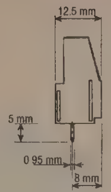
Printed Circuit Board Terminal Blocks High Current

Fixed — Screw Cage Clamp Design

For wire to board connections in AC power applications where a high current connection (up to 30 amps) is required and where frequent terminations occur. Popular 1/4'' and 3/8'' pin spacings provide replacements for outdated PC board barrier strips.

AKZ840 Front Wire Entry

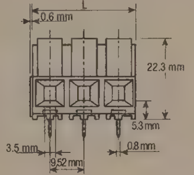


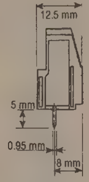


AKZ840. 6.35 mm (.197") pin spacing, 30 A, 300 V, 22-10 AWG.
23.5 mm (.93") high × 12.5 mm (.49") deep; .8 × .95 mm (.032 × .037") rectangular pins. **Color:** Green.

Stock No.	Mfr.'s Type	Poles*	Part No.	Length mm (In.)	EACH	
					1-99	100-499
502-8600	AKZ840/2	2	35.302	12.70 (0.50)	**1.06**	**.95**
502-8602	AKZ840/3	3	35.303	19.00 (0.75)	**1.59**	**1.43**

AKZ841 Front Wire Entry





AKZ841. 9.52 mm (.375") pin spacing, 30 A, 300 V, 22-10 AWG.
22.3 mm (.88") high × 12.5 mm (.49") deep; .8 × .95 mm (.032 × .037 in.) rectangular pins. **Color:** Green.

Stock No.	Mfr.'s Type	Poles*	Part No.	Length mm (In.)	1-99	100-499
502-8604	AKZ841/2	2	35.352	19.00 (0.75)	**1.15**	**1.04**
502-8606	AKZ841/3	3	35.353	28.45 (1.12)	**1.73**	**1.56**

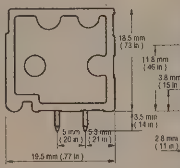
*Multipole assemblies up to 16 poles are available or assemble using 2 and 3 pole modules.

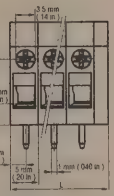
Fixed — CAM Clamp Design

- **Front and Top Wire Entry Versions with Wire Entry and Screws on the Same Plane**
- **Interlocking Sectional Design**
- **Dual Pins for Increased Solder Joint Strength**
- **Multi Pole Assemblies Supplied with End Plate Installed**
- **Standard Color: Green**

Precision machined CAM forces wire against contact pin for a highly efficient and reliable connection. Because clamp screw and wire entry are on the same plane, wire entry and screwdriver access are optimized. Ideal when positioning circuit board directly behind opening in panel, chassis or housing.

Front Wire Entry



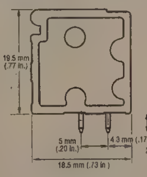


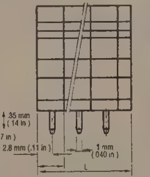
AK2200. 5 mm (.197") pin spacing. 15 A, 300 V, 22-12 AWG.
18.5 mm (0.728") high, 0.8 × 1.0 mm (.032 × .039") rectangular dual pins. **Color:** Green.

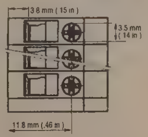
Stock No.	Mfr.'s Type	Poles*	Part No.	Length mm (In.)	EACH	
					1-99	100-499
502-8608	AK2200/2	2	35.402	12.5 (0.492)	**1.98**	**1.78**
502-8610	AK2200/3	3	35.403	17.5 (0.689)	**2.97**	**2.67**
502-8612	AK2200/4	4	35.404	22.5 (0.886)	**3.96**	**3.56**
502-8614	AK2200/5	5	35.405	27.5 (1.083)	**4.95**	**4.45**
502-8616	AK2200/6	6	35.406	32.5 (1.279)	**5.94**	**5.34**
502-8618	AK2200/7	7	35.407	37.5 (1.467)	**6.93**	**6.23**
502-8620	AK2200/8	8	35.408	42.5 (1.673)	**7.92**	**7.12**
502-8622	AK2200/9	9	35.409	47.5 (2.870)	**8.91**	**8.01**
502-8624	AK2200/10	10	35.410	52.5 (2.067)	**9.90**	**8.90**
502-8626	AK2200/11	11	35.411	57.5 (2.264)	**10.89**	**9.79**
502-8628	AK2200/12	12	35.412	62.5 (2.461)	**11.88**	**10.68**

502-8630. AK2200/1. 35.401. Terminal Component. 1 Pole†. 5.0 mm (0.197"). **1-99**....................**EACH .94**
100-499....................**EACH .85**
502-8632. AP2200. 35.400. End Plate. **1-99**.......**EACH .10** **100-499**....................**EACH .09**

Top Wire Entry







AK2205. 5 mm (.197") pin spacing. 15 A, 300 V, 22-12 AWG.
19.5 mm (0.768") high, 0.8 × 1.0 mm (.032 × .039 in.) rectangular dual pins. **Color:** Green.

Stock No.	Mfr.'s Type	Poles*	Part No.	Length mm (In.)	1-99	100-499
502-8634	AK2205/2	2	35.502	12.5 (0.492)	**1.98**	**1.78**
502-8636	AK2205/3	3	35.503	17.5 (0.689)	**2.97**	**2.67**
502-8638	AK2205/4	4	35.504	22.5 (0.886)	**3.96**	**3.56**
502-8640	AK2205/5	5	35.505	27.5 (1.083)	**4.95**	**4.45**
502-8642	AK2205/6	6	35.506	32.5 (1.279)	**5.94**	**5.34**
502-8644	AK2205/7	7	35.507	37.5 (1.467)	**6.93**	**6.23**
502-8646	AK2205/8	8	35.508	42.5 (1.673)	**7.92**	**7.12**
502-8648	AK2205/9	9	35.509	47.5 (2.870)	**8.91**	**8.01**
502-8650	AK2205/10	10	35.510	52.5 (2.067)	**9.90**	**8.90**
502-8652	AK2205/11	11	35.511	57.5 (2.264)	**10.89**	**9.79**
502-8654	AK2205/12	12	35.512	62.5 (2.461)	**11.88**	**10.68**

*Available up to 24 poles.

502-8656. AK2205/1. 35.501. Terminal Component. 1 Pole†. 5.0 mm (0.197"). **1-99**....................**EACH .94**
100-499....................**EACH .85**
502-8632. AP2200. 35.400. End Plate. **1-99**.......**EACH .10** **100-499**....................**EACH .09**

†Sold as 20 pole break apart assembly, includes one end plate.

Printed Circuit Board Terminal Blocks

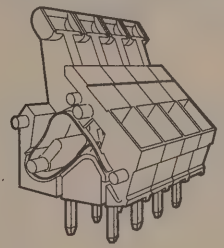
Fixed — Spring Clamp Design

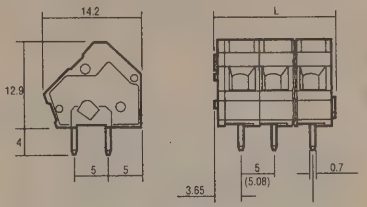
- **45° Wire Entry**
- **Standard Color: Light Gray**
- **Sectional Design**

Ideal for industrial applications where frequent wire terminations occur. UL, CSA, IEC/VDE.

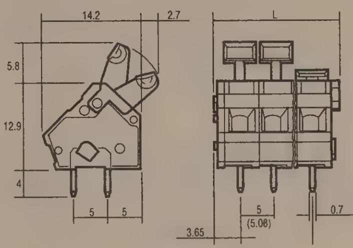
Spring Clamp is screwless simplifying wire termination and saving time. Strip wire, open spring clamp, insert wire, close clamp. Sectional design, order multiple assemblies (up to 50 poles) or easily snap together single pole terminals and end plate. 5 mm (.197") nominal pin spacing, adjustable to 5.08 (.200"). Stainless steel spring. **Standard Color:** Light Gray.

Three Methods of Clamp Actuation: AK3000 — Without actuator lever, using a 3 mm (.118") wide screwdriver tip; AK3001KD — With actuator lever, push on lever with screwdriver tip to open clamp; AK3001FD — With finger operator actuator lever, push on lever with finger to open clamp.

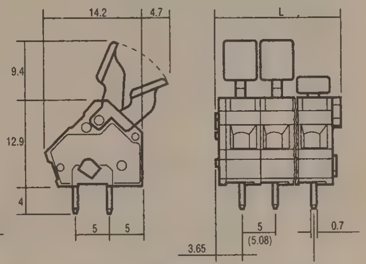




AK3000



AK3001KD



AK3001FD

AK3000. 5.0/5.08 mm (.197/.20") pin spacing. 10 A, 300 V, 22-12 AWG.
12.9 mm (.51") high, 0.7 mm (.03") square pins. **Color:** Light Gray.

Stock No.	Mfr.'s Type	Poles	Part No.	Length mm (In.)	EACH	
					1-99	100-499
502-6022	AK3000/1	1*	32.101	7.2 (0.28)	**.38**	**.34**
502-6024	AK3000/2	2	32.102	12.2 (0.48)	**.76**	**.68**
502-6026	AK3000/3	3	32.103	17.2 (0.67)	**1.13**	**1.02**
502-6028	AK3000/4	4	32.104	22.2 (0.87)	**1.51**	**1.36**
502-6030	AK3000/5	5	32.104	27.2 (1.07)	**1.89**	**1.70**
502-6032	AK3000/6	6	32.106	32.2 (1.26)	**2.27**	**2.04**
502-6034	AK3000/7	7	32.106	37.2 (1.46)	**2.65**	**2.38**
502-6036	AK3000/8	8	32.108	42.2 (1.66)	**3.02**	**2.72**
502-6038	AK3000/9	9	32.109	47.2 (1.85)	**3.40**	**3.06**
502-6040	AK3000/10	10	32.110	52.2 (2.05)	**3.78**	**3.40**
502-6042	AK3000/11	11	32.111	57.2 (2.25)	**4.16**	**3.74**
502-6044	AK3000/12	12	32.112	62.2 (2.44)	**4.54**	**4.08**

502-6045. AP3000. 32.100. End Plate. **1-99**....................**EACH .10**
100-499....................**EACH .08**

AK3001KD. 5.0/5.08 mm (.197/.20") pin spacing. 10 A, 300 V, 22-12 AWG.
12.9 mm (.51") high, 0.7 mm (.03") square pins. With lever. 18.7 mm (.74") high with lever up. **Color:** Light Gray.

Stock No.	Mfr.'s Type	Poles	Part No.	Length mm (In.)	1-99	100-499
502-6046	AK3001KD/1	1*	32.201	7.9 (0.31)	**.40**	**.36**
502-6048	AK3001KD/2	2	32.202	12.9 (0.50)	**.81**	**.73**
502-6050	AK3001KD/3	3	32.203	17.9 (0.70)	**1.21**	**1.09**
502-6052	AK3001KD/4	4	32.204	22.9 (0.90)	**1.61**	**1.45**
502-6054	AK3001KD/5	5	32.205	27.9 (1.10)	**2.02**	**1.81**
502-6056	AK3001KD/6	6	32.206	32.9 (1.30)	**2.42**	**2.18**
502-6058	AK3001KD/7	7	32.207	37.9 (1.49)	**2.82**	**2.54**
502-6060	AK3001KD/8	8	32.208	42.9 (1.69)	**3.22**	**2.90**
502-6062	AK3001KD/9	9	32.209	47.9 (1.89)	**3.63**	**3.26**
502-6064	AK3001KD/10	10	32.210	52.9 (2.08)	**4.03**	**3.63**
502-6066	AK3001KD/11	11	32.211	57.9 (2.28)	**4.43**	**3.99**
502-6068	AK3001KD/12	12	32.212	62.9 (2.48)	**4.84**	**4.35**

502-6070. AP3001. 32.200. End Plate. **1-99**....................**EACH .10**
100-499....................**EACH .08**

AK3001FD. 5.0/5.08 mm (.197/.20") pin spacing. 10 A, 300 V, 22-12 AWG.
12.9 mm (.51") high, 0.7 mm (.03") square pins. With lever. 18.7 mm (.74") high with lever up. **Color:** Light Gray.

Stock No.	Mfr.'s Type	Poles	Part No.	Length mm (In.)	1-99	100-499
502-6072	AK3001FD/1	1*	32.301	7.9 (0.31)	**.40**	**.36**
502-6074	AK3001FD/2	2	32.302	12.9 (0.50)	**.81**	**.73**
502-6076	AK3001FD/3	3	32.303	17.9 (0.70)	**1.21**	**1.09**
502-6078	AK3001FD/4	4	32.304	22.9 (0.90)	**1.61**	**1.45**
502-6080	AK3001FD/5	5	32.305	27.9 (1.10)	**2.02**	**1.81**
502-6082	AK3001FD/6	6	32.306	32.9 (1.30)	**2.42**	**2.18**
502-6084	AK3001FD/7	7	32.307	37.9 (1.49)	**2.82**	**2.54**
502-6086	AK3001FD/8	8	32.308	42.9 (1.69)	**3.22**	**2.90**
502-6088	AK3001FD/9	9	32.309	47.9 (1.89)	**3.63**	**3.26**
502-6090	AK3001FD/10	10	32.310	52.9 (2.08)	**4.03**	**3.63**
502-6092	AK3001FD/11	11	32.311	57.9 (2.28)	**4.43**	**3.99**
502-6094	AK3001FD/12	12	32.312	62.9 (2.48)	**4.84**	**4.35**

*Sold as 50 Pole Break Apart Assembly; does not include end plate, order separately.

502-6070. AP3001. 32.200. End Plate. **1-99**....................**EACH .10**
100-499....................**EACH .08**

Printed Circuit Board Terminal Blocks

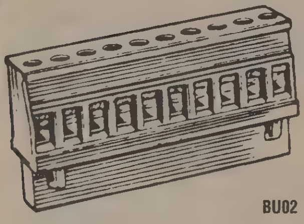
Industry Standard Pluggable — Screw-Cage Clamp Design Plugs

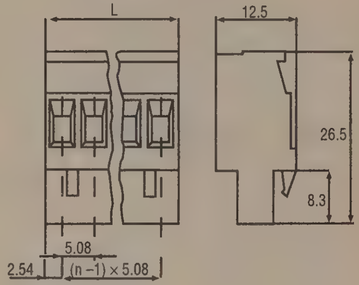
Wire Entry

- ► Perpendicular to Plug-In
- ► Same Direction as Plug-In
- ► Same Plane as Screws and Same Direction as Plug-In

For industrial applications and/or applications where frequent wire terminations occur. Single mold offers maximum strength. Plugs mate with shrouded headers listed on page 169. UL, CSA, IEC/VDE.

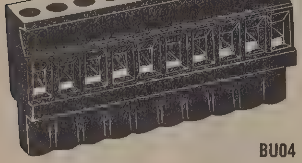
Wire Entry Perpendicular to Plug-In

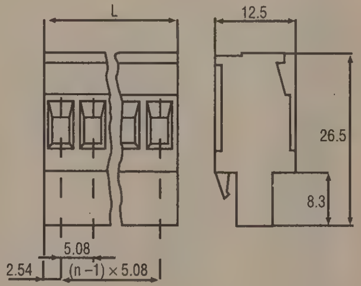

BU02



BU02 Plug. 5.08 mm (.20") pin spacing. 15 A, 300 V, 22-10 AWG.
Vertical construction with grip top makes insertion and removal easy. Wire entry perpendicular to plug-in direction on locking tab side. Mate with STLZ950, STLZ955, STLZ970, STLZ975 and AKZ990 headers. **Color:** Green.

Stock No.	Mfr.'s Type	Poles	Part No.	Length mm (In.)	EACH	
					1-99	100-499
502-3000	BU02/2	2	36.002	10.16 (0.40)	1.08	.97
502-3002	BU02/3	3	36.003	15.24 (0.50)	1.63	1.47
502-3004	BU02/4	4	36.004	20.32 (0.80)	2.17	1.95
502-3006	BU02/5	5	36.005	25.40 (1.00)	2.71	2.44
502-3008	BU02/6	6	36.006	30.48 (1.20)	3.25	2.93
502-3010	BU02/7	7	36.007	35.56 (1.40)	3.79	3.41
502-3012	BU02/8	8	36.008	40.64 (1.50)	4.34	3.91
502-3014	BU02/10	10	36.010	50.80 (2.00)	5.42	4.88
502-3016	BU02/12	12	36.012	60.96 (2.40)	6.50	5.85
502-3018	BU02/14	14	36.014	71.14 (2.80)	7.59	6.83
502-3020	BU02/15	15	36.015	76.22 (3.00)	8.13	7.32

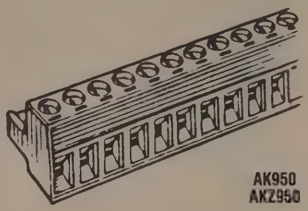

BU04

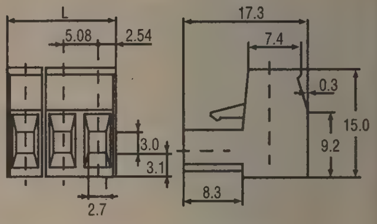


BU04 Plug. 5.08 mm (.20") pin spacing. 15 A, 300 V, 22-10 AWG.
Vertical construction with grip top makes insertion and removal easy. Wire entry is opposite locking tab side. Mate with STLZ950, STLZ955, STLZ970, STLZ975 and AKZ990 headers. **Color:** Green.

Stock No.	Mfr.'s Type	Poles	Part No.	Length mm (In.)	EACH 1-99	EACH 100-499
502-3024	BU04/2	2	36.052	10.16 (0.40)	1.08	.97
502-3026	BU04/3	3	36.053	15.24 (0.60)	1.63	1.47
502-3028	BU04/4	4	36.054	20.32 (0.80)	2.17	1.95
502-3030	BU04/5	5	36.055	25.40 (1.00)	2.71	2.44
502-3032	BU04/6	6	36.056	30.48 (1.20)	3.25	2.93
502-3034	BU04/7	7	36.057	35.56 (1.40)	3.79	3.41
502-3036	BU04/8	8	36.058	40.64 (1.60)	4.34	3.91
502-3038	BU04/10	10	36.060	50.80 (2.00)	5.42	4.88
502-3040	BU04/12	12	36.062	60.96 (2.40)	6.50	5.85
502-3042	BU04/14	14	36.064	71.14 (2.80)	7.59	6.83
502-3044	BU04/15	15	36.065	76.22 (3.00)	8.13	7.32

Wire Entry Same Direction as Plug-In


AK950
AKZ950



NOTE: Dimensions shown are for AKZ950.

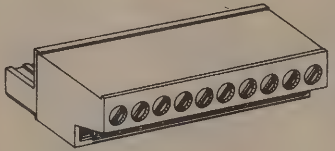
AK950 Plug. 5 mm (.197") pin spacing. 15 A, 300 V, 22-12 AWG.
Wire entry in same direction as plug-in. Mate with STL950 and STL955 headers. **Color:** Green.

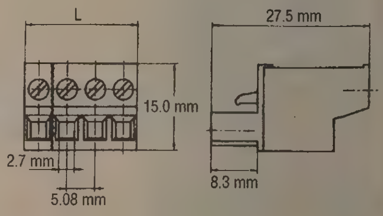
Stock No.	Mfr.'s Type	Poles	Part No.	Length mm (In.)	EACH	
					1-99	100-499
502-3046	AK950/2	2	37.702	10.00 (0.39)	.94	.85
502-3048	AK950/3	3	37.703	15.00 (0.59)	1.41	1.27
502-3050	AK950/4	4	37.704	20.00 (0.79)	1.88	1.69
502-3052	AK950/5	5	37.705	25.00 (0.99)	2.36	2.12
502-3054	AK950/6	6	37.706	30.00 (1.18)	2.83	2.55
502-3056	AK950/7	7	37.707	35.00 (1.38)	3.30	2.97
502-3058	AK950/8	8	37.708	40.00 (1.58)	3.77	3.39
502-3060	AK950/10	10	37.710	50.00 (1.97)	4.71	4.24
502-3062	AK950/12	12	37.712	60.00 (2.36)	5.65	5.09
502-3064	AK950/14	14	37.714	70.00 (2.76)	6.59	5.93
502-3066	AK950/15	15	37.715	75.00 (2.95)	7.07	6.36

AKZ950 Plug. 5.08 mm (.20") pin spacing. 15 A, 300 V, 22-12 AWG.
Wire entry in same direction as plug-in. Mate with STLZ950, STLZ955, STLZ970, STLZ975 and AKZ990 headers. **Color:** Green.

Stock No.	Mfr.'s Type	Poles	Part No.	Length mm (In.)	EACH 1-99	EACH 100-499
502-3068	AKZ950/2	2	37.002	10.16 (0.40)	.94	.85
502-3070	AKZ950/3	3	37.003	15.24 (0.60)	1.41	1.27
502-3072	AKZ950/4	4	37.004	20.32 (0.80)	1.88	1.69
502-3074	AKZ950/5	5	37.005	25.40 (1.00)	2.36	2.12
502-3076	AKZ950/6	6	37.006	30.48 (1.20)	2.83	2.55
502-3078	AKZ950/7	7	37.007	35.56 (1.40)	3.30	2.97
502-3080	AKZ950/8	8	37.008	40.64 (1.60)	3.77	3.39
502-3082	AKZ950/10	10	37.010	50.80 (2.00)	4.71	4.24
502-3084	AKZ950/12	12	37.012	60.96 (2.40)	5.65	5.09
502-3086	AKZ950/14	14	37.014	71.14 (2.80)	6.59	5.93
502-3088	AKZ950/15	15	37.015	76.22 (3.00)	7.07	6.36

Wire Entry and Screws on Same Plane and in Same Direction as Plug-In





AKZ1200 Plug. 5.08 mm (.20") pin spacing. 15 A, 300 V, 22-12 AWG.
Mate with STLZ950, STLZ955, STLZ990, STLZ970 and STL975 headers. **Color:** Green.

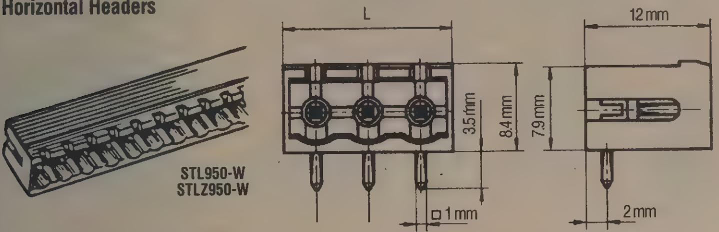
Stock No.	Mfr.'s Type	Poles	Part No.	Length mm (In.)	EACH	
					1-99	100-499
502-5346	AKZ1200/2	2	36.102	10.16 (0.40)	1.27	1.14
502-5348	AKZ1200/3	3	36.103	15.24 (0.60)	1.91	1.71
502-5350	AKZ1200/4	4	36.104	20.32 (0.80)	2.54	2.29
502-5352	AKZ1200/5	5	36.105	25.40 (1.00)	3.18	2.86
502-5354	AKZ1200/6	6	36.106	30.48 (1.20)	3.81	3.43
502-5356	AKZ1200/7	7	36.107	35.56 (1.40)	4.45	4.00
502-5358	AKZ1200/8	8	36.108	40.64 (1.60)	5.08	4.57
502-5360	AKZ1200/10	10	36.110	50.80 (2.00)	6.35	5.72
502-5362	AKZ1200/12	12	36.112	60.98 (2.40)	7.62	6.86
502-5364	AKZ1200/14	14	36.114	71.14 (2.80)	8.89	8.00
502-5366	AKZ1200/15	15	36.115	76.22 (3.00)	9.53	8.57

Headers for Screw-Cage Clamp Design Plugs

- ► **Vertical, Horizontal 45°**
- ► **Open or Closed End**
- ► **Single or Double Level**

Shrouded headers for screw-cage clamp design plugs are industry standard compatible. Single mold construction. Headers mate with plugs on previous page. UL, CSA, IEC/VDE.

Horizontal Headers



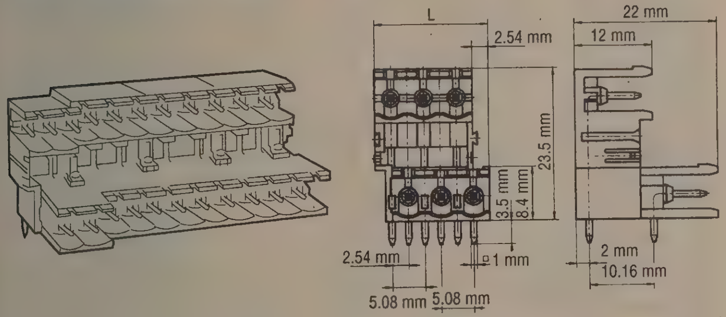
STL950 Headers. 5 mm (.197") pin spacing.
Closed ends. 1.0 × 1.0 mm (.039 × .039") square pins. **Color:** Green. Mate with AK950 plug.

Stock No.	Mfr.'s Type	Poles	Part No.	Length mm (In.)	EACH 1-99	EACH 100-499
502-3090	STL950/2-W	2	37.552	11.20 (0.440)	**.42**	**.36**
502-3092	STL950/3-W	3	37.553	16.20 (0.640)	**.64**	**.56**
502-3094	STL950/4-W	4	37.554	21.20 (0.840)	**.85**	**.75**
502-3096	STL950/5-W	5	37.555	26.20 (1.030)	**1.06**	**.92**
502-3098	STL950/6-W	6	37.556	31.20 (1.230)	**1.28**	**1.12**
502-3100	STL950/7-W	7	37.557	36.20 (1.430)	**1.49**	**1.30**
502-3102	STL950/8-W	8	37.558	41.20 (1.620)	**1.70**	**1.48**
502-3104	STL950/10-W	10	37.560	51.20 (2.020)	**2.13**	**1.86**
502-3106	STL950/12-W	12	37.562	61.20 (2.400)	**2.55**	**2.23**
502-3107	STL950/14-W	14	37.564	71.20 (2.800)	**2.98**	**2.60**
502-3108	STL950/15-W	15	37.565	76.20 (3.000)	**3.19**	**2.79**

STLZ950 Headers. 5.08 mm (.20") pin spacing.
Closed ends. 1.0 × 1.0 mm (.039 × .039") square pins. **Color:** Green. Mate with AKZ950, BU02, BU04 and AKZ1200 plugs.

502-3110	STLZ950/2-W	2	37.102	11.36 (0.450)	**.42**	**.36**
502-3112	STLZ950/3-W	3	37.103	16.44 (0.650)	**.64**	**.56**
502-3114	STLZ950/4-W	4	37.104	21.52 (0.850)	**.85**	**.75**
502-3116	STLZ950/5-W	5	37.105	26.60 (1.050)	**1.06**	**.92**
502-3118	STLZ950/6-W	6	37.106	31.68 (1.250)	**1.28**	**1.12**
502-3120	STLZ950/7-W	7	37.107	36.76 (1.450)	**1.49**	**1.30**
502-3122	STLZ950/8-W	8	37.108	41.84 (1.650)	**1.70**	**1.48**
502-3124	STLZ950/10-W	10	37.110	52.00 (2.050)	**2.13**	**1.86**
502-3126	STLZ950/12-W	12	37.112	62.16 (2.450)	**2.55**	**2.23**
502-3128	STLZ950/14-W	14	37.114	72.32 (2.850)	**2.98**	**2.60**
502-3130	STLZ950/15-W	15	37.115	77.40 (3.050)	**3.19**	**2.79**

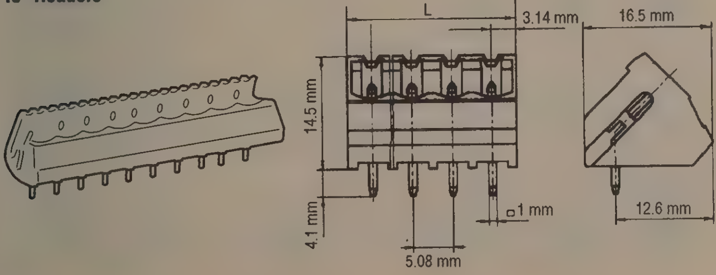
Double Level Horizontal Headers



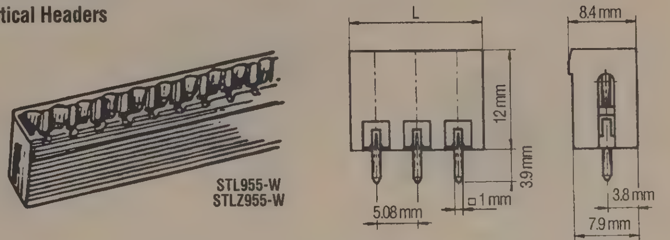
STLZ970 Headers. 5.08 mm (.20") pin spacing.
Double level, horizontal, open ends, modular construction. 1.0 × 1.0 mm (.039 × .039") square pins. **Color:** Green. Mate with AKZ950 and AKZ1200 plugs.

502-1844	STLZ970/4-O	4	37.854	12.26 (0.48)	**1.49**	**1.31**
502-1846	STLZ970/6-O	6	37.856	17.34 (0.68)	**2.24**	**1.97**
502-1848	STLZ970/8-O	8	37.858	22.42 (0.88)	**2.98**	**2.63**
502-1850	STLZ970/10-O	10	37.860	27.50 (1.08)	**3.73**	**3.28**
502-1852	STLZ970/12-O	12	37.862	32.50 (1.28)	**4.47**	**3.94**
502-1854	STLZ970/14-O	14	37.864	37.56 (1.48)	**5.06**	**4.55**
502-1856	STLZ970/16-O	16	37.866	42.74 (1.68)	**5.78**	**5.20**
502-1858	STLZ970/18-O	18	37.868	47.82 (1.88)	**6.51**	**5.85**
502-1860	STLZ970/20-O	20	37.870	52.90 (2.08)	**7.23**	**6.50**
502-1862	STLZ970/22-O	22	37.872	57.96 (2.28)	**7.95**	**7.15**
502-1864	STLZ970/24-O	24	37.874	63.06 (2.48)	**8.68**	**7.81**

45° Headers



Vertical Headers



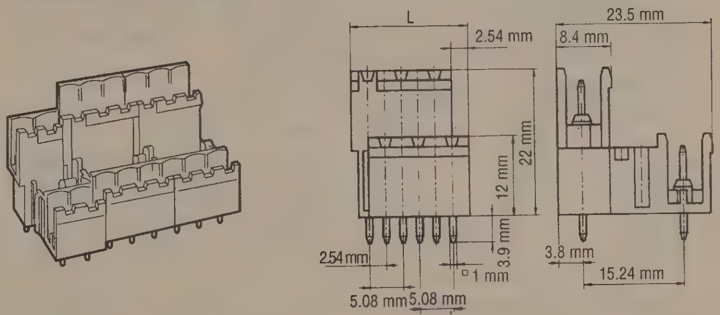
STL955 Headers. 5 mm (.197") pin spacing.
Closed ends. 1.0 × 1.0 mm (.039 × .039") square pins. **Color:** Green. Mate with AK950 plug.

Stock No.	Mfr.'s Type	Poles	Part No.	Length mm (In.)	EACH 1-99	EACH 100-499
502-3132	STL955/2-W	2	37.602	11.20 (0.440)	**.42**	**.36**
502-3134	STL955/3-W	3	37.603	16.20 (0.640)	**.64**	**.56**
502-3136	STL955/4-W	4	37.604	21.20 (0.840)	**.85**	**.75**
502-3138	STL955/5-W	5	37.605	26.20 (1.030)	**1.06**	**.92**
502-3140	STL955/6-W	6	37.606	31.20 (1.230)	**1.28**	**1.12**
502-3150	STL955/7-W	7	37.607	36.20 (1.430)	**1.49**	**1.30**
502-3152	STL955/8-W	8	37.608	41.20 (1.620)	**1.70**	**1.48**
502-3154	STL955/10-W	10	37.610	51.20 (2.020)	**2.13**	**1.86**
502-3156	STL955/12-W	12	37.612	61.20 (2.400)	**2.55**	**2.23**
502-3158	STL955/14-W	14	37.614	71.20 (2.800)	**2.98**	**2.60**
502-3160	STL955/15-W	15	37.615	76.20 (3.000)	**3.19**	**2.79**

STLZ955 Headers. 5.08 mm (.20") Pin Spacing,
Closed ends. 1.0 × 1.0 mm (.039 × .039") square pins. **Color:** Green. Mate with AKZ950, BU02, BU04 and AKZ1200 plugs.

502-3161	STLZ955/2-W	2	37.202	11.36 (0.450)	**.42**	**.36**
502-3162	STLZ955/3-W	3	37.203	16.44 (0.650)	**.64**	**.56**
502-3164	STLZ955/4-W	4	37.204	21.52 (0.850)	**.85**	**.75**
502-3166	STLZ955/5-W	5	37.205	26.60 (1.050)	**1.06**	**.92**
502-3168	STLZ955/6-W	6	37.206	31.68 (1.250)	**1.28**	**1.12**
502-3170	STLZ955/7-W	7	37.207	36.76 (1.450)	**1.49**	**1.30**
502-3172	STLZ955/8-W	8	37.208	41.84 (1.650)	**1.70**	**1.48**
502-3174	STLZ955/10-W	10	37.210	52.00 (2.050)	**2.13**	**1.86**
502-3176	STLZ955/12-W	12	37.212	62.16 (2.450)	**2.55**	**2.23**
502-3178	STLZ955/14-W	14	37.214	72.32 (2.850)	**2.98**	**2.60**
502-3180	STLZ955/15-W	15	37.215	77.40 (3.050)	**3.19**	**2.79**

Double Level Vertical Headers



STLZ975 Headers. 5.08 mm (.20") pin spacing.
Double level, vertical, open ends, modular construction. 1.0 × 1.0 mm (.039 × .039") square pins. **Color:** Green. Mate with AKZ950 and AKZ1200 plugs.

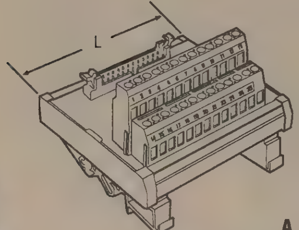
502-1874	STLZ975/4-O	4	37.804	12.26 (0.48)	**1.49**	**1.31**
502-1876	STLZ975/6-O	6	37.806	17.34 (0.68)	**2.24**	**1.97**
502-1878	STLZ975/8-O	8	37.808	22.42 (0.88)	**2.98**	**2.63**
502-1880	STLZ975/10-O	10	37.810	27.50 (1.08)	**3.73**	**3.28**
502-1882	STLZ975/12-O	12	37.812	32.50 (1.28)	**4.47**	**3.94**
502-1884	STLZ975/14-O	14	37.814	37.56 (1.48)	**5.06**	**4.55**
502-1886	STLZ975/16-O	16	37.816	42.74 (1.68)	**5.78**	**5.20**
502-1888	STLZ975/18-O	18	37.818	47.82 (1.88)	**6.51**	**5.85**
502-1890	STLZ975/20-O	20	37.820	52.90 (2.08)	**7.23**	**6.50**
502-1892	STLZ975/22-O	22	37.822	57.96 (2.28)	**7.95**	**7.15**
502-1894	STLZ975/24-O	24	37.824	63.06 (2.48)	**8.68**	**7.81**

STLZ990 Headers. 5.08 mm (.20") pin spacing.
Closed ends. 1.0 × 1.0 mm (.039 × .039") square pins. **Color:** Green. Mate with AKZ950, BU02, BU04 and AKZ1200 plugs.

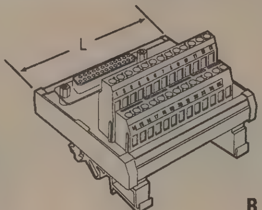
Stock No.	Mfr.'s Type	Poles	Part No.	Length mm (In.)	EACH 1-99	EACH 100-499
502-5367	STLZ990/2-W	2	37.652	11.36 (0.450)	**.47**	**.41**
502-5368	STLZ990/3-W	3	37.653	16.44 (0.650)	**.68**	**.62**
502-5370	STLZ990/4-W	4	37.654	21.52 (0.850)	**.91**	**.82**
502-5372	STLZ990/5-W	5	37.655	26.60 (1.050)	**1.14**	**1.03**
502-5374	STLZ990/6-W	6	37.656	31.68 (1.250)	**1.37**	**1.23**
502-5376	STLZ990/7-W	7	37.657	36.76 (1.450)	**1.60**	**1.44**
502-5378	STLZ990/8-W	8	37.658	41.84 (1.650)	**1.82**	**1.64**
502-5380	STLZ990/10-W	10	37.660	52.00 (2.050)	**2.28**	**2.05**
502-5382	STLZ990/12-W	12	37.662	62.16 (2.450)	**2.74**	**2.46**
502-5384	STLZ990/14-W	14	37.664	72.32 (2.850)	**3.19**	**2.87**
502-5386	STLZ990/15-W	15	37.665	77.40 (3.050)	**3.42**	**3.08**

Interface and Electronic Modules

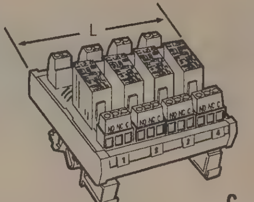
Expand the capabilities of logic systems with Altech Interface and Electronic Modules. DIN rail printed circuit board modules give design flexibility and simplify panel layout, reduce maintenance and downtime.



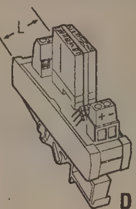
A



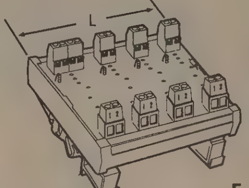
B



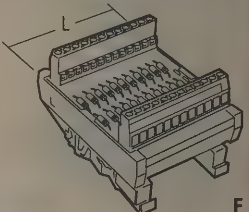
C



D



E



F

Ribbon Cable to Discrete Wire Modules — Fig. A

Interface between multiwire flat cables with up to 64 conductors and discrete wires. No special tools are required. Supplied with short strain relief ejector latches (long latches available). Terminal blocks are individually marked to correspond to the numbers on the header pins. 3 A, 250 VAC, 22-12 AWG. DIN rail mount, panel mount available.

Stock No.	Mfr.'s Type	Part No.	Poles	Length (L) mm (In.)	EACH
502-1010	FBK10	5720.2	10	47 (1.850)	**25.69**
502-1014	FBK14	5721.2	14	47 (1.850)	**27.94**
502-4202	FBK16	5722.2	16	69 (2.720)	**31.58**
502-4204	FBK20	5723.2	20	69 (2.720)	**35.11**
502-4206	FBK26	5724.2	26	80 (3.150)	**39.78**
502-4208	FBK34	5725.2	34	103 (4.060)	**47.70**
502-4210	FBK40	5726.2	40	114 (4.490)	**56.43**
502-4212	FBK50	5727.2	50	148 (5.830)	**64.67**
502-4214	FBK60	5728.2	60	170 (6.680)	**88.09**
502-4216	FBK64	5729.2	64	170 (6.680)	**92.96**

Sub D Modules — Fig. B

Interface between high density connectors with up to 50 poles and discrete wires. No special tools are required. Equipped with male or female connectors. All terminal blocks are individually marked to correspond to the numbers on the connector pins or sockets. 4 A, 250 VAC, 22-12 AWG. DIN rail mount, panel mount available.

Modules with Sub-D Female Connectors

Stock No.	Mfr.'s Type	Part No.	Poles	Length (L) mm (In.)	EACH
502-1109	SD-F9	5745.2	9	35 (1.390)	**29.43**
502-1115	SD-F15	5746.2	15	58 (2.280)	**38.24**
502-1126	SD-F25	5747.2	25	81 (3.190)	**46.79**
502-1137	SD-F37	5748.2	37	114 (4.490)	**59.67**
502-1150	SD-F50	5749.2	50	137 (5.390)	**83.13**

Modules with Sub-D Male Connectors

Stock No.	Mfr.'s Type	Part No.	Poles	Length (L) mm (In.)	EACH
502-1209	SD-M9	5740.2	9	35 (1.390)	**29.43**
502-1215	SD-M15	5741.2	15	58 (2.280)	**38.24**
502-1225	SD-M25	5742.2	25	81 (3.190)	**43.44**
502-1237	SD-M37	5743.2	37	114 (4.490)	**59.67**
502-1250	SD-M50	5744.2	50	137 (5.390)	**83.13**

Miniature Relay Modules with Relays — Fig. C

Traditional relay interfaces in a high density package. Protect equipment devices and components from feed-back and cross-system overvoltages by isolating electrical and electronic circuits. Bussed or isolated coil circuits. Supplied with relays or with sockets only. Indicator and DC protection diodes. Available up to 220 VDC, 330 VAC with coil circuits. Contact circuits rated 260 V, 8 A (SPDT) or 6 A (DPDT) or 15 A (SPDT isolated only); 22-12 AWG. DIN rail mount, panel mount available.

Stock No.	Mfr.'s Type	Part No.	Contact Form	No. of Relays	Length (L) mm (In.)	EACH
502-1305	RM1G1	8933.2	SPDT(C)	1	21 (0.830)	**30.72**
502-1315	RM1G4	8941.2	SPDT(C)	4 Isolated	79 (3.110)	**89.30**
502-4220	RMB1G8V	5494.2	SPDT(C)	8 Bus DC+	125 (4.920)	**132.15**
502-4222	RMB1G8G	5492.2	SPDT(C)	8 Bus Gnd	125 (4.920)	**145.12**
502-4224	RM2G1	8951.2	DPDT(2C)	1	21 (0.830)	**32.44**
502-4226	RM2G4	8956.2	DPDT(2C)	4 Isolated	79 (3.110)	**98.47**

High Current Relay Modules with Relays — Fig. D

Isolated channels, SPDT(C), 15 A resistive, 8 A inductive, 30 VDC/250 VAC. Tungsten (TV-3) 3 A/120 VAC. 1/3 hp at 120 VAC, 1/2 hp at 250 VAC. **Break:** 4000 VA. DIN rail mount, panel mount available. Coil amperage includes LED current.

Stock No.	Mfr.'s Type	Part No.	Coil Volt/Amp	No. of Relays	Length (L) mm (In.)	EACH
502-4230	RMH4B	8905.3	5 VDC/95 mA	4	79 (3.110)	**96.87**
502-4232	RMH4C	8906.3	6 VDC/90 mA	4	79 (3.110)	**96.87**
502-4234	RMH4E	8907.3	12 VDC/48 mA	4	79 (3.110)	**96.87**
502-4236	RMH4G	5800.3	24 VDC/24 mA	4	79 (3.110)	**96.87**
502-4238	RMH4U	5804.3	115 VAC/15 mA	4	79 (3.110)	**111.12**

I/O Opto Carriers — Fig. E

Mount standard optocoupler input/output (I/O) modules in a high density arrangement for logic output to field devices, or for input of field data to the controller. Altech I/O carriers can accept up to 16 industry standard .6" (15.24 mm) I/O modules in any combination — input, output, AC or DC from most manufacturers. 1, 2, and 4 isolated position versions with 5, 15 and 24 VDC logic; and 4, 8 and 16 bussed versions with 5 to 24 VDC. DIN rail mount, panel mount available.

Stock No.	Mfr.'s Type	Part No.	Positions (Sockets)	Logic Voltage	Length (L) mm (In.)	EACH
502-1361	I/OI-1B	8954.0/B	1	3-6 VDC	34.5 (1.360)	**28.56**
502-1362	I/OI-2B	8955.0/B	2 Isolated	3-6 VDC	57.8 (2.280)	**45.54**
502-1366	I/OI-4B	8956.0/B	4 Isolated	3-6 VDC	114.0 (4.490)	**75.55**
502-4240	I/OI-1E	8954.0/E	1	12-18 VDC	34.5 (1.360)	**31.45**
502-4242	I/OI-2E	8955.0/E	2 Isolated	12-18 VDC	57.8 (2.280)	**45.54**
502-4244	I/OI-4E	8956.0/E	4 Isolated	12-18 VDC	114.0 (4.490)	**75.55**
502-1370	I/OI-1G	8954.0/G	1	20-30 VDC	34.5 (1.360)	**28.56**
502-1381	I/OI-2G	8955.0/G	2 Isolated	20-30 VDC	57.8 (2.280)	**44.43**
502-9991	I/OI-4G	8956.0/G	4 Isolated	20-30 VDC	114.0 (4.490)	**75.56**
502-4246	I/OB-4	8956.0	4 Bussed	3-30 VDC	114.0 (4.490)	**77.79**
502-4248	I/OB-8	8959.0	8 Bussed	3-30 VDC	114.0 (4.490)	**128.68**
502-4250	I/OB-16	8861.0	16 Bussed	3-30 VDC	363.0 (14.30)	**247.32**

Diode Modules — Fig. F

Wire individually labeled diodes into existing circuits for freewheeling, DC inductive kick suppression (commutating), reverse DC polarity protection, etc. Used bussed diodes for distribution of logic VCC or ground, or gather and decouple electrical signals for lamp testing or collective fault messages. Use as commutating diodes across inductive loads such as DC relays, solenoid valves, actuator magnets, etc. to suppress voltage surges. Standard modules include series connection diode circuits in 1 A versions, and diode gates with bussed anodes or cathodes. DIN rail mount, panel mount and 3 A diodes available. Can be ordered as Component Carriers without diodes.

Series Connection

Stock No.	Mfr.'s Type	Part No.	No. of Diodes	Diode	Rated Current	Length (L) mm (In.)	EACH
502-5322	DM4-S	8971.2	4	1N4007	1 A	22.0 (0.87)	**17.95**
502-5324	DM8-S	5702.2	8	1N4007	1 A	42.0 (1.65)	**35.56**
502-5326	DM12-S	5703.2	12	1N4007	1 A	62.0 (2.44)	**42.96**
502-5328	DM16-S	8973.2	16	1N4007	1 A	90.0 (3.54)	**58.28**
502-5330	DM20-S	8974.2	20	1N4007	1 A	110.0 (4.33)	**87.73**
502-5332	DM24-S	8975.2	24	1N4007	1 A	130.0 (5.12)	**89.31**

Bussed Anodes

Stock No.	Mfr.'s Type	Part No.	No. of Diodes	Diode	Rated Current	Length (L) mm (In.)	EACH
502-5334	DM6-A-S	8842.2	6	1N4007	1 A	22.0 (0.87)	**25.44**
502-5336	DM14-A-S	5704.2	14	1N4007	1 A	42.0 (1.65)	**38.86**
502-5338	DM22-A-S	5705.2	22	1N4007	1 A	62.0 (2.44)	**48.53**

Bussed Cathodes

Stock No.	Mfr.'s Type	Part No.	No. of Diodes	Diode	Rated Current	Length (L) mm (In.)	EACH
502-5340	DM6-K-S	8850.2	6	1N4007	1 A	22.0 (0.87)	**38.86**
502-5342	DM14-K-S	5706.2	14	1N4007	1 A	42.0 (1.65)	**38.86**
502-5344	DM22-K-S	5707.2	22	1N4007	1 A	62.0 (2.44)	**48.53**

Standard Sex CPC Connectors

Plug

Square Flange Receptacle

Free-Hanging Receptacle

CPC Connectors provide a substantial savings in weight and cost through the use of a plastic shell and a wide variety of pin and socket contacts. The various sizes and densities are supplied unloaded (without contacts). Recognized under the component program of Underwriters Laboratories, Inc. for 250 V service. UL File No. E28476. CSA Certified File No. LR 7189.

Series 1. Standard density, multimate contacts for normal unsealed operations. **Materials:** 94 V-1 rated, heat stabilized, fire resistant, self extinguishing black thermoplastic. **Contacts not included — order as a separate item. Note:** Maximum wire insulation dia. is .100 (2.54) except for arrangement 23-24 which will accept insulation dia. of .150 (3.81) max.

Standard Sex Plugs (For Socket Contacts)

Stock No.	Mfr.'s Type	Shell Size	No. of Contacts	With Seal†	EACH		
					1-24	25-99	100-499
512-1100	206060-1	11	4	No	2.03	1.84	1.56
512-8602	211399-1*	13	7	No	2.73	2.44	2.22
512-1105	206708-1	13	9	No	2.23	2.03	1.72
512-8869	211766-1*	17	9	No	3.64	3.25	2.75
512-1110	206037-1	17	16	No	2.32	2.10	1.78
512-8871	211770-2*	23	19	No	4.43	3.95	3.34
512-1120	206837-1	23	24	No	2.97	2.69	2.28
512-1115	206150-1	23	37	No	2.63	2.40	2.03

Standard Sex Square Flange Receptacles (For Pin Contacts)

Stock No.	Mfr.'s Type	Shell Size	No. of Contacts	With Seal†	1-24	25-99	100-499
512-1150	206061-1	11	4	No	1.60	1.45	1.23
512-9073	206061-2	11	4	Yes	2.69	2.40	2.19
512-8664	211401-1*	13	7	No	3.02	2.71	2.29
512-1155	206705-1	13	9	No	1.73	1.58	1.34
512-8961	206705-3	13	9	Yes	3.35	3.05	2.57
512-8561	211767-1*	17	9	No	2.78	2.47	2.09
512-1160	206036-1	17	16	No	1.85	1.67	1.42
512-8685	206036-4	17	16	Yes	3.01	2.73	2.31
512-8870	211771-1*	23	19	No	3.62	3.23	2.73
512-1166	206838-1	23	24	No	2.32	2.10	1.78
512-8967	206838-3	23	24	Yes	4.59	4.10	3.47
512-1165	206151-1	23	37	No	2.12	1.92	1.62
512-9078	206151-3	23	37	Yes	3.57	3.25	2.75

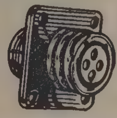
Standard Sex Free Hanging Receptacles (For Pin Contacts)

Stock No.	Mfr.'s Type	Shell Size	No. of Contacts	With Seal†	1-24	25-99	100-499
512-1178	206153-1	11	4	No	1.67	1.51	1.28
512-9074	206153-2	11	4	Yes	2.67	2.38	2.18
512-1180	206705-2	13	9	No	1.78	1.62	1.37
512-8963	206705-4	13	9	Yes	3.31	3.01	2.54
512-1182	206036-3	17	16	No	1.85	1.67	1.42
512-8965	206036-5	17	16	Yes	5.64	5.03	4.25
512-1184	206838-2	23	24	No	3.13	2.84	2.41
512-9076	206838-4	23	24	Yes	4.92	4.40	3.72
512-1186	206151-2	23	37	No	2.34	2.12	1.79
512-9079	206151-4	23	37	Yes	5.10	4.64	3.92

*VDE tested. †With pre-installed, bonded peripheral seal.

Reverse Sex CPC Connectors

Plug


Square Flange Receptacle

Free-Hanging Receptacle

Reverse Sex Plugs (For Pin Contacts)

Stock No.	Mfr.'s Type	Shell Size	No. of Contacts	With Seal†	EACH		
					1-24	25-99	100-499
512-1170	206429-1	11	4	No	2.05	1.86	1.57
512-8603	211400-1*	13	7	No	3.16	2.82	2.57
512-8873	211768-1*	17	9	No	3.29	2.93	2.48
512-1172	206044-1	17	14	No	2.32	2.10	1.78
512-8875	211772-1*	23	19	No	3.62	3.29	2.78
512-1176	206305-1	23	37	No	2.63	2.40	2.03

Reverse Sex Square Flange Receptacles (For Socket Contacts)

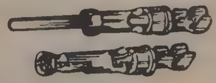
Stock No.	Mfr.'s Type	Shell Size	No. of Contacts	With Seal†	1-24	25-99	100-499
512-1171	206430-1	11	4	No	1.67	1.51	1.28
512-9087	206430-3	11	4	Yes	2.63	2.38	2.01
512-8601	211398-1*	13	7	No	2.65	2.36	2.00
512-8872	211769-1*	17	9	No	3.08	2.75	2.32
512-1173	206043-1	17	14	No	1.85	1.67	1.42
512-9107	206043-4	17	14	Yes	2.85	2.58	2.18
512-8874	211773-1*	23	19	No	3.04	3.74	2.32
512-1175	206306-1	23	37	No	2.12	1.92	1.62

Reverse Sex Free Hanging Receptacles (For Socket Contacts)

Stock No.	Mfr.'s Type	Shell Size	No. of Contacts	With Seal†	1-24	25-99	100-499
512-1188	206430-2	11	4	No	1.67	1.51	1.28
512-9105	206430-4	11	4	Yes	2.63	2.38	2.01
512-1190	206043-3	17	14	No	2.36	2.14	1.81
512-8969	206043-5	17	14	Yes	5.34	4.77	4.03
512-1192	206306-2	23	37	No	2.97	2.66	2.25

*VDE tested. †With pre-installed, bonded peripheral seal.

Multimate Pin and Socket Contacts for CPC, Series 1



Phosphor bronze contact body with stainless steel springs. **Wire Strip Length:** .156" (3.96 mm). **Pin Diameter:** .062" (1.57 mm). **Pins and sockets available in bulk, contact your local sales office.**

Tin-Plated Brass Body, Stainless Steel Spring

Stock No.	Mfr.'s Type	Style	Wire Size AWG	Wire Insulation Range (In.)	PER PKG./100		
					1-4	5-9	10-24
512-1291	66107-9	Pin	26-24	0.035-0.055	17.38	16.20	14.95
512-1293	1-66109-5	Socket	26-24	0.035-0.055	31.41	28.27	26.10
512-1299	1-66103-5	Pin	24-20	0.040-0.080	17.21	15.50	14.31
512-1295	1-66105-6	Socket	24-20	0.040-0.080	20.39	18.35	16.94
512-1331	66400-6	Pin	24-20	0.080-0.100	17.21	15.50	14.31
512-1332	66399-6	Socket	24-20	0.080-0.100	20.39	18.35	16.94
512-1333	1-66099-2	Pin	18-16	0.080-0.100	17.21	15.50	14.31
512-1334	1-66101-6	Socket	18-16	0.080-0.100	20.39	18.35	16.94
512-1336	66602-6	Pin	18-14	0.110-0.150	17.21	15.50	14.31
512-1337	66601-7	Socket	18-14	0.110-0.150	20.39	18.35	16.94
512-1297	1-66361-0	Pin	18-14	0.080-0.100	17.04	16.74	15.34
512-1325	1-66360-0	Socket	18-14	0.080-0.100	20.05	18.05	16.66
512-1330	202236-4	Pin	Solder Tab	—	34.07	30.29	28.13
512-1335	202237-4	Socket	Solder Tab	—	37.32	33.18	30.81

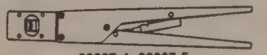
.000030" Gold in the Electrical Engagement Area Over .000050" Nickel

Stock No.	Mfr.'s Type	Style	Wire Size AWG	Wire Insulation Range (In.)	1-4	5-9	10-24
512-1322	1-66107-0	Pin	26-24	0.035-0.055	25.99	23.40	21.59
512-1323	1-66109-6	Socket	26-24	0.035-0.055	31.07	27.97	25.81
512-1324	1-66103-7	Pin	24-20	0.040-0.080	26.01	23.42	21.62
512-1326	1-66105-8	Socket	24-20	0.040-0.080	31.09	27.98	25.83
512-1351	66400-9	Pin	24-20	0.080-0.100	26.04	23.44	21.64
512-1352	66399-9	Socket	24-20	0.080-0.100	31.09	27.98	25.83
512-1348	1-66099-4	Pin	18-16	0.080-0.100	26.04	23.44	21.64
512-1349	1-66101-8	Socket	18-16	0.080-0.100	31.12	28.01	25.86
512-1327	66602-7	Pin	18-14	0.110-0.150	26.08	23.48	21.67
512-1328	66601-8	Socket	18-14	0.110-0.150	29.28	26.36	24.33
512-1338	1-66361-1	Pin	18-14	0.080-0.100	26.26	23.64	21.82
512-1329	1-66360-1	Socket	18-14	0.080-0.100	38.88	35.00	32.30
512-1353	66182-2	Pin	26-20	Solder Type	41.50	37.35	34.48
512-5254	66183-2	Socket	26-20	Solder Type	52.22	47.01	43.39
512-1356	66180-3	Pin	18-16	Solder Type	41.50	37.35	34.48
512-1357	66181-3	Socket	18-16	Solder Type	52.22	47.00	43.48
512-8973	202236-3	Pin	Solder tab	—	30.64*	28.45*	26.55*
512-8977	202237-3	Socket	Solder tab	—	67.18	55.81	53.35

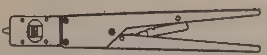
*Pack of 50.

Tools For CPC Connectors with Multimate Contacts

58495-1


90067-4, 90067-5

90287-1


90310-2, 90310-3

305183

Crimping Tools

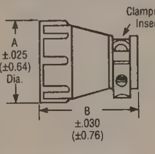
512-9134. 58495-1. PRO-CRIMPER™II for 28-16 AWG .... EACH 128.23
512-9137. 90066-7. CERTI-CRIMP™ for 30-20 AWG .... EACH 360.23
512-9136. 90067-4. CERTI-CRIMP™ for 24-16 AWG. 0.040-0.080 Insulation Dia .... EACH 386.05
512-9139. 90067-5. CERTI-CRIMP™ for 24-16 AWG. 0.080-0.100 Insulation Dia .... EACH 386.05
512-9138. 90310-2. CERTI-CRIMP™ for 18-14 AWG. 0.110-0.150 Insulation Dia .... EACH 438.34
512-9141. 90310-3. CERTI-CRIMP™ for 18-14 AWG. 0.080-0.100 Insulation Dia .... EACH 438.34
512-8615. 90287-1. Service Hand Tool .... EACH 24.50

Insertion/Extraction Tools

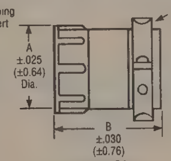
512-0031. 91002-1. Tweezer Style Insertion Tool .... EACH 11.30
512-9140. 305183. Extraction Tool .... EACH 13.19

Cable Clamps

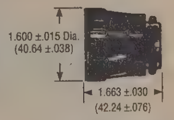
94 V-1 rated, black thermoplastic. Used to prevent transmitting excessive strain on cable or wire to contacts. Can be threaded directly onto plugs or receptacles.



Standard Size



Large Size



Self-Centering

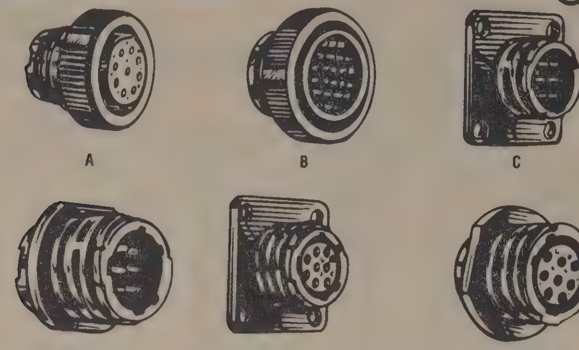
Stock No.	Mfr.'s Type	Shell Size	Dim. A		Dim. B		Cable O.D. Shell		EACH		
			In.	mm	In.	mm	In.	mm	1-24	25-99	100-499
512-1250†	206062-1*	11	0.825	20.96	1.250	31.75	0.329	8.33	2.35	2.17	1.84
512-8609†	206062-3*	11	0.825	20.96	1.250	31.75	0.329	8.33	2.35	2.17	1.84
512-1255†	206966-1	13	0.950	24.13	1.400	35.56	0.453	11.51	2.37	2.19	1.86
512-1260†	206070-1	17	1.125	28.58	1.400	36.56	0.453	11.51	2.37	2.19	1.86
512-1265†	206138-1	23	1.600	40.64	1.555	39.50	0.703	17.86	2.44	2.27	1.92
512-1270‡	206358-1	11	0.850	21.59	1.450	36.50	0.453	11.51	2.35	2.17	1.84
512-1275‡	207008-1	13	0.950	24.13	1.400	35.56	0.703	17.86	2.46	2.29	1.94
512-1280‡	206322-1	17	1.131	28.73	1.655	42.04	0.703	17.86	2.60	2.42	2.04
512-1285‡	206512-1	23	1.600	40.64	1.655	42.04	1.125	28.58	3.08	2.86	2.42

Self Centering Type

Stock No.	Mfr.'s Type	Shell Size	Dim. A In.	Dim. A mm	Dim. B In.	Dim. B mm	Cable O.D. Shell In.	Cable O.D. Shell mm	1-24	25-99	100-499
512-1286	207774-1	23	1.600	40.64	1.663	42.24	1.125	28.58	3.56	3.31	2.80

***Screw Length:** -1 is .375"; -3 is .500". **Size:** †Standard, ‡Large.

Series 2 — High Density



High density connectors for normal unsealed applications. These connectors accept Size 20DM (screw machined) and Size 20DF (precision formed) pin and socket contacts with a .040" (1.02 mm) diameter that are also used in D-Sub Connectors. Contacts can be either crimp or solder cup types and are sold separately. Cable Clamps are the same as for the same size of Series 1. **Contacts, crimp tools, and insertion/extraction tools are listed with D-Subs on page 175.**

Standard Sex Plugs (For Socket Contacts) — Fig. A

Stock No.	Mfr.'s Type	Shell Size	No. of Contacts	EACH		
				1-24	25-99	100-499
512-1101	205838-1	11	8	3.91	3.32	2.81
512-1102	206485-1	11	9	3.82	3.25	2.75
512-1103	205839-3	17	28	4.15	3.53	2.99
512-1104	205842-1	23	63	5.54	4.72	4.00

Reverse Sex Plugs (For Pin Contacts) — Fig. B

Stock No.	Mfr.'s Type	Shell Size	No. of Contacts	EACH		
				1-24	25-99	100-499
512-1116	206434-1	11	8	3.91	3.32	2.81
512-1117	206039-1	17	28	4.06	3.46	2.92
512-1118	206437-1	23	57	5.59	4.75	4.02

Standard Sex Square Flange Receptacles (For Pin Contacts) — Fig. C

512-1106	205841-1	11	8	3.24	2.77	2.34
512-1107	206486-1	11	9	3.19	2.71	2.30
512-1108	205840-3	17	28	3.53	3.01	2.55
512-1109	205843-1	23	63	5.18	4.42	3.74

Standard Sex Free Hanging Receptacles (For Pin Contacts) — Fig. D

512-1111	205841-2	11	8	3.24	2.75	2.33
512-1112	206486-2	11	9	3.29	2.81	2.38
512-1113	206152-1	17	28	4.21	3.53	2.99
512-1114	205843-2	23	63	5.61	5.10	4.32

Reverse Sex Square Flange Receptacles (For Socket Contacts) — Fig. E

512-1121	206433-1	11	8	3.29	2.81	2.38
512-1122	206038-1	17	28	3.43	2.92	2.47
512-1123	206438-1	23	57	5.42	4.60	3.90

Reverse Sex Free Hanging Receptacles (For Socket Contacts) — Fig. F

512-1126	206433-2	11	8	3.29	2.81	2.38
512-1127	206038-2	17	28	4.24	3.57	3.02
512-1128	206438-2	23	57	8.77	7.37	6.24

Keying Plug

Type 206509-1. Keying plug for size 20DM and 20DF contacts.
512-1129. 1-99 .... **EACH .34** 100-499 .... **EACH .31**

Series 3

Power density connectors for normal unsealed applications. The power contacts can carry as much as 25 amperes of current. **Contacts are sold separately.** Series 3 use size 17 and 23 cable clamps that are listed with Series 1 CPC.

Standard Sex Plugs (For Socket Contacts) — Fig. A

Stock No.	Mfr.'s Type	Shell Size	No. of Contacts	EACH		
				1-24	25-99	100-499
512-1130	206037-2	17	3	2.68	2.44	2.06
512-1131	206136-1	23	7	2.95	2.68	2.26

Reverse Sex Plugs (For Pin Contacts) — Fig. B

512-1136	206426-1	17	3	3.70	3.08	2.85
512-1137	206226-1	23	7	3.01	2.73	2.31

Standard Sex Square Flange Receptacles (For Pin Contacts) — Fig. C

512-1132	206036-2	17	3	2.09	1.90	1.61
512-1133	206137-1	23	7	3.22	2.92	2.47

Standard Sex Free Hanging Receptacles (For Pin Contacts) — Fig. D

512-1134	206207-1	17	3	2.09	1.90	1.61
512-1135	206137-2	23	7	3.35	2.99	2.53

Reverse Sex Square Flange Receptacles (For Socket Contacts) — Fig. E

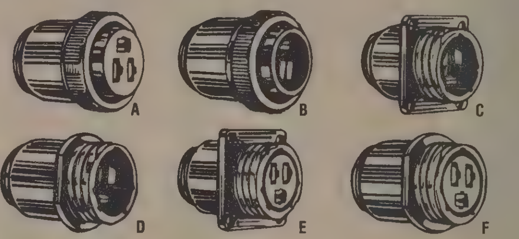
512-1138	206425-1	17	3	2.09	1.90	1.61
512-1139	206227-1	23	7	2.56	2.32	1.97

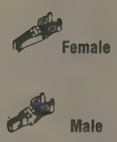
Reverse Sex Free Hanging Receptacles (For Socket Contacts) — Fig. F

512-1140	206425-2	17	3	2.86	2.55	2.16
512-1141	206227-2	23	7	3.62	3.36	2.85

Extraction Tools

Type 91124-1. Economy extraction tool.
512-1146. 91124-1 .... **EACH 27.09**
Type 91019-3. Extraction tool.
512-1147. 91019-3 .... **EACH 113.99**





Type XII Contacts for Series 3

Contact Finish: Select gold flash over .000030" nickel on the entire contact with an additional .000030" gold in the mating area.

Stock No.	Mfr.'s Type	Style	Wire Size AWG	Insulation Dia.-Range (In.)	EACH		
					1-99	100-499	500-999
512-1142	66261-2	Male	16, 14-12	0.135-0.160	1.92	1.78	1.38
512-1143	66740-6	Female	16, 14-12	0.135-0.160	2.37	2.21	1.69
512-1144	66259-2	Male	10	0.190-0.220	2.00	1.82	1.43
512-1145	66741-6	Female	10	0.190-0.220	2.62	2.44	1.88

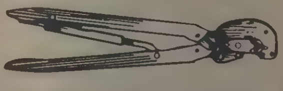
Contact Finish: .000200" silver with lubricant added. Recommended for high current/vibration applications.

512-1258	66261-4	Male	16, 14-12	0.135-0.160	.97	.90	.69
512-1259	66740-2	Female	16, 14-12	0.135-0.160	1.62	1.51	1.16
512-1264	66259-4	Male	10	0.190-0.220	.97	.90	.69
512-1266	66741-2	Female	10	0.190-0.220	2.19	2.04	1.57

Contact Finish: Tin-lead.

512-8979	66261-1	Male	16, 14-12	0.135-0.160	.77	.71	.55
512-8981	66740-8	Female	16, 14-12	0.135-0.160	1.39	1.29	1.00
512-8983	66259-1	Male	10	0.190-0.220	.77	.71	.55
512-8985	66741-8	Female	10	0.190-0.220	1.84	1.65	1.31

CERTI-CRIMP™ Tools



Type 90382-2. For contacts on 16 and 14-12 AWG wire.
512-1148. 90382-2 .... **EACH 528.08**
Type 90384-1. For contacts on 10-8 AWG wire.
512-1149. 90384-1 .... **EACH 528.08**

Series 4

Combination of standard and power density connectors for normal unsealed applications. Accept size 16 multimate and the power contacts. Combine the signal and coaxial capabilities of Series 1 with the power circuit capabilities of Series 3 connectors. **Contacts are sold separately.** The tools, contacts, and accessory items used in Series 1 and Series 3 are used in Series 4. No additional items are required.

Standard Sex Plugs (For Socket Contacts) — Fig. A

Stock No.	Mfr.'s Type	Shell Size	Contacts	EACH		
				1-24	25-99	100-499
512-9111	211824-1	23	5 Power, 8 Multimate	4.10	3.66	3.09
512-1151	207485-1	23	4 Power, 12 Multimate	2.88	2.62	2.22
512-1152	206612-1	23	2 Power, 20 Multimate	3.47	3.14	2.66

Standard Sex Square Flange Receptacles (For Pin Contacts) — Fig. B

512-8987	211825-1	23	5 Power, 8 Multimate	3.80	3.45	2.92

Standard Sex Square Flange Receptacles (For Pin Contacts) — Fig. B (continued)

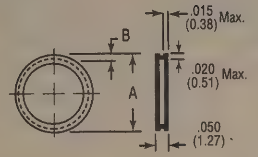
Stock No.	Mfr.'s Type	Shell Size	Contacts	EACH		
				1-24	25-99	100-499
512-1153	207486-1	23	4 Power, 12 Multimate	2.50	2.27	1.92
512-1154	206613-1	23	2 Power, 20 Multimate	2.43	2.21	1.87

Standard Sex Free Hanging Receptacles (For Pin Contacts) — Fig. C

512-8997	211825-2	23	5 Power, 8 Multimate	2.86	2.55	2.15
512-1156	207486-2	23	4 Power, 12 Multimate	3.29	3.23	2.74
512-1157	206613-3	23	2 Power, 20 Multimate	3.31	3.01	2.55

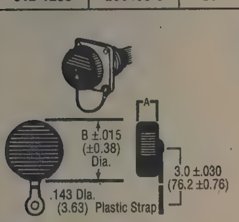
CPC Accessories

Peripheral Seals (For Receptacles Only)



Suggested for sealing connectors to protect from vibration and moisture. Grey elastomer.

Stock No.	Mfr.'s Type	Shell Size	Dim. A		Dim. B		EACH		
			In.	mm	In.	mm	1-99	100-499	500-999
512-1290	206403-1	11	0.524	13.31	0.041	1.04	.44	.37	.34
512-1292	206403-4	13	0.650	16.51	0.041	1.04	.66	.54	.50
512-1294	206403-2	17	0.875	22.23	0.050	1.27	.50	.41	.38
512-1296	206403-3	23	1.230	31.24	0.050	1.27	.92	.75	.70



Sealing Caps (For Receptacles Only)

Used to protect exposed contacts on unmated receptacles. Black thermoplastic cap with plastic strap or beaded chain.

Shell Size	Dimensions — In. (mm)	
	A	B
11	0.360 (9.14)	0.927 (23.55)
13	0.360 (9.14)	1.055 (26.80)
17	0.360 (9.14)	1.295 (32.89)
23	0.460 (11.68)	1.728 (43.89)

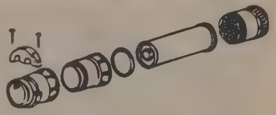
With Plastic Strap

Stock No.	Mfr.'s Type	For Series	Size	EACH		
				1-24	25-99	100-499
512-1240	206903-1	1 and 2	11	2.50	2.27	1.92
512-1241	211870-1	1	13	2.27	2.06	1.75
512-1242	207445-1	1, 2 and 3	17	2.66	2.42	2.04
512-1243	207446-1	1, 3 and 4	23	3.09	2.81	2.37

With Beaded Chain

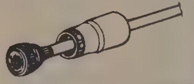
512-1245	208800-1	1 and 2	11	4.15	3.77	3.19
512-1246	208652-1	1, 2 and 3	17	3.98	3.62	3.06
512-1247	208680-1	1, 3 and 4	23	4.78	4.34	3.68

Jacketed Cable Seals (For Shell Size 23)



A jacketed cable seal kit provides an environmentally sealed connection for jacketed cable. **Material:** Peripheral Seal — grey elastomer; Collar — aluminum; Jacketed Cable Seal — black rubber; Back Shell Extender — black glass-filled thermoplastic; Special Clamp Saddle — black thermoplastic.

Stock No.	Mfr.'s Type	Sealing Range Dia. (In.)	EACH		
			1-24	25-49	50-99
512-9003	207052-1	0.300-0.450	12.28	11.42	10.61
512-1271	207052-2	0.450-0.600	16.38	14.75	12.38
512-1272	207052-3	0.600-0.875	10.04	9.33	8.70

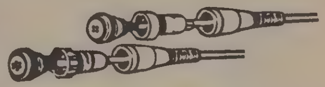


Cable Entry Seals (Heat Shrinkable Sealing Boots)

Cable entry seals are used with jacketed cable to provide an environmentally sealed wire-to-connector system. They can be used with plugs or receptacles. **Material:** Internal Sleeve — black nylon; Outertubing — black polyolefin.

Stock No.	Mfr.'s Type	Shell Size	Dim. (In.)		Sealing Range Dia. (In.)	EACH		
			A	B		1-49	50-99	100-499
512-1273	54010-1	11	2.500	0.625	0.260-0.600	5.70	4.75	4.03
512-1274	54123-1	13	2.500	0.775	0.300-0.725	6.12	5.35	4.46
512-1276	54011-1	17	2.500	0.975	0.400-0.875	6.03	5.27	4.39
512-1277	54012-1	23	3.250	1.250	0.550-1.000	6.73	5.89	4.92

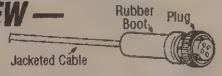
Flexible Cable Boots and Internal Cable Grip



Flexible cable boots, with internal cable grip installed, provide strain relief capabilities for jacketed cable in applications where aesthetic appearance is essential. They can be threaded onto plugs or receptacles. **Material:** Black thermoplastic.

Stock No.	Mfr.'s Type	Size	Description	Cable Range (In.)	EACH		
					1-24	25-99	100-499
512-1267	207489-1	11	Cable Boot	—	1.62	1.47	1.24
512-1268	207490-1	11	Cable Grip	0.150-0.250	1.75	1.60	1.36
512-1269	207241-1	17	Cable Boot	—	2.94	2.68	2.26
512-1278	207387-1	17	Cable Grip	0.200-0.250	2.47	2.25	1.90
512-1279	207387-2	17	Cable Grip	0.250-0.350	2.38	2.17	1.84

— NEW —



Rubber Boots

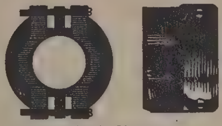
Rubber boots are used with jacketed cable to provide splashproof connections for Series 1 and Series 3 Connectors.

512-8638	206304-1	11	Rubber Boot	0.219-0.438	1.55	1.42	1.28
512-9001	206398-1	17	Rubber Boot	0.297-0.516	1.83	1.63	1.38

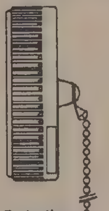
Metal-Shell CPC Connectors

The four series of Metal shell CPC connectors require the same contacts and tools as like series of Circular plastic connectors. **Contacts are sold separately.** Because of the larger size, a different series of cable clamps are offered. **Materials. Insert:** Black thermoplastic. **Shells and Coupling Ring:** Aluminum alloy, zinc-plated. **Retainer Ring:** Stainless steel.

Metal-Shell Connectors



Cable Clamps



Protective Caps

Series 1

See circular plastic connectors for multimate contacts and tools.

Standard Sex Plugs with Tetraseal (For Socket Contacts)

Stock No.	Mfr.'s Type	Size	No. of Contacts	EACH		
				1-24	25-49	50-99
512-1158	208718-1	14	5	35.16	30.65	28.09
512-1159	208714-1	14	7	24.39	21.27	19.54
512-1161	208488-1	22	16	22.74	19.82	18.18
512-1162	208457-1	28	24	29.06	25.33	23.22
512-1163	208470-1	28	37	29.06	25.33	23.22

Standard Sex Square Flange Receptacles (For Pin Contacts)

512-1164	208719-1	14	5	14.53	13.07	11.70
512-1167	208715-1	14	7	15.29	13.33	12.21
512-1168	208489-1	22	16	20.09	17.51	16.05
512-1169	208459-1	28	24	23.01	20.06	18.39
512-1174	208471-1	28	37	22.99	20.04	18.38

Reverse Sex Plugs with Tetraseal (For Pin Contacts)

512-1177	208720-1	14	5	27.61	23.31	20.86
512-1179	208716-1	14	7	23.87	22.36	20.81
512-1181	208486-1	22	14	23.63	20.60	18.88
512-1183	208472-1	28	37	27.85	24.28	22.26

Reverse Sex Square Flange Receptacles (For Socket Contacts)

512-1185	208721-1	14	5	17.64	14.90	13.33
512-1187	208717-1	14	7	15.29	14.33	13.33
512-1189	208487-1	22	14	18.00	15.69	14.38
512-1191	208473-1	28	37	22.99	20.04	18.38

Series 2

These connectors use AMPLIMITE™ type 20DF and 20DM contacts and tools that are listed with AMPLIMITE™ D-Sub connectors in this catalog.

Standard Sex Plugs without Tetraseal (For Socket Contacts)

Stock No.	Mfr.'s Type	Size	No. of Contacts	EACH		
				1-24	25-49	50-99
512-1193	208490-1	22	28	49.28	45.76	44.49
512-1198	208476-1	28	63	72.92	63.81	61.97

Reverse Sex Plugs without Tetraseal (For Pin Contacts)

512-1221	208492-1	22	28	62.57	58.10	56.48
512-1199	208474-1	28	57	73.09	67.87	65.99

Standard Sex Square Flange Receptacles (For Pin Contacts)

512-1201	208491-1	22	28	17.64	14.90	13.33
512-1202	208477-1	28	63	25.94	21.91	19.60

Reverse Sex Square Flange Receptacles (For Socket Contacts)

512-1203	208493-1	22	28	16.99	14.35	12.84
512-1204	208475-1	28	57	25.94	21.91	19.60

Series 3

The Type XII power contacts and tools are listed with Series 3, CPC connectors.

Standard Sex Plugs without Tetraseal (For Socket Contacts)

512-1206	208494-1	22	3	29.16	25.50	24.79
512-1207	208482-1	28	7	32.31	28.17	25.83

Series 3 (Continued)

Reverse Sex Plugs without Tetraseal (For Pin-Contacts)

Stock No.	Mfr.'s Type	Size	No. of Contacts	EACH		
				1-24	25-49	50-99
512-1208	208496-1	22	3	25.27	22.66	22.03
512-1209	208484-1	28	7	28.31	24.68	22.62

Standard Sex Square Flange Receptacles (For Pin Contacts)

512-1211	208495-1	22	3	21.13	17.84	15.96
512-1212	208483-1	28	7	23.08	19.49	17.44

Reverse Sex Square Flange Receptacles (For Socket Contacts)

512-1214	208485-1	28	7	20.51	18.39	17.88

Series 4

Series 1 multimate contacts and tools and Series 3 power contacts and tools are both used for this series.

Standard Sex Plugs without Tetraseal (For Socket Contacts)

512-1216	208478-1	28	4 Power, 12 Multimate	32.33	29.00	28.19
512-1217	208480-1	28	2 Power, 20 Multimate	32.67	28.56	27.77

Standard Sex Square Flange Receptacles (For Pin Contacts)

512-1218	208479-1	28	4 Power, 12 Multimate	23.67	20.69	20.12
512-9016	208481-1	28	2 Power, 20 Multimate	23.67	20.69	20.12

Cable Clamps For Metal-Shell CPC Connectors

Stock No.	Mfr.'s Type	Shell Size	Cable O.D. Range (In.)	EACH		
				1-24	25-49	50-99
512-1261	208945-5	14	.312-.562	7.52	6.50	5.58
512-1262	208945-7	22	.500-.750	10.37	9.58	8.65
512-1263	208945-8	28	.625-.938	16.00	14.77	13.34

Protective Caps **— NEW —**

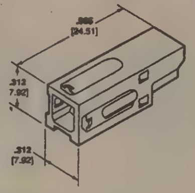
512-9021	211903-1	22	—	21.64	18.64	16.35
512-9023	211904-1	28	—	23.22	19.61	17.54

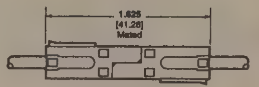
AMP® Power Lock Connectors have hermaphroditic housing and contact designs. The hermaphroditic housings are also modular in design and permit the clustering of connectors of the same series. Housings are made of impact resistant thermoplastic with stainless steel locking springs for contact stability. Terminals are available in strip and loose piece form with a material choice of silver, or gold plated copper. Contacts for Series I Connectors accept a wire size range of 18-12 AWG and contacts for Series II Connectors accept a wire size range of 10-6 AWG. Both insert easily into housings where integral locking springs provide positive retention.

AMP Power Lock Connectors can be adapted to most high current applications and may be used as free-hanging, surface mounted and thru-panel mounted connectors, or when posted contacts are used, they can be used on printed circuits.

Series I Connectors (18-12 AWG)

Connector Housing Assembly



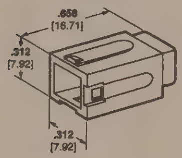


Housing: Polycarbonate

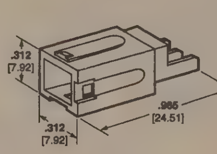
Stock No.	Mfr.'s Type	Color	EACH		
			1-99	100-499	500-999
512-8222	53894-1	White	.47	.41	.38
512-8224	53894-2	Black	.47	.41	.38
512-8226	53894-3	Green	.47	.41	.38
512-8992	53894-4	Red	.47	.41	.38
512-8230	53894-5	Yellow	.47	.41	.38
512-8232	53894-6	Blue	.47	.41	.38
512-8234	53894-7	Natural	1.01	.90	.82

Adapters

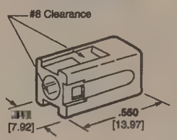
Spacer



Key



Mounting Adapter

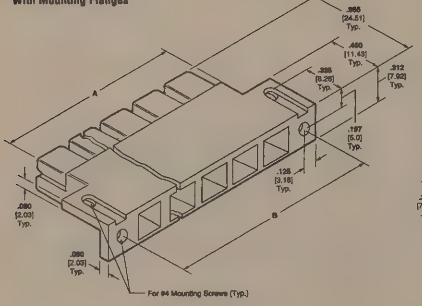


Housing: Polycarbonate (Red)

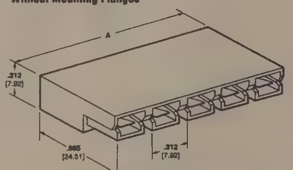
Stock No.	Mfr.'s Type	Type	EACH		
			1-99	100-499	500-999
512-8236	53899-2	Spacer	.33	.30	.26
512-8238	53899-1	Key	.32	.27	.25
512-8240	54315-1	Mounting	.47	.41	.37

In-Line Housings

With Mounting Flanges



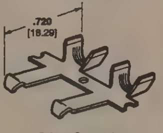
Without Mounting Flanges



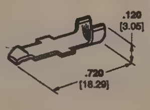
Housing: Nylon, Natural Color

Stock No.	Mfr.'s Type	No. Of Pos.	With Flanges	Dimensions (In.)		EACH	
				A	B	1-49	50-99
512-8242	54489-2	2	Yes	0.624	0.874	1.59	1.46
512-8244	54483-2	2	No	0.624	—	1.57	1.44
512-8246	54489-3	3	Yes	0.936	1.186	2.17	1.99
512-8248	54483-3	3	No	0.936	—	3.09	2.84
512-8250	54489-4	4	Yes	1.248	1.498	2.73	2.50
512-8252	54483-4	4	No	1.248	—	2.69	2.47
512-8254	54489-5	5	Yes	1.560	1.810	3.30	3.03
512-8256	54483-5	5	No	1.560	—	4.63	4.28
512-8258	54489-6	6	Yes	1.872	2.122	3.55	3.27
512-8260	54483-6	6	No	1.872	—	3.50	3.23

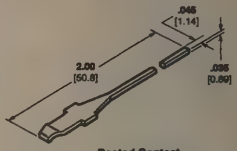
Series I Contacts



Crimp Contact



Solder Contact

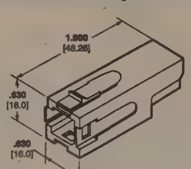


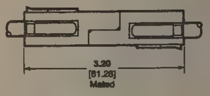
Posted Contact

Stock No.	Mfr.'s Type	Type	Wire AWG	Plating	EACH	
					1-999	1000-4999
512-8991	53892-4	Crimp	18-12	Silver	.19	.14
512-8264	53892-7	Crimp	18-12	Gold	1.05	.85
512-8266	54329-1	Solder	12 Max.	Silver	.20	.14
512-8268	54326-2	Posted	—	Silver	.56	.41
512-8270	54326-1	Posted	—	Gold	1.08	.86

Series II Connectors (10-6 AWG)

Connector Housing Assembly



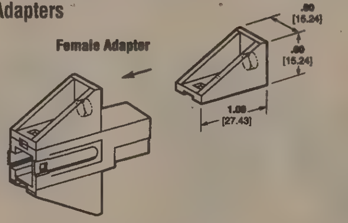


Housing: Polycarbonate

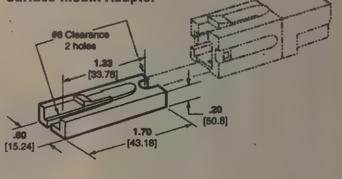
Stock No.	Mfr.'s Type	Color	EACH		
			1-99	100-499	500-999
512-8272	53884-1	Blue	1.68	1.44	1.32
512-8274	53884-3	Black	1.37	1.22	1.11
512-8276	53884-4	Red	1.44	1.27	1.17

Adapters

Female Adapter

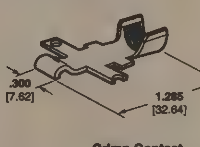


Surface Mount Adapter

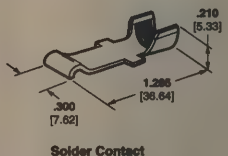


Stock No.	Mfr.'s Type	Type	Color	EACH		
				1-99	100-499	500-999
512-8278	53886-1	Female	Blue	1.40	1.22	1.09
512-8280	53885-1	Surface-Mount	Blue	3.10	2.73	2.54

Series II Contacts



Crimp Contact



Solder Contact

Stock No.	Mfr.'s Type	Type	Wire AWG	Plating	EACH	
					1-999	1000-4999
512-8282	54880-4	Crimp	10-6	Silver	.57	.41
512-8284	54330-1	Solder	6 Max.	Silver	.67	.47

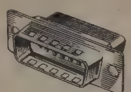
Crimp Tools For Series I and II

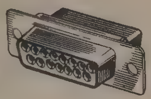
Series I — Heavy Head Hand Tool
512-8286. 68347-1 .... EACH 713.32
Series II — BANTAM ROTA-CRIMP® Hand Tool
512-8288. 68321-1 .... EACH 869.04

HDP Metal Shell Connectors

Listed

Certified





Choice of zinc-plated shell or tin-plated shell with grounding indents on the plugs. Insert is black thermoplastic, rated 94V-0. **Contact Rating (with 20 AWG Wire):** 7.5 amps. **Termination Resistance:** 5 K megohms. **Engagement Force:** 12 oz. **Separation Force:** .75 oz. **Mating Force:** 8 oz. per contact. CONTACTS NOT INCLUDED. Select contacts from those offered below. Recognized under the components program of Underwriters Laboratories, Inc., File No. E28476. Certified by Canadian Standards Association, File No. LR 16455.

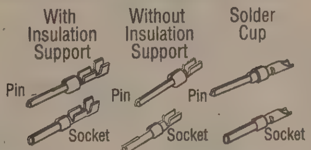
Zinc Plated Shells

Stock No.	Mfr.'s Type	Style	Contacts (Not Included)	EACH		
				1-99	100-499	500-999
512-0005	205204-1	Plug	9	1.22	.96	.74
512-0010	205203-1	Receptacle	9	1.22	.96	.74
512-0015	205206-1	Plug	15	1.25	.98	.75
512-0020	205205-1	Receptacle	15	1.25	.98	.75
512-0025	205208-1	Plug	25	1.29	1.01	.78
512-0030	205207-1	Receptacle	25	1.29	1.01	.78
512-0035	205210-1	Plug	37	1.46	1.14	.92
512-0040	205209-1	Receptacle	37	1.46	1.14	.92
512-0045	205212-1	Plug	50	1.76	1.39	1.13
512-0050	205211-1	Receptacle	50	1.76	1.39	1.13

Tin-Plated Shells, Plugs with Grounding Indents

Stock No.	Mfr.'s Type	Style	Contacts (Not Included)	1-99	100-499	500-999
512-0105	205204-4	Ind. plug	9	1.66	1.30	1.00
512-0110	205203-3	Receptacle	9	1.22	.96	.74
512-0115	205206-3	Ind. plug	15	1.68	1.32	1.02
512-0120	205205-2	Receptacle	15	1.25	.98	.75
512-0125	207464-2	Ind. plug	25	1.72	1.35	1.04
512-0130	207463-1	Receptacle	25	1.29	1.01	.78
512-0135	205210-3	Ind. plug	37	1.90	1.49	1.20
512-0140	205209-2	Receptacle	37	1.46	1.14	.92
512-0145	205212-3	Ind. plug	50	2.21	1.73	1.38
512-0150	205211-2	Receptacle	50	1.76	1.39	1.12

Contact Size 20-DF Pin and Socket Contacts



Pin Diameter: .040". **Materials:** Pins — brass; Sockets — phosphor bronze.

Crimp Style (24-20 AWG Wire).060" maximum insulation diameter with insulation support

Stock No.	Mfr.'s Type	Description	PER PKG./100		
			1-4	5-9	10-24
512-9500	6-66506-1	Pin, select gold flash over nickel overall, Additional .000030" gold on mating end	15.67	14.38	12.53
512-9510	7-66504-0	Socket, select gold flash over nickel overall, Additional .000030" gold on mating end	17.41	15.98	13.92
512-9035	1-66506-0	Pin, gold flash over nickel	12.26	10.69	9.81
512-9040	1-66504-0	Socket, gold flash over nickel	13.62	11.82	10.90
512-9042	5-66506-9	Pin, nickel overall, gold flash on mating end, tin-lead term. end	10.88	9.78	9.10
512-9044	5-66504-7	Socket, nickel overall, gold flash on mating end, tin-lead term. end	12.02	10.82	10.11

Crimp Style (24-20 AWG Wire) .068" maximum insulation diameter without insulation support

Stock No.	Mfr.'s Type	Description	1-4	5-9	10-24
512-9097	2-205202-8	Pin, select gold flash over nickel overall, Additional .000030" gold on mating end	16.23	14.90	12.98
512-9099	2-205201-8	Socket select gold flash over nickel overall, Additional .000030" gold on mating end	19.12	17.55	15.29
512-9091	205202-7	Pin, gold flash over nickel	12.70	10.57	10.16
512-9093	205201-7	Socket, gold flash over nickel	14.96	12.49	11.97

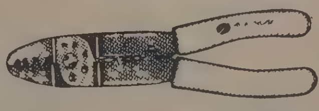
Crimp Style (28-24 AWG Wire) .040" maximum insulation diameter

Stock No.	Mfr.'s Type	Description	1-4	5-9	10-24
512-9585	6-66507-0	Pin, sel. gold flash over nickel overall .000030" gold on mating end	15.66	14.38	12.53
512-9590	6-66505-9	Socket, sel. gold flash over nickel overall .000030" gold on mating end	17.41	15.98	13.92
512-9095	1-66507-0	Pin, gold flash over nickel	12.26	10.69	9.81
512-9100	1-66505-0	Socket, gold flash over nickel	13.27	12.06	11.06

Solder Cup Type (18 AWG Max. Wire Size)

Stock No.	Mfr.'s Type	Description	1-4	5-9	10-24
512-9520	66570-8	Pin, gold flash over nickel, .000030" gold on mating end	19.14	17.57	15.31
512-9530	1-66569-0	Socket, gold flash over nickel, .000030" gold on mating end	23.01	21.12	18.40

AMP® Service Hand Tool



Can crimp D-sub contacts on 22 and 20 AWG wire. Also for 22-10 AWG uninsulated and insulated closed barrel terminals. Includes bolt cutter. Cushioned handles.

512-8615. 90287-1 .... **EACH 24.50**

HDP-20 Solder Cup Connectors

Listed

Certified

Pre-loaded duplex plated solder cup contacts with shell finish of standard zinc chromate or tin. One-piece 94 V-0 rated plastic insert. Anti-solderwicking contact design. Intermateable with other subminiature-D connectors. Available in 9, 15, 25, and 37 position plugs and receptacles. Recognized under the components program of Underwriters Laboratories, Inc., File No. E28476. Certified by Canadian Standards Association, File No. LR 16455.

Zinc-Plated Shells

Stock No.	Mfr.'s Type	Style	Contacts	EACH		
				1-99	100-499	500-999
512-0305	747904-4	Plug	9	2.11	1.43	1.08
512-0310	747905-4	Receptacle	9	2.93	1.98	1.51
512-0315	747908-4	Plug	15	2.93	1.98	1.51
512-0325	747912-4	Plug	25	4.11	2.78	2.11
512-0330	747913-4	Receptacle	25	5.28	3.57	2.72
512-0335	747916-4	Plug	37	6.04	4.08	3.11

Tin-Plated Shells, Plugs with Grounding Indents

Stock No.	Mfr.'s Type	Style	Contacts	1-99	100-499	500-999
512-0405	747904-2	Ind. plug	9	2.22	1.50	1.14
512-0410	747905-2	Receptacle	9	2.93	1.98	1.51
512-0415	747908-2	Ind. plug	15	3.03	1.98	1.51
512-0420	747909-2	Receptacle	15	3.93	2.66	2.03
512-0425	747912-2	Ind. plug	25	4.21	2.85	2.17
512-0430	747913-2	Receptacle	25	5.28	3.57	2.72
512-0435	747916-2	Ind. plug	37	6.14	4.16	3.16
512-0440	747917-2	Receptacle	37	7.57	5.12	3.90

Insertion/Extraction Tool

For size 20 crimp and solder cup contacts.

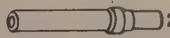
512-0470. 91285-1 .... **EACH 11.62**

HDM-20 (MIL-C-24308) Connectors

Stainless steel retention springs. Insert material per MIL-C-24308.

Stock No.	Mfr.'s Type	M24308/	Style	Contacts (Not Included)	EACH		
					1-24	25-49	50-99
512-0205	205162-1	4-259	Plug	9	6.33	4.49	3.63
512-0210	205161-1	2-281	Receptacle	9	5.82	4.13	3.34
512-0215	205164-1	4-260	Plug	15	6.74	4.79	3.78
512-0220	205163-1	2-282	Receptacle	15	6.74	4.79	3.78
512-0225	205166-1	4-261	Plug	25	7.62	5.39	4.37
512-0230	205165-1	2-283	Receptacle	25	7.62	5.39	4.37
512-0235	205168-1	4-262	Plug	37	9.59	6.79	5.76
512-0240	205167-1	2-284	Receptacle	37	9.59	6.79	5.76

MIL-Spec. Pins, Sockets, and Tools



Shell constructed of steel, class G, cadmium plated per QQ-P-416.

Stock No.	Mfr.'s Type	Description	PER PKG./100		
			1-4	5-9	10-24
512-9015	205089-1	Pin, M39029/64-369	29.78	22.11	18.74
512-9017	205090-1	Socket, M39029/63-368	48.41	35.95	30.47

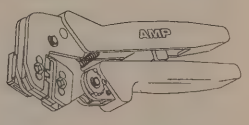
Insertion/Extraction Tools

Stock No.	Mfr.'s Type	Description	EACH
512-9045	91067-1	Insertion/extraction tool M81969/1-04	4.15
512-9110	91067-2	Insertion/extraction tool M81969/1-02	4.15

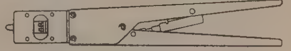
Crimp Tool and Positioner

Stock No.	Mfr.'s Type	Description	EACH
512-6011	601966-1	Crimp tool (M22520/2-01)	349.52
512-6015	601966-5	Positioner (M22520/2-08)	73.75

Crimp Tools



PRO-CRIMPER™II
Ratchet crimp tool for contacts on 28-24 AWG wire and on 24-20 AWG wire. Recommended for field repair use only.
512-9128. 58448-2 .... **EACH 128.23**



CERTI-CRIMP™ Tool
Considered by AMP to be the best crimp tool. Designed to exacting specifications. Long service life.

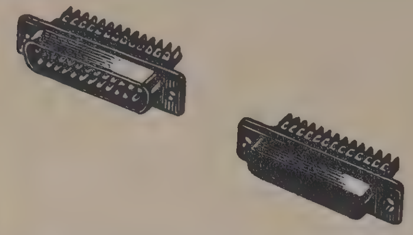
For AMPLIMITE® contacts for 28-24 and 24-20 AWG wire.
512-9132. 90302-1 .... **EACH 406.64**

For AMPLIMITE® contacts (without insulation support) for 24-20 AWG wire.
512-2651. 90265-1 .... **EACH 376.04**

HDE-20 Insulation Displacement D-Sub Connectors

All connectors are preloaded with insulation displacement crimp contacts. Pins in plugs and sockets in receptacles. Contacts accept a max. wire insulation thickness of .015" and a max. wire insulation dia. of .060". Also mateable with HD and HDF connectors.

All Plastic



All-Plastic for 26-22 AWG Wire. Housing: Black thermoplastic, 94V-0 rated. **Contacts:** Phosphor bronze. **Mounting Holes:** .120" diameter.

Plugs

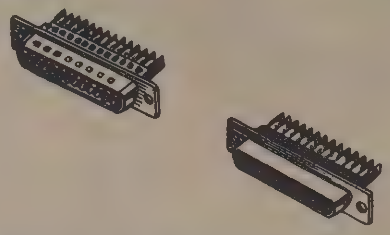
Stock No.	Mfr.'s Type	No. of Contacts	Contact Finish*	EACH		
				1-24	25-99	100-499
512-0270	745203-2	9	A	2.28	2.11	1.89
512-0272	745207-2	15	A	3.24	3.01	2.67
512-0274	745207-5	15	B	2.99	2.70	2.46
512-0276	745211-2	25	A	4.03	3.66	3.35
512-0278	745211-5	25	B	3.68	3.30	3.05

Receptacles

512-0280	745201-2	9	A	2.48	2.22	2.05
512-0282	745201-5	9	B	2.31	1.91	1.63
512-0290	745205-2	15	A	3.57	3.31	2.94
512-0292	745205-5	15	B	3.32	3.08	2.73
512-0294	745209-2	25	A	5.03	4.67	4.14
512-0296	745209-5	25	B	4.14	3.73	3.42

***Contact Finish:** A — .000030 gold on mating termination end, with entire contact nickel plated; B — gold flash on mating end, tin-lead on the termination end, with entire contact nickel plated.

Metal Shell



Metal Shell for 26-22 AWG Wires. Shell: Steel, tin plated. **Insert:** Black thermoplastic, 94V-0 rated. **Contacts:** Phosphor bronze. Also mateable with HDF, HDP, and HD connectors.

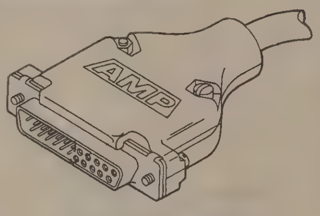
Plugs for 26-22 AWG Wire

Stock No.	Mfr.'s Type	No. of Contacts	Contact Finish*	EACH		
				1-24	25-99	100-499
512-0298	745492-2	9	A	2.70	2.44	2.24
512-0300	745492-5	9	B	2.48	2.24	2.06
512-0302	745494-2	15	A	3.52	3.17	2.92
512-0304	745494-5	15	B	3.29	2.95	2.73
512-0306	745496-2	25	A	4.82	4.32	3.99
512-0308	745496-5	25	B	4.46	4.04	3.76
512-0312	745498-2	37	A	7.26	6.74	5.97
512-0314	745498-5	37	B	6.77	6.28	5.57

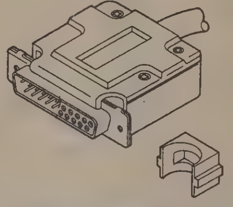
Receptacles for 26-22 AWG Wire

512-0316	745491-2	9	A	2.90	2.62	2.40
512-0318	745491-5	9	B	2.73	3.48	2.27
512-0322	745493-2	15	A	3.81	3.44	3.16
512-0324	745493-5	15	B	3.58	3.24	2.97
512-0326	745495-2	25	A	5.33	4.83	4.42
512-0328	745495-5	25	B	4.91	4.43	4.07
512-0332	745497-2	37	A	8.13	7.55	6.69
512-0334	745497-5	37	B	7.48	6.94	6.15

D-Subminiature Connector Kits



Shielded Plug/Receptacle Kit



Unshielded Plug/Receptacle Kit

AMP® introduces Subminiature D Kits. Individual kits include a connector housing, contacts, a blackshell with grommets and hardware.

Shielded Crimp Snap-In Plug and Receptacle Kits (24-20 AWG)

Stock No.	Mfr.'s Type	No. of Contacts	Description	EACH			
				1-4	5-9	10-24	25-99
512-7919	749805-1	9	Plug	4.08	3.41	3.13	2.89
512-7921	749806-1	9	Receptacle	4.10	3.43	2.90	2.70
512-7923	749805-2	15	Plug	4.44	3.71	3.40	3.14
512-7925	749806-2	15	Receptacle	4.48	3.75	3.43	3.17
512-7927	749805-3	25	Plug	4.90	4.10	3.76	3.47
512-7929	749806-3	25	Receptacle	4.96	4.14	3.79	3.50

Shielded HDE Insulation Displacement Plug and Receptacle Kits (26-22 AWG)

512-7931	749810-1	9	Plug	4.46	3.73	3.42	3.15
512-7933	749814-1	9	Receptacle	4.48	3.75	3.43	3.17
512-7935	749810-2	15	Plug	5.06	4.23	4.88	3.88
512-7937	749814-2	15	Receptacle	5.10	4.27	3.91	3.61
512-7939	749810-3	25	Plug	5.94	4.95	4.54	4.19
512-7941	749814-3	25	Receptacle	6.00	5.01	4.59	4.24

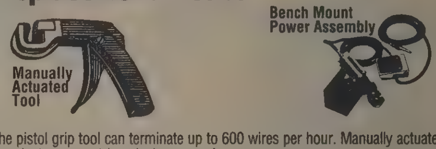
Unshielded Crimp Snap-In Plug and Receptacle Kits (24-20 AWG)

512-7943	749808-1	9	Plug	2.82	2.36	2.16	1.99
512-7945	749812-1	9	Receptacle	2.84	2.37	2.18	2.01
512-7947	749808-2	15	Plug	2.96	2.47	2.26	2.09
512-7949	749812-2	15	Receptacle	3.00	2.50	2.29	2.12
512-7951	749808-3	25	Plug	3.22	2.69	2.47	2.28
512-7953	749812-3	25	Receptacle	3.28	2.74	2.52	2.32

Unshielded Insulation Displacement Plug and Receptacle Kits (26-22 AWG)

512-7955	749809-1	9	Plug	3.20	2.67	2.45	2.26
512-7957	749813-1	9	Receptacle	3.22	2.69	2.47	2.28
512-7959	749809-2	15	Plug	3.60	3.00	2.75	2.54
512-7961	749813-2	15	Receptacle	3.64	3.04	2.79	2.57
512-7963	749809-3	25	Plug	4.26	3.56	3.26	3.01
512-7965	749813-3	25	Receptacle	4.32	3.60	3.30	2.64

Tools for HDE-20 Insulation Displacement D-Subs



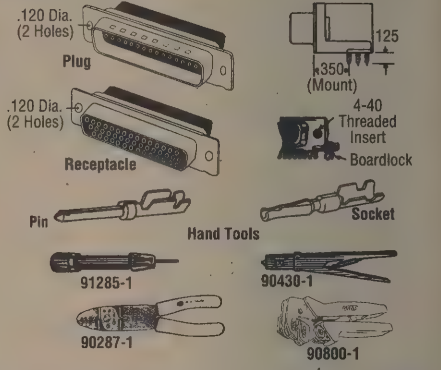
The pistol grip tool can terminate up to 600 wires per hour. Manually actuated: Terminate one unstripped wire per cycle.

512-9082. 58074-1. Pistol grip handle without head ....**EACH 53.92**
512-9092. 58063-2. Modular head for HDE Series ....**EACH 179.52**
512-9081. 58338-1. Bench mount power assembly ....**EACH 302.13**

The bench mount power assembly is actuated by compressed air. Includes a foot switch. Terminates 1000 wires per hour typically. Modular head sold separately.

512-0336. 91232-1. Extraction tool ....**EACH 9.20**

AMPLIMITE® HDP-22 High Density D-Subs



Shell: Steel, tin plated with grounding indents. **Insert:** Black thermoplastic, 94V-0 rated. **Contacts:** Sold separately.

Plugs

Stock No.	Mfr.'s Type	No. of Contacts	EACH		
			1-24	25-99	100-499
512-0252	748364-1	15	3.36	2.90	2.55
512-0254	748365-1	26	3.82	3.29	2.91
512-0255	748366-1	44	4.52	3.92	3.43
512-0256	748367-1	62	4.41	4.15	3.78
512-0258	748368-1	78	5.15	4.28	3.91

Receptacles

512-0238	748565-1	15	3.93	3.41	2.98
512-0242	748566-1	26	4.47	3.88	3.40
512-0244	748567-1	44	5.23	4.51	3.97
512-0246	748568-1	62	5.75	5.28	4.37
512-0248	748569-1	78	5.99	5.49	4.55

HD-22 Front Metal Shell Right-Angle

High density posted — 350 mount with boardlock. **Front Shell:** Steel, tin plated. **Housing:** Black thermoplastic, 94V-0 rated. **Threaded Inserts:** Zinc. **Posted Sockets (Included):** Phosphor bronze plated with .000030 (0.00076) gold on mating end, tin-lead on termination end, with entire contact underplated with .000050 (0.00127) nickel. Recommended PC board thickness .062 (1.57).

512-0260	748390-5	15	7.15	5.51	5.01
512-0262	748481-5	26	11.95	10.09	7.79
512-0263	748482-5	44	15.32	11.60	9.99
512-0264	748394-5	62	24.77	18.74	16.15

Precision Formed Crimp Snap-In Contacts

Plated: .000030 (0.00076) gold on mating end, tin-lead on crimp barrel, with entire contact nickel underplated.

Stock No.	Mfr.'s Type	Description	For Wire AWG	EACH	
				1-4	5-9
512-0271	1-748333-4	Pin for plugs	22-28	11.40	10.26
512-0265	748610-4	Socket for recept.	22-28	11.22	9.82

Plated: Nickel underplate overall, gold flash on mating and tin-lead on crimp barrel.

512-0267	748333-7	Pin for plugs	22-28	8.53	7.83
512-0269	748610-7	Socket for recept.	22-28	12.68	11.42

Tools

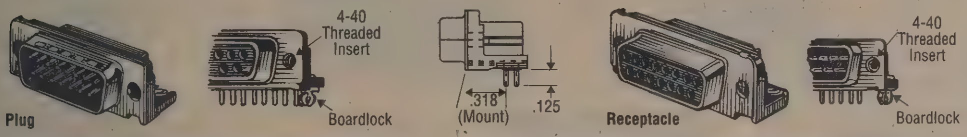
Stock No.	Mfr.'s Type	Description	EACH
512-0470	91285-1	Insertion/extraction tool	11.62
512-0268	90430-1	CERTI-CRIMP™ tool	413.16
512-8615	90287-1	Service hand tool — 22 AWG wires	24.50
512-8710	90800-1	PRO-CRIMPER™II tool	131.14

HD-20 Right Angle Posted D-Sub Connectors

Listed Certified

Front Metal Shell

0.318 mount. 0.125" PC board posts. Plugs with grounding indents.



Plugs with Standard .125" Dia. Mounting Holes, without Boardlocks

Stock No.	Mfr.'s Type	No. of Contacts	Plating Code*	EACH 1-24	EACH 25-99	EACH 100-499
512-0427	747250-2	9	A	5.20	4.39	3.64
512-0429	747236-2	15	A	6.20	4.65	4.34
512-0431	747238-2	25	A	7.40	5.53	5.18
512-0433	747252-2	37	A	10.77	9.15	8.12

Plugs with 4-40 Threaded Inserts without Boardlocks

Stock No.	Mfr.'s Type	No. of Contacts	Plating Code*	EACH 1-24	EACH 25-99	EACH 100-499
512-0426	747250-4	9	A	5.70	4.79	3.99
512-0428	747250-3	9	B	5.00	4.21	3.50
512-0432	747236-4	15	A	6.60	5.56	4.62
512-0434	747238-4	25	A	7.80	6.55	5.46
512-0436	747238-3	25	B	5.90	4.97	4.13
512-0438	747252-4	37	A	9.43	8.73	8.54

Plugs with 4-40 Threaded Inserts, with Boardlocks

Stock No.	Mfr.'s Type	No. of Contacts	Plating Code*	EACH 1-24	EACH 25-99	EACH 100-499
512-0442	747840-4	9	A	6.05	5.10	4.24
512-0444	747840-3	9	B	5.35	4.51	3.75
512-0446	747841-4	15	A	6.95	5.87	4.87
512-0450	747842-4	25	A	8.15	6.88	5.71
—	—	—	—	—	—	—
—	—	—	—	—	—	—

Receptacles with Standard .125" Dia. Mounting Holes, without Boardlocks

Stock No.	Mfr.'s Type	No. of Contacts	Plating Code*	EACH 1-24	EACH 25-99	EACH 100-499
512-0452	745781-2	9	A	5.20	4.39	3.64
512-0454	745782-2	15	A	6.10	4.56	4.27
512-0456	745783-2	25	A	7.30	5.46	5.11
—	—	—	—	—	—	—

Receptacles with 4-40 Threaded Inserts, without Boardlocks

Stock No.	Mfr.'s Type	No. of Contacts	Plating Code*	EACH 1-24	EACH 25-99	EACH 100-499
512-0460	745781-4	9	A	5.60	4.72	3.92
512-0462	745781-3	9	B	4.90	4.13	3.43
512-0464	745782-4	15	A	6.50	5.50	4.55
512-0468	745783-4	25	A	7.70	6.48	5.39
512-0472	745783-3	25	B	5.80	4.87	4.06
512-0474	745784-4	37	A	10.90	9.54	8.46

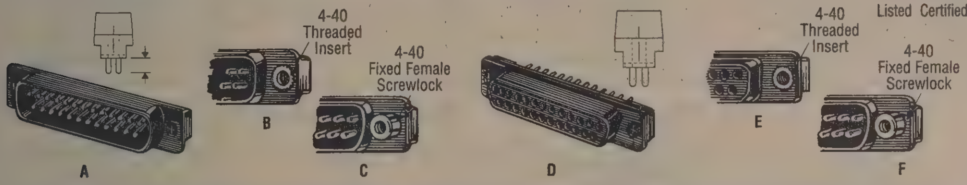
Receptacles with 4-40 Threaded Inserts, with Boardlocks

Stock No.	Mfr.'s Type	No. of Contacts	Plating Code*	EACH 1-24	EACH 25-99	EACH 100-499
512-0476	747844-4	9	A	5.95	5.02	4.17
512-0478	747845-4	15	A	6.85	5.79	4.80
512-0480	747845-3	15	B	5.70	4.79	3.99
512-0482	747846-4	25	A	8.05	6.78	5.64
512-0484	747846-3	25	B	6.15	5.20	4.31
512-0486	747847-4	37	A	11.00	9.84	8.76

***Contact Platings:** A — .000030 gold on mating end, tin-lead on the termination end, with entire contact nickel underplated; B — gold flash on mating end, tin-lead on the termination end, with entire contact nickel underplated.

HD-20 Straight Posted Connectors D-Sub Connectors

Listed Certified



Flame retardant thermoplastic housing. Pin contacts are brass; socket contacts are phosphor bronze. Both have plating options. Intermateable with other HD-20 connectors. UL Recognized and CSA Certified.

All-Plastic

Plugs with .120" Dia. Standard Mounting Holes, .125" Post Length — Fig. A

Stock No.	Mfr.'s Type	No. of Contacts	Plating Code*	EACH 1-49	EACH 50-99	EACH 100-499
512-0488	208006-2	9	A	2.69	2.56	2.02
512-0490	208007-2	15	A	3.27	3.10	2.64
512-0492	208007-1	15	B	2.93	2.79	2.37
512-0494	208008-2	25	A	4.33	4.11	3.24
512-0496	208008-1	25	B	3.77	3.58	2.84
512-0500	208009-1	37	B	5.38	5.11	4.34
—	—	—	—	—	—	—

Plugs with 4-40 Threaded Inserts, .125" Post Length — Fig.B

Stock No.	Mfr.'s Type	No. of Contacts	Plating Code*	EACH 1-49	EACH 50-99	EACH 100-499
512-0502	745051-2	9	A	3.75	3.56	3.04
512-0504	745051-1	9	B	3.55	3.37	2.67
512-0506	745052-1	15	B	4.44	4.22	3.59
512-0508	745053-2	25	A	5.42	5.21	4.37
512-0512	745053-1	25	B	4.85	4.61	3.64
—	—	—	—	—	—	—
—	—	—	—	—	—	—

Plugs with 4-40 Fixed Female Screwlocks, .125" Post Length — Fig.C

Stock No.	Mfr.'s Type	No. of Contacts	Plating Code*	EACH 1-49	EACH 50-99	EACH 100-499
512-0516	745071-2	9	A	4.20	3.99	3.16
512-0518	745071-1	9	B	4.00	3.80	3.25
512-0522	745072-2	15	A	4.79	4.55	3.59
512-0524	745073-2	25	A	5.87	5.58	4.73
512-0526	745073-1	25	B	5.30	5.03	4.29
512-0528	745073-4†	25	A	5.87	5.58	4.73
512-0530	745073-3†	25	B	5.51	5.23	4.46
512-0532	745074-1	37	B	6.94	6.59	5.21
—	—	—	—	—	—	—

Receptacles with .120" Standard Mounting Holes, .125" Post Length — Fig. D

Stock No.	Mfr.'s Type	No. of Contacts	Plating Code*	EACH 1-49	EACH 50-99	EACH 100-499
512-0534	207826-4	9	A	2.80	2.66	2.11
512-0536	207826-3	9	B	2.60	2.47	2.10
512-0538	207827-4	15	A	3.44	3.27	2.78
512-0540	207827-3	15	B	3.11	2.95	2.34
512-0542	207828-4	25	A	4.61	4.38	3.47
512-0544	207828-3	25	B	4.05	3.86	3.05
512-0546	207829-4	37	A	6.62	6.29	4.97

Receptacles with 4-40 Threaded Inserts, .125" Post Length — Fig. E

Stock No.	Mfr.'s Type	No. of Contacts	Plating Code*	EACH 1-49	EACH 50-99	EACH 100-499
512-0548	207841-4	9	A	3.86	3.68	3.13
512-0550	207841-3	9	B	3.66	3.49	2.75
512-0552	745057-4	15	A	4.52	4.29	3.65
512-0556	745058-4	25	A	5.71	5.43	4.28
512-0558	745058-3	25	B	5.15	4.88	3.86
512-0560	745058-6†	25	A	5.71	5.43	4.61
512-0562	745059-4	37	A	7.75	7.37	5.82

Receptacles with 4-40 Fixed Female Screwlocks, .125" Post Length — Fig. F

Stock No.	Mfr.'s Type	No. of Contacts	Plating Code*	EACH 1-49	EACH 50-99	EACH 100-499
512-0566	745076-4	9	A	4.32	4.11	3.49
512-0568	745076-3	9	B	4.12	3.91	3.09
512-0570	745076-6*	9	A	4.32	4.11	3.49
512-0572	745077-4	15	A	4.97	4.71	4.01
512-0574	745077-3	15	B	4.63	4.39	3.74
512-0576	745078-4	25	A	6.15	5.85	4.62
512-0578	745078-3	25	B	5.60	5.31	4.20
512-0582	745078-5†	25	B	5.60	5.31	4.20
512-0584	745079-4	37	A	8.20	7.80	6.62

Front Metal Shell

Shell: Steel, tin plated.

Plugs with .120" Dia. Standard Mounting Holes, .125" Post Length

Stock No.	Mfr.'s Type	No. of Contacts	Plating Code*	EACH 1-49	EACH 50-99	EACH 100-499
512-0585	747871-2	9	A	3.83	3.64	2.87
512-0588	747872-4†	15	A	4.59	4.37	3.44
512-0589	745968-2	25	A	5.83	5.54	4.72
512-0591	747375-2	37	A	5.94	5.64	4.44

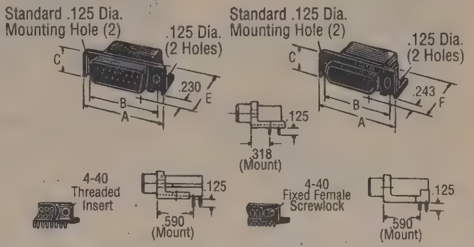
Receptacles with .120" Dia. Standard Mounting Holes, .125" Post Length

Stock No.	Mfr.'s Type	No. of Contacts	Plating Code*	EACH 1-49	EACH 50-99	EACH 100-499
512-0593	747150-2	9	A	3.92	3.74	2.45
512-0595	747299-2	15	A	4.85	4.61	3.64
512-0597	745967-2	25	A	4.47	4.26	3.36
512-0599	747301-2	37	A	6.35	6.03	5.12

***Contact Platings:** A — .000030 gold on mating end, tin-lead on the termination end, with entire contact nickel underplated; B — gold flash on mating end, tin-lead on the termination end, with entire contact nickel underplated. †.170" post length.

HD-20 Right-Angle Posted, PC Board D-Subs

All Plastic Housing



Housing: Black thermoplastic, 94V-0 rated. **Contacts:** Phosphor bronze.

.318 Mount, .125" PC Board Posts
Receptacle with fixed female screwlocks.

Stock No.	Mfr.'s Type	No. of Contacts	Plating Code*	EACH 1-49	EACH 50-99	EACH 100-499
512-0338	745395-2	9	A	6.50	5.20	4.76
512-0344	745397-2	25	A	7.80	6.24	5.88

.590 Mount (Front Load), .125" PC Board Posts
Receptacle with unplated brass threaded inserts.

Stock No.	Mfr.'s Type	No. of Contacts	Plating Code*	EACH 1-49	EACH 50-99	EACH 100-499
512-0349	747459-4	9	A	5.68	4.54	4.16
512-0350	747460-4	15	A	6.25	4.99	4.58
512-0352	747461-4	25	A	6.81	5.45	5.13

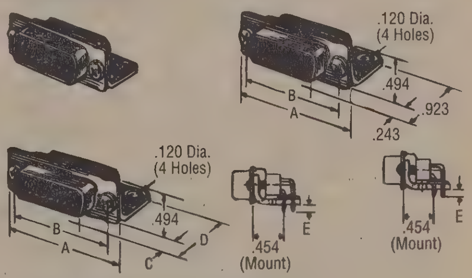
.590 Mount (Front Load), .125" PC Board Posts
Plug with standard mounting holes (.120").

Stock No.	Mfr.'s Type	No. of Contacts	Plating Code*	EACH 1-49	EACH 50-99	EACH 100-499
512-0356	747467-2	9	A	4.85	3.88	3.55
512-5900	747467-1	9	B	4.42	3.54	3.25
512-0358	747468-2	15	A	5.34	4.27	4.02
512-0360	748826-1	25	A	11.96	8.88	6.21
512-5902	748826-2	25	B	8.22	6.60	5.19
512-0362	747470-2	37	A	7.28	5.82	5.49
512-0364	206971-2†	50	A	13.11	10.94	10.25
512-5904	206971-1†	50	B	12.92	11.06	10.37

Receptacle with standard mounting holes (.120").

Stock No.	Mfr.'s Type	No. of Contacts	Plating Code*	EACH 1-49	EACH 50-99	EACH 100-499
512-0366	747459-2	9	A	4.85	3.88	3.55
512-0368	747460-2	15	A	5.34	4.27	4.02
512-0370	747461-2	25	A	5.82	4.65	4.39
512-5907	747461-1	25	B	5.30	4.25	3.89
512-0372	747462-2	37	A	7.28	5.82	5.34
512-0374	206973-2†	50	A	13.82	11.52	10.81
512-5909	206973-1†	50	B	12.42	10.35	9.70

Front Metal Shell



.454 Mount Receptacles, .125" PC Board Post
Shell: Tin-plated steel.

Stock No.	Mfr.'s Type	No. of Contacts	Plating Code*	EACH 1-49	EACH 50-99	EACH 100-499
512-0376	745438-4	9	A	9.20	8.75	7.44
512-0380	745439-4	15	A	10.54	10.02	8.52
512-0383	745440-4	25	A	12.73	12.09	10.26
512-0384	745440-2‡	25	A	12.73	12.09	12.73
512-0386	745441-4	37	A	15.34	14.57	12.38

.545" Mount, .125" PC Board Post
Plug with ground indents and standard screws.

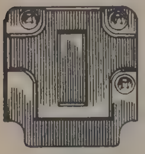
Stock No.	Mfr.'s Type	No. of Contacts	Plating Code*	EACH 1-49	EACH 50-99	EACH 100-499
512-0388	745352-4	15	A	8.97	8.36	7.10
512-0392	745353-4	25	A	10.53	10.00	8.51
512-0397	745354-4	37	A	12.61	11.99	10.17
512-0398	745355-4	50	A	16.03	15.23	12.94

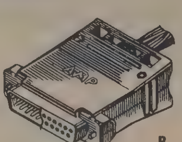
Receptacle with standard mounting screws.

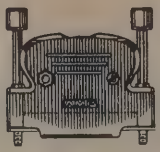
Stock No.	Mfr.'s Type	No. of Contacts	Plating Code*	EACH 1-49	EACH 50-99	EACH 100-499
512-0402	745112-2	9	A	7.83	7.44	6.33
512-0406	745113-2	15	A	8.97	8.53	7.24
512-0412	745114-2	25	A	10.83	10.29	8.73
512-0416	745115-2	37	A	13.05	12.40	10.54
512-0422	745116-2	50	A	16.60	15.78	13.39
512-0424	745116-1	50	B	15.45	14.69	12.49

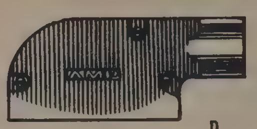
***Contact Plating:** A — .000030 gold on mating end, tin-lead on termination end, with entire contact nickel underplated; B — Gold on mating end, tin-lead on termination end, with entire contact nickel underplated. †Rear loading version. ‡220" PC Board Posts.

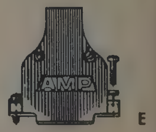
Clamps and Shields (Hoods)


A


B


C


D


E

Straight/90° Exit Cable Clamps (Hoods)

Assemblies can be used on either plugs or receptacles and will not interfere with commonly used hardware.

Black Thermoplastic
Finish is textured. Black zinc-plated steel flat head screws.

Stock No.	Mfr.'s Type	Fig.	Case Style	EACH 1-24	EACH 25-99	EACH 100-499
512-0605	207467-1	A	9-Pin	2.12	1.80	1.59
512-0610	207470-1	A	15-Pin	2.22	1.92	1.66
512-0615	207345-1	A	25-Pin	2.24	1.95	1.68
512-0620	207473-1	A	37-Pin	2.35	2.03	1.77
512-0625	207476-1	A	50-Pin	2.34	2.01	1.74

Grey Thermoplastic
4-40 zinc-plated steel screws.

Stock No.	Mfr.'s Type	Fig.	Case Style	EACH 1-24	EACH 25-99	EACH 100-499
512-0705	206471-1	B	15-Pin	2.50	2.08	1.89
512-0710	206472-1	B	25-Pin*	2.53	2.10	1.91
512-0715	745134-1	B	25-Pin**	2.53	2.10	1.91
512-0720	745081-1	B	37-Pin	2.62	2.14	1.97
512-0725	745082-1	B	50-Pin	2.83	2.61	2.15

*Cable dia. .335". **Cable dia. .460".

Straight Exit Dataphone Cable Clamps (Hoods)

Stock No.	Mfr.'s Type	Fig.	Case Style	EACH 1-24	EACH 25-99	EACH 100-499
512-1000	745122-2	C	15-Pin	7.09	5.79	5.28
512-1005	745121-2	C	25-Pin	6.60	5.38	4.88

2-Piece 90° Exit RFI/EMI Shields (Die Cast)

Stock No.	Mfr.'s Type	Fig.	Max. Cable Dia.	Case Style	EACH 1-24	EACH 25-99	EACH 100-499
512-0950	745652-2	D	0.375	15-Pin	9.12	7.81	6.78
512-0955	745653-4	D	0.350	25-Pin	10.85	9.27	8.06
512-0960	745653-3	D	0.430	25-Pin	10.85	10.02	8.24

2-Piece Straight Exit RFI/EMI Shields

Die Cast Metal
Zinc alloy plated bright nickel over bright copper.

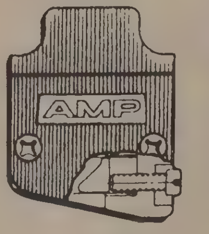
Stock No.	Mfr.'s Type	Fig.	Max. Cable Dia.	Case Style	EACH 1-24	EACH 25-99	EACH 100-499
512-0803	745171-2	E	0.200	9-Pin	5.41	4.62	4.02
512-0805	745171-1	E	0.250	9-Pin	5.41	4.62	4.02
512-0810	745172-2	E	0.300	15-Pin	5.54	4.75	4.12
512-0812	745172-1	E	0.375	15-Pin	5.54	4.75	4.12
512-0814	745173-5	E	0.280	25-Pin	5.67	4.86	4.20
512-0815	745173-4	E	0.350	25-Pin	5.67	4.86	4.20
512-0820	745173-3	E	0.430	25-Pin	5.67	4.86	4.20
512-0822	745173-2	E	0.480	25-Pin	5.67	4.86	4.20
512-0825	745174-4	E	0.425	37-Pin	5.81	4.96	4.32
512-0830	745174-3	E	0.500	37-Pin	5.81	4.96	4.32
512-0835	745175-5	E	0.450	50-Pin	5.95	5.10	4.42
512-0838	745175-4	E	0.525	50-Pin	5.95	5.10	4.42

Metal-Plated Plastic
Plated nickel over copper.

Stock No.	Mfr.'s Type	Fig.	Max. Cable Dia.	Case Style	EACH 1-24	EACH 25-99	EACH 100-499
512-0903	745854-5	E	0.200	9-Pin	3.63	3.13	2.70
512-0905	745854-3	E	0.250	9-Pin	3.63	3.13	2.70
512-0908	747099-5	E	0.300	15-Pin	3.71	3.18	2.75
512-0910	747099-3	E	0.375	15-Pin	3.71	3.18	2.75
512-0912	745833-9	E	0.280	25-Pin	3.80	3.29	2.84
512-0915	745833-7	E	0.350	25-Pin	3.80	3.29	2.84
512-0920	745833-5	E	0.430	25-Pin	3.80	3.29	2.91
512-0922	745833-3	E	0.480	25-Pin	3.80	3.29	2.91
512-0925	747100-7	E	0.425	37-Pin	3.91	3.38	2.91
512-0930	747100-5	E	0.500	37-Pin	3.91	3.38	2.91
512-0935	747098-7	E	0.525	50-Pin	4.00	3.45	2.97

Clamp Shell Straight/45° Exit Hoods

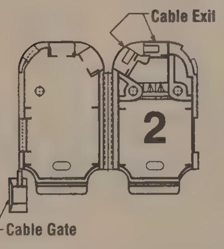
Assemblies can be used on either plug or receptacle and will not interfere with commonly used hardware. Black thermoplastic, textured finish, zinc-plated steel pan head screws. (6-32). 1.625" length short cable clamp.



Stock No.	Mfr.'s Type	Pins	EACH 1-24	EACH 25-99	EACH 100-499
512-0505	205729-1	9	1.98	1.69	1.47
512-0509†	206393-1	15	2.55	2.36	1.94
512-0510	205730-1	15	2.03	1.73	1.48
512-0513†	206390-1	25	2.52	2.16	1.88
512-0515	205718-1	25	2.06	1.77	1.50
512-0520	205731-1	37	2.11	1.79	1.51
512-0525	205732-1	50	2.13	1.88	1.61

†1.25" length short cable clamp.

Quik-Snap Backshell Kits Straight/60° Exit



Designed for ease of assembly. Assemblies can be used with plugs or receptacles and will not interfere with commonly used hardware. Black polypropylene.

Stock No.	Mfr.'s Type	Case Style	EACH 1-24	EACH 25-99	EACH 100-499
512-0850	749914-2	9-Pin	1.71	1.32	1.22
512-0852	749915-2	15-Pin	1.69	1.31	1.20
512-0854	749626-2	25-Pin	1.70	1.34	1.23
512-0856	749916-2	37-Pin	1.87	1.45	1.35

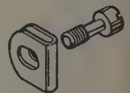
"D" Type Connector Kits

Contained in a rugged steel carrying case. Extra compartments allow customizing of kit. Replacement parts are available from stock.

Model 787053-2. RS232 Type Kit Contains: 100 pin and 100 socket contacts, six 25-position zinc receptacles, 18 25-position zinc plugs, 14 25-position cable clamps, an extraction tool, a crimp tool, and 25 4$\frac{1}{8}$" cable ties.
512-9122. 787053-2 .... **EACH 140.40**

Model 787054-2. RS449 Kit Contains: Pins and sockets (200 each); 9, 15, 25, and 37-position zinc receptacles (3 of each); 9, 15, 25, and 37-position zinc plugs (6 each); 9, 15, 25, and 37-position clamps (6 each); 100 4$\frac{1}{8}$" cable ties. Also includes 4 extraction tools and 1 crimp tool.
512-9123. 787054-2 .... **EACH 187.77**

Male Screw Retainers



Kit contains 2 male-screws and 2 clips. Screws are made of zinc-plated steel with a yellow or clear chromate finish. Retaining clips are made of zinc-plated steel. Type 205980-1 for metal shell connectors. Type 745647-1 for all plastic connectors. All parts packaged unassembled. Thread size 4-40.

Stock No.	Mfr.'s Type	Description	Screw Length	PER SET/2 1-99	PER SET/2 100-499	PER SET/2 500-999
512-9050	205980-1	Yellow chromate finish	.220"	.69	.52	.39
512-9052	205980-4	Clear chromate finish	.220"	.51	.38	.29
512-9055	745647-1	For all plastic D-subs	.220"	.61	.45	.37

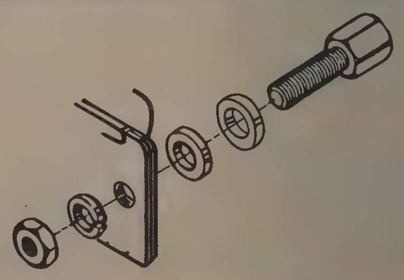
Locking Posts

Kit contains 2 complete post assemblies. Constructed of cold-rolled zinc plated steel. 4-40 threaded. **Size:** .416" long.
512-9080. Type 206514-1. **1-99** .... **PER SET/2 1.55**
100-499 .... **PER SET/2 1.26** **500-999** .... **PER SET/2 1.19**

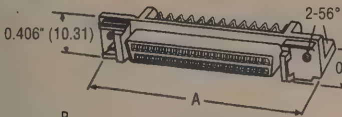
Female Screw Locks

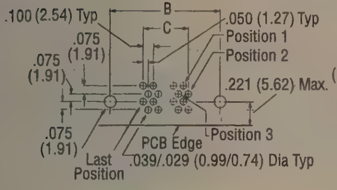
Female screw locks for use with either metal or plastic connector shells. Available in square or hex nut types; short, standard, or long sizes. Each kit contains two female screw lock assemblies. All parts packaged unassembled. Includes female screw lock screw, two flat washers, lockwasher, and hex or square nuts.

Stock No.	Mfr.'s Type	Nominal Type	Finish	Size Nut	Nut Type	Screw Length	PER SET/2 1-99	PER SET/2 100-499	PER SET/2 500-999
512-9060	207952-1	Short	Yellow chromate	0.250	Square	0.250	1.27	.97	.81
512-9065	207952-3	Short	Clear chromate	0.250	Square	0.250	1.27	.97	.81
512-9070	205817-1	Standard	Yellow chromate	0.350	Hex	0.312	1.27	.97	.81
512-9072	205817-3	Standard	Clear chromate	0.350	Hex	0.312	1.27	.97	.81
512-9075	207719-1	Long	Yellow chromate	0.350	Hex	0.560	1.40	1.08	.88
512-9077	207719-3	Long	Clear chromate	0.350	Hex	0.560	1.40	1.08	.88

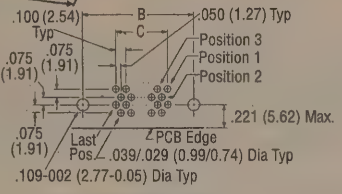


AMPLIMITE® .050 Series Right Angle Receptacle Headers with Rails and Latch Blocks, Series III





Recommended PCB Pattern for 68 Positions

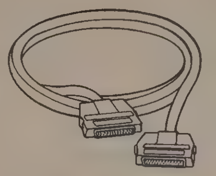


Recommended PCB Pattern for 26 and 50 Positions

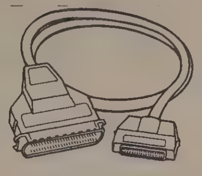
- ► **Housing: Thermoplastic, 94V-0 Rated, Black SMT Compatible**
- ► **Contact Plating: 30 µ" Gold Over Phosphor Bronze**
- ► **.112 (2.84) Solder Tail Length**
- ► **Shell: Steel, Plated Bright Tin Over Copper**

Stock No.	Mfr.'s Type	No. of Pos.	Dimensions (In.)			EACH			
			A	B	C	1-49	50-99	100-249	250-499
512-7901	787171-2	26	1.465	1.230	0.600	**6.07**	**5.22**	**4.48**	**3.89**
512-7903	787171-5	50	2.065	1.830	1.200	**7.15**	**6.15**	**5.29**	**4.58**
512-7905	787171-7	68	2.515	2.280	1.650	**9.45**	**8.13**	**6.99**	**6.05**

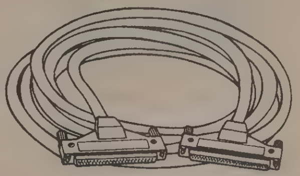
AMPLIMITE® .050 Series Cable Assemblies, Series III



SCSI-2



SCSI-1 to SCSI-2



IPI-2 and HPPI

To meet standard applications the following 106 ohm, black jacketed cable assemblies are available.

Stock No.	Mfr.'s Type	Length	Assembly	Application	EACH		
					1-9	10-24	25-49
512-7908	750254-2	2 Meter	50 pos. .050 series Plug to 50 pos. .050 series Plug	SCSI-2	**39.22**	**36.42**	**34.45**
512-7910	750732-2	2 Meter	68 pos. .050 series Plug to 68 pos. .050 series Plug	SCSI-2	**50.06**	**46.48**	**43.97**
512-7912	750342-5	2 Meter	50 pos. CHAMP® Conn. to 50 pos. .050 series Plug	SCSI-1 to SCSI-2	**40.69**	**37.79**	**35.74**
512-7916	749755-2	5 Meter	100 pos. .050 series Plug to 100 pos. .050 series Plug	IPI-2 and HIPPI	**80.58**	**75.21**	**71.40**

SCSI 1, 2, 3 Termination Connectors SCSI (Small Computer Systems Interface)

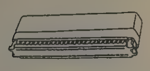


Fig. A
SCSI 1, 2
Low Density Narrow

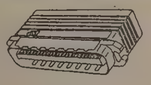


Fig. B
SCSI 1, 2
Low Density Narrow

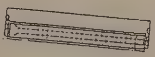


Fig. C
SCSI 1, 2
Low Density Narrow

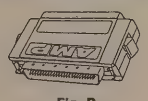


Fig. D
SCSI 2
High Density Narrow

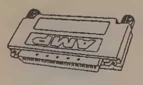


Fig. E
SCSI 3
High Density Wide

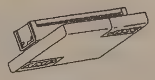


Fig. F
SCSI 3
High Density Wide

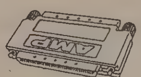


Fig. G
SCSI 3 Feed-Thru
High Density Wide

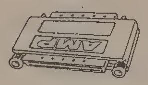


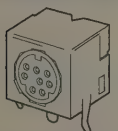
Fig. H
SCSI 2 to SCSI 3 Adapter
High Density Wide to Narrow

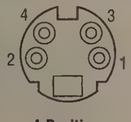
Termination connectors are used to maintain signal transmission integrity requirements of computer bus systems.

Stock No.	Mfr.'s Type	Fig.	Description	Termination	EACH	
					1-9	10-24
512-7708	869574-1	A	50 pos. terminator for use with .050 centerline ribbon cable	Single Ended Active	**31.62**	**29.36**
512-7709	556578-1	B	50 pos. CHAMP® style plug terminators mate with .085 centerline SCSI ports	Single Ended Passive	**33.31**	**26.99**
512-7710	555867-1	B	50 pos. CHAMP® style plug terminators mate with .085 centerline SCSI ports	Differential	**33.87**	**27.30**
512-7711	869587-1	C	50 pos. plug terminators designed to mate with ribbon cable receptacle connectors	Single Ended Passive	**15.98**	**14.84**
512-7713	869884-1	C	50 pos. plug terminators designed to mate with ribbon cable receptacle connectors	Single Ended Active	**29.55**	**27.65**
512-7714	750881-1	D	50 pos. AMPLIMITE® .050 series plug terminators. A cable	Single Ended Passive	**32.05**	**29.76**
512-7718	869546-1	D	50 pos. AMPLIMITE® .050 series plug terminators. A cable	Single Ended Active	**36.13**	**33.55**
512-7716	869545-1	D	50 pos. AMPLIMITE® .050 series plug terminators. A cable	Differential	**34.54**	**32.07**
512-7720	869516-1	E	68 pos. AMPLIMITE® .050 series plug terminators. P and Q cable	Single Ended Active	**40.46**	**37.57**
512-7722	869515-1	E	68 pos. AMPLIMITE® .050 series plug terminators. P and Q cable	Differential	**38.54**	**35.79**
512-7715	869705-1	F	68 pos. terminator for use with .025 centerline ribbon cable	Active Negation compatible	**43.17**	**40.09**
512-7717	869794-1	F	68 pos. terminator for use with .025 centerline ribbon cable	Differential	**43.53**	**40.42**
512-7719	869684-1	G	AMPLIMITE® .050 series, 68 pos. plug feed-thru to 68 pos. receptacle termination	Single Ended Active	**62.38**	**58.22**
512-7721	869682-1	G	AMPLIMITE® .050 series, 68 pos. plug feed-thru to 68 pos. receptacle termination	Differential	**54.67**	**50.77**
512-7723	869680-1	H	AMPLIMITE® .050 series, 68 pos. receptacle feed-thru to 50 pos. plug	Single Ended Active*	**52.90**	**49.12**
512-7725	869678-1	H	AMPLIMITE® .050 series, 68 pos. receptacle feed-thru to 50 pos. plug	Differential*	**52.90**	**49.12**
512-7727	869686-1	H	AMPLIMITE® .050 series, 68 pos. receptacle feed-thru to 50 pos. plug	Unterminated	**43.86**	**40.23**

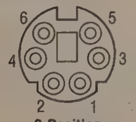
*9 Lines Terminated.

Shielded Miniature Circular DIN Receptacles Right Angle PCB — Thru-Mount Style

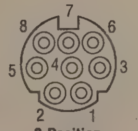




4-Position



6-Position



8-Position

Stock No.	Mfr.'s Type	No. of Pos.	Plating	With Holddown	EACH		
					1-49	50-99	100-499
512-7724	749181-1	4	30 µ" Gold	Yes	**2.76**	**2.43**	**2.04**
512-7726	749264-1	4	30 µ" Gold	No	**2.28**	**2.12**	**1.88**
512-7728	749231-1	6	Gold Flash	Yes	**2.76**	**2.43**	**2.04**
512-7730	749265-1	6	Gold Flash	No	**2.28**	**2.12**	**1.88**
512-7732	749180-1	6	30 µ" Gold	Yes	**2.96**	**2.59**	**2.17**
512-7734	749266-1	6	30 µ" Gold	No	**2.15**	**1.95**	**1.88**
512-7736	749179-1	8	30 µ" Gold	Yes	**3.00**	**2.79**	**2.47**
512-7738	749267-1	8	30 µ" Gold	No	**2.59**	**2.41**	**2.14**

M Series V.35 Special Applications Connectors

M Series offer dependable, convenient assembly in high speed data transmission applications. UL File No. 28476, CSA File No. 7189. Contacts and crimp tools are same as for CPC series on page 171.

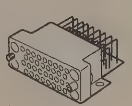
PCB Connectors

Stock No.	Mfr.'s Type	No. of Pos.	Description	EACH	
				1-9	10-24
512-7752	212810-2	34	Right Angle Receptacle Fully Loaded	**24.24**	**22.62**
512-7754	213289-1	34	Right Angle Plug Fully Loaded	**24.24**	**22.62**
512-7756	213524-1	34	Vertical Receptacle Fully Loaded	**32.69**	**30.51**

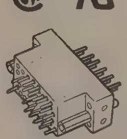
Cable Connector Kits

Stock No.	Mfr.'s Type	No. of Pos.	Cable Range	Connector Type	EACH	
					1-9	10-24
512-7758	213684-1	34	.400-.600	Plug	**14.18**	**12.51**
512-7760	213684-2	34	.250-.400	Plug	**14.18**	**12.51**
512-7762	213684-3**	34	.400-.600	Plug	**18.14**	**16.01**
512-7764	213684-4**	34	.250-.400	Plug	**17.05**	**15.04**
512-7766	213685-1	34	.400-.600	Receptacle	**13.67**	**12.06**
512-7768	213685-2	34	.250-.400	Receptacle	**13.67**	**12.06**

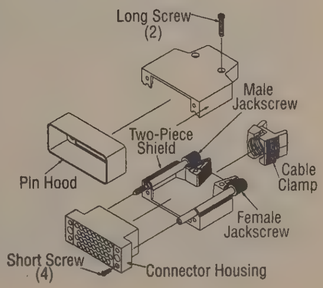
** With Pin Hood.



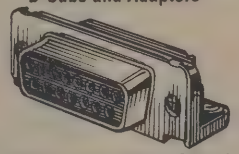
Right Angle



Vertical

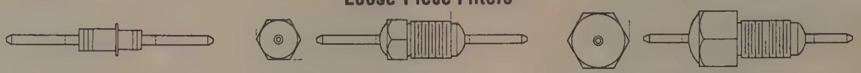


D-Subs and Adapters

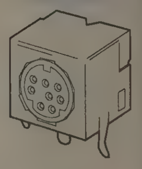


(Right Angle Receptacle Shown)

Loose-Piece Filters



Right Angle Mini-DINs



All AMP® QuietLine filter products offer proven, rugged performance to eliminate unwanted EMI/RFI. They assist in meeting design requirements of FCC Part 15 (A & B), VDE, and VCCI requirements, and are intermateable with standard industry interfaces.

Distributed Element Filters
Current Rating (Max.): Load current (in connector), #20 contact — 7.5 amps (loose-piece filters — 15 amps); RF current — 0.3 amps. **Operating Voltage (Max.):** 100 VDC at –25°C to +85°C. **Dissipation Factor:** 0.1 max. **Dielectric Withstanding Voltage:** 250 VDC for five seconds. **Insulation Resistance (Min.):** 500 megohms, minimum at 100 VDC, 2 minutes and +25°C. **Direct Current Resistance:** .002 ohms max. **Filter Sleeve:** Ferrite and ceramic.

Tubular Capacitive Filters
Current Rating (Max.): Load current, #20 contact — 5 amps; RF current — 0.3 amps. **Operating Voltage (Max.):** 100 VDC at –25°C to +85°C. **Dissipation Factor:** 0.1 max. **Dielectric Withstanding Voltage:** 250 VDC for five seconds (contact manufacturer on higher voltages). **Insulation Resistance (Min.):** 1 gigaohms at 100 VDC, 2 minutes and +25°C. **Direct Current Resistance:** .002 ohms max. **Filter Sleeve:** Ceramic.

Capacitive Array on Ferrite
Operating Voltage: AMPLIMITE® connectors — 100 VDC max.; mini-DIN connectors — 30 VDC max. **Dielectric Withstanding Voltage:** 250 VDC. **Insulation Resistance:** 100 megohms, min.

Ferrite Only
Operating Voltage: AMPLIMITE® connectors — 100 VDC max.; mini-DIN connectors — 30 VDC max. **Dielectric Withstanding Voltage:** 250 VDC. **Insulation Resistance:** 100 megohms, min.

Plug/Receptacle D-Sub Adapters

Distributed Element Filters
Material and Finish. Shell: Steel, tin plated. **Insert:** UL rated 94VO thermoplastic. **Contact:** Pin-brass, socket-phosphor bronze, plated .000015 (0.00038) min. gold in contact area, plated tin/lead on termination end.

Stock No.	Mfr.'s Type	No. of Contacts	Mounting Style	Capacitance	EACH 1-4	5-9	10-24
512-6700	842930-1	9	.120 Mtg. Hole	1000-3000 pf	**33.69**	**31.29**	**29.20**
512-6702	842931-1	15	.120 Mtg. Hole	1000-3000 pf	**56.26**	**52.24**	**48.76**
512-6704	842932-1	25	.120 Mtg. Hole	1000-3000 pf	**59.55**	**55.30**	**51.61**
512-6706	842933-1	37	.120 Mtg. Hole	1000-3000 pf	**81.40**	**75.58**	**70.54**
512-6708	842930-8	9	4-40 Clinch Nut	1000-3000 pf	**47.57**	**44.17**	**41.22**
512-6710	842932-8	25	4-40 Clinch Nut	1000-3000 pf	**63.49**	**58.96**	**55.03**
512-6712	842933-8	37	4-40 Clinch Nut	1000-3000 pf	**85.08**	**79.01**	**73.74**
512-6714	842930-3	9	.120 Mtg. Hole	3000-8000 pf	**54.71**	**50.80**	**47.41**
512-6716	842931-3	15	.120 Mtg. Hole	3000-8000 pf	**69.19**	**64.25**	**59.96**
512-6718	842932-3	25	.120 Mtg. Hole	3000-8000 pf	**84.71**	**78.66**	**73.41**
512-6720	842933-3	37	.120 Mtg. Hole	3000-8000 pf	**109.64**	**102.33**	**97.15**
512-6722	1-842930-0	9	4-40 Clinch Nut	3000-8000 pf	**59.41**	**55.17**	**51.49**
512-6724	1-842931-0	15	4-40 Clinch Nut	3000-8000 pf	**63.00**	**58.51**	**54.61**
512-6726	1-842932-0	25	4-40 Clinch Nut	3000-8000 pf	**82.07**	**76.60**	**72.72**
512-6728	1-842933-0	37	4-40 Clinch Nut	3000-8000 pf	**113.06**	**105.52**	**100.18**
512-6730	842930-6	9	.120 Mtg. Hole	300-600 pf	**33.71**	**31.30**	**29.22**
512-6732	842932-6	25	.120 Mtg. Hole	300-600 pf	**75.87**	**70.45**	**65.76**
512-6734	1-842930-3	9	4-40 Clinch Nut	300-600 pf	**37.41**	**34.74**	**32.43**
512-6736	1-842931-3	15	4-40 Clinch Nut	300-600 pf	**44.92**	**44.34**	**41.39**
512-6738	1-842932-3	25	4-40 Clinch Nut	300-600 pf	**63.35**	**58.83**	**54.91**
512-6740	1-842933-3	37	4-40 Clinch Nut	300-600 pf	**100.51**	**93.81**	**89.06**
512-6742	842930-7	9	.120 Mtg. Hole	600-1000 pf	**47.60**	**44.20**	**41.25**
512-6744	842932-7	25	.120 Mtg. Hole	600-1000 pf	**79.97**	**74.64**	**70.86**
512-6746	1-842931-4	15	4-40 Clinch Nut	600-1000 pf	**69.88**	**64.89**	**60.56**
512-6748	1-842932-4	25	4-40 Clinch Nut	600-1000 pf	**89.47**	**83.50**	**79.28**
512-6750	1-842933-4	37	4-40 Clinch Nut	600-1000 pf	**125.39**	**117.03**	**111.10**

Tubular Capacitive Filters
Material and Finish. Shell: Steel, tin plated. **Insert:** UL rated 94VO thermoplastic. **Contact:** One piece phosphor bronze, plated .000015 (0.00038) min. gold in contact area.

Stock No.	Mfr.'s Type	No. of Contacts	Mounting Style	Capacitance	EACH 1-4	5-9	10-24
512-6752	842954-1	9	.120 Mtg. Hole	4000-10000 pf	**25.90**	**24.05**	**22.44**
512-6754	842956-1	25	.120 Mtg. Hole	4000-10000 pf	**42.51**	**39.48**	**36.85**
512-6756	842957-1	37	.120 Mtg. Hole	4000-10000 pf	**57.87**	**53.74**	**50.16**
512-6758	842954-2	9	4-40 Clinch Nut	4000-10000 pf	**29.62**	**27.50**	**25.67**
512-6760	842957-2	37	4-40 Clinch Nut	4000-10000 pf	**61.58**	**57.18**	**53.37**
512-6762	842737-3	9	.120 Mtg. Hole	1300-2500 pf	**34.40**	**31.94**	**29.82**
512-6764	842740-3	15	.120 Mtg. Hole	1300-2500 pf	**31.65**	**29.39**	**27.44**
512-6766	842743-3	25	.120 Mtg. Hole	1300-2500 pf	**41.92**	**38.92**	**36.33**
512-6768	842746-3	37	.120 Mtg. Hole	1300-2500 pf	**77.60**	**72.06**	**67.25**
512-6770	842737-4	9	4-40 Clinch Nut	1300-2500 pf	**39.41**	**36.59**	**34.15**
512-6772	842740-4	15	4-40 Clinch Nut	1300-2500 pf	**46.62**	**43.29**	**40.41**
512-6774	842743-4	25	4-40 Clinch Nut	1300-2500 pf	**45.60**	**42.35**	**39.53**
512-6776	842697-3	9	.120 Mtg. Hole	600-1000 pf	**38.76**	**35.99**	**33.59**
512-6778	842699-3	25	.120 Mtg. Hole	600-1000 pf	**39.92**	**37.07**	**34.60**
512-6780	842700-3	37	.120 Mtg. Hole	600-1000 pf	**77.60**	**72.06**	**67.25**
512-6782	842697-4	9	4-40 Clinch Nut	600-1000 pf	**31.78**	**29.51**	**27.54**
512-6784	842698-4	15	4-40 Clinch Nut	600-1000 pf	**33.66**	**31.26**	**29.18**
512-6786	842699-4	25	4-40 Clinch Nut	600-1000 pf	**43.42**	**40.32**	**37.63**
512-6788	842700-4	37	4-40 Clinch Nut	600-1000 pf	**82.57**	**76.68**	**71.56**
512-6790	842745-3	25	.120 Mtg. Hole	400-600 pf	**56.84**	**52.78**	**49.26**
512-6792	842745-4	25	4-40 Clinch Nut	400-600 pf	**58.17**	**54.02**	**50.42**
—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—

Loose-Piece Filters

Quiet Line loose-piece filters are especially suited to the cost/performance requirements of commercial electronic equipment. Typical applications include mobile radios, transducers, microprocessors, computer peripheral equipment and communication equipment.

Eyelet Style
Recommended Mounting Hole: $.117^{\pm.002}$ ($2.97^{\pm0.05}$) (#32 drill). **Material and Finish. Contact:** Copper alloy 260, plated .000015 (0.00038) min. gold per MIL-G-45204, Type I, Grade C over .000070 (0.00178) min. nickel per QQ-N-290. **Eyelet:** Copper alloy per QQ-B-626 plated .000015 (0.00038) min. gold per MIL-G-45204, Type I, Grade C over .000070 (0.00178) min. nickel per QQ-N-290. **Solder:** SN10 per QQ-S-571. **Filter:** Ferrite and ceramic.

Stock No.	Mfr.'s Type	Capacitance	Type	Length	EACH 1-49	50-99	100-499
512-6874	859614-1	1000-3000 pf	Eyelet	1.000	**4.02**	**3.74**	**3.49**
512-6876	859617-1	1000-3000 pf	8-32 Bolt	1.000	**6.19**	**5.75**	**5.36**
512-6878	859646-1	1000-3000 pf	12-32 Bolt	1.000	**6.67**	**6.18**	**5.77**
512-6880	859616-1	3000-8000 pf	Eyelet	1.000	**2.33**	**2.16**	**2.02**
512-6882	859619-1*	3000-8000 pf	8-32 Bolt	1.000	**3.85**	**3.57**	**3.34**
512-6884	842493-1	600-1000 pf	Eyelet	1.000	**2.77**	**2.57**	**2.40**
512-6886	859615-1	2000-5000 pf	Eyelet	1.000	**3.03**	**2.82**	**2.63**

8-32 Bolt Style
Supplied with lockwasher and nut except as noted. ***Recommended Hole Sizes:** DA, DB, DD and DF Types — $.177^{\pm.002}$ ($4.5^{\pm0.05}$) dia. (#16 drill); DC, DE and DG Types — 8-32 UNC-2B. **Material and Finish. Contact and Bolt Body:** Copper alloy 260, plated. 000100 (0.00254) min. silver per QQ-S-365 over .000050 (0.00127) min. nickel per QQ-N-290. **Filter:** Ferrite and ceramic.

12-32 Bolt Style
Supplied with lockwasher and nut. **Recommended Hole Size:** $.228^{\pm.002}$ ($5.79^{\pm0.05}$) dia. (#1 drill). **Material and Finish. Contact and Bolt Body:** Copper alloy 260, plated. 000100 (0.00254) min. silver per QQ-S-365 over .000050 (0.00127) min. nickel per QQ-N-290. **Filter:** Ferrite and ceramic.

Stock No.	Mfr.'s Type	Capacitance	Type	Length	EACH 1-49	50-99	100-499
512-6888	859618-1	2000-5000 pf	8-32 Bolt	1.000	**5.09**	**4.73**	**4.41**
512-6890	859645-1	2000-5000 pf	12-32 Bolt	1.000	**5.42**	**5.03**	**4.70**
512-6892	859655-1	130-400 pf	Eyelet	1.000	**6.09**	**5.66**	**5.28**
512-6894	859658-1	130-400 pf	8-32 Bolt	1.000	**5.28**	**4.90**	**4.58**
512-6896	859681-1	130-400 pf	12-32 Bolt	1.000	**9.70**	**8.41**	**7.98**
512-6898	859656-1	50-175 pf	Eyelet	1.000	**3.63**	**3.37**	**3.15**
512-6900	859659-1*	50-175 pf	8-32 Bolt	1.000	**4.05**	**3.76**	**3.51**

AMPLIMITE® D-Sub Connectors

Distributed Element Filters
Material and Finish. Shell: Steel, tin plated. **Insert:** UL rated 94V0 thermoplastic. **Contact:** Sockets — Phosphor bronze, plated .000015 (0.00038) min. gold in contact area, plated tin/lead on termination end; Pins — Brass. **Filter Sleeve:** Ferrite and ceramic.

Right Angle Plug

Stock No.	Mfr.'s Type	No. of Contacts	Mounting Style	Capacitance	EACH		
					1-4	5-9	10-24
512-6794	1-842900-0	9	4-40 Clinch Nut	3000-8000 pf	45.12	41.89	39.10
512-6796	1-842901-0	15	4-40 Clinch Nut	3000-8000 pf	63.30	58.78	54.86
512-6798	1-842902-0	25	4-40 Clinch Nut	3000-8000 pf	80.53	74.78	69.80
512-6800	1-842900-4	9	4-40 Clinch Nut	600-1000 pf	42.75	39.70	37.05

Right Angle Receptacle

512-6832	1-842905-0	9	4-40 Clinch Nut	3000-8000 pf	39.33	36.52	34.09
512-6834	1-842906-0	15	4-40 Clinch Nut	3000-8000 pf	54.97	51.05	47.64
512-6836	1-842907-0	25	4-40 Clinch Nut	3000-8000 pf	84.96	78.89	73.63

Straight Plug

512-6810	1-842910-0	9	4-40 Clinch Nut	3000-8000 pf	47.11	43.75	40.83
512-6812	1-842911-0	15	4-40 Clinch Nut	3000-8000 pf	53.03	49.24	45.96
512-6814	1-842912-0	25	4-40 Clinch Nut	3000-8000 pf	79.40	73.73	68.82

Straight Receptacle

512-6848	1-842915-0	9	4-40 Clinch Nut	3000-8000 pf	45.92	42.64	39.80
512-6850	1-842916-0	15	4-40 Clinch Nut	3000-8000 pf	53.51	49.69	46.38
512-6852	1-842917-0	25	4-40 Clinch Nut	3000-8000 pf	87.42	81.18	75.77
512-6854	1-842916-4	15	4-40 Clinch Nut	600-1000 pf	46.23	42.93	40.07
512-6856	1-842917-4	25	4-40 Clinch Nut	600-1000 pf	71.32	66.23	61.81

Solder Cup Plug

512-6822	1-842920-0	9	4-40 Clinch Nut	3000-8000 pf	46.44	43.12	40.24
512-6824	1-842921-0	15	4-40 Clinch Nut	3000-8000 pf	64.09	59.51	55.54
512-6826	1-842922-0	25	4-40 Clinch Nut	3000-8000 pf	119.66	111.68	106.03
512-6828	1-842920-4	9	4-40 Clinch Nut	600-1000 pf	47.97	44.55	41.58
512-6830	1-842921-4	15	4-40 Clinch Nut	600-1000 pf	71.16	66.08	61.68

Solder Cup Receptacle

512-6866	1-842925-0	9	4-40 Clinch Nut	3000-8000 pf	45.02	41.81	39.02
512-6868	1-842926-0	15	4-40 Clinch Nut	3000-8000 pf	62.58	58.11	54.24
512-6870	1-842927-0	25	4-40 Clinch Nut	3000-8000 pf	94.51	88.21	83.74
512-6872	1-842928-0	37	4-40 Clinch Nut	3000-8000 pf	132.79	123.94	117.66

Tube Capacitive Filters
Material and Finish. Shell: Steel, tin plated. **Insert:** UL rated 94V0 thermoplastic. **Contact:** Phosphor bronze, plated .000015 (0.00038) min. gold in contact area, plated tin/lead on termination end. **Filter Sleeve:** Ferrite and ceramic.

Right Angle Plug

512-6802	842947-2	15	4-40 Clinch Nut	4000-10000 pf	31.11	28.88	26.96
512-6804	842948-2	25	4-40 Clinch Nut	4000-10000 pf	39.59	36.77	34.32
512-6806	842646-4	9	4-40 Clinch Nut	600-1000 pf	24.62	22.87	21.34
512-6808	842648-4	25	4-40 Clinch Nut	600-1000 pf	37.26	34.60	32.29

Right Angle Receptacle

512-6838	842952-2	25	4-40 Clinch Nut	4000-10000 pf	37.38	34.71	32.40
512-6840	842650-4	9	4-40 Clinch Nut	600-1000 pf	35.56	33.02	30.82
512-6842	842651-4	15	4-40 Clinch Nut	600-1000 pf	31.56	29.31	27.35
512-6844	842652-4	25	4-40 Clinch Nut	600-1000 pf	38.43	35.69	33.31
512-6846	842653-4	37	4-40 Clinch Nut	600-1000 pf	60.45	56.13	52.39

Straight Plug

512-6816	842939-2	15	4-40 Clinch Nut	4000-10000 pf	29.62	27.50	25.67
512-6818	842639-4	15	4-40 Clinch Nut	600-1000 pf	29.49	27.38	25.56
512-6820	842640-4	25	4-40 Clinch Nut	600-1000 pf	37.74	35.05	32.71

Straight Receptacle

512-6858	842942-2	9	4-40 Clinch Nut	4000-10000 pf	24.91	23.13	21.59
512-6860	842943-2	15	4-40 Clinch Nut	4000-10000 pf	29.41	27.31	25.49
512-6862	842642-4	9	4-40 Clinch Nut	600-1000 pf	24.48	22.73	21.22
512-6864	842644-4	25	4-40 Clinch Nut	600-1000 pf	29.22	36.42	33.99

AMPLIMITE® HD-20 Ferrite Block and Capacitor Filtered Connector

Material and Finish. Housing: Thermoplastic, 94V0 rated, black, SMT compatible. **Metal Shell:** Steel, plated .000200 (0.00508) min. tin over .000100 (0.00254) min. copper. **Eyelets:** Brass, plated .000200 (0.00508) min. over copper flash. **Boardlocks:** Copper alloy, plated .000200 (0.00508) min. tin-lead over .000050 (0.00127) min. nickel. **Inserts:** Zinc, plated clear chromate. **Contacts. Pins:** Brass. **Plating:** Duplex plated .000030 (0.00076) min. gold on mating end, .000120 (0.00304) min. tin-lead on solder end, all over .000050 (0.00127) nickel underplating.

Right Angle Plug

Stock No.	Mfr.'s Type	No. of Contacts	Capacitance	EACH		
				1-9	10-24	25-49
512-6914	869470-5	9	1000-2000 pf	10.88	10.10	9.43
512-6916	869527-5	15	1000-2000 pf	12.23	11.36	10.60
512-6918	869476-5	25	1000-2000 pf	13.97	12.97	12.11
512-6920	869470-6	9	820 pf	10.88	10.10	9.43
512-6922	869527-6	15	820 pf	12.23	11.36	10.60
512-6924	869476-6	25	820 pf	13.97	12.97	12.11
512-6926	869470-7	9	470 pf	10.88	10.10	9.43
512-6928	869527-7	15	470 pf	12.23	11.36	10.60
512-6930	869476-7	25	470 pf	13.97	12.97	12.11
512-6932	869470-8	9	220 pf	10.88	10.10	9.43
512-6934	869527-8	15	220 pf	12.23	11.36	10.60
512-6936	869476-8	25	220 pf	13.97	12.97	12.11

Right Angle Receptacle

512-6938	869522-5	9	1000-2000 pf	11.01	10.22	9.54
512-6940	869523-5	15	1000-2000 pf	12.42	11.53	10.76
512-6942	869464-5	25	1000-2000 pf	14.30	13.28	12.39
512-6944	869522-6	9	820 pf	11.01	10.22	9.54
512-6946	869523-6	15	820 pf	12.42	11.53	10.76
512-6948	869464-6	25	820 pf	14.30	13.28	12.39
512-6950	869522-7	9	470 pf	11.01	10.22	9.54
512-6952	869523-7	15	470 pf	12.42	11.53	10.76
512-6954	869464-7	25	470 pf	14.30	13.28	12.39
512-6956	869522-8	9	220 pf	11.01	10.22	9.54
512-6958	869523-8	15	220 pf	12.42	11.53	10.76
512-6960	869464-8	25	220 pf	14.30	13.28	12.39

AMPLIMITE® HD-20 Ferrite Block Filtered Connectors

Material and Finish. Housing: Thermoplastic, 94V0 rated, black, SMT compatible. **Metal Shell:** Steel, plated .000200 (0.00508) min. tin over .000100 (0.00254) min. copper. **Eyelets:** Brass, plated .000200 (0.00508) min. over copper flash. **Boardlocks:** Copper alloy, plated .000200 (0.00508) min. tin-lead over .000050 (0.00127) min. nickel. **Inserts:** Zinc, plated clear chromate. **Contacts. Pins:** Brass. **Plating:** Duplex plated .000030 (0.00076) min. gold on mating end, .000120 (0.00304) min. tin-lead on solder end, all over .000050 (0.00127) nickel underplating.

Right Angle Plug

Stock No.	Mfr.'s Type	No. of Contacts	Filter Type	EACH		
				1-9	10-24	25-49
512-6902	869436-2	9	Ferrite	6.06	5.59	5.19
512-6904	869526-2	15	Ferrite	6.99	6.46	5.99
512-6906	869442-2	25	Ferrite	8.37	7.73	7.17

Right Angle Receptacle

512-6908	869520-2	9	Ferrite	6.18	5.70	5.29
512-6910	869521-2	15	Ferrite	7.20	6.64	6.17
512-6912	869448-2	25	Ferrite	8.73	8.06	7.48

Shielded Miniature DIN Receptacle Connectors — Ferrite

Material and Finish. Housing: Thermoplastic, 94V0 rated, black, SMT compatible. **Metal Shell:** Steel, plated .000200 (0.00508) min. tin over .000100 (0.00254) min. copper. **Eyelets:** Brass, plated .000200 (0.00508) min. over copper flash. **Boardlocks:** Copper alloy, plated .000200 (0.00508) min. tin-lead over .000050 (0.00127) min. nickel. **Inserts:** Zinc, plated clear chromate. **Contacts. Pins:** Brass. **Plating:** Duplex plated .000030 (0.00076) min. gold on mating end, .000120 (0.00304) min. tin-lead on solder end, all over .000050 (0.00127) nickel underplating.

Stock No.	Mfr.'s Type	No. of Contacts	Filter Type	Description	EACH		
					1-24	25-49	50-99
512-6962	869508-2	6	Ferrite	with hold-down	3.74	3.46	3.21
512-6964	869504-2	6	Ferrite	without hold-down	3.61	3.33	3.09
512-6966	869509-2	8	Ferrite	with hold-down	4.07	3.76	3.49
512-6968	869505-2	8	Ferrite	without hold-down	3.95	3.65	3.39

HDF Subminiature D Connectors with Standard Mounting Holes

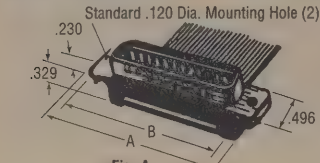


Fig. A

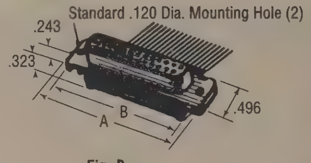


Fig. B

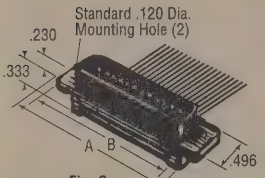


Fig. C

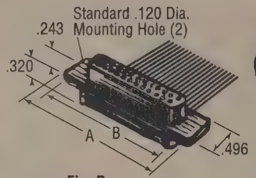


Fig. D

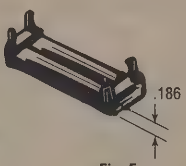


Fig. E

HDF-20 Low Profile Metal Shell Connectors — Tin Plated Shells

Stock No.	Mfr.'s Type	No. of Pos.	Description	Finish*	Fig.	EACH		
						1-99	100-499	500-999
512-0155	747306-4	9	Plug	1	A	4.03	3.39	2.96
512-0165	747306-3	15	Plug	1	A	4.94	4.17	3.63
512-0175	747306-2	25	Plug	1	A	6.15	5.19	4.55
512-0185	747306-1	37	Plug	1	A	8.76	7.37	6.45
512-0160	747303-4	9	Receptacle	1	B	4.05	3.42	2.98
512-0170	747303-3	15	Receptacle	1	B	5.08	4.28	3.75
512-0180	747303-2	25	Receptacle	1	B	6.67	5.62	4.56
512-0190	747303-1	37	Receptacle	1	B	9.44	7.94	6.95

HDF-20 Low Profile All-Plastic Connectors

Stock No.	Mfr.'s Type	No. of Pos.	Description	Finish*	Fig.	1-99	100-499	500-999
512-0055	747321-4	9	Plug	1	C	3.57	3.00	2.64
512-0065	747321-3	15	Plug	1	C	4.18	3.53	3.08
512-0070	747321-2	25	Plug	1	C	5.29	4.45	3.91
512-0085	747321-1	37	Plug	1	C	7.51	6.32	5.53
512-0060	747318-4	9	Receptacle	1	D	3.63	3.07	2.68
512-0067	747318-3	15	Receptacle	1	D	4.42	3.73	3.26
512-0080	747318-2	25	Receptacle	1	D	5.62	4.74	4.14
512-0090	747318-1	37	Receptacle	1	D	7.88	6.63	5.81

Strain Reliefs

Stock No.	Mfr.'s Type	No. of Pos.	Description	Finish*	Fig.	1-99	100-499	500-999
512-0056	747275-4	9	Strain Relief	—	E	.78	.71	.65
512-0068	747275-3	15	Strain Relief	—	E	.83	.75	.69
512-0076	747275-2	25	Strain Relief	—	E	.61	.56	.51
512-0088	747275-1	37	Strain Relief	—	E	.96	.88	.80

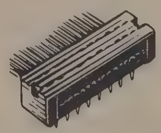
HDF Subminiature D Hardware Metal Shell and All Plastic

Stock No.	Mfr.'s Type	No. of Pos.	Description	Finish*	Fig.	1-99	100-499	500-999
512-3552	746881-1	—	Male Screw Retainers	—	—	1.38	1.25	1.15
512-9070	205817-1	—	Female Screw Locks	—	—	1.27	.97	.81

*Contact Plating: 1= Phosphor bronze, duplex plated .000030 gold on mating end, tin-lead on termination end, with entire contact nickel underplated.

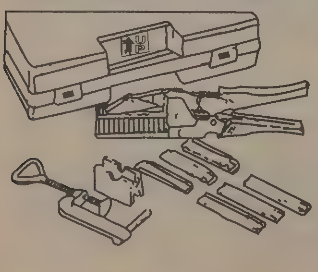
AMP-LATCH® DIP Plugs with Cover

.100" × .100" Centers



Stock No.	Mfr.'s Type	No. of Pos.	Overall Length A	Finish*	EACH		
					1-99	100-499	500-999
512-3560	746610-1	10	0.680	1	.83	.67	.55
512-3561	746610-2	14	0.880	1	.95	.77	.62
512-3562	746610-3	16	0.980	1	1.08	.87	.71
512-3563	746610-4	20	1.180	1	1.23	.99	.81
512-3565	746610-6	26	1.480	1	1.51	1.21	.98
512-3567	746610-8	34	1.880	1	1.81	1.45	1.18
512-3568	746610-9	40	2.180	1	2.09	1.94	1.72
512-3569	1-746610-0	50	2.680	1	2.36	1.90	1.54
512-3570	1-746610-1	60	3.180	1	2.73	2.54	2.25

*Contact Plating: 1 = .000100-.000200" (0.00254-0.0-0.00508 mm) bright tin-lead over .000050" (0.00127 mm) nickel on entire contact.



AMP-LATCH® Connector Termination Kit

Includes the hand tool, a bench mount clamp, locators for receptacles, card edge, D-subs, and a plastic case. Termination of connectors to flat cable up to and including 60 conductors.

512-3795. 768340-1 .... EACH 850.86

CHAMP® LATCH — Low Profile Standard Ribbon Connectors

- ► Terminates to .050 Center Ribbon Cable

Bail Lock Plug Assembly

Stock No.	Mfr.'s Type	No. of Pos.	EACH		
			1-24	25-49	50-99
512-3760	554084-1	36	5.74	5.31	4.29
512-3762	554085-1	50	6.76	6.24	5.05

Panel Mount Plug Assembly

Stock No.	Mfr.'s Type	No. of Pos.	1-24	25-49	50-99
512-3764	554104-1	36	5.74	5.31	5.31
512-3766	554105-1	50	6.76	6.24	6.24

Panel Mount Receptacle Assembly

Stock No.	Mfr.'s Type	No. of Pos.	1-24	25-49	50-99
512-3768	554088-1	24	5.20	4.80	3.89
512-3770	554089-1	36	5.74	5.31	4.29
512-3772	554090-1	50	4.27	3.94	3.66

AMP-LATCH® Card Edge Connectors without Mounting Ears

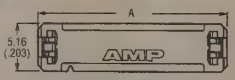
Housing and Cover: Black thermoplastic, 94V-0 rated. **Contacts:** .000030 (0.00076) gold plated on PC board mating end. .000100-.000200 (0.00254-0.00508) bright tin-lead on terminating end, with entire contact underplated with .000050 (0.00127) nickel.

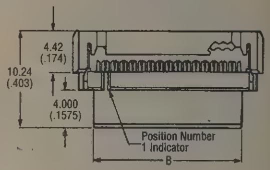
Stock No.	Mfr.'s Type	No. of Pos.	Contact Plating*	EACH		
				1-24	25-99	100-499
512-3742	111109-6	20	A	3.21	3.01	2.67
512-3744	111110-6	20	B	3.10	2.89	2.56
512-3746	111109-5	26	A	5.68	4.67	4.14
512-3748	111109-3	34	A	4.05	3.78	3.35
512-3750	111110-3	34	B	3.86	3.60	3.19
512-3752	111109-2	40	A	4.65	4.35	3.85
512-3754	111109-1	50	A	5.72	5.05	4.34
512-3756	111110-1	50	B	5.44	4.79	4.14

*Contact Plating: A — .000030 (0.00076) gold on pin end; B — .000015 (0.00038) gold on pin end.

512-3758. 88113-1. Intercontact Keying Plug. 1-99 .... EACH .19
100-499 .... EACH .16   500-999 .... EACH .15

2 mm AMP-LATCH® Ribbon Cable Connectors

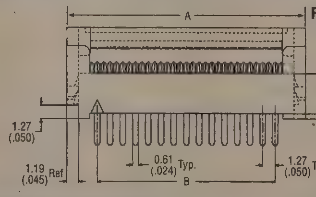




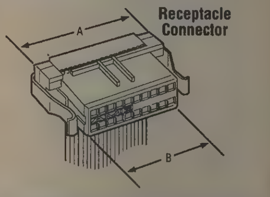
- ► Housing Material: 94V-0 Rated Polyester, Black
- ► Industry Uses: Laptop/Notebook Computers, Point of Sale Terminals, Fax Machines, Photo Copiers, Printers, Computer Peripheral Equipment

Stock No.	Mfr.'s Type	No. of Pos.	Dim. (mm)		EACH		
			A	B	1-24	25-99	100-499
512-7668	111626-9	40	45.19	40.41	2.90	2.72	2.41
512-7670	1-111626-0	44	49.17	44.40	3.18	2.96	2.63
512-7672	1-111626-1	50	55.17	50.39	3.63	3.39	3.00

AMPMODU® System 50 Ribbon Cable Connectors



Paddle Board Connector



Receptacle Connector

- ► Minimizes PCB Real Estate
- ► Used With .025 CL Ribbon Cable
- ► Housing Material: 94V-0 Rated Thermoplastic, Black

Paddle Board Connectors

Stock No.	Mfr.'s Type	No. of Pos.	Dim. (mm)		EACH		
			A	B	1-24	25-99	100-499
512-7680	111595-4	20	17.42	11.43	3.61	3.28	3.05
512-7682	111595-9	40	30.12	24.13	6.03	5.47	5.08
512-7684	1-111595-1	50	36.47	30.48	7.29	6.61	6.14

Receptacle Connectors

Stock No.	Mfr.'s Type	No. of Pos.	A	B	1-24	25-99	100-499
512-8782	111196-4	20	19.30	17.65	3.80	3.45	3.21
512-7690	111196-9	40	32.00	30.35	6.35	5.76	5.35
512-7692	1-111196-1	50	38.35	36.70	7.67	6.96	6.46

AMP-LATCH® Novo Receptacles with Recessed Covers

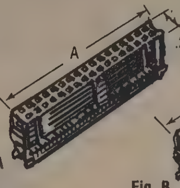


Fig. A

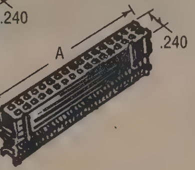


Fig. B

- .100" × .100" (2.54 mm × 2.54 mm) Centers
- Preassembled Receptacle
- Optional Strain Relief
- Black Thermoplastic, 94V-0 Rated
- Mates with Universal Pin Headers

Center and Military Polarized Receptacle — Fig. A

Stock No.	Mfr.'s Type	No. of Pos.	Overall Length A	Contact Plating	EACH 1-99	100-499	500-999
512-3500	746288-1	10	0.680	*	.88	.73	.61
512-3501	746288-2	14	0.880	*	1.30	1.07	.91
512-3502	746288-3	16	0.980	*	1.37	1.13	.96
512-3503	746288-4	20	1.180	*	1.40	1.16	.96
512-3504	746288-6	26	1.480	*	1.72	1.42	1.20
512-3505	746288-8	34	1.880	*	1.93	1.60	1.35
512-3506	746288-9	40	2.180	*	2.17	1.80	1.52
512-3507	1-746288-0	50	2.680	*	2.73	2.26	1.91
512-3508	1-746288-1	60	3.180	*	3.26	2.70	2.28
512-3509	1-746288-2	64	3.380	*	3.54	2.93	2.47

Military Polarized — Fig. B

Stock No.	Mfr.'s Type	No. of Pos.	Overall Length A	Contact Plating	EACH 1-99	100-499	500-999
512-3510	746290-1	10	0.680	*	.88	.73	.61
512-3511	746290-2	14	0.880	*	1.38	1.19	1.05
512-3512	746290-3	16	0.980	*	1.37	1.13	.96
512-3513	746290-4	20	1.180	*	1.50	1.29	1.14
512-3514	746290-6	26	1.480	*	1.72	1.42	1.20
512-3515	746290-8	34	1.880	*	1.90	1.60	1.35
512-3516	746290-9	40	2.180	*	2.17	1.80	1.52
512-3517	1-746290-0	50	2.680	*	2.73	2.26	1.91
512-3518	1-746290-1	60	3.180	*	3.47	2.98	2.64
512-3519	1-746290-2	64	3.380	*	3.76	3.23	2.86

***Contact Plating:** .000030 gold on post/pin mating end, .000100-.000200 bright tin-lead on termination end, with entire contact underplated .000050 nickel.

ECONOLATCH Receptacles with Recessed Covers

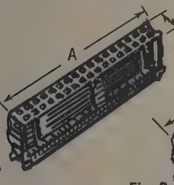


Fig. A

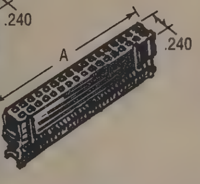


Fig. B

- .100" × .100" (2.54 mm × 2.54 mm) Centers
- Preloading Single Mating Beam Design
- Optional Strain Relief
- Universal Pin Headers

Center and Military Polarization Connector — Fig. A

Stock No.	Mfr.'s Type	No. of Pos.	Overall Length A	Contact Plating	EACH 1-99	100-499	500-999
512-9301	111918-1	10	0.680	*	.59	.49	.42
512-9305	111918-2	14	0.880	*	.66	.55	.46
512-9309	111918-3	16	0.980	*	.73	.61	.51
512-9313	111918-4	20	1.180	*	.84	.69	.58
512-9323	111918-6	26	1.480	*	1.12	.93	.78
512-9331	111918-8	34	1.880	*	.65	.51	.46
512-9335	111918-9	40	2.180	*	.68	.52	.47
512-9339	1-111918-0	50	2.680	*	.83	.64	.56
512-9343	1-111918-1	60	3.180	*	2.00	1.65	1.40
512-9347	1-111918-2	64	3.380	*	2.35	1.94	1.64

Military Polarized — Fig. B

Stock No.	Mfr.'s Type	No. of Pos.	Overall Length A	Contact Plating	EACH 1-99	100-499	500-999
512-9351	111917-1	10	0.680	*	.59	.49	.42
512-9355	111917-2	14	0.880	*	.66	.55	.46
512-9359	111917-3	16	0.980	*	.73	.61	.51
512-9363	111917-4	20	1.180	*	.84	.69	.58
512-9371	111917-6	26	1.480	*	1.12	.93	.78
512-9379	111917-8	34	1.880	*	.65	.51	.46
512-9383	111917-9	40	2.180	*	.68	.52	.47
512-9387	1-111917-0	50	2.680	*	.83	.64	.56
512-9391	1-111917-1	60	3.180	*	2.00	1.65	1.40
512-9395	1-111917-2	64	3.380	*	2.35	1.94	1.64

***Contact Plating:** Phosphor bronze duplex plated mating end, .000100 min. tin-lead on the termination end, with entire contact underplated .000050 nickel.

Universal Ejection Style Pin Headers

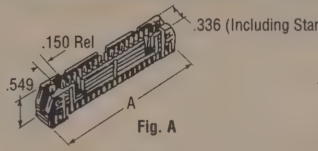


Fig. A

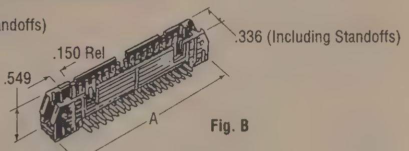


Fig. B

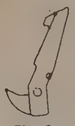


Fig. C

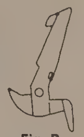


Fig. D

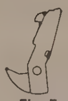


Fig. E

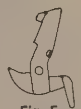


Fig. F

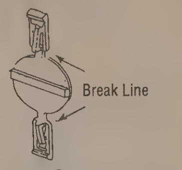


Fig. G

Military, Center and Dual Polarized; .100" × .100" Centers — Mate with Novo Receptacles — Terminate to PC Board

4 Sided Headers .240" (6.1 mm) Mating Post Length, Straight-Thru, .110" (2.79 mm) Termination Post Length — Fig. A

Stock No.	Mfr.'s Type	No. of Pos.	Finish*	EACH 1-99	100-499	500-999
512-3699	102153-1	10	A	.93	.72	.56
512-3531	102154-1	10	B	1.00	.78	.60
512-3701	102153-2	14	A	1.25	.97	.75
512-3532	102154-2	14	B	1.37	1.07	.82
512-3802	102153-3	16	A	1.40	1.09	.84
512-3533	102154-3	16	B	1.53	1.19	.91
512-3703	102153-4	20	A	1.70	1.33	1.02
512-3534	102154-4	20	B	1.85	1.44	1.11
512-3804	102153-6	26	A	2.07	1.62	1.25
512-3535	102154-6	26	B	2.27	1.77	1.37
512-3705	102153-8	34	A	2.55	1.99	1.53
512-3536	102154-8	34	B	2.80	2.18	1.68
512-3806	102153-9	40	A	2.90	2.26	1.74
512-3537	102154-9	40	B	3.20	2.50	1.92
512-3707	1-102153-0	50	A	3.50	2.73	2.10
512-3538	1-102154-0	50	B	3.87	3.02	2.33
512-3539	1-102154-1	60	B	4.50	3.51	2.70
512-3808	1-102153-2	64	A	4.15	3.24	2.49

Right-Angle, .110" (2.79 mm) Termination Post Length — Fig. B

Stock No.	Mfr.'s Type	No. of Pos.	Finish*	EACH 1-99	100-499	500-999
512-3725	102159-1	10	A	1.00	.78	.60
512-3542	102160-1	10	B	1.10	.86	.66
512-3726	102159-3	16	A	1.52	1.19	.91
512-3544	102160-3	16	B	1.68	1.31	1.01
512-3727	102159-4	20	A	1.85	1.44	1.11
512-3545	102160-4	20	B	2.02	1.58	1.22
512-3728	102159-6	26	A	2.28	1.77	1.37
512-3546	102160-6	26	B	2.55	2.19	1.94
512-3729	102159-8	34	A	2.86	2.45	2.17
512-3547	102160-8	34	B	3.08	2.40	1.84
512-3730	102159-9	40	A	3.20	2.50	1.92
512-3548	102160-9	40	B	3.61	3.09	2.74
512-3731	1-102159-0	50	A	3.88	3.02	2.32
512-3549	1-102160-0	50	B	4.27	3.33	2.56
512-3550	1-102160-1	60	B	5.05	4.33	3.83

***Finish:** A — .000015 (0.00038) gold on post/pin mating end, .000100-.000200 (0.00254-0.00508) bright tin-lead on termination end, with entire contact underplated .000050 (0.00127) nickel; B — .000030 (0.00076) gold on post/pin mating end, .000100-.000200 (0.00254-0.00508) bright tin-lead on termination end, with entire contact underplated .000050 (0.00127) nickel.

Latches

Material: Black thermoplastic. UL94V-0 rated.

Stock No.	Mfr.'s Type	Fig.	Description	EACH 1-99	100-499	500-999
512-3735	102320-1	C	For mating receptacles with strain relief	.20	.15	.13
512-3736	102186-1	D	For mating receptacles with strain relief	.20	.15	.13
512-3737	102312-1	E	For mating receptacles without strain relief	.20	.15	.13
512-3738	102185-1	F	For mating receptacles without strain relief	.20	.15	.13

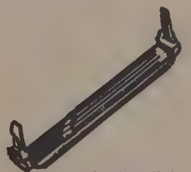
Polarization Key

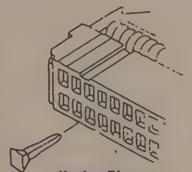
512-3740	499991-2	G	2 keys per tab — sold per tab	.21	.17	.14

Strain Reliefs and Keying Plug for Novo and ECONOLATCH Receptacles

Strain Reliefs

Stock No.	Mfr.'s Type	No. of Pos.	Overall Length A	EACH 1-99	100-499	500-999
512-3520	499252-5	10	0.680	.30	.23	.16
512-3521	499252-9	14	0.880	.32	.24	.17
512-3522	499252-8	16	0.980	.33	.25	.18
512-3523	499252-2	20	1.180	.36	.28	.19
512-3524	499252-3	26	1.480	.39	.30	.21
512-3525	499252-6	34	1.880	.45	.35	.24
512-3526	499252-1	40	2.180	.48	.37	.26
512-3527	499252-4	50	2.680	.54	.41	.29
512-3528	499252-7	60	3.180	.60	.46	.32
512-3529	1-499252-3	64	3.380	.66	.51	.35

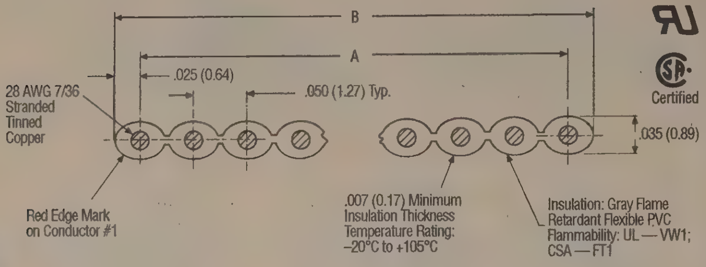

Strain Relief


Keying Plug

Keying Plug

512-3530. 499712-1. **1-99**	EACH .16
100-499	EACH .13
500-999	EACH .11

.050 (1.27) Centerline IDC Ribbon Cable PVC Insulation

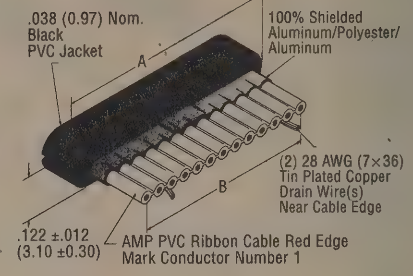

B
A
.025 (0.64)
.050 (1.27) Typ.
28 AWG 7/36 Stranded Tinned Copper
.035 (0.89)
Red Edge Mark on Conductor #1
.007 (0.17) Minimum Insulation Thickness Temperature Rating: –20°C to +105°C
Insulation: Gray Flame Retardant Flexible PVC Flammability: UL — VW1; CSA — FT1

- ► 28 AWG, 7/36 Stranded Tinned Copper
- ► Cable Surface Printed Per UL and CSA Requirements

Electrical Ratings. Voltage Rating: 300 volts. **Impedance:** 105 ohms nom. (GND, SIG, GND). **Insulation Resistance:** 10^{10} ohms/10 ft. (3.048). **Capacitance:** 15 pF/ft. at 1 MHz max. **Propagation Delay:** 1.41 ns/ft. nom. **Crosstalk:** 10 ft. sample 5 ns rise time; Near End — 4.0% max.; Far End — 6.0% max. **UL Style:** 2651.

No. of Cond.	Dimensions		100' Coil			500' Coil		
	A	B	Stock No.	Mfr.'s Type	EACH 1-9	Stock No.	Mfr.'s Type	EACH 1-4
8	0.350	0.400	**512-9240**	2-57040-0	**9.85**	**512-9248**	2-971111-0	**44.80**
9	0.400	0.450	**512-3792**	1-57040-2	**10.07**	**512-9249**	1-971111-2	**45.75**
10	0.450	0.500	**512-3793**	1-57040-3	**11.18**	**512-9250**	1-971111-3	**50.80**
14	0.650	0.700	**512-3794**	1-57040-4	**15.66**	**512-9251**	1-971111-4	**71.20**
15	0.700	0.750	**512-3796**	1-57040-5	**16.77**	**512-9252**	1-971111-5	**76.20**
16	0.750	0.800	**512-3797**	1-57040-6	**17.87**	**512-9253**	1-971111-6	**81.25**
18	0.850	0.900	**512-9241**	2-57040-3	**20.12**	**512-9254**	2-971111-3	**91.45**
20	0.950	1.000	**512-3798**	57040-1	**20.58**	**512-9255**	971111-1	**93.55**
24	1.150	1.200	**512-9242**	1-57040-7	**27.04**	**512-9256**	1-971111-7	**122.90**
25	1.200	1.250	**512-3799**	57040-2	**28.09**	**512-9257**	971111-2	**127.70**
26	1.250	1.300	**512-3800**	57040-3	**26.76**	**512-9258**	971111-3	**121.65**
30	1.450	1.500	**512-9243**	2-57040-1	**32.85**	**512-9259**	2-971111-1	**149.30**
34	1.650	1.700	**512-3801**	57040-4	**34.99**	**512-9260**	971111-4	**159.05**
36	1.750	1.800	**512-9244**	2-57040-5	**39.00**	**512-9261**	2-971111-5	**160.70**
37	1.800	1.850	**512-3803**	1-57040-8	**42.98**	**512-9262**	1-971111-8	**195.35**
40	1.950	2.000	**512-3805**	57040-5	**41.17**	**512-9263**	971111-5	**187.15**
44	2.150	2.200	**512-9245**	2-57040-4	**52.38**	**512-9264**	2-971111-4	**238.05**
50	2.450	2.500	**512-3807**	57040-6	**51.47**	**512-9265**	971111-6	**233.95**
60	2.950	3.000	**512-9246**	57040-7	**61.76**	**512-9266**	971111-7	**280.75**
64	3.150	3.200	**512-9247**	2-57040-2	**65.88**	**512-9267**	2-971111-2	**299.45**

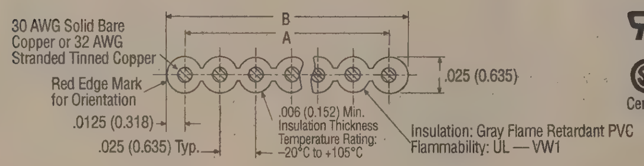
Shielded/Jacketed .050 (1.27) Centerline IDC Ribbon Cable, PVC Insulation


.038 (0.97) Nom. Black PVC Jacket
A
100% Shielded Aluminum/Polyester/Aluminum
(2) 28 AWG (7×36) Tin Plated Copper Drain Wire(s) Near Cable Edge
B
.122 ±.012 (3.10 ±0.30)
AMP PVC Ribbon Cable Red Edge Mark Conductor Number 1

Mechanical Specifications. Conductor: 28 AWG (7 × 36) tinned copper. **Insulation:** .010" (.254) nom. wall grey PVC. **Pitch:** .050" ±.002" (1.27 ±0.051). **Color:** Internal cable — gray with red polarity stripe. **Shielding:** Aluminum/polyester/aluminum. **Drain Wires:** Two 28 AWG (7 × 36) tinned copper. **Jacket:** 0.38" (0.97) nom. wall black PVC. **UL File#:** E53793 Style 20081. **Temperature Rating:** –20°C to +105°C. **Flammability Rating:** UL — VW-1; CSA — FT-1. **CSA Certificate Number:** LL 700828. **Electrical Specifications. Voltage Rating:** 300 V RMS. **Current Rating:** 1 amp. **Conductor Resistance:** 68 ohms/1000 ft. (304.8 m). **Insulation Resistance:** >1 × 10^{10} ohms; 10 ft. (3.048 m). **Impedance:** 45 ohms. **Capacitance @ 1 MHz:** 50 pF/ft. (164 pF/m). **Inductance @ 1 MHz:** .11 μH/ft. (.36 μH/m). **Propagation Delay:** 1.70 ns/ft. (5.6 ns/m).

Stock No.	Mfr.'s Type	No. of Cond.	Dimensions		PER COIL/ 100'
			A	B	1-9
512-9464	57646-9	9	0.550	0.400	**70.20**
512-9465	1-57646-0	10	0.600	0.450	**76.28**
512-9466	1-57646-5	15	0.850	0.700	**81.00**
512-9467	2-57646-0	20	1.100	0.950	**91.80**
512-9468	2-57646-5	25	1.350	1.200	**102.60**
512-9469	2-57646-6	26	1.400	1.250	**108.00**
512-9470	3-57646-4	34	1.800	1.650	**125.55**
512-9471	3-57646-6	36	1.900	1.750	**145.80**
512-9472	3-57646-7	37	1.950	1.800	**151.20**
512-9473	4-57646-0	40	2.100	1.950	**162.00**
512-9474	5-57646-0	50	2.600	2.450	**202.50**
512-9475	6-57646-0	60	3.100	2.950	**240.30**
512-9476	6-57646-4	64	3.300	3.150	**269.33**

.025 (0.63) Centerline IDC Ribbon Cable, PVC Insulation

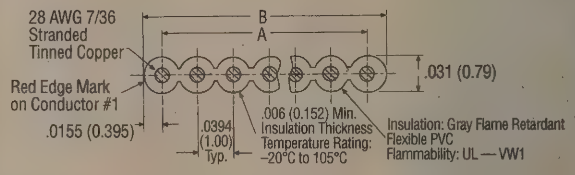

30 AWG Solid Bare Copper or 32 AWG Stranded Tinned Copper
B
A
Red Edge Mark for Orientation
.025 (0.635)
.0125 (0.318)
.025 (0.635) Typ.
.006 (0.152) Min. Insulation Thickness Temperature Rating: –20°C to +105°C
Insulation: Gray Flame Retardant PVC Flammability: UL — VW1

- ► 30 AWG, Solid Bare Copper
- ► Cable Surface Printed Per UL and CSA Requirements

Electrical Ratings. Voltage: 150 volts. **Impedance:** 80 ohms nom. (GND, SIG, GND). **Capacitance:** 19.2 pF/ft. at 1 MHz nom. **Propagation Delay:** 1.51 ns/ft. nom. **Insulation Resistance:** 10^{10} Ohms/10 ft. (3.048 m). **Crosstalk:** 10 ft. sample 5 ns rise time; Near End — 4.0% max.; Far End — 6.0% max. **UL Style:** 2678.

Stock No.	Mfr.'s Type	No. of Cond.	Dimensions		PER COIL/ 100'
			A	B	1-9
512-9268	1-57013-3	20	0.475	0.500	**11.03**
512-9269	1-57013-4	24	0.575	0.600	**13.24**
512-9270	2-57013-6	26	0.625	0.650	**13.04**
512-9271	4-57013-6	28	0.675	0.700	**15.45**
512-9272	1-57013-5	30	0.725	0.750	**16.56**
512-9273	4-57013-9	34	0.800	0.825	**18.77**
512-9274	1-57013-6	36	0.875	0.900	**19.87**
512-9275	1-57013-7	40	0.975	1.000	**22.07**
512-9276	1-57013-8	44	1.075	1.100	**24.28**
512-9277	1-57013-9	50	1.225	1.250	**27.59**
512-9278	2-57013-0	60	1.475	1.500	**33.12**
512-9279	2-57013-1	68	1.675	1.700	**37.54**
512-9280	2-57013-2	72	1.775	1.800	**39.75**
512-9281	2-57013-3	80	1.975	2.000	**44.15**
512-9282	2-57013-4	100	2.475	2.500	**55.20**

1 mm (.0394) Centerline IDC Ribbon Cable, PVC Insulation

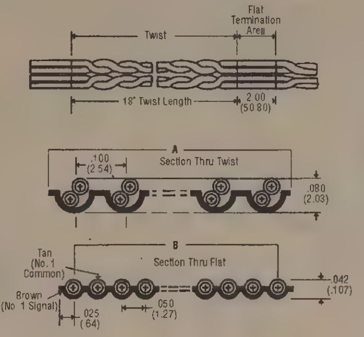

28 AWG 7/36 Stranded Tinned Copper
B
A
.031 (0.79)
Red Edge Mark on Conductor #1
.0155 (0.395)
.0394 (1.00) Typ.
.006 (0.152) Min. Insulation Thickness Temperature Rating: –20°C to 105°C
Insulation: Gray Flame Retardant Flexible PVC Flammability: UL — VW1

- ► 28 AWG Stranded, 7/36 Stranded Tinned Copper
- ► Cable Surface Printed Per UL and CSA Requirements

Electrical Ratings. Voltage: 150 volts. **Impedance:** 80 ohms nom. (GND, SIG, GND). **Capacitance:** 18.3 pF/ft. at 1 MHz nom. **Propagation Delay:** 1.47 ns/ft. nom. **Insulation Resistance:** 10^{10} ohms/10 ft. (3.048 m). **Crosstalk:** 10 ft. sample, 5 ns rise time; Near End — 4.0% max.; Far End — 6.0% max. **UL Style:** 2678.

Stock No.	Mfr.'s Type	No. of Cond.	Dimensions		PER COIL/ 100'
			A	B	1-9
512-9283	1-57051-7	6	0.197	0.236	**15.51**
512-9284	1-57051-8	8	0.276	0.315	**15.84**
512-9285	1-57051-9	10	0.354	0.394	**19.44**
512-9286	5-57051-2	12	0.433	0.472	**22.00**
512-9287	2-57051-0	14	0.512	0.551	**24.81**
512-9288	2-57051-1	16	0.591	0.630	**25.14**
512-9289	2-57051-2	20	0.748	0.787	**28.99**
512-9290	2-57051-3	24	0.906	0.945	**31.24**
512-9291	2-57051-4	26	0.984	1.024	**34.77**
512-9292	2-57051-5	30	1.142	1.181	**40.23**
512-9293	2-57051-6	34	1.299	1.339	**40.89**
512-9294	2-57051-7	40	1.535	1.575	**48.27**
512-9295	2-57051-8	44	1.693	1.732	**50.52**
512-9296	2-57051-9	50	1.929	1.969	**57.90**
512-9297	3-57051-0	60	2.323	2.362	**65.94**
512-9298	3-57051-1	64	2.480	2.519	**76.84**
512-9299	3-57051-2	68	2.638	2.677	**86.59**

AMP-TWIST™ .050 Centerline Color Coded Twisted Pair PVC, Cable Insulation

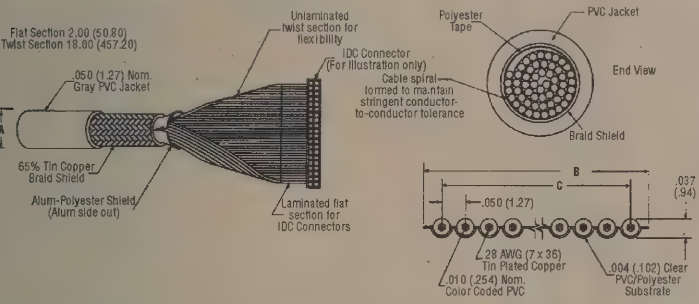


Mechanical Specifications. Conductor: 28 AWG (7 × 36) tinned copper. **Insulation:** .010" (.254 m) nom. wall color coded PVC. **Substrate:** .010" (.254 m); nom. wall clear PVC. **Pitch:** Twisted pair centers — .100" nom. (2.54 m); Conductors centers — Flat .050" ±.005" (1.27 ±0.13 m). **Pairs:** 1/2" nom. lay — adjacent pairs have opposite direction lay. **Construction:** 18" of twisted pairs, 2" of flat section. **Color:** Brown, red, orange, yellow, green, blue, violet, grey, white, black, with common tan, repeat. **UL File No.:** E53793. **UL Style:** Dual rated 2693 and 2697. **Temperature Rating:** –20°C to +105°C UL. **Flammability Rating:** UL — VW-1.

Electrical Specifications. Voltage Rating: 300 V RMS. **Current Rating:** 1 amp. **Conductor Resistance:** 68 ohms/1000 ft. (304.8 m). **Insulation Resistance:** >1 × 10¹⁰ ohms; 10 ft. (3.048 m). **Impedance (Balanced):** 115 ohms. **Impedance (Unbalanced):** 100 ohms. **Capacitance @ 1 MHz:** 16 pF/ft. (52 pF/m). **Inductance @ 1 MHz:** .24 µH/ft. (.79 µH/m). **Propagation Delay:** 1.6 ns/ft. (5.25 ns/m).

Stock No.	Mfr.'s Type	No. of Cond.	No. of Pairs	Dimensions		PER COIL/100'
				A	B	1-9
512-9477	57641-5	10	5	.500	.450	**23.22**
512-9478	57641-7	14	7	.700	.650	**32.40**
512-9479	57641-8	16	8	.800	.750	**37.13**
512-9480	1-57641-0	20	10	1.000	.950	**41.58**
512-9481	1-57641-3	26	13	1.300	1.250	**54.00**
512-9482	1-57641-7	34	17	1.700	1.650	**70.88**
512-9483	1-57641-8	36	18	1.800	1.750	**74.93**
512-9484	2-57641-0	40	20	2.000	1.950	**83.16**
512-9485	2-57641-5	50	25	2.500	2.450	**103.95**
512-9486	3-57641-0	60	30	3.000	2.950	**124.88**
512-9487	3-57641-2	64	32	3.200	3.150	**132.98**

AMP-TWIST™ .050 Centerline Shielded Color Coded Round-To-Flat Cable

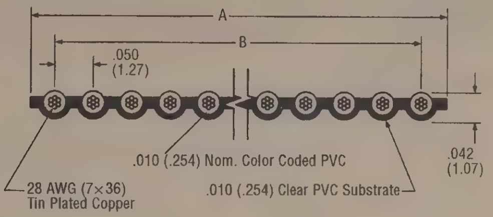

Flat Section 2.00 (50.80)
Twist Section 18.00 (457.20)
Unlaminated twist section for flexibility
IDC Connector (For illustration only)
Polyester Tape
PVC Jacket
.050 (1.27) Nom. Gray PVC Jacket
Cable spiral formed to maintain stringent conductor-to-conductor tolerance
End View
Braid Shield
A
65% Tin Copper Braid Shield
Alum-Polyester Shield (Alum side out)
Laminated flat section for IDC Connectors
B
C
.050 (1.27)
.037 (.94)
28 AWG (7 x 36) Tin Plated Copper
.010 (.254) Nom. Color Coded PVC
.004 (.102) Clear PVC/Polyester Substrate

Mechanical Specifications. Conductor: 28 AWG (7 × 36) tinned copper. **Insulation:** .010" (.254 m) nom. wall color coded PVC. **Substrate:** .004" (.102 m) nom. wall clear PVC/polyester (flat section only). **Pitch:** Conductor centers in flat — .050" ±.005" (1.27 ±0.13 m). **Pairs:** 3/4" nom. lay — adjacent pairs have opposite direction lay. **Construction:** 18" of twisted pairs (non-laminated), 2" of flat section (laminated). **Color:** Internal Cable — Brown, red, orange, yellow, green, blue, violet, gray, white, black, with common tan, repeat. **Shielding:** Aluminum/polyester plus 65% coverage tinned copper braid. **Jacket:** .050" (1.27 m) nom. wall gray PVC. **Temperature Rating:** –20°C to +105°C. **Flammability Rating:** UL — VW-1, UL-1581 Vertical Tray; N.E.C. — 725, CL2. **UL File No.:** E53793. **UL Style:** 20381.

Electrical Specifications. Voltage Rating: 300 V RMS. **Current Rating:** .5 amp. **Conductor Resistance:** 68 ohms/1000 ft. (304.8 m). **Insulation Resistance:** >1 × 10¹⁰ ohms; 10 ft. (3.048 m). **Impedance (Balanced):** 110 ohms. **Impedance (Unbalanced):** 65 ohms. **Capacitance @ 1 MHz:** 27 pF/ft. (89 pF/m). **Inductance @ 1 MHz:** .22 µH/ft. (.72 µH/m). **Propagation Delay:** 1.70 ns/ft. (5.6 ns/m).

Stock No.	Mfr.'s Type	No. of Cond.	No. of Pairs	Dimensions			PER COIL/100'
				A	B	C	1-9
512-9494	1-57647-3	26	13	.380	1.300	1.250	**156.65**
512-9495	1-57647-7	34	17	.410	1.700	1.650	**197.27**
512-9496	2-57647-0	40	20	.440	2.000	1.950	**220.48**
512-9497	2-57647-5	50	25	.480	2.500	2.450	**240.78**
512-9498	3-57647-0	60	30	.510	3.000	2.950	**263.99**
512-9499	3-57647-2	64	32	.520	3.200	3.150	**273.42**

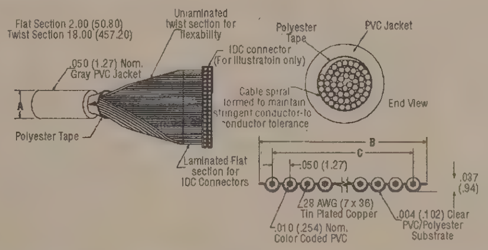
AMP® CODE 10™ .050 Centerline Multi-Colored IDC Ribbon Cable, PVC Installation


A
B
.050 (1.27)
.010 (.254) Nom. Color Coded PVC
.042 (1.07)
28 AWG (7×36) Tin Plated Copper
.010 (.254) Clear PVC Substrate

Mechanical Specifications. Conductor: 28 AWG (7 × 36) tinned copper. **Insulation:** .010" (.254) nom. wall color coded PVC. **Substrate:** .010" (.254) nom. wall clear PVC. **Pitch:** .050" ±.005" (1.27 ±0.13). **Color:** Brown, red, orange, yellow, green, blue, violet, grey, white, black, repeat. **UL File#:** E53793 Style 2884. **Temperature Rating:** CSA — –20°C to +80°C; UL — –20°C to +105°C. **Flammability Rating:** UL — VW-1; CSA — FT-1. **CSA Certificate Number:** LL 700828. **Electrical Specifications. Voltage Rating:** 300 V RMS. **Current Rating:** 1 amp. **Conductor Resistance:** 68 ohms/1000 ft. (304.8 m). **Insulation Resistance:** >1 × 10¹⁰ ohms; 10 ft. (3.048 m). **Impedance:** 105 ohms. **Capacitance @ 1 MHz:** 15 pF/ft. (49 pF/m). **Inductance @ 1 MHz:** .20 µH/ft. (.66 µH/m). **Propagation Delay:** 1.4 ns/ft. (4.6 ns/m).

Stock No.	Mfr.'s Type	No. of Cond.	Dimensions		PER COIL/ 100'
			A	B	1-9
512-9450	1-57643-0	10	0.500	0.450	**33.75**
512-9451	1-57643-4	14	0.700	0.650	**39.15**
512-9452	1-57643-6	16	0.800	0.750	**41.85**
512-9453	2-57643-0	20	1.000	0.950	**47.25**
512-9454	2-57643-4	24	1.200	1.150	**51.98**
512-9455	2-57643-5	25	1.250	1.200	**53.33**
512-9456	2-57643-6	26	1.300	1.250	**55.35**
512-9457	3-57643-4	34	1.700	1.650	**84.38**
512-9458	3-57643-6	36	1.800	1.750	**86.40**
512-9459	3-57643-7	37	1.850	1.800	**88.43**
512-9460	4-57643-0	40	2.000	1.950	**92.48**
512-9461	5-57643-0	50	2.500	2.450	**103.95**
512-9462	6-57643-0	60	3.000	2.950	**119.48**
512-9463	6-57643-4	64	3.200	3.150	**126.90**

AMP-TWIST™ .050 Centerline Unshielded Color Coded Round-To-Flat Cable


Flat Section 2.00 (50.80)
Twist Section 18.00 (457.20)
Unlaminated twist section for flexability
Polyester Tape
PVC Jacket
IDC connector (For illustratoin only)
.050 (1.27) Nom. Gray PVC Jacket
Cable spiral formed to maintain stringent conductor-to conductor tolerance
End View
A
Polyester Tape
Laminated Flat section for IDC Connectors
B
C
.050 (1.27)
.037 (.94)
28 AWG (7 x 36) Tin Plated Copper
.010 (.254) Nom. Color Coded PVC
.004 (.102) Clear PVC/Polyester Substrate

Mechanical Specifications. Conductor: 28 AWG (7 × 36) tinned copper. **Insulation:** .010" (.254 m) nom. wall color coded PVC. **Substrate:** .004" (.102 m) nom. wall clear PVC/polyester (flat section only). **Pitch:** Conductor centers in flat — .050" ±.005" (1.27 ±0.13 m). **Pairs:** 3/4" nom. lay — adjacent pairs have opposite direction lay. **Construction:** 18" of twisted pairs (non-laminated), 2" of flat section (laminated). **Color:** Internal Cable — Brown, red, orange, yellow, green, blue, violet, gray, white, black, with common tan, repeat. **Jacket:** .050" (1.27 m) nom. wall gray PVC. **Tape Separator:** Spiral wrapped polyester tape between jacket and cable. **Temperature Rating:** –20°C to +105°C. **Flammability Rating:** UL — VW-1, UL-1581 Vertical Tray; N.E.C. — 725, CL2. **UL File No.:** E53793. **UL Style:** 20381.

Electrical Specifications. Voltage Rating: 300 V RMS. **Current Rating:** .5 amp. **Conductor Resistance:** 68 ohms/1000 ft. (304.8 m). **Insulation Resistance:** >1 × 10¹⁰ ohms; 10 ft. (3.048 m). **Impedance (Balanced):** 125 ohms. **Impedance (Unbalanced):** 80 ohms. **Capacitance @ 1 MHz:** 13 pF/ft. (43 pF/m). **Inductance @ 1 MHz:** .36 µH/ft. (1.18 µH/m). **Propagation Delay:** 1.70 ns/ft. (5.6 ns/m).

Stock No.	Mfr.'s Type	No. of Cond.	No. of Pairs	Dimensions			PER COIL/100'
				A	B	C	1-9
512-9488	1-57648-3	26	13	.350	1.300	1.250	**138.06**
512-9489	1-57648-7	34	17	.385	1.700	1.650	**147.08**
512-9490	2-57648-0	40	20	.415	2.000	1.950	**160.95**
512-9491	2-57648-5	50	25	.455	2.500	2.450	**191.48**
512-9492	3-57648-0	60	30	.495	3.000	2.950	**199.80**
512-9493	3-57648-2	64	32	.500	3.200	3.150	**208.13**

Coaxial Connectors

AMP® BNC RF connectors have bayonet-lock coupling. AMP's exclusive single and dual crimp terminations insure positive insulation grip and require absolutely no soldering. They provide termination at the lowest overall applied cost. **Rating:** 500 volts (RMS). **Frequency:** 0-2.5 GHz for single crimp; 0-2 GHz for 75 ohm; 0-4 GHz for all others. **Style:** Mil Type or Commercial (Com.). **Crimping tools for the connectors are listed on page 189.**

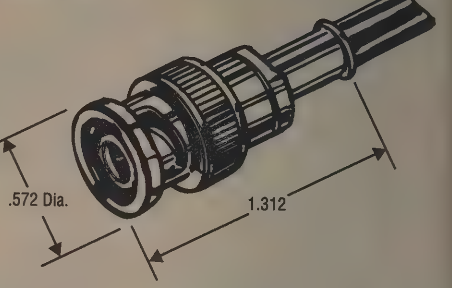
BNC 50 or 75 Ohm, Straight Crimp Plugs

Standard single (S), dual (D), and hex (H) crimp termination plugs. Contact plating is gold (G), silver (S), or tin (T). Body plating is nickel (N) or silver (S). The dielectric is polyethylene (PE), polymethylpenlene (PM), polypropylene (PP) or teflon® (T).

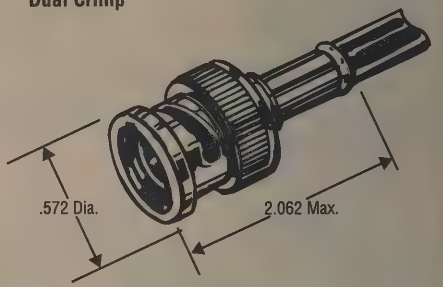
Stock No.	Mfr.'s Type	Crimp Type	Ohms	For RG/U Cable	Contact Plating	Body Plating	Dielectric	Style	CERTI-CRIMP™ Hand Tool	Interchangeable Dies for PROCRIMPER™II Hand Tool	EACH		
											1-24	25-99	100-499
512-2074	225395-7	D	50	174, 188, 188A, 316	G	N	T	Mil type	220009-1	—	**3.15**	**2.74**	**2.10**
512-2000	1-227079-6	D	50	174, 188, 188A, 316	G	N	PP	Com.	220009-5	—	**2.25**	**1.98**	**1.61**
512-2318	2-330061-1	S	50	174, 188, 188A, 316	G	S	T	Mil type	69245-1	—	**11.11**	**9.94**	**8.08**
512-2046	2-331350-4	D	50	174, 188, 188A, 316	G	S	T	Mil type	220009-1	—	**4.51**	**3.85**	**2.98**
512-2001	2-221128-1	H	50	174, 188, 188A, 316	G	N	PM	Com.	—	58436-3	**3.05**	**2.61**	**2.02**
512-2076	225395-8	D	50	179, 179A, 179B, 161, 187, 187A, Belden 9221	G	N	T	Mil type	220009-5	—	**3.15**	**2.74**	**2.10**
512-2004	2-227079-2	D	50	179, 179A, 179B, 161, 187, 187A, Belden 9221	G	N	PP	Com.	69245-1	—	**11.85**	**10.13**	**8.36**
512-2312	2-329446-1	S	50	179, 179A, 179B, 161, 187, 187A, Belden 9221	G	S	T	Mil type	220009-5	—	**11.11**	**9.49**	**7.35**
512-2048	2-331350-5	D	50	179, 179A, 179B, 161, 187, 187A, Belden 9221	G	S	T	Mil type	69477-2	—	**4.51**	**3.85**	**3.28**
512-2003	2-221128-3	H	50	179, 179A, 179B, 161, 187, 187A, Belden 9221	G	N	PM	Com.	—	58436-3	**3.05**	**2.61**	**2.10**
512-2008	413589-8	H	75	179, 179A, 179B, 161, 187, 187A, Belden 9221	G	N	PM	Com.	—	58425-2	**4.24**	**3.62**	**3.08**
512-2032	221185-8	D	75	179, 179A, 179B, 161, 187, 187A, Belden 9221	G	N	PP	Com.	—	318451-2	**3.17**	**2.78**	**2.26**
512-2078	225395-9	D	50	180, 180A, 180B, 195, 195A	G	N	T	Mil type	69477-2	—	**4.13**	**3.53**	**2.82**
512-2050	2-331350-6	D	50	180, 180A, 180B, 195, 195A	G	S	T	Mil type	69477-2	—	**4.51**	**3.85**	**3.08**
512-2011	2-221128-5	H	50	180, 180A, 180B, 195, 195A	G	N	PM	Com.	—	58436-3	**3.05**	**2.61**	**2.10**
512-2080	1-225395-0	D	50	Belden 8218	G	N	T	Mil type	69477-2	—	**3.15**	**2.74**	**2.18**
512-2006	1-227079-9	D	50	Belden 8218	G	N	PP	Com.	69477-4	58330-1	**2.25**	**1.98**	**1.61**
512-2052	2-331350-2	D	50	Belden 8218	G	S	T	Mil type	69477-2	—	**4.51**	**3.85**	**3.08**
512-2030	413589-3	H	75	Belden 8218	G	N	PM	Com.	—	58425-2	**4.24**	**3.62**	**2.90**
512-2025	221128-1	H	50	58, 58A, 58B, 58C	G	N	PE	Com.	—	58436-1[2]	**2.16**	**1.90**	**1.54**
512-2005	1-221128-0	H	50	58, 58A, 58B, 58C	G	N	PE	Com.	—	58436-1[2]	**2.81**	**2.40**	**1.86**
512-2022	225395-1	D	50	58, 58A, 58B, 58C	G	N	T	Mil type	69478-1	220189-3	**3.15**	**2.74**	**2.10**
512-2010	227079-1	D	50	58, 58A, 58B, 58C	T	N	PP	Com.	220187-1	58435-1[1]	**2.05**	**1.80**	**1.46**
512-2015	227079-5	D	50	58, 58A, 58B, 58C	G	N	PP	Com.	220187-1	58435-1[1]	**2.05**	**1.80**	**1.46**
512-2012	227079-9	D	50	58, 58A, 58B, 58C	S	N	PP	Com.	220187-1	58435-1[1]	**2.05**	**1.80**	**1.46**
512-2300	2-329082-1	S	50	58, 58A, 58B, 58C	G	S	PP	Mil type	69140-1	—	**9.65**	**8.25**	**6.39**
512-2310	2-329444-1	S	50	58, 58A, 58B, 58C	G	S	T	Mil type	69140-1	—	**10.12**	**8.65**	**6.93**
512-2017	2-331350-1	D	50	58, 58A, 58B, 58C	G	S	T	Mil type†	69478-1	220189-3	**5.12**	**4.37**	**3.39**
512-2066	225395-3	D	50	223, 55, 55A, 55B	G	N	T	Mil type	69478-1	220189-3	**3.15**	**2.74**	**2.10**
512-2014	227079-6	D	50	223, 55, 55A, 55B	G	N	PP	Com.	220187-1	58435-1[1]	**2.53**	**2.16**	**1.73**
512-2007	1-221128-1	H	50	**	G	N	PE	Com.	—	58436-1[2]	**2.81**	**2.40**	**1.92**
512-2026	221128-2	H	50	**	G	N	PE	Com.	—	58436-1[2]	**2.16**	**1.90**	**1.60**
512-2023	225395-2	D	50	**	G	N	T	Mil type	69477-1	220189-4	**3.15**	**2.74**	**2.10**
512-2016	227079-7	D	50	**	G	N	PP	Com.	220187-2	58435-1[1]	**2.05**	**1.80**	**1.46**
512-2088	1-227079-1	D	50	**	S	N	PP	Com.	220187-2	58435-1[1]	**2.05**	**1.80**	**1.51**
512-2024	227079-3	D	50	**	T	N	PP	Com.	220187-2	58435-1[1]	**2.05**	**1.80**	**1.51**
512-2302	2-329083-1	S	50	**	G	S	PP	Mil type	69141-1	—	**9.65**	**8.25**	**6.39**
512-2028	2-329445-1	S	50	**	G	S	T	Mil type	69141-1	—	**10.12**	**8.65**	**6.70**
512-2042	331350	D	50	**	G	S	T	Mil type‡	69477-1	—	**5.12**	**4.37**	**3.39**
512-2034	221185-2	D	75	**	G	N	PP	Com.	—	58085-1	**2.88**	**2.53**	**2.05**
512-2037	413589-2	H	75	**	G	N	PM	Com.	—	58425-1	**3.85**	**3.29**	**2.64**
512-2036	221185-9	D	75	***	G	N	PP	Com.	—	58085-1	**2.88**	**2.53**	**2.05**
512-2043	1-221128-7	H	50	***	G	N	PP	Com.	—	58435-1[1]	**2.81**	**2.40**	**1.92**
512-2044	413589-9	H	75	***	G	N	PM	Com.	—	58425-1	**3.85**	**3.29**	**2.64**
512-2058	4-331350-0	D	50	Belden 8281, 9141, 9231, Western Electric 724, 728, 3049, AT&T 728	G	S	T	Mil type	220043-1	220189-6	**5.31**	**4.54**	**3.64**
512-2045	1-221128-2	H	50	Belden 8281, 9141, 9231, Western Electric 724, 728, 3049, AT&T 728	G	N	PP	Com.	—	58436-2	**2.81**	**2.40**	**1.92**
512-2049	413589-5	H	75	Belden 8281, 9141, 9231, Western Electric 724, 728, 3049, AT&T 728	G	N	PM	Com.	—	852922-3	**3.85**	**3.29**	**2.64**
512-8668	2-221128-7	H	50	Belden 9907, 89907, RG-141	G	N	PM	Com.	—	58436-1[2]	**3.05**	**2.61**	**2.02**
512-2053	413589-1	H	75	Belden 88241	G	N	PM	Com.	—	852922-3	**3.85**	**3.29**	**2.64**
512-2054	413589-7	H	75	AT&T 734A	G	N	PM	Com.	—	58425-1	**3.85**	**3.29**	**2.64**
512-2055	1-413589-0	H	75	AT&T 735A	G	N	PM	Com.	—	58425-1	**4.24**	**3.62**	**2.90**

[1] Included in PRO-CRIMPER™II assembly 58433-1. [2] Included in PRO-CRIMPER™II assembly 58433-2. †Weatherproof - M39012/16B0004. ‡M39012/16B0008. **59, 59A, 59B, 62, 62A, 62B, 124, 140, 210, Belden 9291, 9209, 9268. ***Belden 8212, 9104, 9112, 9240, 9167, 9259, 9266, Times FM-59, (RG59 type with 20 AWG C.C.).

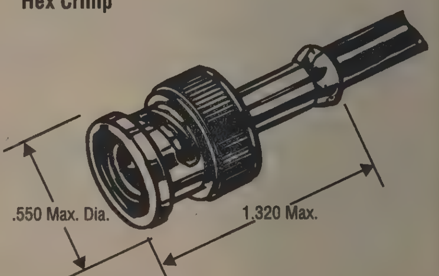
Single Crimp



Dual Crimp



Hex Crimp



Coaxial Connectors

AMP® BNC RF connectors have bayonet-lock coupling. AMP's exclusive single and dual crimp terminations insure positive insulation grip and require absolutely no soldering. They provide termination at the lowest overall applied cost. **Rating:** 500 volts (RMS). **Frequency:** 0-2.5 GHz for single crimp; 0-2 GHz for 75 ohm; 0-4 GHz for all others. **Style:** Mil type or commercial (Com.). **Crimping tools for the connectors can be located on page 189.**

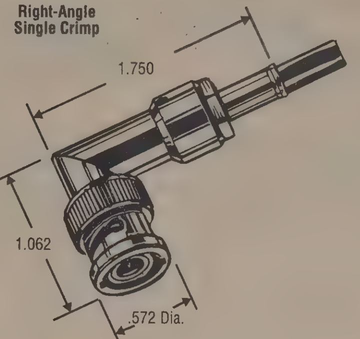
BNC Right Angle Plugs (50 or 75 Ohms)

Standard single (S), dual (D), and hex (H) crimp termination plugs. Contact plating is gold (G). Body plating is nickel (N). The dielectric is polymethylpenlene (PM) or teflon® (T).

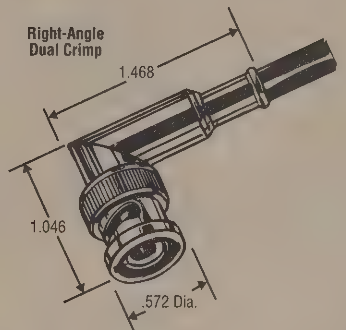
Stock No.	Mfr.'s Type	Crimp Type	Ohms	For RG/U Cable	Contact Plating	Body Plating	Dielectric	Style	CERTI-CRIMP™ Hand Tool	Interchangeable Dies for PROCRIMPER™ II Hand Tool	EACH 1-24	25-49	50-99
512-2278	331178	S	50	174, 188, 188A, 316	G	N	T	Mil type	69245-1	—	**26.02**	**22.23**	**18.92**
512-2056	413959-3	H	50	174, 188, 188A, 316	G	N	PM	Com.	—	58436-3	**12.68**	**10.83**	**9.22**
512-2282	225974-1	D	50	58, 58A, 58B, 58C	G	N	T	Mil type	69478-1	220189-3	**22.50**	**19.22**	**16.36**
512-2057	413959-1	H	50	58, 58A, 58B, 58C	G	N	PM	Com.	—	58436-1¹	**12.10**	**10.34**	**8.80**
512-2288	225974-5	D	50	*	G	N	T	Mil type	69477-1	220189-4	**22.50**	**19.22**	**16.36**
512-2059	413959-2	H	50	*	G	N	PM	Com.	—	58436-1¹	**12.10**	**10.34**	**8.80**
512-2061	413588-2	H	75	*	G	N	PM	Com.	—	58425-1	**16.94**	**14.48**	**12.32**
512-2063	413959-4	H	50	179, 179A, 179B, 161, 187, 187A, Belden 9221	G	N	PM	Com.	—	58436-3	**12.68**	**10.83**	**9.22**
512-2065	413959-5	H	50	180, 180A, 180B, 195, 195A	G	N	PM	Com.	—	58436-3	**12.68**	**10.83**	**9.22**
512-2067	413959-6	H	50	Belden 9907, 89907	G	N	PM	Com.	—	58436-1¹	**12.68**	**10.83**	**9.22**
512-2068	413588-3	H	75	Belden 8218	G	N	PM	Com.	—	58425-1	**18.59**	**15.89**	**13.52**
512-2069	413588-5	H	75	Belden 8281, 9231, AT&T 728	G	N	PM	Com.	—	58425-3	**16.94**	**14.48**	**12.32**
512-2072	413588-6	H	75	RG-59 Double Braid	G	N	PM	Com.	—	58425-3	**16.94**	**14.48**	**12.32**
512-2073	413588-7	H	75	Belden 9145, AT&T 734A	G	N	PM	Com.	—	58425-1	**16.94**	**14.48**	**12.32**
512-2075	413588-9	H	75	†	G	N	PM	Com.	—	58425-1	**16.94**	**14.48**	**12.32**

*59, 59A, 59B, 62, 62A, 62B, 124, 140, 210, Belden 9291, 9209, 9268. †Belden 8212, 9104, 9112, 9240, 9167, 9259, 9266, Times FM-59, (RG59 type with 20 AWG C.C.). ¹Included in PRO-CRIMPER II assembly 58433-2.

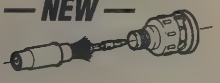
Right-Angle Single Crimp



Right-Angle Dual Crimp



— NEW —



Consumer Series BNC Plugs

► **Plating — Contact - Gold; Body - Nickel; Dielectric — Thermoplastic**

New low-cost alternative to AMP's full line of commercial and military-style BNC connectors. The sleek, lightweight plastic collars come in black, red, green, blue and computer grey for easy circuit identification without any additional assembly. Fully intermateable with standard BNC jacks.

50 Ohm BNC Plugs

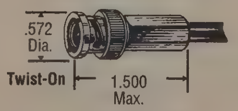
Stock No.	Mfr.'s Type	Cable/ RG Size	Crimp Type	Color	EACH 1-24	25-99	100-499
512-9501	2-414650-4	174, 174A, 316, 188, 188A, 179, 179A, 179B, 161, 187	Dual	Black	**1.11**	**1.02**	**.95**
512-9502	3-414650-0		Dual	Red	**1.11**	**1.02**	**.95**
512-9503	3-414650-3		Dual	Green	**1.11**	**1.02**	**.95**
512-9504	2-414650-7		Dual	Blue	**1.11**	**1.02**	**.95**
512-9505	3-414650-6		Dual	Gray	**1.11**	**1.02**	**.95**
512-9506	414852-6		Dual	Zinc Die Cast	**1.11**	**1.02**	**.95**
512-9507	2-414650-2	58, 58A, 58B, 58C, Belden 9907	Dual	Black	**1.11**	**1.02**	**.95**
512-9508	2-414650-8		Dual	Red	**1.11**	**1.02**	**.95**
512-9509	3-414650-1		Dual	Green	**1.11**	**1.02**	**.95**
512-9511	2-414650-5		Dual	Blue	**1.11**	**1.02**	**.95**
512-9512	3-414650-4		Dual	Gray	**1.11**	**1.02**	**.95**
512-9513	414852-4		Dual	Zinc Die Cast	**1.11**	**1.02**	**.95**
512-9514	2-414650-3	124, 140, 210, 62, 62A, 62B, 59, 59A, 59B, Belden 9291, 9209, 9269	Dual	Black	**1.11**	**1.02**	**.95**
512-9515	2-414650-9		Dual	Red	**1.11**	**1.02**	**.95**
512-9516	3-414650-2		Dual	Green	**1.11**	**1.02**	**.95**
512-9517	2-414650-6		Dual	Blue	**1.11**	**1.02**	**.95**
512-9518	3-414650-5		Dual	Gray	**1.11**	**1.02**	**.95**
512-9519	414852-5		Dual	Zinc Die Cast	**1.11**	**1.02**	**.95**

PRO-CRIMPER™ II Hand Tools

512-9521. 58559-1. Hand Tool with Die Set. For Cable/RG Sizes 174, 316, 188, 179, 161, 187	**EACH 172.04**
512-9522. 58559-2. Die Set Only. For Cable/RG Sizes 174, 316,188, 179, 161, 187	**EACH 90.34**
512-9523. 58558-1. Hand Tool with Die Set. For Cable/RG Sizes 58, 62, 59	**EACH 125.12**
512-9524. 58558-2. Die Set Only. For Cable/RG Sizes 58,62,59	**EACH 90.34**

BNC 50 Ohm, Twist-On-Plugs

Contact plating is gold (G). Body plating is nickel (N). The dielectric is polymethylpenlene (PM).



Stock No.	Mfr.'s Type	For RG/U Cable	Contact Plating	Body Plating	Dielectric	Style	EACH 1-24	25-99	100-499
512-2322	414265-7	58, 58A, 58B, 58C	G	N	PM	Com.	**2.21**	**1.94**	**1.57**
512-2103	414265-3	59, 59A, 59B, 62, 62A, 62B	G	N	PM	Com.	**2.53**	**2.16**	**1.67**

PRO CRIMPER™ II BNC Premise Wiring Kit

Includes: Hand tool, 5 plugs for RG58, 10 plugs for RG59/62, 5 pugs for RG58 plenum, 5 plugs for RG59/62 plenum, 2 jack to jack adapters, and 2 "T" adapters.

512-8477. 58477-1	**EACH 114.00**

Fig. A

Fig.C

Fig.E

Fig. B

Fig. D

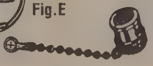


Fig. F

BNC Adapters

Contact plating is gold (G) or silver (S). Body plating is nickel (N) or silver (S). The dielectric is polypropylene (PP), polymethylpenlene (PM) or teflon® (T).

Tee Adapters — Jack-Plug-Jack (Fig. A)

221543-2 comparable to UG274A/U. 329518 comparable to UG274B/U.

Stock No.	Mfr.'s Type	Body Plating	Contact Plating	Dielectric	EACH 1-24	25-49	50-99
512-2202	221543-2	Brass, N	G	T	**13.05**	**11.47**	**9.99**
512-2156	329518	Brass, S	S	T	**16.45**	**14.61**	**12.93**
512-2155	413592-2	Zinc, N	G	Acetal	**4.79**	**4.25**	**3.74**
512-2157	413592-4	Zinc, N	S	Acetal	**4.18**	**3.72**	**3.27**

BNC Right-Angle Adapters — Jack-Plug (Fig. B)

Both are comparable to UG306B/U.

Stock No.	Mfr.'s Type	Body Plating	Contact Plating	Dielectric	EACH 1-24	25-49	50-99
512-2160	329517	N	S	T	**16.14**	**13.79**	**11.74**
512-2161	222165-2	N	G	T	**16.14**	**13.79**	**11.74**

BNC Feed-Thru Adapters — Jack-Jack (Fig. C)

Both are comparable to UG914B/U.

Stock No.	Mfr.'s Type	Body Plating	Contact Plating	Dielectric	EACH 1-24	25-49	50-99
512-2165	221551-1	N	S	T	**7.32**	**6.25**	**5.32**
512-2210	221551-3	N	G	T	**6.71**	**5.73**	**4.88**

BNC Bulkhead Adapters — Jack-Jack (Fig. D)

228226 is comparable to UG492/D.

Stock No.	Mfr.'s Type	Impedance	Body Plating	Contact Plating	Dielectric	EACH 1-24	25-49	50-99
512-2162	330024	50 Ohm	S	S	PP	**15.76**	**13.47**	**11.46**
512-2164	228226-1	50 Ohm	N	G	PP	**6.07**	**5.33**	**4.65**
512-2167	222117-1	75 Ohm	N	G	Polymethylpenlene	**9.35**	**7.99**	**6.80**

BNC Commercial Terminator Plugs (Fig. E)

Stock No.	Mfr.'s Type	Resistor Spec.	Body Plating	Contact Plating	Note	EACH 1-24	25-99	100-499
512-2166	221629-1	1 Watt, 50 Ohm	N	G	With Tether	**6.24**	**5.49**	**4.45**
512-2206	221629-4	1 Watt, 50 Ohm	N	G	Without Tether	**5.13**	**4.51**	**3.66**
512-2208	221629-5	1 Watt, 75 Ohm	N	G	Without Tether	**8.86**	**7.57**	**6.06**
512-2168	221629-6	1 Watt, 93 Ohm	N	G	Without Tether	**6.74**	**5.76**	**4.62**

BNC Jack Cover — Cap (Fig. F)

Stock No.	Mfr.'s Type	Body Plating	Comparable To	EACH 1-24	25-99	100-499
512-2170	330022	S	CW123-A	**6.55**	**5.59**	**4.48**

Coaxial Connectors

BNC Crimp Jacks (50 or 75 Ohms)

Standard single (S), dual (D), and hex (H) crimp termination jacks. Contact plating is gold (G). Body plating is nickel (N) or silver (S). The dielectric is polypropylene (PP), polymethylpenlene (PM), or teflon® (T). **Crimp Tools for connectors are on page 189.**

Stock No.	Mfr.'s Type	Crimp Type	Ohms	For RG/U Cable	Contact Plating	Body Plating	Dielectric	Style	CERTI-CRIMP™ Hand Tool	Interchangeable Dies for PROCRIMPER™ II Hand Tool	EACH		
											1-24	25-99	100-499
512-2114	225396-7	D	50	174, 188, 188A, 316	G	N	T	Mil type	220009-1	—	**5.78**	**4.94**	**3.82**
512-2112	2-330062-1	S	50	174, 188, 188A, 316	G	N	T	Mil type	220009-1	—	**14.63**	**12.50**	**10.45**
512-2106	2-331351-4	D	50	174, 188, 188A, 316	G	S	T	Mil type	220009-1	—	**6.05**	**5.17**	**4.14**
512-2082	413779-3	H	50	174, 188, 188A, 316	G	N	PM	Com.	—	58436-3	**4.07**	**3.48**	**2.77**
512-2116	225396-8	D	50	179, 179A, 179B, 161, 187, 187A, Belden 9221	G	N	T	Mil type	220009-1	—	**5.78**	**4.94**	**3.95**
512-2083	413779-4	H	50	179, 179A, 179B, 161, 187, 187A, Belden 9221	G	N	PM	Com.	—	58436-3	**4.07**	**3.48**	**2.78**
512-2097	413760-8	H	75	179, 179A, 179B, 161, 187, 187A, Belden 9221	G	N	PM	Com.	—	58425-2	**5.67**	**4.84**	**3.88**
512-2018	225396-1	D	50	58, 58A, 58B, 58C	G	N	T	Mil type	69478-1	220189-3	**4.62**	**4.06**	**3.29**
512-2111	2-329545-1	S	50	58, 58A, 58B, 58C	G	N	T	Mil type	69140-1	—	**12.98**	**11.09**	**9.26**
512-2102	2-331351-1	D	50	58, 58A, 58B, 58C	G	S	T	Mil type†	69478-1	220189-3	**7.15**	**6.11**	**4.89**
512-2079	413779-1	H	50	58, 58A, 58B, 58C	G	N	PM	Com.	—	58436-1[2]	**3.71**	**3.17**	**2.55**
512-2019	225396-2	D	50	**	G	N	T	Mil type‡	69477-1	220189-4	**4.62**	**4.06**	**3.29**
512-2110	228979-6	D	50	**	G	N	PP	Com.	220187-2	58435-1[1]	**3.41**	**2.91**	**2.34**
512-2192	221199-2	D	75	**	G	N	PP	Com.	—	58085-1	**4.79**	**4.09**	**3.28**
512-2081	413779-2	H	50	**	G	N	PM	Com.	—	58436-1[2]	**3.71**	**3.17**	**2.55**
512-2095	413760-2	H	75	**	G	N	PM	Com.	—	58425-1	**5.17**	**4.42**	**3.54**
512-2084	413779-6	H	50	Belden 9907, 89907, RG-141	G	N	PM	Com.	—	58436-1[2]	**4.07**	**3.48**	**2.78**
512-2099	413760-1	H	75	Belden 88241	G	N	PM	Com.	—	58425-1	**5.17**	**4.42**	**3.54**
512-2104	413760-3	H	75	Belden 8218	G	N	PM	Com.	—	58425-1	**5.67**	**4.84**	**3.88**
512-2105	413760-4	H	75	AT&T KS19224 L2	G	N	PM	Com.	—	58425-2	**6.13**	**5.24**	**4.21**
512-2107	413760-5	H	75	Belden 8281, 9231, AT&T 728	G	N	PM	Com.	—	58425-3	**5.17**	**4.42**	**3.54**
512-2108	413760-6	H	75	RG-59 Double Braid	G	N	PM	Com.	—	58425-3	**5.17**	**4.42**	**3.54**
512-2109	413760-7	H	75	AT&T 734A	G	N	PM	Com.	—	58425-1	**5.17**	**4.42**	**3.54**
512-2113	413760-9	H	75	***	G	N	PM	Com.	—	58425-1	**5.17**	**4.42**	**3.54**

BNC Bulkhead Jacks (50 or 75 Ohms)

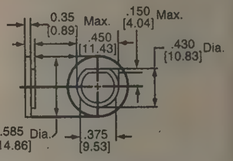
Stock No.	Mfr.'s Type	Crimp Type	Ohms	For RG/U Cable	Contact Plating	Body Plating	Dielectric	Style	CERTI-CRIMP™ Hand Tool	Interchangeable Dies for PROCRIMPER™ II Hand Tool	EACH		
											1-24	25-99	100-499
512-2142	225398-7	D	50	174, 188, 188A, 316	G	N	T	Mil type	220009-1	—	**4.68**	**4.12**	**3.46**
512-2148	228980-7	D	50	174, 188, 188A, 316	G	N	PP	Com.	220009-5	—	**4.51**	**3.85**	**3.08**
512-2040	2-330061-1	S	50	174, 188, 188A, 316	G	N	PP	Com.	69245-1	—	**11.11**	**9.49**	**7.93**
512-2062	2-330063-1	S	50	174, 188, 188A, 316	G	N	T	Mil type	69245-1	—	**14.00**	**11.96**	**10.18**
512-2134	1-331693-2	D	50	174, 188, 188A, 316	G	S	T	Mil type	220009-1	—	**7.87**	**6.72**	**5.39**
512-2087	413771-3	H	50	174, 188, 188A, 316	G	N	PM	Com.	—	58436-3	**4.87**	**4.16**	**3.34**
512-2144	225398-8	D	50	179, 179A, 179B, 161, 187, 187A, Belden 9221	G	N	T	Mil type	220009-1	—	**4.68**	**4.12**	**3.46**
512-2064	2-329092-1	S	50	179, 179A, 179B, 161, 187, 187A, Belden 9221	G	N	PP	Com.	69245-1	—	**16.28**	**13.91**	**11.48**
512-2194	221221-5	D	75	179, 179A, 179B, 161, 187, 187A, Belden 9221	G	N	PP	Com.	—	58304-1	**6.33**	**5.41**	**4.33**
512-2089	413771-4	H	50	179, 179A, 179B, 161, 187, 187A, Belden 9221	G	N	PM	Com.	—	58436-3	**4.87**	**4.16**	**3.34**
512-2117	413590-8	H	75	179, 179A, 179B, 161, 187, 187A, Belden 9221	G	N	PM	Com.	—	58425-2	**6.82**	**5.83**	**4.67**
512-2021	225398-1	D	50	58, 58A, 58B, 58C	G	N	T	Mil type	69478-1	220189-3	**4.68**	**4.12**	**3.46**
512-2070	228980-5	D	50	58, 58A, 58B, 58C	G	N	PP	Com.	220187-1	58435-1[1]	**4.51**	**3.85**	**3.08**
512-2132	1-331693-1	D	50	58, 58A, 58B, 58C	G	S	T	Mil type†	69478-1	220189-3	**8.20**	**7.00**	**5.61**
512-2085	413771-1	H	50	58, 58A, 58B, 58C	G	N	PM	Com.	—	58436-1[2]	**4.43**	**3.78**	**3.04**
512-2020	225398-2	D	50	**	G	N	T	Mil type	69477-1	220189-4	**4.68**	**4.12**	**3.28**
512-2146	228980-6	D	50	**	G	N	PP	Com.	220187-2	58435-1[1]	**4.10**	**3.50**	**2.81**
512-2324	331693	D	50	**	G	S	T	Mil type‡	69477-1	220189-4	**8.20**	**7.00**	**5.61**
512-2196	221221-2	D	75	**	G	N	PP	Com.	—	58085-1	**5.75**	**4.91**	**3.94**
512-2086	413771-2	H	50	**	G	N	PM	Com.	—	58436-1[2]	**4.43**	**3.78**	**3.04**
512-2115	413590-2	H	75	**	G	N	PM	Com.	—	58425-1	**6.22**	**5.31**	**4.25**
512-2091	413771-5	H	50	RG-180, 195	G	N	PM	Com.	—	58436-3	**4.87**	**4.16**	**3.34**
512-2094	413771-6	H	50	Belden 9907, 89907, RG-141	G	N	PM	Com.	—	58436-1[2]	**4.87**	**4.16**	**3.34**
512-2118	413590-3	H	75	Belden 8218	G	N	PM	Com.	—	58425-1	**6.82**	**5.83**	**4.67**
512-2119	413590-4	H	75	AT&T KS19224 L2	G	N	PM	Com.	—	58425-2	**7.40**	**6.32**	**5.06**
512-2120	413590-6	H	75	RG-59 Double Braid	G	N	PM	Com.	—	58425-3	**6.22**	**5.31**	**4.25**
512-2121	413590-7	H	75	AT&T 734A	G	N	PM	Com.	—	58425-1	**6.22**	**5.31**	**4.25**
512-2125	413590-9	H	75	***	G	N	PM	Com.	—	58425-1	**6.22**	**5.31**	**4.25**

[1] Included in PRO-CRIMPER™II assembly 58433-1. [2] Included in PRO-CRIMPER™II assembly 58433-2. †Weatherproof - M39012/16B0004. ‡M39012/16B0008. **59, 59A, 59B, 62, 62A, 62B, 124, 140, 210, Belden 9291, 9209, 9268. ***Belden 8212, 9104, 9112, 9240, 9167, 9259, 9266, Times FM-59, (RG59 type with 20 AWG C.C.).

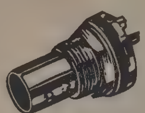
Bulkhead Solder Jacks

Isolated

Commercial



Panel Bushing

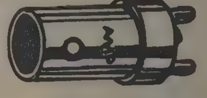

Sealed

Contact plating is gold (G), silver (S) or tin (T). Body plating is nickel (N) or silver (S). The dielectric is polypropylene (PP), polymethylpenlene (PM), or teflon® (T).

Stock No.	Mfr.'s Type	Body Plating	Contact Plating	Dielectric	Style	EACH	
						1-24	25-99
512-2127	227715-3	N	G	T	Com.	**2.64**	**2.25**
512-2090	227726-1	N	T	Valox	Isolated	**2.71**	**2.38**
512-2128	227726-2	N	S	Valox	Isolated	**2.71**	**2.38**
512-2092	227726-3	N	G	Valox	Isolated	**2.71**	**2.38**
512-2093	227426-1	N	G	PP	Sealed	**7.26**	**6.21**

512-2124. 227223-1. Insulating panel bushing for 227715-3. **1-24**.....**EACH .19**
25-99 ....**EACH .17**

BNC Vertical PC Board Mount Jacks Press Fit Terminal



Contact plating is gold (G), silver (S) or tin (T). Body plating is nickel (N) or silver (S). The dielectric is polypropylene (PP), polymethylpenlene (PM), or teflon® (T).

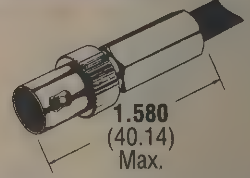
Stock No.	Mfr.'s Type	Imp.	Contact Plating	Body Plating	Dielectric	Style	EACH	
							1-24	25-99
512-2197	222006-1	50 Ω	G	N	T	Com.	**5.54**	**4.74**
512-2198	222462-1	75 Ω	G	N	T	Com.	**6.95**	**5.94**

Vertical Metallized PC Board Mount Jacks

Contact plating is gold (G), silver (S) or tin (T). Body plating is nickel (N) or silver (S). The dielectric is polypropylene (PP), polymethylpenlene (PM), or teflon® (T).

Stock No.	Mfr.'s Type	Imp.	Contact Plating	Body Plating	Dielectric	Style	EACH	
							1-24	25-99
512-2130	227699-1	50 Ω	S	N	Valox	Com.	**4.85**	**4.15**
512-2200	227699-2	50 Ω	G	N	Valox	Com.	**3.93**	**3.45**
512-2136	227699-3	50 Ω	T	N	Valox	Com.	**3.93**	**3.45**
512-2139	221336-3	75 Ω	G	N	T	Com.	**11.21**	**9.58**

BNC Twist-On-Jacks



Twist-on Jacks (must be used with solid conductor cable). Dielectric Acetal (A). Contact plating is gold (G), silver (S) or tin (T). Body plating is nickel (N) or silver (S). The dielectric is polypropylene (PP), polymethylpenlene (PM), or teflon® (T).

Stock No.	Mfr.'s Type	For RG/U Cable	Contact Plating	Body Plating	Dielectric	Style	EACH	
							1-24	25-99
512-2122	222428-7	*	G	N	A	Com.	**3.58**	**3.06**
512-2123	222428-1	†	G	N	A	Com.	**3.58**	**3.06**

*58, 58A, 58B, 58C, 62, 62A, 62B. †59, 59A, 59B.

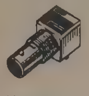
BNC PC Board/Panel Mount Jacks

Right Angle

Valox Body

Metal Body

Vertical


Valex Body

Metal Body

Lock Washer

Jam Nut

Right Angle (Max. Panel Thickness .240") 50 Ohm

Stock No.	Mfr.'s Type	Mtg. Hgt.	Body	Mounting Posts	Center Contact Plating	EACH 1-24	25-99	100-499
512-2171	226990-1	.625"	Wht. Valox	No	Tin	3.00	2.63	2.14
512-2172	226990-3	.625"	Wht. Valox	No	Gold	3.00	2.63	2.14
512-2173	227161-1	.625"	Wht. Valox	Yes	Tin	3.00	2.63	2.14
512-2174	227161-3	.625"	Wht. Valox	Yes	Gold	3.00	2.63	2.14
512-2176	227161-7	.519"	Wht. Valox	Yes	Tin	3.00	2.63	2.14
512-2175	226990-2	.625"	Blk. Valox	No	Tin	3.00	2.63	2.14
512-2178	226990-6	.625"	Blk. Valox	No	Gold	3.00	2.63	2.14
512-2177	227161-2	.625"	Blk. Valox	Yes	Tin	3.00	2.63	2.14
512-2180	227161-6	.625"	Blk. Valox	Yes	Gold	3.00	2.63	2.14
512-2179	227161-9	.519"	Blk. Valox	Yes	Tin	3.00	2.63	2.14
512-2181	227433-1	.625"	Metal	No	Tin	5.27	4.50	3.48
512-2182	227676-1	.625"	Metal	No	Gold	4.27	3.75	3.05
512-2183	227661-1	.625"	Metal	Yes	Tin	4.27	3.75	3.05
512-2184	227677-1	.625"	Metal	Yes	Gold	4.27	3.75	3.05

Vertical (Max. Panel Thickness .240") 50 Ohm

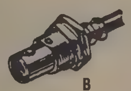
Stock No.	Mfr.'s Type	Mtg. Hgt.	Body	Mounting Posts	Center Contact Plating	EACH 1-24	25-99	100-499
512-2185	226993-1	1.375"	Wht. Valox	No	Tin	4.27	3.75	3.05
512-2187	226993-3	1.375"	Wht. Valox	No	Gold	4.27	3.75	3.05
512-2189	227222-1	1.375"	Wht. Valox	Yes	Tin	3.43	3.01	2.44
512-2186	227222-3	1.375"	Wht. Valox	Yes	Gold	3.43	3.01	2.44
512-2193	227222-6	1.375"	Blk. Valox	Yes	Gold	3.43	3.01	2.44
512-2195	227671-1	1.375"	Metal	Yes	Tin	4.54	3.88	3.01
512-2188	227673-1	1.375"	Metal	Yes	Gold	4.23	3.72	3.08

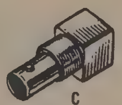
Hardware

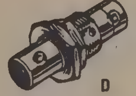
Stock No.	Mfr.'s Type	Description	EACH 1-99	100-499	500-999
512-2190	1-329632-2	Lock Washer	.27	.19	.15
512-2191	1-329631-2	Jam Nut	.30	.22	.18

Twin BNC Connectors

A


B


C


D

Plugs — Fig. A

Stock No.	Mfr.'s Type	For RG/U Cable	Contact Plating	Body Plating	Dielectric	CERTI-CRIMP™ Hand Tool	EACH 1-24	25-49	50-99
512-2340	332225	108, 108A	S	S	T	69667	18.12	15.49	13.18
512-2342	332225-5	108, 108A	S	N	PP	69667	16.47	14.08	11.98

Bulkhead Jack — Fig. B

512-2154	332342	108, 108A	S	N	PP	69667	24.39	20.84	17.74

Right-Angle PC Board/Panel Mount Jacks — Fig. C

Stock No.	Mfr.'s Type	Body Material	Mounting Posts	EACH 1-24	25-49	50-99
512-2344	228686-1	Wht. Valox	Yes	11.58	9.89	8.42

Bulkhead Jack Adapter — Fig. D

Stock No.	Mfr.'s Type	Contact Plating	Body Plating	EACH 1-24	25-49	50-99
512-2346	332215	S	N	15.62	13.35	11.36

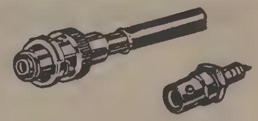
50 Ohm N Connectors

MIL-C-39012, Class 11, Category B qualified. Working voltage 1000 volt, RMS at sea level. **Frequency Range:** 0-11 GHz. **Crimp Type:** D.

Crimp Plugs

Stock No.	Mfr.'s Type	For RG/U Cable	Contact Plating	Body Plating	Dielectric	Style	CERTI-CRIMP™ Hand Tool	EACH 1-24	25-49	50-99
512-2236	1-225661-2	58, 58A, 58B, 58C	G	N	T	Mil type	220045-2	15.36	13.13	10.44
512-2238	225361-1	58, 58A, 58B, 58C	G	S	T	Mil type	220045-2	19.19	16.40	13.05
512-2241	225661-2	8, 8A, 213	G	N	T	Mil type	220015-1	11.81	10.09	8.03
512-2242	1-227086-0	8, 8A, 213	G	N	T	Commercial	220015-1	5.47	4.81	4.20
512-2248	225661-1	9, 9A, 9B, 214	G	N	T	Mil type	220015-1	11.81	10.09	8.03

SHV Connectors



Safe-tested at 5000 volts DC. Looks like, but isn't intermateable with other bayonet-type connectors. Comply with Bureau of Standard's specification ND-545. Polarized center contacts that are recessed in the dielectric. **Crimp Type:** D.

Crimp Plugs

Stock No.	Mfr.'s Type	For RG/U Cable	Contact Plating	Body Plating	Dielectric	CERTI-CRIMP™ Hand Tool	EACH 1-24	25-49	50-99
512-2254	51426-4	58; 58A, 58B, 58C	G	N	T	220022-1	19.97	17.06	14.52
512-2256	51426-2	*	G	S	T	220022-2	21.40	18.28	15.56

*59, 59A, 59B, 62, 62A, 62B, 124, 140, 210 Belden 9291, 9209, 9268.

Bulkhead Solder Jacks

Stock No.	Mfr.'s Type	Contact Plating	Body Plating	Dielectric	EACH 1-24	25-49	50-99
512-2260	51494-1	G	S	T	13.87	11.86	10.09
512-2262	51494-2	G	N	T	14.38	12.29	10.46

Miniature UHF Connectors

Rated for 335 volts rms at sea level .0 to 2.0 GHz frequency range. **Crimp Type:** D.

Crimp Plug

Stock No.	Mfr.'s Type	For RG/U Cable	Contact Plating	Body Plating	Dielectric	CERTI-CRIMP™ Hand Tool	EACH 1-24	25-99	100-499
512-2264	226600-1	58, 58A, 58B, 58C	T	N	PP	220149-1	.94	.82	.67

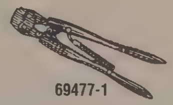
Crimp Jack

512-2266	226602-1	58, 58A, 58B, 58C	T	N	PP	220149-1	2.62	2.29	1.86

CERTI-CRIMP™ Hand Tools

Typical

69140-1


69477-1

AMP's finest tools. The CERTI-CRIMP™ ratchet is designed to provide a complete crimp cycle.

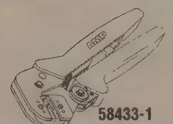
512-2400.	69140-1	EACH 380.89
512-2401.	69141-1	EACH 380.89
512-2402.	69245-1	EACH 406.71
512-2407.	69477-1	EACH 238.86
512-2409.	69477-2	EACH 256.94
512-2031.	69477-4	EACH 382.18
512-2406.	69478-1	EACH 238.86
512-2133.	69667	EACH 573.27
512-2408.	220009-1	EACH 264.68
512-2415.	220009-5	EACH 272.43
512-2414.	220015-1	EACH 644.28
512-2129.	220022-1	EACH 380.89
512-2131.	220022-2	EACH 314.39
512-2410.	220043-1	EACH 328.59
512-2126.	220045-2	EACH 361.52
512-2418.	220061-1	EACH 471.27
512-2404.	220149-1	EACH 870.23
512-2416.	220187-1	EACH 229.84
512-2417.	220187-2	EACH 256.94

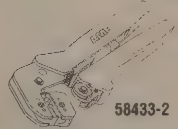
Commercial Crimping Tools

SUPER CHAMP® Crimp Tool

Stock No.	Mfr.'s Type	Description	EACH 1-4	5-9
512-2387	220146-1	RG58 SUPER CHAMP®	22.50	17.65
512-2389	220147-1	RG59/62 SUPER CHAMP®	22.50	17.65

PRO-CRIMPER™II Hand Tools


58433-1

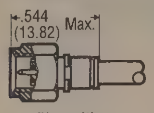

58433-2

Inexpensive and features interchangeable dies. Ratchet control for complete crimping cycle. Precision construction of durable high-carbon steel.

Type 58433-1. For "O" crimp plugs and jacks on RG58, 59, and 62 cables.
512-2380. 58433-1 .... EACH 69.94

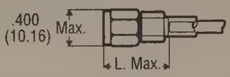
Type 58433-2. For hex crimp plugs and jacks on RG-58, 59, and 62 cables.
512-2381. 58433-2 .... EACH 69.94

SMA Subminiature Connectors, 50 Ohm



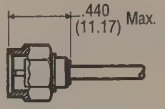
Plug with
Center Contact

Fig. A



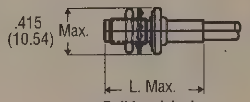
Plug

Fig. C



Short Plug
with Center Contact

Fig. B



Bulkhead Jack

Fig. D

For Semi-Rigid Cable

Frequency Range: 0-18 GHz. **Center Contacts:** Gold-plated beryllium copper. **Shells:** Passivated stainless steel. **Dielectric:** Teflon.

For RG405/U, Semi-Rigid Cable, .086" (2.18) O.D.

Stock No.	Mfr.'s Type	Fig.	Description	EACH		
				1-24	25-99	100-499
512-2385	228639-1	A	Plug with center contact	5.62	5.22	4.87
512-2386	221447-1	B	Short plug with center contact	5.95	5.53	5.16

For RG402/U, Semi-Rigid Cable .141" (3.54) O.D.

Stock No.	Mfr.'s Type	Fig.	Description	EACH		
				1-24	25-99	100-499
512-2388	227743-1	A	Plug with center contact	6.63	6.15	5.74
512-2390	227531-1	A	Plug without center contact	2.01	1.86	1.72

For Flexible Cables

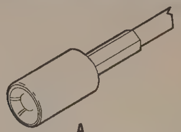
Frequency Range: 0-12.4 GHz. **Center Contact:** Gold-plated brass or beryllium copper. **Shell:** Commercial nickel-plated brass, Mil — passivated stainless steel. **CERTI-CRIMP™ Hand Tool:** 220061-1.

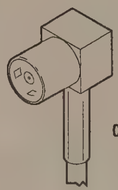
Stock No.	Mfr.'s Type	Fig.	Description	RG/U Cables	EACH		
					1-24	25-49	50-99
512-2392	221117-2	C	Commercial plug	174, 188A, 316	6.66	6.18	5.77
512-2393	225532-1	C	Mil plug	58, 58A, 58B, 58C	9.12	8.47	7.91
512-2394	225532-3	C	Mil plug	142, 142A, 142B	11.68	9.92	7.95
512-2395	225532-4	C	Mil plug	174, 188A, 316	11.68	9.92	7.95
512-2397	225608-4	D	Bulkhead jack	174, 188A, 316	21.05	19.54	17.32

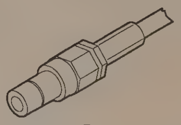
SMA Tooling

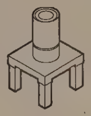
Stock No.	Mfr.'s Type	For Cable Type	Description	EACH
512-5998	59981-1	Semi-Rigid	Hand tool kit	1766.28
512-3131	313113-1	Semi-Rigid	Die set	284.70
512-2213	220221-3	Semi-Rigid	Locator	138.04
512-2418	220061-1	Flexible	Hand Tool	471.27

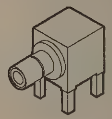
50 and 75 Ohm SMB Connectors

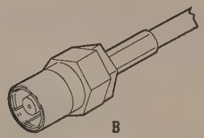

A

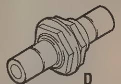

C

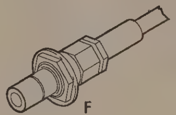

E

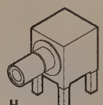

G

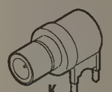

J


B


D


F


H


K

SMB Product Facts

- ► SMB Offers Snap-Fit Coupling for Quick Connect/Disconnect
- ► Choice of Commercial or MIL-Type Connectors
- ► 50 and 75 Ohm MIL-Type Connectors Available
- ► Screw Machined Components for Highest Performance
- ► Straight Plugs and Jacks are Completely Crimp Terminated
- ► Fast Easy Cable Assembly
- ► Low VSWR
- ► Standard Military, Commercial or AMP Tooling
- ► MIL-Type Connectors Offer Consistent Mating and Unmating Forces
- ► Dielectric: Teflon

50 Ohm Straight Plugs

Stock No.	Mfr.'s Type	Fig.	For RG/U Cable	Contact Plating	Other Metal Plating	Style	EACH		
							1-24	25-49	50-99
512-2502	413985-5	A	178, 178A, 178B 196, 196A	Gold	Gold	Mil-Type	5.76	5.02	4.38
512-2504	413985-6	A	178, 178A, 178B 196, 196A	Gold	Nickel	Mil-Type	4.61	4.01	3.50
512-2508	413985-1	A	174, 316, 188 188A	Gold	Gold	Mil-Type	5.48	4.78	4.17
512-2510	413985-3	A	174, 361, 188 188A	Gold	Nickel	Mil-Type	4.39	3.82	3.33
512-2514	1-413985-0	A	179, 179A, 179B 161, 187, 187A Belden 9221	Gold	Gold	Mil-Type	5.48	4.78	4.17
512-2516	1-413985-1	A	179, 179A, 179B 161, 187, 187A Belden 9221	Gold	Nickel	Mil-Type	4.39	3.82	3.33

75 Ohm Straight Plugs

512-2521	414618-2	B	179, 179A, 179B 161, 187, 187A Belden 9221	Gold*	Nickel	Zinc Die Cast	8.07	7.03	6.13

50 Ohm Right-Angle Plugs

512-2507	414363-8	C	178, 178A, 178B 196, 196A	Gold	Nickel	Zinc Die Cast	3.92	3.41	2.98
512-2509	414363-9	C	178, 178A, 178B 196, 196A	Gold*	Nickel	Zinc Die Cast	3.80	3.31	2.89
512-2526	414002-7	C	178, 178A, 178B 196, 196A	Gold	Gold	Mil-Type	7.31	6.37	5.56
512-2511	414363-3	C	174, 316, 188 188A	Gold*	Nickel	Zinc Die Cast	3.73	3.25	2.64
512-2532	414002-1	C	174, 316, 188 188A	Gold	Gold	Mil-Type	6.96	6.07	5.29
512-2534	414002-3	C	174, 316, 188 188A	Gold	Nickel	Mil-Type	5.57	4.85	4.23
512-2513	414363-5	C	179, 179A, 179B 161, 187, 187A, Belden 9221	Gold*	Nickel	Zinc Die Cast	3.62	3.15	2.75
512-2517	414363-4	C	RD316, 188 Double braid	Gold	Nickel	Zinc Die Cast	3.73	3.25	2.64
512-2519	414363-6	C	RD316, 188 Double braid	Gold*	Nickel	Zinc Die Cast	3.62	3.15	2.75
512-2540	414002-2	C	RD316, 188 Double braid	Gold	Gold	Mil-Type	6.96	6.07	5.29

*Center contact — gold; outer contact — nickel.

50 Ohm Bulkhead Jack Adapters

Stock No.	Mfr.'s Type	Fig.	Contact Plating	Body Plating	Style	EACH		
						1-24	25-49	50-99
512-2584	228553-1	D	Gold	Nickel	Mil-Type	5.70	5.10	4.74

50 Ohm Jacks and Bulkhead Jacks

Stock No.	Mfr.'s Type	Fig.	For RG/U Cable	Contact Plating	Body Plating	Style	EACH		
							1-24	25-49	50-99
512-2562	414091-6	E	178, 178A, 178B 196, 196A	Gold	Nickel	Mil-Type	7.77	7.12	6.01
512-2567	228217-2	F	178, 178A, 178B 196, 196A	Gold	Nickel	Mil-Type	7.46	6.50	5.67
512-2573	228217-1	F	174, 316, 188 188A	Gold	Nickel	Mil-Type	7.10	6.19	5.40

50 Ohm PC Board Jacks

Stock No.	Mfr.'s Type	Fig.	Contact Plating	Body Plating	PCB Leg Plating	Type	Style	EACH		
								1-24	25-49	50-99
512-2590	413990-2	G	Gold	Nickel	—	Vertical	Mil-Type	2.79	2.43	2.12
512-2592	413996-2	H	Gold	Gold	Gold	Rt. Angle	Mil-Type, Low Profile	7.47	6.51	5.68
512-2594	413996-4	H	Gold	Nickel	Nickel	Rt. Angle	Mil-Type, Low Profile	5.76	5.02	4.38
512-2596	414026-2	J	Gold	Gold	Gold	Rt. Angle	Mil-Type	5.40	4.71	4.11
512-2591	414026-3	J	Gold	Nickel	Nickel	Rt. Angle	Mil-Type	4.32	3.76	3.28
512-2525	414026-6	J	Gold	Nickel	Tin Lead	Rt. Angle	Mil-Type	4.16	3.63	3.16

75 Ohm PC Board Jacks

Stock No.	Mfr.'s Type	Fig.	Contact Plating	Body Plating	Type	Style	EACH		
							1-24	25-49	50-99
512-2598	221014-1	K	Gold	Front-Nickel Rear-Tin Lead	Rt. Angle	Commercial	4.07	3.55	3.10

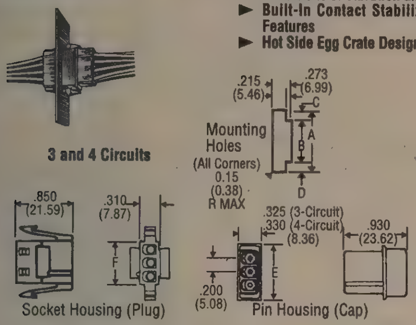
Crimp Tool and Dies

Stock No.	Mfr.'s Type	Description	EACH
512-2599	354940-1	PRO CRIMPER™ II (Frame Only)	61.93
512-2503	58483-1	Die	45.90

Commercial MATE-N-LOK® Connectors

Panel Mount Connectors

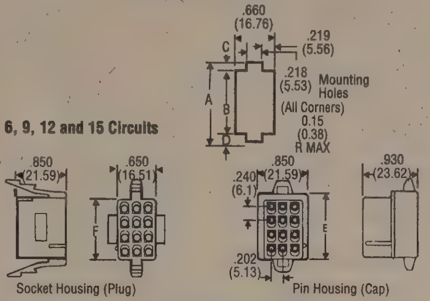
- ► Easy Cavity Identification
- ► Locking Devices are Integral Part of Design, Connector Halves will Hold Together Under Severe Conditions of Vibration and Shock
- ► Built-In Contact Stabilization and Self-Aligning Features
- ► Hot Side Egg Crate Design for Safety
- ► Precision Molded to Exacting Tolerance
- ► Recommended Panel Thickness, .025"-.065" (.064-1.65 mm)
- ► Natural Color UL 94V-2 Rated Nylon — Fully Polarized
- ► UL Rated for 250 V AC or DC



3 and 4 Circuits

Socket Housing (Plug)

Pin Housing (Cap)



6, 9, 12 and 15 Circuits

Socket Housing (Plug)

Pin Housing (Cap)

No. of Circuits	Mounting Hole Dimensions Inches (mm)		Connector Dimensions Inches (mm)	
	A	B	E	F
3	.910 (23.11)	.645-.635 (16.38-16.13)	.810 (20.57)	.630 (16.00)
4	1.110 (28.19)	.845-.835 (21.46-21.21)	1.010 (25.65)	.830 (21.08)
6	.840 (21.34)	.575-.570 (14.61-14.48)	.665 (16.89)	.565 (14.35)
9	1.075 (27.31)	.815-.810 (20.70-20.57)	.905 (22.99)	.805 (20.45)
12	1.320 (33.53)	1.055-1.050 (26.80-26.67)	1.145 (29.08)	1.045 (26.54)
15	1.550 (39.37)	1.290-1.285 (32.77-32.64)	1.382 (35.10)	1.280 (32.51)

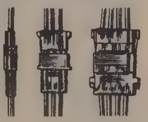
Pin Housings (Cap)

Stock No.	Mfr.'s Type	No. of Circuits	EACH		
			1-99	100-499	500-999
512-1350	1-480305-0	3	**.38**	**.25**	**.21**
512-1465	1-480426-0	4	**.49**	**.33**	**.28**
512-1355	1-480276-0	6	**.58**	**.38**	**.32**
512-1360	1-480277-0	9	**.67**	**.45**	**.37**
512-1365	1-480278-0	12	**.78**	**.52**	**.43**
512-1370	1-480324-0	15	**.93**	**.62**	**.56**

Socket Housings (Plug)

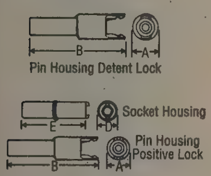
Stock No.	Mfr.'s Type	No. of Circuits	EACH		
			1-99	100-499	500-999
512-1300	1-480304-0	3	**.52**	**.35**	**.29**
512-1306	1-480425-0	4	**.48**	**.32**	**.27**
512-1305	1-480273-0	6	**.64**	**.42**	**.35**
512-1310	1-480274-0	9	**.73**	**.48**	**.41**
512-1315	1-480275-0	12	**.82**	**.55**	**.46**
512-1320	1-480323-0	15	**1.05**	**.70**	**.63**

Free Hanging Connectors



This version of the MATE-N-LOK® Connector provides all the quality features of the panel mount, yet was designed for free-hanging installations. The 2, 3, and 4 circuit configurations feature detent locking housings while the 6, 8, and 10 circuit configurations utilize positive lock housings. A single circuit connector is available with an option of detent or positive lock housings. The multiple circuit connector is available with an option of detent or positive lock housings. The multiple circuit configurations are polarized to assure proper electrical connections.

Single Circuits

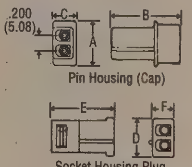


Pin Housing Detent Lock

Socket Housing

Pin Housing Positive Lock

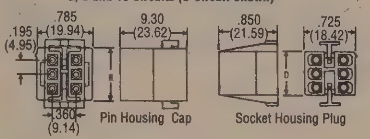
2, 3 and 4 Circuits



Pin Housing (Cap)

Socket Housing Plug

6, 8 and 10 Circuits (6-Circuit Shown)



Pin Housing Cap

Socket Housing Plug

No. of Circuits	Mounting Hole Dimensions Inches (mm)					
	A	B	C	D	E	F
1	.300 (7.62)	1.200 (30.48)	—	.260 (6.60)	.870 (22.10)	—
2	.610 (15.49)	.930 (23.62)	.330 (8.38)	.530 (13.46)	.860 (21.84)	.295 (7.49)
3	.810 (20.57)	.930 (23.62)	.325 (8.25)	.825 (20.96)	.850 (21.59)	.310 (7.87)
4	1.010 (25.65)	.930 (23.62)	.330 (8.38)	1.025 (26.04)	.850 (21.59)	.310 (7.87)
6	.750 (17.95)	—	—	.610 (15.49)	—	—
8	.900 (22.84)	—	—	.805 (20.44)	—	—
10	1.095 (27.81)	—	—	1.000 (25.40)	—	—

Socket Housings (Plug)

Stock No.	Mfr.'s Type	No. of Circuits	EACH		
			1-99	100-499	500-999
512-1400	1-480349-0	1	**.17**	**.11**	**.10**
512-1405	1-480318-0	2	**.25**	**.16**	**.15**
512-1410	1-480303-0	3	**.33**	**.22**	**.20**
512-1415	1-480424-0	4	**.36**	**.24**	**.22**
512-1420	1-480270-0	6	**.67**	**.44**	**.37**
512-1422	1-480283-0	8	**.59**	**.39**	**.35**
512-1425	1-480285-0	10	**.65**	**.43**	**.39**
—	—	—	—	—	—

Pin Housings (Cap)

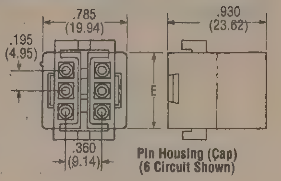
Stock No.	Mfr.'s Type	No. of Circuits	EACH		
			1-99	100-499	500-999
512-1450	1-480351-0**	1	**.18**	**.12**	**.11**
512-1451	1-480350-0*	1	**.19**	**.12**	**.11**
512-1455	1-480319-0	2	**.25**	**.17**	**.15**
512-1350	1-480305-0	3	**.38**	**.25**	**.21**
512-1465	1-480426-0	4	**.49**	**.33**	**.28**
512-1470	1-480340-0	6	**.46**	**.31**	**.28**
512-1472	1-480345-0	8	**.50**	**.34**	**.30**
512-1475	1-480339-0	10	**.58**	**.39**	**.35**

**Positive Lock. *Detent Lock.

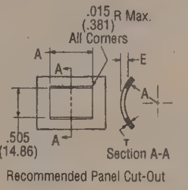
Positive Lock Socket Housings (Plug)

Stock No.	Mfr.'s Type	No. of Circuits	Mates With Pin Headers	EACH		
				1-99	100-499	500-999
512-1406	1-480720-0	2	350539, 350540	**.57**	**.38**	**.34**
512-1412	1-480721-0	3	350541, 350542	**.59**	**.39**	**.35**
512-1416	1-480722-0	4	350543, 350544	**.64**	**.43**	**.38**

Motor Mount Connectors

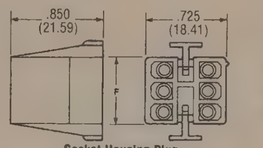


Pin Housing (Cap)
(6 Circuit Shown)



Section A-A

Recommended Panel Cut-Out



Socket Housing Plug

- ► Positive Lock
- ► Dual Row
- ► UL 94V-2 Nylon, Natural

Mounting Information: 1. Recommended panel thickness "E" is .040"-.100" (1.02-2.54 mm) and is dependent on "T" and "R"; 2. The pin housing must be inserted in a rocking manner; 3. The panel must be punched so that the housing enters the panel in the same direction as the punch. **Note:** Motor mount housings may be used in flat panels.

No. of Circuits	Dimensions Inches (mm)		
	A	E	F
6	.715 (18.160)	.705 (17.900)	.610 (15.490)
16	1.690 (42.930)	1.680 (42.670)	1.585 (40.260)

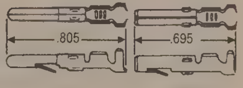
Pin Housings (Cap)

Stock No.	Mfr.'s Type	No. of Circuits	EACH		
			1-99	100-499	500-999
512-1403	1-480271-0	6	**.60**	**.40**	**.33**
512-1404	1-480439-0	16	**.81**	**.54**	**.48**

Socket Housings (Plug)

512-1420	1-480270-0	6	**.67**	**.44**	**.37**
512-1407	1-480438-0	16	**1.06**	**.71**	**63**

MATE-N-LOK® Contacts
(For All Housings On This Page) — Tin Plated Brass



Pin Socket

Stock No.	Mfr.'s Type	Style	AWG	PKG./100	
				1-4	5-9
512-1301	60618-1	Pin	24-18	**10.86**	**10.02**
512-1302	60617-1	Socket	24-18	**10.86**	**10.02**
512-1401	60620-1	Pin	20-14	**10.86**	**10.02**
512-1402	60619-1	Socket	20-14	**10.86**	**10.02**

Crimping Tools and Insertion/Extraction Tools

Crimping Tools

Stock No.	Mfr.'s Type	Description	For AWG	Insulation Diameter (In.)	EACH
512-8615	90287-1	Non-ratcheted	20-10	—	**24.50**
512-3425	90123-2	CERTI-CRIMP™	24-18	.060-.100	**327.95**
512-9004	90124-2	CERTI-CRIMP™	20-14	.100-.130	**327.95**
512-0027	90574-1	PRO-CRIMPER™II	24-18	.060-.100	**122.40**
512-0028	90575-1	PRO-CRIMPER™II	20-14	.100-.130	**122.40**

Insertion/Extraction Tools

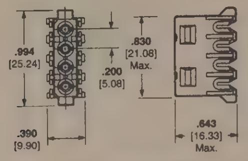
512-9155	465644-1	Extraction tool	20-14	—	**13.19**
512-9160	455830-1	Insertion tool	—	—	**18.05**

MATE-N-LOK® Connector Kit

Model 314975-1. Kit contains connectors, contacts, extraction tool, and SUPER CHAMP FT handheld crimp tool. You get 146 assorted pieces, including 1, 2, 3, 6 and 9-circuit connectors and contacts (20-14 AWG wire size). Contained in a sturdy, see-through case.

512-9316..**EACH 89.61**

Insulation Displacement Connector (IDC)



Socket Assembly (Plug)

4-Circuit, in-line. UL 94 V-2 nylon. **Contact Plating:** Pre-Tin over phosphor bronze.

Stock No.	Mfr.'s Type	No. of Circuits	Wire AWG	Color	Mates With	EACH 1-99	EACH 100-499
512-1408	770156-2	4	22	Red	*	.66	.54
512-1409	770156-4	4	20	Yellow	*	.66	.54
512-1411	770156-3	4	18	Orange	*	.66	.54

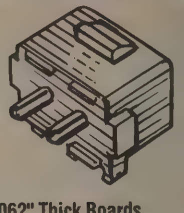
*1-480426-0, 250211-1, 350211-2, and 350424-1 (Allied stocking items).

Tools and Dustcovers

512-9082. 58074-1. Pistol grip handle only	EACH 53.92
512-1413. 231894-1. Modular head for IDC	EACH 577.14
512-1414. 770232-1. Dust cap, for feed to wiring	EACH .13
512-1418. 770233-1. Dust cap, for feed-thru wiring	EACH .13

PC Board Mount MATE-N-LOK®

PC Board Pin Headers (Mate with free hanging Socket Connectors) .070" holes on .200" centers.



Positive Lock For .062" Thick Boards
Tin-Plated Contacts

Stock No.	Mfr.'s Type	No. of Circuits	Mates With	EACH 1-99	EACH 100-499
512-1428	350539-1	2	1-480720-0	.90	.60
512-1430	350541-1	3	1-480721-0	.86	.57
512-1432	350543-1	4	1-480722-0	1.22	.82
512-1478	1-380999-0	6	1-480270-0	.80	.53
512-1480	350212-1	8	1-480283-0	.97	.80
512-1482	1-380991-0	10	1-480285-0	1.13	.75
512-1419	350213-1	12	1-480287-0	1.49	1.21
512-8889	350214-1	16	1-480438-0	1.84	1.50

Gold-Plated Contacts

Stock No.	Mfr.'s Type	No. of Circuits	Mates With	EACH 1-99	EACH 100-499
512-1429	350539-2	2	1-480720-0	1.15	.84
512-1433	350543-2	4	1-480722-0	2.28	1.64

Positive Lock For .125" Thick Boards
Tin-Plated Contacts

Stock No.	Mfr.'s Type	No. of Circuits	Mates With	EACH 1-99	EACH 100-499
512-1479	350540-1	2	1-480720-0	.81	.59
512-1483	350544-1	4	1-480722-0	1.45	.96
512-1484	350425-1	6	1-480270-0	.91	.60
512-1486	350426-1	8	1-480283-0	1.02	.68
512-1488	350219-1	10	1-480285-0	1.47	1.14

Detent Lock For .062" Thick Boards
Tin-Plated Contacts

Stock No.	Mfr.'s Type	No. of Circuits	Mates With	EACH 1-99	EACH 100-499
512-1434	350209-1	2	1-480318-0	.40	.27
512-1436	350210-1	3	1-480303-0	.63	.42
512-1438	350211-1	4	1-480424-0	.70	.47

Gold-Plated Contacts

Stock No.	Mfr.'s Type	No. of Circuits	Mates With	EACH 1-99	EACH 100-499
512-1441	350209-2	2	1-480318-0	.96	.64
512-1442	350210-2	3	1-480303-0	1.47	1.14
512-1443	350211-2	4	1-480424-0	2.09	1.39

Detent Lock For .125" Thick Boards
Tin-Plated Contacts

Stock No.	Mfr.'s Type	No. of Circuits	Mates With	EACH 1-99	EACH 100-499
512-1444	350422-1	2	1-480318-0	.49	.33
512-1445	350423-1	3	1-480303-0	.64	.43
512-1446	350424-1	4	1-480424-0	.75	.50

MR (Mini. Rectangular) Connectors

The housings are brick red in color (UL 94V-0 rated) and have .165" contact-to-contact spacing. Housings have molded-in polarization. Plugs and caps fit the same mounting hole. Contacts accept 26-18 AWG wire with insulation diameters from .025"-.115". UL recognized File E28476 and CSA certified LR7189 for 250 V and 105°C operation.

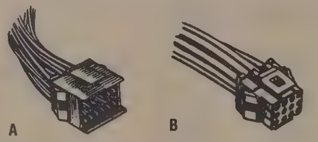


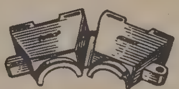
Fig. A — Pin Housings (Cap)
Nylon, 94 V-0 Rated, Brick Red.

Stock No.	Mfr.'s Type	No. of Pos.	EACH 1-99	EACH 100-499	EACH 500-999
512-3600	1-640507-0	2	.34	.31	.27
512-3602	1-640508-0	3	.50	.46	.40
512-3604	1-640509-0	4	.55	.49	.44
512-3606	1-640510-0	6	.62	.55	.50
512-3608	1-640511-0	9	.66	.59	.53
512-3610	1-640512-0	12	.74	.66	.59
512-3612	1-640513-0	15	.81	.72	.65
512-3614	1-640514-0	20	1.28	1.14	1.03
512-3613	1-640515-0	24	1.36	1.22	1.09
512-3615	1-640516-0	36	1.42	1.32	1.24

Fig. B — Socket Housings (Plug)
Nylon, 94 V-0 Rated, Brick Red.

Stock No.	Mfr.'s Type	No. of Pos.	EACH 1-99	EACH 100-499	EACH 500-999
512-3616	1-640517-0	2	.34	.30	.27
512-3618	1-640518-0	3	.49	.44	.39
512-3620	1-640519-0	4	.53	.47	.43
512-3622	1-640520-0	6	.58	.53	.47
512-3624	1-640521-0	9	.66	.59	.53
512-3626	1-640522-0	12	.73	.65	.59
512-3628	1-640523-0	15	.79	.70	.63
512-3630	1-640524-0	20	1.28	1.14	1.03
512-3632	1-640525-0	24	1.37	1.22	1.09
512-3634	1-640526-0	36	1.41	1.26	1.13

Strain Reliefs, Grommets, and Keying Plugs


A

B

C

Fig. A — Strain Reliefs MR Connectors
These strain reliefs can be used with either pin or socket housings. One piece — clam shell design. **Material:** 94 V-0 nylon, brick red color. Adapting grommets (sold separately) are flexible PVC (55/79 durometer) and are black.

Stock No.	Mfr.'s Type	No. of Circuits	I.D. (In.)	EACH 1-99	EACH 100-499	EACH 500-999
512-3685	350373-1	6	0.374	.67	.63	.53
512-3687	350522-1	9	0.420	.73	.69	.57
512-3689	350374-1	12	0.420	.92	.87	.72
512-3691	350523-1	15	0.420	1.39	1.28	1.10
512-3693	480634-1	20	0.560	1.44	1.36	1.13
512-3695	350524-1	24	0.560	1.47	1.39	1.16
512-3697	480594-1	36	0.560	1.93	1.77	1.52

Fig. B — Black PVC Adapting Grommets (For Socket Housing Only)

Stock No.	Mfr.'s Type	No. of Circuits	I.D. (In.)	EACH 1-99	EACH 100-499	EACH 500-999
512-3704	1-350377-0	6	0.156	.54	.51	.42
512-3706	1-350376-0	6	0.218	.48	.45	.38
512-1452	1-350375-0	6	0.296	.51	.48	.41
512-1453	1-350378-1	9, 12, and 15	0.218	.51	.48	.41
512-3708	1-350379-1	9, 12, and 15	0.250	.52	.49	.41
512-3710	1-350380-1	9, 12, and 15	0.281	.52	.49	.41
512-3712	1-380935-0	20, 24, and 36	0.437	.57	.54	.45
512-3714	1-380936-0	20, 24, and 36	0.375	.55	.52	.43
512-1454	1-380937-0	20, 24, and 36	0.312	.52	.50	.41

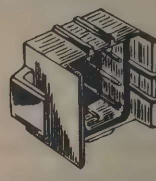
Fig. C — Keying Plug

512-3670. 350591-1. **1-99**	EACH .35
100-499	EACH .33
500-999	EACH .28

Crimping Tools and Insertion/Extraction Tools

512-8615. 90287-1. Contact crimping tool for 22-10 AWG wires	EACH 24.50
512-9018. 90325-1. CERTI-CRIMP™ for 26-22 and 20-18 AWG wires	EACH 437.70
512-9158. 455822-2. Contact extraction tool	EACH 18.05
512-9160. 455830-1.Contact insertion tool	EACH 18.05
512-9019. 58514-1. PRO-CRIMPER™II for 26-18 AWG wires	EACH 137.70

MR P.C. Board Pin Headers .165" Pin Spacing

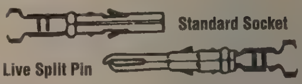


Material. Housings: Nylon, 94V-0 rated, brick red. **Contacts:** Plated tin over .000050" (0.00127) nickel over contact length and matte tin on solder tail end.

Stock No.	Mfr.'s Type	No. of Pos.	Board Thickness (In.)	Plating	EACH 1-99	EACH 100-499	EACH 500-999
512-1423	640497-1	2	0.062	3*	.34	.31	.28
512-1424	640497-4	2	0.120	4*	.94	.82	.74
512-3636	640498-1	3	0.062	3*	.50	.44	.39
512-3652	640498-2	3	0.062	4*	1.39	1.22	1.09
512-1426	640498-4	3	0.120	4*	1.39	1.22	1.09
512-3638	640499-1	4	0.062	3*	.67	.59	.52
512-3654	640499-2	4	0.062	4*	1.73	1.52	1.36
512-3640	640500-1	6	0.062	3*	.91	.81	.72
512-3656	640500-2	6	0.062	4*	2.37	2.09	1.86
512-1427	640500-4	6	0.120	4*	2.37	2.09	1.86
512-3642	640501-1	9	0.062	3*	1.18	1.10	.92
512-3658	640501-2	9	0.062	4*	3.29	2.91	2.58
512-1435	640501-4	9	0.120	4*	3.29	2.91	2.58
512-3644	640502-1	12	0.062	3*	1.52	1.39	1.19
512-3660	640502-2	12	0.062	4*	4.26	3.76	3.35
512-3646	640503-1	15	0.062	3*	1.85	1.75	1.45
512-3662	640503-2	15	0.062	4*	4.88	4.58	3.83
512-1437	640503-4	15	0.120	4*	5.19	4.58	4.07
512-3648	640504-1	20	0.062	3*	2.40	2.27	1.89
512-1439	640504-2	20	0.062	4*	6.82	6.29	5.35
512-1440	640505-2	24	0.062	4*	7.56	7.23	5.94
512-1447	640505-4	24	0.120	4*	7.56	7.23	5.94
512-1448	640506-2	36	0.062	4*	11.19	10.63	8.81
512-1449	640506-4	36	0.120	4*	11.19	10.63	8.81

*3 = Phosphor Bronze, Pre-Tin, with Matte Tin on Solder Tail; 4 = Gold, with Matte Tin on Solder Tail.

MR Contacts



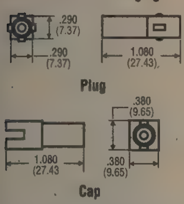
Material and Finish: Phosphor bronze, pre-tin plated or .000050" (0.00127) nickel over entire contact and .000030" (0.00076) gold in contact area. .008" (0.2) stock thickness.

Stock No.	Mfr.'s Type	Description	Plating	AWG	PER PKG./100 1-4	PER PKG./100 5-9	PER PKG./100 10-49
512-3680	640545-1	Live split pin	1*	26-18	12.11	11.06	7.78
512-3682	640545-2	Live split pin	2*	26-18	36.29	32.66	31.29
512-3684	641300-1	Socket	1*	26-18	11.44	10.40	7.33
512-3686	641300-2	Socket	2*	26-18	32.04	29.13	26.81

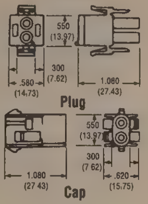
*1 = Pre-Tin; 2 = Gold.

Panel Mount

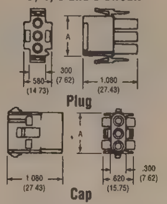
1 Circuit Free-Hanging



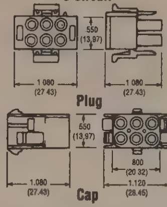
2 Circuit



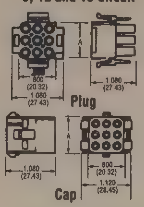
3, 4, 5 and 8 Circuit

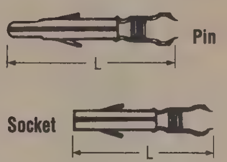


6 Circuit



9, 12 and 15 Circuit





- ► Innumerable Keying Combinations
- ► Pins and Sockets Can Be Intermixed In The Same Housing
- ► Positive Polarization
- ► Rear Cavity Identification
- ► Pin or Socket Contact Can Be Hot
- ► Positive Locking Housings
- ► Insulation Capability To .200 (5.08) Diameter
- ► Removable, Crimp Snap-In Contacts
- ► Low Contact Mating Force
- ► Harness to PC Board Capability Using Pin or Socket Header Assemblies
- ► Contacts are on .250 (6.35) Centerline Spacing
- ► Recognized Under Component Program of Underwriters Laboratories Inc. File No. E28476
- ► CSA Certified File No. LR 7189
- ► Tested By VDE Under Their Test Report #14397-1431-1003
- ► Rated for 600 VAC or DC
- ► Not Recommended For Interrupting Current
- ► Dual Locking Lances Provide Optimum Contact Stability

This series of connectors provides a highly reliable and economical means of grouping multiple-lead connectors in today's computer, computer/peripheral equipment and business machines.

Plugs — Natural Color UL 94V-2 Rated Nylon

Stock No.	Mfr.'s Type	No. of Circuits	Dimension A Inches (mm)	EACH		
				1-499	500-999	1000-2499
512-2995	1-350867-0	1	—	**.11**	**.10**	**.09**
512-3000	1-480698-0	2	—	**.21**	**.19**	**.17**
512-3002	1-480700-0	3	.80 (20.32)	**.23**	**.20**	**.18**
512-3005	1-480702-0	4	1.05 (26.67)	**.24**	**.22**	**.19**
512-1417	1-480763-0	5	1.30 (33.02)	**.25**	**.23**	**.20**
512-3010	1-480704-0	6	—	**.30**	**.27**	**.24**
512-8632	640586-1	8†	2.05 (52.07)	**.52**	**.47**	**.42**
512-3012	1-480706-0	9	.80 (20.32)	**.34**	**.30**	**.27**
512-3021	1-480708-0	12	1.05 (26.67)	**.39**	**.35**	**.31**
512-3023	1-480710-0	15	1.30 (33.02)	**.56**	**.51**	**.45**

Plugs — White Color UL 94V-0 Rated

Stock No.	Mfr.'s Type	No. of Circuits	Dimension A Inches (mm)	1-499	500-999	1000-2499
512-3051	350865-1	1	—	**.20**	**.18**	**.16**
512-3053	350777-1	2	—	**.36**	**.32**	**.28**
512-3056	350766-1	3	.80 (20.32)	**.39**	**.35**	**.31**
512-3058	350779-1	4	1.05 (26.67)	**.41**	**.37**	**.32**
512-3061	350809-1	5	1.30 (33.02)	**.40**	**.36**	**.32**
512-3063	350715-1	6	—	**.49**	**.44**	**.39**
512-3066	350720-1	9	.80 (20.32)	**.53**	**.47**	**.42**
512-3068	350735-1	12	1.05 (26.67)	**.60**	**.54**	**.48**
512-3071	350736-1	15	1.30 (33.02)	**.78**	**.70**	**.62**

†8 pos. in-line.

Caps — Natural Color UL 94V-2 Rated Nylon

Stock No.	Mfr.'s Type	No. of Circuits	Dimension A Inches (mm)	EACH		
				1-499	500-999	1000-2499
512-2996	770421-1	1	—	**.11**	**.10**	**.09**
512-3015	1-480699-0	2	—	**.22**	**.19**	**.17**
512-3004	1-480701-0	3	.80 (20.32)	**.24**	**.21**	**.19**
512-3020	1-480703-0	4	1.05 (26.67)	**.24**	**.22**	**.19**
512-1467	1-480764-0	5	1.30 (33.02)	**.24**	**.22**	**.19**
512-3025	1-480705-0	6	—	**.28**	**.25**	**.22**
512-1456	926308-1	8†	2.05 (52.07)	**1.17**	**1.01**	**.94**
512-3022	1-480707-0	9	.80 (20.32)	**.30**	**.27**	**.24**
512-3024	1-480709-0	12	1.05 (26.67)	**.34**	**.31**	**.27**
512-3026	1-480711-0	15	1.30 (33.02)	**.50**	**.45**	**.40**

Caps — White Color UL 94V-0 Rated

Stock No.	Mfr.'s Type	No. of Circuits	Dimension A Inches (mm)	1-499	500-999	1000-2499
512-3052	350866-1	1	—	**.20**	**.18**	**.16**
512-3054	350778-1	2	—	**.36**	**.33**	**.29**
512-3057	350767-1	3	.80 (20.32)	**.40**	**.36**	**.32**
512-3059	350780-1	4	1.05 (26.67)	**.43**	**.39**	**.34**
512-3062	350810-1	5	1.30 (33.02)	**.47**	**.40**	**.38**
512-3064	350781-1	6	—	**.50**	**.45**	**.40**
512-3067	350782-1	9	.80 (20.32)	**.52**	**.46**	**.41**
512-3069	350783-1	12	1.05 (26.67)	**.58**	**.52**	**.46**
512-3072	350784-1	15	1.30 (33.02)	**.74**	**.67**	**.59**

Universal Pins and Sockets

Can be used in either plug or cap housings. **Pin Dia.:** .084" (2.13 mm).

Pre-Tinned Brass

Stock No.	Mfr.'s Type	Style	Ins. Dia. Range (In.)	Dimension L Inches (mm)	PK./100	
					1-4	5-9
512-1303†	350690-1	Pin	.040-.100	.790	**8.70**	**7.95**
512-1304†	350689-1	Socket	.040-.100	.760	**8.70**	**7.95**
512-3028†	350706-1	Split Pin	.040-.100	.790	**10.71**	**9.38**
512-3030*	350547-1	Pin	.060-.130	.790	**8.70**	**7.95**
512-3035*	350550-1	Socket	.060-.130	.760	**8.70**	**7.95**
512-3045*	350552-1	Pin	.130-.200	.810	**10.92**	**10.12**
512-3040*	350551-1	Socket	.130-.200	.780	**11.63**	**10.41**
512-1307*	350705-1	Split Pin	.060-.130	.790	**8.70**	**7.95**
512-1308*	350669-1	Grounding Pin	.060-.130	.890	**11.63**	**10.41**

†24-18 AWG. *20-14 AWG.

Brass with Gold Finish

Stock No.	Mfr.'s Type	Style	Ins. Dia. Range (In.)	Dimension L Inches (mm)	1-4	5-9
512-3170†	350690-2	Pin	.040-.100	.790	72.22	67.87
512-3175†	350689-2	Socket	.040-.100	.760	74.82	68.39
512-3180*	350547-2	Pin	.060-.130	.790	70.25	67.87
512-3185*	350550-2	Socket	.060-.130	.760	75.23	68.39

†24-18 AWG. *20-14 AWG.

Keying Plug

Snaps into plug or cap housing.

Stock No.	Mfr.'s Type	Description	EACH		
			1-499	500-999	1000-2499
512-3043	1-640415-1	Natural color, UL 94V-2 rated, Nylon	.14	.13	.12
512-3044	1-640415-0	White color, UL 94V-0 rated, Nylon	.15	.14	.13

Crimp Tools, Insertion/Extraction, and Service Tool

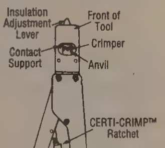
Insertion Tool

Extraction Tool

Service Tool

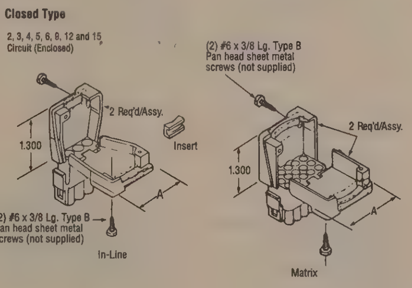
Stock No.	Mfr.'s Type	Description	EACH
512-9160	455830-1	Contact insertion tool	**18.05**
512-9165	458994-1	Contact extraction tool	**35.70**
512-8615	90287-1	Service hand tool for contacts on 22-10 AWG wires	**24.50**

CERTI-CRIMP™ and PRO-CRIMPER™II Tools



Stock No.	Mfr.'s Type	Description	Tool Type	EACH
512-9006	90300-2	For contacts on 24-18 AWG wire .040"-.100" ins. dia.	CERTI-CRIMP™	**412.76**
512-9007	90548-1	For contacts on 24-18 AWG wire .040"-.100" ins. dia.	PRO-CRIMPER™II	**139.89**
512-9008	90296-2	For contacts on 20-14 AWG wire .060"-.130" ins. dia.	CERTI-CRIMP™	**391.86**
512-9009	90546-1	For contacts on 20-14 AWG wire .060"-.130" ins. dia.	PRO-CRIMPER™II	**139.89**
512-9012	90298-2	For contacts on 20-18 AWG wire .130"-.200" ins. dia.	CERTI-CRIMP™	**391.86**
512-9013	90547-1	For contacts on 20-18 AWG wire .130"-.200" ins. dia.	PRO-CRIMPER™II	**139.89**
512-9014	90299-2	For contacts on 16-14 AWG wire .130"-.200" ins. dia.	CERTI-CRIMP™	**391.86**

Plug or Housing Strain Reliefs


Closed Type
2, 3, 4, 5, 6, 9, 12 and 15 Circuit (Enclosed)
2 Req'd/Assy.
Insert
1.300
A
(2) #6 x 3/8 Lg. Type B Pan head sheet metal screws (not supplied)
In-Line
(2) #6 x 3/8 Lg. Type B Pan head sheet metal screws (not supplied)
2 Req'd/Assy.
1.300
A
Matrix

Strains Reliefs

Note: Two pieces are required for each strain relief assembly. If you order just 1 you will get 1/2 of a strain relief.

Natural Nylon, UL 94V-2 Rated

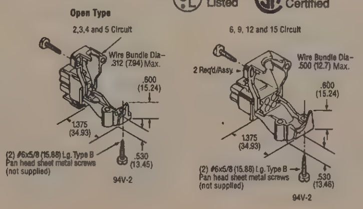
Stock No.	Mfr.'s Type	No. of Circuits	Dia. Range (In.)	EACH		
				1-499	500-999	1000-2499
512-3076	1-640719-0	2	.040-.190	**.61**	**.56**	**.50**
512-3078	1-640719-1	2	.200-.350	**.61**	**.56**	**.50**
512-3081	1-640720-0	3	.040-.190	**.62**	**.57**	**.51**
512-3083	641763-1	3	.200-.350	**.62**	**.57**	**.51**
512-3086	641775-1	4	.040-.190	**.63**	**.59**	**.52**
512-3088	641775-2	4	.200-.350	**.63**	**.59**	**.52**
512-3104	643030-3	5	.040-.190	**.63**	**.59**	**.52**
512-3091	643030-2	5	.200-.350	**.63**	**.59**	**.52**
512-3093	1-640721-0	6	.120-.650	**.64**	**.60**	**.53**
512-3096	1-640722-0	9	.120-.650	**.66**	**.61**	**.54**
512-3098	1-640723-0	12	.150-.750	**.68**	**.63**	**.56**
512-3101	1-640724-0	15	.200-.850	**.70**	**.65**	**.58**

White Nylon, UL 94V-0 Rated

Stock No.	Mfr.'s Type	No. of Circuits	Dia. Range (In.)	1-499	500-999	1000-2499
512-3077	640713-1	2	.040-.190	**.68**	**.62**	**.56**
512-3079	640713-2	2	.200-.350	**.68**	**.62**	**.56**
512-3082	640714-1	3	.040-.190	**.68**	**.62**	**.56**
512-3084	641945-1	3	.200-.350	**.68**	**.62**	**.56**
512-3087	641776-1	4	.040-.190	**.87**	**.76**	**.72**
512-3089	641776-2	4	.200-.350	**.69**	**.66**	**.57**
512-3102	643030-1	5	.040-.190	**.70**	**.67**	**.58**
512-3103	643030-4	5	.200-.350	**.70**	**.67**	**.58**
512-3092	640715-1	6	.120-.650	**.70**	**.67**	**.58**
512-3094	640716-1	9	.120-.650	**.73**	**.68**	**.60**
512-3097	640717-1	12	.150-.750	**.76**	**.69**	**.61**
512-3099	640718-1	15	.200-.850	**.78**	**.72**	**.64**

Plug Housing Strain Reliefs

Listed Certified


Open Type
2,3,4 and 5 Circuit
Wire Bundle Dia- .312 (7.94) Max.
.600
(15.24)
1.375
(34.93)
(2) #6x5/8 (15.88) Lg. Type B Pan head sheet metal screws (not supplied)
.530
(13.45)
94V-2
6, 9, 12 and 15 Circuit
2 Req'd/Assy.
Wire Bundle Dia- .500 (12.7) Max.
.600
(15.24)
1.375
(34.93)
(2) #6x5/8 (15.88) Lg. Type B Pan head sheet metal screws (not supplied)
.530
(13.46)
94V-2

Open type strain relief part numbers are for 1/2 of a strain relief. Two pieces are required for a strain relief assembly.

Natural Color, UL 94V-2 Rated, Nylon

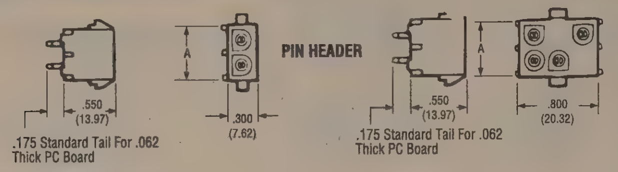
Stock No.	Mfr.'s Type	Description (Circuits)	EACH		
			1-499	500-999	1000-2499
512-3050	1-350589-0	For 2, 3, 4 and 5	**.34**	**.31**	**.28**
512-3055	1-350590-0	For 6, 9, 12 and 15	**.39**	**.36**	**.32**

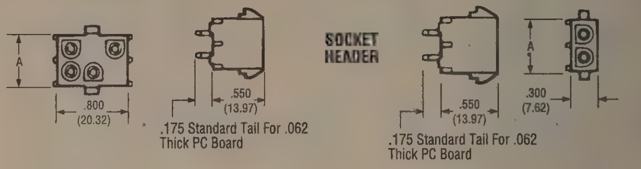
White Color, UL 94V-0 Rated, Nylon

Stock No.	Mfr.'s Type	Description (Circuits)	1-499	500-999	1000-2499
512-3047	350811-1	For 2, 3, 4 and 5	**.38**	**.35**	**.31**
512-3048	350812-1	For 6, 9, 12 and 15	**.43**	**.40**	**.36**

PC Board Mount Vertical Headers

► Plating: 1 — Pre-Tin; 2 — 30 µ" Gold In Mating Are





Vertical Pin Headers
In-Line Style

Stock No.	Mfr.'s Type	No. of Pos.	Plating	Housing Material	Dimensions A (In.)	Mates With*	EACH 1-499	EACH 500-999
512-3060	350428-1	2	1	UL 94V-2	.550 (13.97)	1-480698-0	**.31**	**.28**
512-3073	350786-1	2	1	UL 94V-0	.550 (13.97)	350777-1	**.53**	**.50**
512-3065	350429-1	3	1	UL 94V-2	.800 (20.32)	1-480700-0	**.35**	**.32**
512-3074	350789-1	3	1	UL 94V-0	.800 (20.32)	350766-1	**.53**	**.47**
512-3070	350430-1	4	1	UL 94V-2	1.050 (26.67)	1-480702-0	**.45**	**.40**
512-3106	350792-1	4	1	UL 94V-0	1.050 (26.67)	350779-1	**.78**	**.68**
512-3075	640466-1	5	1	UL 94V-2	1.300 (33.02)	1-480763-0	**.69**	**.62**
512-3107	640900-1	5	1	UL 94V-0	1.300 (33.02)	350809-1	**.94**	**.83**
512-3108	641832-1	6	1	UL 94V-2	1.550 (39.37)	640585-1	**1.03**	**.91**
512-3109	641825-1	8	1	UL 94V-2	2.050 (52.07)	640586-1	**1.08**	**.95**
512-3111	641828-1	8	1	UL 94V-0	2.050 (52.07)	640582-1	**1.44**	**1.26**

Matrix Style

Stock No.	Mfr.'s Type	No. of Pos.	Plating	Housing Material	Dimensions A (In.)	Mates With*	EACH 1-499	EACH 500-999
512-3080	350431-1	6	1	UL 94V-2	.550 (13.97)	1-480704-0	**.58**	**.52**
512-3112	350431-2	6	2	UL 94V-2	.550 (13.97)	1-480704-0	**2.69**	**2.36**
512-3113	350711-1	6	1	UL 94V-0	.550 (13.97)	350715-1	**.97**	**.85**
512-3114	350711-2	6	2	UL 94V-0	.550 (13.97)	350715-1	**3.02**	**2.65**
512-3085	350432-1	9	1	UL 94V-2	.800 (20.32)	1-480706-0	**.71**	**.64**
512-3116	350432-2	9	2	UL 94V-2	.800 (20.32)	1-480706-0	**3.77**	**3.10**
512-3117	350712-1	9	1	UL 94V-0	.800 (20.32)	350720-1	**1.15**	**1.01**
512-3090	350433-1	12	1	UL 94V-2	1.050 (26.67)	1-480708-0	**.88**	**.79**
512-3118	350713-1	12	1	UL 94V-0	1.050 (26.67)	350735-1	**1.35**	**1.19**
512-3119	350713-2	12	2	UL 94V-0	1.050 (26.67)	350735-1	**4.97**	**4.07**
512-3095	350434-1	15	1	UL 94V-2	1.300 (33.02)	1-480710-0	**1.18**	**1.04**
512-3121	350714-1	15	1	UL 94V-0	1.300 (33.02)	350736-1	**1.59**	**1.39**

*Mates with plug housing part number using socket contacts.

Vertical Socket Headers
In-Line Style

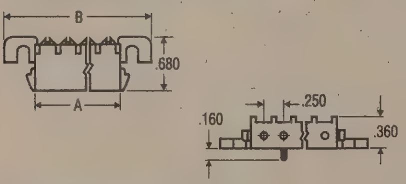
Stock No.	Mfr.'s Type	No. of Pos.	Plating	Housing Material	Dimensions A (In.)	Mates With†	EACH 1-499	EACH 500-999
512-3130	350759-4	2	1	UL 94V-2	.550 (13.97)	1-480698-0	**.27**	**.24**
512-3135	350760-4	3	1	UL 94V-2	.800 (20.32)	1-480700-0	**.34**	**.31**
512-3122	350825-1	3	1	UL 94V-0	.800 (20.32)	350766-1	**.59**	**.55**
512-3140	350761-4	4	1	UL 94V-2	1.050 (26.67)	1-480702-0	**.46**	**.40**
512-3123	350826-1	4	1	UL 94V-0	1.050 (26.67)	350779-1	**.67**	**.59**
512-3145	640467-1	5	1	UL 94V-2	1.300 (33.02)	1-480763-0	**.75**	**.66**

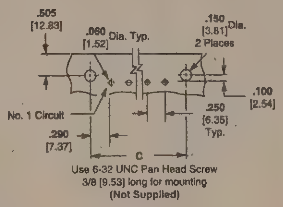
Matrix Style

Stock No.	Mfr.'s Type	No. of Pos.	Plating	Housing Material	Dimensions A (In.)	Mates With†	EACH 1-499	EACH 500-999
512-3150	350762-4	6	1	UL 94V-2	.550 (13.97)	1-480704-0	**.68**	**.63**
512-3124	350827-1	6	1	UL 94V-0	.550 (13.97)	350715-1	**1.01**	**.89**
512-3155	350763-4	9	1	UL 94V-2	.800 (20.32)	1-480706-0	**.90**	**.79**
512-3126	350763-3	9	2	UL 94V-2	.800 (20.32)	1-480706-0	**3.51**	**3.08**
512-3127	350828-1	9	1	UL 94V-0	.800 (20.32)	350720-1	**1.27**	**1.11**
512-3160	350764-4	12	1	UL 94V-2	1.050 (26.67)	1-480708-0	**1.12**	**.98**
512-3128	350829-1	12	1	UL 94V-0	1.050 (26.67)	350735-1	**1.33**	**1.17**
512-3129	350829-2	12	2	UL 94V-0	1.050 (26.67)	350735-1	**4.94**	**4.06**
512-3165	350765-4	15	1	UL 94V-2	1.300 (33.02)	1-480710-0	**1.54**	**1.35**
512-3132	350830-1	15	1	UL 94V-0	1.300 (33.02)	350736-1	**1.78**	**1.56**
512-3133	350830-2	15	2	UL 94V-0	1.300 (33.02)	350736-1	**6.03**	**4.96**

†Mates with plug housing part number using pin contacts.

Right-Angle Pin Headers





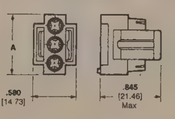
- ► For .062 PC Board Thickness
- ► Housing: UL 94V-0 Rated, Nylon (White)
- ► Contact Plating: 1 — Pre-Tin; 2 — 30 µ" Gold In Mating Area

Stock No.	Mfr.'s Type	No. of Pos.	Plating	Mates With*	Dimensions (In.) A	Dimensions (In.) B	Dimensions (In.) C	EACH 1-499	EACH 500-999
512-3100	1-350942-0	2	1	350777-1	.550	1.250	.830	**1.06**	**.93**
512-3105	1-350943-0	3	1	350766-1	.800	1.495	1.080	**1.37**	**1.20**
512-3134	2-350943-0	3	2	350766-1	.800	1.495	1.080	**2.60**	**2.28**
512-3110	1-350944-0	4	1	350779-1	1.050	1.745	1.330	**1.56**	**1.36**
512-3136	2-350944-0	4	2	350779-1	1.050	1.745	1.330	**2.93**	**2.41**
512-3115	1-350945-0	5	1	350809-1	1.300	1.995	1.580	**1.79**	**1.56**
512-3137	2-350945-0	5	2	350809-1	1.300	1.995	1.580	**3.25**	**2.67**
512-3120	640583-1	6	1	640581-1	1.550	2.245	1.830	**2.43**	**2.00**
512-3125	640584-1	8	1	640582-1	2.050	2.745	2.330	**2.26**	**1.98**
512-3138	640584-2	8	2	640582-1	2.050	2.745	2.330	**4.97**	**4.09**

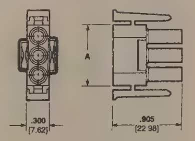
*Mates with plug housing part number using socket contacts.

Universal MATE-N-LOK® II Connectors

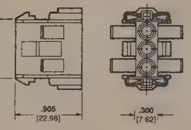
3, 4 and 5 Circuit, In-Line



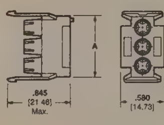
Plug Rear



Plug Front

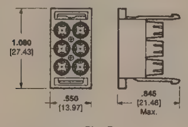


Cap Front

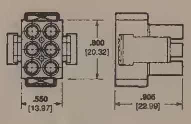


Cap Rear

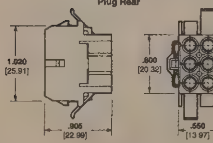
6 Circuit, Matrix



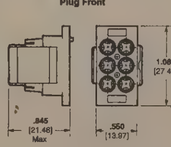
Plug Rear



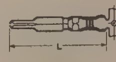
Plug Front



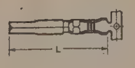
Cap Front



Cap Rear



Pin



Socket

- ► Housing Kits
- ► FREE Hanging or Panel Mount (Kit = 1 Front and 1 Rear)
- ► Ultimate Reliability
- ► Not For Interrupting Current
- ► For Use Where Repair or Replacement Would Be Difficult
- ► UL File No. E28476
- ► CSA File No. LR 16455-113
- ► .250 Centerline Spacing

Plug Housing Kits*

Stock No.	Mfr.'s Type	No. of Pos.	Layout	Dim. A (In.)	EACH 1-99	EACH 100-499	EACH 500-999
512-8800	770017-1	2	In-line	—	**.52**	**.47**	**.44**
512-8802	770018-1	3	In-line	.800	**.57**	**.52**	**.48**
512-8804	770019-1	4	In-line	1.050	**.60**	**.54**	**.50**
512-8806	770020-1	6	Matrix	—	**.71**	**.64**	**.60**
512-8808	770021-1	9	Matrix	.800	**.76**	**.70**	**.65**
512-8810	770022-1	12	Matrix	1.050	**.87**	**.80**	**.74**
512-8812	770023-1	15	Matrix	1.300	**1.13**	**1.03**	**.95**

Cap Housing Kits*

Stock No.	Mfr.'s Type	No. of Pos.	Layout	Dim. A (In.)	EACH 1-99	EACH 100-499	EACH 500-999
512-8814	770024-1	2	In-line	—	**.63**	**.54**	**.47**
512-8816	770025-1	3	In-line	.800	**.59**	**.53**	**.50**
512-8818	770026-1	4	In-line	1.050	**.75**	**.63**	**.56**
512-8820	770027-1	6	Matrix	—	**.72**	**.66**	**.61**
512-8822	770028-1	9	Matrix	.800	**.75**	**.68**	**.63**
512-8824	770029-1	12	Matrix	1.050	**.84**	**.77**	**.71**
512-8826	770030-1	15	Matrix	1.300	**1.07**	**.98**	**.91**

***Housing Material:** UL 94V-0.

Contacts — Pre-Tinned Brass

Stock No.	Mfr.'s Type	Style	For Wire AWG	Ins. Dia. Range (In.)	Dim. L (In.)	PK./100 1-4	PK./100 5-9
512-8828	770252-1	Pin	24-18	.040-.100	1.005	**10.36**	**9.46**
512-8830	770253-3†	Socket	24-18	.040-.100	.980	**12.00**	**10.95**
512-8832	770250-1	Pin	20-14	.060-.130	1.005	**10.36**	**9.46**
512-8834	770251-3†	Socket	20-14	.060-.130	.980	**12.61**	**11.52**
512-8836	770248-1	Pin	20-14	.130-.200	.995	**13.64**	**12.45**
512-8838	770249-3†	Socket	20-14	.130-.200	.970	**16.50**	**15.06**
512-8840	770246-3†	Pin	12-10	.200 max.	1.005	**21.83**	**19.93**
512-8842	770247-3†	Socket	12-10	.200 max.	.980	**21.83**	**19.93**

Contacts — Gold Over Brass**

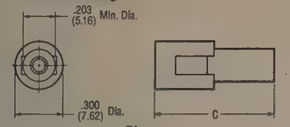
Stock No.	Mfr.'s Type	Style	For Wire AWG	Ins. Dia. Range (In.)	Dim. L (In.)	PK./100 1-4	PK./100 5-9
512-8844	770252-2	Pin	24-18	.040-.100	1.005	**47.49**	**43.35**
512-8846	770253-4†	Socket	24-18	.040-.100	.980	**74.09**	**67.64**
512-8848	770250-2	Pin	20-14	.060-.130	1.005	**47.49**	**43.35**
512-8850	770251-4†	Socket	20-14	.060-.130	.980	**77.99**	**71.20**
512-8852	770246-4†	Pin	12-10	.200 max.	1.005	**103.57**	**94.54**
512-8854	770247-4†	Socket	12-10	.200 max.	.980	**104.99**	**95.85**

†**Contact Material:** Phosphor Bronze. **30 µ" of gold over mating area.

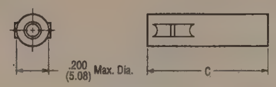
Tooling

Stock No.	Mfr.'s Type	Description	EACH
512-9160	455830-1	Contact insertion tool	**18.05**
512-9165	458994-2	Contact extraction tool	**35.70**
512-8615	90287-1	Service hand tool for contacts on 22-10 AWG wires	**24.50**
512-9007	90548-1	For contacts on 24-18 AWG wire PRO-CRIMPER™II .040"-.100" ins. dia.	**139.89**
512-9009	90546-1	For contacts on 20-14 AWG wire PRO-CRIMPER™II .060"-.130" ins. dia.	**139.89**

1-Circuit Housing

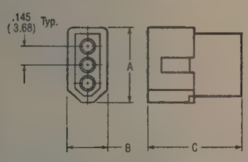


Plug

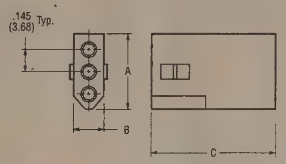


Receptacle

2-, 3- and 4-Circuit Housings, In-Line

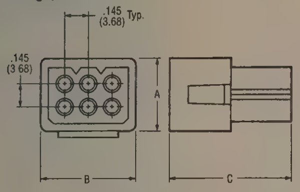


Plug

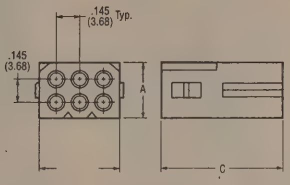


Receptacle

4-, 6- and 9-Circuit Housings, Matrix

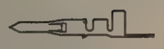


Plug

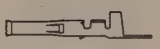


Receptacle

Contacts



Pin



Socket

.062 (1.57) Soft-Shell Pin and Socket Connectors

► Housing Material: UL 94V-2 Nylon, Natural Color

Plugs (.145 Centerline Spacing)

Stock No.	Mfr.'s Type	No. of Circuits	Style	Layout	Dimensions (In.)			EACH		
					A	B	C	1-99	100-499	500-999
512-8900	770278-1	1	Free Hanging	In-line	—	—	.750	.14	.12	.09
512-8902	770340-1	2	Free Hanging	In-line	.440	.300	.780	.20	.18	.13
512-8904	770331-1	3	Free Hanging	In-line	.590	.300	.750	.23	.21	.15
512-8906	770275-1	4	Free Hanging	In-line	.733	.300	.750	.48	.45	.30
512-8908	770433-1	4	Free Hanging	Matrix	.445	.445	.868	.38	.34	.25
512-8910	770355-1	6	Free Hanging	Matrix	.445	.600	.750	.33	.30	.23
512-8912	770428-1	9	Free Hanging	Matrix	.590	.600	.750	.36	.32	.24

Receptacles (.145 Centerline Spacing)

Stock No.	Mfr.'s Type	No. of Circuits	Style	Layout	A	B	C	1-99	100-499	500-999
512-8914	770277-1	1	Free Hanging	In-line	—	—	.785	.13	.11	.08
512-8916	770342-1	2	Free Hanging	In-line	.340	.199	.820	.23	.20	.15
512-8918	770333-1	3	Free Hanging	In-line	.490	.199	.785	.25	.22	.16
512-8920	770274-1	4	Free Hanging	In-line	.635	.199	.785	.50	.47	.29
512-8922	770442-1	4	Free Hanging	Matrix	.345	.345	.878	.37	.34	.25
512-8924	770356-1	6	Free Hanging	Matrix	.345	.495	.785	.36	.33	.24
512-8926	770429-1	9	Free Hanging	Matrix	.490	.495	.790	.29	.26	.22

Contacts (Pre-Tinned Brass)

Stock No.	Mfr.'s Type	Style	For Wire AWG	Ins. Dia. Range (In.)	PER PK./100	
					1-4	5-9
512-8928	794018-1	Pin	30-24	.060	8.18	7.26
512-8930	794019-1	Socket	30-24	.060	8.18	7.26
512-8932	794017-1	Pin	24-18	.050-.110	8.18	7.26
512-8934	794016-1	Socket	24-18	.050-.110	8.18	7.26

Tooling

512-0031. 91002-1. Contact Insertion Tool .... EACH 11.30
512-8936. 458994-4. Contact Extraction Tool .... EACH 38.45
512-8938. 90870-1. PRO-CRIMPER™II. 30-24 AWG .... EACH 122.40
512-8942. 90870-2. Die Set Only. 30-24 AWG .... EACH 78.69
512-8940. 90869-1. PRO-CRIMPER™II. 24-18 AWG .... EACH 122.40
512-8944. 90869-2. Die Set Only. 24-18 AWG .... EACH 78.69

.093 (2.36) Soft-Shell Pin and Socket Connectors

► Housing Material: UL 94V-2 Nylon, Natural Color

Plugs (.198 Centerline Spacing)

Stock No.	Mfr.'s Type	No. of Circuits	Style	Layout	Dimensions (In.)			EACH		
					A	B	C	1-99	100-499	500-999
512-8964	770064-1	1	Free Hanging	In-line	—	—	—	.15	.13	.09
512-9147	770068-1*	2	Panel Mount	In-line	0.640	—	—	.26	.24	.16
512-8966	770069-1*	2	Free Hanging	In-line	0.640	—	—	.24	.21	.15
512-8968	770074-1	3	Free Hanging	In-line	0.770	—	—	.29	.26	.18
512-8970	770078-1	4	Free Hanging	In-line	0.970	—	—	.32	.29	.20
512-8972	770842-1	4	Free Hanging	Matrix	0.540	—	—	.43	.40	.35
512-8974	770084-1	5	Free Hanging	Matrix	1.170	—	—	.37	.34	.25
512-8976	770090-1	6	Free Hanging	Matrix	0.535	—	—	.41	.38	.26
512-8978	770096-1	9	Free Hanging	Matrix	0.770	—	—	.47	.44	.31

Receptacle

Stock No.	Mfr.'s Type	No. of Circuits	Style	Layout	A	B	C	1-99	100-499	500-999
512-8980	770063-1	1	Free Hanging	In-line	—	—	—	.12	.10	.07
512-9148	770066-1*	2	Panel Mount	In-line	0.540	—	—	.26	.23	.16
512-8638	770065-1*	2	Free Hanging	In-line	0.540	—	—	.25	.22	.16
512-9149	770071-1	3	Panel Mount	In-line	0.670	—	—	.25	.22	.16
512-8982	770070-1	3	Free Hanging	In-line	0.670	—	—	.29	.26	.19
512-9150	770076-1	4	Panel Mount	In-line	0.870	—	—	.33	.30	.21
512-8984	770075-1	4	Free Hanging	In-line	0.870	—	—	.33	.30	.22
512-8986	770843-1	4	Free Hanging	Matrix	0.443	—	—	.45	.42	.36
512-8988	770083-1	5	Free Hanging	Matrix	1.070	—	—	.46	.43	.32
512-9151	770087-1	6	Panel Mount	In-line	0.435	—	—	.42	.39	.25
512-8989	770086-1	6	Free Hanging	Matrix	0.435	—	—	.41	.38	.25
512-8996	770092-1	9	Free Hanging	Matrix	0.670	—	—	.48	.45	.31

*.248 centerline spacing.

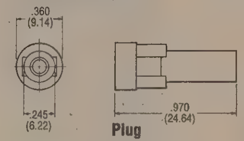
Contacts (Pre-Tinned Brass)

Stock No.	Mfr.'s Type	Style	For Wire AWG	Ins. Dia. Range (In.)	PER PK./100	
					1-4	5-9
512-8956	770147-1	Pin	24-18	0.110	6.02	5.10
512-8958	770146-1	Socket	24-18	0.110	6.02	5.10
512-8960	770145-1	Pin	20-14	0.140	6.02	5.10
512-8962	770144-1	Socket	20-14	0.140	6.02	5.10

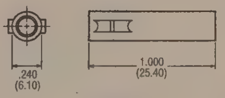
Tooling

512-0031. 91002-1. Contact Insertion Tool .... EACH 11.30
512-8946. 458994-3. Contact Extraction Tool .... EACH 38.45
512-8948. 90872-1. PRO-CRIMPER™II. 24-18 AWG .... EACH 122.40
512-8952. 90872-2. Die Set Only . 24-18 AWG .... EACH 78.69
512-8950. 90871-1. PRO-CRIMPER™II. 20-14 AWG .... EACH 122.40
512-8954. 90871-2. Die Set Only . 20-14 AWG .... EACH 78.69

1-Circuit Housing

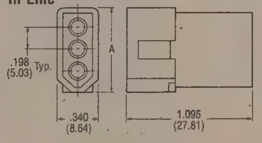


Plug

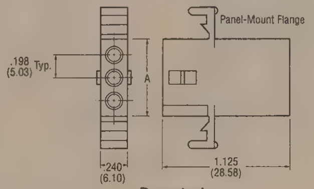


Receptacle

2-, 3- and 4-Circuit Housings, In-Line

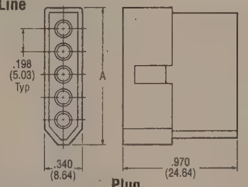


Plug

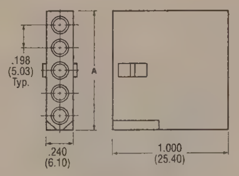


Receptacle

5-Circuit Housing, In-Line

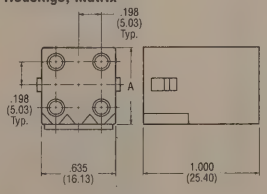


Plug

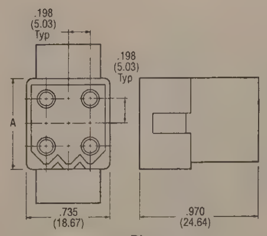


Receptacle

4-, 6- and 9-Circuit Housings, Matrix

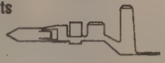


Receptacle

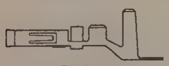


Plug

Contacts



Pin



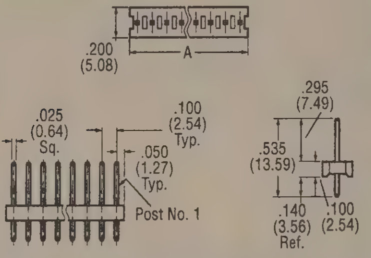
Socket

MTA-100 Post Headers — .100" Centers

Discrete wire to board — 2-piece interconnection. Insulation displacement wire termination. **MTA Post Headers:** .100" Centers. **Insulation:** Polyester. UL94V-0 rated. Natural color. **Posts:** Tin-plated copper alloy. Meets the material requirements to Table 23.1 of UL 1410 Standards for Television Receiver and Video Products*. UL Recognized File No. E 28476. CSA Certified File No. LR17189.
*Wire-to-post connectors only.

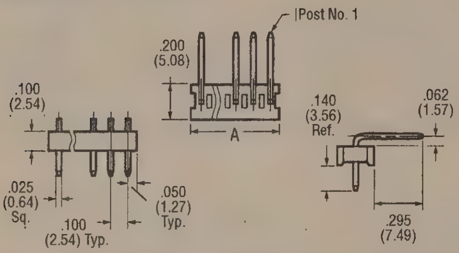
.200" Wide Flat Headers

Straight Post — .025" Square



Stock No.	Mfr.'s Type	No. of Pos.	Dimension A — In.	EACH	
				1-499	500-999
512-3850	640452-2	2	0.200	.19	.11
512-3851	640452-3	3	0.300	.19	.11
512-3852	640452-4	4	0.400	.25	.15
512-3853	640452-5	5	0.500	.32	.18
512-3854	640452-6	6	0.600	.35	.20
512-3855	640452-7	7	0.700	.40	.23
512-3856	640452-8	8	0.800	.46	.27
512-3857	640452-9	9	0.900	.52	.30
512-3858	1-640452-0	10	1.000	.58	.33

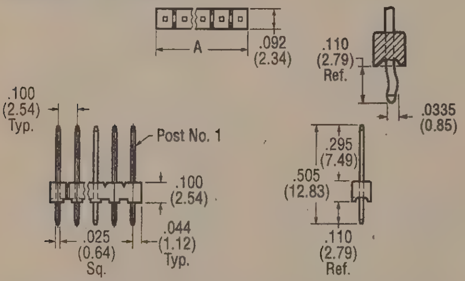
Right Angle Post — .025" Square



512-3860	640453-2	2	0.200	.13	.08
512-3861	640453-3	3	0.300	.20	.12
512-3862	640453-4	4	0.400	.26	.16
512-3863	640453-5	5	0.500	.33	.19
512-3864	640453-6	6	0.600	.36	.21
512-3865	640453-7	7	0.700	.42	.24
512-3866	640453-8	8	0.800	.48	.28
512-3868	1-640453-0	10	1.000	.60	.35

.092" Wide — Narrow Flat Header

Straight Post — .025" Square



512-3870	644456-2	2	0.188	.15	.09
512-3871	644456-3	3	0.288	.19	.11
512-3872	644456-4	4	0.388	.25	.15
512-3873	644456-5	5	0.488	.32	.19
512-3874	644456-6	6	0.588	.35	.20
512-3875	644456-7	7	0.688	.40	.23
512-3876	644456-8	8	0.788	.46	.27
512-3877	644456-9	9	0.888	.52	.30
512-3878	1-644456-0	10	0.988	.58	.33
512-3879	1-644456-1	11	1.088	.63	.37
512-3880	1-644456-2	12	1.188	.69	.40
512-3883	1-644456-3	13	1.288	.75	.43
512-3881	1-644456-4	14	1.388	.81	.47

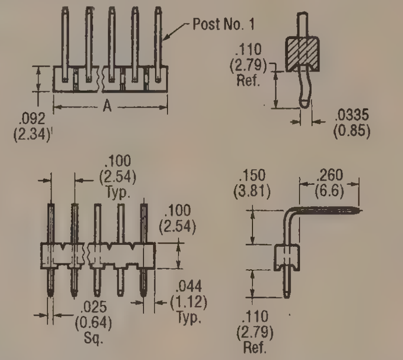
Straight Post — .025" Square with Retentive Legs

512-3882	644695-2	2	0.188	.17	.10
512-3884	644695-3	3	0.288	.21	.12
512-3885	644695-4	4	0.388	.28	.16
512-3886	644695-5	5	0.488	.35	.20

Straight Post — .025" Square With Retentive Legs (Continued)

Stock No.	Mfr.'s Type	No. of Pos.	Dimension A — In.	EACH	
				1-499	500-999
512-3887	644695-6	6	0.588	.38	.22
512-3888	644695-7	7	0.688	.44	.26
512-3889	644695-8	8	0.788	.51	.29
512-3890	644695-9	9	0.888	.57	.33
512-3891	1-644695-0	10	0.988	.63	.37
512-3892	1-644695-1	11	1.088	.70	.40
512-3893	1-644695-2	12	1.188	.76	.44
512-3894	1-644965-3	13	1.288	.82	.48
512-3895	1-644695-4	14	1.388	.86	.51

Right Angle — .025" Square



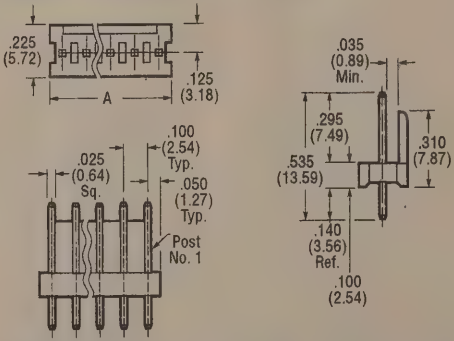
512-3896	644457-2	2	0.188	.13	.08
512-3897	644457-3	3	0.288	.20	.11
512-3898	644457-4	4	0.388	.26	.15
512-3899	644457-5	5	0.488	.33	.19
512-3901	644457-6	6	0.588	.36	.21
512-3917	644457-7	7	0.688	.42	.24
512-3903	644457-8	8	0.788	.48	.28
512-3905	644457-9	9	0.888	.54	.31
512-3907	1-644457-0	10	0.988	.60	.35
512-3909	1-644457-1	11	1.088	.66	.38
512-3911	1-644457-2	12	1.188	.72	.42
512-3913	1-644457-3	13	1.288	.78	.45
512-3915	1-644457-4	14	1.388	.84	.49

Right Angle — .025" Square with Retentive Legs

512-3919	644694-2	2	0.188	.14	.09
512-3921	644694-3	3	0.288	.22	.13
512-3923	644694-4	4	0.388	.29	.17
512-3925	644994-5	5	0.488	.36	.21
512-3926	644694-6	6	0.588	.39	.23
512-3927	644694-7	7	0.688	.46	.27
512-3928	644694-8	8	0.788	.53	.31
512-3929	644694-9	9	0.888	.59	.43
512-3931	1-644694-0	10	0.988	.66	.38
512-3933	1-644694-1	11	1.088	.72	.41
512-3935	1-644694-2	12	1.188	.79	.46
512-3937	1-644694-3	13	1.288	.86	.50
512-3939	1-644694-4	14	1.388	.92	.53

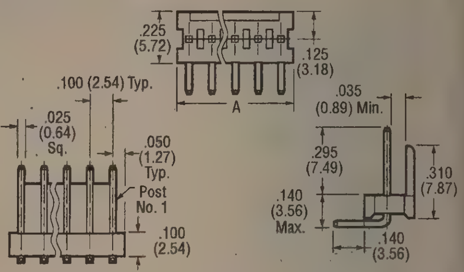
Polarized Header with Polarized Notches

Straight Post — .025" Square



512-3300	640454-2	2	0.200	.15	.09
512-3301	640454-3	3	0.300	.23	.13
512-3302	640454-4	4	0.400	.30	.18
512-3303	640454-5	5	0.500	.38	.22
512-3304	640454-6	6	0.600	.41	.24
512-3305	640454-7	7	0.700	.48	.28
512-3306	640454-8	8	0.800	.55	.32
512-3325	640454-9	9	0.900	.62	.36
512-3307	1-640454-0	10	1.000	.69	.40
512-3329	1-640454-1	11	1.100	.76	.44
512-3308	1-640454-2	12	1.200	.83	.48
512-3332	1-640454-3	13	1.300	.90	.52
512-3309	1-640454-4	14	1.400	.97	.56
512-3310	2-640454-0	20	2.000	1.73	1.00

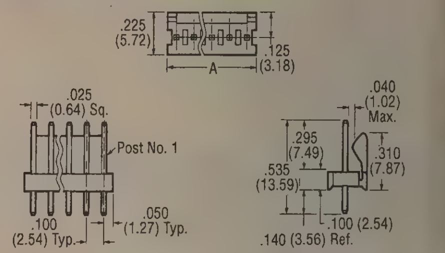
Right Angle Post — .025" Square



Stock No.	Mfr.'s Type	No. of Pos.	Dimension A — In.	EACH	
				1-499	500-999
512-3311	640455-2	2	0.200	.23	.14
512-3296	640455-3	3	0.300	.34	.20
512-3297	640455-4	4	0.400	.46	.26
512-3312	640455-5	5	0.500	.57	.33
512-3298	640455-6	6	0.600	.62	.36
512-3342	640455-7	7	0.700	.72	.42
512-3313	640455-8	8	0.800	.83	.48
512-3343	640455-9	9	0.900	.93	.54
512-3299	1-640455-0	10	1.000	1.04	.60
512-3380	1-640455-1	11	1.100	1.14	.66
512-3384	1-640455-2	12	1.200	1.24	.72
512-3386	1-640455-3	13	1.300	1.35	.78
512-3415	1-640455-4	14	1.400	1.45	.84

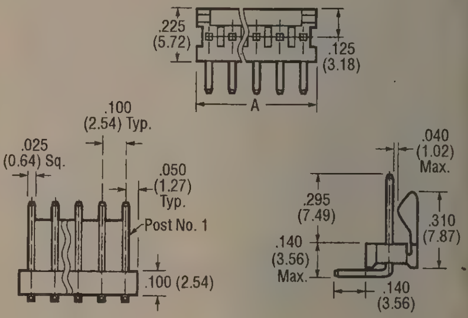
Friction Lock Header with Polarized Notches

Straight Post — .025" Square



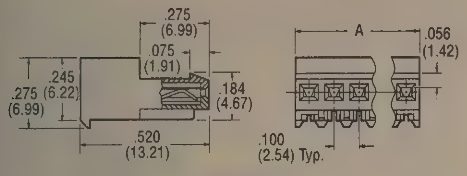
512-3314	640456-2	2	0.200	.14	.08
512-3315	640456-3	3	0.300	.21	.12
512-3316	640456-4	4	0.400	.28	.16
512-3317	640456-5	5	0.500	.35	.20
512-3318	640456-6	6	0.600	.38	.22
512-3319	640456-7	7	0.700	.44	.26
512-3320	640456-8	8	0.800	.51	.29
512-3321	640456-9	9	0.900	.57	.33
512-3322	1-640456-0	10	1.000	.63	.37
512-3323	1-640456-1	11	1.100	.70	.40
512-3324	1-640456-2	12	1.200	.76	.44
512-3438	1-640456-3	13	1.300	.82	.48
512-3326	1-640456-4	14	1.400	.89	.51
512-3327	1-640456-5	15	1.500	1.19	.69
512-3328	1-640456-6	16	1.600	1.27	.73
512-3330	2-640456-0	20	2.000	1.58	.92

Right Angle Post — .025" Square

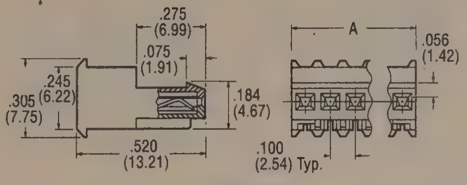


512-3333	640457-2	2	0.200	.23	.13
512-3334	640457-3	3	0.300	.34	.20
512-3335	640457-4	4	0.400	.46	.26
512-3336	640457-5	5	0.500	.57	.33
512-3337	640457-6	6	0.600	.62	.36
512-3338	640457-7	7	0.700	.72	.42
512-3339	640457-8	8	0.800	.83	.48
512-3340	640457-9	9	0.900	.93	.54
512-3341	1-640457-0	10	1.000	1.04	.60
512-3439	1-640457-1	11	1.100	1.14	.66
512-8542	1-640457-2	12	1.200	1.24	.72
512-3442	1-640457-3	13	1.300	1.35	.78
512-8765	1-640457-4	14	1.400	1.45	.84

MTA-100 IDC Receptacles — .100" Centers



Closed-End



Feed-Thru

Housing: Color coded translucent thermoplastic. 28 AWG — green, 26 AWG — blue, 24 AWG — white, and 22 AWG — red. UL94V-2 rated. **Contacts:** Tin-plated phosphor bronze.

Closed-End Without Polarizing Tab

28 AWG — Green

Stock No.	Mfr.'s Type	No. of Pos.	Dimension A — In.	EACH	
				1-499	500-999
512-3200	640443-2	2	0.200	.17	.10
512-3201	640443-3	3	0.300	.26	.15
512-3202	640443-4	4	0.400	.34	.20
512-3204	640443-5	5	0.500	.43	.25
512-3203	640443-6	6	0.600	.47	.27
512-3205	640443-7	7	0.700	.54	.32
512-3206	640443-8	8	0.800	.62	.36
512-3488	640443-9	9	0.900	.70	.41
512-3208	1-640443-0	10	1.000	.78	.45
512-3489	1-640443-1	11	1.100	.85	.50
512-3490	1-640443-2	12	1.200	.93	.54
512-3492	1-640443-3	13	1.300	1.01	.59
512-3493	1-640443-4	14	1.400	1.09	.63

26 AWG — Blue

512-3210	640442-2	2	0.200	.17	.10
512-3211	640442-3	3	0.300	.26	.15
512-3212	640442-4	4	0.400	.34	.20
512-3213	640442-5	5	0.500	.43	.25
512-3214	640442-6	6	0.600	.47	.27
512-3461	640442-7	7	0.700	.54	.32
512-3216	640442-8	8	0.800	.62	.36
512-3485	640442-9	9	0.900	.70	.41
512-3218	1-640442-0	10	1.000	.78	.45
512-3486	1-640442-1	11	1.100	.85	.50
512-3219	1-640442-2	12	1.200	.93	.54
512-3487	1-640442-3	13	1.300	1.01	.59
512-3220	1-640442-4	14	1.400	1.09	.63

24 AWG — White

512-3221	640441-2	2	0.200	.17	.10
512-3222	640441-3	3	0.300	.26	.15
512-3223	640441-4	4	0.400	.33	.19
512-3224	640441-5	5	0.500	.43	.25
512-3225	640441-6	6	0.600	.47	.27
512-3226	640441-7	7	0.700	.54	.32
512-3227	640441-8	8	0.800	.62	.36
512-3228	640441-9	9	0.900	.70	.41
512-3229	1-640441-0	10	1.000	.78	.45
512-3448	1-640441-1	11	1.100	.85	.50
512-3231	1-640441-2	12	1.200	.93	.53
512-3449	1-640441-3	13	1.300	1.01	.59
512-3232	1-640441-4	14	1.400	1.09	.63
512-3233	1-640441-5	15	1.500	1.46	.84
512-3235	2-640441-0	20	2.000	1.94	1.13

22 AWG — Red

512-3237	640440-2	2	0.200	.17	.10
512-3238	640440-3	3	0.300	.26	.15
512-3239	640440-4	4	0.400	.34	.20
512-3240	640440-5	5	0.500	.43	.25
512-3241	640440-6	6	0.600	.47	.27
512-3242	640440-7	7	0.700	.54	.32
512-3243	640440-8	8	0.800	.62	.36
512-3244	640440-9	9	0.900	.70	.41
512-3245	1-640440-0	10	1.000	.78	.45
512-3246	1-640440-1	11	1.100	.86	.50
512-3247	1-640440-2	12	1.200	.93	.54
512-3443	1-640440-3	13	1.300	1.01	.59
512-3248	1-640440-4	14	1.400	1.09	.63
512-3249	1-640440-5	15	1.500	1.46	.84
512-3250	1-640440-6	16	1.600	1.55	.90
512-3251	1-640440-8	18	1.800	1.75	1.01
512-3253	2-640440-0	20	2.000	1.94	1.13

LED* Closed-End Without Tabs

Stock No.	Mfr.'s Type	No. of Pos.	Wire AWG	Dimension A — In.	EACH	
					1-499	500-999
512-3664	641537-2	2	28	0.200	.17	.10
512-3665	641537-3	3	28	0.300	.26	.15
512-3661	641536-2	2	26	0.200	.17	.10
512-3663	641536-3	3	26	0.300	.26	.15
512-3657	641535-2	2	24	0.200	.17	.10
512-3659	641535-3	3	24	0.300	.26	.15
512-3653	641534-2	2	22	0.200	.17	.10
512-3655	641534-3	3	22	0.300	.26	.15

Feed-Thru Without Polarizing Tabs

28 AWG — Green

Stock No.	Mfr.'s Type	No. of Pos.	Dimension A — In.	EACH	
				1-499	500-999
512-3627	640623-2	2	0.200	.17	.10
512-3629	640623-3	3	0.300	.26	.15
512-3631	640623-4	4	0.400	.34	.20
512-3633	640623-5	5	0.500	.43	.25
512-3635	640623-6	6	0.600	.47	.27
512-3637	640623-7	7	0.700	.54	.32
512-3639	640623-8	8	0.800	.62	.36
512-3641	640623-9	9	0.900	.70	.41
512-3643	1-640623-0	10	1.000	.78	.45
512-3645	1-640623-1	11	1.100	.85	.50
512-3647	1-640623-2	12	1.200	.93	.54
512-3649	1-640623-3	13	1.300	1.01	.59
512-3651	1-640623-4	14	1.400	1.09	.63

26 AWG — Blue

512-3598	640622-2	2	0.200	.17	.10
512-3599	640622-3	3	0.300	.31	.18
512-3601	640622-4	4	0.400	.35	.20
512-3603	640622-5	5	0.500	.43	.25
512-3605	640622-6	6	0.600	.47	.27
512-3607	640622-7	7	0.700	.54	.32
512-3609	640622-8	8	0.800	.62	.36
512-3611	640622-9	9	0.900	.70	.41
512-3617	1-640622-0	10	1.000	.78	.45
512-3619	1-640622-1	11	1.100	.85	.50
512-3621	1-640622-2	12	1.200	.93	.54
512-3623	1-640622-3	13	1.300	1.01	.59
512-3625	1-640622-4	14	1.400	1.09	.63

24 AWG — White

512-3572	640621-2	2	0.200	.17	.10
512-3578	640621-3	3	0.300	.26	.15
512-3586	640621-4	4	0.400	.34	.20
512-3588	640621-5	5	0.500	.43	.25
512-3589	640621-6	6	0.600	.47	.27
512-3590	640621-7	7	0.700	.54	.32
512-3591	640621-8	8	0.800	.62	.36
512-3592	640621-9	9	0.900	.70	.41
512-3593	1-640621-0	10	1.000	.78	.45
512-3594	1-640621-1	11	1.100	.85	.50
512-3595	1-640621-2	12	1.200	.93	.54
512-3596	1-640621-3	13	1.300	1.01	.59
512-3597	1-640621-4	14	1.400	1.09	.63

22 AWG — Red

512-3499	640620-2	2	0.200	.17	.10
512-3541	640620-3	3	0.300	.26	.15
512-3543	640620-4	4	0.400	.34	.20
512-3553	640620-5	5	0.500	.43	.25
512-3554	640620-6	6	0.600	.47	.27
512-3555	640620-7	7	0.700	.54	.32
512-3556	640620-8	8	0.800	.62	.36
512-3557	640620-9	9	0.900	.70	.41
512-3558	1-640620-0	10	1.000	.78	.45
512-3559	1-640620-1	11	1.100	.85	.50
512-3564	1-640620-2	12	1.200	.93	.54
512-3566	1-640620-3	13	1.300	1.01	.59
512-3571	1-640620-4	14	1.400	1.09	.63

LED* Feed-Thru Without Tab

Stock No.	Mfr.'s Type	No. of Pos.	Wire AWG	Dimension A — In.	EACH	
					1-499	500-999
512-3673	641656-2	2	28	0.200	.17	.10
512-3674	641656-3	3	28	0.300	.26	.15
512-3671	641655-2	2	26	0.200	.17	.10
512-3672	641655-3	3	26	0.300	.26	.15
512-3668	641654-2	2	24	0.200	.17	.10
512-3669	641654-3	3	24	0.300	.26	.15
512-3666	641653-2	2	22	0.200	.17	.10
512-3667	641653-3	3	22	0.300	.26	.15

*LED connectors are designed to mate with .014-.020 (0.36-0.51) diameter posts or square leads.

MTA-100 Accessories

Strain Reliefs

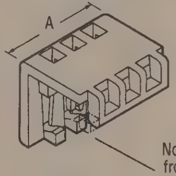


Fig. A

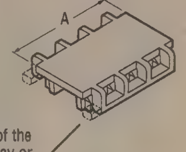


Fig. B

Note: This portion of the front locking bar may or may not be present.

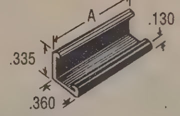
Closed End Strain Relief — Fig. A

Stock No.	Mfr.'s Type	No. of Pos.	Dimension A — In.	EACH	
				1-499	500-999
512-3273	643075-2	2	0.200	.42	.35
512-3274	643075-3	3	0.300	.42	.35
512-3275	643075-4	4	0.400	.42	.35
512-3276	643075-5	5	0.500	.43	.35
512-3277	643075-6	6	0.600	.43	.35
512-3278	643075-7	7	0.700	.43	.36
512-3279	643075-8	8	0.800	.43	.36
512-3883	643075-9	9	0.900	.43	.36
512-3280	1-643075-0	10	1.000	.43	.36
512-3675	1-643075-1	11	1.100	.43	.36
512-3281	1-643075-2	12	1.200	.43	.36
512-3676	1-643075-3	13	1.300	.44	.36
512-3677	1-643075-4	14	1.400	.44	.36

Feed-Thru Strain Relief — Fig. B

512-3681	643077-2	2	0.200	.42	.35
512-3683	643077-3	3	0.300	.42	.35
512-3692	643077-4	4	0.400	.42	.35
512-3694	643077-5	5	0.500	.43	.35
512-3702	643077-6	6	0.600	.43	.35
512-3709	643077-7	7	0.700	.43	.36
512-3884	643077-8	8	0.800	.43	.36
512-3711	643077-9	9	0.900	.43	.36
512-3717	1-643077-0	10	1.000	.43	.36
512-3718	1-643077-1	11	1.100	.43	.36
512-3719	1-643077-2	12	1.200	.43	.36
512-3720	1-643077-3	13	1.300	.44	.36
512-3723	1-643077-4	14	1.400	.44	.36

Dust Covers



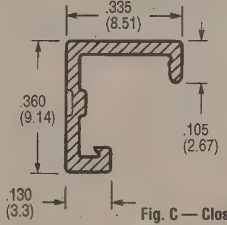


Fig. C — Closed-End

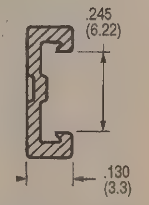


Fig. D — Feed-Thru

Closed End Dust Covers — Fig. C

512-3295	640550-2	2	0.200	.07	.06
512-3283	640550-3	3	0.300	.08	.07
512-3284	640550-4	4	0.400	.09	.08
512-3285	640550-5	5	0.500	.10	.09
512-3286	640550-6	6	0.600	.10	.09
512-3287	640550-7	7	0.700	.12	.11
512-3288	640550-8	8	0.800	.13	.10
512-3289	640550-9	9	0.900	.15	.14
512-3290	1-640550-0	10	1.000	.16	.15
512-3678	1-640550-1	11	1.100	.16	.14
512-3291	1-640550-2	12	1.200	.19	.17
512-3679	1-640550-3	13	1.300	.19	.17
512-3292	1-640550-4	14	1.400	.22	.19

Feed-Thru Dust Covers — Fig. D

512-3724	640642-3	3	0.300	.07	.06
512-3732	640642-4	4	0.400	.08	.07
512-3733	640642-5	5	0.500	.10	.09
512-3734	640642-6	6	0.600	.11	.10
512-3739	640642-7	7	0.700	.11	.10
512-3741	640642-8	8	0.800	.14	.12
512-3743	640642-9	9	0.900	.15	.13
512-3745	1-640642-0	10	1.000	.16	.14
512-3747	1-640642-1	11	1.100	.17	.15
512-3749	1-640642-2	12	1.200	.19	.17
512-3751	1-640642-3	13	1.300	.20	.17
512-3753	1-640642-4	14	1.400	.21	.18

Keying Plug on Carrier Strip — 10 pc. Strip
512-3294. 641994-1 .... PER STRIP .50
Additional MTA-100 Series Accessories are located on the following page.

MTA-100 Accessories (Continued)

Replacement IDC Contacts — Tin Plated

Stock No.	Mfr.'s Type	Wire AWG	EACH 1-499	EACH 500-999
512-4900	640639-1	28	.06	.04
512-4901	641646-1*	28	.06	.04
512-4911	640638-2	26	.06	.04
512-4902	641645-1*	26	.06	.04
512-4903	640637-1	24	.06	.04
512-4904	641644-1*	24	.06	.04
512-4905	640636-1	22	.06	.04
512-4906	641643-1*	22	.06	.04

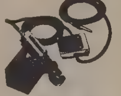
*For LED connectors.

Tools for MTA-100

The pistol grip tool can terminate up to 600 wires per hour. The T-handle tool is useful for prototype, maintenance, and repair.

Type 58074-1. Pistol grip handle only.
512-9082. 58074-1 .... **EACH 53.92**
Type 58246-1. Head for MTA-100.
512-9084. 58246-1 .... **EACH 113.66**
Type 59803-1. Maintenance T-handle tool, MTA-100.
512-9088. 59803-1 .... **EACH 19.55**

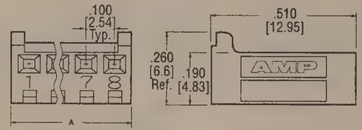
Bench Mount Power Assembly



The bench mount power assembly is actuated by compressed air. Includes a foot switch. Terminates 1000 wires per hour typically. Modular head sold separately

512-9081. 58338-1 .... **EACH 302.13**

CST-100 Crimp Housings — .100" Centers

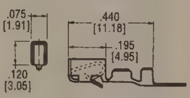


- **Low Cost Wire-to-Board Interconnections**
- **High Current Rating**
- **Wide Wire Range for Single Contact**
- **Mates with MTA and Similar Competitive Notched Headers**
- **Anti-Overstress Feature Prevents Damage to Contact**
- **Locking Ramps and Polarizing Tabs Are Standard**
- **Recognized Under the Component Program of Underwriters Laboratories Inc. File No. E28476**
- **Certified by Canadian Standards Association File No. LR7189**

Material: UL94V-0 rated, type 6/6 nylon, natural color.

Stock No.	Mfr.'s Type	No. of Pos.	Dimension A — In.	EACH 1-499	EACH 500-999
512-3930	770602-2	2	0.220	.09	.06
512-3932	770602-3	3	0.320	.14	.10
512-3934	770602-4	4	0.420	.18	.13
512-3936	770602-5	5	0.520	.23	.16
512-3938	770602-6	6	0.620	.27	.19
512-3940	770602-7	7	0.720	.32	.23
512-3942	770602-8	8	0.820	.37	.26
512-3944	770602-9	9	0.920	.41	.29
512-3946	1-770602-0	10	1.020	.46	.32
512-3948	1-770602-1	11	1.120	.50	.36
512-3950	1-770602-2	12	1.220	.55	.39
512-3952	1-770602-3	13	1.320	.59	.42
512-3954	1-770602-4	14	1.420	.64	.45
512-3956	1-770602-5	15	1.520	.69	.49
512-3958	1-770602-6	16	1.620	.73	.52
512-3960	1-770602-7	17	1.720	.78	.55
512-3962	1-770602-8	18	1.820	.82	.58
512-3964	1-770602-9	19	1.920	.87	.61
512-3966	2-770602-0	20	2.020	.91	.65
512-3968	2-770602-1	21	2.120	.96	.68
512-3970	2-770602-2	22	2.220	1.01	.71
512-3972	2-770602-3	23	2.320	1.05	.74
512-3974	2-770602-4	24	2.420	1.10	.78

Crimp Contact for CST-100



- **Fits 22-26 AWG Wire Max. Ins. Dia. .065 (1.65)**

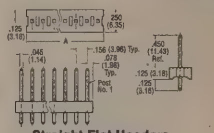
Contact Material: Phosphor bronze tinned.

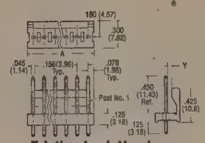
512-3976. 770666-1. **1-99** .... **EACH .13**
100-499 .... **EACH .10**

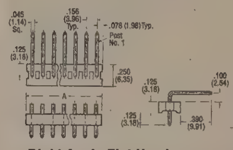
Hand Tool for CST-100

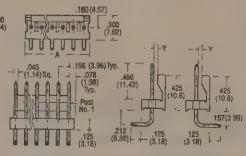
512-3984. 58517-1. PRO-CRIMPER™II (With Die) .... **EACH 145.71**
512-2599. 354940-1. PRO-CRIMPER™II (Less Die) .... **EACH 61.93**
512-3983. 58517-2. Die Set .... **EACH 99.09**

MTA-156 Post Headers .156" Centers


Straight Flat Headers


Friction Lock Headers


Right Angle Flat Headers


Right Angle — Front and Rear Bend

Discrete wire to board — 2-piece interconnection. Insulation displacement wire termination. **Housing:** Polyester UL94V-0 rated, natural color. **Posts:** Tin plated copper alloy.

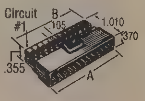
Flat Header
Straight Post — .045" Square Posts

Stock No.	Mfr.'s Type	No. of Pos.	Dimension A — In.	EACH 1-499	EACH 500-999
512-3427	640383-2	2	0.312	.12	.07
512-3997	640383-3	3	0.468	.18	.10
512-3428	640383-4	4	0.624	.24	.14
512-3998	640383-5	5	0.780	.30	.17
512-3429	640383-6	6	0.936	.33	.19
512-3430	640383-7	7	1.092	.38	.22
512-3447	640383-8	8	1.248	.43	.25
512-3431	640383-9	9	1.404	.49	.28
512-3432	1-640383-0	10	1.560	.54	.32
512-3999	1-640383-1	11	1.716	.60	.35
512-3433	1-640383-2	12	1.872	.65	.38
512-3434	1-640383-5	15	2.340	1.02	.59

Right Angle — .045" Square Posts

Stock No.	Mfr.'s Type	No. of Pos.	Dimension A — In.	EACH 1-499	EACH 500-999
512-3190	640385-2	2	0.312	.16	.09
512-3191	640385-3	3	0.468	.24	.14
512-3192	640385-4	4	0.624	.32	.18
512-3193	640385-5	5	0.780	.40	.23
512-3194	640385-6	6	0.936	.43	.25
512-3195	640385-7	7	1.092	.51	.29
512-3196	640385-8	8	1.248	.58	.34
512-3197	640385-9	9	1.404	.65	.38
512-3198	1-640385-0	10	1.560	.72	.42
512-3199	1-640385-1	11	1.716	.80	.46
512-3230	1-640385-2	12	1.872	.87	.50

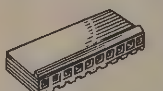
MTA-156 Cable To Cable Posted Connectors .156" Centers



Housing: Thermoplastic, 94V-2 rated.
Contacts: Tin plated copper alloy.

22 AWG

Stock No.	Mfr.'s Type	No. of Pos.	Dim. A	Dim. B	EACH 1-499	EACH 500-999
512-3418	641437-2	2	0.468	0.316	.61	.40
512-3419	641437-4	4	0.780	0.628	.83	.55



SL .156" Wire-To-Board Receptacles

Housing: Thermoplastic, UL 94V-0 rated.
Contacts: Crimp type (sold separately).

With Locking Ramp

Stock No.	Mfr.'s Type	No. of Pos.	Dimension A — In.	EACH 1-499	EACH 500-999
512-3262	640250-1	1	0.152	.11	.09
512-3900	640250-2	2	0.308	.09	.07
512-3902	640250-3	3	0.465	.13	.11
512-3904	640250-4	4	0.620	.18	.14
512-3906	640250-5	5	0.777	.22	.18
512-3908	640250-6	6	0.933	.27	.22
512-3910	640250-7	7	1.090	.31	.25
512-3912	640250-8	8	1.246	.36	.29
512-3914	640250-9	9	1.402	.40	.33
512-3916	1-640250-0	10	1.558	.44	.36
512-3918	1-640250-1	11	1.715	.49	.40
512-3920	1-640250-2	12	1.871	.53	.43
512-3922	1-640250-4	14	2.183	.62	.51
512-3924	1-640250-5	15	2.340	.67	.54

Friction Lock Header with Polarizing Notches
Straight Post — .045" Square

Stock No.	Mfr.'s Type	No. of Pos.	Dimension A — In.	EACH 1-499	EACH 500-999
512-3450	640445-2	2	0.312	.16	.09
512-3451	640445-3	3	0.468	.24	.14
512-3452	640445-4	4	0.624	.32	.18
512-3453	640445-5	5	0.780	.40	.23
512-3454	640445-6	6	0.936	.43	.25
512-3455	640445-7	7	1.092	.51	.29
512-3456	640445-8	8	1.248	.58	.34
512-3457	640445-9	9	1.404	.65	.38
512-3458	1-640445-0	10	1.560	.72	.42
512-3459	1-640445-1	11	1.716	.80	.46
512-3460	1-640445-2	12	1.872	.87	.50
512-3462	1-640445-4	14	2.184	1.01	.59
512-3463	1-640445-5	15	2.340	1.36	.79
512-3464	1-640445-6	16	2.496	1.45	.84

Straight Post — .045" Round

Stock No.	Mfr.'s Type	No. of Pos.	Dimension A — In.	EACH 1-499	EACH 500-999
512-3465	640388-2	2	0.312	.16	.09
512-3466	640388-3	3	0.468	.24	.14
512-3467	640388-4	4	0.624	.32	.18
512-3468	640388-5	5	0.780	.40	.23
512-3469	640388-6	6	0.936	.43	.25
512-3470	640388-7	7	1.092	.51	.29
512-3471	640388-8	8	1.248	.58	.34
512-3472	640388-9	9	1.404	.65	.38
512-3473	1-640388-0	10	1.560	.72	.42
512-3474	1-640388-2	12	1.872	.87	.50

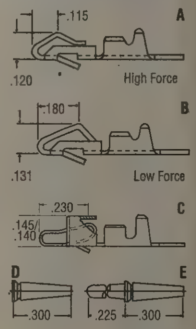
Right Angle Post — .045" Square, Front Bend

Stock No.	Mfr.'s Type	No. of Pos.	Dimension A — In.	EACH 1-499	EACH 500-999
512-3475	640389-2	2	0.312	.24	.14
512-3476	640389-3	3	0.468	.36	.21
512-3477	640389-4	4	0.624	.48	.28
512-3478	640389-5	5	0.780	.60	.35
512-3479	640389-6	6	0.936	.65	.38
512-3480	640389-7	7	1.092	.76	.44
512-3481	640389-8	8	1.248	.87	.50
512-3482	640389-9	9	1.404	.98	.57
512-3483	1-640389-0	10	1.560	1.09	.63
512-3234	1-640389-1	11	1.716	1.20	.69
512-3484	1-640389-2	12	1.872	1.31	.76

Right Angle — .045" Square, Rear Bend

Stock No.	Mfr.'s Type	No. of Pos.	Dimension A — In.	EACH 1-499	EACH 500-999
512-3236	640387-2	2	0.312	.24	.14
512-3252	640387-3	3	0.468	.36	.21
512-3491	640387-4	4	0.624	.48	.28
512-3254	640387-5	5	0.780	.60	.35
512-3255	640387-6	6	0.936	.65	.38
512-3256	640387-7	7	1.092	.76	.44
512-3257	640387-8	8	1.248	.87	.50
512-3258	640387-9	9	1.404	.98	.57
512-3259	1-640387-0	10	1.560	1.09	.63
512-3260	1-640387-1	11	1.716	1.20	.69
512-3261	1-640387-2	12	1.872	1.30	.76

Contacts For SL .156" Receptacles 24-18 AWG Wires .045" Post Contact



Brass, Bright Tin Plated
Type 640706-1. High force — Fig. A.
512-3420. 640706-1. **1-499** .... **EACH .12**
500-999 .... **EACH .11**

Type 640707-1. Low force — Fig. B.
512-3421. 640707-1. **1-499** .... **EACH .12**
500-999 .... **EACH .11**

Brass, Pre-Tin Plated
Type 640706-2. High Force — Fig. A
512-3263. 640706-2. **1-499** .... **EACH .10**
500-999 .... **EACH .09**

Phos. Bronze, Tin Plated
Type 770522-1. Hooded contact — Fig. C.
512-2705. 770522-1. **1-499** .... **EACH .12**
500-999 .... **EACH .11**

Brass, Gold Plated
Type 770258-1. Low force — Fig. B.
512-3422. 770258-1. **1-499** .... **EACH .26**
500-999 .... **EACH .25**

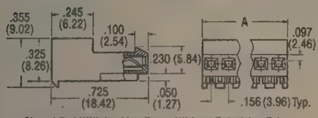
Keying Plug
Type 640254-1. Keying plug — Fig. D.
512-3423. 640254-1. **1-499** .... **EACH .09**
500-999 .... **EACH .07**

Keying Pin
Type 640255-1. Keying Pin — Fig. E.
512-3264. 640255-1. **1-499** .... **EACH .09**
500-999 .... **EACH .06**

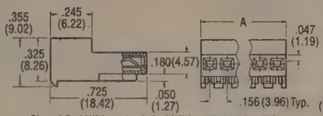
Extraction Tool
512-3424. 457241-1. Extraction tool .... **EACH 25.11**

Hand Crimp Tools — 24-20 and 18 AWG Wires
512-3425. 90123-2. Insulation diameter .060"-.110" .... **EACH 327.95**
512-3426. 90123-5. Insulation diameter .043"-.075" .... **EACH 327.95**

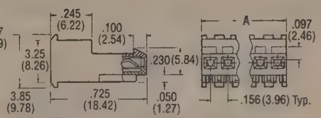
MTA-156 Receptacles .156" Centers



Closed End With Locking Ramp Without Polarizing Tab



Closed End Without Lock And Without Polarizing Tabs



Feed Through With Locking Ramp Without Polarizing Tab

Housing. Color Coded Translucent Thermoplastic: 24 AWG — white; 22 AWG — red; 20 AWG — yellow; 18 AWG — orange. UL94V-2 rated. **Contacts:** Tin plated phosphor bronze.

Closed End with Locking Ramp, without Polarizing Tab

24 AWG (White)

Stock No.	Mfr.'s Type	No. of Pos.	Dimension A — In.	EACH	
				1-499	500-999
512-3344	640429-2	2	0.312	.20	.12
512-3387	640429-3	3	0.468	.30	.17
512-3388	640429-4	4	0.624	.40	.23
512-3761	640429-5	5	0.780	.50	.29
512-3345	640429-6	6	0.936	.54	.32
512-3763	640429-7	7	1.092	.63	.37
512-3765	640429-8	8	1.248	.72	.42
512-3767	640429-9	9	1.404	.82	.47
512-3769	1-640429-0	10	1.560	.91	.53
512-3771	1-640429-1	11	1.716	1.00	.58
512-3773	1-640429-2	12	1.872	1.09	.63

22 AWG (Red)

Stock No.	Mfr.'s Type	No. of Pos.	Dimension A — In.	1-499	500-999
512-3346	640428-2	2	0.312	.20	.12
512-3347	640428-3	3	0.468	.30	.17
512-3348	640428-4	4	0.624	.40	.23
512-3349	640428-5	5	0.780	.50	.29
512-3350	640428-6	6	0.936	.54	.32
512-3351	640428-7	7	1.092	.63	.37
512-3352	640428-8	8	1.248	.72	.42
512-3353	640428-9	9	1.404	.82	.47
512-3354	1-640428-0	10	1.560	.91	.53
512-3355	1-640428-1	11	1.716	1.00	.58
512-3356	1-640428-2	12	1.872	1.09	.63

20 AWG (Yellow)

Stock No.	Mfr.'s Type	No. of Pos.	Dimension A — In.	1-499	500-999
512-3389	640427-2	2	0.312	.20	.12
512-3390	640427-3	3	0.468	.30	.17
512-3391	640427-4	4	0.624	.40	.23
512-3392	640427-5	5	0.780	.50	.29
512-3393	640427-6	6	0.936	.54	.32
512-3394	640427-7	7	1.092	.63	.37
512-3395	640427-8	8	1.248	.72	.42
512-3755	640427-9	9	1.404	.82	.47
512-3396	1-640427-0	10	1.560	.91	.53
512-3757	1-640427-1	11	1.716	1.00	.58
512-3759	1-640427-2	12	1.872	1.09	.63

18 AWG (Orange)

Stock No.	Mfr.'s Type	No. of Pos.	Dimension A — In.	EACH	
				1-499	500-999
512-3357	640426-2	2	0.312	.20	.12
512-3358	640426-3	3	0.468	.30	.17
512-3359	640426-4	4	0.624	.40	.23
512-3360	640426-5	5	0.780	.50	.29
512-3361	640426-6	6	0.936	.54	.32
512-3362	640426-7	7	1.092	.63	.37
512-3363	640426-8	8	1.248	.72	.42
512-3364	640426-9	9	1.404	.82	.47
512-3365	1-640426-0	10	1.560	.91	.53
512-3366	1-640426-1	11	1.716	1.00	.58
512-3367	1-640426-2	12	1.872	1.09	.63
512-3368	1-640426-3	13	2.028	1.18	.68
512-3369	1-640426-4	14	2.184	1.27	.74
512-3370	1-640426-5	15	2.340	1.70	.98

Closed End without Lock and without Polarizing Tabs

22 AWG (Red)

Stock No.	Mfr.'s Type	No. of Pos.	Dimension A — In.	1-499	500-999
512-3397	640433-2	2	0.312	.20	.12
512-3371	640433-3	3	0.468	.30	.17
512-3398	640433-4	4	0.624	.40	.23
512-3372	640433-5	5	0.780	.50	.29
512-3373	640433-6	6	0.936	.54	.32
512-3374	640433-7	7	1.092	.63	.37
512-3375	640433-8	8	1.248	.72	.42
512-3376	640433-9	9	1.404	.82	.47
512-3377	1-640433-0	10	1.560	.91	.53

18 AWG (Orange)

Stock No.	Mfr.'s Type	No. of Pos.	Dimension A — In.	1-499	500-999
512-3379	640431-4	4	0.624	.40	.23
512-3381	640431-6	6	0.936	.54	.32
512-3382	640431-7	7	1.092	.63	.37
512-3383	640431-8	8	1.248	.72	.42
512-3385	1-640431-0	10	1.560	.91	.53

Feed-Thru with Locking Ramp without Polarizing Tab

24 AWG (White)

Stock No.	Mfr.'s Type	No. of Pos.	Dimension A — In.	EACH	
				1-499	500-999
512-3827	640602-2	2	0.312	.20	.12
512-3828	640602-3	3	0.468	.48	.28
512-3829	640602-4	4	0.624	.80	.46
512-3830	640602-5	5	0.780	.50	.29
512-3831	640602-6	6	0.936	.54	.32
512-3832	640602-7	7	1.092	.63	.37
512-3833	640602-8	8	1.248	.72	.42
512-3834	640602-9	9	1.404	.82	.47
512-3835	1-640602-0	10	1.560	.91	.53
512-3836	1-640602-1	11	1.716	1.00	.58
512-3837	1-640602-2	12	1.872	1.09	.63

22 AWG (Red)

Stock No.	Mfr.'s Type	No. of Pos.	Dimension A — In.	1-499	500-999
512-3816	640601-2	2	0.312	.20	.12
512-3817	640601-3	3	0.468	.30	.17
512-3818	640601-4	4	0.624	.40	.23
512-3819	640601-5	5	0.780	.50	.29
512-3820	640601-6	6	0.936	.54	.32
512-3821	640601-7	7	1.092	.63	.37
512-3822	640601-8	8	1.248	.72	.42
512-3823	640601-9	9	1.404	.82	.47
512-3824	1-640601-0	10	1.560	.91	.53
512-3825	1-640601-1	11	1.716	1.00	.58
512-3826	1-640601-2	12	1.872	1.09	.63

20 AWG (Yellow)

Stock No.	Mfr.'s Type	No. of Pos.	Dimension A — In.	1-499	500-999
512-3786	640600-2	2	0.312	.40	.23
512-3787	640600-3	3	0.468	.49	.29
512-3788	640600-4	4	0.624	.40	.23
512-3790	640600-5	5	0.780	.63	.37
512-3791	640600-6	6	0.936	.54	.32
512-3809	640600-7	7	1.092	.63	.37
512-3810	640600-8	8	1.248	1.30	.75
512-3811	640600-9	9	1.404	.82	.47
512-3813	1-640600-0	10	1.560	1.36	.79
512-3814	1-640600-1	11	1.716	1.00	.58
512-3815	1-640600-2	12	1.872	1.09	.63

18 AWG (Orange)

Stock No.	Mfr.'s Type	No. of Pos.	Dimension A — In.	1-499	500-999
512-3774	640599-2	2	0.312	.20	.12
512-3775	640599-3	3	0.468	.30	.17
512-3776	640599-4	4	0.624	.40	.23
512-3777	640599-5	5	0.780	.50	.29
512-3778	640599-6	6	0.936	.54	.32
512-3779	640599-7	7	1.092	.63	.37
512-3781	640599-8	8	1.248	.72	.42
512-3782	640599-9	9	1.404	.82	.47
512-3783	1-640599-0	10	1.560	.91	.53
512-3784	1-640599-1	11	1.716	1.00	.58
512-3785	1-640599-2	12	1.872	1.09	.63

MTA-156 Accessories

Strain Reliefs

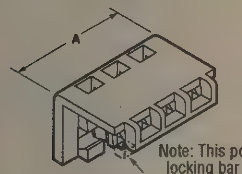


Fig. A

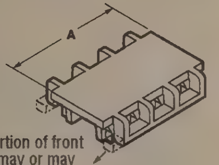


Fig. B

Note: This portion of front locking bar may or may not be present

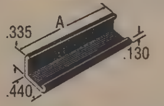
Closed End Strain Reliefs — Fig. A

Stock No.	Mfr.'s Type	No. of Pos.	Dimension A — In.	EACH	
				1-499	500-999
512-3400	643067-2	2	0.312	.45	.38
512-3401	643067-3	3	0.468	.45	.38
512-3402	643067-4	4	0.624	.45	.38
512-3403	643067-5	5	0.780	.45	.38
512-3404	643067-6	6	0.936	.46	.38
512-3838	643067-7	7	1.092	.46	.38
512-3405	643067-8	8	1.248	.46	.38
512-3839	643067-9	9	1.404	.46	.38
512-3498	1-643067-0	10	1.560	.46	.38
512-3840	1-643067-1	11	1.716	.46	.39
512-3841	1-643067-2	12	1.872	.46	.39

Feed-Thru Strain Reliefs — Fig B

Stock No.	Mfr.'s Type	No. of Pos.	Dimension A — In.	1-499	500-999
512-3843	643071-2	2	0.312	.45	.37
512-3844	643071-3	3	0.468	.45	.38
512-3845	643071-4	4	0.624	.45	.38
512-3846	643071-5	5	0.780	.45	.38
512-3847	643071-6	6	0.936	.46	.38
512-3848	643071-7	7	1.092	.46	.38
512-3849	643071-8	8	1.248	.46	.38
512-3859	643071-9	9	1.404	.46	.38
512-3867	1-643071-0	10	1.560	.46	.38
512-3869	1-643071-1	11	1.716	.46	.39
512-3985	1-643071-2	12	1.872	.46	.39

Dust Covers



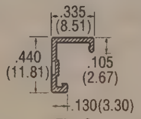


Fig. C

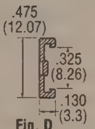


Fig. D

Closed End Dust Covers — Fig. C

Stock No.	Mfr.'s Type	No. of Pos.	Dimension A — In.	EACH	
				1-499	500-999
512-3494	640551-2	2	0.312	.07	.06
512-3406	640551-3	3	0.468	.08	.07
512-3407	640551-4	4	0.624	.10	.09
512-3408	640551-5	5	0.780	.12	.11
512-3409	640551-6	6	0.936	.14	.12
512-3410	640551-7	7	1.092	.15	.13
512-3495	640551-8	8	1.248	.16	.14
512-3411	640551-9	9	1.404	.17	.15
512-3412	1-640551-0	10	1.560	.18	.16
512-3842	1-640551-1	11	1.716	.19	.18
512-3413	1-640551-2	12	1.872	.21	.19
512-3496	1-640551-4	14	2.184	.29	.23
512-3497	1-640551-5	15	2.340	.24	.19

Feed-Thru Dust Covers — Fig. D

Stock No.	Mfr.'s Type	No. of Pos.	Dimension A — In.	1-499	500-999
512-3986	640643-3	3	0.468	.07	.06
512-3987	640643-4	4	0.624	.09	.07
512-3988	640643-5	5	0.780	.10	.09
512-3989	640643-6	6	0.936	.12	.10
512-3990	640643-7	7	1.092	.13	.11
512-3991	640643-8	8	1.248	.15	.12
512-3992	640643-9	9	1.404	.16	.14
512-3993	1-640643-0	10	1.560	.18	.15
512-3994	1-640643-1	11	1.716	.19	.16
512-3995	1-640643-2	12	1.872	.19	.16

Flush Keying Plugs

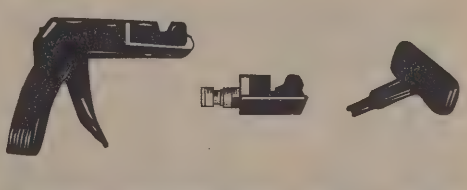
Type 640629-1. Loose. Used with keyed headers.
512-3416. 640629-1. **1-499** .... **EACH .07**
500-999 .... **EACH .06**
Type 641623-1. On Carrier Strip (10 Per Strip).
512-3417. 641623-1 .... **PER STRIP .63**

Replacement IDC Contacts

Tin Plated

Stock No.	Mfr.'s Type	Wire AWG	EACH	
			1-499	500-999
512-4907	640635-2	24	.06	.05
512-4908	640633-2	22	.06	.05
512-4909	640632-2	20	.06	.05
512-4910	640631-2	18	.06	.05

Tools for MTA-156

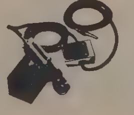


The pistol grip tool can terminate up to 600 wires per hour. The T-handle tool is useful for prototype, maintenance, and repair.

Type 58074-1. Pistol grip handle only.
512-9082. 58074-1 .... **EACH 53.92**

Type 58247-1. Head for MTA-156.
512-9086. 58247-1 .... **EACH 113.66**

Type 59804-1. Maintenance T-handle tool, MTA-156.
512-9089. 59804-1 .... **EACH 20.40**

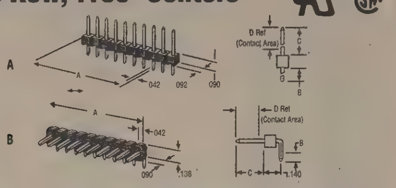


Bench Mount Power Assembly

The bench mount power assembly is actuated by compressed air. Includes a foot switch. Terminates 1000 wires per hour typically. Modular head sold separately

512-9081. 58338-1 .... **EACH 302.13**

Breakaway Headers — Unshrouded Single Row, .100" Centers



UL Recognized, CSA Certified. **Housing:** Black thermoplastic. **Posts:** Copper Alloy.

.025 Square Straight Post — Fig. A

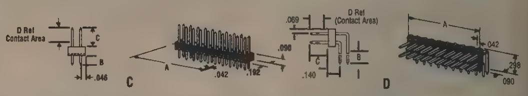
†100-499

Stock No.	Mfr.'s Type	No. of Pos.	Dimensions A	B	C	D	Plating Code*	EACH 1-99	100†
512-1700	103185-1	1	.084	.120	.230	.185	2	.11	.09
512-1726	103239-2	2	.184	.120	.230	.185	1	.18	.15
512-1728	103185-2	2	.184	.120	.230	.185	2	.15	.13
512-1730	103327-2	2	.184	.120	.230	.185	3	.11	.09
512-1701	102976-2	2	.184	.125	.318	.200	1	.18	.15
512-1703	102972-2	2	.184	.125	.318	.200	2	.15	.13
512-1736	103321-2	2	.184	.125	.318	.200	3	.14	.11
512-1738	103239-3	3	.284	.120	.230	.185	1	.26	.22
512-1740	103185-3	3	.284	.120	.230	.185	2	.21	.17
512-1742	103327-3	3	.284	.120	.230	.185	3	.14	.11
512-1704	102976-3	3	.284	.125	.318	.200	1	.29	.23
512-1705	102972-3	3	.284	.125	.318	.200	2	.23	.22
512-1748	103321-3	3	.284	.125	.318	.200	3	.18	.15
512-1707	103239-4	4	.384	.120	.230	.185	1	.37	.31
512-1708	103185-4	4	.384	.120	.230	.185	2	.29	.23
512-1709	103327-4	4	.384	.120	.230	.185	3	.15	.13
512-1711	102972-4	4	.384	.125	.318	.200	2	.32	.26
512-1712	103321-4	4	.384	.125	.318	.200	3	.21	.17
512-1713	103185-5	5	.484	.120	.230	.185	2	.32	.26
512-1715	103321-5	5	.484	.125	.318	.200	3	.23	.20
512-1764	4-103239-0	40	3.984	.120	.230	.185	1	2.24	1.85
512-1766	4-103185-0	40	3.984	.120	.230	.185	2	1.67	1.39
512-1771	4-103327-0	40	3.984	.120	.230	.185	3	1.10	.91
512-1768	4-102976-0	40	3.984	.125	.318	.200	1	2.40	1.99
512-1770	4-102972-0	40	3.984	.125	.318	.200	2	1.83	1.51
512-1772	4-103321-0	40	3.984	.125	.318	.200	3	1.22	1.02

.025 Square Right-Angle Post — Fig. B

512-1777	4-103148-0	40	3.984	.120	.230	.185	1	3.63	3.00
512-1716	4-103325-0	40	3.984	.120	.130	.185	2	2.81	2.33
512-1773	4-103329-0	40	3.984	.120	.230	.185	3	2.00	1.66
512-1775	4-102978-0	40	3.984	.110	.318	.200	1	3.83	3.17
512-1776	4-102974-0	40	3.984	.110	.318	.200	2	3.02	2.50
512-1778	4-103323-0	40	3.984	.110	.318	.200	3	2.20	1.82

Breakaway Headers – Unshrouded Double Row, .100" × .100" Centers



.025 Square Straight Post — Fig. C

†100-499

Stock No.	Mfr.'s Type	No. of Pos.	Dimensions A	B	C	D	Plating Code*	EACH 1-99	100†
512-1717	103328-1	2	.084	.120	.230	.185	3	.11	.09
512-1719	102977-1	2	.084	.125	.318	.200	1	.21	.17
512-1780	103240-2	4	.184	.120	.230	.185	1	.37	.31
512-1721	102973-2	4	.184	.125	.318	.200	2	.32	.26
512-1782	103322-2	4	.184	.125	.318	.200	3	.23	.20
512-1724	103240-3	6	.284	.120	.230	.185	1	.44	.37
512-1725	103186-3	6	.284	.120	.230	.185	2	.37	.31
512-1727	103328-3	6	.284	.120	.230	.185	3	.23	.20
512-1729	102977-3	6	.284	.125	.318	.200	1	.47	.39
512-1731	102973-3	6	.284	.125	.318	.200	2	.37	.31
512-1732	103322-3	6	.284	.125	.318	.200	3	.29	.23
512-1790	103240-4	8	.384	.120	.230	.185	1	.60	.50
512-1733	103328-4	8	.384	.120	.230	.185	3	.32	.26
512-1794	102977-4	8	.384	.125	.318	.200	1	.63	.52
512-1796	102973-4	8	.384	.125	.318	.200	2	.50	.41
512-1734	103322-4	8	.384	.125	.318	.200	3	.37	.31
512-1735	103240-5	10	.484	.120	.230	.185	1	.70	.59
512-1787	103186-5	10	.484	.120	.230	.185	2	.55	.45
512-1800	103328-5	10	.484	.120	.230	.185	3	.37	.31
512-1802	102977-5	10	.484	.125	.318	.200	1	.76	.63
512-1739	102973-5	10	.484	.125	.318	.200	2	.60	.50
512-1741	103322-5	10	.484	.125	.318	.200	3	.44	.37
512-1743	103328-6	12	.584	.120	.230	.185	3	.41	.34
512-1744	103240-7	14	.684	.120	.230	.185	1	.94	.77
512-1745	103186-7	14	.684	.120	.230	.185	2	.70	.59
512-1746	103328-7	14	.684	.120	.230	.185	3	.47	.39
512-1747	103240-8	16	.784	.120	.230	.185	1	1.02	.85

.025 Square Straight Post — Fig. C (Cont.)

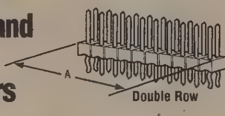
†100-499

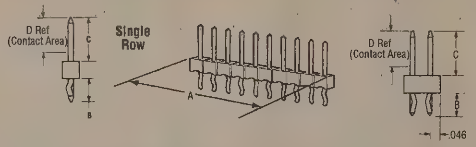
Stock No.	Mfr.'s Type	No. of Pos.	Dimensions A	B	C	D	Plating Code*	EACH 1-99	100†
512-1749	103186-8	16	.784	.120	.230	.185	2	.78	.65
512-1816	103328-8	16	.784	.120	.230	.185	3	.52	.43
512-1751	103240-9	18	.884	.120	.230	.185	1	1.15	.95
512-1752	1-103240-0	20	.784	.120	.230	.185	1	1.25	1.04
512-1822	1-103186-0	20	.984	.120	.230	.185	2	.94	.77
512-1753	1-103328-0	20	.984	.120	.230	.185	3	.63	.52
512-1826	1-102973-0	20	.984	.125	.318	.200	2	.99	.82
512-1830	1-102973-3	26	1.284	.125	.318	.200	2	1.25	1.04
512-1838	2-103186-0	40	1.984	.120	.230	.185	2	1.70	1.40
512-1840	2-102977-0	40	1.984	.125	.318	.200	1	2.48	2.05
512-1848	2-102973-5	50	2.484	.125	.318	.200	2	2.30	1.90
512-1853	4-103240-0	80	3.984	.120	.230	.185	1	3.92	3.24
512-1854	4-103186-0	80	3.984	.120	.230	.185	2	2.75	2.27
512-1856	4-103328-0	80	3.984	.120	.230	.185	3	1.57	1.30
512-1858	4-102977-0	80	3.984	.125	.318	.200	1	4.20	3.47
512-1859	4-102973-0	80	3.984	.125	.318	.200	2	3.02	2.50
512-1860	4-103322-0	80	3.984	.125	.318	.200	3	1.85	1.53

.025 Square Straight Post — Fig. D

512-1880	2-103326-5	50	2.484	.120	.230	.185	2	3.13	2.59
512-1882	4-103149-0	80	3.984	.120	.230	.185	1	6.03	4.99
512-1881	4-103326-0	80	3.984	.120	.230	.185	2	4.41	3.65
512-1883	4-103330-0	80	3.984	.120	.230	.185	3	2.78	2.30
512-1884	4-102979-0	80	3.984	.110	.318	.200	1	6.44	5.33
512-1879	4-102975-0	80	3.984	.110	.318	.200	2	4.81	3.98
512-1885	4-103324-0	80	3.984	.110	.318	.200	3	3.19	2.64

Retention Headers — Unshrouded Single and Double Row .100" × .100" Centers





.025 Square Straight Post — Single Row

†100-499

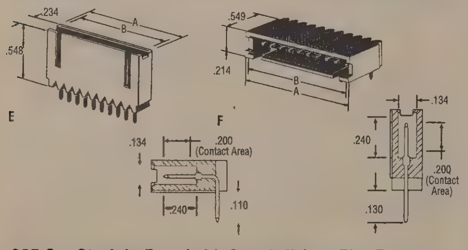
Stock No.	Mfr.'s Type	No. of Pos.	Dimensions A	B	C	D	Plating Code*	EACH 1-99	100†
512-1755	104344-1	3	.284	.120	.230	.185	1	.29	.23
512-1756	104345-1	3	.284	.120	.230	.185	2	.23	.20
512-1757	104346-1	3	.284	.120	.230	.185	3	.15	.13
512-1759	104344-2	4	.384	.120	.230	.185	1	.40	.32
512-1761	104345-2	4	.384	.120	.230	.185	2	.32	.26

.025 Square Straight Post — Double Row

512-1762	104350-1	2	.084	.120	.230	.185	1	.23	.20
512-1763	104351-1	2	.084	.120	.230	.185	2	.21	.17
512-1765	104352-1	2	.084	.120	.230	.185	3	.18	.15

*Contact Plating: 1=Duplex C–.000030 gold on contact area, .000100-.000200 tin-lead on solder area, with entire post underplated .000050 nickel; 2=Duplex D–.000015 gold on contact area .000100—.000200 tin-lead on solder area, with entire post underplated .000050 nickel; 3=Tin-Lead/Nickel—.000100-.000200 tin-lead over .000050 nickel on entire post.

Standard Profile Headers Single Row Headers — Shrouded .100" Centers



.025 Sq. Straight Post (with Standoffs) — Fig. E

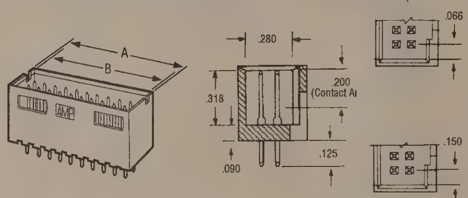
†100-499

Stock No.	Mfr.'s Type	No. of Pos.	Dimensions A	B	Plating Code*	EACH 1-99	100†
512-1767	3-102202-4	3	.420	.340	2	.83	.70
512-2601	102202-1	4	.520	.440	2	.89	.77
512-2602	102202-2	5	.620	.540	2	1.07	.91
512-2603	102202-3	6	.720	.640	2	1.13	.97
512-2604	102202-4	7	.820	.740	2	1.20	1.05
512-2605	102202-5	8	.920	.840	2	1.27	1.07
512-2606	102202-7	10	1.120	1.040	2	1.40	1.23
512-2607	102202-9	12	1.320	1.240	2	1.58	1.36
512-2608	1-102202-1	14	1.520	1.440	2	1.71	1.52

.025 Square Right-Angle Post (with Standoffs) — Fig. F

512-1769	3-102203-4	3	.420	.340	2	.85	.72
512-2614	102203-1	4	.520	.440	2	.97	.82
512-2615	102203-2	5	.620	.540	2	1.10	.97
512-2616	102203-3	6	.720	.640	2	1.13	.97
512-2617	102203-4	7	.820	.740	2	1.27	1.12
512-2618	102203-5	8	.920	.840	2	1.34	1.15
512-2619	102203-7	10	1.120	1.040	2	1.52	1.29
512-1781	102203-9	12	1.320	1.240	2	1.70	1.49
512-1783	1-102203-1	14	1.520	1.440	2	1.85	1.62

Standard Profile Headers — Shrouded Straight, Double Row, .100" × .100 Centers



.025 Square Straight Post — .066 End Dimension

†100-499

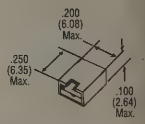
Stock No.	Mfr.'s Type	No. of Pos.	Dimensions A	B	Plating Code*	EACH 1-99	100†
512-2800	103168-1	6	.412	.332	1	.91	.79
512-2802	102618-1	6	.412	.332	2	.72	.63
512-2804	103168-2	8	.512	.432	1	1.12	.99
512-2806	102618-2	8	.512	.432	2	.95	.81
512-2808	103168-3	10	.612	.532	1	1.39	1.18
512-2810	102618-3	10	.612	.532	2	1.10	.93
512-2812	103168-4	12	.712	.632	1	1.61	1.36
512-2814	102618-4	12	.712	.632	2	1.22	1.04
512-2816	103168-5	14	.812	.732	1	1.80	1.59
512-2818	102618-5	14	.812	.732	2	1.40	1.19
512-2820	103168-6	16	.912	.832	1	2.00	1.69
512-2822	102618-6	16	.912	.832	2	1.56	1.33

.025 Square Straight Post — .150 End Dimension

512-2824	103169-3	10	.780	.700	1	1.35	1.15
512-2826	102619-3	10	.780	.700	2	1.10	.96
512-2828	103169-6	16	1.080	1.000	1	1.98	1.72
512-2830	102619-6	16	1.080	1.000	2	1.56	1.35
512-2832	103169-8	20	1.280	1.200	1	2.39	2.08
512-2834	102619-8	20	1.280	1.200	2	1.85	1.58

Contact Plating: 1=Duplex C–.000030 gold on contact area, .000100-.000200 tin-lead on solder area, with entire post underplated .000050 nickel; 2=Duplex D–.000015 gold on contact area .000100–.000200 tin-lead on solder area, with entire post underplated .000050 nickel; 3=Tin-Lead/Nickel–.000100-.000200 tin-lead over .000050 nickel on entire post.

Post Shunts

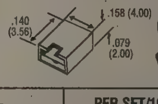


- **One-Piece Contact Construction**
- **High Normal Forces**
- **94V-0 Rated Housings**
- **Underwriters Laboratories Inc., File No. E28476; A CSA Certified File No. LR 16455**

Two-position, low profile shunts.

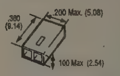
Stock No.	Mfr.'s Type	Switch Type With Slot	Contact Plating	PER SET/10 1-99	100-499
512-7070	531220-2	.100 Centerline	15 µ" Gold	1.76	1.47
512-7071	531220-3	.100 Centerline	30 µ" Gold	1.82	1.51
512-7072	531220-1	.100 Centerline	Tin	1.54	1.28
512-7074	531230-3	.200 Centerline	30 µ" Gold	2.22	1.85
512-7075	531230-1	.200 Centerline	Tin	1.83	1.52

2 mm Mini-Shunts, .079 (2.00) Centerline



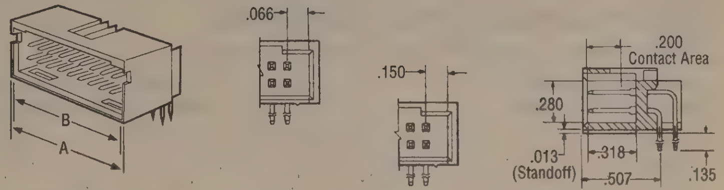
Stock No.	Mfr.'s Type	Housing Color	Contact Plating	PER SET/10 1-99	100-499
512-7156	382575-3	Black	15 µ" Gold	1.52	1.37
512-7158	382575-2	Black	30 µ" Gold	1.40	1.26
512-7160	382575-1	Black	100 µ" Tin	1.33	1.20

Tandem Spring Shunts, .100 (2.54) Centerline



Stock No.	Mfr.'s Type	Housing Color	Contact Plating	EACH 1-999	1000-4999	5000-9999
512-7162	3-530153-2	Black	15 µ" Gold	.41	.30	.25
512-7164	530153-1	Natural	30 µ" Gold	.53	.39	.33
512-7166	530153-2	Black	30 µ" Gold	.51	.37	.32
512-7168	1-530153-2	Black	50 µ" Gold	.66	.49	.38
512-7170	2-530153-2	Black	100 µ" Tin	.30	.22	.19

Standard Profile Headers — Shrouded Right Angle, Double Row, .100" × .100 Centers



.025 Square Right-Angle Post — .066 End Dimension

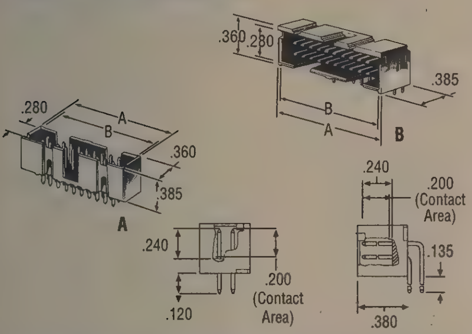
Stock No.	Mfr.'s Type	No. of Pos.	Dimensions		Plating Code*	1-99	
			A	B		1-99	100-499
512-2836	103166-1	6	.412	.332	1	.93	.79
512-2838	102617-1	6	.412	.332	2	.94	.78
512-2840	103166-2	8	.512	.432	1	1.20	1.01
512-2842	102617-2	8	.512	.432	2	1.06	.98
512-2844	103166-3	10	.612	.532	1	1.53	1.42
512-2846	102617-3	10	.612	.532	2	1.17	.98

.025 Square Right-Angle Post — .150 End Dimension

Stock No.	Mfr.'s Type	No. of Pos.	Dimensions		Plating Code*	1-99	
			A	B		1-99	100-499
512-2848	103167-1	8	.680	.600	1	1.17	.99
512-2850	102570-2	8	.680	.600	2	1.06	.98
512-2852	103167-2	10	.780	.700	1	1.40	1.19
512-2854	102570-3	10	.780	.700	2	1.24	1.16

*Contact Plating: 1=Duplex C — .000030 gold on contact area, .000100-.000200 tin-lead on solder area, with entire post underplated .000050 nickel; 2=Duplex D — .000015 gold on contact area .000100-.000200 tin-lead on solder area, with entire post underplated .000050 nickel; 3=Tin-Lead/Nickel — .000100-.000200 tin-lead over .000050 nickel on entire post.

Low Profile Headers



Shrouded with .150 End Dimension Double Row, .100" × .100" Centers

.025 Square Straight Post — Fig. A

Stock No.	Mfr.'s Type	No. of Pos.	Dimensions		Plating Code*	1-99	
			A	B		1-99	100-499
512-2626	103308-1	10	.800	.700	2	.98	.78
512-2627	103309-1	10	.800	.700	1	1.09	.87
512-2625	103308-2	14	1.000	.900	2	1.33	1.06
512-2628	103308-3	16	1.100	1.000	2	1.47	1.18
512-2629	103308-5	20	1.300	1.200	2	1.75	1.40
512-2630	103309-5	20	1.300	1.200	1	1.96	1.57
512-2631	103308-6	26	1.600	1.500	2	2.17	1.74
512-2632	103309-6	26	1.600	1.500	1	2.45	1.96
512-2633	103308-7	34	2.000	1.900	2	2.73	2.18
512-2635	103308-8	40	2.300	2.200	2	3.08	2.46
512-2636	1-103308-0	50	2.800	2.700	2	3.68	2.94

.025 Square Right-Angle Post — Fig. B

Stock No.	Mfr.'s Type	No. of Pos.	Dimensions		Plating Code*	1-99	
			A	B		1-99	100-499
512-2634	103310-1	10	.800	.700	2	1.05	.84
512-2637	103311-1	10	.800	.700	1	1.16	.92
512-2638	103310-2	14	1.000	.900	2	1.40	1.12
512-2644	103310-3	16	1.100	1.000	2	1.16	.92
512-2648	103310-5	20	1.300	1.200	2	1.86	1.48
512-2639	103310-6	26	1.600	1.500	2	2.28	1.82
512-2640	103310-7	34	2.000	1.900	2	2.87	2.30
512-2641	103311-7	34	2.000	1.900	1	3.22	2.58
512-2642	103310-8	40	2.300	2.200	2	3.22	2.58
512-2643	1-103310-0	50	2.800	2.700	2	3.85	3.08
—	—	—	—	—	—	—	—

*Contact Plating: 1=Duplex C — .000030 gold on contact area, .000100-.000200 tin-lead on solder area, with entire post underplated .000050 nickel; 2=Duplex D — .000015 gold on contact area .000100-.000200 tin-lead on solder area, with entire post underplated .000050 nickel; 3=Tin-Lead/Nickel — .000100-.000200 tin-lead over .000050 nickel on entire post.

Double Row MT Receptacle Connectors

Housings are preloaded with standard pressure contacts on .100' × .100" centers. The contacts are insulation displacement for termination of discrete wires or ribbon cable with conductors separated. Crimp, snap-in contacts can be used interchangeably with the insulation displacement contacts. Connector covers are sold separately. **Specifications. Housing:** Black thermoplastic, flame retardant. **Contacts:** Copper alloy; duplex plated .000030µ" gold on the contact area, .000050µ" min. tin-lead on termination area, with entire contact underplated .000050µ" nickel. **Rating:** 3 amperes for single contact in free air. UL recognized, CSA certified. **Operating Temperature:** –65°C to +105°C. Mate with posts .222"-.273" in length.

Wire Size 30-26 AWG — Fig. A

Stock No.	Mfr.'s Type	A Dim.	No. of Pos.	EACH	
				1-99	100-499
512-6400	102393-1	.300	6	1.01	.94
512-6402	102393-2	.400	8	1.19	1.12
512-6404	102393-3	.500	10	1.37	1.28
512-6406	102393-5	.700	14	1.91	1.79
512-6408	102393-6	.800	16	2.19	2.04
512-6410	102393-8	1.000	20	2.73	2.55
512-6412	1-102393-0	1.200	24	3.28	3.06
512-6414	1-102393-1	1.300	26	2.82	2.63
512-6416	1-102393-3	1.500	30	4.10	3.83
512-6418	1-102393-5	1.700	34	4.64	4.33
512-6420	1-102393-8	2.000	40	4.06	3.79
512-6422	2-102393-3	2.500	50	4.94	4.62

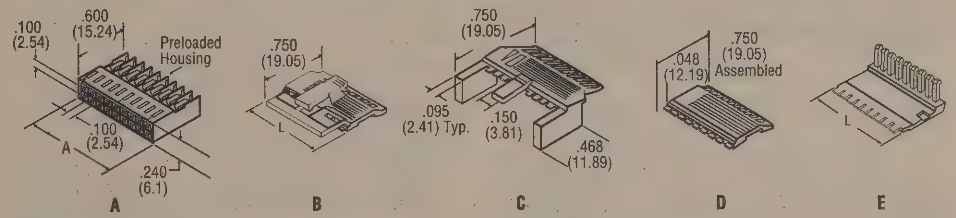
Wire Size 26-22 AWG — Fig. A

512-6424	102398-1	.300"	6	1.01	.94
512-6000	102398-2	.400"	8	1.19	1.11
512-6002	102398-3	.500"	10	1.37	1.28
512-6004	102398-4	.600"	12	1.64	1.53
512-6006	102398-5	.700"	14	1.91	1.79
512-6008	102398-6	.800"	16	2.19	2.04
512-6010	102398-7	.900"	18	2.45	2.29
512-6012	102398-8	1.000"	20	2.73	2.55
512-6014	1-102398-1	1.300"	26	2.82	2.63
512-6426	1-102398-3	1.500"	30	4.10	3.83
512-6018	1-102398-5	1.700"	34	4.64	4.33
512-6022	1-102398-8	2.000"	40	4.06	3.79
512-6026	2-102398-3	2.500"	50	4.94	4.62

Wire Size 22-20 AWG — Fig. A

512-6040	102448-3	.500"	10	1.37	1.28
512-6042	102448-4	.600"	12	1.64	1.53
512-6044	102448-5	.700"	14	1.91	1.79
512-6046	102448-6	.800"	16	2.19	2.04
512-6048	102448-8	1.000"	20	2.73	2.55
512-6428	1-102448-0	1.200"	24	3.28	3.06
512-6052	1-102448-1	1.300"	26	2.82	2.63
512-6068	1-102448-8	2.000"	40	4.06	3.79

Covers. Low profile for double row MT connectors. **Material:** Black thermoplastic, flame retardant.



Front Covers

Latching Cover — Fig. B. Mates with AMPMODU® 4-sided shrouded headers with extraction slot.

Stock No.	Mfr.'s Type	No. of Pos.	L Dim.	EACH	
				1-99	100-499
512-6430	102681-1	12	.600"	.35	.32
512-6075	102681-3	16	.800"	.43	.40
512-6432	102681-4	18	.900"	.53	.46
512-6077	102681-5	20	1.000"	.54	.46
512-6079	102681-8	26	1.300"	.49	.42
512-6081	1-102681-2	34	1.700"	.92	.86
512-6083	1-102681-5	40	2.000"	.93	.87
512-6085	2-102681-0	50	2.500"	1.06	.99

Ejection Cover — Fig. C. Mates with AMP-LATCH® universal ejection style pin headers with latching ears or AMPMODU® low profile shrouded headers.

512-6434	102537-5	14	.700"	.41	.38
512-6087	102537-8	20	1.000"	.27	.25
512-6436	1-102537-0	24	1.200"	.64	.59
512-6089	1-102537-1	26	1.300"	.69	.64
512-6438	1-102537-3	30	1.500"	.57	.52
512-6091	1-102537-5	34	1.700"	.84	.78
512-6093	1-102537-8	40	2.000"	.98	.91
512-6095	2-102537-3	50	2.500"	1.23	1.14

Non-polarizing Cover — Fig. D. For shielded connectors or non-polarizing applications.

512-6440	102541-1	6	.300"	.14	.13
512-6097	102541-2	8	.400"	.30	.27
512-6099	102541-3	10	.500"	.14	.13
512-6101	102541-5	14	.700"	.29	.26
512-6103	102541-6	16	.800"	.22	.20
512-6105	102541-8	20	1.000"	.33	.30
512-6107	1-102541-1	26	1.300"	.49	.45
512-6109	1-102541-5	34	1.700"	.50	.46
512-6111	1-102541-8	40	2.000"	.88	.82
512-6113	2-102541-3	50	2.500"	.67	.61

Back Covers — Fig. E

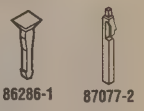
Fig. E — For use with the front covers to the left.

Stock No.	Mfr.'s Type	No. of Pos.	L Dim.	EACH	
				1-99	100-499
512-6442	102536-1	6	.300"	.14	.13
512-6115	102536-2	8	.400"	.27	.25
512-6117	102536-3	10	.500"	.19	.17
512-6444	102536-4	12	.600"	.32	.29
512-6119	102536-5	14	.700"	.38	.34
512-6121	102536-6	16	.800"	.30	.28
512-6446	102536-7	18	.900"	.48	.40
512-6123	102536-8	20	1.000"	.27	.25
512-6448	1-102536-0	24	1.200"	.55	.50
512-6125	1-102536-1	26	1.300"	.35	.32
512-6450	1-102536-3	30	1.500"	.57	.52
512-6127	1-102536-5	34	1.700"	.61	.56
512-6129	1-102536-8	40	2.000"	.81	.75
512-6131	2-102536-3	50	2.500"	.87	.80

Keying Plugs

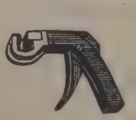
Material: Natural color nylon. For all AMPMODU® receptacles

Type 86286-1. Plugs into receptacle contact.
512-6070. 1-99 ....**EACH** .18
100-499 ....**EACH** .15
Type 87077-2. Plugs directly into housing.
512-6071. 1-99 ....**EACH** .10
100-499 ....**EACH** .09



Contact Extraction and Lance Reset Tool

Type 843996-3. For new style locking lance Mod. IV contacts.
512-6073 ....**EACH** 10.75



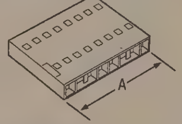
Pistol Grip Tool

Type 58074-1. Pistol grip-handle only.
512-9082 ....**EACH** 53.92
Type 58062-1. Modular head for MT receptacles.
512-9083 ....**EACH** 165.92

MTE Interconnection System (AMPMODU®)

► Materials: Housings — Black Thermoplastic, UL 94V-0 Rated; Contact — Copper Alloy

Receptacle Assemblies — Plain, Single Row, .100" Centers

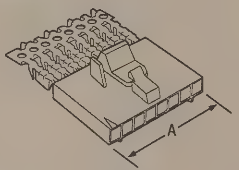


Unloaded Housings (Order Crimp-Type Contacts Separately)

Stock No.	Mfr.'s Type	No. of Pos.	Dim. A	Contact Plating*	EACH	
					1-99	100-499
512-2922	103688-1	2	0.198	—	.39	.30
512-2924	103688-2	3	0.298	—	.49	.38
512-2926	103688-3	4	0.398	—	.56	.43
512-2928	103688-4	5	0.498	—	.60	.46
512-2930	103688-5	6	0.598	—	.65	.50
512-2932	103688-6	7	0.698	—	.72	.55

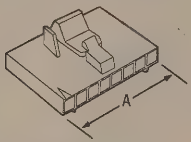
Receptacle Assemblies — Polarized/Latching, Single Row, .100" Centers

Pre-Assembled Housings



512-2944	103645-5	6	0.598	1	1.39	1.07
512-2946	103644-5	6	0.598	2	1.48	1.14
512-2950	103644-6	7	0.698	2	1.71	1.31
512-2952	103645-7	8	0.798	1	1.72	1.32
512-2645	103644-7	8	0.798	2	1.89	1.45
512-2956	103644-8	9	0.898	2	2.04	1.57
512-2958	103645-9	10	0.998	1	1.99	1.53
512-2646	103644-9	10	0.998	2	2.21	1.70
512-2960	1-103645-0	11	1.098	1	2.17	1.66
512-2966	1-103644-1	12	1.198	2	2.59	1.99

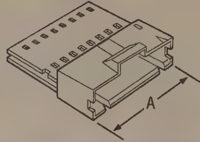
Unloaded Housings (Order Crimp-Type Contacts Separately)



512-2650	104257-1	2	0.198	—	.39	.30
512-2652	104257-2	3	0.298	—	.49	:38
512-2654	104257-3	4	0.398	—	.56	.43
512-2656	104257-4	5	0.498	—	.60	.46
512-2968	104257-5	6	0.598	—	.65	.50
512-2970	104257-6	7	0.698	—	.74	.57
512-2972	104257-7	8	0.798	—	.76	.59
512-2974	104257-8	9	0.898	—	.88	.68
512-2976	104257-9	10	0.998	—	.93	.71
512-2980	1-104257-1	12	1.198	—	1.11	.85

*1 = Tin-lead over nickel; 2 = 15 µ gold; 3 = 30 µ gold.

Pin Assemblies — Shrouded Polarized/Latching, Single Row .100" Centers

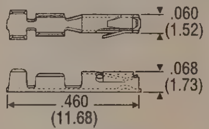


Unloaded Housings (Order Crimp-Type Contacts Separately)

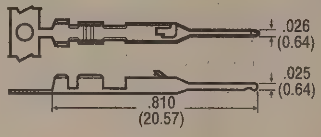
Stock No.	Mfr.'s Type	No. of Pos.	Dim. A	Contact Plating*	EACH	
					1-99	100-499
512-2658	103653-1	2	0.300	—	.79	.60
512-2660	103653-2	3	0.400	—	.82	.63
512-2662	103653-3	4	0.500	—	.83	.64
512-2664	103653-4	5	0.600	—	.83	.64
512-2992	103653-5	6	0.700	—	.84	.65
512-2994	103653-6	7	0.800	—	1.44	1.11
512-2998	103653-7	8	0.900	—	1.53	1.18
512-2901	103653-8	9	1.000	—	1.77	1.36
512-2903	103653-9	10	1.100	—	.93	.71

*1 = Tin-lead over nickel; 2 = 15 µ gold; 3 = 30 µ gold.

Interchangeable Contacts — Wire Crimp (Snap-In)



Receptacles



Pins

Receptacles

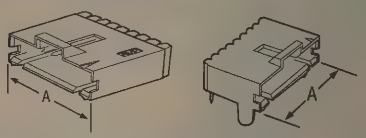
Stock No.	Mfr.'s Type	AWG	Contact Plating*	EACH	
				1-99	100-499
512-0019	104481-8	32-28	3	.10	.09
512-0016	104480-7	26-22	1	.07	.06
512-2696	104480-8	26-22	2	.08	.07
512-2734	104480-9	26-22	3	.10	.09

Pins

512-2961	104506-5	32-28	2	.30	.27
512-2963	104506-7	32-28	3	.33	.29
512-2965	104505-3	26-22	1	.16	.14
512-2697	104505-5	26-22	2	.30	.27
512-2698	104505-7	26-22	3	.33	.29

*1 = Tin-lead over nickel; 2 = 15 µ gold; 3 = 30 µ gold.

Header Assemblies — Shrouded Polarized/Latching, Single Row .100" Centers



.100 Centers, .025 Square Straight Post with Hold Down

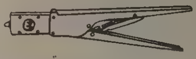
Stock No.	Mfr.'s Type	No. of Pos.	Dim. A	Contact Plating*	EACH	
					1-99	100-499
512-2909	103669-1	2	0.300	1	.71	.54
512-2668	103670-1	2	0.300	2	.75	.58
512-2911	103669-2	3	0.400	1	.77	.60
512-2670	103670-2	3	0.400	2	.84	.65
512-2913	103669-3	4	0.500	1	.85	.66
512-2672	103670-3	4	0.500	2	.94	.72
512-2915	103669-4	5	0.600	1	.92	.71
512-2674	103670-4	5	0.600	2	1.03	.79
512-2917	103669-5	6	0.700	1	.99	.76
512-2676	103670-5	6	0.700	2	1.12	.86
512-2919	103669-6	7	0.800	1	1.05	.81
512-2921	103669-7	8	0.900	1	1.12	.86
512-2678	103670-7	8	0.900	2	1.30	1.00
512-2679	103670-8	9	1.000	2	1.39	1.07
512-2925	103669-9	10	1.100	1	1.26	.97
512-2680	103670-9	10	1.100	2	1.48	1.14
512-2929	1-103669-1	12	1.300	1	1.47	1.13
512-2683	1-103670-1	12	1.300	2	1.73	1.33

.025 Square Right-Angle Post with Hold Down

512-2931	103672-1	2	0.300	1	.71	.54
512-2682	103673-1	2	0.300	2	.75	.58
512-2933	103672-2	3	0.400	1	.77	.60
512-2684	103673-2	3	0.400	2	.84	.65
512-2935	103672-3	4	0.500	1	.85	.66
512-2686	103673-3	4	0.500	2	.94	.72
512-2937	103672-4	5	0.600	1	.92	.71
512-2688	103673-4	5	0.600	2	1.03	.79
512-2939	103672-5	6	0.700	1	.99	.76
512-2690	103673-5	6	0.700	2	1.12	.86
512-2941	103672-6	7	0.800	1	1.06	.81
512-2943	103672-7	8	0.900	1	1.12	.86
512-2693	103673-8	9	1.000	2	1.39	1.07
512-2945	103672-9	10	1.100	1	1.26	.97
512-2694	103673-9	10	1.100	2	1.48	1.14
512-2953	1-103673-1	12	1.300	2	1.73	1.34

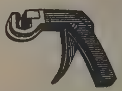
*1 = Tin-lead over nickel; 2 = 15 µ gold; 3 = 30 µ gold.

Crimp Tools



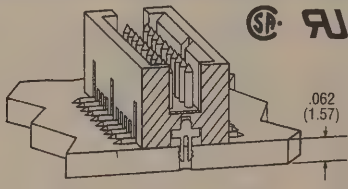
512-2967. 58342-2. For 32-28 AWG Wire	EACH 515.16
512-2699. 58342-1. For 26-22 AWG Wire	EACH 515.16

Pistol Grip Tool

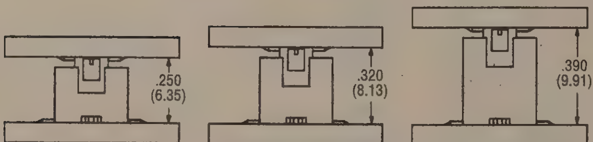


512-9082. 58074-1. Pistol Grip-Handle Only	EACH 53.92
512-2955. 58336-1. Modular Head for MTE Receptacles	EACH 430.59

AMPMODU 50/50 Grid Surface-Mount Connector System



Header



Mating Heights

With Standard Holddowns

The AMPMODU 50/50 Grid Connector System features polarized surface-mount headers and receptacles on a .050 × .050 (1.27 × 1.27) centerline grid. Board-to-board stack heights of .250 (6.35), .320 (8.13) and .390 (9.91) are available. This system is ideal for parallel stacking applications for computers, computer peripheral·equipment, communication systems, medical instrumentation and environmental control systems as well as other high density applications.

Vertical Headers (Double Row)

Mated Height .250		Mated Height .320		Mated Height .390		No. of Pos.	EACH	
Stock No.	Mfr.'s Type	Stock No.	Mfr.'s Type	Stock No.	Mfr.'s Type		1-24	25-49
—	—	512-8130	104656-1	—	—	10	2.34	2.08
512-8133	104655-3	512-8134	104656-2	512-8136	104693-2	20	2.84	2.53
512-8139	104655-4	512-8140	104656-3	512-8141	104693-3	30	3.46	3.08
512-8144	104655-5	512-8145	104656-4	512-8146	104693-4	40	4.17	3.71
512-8149	104655-6	512-8150	104656-5	512-8151	104693-5	50	4.64	4.12
512-8154	104655-7	512-8155	104656-6	512-8156	104693-6	60	4.90	4.36
512-8159	104655-8	512-8160	104656-7	512-8161	104693-7	70	5.27	4.68
512-8164	104655-9	512-8165	104656-8	512-8166	104693-8	80	5.95	5.29
—	—	512-8169	104656-9	512-8170	104693-9	90	6.69	5.95
512-8173	1-104655-1	512-8174	1-104656-0	512-8176	1-104693-0	100	6.93	6.16

Vertical Receptacles, Double Row with Polarizing Tab

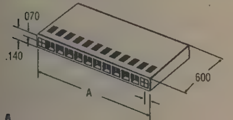
Stock No.	Mfr.'s Type	No. of Pos.	EACH		
			1-24	25-49	50-99
512-8100	104652-1	10	2.46	2.18	2.08
512-8103	104652-2	20	3.18	2.83	2.68
512-8106	104652-3	30	4.01	3.56	3.39
512-8109	104652-4	40	4.94	4.39	4.17
512-8112	104652-5	50	5.57	4.95	4.70
512-8115	104652-6	60	6.40	5.69	5.40
512-8118	104652-7	70	7.26	6.46	6.13
512-8121	104652-8	80	7.93	7.05	6.70
512-8124	104652-9	90	8.68	7.72	7.33
512-8127	1-104652-0	100	9.18	8.16	7.75

Mod. IV Wire-Applied Housings

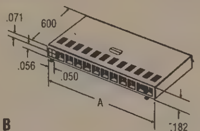
For termination of discrete wires. Receptacles mate with .025" square or round posts. Contacts are sold separately — order from the contacts listed below. Single and double row housings listed below are on .100" centerlines. **Contact Current Rating:** 3 amperes. **Housing Material:** Black thermoplastic — flame retardant. UL recognized, CSA certified.

Single Row — .100" Centers

Sold without contacts — See Mod. IV contacts below.



A



B

Non-Polarized — Stamped — Fig. A

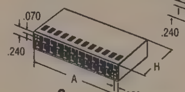
Stock No.	Mfr.'s Type	No. of Pos.	A Dim.	EACH	
				1-99	100-499
512-6150	87499-3	2	0.205"	.73	.66
512-6152	87499-5	3	0.305"	.52	.47
512-6154	87499-7	4	0.405"	.46	.41
512-6156	87499-9	5	0.505"	.46	.41
512-6158	1-87499-1	6	0.605"	.46	.41
512-6161	87499-1	7	0.705"	.60	.55
512-6162	1-87499-3	8	0.805"	.48	.43
512-6164	1-87499-5	9	0.905"	.76	.69
512-6166	1-87499-7	10	1.005"	.58	.53
512-6151	2-87499-1	12	1.205"	.64	.58
512-6153	2-87499-5	14	1.405"	.75	.68
512-6155	2-87499-9	16	1.605"	1.62	1.46
512-9094	3-87499-4	18	1.805"	.83	.75
512-6159	3-87499-7	20	2.005"	.94	.85

Polarized (with detent latching) — Stamped — Fig. B

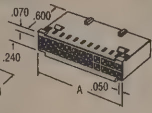
Stock No.	Mfr.'s Type	No. of Pos.	A Dim.	EACH 1-99	EACH 100-499
512-6170	102241-1	3	0.300"	.27	.24
512-6172	102241-2	4	0.400"	.31	.28
512-6174	102241-3	5	0.500"	.33	.30
512-6176	102241-4	6	0.600"	.35	.32
512-6178	102241-5	7	0.700"	.37	.34
512-6173	102241-6	8	0.800"	.40	.36
512-6175	102241-7	9	0.900"	.42	.38
512-6177	102241-8	10	1.000"	.48	.43
512-6163	1-102241-0	12	1.200"	.54	.49
512-6165	1-102241-2	14	1.400"	.60	.55
512-6167	1-102241-4	16	1.600"	.80	.73
512-6168	1-102241-6	18	1.800"	.81	.73
512-6169	1-102241-8	20	2.000"	.83	.75

Double Row — .100" × .100" Centers

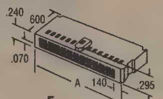
Sold without contacts — See Mod. IV contacts below.



C



D



E

Non-Polarized — Stamped — Fig. C

Stock No.	Mfr.'s Type	No. of Pos.	A Dim.	EACH	
				1-99	100-499
512-6171	87456-2	6	0.300"	.92	.83
512-6180	87456-4	8	0.400"	.94	.85
512-6182	87456-6	10	0.500"	.96	.86
512-6186	1-87456-0	14	0.700"	1.00	.90
512-6190	1-87456-6	20	1.000"	1.23	1.11
512-6192	2-87456-2	26	1.300"	1.46	1.32
512-6179	2-87456-6	30	1.500"	2.12	1.93
512-6194	3-87456-0	34	1.700"	1.77	1.60
512-6196	3-87456-6	40	2.000"	2.04	1.84
512-6198	4-87456-0	50	2.500"	2.43	2.20

Polarized (with detent latching) — Stamped — Fig. D

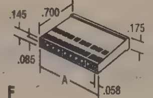
Stock No.	Mfr.'s Type	No. of Pos.	A Dim.	EACH 1-99	EACH 100-499
512-6200	87631-2	6	0.300"	.87	.79
512-6202	87631-4	8	0.400"	.92	.83
512-6204	87631-6	10	0.500"	.96	.86
512-6206	87631-8	12	0.600"	1.04	.94
512-6208	1-87631-0	14	0.700"	1.06	.96
512-6210	1-87631-2	16	0.800"	1.19	1.07
512-6212	1-87631-6	20	1.000"	1.39	1.26
512-6214	2-87631-2	26	1.300"	1.60	1.45
512-6181	2-87631-6	30	1.500"	1.79	1.62
512-6183	3-87631-0	34	1.600"	1.93	1.75
512-6216	3-87631-6	40	2.000"	2.12	1.92
512-6218	4-87631-2	50	2.500"	2.54	2.29

Center Polarized — Stamped — Fig. E

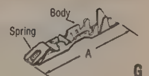
Stock No.	Mfr.'s Type	No. of Pos.	A Dim.	EACH 1-99	EACH 100-499
512-6220	102387-1	10	0.680"	1.00	.90
512-6222	102387-2	14	0.880"	1.02	.92
512-6224	102387-3	16	0.980"	1.19	1.07
512-6226	102387-4	20	1.180"	1.35	1.22
512-6228	102387-6	26	1.480"	1.50	1.35
512-6230	102387-8	34	1.880"	1.87	1.69
512-6232	102387-9	40	2.180"	2.08	1.88
512-6234	1-102387-0	50	2.680"	2.50	2.26

Locking Clip Contact Housings

Material: Glass-filled Nylon, UL94V-0 Rated.



F



G

Single Row — Unstamped — Fig. F

Stock No.	Mfr.'s Type	No. of Pos.	A Dim.	EACH	
				1-99	100-499
512-6250	87175-2	1	0.108"	.37	.34
512-6252	87175-6	2	0.216"	.70	.64
512-6254	87175-8	3	0.316"	.88	.81
512-6256	1-87175-0	4	0.416"	.98	.90
512-6258	1-87175-2	5	0.516"	1.00	.92
512-6260	1-87175-4	6	0.616"	1.10	1.02
512-6262	1-87175-6	7	0.716"	1.13	1.04
512-6264	1-87175-8	8	0.816"	1.31	1.21
512-6269	2-87175-1	10	1.016"	1.37	1.26

Double Row — Unstamped

Stock No.	Mfr.'s Type	No. of Pos.	A Dim.	EACH 1-99	EACH 100-499
512-6185	87176-2	2	0.116"	.85	.79
512-6187	87133-1	4	0.216"	1.10	1.01
512-6189	87133-7	6	0.316"	1.07	.99
512-6193	87133-9	8	0.416"	2.42	2.24
512-6195	87133-2	10	0.516"	1.20	1.11
512-6197	1-87133-1	12	0.616"	1.77	1.64

Locking Clip Contacts — Fig. G

Stock No.	Mfr.'s Type	AWG	Ins. Dia. (Max.)	Plating Code	EACH	
					1-99	100-499
512-6199	87191-1	30-28	0.039"	*	.36	.32
512-6275	87165-1	26-22	0.062"	*	.36	.32

*Sel. Gold/Nickel.

Keying Plug

Note: Mod. IV uses the same keying plugs and extraction/lance reset tool as the MT-Series.
512-6270. Model 87179-1. **1-99**.........**EACH** **.12**
100-499.........**EACH** **.09**

Extraction Tool

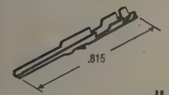
512-9118. Model 91084-1..................**EACH** **10.83** **87179-1** **91084-1**

Crimp Tools

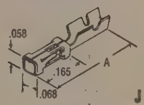
512-6201. 90295-1. For 30-28 AWG Wire ......**EACH 749.51**
512-9116. 90289-1. For 26-22 AWG Wire ......**EACH 416.39**

Mod. IV Crimp Snap-in Contacts

6 Types of Plating
1. 30 Gold Duplex
2. 15 Gold Duplex
3. 30 Sel. Gold/Nickel A
4. 15 Gold Select/Nickel
5. Br. Tin-Lead/Nickel A
6. Br. Tin-Lead/Nickel B



H



J

Pin with Insulation Support — Fig. H

Stock No.	Mfr.'s Type	AWG	Ins. Dia. (Max.)	Plating Code	EACH	
					1-99	100-499
512-6276	102107-2	26-22	0.061"	3	.35	.31
512-6277	102107-3	26-22	0.061"	5	.14	.12

Receptacles with Insulation Support — Fig. J

Standard Pressure. Material: Phosphor Bronze.

Stock No.	Mfr.'s Type	AWG	Ins. Dia. (Max.)	Plating Code	EACH	
					1-99	100-499
512-6203	1-102316-3	32-27	0.040"	2	.22	.20
512-6205	1-102316-4	32-27	0.040"	1	.23	.21
512-6280	87756-7	26-22	0.061"	6	.14	.12
512-6282	1-87756-6	26-22	0.061"	2	.22	.20
512-6284	1-87756-8	26-22	0.061"	1	.23	.21
512-6286	87523-6	24-20	0.069"	6	.14	.12
512-6288	1-87523-6	24-20	0.069"	2	.22	.20
512-6290	1-87523-9	24-20	0.069"	1	.23	.21

Standard Pressure. Material: Beryllium Copper.

Stock No.	Mfr.'s Type	AWG	Ins. Dia. (Max.)	Plating Code	EACH 1-99	EACH 100-499
512-6292	87667-5	26-22	0.061"	4	.28	.25
512-6294	87667-2	26-22	0.061"	3	.35	.31
512-6296	86016-5	24-20	0.069"	4	.32	.28
512-6298	86016-2	24-20	0.069"	3	.35	.31

Intermediate Pressure. Material: Beryllium Copper.

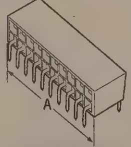
Stock No.	Mfr.'s Type	AWG	Ins. Dia. (Max.)	Plating Code	EACH	
					1-99	100-499
512-6207	102918-2	32-27	0.040"	3	.35	.31
512-6300	102548-6	26-22	0.061"	3	.35	.31
512-6302	87046-4	24-20	0.069"	6	.27	.24
512-6304	87046-1	24-20	0.069"	4	.32	.29
512-6306	87046-3	24-20	0.069"	3	.36	.32

High Pressure. Material: Phosphor Bronze.

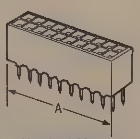
Stock No.	Mfr.'s Type	AWG	Ins. Dia. (Max.)	Plating Code	EACH 1-99	EACH 100-499
512-6209	103455-2	32-27	0.040"	3	.32	.29
512-6308	102128-2	26-22	0.061"	6	.14	.13
512-6310	102128-1	26-22	0.061"	3	.27	.25
512-6312	1-87309-4	24-20	0.069"	3	.28	.25

Crimping Tools for Mod. IV Contacts
512-6211. Model 90417-1. 32-27 AWG ......**EACH 450.61**
512-9145. Model 90418-1. 26-22 AWG ......**EACH 450.61**
512-9146. Model 90202-2. 24-20 AWG ......**EACH 450.61**

Mod. II Receptacle Assemblies Closed Entry, .100 × .100 Centers



Horizontal Mount



Vertical Mount

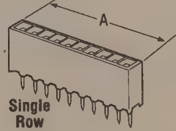
Horizontal Mount — End to End Stackable

Stock No.	Mfr.'s Type	No. of Pos.	A Dim.	EACH		
				1-49	50-99	100-499
512-6213	6-535512-2	6	0.340"	1.20	1.11	.99
512-6215	6-535512-3	8	0.440"	1.22	1.15	1.07
512-6217	535512-1	12	0.640"	1.68	1.58	1.47
512-6219	1-535512-7	14	0.740"	1.85	1.73	1.62
512-6221	1-535512-8	16	0.840"	2.58	2.39	2.12
512-6223	535512-2	20	1.040"	2.30	2.16	2.02
512-6225	2-535512-0	26	1.340"	3.58	3.33	2.95

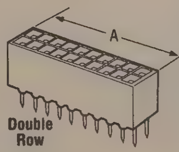
Vertical Mount

Stock No.	Mfr.'s Type	No. of Pos.	A Dim.	EACH 1-49	EACH 50-99	EACH 100-499
512-6227	534206-8	16	0.800"	2.06	1.94	1.79
512-6229	1-534206-0	20	1.000"	2.35	2.20	2.06
512-6231	1-534206-3	26	1.300"	2.53	2.37	2.21
512-6233	2-534206-0	40	2.000"	3.46	3.24	3.02

Mod. IV Receptacle Assemblies Closed Entry, Low Profile, .100 × .100 Centers



Single Row



Double Row

Single Row

Stock No.	Mfr.'s Type	No. of Pos.	A Dim.	EACH		
				1-49	50-99	100-499
512-6235	1-535541-0	12	1.200"	1.17	1.10	1.02
512-6236	2-535541-8	30	3.000"	2.27	2.12	1.99

Double Row

Stock No.	Mfr.'s Type	No. of Pos.	A Dim.	EACH 1-49	EACH 50-99	EACH 100-499
512-6237	534998-4	8	0.400"	1.10	1.04	.96
512-6238	534998-7	14	0.700"	1.67	1.56	1.46
512-6239	1-534998-0	20	1.000"	2.07	1.94	1.82
512-6240	1-534998-3	26	1.300"	2.53	2.37	2.21
512-6241	2-534998-0	40	2.000"	3.46	3.24	3.02
512-6242	3-534998-0	60	3.000"	4.86	4.55	4.26

Modular Plugs

- One-Piece Construction with Preloaded Contacts
- FCC and Telephone Industry Standard Size and Performance
- Selectively Gold Plated Contacts

Stock No.	Mfr.'s Type	Description	EACH		
			1-99	100-499	500-999
512-5710	5-641334-3	4 Position Handset	.19	.16	.15
512-5724	5-556384-3	6 Position Flat Oval Solid Line*	.33	.28	.25
512-5714	5-641335-3	6 Position Flat Oval Stranded Line*	.19	.16	.15
512-5716	5-641337-3	6 Position Flat Oval Stranded Line	.23	.19	.18
512-5715	5-554710-3	6 Position Round Stranded Line	.26	.21	.19
512-5725	5-555042-3	6 Position Flat Oval Solid Line	.27	.23	.21
512-5726	5-557970-3	6 Position Flat Oval Small Solid Line	.24	.22	.20
512-5727	5-555426-3	6 Position Long Body, Flat Oval Solid Line	.55	.46	.42
512-5728	5-555176-3	6 Position Long, Flat Oval Stranded Line	.51	.42	.39
512-5733	5-555174-2	6 Position Long, Flat Oval Stranded†	1.12	1.03	.97
512-5734	5-555175-3	6 Position Long Body, Round Cable†	1.14	1.06	.98
512-5729	5-555177-3	6 Position Long, Round Stranded Line	.51	.42	.39
512-5717	5-554739-3	8 Position Flat Oval Stranded Line	.49	.40	.37
512-5730	5-557315-3	8 Position Round Solid Line	.52	.44	.40
512-5719	5-554169-3	8 Position Round Stranded Line	.50	.40	.38
512-8619	5-554720-3	8 Position Round Cable Solid Wire	.52	.43	.40
512-5720	5-554743-3	8 Position Flat Oval Stranded Line, Keyed	.50	.40	.38
512-5718	5-554170-3	8 Position Round Cable	.50	.40	.38
512-5857	5-569542-3	8 Position Flat Oval, Stranded†	1.26	1.17	1.09
512-5858	5-569532-3	8 Position Round Cable, Stranded†	1.26	1.17	1.09
512-5859	5-569530-3	8 Position Round Cable, Solid†	1.26	1.17	1.09

*6 Position, 4-Loaded. †Shielded.

Plug with Offset Latch, DEC Connect

Stock No.	Mfr.'s Type	Description	EACH		
			1-99	100-499	500-999
512-5722	5-555237-2	6 Position Flat Oval Stranded	.57	.47	.43
512-5723	5-555238-2	6 Position Round Stranded	.57	.47	.43

Modular Tools

Light Duty Hand Tools — Fig. A

Strips and terminates cable, lightweight and low cost. Constructed of strong DuPont Derlin.

512-5800. 231648-1. 4 and 6 Pos. Line Cord .... EACH 25.11
512-5805. 231649-1. 4 Pos. Handset .... EACH 25.11

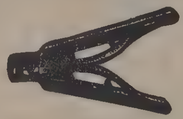


Fig. A

Professional Hand Tools and Dies — Fig. B

Ratchet handle assures proper termination. Cuts, strips and terminates cable. All sizes can be accommodated by exchanging die sets.

512-5811. 2-231652-0. Hand Tool without Dies .... EACH 85.52
512-5812. 2-231652-8. Hand Tool with 4-6 Pos. Die-Line .... EACH 108.56
512-5821. 2-231652-1. Hand Tool with 8 Pos. Die-Line .... EACH 108.56
512-5822. 2-231652-3. Hand Tool with 4 Pos. Die-Handset .... EACH 108.56
512-5825. 2-231652-6. Hand Tool with 6 Pos. Offset Die-Line .... EACH 108.56
512-5838. 2-231652-7. Hand Tool with 6 Pos. Long Body Die .... EACH 108.56
512-5839. 3-231652-0. Hand Tool with Category 5 Die .... EACH 108.56
512-8738. 231662-5. Replacement blade for hand tool assembly .... EACH 5.62
512-5814. 853400-8. Die Only for 4-6 Pos. Line .... EACH 39.23
512-5815. 853400-1. Die Only for 8 Pos. Line .... EACH 39.23
512-5820. 853400-3. Die Only for 4 Pos. Handset .... EACH 39.23
512-5830. 853400-6. Die Only for 6 Pos. Offset-line .... EACH 39.23
512-5841. 853400-7. Die Only for 6 Pos. Long body .... EACH 39.23
512-5842. 1-853400-0. Die Only for Category 5 Die .... EACH 39.23

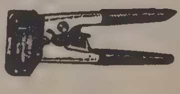


Fig. B

AMP® SUPER CHAMP® Modular Plug Service Hand Tool — Fig. C

Crimps 2, 4, 6, and 8 position AMP modular plugs plus blue, long bodied and keyed styles. UL and CSA Approved.

512-5831. 189710-1 .... EACH 30.60

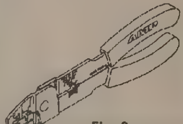


Fig. C

Production Hand Tool Kits

All kits include a carrying case with blade replacement kit and a small screwdriver.

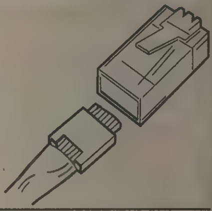
Stock No.	Mfr.'s Type	Description	EACH
512-5835	231666-9	Carrying Case, Blade Replacement Kit, Screwdriver Only	40.80
512-5840	1-231666-0	Includes 8-Position Hand Tool and 4- and 6-Position Die Set	178.84
512-5845	1-231666-1	Includes 8-Position Hand Tool 4- and 6-Position Die, 4-Position Handset Die	211.48

Modular Plug Hand Tool Kit — NEW —

Kit consists of a hinged-top clear plastic case, with a cushioned compartment for the low-cost SUPER CHAMP® Service hand tool and six smaller compartments containing an assortment of popular size modular plugs (2, 4, 6, and 8 pos.).

512-9058. 224685-1 .... EACH 61.98

Category 5 High Performance Modular Plugs



Exceeds EIA/TIA 568A and TSB-40A requirements for Category 5 Four-Pair (RJ45) UTP Applications. AMP's load bar concept allows the conductors to be oriented into the load bar, trimmed and then simply slid into the connector housing. These plugs are designed to accommodate 24 AWG stranded conductors with a maximum conductor insulation diameter of .039 inches (.99 mm) and cable jacket outside diameters in the range of .200 to .215 inches.

Category 5 Plugs

Stock No.	Mfr.'s Type	Description	EACH		
			1-99	100-499	500-999
512-5731	5-558530-3	8 Position Line, Round, Stranded	.58	.54	.50
512-5855	5-569552-3	8 Position Shielded, Round, Stranded	1.44	1.33	1.25
512-5856	5-569550-3	8 Position Solid	1.53	1.41	1.33

Cable Boots

Stock No.	Mfr.'s Type	Description	1-99	100-499	500-999
512-5860	569875-1	Black Cable Boot	.45	.38	.35
512-5861	569875-2	Almond Cable Boot	.45	.38	.35
512-5862	569875-3	Red Cable Boot	.45	.38	.35
512-5863	569875-4	Green Cable Boot	.45	.38	.35
512-5864	569875-5	Blue Cable Boot	.45	.38	.35
512-5865	569875-6	Yellow Cable Boot	.45	.38	.35
512-5866	569875-7	Orange Cable Boot	.45	.38	.35
512-5867	569875-8	White Cable Boot	.45	.38	.35
512-5868	569875-9	Violet Cable Boot	.45	.38	.35

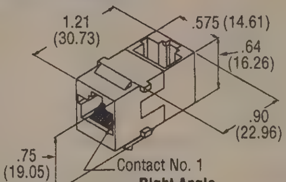
Tooling

Crimp Tool Assembly
512-5839. 3-231652-0 .... EACH 108.56

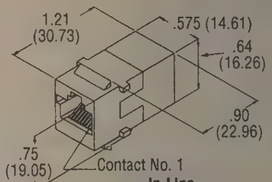
Tool Frame Only
512-5811. 2-231652-0 .... EACH 79.41

Die Set Only
512-5842. 1-853400-0 .... EACH 39.23

Modular Couplers — NEW —



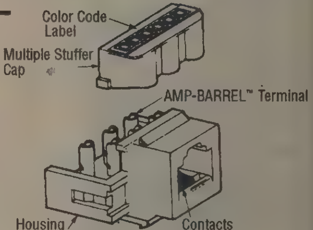
Right Angle



In-Line

Stock No.	Mfr.'s Type	No. of Pos.	Style	EACH		
				1-24	25-99	100-499
512-5834	555049-1	6	Right Angle	3.23	2.99	2.59
512-5836	555051-1	8	Right Angle	3.39	3.13	2.71
512-5837	555050-1	6	In-Line	3.18	2.94	2.55
512-8598	555052-1	8	In-Line	3.23	2.99	2.59

Modular Telephone Keystone Jacks Kits — NEW —

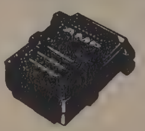


These jacks are specially designed to snap into wall plates, panels and under carpet fittings. Insulation displacement AMP-BARREL™ terminals allow toolless termination of discrete wire pairs.

Black Kits

Stock No.	Mfr.'s Type	Kit Style	No. of Pairs	Wire Range	Color Code	EACH		
						1-24	25-99	100-499
512-8596	553983-1	IBM†	3	22	RJ11	4.03	3.72	3.23
512-5832	554546-1	IBM†	4	22	T5688	4.15	3.83	3.32
512-8597	554171-1	Commercial	3	22-26	—	3.98	3.68	3.19
512-5833	554578-1	Commercial	4	22-26	—	4.08	3.77	3.27

†553983-1 is equivalent to IBM 8310575; 554546-1 is equivalent to IBM 6091030.



RS-232 Modular Jack Adapter

Converts 25-contact D-Sub plug/receptacle to 8-contact modular jack.

Stock No.	Mfr.'s Type	Description	EACH		
			1-24	25-99	100-499
512-5700	747868-1	RS-232 Receptacle to Modular Phone Jack	16.82	14.95	13.25
512-5705	747772-1	RS-232 Plug to Modular Phone Jack	16.82	14.95	13.25

Printed Circuit Board and Surface Mount Modular Jacks

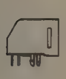


Fig. 1

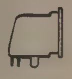


Fig. 2

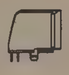


Fig. 3

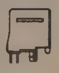


Fig. 4

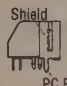


Fig. 5

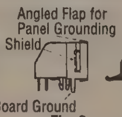


Fig. 6

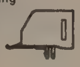


Fig. 7

Housing: Polyester, UL 94 V-0 rated, black (except for offset latch). **Contact:** .014 thick phosphor bronze. **Plated:** .000050 gold in contact area and .000150 tin-lead on solder tails. Meet or exceed FCC part 68 rules and regulations; REA PE-76 and UL1863, Communications Circuit accessories. UL listed, CSA Certified.

Low Profile (.495 Height), Thru-Hole, Side Entry — Fig. 1

Stock No.	Mfr.'s Type	No. of Cont.	Panel Stops	EACH		
				1-99	100-499	500-999
512-5750	555163-1	6	Yes	.74	.72	.70
512-5735	555163-2	6 (4-Loaded)	Yes	.63	.57	.52
512-5752	555165-1	6	No	.74	.72	.70
512-8599	555165-2	6 (4-Loaded)	No	.74	.72	.70
512-5754	555162-1	8	Yes	.79	.76	.74
512-5756	555164-1	8	No	.79	.76	.74
512-5758	555166-1	8-Keyed	Yes	.79	.76	.74
512-5760	555167-1	8-Keyed	No	.79	.76	.74

Standard Height, Side Entry with Center Latch, Flanged — Fig. 2

512-5762	520241-2	4-Handset	No	.87	.83	.78
512-5792	520242-2	6 (4-Loaded)	No	.68	.57	.52
512-5764	520242-3	6	No	.69	.66	.65
512-5766	520243-4	8	No	.73	.71	.69
512-5793	520244-4	8-Keyed	No	.68	.61	.56

Standard Height, Side Entry without Flange — Fig. 3

512-5768	520249-2	4-Handset	Yes	.87	.82	.78
512-5795	520250-1	6 (2-Loaded)	Yes	.67	.63	.55
512-8707	520250-2	6 (4-Loaded)	Yes	.68	.66	.64
512-5770	520250-3	6	Yes	.69	.67	.65
512-5796	555980-1	4	No	.58	.52	.50
512-5797	555979-1	6 (4-Loaded)	No	.58	.52	.50
512-5772	520470-3	6	No	.63	.57	.52
512-5774	520251-4	8	Yes	.73	.71	.67
512-5776	520426-4	8	No	.78	.75	.73
512-5798	554517-1	8-Keyed	No	.66	.60	.55
512-5778	520252-4	8-Keyed	Yes	.73	.71	.69

Top Entry with Center Latch — Fig. 4

512-5780	520257-2	4-Handset	Yes	.65	.62	.58
512-5799	520258-2	6 (4-Loaded)	Yes	.68	.64	.61
512-5782	520258-3	6	Yes	.69	.65	.61
512-5786	520259-4	8	Yes	.73	.69	.65
512-5790	520260-4	8-Keyed	Yes	.73	.69	.65
512-5801	520425-2	6 (4-Loaded)	No	.62	.56	.51
512-5784	520425-3	6	No	.74	.70	.66
512-5794	554990-1	6*	Yes	.69	.64	.61
512-5788	556416-1	8	No	.73	.68	.65
512-5802	555799-1	8-Keyed	No	.99	.93	.89
512-5803	557969-1	8-Shielded	Yes	.94	.85	.78

Low Profile, Side Entry, Shielded with PCB Ground — Fig. 5 — *NEW* —

512-5757	555154-2	6 (4-Loaded)	Yes	.84	.77	.70
512-5755	555154-1	6	Yes	.90	.82	.75
512-5763	555153-1	8	Yes	.94	.86	.79
512-5767	556591-1	8-Keyed	Yes	.99	.90	.82

Low Profile, Side Entry, Shielded with Panel Ground — Fig. 6 — *NEW* —

512-5761	555140-2	6 (4-Loaded)	Yes	.88	.80	.74
512-5759	555140-1	6	Yes	.88	.80	.74
512-5765	555141-1	8	Yes	.94	.86	.79

Low Profile, Side Entry, Unshielded, Surface Mount — Fig.7

512-5736	555077-1	6	Yes	.99	.89	.82
512-5737	555077-2	6 (4-Loaded)	Yes	.98	.88	.81
512-5738	555248-1	8	Yes	2.77	2.31	2.13
512-5739	555764-1	8	No	2.77	2.31	2.13
512-5740	558178-1	8-Keyed	Yes**	1.41	1.27	1.17
512-5741	555078-1	8-Keyed	Yes	1.04	.94	.87

*With offset latch, (color — gray). **With panel stop and shields.

IBM Style Token Ring Data Connector

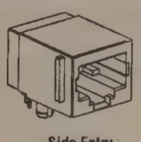
Designed for the mechanical interface requirements of IEEE 802.5 specification local area networks. The connector is used to terminate 2 twisted pairs of data conductors. This connector mates with another identical connector. Cable termination is by insulation displacement. Cable braid is held between a ferrule and the connectors' integral grounding shield. Termination of the conductors requires only a pair of slip joint pliers. Remove the appropriate posts for the desired cable exit direction. Completed connectors can be snapped into a panel cut-out or used as free-hanging.

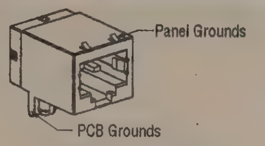
Standard Connector Kits

IBM Cable Type: 1, 2, 6. **Cable Exit:** 45°, 90°, or 180°.

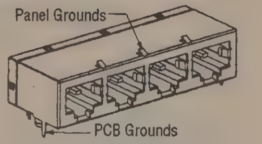
512-5600. 554000-1. **1-24**........ **EACH 5.64**
25-99........ **EACH 4.97**
100-499........ **EACH 4.59**

High Performance PCB Modular Jacks — *NEW* —


Side Entry
with
Panel Stops



Side Entry Shielded Showing
Panel and PCB Ground

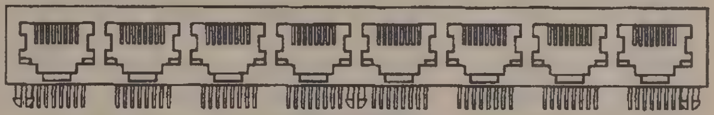


Multi-Port Shielded Showing
Panel and PCB Ground

- ► **Performance Exceeds Near End Crosstalk (Next) Requirements of –40 dB at 100 MHz per EIA/TIA568A**
- ► **Meets All Dimensional Tolerance and Metallic Plating Requirements of FCC Part 68**

Stock No.	Mfr.'s Type	Description	EACH		
			1-99	100-499	500-999
512-5804	558343-1	1 Port, 8 Position Unshielded with Panel Stops	1.10	1.02	.95
512-5806	558341-1	1 Port, 8 Position Unshielded without Panel Stops	1.10	1.02	.95
512-5807	558342-1	1 Port, 8 Position Shielded with PC Ground	1.71	1.59	1.48
512-5808	558344-1	1 Port, 8 Position Shielded with Panel Ground	1.71	1.59	1.48
512-5809	558500-1	4 Port, 8 Position Unshielded without Panel Stops	4.79	4.45	4.13
512-5810	558503-1	4 Port, 8 Position Shielded with PC Ground	5.95	5.53	5.13
512-5813	558524-1	4 Port, 8 Position Shielded with Panel Ground	5.95	5.53	5.13
512-5823	558501-1	6 Port, 8 Position Unshielded without Panel Stops	7.19	6.67	6.20
512-5824	558504-1	6 Port, 8 Position Shielded with PC Ground	8.91	8.27	7.68
512-5826	558525-1	6 Port, 8 Position Shielded with Panel Ground	8.91	8.27	7.68
512-5827	558502-1	8 Port, 8 Position Unshielded without Panel Stops	9.60	8.92	8.28
512-5828	558505-1	8 Port, 8 Position Shielded with PC Ground	11.88	11.02	10.23
512-5829	558526-1	8 Port, 8 Position Shielded with Panel Ground	11.88	11.02	10.23

Multi-Port PCB Modular Jacks — *NEW* —


8 Port, 8 Position

- ► **Meets or Exceeds FCC Part 68 Rules and Regulations with Industry Standard PC Board Footprints**
- ► **Center Mounting Leg Standard on 8 Port Jacks**

Low Profile, Side Entry, Unshielded Jacks

Stock No.	Mfr.'s Type	Description	EACH		
			1-99	100-499	500-999
512-5742	557785-1	1 Port, 8 Position	.89	.79	.73
512-5743	558065-1	1 Port, 10 Position	1.52	1.34	1.24
512-5744	558066-1	1 Port, 10 Position	1.52	1.34	1.24
512-5745	557560-1	2 Port, 8 Position	1.78	1.56	1.43
512-5746	557561-1	3 Port, 8 Position	2.67	2.34	2.15
512-5747	557562-1	4 Port, 8 Position	3.57	3.14	2.88
512-5748	557563-1	5 Port, 8 Position	4.45	3.90	3.57
512-5749	557564-1	6 Port, 8 Position	5.34	4.70	4.31
512-5751	557565-1	7 Port, 8 Position	6.23	5.46	5.00
512-5753	557566-1	8 Port, 8 Position	7.13	6.25	5.73

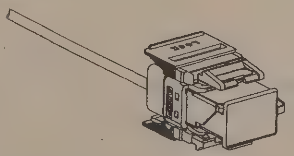
Low Profile, Side Entry, Shielded with PCB Ground

512-5771	558067-1	1 Port, 10 Position	2.42	2.13	1.97
512-5775	558068-1	1 Port, 10 Position, Keyed	2.42	2.13	1.97
512-5777	557570-1	2 Port, 8 Position	3.12	2.75	2.52
512-5781	557571-1	4 Port, 8 Position	4.43	3.88	3.56
512-5785	557572-1	6 Port, 8 Position	6.63	5.83	5.34
512-5789	557573-1	8 Port, 8 Position	8.84	7.76	7.11

Low Profile, Side Entry, Shielded with Panel Ground

512-5769	557787-1	1 Port, 8 Position	1.39	1.21	1.12
512-5773	558070-1	1 Port, 10 Position	2.42	2.13	1.97
512-5779	557570-2	2 Port, 8 Position	3.12	2.75	2.52
512-5783	557571-2	4 Port, 8 Position	4.43	3.88	3.56
512-5787	557572-3	6 Port, 8 Position	6.63	5.83	5.34
512-5791	557573-2	8 Port, 8 Position	8.84	7.76	7.11

EMC Data Connector

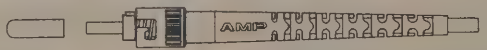


- ► **For Type 1A, 2A, 6A Cable**

The original specifications for 150 ohm shielded (Type 1) cables and the AMP Four-Position Data Connector supported signals up to 20 MHz. As LAN speeds have increased, these specifications needed to be extended to provide stable performance at higher frequencies. The Telecommunications Industries Association/Electronics Industries Association (TIA/EIA) has proposed extended specifications for 150 ohm shielded cables and connectors up to 300 MHz. These proposals are being incorporated into pending new specifications TIA/EIA TSB 53 and PN-2840. All of the FOUR plus products presented comply with these specifications.

512-5611. 558585-1. Kit with Integral Locking Latch. **1-24**........ **EACH 6.12**
25-99........ **EACH 5.38**
100-499........ **EACH 4.96**

ST Style Connectors — Epoxy Type



- Quick Cure Epoxy Type
- Pre-Radiused PC Finish
- High Performance Multimode and Singlemode ST Compatible Connectors

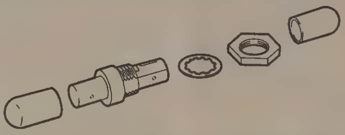
ST Style

Stock No.	Mfr.'s Type	Ferrule Material	Fiber Size/Type	Boot Type and Color	EACH	
					1-24	25-49
512-6500	501380-1	Ceramic	125 µm, Multimode	Bend Limiting/Black	8.26	7.23
512-6501	503571-1	Ceramic	125 µm, Multimode	Short/Black	7.36	6.33
512-6502	504008-3	Steel	125 µm, Multimode	Long/Black	6.95	5.93
512-6503	503415-1	Plastic	125 µm, Multimode	Short/Black	4.03	3.72
512-6510	502579-2	Ceramic	126 µm, Singlemode	Bend Limiting/Yellow	11.93	11.08

Termination Kit
512-6541. 503746-1 .... EACH 571.02

Crimp Tool and Die Set — Included in Termination Kit
512-9054. 58433-4. PRO-CRIMPER™II with Die Set .... EACH 94.15
512-6504. 58424-1. ST Style Die Set........ EACH 36.88

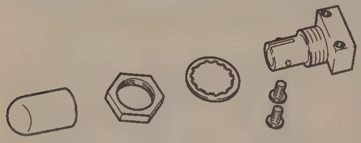
ST Style Coupling Receptacle



Alignment sleeve is used for singlemode or multimode applications. Joins two ST connectors in free hanging or panel mount applications. Includes lock washer, nut, and two dust caps.

Stock No.	Mfr.'s Type	Sleeve Material	Application	EACH	
				1-24	25-49
512-6506	501381-1	Plastic	Multimode	5.04	4.68
512-6565	504021-1	Metal	Single/Multimode	6.29	5.60
512-6507	502750-1	Ceramic	Single/Multimode	12.53	11.63

ST Style Active Device Receptacle

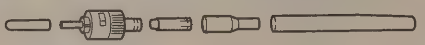


Join ST connectors to LEDs or detectors in TO-18, TO-46, or TO-52 packages. Mount to PC board or through panel. Packaged with lock washer, nut, alignment ring, mounting screws, and dust cap. Nickel plated, die cast zinc.

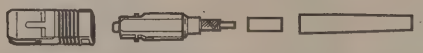
Stock No.	Mfr.'s Type	Description	EACH	
			1-24	25-49
512-6570	501474-1	Standard; Height — .410"	5.98	5.56
512-6508	502585-2†	Low Profile; Height — .280"	5.86	5.44

†502585-2 is not threaded and does not include lock washer or nut.

LIGHTCRIMP™ Connectors — Epoxyless



ST Style



SC Style

Epoxyless connectors terminate fiber cables the easy way, with no epoxy mess or curing. Crimp on the connectors with the special tool and polish, in less than two minutes. **Insertion Loss:** Singlemode — .2 dB average; Multimode — .2 dB average.

ST Style

Stock No.	Mfr.'s Type	Ferrule Material	Fiber Size/Type	EACH	
				1-24	25-49
512-6515	503453-1	Plastic	125 µm, Multimode	8.78	7.68
512-6545	504034-1	Steel	125 µm, Multimode	8.57	7.81
512-6656	504001-1	Ceramic	125 µm, Multimode	10.22	9.49
512-6555	504000-1	Ceramic	126 µm, Singlemode	24.83	23.06

Termination Kits
512-6561. 503330-1 .... EACH 858.97
512-6514. 503330-2. With Microscope .... EACH 1936.71

Crimp Tools and Die Sets
512-6516. 502835-1. PRO-CRIMPER™II with Die Set for Plastic .... EACH 168.30
512-6517. 502834-1. Die Set for Plastic........ EACH 87.88
512-6518. 503568-1. PRO-CRIMPER™II with Die Set for Steel and Ceramic........ EACH 168.30
512-6519. 503567-1. Die Set for Steel and Ceramic .... EACH 87.88

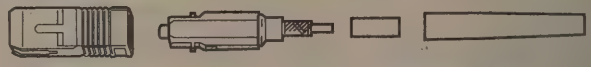
SC Style

512-6563	503692-1	Ceramic	125 µm, Multimode, Simplex	12.00	10.93
512-6564	503693-1	Ceramic	125 µm, Multimode, Duplex	25.00	22.78

Termination Kits
512-6562. 503706-1........ EACH 740.18
512-6522. 503706-2. With Microscope .... EACH 1506.66

Crimp Tool and Die Set
512-6520. 503699-1. PRO-CRIMPER™ II with Die Set........ EACH 242.03
512-6521. 503698-1. Die Set .... EACH 188.99

SC Style Connectors — Epoxy Type



Simplex

- Multimode and Singlemode
- Compliant with Bellcore 326
- Field Installable, PC Finish

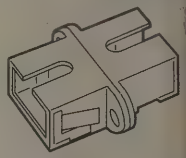
SC Style — Ceramic Ferrules

Stock No.	Mfr.'s Type	Housing Color	Fiber Size/Type	EACH	
				1-24	25-49
512-6566	502883-1	Beige	125 µm, Multimode, Simplex	12.90	11.75
512-6509	502882-1	Blue	125 µm, Singlemode, Simplex	19.94	17.42
512-6575	502882-2	Blue	126 µm, Singlemode, Simplex	19.94	17.42
512-6567	503553-1	Beige	125 µm, Multimode, Duplex	25.46	23.18
512-6568	503554-1	Blue	126 µm, Singlemode, Duplex	39.36	35.85

Termination Kit
512-6586. 503746-5........ EACH 545.60

Crimp Tool and Die Set — Included in Termination Kit
512-9054. 58433-4. PRO-CRIMPER™II with Die Set........ EACH 94.15
512-6504. 58424-1. SC Style Die Set........ EACH 36.88

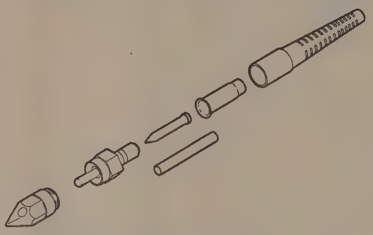
SC Coupling Receptacle with Dust Covers



- Duplex Receptacles Will Accept Either Two Individual Connectors or One Duplex Connector
- Metal Alignment Sleeves

Stock No.	Mfr.'s Type	Description	EACH	
			1-24	25-49
512-6580	502632-8	Blue, Simplex	11.22	9.65
512-6511	502632-9	Beige, Simplex	11.22	9.65
512-6512	502776-8	Blue, Duplex	21.30	18.32
512-6513	502776-9	Beige, Duplex	21.30	18.32

FSMA-I and FSMA-II Style Connectors



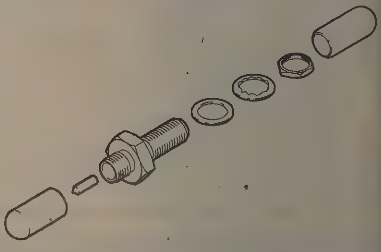
- Nominal Jacket O.D. 3.1 mm
- Connector Body Material: Nickel Plated Brass
- Compatible with 905 (FSMA-I) and 906 (FSMA-II)

Stock No.	Mfr.'s Type	Description	EACH	
			1-24	25-49
512-6676	504566-1	FSMA 905, 125 µm, Multimode	8.60	7.99
512-6523	504014-1	FSMA 906, 125 µm, Multimode	9.76	9.07

Termination Kit
512-6696. 503746-2........ EACH 571.51

Crimp Tool and Die Set — Included in Termination Kit
512-6524. 58520-1. Pro-Crimper™II with Die Set .... EACH 255.68
512-6525. 58502-1. Die Set .... EACH 134.06

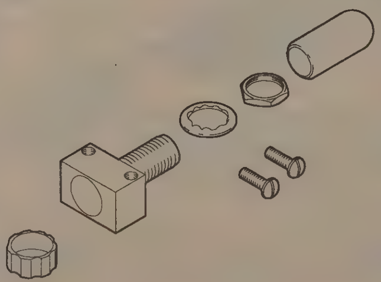
FSMA Coupling Receptacle



Joins two free-hanging or panel mounted FSMA connectors. Stainless steel, with lock washer, jam nut, alignment sleeve, and dust caps.

512-6685. 501049-1. **1-24**........ EACH 10.55
25-49........ EACH 9.80
50-99........ EACH 9.14

FSMA Device Mount



Accepts active devices in TO-18, TO-46, TO-52 packages. Includes lock washer, jam nut, alignment ring, and dust cap. Panel mount or PCB mount. Stainless steel.

512-6690. Model 501055-1. **1-24**........ EACH 10.64
25-49........ EACH 9.88
50-99........ EACH 9.23

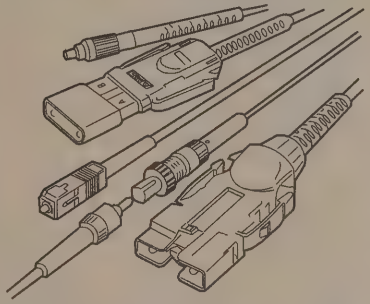
Hybrid Adapters with Metal Alignment Sleeves

- ► **Use For Multimode or Singlemode**
- ► **Adapt Various Connector Interfaces**

Stock No.	Mfr.'s Type	Housing Color	Adapter Type	EACH 1-24	EACH 25-49
512-6583	502780-1	Black	SC to ST	**10.32**	**8.87**
512-6584	502780-2	Blue	SC to ST	**12.46**	**10.87**
512-6585	502780-3	Beige	SC to ST	**12.46**	**10.87**
512-6587	503638-1	Nickel Plated Die Cast	SC to ST	**14.83**	**12.86**
512-6588	502781-1	Black	SC to FC	**10.32**	**8.87**
512-6589	502781-2	Blue	SC to FC	**12.46**	**10.87**
512-6591	502781-3	Beige	SC to FC	**12.46**	**10.87**
512-6592	503480-1	Nickel Plated Die Cast	SC to FC	**17.33**	**15.02**
512-6593	503640-1	Nickel Plated Die Cast	FC to ST	**14.83**	**12.86**
512-6594	503137-1	Black	Duplex SC to ST	**18.14**	**15.37**
512-6596	503137-2	Blue	Duplex SC to ST	**18.14**	**15.37**
512-6597	503137-3	Beige	Duplex SC to ST	**18.14**	**15.37**
512-6598	503135-1	Black	Duplex AMP SC to FC	**18.14**	**15.37**
512-6599	503135-2	Blue	Duplex AMP SC to FC	**18.14**	**15.37**
512-6601	503135-3	Beige	Duplex AMP SC to FC	**18.14**	**15.37**

512-6602. 503663-1. Mounting Screws .... **EACH .24**

Fiber Optic Cable Assemblies, 125 µm



Use these pre-terminated assemblies for equipment hookup, testing, or experimentation. These cable assemblies are manufactured with 62.5/125, FDDI grade, OFNR rated fiber cable.

Stock No	Mfr.'s Type	Type	Assembly Description	Connector Ferrule Material	Cable Type*/Length	EACH 1-9
512-6635	502144-1	Simplex	ST to ST	Ceramic	LDS/1meter	**26.29**
512-6650	502149-1	Simplex	FSMA-1 to FSMA-1	Metal	LDS/1 meter	**36.14**
512-6526	502149-2	Simplex	FSMA-1 to FSMA-1	Metal	LDS/3 meters	**38.75**
512-6527	502149-3	Simplex	FSMA-1 to FSMA-1	Metal	LDS/5 meters	**41.35**
512-6528	502149-5	Simplex	FSMA-1 to FSMA-1	Metal	LDS/10 meters	**47.86**
512-6529	502152-1	Duplex	FSMA-1 to FSMA-1	Metal	LDD/1 meter	**67.98**
512-6530	502152-2	Duplex	FSMA-1 to FSMA-1	Metal	LDD/3 meters	**70.73**
512-6531	502152-3	Duplex	FSMA-1 to FSMA-1	Metal	LDD/5 meters	**74.75**
512-6532	502152-5	Duplex	FSMA-1 to FSMA-1	Metal	LDD/10 meters	**84.81**
512-6533	501833-2	Duplex	ST to ST	Ceramic	LDD/1 meter	**52.13**
512-6534	1-501833-7	Duplex	ST to ST	Ceramic	LDD/2 meters	**54.30**
512-6535	501833-3	Duplex	ST to ST	Ceramic	LDD/3 meters	**56.46**
512-6536	501833-4	Duplex	ST to ST	Ceramic	LDD/5 meters	**60.79**
512-6537	501833-6	Duplex	ST to ST	Ceramic	LDD/10 meters	**66.50**
512-6538	503549-1	Duplex	ST to ST	Polymer	LDD/1 meter	**43.09**
512-6539	503549-2	Duplex	ST to ST	Polymer	LDD/2 meters	**45.26**
512-6540	503549-3	Duplex	ST to ST	Polymer	LDD/3 meters	**47.42**
512-6542	503549-4	Duplex	ST to ST	Polymer	LDD/5 meters	**51.75**
512-6543	503549-7	Duplex	ST to ST	Polymer	LDD/10 meters	**58.11**
512-6544	503165-1	Simplex	AMP SC to SC	Ceramic	LDS/1 meter	**31.94**
512-6546	503165-2	Simplex	AMP SC to SC	Ceramic	LDS/2 meters	**33.24**
512-6547	503165-3	Simplex	AMP SC to SC	Ceramic	LDS/3 meters	**34.54**
512-6548	503165-5	Simplex	AMP SC to SC	Ceramic	LDS/5 meters	**37.15**
512-6549	1-503165-0	Simplex	AMP SC to SC	Ceramic	LDS/10 meters	**43.66**
512-6550	503624-1	Duplex	AMP SC to SC	Ceramic	LDD 1 meter	**62.45**
512-6552	503624-2	Duplex	AMP SC to SC	Ceramic	LDD/2 meters	**64.46**
512-6553	503624-3	Duplex	AMP SC to SC	Ceramic	LDD/3 meters	**66.48**
512-6554	503624-4	Duplex	AMP SC to SC	Ceramic	LDD/5 meters	**70.50**
512-6556	503624-7	Duplex	AMP SC to SC	Ceramic	LDD/10 meters	**80.55**
512-6557	503551-1	Duplex	FSD to FSD	Polymer	LDD/1 meter	**45.48**
512-6558	503551-2	Duplex	FSD to FSD	Polymer	LDD/2 meters	**47.64**
512-6559	503551-3	Duplex	FSD to FSD	Polymer	LDD/3 meters	**49.81**
512-6560	503551-4	Duplex	FSD to FSD	Polymer	LDD/5 meters	**54.14**
512-6576	503551-7	Duplex	FSD to FSD	Polymer	LDD/10 meters	**60.33**
512-6577	503552-1	Duplex	FSD to ST	Polymer	LDD/1 meter	**44.29**
512-6578	503552-2	Duplex	FSD to ST	Polymer	LDD/2 meters	**46.45**
512-6579	503552-3	Duplex	FSD to ST	Polymer	LDD/3 meters	**48.62**
512-6581	503552-4	Duplex	FSD to ST	Polymer	LDD/5 meters	**52.95**
512-6582	503552-7	Duplex	FSD to ST	Polymer	LDD/10 meters	**59.22**

*LDS = Light Duty Single; LDD = Light Duty Dual.

Polishing Film

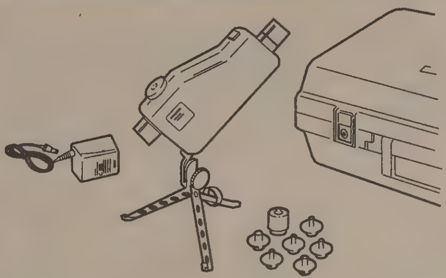
Package of ten 8½ × 11 sheets of connector polishing film. Each package can be used to polish up to 100 connectors.

512-6600. Model 228433-8. 5 µm. **1-9** .... **PER PK./10 14.91**
10-24 .... **PER PK./10 13.85**

512-6605. Model 228433-7. 1 µm. **1-9** .... **PER PK./10 14.91**
10-24 .... **PER PK./10 13.85**

512-6610. Model 228433-5. 0.3 µm. **1-9** .... **PER PK./10 14.91**
10-24 .... **PER PK./10 35.85**

Inspection Microscope Kit (110 V)



The Inspection Microscope is designed specifically for visual examination of terminated or cleaved ends of singlemode and multimode fibers in both field and laboratory applications. This portable, hand-held unit provides 100-power magnification for optimum detection of flaws. It operates on AC or battery power. The complete microscope kit includes a handy carrying case, tripod stand, AC adapter and all adapters needed to inspect the following connectors — FSMA; FSD; ST Style; FC Type; D4 Type.

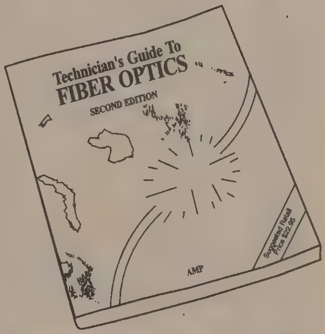
512-6603. 502970-2 .... **EACH 1092.05**

Handheld Microscope

- ► **100 Power Magnification**
- ► **Built-In Illumination**
- ► **Compact Hand-Held Size**
- ► **Battery Operated**

512-6604. 504085-1. Microscope .... **EACH 103.46**
512-6606. 504088-1. STC Adapter .... **EACH 28.25**
512-6607. 503958-1. SC Adapter .... **EACH 28.25**
512-6608. 504086-1. SMA Adapter .... **EACH 28.25**

Technicians Guide to Fiber Optics



An excellent introductory and intermediate level fiber optic text, this informative book covers the fundamentals of data transmissions, fiber theory, fiber characteristics, sources and detectors, connectors and splice products, and other fiber optic components.

512-6609. 228838-1 .... **EACH 24.64**

General Purpose Epoxy and Applicators

Recommended for all epoxy style fiber connectors. One tube each of resin and catalyst terminates up to 200 connectors. Use with applicators (syringes) listed. Cures in 30 minutes at 100°C, or 24 hrs. at room temperature.

512-6590. Model 502418-1. Epoxy .... **EACH 28.70**
512-6595. Model 501473-3. Applicator .... **EACH 1.05**

Consumables Kits

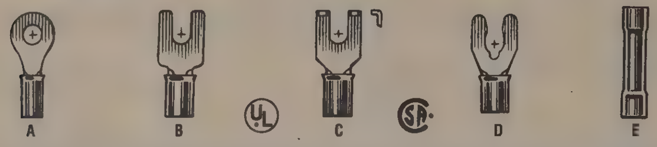
Kits contain all consumable supplies for at least 100 connectors — epoxy (general purpose), polish film, epoxy applicators, and polish pad.

For ST style, FSD, FSMA Connectors.
512-6611. 502306-1 .... **EACH 197.99**

For SC, Singlemode ST Connectors.
512-6612. 502306-2 .... **EACH 213.05**

For LIGHTCRIMP® Connectors.
512-6613. 502306-3 .... **EACH 211.89**

Terminals and Splices



PIDG® (Pre-insulated Diamond Grip) Terminals. These terminals feature color-coded nylon sleeves, funnel ramp entry, serrated inner barrel, a copper sleeve over the barrel, and tin-plated terminals for corrosion resistance. Terminals meet or exceed the requirements of MIL-T-7928, Type II, Class 1 and 2. 300 V max., 150°C max. **Bulk packages available, contact your local Allied sales office.**

Ring Tongue Terminals (Fig. A)

Nylon insulation, tin-plated copper terminals.

AWG 26-22 (Yellow)

Stock No.	Mfr.'s Type	Stud Size	Insulation Max. Dia. (In.)	Length In.	Width In.	PER PKG./100		
						1-4	5-9	10-24
512-5002	8-323914-1	4	0.082	0.646	0.203	21.24	18.21	13.88
512-5004	8-323915-1	6	0.082	0.646	0.203	20.62	17.68	13.48
512-5006	8-326875-1	6	0.082	0.740	0.250	21.24	18.21	13.88
512-5012	8-323916-1	8	0.082	0.740	0.250	24.64	21.10	16.03

AWG 22-16 (Red)

512-5300	8-31880-1	4	0.140	0.672	0.218	21.24	18.21	13.88
512-5014	8-36149-1	6	0.125	0.672	0.218	21.24	18.21	13.88
512-5302	8-36150-1	6	0.140	0.672	0.218	21.24	18.21	13.88
512-5018	7-51863-1	6	0.125	0.782	0.250	21.24	18.21	13.88
512-5022	8-36151-1	6	0.125	0.797	0.250	20.62	17.68	13.48
512-5304	8-36152-1	6	0.140	0.797	0.281	20.62	17.68	13.48
512-5306	8-31890-1	8	0.140	0.844	0.312	21.24	18.21	13.88
512-5024	6-32055i-1	8	0.125	0.844	0.312	21.24	18.21	13.88
512-5026	8-31886-1	8	0.140	0.797	0.281	20.62	17.68	13.48
512-5038	6-36153-1	10	0.125	0.844	0.312	21.24	18.21	13.88
512-5308	8-36154-1	10	0.140	0.844	0.312	21.24	18.21	13.88
512-5310	8-31887-1	10	0.140	0.797	0.281	20.62	17.68	13.48
512-5312	8-32836-1	10	0.125	0.876	0.344	25.14	21.53	16.35
512-5314	8-31894-1	1/4"	0.140	1.078	0.469	24.62	21.09	16.02
512-5316	8-31895-1	5/16"	0.140	1.078	0.469	24.62	21.09	16.02
512-5318	8-31897-1	3/8"	0.140	1.218	0.531	25.34	21.69	16.47
512-5320	8-328975-1	1/2"	0.140	1.293	0.713	54.62	46.57	35.04

AWG 16-14 (Blue)

512-5052	8-324159-1	4	0.150	0.703	0.250	21.24	18.21	13.88
512-5322	8-328996-1	4	0.170	0.703	0.250	20.62	17.68	13.48
512-5324	8-36157-1	6	0.150	0.859	0.343	20.62	17.68	13.48
512-5326	8-36158-1	6	0.170	0.859	0.343	20.62	17.68	13.48
512-5062	8-320561-1	6	0.150	0.703	0.250	21.24	18.21	13.88
512-5064	8-320619-1	6	0.170	0.703	0.250	20.62	17.68	13.48
512-5328	8-320560-1	8	0.150	0.859	0.343	20.62	17.68	13.48
512-5330	8-320565-1	8	0.170	0.859	0.343	20.62	17.68	13.48
512-5068	8-53941-1	8	0.170	0.813	0.312	27.33	23.38	17.73
512-5332	8-320574-1	10	0.150	0.859	0.343	20.62	17.68	13.48
512-5334	8-36160-1	10	0.170	0.859	0.343	20.62	17.68	13.48
512-5336	8-321045-1	1/4"	0.170	1.078	0.469	23.90	20.47	15.56
512-5338	8-328998-1	5/16"	0.170	1.078	0.469	23.90	20.47	15.56
512-5340	8-328999-1	3/8"	0.170	1.218	0.531	24.59	21.06	16.00
512-4084	328976	1/2"	0.150	1.293	0.713	52.57	44.66	33.34

AWG 12-10 (Yellow)

512-5342	8-35149-2	6	0.250	0.953	0.281	12.25*	10.36*	7.91*
512-5086	8-35107-2	6	0.250	1.083	0.375	12.62*	10.68*	8.15*
512-5344	8-35108-1	8	0.250	1.083	0.375	25.24	21.35	16.29
512-5130	8-324918-2	10	0.230	1.052	0.312	17.87	15.08*	11.45*
512-5346	8-35109-1	10	0.250	1.083	0.375	25.24	21.35	16.29
512-5348	8-35110-1	1/4"	0.250	1.322	0.531	29.19	24.66	18.77
512-5350	8-35111-1	5/16"	0.250	1.322	0.531	29.19	24.66	18.77
512-5352	8-35112-1	3/8"	0.250	1.414	0.593	29.19	24.66	18.77
512-5354	8-35151-2	1/2"	0.250	1.594	0.750	15.18*	12.82*	9.75*

Spade Tongue Terminals (Fig. B)

AWG 22-16 (Red)

512-5356	8-328394-1	2	0.140	0.727	0.182	20.62	17.68	13.48
512-5358	8-327717-1	4	0.140	0.674	0.218	24.85	21.28	16.16
512-5090	8-326861-1	6	0.140	0.753	0.297	20.62	17.68	13.48
512-5360	8-34541-1	6	0.140	0.846	0.250	20.62	17.68	13.48
512-5362	8-32053-1	8	0.140	0.908	0.375	20.62	17.68	13.48
512-5364	8-32054-1	10	0.140	0.908	0.375	20.62	17.68	13.48

*Package of 50.

Spade Tongue Terminals (Fig. B) — (continued)

AWG 16-14 (Blue)

Stock No.	Mfr.'s Type	Stud Size	Insulation Max. Dia. (In.)	Length In.	Width In.	PER PKG./100		
						1-4	5-9	10-24
512-5366	8-35559-1	6	0.170	0.753	0.297	20.62	17.68	13.48
512-5100	8-328281-1	6	0.170	0.846	0.244	23.67	20.28	15.42
512-5110	8-32056-1	8	0.150	0.908	0.375	31.75	27.14	20.54
512-5368	8-321233-1	8	0.170	0.753	0.297	20.62	17.68	13.48
512-5370	8-32060-1	10	0.170	0.908	0.375	20.62	17.68	13.48

AWG 12-10 (Yellow)

512-5372	8-322985-2	6	0.230	0.954	0.290	19.47*	16.41*	12.45*
512-5116	8-326859-1	6	0.230	1.095	0.312	36.70	30.96	23.50
512-5088	8-32588-2	8	0.230	1.095	0.406	12.25*	10.36*	7.91*
512-5376	8-32589-2	10	0.230	1.095	0.406	12.25*	10.36*	7.91*

Flanged Spade Tongue Terminals (Fig. C)

AWG 22-16 (Red)

512-5378	8-324608-1	2	0.140	0.727	0.182	26.66	22.82	17.31
512-5380	8-32562-1	6	0.140	0.737	0.296	22.36	19.16	14.59
512-5382	8-32498-1	8	0.140	0.830	0.416	22.57	19.34	14.72

AWG 16-14 (Blue)

512-5384	8-320861-1	6	0.170	0.737	0.294	22.57	19.34	14.72
512-5386	8-320862-1	8	0.170	0.737	0.294	22.57	19.34	14.72
512-5388	8-320863-1	10	0.170	0.737	0.294	22.57	19.34	14.72

AWG 12-10 (Yellow)

512-5390	8-325150-2	6	0.250	1.017	0.296	26.29*	22.14*	16.74*
512-5392	8-32510-2	8	0.230	1.017	0.416	13.42*	11.35*	8.65*
512-5394	8-324015-2	10	0.250	1.017	0.416	13.42*	11.35*	8.65*

Spring Spade Terminals (Fig. D)

Tin-plated phosphor bronze.

Short Spring — AWG 26-22 (Yellow)

512-5118	8-52924-1	6	0.082	0.679	0.250	23.43	20.07	15.26

AWG 22-16 (Red)

512-5406	8-52927-1	4	0.125	0.799	0.203	23.80	20.38	15.49
512-5122	8-52928-1	5	0.125	0.799	0.250	28.12	24.05	18.24
512-5408	8-52929-1	6	0.125	0.799	0.250	23.43	20.07	15.26
512-5410	8-52930-1	8	0.125	0.860	0.375	23.43	20.07	15.26
512-5412	8-52931-1	10	0.125	0.908	0.406	33.45	28.58	21.62

AWG 16-14 (Blue)

512-5414	7-52935-1	6	0.170	0.799	0.250	23.43	20.07	15.26
512-5416	8-52936-1	8	0.170	0.860	0.375	23.43	20.07	15.26
512-5418	7-52937-1	10	0.170	0.908	0.406	23.43	20.07	15.26

AWG 12-10 (Yellow)

512-5420	8-52941-2	6	0.250	0.959	0.250	13.82*	11.68*	8.90*
512-5422	8-52942-1	8	0.250	1.052	0.375	27.64	23.36	17.80
512-5424	8-52943-1	10	0.250	1.100	0.406	27.64	23.36	17.80

Long Spring

512-5426**	8-52409-1	6	0.125	0.938	0.250	37.24	31.80	24.02
512-5428**	8-52410-1	8	0.125	0.479	0.281	36.89	31.51	23.80
512-5430**	8-52411-1	10	0.125	1.009	0.343	23.43	20.07	15.26
512-5432†	9-52420-1	6	0.170	0.428	0.250	43.17	36.84	27.78
512-5434†	9-52421-1	8	0.170	0.974	0.281	23.43	20.07	15.26
512-5436†	8-52422-1	10	0.170	1.008	0.343	23.43	20.07	15.26

*Package of 50. **AWG = 22-16. †AWG = 16-14.

Butt Splice Terminals (Fig. E)

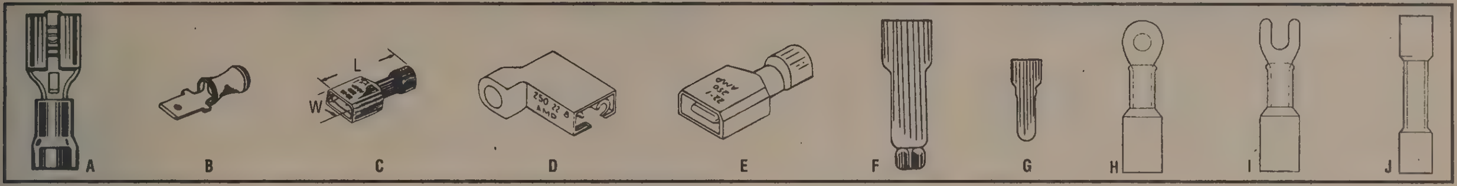
Stock No.	Mfr.'s Type	AWG	Insulation Max. Dia. (In.)	Length In.	Barrel Min. ID. (In.)	PER PKG./50		
						1-4	5-9	10-24
512-5124	8-323994-2	26-22	0.082	0.890	0.029	24.24	20.68	15.58
512-4126	323975	24-20	0.100	1.035	0.043	27.86	23.67	16.77
512-5396	8-320559-2	22-16	0.125	1.265	0.061	36.03	30.70	23.06
512-5398	8-320562-2	16-14	0.150	1.265	0.085	36.03	30.70	23.06
512-5400	8-320570-2	12-10	0.220	1.656	0.129	55.35	46.50	35.01

Hand Tools (Non-Ratcheted)

Stock No.	Mfr.'s Type	Description	EACH
512-9181	314966-1	Strips, cuts and bends solid or stranded 22-10 AWG wire	14.52
512-9186	47100-1	SUPER CHAMP® all purpose electrical repair tool. Crimps 22-10 AWG insulated terminals and splices. Also cuts and strips wire, plus cuts bolts	14.95
512-8675	604252-1	SUPER CHAMP® IV tool crimps insulated products with a confined trapezoidal crimp. Also crimps uninsulated terminals and splices	16.95
512-8615	90287-1	Crimps open barrel terminals as well as closed barrel insulated and uninsulated terminals and splices on 22-10 AWG wire	24.50

Ratcheted Crimp Tools

Stock No.	Mfr.'s Type	Description	EACH
512-9022	58433-3	PRO-CRIMPER™II for insulated terminals and splices on 22-18, 16-14, and 12-10 AWG wires	69.94
512-9220	607949-1	For pre-insulated, sealed terminals and splices	124.59
512-9112	59275	T-HEAD for PIDG® terminals and splices on 26-22 AWG wires	579.72
512-9114	59250	T-HEAD for PIDG® terminals and splices on 22-14 AWG wires	579.72
512-9225	59824-1	TETRA-CRIMP®, for terminals and splices on 22-18, 16-14, and 12-10 AWG wires	347.32
512-9102	58078-3	Tool (less dies) for Ultra-Fast FASTON®	256.94
512-9103	90390-3	Dies only for Ultra-Fast FASTON® — 22-18 AWG	224.66
512-9104	90391-3	Dies only for Ultra-Fast FASTON® — 16-14 AWG	224.66
512-9106	58079-3	Dies only for Ultra-Fast Plus FASTON® — 22-18 AWG	347.32
512-9108	58080-3	Dies only for Ultra-Fast Plus FASTON® — 16-14 AWG	347.32
512-9109	49935	CERTI CRIMP® for SOLISTRAND® terminals and splices on 22-10 AWG wires	150.81



PIDG® and Ultra-Fast FASTON® Terminals

PIDG® FASTON® Terminals

Tin-plated brass. Color coded nylon insulation. **Receptacle Style:** 1 — No dimple with wire stop; 2 — dimple with wire stop. UL Recognized, CSA Certified.

Receptacles (Fig. A)

Stock No.	Mfr.'s Type	Series	AWG	Style	Insulation Max. Dia. (In.)	Fits Tab (In.)	PER PKG./100	
							1-4	5-9
512-5150	8-640903-1	0.250	22-18	2	0.140	0.250 × 0.032	**25.20**	**21.57**
512-5128	8-640909-1	0.205	22-18	2	0.135	0.205 × 0.020	**25.20**	**21.57**
512-5132	8-640911-1	0.205	22-18	2	0.135	0.205 × 0.032	**25.20**	**21.57**
512-5440	8-640917-1	0.187	22-18	2	0.135	0.187 × 0.020	**25.20**	**21.57**
512-5134	8-61048-1	0.110	22-18	2	0.100	0.110 × 0.016	**27.11**	**23.20**
512-5136	8-61060-1	0.110	22-18	1	0.100	0.110 × 0.020	**27.11**	**23.20**
512-5138	8-60894-1	0.110	22-18	2	0.100	0.110 × 0.032	**27.11**	**23.20**
512-4438	640921-1*	0.110	22-18	1	0.140	0.110 × 0.016	**24.10**	**20.47**
512-5442	8-640923-1*	0.110	22-18	1	0.140	0.110 × 0.020	**25.20**	**21.57**
512-5142	8-640925-1*	0.110	22-18	1	0.140	0.110 × 0.032	**25.20**	**21.57**
512-5160	8-640905-1	0.250	16-14	2	0.170	0.250 × 0.032	**25.20**	**21.57**
512-5144	8-640913-1	0.205	16-14	2	0.170	0.205 × 0.020	**25.20**	**21.57**
512-5146	8-640915-1	0.205	16-14	2	0.170	0.205 × 0.032	**25.20**	**21.57**
512-5444	8-640919-1	0.187	16-14	2	0.170	0.187 × 0.020	**25.20**	**21.57**
512-4148	640927-1*	0.110	16-14	2	0.170	0.110 × 0.016	**28.92**	**24.57**
512-5446	8-640929-1*	0.110	16-14	1	0.170	0.110 × 0.020	**25.20**	**21.57**
512-5447	8-640931-1*	0.110	16-14	1	0.170	0.110 × 0.032	**25.20**	**21.57**
512-5155	8-640907-1	0.250	12-10	2	0.250	0.250 × 0.032	**32.59**	**27.51**

*Low insertion receptacle.

PIDG® Insulated Tab Terminals (Fig. B)
Nylon insulation, copper sleeve, tinned copper alloy tab terminal.

Stock No.	Mfr.'s Type	AWG	Fits Receptacle (In.)	Pkg. Size	PER PKG.	
					1-4	5-9
512-5242	66023-6	22-16	0.032 × 0.250	100	**39.70**	**36.09**
512-5246	66024-6	16-14	0.032 × 0.250	100	**39.70**	**36.09**
512-5247	66025-6	12-10	0.032 × 0.250	50	**24.92**	**22.65**

Ultra-Fast Fully Insulated FASTON® Receptacles (Fig. C)
Housing: Translucent, color-coded nylon type 6/6. **Terminal:** Tin plated brass, except * tin-plated phosphor bronze.

Stock No.	Mfr.'s Type	Series	AWG	Insulation Max. Dia. (In.)	Fits Tab (In.)	PER PKG./100	
						1-4	5-9
512-5202	8-520184-1	0.250	22-18	0.135	0.250 × 0.032	**17.49**	**15.85**
512-4152	2-520184-4*	0.250	22-18	0.135	0.250 × 0.032	**20.59**	**18.64**
512-5204	8-520264-1	0.250	22-18	0.230	0.250 × 0.032	**19.31**	**17.49**
512-5214	8-520182-1	0.187	22-18	0.135	0.187 × 0.020	**16.46**	**14.64**
512-5216	8-520194-1	0.187	22-18	0.135	0.187 × 0.032	**16.14**	**14.64**
512-4218	2-520275-2	0.187	22-18	0.230	0.187 × 0.032	**15.14**	**13.63**
512-4228	2-520081-2	0.110	22-18	0.120	0.110 × 0.016	**14.21**	**12.92**
512-5232	8-520084-1	0.110	22-18	0.120	0.110 × 0.020	**15.45**	**14.03**
512-5234	8-520273-1	0.110	22-18	0.120	0.110 × 0.032	**17.27**	**15.64**
512-5206	8-350820-1	0.250	16-14	0.160	0.250 × 0.032	**17.49**	**15.85**
512-4154	3-520117-2*	0.250	16-14	0.160	0.250 × 0.032	**16.92**	**15.39**
512-4208	3-520141-2	0.250	16-14	0.260	0.250 × 0.032	**16.51**	**14.86**
512-5222	8-350816-1	0.187	16-14	0.160	0.187 × 0.020	**14.52**	**13.20**
512-5224	8-520125-1	0.187	16-14	0.160	0.187 × 0.032	**16.14**	**14.46**
512-4226	3-520151-2	0.187	16-14	0.260	0.187 × 0.020	**14.65**	**13.32**
512-4212	4-520448-2	0.250	12-10	0.320	0.250 × 0.032	**17.98**	**16.34**

*Terminal Base material; phosphor bronze.

Ultra-Fast Plus Fully Insulated FASTON® Receptacles (Fig. C)
The nylon housing insulation barrel is made from a premium nylon that retains the insulation crimp with minimal springback for improved crimp tensile strength and strain relief. **Housing:** Translucent, color-coded nylon type 6/6. **Terminal:** Tin plated copper alloy.

Stock No.	Mfr.'s Type	Series	AWG	Insulation Dia. Range (In.)	Fits Tab (In.)	PER PKG./100	
						1-4	5-9
512-4156	2-520407-2	0.250	22-18	0.060-0.135	0.250 × .032	**15.71**	**14.28**
512-4158	2-520409-2	0.187	22-18	0.060-0.135	0.187 × .020	**14.97**	**13.61**
512-4162	2-520411-2	0.187	22-18	0.060-0.135	0.187 × .032	**13.95**	**12.68**
512-4164	3-520408-2	0.250	16-14	0.090-0.160	0.250 × .032	**20.30**	**16.24**
512-4166	3-520410-2	0.187	16-14	0.090-0.160	0.187 × .020	**13.95**	**12.68**
512-4168	3-520412-2	0.187	16-14	0.090-0.160	0.187 × .032	**15.50**	**13.95**

Ultra-Fast Fully Insulated Flag Receptacles (Fig. D)

Stock No.	Mfr.'s Type	Series	AWG	Insulation Max. Dia. (In.)	Fits Tab (In.)	PER PKG./100	
						1-4	5-9
512-5170	8-520129-1	0.250	22-18	0.165	0.250 × 0.032	**25.63**	**23.30**
512-5172	8-520335-1	0.187	22-18	0.165	0.187 × 0.020	**27.80**	**25.13**
512-5174	8-520337-1	0.187	22-18	0.165	0.187 × 0.032	**24.03**	**21.85**
512-5176	8-520133-1	0.250	16-14	0.185	0.250 × 0.032	**29.75**	**26.89**
512-5178	8-520339-1	0.187	16-14	0.185	0.187 × 0.020	**26.70**	**24.03**

Ultra-Fast Fully Insulated FASTON® Tabs (Fig. E)

512-5236	8-520103-1	0.250	22-18	0.135	0.250 × 0.032	**29.36**	**26.43**
512-5238	8-520107-1	0.250	16-14	0.160	0.250 × 0.032	**29.36**	**26.43**

Closed End Splices

Closed End Splices

Stock No.	Mfr.'s Type	Fig.	AWG	Material	Rating Code	Length (In.)	PER PKG./100	
							1-4	5-9
512-5448	8-36964-1	F	22-16	Purple Vinyl	VS	0.740	**11.29**	**9.38**
512-5450	8-35115-1	G	22-16	Trans. Nylon	ECN	0.680	**13.16**	**11.35**
512-5452	8-35653-1	G	18-10	Trans. Nylon	ECN	0.775	**14.79**	**12.73**
512-5454	8-36965-1	F	18-10	Purple Vinyl	VS	1.010	**12.32**	**10.21**

Pre-Insulated Sealed Terminals and Splices (Heat Shrinkable)

Environmentally sealed to prevent corrosion from fluids and vapors. Color coded nylon heat-shrinkable sleeves impart exceptional strain relief to the insulation and wire. Heavy duty clear insulation permits visual inspection.

Ring Tongue Terminals (Fig. H)

22-18 AWG

Stock No.	Mfr.'s Type	Stud Size	Insulation Max. Dia. (In.)	Dimensions (In.)		Pkg. Size	PER PKG.	
				Length	Width		1-4	5-9
512-5502	8-55846-2	6	0.170	1.248	0.250	50	**27.46**	**25.50**
512-5503	8-55847-2	8	0.170	1.268	0.310	50	**27.46**	**25.50**
512-5504	8-55848-2	10	0.170	1.268	0.310	50	**27.46**	**25.50**
512-5506	8-55849-2	1/4	0.170	1.468	0.470	50	**27.46**	**25.50**

16-14 AWG

512-5507	8-55850-2	6	0.190	1.188	0.310	50	**27.46**	**25.50**
512-5508	8-55851-2	8	0.190	1.218	0.310	50	**27.46**	**25.50**
512-5509	8-55852-2	10	0.190	1.218	0.310	50	**27.46**	**25.50**
512-5510	8-55853-2	1/4	0.190	1.448	0.460	50	**27.46**	**25.50**
512-5511	8-55854-2	5/16	0.190	1.448	0.460	50	**27.46**	**25.50**
512-5512	8-55855-2	3/8	0.190	1.478	0.530	50	**27.46**	**25.50**

12-10 AWG

512-5513	8-55856-3	8	0.240	1.408	0.370	25	**16.48**	**15.30**
512-5514	8-55857-3	10	0.240	1.408	0.370	25	**16.48**	**15.30**
512-5515	8-55858-3	1/4	0.240	1.598	0.520	25	**16.48**	**15.30**
512-5516	8-55859-3	5/16	0.240	1.598	0.520	25	**16.48**	**15.30**
512-5517	8-55860-3	3/8	0.240	1.658	0.590	25	**16.48**	**15.30**
512-5518	8-55861-3	1/2	0.240	1.728	0.720	25	**20.80**	**19.31**

Spade Terminals (Fig. I)

22-18 AWG

512-5519	8-55866-2	6	0.170	1.228	0.320	50	**27.46**	**25.50**
512-5520	8-55867-2	8	0.170	1.228	0.320	50	**27.46**	**25.50**
512-5521	8-55868-2	10	0.170	1.228	0.320	50	**27.46**	**25.50**

16-14 AWG

512-5522	8-55869-2	6	0.190	1.258	0.380	50	**27.46**	**25.50**
512-5523	8-55870-2	8	0.190	1.258	0.380	50	**27.46**	**25.50**
512-5524	8-55871-2	10	0.190	1.258	0.380	50	**27.46**	**25.50**

12-10 AWG

512-5525	8-55872-3	8	0.240	1.388	0.380	25	**16.48**	**15.30**
512-5526	8-55873-3	10	0.240	1.388	0.380	25	**16.48**	**15.30**

Butt Splices (Fig. J)

Stock No.	Mfr.'s Type	Length Size (In.)	Insulation Max. Wire (In.)	Wire AWG	Pkg. Size	PER PKG.	
						1-4	5-9
512-5527	8-55824-2	1.606	0.170	22-18	50	**29.82**	**27.69**
512-5528	8-55825-2	1.606	0.190	16-14	50	**29.82**	**27.69**
512-5529	8-55826-3	1.796	0.240	12.10	25	**17.66**	**16.40**

Crimp Tools for Pre-Insulated Sealed Terminals and Splices

512-5530. 55893-1. Crimps 22-10 AWG .... **EACH 63.75**
512-5531. 55894-1. Crimps 16-8 AWG .... **EACH 79.87**

PLASTI-GRIP® Terminals and Splices

Terminals are constructed of high conductivity copper and are tin-plated. Spring spade tongue terminals are constructed of phosphor bronze and are tin-plated. Color-coded vinyl insulation sleeves with a funnel entry for easy wire insertion. UL and CSA rated for 600 V max. (1000 V fixture or sign.) and 90°C. **Bulk packages available, contact your local Allied sales office.**

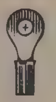


Fig. A

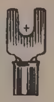


Fig. B

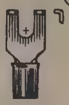


Fig. C

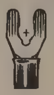


Fig. D

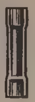


Fig. E

Ring Tongue Terminals — Fig. A

22-16 AWG — Red

Stock No.	Mfr.'s Type	Stud Size	Insulation Max. Dia. (In.)	Length (In.)	Width (In.)	PER PKG./100		
						1-4	5-9	10-24
512-5008	8-34141-1	4	0.140	0.684	0.218	16.13	13.87	10.63
512-5010	8-34142-1	6	0.140	0.572	0.218	16.13	13.87	10.63
512-5015	8-34144-1	6	0.140	0.809	0.218	16.13	13.87	10.63
512-5020	8-34145-1	8	0.140	0.809	0.281	16.13	13.87	10.63
512-5016	8-34148-1	8	0.140	0.856	0.312	16.12	13.26	10.63
512-5025	8-34146-1	10	0.140	0.809	0.281	16.13	13.87	10.63
512-5028	8-34149-1	10	0.140	0.856	0.312	16.13	13.87	10.63
512-5030	8-34150-1	1/4"	0.140	1.090	0.469	18.67	16.02	12.24
512-5032	8-34151-1	5/16"	0.140	1.090	0.469	18.67	16.02	12.24
512-5034	8-34152-1	3/8"	0.140	1.230	0.531	19.20	16.48	12.58
16-14 AWG — Blue								
512-5036	8-34157-1	4	0.170	0.715	0.250	20.94	17.96	13.68
512-5035	8-34158-1	6	0.170	0.715	0.250	16.13	13.87	10.63
512-5040	8-34160-1	8	0.170	0.871	0.343	16.13	13.87	10.63
512-5045	8-34161-1	10	0.170	0.871	0.343	16.13	13.87	10.63
512-5120	8-34162-1	1/4"	0.170	1.090	0.469	18.67	16.02	12.24
512-5042	8-34163-1	5/16"	0.170	1.090	0.469	18.67	16.02	12.24
512-5044	8-34164-1	3/8"	0.170	1.230	0.531	19.20	16.48	12.58
12-10 AWG — Yellow								
512-5046*	8-34852-2	6	0.250	0.953	0.281	9.76	8.27	6.34
512-5047*	8-34169-2	8	0.230	1.083	0.375	9.76	8.27	6.34
512-5048	8-34853-1	8	0.250	1.083	0.375	19.51	16.54	12.68
512-5050	8-34854-1	10	0.250	1.083	0.375	19.51	16.54	12.68
512-5056*	8-34855-2	1/4"	0.250	1.327	0.531	11.12	9.42	7.20
512-5057*	8-34172-2	5/16"	0.230	1.327	0.531	11.12	9.42	7.20
512-5058*	8-34856-2	5/16"	0.250	1.327	0.531	11.27	9.54	7.30
512-5054*	8-34173-2	3/8"	0.230	1.421	0.593	11.12	9.42	7.20
512-5059*	8-34837-2	1/2"	0.250	1.594	0.750	16.35	13.81	10.49

*Package of 50.

Spade Tongue Terminals — Fig. B

Stock No.	Mfr.'s Type	AWG	Stud Size	Insulation Max. Dia. (In.)	Length (In.)	Width (In.)	PER PKG./100		
							1-4	5-9	10-24
512-5060	8-320665-1	22-16	6	0.140	0.765	0.297	16.13	13.87	10.63
512-5065	8-34155-1	22-16	8	0.140	0.920	0.375	16.13	13.87	10.63
512-5066	8-34156-1	22-16	10	0.140	0.920	0.375	16.13	13.87	10.63
512-5080	8-322994-1	16-14	6	0.140	0.765	0.297	16.13	13.87	10.63
512-5082	8-34166-1	16-14	8	0.170	0.920	0.375	16.13	13.87	10.63
512-5085	8-34167-1	16-14	10	0.170	0.920	0.375	16.13	13.87	10.63
512-5092	8-34176-1	12-10	10	0.230	1.095	0.406	19.51	16.54	12.68

Flanged Spade Tongue Terminals — Fig. C

512-5070	8-322249-1	22-16	6	0.140	0.749	0.296	17.63	15.14	11.59
512-5072	8-324169-1	22-16	8	0.140	0.842	0.416	17.63	15.15	11.59
512-5074	8-328516-1	22-16	10	0.140	0.749	0.296	34.16	29.19	22.07
512-5094	8-324165-1	16-14	6	0.170	0.749	0.294	17.63	15.14	11.59
512-5096*	8-324581-2	10-12	6	0.230	1.017	0.296	17.61	14.86	11.28
512-5076*	8-324172-2	10-12	8	0.230	1.017	0.416	9.10	7.72	5.93

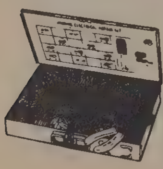
Short Spring Spade Tongue Terminals — Fig. D

512-5097	8-52947-1	22-16	4	0.140	0.811	0.203	18.94	16.25	12.41
512-5005	8-52949-1	22-16	6	0.140	0.811	0.250	18.94	16.25	12.41
512-5098	8-52950-1	22-16	8	0.140	0.872	0.375	22.65	19.41	14.77
512-5102	8-52951-1	22-16	10	0.140	0.920	0.406	27.18	23.26	17.64
512-5104	8-52955-1	16-14	6	0.140	0.811	0.250	18.94	16.25	12.41
512-5106	7-52956-1	16-14	8	0.170	0.872	0.375	21.82	18.70	14.24
512-5108	8-52957-1	16-14	10	0.170	0.920	0.406	18.94	16.25	12.41
512-5112*	8-52961-2	12-10	6	0.200	0.959	0.250	14.86	12.55	9.55
512-5114*	8-52962-2	12-10	8	0.200	1.052	0.375	15.63	13.20	10.04
512-4188*	52963	12-10	10	0.200	1.100	0.406	15.47	12.97	9.73

*Package of 50.

Butt Splices — Fig. E

Stock No.	Mfr.'s Type	AWG	Insulation Max. Dia. (In.)	Length (In.)	PER PKG./100		
					1-4	5-9	10-24
512-5135	8-34070-1	22-16	0.140	1.065	19.13	16.42	12.54
512-5140	8-34071-1	16-14	0.170	1.065	19.13	16.42	12.54
512-5000	8-34072-1	12-10	0.230	1.160	28.47	24.06	18.32



Terminal Kits

Contain 20 different terminals and splices; 25 of each, for a 500 piece kit. The PLASTI-GRIP® kit includes a SUPER CHAMP® hand tool. The PIDG® kit includes a SUPER CHAMP HAND TOOL IV®. Enclosed in a compartmented steel carrying case.

512-9230. 608029-1. PLASTI-GRIP® Kit...**PER KIT 83.95**
512-9235. 608028-1. PIDG® Kit...**PER KIT 94.94**

SOLISTRAND® Uninsulated Terminals and Splices

Constructed of fine grade high conductivity copper (spring spade terminals are constructed of phosphor bronze) and tin-plated. These feature a brazed seam, dimples or serrations inside the barrel and a bell-shaped barrel entrance. Meets or exceeds the requirements of MIL-T-7928, type 1, class 1 and 2. UL listed and CSA certified. **Bulk packages available, contact your local Allied sales office.**

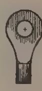


Fig. O

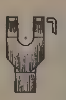


Fig. P

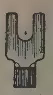


Fig. Q

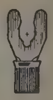


Fig. R

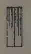


Fig. S

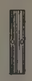


Fig. T

Ring Tongue Terminals — Fig. O

Stock No.	Mfr.'s Type	AWG	Stud Size	Length (In.)	Width (In.)	Pkg. Size	PER PKG.		
							1-4	5-9	10-24
512-5182	8-34105-1	22-16	6	0.449	0.218	100	10.93	9.45	7.34
512-5278	8-34110-1	22-16	6	0.621	0.312	100	11.24	9.72	7.53
512-5280	8-34111-1	22-16	8	0.625	0.312	100	10.93	9.45	7.34
512-5184	8-34108-1	22-16	8	0.574	0.281	100	10.93	9.45	7.34
512-5282	8-34112-1	22-16	10	0.625	0.312	100	11.24	9.72	7.53
512-5186	8-34109-1	22-16	10	0.574	0.281	100	10.93	9.45	7.35
512-5284	8-34113-1	22-16	1/4"	0.855	0.469	100	12.60	10.87	8.39
512-5286	8-34120-1	16-14	6	0.450	0.250	100	10.93	9.45	7.34
512-5288	8-324955-1	16-14	8	0.590	0.312	100	15.26	13.13	10.08
512-5289	8-34122-1	16-14	8	0.636	0.343	100	10.93	9.45	7.35
512-5290	8-34123-1	16-14	10	0.636	0.343	100	10.93	9.45	7.34
512-5292	8-34124-1	16-14	1/4"	0.855	0.469	100	12.60	10.87	8.39
512-5294	8-32994-2	12-10	8	0.760	0.375	50	7.00	5.96	4.82
512-5296	8-33457-1	12-10	10	0.760	0.375	100	14.41	12.26	9.47
512-5298	8-33458-2	12-10	1/4"	1.004	0.531	50	7.96	6.76	5.40

Flanged Spade Tongue Terminals — Fig. P

512-5301	8-320749-1	22-16	6	0.514	0.296	100	11.91	10.29	7.96
512-5303	8-320856-1	16-14	8	0.514	0.294	100	11.91	10.29	7.96

Spade Tongue Terminals — Fig. Q

512-5305	8-36195-1	22-16	6	0.530	0.297	100	10.93	9.45	7.34
512-5307	8-323127-1	22-16	6	0.623	0.250	100	10.93	9.45	7.34
512-5309	8-34117-5	22-16	8	0.685	0.375	200	21.86	18.90	14.68
512-4311	34118	22-16	10	0.685	0.375	100	9.83	8.35	6.24
512-5313	8-32995-1	12-10	8	0.772	0.406	100	13.99	11.92	9.21
512-5315	8-33479-2	12-10	10	0.772	0.406	50	7.00	5.96	4.61

Short Spring Spade Tongue Terminals — Fig. R

512-5317	8-53120-1	22-16	6	0.576	0.250	100	16.16	13.89	10.65
512-5319	8-53123-1	16-14	6	0.576	0.250	100	18.42	15.82	12.09
512-5321	8-53124-1	16-14	8	0.637	0.375	100	20.58	17.58	13.40
512-5323	8-53125-1	16-14	10	0.685	0.406	100	13.87	11.95	9.20
512-5325	8-53126-2	12-10	6	0.636	0.250	50	8.65	7.34	5.65
512-5327	8-53127-2	12-10	8	0.729	0.375	50	13.63	11.52	8.78
512-5329	8-53128-2	12-10	10	0.777	0.406	50	14.08	11.90	9.06

Parallel Splices — Fig. S

When using two or more wires in a parallel splice, the combined cross sectional area must be within the circular mil area (CMA) listed.

Stock No.	Mfr.'s Type	AWG	CMA	Length (In.)	Pkg. Size	PER PKG.		
						1-4	5-9	10-24
512-5331	8-34130-1	22-16	509-3,260	0.301	100	10.38	8.99	6.99
512-5333	8-34137-1	16-14	2,050-5,180	0.301	100	10.38	8.99	6.99
512-5335	8-34138-2	12-18	5,180-13,100	0.343	50	5.95	5.03	4.19
512-5190	8-34318-3	8	13,100-20,800	—	25	6.05	4.76	4.01

Standard Butt Splices — Fig. T

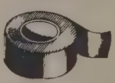
512-5337	8-31818-1	22-16	509-3,260	0.591	100	15.31	13.18	10.12
512-5339	8-31819-1	16-14	2,050-5,180	0.572	100	15.31	13.18	10.12
512-5341	8-32151-2	12-10	5,180-13,100	0.567	50	9.95	8.44	6.46

See page 209 for terminal and splice crimp tools.

PRO CRIMPER™II, PIDG® and PLASTI-GRIP® Terminal Kit

Includes hand tool, 225 ring and spade terminals in 12-10, 16-14 and 22-16 AWG wire sizes.

512-9236. 55823-1 ....**PER KIT 83.79**



Cold Shrink Tape

This is an all purpose Insulating and sealing tape which bonds itself permanently, water seals, has better insulating qualities than electrical tape and is ideal for "buried" applications.

Stock No.	Mfr.'s Type	Description	EACH		
			1-9	10-24	25-49
512-0001	605262-1	1" × 10' Black	4.48	4.14	3.79
512-0004	605262-2	2" × 30' Black	16.76	15.57	14.63

Electrical Repair Kit

Clear plastic case contains 104 assorted terminals and a SUPER CHAMP Crimping Tool IV®.

512-9211. 314974-1. Electrical Repair Kit ....**PER KIT 41.59**

DIPLOMATE® (DL) DIP Sockets and Test Probe Receptacles

AMP

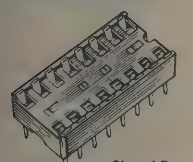
The DIPLOMATE® socket family provides high quality at low cost with superior handling characteristics. It is available with dual wiping contacts in tin or gold plating over beryllium copper or economical phosphor bronze. The large target area of the contacts and tapered side ramps in the housing insure easy entry of a DIP package. Internal anti-overstress walls prevent contact damage. The housings are compatible with commercially available automatic insertion equipment for socket-to-board or DIP-to-socket applications. These stackable housings feature a "True Closed Bottom" design which prevents solder or flux wicking at class 1 conditions of EIA 486.

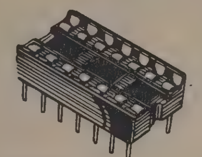
Standoffs provide board clearance for proper cleaning after soldering. Sockets are available with straight solder tails for clinching and are "true positioned" for automatic insertion into the PC board. Solder tails with retention feature, for self-retention in the PC board during handling and flow soldering, are available for hand insertion.

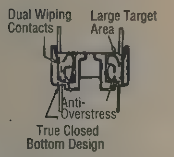
Housings are constructed from self-extinguishing glass-filled polyester, 94V-0 rated material and meet the material requirements of Table 23.1 of UL 1410 Standard for Television Receivers and Video Products.

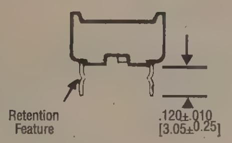
The DIPLOMATE® (DL) DIP and SIP socket family meets the requirements of EIA RS415, MIL-S-83734 and the most stringent specifications of main-frame computer manufacturers.

Dual Leaf DIP


Closed Frame


Open Frame





Accepts .008–.015 thick × .030 wide rectangular leads.

Performance Characteristics. Rating: 250 VAC. **Contact Resistance:** 20 milliohms max. (initial), 30 milliohms max. (after test). **Dielectric Withstanding Voltage:** 1000 VRMS min. **Insulation Resistance:** 5000 megohms min. **Capacitance:** 0.5 picofarad max. **Operating Temperature:** –55°C to +105°C (tin), –55°C to + 125°C (gold). **Vibration:** 10-2000-10 Hz in 20 minutes at .06 (1.52) or 15 Gs for 3 sweeps in each of 3 axes. **Shock:** 100 Gs sawtooth, 6 shocks. **Engaging Force:** 340 grams (3.33 N) max. (.013 (0.33) pin). **Separating Force:** 25 grams (.24 N) (.008 (0.2) pin.

No. of Pos.	Dimensions — Inch (mm)		
	Length	Width	Height
6	.295 (7.49)	.394 (10.01)	.210 (5.33)
8	.395 (10.03)	.394 (10.01)	.210 (5.33)
14	.695 (17.65)	.394 (10.01)	.210 (5.33)
16	.795 (20.19)	.394 (10.01)	.210 (5.33)
18	.895 (22.73)	.394 (10.01)	.210 (5.33)
20	.995 (25.27)	.394 (10.01)	.210 (5.33)
22	1.095 (27.81)	.494 (12.55)	.210 (5.33)
24a	1.195 (30.35)	.394 (10.01)	.210 (5.33)
24b	1.195 (30.35)	.694 (17.63)	.210 (5.33)
28	1.395 (35.43)	.394 (10.01)	.210 (5.33)
28b	1.395 (35.43)	.694 (17.63)	.210 (5.33)
40	1.995 (50.67)	.694 (17.63)	.210 (5.33)

Dual Leaf, Closed Frame Sockets

Sockets with Straight Solder Tail

Tinned Beryllium Copper

Stock No.	Mfr.'s Type	No. of Pos.	EACH		
			1-99	100-499	500-999
512-4520	2-641296-1	6	.15	.13	.11
512-4521	2-640463-1	8	.15	.13	.11
512-4522	2-640357-1	14	.26	.23	.19
512-4523	2-640358-1	16	.29	.27	.22
512-4524	2-640359-1	18	.33	.30	.25
512-4525	2-640464-1	20	.37	.33	.28
512-4527	2-640361-1	24b	.44	.40	.33
512-4528	2-640362-1	28	.51	.47	.39
512-4529	2-640379-1	40	.74	.67	.55

Beryllium Copper with .000030" Gold Plating*

Stock No.	Mfr.'s Type	No. of Pos.	1-99	100-499	500-999
512-4540	2-641296-2	6	.23	.21	.19
512-4541	2-640463-2	8	.23	.21	.19
512-4542	2-640357-2	14	.39	.36	.33
512-4543	2-640358-2	16	.44	.41	.38
512-4544	2-640359-2	18	.50	.46	.43
512-4545	2-640464-2	20	.55	.51	.48
512-4547	2-640361-2	24b	.66	.61	.57
512-4548	2-640362-2	28	.78	.71	.67
512-4549	2-640379-2	40	1.11	1.02	.96

Tinned Phosphor Bronze

Stock No.	Mfr.'s Type	No. of Pos.	EACH		
			1-99	100-499	500-999
512-4530	2-641296-3	6	.07	.06	.05
512-4531	2-640463-3	8	.08	.07	.06
512-4532	2-640357-3	14	.08	.07	.06
512-4533	2-640358-3	16	.09	.08	.06
512-4534	2-640359-3	18	.11	.10	.08
512-4535	2-640464-3	20	.13	.11	.09
512-4537	2-640361-3	24b	.18	.15	.11
512-4538	2-640362-3	28	.19	.17	.12
512-4539	2-640379-3	40	.28	.24	.18

Phosphor Bronze with .000015" Gold Plating*

Stock No.	Mfr.'s Type	No. of Pos.	1-99	100-499	500-999
512-4550	2-641296-4	6	.21	.17	.16
512-4551	2-640463-4	8	.21	.17	.16
512-4552	2-640357-4	14	.34	.28	.26
512-4553	2-640358-4	16	.39	.32	.30
512-4554	2-640359-4	18	.44	.36	.33
512-4555	2-640464-4	20	.48	.40	.37
512-4557	2-640361-4	24b	.58	.48	.45
512-4558	2-640362-4	28	.69	.57	.52
512-4559	2-640379-4	40	.98	.81	.74

*Gold thickness in contact area. Tin-lead plate on solder tails.

Test Probe Receptacles

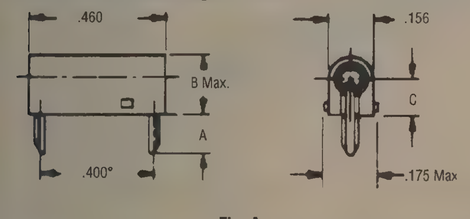


Fig. A

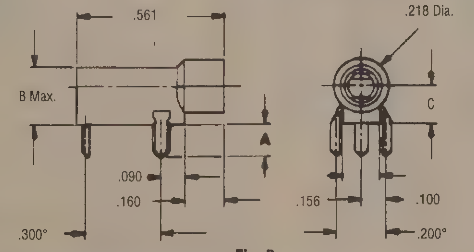


Fig. B

- ► Leg Mounts Are "V" Shaped to Promote Solder Wicking and Consistent Fillets
- ► Housing Color Is Molded, Not Dyed
- ► Receptacle Is Recessed in Housing to Prevent Shorting of Flashover
- ► Accepts .080 ±.001 Probes

The AMP® line of Test Probe Receptacles is designed to provide low-cost test probe capability of circuits on printed circuit boards, without interruption of operating current, with precise reliability.

Stock No.	Mfr.'s Type	Fig.	Contact Finish	Color	Dimensions			EACH		
					A	B	C	1-99	100-499	500-999
512-7500	1-582118-0	A	Tin-Lead	Black	0.130	0.230	0.138	.30	.26	.23
512-7502	1-582118-2	A	Tin-Lead	Red	0.130	0.230	0.138	.28	.24	.21
512-7504	1-582118-5	A	Tin-Lead	Green	0.130	0.230	0.138	.28	.24	.21
512-7506	1-582118-9	A	Tin-Lead	White	0.130	0.230	0.138	.28	.24	.21
512-7508	3-582118-0	A	Gold	Black	0.130	0.230	0.138	.81	.69	.61
512-7510	3-582118-2	A	Gold	Red	0.130	0.230	0.138	.81	.69	.61
512-7512	3-582118-5	A	Gold	Green	0.130	0.230	0.138	.81	.69	.61
512-7514	3-582118-9	A	Gold	White	0.130	0.230	0.138	.81	.69	.61
512-7516	350180-0	B	Gold	Black	0.130	0.230	0.138	1.97	1.42	1.19
512-7518	350180-2	B	Gold	Red	0.130	0.230	0.138	1.97	1.42	1.19
512-7520	350180-5	B	Gold	Green	0.130	0.230	0.138	1.97	1.42	1.19

Dual Leaf, Open Frame Sockets

Sockets with Straight Solder Tail

Tinned Beryllium Copper

Stock No.	Mfr.'s Type	No. of Pos.	EACH		
			1-99	100-499	500-999
512-4661	2-641599-1	14	.26	.23	.19
512-4662	2-641600-1	16	.29	.27	.22
512-4663	2-641601-1	18	.33	.30	.25
512-4664	2-641602-1	20	.37	.33	.28
512-4665	2-641603-1	22	.41	.37	.31
512-4666	2-641932-1	24a	.44	.40	.33
512-4667	2-641604-1	24b	.44	.40	.33
512-4668	2-641605-1	28	.51	.47	.39
512-4669	2-641606-1	40	.74	.67	.55

Beryllium Copper with .000030" Gold Plating*

Stock No.	Mfr.'s Type	No. of Pos.	1-99	100-499	500-999
512-4681	2-641599-2	14	.39	.36	.33
512-4682	2-641600-2	16	.44	.41	.38
512-4684	2-641602-2	20	.55	.51	.48
512-4686	2-641932-2	24a	.66	.61	.57
512-4688	2-641605-2	28	.78	.71	.67
512-4689	2-641606-2	40	1.11	1.02	.96

Phosphor Bronze—Tinned

Stock No.	Mfr.'s Type	No. of Pos.	1-99	100-499	500-999
512-4671	2-641599-3	14	.08	.07	.06
512-4672	2-641600-3	16	.09	.08	.07
512-4673	2-641601-3	18	.11	.09	.08
512-4674	2-641602-3	20	.12	.11	.08
512-4676	2-641932-3	24a	.15	.13	.10
512-4677	2-641604-3	24b	.19	.17	.12
512-4678	2-641605-3	28	.20	.18	.13
512-4679	2-641606-3	40	.27	.23	.17

Phosphor Bronze with .000015" Gold Plating*

Stock No.	Mfr.'s Type	No. of Pos.	1-99	100-499	500-999
512-4691	2-641599-4	14	.34	.28	.26
512-4692	2-641600-4	16	.39	.32	.30
512-4694	2-641602-4	20	.56	.44	.37
512-4696	2-641932-4	24a	.59	.48	.45
512-4697	2-641604-4	24b	.59	.48	.45
512-4698	2-641605-4	28	.69	.57	.52
512-4699	2-641606-4	40	.98	.81	.74

Sockets with Retention Feature

Beryllium Copper — Tinned (Open Frame except 6 and 8 contact)

Stock No.	Mfr.'s Type	No. of Pos.	1-99	100-499	500-999
512-4620	2-641259-1	6	.15	.13	.11
512-4621	2-641260-1	8	.15	.13	.11
512-4622	2-641609-1	14	.26	.23	.19
512-4623	2-641610-1	16	.30	.27	.22
512-4624	2-641611-1	18	.33	.30	.25
512-4625	2-641612-1	20	.37	.33	.28
512-4641	2-641933-1	24a	.44	.40	.33
512-4628	2-641615-1	28	.51	.47	.39
512-4629	2-641616-1	40	.74	.67	.55

Beryllium Copper with .000030" Gold Plating*

Stock No.	Mfr.'s Type	No. of Pos.	1-99	100-499	500-999
512-4572	2-641609-2	14	.39	.36	.33
512-4573	2-641610-2	16	.44	.41	.38
512-4575	2-641612-2	20	.55	.51	.48
512-4578	2-641615-2	28	.78	.71	.67
512-4579	2-641616-2	40	1.11	1.02	.96

Phosphor Bronze—Tinned (Open Frame except 6 and 8 contact)

Stock No.	Mfr.'s Type	No. of Pos.	1-99	100-499	500-999
512-4630	2-641259-3	6	.07	.06	.05
512-4631	2-641260-3	8	.07	.06	.05
512-4632	2-641609-3	14	.08	.07	.06
512-4633	2-641610-3	16	.09	.08	.06
512-4634	2-641611-3	18	.11	.09	.08
512-4635	2-641612-3	20	.12	.11	.08
512-4642	2-641933-3	24a	.16	.14	.10
512-4637	2-641614-3	24b	.19	.17	.12
512-4638	2-641615-3	28	.20	.17	.13
512-4639	2-641616-3	40	.27	.23	.17

Phosphor Bronze with .000015" Gold Plating

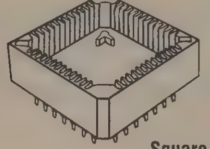
Stock No.	Mfr.'s Type	No. of Pos.	1-99	100-499	500-999
512-4581	2-641260-4	8	.21	.17	.15
512-4582	2-641609-4	14	.34	.28	.26
512-4583	2-641610-4	16	.39	.32	.30
512-4585	2-641612-4	20	.56	.44	.37
512-4643	2-641933-4	24a	.59	.48	.45
512-4588	2-641615-4	28	.69	.57	.52
512-4589	2-641616-4	40	.98	.81	.74

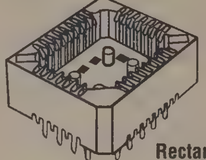
*Gold thickness in contact area. Tin-lead plate on solder tails.

PLCC Sockets

Listed Certified

High Pressure Tin (HPT) Sockets with Solder Tails

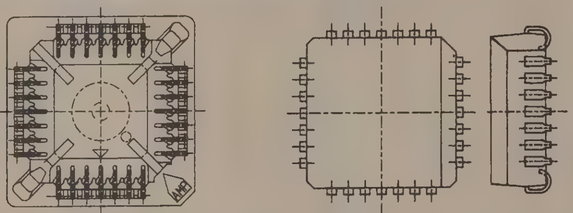

Square


Rectangle

Sockets accept JEDEC PLCC packages in square and 32-position rectangular EPROM configurations with tin plated leads on .050 centers. AMP® (HPT) chip carriers are designed to make effective and economical use of a PC board area for PLCCs with high pin counts. **Housing Materials:** Polyphenylene Sulfide, 40% glass filled, UL 94V-O rated, 220°C. **Contacts:** Tin plate over phosphor bronze.

Stock No.	Mfr.'s Type	No. of Pos/Config.	Dim. "D" (In.)	EACH		
				1-99	100-499	500-999
512-7270	821815-1	20/Square	0.055-0.075	2.50	2.28	2.13
512-7272	821581-1	28/Square	0.055-0.075	1.39	1.17	1.07
512-7274	821665-1	32/Rectangular	0.055-0.075	1.60	1.28	1.17
512-7276	821575-1	44/Square	0.055-0.075	1.67	1.41	1.28
512-7278	821551-1	52/Square	0.055-0.075	1.52	1.46	1.32
512-7280	821574-1	68/Square	0.055-0.075	1.92	1.62	1.46
512-7282	821573-1	84/Square	0.055-0.075	2.24	1.89	1.72

Low Insertion Force, Low Profile Surface Mount PLCC Sockets



New to the AMP® family of Low Profile Plastic Leaded Chip Carrier (PLCC) sockets for surface mounting is this line of Low Insertion Force Sockets. A unique contact design allows the PLCC device to be easily inserted into the socket. Sockets will accommodate plastic "J"-leaded devices made to JEDEC Specifications MO-047AA-AH (square packages and MO-052-AE (rectangular packages)).

Rectangular Sockets

Stock No.	Mfr.'s Type	No. of Positions	With Locating Posts	EACH		
				1-99	100-499	500-999
512-7564	822273-1	32	No	1.50	1.35	1.12
512-7566	822274-1	32	Yes	1.50	1.35	1.20

Square Sockets

Stock No.	Mfr.'s Type	No. of Positions	With Locating Posts	1-99	100-499	500-999
512-7540	822269-1	20	No	1.15	1.03	.92
512-7542	822270-1	20	Yes	1.15	1.03	.92
512-7544	822271-1	28	No	1.40	1.26	1.04
512-7546	822272-1	28	Yes	1.40	1.26	1.11
512-7548	822275-1	44	No	1.88	1.68	1.39
512-7550	822276-1	44	Yes	1.88	1.68	1.39
512-7552	822277-1	52	No	2.15	1.93	1.72
512-7554	822278-1	52	Yes	2.15	1.93	1.72
512-7556	822279-1	68	No	2.37	2.13	1.90
512-7558	822280-1	68	Yes	2.37	2.13	1.90
512-7560	822281-1	84	No	2.73	2.45	2.17
512-7562	822282-1	84	Yes	2.73	2.45	2.17

PLCC Tooling

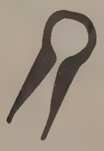


Fig. A

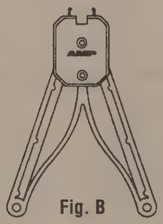


Fig. B

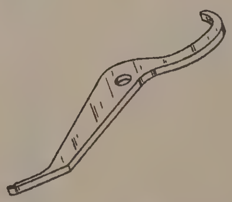
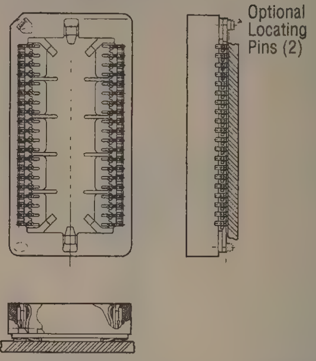


Fig. C

Stock No.	Mfr.'s Type	Fig.	Socket Type	No. of Positions	EACH
512-7290	821903-6	A	Square	20	18.13
512-7292	821903-5	A	Square	28	18.13
512-7426	822011-1	B	Square	20	41.19
512-7428	822045-1	B	Square	28	41.19
512-7432	821981-1	B	Square	44	41.19
512-7434	822049-1	B	Square	52	41.19
512-7436	822026-1	B	Square	68	41.19
512-7438	822268-1	B	Square	84	41.19
512-7298	821980-1	B	Rectangular	32	41.19
512-7440	822154-1	C	All-Purpose	—	1.11

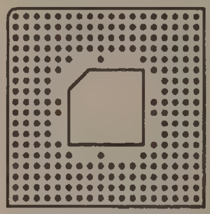
Low Profile SOJ-Style Surface Mount PLCC Socket



AMP® has expanded its family of PLCC sockets to include this SOJ-style version. The socket was developed to accommodate "J"-leaded drams/vrams with tin-plated leads.

Stock No.	Mfr.'s Type	No. of Positions	Centerline Spacing	With Locating Posts	EACH		
					1-99	100-499	500-999
512-7572	822372-1	28	0.300	No	1.20	1.04	.96
512-7574	822374-1	32	0.300	No	1.27	1.11	1.01
512-7576	822265-2	40	0.400	No	1.54	1.34	1.21
512-7578	822267-2	40	0.400	Yes	1.54	1.34	1.21

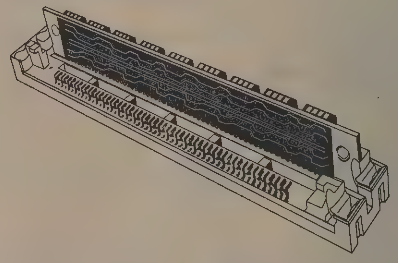
LIF PGA Socket for Motorola's 68360 QUICC Controller



The AMP® Socket, an 18 × 18, 241 position version with standard cavity, is a true low force product. Preloaded, long, dual beam contacts with staggered-row heights provide both sufficient normal force and low insertion/extraction forces.

512-9162. 1-916228-1. Socket for Motorola 68360 QUICC Controller. **1-99** ....EACH 4.74
100-249....................EACH 4.11
250-499....................EACH 3.90

MICRO-EDGE™ SIMM Sockets



SIMM connectors with metal latches for leadless single in-line memory modules (.050 centerlines).

Vertical Single Row Standard Polarization (Tin Plated)

Stock No.	Mfr.'s Type	No. of Positions	With Center Post	EACH		
				1-24	25-99	100-499
512-7250	822021-2	64	Yes	1.66	1.58	1.52
512-7252	822019-2	64	No	1.66	1.58	1.52
512-7254	822021-3	68	Yes	1.76	1.68	1.61
512-7256	822019-3	68	No	1.76	1.68	1.61
512-7258	822021-4	72	Yes	1.86	1.78	1.70
512-7260	822019-4	72	No	1.86	1.78	1.70
512-7262	822021-5	80	Yes	2.07	1.98	1.89
512-7264	822019-5	80	No	2.07	1.98	1.89

Left Polarization

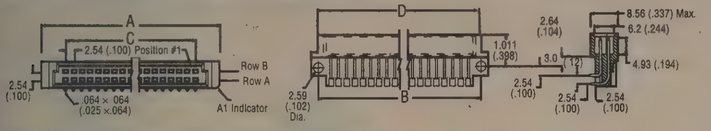
Stock No.	Mfr.'s Type	No. of Positions	With Center Post	1-24	25-99	100-499
512-7266	822030-3	72	Yes	1.86	1.78	1.70
512-7200	821997-3*	72	Yes	2.10	2.00	1.92
512-8220	822030-4	80	Yes	2.07	1.98	1.89
512-8219	821997-4*	80	Yes	2.33	2.20	2.13

*Gold Plated.

Meets DIN41612 and IEC603-2. Two Piece Reliability. Flame Retardant. UL Recognized, CSA Certified. All Products Listed are DIN Level II. **Contact Plating:** .000030" Gold in Contact Area, Tin-Lead on Posts, .000050" Nickel Overall.

Type B — Two Row Connectors

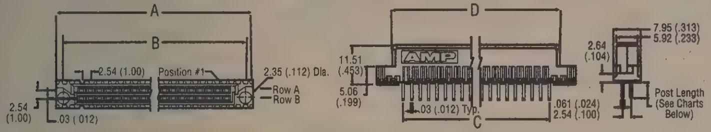
Grid: 2.54 × 2.54 (.100" × .100"). **Common Bus System Applications:** STE Bus and CIMBUS.



Right-Angle Pin Assemblies with Solder Posts

2.64 (.104") post length. **Housing:** Polyester, black, 94V-O rated. **Contacts:** Brass with plating.

Stock No.	Mfr.'s Type	No. of Pos.	Rows Loaded	Dimensions - mm/in				EACH		
				A	B	C	D	1-24	25-99	100-499
512-2700	536052-5	64	A,B	93.980 3.700	88.900 3.500	85.290 3.358	87.760 3.455	**3.95**	**3.62**	**2.61**



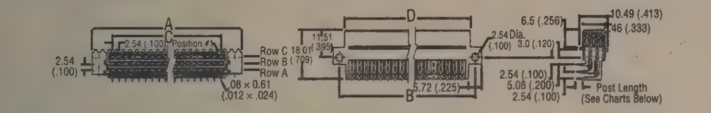
Vertical Receptacle Assemblies with Solder Posts

4.57 (.180") post length. **Housing:** Polyester, grey, 94V-O rated. **Contacts:** Phosphor Bronze with plating.

Stock No.	Mfr.'s Type	No. of Pos.	Rows Loaded	Dimensions - mm/in				EACH		
				A	B	C	D	1-24	25-99	100-499
512-9127	650861-5	64	A,B	93.960 3.700	90.000 3.543	78.740 3.100	85.000 3.346	**5.71**	**4.73**	**3.41**

Type R — Three Row Connectors

Grid: 2.54 × 2.54 (.100" × .100"). Inverse of Type C — for similar Bus applications.

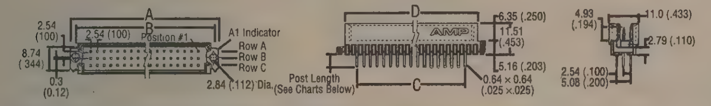


Right-Angle Receptacle Assemblies with Solder Posts

2.79 (.110") post length. **Housing:** Polyester, grey, 94V-O rated. **Contacts:** Phosphor Bronze with plating.

Standard Size

Stock No.	Mfr.'s Type	No. of Pos.	Rows Loaded	Dimensions - mm/in				EACH		
				A	B	C	D	1-24	25-99	100-499
512-9120	650461-5	96	A,B,C	93.870 3.696	88.900 3.500	78.740 3.100	85.000 3.346	**5.04**	**4.62**	**3.33**
512-2719	650870-5	64	A,C	93.870 3.696	88.900 3.500	78.740 3.100	85.000 3.346	**4.78**	**4.38**	**3.16**



Vertical Pin Assemblies with Solder Posts

3.30 (.130") post length. **Housing:** Polyester, grey, 94V-O rated. **Contacts:** Brass with plating.

Standard Size

Stock No.	Mfr.'s Type	No. of Pos.	Rows Loaded	Dimensions - mm/in				EACH		
				A	B	C	D	1-24	25-99	100-499
512-2853	650908-5	96	A,B,C	95.000 3.740	90.000 3.543	78.740 3.100	88.010 3.465	**3.47**	**3.18**	**2.47**

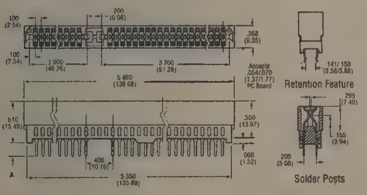
Half Size

Stock No.	Mfr.'s Type	No. of Pos.	Rows Loaded	Dimensions - mm/in				EACH		
				A	B	C	D	1-24	25-99	100-499
512-2856	650479-5	48	A,B,C	54.370 2.140	49.350 1.943	38.100 1.500	47.370 1.865	**2.34**	**2.15**	**1.55**

4.57 (.180") post length. **Housing:** Polyester, Grey, 94V-O rated. **Contacts:** Brass with Plating.

Standard Size

Stock No.	Mfr.'s Type	No. of Pos.	Rows Loaded	Dimensions - mm/in				EACH		
				A	B	C	D	1-24	25-99	100-499
512-2721	650470-5	96	A,B,C	95.000 3.740	90.000 3.543	78.740 3.100	88.010 3.465	**3.47**	**3.18**	**2.29**



Standard Edge II Connectors

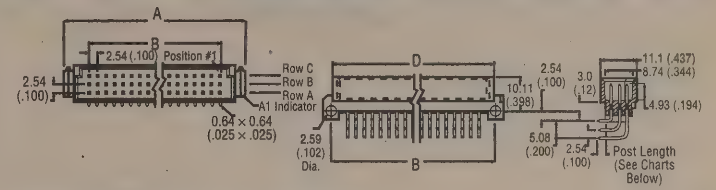
.100" (2.54) Centerline, Special 18/31 Dual Combination Connector, Vertical Solder Posts

- ▶ **Housing: Black Glass-Filled Polyester 94V-0 Rated**
- ▶ **Contacts: Phosphor Bronze, Plated with 30µ" Gold**

Stock No.	Mfr.'s Type	No. of Dual Pos.	Description	Length	EACH		
					1-24	25-49	50-99
512-2868	645169-2	52	Retention Leads	5.35"	**1.76**	**1.55**	**1.47**
512-2870	645169-3	52	Straight Leads	5.35"	**1.76**	**1.55**	**1.34**

Type C — Three Row Connectors

Grid: 2.54 × 2.54 (1.000" × 1.000"). **Common Bus System Applications:** FUTUREBUS, VMEbus, MULTIBUS(II), and NUBUS.



Right-Angle Pin Assemblies with Solder Posts

Standard Size

2.64 (.104") post length. **Housing:** Polyester, grey, 94V-O rated. **Contacts:** Brass with plating.

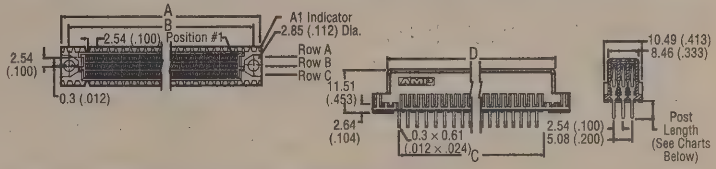
Stock No.	Mfr.'s Type	No. of Pos.	Rows Loaded	Dimensions - mm/in				EACH		
				A	B	C	D	1-24	25-99	100-499
512-2702	650473-5	96	A,B,C	93.980 3.700	88.900 3.500	74.740 3.100	87.760 3.455	**3.53**	**3.23**	**2.33**
512-2703	650945-5	64	A,C	93.980 3.700	88.900 3.500	78.740 3.100	87.760 3.455	**3.31**	**3.03**	**2.18**

3.30 (.130") post length. **Housing:** Polyester, grey, 94V-O rated. **Contacts:** Brass with plating.

Stock No.	Mfr.'s Type	No. of Pos.	Rows Loaded	Dimensions - mm/in				EACH		
				A	B	C	D	1-24	25-99	100-499
512-2801	650947-5	96	A,B,C	93.980 3.700	88.900 3.500	74.740 3.100	87.760 3.455	**3.53**	**3.23**	**2.33**
512-2803	650951-5	64	A,C	93.980 3.700	88.900 3.500	78.740 3.100	87.760 3.455	**3.31**	**3.03**	**2.18**

Half Size

Stock No.	Mfr.'s Type	No. of Pos.	Rows Loaded	Dimensions - mm/in				EACH		
				A	B	C	D	1-24	25-99	100-499
512-2805	650948-5	48	A,B,C	53.340 2.100	48.260 1.900	38.100 1.500	47.120 1.855	**2.54**	**2.32**	**1.67**



Vertical Receptacle Assemblies with Solder Posts

Standard Size

2.49 (.098") post length. **Housing:** Polyester, grey, 94V-O rated. **Contacts:** Phosphor bronze.

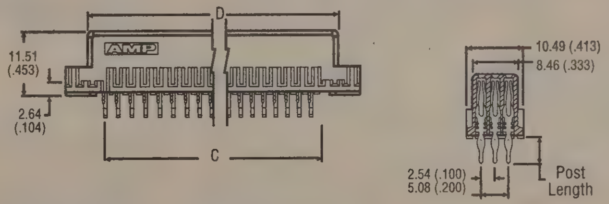
Stock No.	Mfr.'s Type	No. of Pos.	Rows Loaded	Dimensions - mm/in				EACH		
				A	B	C	D	1-24	25-99	100-499
512-2831	535089-5	96	A,B,C	93.980 3.700	90.000 3.543	78.740 3.100	85.000 3.346	**4.78**	**4.38**	**3.16**
512-9113	650458-5	64	A,C	93.980 3.700	90.000 3.543	78.740 3.100	85.000 3.346	**4.53**	**4.15**	**2.99**

3.30 (.130") post length. **Housing:** Polyester, grey, 94V-O rated. **Contacts:** Phosphor bronze with plating.

Stock No.	Mfr.'s Type	No. of Pos.	Rows Loaded	Dimensions - mm/in				EACH		
				A	B	C	D	1-24	25-99	100-499
512-2741	535090-5	96	A,B,C	93.980 3.700	90.000 3.543	78.740 3.100	85.000 3.346	**4.78**	**4.38**	**3.16**
512-2743	650956-5	64	A,C	93.980 3.700	90.000 3.543	78.740 3.100	85.000 3.346	**4.53**	**4.15**	**2.99**

.457 (.180") post length. **Housing:** Polyester, grey, 94V-O rated. **Contacts:** Phosphor bronze with plating.

Stock No.	Mfr.'s Type	No. of Pos.	Rows Loaded	Dimensions - mm/in				EACH		
				A	B	C	D	1-24	25-99	100-499
512-9124	535043-5	96	A,B,C	93.980 3.700	90.000 3.543	78.740 3.100	85.000 3.346	**4.78**	**4.38**	**3.16**



Vertical Receptacle Assemblies with Action Pin Posts

Standard Size

0.64 (.025") Square Posts for PC Board Thickness 2.36 (.093) and above. **Post Length:** 13 (.512") **Housing:** Polyester, Grey, 94V-O Rated. **Contacts:** Phosphor Bronze.

Stock No.	Mfr.'s Type	No. of Pos.	Rows Loaded	Dimensions - mm/in				EACH		
				A	B	C	D	1-24	25-99	100-499
512-2827	215912-4	96	A,B,C	95.000 3.740	90.000 3.543	78.740 3.100	85.000 3.346	**11.81**	**8.19**	**6.82**

30 × 0.61 (.012" × 0.024") for PC Board thickness 1.57 (.062") and above 4.83 (190") post length.

Stock No.	Mfr.'s Type	No. of Pos.	Rows Loaded	Dimensions - mm/in				EACH		
				A	B	C	D	1-24	25-99	100-499
512-2752	535032-4	96	A,B,C	93.980 3.700	90.000 3.453	78.74 3.100	85.000 3.346	**4.88**	**4.47**	**3.22**

PCMCIA: Infoport Connector System

Series I, Type II Unshielded
Frame Kit

Stock No.	Mfr.'s Type	No. of Pos.	Description	EACH		
				1-99	100-499	500-999
512-9700	557920-1	9	With Recessed Label Area	3.31	3.16	2.92
512-9702	557920-2	15	With Recessed Label Area	3.64	3.48	2.95
512-9704	557920-3	9	Without Recessed Label Area	3.31	3.16	2.92
512-9706	557920-4	15	Without Recessed Label Area	3.64	3.48	2.95

I/O Connector Assembly

512-9708	557908-1	9	Keyed Header	3.18	3.04	2.81
512-9710	557908-2	15	Keyed Header	3.74	3.57	3.30

Plug Assembly

512-9712	558314-1	9	Keyed Plug	4.04	3.86	3.57
512-9714	557715-2	15	Keyed Plug	4.32	4.14	3.82

Series II, Types I and II, Shielded, 0.8 mm
Frame Kit, Type II for I/O Applications

512-9738	558133-1	15	With Recessed Label Area	3.64	3.48	3.22
512-9742	558133-3	33	With Recessed Label Area	4.01	3.83	3.54
512-9746	558133-5	33	Without Recessed Label Area	4.01	3.83	3.54

I/O Assembly, Type II

512-9766	558134-1	15	Key 2	4.10	3.92	3.63
512-9768	558134-2	33	Key 2	5.87	5.61	5.19
512-9774	558134-5	33	Key 1	5.87	5.61	5.19

Frame Kit, Type I For Memory Card Applications

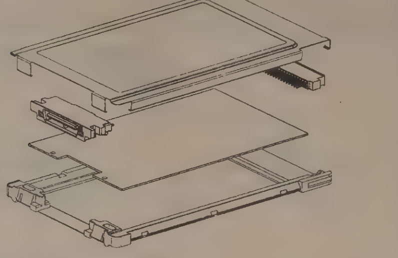
Stock No.	Mfr.'s Type	Description	EACH	
			1-99	100-499
512-9750	558138-1	No I/O Port, Offset PCB, With Recessed Label Area	3.64	3.48
512-9752	558138-2	No I/O Port, Offset PCB, Without Recessed Label Area	3.64	3.48

Frame Kit, Type I for DRAM Applications

512-9760	558360-2	No I/O Port, Centered PCB, Without Recessed Label Area	3.72	3.56

Cable Connector Kits

Stock No.	Mfr.'s Type	No. of Pos.	Description	EACH		
				1-99	100-499	500-999
512-9778	558126-1	15	Metal Latch, Key 2	4.77	4.56	4.22
512-9780	558126-2	15	Metal Latch, Key 1	4.77	4.56	4.22
512-9782	558126-3	15	Metal Latch, Key 3	7.16	6.94	6.33
512-9790	558126-4	33	Metal Latch, Key 2	6.41	6.13	5.67
512-9792	558277-1	33	Metal Latch, Key 1	6.41	6.13	5.67
512-9794	558277-2	33	Metal Latch, Key 3	6.41	6.13	5.67



Series III, Type II Shielded
Frame Kit Components

Stock No.	Mfr.'s Type	Description	EACH		
			1-99	100-499	500-999
512-9701	558877-1	Frame Assembly with Label Recess	2.32	2.22	2.05
512-9703	558877-2	Frame Assembly without Label Recess	2.32	2.22	2.05
512-9705	558879-1	Top Cover with Label Recess	1.14	1.10	1.01
512-9707	558879-2	Top Cover without Label Recess	1.14	1.10	1.01

Header Assemblies — 15 Position

512-9709	558556-1	Key 1, "Closed"	4.39	4.20	3.88
512-9711	558556-2	Key 2, "Multi-Function"	4.39	4.20	3.88
512-9713	558556-3	Key 3, "Modem"	4.39	4.20	3.88
512-9715	588556-4	Key 4, "LAN"	4.39	4.20	3.88

Cable Connector Assemblies

512-9717	558880-1*	8 Pin, Key 1, "Closed"	3.19	3.05	2.82
512-9719	558880-2*	8 Pin, Key 2, "Multi-Function"	3.19	3.05	2.82
512-9721	558880-3*	8 Pin, Key 3, "Modem"	3.19	3.05	2.82
512-9723	558880-4*	8 Pin, Key 4, "LAN"	3.19	3.05	2.82
512-9725	558666-1	15 Pin, Key 1, "Closed"	3.62	3.47	3.21
512-9727	558666-2	15 Pin, Key 2, "Multi-Function"	3.62	3.47	3.21
512-9729	558866-3	15 Pin, Key 3, "Modem"	3.62	3.47	3.21
512-9731	558666-4	15 Pin, Key 4, "LAN"	3.62	3.47	3.21

Cable Connector Shield Kits

512-9733	558807-1	Pull-to-Release, Small Cable Exit	.94	.90	.83
512-9735	558807-2	Pull-to-Release, Large Cable Exit	.94	.90	.83
512-9737	558790-1	Squeeze-to-Release, Small Cable Exit	.81	.78	.72
512-9739	558790-2	Squeeze-to-Release, Large Cable Exit	.81	.78	.72

Cable Connector Cover Kits

512-9741	558809-1	Pull-to-Release, with AMP Logo	1.29	1.23	1.14
512-9743	558809-2	Pull-to-Release, without AMP Logo	1.29	1.23	1.14
512-9745	558875-1	Squeeze-to-Release, For Post Molded Cable Exit	.99	.94	.87

*Partially loaded 15 position.

68 Position Pin Headers and Accessories

Right-angle pin headers, available in standard, raised and stacked standard profiles, provide attachment to the host equipment and feature three levels of sequencing. Both standard and raised profile pin headers offer thru-hole and surface-mount lead configurations for top or bottom mounting. Stacked standard profile pin headers permit 136 circuit connections with thru-hole lead configurations for top mounting. An organizer on the 68- and 136-position headers and 4-sided post lead-in aids in the placement of the headers on the PC board. The true position of the leads is held to 0.30 (.012). This allows a small hole size, 0.84 (.033), to be used in the PC pattern, which gives the designer flexibility in routing signal paths. Guide rails and card guides facilitate the insertion and removal of the memory cards. Pin headers find wide use in such equipment as: computer, office, photographic, communications, industrial, test and medical, and pay.

Standard Profile, Pin Headers

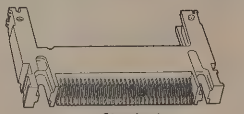
Stock No	Mfr.'s Type	No. of Pos.	Board Mount	Lead Type	EACH		
					1-24	25-99	100-249
512-9400	535653-1	68	Top	Thru-Hole	4.27	3.80	3.08
512-9404	535654-1	68	Bottom	Thru-Hole	4.27	3.80	3.08

Raised Profile, Pin Headers

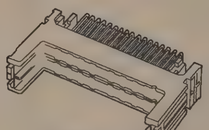
512-9408	535655-1	68	Top	Thru-Hole	4.27	3.80	3.08
512-9412	535656-1	68	Bottom	Thru-Hole	4.27	3.80	3.08

Stacked Standard Profile, Pin Header, with Holddown

512-9416	146027-1	132	Top	Thru-Hole	9.11	8.10	6.56



Standard



Stacked

Guide Rails and Guide Rail Assembly

Stock No.	Mfr.'s Type	Description	EACH		
			1-24	25-99	100-249
512-9418†	535664-1	Left with holddown	2.08	1.92	1.78
512-9420†	535664-2	Right with holddown	2.08	1.92	1.78
512-9422‡	535661-1	Left with holddown	2.08	1.92	1.78
512-9424‡	535661-2	Right with holddown	2.08	1.92	1.78
512-9430†	146033-1	Guide assembly, ESD	3.99	3.33	2.72
512-9432‡	146034-1	Guide assembly, ESD	3.99	3.33	2.72

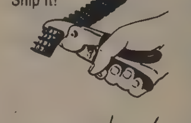
Ejector Assemblies

512-9434†	146021-1	With right button	3.94	3.50	2.84
512-9436†	146019-1	With left button	3.94	3.50	2.84
512-9438‡	146022-1	With right button	3.94	3.50	2.84
512-9440‡	146020-1	With left button	3.94	3.50	2.84
512-9442*	146036-1	Left or right	8.21	7.30	5.91

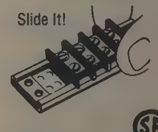
†For use with standard profile. ‡For use with raised profile. *For use with stacked standard profile; Ejector with both buttons on same side; can be used for either left or right orientation.

FLEXI-BLOCK™ Terminal Block System

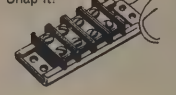
Snip It!



Slide It!



Snap It!

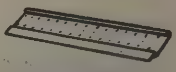


It's ready to go!

Block Assembly

Track

Track — Flanged



End Stop

Cutting Tool

Accessory Tabs

Jumper Tabs

Double Tabs

Flat

45°

90°

AMP® FLEXI-BLOCK™ terminal block assemblies can be custom-made in seconds. Any number of blocks, assembled on tape can be pulled from a convenient, stackable dispenser carton. Cutting the desired number of blocks and the required length of track can be accomplished with a handy cutting tool or a hacksaw. The track, GE NORYL EN 265, conforms to curved surfaces. Both the track and the blocks are self-extinguishing. To complete a proper assembly, after selecting the size blocks with appropriate electrical capacity, track is cut to the length of the required number of terminal blocks, plus two extra spaces to accommodate end stops. After the strip of terminal blocks is slid onto the track, insertion of an end stop in each end completes the assembly. Predrilled holes in the track allow quick mounting on flat or curved surfaces. In addition to direct application of wire ends under screw heads, plates with FASTON tabs or jumper tabs can be installed on size #6 and #8 FLEXI-BLOCK™ assemblies.

#6 Blue FLEXI-BLOCK™ and Accessories

Stock No.	Mfr.'s Type	Description	Pkg. Size	PER PACK
512-9992	1-604102-1	One block assembly on tape with nickel-plated brass screws; 100-block dispenser carton	100	33.23
512-8604	1-601805-1	3' long track; accommodates 80 positions, 2 end stops	1	3.69
512-8038	603817-4	3' long flanged track for marker I.D.; accommodates 80 positions, 2 end stops	1	11.34
512-8624	604111-1	End stops; 2 required per assembly	100	5.54
512-4081	604008-1	Cutting tool; tape or track	1	26.10
512-6019	601985-2	Jumper tab	1	.15
512-1989	3-601989-1	FASTON™ flat double tab	100	22.98
512-1990	3-601989-2	FASTON™ 45° double tab	100	28.76
512-1991	3-601989-3	FASTON™ 90° double tab	100	20.92

#8 Yellow FLEXI-BLOCK™ and Accessories

512-8643	1-604152-1	One block assembly on tape with nickel-plated brass screws; 100-block dispenser carton	100	39.33
512-1806	1-601806-1	3' long track; accommodates 60 positions, 2 end stops	1	3.33
512-8682	604161-1	End stops; 2 required per assembly	100	6.95
512-4081	604008-1	Cutting tool; tape or track	1	26.10
512-6045	604591-1	Jumper tab	1	.08
512-1989	3-601989-1	FASTON™ flat double tab	100	22.98
512-1990	3-601989-2	FASTON™ 45° double tab	100	28.76
512-1991	3-601989-3	FASTON™ 90° double tab	100	20.92

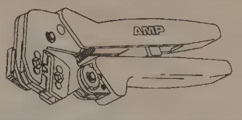
Kits

#6 FLEXI-BLOCK™ Kit — Standard Track
100-block assembly; 25 ea. stops; 2 ea. 1-601805-1, track.
512-8048. 601804-8..**EACH 54.14**

#6 FLEXI-BLOCK™ Kit — Flanged Track
One #6 kit consisting of 1 ea. 1-604102-1, 100-block assembly; 50 ea. 604111-1, end stops; 7 ea. 7.25 (184.15) flanged track.
512-8657. 604007-1..**EACH 53.93**

#8 FLEXI-BLOCK™ Kit — Standard Track
One #8 kit consisting of 1 ea. 1-604152-1, 100-block assembly; 50 ea. 604161-1, end stops; 8 ea. 9.5 (241.3) track.
512-8049. 604336-1..**EACH 65.45**

PRO-CRIMPER™ II Hand Tools and Dies



- ► Ratchet Control Provides Complete Crimping Cycle
- ► Emergency Ratchet Release
- ► Angled Head Provides a Comfortable Hand and Wrist Position
- ► One Tool with Interchangeable Die Sets Can Crimp Many Different Types of Connectors
- ► Accommodates Multiple Terminal Sizes in One Die Set
- ► Precision Construction of Durable High-Carbon Steel
- ► Extra Strength Pivot Pins Provide Greater Durability
- ► Produced Under a Quality Management System Certified to ISO 9001

Hand Tool (without Die Sets)

Stock No.	Mfr.'s Type	Description	EACH
512-2599	354940-1	Hand tool frame without die sets	66.69

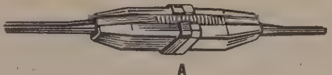
Die Sets Only

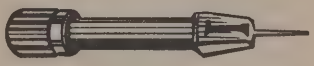
Stock No.	Mfr.'s Type	Crimps Connector Type	RG/U Cable or Wire Size	EACH
512-8614	58436-1	50 ohm BNC/TNC/N-type	58, 62, 59	36.88
512-2002	58436-3	50 ohm BNC	174, 188, 316, 179, 161, 187	36.88
512-2047	58436-2	50 ohm BNC	Belden 8281, 9141	36.88
512-2009	58425-2	75 ohm BNC	179, 161, 187	35.31
512-2038	58425-1	75 ohm BNC	62, 59	35.31
512-2071	58425-3	75 ohm BNC	Double braid 59, Belden 8281, 9141	35.31
512-9808	58485-1	50 ohm N-type	8, 213, 11, 216, 9, 214	45.51
512-9809	58485-2	50 ohm N-type	393, Belden 8214	45.51
512-9810	58494-1	Mini UHF	141, 223	260.44
512-2501	58489-1	50 ohm military SMB	174, 316, 188, 179, 161, 187, RD316, 188 double braid	45.41
512-9811	58046-1	50 ohm commercial SMB	178, 196, 174, 316, 188, 179, 161, 187	339.32
512-8748	58423-1	Insulated terminals	22-10 AWG	36.88
512-9812	58545-1	Uninsulated terminals	22-10 AWG	101.27
512-9813	58448-3	D-sub 20DF pin and sockets	28-20 AWG	87.88
512-9814	90800-2	D-sub 22DF pin and sockets	28-20 AWG	96.90
512-8952	90872-2	Soft shell .093 pin and pockets	24-18 AWG	84.74
512-8954	90871-2	Soft shell .093 pin and sockets	20-14 AWG	84.74
512-8942	90870-2	Soft shell .062 pin and sockets	30-24 AWG	84.74
512-8944	90869-2	Soft shell .062 pin and sockets	24-18 AWG	84.74

SUPER CHAMP® Crimp Tools

Stock No.	Mfr.'s Type	Description/ Crimps Connector Type	EACH
512-9186	47100-1	SUPER CHAMP®, insulated terminals and splices 22-10 AWG	14.95
512-8675	604252-1	SUPER CHAMP® IV, insulated and uninsulated terminals and splices, 22-10 AWG	16.95
512-8658	29564	SUPER CHAMP® FT, push-on type terminals 22-14 AWG	24.50
512-8615	90287-1	SERVICE TOOL I, all-purpose, insulated and uninsulated terminals 22-10 AWG	24.50
512-8634	90330-1	SERVICE TOOL II, appliance repair/all-purpose, insulated and uninsulated terminals 22-10 AWG	24.50
512-5831	189710-1	SUPER CHAMP®, modular plugs 2, 4, 6, and 8 pos.	33.15
512-2387	220146-1	SUPER CHAMP®, BNC, coaxial cable RG58	22.50
512-2389	220147-1	SUPER CHAMP®, BNC, coaxial cable RG59	22.50
512-9051	220148-1	SUPER CHAMP®, UHF, coaxial cable RG58, 59	22.50
512-9053	58124-1	SUPER CHAMP®, mini UHF, coaxial cable RG58, 188	22.50

D-Sub Pin and Socket Contact Extraction and Insertion Tools

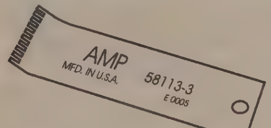

A


B

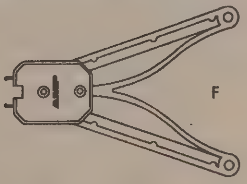
Stock No.	Mfr.'s Type	Fig.	Description	EACH
512-9045	91067-1	A	M81969/1-04, for size 22	4.15
512-9110	91067-2	A	M81969/1-02, for size 20	4.15
512-0470	91285-1	B	For size 20 crimp and solder	11.62

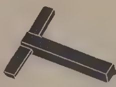
IC Socket Tools

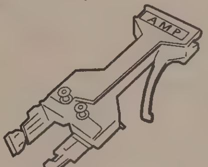
Stock No.	Mfr.'s Type	Fig.	Description	EACH
512-9815	58113-1	C	5 blade PGA extraction tool	9.98
512-9816	58113-3	C	10 blade PGA extraction tool	10.58
512-9817	58113-4	C	13 blade PGA extraction tool	13.19
512-9818	58113-5	C	16 blade PGA extraction tool	15.54
512-9819	58417-1	D	10 × 10 to 16 × 16 PGA insertion/extraction tool	108.56
512-9820	58417-2	D	17 × 17 to 25 × 25 PGA insertion/extraction tool	108.56
512-7244	382264-1	E	SIMM extraction tool	1.42
512-7426	822011-1	F	20 pos. PLCC extraction tool	41.19
512-7428	822045-1	F	28 pos. PLCC extraction tool	41.19
512-7432	821981-1	F	44 pos. PLCC extraction tool	41.19
512-7434	822049-1	F	52 pos. PLCC extraction tool	41.19
512-7436	822026-1	F	68 pos. PLCC extraction tool	41.19
512-7438	822268-1	F	84 pos. PLCC extraction tool	41.19
512-7440	822154-1	G	ALL purpose PLCC tool	.92



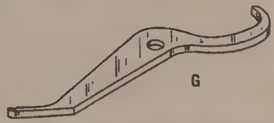
C


F


E



D


G

D-Subminiature Kits

AMPLIMITE® HDP-20 Subminiature D RS-232 Repair Kit

AMP
Multiposition Repair Kit with Crimp Tool

Designed for quick, reliable repairs on site. The kit is packaged in a sturdy metal carrying case for ease of job-to-job portability. **Each Kit Contains:** 100 socket contacts; 100 pin contacts; 6 (25 pos.) receptacles; 18 (25 pos.) plugs; 14 (25 pos.) cable clamps; 1 insertion/extraction tool; and 1 crimp tool.

512-9122. 787053-2. Kit with crimp tool ....**EACH 144.53**
512-9056. 787053-1. Kit without crimp tool ....**EACH 111.74**

AMP
Multiposition Repair Kit with Crimp Tool

AMPLIMITE® HDP-20 Subminiature D Multi-Position Repair Kit

Designed to cover on site repairs of the more popular Subminiature D connector applications. **Each Kit Contains:** 100 socket contacts; 100 pin contacts; 3 of each receptacle (9, 15, 25, and 37 pos.); 6 of each plug (9, 15, 25, and 37 pos.); 6 of each cable clamp (9, 15, 25, and 37 pos.); 1 insertion/extraction tool; and 1 crimp tool.

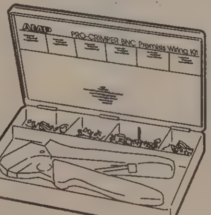
512-9123. 787054-2. Kit with crimp tool ....**EACH 193.29**
512-9057. 787054-1. Kit without crimp tool ....**EACH 160.50**

Modular Plug Hand Tool Kit

Kit consists of a hinged-top clear plastic case, with a cushioned compartment for the low-cost SUPER CHAMP® Service hand tool and six smaller compartments containing an assortment of popular size modular plugs (2, 4, 6, and 8 pos.).

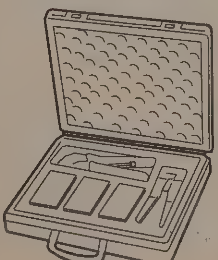
512-9058. 224685-1 ....**EACH 61.98**

BNC Premise Wiring Kit


AMP
PRO-CRIMPER BNC Premise Wiring Kit

Includes PRO-CRIMPER™ II hand tool, BNC plugs 5 RG-58, 10 RG-59/62, 5 RG-58 plenum and RG- 59/62 plenum sizes; adapters — 2 jack-to-jack and 2 "T".

512-8477. 58477-1 .....**EACH 114.00**



Local Area Network Kit

Includes 8 position Modular Plug Professional Hand Tool, PRO-CRIMPER™ II frame, fiber optic connector die sets, coaxial connector die sets, and carrying case.

512-9825. 58513-1..........**EACH 629.00**

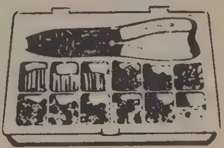
BNC Coaxial Connector Kits

Each of the following kits contains 20 connectors and a SUPER CHAMP® crimp tool in a steel box with compartments.

512-9821. 314971-1. BNC kit for RG-58 cable ....**EACH 107.83**
512-9822. 314972-1. BNC kit for RG-59/62 cable ....**EACH 107.83**
512-9823. 314973-1. UHF kit for RG-58, 59, 62 cable ....**EACH 107.83**

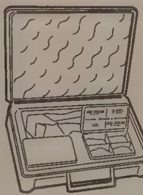
Terminal Kits with Hand Tool

PLASTI-GRIP® Terminal Kit



Steel case contains 20 different types of basic terminals and a SUPER CHAMP® crimp tool. Includes 500 terminals and splices most often used, wire sizes 22-10 AWG.

512-9201. 604200-1........**EACH 90.34**



PIDG® and PLASTI-GRIP® Terminal Kit with PRO-CRIMPER™ II Hand Tool

Includes hand tool, 225 insulated ring and spade terminals in 12-10, 16-14, and 22-16 AWG wire sizes.

512-9236. 55823-1.................................**EACH 83.79**

Heat Shrink Tubing Kit

Kit contains 103 pieces of tubing in assorted colors, 3/32 to 1/2 dia. × 4" length. Packaged in a sturdy plastic hinged lip case.

512-9824. 607243-1 ....**EACH 46.28**

Formerly MIL-C-5015 Types A and B

UL Approved
File # E 115497

CSA Certified
File # LR 69183

Service		INST	A	D	E	B	C
Limiting Operating	DC	250	700	1250	1750	2450	4200
Voltages at sea level	AC (rms)	200	500	900	1250	1750	3000

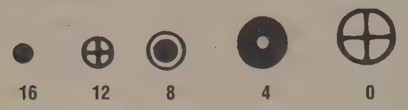
Service Chart above shows Army-Navy ratings for aircraft use. INST service normally for low voltages and currents.

Effective Creepage (nominal)	Inch	1/16	1/8	3/16	1/4	5/16	1
	mm	1.57	3.18	4.75	6.35	7.92	25.40
Mechanical Spacing (nominal)	Inch		1/16	1/8	3/16	1/4	5/16
	mm		1.57	3.18	4.75	6.35	7.92

†† High Voltage Contact. Rating 24,000 volts DC, 17,000 volts R.M.S., 60 CPS at sea level ÷ 41 amps. Maximum – in mated condition with connector potted.

☒ Inactive for for new military design but available for replacement or non-military purposes.

Code of Wire Sizes



Test Current

Contact Size	16	12	8	4	0
Amperes	13	23	46	80	150

The following inserts are available for crimp type contacts. See page 221 for details.

12S-3	16S-8	18-20	28-11
14S-1	18-1	20-4	28-12
14S-2	18-4	20-7	28-20
14S-5	18-11	20-27	28-21
14S-7	18-12	22-14	32-414
16S-1	18-19	24-2	36-10

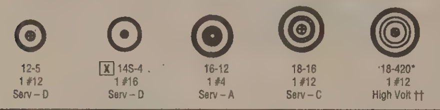
Connector Size – O.D. of Receptacle Coupling Threads

Conn. Size	O.D.		Conn. Size	O.D.		Conn. Size	O.D.		Conn. Size	O.D.	
	In.	mm		In.	mm		In.	mm		In.	mm
—	—	—	14S	7/8	22.22	18	1 1/8	28.57	24	1 1/2	38.10
10SL	5/8	15.87	16S	1	25.40	20	1 1/4	31.75	28	1 3/4	44.45
12SL	3/4	19.05	—	—	—	—	—	—	32	2 1/32	51.59
12S	3/4	19.05	16	1	25.40	22	1 3/8	34.92	36	2 1/4	57.15

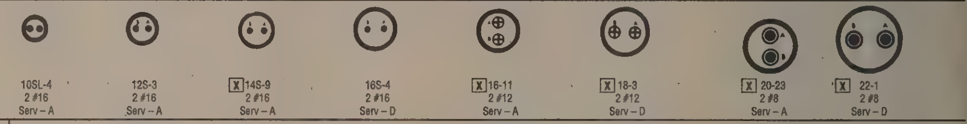
Ordering Information

1. Select the insert and configuration. The table of insert configuration identifies the size, number of contacts, and contact wire size. The letter "P" identifies pin (male) contacts and the letter "S" identifies socket (female) contacts.
2. Select the receptacle shell. For wall (thick)—Series 3100A; for unmounted—Series 3101A; for box or panel—Series 3102A. Series 3102A isn't threaded on the back and is used when a cable clamp isn't required.
3. Select the plug shell. Straight—Series 3106A; straight, quick disconnect—Series 3107A; straight, split backshell—Series 3106B; right angle—Series 3108A; right angle, spilt backshell—Series 3108B.
4. Select the shell finish. Drab olive cadmium plate is standard. To order shells with a clear cadmium finish (bright metal) add (639) to the end of the connector part number. Black zinc (621) and Electroless Nickel (689) finishes are also available.
5. Miscellaneous. Amphenol suggests that the connector on the power source side of the connection contain socket contacts to reduce chance of short circuit or accidental injury.
6. Putting it together. If you have selected socket contacts for the insert in the receptacle, then the insert in the mating plug must contain pin contacts. For ease in ordering, the listings that follow have the mates for the receptacles on the same line.
7. Accessories. All shells except 3102A are threaded for a cable clamp. Cable clamps are available from Allied in drab olive, black zinc (621), electroless nickel (689), and clear cadmium finish (639), except electroless nickel (689) finish has replaced clear cadmium (639) finish on type 3057 cable clamps..
8. **Warning.** (A) You must select a plug shell to mate with a receptacle. (B) Pins mate with sockets. If you select socket contacts for the receptacle, please designate pin contacts for the plug.

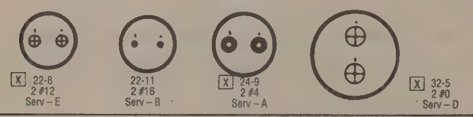
1 Contact



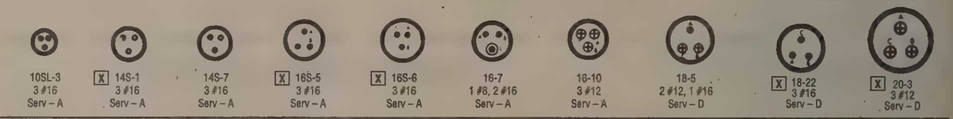
2 Contacts



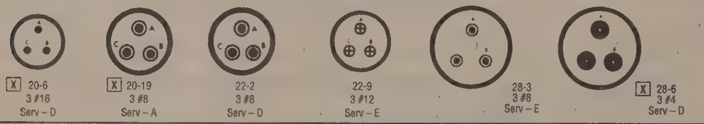
2 Contacts (continued)



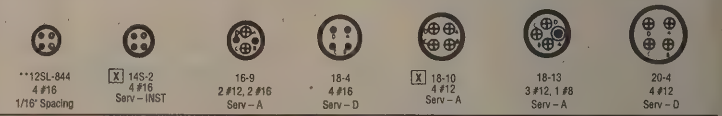
3 Contacts



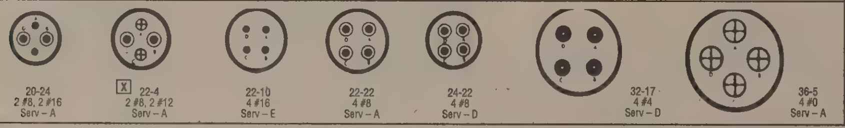
3 Contacts (continued)



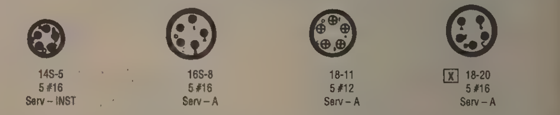
4 Contacts



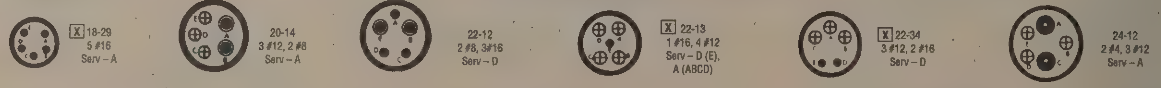
4 Contacts (continued)



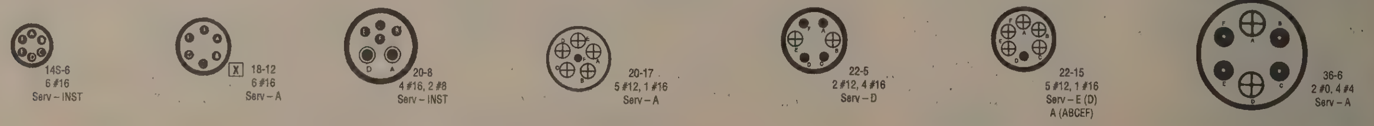
5 Contacts



5 Contacts (continued)



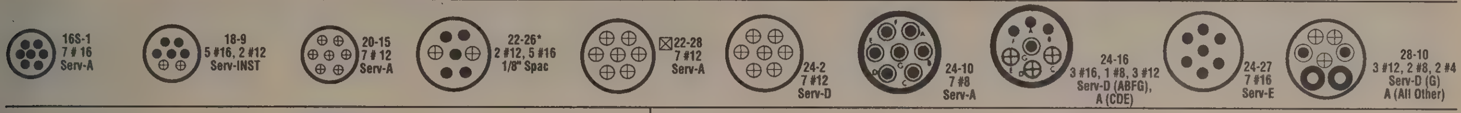
6 Contacts



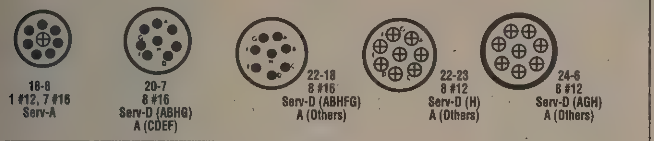
Formerly MIL-C-5015 Types A and B

UL File #E115497 CSA File #LR69183

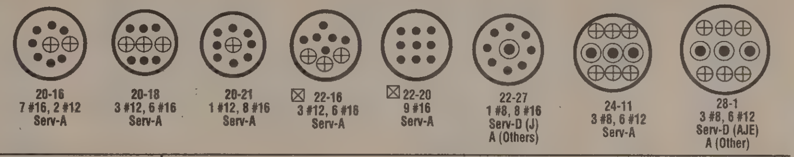
7 Contacts



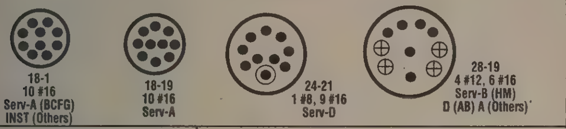
8 Contacts



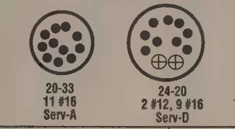
9 Contacts



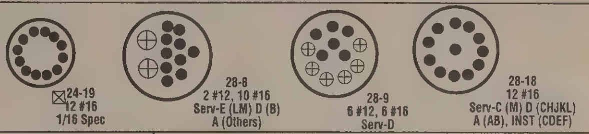
10 Contacts



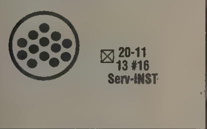
11 Contacts



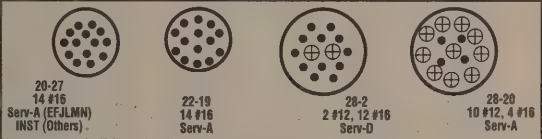
12 Contacts



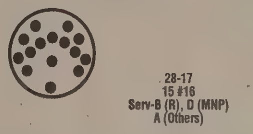
13 Contacts



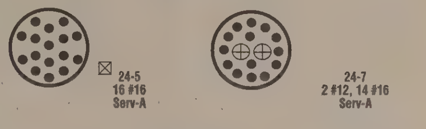
14 Contacts



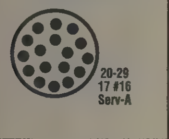
15 Contacts



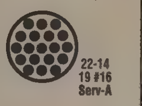
16 Contacts



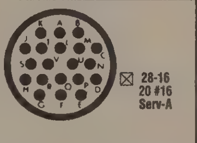
17 Contacts



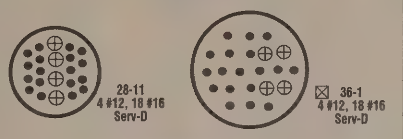
19 Contacts



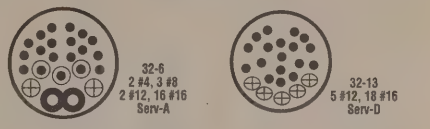
20 Contacts



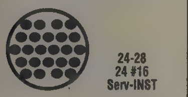
22 Contacts



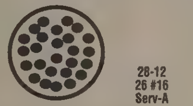
23 Contacts



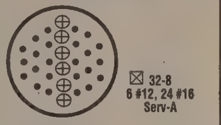
24 Contacts



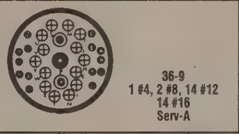
26 Contacts



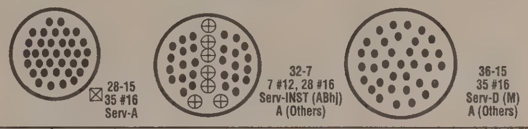
30 Contacts



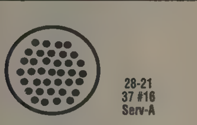
31 Contacts



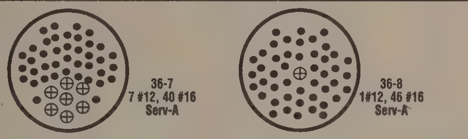
35 Contacts



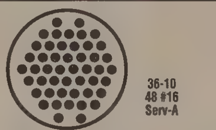
37 Contacts



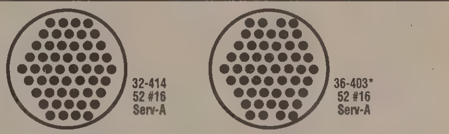
47 Contacts



48 Contacts

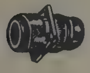


52 Contacts

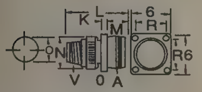


Receptacles

Wall

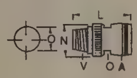


97-3100A



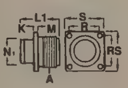
Cable

97-3101A



Box

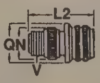
97-3102A



Mating Plugs

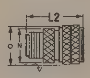
Straight

97-3106A



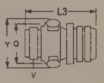
Straight Quick Disconnect

97-3107A



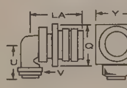
Straight (Split)

97-3106B

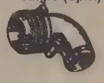


Angle

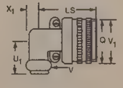
97-3108A



Angle (Split)



97-3108B



Dimensions Table

Connector Size	A Coup. Threads	K	L	L_1 3102A	L_2 3106A 3107A	L_3 3106B	L_4 3108A	L_5 3108B	M	N	N_1 3102A	O Panel Opening	Q	R	S	U 3108A	U_1 3108B	Y	X_1 3108B	Y_1 3108B	V Fitting Threads
10SL	5/8-24	5/64	1 9/32	61/64	1 3/8	—	1 5/16	1 1/2	9/16	3/4	11/16	0.812	7/8	23/32	1	1	1	1 1/16	—	—	5/8-24
12S	3/4-20	5/64	1 15/32	31/32	1 7/16	—	1 3/8	1 9/16	9/16	25/32	11/16	0.812	1	13/16	1 3/32	1	1	1 1/16	1/2	—	5/8-24
12SL	3/4-20	5/64	—	27/32	1 31/64	—	1 13/64	—	—	—	11/16	—	1	—	—	1	—	1 1/16	—	—	3/4-20
12	3/4-20	5/64	—	1 21/64	1 7/8	—	—	—	3/4	25/32	11/16	0.812	—	13/16	1 3/32	—	—	—	—	—	5/8-24
14S	7/8-20	5/64	1 7/16	61/64	1 15/32	1 11/16	1 3/8	1 23/32	9/16	7/8	3/4	0.938	1 1/8	29/32	1 3/16	1	1 1/16	1 1/16	21/32	—	3/4-20
16S	1-20	5/64	1 31/64	61/64	1 15/32	1 11/16	1 1/2	1 3/4	9/16	1	7/8	1.062	1 1/4	31/32	1 9/32	1 1/8	1 1/8	1 5/16	—	1 1/2	7/8-20
16	1-20	1/8	1 57/64	1 3/8	1 7/8	—	1 15/16	2 1/8	3/4	1	7/8	1.062	1 1/4	31/32	1 9/32	1 1/8	1 1/8	1 5/16	—	1 1/2	7/8-20
18	1 1/8-18	1/8	2	1 3/8	1 31/32	2 1/16	1 15/16	2 13/32	3/4	1 1/8	1	1.188	1 11/32	1 1/16	1 3/8	1 1/8	1 3/16	1 5/16	—	1 41/64	1-20
20	1 1/4-18	1/8	2 1/8	1 3/8	1 7/8	2 1/8	2 1/16	2 5/32	3/4	1 1/4	1 1/8	1.312	1 15/32	1 5/32	1 1/2	1 5/16	1 5/16	1 5/8	—	1 13/16	1 3/16-18
22	1 3/8-18	1/8	2 1/8	1 3/8	1 31/32	2 1/8	2 1/16	2 13/32	3/4	1 3/8	1 1/4	1.438	1 19/32	1 1/4	1 5/8	1 5/16	1 5/16	1 5/8	—	1 15/16	1 3/16-18
24	1 1/2-18	1/8	2 1/4	1 3/8	2 1/4	2 9/32	2 15/32	2 5/8	13/16	1 1/2	1 3/8	1.562	1 23/32	1 3/8	1 3/4	1 1/2	1 7/16	2	—	2 1/16	1 7/16-18
28	1 3/4-18	1/8	2 1/4	1 3/8	2 1/4	2 9/32	2 15/32	2 5/8	13/16	1 3/4	1 5/8	1.812	1 31/32	1 9/16	2	1 1/2	1 7/16	2	—	2 5/16	1 7/16-18
32	2-18	1/8	2 3/8	1 15/32	2 3/8	2 5/16	—	2 13/16	7/8	2 1/32	1 29/32	2.062	2 7/32	1 3/4	2 1/4	—	1 3/4	—	—	2 19/32	1 3/4-18
36	2 1/4-16	1/8	2 3/8	1 15/32	2 3/8	2 11/32	—	2 27/32	7/8	2 1/4	2 1/8	2.312	2 15/32	1 15/16	2 1/2	—	1 15/16	—	—	2 27/32	2-18

Receptacles mate with plugs on the same line in the table on the next page.

Formerly MIL-C-5015 Types A and B

UL Approved - File No. E11 5497

CSA Certified - File No. LR69183

See Page 217 for Dimension Table. MS Receptacles mate with MS mating plugs that are on the same line in the table below. *Standard shells have cadmium plating with drab olive chromate finish. In shell sizes 12S, 14S, 16, 16S, 18, 20, 22, 24, and 28, clear chromate over cadmium plating (639), black zinc over zinc plating (621), or electroless nickel plating (689) are also available. Add the shell finish identification to the end of part number to specify a shell finish other than drab olive. * notes the shell styles that are available with all four of these finish choices. Pricing shown is for standard drab olive and for clear chromate over cadmium plating (639) finishes. Prices for finishes (621) and (689) are higher.

MS Receptacles

Number of Contacts	Shell Insert/ Size	97-3100A*		97-3101A*		97-3102A*	
		EACH		EACH		EACH	
		1-9	10-49	1-9	10-49	1-9	10-49
3	10SL-3P	10.62	7.98	14.19	9.59	8.12	5.49
2	10SL-4P	9.91	6.72	13.56	9.16	7.49	6.73
1	12-5P	—	—	—	—	7.97	5.39
1	12-5S	—	—	—	—	9.03	6.11
2	12S-3P	10.31	7.42	11.05	8.51	6.19	4.62
2	12S-3S	9.50	8.54	11.18	8.78	6.52	4.85
4	12SL-844P	—	—	—	—	14.81	13.32
3	14S-1P	10.75	7.72	12.89	9.14	7.63	5.58
3	14S-1S	10.99	7.85	13.13	9.30	8.45	6.17
4	14S-2P	10.75	7.71	12.85	9.11	8.06	5.90
4	14S-2S	12.22	8.73	13.52	9.56	8.24	6.21
1	14S-4P	13.81	9.95	14.97	11.62	9.73	7.34
1	14S-4S	18.89	15.82	19.24	14.92	14.53	10.97
5	14S-5P	11.87	8.46	13.80	9.73	8.37	6.10
5	14S-5S	12.21	8.67	14.33	10.11	8.94	6.49
6	14S-6P	12.22	8.67	14.33	10.11	8.94	6.49
6	14S-6S	12.27	8.77	14.62	10.31	12.81	9.26
3	14S-7P	10.75	7.71	12.89	9.14	7.63	5.58
3	14S-7S	10.99	7.85	13.14	9.29	7.68	5.61
2	14S-9P	10.31	7.42	12.28	8.76	6.85	5.05
2	14S-9S	12.22	8.73	12.76	10.09	7.00	6.30
3	16-7P	17.13	11.65	19.30	14.98	11.46	8.89
3	16-7S	19.75	13.37	22.58	17.52	14.76	11.45
4	16-9P	16.36	11.41	16.77	12.79	10.35	7.43
4	16-9S	18.02	12.61	18.67	14.08	11.80	8.85
3	16-10P	17.78	12.41	18.25	13.67	11.09	7.86
3	16-10S	16.36	11.41	16.77	12.79	10.53	7.54
2	16-11P	14.96	10.53	16.12	11.83	9.10	6.58
2	16-11S	16.43	11.55	16.88	12.90	10.92	7.81
1	16-12P	16.81	11.08	19.17	14.87	11.34	8.80
1	16-12S	19.20	13.47	22.02	17.09	14.20	11.01
7	16S-1P	13.46	9.53	14.38	10.16	8.98	6.52
7	16S-1S	14.87	10.43	15.57	10.94	10.24	7.34
2	16S-4P	13.22	9.35	14.29	10.10	8.37	6.10
2	16S-4S	13.67	9.66	14.96	10.53	8.61	6.26
3	16S-5P	13.30	9.42	13.68	9.66	8.24	5.99
3	16S-5S	13.65	9.64	14.07	9.95	8.61	6.26
3	16S-6P	23.21	16.47	19.66	15.26	11.55	8.97
3	16S-6S	23.21	16.47	19.66	15.26	11.55	8.97
5	16S-8P	13.73	9.72	15.04	10.60	8.91	6.45
5	16S-8S	14.10	10.10	14.62	10.31	9.10	6.58
10	18-1P	16.22	11.38	18.13	12.67	11.74	8.36
10	18-1S	17.61	12.35	19.55	13.63	12.84	9.11
2	18-3P	16.60	11.75	16.77	11.75	9.60	8.63
2	18-3S	17.77	12.45	19.95	13.89	12.58	8.92
4	18-4P	13.46	9.53	15.31	10.75	8.91	6.45
4	18-4S	14.60	10.27	16.20	11.36	9.52	6.84
3	18-5P	14.14	9.57	14.71	11.41	7.67	5.95
3	18-5S	15.85	10.71	16.64	12.92	9.60	7.45
8	18-8P	16.22	11.38	18.13	12.67	11.74	8.36
8	18-8S	17.23	12.05	19.00	13.27	12.76	9.05
7	18-9P	16.39	11.54	19.23	13.42	11.86	8.46
7	18-9S	18.58	12.98	20.52	14.29	13.13	9.30
4	18-10P	15.88	11.16	17.61	12.37	10.99	7.85
4	18-10S	17.23	12.05	19.00	13.27	12.76	9.05
5	18-11P	15.88	11.16	17.61	12.35	10.99	7.85
5	18-11S	16.22	11.38	18.13	13.71	11.74	8.36
6	18-12P	14.77	10.42	16.74	11.73	10.10	7.26
6	18-12S	15.88	11.16	17.61	12.37	10.99	7.85
4	18-13P	30.61	20.70	27.21	21.10	20.15	15.64
4	18-13S	34.67	23.91	31.73	24.62	24.66	19.14
1	18-16P	15.71	10.99	18.02	12.59	10.53	7.54
1	18-16S	18.58	12.98	20.52	14.29	13.13	9.30
10	18-19P	20.63	15.97	23.56	17.38	17.10	11.99
10	18-19S	18.31	12.71	19.63	14.71	13.13	9.30
5	18-20P	15.93	11.20	17.77	12.45	10.35	7.43
5	18-20S	16.77	11.75	18.93	13.23	11.41	8.15
3	18-22P	14.62	10.31	16.77	11.75	9.60	6.92
3	18-22S	15.93	11.20	19.00	13.27	10.35	7.43
5	18-29P	26.81	18.13	21.38	16.04	16.87	11.41
5	18-29S	26.81	13.13	21.38	16.04	16.87	11.41
1	18-420P	—	—	—	—	45.03	32.12
1	18-420S	—	—	—	—	48.58	34.87
3	20-3P	16.81	11.36	18.13	12.85	10.40	7.02
3	20-3S	22.15	15.00	23.30	16.34	15.68	10.60
4	20-4P	16.16	11.31	17.43	12.21	10.75	7.71
4	20-4S	22.57	17.72	23.75	18.20	16.22	12.57
3	20-6P	20.52	16.42	19.73	15.31	12.47	9.67
3	20-6S	21.09	16.87	20.25	15.71	12.99	10.08
8	20-7P	16.25	11.41	17.43	12.21	10.75	7.71
8	20-7S	17.74	12.42	18.67	13.04	12.22	8.67

MS Mating Plugs

Shell Insert/ Size	97-3106A*		97-3107A*		97-3106B*		97-3108A*		97-3108B*	
	EACH		EACH		EACH		EACH		EACH	
	1-9	10-49	1-9	10-49	1-9	10-49	1-9	10-49	1-9	10-49
10SL-3S	12.07	8.16	—	—	—	—	21.76	16.32	16.61	12.46
10SL-4S	11.46	7.76	—	—	—	—	21.15	15.86	14.53	10.90
12-5S	13.80	9.31	—	—	—	—	—	—	—	—
12-5P	12.85	8.68	—	—	—	—	—	—	—	—
12S-3S	10.04	7.77	15.97	11.80	—	—	23.51	17.37	13.68	10.25
12S-3P	9.52	6.84	15.83	11.69	—	—	23.36	17.25	13.51	10.13
12SL-844S	25.75	23.12	—	—	—	—	—	—	—	—
14S-1S	10.99	7.85	16.39	11.87	12.89	9.14	22.57	16.66	12.22	8.67
14S-1P	10.80	7.75	16.16	11.70	12.84	9.11	22.37	16.52	11.95	8.49
14S-2S	12.17	8.68	17.57	12.85	13.46	9.92	23.81	17.58	12.76	9.66
14S-2P	10.46	7.48	16.11	11.69	12.78	9.06	22.34	16.49	11.89	8.47
14S-4S	16.43	12.32	23.43	17.18	18.98	14.73	31.14	24.16	18.20	14.12
14S-4P	12.14	9.10	19.04	13.97	14.71	11.41	26.87	20.85	13.94	10.81
14S-5S	12.22	8.67	17.57	12.76	13.26	9.37	23.69	17.49	13.19	9.57
14S-5P	11.86	8.46	17.26	12.26	13.67	9.66	23.14	17.09	12.84	9.11
14S-6S	12.28	8.77	17.68	12.93	14.39	10.15	23.91	17.66	13.52	9.73
14S-6P	12.22	8.67	17.62	12.76	14.29	10.10	23.69	17.49	13.19	9.57
14S-7S	10.99	7.85	16.39	11.87	12.89	9.14	22.57	16.66	12.22	8.67
14S-7P	10.75	7.71	16.16	11.70	12.84	9.11	22.37	16.52	11.95	8.49
14S-9S	13.46	9.53	17.52	12.85	13.68	10.61	23.81	17.58	13.33	9.66
14S-9P	10.31	7.39	15.86	11.64	12.25	9.18	22.02	16.25	11.42	8.17
16-7S	18.37	13.56	25.62	18.92	—	—	36.57	27.42	23.42	18.74
16-7P	15.27	11.27	22.52	16.63	—	—	33.29	24.99	20.33	16.27
16-9S	16.48	12.12	22.26	16.43	—	—	30.92	22.83	20.76	14.82
16-9P	15.53	10.92	20.82	15.37	—	—	29.37	21.69	19.00	13.66
16-10S	15.06	10.62	20.69	15.28	—	—	29.37	21.69	19.00	13.66
16-10P	15.77	11.47	21.81	16.11	—	—	30.50	22.53	20.94	14.49
16-11S	15.93	11.20	20.80	15.36	—	—	29.46	21.76	19.85	13.74
16-11P	14.10	9.97	19.19	14.17	—	—	27.87	20.58	18.13	12.35
16-12S	17.84	13.17	25.06	18.51	—	—	35.99	27.92	22.87	18.30
16-12P	15.16	11.19	22.39	16.54	—	—	33.14	25.72	20.20	16.16
16S-1S	13.46	9.53	17.62	12.91	16.25	11.85	30.06	22.19	15.93	11.95
16S-1P	12.22	8.67	16.44	12.15	15.30	11.09	29.13	21.51	14.80	11.11
16S-4S	12.46	8.85	16.62	12.27	15.18	11.21	29.17	21.54	15.00	11.24
16S-4P	11.86	8.46	16.09	11.88	14.67	10.84	28.66	21.16	14.45	10.84
16S-5S	11.86	8.46	16.58	12.24	15.16	11.19	29.15	21.53	14.97	11.22
16S-5P	12.72	9.08	16.20	11.96	14.77	10.90	28.78	21.25	14.55	10.91
16S-6S	15.21	11.40	20.69	15.28	20.53	15.93	35.47	27.53	19.35	15.02
16S-6P	15.21	11.40	20.69	15.28	20.53	15.93	35.47	27.53	19.35	15.02
16S-8S	11.60	9.00	17.13	12.65	15.69	11.59	29.68	21.91	15.54	11.65
16S-8P	11.89	8.47	16.68	12.32	15.25	11.26	29.27	21.61	14.95	11.21
18-1S	17.10	11.99	24.20	17.86	19.63	14.00	31.97	23.86	21.24	15.93
18-1P	15.57	10.94	23.27	17.18	18.44	13.35	31.13	23.22	20.27	15.21
18-3S	17.10	11.99	24.67	18.21	20.18	14.36	33.79	24.95	21.76	16.32
18-3P	16.16	12.09	23.67	17.48	18.45	13.62	32.80	24.22	20.70	15.53
18-4S	13.67	9.66	21.90	16.17	16.71	12.33	31.05	22.93	18.83	14.12
18-4P	12.78	9.06	20.88	15.42	15.69	11.59	30.04	22.18	17.75	13.31
18-5S	13.91	10.43	22.96	16.95	18.93	14.69	34.23	26.56	18.70	14.96
18-5P	11.95	8.97	21.13	15.60	16.99	13.19	32.29	25.05	16.88	13.51
18-8S	16.74	11.74	24.49	18.09	19.56	14.25	33.63	24.83	21.57	16.17
18-8P	15.57	10.94	23.91	17.66	18.44	13.81	37.04	24.40	20.96	15.71
18-9S	17.61	12.35	25.42	18.77	20.76	14.91	34.54	25.51	22.56	16.92
18-9P	16.28	11.43	24.07	17.77	18.63	13.76	33.22	24.53	21.14	15.86
18-10S	16.74	11.74	24.49	18.09	19.56	14.25	33.63	24.83	21.57	16.17
18-10P	15.06	10.62	23.12	17.07	18.00	13.24	32.26	23.83	20.13	15.10
18-11S	15.57	10.94	23.91	17.66	18.70	13.81	33.04	24.40	20.96	15.71
18-11P	15.06	10.62	23.12	17.07	18.00	13.24	32.26	23.83	20.13	15.10
18-12S	14.31	10.09	23.12	17.07	18.00	13.24	32.26	23.83	20.13	15.10
18-12P	14.29	10.10	22.10	16.32	17.10	12.48	31.25	23.08	19.04	14.29
18-13S	26.99	20.24	37.09	27.38	34.00	26.37	49.30	38.24	32.82	26.26
18-13P	23.79	17.84	32.35	23.89	29.49	22.88	44.79	34.75	28.60	22.88
18-16S	17.61	12.35	25.42	18.77	20.76	14.91	34.54	25.51	22.56	16.92
18-16P	15.06	10.62	22.96	16.95	18.06	13.10	32.09	23.70	19.95	14.96
18-19S	17.17	12.04	25.13	18.55	20.09	14.71	34.26	25.29	22.26	16.69
18-19P	20.98	14.61	28.60	21.12	23.70	17.26	37.72	27.86	25.96	19.47
18-20S	15.95	11.22	23.85	17.61	19.03	13.77	33.00	24.37	19.95	14.48
18-20P	17.08	12.02	22.69	16.77	18.04	12.91	31.82	23.50	19.00	13.61
18-22S	15.00	10.55	22.69	16.77	18.04	12.91	31.82	23.50	19.00	13.61
18-22P	14.50	10.25	21.59	15.94	16.44	12.15	30.78	22.73	17.77	12.84
18-29S	25.22	17.03	27.38	20.22	22.16	16.37	36.51	29.96	24.66	18.49
18-29P	25.22	17.03	27.38	20.22	22.16	16.37	36.51	29.96	24.66	18.49
18-420S	64.72	47.89	—	—	—	—	—	—	—	—
18-420P	61.28	43.99	—	—	—	—	—	—	—	—
20-3S	23.74	16.04	29.66	21.90	25.52	18.85	41.21	30.44	27.40	19.75
20-3P	18.65	12.59	25.01	18.47	21.17	15.63	36.87	27.22	22.39	16.54
20-4S	24.21	17.16	31.51	23.27	27.66	20.44	43.36	32.02	30.81	23.11
20-4P	18.02	12.61	24.71	18.24	20.86	15.40	36.56	27.00	23.55	17.66
20-6S	19.63	14.73	27.93	20.63	25.70	19.94	42.48	32.96	26.99	20.95
20-6P	19.12	14.34	27.45	20.27	25.18	19.53	41.91	32.52	26.47	20.54
20-7S	19.23	13.42	25.97	19.18	22.12	16.34	37.81	27.92	24.85	18.64
20-7P	18.02	12.61	24.71	18.24	20.86	15.40	36.40	26.88	23.39	17.53

Formerly MIL-C-5015 Types A and B

UL Approved - File No. E11 5497

CSA Certified - File No. LR69183

See Page 217 for Dimension Table. MS Receptacles mate with MS mating plugs that are on the same line in the table below. Standard shells have cadmium plating with drab olive chromate finish. In shell sizes 12S, 14S, 16, 16S, 18, 20, 22, 24, and 28, clear chromate over cadmium plating (639), black zinc over zinc plating (621) or electroless nickel plating (689) are also available. Add the shell finish identification to the end of the part number to specify a shell finish other than drab olive. * notes the shell styles that are available with all four of these finish choices. Pricing shown is for standard drab olive and for clear chromate over cadmium plating (639) finishes. Prices for finishes (621) and (689) are higher.

MS Receptacles

Number of Contacts	Shell Insert/ Size	97-3100A*		97-3101A*		97-3102A*	
		EACH		EACH		EACH	
		1-9	10-49	1-9	10-49	1-9	10-49
6	20-8P	35.17	23.79	30.43	23.61	23.17	17.98
6	20-8S	41.05	27.74	37.22	28.88	29.96	23.24
13	20-11P	33.49	26.58	31.52	24.45	24.25	18.82
13	20-11S	56.04	41.89	51.96	40.31	44.70	34.67
5	20-14P	34.84	27.87	32.72	25.39	25.46	19.75
5	20-14S	46.28	33.23	45.52	35.32	38.26	29.68
7	20-15P	18.12	12.79	18.93	13.23	12.28	8.77
7	20-15S	23.88	17.83	24.99	17.32	18.44	12.89
9	20-16P	18.30	12.98	19.00	13.27	12.76	9.05
9	20-16S	19.14	13.81	20.18	14.07	13.67	9.66
6	20-17P	19.57	16.47	19.61	15.22	12.35	9.59
6	20-17S	23.65	20.26	23.88	18.52	16.62	12.90
9	20-18P	20.96	14.59	22.17	15.41	14.62	10.31
9	20-18S	22.99	16.63	23.87	16.56	16.77	11.75
3	20-19P	21.96	18.46	21.85	16.95	14.24	11.05
3	20-19S	26.72	23.07	26.97	20.92	19.35	15.02
9	20-21P	33.42	22.57	27.91	21.65	20.65	16.03
9	20-21S	35.11	23.74	30.20	23.43	22.93	17.79
2	20-23P	18.53	13.21	20.52	14.29	13.13	9.30
2	20-23S	20.98	14.61	22.23	15.44	14.96	10.53
4	20-24P	34.10	23.07	28.66	22.23	21.40	16.61
4	20-24S	42.27	28.58	33.92	26.32	26.67	20.69
14	20-27P	17.93	12.63	19.59	13.66	12.89	9.14
14	20-27S	19.01	13.69	21.21	14.75	14.64	10.32
17	20-29P	18.89	13.56	20.98	14.61	14.39	10.15
17	20-29S	21.54	15.17	22.92	15.91	16.25	11.41
11	20-33P	21.87	15.51	23.25	16.14	15.93	11.20
11	20-33S	22.35	15.99	23.74	16.47	16.28	11.43
2	22-1P	20.21	15.17	19.80	15.36	11.57	8.98
2	22-1S	23.41	18.29	23.27	18.05	15.04	11.67
3	22-2P	21.60	15.24	22.66	15.77	14.29	10.10
3	22-2S	26.24	18.15	27.14	19.81	19.00	13.27
4	22-4P	38.62	26.09	33.35	26.68	25.01	19.41
4	22-4S	43.88	29.67	38.92	31.14	30.95	24.01
6	22-5P	35.93	24.28	37.64	25.88	22.79	15.82
6	22-5S	37.49	24.20	37.72	25.90	23.52	16.32
2	22-8P	30.52	20.63	23.81	19.04	14.80	11.48
2	22-8S	38.56	26.05	32.49	25.99	24.07	18.68
3	22-9P	32.20	21.78	23.83	19.06	14.83	11.50
3	22-9S	40.71	27.53	31.87	25.49	23.43	18.18
4	22-10P	31.94	22.03	33.16	22.84	18.93	13.19
4	22-10S	33.07	22.79	34.71	23.88	20.37	14.19
2	22-11P	29.70	20.07	23.12	18.49	14.09	10.94
2	22-11S	32.20	21.78	25.75	20.60	16.88	13.09
5	22-12P	38.62	28.88	39.27	31.42	31.30	24.28
5	22-12S	45.01	30.44	40.07	32.05	32.16	24.95
5	22-13P	35.79	24.20	29.99	23.99	21.40	16.61
5	22-13S	37.64	27.26	34.32	27.46	26.05	20.21
19	22-14P	22.35	15.53	22.92	16.95	15.57	10.94
19	22-14S	25.24	17.47	26.11	20.15	18.67	13.04
6	22-15P	38.28	25.88	32.29	25.83	23.86	18.51
6	22-15S	46.46	31.41	42.02	33.61	34.23	26.56
9	22-16P	23.08	17.87	23.61	18.89	14.61	11.34
9	22-16S	23.41	18.36	24.09	19.27	15.13	11.74
8	22-18P	20.76	14.46	21.87	16.21	13.52	9.57
8	22-18S	20.98	14.61	22.16	16.45	13.67	9.66
14	22-19P	21.90	15.23	22.75	16.84	15.34	11.23
14	22-19S	22.35	16.07	22.92	17.11	15.57	10.94
9	22-20P	21.38	14.87	22.39	16.58	14.10	9.97
9	22-20S	22.39	15.54	23.34	16.21	15.00	10.55
4	22-22P	24.99	17.32	25.96	19.01	17.52	12.24
4	22-22S	31.02	21.39	31.92	24.08	23.56	16.34
8	22-23P	23.82	16.51	24.99	18.36	16.43	11.55
8	22-23S	30.21	20.84	31.33	23.68	22.92	15.91
7	22-26P	39.58	26.76	34.24	27.38	25.93	20.11
7	22-26S	45.01	30.44	40.07	32.05	32.16	24.95
9	22-27P	23.41	15.81	24.42	18.60	16.50	10.94
9	22-27S	25.35	17.54	26.24	19.80	18.06	12.22
7	22-28P	39.16	26.47	33.79	27.03	25.46	19.75
7	22-28S	54.02	37.75	50.33	40.26	43.09	33.44
5	22-34P	35.79	24.20	29.99	23.99	21.40	16.61
5	22-34S	37.54	25.39	31.63	25.30	23.17	17.98
7	24-2P	22.47	15.61	22.59	16.79	14.77	10.42
7	24-2S	26.86	18.58	27.00	19.71	19.23	13.42
16	24-5P	27.71	19.16	27.90	20.30	19.04	13.29
16	24-5S	31.00	21.39	31.04	24.25	22.38	15.54
8	24-6P	44.37	30.41	44.45	30.45	29.03	20.06
8	24-6S	57.19	39.05	57.43	39.25	42.49	29.15
16	24-7P	25.90	17.93	25.96	17.97	18.13	12.67
16	24-7S	27.90	19.26	27.97	19.32	20.13	14.04
2	24-9P	34.85	25.74	34.92	27.93	26.57	20.61
2	24-9S	40.33	29.79	40.64	32.51	32.68	25.35
7	24-10P	37.42	24.94	35.69	24.58	27.09	18.74

MS Mating Plugs

Shell Insert/ Size	97-3106A*		97-3107A*		97-3106B*		97-3108A*		97-3108B*	
	EACH		EACH		EACH		EACH		EACH	
	1-9	10-49	1-9	10-49	1-9	10-49	1-9	10-49	1-9	10-49
20-8S	37.65	28.24	43.85	32.38	42.67	33.10	59.38	46.07	43.96	34.11
20-8P	30.86	23.14	37.48	27.67	35.88	27.84	52.59	40.80	37.18	28.84
20-11S	52.38	39.28	57.64	42.57	57.38	44.51	74.11	57.50	58.70	45.54
20-11P	31.94	23.95	38.50	28.43	36.96	28.68	53.67	41.64	38.26	29.68
20-14S	45.95	34.46	51.63	38.13	50.97	39.54	67.68	52.51	52.26	40.55
20-14P	33.17	24.88	39.62	29.27	38.17	29.61	54.90	42.60	39.46	30.62
20-15S	25.52	17.68	31.74	23.43	27.89	20.59	43.55	32.17	28.65	21.50
20-15P	19.59	13.66	26.38	19.49	22.54	16.65	38.21	28.21	23.27	17.54
20-16S	22.37	15.58	27.45	20.27	23.61	17.43	39.29	29.02	24.31	18.33
20-16P	19.63	13.67	26.58	19.63	22.75	16.80	38.41	28.36	23.46	17.69
20-17S	24.33	18.24	31.33	23.14	29.33	22.75	46.06	35.73	30.62	23.75
20-17P	20.06	15.05	27.34	20.19	25.05	19.44	41.78	32.41	26.35	20.45
20-18S	24.78	17.18	30.63	22.62	26.79	19.78	42.47	31.37	27.90	20.67
20-18P	22.68	15.76	28.46	21.02	25.01	18.20	40.31	29.77	26.11	19.09
20-19S	27.41	20.56	34.24	25.28	32.42	25.15	49.15	38.14	33.71	26.16
20-19P	22.30	16.72	29.43	21.74	27.32	21.19	44.03	34.16	28.62	22.20
20-21S	30.62	22.96	37.01	27.33	35.64	27.65	52.35	40.62	36.94	28.66
20-21P	28.36	21.27	35.12	25.94	33.35	25.88	50.07	38.84	34.65	26.88
20-23S	22.81	15.83	28.49	21.04	24.67	18.21	40.33	29.79	26.24	19.12
20-23P	20.98	14.61	26.83	19.81	23.48	16.97	38.66	28.55	24.60	17.87
20-24S	34.37	25.78	40.76	30.10	39.36	30.54	56.11	43.53	40.66	31.55
20-24P	29.09	21.82	35.83	26.46	34.11	26.47	50.83	39.44	35.41	27.47
20-27S	21.41	14.90	27.34	20.19	23.74	17.35	39.17	28.92	26.35	19.77
20-27P	20.78	14.48	26.17	19.32	22.35	16.48	38.01	28.07	25.11	18.83
20-29S	24.25	16.81	29.08	21.48	25.81	18.64	40.93	30.22	27.70	20.78
20-29P	22.02	15.34	27.19	20.07	23.58	17.23	39.03	28.82	26.19	19.65
20-33S	24.39	16.93	29.94	22.11	26.68	19.29	41.79	30.86	29.16	21.87
20-33P	23.74	16.47	29.43	21.74	26.11	18.92	41.29	30.48	28.59	21.44
22-1S	22.30	16.72	34.63	25.57	27.75	21.53	45.89	35.61	27.45	21.95
22-1P	18.83	14.12	31.36	23.16	24.28	18.83	42.43	32.93	24.20	19.35
22-2S	25.43	18.15	37.37	27.60	29.17	21.25	45.79	33.81	30.45	22.30
22-2P	21.76	15.17	32.84	24.25	24.77	17.90	41.26	30.47	26.11	18.96
22-4S	38.21	28.66	49.53	36.58	43.66	33.87	61.81	47.95	42.35	33.87
22-4P	32.27	24.20	43.96	32.46	37.72	29.27	55.87	43.35	36.79	29.43
22-5S	35.93	24.70	41.66	30.76	33.04	24.40	50.05	36.96	34.48	25.46
22-5P	35.47	24.39	41.11	30.36	32.51	24.00	49.53	36.58	33.95	25.06
22-8S	31.33	23.49	43.08	31.80	36.77	28.53	54.92	42.62	35.91	28.73
22-8P	22.07	16.55	34.41	25.41	27.58	21.40	45.73	35.49	29.05	22.54
22-9S	30.69	23.02	42.47	31.37	36.14	28.04	54.29	42.12	37.65	29.21
22-9P	22.09	16.57	34.43	25.43	27.53	21.36	45.69	35.44	29.07	22.55
22-10S	33.07	22.79	35.36	26.11	26.74	19.75	43.76	32.31	30.06	20.81
22-10P	31.94	22.03	34.43	25.43	25.81	19.06	42.83	31.63	29.07	20.12
22-11S	24.14	18.11	36.36	26.84	29.59	22.95	47.74	37.03	31.12	24.14
22-11P	21.36	16.02	33.73	24.91	26.80	20.80	44.96	34.88	28.31	21.96
22-12S	39.42	29.56	50.68	37.42	44.86	34.81	63.01	48.89	46.39	35.99
22-12P	38.56	28.92	49.86	36.82	44.01	34.14	62.16	48.22	45.54	35.34
22-13S	33.31	24.98	44.93	33.18	38.75	30.07	56.96	44.15	40.29	31.25
22-13P	28.66	21.50	40.58	29.96	34.11	26.47	52.26	40.55	35.64	27.65
22-14S	25.24	17.47	36.68	27.09	28.09	20.74	45.11	33.31	31.49	21.80
22-14P	21.93	15.23	33.97	25.08	25.38	18.73	42.39	31.30	28.57	19.78
22-15S	41.49	31.12	52.62	38.85	46.93	36.41	65.08	50.50	48.46	37.61
22-15P	31.12	23.34	42.90	31.68	36.57	28.37	54.71	42.45	38.09	31.09
22-16S	22.39	16.80	34.69	25.63	27.84	21.60	45.99	35.68	29.35	22.77
22-16P	21.87	16.41	34.22	25.26	27.32	21.19	45.47	35.28	28.83	22.37
22-18S	20.98	14.61	32.47	23.97	23.88	17.61	40.86	30.18	26.97	18.67
22-18P	20.76	14.46	32.04	23.66	23.74	17.32	40.47	29.88	26.54	18.38
22-19S	22.35	15.53	34.04	25.14	25.44	18.78	42.45	31.35	28.66	19.84
22-19P	21.90	15.23	33.59	24.80	24.99	18.46	42.02	31.02	28.19	19.52
22-20S	22.39	15.54	33.33	24.61	25.35	18.26	41.75	30.88	27.91	19.32
22-20P	21.38	14.87	32.80	24.22	24.39	17.87	41.21	30.44	27.34	18.93
22-22S	31.02	21.39	41.96	30.99	33.79	24.72	50.37	37.19	37.24	25.78
22-22P	24.99	17.32	36.00	26.58	27.90	20.42	44.42	32.80	30.76	21.30
22-23S	30.21	20.84	41.55	30.68	33.27	24.34	49.97	36.90	36.68	25.40
22-23P	23.82	16.50	35.14	25.95	27.17	19.58	43.53	32.15	29.82	20.64
22-26S	39.42	29.56	50.68	37.42	44.86	34.81	63.01	48.89	46.39	35.99
22-26P	33.19	24.90	44.84	33.11	38.64	29.97	56.78	44.07	40.17	31.17
22-27S	25.26	17.07	38.76	28.62	30.15	22.26	47.16	34.83	31.58	23.32
22-27P	23.41	15.81	36.66	27.07	28.07	20.73	45.08	33.29	29.50	21.79
22-28S	50.36	37.76	60.93	44.99	55.80	43.29	73.95	57.38	57.33	44.48
22-28P	32.72	24.54	44.40	32.79	38.17	29.61	56.32	43.69	39.70	30.81
22-34S	30.43	22.83	42.23	31.19	35.64	27.65	54.03	41.92	37.39	29.01
22-34P	28.66	21.50	40.57	29.96	34.11	26.47	52.26	40.55	35.64	27.65
24-2S	27.20	18.80	37.72	27.86	33.20	24.51	49.13	36.28	32.20	22.30
24-2P	22.79	15.82	33.51	24.74	28.95	21.38	44.91	33.17	27.69	19.18
24-5S	31.41	21.66	41.04	30.31	36.74	26.95	52.45	38.73	35.73	24.74
24-5P	28.06	19.38	37.86	27.96	33.42	24.60	49.26	36.38	32.34	22.39
24-6S	57.82	39.50	57.50	42.46	52.96	39.10	68.91	50.89	53.30	36.90
24-6P	44.95	30.81	44.51	32.86	39.98	29.53	55.91	41.29	39.44	27.30
24-7S	28.26	19.51	38.43	28.38	33.90	25.03	49.84	36.81	32.96	22.82
24-7P	26.22	18.14	36.73	27.12	32.20	23.77	48.13	35.55	31.14	21.56
24-9S	41.21	30.91	51.39	37.94	49.95	38.76	66.95	51.94	43.85	35.08
24-9P	35.10	26.32	45.63	33.70	43.83	34.00	60.84	47.21	38.11	30.48
24-10S	41.08	28.17	50.70	37.44	46.18	34.08	62.10	45.86	46.27	32.03

Formerly MIL-C-5015 Types A and B

UL Approved - File No. E11 5497 CSA Certified - File No. LR69183

See Page 217 for Dimension Table. MS Receptacles mate with MS mating plugs that are on the same line in the table below. *Standard shells have cadmium plating with drab olive chromate finish. In shell sizes 12S, 14S, 16, 16S, 18, 20, 22, 24, and 28, clear chromate over cadmium plating (639), black zinc over zinc plating (621), or electroless nickel (689) plating are also available. Add the shell finish identification to the end of the part number to specify a shell finish other than drab olive. * notes the shell styles that are available with all four of these finish choices. Pricing shown is for standard drab olive and for clear chromate over cadmium plating (639) finishes. Prices for finishes (621) and (689) are higher.

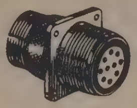
MS Receptacles

Number of Contacts	Shell Insert/ Size	97-3100A*		97-3101A*		97-3102A*	
		EACH		EACH		EACH	
		1-9	10-49	1-9	10-49	1-9	10-49
7	24-10S	40.84	28.00	40.95	28.09	33.60	23.13
9	24-11P	27.36	20.19	27.40	21.92	18.55	14.39
9	24-11S	33.97	25.08	34.04	27.23	25.63	19.88
5	24-12P	50.01	36.93	50.08	40.06	42.73	33.16
5	24-12S	62.53	46.17	62.61	50.09	56.11	43.53
7	24-16P	39.13	28.90	39.23	31.39	31.14	24.16
7	24-16S	54.37	36.75	47.54	38.03	40.03	31.05
12	24-19P	47.14	32.28	47.50	32.54	32.14	22.13
12	24-19S	49.83	34.10	49.91	34.14	35.11	24.16
11	24-20P	25.96	17.97	26.05	19.58	17.23	12.05
11	24-20S	26.11	18.08	27.28	19.71	17.51	12.23
10	24-21P	37.24	27.50	37.33	29.86	29.14	22.61
10	24-21S	40.80	30.13	40.86	32.69	32.91	25.53
4	24-22P	29.17	20.12	29.21	20.18	20.54	14.30
4	24-22S	35.89	24.67	35.98	24.72	27.36	18.91
7	24-27P	37.96	26.07	38.00	26.11	22.79	15.83
7	24-27S	38.93	26.74	39.56	27.15	23.82	16.51
24	24-28P	27.00	18.67	27.14	18.77	19.56	13.63
24	24.28S	30.41	20.97	30.54	21.05	22.75	15.80
9	28-1P	45.95	33.92	50.27	40.23	39.70	30.81
9	28-1S	63.61	46.97	67.93	54.35	58.53	45.42
14	28-2P	28.31	19.57	31.33	22.64	20.18	14.07
14	28-2S	30.00	20.72	32.99	23.76	22.16	15.41
3	28-3P	41.41	30.59	45.73	36.58	34.86	27.05
3	28-3S	45.11	33.31	49.44	39.55	38.80	30.11
3	28-6P	35.89	26.50	40.23	32.18	28.97	22.47
3	28-6S	40.51	29.91	44.84	35.87	33.89	26.30
12	28-8P	39.34	29.05	43.67	34.93	32.65	25.33
12	28-8S	41.41	30.59	45.73	36.58	34.86	27.05
12	28-9P	51.02	34.89	55.94	38.24	36.99	25.43
12	28-9S	55.63	38.00	60.66	41.42	41.47	28.46
7	28-10P	52.55	38.81	56.89	45.51	46.77	36.29
7	28-10S	68.73	50.75	73.06	58.45	64.00	49.66
22	28-11P	28.65	19.78	31.33	23.18	21.38	14.87
22	28-11S	34.11	23.68	36.93	27.55	27.10	20.33
26	28-12P	29.62	20.42	32.30	23.89	22.47	15.61
26	28-12S	31.44	23.68	36.93	27.55	27.14	18.77
35	28-15P	33.10	22.81	35.89	26.52	25.96	17.97
35	28-15S	37.93	26.05	40.73	30.16	30.83	21.24
20	28-16P	29.30	22.31	31.39	23.74	23.66	16.44
20	28-16S	29.62	22.50	32.30	23.94	22.41	16.43
15	28-17P	48.77	32.96	43.97	32.18	34.09	23.04
15	28-17S	52.25	35.32	46.32	34.81	37.54	25.39
12	28-18P	27.14	18.77	30.00	21.34	19.77	13.80
12	28-18S	29.27	22.28	32.58	23.29	21.38	14.87
10	28-19P	46.67	31.94	41.87	31.40	31.28	22.57
10	28-19S	56.40	38.54	53.86	40.39	43.38	29.34
14	28-20P	28.98	21.69	31.89	23.44	21.15	15.33
14	28-20S	31.98	24.11	34.95	25.64	24.63	17.69
37	28-21P	34.15	23.52	36.81	27.17	28.53	19.74
37	28-21S	38.43	26.38	41.25	30.56	33.53	23.13
2	32-5P	40.26	31.17	43.04	34.01	30.66	22.83
2	32-5S	44.72	32.60	47.06	37.37	34.76	25.99
23	32-6P	39.05	32.31	44.49	36.82	31.12	24.90
23	32-6S	56.00	46.34	61.44	50.85	48.07	38.45
35	32-7P	53.39	44.19	58.83	48.68	45.46	36.37
35	32-7S	71.47	59.14	76.93	63.67	63.57	50.85
30	32-8P	39.35	27.03	41.79	30.86	31.44	21.68
30	32-8S	40.04	27.48	42.28	31.35	31.98	22.03
23	32-13P	36.66	30.35	42.10	34.84	28.76	23.00
23	32-13S	42.19	34.91	48.07	39.78	34.69	27.76
4	32-17P	78.61	65.05	84.04	69.55	70.68	56.54
4	32-17S	87.76	72.62	93.21	77.15	79.85	63.88
52	32-414P	60.25	43.21	66.85	51.43	51.76	37.07
52	32-414S	80.09	57.67	89.49	68.84	71.89	52.91
22	36-1P	58.68	48.56	60.05	49.69	41.03	34.20
22	36-1S	79.30	65.62	80.68	66.78	60.85	50.71
4	36-5P	121.11	100.22	122.50	101.38	100.98	84.16
4	36-5S	148.10	122.56	149.49	123.71	126.89	105.75
6	36-6P	79.78	66.03	81.17	67.17	61.32	51.09
6	36-6S	98.14	81.22	99.54	82.38	78.93	65.77
47	36-7P	62.43	51.67	63.83	52.82	44.68	37.23
47	36-7S	69.13	57.21	70.50	58.34	51.06	42.56
47	36-8P	85.81	71.02	87.20	72.18	67.11	55.92
47	36-8S	93.55	77.42	94.94	78.57	74.54	62.11
31	36-9P	107.32	88.82	102.05	84.46	87.72	73.10
31	36-9S	134.46	111.27	135.85	112.42	113.81	94.84
48	36-10P	48.44	35.29	49.51	37.47	36.76	26.32
48	36-10S	52.30	37.86	53.40	40.13	40.41	28.77
35	36-15P	81.89	55.35	67.02	50.26	57.76	39.03
35	36-15S	90.03	60.88	74.96	56.22	66.01	44.63
52	36-403P	107.36	88.85	108.69	89.95	87.72	73.10
52	36-403S	151.58	125.45	152.95	126.58	130.23	108.52

MS Mating Plugs

Shell Insert/ Size	97-3106A*		97-3107A*		97-3106B*		97-3108A*		97-3108B*	
	EACH		EACH		EACH		EACH		EACH	
	1-9	10-49	1-9	10-49	1-9	10-49	1-9	10-49	1-9	10-49
24-10P	35.98	24.72	45.77	33.80	41.33	30.44	57.15	42.20	40.76	28.21
24-11S	34.15	25.62	44.75	33.05	42.90	33.29	59.90	46.48	37.22	29.77
24-11P	27.08	20.31	38.13	28.15	35.81	27.78	52.83	40.99	30.59	24.47
24-12S	64.62	48.46	73.33	54.15	73.36	56.92	90.38	70.13	65.79	52.63
24-12P	51.27	38.46	60.80	44.90	60.02	46.56	77.01	59.75	53.26	42.61
24-16S	48.54	36.40	58.26	43.01	57.28	44.44	74.31	57.65	50.72	40.58
24-16P	39.68	29.75	49.94	36.88	49.71	38.57	66.74	51.78	42.41	33.92
24-19S	51.01	34.89	50.72	37.45	46.17	34.09	62.12	45.87	46.06	31.89
24-19P	47.83	32.76	47.34	34.95	42.79	31.60	58.74	43.38	42.45	29.39
24-20S	26.47	18.31	38.70	28.58	34.16	25.23	50.10	36.99	31.16	23.02
24-20P	26.24	18.15	38.21	28.21	33.67	24.38	49.62	36.64	30.68	22.65
24-21S	41.44	31.09	51.58	38.09	50.19	38.94	67.18	52.13	44.04	35.24
24-21P	37.65	28.24	48.05	35.57	46.39	35.99	63.41	49.20	40.51	32.41
24-22S	36.34	24.98	45.99	33.97	41.67	50.62	57.40	42.38	38.93	28.39
24-22P	29.77	20.56	39.52	29.18	35.08	25.82	50.92	37.61	32.39	23.62
24-27S	39.84	27.36	38.50	28.43	36.21	25.06	49.90	36.85	30.96	22.86
24-27P	38.71	26.57	38.43	28.38	36.16	25.03	49.84	36.81	30.90	22.82
24-28S	30.79	21.84	40.58	29.96	36.26	26.78	52.22	38.56	33.28	24.58
24-28P	27.36	18.93	37.90	27.99	33.35	24.63	49.31	36.41	30.37	22.42
28-1S	67.39	50.54	76.23	56.05	69.01	55.21	93.24	72.33	66.38	55.32
28-1P	48.59	36.44	59.28	43.59	51.39	41.10	74.40	57.72	51.49	41.19
28-2S	31.33	21.60	44.36	32.75	34.13	25.08	52.35	38.67	34.29	25.17
28-2P	29.27	20.20	42.55	31.42	32.18	23.76	50.54	37.33	32.58	23.85
28-3S	47.66	35.75	60.91	44.98	50.52	40.41	73.50	57.02	50.65	40.52
28-3P	43.73	32.80	57.22	42.25	46.83	37.46	69.54	53.96	46.93	37.55
28-6S	42.76	32.07	56.32	41.58	45.93	36.74	68.60	53.23	46.06	36.85
28-6P	37.58	28.18	51.69	38.17	41.31	33.04	63.41	49.20	41.43	33.16
28-8S	43.73	32.80	57.22	42.25	46.83	37.46	69.54	53.96	46.93	37.55
28-8P	41.52	31.14	55.14	40.72	44.74	35.80	67.35	52.25	44.89	35.91
28-9S	57.43	39.25	63.67	47.02	53.28	39.34	71.67	52.93	51.28	39.45
28-9P	53.00	36.23	53.65	39.62	43.27	31.96	61.66	45.53	43.41	32.05
28-10S	72.86	54.65	84.53	62.42	74.14	59.31	98.56	76.47	74.28	59.43
28-10P	55.63	41.72	68.36	50.48	57.99	46.39	81.44	63.19	58.11	46.48
28-11S	35.43	26.44	49.01	36.20	38.64	28.53	57.02	42.11	38.76	28.62
28-11P	31.36	23.85	43.61	32.20	33.20	24.51	51.56	38.07	33.30	24.60
28-12S	35.43	26.44	49.01	36.20	38.64	28.53	57.02	42.11	38.76	28.62
28-12P	30.71	23.25	44.44	32.82	34.06	25.15	52.45	38.73	34.18	25.25
28-15S	39.24	26.94	52.29	38.62	41.92	30.96	60.29	44.52	42.04	31.04
28-15P	34.15	32.52	47.74	35.26	37.35	27.58	55.71	41.14	37.46	27.66
28-16S	32.60	24.68	44.51	32.86	31.94	23.59	52.51	38.77	34.26	25.29
28-16P	30.41	23.05	44.26	32.69	33.90	25.03	52.27	38.59	34.01	25.12
28-17S	54.37	36.75	58.01	42.84	47.62	35.17	66.01	48.75	47.76	35.27
28-17P	50.85	34.36	54.81	30.08	44.42	32.80	62.81	46.38	44.53	32.88
28-18S	30.45	20.99	43.69	32.26	35.53	24.60	51.69	38.17	83.71	24.69
28-18P	28.31	19.57	41.26	30.47	30.88	22.80	49.26	36.38	31.41	22.90
28-19S	58.53	39.99	65.08	48.06	54.69	40.39	73.08	53.97	54.61	40.33
28-19P	48.96	33.53	53.84	39.76	43.45	32.08	61.84	45.67	43.55	32.17
28-20S	34.95	23.61	46.63	34.43	36.24	26.77	54.63	40.34	36.38	26.86
28-20P	31.57	21.35	43.89	32.41	33.51	24.74	51.90	38.32	33.63	24.83
28-21S	39.59	29.25	52.78	38.97	42.41	31.31	60.78	44.88	42.53	31.40
28-21P	35.07	26.22	48.56	35.86	38.17	28.18	56.55	41.77	38.30	28.28
32-5S	52.04	36.92	—	—	55.20	40.77	—	—	50.90	42.41
32-5P	47.21	33.55	—	—	50.57	37.34	—	—	46.45	38.70
32-6S	61.86	49.48	—	—	61.37	41.47	—	—	64.12	53.06
32-6P	43.11	35.92	—	—	44.97	30.41	—	—	47.12	39.03
32-7S	74.23	61.86	—	—	103.17	69.76	—	—	79.60	65.88
32-7P	56.88	47.40	—	—	84.02	56.82	—	—	61.51	50.90
32-8S	45.69	34.43	—	—	47.32	34.94	—	—	48.14	33.32
32-8P	45.16	34.05	—	—	46.70	34.49	—	—	47.48	32.83
32-13S	46.55	38.79	—	—	49.55	33.49	—	—	50.74	42.00
32-13P	40.82	34.02	—	—	44.13	29.95	—	—	44.77	37.05
32-17S	87.74	73.12	—	—	108.37	73.26	—	—	95.89	79.36
32-17P	81.09	67.57	—	—	100.13	67.69	—	—	86.73	71.77
32-414S	87.96	64.93	—	—	86.82	72.43	—	—	75.30	62.74
32-414P	67.49	48.79	—	—	67.09	55.02	—	—	69.46	57.84
36-1S	76.95	64.13	—	—	103.66	70.06	—	—	89.62	74.16
36-1P	57.14	47.61	—	—	85.09	57.52	—	—	68.97	57.09
36-5S	143.00	119.16	—	—	164.75	111.39	—	—	146.22	118.81
36-5P	121.97	97.57	—	—	141.17	95.44	—	—	121.32	98.57
36-6S	98.99	79.19	—	—	99.65	65.69	—	—	100.10	81.34
36-6P	80.64	64.51	—	—	80.54	54.45	—	—	83.17	67.58
36-7S	69.97	55.97	—	—	71.09	48.07	—	—	73.32	59.57
36-7P	63.29	50.64	—	—	64.98	43.95	—	—	67.13	54.55
36-8S	94.41	75.53	—	—	116.68	78.88	—	—	95.72	77.77
36-8P	86.67	69.34	—	—	109.70	74.17	—	—	88.74	72.10
36-9S	135.31	108.25	—	—	152.88	103.36	—	—	133.64	108.59
36-9P	108.16	86.53	—	—	128.45	86.85	—	—	108.57	88.21
36-10S	56.94	38.91	—	—	59.98	44.29	—	—	60.55	49.70
36-10P	53.25	37.49	—	—	56.38	41.63	—	—	56.86	46.82
36-15S	96.31	65.51	—	—	75.94	56.08	—	—	83.26	62.44
36-15P	88.67	60.34	—	—	68.46	50.55	—	—	75.32	56.48
36-403S	146.33	121.94	—	—	168.57	113.96	—	—	141.28	121.41
36-403P	103.83	86.53	—	—	128.45	86.85	—	—	102.65	88.21

97 Series Rear Release Crimp Type



See Page 217 for Dimension Table.

UL, CSA Recognized. High speed termination, closed entry. Reduces fatigue failure at wire contact junction. Intermateable and intermountable with 97 Series and MIL-C-5015 type shell styles, both plugs and receptacles. Utilizes Standard 97 Series bright cadmium plated shells and insert configurations. Designed for use with stamped and formed type crimp contacts. The size 16 contact design features insulation crimp support. Use with standard hardware for 97 Series connector. Order accessories with (639) plating deviation to match connector plating. **Specifications. Standard Shell Finish:** Clear chromate over cadmium plate. **Inserts:** Molded 94V-O UL rated material. **Contacts:** Copper Alloy formed, silver plated; gold plating also available. **Wire Sizes:** 12-30 AWG. UL File #E115497. CSA File #LR69183. **Operating Temperature Range:** –55°C to +125°C. **Contacts sold separately. (See Contacts and Tools below.)**

Receptacles

Number of Contacts	Shell Size and Style	97-4100A EACH		97-4101A EACH		97-4102A EACH	
		1-9	10-49	1-9	10-49	1-9	10-49
2	12S-3P	10.89	8.45	13.06	10.13	5.81	4.36
2	12S-3S	10.89	8.45	13.06	10.13	5.81	4.36
3	14S-1P	9.62	7.47	11.69	9.07	6.69	4.94
3	14S-1S	9.62	7.47	11.69	9.07	6.69	4.94
4	14S-2P	9.45	7.33	11.52	8.94	6.47	4.77
4	14S-2S	9.45	7.33	11.52	8.94	6.47	4.77
5	14S-5P	9.95	7.72	12.02	9.33	6.99	5.14
5	14S-5S	9.95	7.72	12.02	9.33	6.99	5.14
3	14S-7P	10.14	7.86	12.21	9.47	6.69	4.94
3	14S-7S	10.14	7.86	12.21	9.47	6.69	4.94
7	16S-1P	12.71	9.86	12.30	9.55	7.37	5.42
7	16S-1S	12.71	9.86	12.30	9.55	7.37	5.42
5	16S-8P	12.97	10.06	12.56	9.75	7.18	5.28
5	16S-8S	12.97	10.06	12.56	9.75	7.18	5.28
10	18-1P	13.20	10.24	15.13	11.74	8.73	6.31
10	18-1S	13.20	10.24	15.13	11.74	8.73	6.31
4	18-4P	12.19	9.45	14.12	10.95	8.03	5.83
4	18-4S	12.19	9.45	14.12	10.95	8.03	5.83
5	18-11P	14.78	11.47	16.71	12.97	9.51	6.84
5	18-11S	14.78	11.47	16.71	12.97	9.51	6.84
6	18-12P	13.86	10.75	15.77	12.24	8.32	6.28
6	18-12S	13.86	10.75	15.77	12.24	8.32	6.28
10	18-19P	15.82	12.27	17.75	13.77	13.66	10.06
10	18-19S	15.82	12.27	17.75	13.77	13.66	10.06
5	18-20P	14.83	11.50	16.81	13.04	9.18	6.90
5	18-20S	14.83	11.50	16.81	13.04	9.18	6.90
4	20-4P	15.91	12.35	17.05	13.22	10.77	8.03
4	20-4S	15.91	12.35	17.05	13.22	10.77	8.03
8	20-7P	14.97	11.62	16.10	12.49	9.14	6.85
8	20-7S	14.97	11.62	16.10	12.49	9.14	6.85
14	20-27P	15.56	12.07	16.71	12.97	9.23	6.93
14	20-27S	15.56	12.07	16.71	12.97	9.23	6.93
19	22-14P	16.86	13.07	17.83	13.83	11.35	8.46
19	22-14S	16.86	13.07	17.83	13.83	11.35	8.46
7	24-2P	24.47	18.98	24.54	19.04	16.04	11.75
7	24-2S	24.47	18.98	24.54	19.04	16.04	11.75
22	28-11P	23.88	18.52	26.69	20.71	18.12	13.21
22	28-11S	23.88	18.52	26.69	20.71	18.12	13.21
26	28-12P	23.10	17.92	25.91	20.10	17.29	12.65
26	28-12S	23.10	17.92	25.91	20.10	17.29	12.65
14	28-20P	27.39	21.26	30.20	23.43	18.45	12.47
14	28-20S	27.39	21.26	30.20	23.43	18.45	12.47
37	28-21P	23.24	18.03	26.05	20.21	17.50	12.80
37	28-21S	23.24	18.03	26.05	20.21	17.50	12.80

Mating Plugs

Shell Size and Style	97-4106A EACH		97-4106B EACH		97-4107A EACH		97-4108B EACH	
	1-9	10-49	1-9	10-49	1-9	10-49	1-9	10-49
12S-3S	9.55	6.89	—	—	16.13	9.29	11.90	8.48
12S-3P	9.55	6.89	—	—	16.13	9.29	11.90	8.48
14S-1S	10.05	7.24	12.15	8.62	17.15	9.88	11.35	8.10
14S-1P	10.05	7.24	12.15	8.62	17.15	9.88	11.35	8.10
14S-2S	10.03	7.22	12.17	8.66	17.13	9.86	11.41	8.15
14S-2P	10.03	7.22	12.17	8.66	17.13	9.86	11.41	8.15
14S-5S	10.40	7.45	12.56	8.92	17.58	10.12	11.41	8.15
14S-5P	10.40	7.45	12.56	8.92	17.58	10.12	11.41	8.15
14S-7S	10.05	7.24	12.15	8.62	17.15	9.88	11.35	8.10
14S-7P	10.05	7.24	12.15	8.62	17.15	9.88	11.35	8.10
16S-1S	10.75	7.71	13.70	9.67	16.63	9.58	12.94	9.18
16S-1P	10.75	7.79	13.70	9.67	16.63	9.58	12.94	9.18
16S-8S	10.46	7.50	13.66	9.66	16.20	9.33	12.68	9.01
16S-8P	10.46	7.50	13.66	9.66	16.20	9.33	12.68	9.01
18-1S	13.21	9.34	15.84	11.14	22.98	13.23	16.61	11.67
18-1P	13.21	9.34	15.84	11.14	22.98	13.23	16.61	11.67
18-4S	12.44	8.83	15.11	10.66	22.00	12.67	16.10	11.29
18-4P	12.44	8.83	15.11	10.66	22.00	12.67	16.10	11.29
18-11S	13.47	9.54	16.47	11.56	23.30	13.42	17.11	12.00
18-11P	13.47	9.54	16.47	11.56	23.30	13.42	17.11	12.00
18-12S	12.90	9.15	16.00	11.24	22.60	13.02	16.55	11.64
18-12P	12.90	9.15	16.00	11.24	22.60	13.02	16.55	11.64
18-19S	18.29	12.82	16.96	13.19	29.33	16.89	18.81	13.55
18-19P	18.29	12.82	16.96	13.19	29.33	16.89	18.81	13.55
18-20S	14.31	10.11	17.57	12.28	24.40	14.05	18.50	12.94
18-20P	14.31	10.11	17.57	12.28	24.40	14.05	18.50	12.94
20-4S	18.81	13.15	21.15	14.72	27.68	15.94	22.17	15.42
20-4P	18.81	13.15	21.15	14.72	27.68	15.94	22.17	15.42
20-7S	16.91	11.86	19.10	13.35	25.33	14.59	20.26	14.13
20-7P	16.91	11.86	19.10	13.35	25.33	14.59	20.26	14.13
20-27S	16.94	11.88	19.21	13.41	25.35	14.60	20.62	14.35
20-27P	16.94	11.88	19.21	13.41	25.35	14.60	20.62	14.35
22-14S	18.71	13.09	21.60	15.46	32.98	18.99	22.92	15.93
22-14P	18.71	13.09	21.60	15.46	32.98	18.99	22.92	15.93
24-2S	25.13	17.42	26.01	18.02	39.55	22.78	27.61	19.10
24-2P	25.13	17.42	26.01	18.02	39.55	22.78	27.61	19.10
28-11S	27.59	19.10	30.22	20.85	45.53	26.22	30.66	21.15
28-11P	27.59	19.10	30.22	20.85	45.53	26.22	30.66	21.15
28-12S	26.81	18.54	29.41	20.33	44.48	25.62	29.87	20.62
28-12P	26.81	18.54	29.41	20.33	44.48	25.62	29.87	20.62
28-20S	27.30	18.47	30.00	20.58	45.73	26.34	30.26	20.46
28-20P	27.30	18.47	30.00	20.58	45.73	26.34	30.26	20.46
28-21S	26.84	18.56	29.37	20.54	44.50	25.63	29.87	20.62
28-21P	26.84	18.56	29.37	20.54	44.50	25.63	29.87	20.62

Contacts and Tools

Size 12-Silver Plated Contacts

Stock No.	Mfr.'s Type	Wires Sizes AWG	PER PK./100	
			1-4	5-9
714-3100	97-38-1216P-4(920) Pin	12-16	32.12	28.68
714-3110	97-38-1216S-4(920) Socket	12-16	35.56	32.12

Size 16-Silver Plated Contacts

714-3113	97-45-1418P-4(920) Pin	14-18	22.73	20.56
714-3115	97-45-1418S-4(920) Socket	14-18	26.37	24.08
714-3120	97-45-1622P-4(920) Pin	16-22	24.08	21.79
714-3130	97-45-1622S-4(920) Socket	16-22	26.37	24.08
714-3140	97-45-2026P-4(920) Pin	20-26	24.08	21.79
714-3150	97-45-2026S-4(920) Socket	20-26	26.37	24.08
714-3154*	97-55-1418S-4(920) Socket	14-18	26.37	24.08
714-3155*	97-55-1622S-4(920) Socket	16-22	36.37	24.08
714-3156*	97-55-2026S-4(920) Socket	20-26	26.37	24.08

Size 12-Gold Plated Contacts

714-3160	97-38-1216P-5(920) Pin	12-16	110.12	98.64
714-3170	97-38-1216S-5(920) Socket	12-16	117.00	104.94

Size 16-Gold Plated Contacts

714-3175	97-45-1622P-5(929) Pin	16-22	55.40	48.48
714-3180	97-45-1622S-5(920) Socket	16-22	62.08	55.19
714-3185	97-45-2026P-5(920) Pin	20-26	55.06	48.18
714-3190	97-45-2026S-5(920) Socket	20-26	61.94	55.06
714-3195*	97-55-1622S-5(920) Socket	16-22	61.94	55.06
714-3197*	97-55-2026S-5(920) Socket	20-26	61.94	55.06

*Short socket contacts for size 10SL, 12S, 14S and 16S.

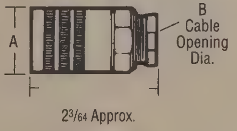
Insertion/Extraction Tools

Stock No.	Mfr.'s Type	Contact Size	EACH	
			1-9	10-24
714-3192	M81969/14-03	16	3.92	3.58
714-3194	M81969/14-04	12	4.60	3.77

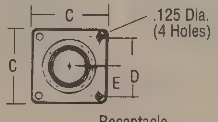
Hand Crimp Tools

714-3196. 357-578. 12-22 AWG ....EACH 245.66
714-3198. 357-579. 20-30 AWG ....EACH 245.66

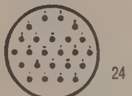
Series 165 MS-Type Miniature Solder Connectors

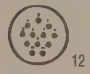


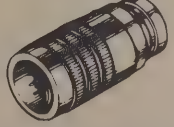
$2\frac{3}{64}$ Approx.

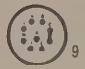


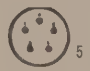
Receptacle











Pressure-proof and completely weather-proof miniature connectors. Widely used in instrumentation and miniaturized electronic equipment. These highly reliable connectors are available in both small and large shell sizes providing enough variation for a wide range of applications. Contacts are gold over nickel plating. Aluminum shells feature quick bayonet coupling. Small receptacles mount in $\frac{13}{16}$" hole; secure through four $\frac{1}{8}$" holes on $\frac{25}{32}$" centers. Large receptacles require $1\frac{1}{16}$" hole with four $\frac{1}{8}$" holes on $1\frac{5}{16}$" centers. Plugs are $2\frac{1}{16}$" long. Small plugs are $\frac{57}{64}$" dia.; large plugs are $1\frac{9}{64}$" in dia. Rated 500 volts rms, except *600 volts. All have strain relief clamps. Shells are aluminum with gray anodize chromium finish. Dielectric material is diallyl phthalate. All have "O" ring seals. **Av. Shipping Wt.:** 3 oz.

Dimensions (Inches)

Size	A	B	C	D	E
Small	$\frac{57}{64}$	$\frac{3}{8}$	$1\frac{1}{16}$	$\frac{25}{32}$	$\frac{25}{64}$
Large	$1\frac{9}{64}$	$\frac{21}{32}$	$1\frac{5}{16}$	$\frac{31}{32}$	$\frac{31}{64}$

Small Shell-5 No. 20 Contacts

Stock No.	Mfr.'s Type	Contacts and Ampere Rating	Description	EACH	
				1-9	10-49
714-5570	165-33	5 @ 7.5*	Male Plug	42.07	32.05
714-5573	165-34	5 @ 7.5*	Female Plug	52.31	39.81
714-5576	165-35	5 @ 7.5*	Male Receptacle	28.54	21.74
714-5579	165-36	5 @ 7.5*	Female Receptacle	38.78	29.54

Small Shell-9 No. 20 Contacts

714-5526	165-13	9 @ 7.5	Male Plug	43.48	33.14
714-5529	165-14	9 @ 7.5	Female Plug	57.81	44.04
714-5532	165-15	9 @ 7.5	Male Receptacle	30.83	23.49
714-5535	165-16	9 @ 7.5	Female Receptacle	45.03	34.31

Small Shell-12 No. 20 Contacts

Stock No.	Mfr.'s Type	Contacts and Ampere Rating	Description	EACH	
				1-9	10-49
714-5516	165-9	12 @ 7.5	Male Plug	49.50	37.72
714-5518	165-10	12 @ 7.5	Female Plug	65.71	50.06
714-5520	165-11	12 @ 7.5	Male Receptacle	37.11	28.27
714-5523	165-12	12 @ 7.5	Female Receptacle	52.69	40.14

Large Shell-24 No. 20 Contacts

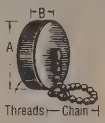
714-5550	165-25	24 @ 7.5	Male Plug	88.27	67.25
714-5559	165-28	24 @ 7.5	Female Receptacle	79.20	60.35

*UL Recognized

On Allied Stock Numbers marked with †, the part is available in the following finishes: Standard — (no code), cadmium plate with drab olive chromate finish; (639) — cadmium plate with clear chromate finish; (621) — zinc with black zinc finish; (689) — electroless nickel. For finishes other than drab olive, add the finish identification to the end of the part number. *Finish (639) has been replaced with finish (689) in 3057 clamps.

Type 97-60 Dust Caps

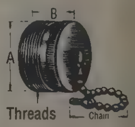
For Receptacles



Provides protection against live circuits and keeps out dirt and dust when connector is not in use. Has internal threads especially designed for use with Series 3100A, 3101A and 3102A receptacles. Beaded chain. A soft rubber disc sits on the connector shell forming a watertight joint. **Average Shipping Weight:** 2 oz.

Stock No.	Mfr.'s Type	Fits Shell	Dimensions (Inches)			EACH	
			Threads	A	B	1-9	10-49
714-2538	97-60-10	10S, 10SL	5/8-24	13/16	7/16	3.34	2.68
714-2540	97-60-12	12S, 12SL	3/4-20	15/16	7/16	3.11	2.47
714-2542†	97-60-14	14, 14S	7/8-20	1 1/16	7/16	3.22	2.64
714-2544†	97-60-16	16, 16S	1-20	1 1/8	7/16	3.69	3.00
714-2546†	97-60-18	18	1 1/8-18	1 5/16	7/16	4.16	3.42
714-2548†	97-60-20	20	1 1/4-18	1 7/16	7/16	4.78	4.14
714-2550†	97-60-22	22	1 3/8-18	1 9/16	7/16	5.01	4.35
714-2552†	97-60-24	24	1 1/2-18	1 11/16	7/16	6.98	6.19
714-2554†	97-60-28	28	1 3/4-18	1 59/64	1/2	6.85	6.07
714-2556	97-60-32	32	2-18	2 3/16	1/2	11.24	8.92
714-2558	97-60-36	36	2 1/4-16	2 7/16	1/2	13.11	10.92

For Plugs



Male caps and chains especially designed for Series 3106, 3107 and 3108 plugs. Have external threads and are used on all plugs where a coupling ring is provided. Provide excellent protection against live circuits in a wide variety of applications. Beaded chain. **Average Shipping Weight:** 2 oz.

Stock No.	Mfr.'s Type	Fits Shell	Dimensions (Inches)			EACH	
			Threads	A	B	1-9	10-49
714-2539	97-60-10P	10S, 10SL	5/8-24	5/8	21/32	3.77	3.13
714-2541	97-60-12P	12S, 12SL	3/4-20	3/4	27/32	7.09	6.28
714-2543†	97-60-14P	14, 14S	7/8-20	7/8	27/32	4.73	4.24
714-2545†	97-60-16P	16, 16S	1-20	1	27/32	5.21	4.63
714-2547†	97-60-18P	18	1 1/8-18	1 1/8	27/32	6.44	5.74
714-2549†	97-60-20P	20	1 1/4-18	1 1/4	27/32	11.56	10.40
714-2551†	97-60-22P	22	1 3/8-18	1 3/8	27/32	11.95	10.75
714-2553†	97-60-24P	24	1 1/2-18	1 1/2	27/32	14.26	12.83
714-2555†	97-60-28P	28	1 3/4-18	1 3/4	27/32	8.84	7.92
714-2557	97-60-32P	32	2-18	2	27/32	24.77	20.65
714-2559	97-60-36P	36	2 1/4-16	2 1/4	27/32	17.79	14.82

AN3057 Cable Clamps*

For jacketed cable or wires protected by tubing. Supports at plug or receptacle. Use with rubber bushing for firm grip. **Weight:** 3 1/2 oz.

Stock No.	Mfr.'s Type	Fits Shell	Max Cable O.D. (Inches)	EACH		
				1-9	10-49	50-99
714-2500	97-3057-3	8S, 10S	1/4	6.77	5.09	4.58
714-2501†	97-3057-4	10SL, 12, 12S	5/16	5.56	4.22	3.79
714-2503†	97-3057-6	12SL, 14, 14S	7/16	6.78	5.23	4.69
714-2505†	97-3057-8	16, 16S	9/16	6.14	4.86	4.43
714-2507†	97-3057-10	18	5/8	5.13	4.25	3.83
714-2533†	97-3057-10-6‡	18	1/2	5.74	4.36	3.93
714-2509†	97-3057-12	20, 22	3/4	5.68	4.38	3.93
714-2534†	97-3057-12-6‡	20, 22	1/2	5.93	4.52	4.08
714-2511†	97-3057-16	24, 28	15/16	5.80	4.72	4.24
714-2513	97-3057-20	32	1 1/4	8.14	6.20	5.58
714-2515	97-3057-24	36	1 3/4	8.47	6.42	5.78

‡Step-down.

MS3420 Telescoping Boots

Amphenol Series 97-79-513

Rubber bushing designed for MS3057A cable clamp. Protects wire bundles and unjacketed cables from possible damage by cable clamp. Telescope for use with cable to small in relation to connector used. **Shipping Weight:** 1 1/2 oz.

Stock No.	Mfr.'s Type	Cable O.D.	EACH		
			1-9	10-49	50-99
714-2579	97-79-513-3	0.130	.67	.59	.49
714-2580	97-79-513-4	0.220	.75	.67	.55
714-2581	97-79-513-6	0.312	.76	.68	.56
714-2582	97-79-513-8	0.437	.67	.59	.49
714-2583	97-79-513-10	0.562	.66	.58	.48
714-2584	97-79-513-12	0.625	.75	.67	.55
714-2585	97-79-513-16	0.750	.99	.86	.73
714-2586	97-79-513-20	0.937	1.62	1.35	1.14
714-2587	97-79-513-24	1.250	1.62	1.35	1.14

MS3057A Cable Clamp*

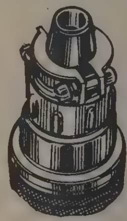
Strong, lightweight. Both clamping halves float so that cable is always centered for maximum strain relief. MS3420 boot (not included) provides support and weatherproofing. Boots may be used for small cables (order from table above right). **Shipping Weight:** 5 oz.

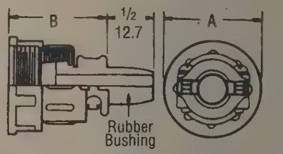
Stock No.	Mfr.'s Type	Fits Shell	Max Cable O.D. (Inches)	EACH		
				1-9	10-49	50-99
714-2502†	97-3057-1004	10SL, 12, 12S	5/16	4.04	3.01	2.68
714-2504†	97-3057-1007	12SL, 14, 14S	7/16	4.21	3.15	2.82
714-2506†	97-3057-1008	16, 16S	9/16	4.53	3.26	2.89
714-2508†	97-3057-1010	18	5/8	3.31	2.74	2.43
714-2510†	97-3057-1012	20, 22	3/4	3.89	2.84	2.52
714-2512†	97-3057-1016	24, 28	15/16	4.09	3.04	2.72
714-2514	97-3057-1020	32	1 1/4	5.84	4.66	4.19
714-2516	97-3057-1024	36	1 3/8	6.09	4.55	4.09

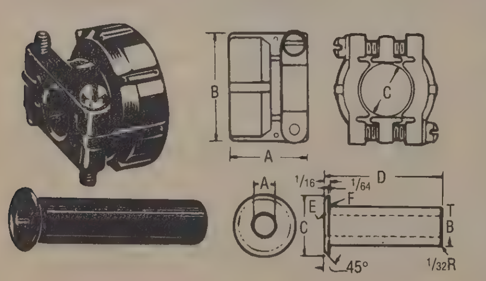
Waterproof Cable Clamps

The complete waterproof cable clamp assembly Type 97-67 (for use with MS connectors) consists of an AN3057 cable clamp, a rubber bushing, washer and an AN3055 adapter. It is available for all sizes MS and 97 plugs.

Stock No.	Mfr.'s Type	Max Cable O.D. (Inches)	Connector Size	Weight Lbs. Per 100	Dimensions (Inches)			EACH		
					Threads	A	B	1-9	10-49	50-99
714-2000	97-67-12-4	7/32	10SL, 12S, 12	3.82	5/8-24	25/32	1 17/32	14.41	10.81	9.73
714-2006†	97-67-14-6	11/32	12SL, 14S, 14	5.54	3/4-20	29/32	1 19/32	15.10	11.33	10.19
714-2008†	97-67-16-8	7/16	16S, 16	6.92	7/8-20	1 1/16	1 19/32	15.77	11.85	10.65
714-2010†	97-67-16-6	11/32	16S, 16	5.84	7/8-20	1 1/16	1 19/32	15.60	11.69	10.53
714-2015†	97-67-18-6	11/32	18	5.94	1-20	1 3/16	1 19/32	14.61	10.97	9.86
714-2020†	97-67-18-8	7/16	18	7.10	1-20	1 3/16	1 19/32	16.13	12.09	10.90
714-2025†	97-67-18-10	9/16	18	8.79	1-20	1 3/16	1 19/32	16.47	12.36	11.12
714-2030†	97-67-22-8	7/16	20, 22	7.27	1 3/16-18	1 3/8	1 19/32	16.65	12.49	11.25
714-2035†	97-67-22-10	9/16	20, 22	8.97	1 3/16-18	1 3/8	1 9/32	16.81	12.63	11.35
714-2045†	97-67-22-12	11/16	20, 22	12.65	1 3/16-18	1 3/8	1 21/32	18.37	13.78	12.39
714-2040†	97-67-28-10	9/16	24, 28	9.12	1 7/16-18	1 5/8	1 17/32	18.25	13.69	12.33
714-2048†	97-67-28-12	11/16	24, 28	12.86	1 7/16-18	1 5/8	1 21/32	20.65	15.48	13.93
714-2050†	97-67-28-16	27/32	24, 28	14.95	1 7/16-18	1 5/8	1 25/32	20.27	15.20	13.69
714-2055	97-67-32-20	1 1/32	32	22.27	1 3/4-18	1 15/16	1 31/32	45.74	40.22	—
714-2060	97-67-36-16	27/32	36	16.36	2-18	2 3/16	1 31/32	33.90	28.81	—







97 Series Cable Clamps with Rubber Bushing*

For unjacketed cable and wires. Both clamping halves float for maximum strain relief. Two telescoping bushings are furnished with shells sizes 24 and larger.

Stock No.	Mfr.'s Type	Shell Size	Max Cable O.D. (Inches)	Dimensions (Inches)				EACH		
				Threads	A	B	C	1-9	10-49	50-99
714-2560†	97-3057-1004-1	10SL, 12, 12S	7/32	5/8-24	0.795	0.842	5/16	4.73	4.11	3.60
714-2561†	97-3057-1007-1	12SL, 14, 14S	5/16	3/4-20	0.850	0.995	7/16	4.78	4.15	3.65
714-2562†	97-3057-1008-1	16, 16S	7/16	7/8-20	0.920	1.120	9/16	4.92	4.42	3.87
714-2563†	97-3057-1010-1	18	9/16	1-20	0.920	1.216	5/8	4.48	3.75	3.30
714-2564†	97-3057-1012-1	20, 22	5/8	1 3/16-18	0.927	1.403	3/4	4.44	3.81	3.34
714-2565†	97-3057-1016-1	24, 28	3/4	1 7/16-18	1.015	1.683	15/16	4.88	3.99	3.75
714-2566	97-3057-1020-1	32	15/16	1 3/4-18	1.095	2.050	1 1/4	8.10	7.35	6.51
714-2567	97-3057-1024-1	36	1 1/4	2-18	1.156	2.245	1 3/8	8.24	7.40	6.54

Circular DIN Connectors

Industry Approvals: UL File Number E63093 (C091, C016 Series); CSL List Number LR 48932 (C016 Series); VDE 1780, 1781 (C016-1 Series).

Series C091A

Nickel-plated shell with thermoplastic insert. Silver-plated contacts. Screw lock mating. Cable outlet 6 mm on the plugs. Accept 26-20 AWG wire. The receptacle is front panel mounting with hex nut. **Rated:** 300 V. **5 Stereo Rated:** 150 V. **Current:** 5 amps at 40°C ambient temperature. Solder termination.

Straight Male Cable Connectors

Stock No.	Mfr.'s Type	No. of Contacts	EACH	
			1-24	25-99
246-7028	T3200-001	2	**6.95**	**5.98**
246-7030	T3260-001	3 DIN	**7.28**	**6.27**
246-7032	T3300-001	4 IEC	**7.22**	**6.22**
246-7034	T3360-001	5	**7.55**	**6.50**
246-7035	T3360-010	5S DIN	**8.13**	**7.00**
246-7036	T3400-001	6 DIN	**8.08**	**6.95**

Right-Angled Male Cable Plugs

Stock No.	Mfr.'s Type	No. of Contacts	1-24	25-99
246-7010	T3200-005	2	**11.70**	**10.07**
246-7015	T3260-005	3 DIN	**11.98**	**10.31**
246-7020	T3300-005	4 IEC	**12.20**	**10.50**

Female Panel Receptacles, Front Mounting, Hex Nut

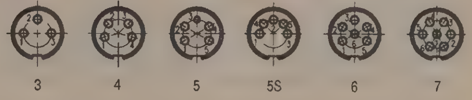
Stock No.	Mfr.'s Type	No. of Contacts	EACH	
			1-24	25-99
246-7037	T3203-009	2	**5.14**	**4.42**
246-7038	T3263-009	3 DIN	**4.92**	**4.23**
246-7040	T3303-009	4 IEC	**4.81**	**4.14**
246-7042	T3363-009	5	**4.97**	**4.28**
246-7043	T3359-009	5S DIN	**8.14**	**7.01**
246-7044	T3403-009	6 DIN	**5.19**	**4.47**

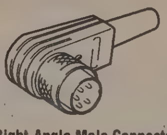
Straight Female Cable Connectors

Stock No.	Mfr.'s Type	No. of Contacts	1-24	25-99
246-7050	T3261-001	3 DIN	**6.45**	**5.56**
246-7055	T3301-001	4 IEC	**9.93**	**8.25**
246-7060	T3361-001	5	**10.30**	**8.56**

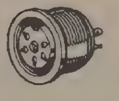
Male Panel Receptacles, Front Mounting, Hex Nut

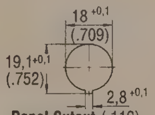
Stock No.	Mfr.'s Type	No. of Contacts	1-24	25-99
246-7070	T3262-009	3 DIN	**5.03**	**4.33**
246-7075	T3302-009	4 IEC	**5.47**	**4.71**
246-7080	T3362-009	5	**4.97**	**4.28**



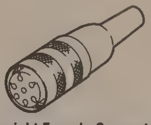

Right-Angle Male Connector

Straight Male Plug


Female Receptacle



Panel Cutout (.110)


Straight Female Connector

Male Receptacle

Series C091B

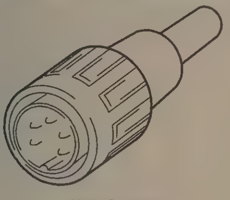
Bayonet locking mating. Silver-plated contacts. Cable outlet 6 mm. Solder termination.

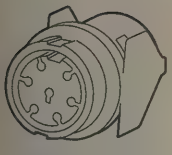
Male Cable Connectors, Bayonet Locking Inside

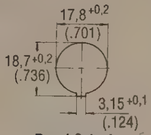
Stock No.	Mfr.'s Type	No. of Contacts	EACH	
			1-24	25-99
246-7110	T3274-501	3 DIN	**4.31**	**3.71**
246-7112	T3324-501	4 IEC	**4.53**	**3.90**
246-7114	T3374-501	5	**4.97**	**4.28**
246-7118	T3424-501	6 DIN	**5.27**	**4.54**
246-7120	T3434-501	7	**6.18**	**5.32**

Female Panel Receptacles, Bayonet Locking, Plastic, Full Snap-In Mounting

Stock No.	Mfr.'s Type	No. of Contacts	1-24	25-99
246-7130	T3277-500	3 DIN	**2.80**	**2.41**
246-7132	T3327-500	4 IEC	**3.63**	**3.12**
246-7134	T3377-500	5	**3.19**	**2.74**
246-7138	T3427-500	6 DIN	**3.63**	**3.12**
246-7140	T3437-500	7	**3.54**	**3.05**


Male Connector


Female Receptacle



Panel Cutout

Series C016-1

Full plastic connector. Screw locking. 4 or 7 contacts. 9.5 mm cable opening. Silver-plated contacts. **Dielectric Material:** Polyamide 6.6. **Flammability Rating:** UL 94 V0. **Protection to IEC 529**: IP 67 (water resistant). Plastic shell resistant to UV, solvents, oil and gas. **Wire Sizes:** 26-12 AWG. **Current Rating:** 5-16 amps. **Voltage Rating:** 250-600 V.

Male Cable Connectors — Without Strain Relief

Stock No.	Mfr.'s Type	No. of Contacts	EACH	
			1-24	25-99
246-7150	T3108-000	3 plus ground	**10.57**	**9.10**
246-7155	T3104-000	6 plus ground	**9.37**	**8.06**

Male Cable Connectors — With Strain Relief

Stock No.	Mfr.'s Type	No. of Contacts	1-24	25-99
246-7160	T3108-001	3 plus ground	**11.84**	**10.19**
246-7165	T3104-001	6 plus ground	**10.71**	**9.22**

Female Cable Connectors — With Strain Relief

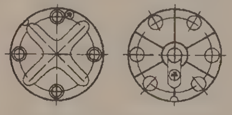
Stock No.	Mfr.'s Type	No. of Contacts	EACH	
			1-24	25-99
246-7170	T3109-001	3 plus ground	**13.02**	**11.21**
246-7175	T3105-001	6 plus ground	**10.77**	**9.27**

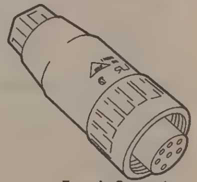
Female Receptacles

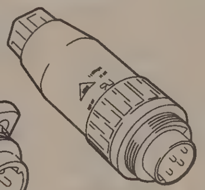
Stock No.	Mfr.'s Type	No. of Contacts	1-24	25-99
246-7180	T3111-000	3 plus ground	**9.29**	**7.99**
246-7185	T3107-000	6 plus ground	**10.50**	**8.72**

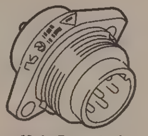
Male Receptacles

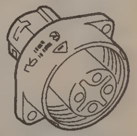
Stock No.	Mfr.'s Type	No. of Contacts	1-24	25-99
246-7190	T3110-000	3 plus ground	**7.55**	**6.50**
246-7195	T3106-000	6 plus ground	**6.81**	**5.87**



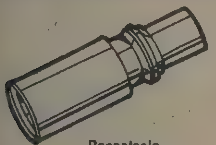

Female Connector

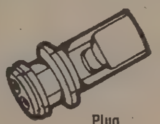

Male Connector

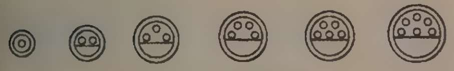

Male Receptacle


Female Receptacle

44 Series
Environmentally-Sealed Connectors


Receptacle


Plug


Contact Configurations

44 Series high-performance environmentally-sealed connectors feature a resilient, one-piece design incorporating crimp contacts, in six insert configurations. Primary and secondary mating seals and discrete wire seals resist liquids. Ideal for auto/truck, marine, industrial, traffic control, security and mining ventilation systems. 250 VAC RMS at 8 A continuous. **Temperature Range:** –40° to +125°C. Order contacts and tooling separately.

Receptacles

Stock No.	Mfr.'s Type	No. of Contacts	EACH	
			1-24	25-99
246-4400	044-103-10001	1	**1.66**	**1.34**
246-4402	044-103-10002	2	**1.66**	**1.34**
246-4404	044-103-10003	3	**1.71**	**1.38**
246-4406	044-103-10004	4	**1.77**	**1.43**
246-4408	044-103-10005	5	**1.77**	**1.43**
246-4410	044-103-10006	6	**1.84**	**1.48**

Plugs

Stock No.	Mfr.'s Type	No. of Contacts	EACH	
			1-24	25-99
246-4412	044-104-10001-2	1	**1.70**	**1.37**
246-4414	044-104-10002-2	2	**1.74**	**1.41**
246-4416	044-104-10003-2	3	**1.80**	**1.45**
246-4418	044-104-10004-2	4	**1.88**	**1.52**
246-4422	044-104-10006-2	6	**1.97**	**1.59**
246-4420	044-104-10005-2	5	**1.88**	**1.52**

Poke-Home Contacts

Stock No.	Mfr.'s Type	Description	EACH	
			1-4	5-9
246-4424	044-100-1414P-100	Pin (Small Pack)	**17.31**	**14.57**
246-4426	044-100-1414P-1000	Pin (Bulk Pack)	**102.70**	**98.12**
246-4428	044-102-1414S-100	Socket (Small Pack)	**35.91**	**29.62**
246-4430	044-102-1414S-1000	Socket (Bulk Pack)	**224.77**	**211.09**

Tooling

720-4432. 357-588. Crimp Tool	**EACH 242.74**
720-4434. 356-258. Insertion Tool	**EACH 67.59**
720-4436. 356-260. Socket Extraction Tool	**EACH 28.80**
720-4438. 345-259. Pin Extraction Tool	**EACH 35.57**

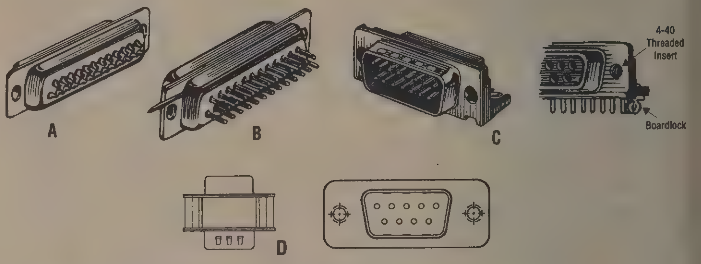
Introduction
The cost of EMI/RFI control has dropped dramatically with the introduction of Amphenol Canada's new FCC Series of filtered modular jacks, D-subminiature and Micro-Ribbon. At less than half the cost of previous industry levels, the FCC Series products have already solved EMI/RFI problems for a host of electronic equipment designers. These filtered connectors are useful for dealing with the two main EMI/RFI control issues.

FCC Compliance
FCC Docket 20780, Part 15, Subpart J imposes electromagnetic radiation emission limitations upon manufacturers of both Industrial (Class A) and Commercial (Class B) products. The FCC Series of filtered connectors are instrumental in passing these requirements because the chief cause of noncompliance is traceable to noise radiated from the I/O cables. A filtered connector at the I/O port removes the noise before it exits the system.

Noise Protection
Unwanted EMI/RFI noise or electrostatic discharge can be removed from an I/O cable if a filtered connector is used at the I/O port. This prevents false signals and protects the equipment from damaging voltage spikes thereby greatly enhancing device immunity from external effects.

FCC17 Series — Filtered D-Sub Connectors

Designed to provide EIA RS-232 and RS-449 compatibility. Intermateable with standard non-filtered Amphenol 17 Series D-Subs and connectors meeting MIL-C-24308. **Materials. Shell:** High strength zinc diecast or stamped steel. **Contacts:** Phosphor bronze. **Inserts:** High strength thermoplastic material (complies with UL flammability requirements of 94V-O per UL-STD-94). **Finish. Shell:** Bright tin plating per MIL-T-10727. **Contacts:** 15 μ" gold plating per MIL-G-45204 on contact area over 100 μ" nickel plating. **Operating Temperature:** –40°C to +85°C.



Solder Cup (Plug) — Fig. A

Stock No.	Mfr.'s Type	No. of Contacts	CAP (pF)	EACH		
				1-9	10-49	50-99
625-0005	FCC17-E09PM-210	9	470	10.78	9.80	7.16
625-0010	FCC17-E09PM-240	9	820	10.89	9.90	7.23
625-0015	FCC17-A15PM-210	15	470	14.57	13.24	9.67
625-0020	FCC17-A15PM-240	15	820	14.73	13.39	9.78
625-0025	FCC17-B25PM-210	25	470	16.58	15.07	11.01
625-0030	FCC17-B25PM-240	25	820	16.85	15.32	11.19
625-0035	FCC17-C37PM-210	37	470	22.79	20.72	15.13
625-0040	FCC17-C37PM-240	37	820	23.21	27.10	15.41

Solder Cup (Receptacle) — Fig. A

625-0045	FCC17-E09SM-210	9	470	11.90	10.82	7.90
625-0050	FCC17-E09SM-240	9	820	12.01	10.92	7.98
625-0055	FCC17-A15SM-210	15	470	15.37	13.97	10.21
625-0060	FCC17-A15SM-240	15	820	15.48	14.07	10.28
625-0065	FCC17-B25SM-210	25	470	18.73	17.03	12.44
625-0070	FCC17-B25SM-240	25	820	19.01	17.28	12.62
625-0075	FCC17-C37SM-210	37	470	30.24	27.49	20.08
625-0080	FCC17-C37SM-240	37	820	30.66	27.87	20.36

Straight PCB (Plug) — Fig. B

625-0085	FCC17-E09PE-210	9	470	11.58	10.53	7.67
625-0090	FCC17-E09PE-240	9	820	11.58	10.53	7.67
625-0095	FCC17-A15PE-210	15	470	14.06	12.78	9.32
625-0100	FCC17-A15PE-240	15	820	14.06	12.78	9.32
625-0105	FCC17-B25PE-210	25	470	16.54	15.04	10.96
625-0110	FCC17-B25PE-240	25	820	16.54	15.04	10.96
625-0111	FCC17-C37PE-210	37	470	23.99	21.81	15.89
625-0112	FCC17-C37PE-240	37	820	23.99	21.81	15.89

Straight PCB (Receptacle) — Fig. B

625-0115	FCC17-E09SE-210	9	470	11.58	10.53	7.67
625-0120	FCC17-E09SE-240	9	820	11.58	10.53	7.67
625-0125	FCC17-A15SE-210	15	470	14.06	12.78	9.32
625-0130	FCC17-A15SE-240	15	820	14.06	12.78	9.32
625-0135	FCC17-B25SE-210	25	470	16.54	15.04	10.96
625-0140	FCC17-B25SE-240	25	820	16.54	15.04	10.96
625-0145	FCC17-C37SE-210	37	470	23.99	21.81	15.89
625-0150	FCC17-C37SE-240	37	820	23.99	21.81	15.89

.318 (Footprint) Right Angle PCB with 4-40 Thread (Plug) — Fig. C

Stock No.	Mfr.'s Type	No. of Contacts	CAP (pF)	EACH		
				1-9	10-49	50-99
625-0155	FCC17-E09PA-410	9	470	11.58	10.53	7.67
625-0160	FCC17-E09PA-440	9	820	11.58	10.53	7.67
625-0165	FCC17-A15PA-410	15	470	14.06	12.78	9.32
625-0170	FCC17-A15PA-440	15	820	14.06	12.78	9.32
625-0175	FCC17-B25PA-410	25	470	16.54	15.04	10.96
625-0180	FCC17-B25PA-440	25	820	16.54	15.04	10.96
625-0185	FCC17-C37PA-410	37	470	23.99	21.81	15.89
625-0190	FCC17-C37PA-440	37	820	23.99	21.81	15.89

.318 (Footprint) Right Angle PCB with 4-40 Thread (Receptacle) — Fig. C

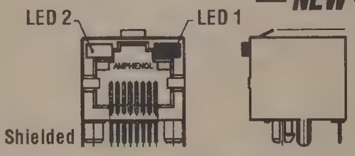
625-0195	FCC17-E09SA-410	9	470	11.58	10.53	7.67
625-0200	FCC17-E09SA-440	9	820	11.58	10.53	7.67
625-0205	FCC17-A15SA-410	15	470	14.06	12.78	9.32
625-0210	FCC17-A15SA-440	15	820	14.06	12.78	9.32
625-0215	FCC17-B25SA-410	25	470	16.54	15.04	10.96
625-0220	FCC17-B25SA-440	25	820	16.54	15.04	10.96
625-0225	FCC17-C37SA-410	37	470	23.99	21.81	15.89
625-0230	FCC17-C37SA-440	37	820	23.99	21.81	15.89

Pin to Socket Adapter (Plug) — Fig. D

625-0235	FCC17-E09AD-210	9	470	24.78	22.53	16.78
625-0240	FCC17-E09AD-240	9	820	24.78	22.53	16.78
625-0245	FCC17-E09AD-290	9	5600	25.50	23.18	17.26
625-0250	FCC17-A15AD-210	15	470	27.89	25.35	18.88
625-0255	FCC17-A15AD-240	15	820	27.89	25.35	18.88
625-0260	FCC17-A15AD-290	15	5600	29.03	26.39	19.65
625-0265	FCC17-B25AD-210	25	470	31.05	28.23	21.03
625-0270	FCC17-B25AD-240	25	820	31.05	28.23	21.03
625-0275	FCC17-B25AD-290	25	5600	32.99	29.99	22.33
625-0280	FCC17-C37AD-210	37	470	36.85	33.50	24.94
625-0285	FCC17-C37AD-240	37	820	36.85	33.50	24.94
625-0290	FCC17-C37AD-290	37	5600	39.74	36.13	26.90

RJ Vista™ High Speed RJ-45 Modular Jacks

— *NEW* —



RJ Vista™ is a family of RJ-45 Modular Jack Connectors with built-in LEDs, designed for Category 5 performance. This product is ideal for LAN applications such as adapter cards and routers. Shielded and non-shielded versions are available, with a variety of LED colors, and ports. U.L. File #E135615, CSA File #LR68598.

Materials. Shield: Copper alloy/tin-lead plated. **Contacts:** Phosphor bronze; 30 μ" gold over nickel. **Insert:** Thermoplastic (complies with UL94V-0). **Current Rating:** 1.5 amps. **Voltage Rating:** 125 VAC.

Non-Shielded — 8 Contacts

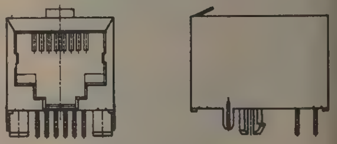
Stock No.	Mfr.'s Type	LED 1	LED2	EACH		
				1-49	50-99	100-249
625-0355	RJHS-4080	None	None	.90	.81	.72
625-0360	RJHS-4081	Green	Yellow	1.04	.94	.85
625-0365	RJHS-4084	Yellow	Green	1.04	.94	.85
625-0370	RJHS-4085	Green	Green	1.04	.94	.85

Shielded — 8 Contacts

625-0375	RJHS-4380	None	None	1.46	1.31	1.18
625-0380	RJHS-4381	Green	Yellow	1.60	1.44	1.30
625-0385	RJHS-4384	Yellow	Green	1.60	1.44	1.30
625-0390	RJHS-4385	Green	Green	1.60	1.44	1.30

Filtered and Shielded Modular Jacks

The FRJ series of Shielded and FIltered Modular Jacks offers low cost and effective EMC control within standard RJ-45 connector footprints. EMC control is offered by a completely shielded connector and/or with the use of a high resistivity, high impedance ferrite block. No board layout changes are required for its use. Simply replace the standard non-filtered connector for superior EMC performance.



Materials. Shield: Copper Alloy. **Contacts:** Phosphor Bronze, Gold over 20 μ" Pd. over Ni. **Insert:** Thermoplastic (Complies with UL 94V-0). **Filter:** High Impedance, High Resistivity, Ferrite Block. **Electrical. Current Rating:** 1.5 Amps. **Voltage Rating:** 125 Volts AC. **UL and CSA File No.:** LR68598-11.

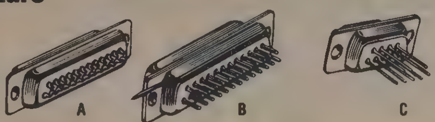
Non-Shielded — 8-Contacts

Stock No.	Mfr.'s Type	Description	EACH		
			1-49	50-99	100-249
625-0325	FRJ-408	Standard	1.24	1.12	1.01
625-0330	FRJ-448	Filtered	1.64	1.48	1.33

Shielded and Filtered — 8-Contacts

625-0335	FRJ-488	Shielded	1.48	1.33	1.20
625-0340	FRJ-468	Filtered and Shielded	2.05	1.84	1.66
625-0345	FRJ-438	Shielded	1.52	1.37	1.23
625-0350	FRJ-418	Filtered and Shielded	2.05	1.84	1.66

17 Series D Subminiature



Conforms to NFC 93-425, EIA standard RS-232-C — RS-449. Two-piece black thermoplastic insulator. UL94 V0 rated. Nonremovable contacts. **Shell:** Steel yellow chromated over zinc. **Contacts:** Screw machined (male brass). **Plating:** Gold over nickel. **Normal Voltage:** 300 Vrms 50 Hz at a current rating of 7.5 A.

Fixed Contact Solder Cup: Male (Plug) — Fig. A

Stock No.	Mfr.'s Type	Contacts	EACH		
			1-49	50-99	100-499
720-8029	17-DE9P	9	2.08	1.70	1.40
720-8030	17-DA15P	15	2.50	2.05	1.69
720-8031	17-DB25P	25	3.72	3.04	2.51
720-8032	17-DC37P	37	5.17	4.30	3.59
720-8033	17-DD50P	50	6.88	5.73	4.78

Fixed Contact Solder Cup (Stamped and Formed Contacts): Male (Plug) — Fig. A

720-8019	17S-DE9P	9	.69	.58	.48
720-8020	17S-DA15P	15	1.25	1.04	.87
720-8021	17S-DB25P	25	1.84	1.54	1.28
720-8022	17S-DC37P	37	2.71	2.26	1.88
720-8023	17S-DD50P	50	4.33	3.61	3.01

Fixed Contact Dip Solder: Male (Plug) PCB — Fig. B

Termination Contacts: Diameter — 0.040"; Length — 0.092".

720-8039	17-DE9P-V	9	3.03	2.47	2.04
720-8040	17-DA15P-V	15	3.20	2.66	2.22
720-8041	17-DB25P-V	25	3.43	2.86	2.38
720-8042	17-DC37P-V	37	5.88	5.74	4.78
720-8043	17-DD50P-V	50	9.48	7.90	6.58

Termination Contacts: Diameter — 0.024"; Length — 0.124".

720-8069	17-DE9P-U	9	2.28	1.90	1.58
720-8070	17-DA15P-U	15	3.11	2.59	2.16
720-8071	17-DB25P-U	25	3.43	2.86	2.38
720-8072	17-DC37P-U	37	6.88	5.74	4.78

Fixed Contact Wire Wrap: Male (Plug) PCB — Fig. C

Termination Contacts: Diameter — 0.031/0.034"; Diagonal Length — 0.378".

720-8059	17-DE9P-F179	9	6.55	5.46	4.55
720-8060	17-DA15P-F179	15	7.34	6.12	5.10
720-8061	17-DB25P-F179	25	8.14	6.78	5.65
720-8062	17-DC37P-F179	37	12.23	10.19	8.49
720-8063	17-DD50P-F179	50	15.71	13.09	10.91

Fixed Contact Solder Cup: Female (Receptacle) — Fig. A

Stock No.	Mfr.'s Type	Contacts	EACH		
			1-49	50-99	100-499
720-8034	17-DE9S	9	3.43	2.80	2.31
720-8035	17-DA15S	15	3.44	2.81	2.32
720-8036	17-DB25S	25	5.18	4.32	3.60
720-8037	17-DC37S	37	7.50	6.34	5.28
720-8038	17-DD50S	50	10.26	8.56	7.13

Fixed Contact Solder Cup (Stamped and Formed Contacts): Female (Recept.) — Fig. A

720-8024	17S-DE9S	9	.75	.62	.52
720-8025	17S-DA15S	15	1.35	1.13	.94
720-8026	17S-DB25S	25	1.96	1.63	1.36
720-8027	17S-DC37S	37	2.81	2.34	1.94
720-8028	17S-DD50S	50	4.87	4.06	3.38

Fixed Contact Dip Solder: Female (Recept.) PCB — Fig. B

Termination Contacts: Diameter — 0.040"; Length — 0.092".

720-8044	17-DE9S-V	9	4.66	3.81	3.14
720-8045	17-DA15S-V	15	4.91	4.09	3.41
720-8046	17-DB25S-V	25	5.24	4.37	3.64
720-8047	17-DC37S-V	37	8.97	7.48	6.23
720-8048	17-DD50S-V	50	12.50	10.42	8.68

Termination Contacts: Diameter — 0.024"; Length — 0.124".

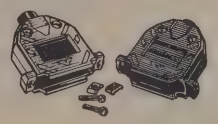
720-8074	17-DE9S-U	9	3.20	2.66	2.22
720-8075	17-DA15S-U	15	3.96	3.30	2.75
720-8076	17-DB25S-U	25	5.24	4.37	3.64
720-8077	17-DC37S-U	37	8.97	7.48	6.23

Fixed Contact Wire Wrap: Female (Recept.) PCB — Fig. C

Termination Contacts: Diameter — 0.031/0.034"; Diagonal Length — 0.378".

720-8064	17-DE9S-F179	9	6.94	6.07	4.82
720-8065	17-DA15S-F179	15	8.05	6.71	5.59
720-8066	17-DB25S-F179	25	9.95	8.29	6.91
720-8067	17-DC37S-F179	37	17.27	14.39	11.99
720-8068	17-DD50S-F179	50	17.27	14.39	11.99

Two-Piece Grommet Type Backshell



Housing: ABS polymer or styrene. **Plating:** Nickel over copper. **Grommet:** PVC. **Hardware:** Steel, clear zinc finish.

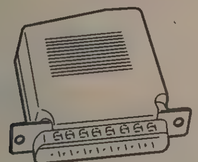
Plastic (Black) with Styrene Housing

Stock No.	Mfr.'s Type	Contacts In D-Sub	EACH		
			1-49	50-99	100-499
720-0050	17-1724-1	9	1.75	1.43	1.03
720-0051	17-1725-1	15	2.42	1.98	1.33
720-0052	17-1726-1	25	2.73	2.23	1.50
720-0053	17-1727-1	37	3.09	2.53	1.70
720-0054	17-1728-1	50	5.12	4.27	3.09

Metallized Plastic with ABS Polymer Housing

Stock No.	Mfr.'s Type	Contacts In D-Sub	EACH		
			1-49	50-99	100-499
720-0056	17-1724-2	9	2.93	2.39	1.72
720-0057	17-1725-2	15	3.82	3.12	2.10
720-0058	17-1726-2	25	4.31	3.51	2.36
720-0059	17-1727-2	37	5.22	4.35	3.15
720-0060	17-1728-2	50	8.10	6.76	5.63

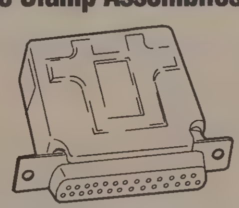
Straight/45° Exit One Piece Clamp Assemblies



Plastic one-piece hinged construction. Cable support gate can be positioned for straight or 45°.

Stock No.	Mfr.'s Type	Case Style	EACH		
			1-49	50-99	100-499
720-0062	17-1767-09	9	2.13	1.78	1.48
720-0064	17-1767-15	15	2.20	1.84	1.53
720-0066	17-1767-25	25	2.03	1.69	1.41
720-0068	17-1767-37	37	2.64	2.20	1.83

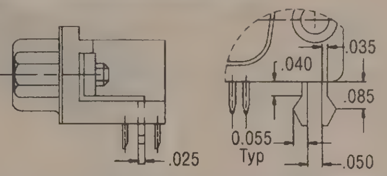
Straight/90° Exit One Piece Clamp Assemblies



Plastic cable clamp assemblies with molded cable opening for straight and for 90° exit. One blank gate and several support gates are supplied to provide adjustable clamping over a wide range of cable diameters. One-piece hinged construction.

Stock No.	Mfr.'s Type	Case Style	EACH		
			1-49	50-99	100-499
720-0070	17-1768-09	9	1.05	.88	.73
720-0072	17-1768-15	15	1.18	.98	.82
720-0074	17-1768-25	25	1.28	1.07	.89
720-0076	17-1768-37	37	1.86	1.55	1.29

Right Angle — Front Metal Shell D-Subminiature Connector

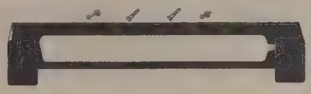


Amphenol's 617 series right angle connectors are a state of the art design. The front metal shell helps reduce EMI/RFI emissions. Contacts are selectively plated for high performance at a low cost. **Specifications. Temperature Range:** –55°C to +105°C. **Voltage Rating:** 1000 VAC at sea level. **Current Rating:** 5 amp. **Dielectric:** Glass filled thermoplastic, black, UL 94 VO. **Shells:** Steel/tin plated. **Contacts:** Precision formed copper alloy. **Contact Plating:** Goldflash over nickel. **Contact Forces:** Engagement — 18 oz. max.; Separation — .75 oz. min. **Mounting Feature:** #4-40 threadhole with female screwlock. .318 Footprint.

Split Arrowhead Boardlock

Stock No.	Mfr.'s Type	Description	EACH	
			1-49	50-99
720-6170	617-C009P-BF221	9-Contact Plug	1.41	1.19
720-6175	617-C009S-BF220	9-Contact Socket	1.41	1.19
720-6180	617-C015P-BF221	15-Contact Plug	2.05	1.68
720-6185	617-C015S-BF220	15-Contact Socket	1.66	1.39
720-6190	617-C025P-BF221	25-Contact Plug	1.86	1.58
720-6195	617-C025S-BF220	25-Contact Socket	1.86	1.58
720-6200	617-C037P-BF221	37-Contact Plug	3.21	2.54
720-6205	617-C037S-BF220	37-Contact Socket	2.59	2.18

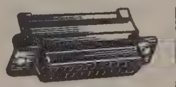
Slide Lock Assemblies



Two posts are required per connector.

Stock No.	Mfr.'s Type	Case Style	EACH	
			1-49	50-99
720-0080	17-D-51224-1	9	2.04	1.68
720-0082	17-D-51220-1	15	1.64	1.37
720-0084	17-D-51221-1	25	2.06	1.72
720-0086	17-D-51222-1	37	2.49	2.04
720-0088	17-D-51223-1	50	4.51	3.69
720-0091†	17-D-53018-X	Post	3.29	2.69

†Per package of 5 sets of 2.



D-Sub Connectors for Flat Cable Termination

RS-232 and RS-449 standard and intermateable with all industry standard D-Subs. **Insulator Material:** Gray, glass-filled polycarbonate (UL94V-0). **Contacts:** Phosphor bronze with gold plating over nickel. **Flange:** Metal, detents on the plugs. **Termination:** 26 AWG solid and 28 AWG stranded conductors on .050" ribbon cable. **Rated:** 1 amp, 125 VAC. **Temperature Rating:** –25°C to +105°C.

Metal Flange Plugs (Male)

Stock No.	Mfr.'s Type	Contacts	EACH	
			1-49	50-99
715-9077	841-17-DEFR-A9P	9	5.52	4.60
715-9078	841-17-DAFR-A15P	15	6.42	5.35
715-9080	841-17-DBFR-A25P	25	7.55	6.29
715-9082	841-17-DCFR-A37P	37	11.09	9.24
715-9083	841-17-DDFR-A50P	50	30.15	25.13

Plastic Plugs (Male)

715-9120	841-17-DEFR-B9P	9	5.32	4.44
715-9122	841-17-DAFR-B15P	15	6.89	5.33
715-9124	841-17-DBFR-B25P	25	7.15	5.96
715-9126	841-17-DCFR-B37P	37	10.80	

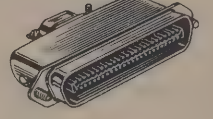
Metal Flange Receptacles (Female)

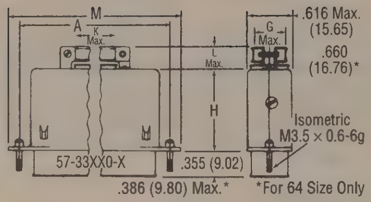
715-9071	841-17-DEFR-A9S	9	5.32	4.60
715-9072	841-17-DAFR-A15S	15	6.42	5.35
715-9074	841-17-DBFR-A25S	25	7.55	6.29
715-9076	841-17-DCFR-A37S	37	11.09	9.24
715-9075	841-17-DDFR-A50S	50	28.30	23.58

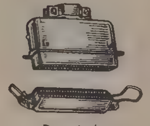
Plastic Receptacles (Female)

715-9128	841-17-DEFR-B9S	9	5.27	4.54
715-9130	841-17-DAFR-B15S	15	6.39	5.30
715-9132	841-17-DBFR-B25S	25	7.15	5.96
715-9134	841-17-DCFR-B37S	37	10.80	9.00

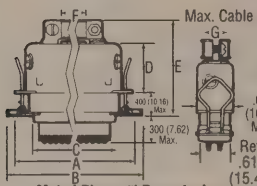
57-Series Connectors





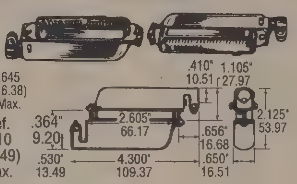


Cable-to-Panel



Mated Plug and Receptacle

Cable-to Cable



Copper alloy contacts, selectively plated gold-over-copper for excellent current carrying characteristics. UL94 VO rated diallyl phthalate dielectric per MIL-M14G Type MDG, for operation at up to 700 volts DC (sea level) without shorting or flashover. Zinc-plated steel outer shell, with clear chromate finish, for corrosion resistance. Trapezoidal-shape shell assures correct polarity. **Current Capacity:** 5 amps per contact. **Voltage Rating:** 700 volts DC at sea level. **Operating Temperature:** –55°C to +105°C (–67°F to +122°F). **Wire Sizes:** Solid — 22 gauge, max.; Stranded — 24 gauge, maximum.

Plugs – Top Cable Entry

Zinc plated shells for screw locking.

Stock No.	Mfr.'s Type	No. of Contacts	EACH		
			1-49	50-99	100-499
720-1750	57-33240-1	24	7.59	6.32	5.27
720-1751	57-33360-1	36	9.72	8.10	6.76
720-1752	57-33500-1	50	8.35	6.96	5.80

Cable-to-Panel Connectors

Plugs with top cable entry. Receptacles with spring latches.

Stock No.	Mfr.'s Type	Description	EACH		
			1-49	50-99	100-499
720-1722	57-30140	14-Contact Plug	5.77	4.81	4.01
720-1726	57-40140	14-Contact Receptacle	5.40	4.50	3.73
720-1723	57-30240	24-Contact Plug	6.52	5.44	4.53
720-1727	57-40240	24-Contact Receptacle	5.90	4.92	4.10
720-1724	57-30360	36-Contact Plug	7.19	5.99	4.99
720-1728	57-40360	36-Contact Receptacle	6.75	5.63	4.69
720-1725	57-30500	50-Contact Plug	8.08	6.73	5.61
720-1729	57-40500	50-Contact Receptacle	7.52	6.26	5.22

Cable-to-Cable Connectors

720-1708	57-10500-7	50-Contact Plug	8.37	6.97	5.81
720-1719	57-20500-7	50-Contact Receptacle	9.01	7.51	6.26

Rack and Panel Connectors

Rack and Panel Connectors

Top Cable Entry Receptacles with Spring Latches

Rack and Panel Connectors Fix-Mounted Plugs and Float-Mounted Receptacles

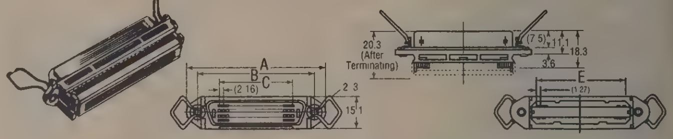
0.103" mounting hole (accepts #3 screw — not included).

Stock No.	Mfr.'s Type	Description	EACH		
			1-49	50-99	100-499
720-1660	57-10140	14-Contact Plug	4.22	3.52	2.93
720-1670	57-20140	14-Contact Receptacle	4.49	3.74	3.12
720-1662	57-10240	24-Contact Plug	4.67	3.89	3.24
720-1672	57-20240	24-Contact Receptacle	5.69	4.74	3.95
720-1664	57-10360	36-Contact Plug	5.50	4.58	3.82
720-1674	57-20360	36-Contact Receptacle	6.52	5.44	4.53
720-1666	57-10500	50-Contact Plug	5.90	4.92	4.10
720-1676	57-20500	50-Contact Receptacle	7.30	6.08	5.07

Top Cable Entry Receptacles with Spring Latches

720-1735	57-60140	14-Contact Receptacle	8.16	6.80	5.67
720-1737	57-60240	24-Contact Receptacle	8.64	7.20	6.00
720-1739	57-60360	36-Contact Receptacle	9.17	7.64	6.37
720-1741	57-60500	50-Contact Receptacle	10.84	9.04	7.53

Amphenol® Microribbon Connectors



These connectors are intermateable with Amphenol 57 Series and 157 Series connectors. Special contact design allows the use of standard .050" flat ribbon cable for termination. **Contacts:** Copper alloy/gold plating. **Dielectric:** Polycarbonate resin (UL94V-O)/blue. **Rated:** 250 VAC rms; 1 amp. **Test Voltage:** 500 VAC rms at sea level. **Operating Temperature:** –55°C to +105°C.

Amphenol Plugs

Stock No.	Mfr.'s Type	No. of Contacts	EACH	
			1-49	50-99
715-9110	850-57F-30360-20	36	8.25	6.88
715-9112	850-57F-30500-20	50	9.30	7.75

Receptacles with Spring Latch

715-9114	850-57F-40360-20	36	8.60	7.16
715-9116	850-57F-40500-20	50	8.15	6.79

Metal Front Shell Receptacles

715-9150	850-57FE-40360-20	36	10.60	8.83
715-9152	850-57FE-40500-20	50	11.43	9.53

157 Series I.D.C. Termination

Current Capacity: 5 amps per contact. **Voltage Rating:** 700 VDC at sea level. **Operating Temperature:** –67°F to +221°F (–55°C to +105°C). **Wire Size:** 24 and 26 AWG solid conductor; 26 and 28 AWG stranded conductor. **Contacts:** Selectively plated 20 µ" gold over 50 µ" nickel on a copper alloy base. **Dielectric:** DPT-UL94V0. **Shells:** Zinc plated steel with clear chromate coating. Trapezoidal shape assures positive polarization.

Cable-to-Cable Connectors

Low Profile Plastic Hood

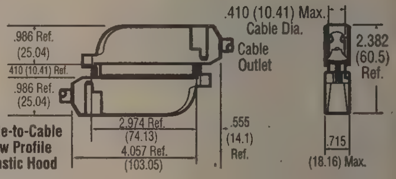
Stock No.	Mfr.'s Type	Description	EACH		
			1-49	50-99	100-499
720-5220	157-72500-3 (431)	50-Contact Plug	7.55	6.29	5.24
720-5225	157-82500-3 (431)	50-Contact Receptacle	7.17	5.98	4.98

Low Profile Steel Hood

720-5240	157-72500-3	50-Contact Plug	6.84	5.70	4.75
720-5245	157-82500-3	50-Contact Receptacle	6.98	5.82	4.85

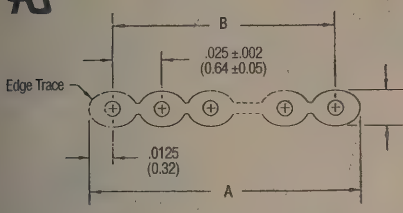
Tools for 157 Series

Stock No.	Mfr.'s Type	Description	EACH
720-8006	356-251	Insertion/Repair Tool	250.00



Cable-to-Cable Low Profile Plastic Hood

Spectra-Zip® PVC .025" Center Cable — 191-3003 Series



Spectra•Strip .025" center zip cable is designed to meet industry requirements for interconnect miniaturization. Features include quick and easy IDC termination, UL recognition and inexpensive PVC dielectric. Applications include any system requiring a higher signal density or an inexpensive alternative to transmission cable. The cable is rated for 105°C (+221°F) operating temperature and 150 volts. One edge of the cable is marked for polarity reference. **Physical Characteristics. Conductors:** 30 AWG solid bare copper. **Insulation:** PVC, .0075" wall. **Thickness:** 0.025" ±0.002". **Pitch:** 0.025" ±0.002". **Color:** Grey (one edge black). **UL style:** 2678; rated 105°C (+221°F).

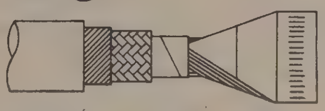
- ► **Allows Increased Miniaturation**
- ► **Highly Flexible PVC Insulation**
- ► **Fast, Low-Cost Mass Termination**
- ► **UL Recognized Style**
- ► **Precise Spacing for Controlled Electrical Characteristics**

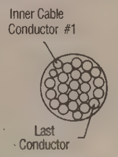
Stock No.	Mfr.'s Type	No. of Conductors	Dimensions — In.		PER 100'	
			Width A	Span B	1-4	5-9
608-2915	843-191-3003-026	26	.650	.625±.005	**51.17**	**42.98**
608-2920	843-191-3003-034	34	.850	.825±.005	**66.91**	**56.21**
608-2925	843-191-3003-040	40	1.000	.975±.006	**78.72**	**66.12**
608-2930	843-191-3003-050	50	1.250	1.225±.006	**98.40**	**82.66**
608-2935	843-191-3003-060	60	1.500	1.475±.006	**118.08**	**99.19**
608-2937	843-191-3003-068	68	1.700	1.675± 006	**134.88**	**112.40**
608-2940	843-191-3003-080	80	2.000	1.975±.006	**150.78**	**113.09**
608-2945	843-191-3003-100	100	2.500	2.475±.007	**196.80**	**165.30**

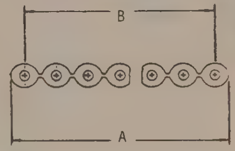
Spectra•Strip® Jacketed Shielded Cable

- ► **Round Cable That Mass Terminates**
- ► **High Flexibility**
- ► **Twisted Pair Electrical Characteristics**
- ► **Helps Meet FCC Regulations UL, CSA and CL2**

Cable combines into a single construction, the handling and shielding features of round cable and the mass termination capabilities of flat cable. This product is designed for routing in tight spaces where a round shape is more practical and where a foil/braid shield is necessary to help meet FCC requirements for EMI/RFI suppression. **Conductors:** 28 AWG-7/36 tinned copper. **Jacket:** Black PVC, .030" nom. wall. **Temperature Rating:** –20° to +105°C (–4° to +221°F).







Round Twist "N" Flat™ Jacketed Shielded Cable — 159-2832 Series

Physical Characteristics. Color Code: Brown, red, orange, yellow, green, blue, violet, gray, white, black and repeat with tan common. **Insulation:** PVC, .010" wall laminated between .005" clear PVC film. **Thickness:** .042" ±.003". **Pitch:** .050" ±.005". **Twist Length:** 17.5" (consult Allied for other available lengths). **Flat Length:** 2.5". **Shielding:** Aluminum/polyester foil, with minimum 90% coverage tinned copper braid. **UL Style:** Inner Cable — 20130; Composite — 20381.

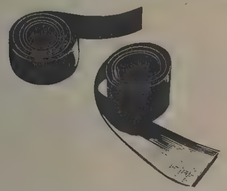
Stock No.	Mfr.'s Type	No. of Pairs	Dimensions — In.		PER 100'	
			Width A	Span B	1-4	5-9
608-2830	843-159-2832-010	5	.526	.450±.015	**142.96**	**122.65**
608-2835	843-159-2882-014	7	.726	.650±.015	**149.58**	**128.35**
608-2840	843-159-2832-016	8	.826	.750±.015	**157.28**	**134.95**
608-2845	843-159-2832-020	10	1.026	.950±.015	**167.18**	**143.45**
608-2850	843-159-2832-026	13	1.326	1.250±.015	**180.37**	**154.75**
608-2855	843-159-2832-034	17	1.726	1.650±.015	**211.58**	**181.50**
608-2860	843-159-2832-040	20	2.026	1.905±.020	**227.53**	**195.28**
608-2865	843-159-2832-050	25	2.526	2.450±.020	**261.22**	**224.10**

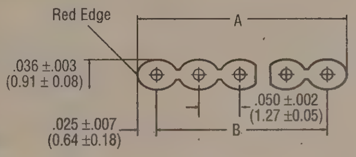
Round "N" Flat™ Jacketed Shielded Cable — 159-2801 Series

Physical Characteristics. Color Code: Gray with red edge. **Insulation:** PVC, .010" wall. **Thickness:** .035" ±.003". **Pitch:** .050" ±.003'. **Shielding:** Aluminum/polyester tape, with minimum 90% coverage tinned copper braid. **UL Style:** Inner Cable — 2651; Composite — 20381. CSA Certified.

Stock No.	Mfr.'s Type	No. of Conductors	Dimensions — In.		PER 100'	
			Width A	Span B	1-4	5-9
608-2870	843-159-2801-010	10	.500	.450±.007	**110.29**	**88.16**
608-2875	843-159-2801-020	20	1.000	.950±.011	**121.51**	**104.25**
608-2880	843-159-2801-025	25	1.250	1.200±.011	**130.28**	**111.75**
608-2885	843-159-2801-026	26	1.300	1.250±.011	**133.45**	**114.50**
608-2890	843-159-2801-034	34	1.700	1.650±.015	**155.88**	**134.60**
608-2895	843-159-2801-037	37	1.850	1.800±.015	**160.80**	**137.95**
608-2900	843-159-2801-040	40	2.000	1.950±.015	**165.15**	**141.70**
608-2905	843-159-2801-050	50	2.500	2.450±.015	**199.24**	**170.95**
608-2910	843-159-2801-060	60	3.000	2.950±.015	**223.48**	**191.70**

Spectra-Zip® Planar Cable (Gray)

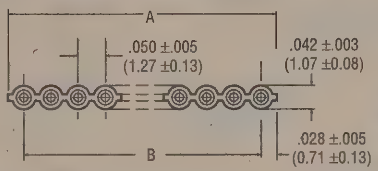


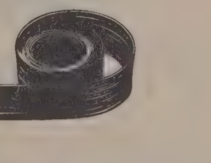


- ► **28 AWG, 7/36, .050 Centers, Strand Tinned Copper**
- ► **Fast, Low Cost Mass Termination for All Standard 50 MIL Insulation Displacement (IDC) Connectors**
- ► **High Flexible Gray PVC Insulation with One Red Edge**
- ► **U.L. and CSA Recognized**
- ► **Voltage Rating: 300 V**
- ► **Current Rating: 1 Amp**

Stock No.	Mfr.'s Type	No. of Conductors	Dimensions — In.		PER 100'	
			Width A	Span B	1-4	5-9
608-7110	843-191-2801-110	10	.500	.450±.007	**18.38**	**16.63**
608-7114	843-191-2801-114	14	.700	.650±.007	**22.38**	**20.25**
608-7116	843-191-2801-116	16	.800	.750±.011	**25.59**	**23.14**
608-7120	843-191-2801-120	20	1.000	.950±.011	**31.97**	**28.93**
608-7124	843-191-2801-124	24	1.200	1.150±.011	**38.36**	**34.71**
608-7125	843-191-2801-125	25	1.250	1.200±.011	**39.97**	**36.16**
608-7126	843-191-2801-126	26	1.300	1.250±.011	**41.56**	**37.61**
608-7134	843-191-2801-134	34	1.700	1.650±.011	**54.36**	**49.18**
608-7137	843-191-2801-137	37	1.850	1.800±.012	**59.15**	**53.52**
608-7140	843-191-2801-140	40	2.000	1.950±.015	**63.95**	**57.86**
608-7150	843-191-2801-150	50	2.500	2.450±.015	**79.94**	**72.32**
608-7160	843-191-2801-160	60	3.000	2.950±.015	**95.92**	**86.79**
608-7164	843-191-2801-164	64	3.200	3.150±.020	**102.31**	**92.58**

3C® Color Coded Planar Cable

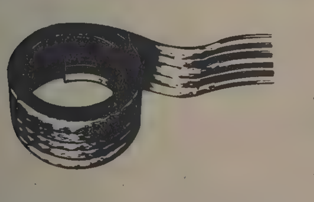


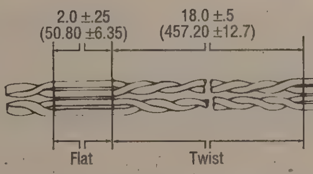


- ► **28 AWG, 7/36, .050 Centers, Strand Tinned Copper**
- ► **Double Contour Allows Termination from Either Side of Cable, Easy Conductor Separation for Circuit Routing**
- ► **U.L. and CSA Recognized**
- ► **Fast, Low Cost Mass Termination to All Standard 50 MIL Insulation Displacement (IDC) Connectors**
- ► **Voltage Rating: 300 V**
- ► **Current Rating: 1 Amp**

Stock No.	Mfr.'s Type	No. of Conductors	Dimensions — In.		PER 100'	
			Width A	Span B	1-4	5-9
608-7210	843-135-2801-010	10	.505	.450±.015	**37.97**	**31.48**
608-7214	843-135-2801-014	14	.705	.650±.007	**48.51**	**40.26**
608-7216	843-135-2801-016	16	.805	.750±.015	**55.44**	**46.00**
608-7220	843-135-2801-020	20	1.005	.950±.015	**69.30**	**57.51**
608-7224	843-135-2801-024	24	1.205	1.150±.015	**78.07**	**64.77**
608-7225	843-135-2801-025	25	1.255	1.200±.015	**81.30**	**67.47**
608-7226	843-135-2801-026	26	1.305	1.250±.015	**84.56**	**70.17**
608-7234	843-135-2801-034	34	1.705	1.650±.015	**110.58**	**91.76**
608-7237	843-135-2801-037	37	1.855	1.800±.015	**120.33**	**97.16**
608-7240	843-135-2801-040	40	2.005	1.950±.020	**130.09**	**107.95**
608-7250	843-135-2801-050	50	2.505	2.450±.020	**162.62**	**134.86**
608-7260	843-135-2801-060	60	3.005	2.950±.020	**195.14**	**161.94**
608-7264	843-135-2801-064	64	3.205	3.150±.020	**208.16**	**172.74**

Twist "N" Flat Planar Cable



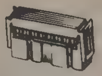


- ► **28 AWG, 7/36, .050 Center, Tinned Strand Copper**
- ► **Unique Design Allows Mass Termination to IDC Connectors**
- ► **Up to 64 Conductors (32 pr.) with Precise Spacing for Controlled Electrical Characteristics**
- ► **Highly Flexible PVC Insulation is Color Coded with a Tan Common to Allow Ten Repeatable Colors**
- ► **Double Contour at Flat Sections Allows Termination from Either Side of Cable, Easy Conductor Separation for Circuit Routing**
- ► **U.L. and CSA Recognized**
- ► **Voltage Rating: 300 V**
- ► **Current Rating: 1 Amp**

Twist "N" Flat cable combines the time and cost savings of mass termination with the electrical performance of twisted pairs, making it ideal for high speed computers and communications equipment. Labor savings of 95% and more compared to automatic strip and crimp terminations are readily achieved. Twist "N" Flat cable consists of stranded round conductors insulated with color coded PVC, twisted into pairs and laminated between layers of PVC film to form a planar cable. The twist in adjacent pairs is reversed to reduce crosstalk even further. Standard cables alternate 18-inch long twisted pair sections with 2-inch flat sections in which the conductors are laminated in parallel. This cable is packaged in 100-foot lengths in dispenser boxes with a footage indicator. 28 AWG, 7/36, .050 centers.

Stock No.	Mfr.'s Type	No. of Pairs	Dimensions — In.		PER 100'	
			Width A	Span B	1-4	5-9
608-7310	843-132-2801-010	5	.530	.450±.015	**50.27**	**45.70**
608-7314	843-132-2801-014	7	.730	.650±.015	**70.37**	**63.98**
608-7316	843-132-2801-016	8	.830	.750±.015	**80.43**	**73.12**
608-7320	843-132-2801-020	10	1.030	.950±.015	**100.54**	**91.40**
608-7326	843-132-2801-026	13	1.330	1.250±.015	**130.71**	**118.83**
608-7334	843-132-2801-034	17	1.730	1.650±.015	**170.92**	**155.39**
608-7340	843-132-2801-040	20	2.030	1.950±.020	**201.09**	**182.81**
608-7350	843-132-2801-050	25	2.530	2.450±.020	**251.37**	**228.52**
608-7360	843-132-2801-060	30	3.030	2.950±.020	**301.63**	**274.21**
608-7364	843-132-2801-064	32	3.230	3.150±.020	**321.73**	**292.49**

IDC Socket Connectors



MIL-C 83503 compatible. .100" × .100" grid. Two slots for polarization (except 10 and 14 contact sizes). Duplex plated contacts for lower per line cost. Center polarizing position. UL and CSA recognized. **Insulation Material:** Glass reinforced thermoplastic. **UL Flammability Rating:** 94 V-0. **Contact Material:** Beryllium copper. **Contact Area Plating:** 30 μ gold over nickel. **Wire Accommodation:** AWG 26 stranded; AWG 28 solid and stranded, AWG 30 solid. **Current Rating:** 1 amp. **Withstanding Voltage:** 1000 Vrms at sea level — terminated. **Temp. Rating:** –55°C to +130°C.

Polarization Tabs

715-9328. 842-800-1211-002. **1-4** ....**PER PK./100 11.90**
5-9..**PER PK./100 10.98**

Connectors

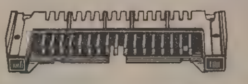
Stock No.	Mfr.'s Type	Contacts	EACH	
			1-49	50-99*
715-9310	842-812-1022-134	10	**.64**	**.53**
715-9311	842-812-1422-134	14	**.87**	**.72**
715-9312	842-812-1622-134	16	**.98**	**.82**
715-9313	842-812-2022-134	20	**1.05**	**.89**
715-9314	842-812-2622-134	26	**1.52**	**1.27**
715-9315	842-812-3422-134	34	**1.73**	**1.44**
715-9316	842-812-4022-134	40	**2.22**	**1.85**
715-9317	842-812-5022-134	50	**2.60**	**2.17**

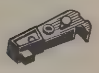
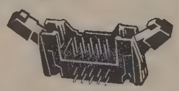
Accessories — Strain Reliefs

715-9320	842-800-1206-030	10	**.22**	**.19**
715-9321	842-800-1206-031	14	**.22**	**.19**
715-9322	842-800-1206-032	16	**.22**	**.19**
715-9323	842-800-1206-033	20	**.21**	**.18**
715-9324	842-800-1206-034	26	**.21**	**.18**
715-9325	842-800-1206-035	34	**.22**	**.19**
715-9326	842-800-1206-036	40	**.24**	**.20**
715-9327	842-800-1206-037	50	**.24**	**.20**

*Contact the closest sales office for quantity pricing.

Spectra-Strip® Protected Headers



The 816 series protected headers are for applications requiring positive connect and fast disconnect capabilities. MIL-C-83503 21B/24A and 25A compatible and have snap-in polarization tabs. Solder plated tails avoid solder bath contamination. Lock and eject latches optional (no tooling required to install). UL and CSA recognized. **Insulation Material:** Glass reinforced thermoplastic. **UL Flammability Rating:** 94 V-0. **Contact Material:** Phosphor bronze. **Contact Area Plating:** 30 μ gold over nickel. **Current Rating:** 1 amp. **Withstanding Voltage:** 1000 Vrms at sea level. **Temperature Rating:** –55°C to +150°C (–67°F to +221°F).

Straight Solder Tail for .062" PCB

Tail Length: .100". **Tail Coined:** .028" diameter.

Stock No.	Mfr.'s Type	Contacts	EACH	
			1-49	50-99
715-9230	842-816-1020-035	10	**1.07**	**.89**
715-9231	842-816-1420-035	14	**1.54**	**1.28**
715-9232	842-816-1620-035	16	**1.94**	**1.62**
715-9233	842-816-2020-035	20	**1.58**	**1.32**
715-9234	842-816-2620-035	26	**2.30**	**1.92**
715-9235	842-816-3420-035	34	**2.86**	**2.38**
715-9236	842-816-4020-035	40	**2.66**	**2.22**
715-9237	842-816-5020-035	50	**3.90**	**3.25**

Right Angle Solder Tail for .062" PCB

Tail Length: .100". **Tail Coined:** .028" diameter.

715-9240	842-816-1022-035	10	**1.09**	**.91**
715-9242	842-816-1622-035	16	**1.97**	**1.64**
715-9243	842-816-2022-035	20	**1.62**	**1.35**
715-9244	842-816-2622-035	26	**2.16**	**1.80**
715-9245	842-816-3422-035	34	**2.94**	**2.45**
715-9246	842-816-4022-035	40	**2.75**	**2.29**
715-9247	842-816-5022-035	50	**4.02**	**3.35**

Accessories

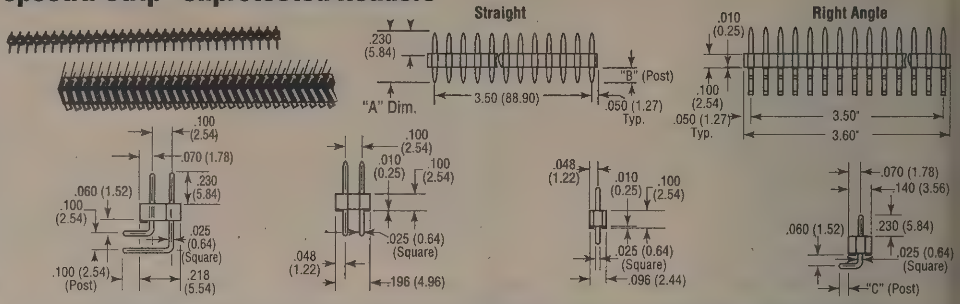
Stock No.	Mfr.'s Type	Description	EACH	
			1-49	50-99
715-9250	842-800-1607-005	Short Latch*	**.21**	**.17**
715-9251	842-800-1607-006	Long Latch†	**.21**	**.17**

*For use with socket connectors without strain relief. †For use with socket connectors with strain relief.

Polarization Tabs

715-9252. Model 842-800-1611-003 ....**PER PK./100 9.42**

Spectra-Strip® Unprotected Headers



UL and CSA Recognized. **Contacts:** Phosphor bronze with duplex plated 15 micro inch gold/tin. .100" contact spacing. **Insulation Material:** Glass reinforced black thermoplastic. **Current Rating:** 1 amp. **Dielectric Withstand Voltage:** 7500 VACrms. **Operating Temperature:** –55°C to +130°C. Sold with 36 pins only.

Standard Single Row Headers

Stock No.	Mfr.'s Type	Configuration	EACH	
			1-49	50-99
715-9176	842-800-272-005	Straight (1 × 36)	**1.87**	**1.56**
715-9181	842-800-840-005	Right Angle (1 × 36)	**2.54**	**2.12**

Standard Double Row Headers

Stock No.	Mfr.'s Type	Configuration	EACH	
			1-49	50-99
715-9186	842-800-560-005	Straight (2 × 36)	**3.26**	**2.72**
715-9191	842-801-056-005	Right Angle (2 × 36)	**3.86**	**3.22**

SMA Connectors

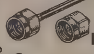


Fig. A

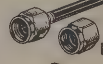


Fig. B

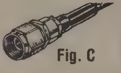


Fig. C

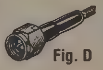


Fig. D

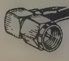


Fig. E

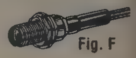


Fig. F

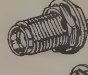


Fig. G

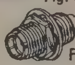


Fig. H

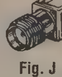


Fig. J

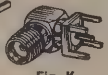


Fig. K

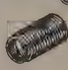


Fig. L

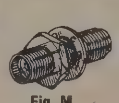


Fig. M

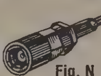


Fig. N

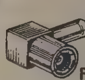


Fig. O

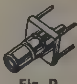


Fig. P

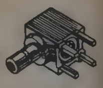


Fig. Q

Semi-precision, high frequency, subminiature connectors. Rated for 500 volts peak. **Frequency:** 0-18 GHz. **Impedance:** 50 Ω. **VSWR:** 1.25 max.

SMA Plugs

Stock No.	Mfr.'s Type	Fig.	Cable RG/U	Cable Attachment		Construction Notes*	EACH	
				Outer	Inner		1-24	25-99
713-4200	901-9723	A	.086" (2.2 mm) semi-rigid RG-405 (M17/133)	Solder	Press fit	1	**7.24**	**6.04**
713-4201	901-9201-1A	B	.141" (3.6 mm) semi-rigid RG-402 (M17/130)	Solder	None	2	**7.82**	**6.52**
713-4206	901-9601-3	C	RG-174, 179, 187, 188, 316	Braid crimp	Solder	3	**15.32**	**12.76**
713-9982	901-9511-1	D	RG-55, 142, 223, 400	Braid crimp	Solder	4	**9.17**	**7.50**
713-4210	901-9511-3	D	RG-174, 179, 187, 188, 316	Braid crimp	Solder	5	**8.56**	**7.10**
713-4212	901-9511-3SF	D	RG-174, 179, 187, 188, 316	Braid crimp	Solder	6	**7.30**	**6.09**

*1 — Center conductor of cable is press fit into pre-installed center contact, not gasketed; 2 — Center conductor and insulation of cable used as center contact and insulator of connector; 3 — Captivated contact; 4 — Non-captive contact; 5 — Non-captive contact, gold-plated body and nut; 6 — Non captive contact, passivated body and nut.

SMA Angle Plugs, Bulkhead Jacks

Stock No.	Mfr.'s Type	Fig.	Cable RG/U	Conn. Type	Cable Attachment		Plating*	Construction Notes	EACH	
					Outer	Inner			1-24	25-99
713-4216	901-9531-1	E	RG-55, 142, 223, 400	Angle Plug	Braid crimp	Solder	1	Captivated contact	**15.56**	**12.97**
713-4218	901-9531-1SF	E	RG-55, 142, 223, 400	Angle Plug	Braid crimp	Solder	2	Captivated contact	**12.30**	**10.24**
713-4220	901-9531-3	E	RG-174, 179, 187, 188, 316	Angle Plug	Braid crimp	Solder	1	Captivated contact	**13.86**	**11.55**
713-4224	901-9610-3	F	RG-174, 179, 187, 188, 316	Bulkhead jack	Braid crimp	Solder	1	Captivated contact	**16.24**	**13.72**

*1 — Gold plated body and nut; 2 — Passivated body and nut.

SMA Bulkhead and Printed Circuit Receptacles, Female Contacts

Stock No.	Mfr.'s Type	Fig.	Description	Terminal Type	Plating	Construction Notes*	EACH	
							1-24	25-99
713-4228	901-9211	G	Bulkhead receptacle rear mount	Solder cup	Gold plated	1	**10.99**	**9.15**
713-4232	901-9220	H	Bulkhead receptacle front or rear mount	Blunt post	Gold plated	1	**8.78**	**7.32**
713-4236	901-144	J	Printed circuit board straight receptacle	Blunt post	Gold plated	2	**10.96**	**9.13**
713-4238	901-143	K	Printed circuit board angle receptacle	Blunt post	Gold plated	2	**17.68**	**14.73**

*1 — Captive contact/.062" (1.6 mm) exposed TFE; 2 — Captive contact/BeCu body and legs.

SMA In-Series Adapters

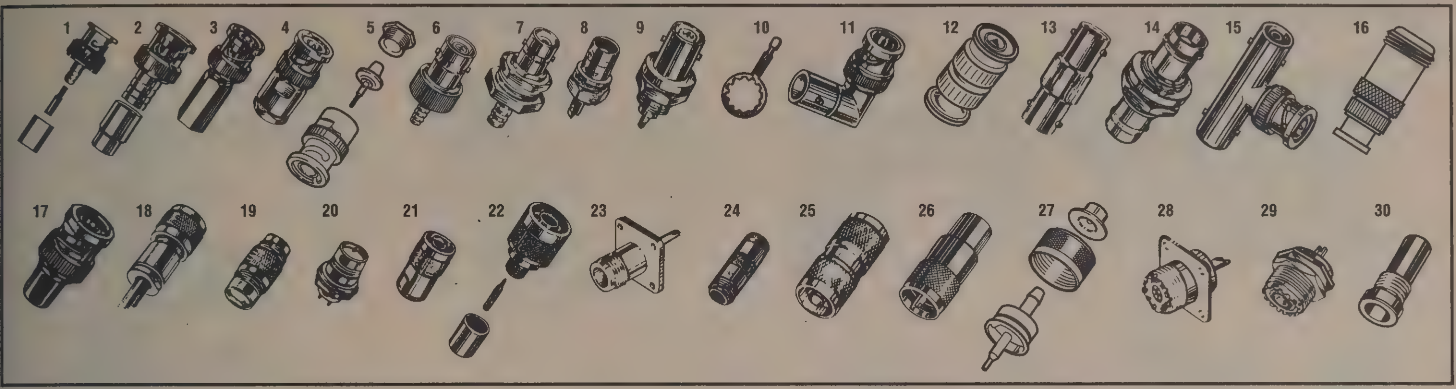
Stock No.	Mfr.'s Type	Fig.	Description	Notes	Plating	EACH	
						1-24	25-99
713-4240	901-9217	L	Straight, Jack-jack	DC-18 GHz max. VSWR 1.14 captive contact	Gold plated	**18.64**	**15.54**
713-4244	901-9209-A	M	Bulkhead, Jack-jack front or rear mount	DC-18 GHz max. VSWR 1.14 captive contact	Gold plated	**16.33**	**13.60**
713-4246	901-9209-ASF	M	Bulkhead, Jack-jack front or rear mount	DC-18 GHz max. VSWR 1.14 captive contact	Passivated	**14.40**	**12.01**

SMB Plugs, Angle Plugs, Bulkhead and Printed Circuit Receptacles

Amphenol SMB connectors meet or exceed the requirements of MIL-C-39012 series SMB. These subminiature units feature snap-on mating and broadband performance with low reflection DC-4 GHz (usable to 10 GHz). The connectors shown in this catalog are 50 Ω impedance, with voltage rating of 375 V peak.

Stock No.	Mfr.'s Type	Fig.	Cable RG/U	Connector Description*	Cable Attachment		Construction Notes	EACH	
					Outer	Inner		1-24	25-99
713-4270	903-285P-51S	N	RG-174, 179, 187, 188, 316	1	Crimp	Solder	Gold plated body	**8.57**	**7.14**
713-4274	903-289P-51A	O	RG-174, 179, 187, 188, 316	2	Crimp	Solder	Gold plated body	**6.07**	**5.06**
713-4276	903-367P-51A	O	RG-174, 179, 187, 188, 316	2	Crimp	Solder	Nickel plated body	**6.32**	**5.27**
713-4288	903-415J-51P	P	—	3	—	—	Gold plated body	**5.07**	**4.14**
713-4292	903-373J-51A	Q	—	3	—	—	Tin lead plt body/legs/leak tight	**7.27**	**6.05**

*1 — Plug; 2 — Plug, angle plug; 3 — PC jack receptacle post terminal/four legs.



Note: These connectors meet or exceed military specification, but aren't on the RPL and are intended for commercial use only. Military specification numbers, where shown, are for reference only.

RFX™ Commercial Coaxial Connectors

BNC 3-Piece Crimp-Type Plugs

Miniature bayonet-lock units. 50 ohm or 75 ohm impedance. Operate with low reflection DC-4 GHz on 50 ohm cables and DC-500 MHz on 75 ohm cables.

Stock No.	Mfr.'s Type	Fig.	RG/U Cable	Cable Attachment		Imp.	EACH		
				Outer	Inner		1-24	25-99	100-249
713-9005	31-320-RFX1	1	58, 141	Crimp	Crimp	50 ohm	1.66	1.28	1.05
713-9007	36650-3RFX1	1	Plenum 58	Crimp	Crimp	50 ohm	2.03	1.67	1.34
713-9010	31-321-RFX1	1	59, 62	Crimp	Crimp	50 ohm	1.66	1.28	1.05
713-9006	31-71008-RFX1	1	59, 62	Crimp	Crimp	75 ohm	2.42	1.89	1.60
713-9012	68175-1RFX1	1	Plenum 59	Crimp	Crimp	50 ohm	1.52	1.24	1.01
713-9008	31-71013-RFX	1	179, 187	Crimp	Crimp	75 ohm	2.82	2.30	1.86
713-9015	31-315-RFX	1	174, 188, 316	Crimp	Crimp	50 ohm	2.22	1.73	1.40
713-9025	31-321-1RFX1	1	Belden 8281	Crimp	Crimp	50 ohm	2.25	1.75	1.41

BNC 2-Piece Single Crimp Plugs

713-9040	31-5556-RFX	2	59, 62	Crimp	Press fit	50 ohm	2.86	2.23	1.89

BNC SureTwist® Plugs

713-9050	31-5137-RFX	3	58, 141, 142	SureTwist®	—	50 ohm	2.11	1.66	1.33
713-9055	31-5136-RFX	3	59, 62	SureTwist®	—	50 ohm	2.12	1.66	1.33

BNC Clamp-Type Plugs

713-9060	31-2-RFX	4	58, 141, 142	Clamp	Solder	50 ohm	2.28	1.78	1.44
713-9065	31-212-RFX	4	59, 62	Clamp	Solder	50 ohm	3.32	2.59	2.20

BNC Quicktrim® Plug

713-9002	31-4541-RFX	5	59, 62	—	Quicktrim®	50 ohm	3.96	3.24	2.62

BNC 3-Piece Crimp Jack

713-9069	31-71014-RFX	6	179, 187	Crimp	Crimp	75 ohm	2.89	2.37	1.91

BNC Bulkhead Jacks

713-9070	31-318-RFX	7	174, 188, 316	Crimp	Crimp	50 ohm	3.55	2.76	2.35

Front Mount BNC Bulkhead Receptacles

Stock No.	Mfr.'s Type	Fig.	Description	Terminal Type	Imp.	EACH		
						1-24	25-99	100-249
713-9080	31-10-RFX	8	Isolated from panel	Solder cup grounding tab	50 ohm	3.54	2.75	2.34
713-9085	31-221-RFX1	9	.125" max. panel	Solder cup	50 ohm	1.88	1.46	1.18
713-9087	31-221-75RFX	9	.125" max. panel	Solder Cup	75 ohm	2.58	2.10	1.69
713-9095	31-10152-RFX	10	Lug for inside panel for ground wire to circuit	—	—	.52	.41	.34

BNC Adapters

713-9100	31-9-RFX	11	Right angle jack-plug	—	50 ohm	8.84	7.36	6.32
713-9102	31-218-RFX	12	Straight plug-plug	—	50 ohm	6.51	5.43	4.65
713-9104	31-218-7RFX1	12	Straight plug-plug	—	75 ohm	9.51	7.93	6.48
713-9105	31-219-RFX1	13	Straight jack-jack	—	50 ohm	2.41	1.87	1.51
713-9110	31-220G-RFX	14	Bulkhead pressurized jack-jack	—	50 ohm	4.52	3.70	3.14
713-9115	31-220N-RFX	14	Bulkhead non-sealed jack-jack	—	50 ohm	4.13	3.21	2.73
713-9117	31-220N-75RFX	14	Bulkhead non-sealed jack-jack	—	75 ohm	4.05	3.30	2.67
713-9120	31-208-RFX	15	Tee jack-plug-jack	—	50 ohm	4.04	3.14	2.67
713-9125	31-217-RFX	16	BNC plug-n-jack	—	50 ohm	13.99	11.66	10.72

Resistor Terminated Male Cap

713-9097	46650-51RFX	17	—	—	50 ohm	2.91	2.38	2.03
713-9098	46650-75RFX	17	—	—	75 ohm	3.24	2.65	2.13
713-9099	46650-93RFX	17	—	—	93 ohm	3.59	2.94	2.38

Twinax and N-Type Connectors

Keyed 90° Twinax Connectors

Plug, Twin Male Contacts

Stock No.	Mfr.'s Type	Fig.	RG/U Cable	Cable Attachment		IBM Ref. No.	EACH		
				Outer	Inner		1-24	25-99	100-249
713-9130	82-5589-RFX1	18	Belden 8227, 9207, IBM 7362211	Clamp	Solder or Crimp	7362229	5.70	4.75	4.08

Stock No.	Mfr.'s Type	Fig.	Description	IBM Ref. No.	EACH		
					1-24	25-99	100-249
713-9135	82-5588-RFX	19	Straight adapter jack-jack	7362230	6.13	5.11	4.38
713-9140	82-5590-RFX	20	Bulkhead receptacle front-mount solder cup terminal	7362179	7.94	6.61	5.68

N Cable Plugs

Stock No.	Mfr.'s Type	Fig.	RG/U Cable	Cable Attachment		UG Ref. No.	EACH		
				Outer	Inner		1-24	25-99	100-249
713-9160	82-202-RFX	21	8, 9, 144, 165, 213, 214, 216, 225	Clamp	Solder	UG-21D	5.00	4.08	3.46
713-9165	82-4426-11RFX	22	8, 9, 144, 165, 213, 214, 216, 225 and Ethernet*	Crimp	Crimp	—	5.35	4.46	3.82
713-9167	82-5375-RFX	22	58, 141, 142A	Crimp	Crimp	—	4.28	3.57	3.06

*Ethernet = Xerox trademark.

N Panel Receptacle

Stock No.	Mfr.'s Type	Fig.	Description	UG Ref. No.	EACH		
					1-24	25-99	100-249
713-9170	82-97-REX	23	Front or rear mount	UG-58A	3.98	3.10	2.62

N Adapters

713-9175	82-101-RFX	24	Straight jack-jack	UG-29A	5.08	4.15	3.52
713-9180	82-100-RFX	25	Straight plug-plug	UG-57B	8.40	7.00	5.99

UHF Connectors

Low cost for general purpose. **Peak Voltage Rating:** 500 V. Operates satisfactory DC-300 MHz.

Straight Plugs — Male Contacts

Stock No.	Mfr.'s Type	Fig.	MIL Type Ref.	Cable Term.	For RG/U Cable	EACH		
						1-24	25-99	100-249
713-9200	83-1SP-15RFX	26	PL-259	UG std. nickel plated	8, 9, 11, 13, 63, 87A, 149, 213, 214, 216, 225	2.02	1.58	1.27
713-9215	83-58FCP-RFX	27	—	FCP clamp	58, 141, 142	3.03	2.35	1.99

Panel Receptacle

713-9220	83-1R-RFX	28	SO-239	Standard	—	2.42	1.89	1.51

Bulkhead Receptacle

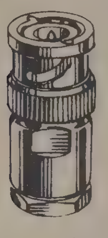
713-9225	83-878-RFX	29	—	Rear mount	—	3.12	2.44	2.07

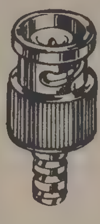
Reducing Adapters

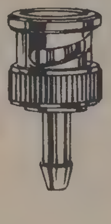
713-9235	83-185-RFX	30	UG 175/U	—	58, 141, 142	.40	.32	.26
713-9240	83-168-RFX	30	UG 176/U	—	59, 62, 71, 140, 210	.40	.32	.26

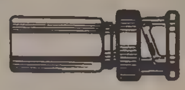
*TFE insulation.

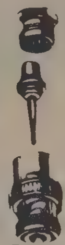
BNC Plugs and Jacks

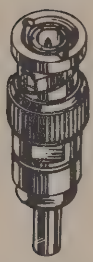

A

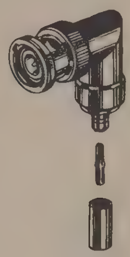

B

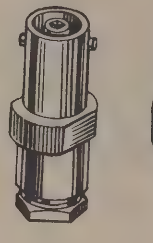

C

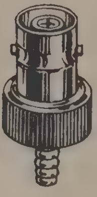

D — BNC Plug


E


F


G


H


J

Straight Plugs

Recognized under the component program of UL, Inc. Male contacts. **Weather-proof only when used in combination with other Amphenol BNC connectors. 50 Ohm impedance. TFE insulation, except † rexolite insulation.

Stock No.	Mfr.'s Type	Fig.	MIL Type	Cable Term.	For RG/U Coaxial Cable	EACH 1-24	EACH 25-99	EACH 100-249
713-9575	6775	A	UG-959	Std. clamp	8, 9	**10.25**	**8.30**	**7.23**
713-1041	31-202	A	UG-88C	MIL clamp II	55, 58, 141, 142, 223, 400	**3.64**	**2.69**	**2.29**
713-1003	31-2	A	UG-88	Std. clamp	58, 141, 142, 400	**3.66**	**2.99**	**2.54**
713-8660	36875	B	—	MIL crimp II	55, 142, 223, 400	**5.89**	**4.91**	**4.21**
713-1082	31-326	B	M23329/3-02	MIL crimp II	55, 142, 223	**5.34**	**4.45**	**3.81**
713-1100	31-4320	B	M39012/16-0013	MIL crimp II	58, 141	**5.03**	**4.11**	**3.49**
713-8662	31-320	B	M23329/3-01	MIL crimp I	58, 141	**4.50**	**3.68**	**3.12**
713-9784	36775	B	—	Quick crimp	58, 141	**4.64**	**3.79**	**3.21**
713-1110	31-4700	C	—	FCP	58	**4.88**	**3.99**	**3.39**
713-1137	31-5137	D	—	Sure Twist®	58, 58B	**5.58**	**4.66**	**4.00**
713-8004	31-4702	C	—	FCP	59	**4.84**	**3.96**	**3.36**
713-9819	68175-1005	B	—	Quick crimp	20 AWG 59	**4.64**	**3.79**	**3.21**
713-1059	31-212	A	UG-260B	MIL crimp II	59, 62, 71, 140, 210, 302	**3.72**	**2.75**	**2.33**
713-1085	31-321	B	M23329/3-05	MIL crimp II	59, 62, 71, 140, 210, 302	**4.64**	**3.79**	**3.21**
713-9818	68175	B	—	MIL crimp II	59, 140, 210, 302	**4.40**	**3.42**	**2.90**
713-1102	31-4321	B	M39012/16-0015	MIL crimp II	59, 62, 140, 210, 302	**5.32**	**4.44**	**3.80**
713-9820	68175-1004	B	—	MIL crimp II	59, 62, 140, 210, 302	**5.04**	**4.20**	**3.61**
713-1136	31-5136	D	—	Sure Twist®	59, 59A, 62, 62A	**4.28**	**3.34**	**2.84**
713-8003	31-4541	E	—	Quick trim	59, 62	**5.30**	**4.41**	**3.79**
713-9998	31-325	B	—	MIL crimp I	122, Belden 8218	**5.97**	**4.73**	**4.06**
713-1080	31-242	B	—	MIL crimp I	179, 187, 316	**5.96**	**4.97**	**4.26**
713-1083	31-315	B	—	MIL crimp I	174, 188, 316	**5.03**	**4.11**	**3.49**
713-8002	31-371	F	—	Orig. crimp	174, 179, 187, 188, 316	**12.12**	**10.10**	**8.65**
713-9828	69475	A	—	MIL clamp I	174, 179, 188, 316	**6.69**	**5.58**	**4.78**
713-9658	15875	A	—	Std. clamp	178, 196	**6.43**	**5.36**	**4.59**
713-1087	31-321-1000	B	—	MIL crimp II	Alpha 9807/ Belden 8281	**5.12**	**4.27**	**3.66**
713-9822	68175-1003	B	—	MIL Crimp I	Belden 9259	**4.16**	**3.47**	**2.97**
713-8663	31-320-1006	B	IEEE 802.3 10 base 2	Crimp-crimp	Thinnet Belden 89907	**4.27**	**3.49**	**2.96**

75 Ohm BNC Straight Plugs

These connectors can be used in a variety of applications where true 75 ohm performance is needed to insure lower signal distortion. They may be matched with standard 50 ohm BNC without damage or intermittence.

713-8600	31-70000	B	—	Crimp-crimp	6, .295 Max. O.D.	**5.69**	**4.74**	**4.07**
713-8608	31-70008	B	—	Crimp-crimp	59	**6.04**	**4.80**	**4.12**
713-8622	31-71008-2000	B	—	Crimp-crimp	RG-59, 62 Plenum	**5.63**	**4.69**	**4.03**
713-8628	31-71013	B	—	Crimp-crimp	RG-179 FEP	**6.26**	**5.22**	**4.48**
713-9980	31-71033	B	—	Crimp-crimp	Belden 8218	**3.48**	**2.85**	**2.30**
713-9978	31-71032	B	—	Crimp-crimp	Belden 8281, 88281	**5.14**	**4.08**	**3.68**

BNC Angle Plugs

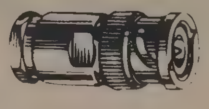
713-1089	31-335	G	—	Crimp-crimp	55, 58, 141, 142, 223, 400	**20.70**	**17.13**	**14.61**
713-1090	31-336	G	—	Crimp-crimp	59, 62, 140, 210	**16.57**	**13.81**	**12.28**

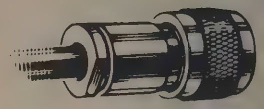
BNC Straight Jacks

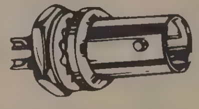
Recognized under the component program of UL, Inc. Female contacts. **Each BNC connector is considered to be weatherproof when used only in combination with other Amphenol BNC connectors described in this catalog. 50 ohm impedance. TFE insulation.

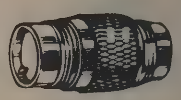
713-1007	31-5	H	UG-89	MIL clamp I	58, 141, 142, 223, 400	**5.31**	**4.43**	**3.80**
713-8050	31-4328	J	M39012/17-0015	MIL crimp II	59, 62, 140, 210	**7.73**	**6.44**	**5.52**
713-1084	31-317	J	—	MIL crimp I	174, 188	**9.60**	**8.00**	[illegible]

Twin Coaxial Connectors


31-224


82-5589


31-223


82-5588

Straight Plugs

Stock No.	Mfr.'s Type	Mating and Polarization	Construction	Contacts	EACH 1-24	EACH 25-99	EACH 100-249
713-1076	31-224	Polarized, BNC	V-groove clamp	1 male, 1 female	**8.11**	**6.75**	**5.79**
713-1097	31-2226	Polarized, BNC	TFE Insulation V-groove clamp	1 male, 1 female	**11.09**	**9.24**	**7.92**
713-8025	82-5589	Keyed 90°	V-groove clamp	Twin male	**9.93**	**8.27**	**7.09**

Front Mounted Bulkhead Receptacles

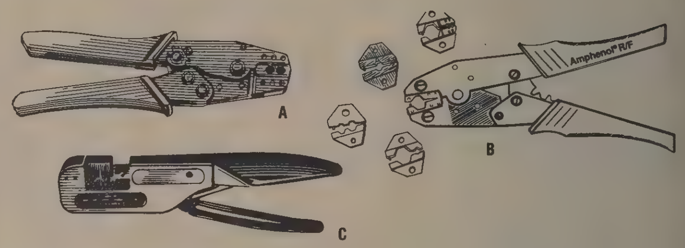
713-1075	31-223	Polarized, BNC	—	1 female, 1 male	**15.33**	**12.83**	**11.00**
713-1096	31-2225	Polarized, BNC	TFE Insulation	1 female, 1 male	**14.24**	**11.86**	**10.17**

Straight Adapter

713-8027	82-5588	Keyed 90°	Noryl insulation	Twin female	**19.68**	**16.40**	**14.06**

713-8031. 82-10588. Bag of contacts for 82-5589 .... **PER BAG/50 41.82**

Crimp Tools



Economy Trihex Crimp Tools — Fig. A

Stock No.	Mfr.'s Type	Connector Types	Cable Types	EACH
713-9190	CTL-1	3-piece crimp BNC, TNC	RG58, 59, 62, Plenum 58, 59, 62	**53.33**
713-9192	CTL-2	3-piece crimp BNC, TNC, 2-piece BNC	RG6, 174, 188, 316, 179, 187 and Belden 8281, 58, 59, 62, Plenum 58, 59, 62	**53.33**
713-9194	CTL-3	3-piece crimp N	58, 8, 213, 214, Ethernet cables	**53.33**
713-9196	CTL-4	Center contacts, 82-5589-RFX	Belden 8227, 9207, 89207, IBM 7362211	**53.33**
713-9197	CTL-5	BNC, TNC, Mini UHF, Type N, 3-piece crimp	RG55, 58, 141, 142, 223, 303, 400, 59, 62, 140, 210, Plenum 59, 62; Used on Belden 9907, 9258, 9259	**53.33**

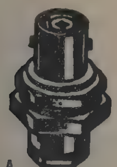
Econohex™ Crimp Tools and Dies — Feature Exchangeable/Replaceable Dies — Fig. B

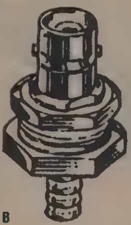
Stock No.	Mfr.'s Type	Description	For RG/U Cables	EACH
713-6100	227-987	Handle without dies	—	**99.48**
713-6105	227-1420	Die set only	8, 9, 11, 87A, 149, 165, 213, 214, 216, 225, 393	**59.03**
713-6106	227-1419	Die set only	55, 58, 59, 62, 140, 141, 142, 142B, 210, 223, 302, 303, 400	**59.03**
713-6107	227-1418	Die set only	122, 161, 174, 179, 180, 187, 188, 195, 316	**59.03**

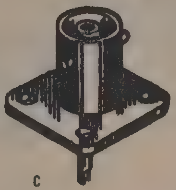
Twin-Hex Tool System — Fig. C

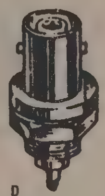
Stock No.	Mfr.'s Type	MIL Type	For Connector Series	For RG/U Cables	EACH
713-6200	227-944	M22520/5-01	Frame (die not included)	—	**271.59**
713-6209	227-1221-09	M22520/5-09	BNC, TNC, SMA	174, 179B, 186A, 187A, 316	**129.33**
713-6208	227-1221-03	M22520/5-03	SMA, SMB	174, 179B, 186A, 187A, 316	**129.33**
713-6210	227-1221-11	M22520/5-11	BNC, TNC, MHV, UHF, SMA	55, 58, 141, 142, 223, 303, 400	**129.33**
713-6220	227-1221-13	M22520/5-13	BNC, TNC, UHF, SMA	59, 62, 140, 210	**129.33**
713-6225	227-1221-25	—	N, SC	8, 9, 11, 87A, 149, 165, 213, 214, 216, 225, 393	**129.33**
713-6230	227-980-1	—	75-Ohm BNC	59	**209.81**

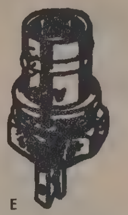
BNC Coaxial Connectors

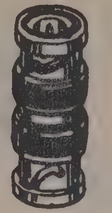

A

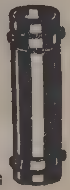

B

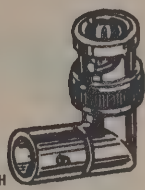

C

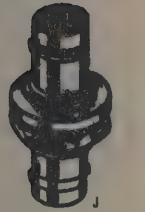

D

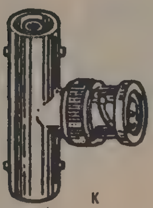

E

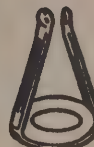

F

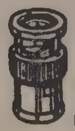

G

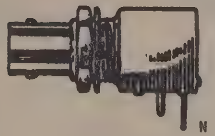

H

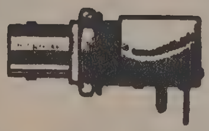

J

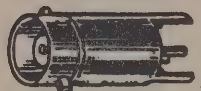

K


L


M


N


P


Q

Rear-Mounted Bulkhead Jacks

Stock No.	Mfr.'s Type	Fig.	MIL Type	Cable Term.	For RG/U Cable	EACH 1-24	25-99	100-249
713-1048	31-206	A	UG-909	MIL clamp 1	58, 141, 142, 400	6.67	5.29	4.54
713-1092	31-342	B	M23329/3-15, 3-17	Crimp crimp	58, 141	6.20	5.16	4.43
713-1088	31-318	B	—	MIL crimp 1	174, 188	9.01	7.21	6.18

Panel Receptacles

713-1043	31-203	C	UG-290A	Solder cup	No. 3-56 tapped flange holes	5.70	4.53	3.89

Front Mount Bulkhead Receptacles — Internal Tooth Lockwasher

713-1011	31-10-75	E	—	Solder cup, Ground tab	Isolated from ground, 75 ohms	4.72	3.75	3.21
713-1012	31-10	E	—	Solder cup	Isolated thermoplastic insulation	4.64	3.61	3.06
713-1099	31-2221	D	UG-1094A	Solder cup	Standard type	2.77	2.17	1.75
713-1073	31-221	D	UG-1094	Solder cup	Thin panel	2.37	1.83	1.48
713-1079	31-236	D	UG-625B	Solder cup	Standard type	2.63	2.04	1.64
713-1035	31-102	D	UG-657	Solder cup	Pressurized	4.86	3.78	3.22

Straight Adapters

713-1067	31-218	F	UG-491A	Plug-plug	—	7.52	6.27	5.37
713-1069	31-219	G	UG-914	Jack-jack	—	4.48	3.67	3.11

75 Ohm Impedance Matching Straight Adapter and Front Mounted Bulkhead Jack

713-8618	31-70018	D	—	Solder cup	—	5.88	4.90	4.20
713-8619	31-70019	G	—	Jack-jack	—	4.97	4.06	3.46

Angle Adapters

713-1013	31-9	H	UG-306	Jack-plug	—	10.77	8.55	7.34
713-8668	31-209	H	UG-306A	Jack-plug	—	11.76	9.79	8.40

Bulkhead Adapters

Stock No.	Mfr.'s Type	Fig.	MIL Type	Adapter Ends	Description	EACH 1-24	25-99	100-249
713-1071	31-220H	J	UG-492A	Jack-jack	Pressurized/glass — TFE internal lockwasher	7.91	6.60	5.65
713-1072	31-220N	J	—	Jack-jack	Non-pressurized version	6.43	5.36	4.59
713-8005	31-3220	J	UG-492D	Jack-jack	Pressurized/glass — TFE external lockwasher/thick panel	9.46	7.89	6.76
713-8028	31-4803	J	—	Jack-jack	Isolated from the panel white molded thermoplastic insulation	10.42	8.69	7.45

Tee Adapters

Stock No.	Mfr.'s Type	Fig.	MIL Type	Adapter Ends	Description	EACH 1-24	25-99	100-249
713-1010	31-8	K	UG-274	Jack-plug-jack	Standard	10.23	8.12	6.97
713-1053	31-208	K	UG-274A	Jack-plug-jack	Silver plt. contact	8.51	6.76	5.80

Accessories

713-8676	31-759	L	—	—	Grounding lug, inside panel on front mount receptacles	.52	.41	.34

Resistor Terminated Cap

713-8671	46650-51	M	**	—	BNC terminator 50 Ω, 5%, 1 W	13.36	11.13	9.27

**IEEE 802.3 10 base 2.

BNC PC Mount Bulkhead Receptacles (Hardware Sold Separate)

Stock No.	Mfr.'s Type	Fig.	Description	Mounting PIN Type	EACH 1-24	25-99	100-249
713-7200	31-5431	N	Isolated white valox housing	Round	4.72	3.86	3.27
713-7202	31-5486	P	Isolated white valox housing	Round	4.72	3.86	3.27
713-7203	31-5640	N	Metal housing	Round	4.93	4.03	3.42
713-7206	31-5652	—	HEX nut (mounting hardware)	—	.82	.71	.60
713-7207	31-5653	—	Lockwasher (mounting hardware)	—	.84	.73	.62

Vertical BNC Receptacle (PCB)

.040" diameter post terminal. .125" long. Zinc body, bright tin/lead over copper base finish. Gold plated contact, TFE Insulation.

713-7160	31-5329	Q	3-leg vertical BNC receptacle .040" dia. post terminal	—	5.84	4.87	4.17

Between Series Straight Adapters (Not Illustrated)

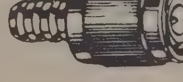
Stock No.	Mfr.'s Type	MIL Type	Description	EACH 1-24	25-99	100-249
713-1063	31-216	UG-201A/U	BNC jack-N-plug	11.47	9.11	7.80
713-1033	31-28	UG-273/U	BNC jack-UHF-plug	9.40	7.47	6.40
713-1065	31-217	UG-349A/U	BNC plug-N-jack	11.28	9.40	8.05
713-9500	2900	UG-255/U	BNC plug-UHF-jack	9.95	8.29	7.11
713-8007	4400	UG-146/U	N plug-UHF-jack	13.70	11.48	9.84

TNC and MHV (High Voltage) Connectors

TNC Connectors

Non-Constant Impedance: 500 Volts, 0-300 MHz.

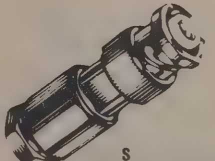
Stock No.	Mfr.'s Type	Fig.	Description	For RG/U Cable	EACH 1-24	25-99	100-249
713-8654	36825	R	Plug, quick crimp	58, 141	4.69	3.83	3.25

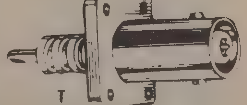

R

MHV (High Voltage) Connectors

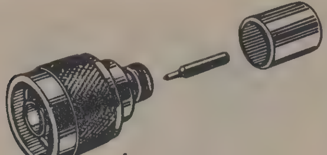
Similar to BNC, but do not intermate, weatherproof, non-constant impedance. For applications up to 5000 volts at frequencies up to 50 MHz.

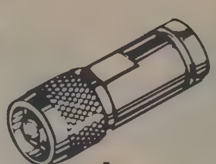
Stock No.	Mfr.'s Type	Fig.	MIL Type	Description	For RG/U Cable	EACH 1-24	25-99	100-249
713-9770	29100	S	—	Straight plug/STD clamp	55, 58, 141, 142	30.43	25.34	21.74
713-8012	28000	S	UG-932	Straight plug/STD clamp	59, 62, 71	10.90	8.41	7.21
713-8013	27000	T	UG-931	Rear mounted panel receptacle	—	9.01	7.51	6.44

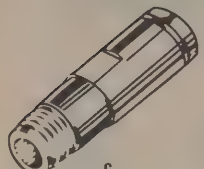

S

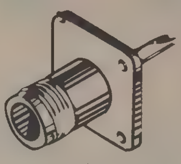

T

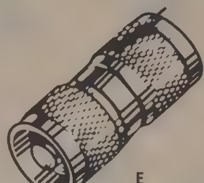
N Coaxial Connectors

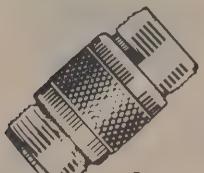

A

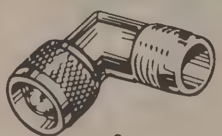

B

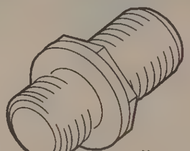

C

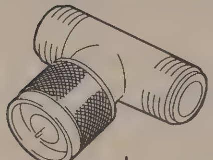

D

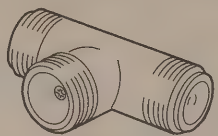

E

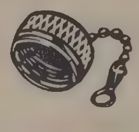

F


G


H


J


K


L

Type N Straight Plugs

Medium size. Threaded coupling. Up microwave frequencies. Male contacts. Weatherproof. 50 ohm impedance. TFE insulation.

Stock No.	Mfr.'s Type	Fig.	MIL Type	Cable Term.	For RG/U Cable	EACH		
						1-24	25-99	100-249
713-3345	82-340	A	M39012/01-B0007	MIL-crimp-1	8, 213	**8.18**	**6.82**	**5.56**
713-3311	82-61	B	UG-21B	MIL-clamp-1	8, 9, 213, 214, 225	**7.70**	**6.41**	**5.50**
713-8015	82-202	B	UG-21D	MIL-clamp-1	8, 9, 213, 214, 225	**5.84**	**4.77**	**4.08**
713-8016	82-312	B	UG-1185	CC-clamp	8, 9, 213, 214, 225	**7.05**	**5.87**	**5.03**
713-9994	82-5370	A	—	Crimp-crimp	55, 142	**8.43**	**7.03**	**5.74**
713-9997	82-5375	A	—	Crimp-crimp	58, 141	**10.20**	**8.09**	**6.94**
713-9762	34025	B	UG-536B	MIL-clamp 1	58, 141, 142	**6.62**	**5.52**	**4.73**
713-9992	82-202-1006	B	—	Clamp	Belden 9913	**7.37**	**6.15**	**5.02**
713-3420	82-4426-1001	A	—	Crimp-crimp	Ethernet® cables	**9.55**	**7.97**	**6.50**

Type N Straight Jack — Female Contact

713-3313	82-63	C	UG-23B	MIL-clamp 1	8, 9, 87, 213, 214, 225	**8.67**	**7.23**	**6.19**

Type N Female Panel Receptacles

713-8017	82-24	D	UG-58	Standard	—	**5.55**	**4.63**	**3.98**
713-3336	82-97	D	UG-58A	Standard	—	**4.97**	**4.07**	**3.46**

Type N Adapters

50 ohms impedance. TFE insulation.

713-3340	82-100	E	UG-57B	Plug-plug	—	**8.90**	**7.42**	**6.36**
713-3330	82-101	F	UG-29B	Jack-jack	—	**7.42**	**6.18**	**5.29**

Type N Angle Adapters

713-3314	82-64	G	UG-27A	Mitre body/ jack-plug	—	**20.92**	**17.43**	**14.94**
713-8020	82-213	G	UG-27C	Cubic body/ plug-jack	—	**23.00**	**19.16**	**16.43**

Type N Bulkhead Adapter

713-3316	82-66*	H	UG-30	Jack-jack**	—	**19.31**	**16.10**	**13.80**

Ethernet® is a Xerox Trademark. *Copolymer of styrene insulation. **Pressurized.

Type N Tee Adapters

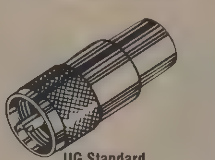
5 ohm impedance. TFE Insulation.

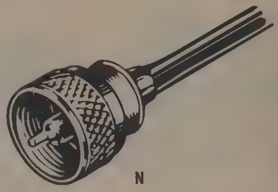
Stock No.	Mfr.'s Type	Fig.	Description	EACH		
				1-24	25-99	100-249
713-3350	82-102	J	Jack-plug-jack	53.34	42.34	36.32
713-3355	82-99	K	Jack-jack-jack	42.00	33.34	28.60

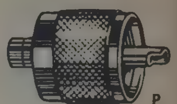
Accessories

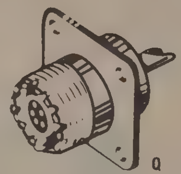
713-3342. 82-106. Fig. L. Male Cap and Chain (MX-913). **1-24**....................**EACH 10.00**
25-99....................**EACH 8.33** **100-499**....................**EACH 7.14**

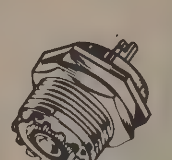
UHF Connectors

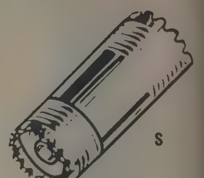

UG Standard
M

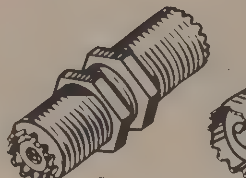

N

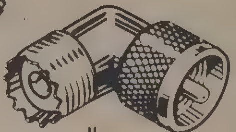

Crimp
P

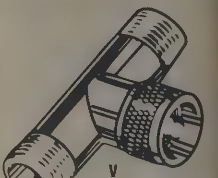

Q

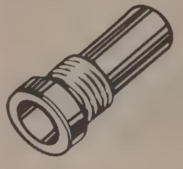

R

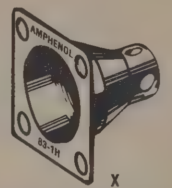

S


T

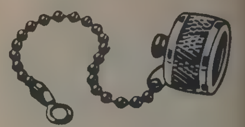

U


V


W



X


Y

Non-constant impedance. Non-weatherproofed. Mica-filled phenolic insulation. **Peak Voltage Rating:** 500 V. Operates satisfactorily up to 300 MHz.

Straight Plugs — Male Contacts

Stock No.	Mfr.'s Type	Fig.	MIL Type	Cable Term.	For RG/U Cable	EACH		
						1-24	25-99	100-249
713-3518	83-1SP	M	PL-259	UG std. silver plated	8, 9, 11, 13, 63, 87, 149, 213, 214, 216, 225	**3.27**	**2.54**	**2.15**
713-3519	83-1SP-1050	M	PL-259	UG std. nickel plated	8, 9, 11, 13, 63, 87, 149, 213, 214, 216, 225	**2.07**	**1.62**	**1.30**
713-3562	83-822*	M	PL-259A	UG std.	8, 9, 11, 13, 63, 87, 149, 213, 214, 216, 225	**3.52**	**2.74**	**2.32**
713-3537	83-58FCP	N	—	FCP clamp	58, 141	**3.32**	**2.58**	**2.19**
713-3505	83-58SP	P	—	Braid crimp	58, 141	**4.11**	**3.20**	**2.72**

Panel Receptacles

713-3514	83-1R	Q	SO-239	Standard	—	**2.58**	**2.00**	**1.61**
713-3559	83-798	Q	SO-239A	TFE insulation	—	**4.35**	**3.56**	**3.02**

Bulkhead Receptacle

713-8680	83-878	R	—	Rear mount**	—	**2.94**	**2.28**	**1.94**

Adapters — Polystyrene Insulation

713-3512	83-1J	S	PL-258	Straight/jack-jack	—	**3.72**	**2.89**	**2.46**
713-3507	83-1F	T	UG-363	Bulkhead/jack-jack	—	**10.45**	**8.71**	**7.48**
713-3503	83-1AP	U	UG-646	Angle/jack-plug	—	**5.97**	**4.97**	**4.26**
713-3523	83-1T	V	M-358	Tee/jack-plug-jack	—	**8.72**	**7.26**	**6.23**

Reducing Adapters

713-3547	83-185	W	UG-175	—	55, 58, 141, 142	**.69**	**.57**	**.46**
713-3545	83-168	W	UG-176	—	59, 62, 71, 140, 210	**.65**	**.53**	**.43**

Hood

For use with panel receptacles 83-1R, 83-1RTY, 83-716, 83-798.

713-8011	83-765	X	UG-177	—	58, 141	**2.38**	**1.84**	**1.48**

*TFE insulation. **Mica-filled phenolic.

Accessories

713-3502. 83-1AC. Fig. Y. Male Cap and Chain. **1-24**....................**EACH 8.66**
25-99....................**EACH 7.22** **100-499**....................**EACH 6.10**

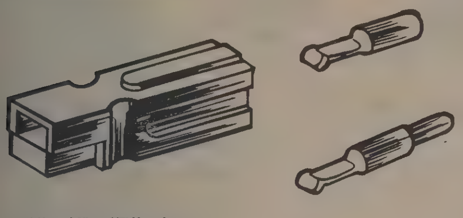
Products Not Cataloged Are Available — Call 1-800-433-5700 For Price And Delivery

PowerPole® Connectors

ISO 9001 Certified

Powerpole® connector modules feature a single pole, genderless connector half. This module consists of a color-coded housing and a silver-plated, crimp-type contact. The module is designed to mate with another identical module. The housing is durable, high-impact resistant polycarbonate (UL94V-2 flammability rating). An internal stainless steel leaf spring forces contacts to maintain constant pressure. The contacts are sold separately and are made from highly conductive silver-plated copper. UL recognized file No. E26226. CSA certified file No. LR25154. Powerpole® is a registered trademark of Anderson Power Products.

15/30/45 Amp Connectors



- ► .32" × .32" × .97" Housing
- ► 1.63" Length for a Mated Set

Housings 15/30/45 Amp

Stock No.	Mfr.'s Type	Color	EACH 1-99	EACH 100-999
803-0100	1327G6	Black	.31	.25
803-0101	1327G8	Blue	.31	.25
803-0102	1327G21	Brown	.31	.25
803-0103	1327G18	Gray	.31	.25
803-0104	1327G5	Green	.31	.25
803-0105	1327G17	Orange	.31	.25
803-0108	1327	Red	.31	.25
803-0109	1327G7	White	.31	.25
803-0110	1327G16	Yellow	.31	.25

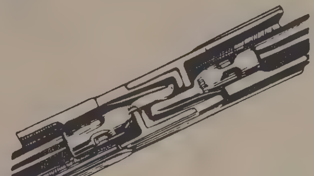
Contacts 15/30/45 Amp

Stock No.	Mfr.'s Type	Description	Wire AWG	EACH 1-99	EACH 100-999
803-0120	1332	For 15 Amp	16-20	.15	.13
803-0125	1331	For 30 Amp	12-16	.15	.13
803-1000	261G2LP	For 45 Amp	10	.36	.32

Contacts 25 Amp PCB

Stock No.	Mfr.'s Type	Description	Wire AWG	EACH 1-99	EACH 100-999
803-0126	1377G4	Straight 1.72"	—	.60	.54
803-0127	1377G3	Straight 2.16"	—	.60	.54
803-0128	1377G2	Right Angle .400	—	.60	.54
803-0129	1377G1	Right Angle .700	—	.60	.54

75 Amp Connectors



- ► .63" × .63" × 1.88" Housing
- ► 3.20" Length for Mated Set

Housings 75 Amp

Stock No.	Mfr.'s Type	Color	EACH 1-24	EACH 25-99
803-0200	5916G4	Black	1.28	1.04
803-0202	5916	Blue	1.28	1.04
803-0206	5916G6	Green	1.39	1.14
803-0208	5916G7	Red	1.28	1.04
803-0210	5916G5	White	1.28	1.04

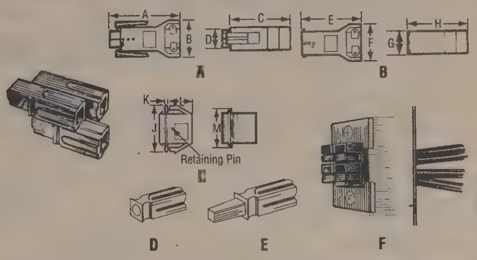
Contacts 75 Amp

Stock No.	Mfr.'s Type	Description	EACH 1-24	EACH 25-99
803-0215	5900	For 6 AWG wire	.99	.81
803-0220	5915	For 10-12 AWG wire	1.43	1.17

Tools 15/30/45/75 Amp Connectors

Stock No.	Mfr.'s Type	Description	EACH
803-0300	111038G2	Insertion/extraction tool	10.20
803-0311	1351G1	15/30/45, 12-20 AWG, 4 pt. crimp tool, non-cycle and cycle controlled	161.50
803-0326	1352G1	75A/50A, 6-10 AWG, 4 pt. crimp tool, cycle controlled	204.00

Accessories for Connector Assemblies



The connector modules have dovetail locking grooves molded into the housing. The housing can be assembled to form a multi-pole connector.

Powerpole® PAK, 15/30/45 Amp

Stock No.	Mfr.'s Type	Fig.	Description	EACH 1-24	EACH 25-99
803-0140	1460G1	A	4 Pole plug housing with latch	1.15	.94
803-0142	1460G2	A	6 Pole plug housing with latch	1.42	1.16
803-0144	1461G1	B	4 Pole plug housing without latch	1.26	1.03
803-0146	1461G2	B	6 Pole plug housing without latch	1.42	1.16
803-0148	1470G1	C	4 Pole snap-in receptacle*	1.22	1.00
803-0150	1470G2	C	6 Pole snap-in receptacle**	1.50	1.23
803-0152	1399G1	D	Short space key, red	.31	.25
803-0153	1399G2	E	Long spacer key, red	.31	.25
803-0155	115G1	—	Cable clamp hardware pack (4 hole)	.81	.67
803-0156	115G2	—	Cable clamp hardware pack (6 hole)	.93	.76
803-0158	110G9	—	Snap-in receptacle retaining pin	.13	.11

*Panel knockout size 1.00" × 1.25". **Panel knockout size 1.00" × 1.62".

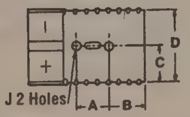
Stock No.	Mfr.'s Type	Fig.	Description	PER SET 1-24	PER SET 25-99
803-0160	1462G1	F	Bulkhead 2 or 4 pole mounting clamps (set/2)	2.89	2.36
803-0162	1462G2	F	Bulkhead 3 or 6 pole mounting clamps (set/2)	2.89	2.36
803-0164	110G16	—	Retaining pin — 1 row of housings	.25	.22
803-0165	110G17	—	Retaining pin — 2 row of housings	.27	.24

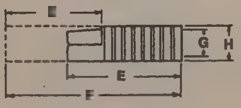
The SB® Series Connector

2 pole 50, 175, 350 Amp, 600 Volt Connectors

Housing

Contacts





Dimensions

Mfr.'s Type	A In.	A mm	B In.	B mm	C In.	C mm	D In.	D mm	E In.	E mm	F In.	F mm	G In.	G mm	H In.	H mm	J dia. In.	J dia. mm
SB 50	0.750	19.0	0.250	6.4	0.718	18.2	1.437	36.5	1.875	47.6	3.187	80.9	0.453	11.5	0.625	15.9	0.144	3.7
SB 175	1.125	28.5	0.437	11.0	1.093	27.8	2.187	55.6	3.125	79.4	5.250	133.3	0.750	19.0	1.000	25.4	0.265	6.7
SB 350	1.125	28.5	1.375	35.0	1.375	35.0	2.750	69.8	4.250	108.0	7.187	182.6	1.062	27.0	1.312	33.3	0.265	6.7

- ► **Single Piece Housing — Unitized Construction Provides Industrial Quality Durability**
- ► **Individually Replaceable Contacts — Enables Safe Replacement of Contacts**
- ► **Spring Loaded Silver Plated Contoured Contacts — Self-Wiping Cleaning Action Assures Greater Conductivity and Longer Life**
- ► **Polycarbonate Housing — Non-Conductive Material Can Be Used Safely With Industrial Batteries**
- ► **Mechanically Keyed and Color Identified — Prevents Mismatching of Voltage**

The SB® Connector was designed by Anderson Power Products® and has 30 years performance on electric vehicles. Other applications include quick disconnect for computer systems, uninterruptible power and power distribution systems.

SB® 50 Series Connectors 2-Pole

Housings with Springs and 2 Contacts

Stock No.	Mfr.'s Type	Color	Wire AWG	Cable Well Dia. In.	Cable Well Dia. mm	EACH
803-0400	6319	Gray	6	.221	5.613	4.77
803-0402	6319G1	Gray	10-12	.136	3.454	5.08
803-0404	6331G1	Red	6	.221	5.613	4.77
803-0406	6331G2	Red	10-12	.136	3.454	5.08

Housings with Springs (No Contacts)

803-0408	992	Gray	—	—	—	3.03
803-0410	992G1	Red	—	—	—	3.03

Contacts (Sets/2)

803-0412	903G1	—	6	.221	5.613	2.41
803-0414	904G1	—	10-12	.136	3.454	2.88

SB® 175 Series Connectors 2-Pole

Housings with Springs and 2 Contacts

Stock No.	Mfr.'s Type	Color	Wire AWG	Cable Well Dia. In.	Cable Well Dia. mm	EACH
803-0416	6325G1	Gray	1/0	.437	11.099	10.80
803-0418	6326G1	Blue	1/0	.437	11.099	10.80
803-0420	6327G1	Orange	1/0	.437	11.099	10.80
803-0422	6328G1	Yellow	1/0	.437	11.099	10.80
803-0424	6329G1	Red	1/0	.437	11.099	10.80

Housings with Springs (No Contacts)

803-0426	940	Gray	—	—	—	8.00
803-0428	941	Blue	—	—	—	8.00
803-0430	942	Orange	—	—	—	8.00
803-0432	943	Yellow	—	—	—	8.00
803-0434	949	Red	—	—	—	8.00

Contacts (Sets/2)

803-0436	944	—	1/0	.437	11.099	6.23

SB® 350 Series Connectors 2-Pole

Housings with Springs and 2 Contacts

Stock No.	Mfr.'s Type	Color	Wire AWG	Cable Well Dia. In.	Cable Well Dia. mm	EACH
803-0450	6320G1	Gray	2/0	.484	12.294	17.28
803-0452	6320G5	Gray	3/0	.578	14.681	18.51
803-0454	6320G2	Gray	4/0	.641	16.281	18.51
803-0456	6320G4	Gray	300 MCM	.765	19.431	26.25
803-0458	6321G1	Blue	2/0	.484	12.294	17.28
803-0460	6321G5	Blue	3/0	.578	14.681	18.51
803-0462	6321G2	Blue	4/0	.641	16.281	18.51
803-0464	6321G4	Blue	300 MCM	.765	19.431	26.25
803-0466	6322G1	Red	2/0	.484	12.294	17.28
803-0468	6322G5	Red	3/0	.578	14.681	18.51
803-0470	6322G2	Red	4/0	.641	16.281	18.51
803-0472	6322G4	Red	300 MCM	.765	19.431	26.25
803-0474	6323G1	Yellow	2/0	.484	12.294	17.28
803-0476	6323G5	Yellow	3/0	.578	14.681	18.51
803-0478	6323G2	Yellow	4/0	.641	16.281	18.51
803-0480	6323G4	Yellow	300 MCM	.765	19.431	26.25
803-0482	6324G1	Green	2/0	.484	12.294	17.28
803-0484	6324G5	Green	3/0	.578	14.681	18.51
803-0486	6324G2	Green	4/0	.641	16.281	18.51
803-0488	6324G4	Green	300 MCM	.765	19.431	26.25

Housings with Springs (No Contacts)

803-0490	906	Gray	—	—	—	11.00
803-0492	912	Blue	—	—	—	11.00
803-0494	913	Red	—	—	—	11.00
803-0496	914	Yellow	—	—	—	11.00
803-0498	931	Green	—	—	—	11.00

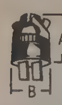
Contacts (Sets/2)

803-0500	907	—	2/0	.484	12.294	11.42
803-0502	916	—	3/0	.578	14.681	12.67
803-0504	908	—	4/0	.641	16.281	12.67
803-0506	910	—	300 MCM	.765	19.431	19.56

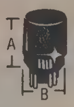
Crimp Tools

Stock No.	Mfr.'s Type	For Use With	Description	EACH
803-0326	1352G1	SB® 50 Series	Manual Hand Tool	204.00
803-0508	1368	SB® 175/350 Series	Hydraulic.Hand Tool	2840.00

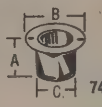
Midget Hart-Lock Devices (2-Pole, 2-Wire, 15 A; 125 V)



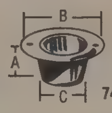
7428N



7427



7456

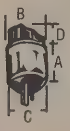


7468

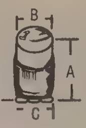
7428N (backwired dead front) and 7427 (for polarized and nonpolarized plugs) are black nylon/phenolic with cord grip for $\frac{7}{16}$" to $\frac{1}{2}$" OD cords. Both are $1\frac{13}{16}$" long. 7466 and 7468 are bakelite with metal housings. NEMA ML1-R, ML1-P ANSI C73.29.

Stock No.	Mfr.'s Type	Dimensions (In.)			Description	EACH	
		A	B	C		1-9	10-49
813-7428	7428N	$1\frac{3}{16}$	1	—	Male Cap	8.93	8.04
813-7427	7427	$1\frac{3}{16}$	1	—	Female Conn.	10.66	9.02
813-7466	7466	.937	$1\frac{3}{8}$	$1\frac{1}{8}$	Flanged Inlet	15.00	13.12
813-7468	7468	.781	$1\frac{3}{8}$	$1\frac{1}{8}$	Flanged Outlet	11.82	10.75

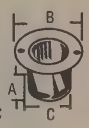
Hart-Lock Devices* (3-Pole, 3-Wire; 10 A; 250 V, 15 A; 125 V)



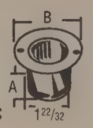
4767



4755



7557C



7556C

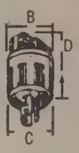
Gray nylon/lexan suitable for 105°C continuous use. 4767 and 4755 have dual range cord grip clamps for .250" to .656" OD cords and are backwired dead front designed. 7556C and 7557C have backwired clamp type terminals.

*Not UL listed.

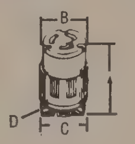
Stock No.	Mfr.'s Type	Dimensions (In.)			Description	EACH	
		A	B	C		1-9	10-49
813-7572	4767	$1\frac{5}{16}$	$1\frac{11}{32}$	$1\frac{1}{2}$	Male Cap	14.82	13.34
813-4755	4755	$2\frac{1}{8}$	$1\frac{11}{32}$	$1\frac{1}{2}$	Female Conn.	25.10	21.20
813-7556	7556C	$1\frac{27}{32}$	$2\frac{9}{16}$	$1\frac{23}{32}$	Flanged Inlet	21.22	19.29
813-7557	7557C	$1\frac{27}{32}$	$2\frac{9}{16}$	$1\frac{23}{32}$	Flanged Outlet	21.80	19.62

Hart-Lock Devices* (3-Pole, 3-Wire; 20 A; 125 V/250 V)

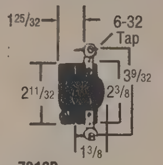
Gray nylon/lexan suitable for 105°C continuous use. All items have dual range cord grip clamps for .375"-1.000" O.D. cords and backwired dead front.



9966C



7314C



7310B

Stock No.	Mfr.'s Type	Dimensions (In.)				Description	EACH	
		A	B	C	D		1-9	10-49
813-6312	9965C	$2\frac{11}{32}$	2	$2\frac{1}{8}$	$\frac{5}{8}$	Male Plug	18.81	16.93
813-7313	7314C	$3\frac{7}{16}$	$1\frac{25}{32}$	$2\frac{1}{8}$	$\frac{5}{8}$	Female Conn.	29.07	26.16
813-7310	7310B	—	—	—	—	Receptacle	25.27	22.74

Safety Grip™ Connectors Straight Blade Devices (2-Pole, 3 Wire Grounding 15 A and 20 A; 125 V)

Male Plug

Female Connector

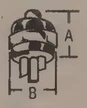
These devices have cord grips for .250"-.656" diameter cords.
Nylon/lexan* backwired dead front construction. Complies with NEMA WD1-1979 requirements. NEMA-5-15R, 5-15P ANSI C73.11.

*Lexan is a registered trademark of General Electric.

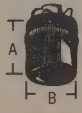
Stock No.	Mfr.'s Type	Description	EACH	
			1-9	10-49
813-6266	6266	Male Dead Front Plug (15 A)	11.30	10.10
813-6269	6269	Female Cord Connector (15 A)	19.10	17.10
813-6766	6766	Male Dead Front Plug (20 A)	15.20	13.68
813-6769	6769	Female Cord Connector (20 A)	26.00	23.40

Little Midget Hart-Lock Devices (2-Pole, 3-Wire Grounding 15 A, 125 V)

While similar to the previous parts, these devices have a hollow brass grounding sleeve. Cord grips are the same size. NEMA ML2-R, ML2-P.



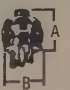
7594



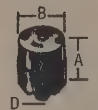
7593

Stock No.	Mfr.'s Type	Dimensions (In.)		Description	EACH	
		A	B		1-9	10-49
813-7593	7593	$\frac{27}{32}$	$1\frac{7}{64}$	Female Conn.	15.01	13.51
813-7594	7594	$1\frac{15}{64}$	$1\frac{3}{16}$	Male Cap	11.59	10.43

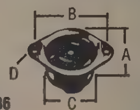
Little Midget Hart-Lock Devices (3-Pole, 3-Wire Grounding 15 A; 125 V/250 V)



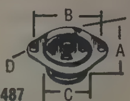
7485



7484



7486

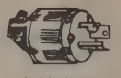


7487

These devices are for 3-conductor cables and have clamps for .281" to .421" OD cord. Devices are polarized to prevent incorrect connection. NEMA ML3-R, ML-3P. ANSI C73.30.

Stock No.	Mfr.'s Type	Dimensions (In.)				Description	EACH	
		A	B	C	D		1-9	10-49
813-7484	7484	$1\frac{1}{4}$	$1\frac{5}{32}$	—	—	Female Conn.	15.20	13.68
813-7485	7485	$\frac{27}{32}$	$1\frac{5}{32}$	—	—	Male Cap	11.78	10.60
813-7486	7486	$1\frac{5}{8}$	$1\frac{3}{4}$	$1\frac{7}{32}$	$\frac{5}{32}$	Flanged Inlet	13.68	12.31
813-7487	7487	$1\frac{5}{8}$	$1\frac{3}{4}$	$1\frac{11}{64}$	$\frac{5}{32}$	Flanged Outlet	16.53	14.88

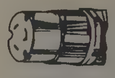
Hart-Lock Locking Devices (2-Pole, 3-Wire)



4721, 6565

4731, 6566

6202, 6212, 6332, 6342



6204, 6214, 6334, 6344

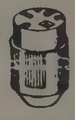
These devices feature nylon/lexan backwired dead front construction and dual range cord grip.

Stock No.	Mfr.'s Type	Description	EACH	
			1-9	10-49
813-4720	4721	15 A; 125 V NEMA L5-15P ANSI C73.42	12.16	10.95
813-4730	4731	15 A; 125 V NEMA L5-15R ANSI C73.42	21.85	19.67
813-6565	6565	15 A; 250 V NEMA L6-15P ANSI C73.74	13.40	12.06
813-6566	6566	15 A; 250 V NEMA L6-15R ANSI C73.74	23.60	21.24
813-6202	6202	20 A; 125 V NEMA L5-20P ANSI C73.72	15.01	13.51
813-6204	6204	20 A; 125 V NEMA L5-20R ANSI C73.72	23.75	21.38
813-6212	6212	20 A; 250 V NEMA L6-20P ANSI C73.75	15.01	13.51
813-6214	6214	20 A; 250 V NEMA L6-20R ANSI C73.75	23.75	21.38
813-6332	6332	30 A; 125 V NEMA L5-30P ANSI C73.73	25.00	22.50
813-6334	6334	30 A; 125 V NEMA L5-30R ANSI C73.73	49.40	44.46
813-6342	6342	30 A; 250 V NEMA L6-30P ANSI C73.76	25.20	22.58
813-6344	6344	30 A; 250 V NEMA L6-30R ANSI C73.76	49.80	44.82

Autogrip™ Plugs and Connectors (2-Pole, 3-Wire)

Thermoplastic dead front, backwired plugs and thermoplastic connectors. Automatic cord grip clamps the cord during assembly.

Plug



Connector

Stock No.	Mfr.'s Type	Description	EACH	
			1-9	10-49
813-5266	5266N	Straight blade plug; (15 A; 125 V NEMA 5-15P ANSI C73.11)	11.02	9.92
813-5269	5269N	Straight blade connector; (15 A; 125 V NEMA 5-15R ANSI C73.11)	20.35	16.96
813-5366	5366N	Straight blade plug; (20 A; 125 V NEMA 5-20P ANSI C73.11)	15.60	14.04
813-5369	5369N	Straight blade connector; (20 A; 125 V NEMA 5-20R ANSI C73.12	26.20	23.58
813-5666	5666N	Straight blade plug; (15 A; 250 V NEMA 6-15P ANSI C73.20)	13.80	12.42
813-5669	5669N	Straight blade connector; (15 A; 250 V NEMA 6-15R ANSI C73.20)	23.80	21.42

Autogrip™ Plugs and Connectors (3-Pole, 3-Wire)

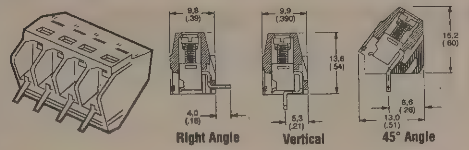
Thermoplastic dead front, backwired plugs and thermoplastic connectors. Automatic cord grip clamps the cord during assembly.

7567N

7567N

Stock No.	Mfr.'s Type	Description	EACH	
			1-9	10-49
813-7567	7567N	Locking plug; 3-pole, 3-wire (10 A; 250 V, 15 A; 125 V)	15.70	14.02
813-7555	7565N	Locking connector; 3-pole, 3-wire (10 A; 250 V, 15 A; 125 V)	24.51	22.06

5LE Series — EURO Terminal Blocks

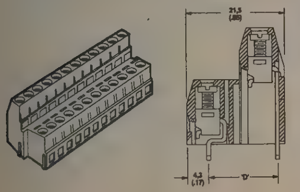


- Connection on 5mm (.197") Centers
- Standoffs for Flux Cleaning
- Captive M2.5 Screws
- Superior Elevator Wire-Clamp with Wire Guard
- Modular Housing: End to End Stackability with Snap Together/Stay Together Design
- Dead Front Design Protects Against Shock
- Housing Withstands Wave Line Temperatures
- In Accordance with VDE0110
- 2 Thru 4 Positions Molded to Length (Snap Together Larger Sizes)

Housing Material: Thermoplastic, UL recognized flammability classification 94V-0, 105°C max. operating temperature. **Terminals:** Bright acid-tin plated copper alloy. **Solderability:** MIL-STD-202, Method 208. **Rating:** 10 amps/300 volts, 15 amps/150 volts (limited rating). **Wire Range:** 14-28 AWG (solid or stranded). **Recommended PC Hole Size:** .062" diameter. **UL File Number:** E54800. **CSA File Number:** LR30811.

Stock No.	Mfr.'s Type	No. of Positions	Mounting Style	Color	EACH		
					1-49	50-249	250-499
905-8000	5LEV-02	2	Vertical	Green	.64	.56	.41
905-8002	5LEV-02-1	2	Vertical	Black	.64	.56	.41
905-8004	5LER-02	2	Right-Angle	Green	.69	.61	.45
905-8006	5LER-02-1	2	Right-Angle	Black	.69	.61	.45
905-8008	5LEA-02	2	45° Angle	Green	.69	.61	.45
905-8010	5LEA-02-1	2	45° Angle	Black	.69	.61	.45
905-8012	5LEV-03	3	Vertical	Green	.95	.84	.61
905-8014	5LEV-03-1	3	Vertical	Black	.95	.84	.61
905-8016	5LER-03	3	Right-Angle	Green	1.04	.92	.67
905-8018	5LER-03-1	3	Right-Angle	Black	1.04	.92	.67
905-8020	5LEA-03	3	45° Angle	Green	1.04	.92	.67
905-8022	5LEA-03-1	3	45° Angle	Black	1.04	.92	.67
905-8024	5LEV-04	4	Vertical	Green	1.27	1.12	.82
905-8026	5LEV-04-1	4	Vertical	Black	1.27	1.12	.82
905-8028	5LER-04	4	Right-Angle	Green	1.39	1.22	.89
905-8030	5LER-04-1	4	Right-Angle	Black	1.39	1.22	.89
905-8032	5LEA-04	4	45° Angle	Green	1.39	1.22	.89
905-8034	5LEA-04-1	4	45° Angle	Black	1.39	1.22	.89

5LEE, 2LEE Series — EURO Terminal Blocks

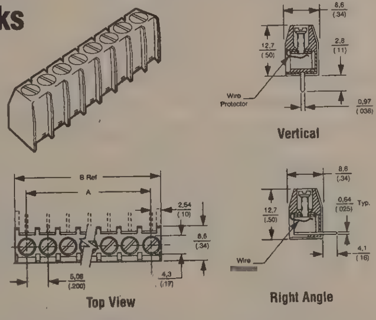


- Connection on 5mm (.197") and 5.08mm (.200") Centers
- Standoffs for Flux Cleaning
- Captive M2.5 Screws
- Superior Elevator Wire-Clamp with Wire Guard
- Modular Housing: End to End Stackability with Locking Dovetails
- Dead Front Design Protects Against Shock
- Housing Withstands Wave Line Temperatures
- In Accordance with VDE0110

Housing Material: Thermoplastic, UL recognized flammability classification 94V-0, 105°C max. operating temperature. **Color:** Green. **Terminals:** Bright acid-tin plated copper alloy. **Solderability:** MIL-STD-202, Method 208. **Rating:** 10 amps/300 volts, 15 amps/150 volts (limited rating). **Wire Range:** 14-28 AWG (solid or stranded). **Recommended PC Hole Size:** .062" diameter. **UL File Number:** E54800. **CSA File Number:** LR30811.

Stock No.	Mfr.'s Type	No. of Positions	Centers	Dimension D	EACH		
					1-49	50-249	250-499
905-8100	5LEEV-04	4	5.00 mm	.590	1.56	1.37	.96
905-8102	2LEEV-04	4	5.08 mm	.600	1.56	1.37	.96
905-8104	5LEEV-06	6	5.00 mm	.590	2.33	2.06	1.44
905-8106	2LEEV-06	6	5.08 mm	.600	2.33	2.06	1.44

2M Series — Terminal Blocks

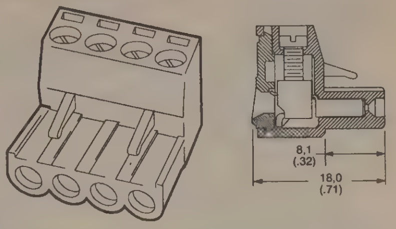


- Maintains Center to Center Spacing When Installed End to End
- High Density: Connections on 5.1mm Centers (0.2")
- Dead Front Design Protects Against Shock
- Standoffs for Flux Cleaning
- Captive 3-48 UNC Screws
- Spring-Loaded Wire Protector
- Extra Large Entry for Stranded Wire, Multiple Wires or Up to #12 AWG Single Wire

Barrier Material: Thermoplastic polyester, UL recognized flammability classification 94V-0, black, 120°C max. operating temperature. **Terminals:** Bright acid-tin over copper plated brass. **Rating:** 20 amps/300 volts (limited rating). **Wire Range:** 12-22 AWG. **UL File Number:** E54800. **CSA File Number:** LR30811.

Stock No.	Mfr.'s Type	No. of Positions	Dimensions		Mounting Style	EACH		
			A	B		1-49	50-249	250-499
905-8108	2MV-02	2	0.02	0.04	Vertical	.69	.61	.43
905-8110	2MR-02	2	0.02	0.04	Right-Angle	.79	.69	.48
905-8112	2MV-03	3	0.04	0.06	Vertical	1.04	.91	.64
905-8114	2MR-03	3	0.04	0.06	Right-Angle	1.18	1.04	.73
905-8116	2MV-04	4	0.06	0.08	Vertical	1.38	1.21	.85
905-8118	2MR-04	4	0.06	0.08	Right-Angle	1.57	1.38	.97
905-8120	2MV-05	5	0.08	1.00	Vertical	1.73	1.51	1.06
905-8122	2MR-05	5	0.08	1.00	Right-Angle	1.86	1.73	1.21
905-8124	2MV-06	6	1.00	1.20	Vertical	2.07	1.82	1.28
905-8126	2MR-06	6	1.00	1.20	Right-Angle	2.35	2.07	1.45
905-8128	2MV-07	7	1.20	1.40	Vertical	2.42	2.13	1.49
905-8130	2MR-07	7	1.20	1.40	Right-Angle	2.74	2.42	1.69
905-8132	2MV-08	8	1.40	1.60	Vertical	2.76	2.43	1.70
905-8134	2MR-08	8	1.40	1.60	Right-Angle	3.14	2.76	1.93
905-8136	2MV-10	10	1.80	2.00	Vertical	3.45	3.04	2.13
905-8138	2MR-10	10	1.80	2.00	Right-Angle	3.92	3.45	2.42
905-8140	2MV-12	12	2.20	2.40	Vertical	4.14	3.64	2.55
905-8142	2MR-12	12	2.20	2.40	Right-Angle	4.70	4.14	2.90

5ESD, 2ESD Series — EURO Terminal Blocks

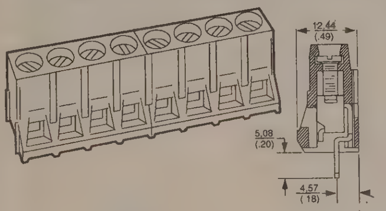


- Pluggable Euro Blocks
- Superior Elevator Wire-Clamp with Wire Guard
- Connections on 5mm (.197") and 5.08m (.200") Centers
- Dead Front Design Protects Against Shock
- Captive M2.5 Screws
- Housing Withstands Wave Line Temperatures
- In Accordance with VDE0110

Housing Material: Thermoplastic, UL recognized flammability classification 94V-0, 105°C max. operating temperature. **Color:** Green. **Terminals:** Bright acid-tin plated copper alloy. **Rating:** 10 amps/300 volts, 15 amps/150 volts (limited rating). **Wire Range:** 14-28 AWG (solid or stranded). **UL File Number:** E54800. **CSA File Number:** LR30811.

Stock No.	Mfr.'s Type	No. of Positions	Centers	EACH		
				1-49	50-249	250-499
905-8036	5ESDV-02	2	5.00 mm	1.07	.94	.66
905-8038	2ESDV-02	2	5.08 mm	1.07	.94	.66
905-8040	5ESDV-04	4	5.00 mm	2.14	1.88	1.32
905-8042	2ESDV-04	4	5.08 mm	2.14	1.88	1.32
905-8044	5ESDV-06	6	5.00 mm	3.20	2.82	1.97
905-8046	2ESDV-06	6	5.08 mm	3.20	2.82	1.97
905-8048	5ESDV-08	8	5.00 mm	4.27	3.76	2.63
905-8050	2ESDV-08	8	5.08 mm	4.27	3.76	2.63
905-8052	5ESDV-10	10	5.00 mm	5.33	4.70	3.29
905-8054	2ESDV-10	10	5.08 mm	5.33	4.70	3.29
905-8056	5ESDV-12	12	5.00 mm	6.40	5.64	3.95
905-8058	2ESDV-12	12	5.08 mm	6.40	5.64	3.95

25EV Series — EURO Block

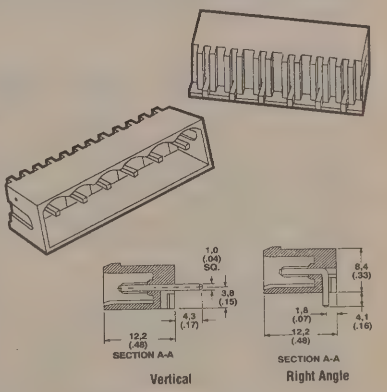


- Superior Elevator Wire-Clamp with Wire Guard
- Connections on .250" (6.35mm) Centers
- Modular Housing: End to End Stackability with Snap Together/Stay Together Design
- Dead Front Design Protects Against Shock
- Standoffs for Flux Cleaning
- Captive M3 Screws
- High Temperature Housing Withstands Wave Line Temperatures
- In Accordance with VDE0110

Housing Material: Thermoplastic, UL recognized flammability classification 94V-0, 120°C max. operating temperature. **Color:** Black. **Terminals:** Bright acid-tin plated copper alloy. **Solderability:** MIL-STD-202, Method 208. **Elevator Box:** Zinc plated steel with yellow chromate coating. **Screws:** Zinc plated steel with yellow chromate coating, M3. **Rating:** 10 amps/300 volts, 15 amps/150 volts (limited rating). **Wire Range:** 10-22 AWG. **Max. Tightening Torque:** 5.0 lb. inch. **UL File Number:** E54800. **CSA File Number:** LR30811.

Stock No.	Mfr.'s Type	No. of Positions	Centers	EACH		
				1-49	50-249	250-499
905-8061	25EV-02-1	2	0.250"	.83	.72	.51
905-8063	25EV-03-1	3	0.250"	1.17	1.09	.76
905-8065	25EV-04-1	4	0.250"	1.65	1.45	1.01

5EHD, 2EHD Series — EURO Block Headers



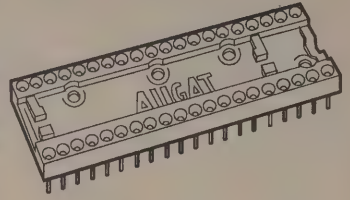
- Pluggable Euro Block Header
- Connections on 5mm (.197") and 5.08m (.200") Centers
- Shrouded Header Design Protects Header Pins and Enables Latching to Plug Side
- Closed End Style Prevents Misalignment of Plug and Header
- Housing Withstands Wave Line Temperatures
- In Accordance with VDE0110

Housing Material: Thermoplastic, UL recognized flammability classification 94V-0, 105°C max. operating temperature. **Color:** Green. **Terminals:** Bright acid-tin plated copper alloy. **Solderability:** MIL-STD-202, Method 208. **Recommended PC Hole Size:** .062" diameter. **Rating:** 10 amps/300 volts, 15 amps/150 volts (limited rating). **UL File Number:** E54800. **CSA File Number:** LR30811.

Stock No.	Mfr.'s Type	No. of Positions	Mounting Style	Centers	EACH		
					1-49	50-249	250-499
905-8060	5EHDV-02	2	Vertical	5.00 mm	.44	.38	.27
905-8062	5EHDR-02	2	Right-Angle	5.00 mm	.44	.38	.27
905-8064	2EHDV-02	2	Vertical	5.08 mm	.44	.38	.27
905-8066	2EHDR-02	2	Right-Angle	5.08 mm	.44	.38	.27
905-8068	5EHDV-04	4	Vertical	5.00 mm	.87	.76	.53
905-8070	5EHDR-04	4	Right-Angle	5.00 mm	.87	.76	.53
905-8072	2EHDV-04	4	Vertical	5.08 mm	.87	.76	.53
905-8074	2EHDR-04	4	Right-Angle	5.08 mm	.87	.76	.53
905-8076	5EHDV-06	6	Vertical	5.00 mm	1.30	1.14	.80
905-8078	5EHDR-06	6	Right-Angle	5.00 mm	1.30	1.14	.80
905-8080	2EHDV-06	6	Vertical	5.08 mm	1.30	1.14	.80
905-8082	2EHDR-06	6	Right-Angle	5.08 mm	1.30	1.14	.80
905-8084	5EHDV-08	8	Vertical	5.00 mm	1.73	1.52	1.06
905-8086	5EHDR-08	8	Right-Angle	5.00 mm	1.73	1.52	1.06
905-8088	2EHDV-08	8	Vertical	5.08 mm	1.73	1.52	1.06
905-8090	2EHDR-08	8	Right-Angle	5.08 mm	1.73	1.52	1.06
905-8092	5EHDV-10	10	Vertical	5.00 mm	2.16	1.90	1.33
905-8094	5EHDR-10	10	Right-Angle	5.00 mm	2.16	1.90	1.33
905-8096	2EHDV-10	10	Vertical	5.08 mm	2.16	1.90	1.33
905-8098	2EHDR-10	10	Right-Angle	5.08 mm	2.16	1.90	1.33

500 Series — Machined Contact, Solid Insulator, DIP Sockets

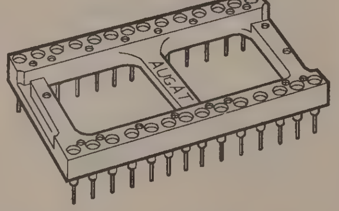
- PC Board Thickness Range: .062" and .092"
- Contact Spacing: .100 Centers
- PC Termination: .125"
- Recognized Under the Component Program of Underwriters Laboratories, Inc. File No. E111362
- Precision Four-Finger Inner Contact Provides Concentric Funnel Entry for Easy Flat and Round Lead Insertion
- BeCu Inner Contact for Maximum Mechanical and Electrical Performance



Stock No.	Mfr.'s Type	No. of Contacts	Plating		EACH		
			Contact	Sleeve	1-24	25-99	100-499
905-6000	506-AG10D	6	Gold	Gold	1.61	1.43	1.32
905-6005	506-AG11D	6	Gold	Tin/Lead	1.04	.92	.86
905-6010	506-AG12D	6	Tin/Lead	Tin/Lead	.69	.61	.56
905-6015	508-AG10D	8	Gold	Gold	1.87	1.66	1.53
905-6020	508-AG11D	8	Gold	Tin/Lead	1.36	1.21	1.11
905-6025	508-AG12D	8	Tin/Lead	Tin/Lead	.88	.79	.72
905-6030	514-AG10D	14	Gold	Gold	2.77	2.46	2.27
905-6035	514-AG11D	14	Gold	Tin/Lead	1.88	1.67	1.54
905-6040	514-AG12D	14	Gold	Tin/Lead	1.23	1.10	1.01
905-6050	516-AG10D	16	Gold	Gold	3.10	2.76	2.54
905-6055	516-AG11D	16	Gold	Tin/Lead	2.06	1.83	1.69
905-6060	516-AG12D	16	Tin/Lead	Tin/Lead	1.40	1.25	1.15
905-6065	518-AG10D	18	Gold	Gold	3.82	3.50	3.19
905-6070	518-AG11D	18	Gold	Tin/Lead	2.60	2.31	2.13
905-6075	520-AG10D	20	Gold	Gold	4.38	4.02	3.66
905-6080	520-AG11D	20	Gold	Tin/Lead	2.97	2.64	2.44
905-6085	520-AG12D	20	Tin/Lead	Tin/Lead	1.76	1.56	1.44
905-6090	522-AG10D	22	Gold	Gold	4.51	4.14	3.77
905-6100	522-AG11D	22	Gold	Tin/Lead	3.16	2.90	2.64
905-6105	524-AG10D	24	Gold	Gold	5.24	4.80	4.37
905-6110	524-AG11D	24	Gold	Tin/Lead	3.53	3.24	2.95
905-6115	528-AG10D	28	Gold	Gold	5.93	5.27	4.87
905-6120	528-AG11D	28	Gold	Tin/Lead	3.82	3.50	3.19
905-6125	528-AG12D	28	Tin/Lead	Tin/Lead	2.46	2.19	2.02
905-6130	532-AG10D	32	Gold	Gold	6.73	6.17	5.62
905-6135	532-AG11D	32	Gold	Tin/Lead	4.47	4.10	3.74
905-6140	532-AG12D	32	Tin/Lead	Tin/Lead	2.76	2.53	2.31
905-6145	536-AG10D	36	Gold	Gold	7.27	6.67	6.07
905-6150	536-AG11D	36	Gold	Tin/Lead	4.94	4.53	4.13
905-6155	540-AG10D	40	Gold	Gold	8.11	7.21	6.66
905-6160	540-AG11D	40	Gold	Tin/Lead	5.49	4.88	4.51
905-6165	540-AG12D	40	Tin/Lead	Tin/Lead	3.52	3.13	2.89

800 Series — Machined Contact, Open Insulator, DIP Sockets

- Precision Four-Finger Inner Contact Provides Concentric Funnel Entry for Easy Flat and Round Lead Insertion
- BeCu Inner Contact for Maximum Mechanical and Electrical Performance
- PC Board Thickness Range: .062" and .092"
- PC Termination: .125"
- Contact Spacing: .100 Centers
- Recognized Under the Component Program of Underwriters Laboratories, Inc. File No. E111362



Stock No.	Mfr.'s Type	No. of Contacts	Plating		EACH		
			Contact	Sleeve	1-24	25-99	100-499
905-6260	808-AG10D	8	Gold	Gold	1.83	1.62	1.50
905-6265	808-AG11D	8	Gold	Tin/Lead	1.36	1.21	1.11
905-6270	814-AG10D	14	Gold	Gold	2.70	2.40	2.22
905-6275	814-AG11D	14	Gold	Tin/Lead	1.88	1.67	1.54
905-6280	816-AG10D	16	Gold	Gold	3.03	2.69	2.48
905-6285	816-AG11D	16	Gold	Tin/Lead	2.06	1.83	1.69
905-6290	818-AG10D	18	Gold	Gold	3.81	3.39	3.13
905-6295	820-AG10D	20	Gold	Gold	4.38	3.89	3.59
905-6300	820-AG11D	20	Gold	Tin/Lead	2.97	2.64	2.44
905-6305	824-AG11D	24	Gold	Tin/Lead	3.59	3.19	2.95
905-6310	828-AG10D	28	Gold	Gold	5.82	5.17	4.77
905-6315	828-AG11D	28	Gold	Tin/Lead	4.06	3.61	3.33
905-6320	832-AG10D	32	Gold	Gold	6.60	6.05	5.51
905-6325	832-AG11D	32	Gold	Tin/Lead	4.47	4.10	3.74
905-6330	840-AG10D	40	Gold	Gold	7.96	7.07	6.53
905-6335	840-AG11D	40	Gold	Tin/Lead	5.49	4.88	4.51

500 Series — Economy Series Contact Solid Insulator, DIP Sockets

- 10D-ES Series: Contact Plating: 30 µ" Gold Over Nickel; Sleeve Plating: 10 µ" Gold
- 11D-ES Series: Contact Plating 30 µ" Gold Over Nickel; Sleeve Plating: Tin/Lead
- 11D-ESL Series: Contact Plating: 10 µ" Gold Over Nickel ; Sleeve Plating: Tin/Lead

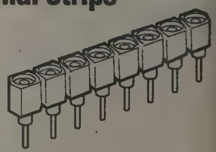
Stock No.	Mfr.'s Type	No. of Contacts	EACH		
			1-24	25-99	100-499
905-6170	514-AG10D-ES	14	1.14	1.01	.93
905-6175	514-AG11D-ES	14	.72	.64	.59
905-6180	514-AG11D-ESL	14	.63	.56	.51
905-6185	516-AG10D-ES	16	1.30	1.16	1.07
905-6190	516-AG11D-ES	16	.82	.73	.67
905-6195	516-AG11D-ESL	16	.72	.64	.59
905-6200	520-AG10D-ES	20	1.63	1.45	1.33
905-6205	520-AG11D-ES	20	1.02	.91	.84
905-6210	520-AG11D-ESL	20	.90	.80	.73
905-6215	524-AG11D-ES	24	1.23	1.09	1.00
905-6220	528-AG10D-ES	28	2.27	2.02	1.87
905-6225	528-AG11D-ES	28	1.43	1.27	1.17
905-6230	528-AG11D-ESL	28	1.25	1.12	1.03
905-6235	532-AG11D-ES	32	1.63	1.45	1.34
905-6240	532-AG11D-ESL	32	1.43	1.27	1.17
905-6245	540-AG10D-ES	40	3.25	2.89	2.66
905-6250	540-AG11D-ES	40	2.04	1.82	1.67
905-6255	540-AG11D-ESL	40	1.79	1.59	1.47

800 Series — Economy Series Contact Open Insulator, Dip Sockets

- 11D-ES Series: Contact Plating: 30 µ" Gold Over Nickel; Sleeve Plating: Tin/Lead
- 11D-ESL Series: Contact Plating 10 µ" Gold Over Nickel; Sleeve Plating: Tin/Lead
- 12D-ES Series: Contact Plating: Tin/Lead; Sleeve Plating: Tin/Lead

Stock No.	Mfr.'s Type	No. of Contacts	EACH		
			1-24	25-99	100-499
905-6340	814-AG11D-ES	14	.76	.64	.59
905-6345	814-AG11D-ESL	14	.63	.56	.51
905-6350	814-AG12D-ES	14	.54	.48	.44
905-6355	816-AG11D-ES	16	.82	.73	.07
905-6360	816-AG11D-ESL	16	.72	.64	.59
905-6365	816-AG12D-ES	16	.62	.55	.50
905-6370	820-AG11D-ES	20	1.02	.91	.84
905-6375	820-AG11D-ESL	20	.90	.80	.73
905-6380	820-AG12D-ES	20	.77	.68	.63
905-6385	824-AG11D-ES	24	1.23	1.09	1.00
905-6390	824-AG11D-ESL	24	1.08	.96	.88
905-6395	824-AG12D-ES	24	.92	.82	.75
905-6400	828-AG11D-ES	28	1.43	1.27	1.17
905-6405	828-AG11D-ESL	28	1.25	1.11	1.03
905-6410	828-AG12D-ES	28	1.08	.96	.88
905-6415	832-AG11D-ES	32	1.63	1.45	1.34
905-6420	832-AG11D-ESL	32	1.43	1.27	1.17
905-6425	832-AG12D-ES	32	1.29	1.15	1.05
905-6430	840-AG11D-ES	40	2.04	1.82	1.67
905-6435	840-AG11D-ESL	40	1.79	1.59	1.47
905-6440	840-AG12D-ES	40	1.53	1.36	1.26
905-6445	864-AG11D-ES	64	3.27	2.91	2.68
905-6450	864-AG11D-ESL	64	2.86	2.54	2.34

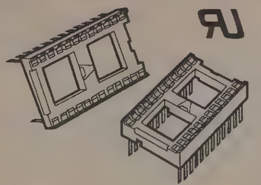
500 Series — SIP Sockets / Socket Terminal Strips



- Non-Wicking Closed Bottom Sleeve Gives 100% Protection Against Flux and Solder Contamination
- Breakaway Feature for Breaking Strips into Any Desired Shorter Lengths (No Special Tooling Required)
- Withstands Most Severe Environmental Conditions Including Military Requirements of High Shock and Vibration
- Two-Piece Tapered Entry Closed Entry Inner Contact and Machined Outer Sleeve
- Accepts Any IC Lead and Component Leads .016"-.021" Diameter, .105" Min. Length
- Uses: Microprocessor Sockets, Hybrid IC Sockets, Q.I.L. Sockets, Component

Stock No.	Mfr.'s Type	No. of Contacts	Plating		EACH		
			Contact	Sleeve	1-99	100-499	500-999
905-3072	510AG91D08ES	8	30 µ Gold	Tin/Lead	.51	.46	.42
905-3074	510AG91D08ESL	8	10 µ Gold	Tin/Lead	.45	.41	.37
905-3076	510AG90D10ES	10	30 µ Gold	Gold	.76	.70	.67
905-3078	510AG90D10ESL	10	10 µ Gold	Gold	.60	.55	.49
905-3080	510AG91D10ES	10	30 µ Gold	Tin/Lead	.69	.52	.47
905-3082	510AG91D10ESL	10	10 µ Gold	Tin/Lead	.51	.46	.42
905-3084	510AG90D20ES	20	30 µ Gold	Gold	1.52	1.40	1.27
905-3086	510AG90D20ESL	20	10 µ Gold	Gold	1.15	1.09	.99
905-3088	510AG91D20ES	20	30 µ Gold	Tin/Lead	1.15	1.09	.99
905-3090	510AG91D20ESL	20	10 µ Gold	Tin/Lead	1.01	.93	.84

200C Series — Stamped Single Beam Contact, Closed Bottom DIP Sockets

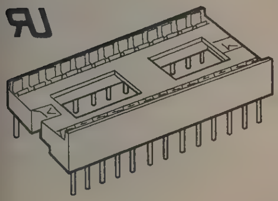


- Contact Spacing: .100 Centers
- Insulator: Thermoplastic Polyester Rated 94V-0
- Contacts: Phosphor Bronze (Per QQ-B-750), Beryllium Copper (Per QQ-C-533)
- Plating: Tin/Lead (Per MIL-P-81728)
- High Normal Force Results in Gas Tight Connections
- Non-Wicking, Closed Bottom Design Gives Protection Against Solder Contamination
- Protected Open Entry for Easy Insertion of ICs By Hand or By Automatic Insertion
- Anti-Overstress Design Protects Contacts, Helps Eliminate Damage from Oversize Leads and Maintains Consistent Normal Force
- Recognized Under the Component Program of Underwriters Laboratories, Inc. File No. E111362

Augat 200C Series single beam face wipe contact provides maximum normal force and consistent mechanical performance in Augat's lowest cost socket.

Stock No.	Mfr.'s Type	No. of Contacts	EACH		
			1-99	100-499	500-999
905-1000	214-AG19DC	14	.14	.13	.12
905-1005	216-AG19DC	16	.16	.15	.14
905-1010	220-AG19DC	20	.20	.18	.17
905-1015	224-AG10DC	24	.24	.22	.21
905-1020	224-AG19DC	24	.24	.22	.21
905-1025	228-AG19DC	28	.28	.25	.24
905-1030	232-AG19DC	32	.32	.29	.27
905-1035	240-AG19DC	40	.40	.36	.34

300C Series — Stamped Dual Wipe Contact DIP Sockets

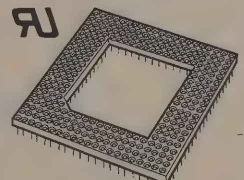


- Contact Spacing: .100 Centers
- Insulator: Thermoplastic Polyester Rated 94V-0
- Contacts: Phosphor Bronze
- Plating: Tin/Lead
- Available in Open Frame Style Allowing Maximum Utilization of Circuit Board Real Estate
- Standoffs Facilitate Board Cleaning
- Low Profile Design
- Recognized Under the Component Program of Underwriters Laboratories, Inc. File No. E111362

The Augat 300C Series dual wipe contact adds a new family of product to Augat's low cost DIP socket line.

Stock No.	Mfr.'s Type	No. of Contacts	EACH		
			1-99	100-499	500-999
905-1040	308-AG19DC	8	.14	.13	.12
905-1045	316-AG19DC	16	.17	.15	.14
905-1050	318-AG19DC	18	.19	.17	.16
905-1055	320-AG19DC	20	.21	.19	.17
905-1060	324-AG10DC	24	.25	.22	.21
905-1065	324-AG19DC	24	.24	.22	.21
905-1070	328-AG19DC	28	.29	.26	.25
905-1075	332-AG19DC	32	.33	.29	.28
905-1080	340-AG19DC	40	.41	.37	.35

PGM Series Pin Grid Array Sockets



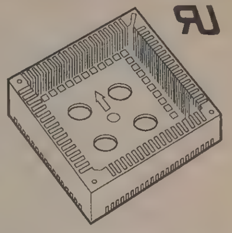
- Low Insertion and Withdrawal Force Contacts
- Non-Wicking Closed Bottom, Precision Sleeve Protects 100% Against Flux and Solder Contamination
- Contact Sleeves Are Recessed into a Molded Insulator for Extra Protection and Greater Surface Are a Presentation with Vacuum Pick Up for Automatic Insertion Systems
- Recognized Under the Component Program of Underwriters Laboratories, Inc. File No. E111362
- Insulator: Thermoplastic Polyester UL Rated 94V-0
- Plating: Contacts — 30 μ" Gold; Sleeve — Tin/Lead

Sockets

Stock No.	Mfr.'s Type	No. of Positions	EACH	
			1-24	25-49
905-3030	PGM068-1A1132-V	68	3.82	3.56
905-3031	PGM085-7A1107-V*	85	3.89	3.47
905-3033	PGM114-7A1345-V*	114	6.98	6.48
905-3035	PGM121-7A1312-V*	121	5.54	4.94
905-3037	PGM128-7A1359-V*	128	7.84	6.79
905-3040	PGM132-1A1414-V	132	9.05	8.41
905-3042	PGM145-1A1521-V	145	9.94	9.23
905-3044	PGM168-1A1715-V	168	11.52	10.70
905-3046	PGM169-1A1708-V	169	11.59	10.76
905-3048	PGM238-1A1916-V	238	16.32	15.15
905-3050	PGM273-1A2111-V	273	18.72	17.38

*Contact Plating: 10 μ" gold.

PCS Series "Type A" Sockets for PLCC Packages



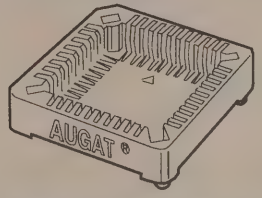
- Visual Aids External to Socket Assure Easy Registration to Printed Wiring Board
- Easy Access for Probing Installed Chip Carrier
- Accepts JEDEC PLCC's MO-47 AA-AH (20-84), MO-052 AE (32 RECT)
- Recognized Under the Component Program of Underwriters Laboratories, Inc. File No. E111362
- Plating: Tin/Lead Over Nickel

The Augat PCS Series Chip Carrier solder tail sockets accept Jedec Type "A" plastic leaded chip carriers on .050" (1.27mm) centers. These dependable sockets combine positive retention of package with high normal force to insure outstanding electrical and mechanical performance. The solder tail design allows through-hole board patterns on .100" (2.54 mm) grid.

Stock No.	Mfr.'s Type	No. of Positions	EACH		
			1-99	100-499	500-999
905-3002	PCS-028A-1	28	1.34	1.18	1.07
905-3004	PCS-032A-1	32	1.43	1.27	1.15
905-3006	PCS-044A-1	44	1.71	1.52	1.37
905-3008	PCS-052A-1	52	2.11	1.87	1.69
905-3010	PCS-068A-1	68	2.00	1.77	1.60
905-3012	PCS-084A-1	84	2.55	2.26	2.04

905-3014. TX8136-20/84PCS. Extraction Tool……………………**EACH 26.46**

PCS-SMU Series Ultra Low Profile SMT Sockets for PLCC Packages



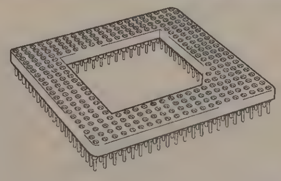
- Visual Aids External to Socket Assure Easy Registration to Printed Wiring Board
- Easy Access for Probing Installed Chip Carrier
- Accepts JEDEC PLCC's MO-47 AA-AH (20-84), MO-052 AE (32 RECT)
- Recognized Under the Component Program of Underwriters Laboratories, Inc. File No. E111362
- Plating: Tin/Lead Over Nickel

The Augat SMU Series Surface Mount chip carrier sockets are an "Ultra" low profile, .175" (4.45 mm) for JEDEC dimensioned PLCC devices. The lower profile is to accommodate height packaging restrictions in high density disk drive and laptop applications. With a PCB footprint which matches PLCC device and an open insulator design to facilitate placement and inspection, the Augat SMU Series meets your high density packaging needs.

Stock No.	Mfr.'s Type	No. of Positions	EACH		
			1-99	100-499	500-999
905-3016	PCS-028SMU-11	28	1.49	1.32	1.19
905-3018	PCS-032SMU-11	32	1.60	1.41	1.28
905-3020	PCS-044SMU-11	44	1.77	1.57	1.41
905-3022	PCS-052SMU-11	52	2.35	2.08	1.88
905-3024	PCS-068SMU-11	68	2.33	2.06	1.86
905-3026	PCS-084SMU-11	84	2.45	2.17	1.96

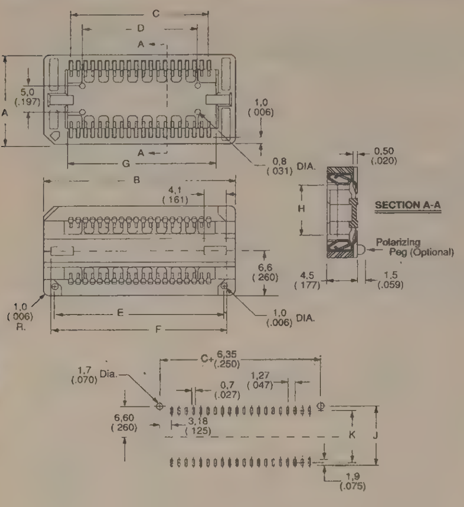
905-3014. TX8136-20/84PCS. Extraction Tool……………………**EACH 26.46**

PGA (LIF) Sockets for Intel Pentium Devices



- Augat's Sockets Include Super Low Insertion Force 1.3 oz. (LIF) Contact
- Non-Wicking Closed Bottom, Precision Sleeve Protects 100% Against Flux and Solder Contamination
- Sockets Compatible with IR Vaporphase Soldering
- Recognized Under the Component Program of Underwriters Laboratories Inc. File E111362

Stock No.	Mfr.'s Type	No. of Pins	Intel Socket	EACH		
				1-49	50-99	100-499
905-0100.	PGM238-7A1916-V	238	#2	7.29	5.83	4.86
905-0102	PGM237-7A1927-V	237.	#3	7.29	5.83	4.86
905-0104	PGM273-7A2111-V	273	#4	8.36	6.69	5.57
905-0106	PIS296-7A37A3-V	296	#5	26.38	21.98	18.84



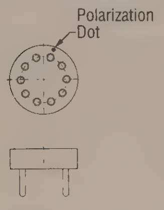
SOJ Sockets

- ► Sizes Range from 24 to 40 Positions
- ► 10,16 mm (.400") and 7,62 mm (.300") Centerlines
- ► High Normal Force Contacts Insure Long Term Reliability
- ► High Temperature Plastic

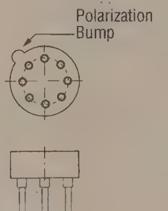
Augat's new SOJ Socket provides the user an easy means of socketing their SOJ devices. These full featured devices are available in a variety of sizes. **Material Specifications. Contact:** Phosphor bronze. **Insulator:** 94 V-0 thermoplastic. **Plating:** 200 μ" min. tin over 75 μ" Ni. **Performance Characteristics. Current Rating:** 1.0 amp. **Dielectric Withstanding Voltage:** 600 VAC RMS for 60 seconds. **Insulation Resistance:** 10,000 MΩ/500 VDC. **Contact Resistance:** 20 mΩ. **Operating Temperature:** –55°C to +105°C. **Durability:** 25 cycles. **Mating Force:** 20 lbs. max. **Unmating Force:** 2 lbs. min.

Stock No.	Mfr.'s Type	No. of Pins	With Locating Post	Dimensions (in.)										EACH		
				A	B	C	D	E	F	G	H	J	K	1-99	100-499	500-999
905-0108	165-200005-04	24	No	.550	.916	.550	.500	.800	.850	.644	.325	.346	.300	**1.24**	**1.10**	**.99**
905-0110	165-200005-14	24	Yes	.550	.916	.550	.500	.800	.850	.644	.325	.346	.300	**1.13**	**1.00**	**.91**
905-0112	165-200005-05	26	No	.550	.965	.600	.550	.850	.902	.694	.325	.346	.300	**1.45**	**1.28**	**1.16**
905-0114	165-200005-15	26	Yes	.550	.965	.600	.550	.850	.902	.694	.325	.346	.300	**1.18**	**1.05**	**.94**
905-0116	165-200005-06	28	No	.550	1.010	.650	.600	.900	.952	.744	.325	.346	.300	**1.49**	**1.32**	**1.20**
905-0118	165-200005-16	28	Yes	.550	1.010	.650	.600	.900	.952	.744	.325	.346	.300	**1.16**	**1.03**	**.93**
905-0120	165-200005-03	28	No	.646	1.010	.650	.500	.900	.951	.743	.425	.445	.400	**1.32**	**1.17**	**1.05**
905-0122	165-200005-13	28	Yes	.646	1.010	.650	.500	.900	.951	.743	.425	.445	.400	**1.32**	**1.17**	**1.05**
905-0124	165-200005-07	32	No	.550	1.160	.750	.700	1.000	1.050	.844	.325	.346	.300	**1.20**	**1.06**	**.96**
905-0126	165-200005-17	32	Yes	.550	1.160	.750	.700	1.000	1.050	.844	.325	.346	.300	**1.20**	**1.06**	**.96**
905-0128	165-200005-02	32	No	.646	1.110	.750	.600	1.000	1.050	.843	.425	.445	.400	**1.60**	**1.41**	**1.28**
905-0130	165-200005-12	32	Yes	.646	1.110	.750	.600	1.000	1.050	.843	.425	.445	.400	**1.60**	**1.41**	**1.28**
905-0132	165-200005-01	40	No	.646	1.310	.950	.800	1.200	1.250	1.040	.425	.445	.400	**1.61**	**1.43**	**1.29**
905-0134	165-200005-11	40	Yes	.646	1.310	.950	.800	1.200	1.250	1.040	.425	.445	.400	**1.61**	**1.43**	**1.29**

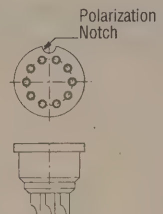
Transistor Sockets



8058



8059



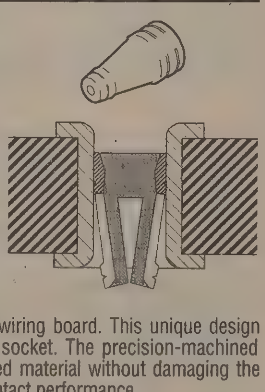
8060

- ► Polarization: Dot, Notch, Bump
- ► Contact Plating: 30 μ" Gold per Mil-G-45204

The Augat Transistor sockets utilize hi-rel machined outer sleeves and gold plated inner contacts assembled into a low profile insulator. The funnel entry design eliminates distortion or damage to the contact with misalignment or oversized leads. The sockets accept .016" to .020" dia. pins. All have a 3 A current rating. This Series features a large tapered entry for easy lead insertion and a closed bottom sleeve providing 100% prevention of solder or flux wicking.

Stock No.	Mfr.'s Type	No. of Pins	Insulator	Terminal Style	EACH		
					1-24	25-49	50-99
905-1213	8058-1G50	8	Teflon	PC	**6.03**	**5.57**	**5.17**
905-1225	8058-39G3	8	Teflon	PC	**6.23**	**5.75**	**5.34**
905-1230	8059-2G1	3	Nylon (Red)	PC	**1.51**	**1.44**	**1.38**
905-1235	8059-2G5	8	Nylon (Green)	PC	**3.54**	**3.27**	**3.04**
905-1240	8059-2G6	8	Nylon (Green)	PC	**3.23**	**2.98**	**2.77**
905-1245	8059-2G7	8	Nylon (Orange)	PC	**3.54**	**3.27**	**3.04**
905-1250	8060-1G5	3	Teflon	Pocket	**5.85**	**5.40**	**5.02**
905-1253	8060-1G11	3	Teflon	PC	**3.57**	**3.29**	**3.06**
905-1255	8060-1G6	4	Teflon	Pocket	**7.03**	**6.49**	**6.03**

Holtite® Series Zero Profile Solderless Sockets

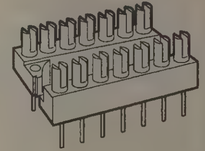


- ► Available Qualified to MIL-83505/6
- ► Zero Socket Profile
- ► Precision-Machined, Tapered-Entry, Four Finger Contact
- ► Solderless, Gas-Tight, Press-Fit Insertion
- ► Contact: Beryllium Copper per QQ-C-530
- ► Finish: Gold Plated .000030" Per MIL-G-45204 Over Nickel Per QQ-N-290 or Tin/Lead Per MIL-P-81728

The solderless zero profile Holtite® contact is designed to be pressfit into the the plated-thru hole of a printed wiring board. This unique design allows the plated-thru hole to become the component socket. The precision-machined geometry allows for the controlled displacement of plated material without damaging the hole, or affecting the normal mechanical and electrical contact performance.

Stock No.	Mfr.'s Type	Finish	EACH		
			1-99	100-499	500-999
905-1265	8134-HC-5P2	Gold-Plated	**.12**	**.11**	**.10**
905-1270	8134-HC-5P3	Tin/Lead-Plated	**.09**	**.08**	**.07**
905-1275	8134-HC-6P2	Gold-Plated	**.13**	**.12**	**.11**

600 Series — AG and CG Plug Adapter Assemblies



- ► AG Style Machined Round Pin Machined Printed Circuit Terminal
- ► CG Style Machined Slotted Pin Machined Printed Circuit Terminal
- ► Precision Machined Pins
- ► Used for Interposing Discrete Components
- ► Terminals Are the Same Dimension as IC Board Patterns
- ► Option of Round or Slotted Pin Styles

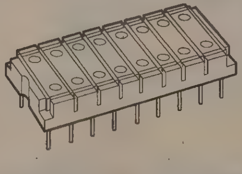
The 600 Series is a high quality machine pin molded adapter which is used to assemble hybrid and special network circuits. The .018" diameter precision pin allows the adapter to be plugged into socket or wire wrappable panels repeatedly.

Tin Plated

Stock No.	Mfr.'s Type	No. of Pins	Pin Style	EACH		
				1-24	25-49	50-99
905-1085	608-AG1T	8	Round	**2.35**	**2.17**	**2.01**
905-1090	608-CG1T	8	Slotted	**1.69**	**1.49**	**1.34**
905-1095	614-AG1T	14	Round	**4.11**	**3.79**	**3.52**
905-1100	614-CG1T	14	Slotted	**2.89**	**2.60**	**2.34**
905-1105	616-AG1T	16	Round	**4.47**	**4.13**	**3.83**
905-1110	616-CG1T	16	Slotted	**3.30**	**2.97**	**2.67**
905-1115	620-AG1T	20	Round	**5.88**	**5.42**	**5.03**
905-1120	620-CG1T	20	Slotted	**4.48**	**4.13**	**3.83**
905-1125	624-AG1T	24	Round	**7.04**	**6.50**	**6.03**
905-1130	624-CG1T	24	Slotted	**5.37**	**4.96**	**4.60**

Gold Plated

Stock No.	Mfr.'s Type	No. of Pins	Pin Style	1-24	25-49	50-99
905-1135	608-AG1	8	Round	**2.85**	**2.63**	**2.43**
905-1140	608-CG1	8	Slotted	**2.63**	**2.41**	**2.22**
905-1145	614-AG1	14	Round	**4.98**	**4.60**	**4.26**
905-1150	614-CG1	14	Slotted	**4.73**	**4.34**	**4.00**
905-1155	616-AG1	16	Round	**5.69**	**5.25**	**4.88**
905-1160	616-CG1	16	Slotted	**5.25**	**4.73**	**4.25**
905-1165	620-AG1	20	Round	**7.11**	**6.57**	**6.09**
905-1170	620-CG1	20	Slotted	**7.11**	**6.57**	**6.09**
905-1175	624-AG1	24	Round	**8.53**	**7.80**	**7.31**
905-1180	624-CG1	24	Slotted	**8.53**	**7.80**	**7.31**



8136-475 Series — Programming Jumper Plug Assemblies

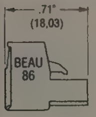
- ► Low Profile; Only .100" High, X and Y Stackability
- ► Jumper Pin Assembly Spans 7.62/.300" Centers to Connect Opposing Contacts in I.C. Patterns, or 2.54/.100" Centers to Connect Adjacent Pins

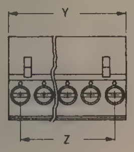
8136-475 Series of programmed jumper plugs offer the unique combination of low cost and flexible signal path selection. Standard configurations are supplied programmed across rows.

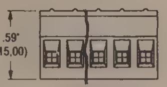
Stock No.	Mfr.'s Type	No. of Pins	Plating	EACH	
				1-99	100-499
905-1185	8136-475G1	1-Unit	Tin	**.74**	**.63**
905-1190	8136-475G7	7-Unit	Tin	**2.63**	**2.22**
905-1195	8136-475G8	8-Unit	Tin	**2.88**	**2.43**
905-1200	8136-475G9	9-Unit	Tin	**3.06**	**2.59**
905-1205	8136-651P2	Jumper Pin (.100")	Gold	**.17**	**.15**
905-1210	8136-650P2	Jumper Pin (.300")	Gold	**.22**	**.19**

Pluggable Terminal Blocks (.200" Spacing) Series 86 With Rising Cage Pressure Clamps

- Holds Wires For Secure, Reliable Contact
- Industry Standard Interface
- End-To-End Stackable
- High Flammability Rating (94V-0)
- Wire Range: 12-30 AWG

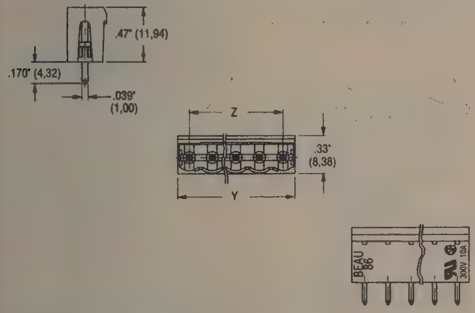






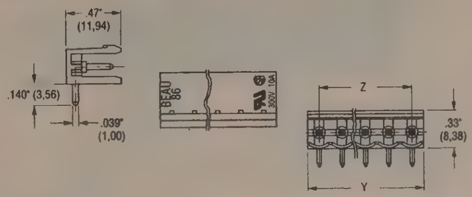
Plug, Right-Angle

Stock No.	Mfr.'s Type	No. Of Poles	Dim. (In.)		EACH		
			Y	Z	1-99	100-249	250-499
607-2000	860502	2	.395	.200	.90	.82	.69
607-2002	860503	3	.595	.400	1.35	1.23	1.04
607-2004	860504	4	.795	.600	1.80	1.64	1.38
607-2006	860505	5	.995	.800	2.25	2.05	1.73
607-2008	860506	6	1.195	1.000	2.70	2.45	2.07
607-2010	860507	7	1.395	1.200	3.15	2.86	2.42
607-2012	860508	8	1.595	1.400	3.60	3.27	2.77
607-2014	860509	9	1.795	1.600	4.05	3.68	3.11
607-2016	860510	10	1.995	1.800	4.50	4.09	3.46
607-2018	860512	12	2.395	2.200	5.40	4.91	4.15
607-2020	860516	16	3.195	3.000	7.20	6.54	5.53



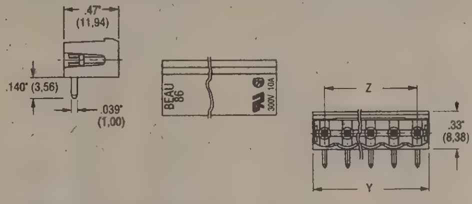
Header, Straight Thru, Closed End

607-2022	861602	2	.445	.200	.34	.31	.26
607-2024	861603	3	.645	.400	.51	.47	.40
607-2026	861604	4	.845	.600	.69	.62	.53
607-2028	861605	5	1.045	.800	.86	.78	.66
607-2030	861606	6	1.245	1.000	1.03	.94	.79
607-2032	861607	7	1.445	1.200	1.20	1.09	.92
607-2034	861608	8	1.645	1.400	1.38	1.25	1.06
607-2036	861609	9	1.845	1.600	1.55	1.41	1.19
607-2038	861610	10	2.045	1.800	1.72	1.56	1.32
607-2040	861612	12	2.445	2.200	2.06	1.87	1.58
607-2042	861616	16	3.245	3.000	2.75	2.50	2.11



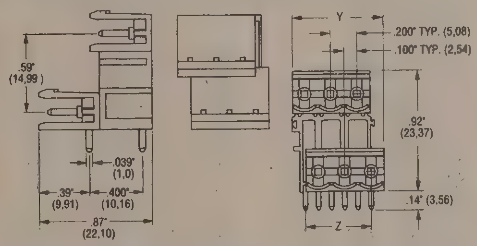
Header, 90°

Stock No.	Mfr.'s Type	No. Of Poles	Dim. (In.)		EACH		
			Y	Z	1-99	100-249	250-499
607-2044	861802	2	.395	.200	.34	.31	.26
607-2046	861803	3	.595	.400	.51	.47	.40
607-2048	861804	4	.795	.600	.69	.62	.53
607-2050	861805	5	.995	.800	.86	.78	.66
607-2052	861806	6	1.195	1.000	1.03	.94	.79
607-2054	861807	7	1.395	1.200	1.20	1.09	.92
607-2056	861808	8	1.595	1.400	1.38	1.25	1.06
607-2058	861809	9	1.795	1.600	1.55	1.41	1.19
607-2060	861810	10	1.995	1.800	1.72	1.56	1.32
607-2062	861812	12	2.395	2.200	2.06	1.87	1.58
607-2064	861816	16	3.195	3.000	2.75	2.50	2.11



Header, 90°, Closed End

607-2066	861902	2	.445	.200	.34	.31	.26
607-2068	861903	3	.645	.400	.51	.47	.40
607-2070	861904	4	.845	.600	.69	.62	.53
607-2072	861905	5	1.045	.800	.86	.78	.66
607-2074	861906	6	1.245	1.000	1.03	.94	.79
607-2076	861907	7	1.445	1.200	1.20	1.09	.92
607-2078	861908	8	1.645	1.400	1.38	1.25	1.06
607-2080	861909	9	1.845	1.600	1.55	1.41	1.19
607-2082	861910	10	2.045	1.800	1.72	1.56	1.32
607-2084	861912	12	2.445	2.200	2.06	1.87	1.58
607-2086	861916	16	3.245	3.000	2.75	2.50	2.11



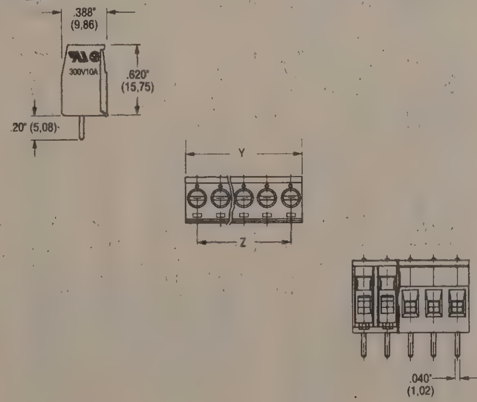
2-Level Header, 90°, Stackable

607-2088	862804	4	.500	.300	1.20	1.09	.92
607-2090	862806	6	.700	.500	1.80	1.64	1.38

Fixed PCB Terminal Blocks (.200" Spacing) Series 88 With Rising Cage Pressure Clamps

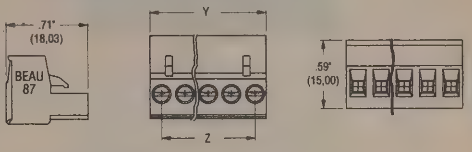
- Holds Wires For Secure, Reliable Contact
- Molded To Length
- High Flammability Rating (94V-0)
- Extra High Conductivity Contacts
- Wire Range: 12-30 AWG
- Small Footprint: .388"

Stock No.	Mfr.'s Type	No. Of Poles	Dim. (In.)		EACH		
			Y	Z	1-99	100-249	250-499
607-2182	880502	2	.395	.200	.59	.53	.45
607-2184	880503	3	.595	.400	.88	.80	.67
607-2186	880504	4	.795	.600	1.17	1.06	.90
607-2188	880505	5	.995	.800	1.46	1.33	1.12
607-2190	880506	6	1.195	1.000	1.75	1.59	1.35
607-2192	880507	7	1.395	1.200	2.04	1.86	1.57
607-2194	880508	8	1.595	1.400	2.33	2.12	1.80
607-2196	880509	9	1.795	1.600	2.62	2.38	2.02
607-2198	880510	10	1.995	1.800	2.92	2.65	2.24
607-2200	880512	12	2.395	2.200	3.50	3.18	2.69
607-2202	880516	16	3.195	3.000	4.67	4.24	3.59



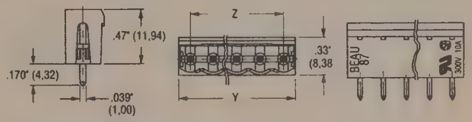
Pluggable Terminal Blocks (5.0 mm Spacing) Series 87 With Rising Cage Pressure Clamps

- Holds Wires For Secure, Reliable Contact
- Industry Standard Interface
- End-To-End Stackable
- High Flammability Rating (94V-0)
- Wire Range: 12-30 AWG



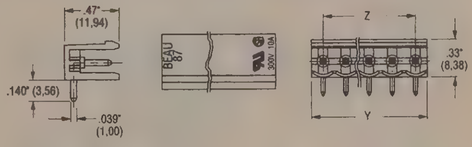
Plug, Right-Angle

Stock No.	Mfr.'s Type	No. Of Poles	Dim. (In.)		EACH		
			Y	Z	1-99	100-249	250-499
607-2092	870502	2	.389	.197	1.07	.97	.88
607-2094	870503	3	.596	.394	1.76	1.32	1.15
607-2096	870504	4	.783	.591	2.35	1.76	1.53
607-2098	870505	5	.980	.788	2.94	2.21	1.91
607-2100	870506	6	1.177	.985	3.53	2.65	2.29
607-2102	870507	7	1.374	1.182	4.12	3.09	2.68
607-2104	870508	8	1.571	1.379	4.70	3.53	3.06
607-2106	870509	9	1.768	1.576	5.29	3.97	3.44
607-2108	870510	10	1.965	1.773	5.88	4.41	3.82
607-2110	870512	12	2.359	2.167	7.06	5.29	4.59
607-2112	870516	16	3.147	2.955	9.41	7.06	6.11



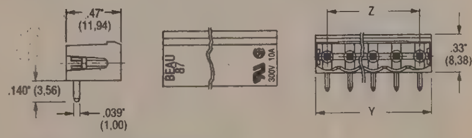
Header, Straight Thru, Closed End

607-2114	871602	2	.439	.197	.34	.31	.26
607-2116	871603	3	.636	.394	.51	.47	.40
607-2118	871604	4	.833	.591	.69	.62	.53
607-2120	871605	5	1.030	.788	.86	.78	.66
607-2124	871606	6	1.227	.985	1.03	.94	.79
607-2126	871607	7	1.424	1.182	1.20	1.09	.92
607-2128	871608	8	1.621	1.379	1.38	1.25	1.06
607-2130	871609	9	1.818	1.576	1.55	1.41	1.19
607-2132	871610	10	2.045	1.773	1.72	1.56	1.32
607-2134	871612	12	2.409	2.167	2.06	1.87	1.58
607-2136	871616	16	3.197	2.955	2.75	2.50	2.11



Header, 90°

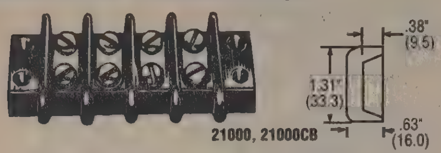
607-2138	871802	2	.389	.197	.34	.31	.26
607-2140	871803	3	.586	.394	.51	.47	.40
607-2142	871804	4	.783	.591	.69	.62	.53
607-2144	871805	5	.980	.788	.86	.78	.66
607-2146	871806	6	1.177	.985	1.03	.94	.79
607-2148	871807	7	1.374	1.182	1.20	1.09	.92
607-2150	871808	8	1.571	1.379	1.38	1.25	1.06
607-2152	871809	9	1.768	1.576	1.55	1.41	1.19
607-2154	871810	10	1.965	1.773	1.72	1.56	1.32
607-2156	871812	12	2.359	2.167	2.06	1.87	1.58
607-2158	871816	16	3.147	2.955	2.75	2.50	2.11



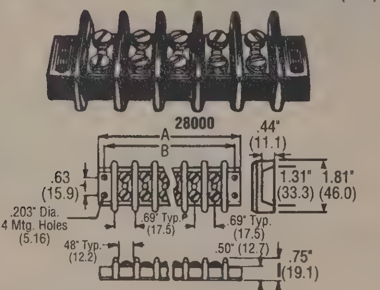
Header, 90°, Closed End

607-2160	871902	2	.389	.197	.34	.31	.26
607-2162	871903	3	.586	.394	.51	.47	.40
607-2164	871904	4	.783	.591	.69	.62	.53
607-2166	871905	5	.980	.788	.86	.78	.66
607-2168	871906	6	1.177	.985	1.03	.94	.79
607-2170	871907	7	1.374	1.182	1.20	1.09	.92
607-2172	871908	8	1.571	1.379	1.38	1.25	1.06
607-2174	871909	9	1.768	1.576	1.55	1.41	1.19
607-2176	871910	10	1.905	1.773	1.72	1.56	1.32
607-2178	871912	12	2.359	2.167	2.06	1.87	1.58
607-2180	871916	16	3.147	2.955	2.75	2.50	2.11

Double-Row Terminal Strips



21000, 21000CB



28000

Model	Dimensions			
	W × H (In.)	Terminal Centers (In.)	Mtg. Hole Dia. (In.)	Screw Size
Series 21000	1.31 × .63	0.563	0.209	8-32
Series 76000	0.88 × .63	0.375	0.160	6-32
Series 77000	0.88 × .44	0.375	0.160	6-32
Series 78000	1.13 × .55	0.430	0.180	6-32
Series 28000	1.81 × .75	0.688	0.203	10-32

Series 21000

Open back construction. 9/16" terminal centers. 30 amp current rating (UL). **Voltage Rating, rms:** UL recognized, Class B — 600; Class C — 600. **CSA Certified:** 300 @ 30 amps. **Withstand Volts, rms:** 10500. **Insulator Material:** General purpose phenolic. UL temp. index 150°C. Black. **Width × Height:** 1 5/16" × 5/8". **Max. AWG:** 12. **Terminal Screws:** No. 8-32 × 5/16" binding head screws. Steel, cadmium plated.

Stock No.	Mfr.'s Type	No. of Circuits	EACH			
			1-24	25-49	50-99	100-249
607-1116	21002	2	**.99**	**.90**	**.77**	**.69**
607-1126	21003	3	**1.86**	**1.59**	**1.36**	**1.22**
607-1136	21004	4	**1.87**	**1.60**	**1.37**	**1.23**
607-1156	21006	6	**2.55**	**2.21**	**1.99**	**1.79**
607-1176	21008	8	**3.05**	**2.44**	**2.23**	**2.07**
607-1196	21010	10	**3.93**	**3.40**	**3.06**	**2.75**
607-1216	21012	12	**4.53**	**4.12**	**3.71**	**3.34**
607-1236	21014	14	**6.02**	**5.42**	**4.87**	**4.39**
607-1256	21016	16	**7.02**	**6.32**	**5.68**	**5.12**
607-1276	21018	18	**7.99**	**7.19**	**6.47**	**5.82**
607-1296	21020	20	**8.85**	**7.97**	**7.17**	**6.45**

Series 28000

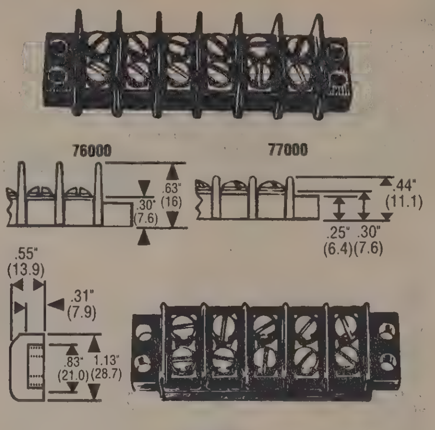
Open back construction. 11/16" terminal centers. 50 amp current rating (UL). **Voltage Rating, rms:** UL Recognized, Class B — 600; Class C — 600. **CSA Certified:** 600 @ 50 amps. **Withstand Volts, rms:** 10500. **Insulator Material:** General purpose phenolic. UL temp. Index 150°C. Black. **Width × Height:** 1 13/16" × 3/4". **Max. AWG:** 6 lugged. **Terminal Screws:** No. 10-32 × 3/8" binding head screws. Brass, nickel plated.

Stock No.	Mfr.'s Type	No. of Circuits	1-24	25-49	50-99	100-249
607-1402	28002	2	**2.96**	**2.48**	**2.25**	**2.09**
607-1403	28003	3	**4.15**	**3.46**	**3.11**	**2.80**
607-1404	28004	4	**5.03**	**4.53**	**4.08**	**3.67**
607-1405	28005	5	**6.18**	**5.47**	**4.93**	**4.43**
607-1406	28006	6	**8.26**	**7.51**	**6.88**	**6.35**
607-1408	28008	8	**9.65**	**8.69**	**7.82**	**7.04**
607-1410	28010	10	**11.90**	**10.71**	**9.64**	**8.67**
607-1412	28012	12	**14.33**	**12.89**	**11.61**	**10.45**

Series 77000

Closed back construction. 3/8" terminal centers. 20 amp current rating (UL). **Voltage Rating, rms:** UL Recognized, Class B — 250; Class C — 150. **CSA Certified:** 150 @ 20 amps. **Withstand Volts, rms:** 7500. **Insulator Material:** Thermoplastic, glass-filled. UL temp. index 95°C. UL flame retardant rating 94V-0. Black. **Width × Height:** 7/8" × 7/16". **Max. AWG:** 14. **Terminal Screws:** No. 6-32 × 1/3" binding head screws. Steel, cadmium plated.

Stock No.	Mfr.'s Type	No. of Circuits	1-24	25-49	50-99	100-249
607-1113	77002	2	**.76**	**.69**	**.59**	**.53**
607-1123	77003	3	**.84**	**.77**	**.65**	**.59**
607-1133	77004	4	**1.08**	**.94**	**.80**	**.72**
607-1143	77005	5	**1.42**	**1.22**	**1.04**	**.94**
607-1153	77006	6	**1.65**	**1.42**	**1.22**	**1.09**
607-1163	77007	7	**2.04**	**1.75**	**1.49**	**1.35**
607-1173	77008	8	**2.06**	**1.78**	**1.52**	**1.37**
607-1183	77009	9	**2.52**	**2.16**	**1.94**	**1.75**
607-1193	77010	10	**2.35**	**2.04**	**1.84**	**1.65**
607-1203	77011	11	**2.94**	**2.52**	**2.27**	**2.04**
607-1213	77012	12	**2.66**	**2.30**	**2.07**	**1.86**
607-1233	77014	14	**3.73**	**3.20**	**2.88**	**2.59**
607-1243	77015	15	**4.04**	**3.46**	**3.12**	**2.81**
607-1253	77016	16	**4.19**	**3.59**	**3.23**	**2.91**
607-1273	77018	18	**4.40**	**3.96**	**3.56**	**3.21**
607-1293	77020	20	**4.18**	**3.80**	**3.42**	**3.08**
607-1313	77022	22	**5.25**	**4.73**	**4.26**	**3.83**
607-1333	77024	24	**5.84**	**5.26**	**4.73**	**4.26**
607-1353	77026	26	**6.48**	**5.83**	**5.25**	**4.72**
607-1373	77028	28	**6.98**	**6.29**	**5.66**	**5.09**
607-1393	77030	30	**7.21**	**6.49**	**5.84**	**5.26**



78000

Series 21000CB

Closed back construction. 9/16" terminal centers. 30 amp current rating (UL). **Voltage Rating, rms:** UL recognized Class B — 600; Class C — 600. **CSA Certified:** 300 @ 30 amps. **Withstand Volts, rms:** 9000. **Insulator Material:** General purpose phenolic. UL temp. index 150°C. Black. **Width × Height:** 1 5/16" × 21/32". **Max. AWG:** 12. **Terminal Screws:** No. 8-32 × 5/16" binding head screws. Steel, cadmium plated.

Stock No.	Mfr.'s Type	No. of Circuits	EACH			
			1-24	25-49	50-99	100-249
607-1117	21002CB	2	**1.45**	**1.24**	**1.06**	**.96**
607-1137	21004CB	4	**2.46**	**2.11**	**1.90**	**1.71**
607-1157	21006CB	6	**3.56**	**3.05**	**2.75**	**2.47**
607-1177	21008CB	8	**4.04**	**3.63**	**3.27**	**2.94**
607-1197	21010CB	10	**5.21**	**4.68**	**4.22**	**3.80**
607-1217	21012CB	12	**6.63**	**6.03**	**5.52**	**5.10**
607-1237	21014CB	14	**7.05**	**6.34**	**5.71**	**5.14**
607-1257	21016CB	16	**8.20**	**7.38**	**6.64**	**5.98**
607-1277	21018CB	18	**9.34**	**8.40**	**7.56**	**6.81**
607-1297	21020CB	20	**10.36**	**9.32**	**8.39**	**7.55**
607-1317	21024CB	24	**12.30**	**11.07**	**9.96**	**8.97**

Series 76000

High barrier, closed back construction. 3/8" terminal centers. 20 amp current rating (UL). **Voltage Rating, rms:** UL recognized Class B — 250; Class C — 150. **CSA Certified:** 300 @ 20 amps. **Withstand Volts, rms:** 10500. **Insulator Material:** Thermoplastic, glass filled. UL temp. index 95°C. **UL Flame Retardant Rating:** 94V-0. Black. **Width × Height:** 7/8" × 5/8". **Max. AWG:** 14. **Terminal Screws:** No. 6-32 × 1/4" binding head screws. Steel, cadmium plated.

Stock No.	Mfr.'s Type	No. of Circuits	1-24	25-49	50-99	100-249
607-1112	76002	2	**.76**	**.69**	**.59**	**.53**
607-1122	76003	3	**1.00**	**.90**	**.77**	**.69**
607-1132	76004	4	**1.08**	**.94**	**.80**	**.72**
607-1142	76005	5	**1.66**	**1.42**	**1.22**	**1.10**
607-1152	76006	6	**1.65**	**1.42**	**1.22**	**1.10**
607-1162	76007	7	**2.04**	**1.75**	**1.49**	**1.35**
607-1172	76008	8	**2.06**	**1.78**	**1.52**	**1.37**
607-1182	76009	9	**2.52**	**2.16**	**1.94**	**1.75**
607-1192	76010	10	**2.35**	**2.04**	**1.84**	**1.65**
607-1212	76012	12	**2.66**	**2.30**	**2.07**	**1.86**
607-1232	76014	14	**3.73**	**3.20**	**2.88**	**2.59**
607-1242	76015	15	**4.04**	**3.46**	**3.12**	**2.81**
607-1252	76016	16	**4.19**	**3.59**	**3.23**	**2.91**
607-1272	76018	18	**4.40**	**3.96**	**3.56**	**3.21**
607-1292	76020	20	**4.94**	**4.45**	**4.01**	**3.61**
607-1312	76022	22	**5.25**	**4.73**	**4.26**	**3.83**
607-1332	76024	24	**5.84**	**5.26**	**4.73**	**4.26**
607-1352	76026	26	**6.48**	**5.83**	**5.25**	**4.72**
607-1372	76028	28	**6.98**	**6.29**	**5.66**	**5.09**
607-1392	76030	30	**7.21**	**6.49**	**5.84**	**5.26**

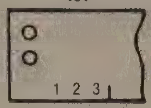
Series 78000

Closed back construction. 7/16" terminal centers. 20 amp current rating. **Voltage Rating:** UL recognized, Class B — 250; Class C — 300. **CSA Certified:** 300 @ 20 amps. **Withstand Volts, rms:** 7500. **Insulator Material:** Thermoplastic, glass-filled. UL temp. index 95°C. UL flame retardant rating 94V-0. Black. **Width × Height:** 1 1/8" × 35/64". **AWG:** 14. **Terminal Screws:** No. 6-32 × 1/3" binding head screws. Steel, cadmium plated.

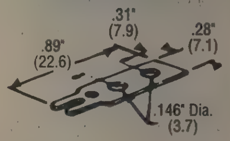
Stock No.	Mfr.'s Type	No. of Circuits	1-24	25-49	50-99	100-249
607-1114	78002	2	**.92**	**.83**	**.71**	**.64**
607-1124	78003	3	**1.23**	**1.05**	**.90**	**.81**
607-1134	78004	4	**1.45**	**1.25**	**1.07**	**.96**
607-1144	78005	5	**1.63**	**1.41**	**1.21**	**1.09**
607-1154	78006	6	**2.14**	**1.83**	**1.65**	**1.49**
607-1164	78007	7	**2.58**	**2.22**	**2.00**	**1.80**
607-1174	78008	8	**2.32**	**2.01**	**1.81**	**1.63**
607-1184	78009	9	**2.95**	**2.53**	**2.27**	**2.05**
607-1194	78010	10	**3.31**	**2.83**	**2.55**	**2.29**
607-1204	78011	11	**3.77**	**3.23**	**2.91**	**2.62**
607-1214	78012	12	**3.97**	**3.40**	**3.06**	**2.76**
607-1234	78014	14	**4.40**	**3.96**	**3.56**	**3.21**
607-1244	78015	15	**4.91**	**4.21**	**3.79**	**3.51**
607-1254	78016	16	**5.04**	**4.40**	**3.96**	**3.67**
607-1274	78018	18	**5.37**	**4.83**	**4.35**	**3.91**
607-1294	78020	20	**5.85**	**5.27**	**4.74**	**4.27**
607-1314	78022	22	**6.52**	**5.87**	**5.28**	**4.75**
607-1334	78024	24	**7.04**	**6.34**	**5.70**	**5.13**
607-1354	78026	26	**7.66**	**6.89**	**6.20**	**5.58**
607-1374	78028	28	**8.28**	**7.45**	**6.71**	**6.04**
607-1394	78030	30	**8.69**	**7.82**	**7.04**	**6.34**

Accessories

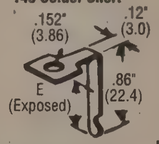
101



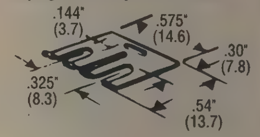
141 One-Sided Solder



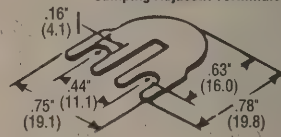
143 Solder Short



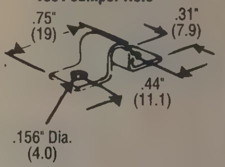
7233 Jumper Edge On for Jumping 2 to 30 Adjacent Terminals



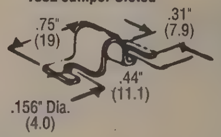
7833 Jumper Edge On for Jumping Adjacent Terminals



1831 Jumper Hole



1832 Jumper Sloted



Insulating/Marker Strips

Non-feed-thru. Vulcanized fiber. **Marker Strip Width:** 76000 and 77000 — 1.13" (28.6 mm); 78000 — 1.31" (33.3 mm). **Imprinting Character Height:** 0.13" (3.2 mm).

Stock No.	Mfr.'s Type	For Series	EACH			
			1-24	25-49	50-99	100-249
607-1054	VF-14004-101	76000, 77000	**.49**	**.43**	**.37**	**.34**
607-1056	VF-14006-101	76000, 77000	**.55**	**.49**	**.42**	**.38**
607-1058	VF-14008-101	76000, 77000	**.58**	**.52**	**.43**	**.36**
607-1060	VF-14010-101	76000, 77000	**.64**	**.55**	**.49**	**.46**
607-1062	VF-14012-101	76000, 77000	**.56**	**.51**	**.42**	**.35**
607-1064	VF-14014-101	76000, 77000	**.76**	**.69**	**.58**	**.53**
607-1066	VF-14016-101	76000, 77000	**.79**	**.71**	**.60**	**.54**
607-1070	VF-14020-101	76000, 77000	**.73**	**.66**	**.55**	**.46**
607-1055	VF-18004-101	78000	**.52**	**.47**	**.40**	**.36**
607-1057	VF-18006-101	78000	**.63**	**.57**	**.48**	**.44**
607-1059	VF-18008-101	78000	**.68**	**.60**	**.52**	**.47**
607-1061	VF-18010-101	78000	**.75**	**.63**	**.56**	**.51**
607-1063	VF-18012-101	78000	**.90**	**.78**	**.66**	**.60**
607-1065	VF-18014-101	78000	**.77**	**.70**	**.58**	**.49**
607-1067	VF-18016-101	78000	**.94**	**.84**	**.72**	**.65**
607-1071	VF-18020-101	78000	**1.52**	**1.31**	**1.12**	**1.01**

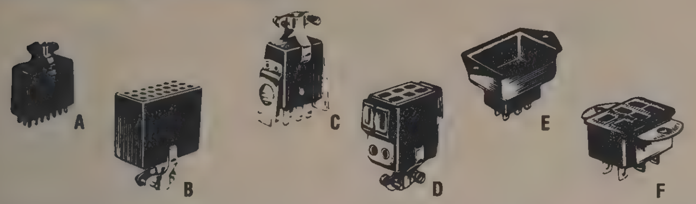
For Series 76000 and 77000

Stock No.	Mfr.'s Type	For Series	EACH	
			1-49	50-99
607-1000	141	One-sided solder terminal	**.10**	**.09**
607-1002	142	Two-sided solder terminal	**.13**	**.12**
607-1003	143	Short solder bottom terminal	**.07**	**.06**
607-1011	1431	Hole mount jumper (77000)	**.08**	**.07**
607-1012	1432	Slotted jumper (77000)	**.08**	**.07**
607-1031	7631	Hole mount jumper (76000)	**.12**	**.10**
607-1032	7632	Slotted jumper (76000)	**.12**	**.10**
607-1033	7233/2	Edge on jumper	**.10**	**.09**

For Series 78000

Stock No.	Mfr.'s Type	For Series	1-49	50-99
607-1043	7833	Edge on jumper	**.18**	**.16**
607-1081	1831	Hole mount jumper	**.09**	**.08**
607-1082	1832	Slotted jumper	**.09**	**.08**
607-1083	183	Short solder bottom terminal	**.10**	**.09**

Series 3300 Connectors



Series 3300 connectors are interchangeable with Series 300 types and are designed for panel and cable mounting. **Specifications. Current Rating (Individual Contacts):** 10 amps. **Voltage Rating, rms:** 750 volts, 250 volts (UL). **Plug Contact Material:** Brass, cadmium plated. **Socket Contact:** Phosphor bronze, cadmium plated. **Pre-Grounding Contact Material:** Heavy duty plated brass. **Base Insulating Material:** High-grade phenolic, black. **Backshell:** Thermoplastic. **Finishes:** Cable clamp, screws, latch and keeper; Angle Bracket — steel, bright nickel electroplate; Deep Bracket — steel, baked black wrinkle enamel finish over zinc chromate plating.

Plugs (Cable Clamp Top) — Fig. A

Stock No.	Mfr.'s Type	No. of Contacts	EACH			
			1-24	25-49	50-99	100-249
607-0402	P-3302-CCT	2	2.95	2.53	2.28	2.05
607-0403	P-3303-CCT	3	3.28	2.73	2.46	2.21
607-0404	P-3304-CCT	4	3.44	2.86	2.58	2.32
607-0406	P-3306-CCT	6	3.68	3.15	2.84	2.55
607-0407	P-3306-8-CCT*	6	3.86	3.31	2.98	2.68
607-0408	P-3308-CCT	8	4.04	3.47	3.12	2.81
607-0412	P-3312-CCT	12	4.88	4.10	3.69	3.33
607-0422	PG-3312-CCE	12	8.76	7.88	7.09	6.38

Sockets (Cable Clamp Top) — Fig. B

607-0552	S-3302-CCT	2	3.19	2.74	2.46	2.22
607-0553	S-3303-CCT	3	3.46	2.88	2.59	2.33
607-0554	S-3304-CCT	4	3.65	3.03	2.73	2.46
607-0556	S-3306-CCT	6	4.04	3.46	3.12	2.81
607-0557	S-3306-8-CCT*	6	4.04	3.64	3.28	2.95
607-0558	S-3308-CCT	8	4.58	3.85	3.47	3.12
607-0562	S-3312-CCT	12	5.53	4.98	4.48	4.03

Plugs with Panel Latch — Fig. C

For locking a cable-mounted connector with latch to a panel-mounted connector. Used with AB angle bracket. The latch will engage chassis up to 1/16" thick, max.

Stock No.	Mfr.'s Type	No. of Contacts	EACH			
			1-24	25-49	50-99	100-249
607-0442	P-3302-CCT-L	2	4.55	4.13	3.79	3.25
607-0443	P-3303-CCT-L	3	5.13	4.35	3.94	3.66
607-0444	P-3304-CCT-L	4	4.81	4.24	3.84	3.57
607-0446	P-3306-CCT-L	6	5.09	4.49	4.07	3.78
607-0447	P-3306-8-CCT-L*	6	5.56	4.68	4.28	3.97
607-0448	P-3308-CCT-L	8	5.19	4.68	4.27	3.97
607-0452	P-3312-CCT-L	12	6.13	5.51	5.04	4.68

Sockets with Keeper — Fig. D

For connecting two cable-mounted connectors.

607-0602	S-3302-CCT-K	2	4.64	4.09	3.65	3.28
607-0604	S-3304-CCT-K	4	5.20	4.68	4.21	3.79
607-0606	S-3306-CCT-K	6	5.70	5.13	4.62	4.15
607-0607	S-3306-8-CCT-K*	6	5.98	5.38	4.84	4.36
607-0608	S-3308-CCT-K	8	6.41	5.77	5.20	4.68
607-0612	S-3312-CCT-K	12	8.12	7.38	6.25	5.80

Sockets with Deep Brackets — Fig. E

607-0666	S-3306-DB	6	4.80	4.23	3.83	3.56
607-0667	S-3306-8-DB*	6	5.04	4.44	4.02	3.74
607-0672	S-3312-DB	12	6.62	5.95	5.36	4.82

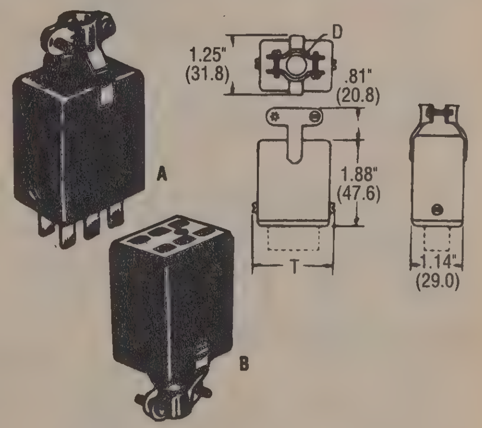
Sockets with Angle Brackets — Fig. F

607-0632	S-3302-AB	2	2.03	1.74	1.48	1.34
607-0633	S-3303-AB	3	2.11	1.81	1.55	1.39
607-0634	S-3304-AB	4	2.10	1.80	1.62	1.46
607-0636	S-3306-AB	6	2.54	2.18	1.96	1.77
607-0637	S-3306-8-AB*	6	2.67	2.29	2.06	1.85
607-0638	S-3308-AB	8	3.06	2.62	2.36	2.13
607-0642	S-3312-AB	12	4.01	3.61	3.25	2.92

*Polarized.

Series 5400 15 Amp

Cable clamp top connectors are designed for use in panel and cable mounting applications. They are interchangeable with Series 2400 or 400 type connectors. **Current Rating (Individual Contacts):** 15 amps. **Voltage Rating:** 1750 volts; 250 volts (UL rated at 250 V, AC or DC max. between adjacent contacts). **Plug Contact Material:** Brass, cadmium plated. **Socket Contact:** Phosphor bronze, cadmium plated. **Pre-Grounding Contact Rating:** Up to 30 amps at rated voltages. **Pre-Grounding Contact Material:** Heavy-duty plated brass. **Base Insulating Material:** High-grade phenolic, black. **Backshell:** Thermoplastic. **Includes:** Steel, bright nickel electroplated cable clamp and screws. UL recognized, File No. E34763. CSA certified, File No. 22156.



Plugs — Fig. A

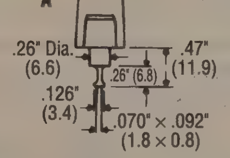
Stock No.	Mfr.'s Type	No. of Contacts	Dimensions (In.)		EACH			
			D	T	1-24	25-49	50-99	100-249
607-0754	P-5404-CCT	4	0.44	0 1.23	6.49	5.84	5.26	4.73
607-0756	P-5406-CCT	6	0.44	0 1.67	7.35	6.61	5.95	5.36
607-0758	P-5408-CCT	8	0.56	0 2.11	8.04	7.24	6.51	5.86
607-0762	P-5412-CCT	12	0.63	0 2.98	9.30	8.37	7.53	6.78

Sockets — Fig. B

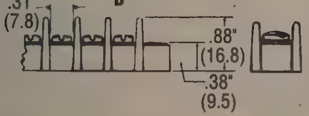
607-0854	S-5404-CCT	4	0.44	0 1.23	7.03	6.32	5.69	5.12
607-0856	S-5406-CCT	6	0.44	0 1.67	7.81	7.02	6.32	5.69
607-0858	S-5408-CCT	8	0.56	0 2.11	8.64	7.78	7.00	6.30
607-0862	S-5412-CCT	12	0.63	0 2.98	10.31	9.28	8.35	7.52

Series 72000 Single Row Terminal Strips

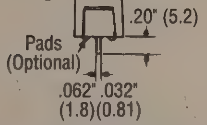
A



B



C



Single row types have the terminals imbedded into the walls of the insulator on both sides. This provides a pull-out strength over twice as great as competitive designs. High barrier construction offer lower overall height. **Specifications. Terminal Centers:** 3/8". **Current Rating (UL):** 20 amps. **Voltage Rating: rms:** UL recognized, Class B — 250; Class — 150. **CSA Certified:** 300 @ 20 amps. **Withstand Volts, rms:** 10500. **Insulator Material:** Thermoplastic, glass-filled. UL temp. index, 95°C. **UL Flame Retardant Rating:** 94V-0. Black. **W × H:** 5/8 × 21/32". **Max. AWG:** 14. **Terminal Screws:** No. 6-32 × 1/4" binding head screws. Steel, cadmium plated. PC bottom terminals are brass, bright electro-tinned.

Insulated Solder Turret — Fig. A

Stock No.	Mfr.'s Type	No. of Circuits	EACH			
			1-24	25-49	50-99	100-249
607-0922	72202	2	.99	.91	.77	.69
607-0923	72203	3	1.39	1.20	1.02	.92
607-0924	72204	4	1.72	1.48	1.27	1.15
607-0926	72206	6	2.31	2.00	1.71	1.54
607-0928	72208	8	2.80	2.43	2.18	1.97
607-0930	72210	10	4.02	3.45	3.10	2.79
607-0932	72212	12	4.00	3.47	3.12	2.81

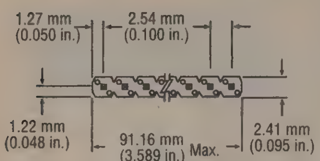
Closed Black Type — Fig. B

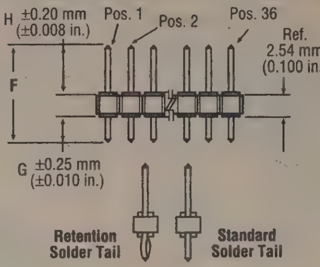
607-0902	72102	2	.98	.89	.75	.68
607-0904	72104	4	1.55	1.34	1.14	1.03
607-0906	72106	6	2.12	1.82	1.56	1.40
607-0908	72108	8	2.56	2.20	1.98	1.78
607-0910	72110	10	3.11	2.67	2.40	2.16
607-0912	72112	12	3.59	3.08	2.77	2.49

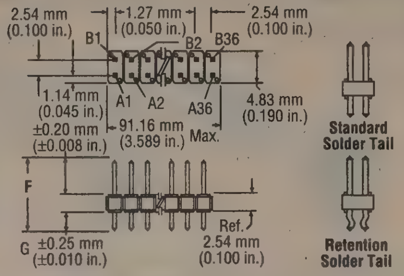
PC Bottom Terminal Type (.20" L × .062" × .032") — Fig. C

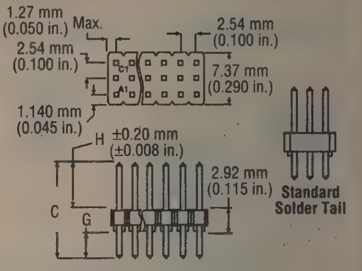
607-0952	72502	2	.90	.81	.69	.62
607-0954	72504	4	1.46	1.26	1.08	.97
607-0956	72506	6	2.03	1.75	1.49	1.35
607-0958	72508	8	2.46	2.12	1.91	1.72
607-0960	72510	10	3.50	3.00	2.70	2.43
607-0962	72512	12	3.49	3.02	2.71	2.44

Bergstik® II Headers









"Retentive sticks" headers have optional retention tail that provides 0.5 lb. minimum retention prior to soldering on 0.062 inch thick p.c. boards. Can be manually broken to the desired length. Drawn 0.025 inch square wire presents four surfaces suitable for the wrapping. Pins positioned on 0.100" centers. Stand-offs allow cleaning to eliminate soldering contaminates. Header body made of glass-filled nylon rated UL 94V-0, color black. **Insulation Resistance:** 500 MΩ minimum. **Temperature Range:** -65°C to +105°C. **Withstanding Voltage:** 1500 Vrms at sea level. Phosphor bronze pin, current rating, 3 A maximum. Retention force to body, 2 lbs. in either direction. UL recognized, CSA certified.

Straight Single Row Solder Tail

Stock No.	Mfr.'s Type	No. of Pos.	Dimensions			Plating	EACH		
			"H" Mating End	"G" Tail End	"F" Overall Length		1-99	100-499	500-999
518-1046	68000-236	36	0.230	0.095	0.425	2	2.57	2.02	1.71
518-1048	68000-436	36	0.230	0.095	0.425	4	1.03	.94	.79
518-1052	68001-236	36	0.230	0.120	0.450	2	2.57	2.02	1.71
518-1054	68001-436	36	0.230	0.120	0.450	4	1.03	.94	.79
518-1058	68002-236	36	0.230	0.150	0.480	2	2.60	2.04	1.73
518-1060	68002-436	36	0.230	0.150	0.480	4	1.28	1.16	.90
518-1064	78511-236	36	0.318	0.120	0.538	2	2.63	2.08	1.76
518-1066	78511-436	36	0.318	0.120	0.538	4	1.03	.94	.79

Straight Double Row Solder Tail

518-1020	67996-272	72	0.230	0.095	0.425	2	5.10	4.02	3.40
518-1022	67996-472	72	0.230	0.095	0.425	4	2.05	1.88	1.44
518-1026	67997-272	72	0.230	0.120	0.450	2	5.10	4.02	3.40
518-1028	67997-472	72	0.230	0.120	0.450	4	2.05	1.88	1.44

Straight Triple Row Solder Tail

Stock No.	Mfr.'s Type	No. of Pos.	Dimensions		Plating	EACH		
			"H" Mating End	"G" Tail End		1-99	100-499	500-999
518-1087	68702-236	108	0.230	0.120	2	9.78	9.03	8.38

Right Angle Single Row Solder Tail

Stock No.	Mfr.'s Type	No. of Pos.	Dimensions			Plating	EACH		
			"H" Mating End	"G" Tail End	"C" Bend Dist. From Plastic		1-99	100-499	500-999
518-1089	68015-236	36	0.230	0.090	0.060	2	2.63	2.08	1.76
518-1091	68015-436	36	0.230	0.090	0.060	4	1.03	.94	.79
518-1090	68016-236	36	0.230	0.120	0.060	2	2.63	2.08	1.76
518-1092	68016-436	36	0.230	0.120	0.060	4	1.03	.94	.79

Right Angle Double Row Solder Tail

Stock No.	Mfr.'s Type	No. of Pos.	Dimensions		Plating	EACH		
			"H" Mating End	"G" Tail End		1-99	100-499	500-999
518-1100	68020-272	72	0.230	0.095	2	5.26	4.14	3.51
518-1102	68020-472	72	0.230	0.095	4	2.05	1.88	1.44
518-1103	68021-272	72	0.230	0.120	2	5.29	4.16	3.53
518-1105	68021-472	72	0.230	0.120	4	2.05	1.88	1.44
518-1107	79257-272	72	0.230	0.120	2	5.32	4.20	3.55
518-1124	79257-472	72	0.230	0.120	4	2.50	2.28	1.76

Plating Codes

2 — 15 μ inch gold over 50 μ inch nickel
4 — 150 μ inch tin-lead
6 — 30 μ inch GXT™ with gold flash over 50 μ inch nickel

Straight Single Row Retentive Solder Tail

Stock No.	Mfr.'s Type	No. of Pos.	Dimensions		Plating	EACH		
			"H" Mating End	"G" Tail End		1-99	100-499	500-999
518-1070	69190-402	2	0.230	0.120	4	.16	.14	.11
518-1072	69190-403	3	0.230	0.120	4	.19	.17	.14
518-1074	69190-404	4	0.230	0.120	4	.26	.23	.17
518-1078	69190-410	10	0.230	0.120	4	.45	.41	.30
518-1071	69190-202	2	0.230	0.120	2	.35	.32	.24
518-1073	69190-203	3	0.230	0.120	2	.42	.37	.28
518-1075	69190-204	4	0.230	0.120	2	.51	.46	.34
518-1076	69190-210	10	0.230	0.120	2	.93	.84	.62
518-1088	69190-610	10	0.230	0.120	6	.87	.73	.56

Straight Double Row Retentive Solder Tail

518-1000	69192-404	4	0.230	0.120	4	.22	.19	.15
518-1002	69192-406	6	0.230	0.120	4	.29	.25	.19
518-1004	69192-408	8	0.230	0.120	4	.38	.33	.26
518-1008	69192-420	20	0.230	0.120	4	.87	.77	.58
518-1001	69192-204	4	0.230	0.120	2	.48	.40	.34
518-1003	69192-206	6	0.230	0.120	2	.58	.51	.39
518-1005	69192-208	8	0.230	0.120	2	.77	.67	.51
518-1007	69192-220	20	0.230	0.120	2	1.76	1.56	1.18

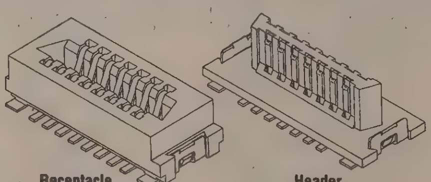
Right Angle Single Row Retentive Solder Tail

Stock No.	Mfr.'s Type	No. of Pos.	'Dimensions			Plating	EACH		
			"H" Mating End	"G" Tail End	"C" Bend Dist. From Plastic		1-99	100-499	500-999
518-1109	69191-402	2	.230	0.120	0.060	4	.16	.14	.11
518-1104	69191-403	3	.230	0.120	0.060	4	.19	.17	.14
518-1106	69191-404	4	.230	0.120	0.060	4	.26	.23	.17
518-1108	69191-405	5	.230	0.120	0.060	4	.29	.25	.19
518-1110	69191-410	10	.230	0.120	0.060	4	.45	.39	.30
518-1111	69191-202	2	.230	0.120	0.060	2	.35	.32	.24
518-1112	69191-203	3	.230	0.120	0.060	2	.48	.43	.32
518-1113	69191-205	5	.230	0.120	0.060	2	.58	.52	.39
518-1114	69191-210	10	.230	0.120	0.060	2	.99	.89	.69

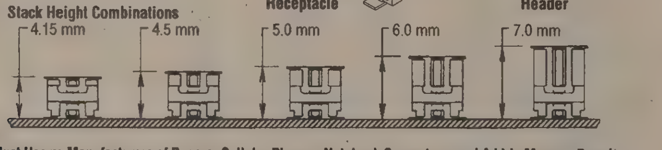
Right Angle Double Row Retentive Solder Tail

Stock No.	Mfr.'s Type	No. of Pos.	Dimensions		Plating	EACH		
			"H" Mating End	"G" Tail End		1-99	100-499	500-999
518-1250	69193-404	4	0.230	0.120	4	.27	.24	.20
518-1251	69193-408	8	0.230	0.120	4	.45	.41	.35
518-1252	69193-420	20	0.230	0.120	4	1.19	1.08	.91
518-1253	78299-204	4	0.230	0.120	2	.48	.43	.35
518-1254	78299-208	8	0.230	0.120	2	.80	.70	.54
518-1255	78299-220	20	0.230	0.120	2	1.80	1.56	1.20

CONAN™ 1.0 mm Pitch Connector System



Stack Height Combinations



► **Product Users: Manufacturers of Pagers, Cellular Phones, Notebook Computers, and Add-In Memory Boards**

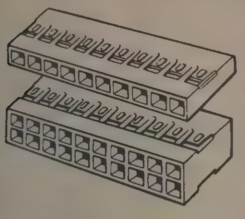
Low-profile, surface-mount connectors for close stacking of parallel circuit boards. Options available for 4.15 mm, 4.5 mm, 5.0 mm, 6.0 mm, or 7.0 mm mated connector height. Connectors feature reliable selectively-plated, blade-on-beam contacts on 1.0 mm pitch. **Current Rating:** 1 amp per contact. UL recognized, CSA certified.

Receptacles

Stuck No.	Mfr.'s Type	No. of Pos.	EACH		
			1-99	100-499	500-999
518-7000	91930-21125	25	2.08	1.89	1.79
518-7005	91930-21141	41	3.07	2.77	2.63
518-7010	91930-21151	51	3.61	3.27	3.10
518-7015	91930-21169	69	4.71	4.25	4.04

Headers

Stock No.	Mfr.'s Type	No. of Pos.	Stacking Height	EACH		
				1-99	100-499	500-999
518-7020	91910-21425	25	6.00 mm	2.02	1.83	1.73
518-7025	91910-21525	25	7.00 mm	2.02	1.83	1.73
518-7030	91910-21141	41	4.15 mm	2.71	2.45	2.32
518-7035	91910-21441	41	6.00 mm	2.98	2.69	2.56
518-7040	91910-21541	41	7.00 mm	2.98	2.69	2.56
518-7045	91910-21151	51	4.15 mm	3.19	2.89	2.73
518-7050	91910-21569	69	7.00 mm	4.57	4.14	3.92



65039/65043 Series
Mini-Latch PV™ Housing

For use with dual metal Mini-PV contacts and crimp-to-wire pins. Allows simultaneous connections of Mini-PV terminated conductors on 0.100" × 0.100" or 0.100" × 0.200" double row, to accommodate Mini-PV receptacles or crimp-to-wire male pins. Accepts crimp-to-wire Mini-PV range AWG 22-36, and crimp-to wire pin AWG 22-32. Made of modified polyphenylene oxide rated UL 94V-1, color Black. **Insulation Resistance:** 1 × 10⁵ MΩ minimum. **Temperature Range:** –40°C to +105°C. **Withstanding Voltage:** 1000 Vrms at sea level. **Latching Force:** 6.5 lbs..minimum per position. Optional polarization plug.

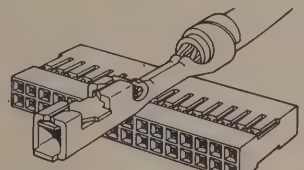
Single Row, 0.100" Centers

Stock No.	Mfr.'s Type	No. of Pos.	Dim. A Inches	EACH		
				1-99	100-499	500-999
518-0150	65039-035	2	0.200	.50	.39	.32
518-0151	65039-034	3	0.300	.55	.41	.34
518-0152	65039-033	4	0.400	.62	.45	.38
518-0153	65039-032	5	0.500	.68	.55	.45
518-0154	65039-031	6	0.600	.72	.59	.48
518-0155	65039-030	7	0.700	.82	.65	.53
518-0156	65039-029	8	0.800	.92	.69	.57
518-0157	65039-027	10	1.000	1.02	.79	.65

Double Row, 0.100 × 0.100" Centers

Stock No.	Mfr.'s Type	No. of Pos.	Dim. A Inches	1-99	100-499	500-999
518-0170	65043-035	4	0.200	.90	.67	.55
518-0171	65043-034	6	0.300	.92	.71	.58
518-0172	65043-033	8	0.400	1.08	.83	.68
518-0173	65043-032	10	0.500	1.21	.91	.75
518-0174	65043-031	12	0.600	1.32	1.03	.85
518-0175	65043-030	14	0.700	1.50	1.16	.96
518-0176	65043-029	16	0.800	1.60	1.22	1.01
518-0177	65043-027	20	1.000	1.78	1.44	1.19
518-0178	65043-017	40	2.000	2.79	2.39	1.98

Bergcon® Crimp-To-Wire MiniPV™ Receptacles



► **Mini-PV Receptacle Shown with Latch Housing**

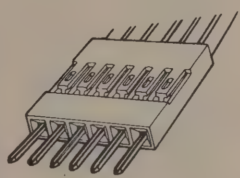
Mate to 0.019 inch and 0.025 inch round or square pins. Dual-metal contact design provides constant retention force after repeated cycles. These female receptacles have beryllium-copper spring and brass body. Offer superior electrical and mechanical characteristics. Standard spring force is recommended for use in Mini-Latch housings 40-72 positions. High spring force for Mini-Latch housings 10-50 positions.

Stock No.	Mfr.'s Type	AWG	Spring Force	Plating*	EACH		
					1-99	100-499	500-999
518-0129	47716-000	18, 20	High	3	.15	.13	.12
518-0130	48266-000	18, 20	Standard	1	.31	.27	.25
518-0003	47750-000	22, 24, 26	Ultra-High	3	.15	.13	.12
518-9997	47712-000	22, 24, 26	High	4	.37	.32	.30
518-0132	48234-000	22, 24, 26	High	1	.30	.26	.24
518-0131	48235-000	22, 24, 26	Standard	1	.30	.26	.24
518-0134	47747-000	22, 24, 26	Standard	3	.15	.13	.12
518-0135	47748-000	28, 30, 32	High	3	.15	.13	.12
518-0133	48252-000	28, 30, 32	Standard	2	.30	.26	.24

*1=30 µ inch gold over nickel with gold flash; 2=15 µ inch gold over nickel with gold flash; 3=100 µ inch tin-lead; 4=40 µ inch gold over nickel with gold flash.

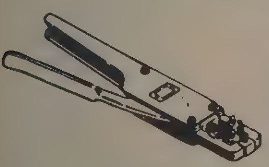
Male Crimp-To-Wire Pins

► **Crimp-to-Wire Pin Shown Installed in Mini-Latch Housing**



Crimp-to-wire pin fits in mini-latch housings. Mates to MiniPV receptacles. 0.100" minimum spacing. Brass contact and gold finish. **Current Rating:** 3 A continuous depending on wire size. **Resistance:** 5 mΩ maximum. **Temperature Range:** –65°C to +125°C. UL recognized.

518-0100. 48115-000. For 28-32 AWG. **1-99**	**EACH .60**
100-999	**EACH .47**
518-0101. 48116-000. For 22-26 AWG. **1-99**	**EACH .60**
100-999	**EACH .47**
518-0102. 48117-000. For 18-20 AWG. **1-99**	**EACH .60**
100-999	**EACH .47**

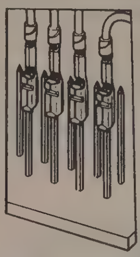


HT Series

Handtools

Lightweight, rugged hand tools have ratchet-action handle that assures complete crimp cycle. For application on crimp-to-wire PV receptacles and pins.

518-0050. HT-73. Mini PV, 18-20 AWG	**EACH 548.08**
518-0051. HT-80. PV Removal Tool	**EACH 1.33**
518-0052. HT-95. Mini PV, 22-32 AWG	**EACH 548.08**
518-0054. HT-49. Maxi PV, 18-20 AWG	**EACH 575.28**
518-0055. HT-48. Mini PV, 22-26 AWG	**EACH 575.28**
518-0056. HT-102. Pin Contacts, 22-32 AWG	**EACH 535.84**
518-0057. HT-110. Pin Contacts, 18-20 AWG	**EACH 612.00**

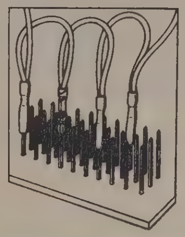


Bergcon® System Crimp-To-Wire MaxiPV™ Receptacles

Two-piece design provides low resistance, high pressure, gas-light connection. Mate to 0.025" round or square pins. 0.125" spacing. Contact has brass body, beryllium copper spring and gold finish. **Current Rating:** 5 A continuous depending on wire size. Type 46227 accepts AWG 18 or 20. Type 46237 accepts AWG 22, 24, or 26. **Resistance:** 4 mΩ maximum. **Temperature Range:** –65°C to +125°C. Come with standard spring force, recommended for Maxi-Latch housing 12 through 56 positions. UL recognized, CSA certified.

518-0120. 46227-000. **1-99**	**EACH .45**
100-999	**EACH .36**
518-0121. 46237-000. **1-99**	**EACH .45**
100-999	**EACH .36**

Daisy Chain Jumpers



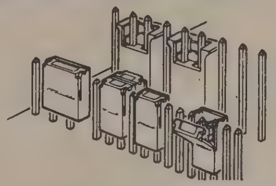
► **MAXI-PV Contacts Provide Constant High Electrical and Mechanical Reliability After Repeated Cycles**

► **Board As Shown Not Included With Jumpers**

Eliminate wire measuring, stripping, soldering or hand-tool terminating. Maxi-PV contacts provide constant high electrical and mechanical reliability after repeated cycles. Contact has brass body and beryllium.copper spring. **Contact Area:** 1 µm (40 µ inch) gold over nickel. **Reminder:** Gold flash. **Current Rating:** 2.5 A. **Resistance:** 4 mΩ maximum. **Insertion Force (Max.):** 4,30 N (430 gf) with withdrawal force (min.) 0,75 N (75 gf). **Temperature Range:** –65°C to +105°C. AWG 28 stranded copper wire conductor with PVC insulation. PVC shrinkable tubing. **Packaging:** 250 contacts per reel.

518-0001. 47254-000	**PER REEL 232.87**

Bergcon® System Mini Jump™ Jumpers

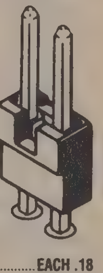


65474 Series. Jumpers feature high density packaging, stackable on 0.100" spacing. Offer single row, two positions per row. For bussing, programming and switch replacement. Replace conventional printed circuit board switches. Virtually eliminates accidental de-programming. Mate with 0.025" square and round pins. Dual metal PV contact design provide excellent retention after repeated cycling. Available in glass-filled thermoplastic polyester housing, color blue. Gold flash over nickel finish. **Insulation Resistance:** 1 × 10⁵ MΩ minimum. **Temperature Range:** –65°C to +125°C. Contact has a brass or cupro nickel body and a beryllium copper spring. Rated at 3 A maximum, with initial resistance of 11 mΩ maximum, 15 mΩ maximum after tests. UL recognized, CSA certified.

Stock No.	Mfr.'s Type	Plating	EACH		
			1-99	100-499	500-999
518-0005	65474-002	100 µ inch tin-lead over nickel	.35	.30	.25
518-0009	65474-010	30 µ inch gold over nickel	.43	.38	.31

Low Profile Jumper System

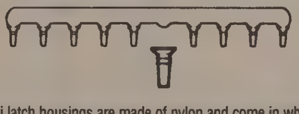
► **Pins Shown Are Not Included with Jumper**



68786 Series. Economy jumper system applicable for bussing, programming, and switch replacement. Low profile permits high-density packaging. Dual beam contact. Offer 0.100 inch spacing and two positions standard. Housed in thermoplastic polyester rated UL94V-0, color black. **Insulation Resistance:** 50,000 MΩ minimum. **Temperature Range:** –55°C to +120°C. **Withstanding Voltage:** 750 Vrms. **Contact Current Rating:** 2.5 A maximum. **Resistance:** 15 mΩ maximum. Mates with 0.025 inch square pin. Contact made of phosphor-bronze. Type 68786-202 is plated 30 µ inch gold; 68786-302, 100 µ inch tin/lead.

518-0021. 68786-202. **1-99**	**EACH .18**
100-999	**EACH .15**
518-0022. 68786-302. **1-99**	**EACH .15**
100-999	**EACH .13**

Bergcon® System Polarization Plug



Polarization plugs for mini and maxi latch housings are made of nylon and come in white. **Temperature Range:** –40°C to +105 °C. UL recognized.

518-0025. 65307-001. **1-99**	**EACH .15**
100-999	**EACH .14**

Quickie™ IDC System Connectors

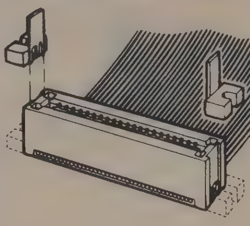
Quickie™ III provides "world class" quality at a globally competitive price. This product line is ideally suited for high-volume applications such as small computers, video equipment, instrumentation, office products, and automotive related packaging schemes.

The Quickie™ III female connector features a single-beam, long-wipe contact that provides a highly reliable electrical connection. The contact is made of a phosphor-bronze base material and is available with gold over nickel, tin/lead, or Berg's exclusive "better than gold" GXT™ plating system.

Quickie™ III headers feature duplex-plated pins with either gold or GXT™ plating in the contact area. The solder-tail portion of the pin is fully plated with tin/lead.

Headers have dual polarization and are compatible with virtually all IDC specifications.

Quickie™ III Edge Card Connectors



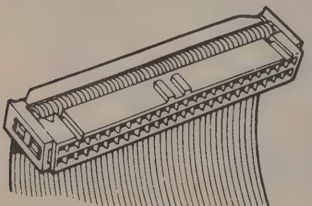
Single-beam configuration provides high contact pressure for reliable electrical performance. Preloaded cover ensures cable positioning and protects contacts. Bridge-type cover enhances connector-to-cable production rates. Molded-in polarization. Housed in glass-filled thermoplastic polyester rated UL94-V-0. **Insulation Resistance:** 1 × 10⁵ MΩ minimum. **Temperature Range:** –65°C to +125°C. **Withstanding Voltage:** 500 Vrms. Contact made of phosphor-bronze. **Current Rating:** 1 A. **Resistance:** 15 mΩ maximum.

Quickie™ III Edge Card Connectors Without Mounting Ears

30 µ GXT™ finish.

Stock No.	Mfr.'s Type	No. of Pos.	EACH			
			1-99	100-499	500-999	1000-4999
518-3009	71905-120	2 × 10	1.80	1.23	1.10	.88
518-3012	71905-126	2 × 13	2.16	1.47	1.32	1.06
518-3016	71905-134	2 × 17	2.55	1.73	1.56	1.25
518-3019	71905-140	2 × 20	3.00	2.04	1.83	1.47
518-3021	71905-144	2 × 22	3.30	2.24	2.01	1.62
518-3024	71905-150	2 × 25	3.66	2.47	2.21	1.78
518-3030	71905-162	2 × 31	4.32	2.94	2.64	2.12
518-3031	71905-164	2 × 32	4.47	3.04	2.73	2.19

Quickie™ III Female Connectors



Pre-loaded adjustable bridge-type cover suits a wide range of cable. Reduces assembly time, protects contacts and offers precise cover-to-base alignment ensuring reliable termination. Cover's feed-through design allows cable to be inserted into either side of the connector for cable-end terminations. Also allows connector to pass smoothly over cable for daisy chain applications. Serrated slots in the cover assure accurate positioning of the cable over the contacts during assembly. Long wiping action ensures good contact. Polarization by means of polarization plug. Glass-filled thermoplastic polyester body rated UL94-V-0. **Insulation Resistance:** 1 × 10⁵ MΩ minimum. **Temperature Range:** –65°C to +125°C. **Withstanding Voltage:** 1000 Vrms. Phosphor bronze contact has finish of 30 µ GXT over pre-plated nickel. **Current Rating:** 1 A. **Resistance:** 15 mΩ maximum.

Central And Dual Polarization Quickie™ III Female Connectors

Standard female assembly includes strain relief.

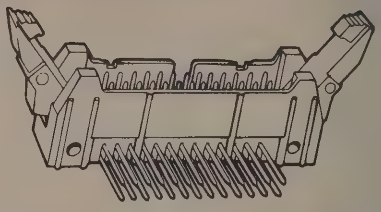
Stock No.	Mfr.'s Type	No. of Pos.	EACH			
			1-99	100-499	500-999	1000-4999
518-3100	71602-010	2 × 5	.77	.63	.49	.40
518-3102	71602-014	2 × 7	.92	.73	.58	.48
518-3104	71602-016	2 × 8	1.01	.83	.64	.52
518-3106	71602-018	2 × 9	1.13	.84	.71	.58
518-3108	71602-020	2 × 10	1.25	1.04	.78	.64
518-3110	71602-026	2 × 13	1.61	1.16	1.00	.81
518-3112	71602-034	2 × 17	2.09	1.63	1.29	1.05
518-3114	71602-040	2 × 20	2.33	1.92	1.44	1.17
518-3116	71602-044	2 × 22	2.51	1.77	1.55	1.26
518-3118	71602-050	2 × 25	2.78	2.23	1.72	1.39
518-3120	71602-060	2 × 30	3.17	2.22	1.95	1.58
518-3122	71602-064	2 × 32	3.32	2.33	2.04	1.65

Dual Polarization Quickie™ III Female Connectors

Standard female assembly includes strain relief.

Stock No.	Mfr.'s Type	No. of Pos.	EACH			
			1-99	100-499	500-999	1000-4999
518-3150	71602-306	2 × 3	.77	.59	.49	.40
518-3152	71602-308	2 × 4	.83	.63	.53	.43
518-3154	71602-310	2 × 5	.77	.63	.49	.40
518-3156	71602-314	2 × 7	.92	.69	.58	.48
518-3158	71602-316	2 × 8	1.01	.76	.64	.52
518-3162	71602-320	2 × 10	1.25	.92	.78	.64
518-3164	71602-326	2 × 13	1.61	1.16	1.00	.81
518-3166	71602-334	2 × 17	2.09	1.63	1.29	1.05
518-3168	71602-340	2 × 20	2.33	1.65	1.44	1.17
518-3172	71602-350	2 × 25	2.78	2.02	1.72	1.39

Quickie™ III Right-Angle Headers

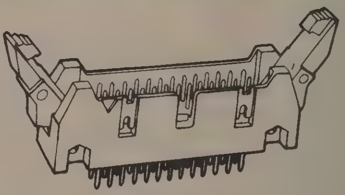


Four-walled shielding protects pins in unmated condition and prevents misalignment. Dual polarization by use of polarization keys. Lock and eject system minimizes PC space required and allows dense packaging design. Feature duplex-plated pins made of phosphor-bronze. **Current Rating:** 1 A. **Finish:** 30 µ" GXT™ over nickel on the two contact sides of the pin and gold flash on the other two non-contact sides. Body is glass-filled thermoplastic polyester rated UL94-V-0. **Insulation Resistance:** 1 × 10⁵ MΩ minimum. **Temperature Range:** –65°C to +125°C. **Withstanding Voltage:** 1000 Vrms. Polarization achieved by cutting off pin and adding polarization plug to mating female connector.

Standard Latch Quickie™ III Right-Angle Headers

Stock No.	Mfr.'s Type	No. of Pos.	EACH			
			1-99	100-499	500-999	1000-4999
518-3200	71922-106	2 × 3	1.05	.80	.69	.58
518-3204	71922-110	2 × 5	1.23	.91	.80	.66
518-3206	71922-114	2 × 7	1.41	1,02	.91	.75
518-3208	71922-116	2 × 8	1.50	1.08	.96	.80
518-3212	71922-120	2 × 10	1.71	1.21	1.09	.90
518-3214	71922-126	2 × 13	2.01	1.53	1.27	1.05
518-3216	71922-134	2 × 17	2.37	1.77	1.49	1.22
518-3218	71922-140	2 × 20	2.76	2.04	1.73	1.41
518-3220	71922-144	2 × 22	3.03	2.22	1.90	1.55
518-3222	71922-150	2 × 25	3.42	2.49	2.13	1.74
518-3224	71922-160	2 × 30	3.99	2.88	2.48	2.02
518-3226	71922-164	2 × 32	4.23	3.16	2.63	2.13

Quickie™ III Straight Header With Dual Polarization Slots



Standard Latch Quickie™ III Straight Headers

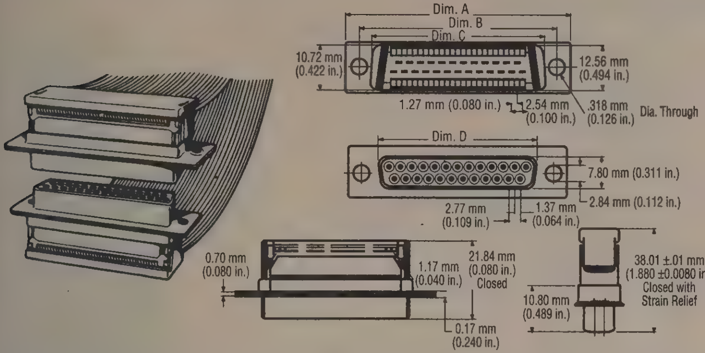
Stock No.	Mfr.'s Type	No. of Pos.	EACH			
			1-99	100-499	500-999	1000-4999
518-3250	71918-106	2 × 3	1.05	.80	.69	.58
518-3254	71918-110	2 × 5	1.23	.91	.80	.66
518-3256	71918-114	2 × 7	1.41	1.02	.91	.75
518-3258	71918-116	2 × 8	1.50	1.08	.96	.80
518-3260	71918-118	2 × 9	1.62	1.26	1.04	.86
518-3262	71918-120	2 × 10	1.71	1.33	1.09	.90
518-3264	71918-126	2 × 13	2.01	1.53	1.27	1.05
518-3266	71918-134	2 × 17	2.37	1.87	1.49	1.22
518-3268	71918-140	2 × 20	2.76	2.04	1.73	1.41
518-3272	71918-150	2 × 25	3.42	3.49	2.13	1.74
518-3274	71918-160	2 × 30	3.99	2.88	2.48	2.02
518-3276	71918-164	2 × 32	4.23	3.04	2.63	2.13

Optional Modular Mounting Hardware for Quickie™ III

Stock No.	Mfr.'s Type	Description	EACH	
			1-99	100-499
518-3040	67041-001	Mounting Ears/Hole	.13	.12
518-3041	67042-001	Mounting Ears/Slot	.13	.12

Quickie III Edge Card Connectors Incorporate optional mounting hardware: To obtain the equivalent of the Quickie II Edge Card Connectors with molded mounting ears and slots, order the corresponding Quickie II Edge Card Connectors and one modular hardware unit (two pieces must be bought to make one unit).

Quickie™ IDC D-Subminiature Connectors



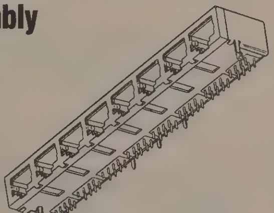
Industry standard connector configurations that allow mating with military and commercial D-subminiature connectors. **Body:** Black glass-filled thermoplastic polyester, rated UL94V-O. **Contacts:** Copper alloy with gold plating over nickel. **Ratings:** 1 amp DC, –65°C to +105°C temperature range. **Termination:** 28 AWG stranded or 30 AWG solid flat, flexible, round conductor cable.

Plastic Version
Series 66167 Plug, Plastic Shell

Stock No.	Mfr.'s Type	Contacts	Plating	EACH 1-24	25-99	100-999
518-4010	66167-009	9	30 µ" gold over nickel	**2.43**	**2.23**	**1.91**
518-4016	66167-015	15	30 µ" gold over nickel	**3.34**	**3.06**	**2.63**
518-4026	66167-025	25	30 µ" gold over nickel	**5.38**	**4.93**	**4.23**
518-4038	66167-037	37	30 µ" gold over nickel	**6.87**	**6.29**	**5.40**
Series 66168 Receptacle, Plastic Shell						
518-4110	66168-009	9	30 µ" gold over nickel	**2.43**	**2.23**	**1.91**
518-4116	66168-015	15	30 µ" gold over nickel	**3.34**	**3.06**	**2.63**
518-4126	66168-025	25	30 µ" gold over nickel	**5.38**	**4.93**	**4.23**
518-4138	66168-037	37	30 µ" gold over nickel	**6.87**	**6.29**	**5.40**
Metal Version **Series 66169 Plug, Steel Shell with Tin-Plating Over Copper**						
518-4009	66169-109	9	30 µ" gold over nickel	**2.95**	**2.71**	**2.32**
518-4015	66169-115	15	30 µ" gold over nickel	**3.90**	**3.57**	**3.06**
518-4025	66169-125	25	30 µ" gold over nickel	**5.48**	**5.02**	**4.30**
518-4037	66169-137	37	30 µ" gold over nickel	**7.55**	**6.92**	**5.94**
518-4059	66169-509	9	15 µ" gold over nickel	**2.95**	**2.71**	**2.32**
518-4065	66169-515	15	15 µ" gold over nickel	**3.90**	**3.57**	**3.06**
518-4075	66169-525	25	15 µ" gold over nickel	**5.48**	**5.02**	**4.30**
518-4087	66169-537	37	15 µ" gold over nickel	**7.55**	**6.92**	**5.94**
Series 66170 Receptacle, Steel Shell with Tin-Plating Over Copper						
518-4109	66170-109	9	30 µ" gold over nickel	**2.95**	**2.71**	**2.32**
518-4115	66170-115	15	30 µ" gold over nickel	**3.90**	**3.57**	**3.06**
518-4125	66170-125	25	30 µ" gold over nickel	**5.48**	**5.02**	**4.30**
518-4137	66170-137	37	30 µ" gold over nickel	**7.55**	**6.92**	**5.94**
518-4159	66170-509	9	15 µ" gold over nickel	**2.95**	**2.71**	**2.32**
518-4165	66170-515	15	15 µ" gold over nickel	**3.90**	**3.57**	**3.06**
518-4175	66170-525	25	15 µ" gold over nickel	**5.48**	**5.02**	**4.30**
518-4187	66170-537	37	15 µ" gold over nickel	**7.55**	**6.92**	**5.94**

Gang Jack Right Angle P.C.B. Assembly

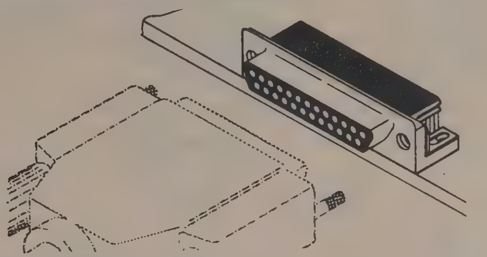
- **Low Profile Style with Snap-In Peg**
- **Additional Ports, Footprints, and Unshielded Versions Available As Special Order Items**



Insulation Resistance: 10 megohms minimum. **Dielectric Withstanding Volts:** 1000 volts RMS 60 Hz. **Current Ratings:** 2.0 amps DC. **Housing Material:** Thermoplastic. **Shielding:** .25 mm thick, copper alloy tin plated.

Stock No.	Mfr.'s Type	No. of Positions	Description	EACH 1-24	25-99
518-7106	94710-002M	8	2 Port Right Angle Shielded	**2.50**	**2.33**
518-7111	94710-004M	8	4 Port Right Angle Shielded	**4.41**	**4.13**
518-7116	94710-006M	8	6 Port Right Angle Shielded	**6.28**	**5.88**
518-7121	94710-008M	8	8 Port Right Angle Shielded	**8.15**	**7.63**

Right Angle D-Subminiature Headers



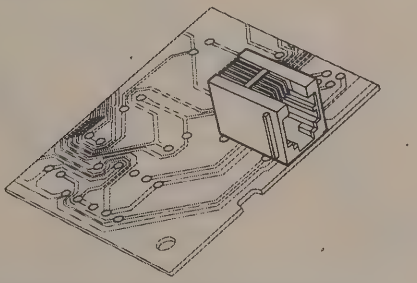
- **Industry Standard Connector Designs Allow Mating with Both Military and Commercial D-Subminiature Connectors**
- **Metal Shells Ensure EMI Protection**
- **Right Angle Plugs and Receptacles Are Available in 9, 15, 25, and 37 Positions; Duplex Plating Is Available in the Contact Areas with 30 µ In. (0.76 µm) of Gold Over 50 µ In. (1.27 µm) of Nickel Underplate, or Gold Flash Over 50 µ In. (1.27 µm) of Nickel Underplate**
- **High Density Versions Use 67% Less Space Than Standard Connectors**
- **All Connectors Are Offered with PWB Grounding and Retentive Feature; All Are Available with or without Hex Standoff**

Product offering includes the most popular versions used in today's market and state-of-the-art high density versions for new designs. These include the popular right angle short (.318) footprint and the traditional long footprint (.590) in 9, 15, 25, and 37 position versions and a high density version, offering 67% greater packaging density, in 15, 44, 62, and 104 position versions.

The housing is glass-filled thermoplastic polyester (UL 94V-0) with insulation resistance of 2 GΩ min. and a temperature range of –40°C to +105°C. Product can withstand voltage of 1000 Vrms min. The shell is a steel strip with a finish of 150 µ in. tin-lead plating. Contact base material-male is brass MIL C50 and the base material-female is phosphor-bronze CDA-510 with a finish of gold flash over 50 µ in. (1.27 µm) nickel underplate at engagement area, 150 µ in. (3.81 µm) tin-lead plate at termination area, or 30 µ in. (0.76 µm) gold over 50 µ in. (1.27 µm) nickel underplate at engagement area, 150 µ in. (3.81 µm) tin-lead plate termination area. The current rating as 2 amps fully loaded with resistance of 30 mΩ max.

Stock No.	Mfr.'s Type	No. of Pos.	Sex	Gold 30	Flash	Footprint Short 0.318	Long 0.590	EACH 1-99	100-499
518-4200	86857-309	9	M	—	X	X	—	**1.37**	**1.24**
518-4202	86857-315	15	M	—	X	X	—	**1.58**	**1.43**
518-4204	86857-325	25	M	—	X	X	—	**1.88**	**1.71**
518-4210	86858-309	9	F	—	X	X	—	**1.39**	**1.27**
518-4212	86858-315	15	F	—	X	X	—	**1.70**	**1.54**
518-4214	86858-325	25	F	—	X	X	—	**1.98**	**1.80**
518-4230	86860-309	9	F	—	X	—	X	**1.56**	**1.42**
518-4232	86860-315	15	F	—	X	—	X	**2.25**	**2.04**
518-4234	86860-325	25	F	—	X	—	X	**2.25**	**2.04**
518-4250	71562-309	9	F	X	—	X	—	**1.84**	**1.67**
518-4254	71562-325	25	F	X	—	X	—	**2.86**	**2.60**

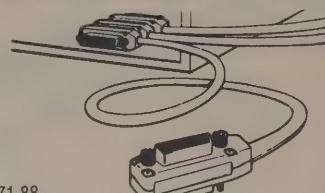
PCB II Modular Jacks

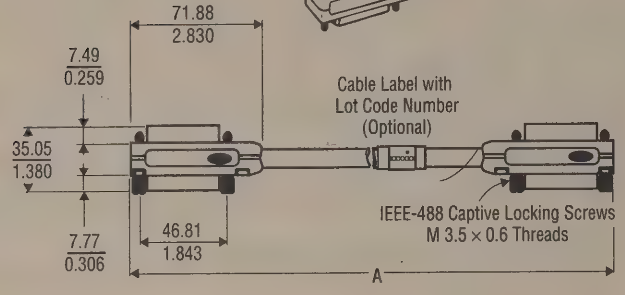


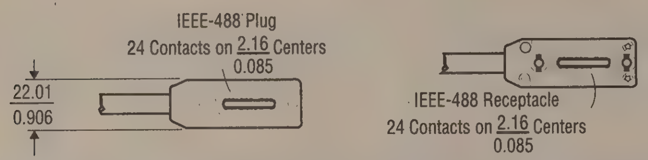
(.100 × .100 in.) centerlines. Vertical and horizontal configurations.

Stock No.	Mfr.'s Type	No. of Pos.	Configuration	EACH 1-499	500-999	1000-4999
518-5070	68897-001	4	Horizontal	**.70**	**.61**	**.52**
518-5075	69253-001	4	Vertical	**.78**	**.68**	**.58**
518-5080	68898-001	6	Horizontal	**.80**	**.71**	**.60**
518-5085	69254-001	6	Vertical	**.80**	**.71**	**.60**
518-5090	68899-001	8	Horizontal	**.91**	**.80**	**.68**
518-5095	69255-001	8	Vertical	**.91**	**.80**	**.68**

GPIB Shielded Cable Assemblies





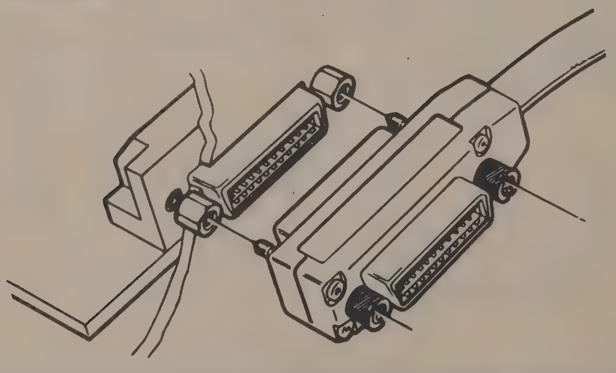


General Purpose Interface Bus assemblies feature double shielded cable, metal cast connector housing and shield termination. Pre-loaded cantilever beam ensures low connector insertion force and minimum contact wear. Interface meets IEEE–488 specifications. **Spacing:** 0.85 inch. Connector has insulation resistance of 10 GΩ minimum, 1 A maximum current rating, and 1,000 cycles durability. Contact force of 101, 5 N per contact, with 24 contacts per connector side. Housed in black glass-filled thermoplastic polyester rated UL94V-0. **Contact:** Beryllium copper with 30 μ inch gold over nickel finish. **Shielded Cover:** Zinc alloy with nickel finish. Black oxidized steel captive locking screw and metric thread. Double shielded cable made of aluminum/mylar polyester film tape with braid and drain wire. Gray PVC insulation. **Material Conductors:** AWG 26-7/34. Signal line resistance is 0.14 μ/m maximum, bulk resistance braid is 0.0085 Ω/m maximum. **Capacitance:** 150 pF/m maximum at 1 kHz. **Impedance:** 70-75 Ω. **Operating Temperature:** 80°C maximum.

Standard GPIB Assembly Lengths

Stock No.	Mfr.'s Type	Dimension A Inches	EACH	
			1-4	5-9
518-4401	81190-005	023.62	**63.93**	**58.60**
518-4402	81190-010	043.30	**68.43**	**62.73**
518-4403	81190-020	082.68	**92.17**	**84.49**
518-4404	81190-040	161.42	**103.02**	**95.10**
518-4405	81190-060	240.16	**123.42**	**114.60**
518-4406	81190-080	318.90	**142.17**	**132.02**

GPIB Headers

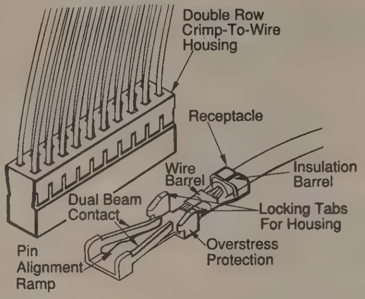


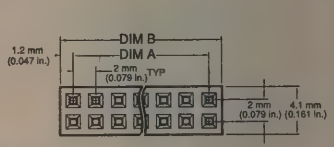
General Purpose Interface Bus Headers have 0.85 inch spacing. Connector has insulation resistance of 10 GΩ minimum, contact resistance of 10 mΩ maximum, withstanding voltage of 1000 VAC RMS, and current rating of 1.5 A maximum. Contact force is 1-1, 5 N per contact and durability is 1000 cycles. 24 contacts. Housed in glass-filled thermoplastic polyester UL listed 94V-0, color black. Contact material is beryllium copper, and finish is 30 μ inch gold over nickel in contact area and 100 μ inch tin-lead over nickel on the soldertail. Shield and R/A bracket are low carbon steel with nickel finish. Threaded clinching nuts are low carbon steel with cadmium and clear chromate. **Temperature Range:** –55°C to +105°C.

Stock No.	Mfr.'s Type	Description	EACH
518-4410	68277-001	4-40 UNC 2B threaded holes	**8.43**

Minitek II 2.0 mm (0.079") Connector System

Crimp-to-Wire Housings





Minitek II is a 2 mm (.079 in.) pitch connector system ideal for dense packaging board to board and wire to board interconnection.

Crimp to Wire Housings (Double Row)

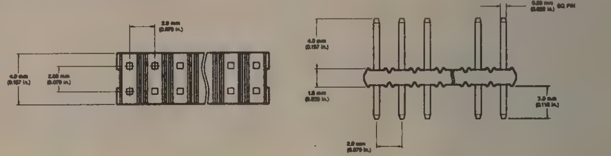
Stock No.	Mfr.'s Type	No. of Pos.	Dimensions		EACH	
			A	B	1-99	100-499
518-5099	69307-004	4	0.079"	0.173"	**.25**	**.23**
518-5100	69307-008	8	0.236"	0.331"	**.24**	**.22**
518-5105	69307-010	10	0.315"	0.409"	**.27**	**.24**
518-5115	69307-014	14	0.472"	0.567"	**.32**	**.29**
518-5125	69307-020	20	0.709"	0.803"	**.37**	**.34**
518-9984	69307-050	50	1.890"	1.984"	**.71**	**.64**

Receptacle Contacts

Stock No.	Mfr.'s Type	Wire AWG	Plating	PER PK./1000
518-5130	77138-001	26-30	8 Micro In. (Min.) Gold over Nickel	**67.74**

Hand-Crimp Tools
518-5140. HT-151. Crimps 26-30 AWG....................**EACH 645.57**

Straight Headers (Double Row)

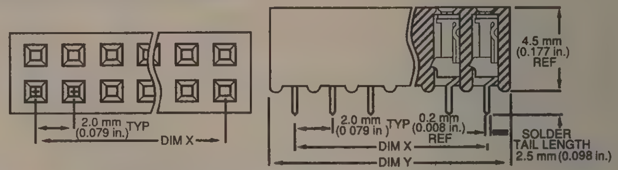


Housing Material: Glass filled nylon. **Contact Plating:** 8 micros in. gold.

Stock No.	Mfr.'s Type	No. of Pos.	EACH		
			1-99	100-499	500-999
518-5155	86451-004	2 × 2	**.24**	**.20**	**.18**
518-5160	86451-008	2 × 4	**.46**	**.37**	**.31**
518-5165	86451-010	2 × 5	**.58**	**.47**	**.40**
518-5175	86451-016	2 × 8	**.91**	**.74**	**.61**
518-5176	86451-020	2 × 10	**.92**	**.83**	**.77**
518-5181	86451-044	2 × 22	**2.56**	**2.04**	**1.70**
518-9987	86451-050	2 × 25	**2.89**	**2.33**	**1.94**

Shunts
Type 86730-001. Minitek II Shunt. **Height:** .138". **Plating:** 8 micro in. (min.) over gold plate. **Color:** Black.
518-5150. 86730-001....................**EACH .12**

Vertical Card Connector (Double Row)



Housing Material: Glass filled PBT. **Contact Plating:** 8 micros in. gold.

518-5225	86455-004	2 × 2	**.33**	**.27**	**.25**
518-5226	86455-008	2 × 4	**.62**	**.51**	**.47**
518-5230	86455-016	2 × 8	**1.22**	**1.02**	**.94**
518-5235	86455-020	2 × 10	**1.33**	**1.11**	**1.02**
518-5240	86455-022	2 × 11	**1.45**	**1.21**	**1.12**
518-5245	86455-040	2 × 20	**2.63**	**2.19**	**2.02**
518-5250	86455-044	2 × 22	**2.90**	**2.42**	**2.23**
518-5265*	86455-144	2 × 22	**3.22**	**2.69**	**2.48**
518-5281	86455-050	2 × 25	**3.28**	**2.74**	**2.53**

***Contact Plating:** 30 micro in. gold.

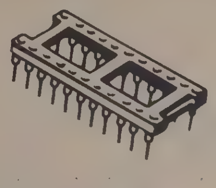
DIP Socket Series

- **Open Frame: For Easy Inspection of Solder Joints and Better Air Flow**
- **Closed Bottom Contacts: Prevents Flux Intrusion and Solder Wicking**
- **Stackability: X and Y Stackable**
- **BeCu Inner Contact: For Optimal Electrical and Mechanical Performance**
- **Accommodates: 6-64 DIP ICs with .015" to .022" Diameter Leads**

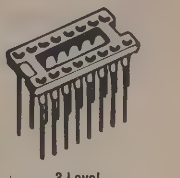
Contact Specification

All types on this page have an inner clip of beryllium copper alloy 172 with a plating of gold over nickel. The outer sleeve is ½ hard brass alloy with tin plating.

Contact Type	Tail Style	Length Inches	Above PCB Height
001B	Solder Tail	0.125	0.165
054B	Solder Tail	0.180	0.165
156B	Solder Tail	0.082	0.083
411B	Wire Wrap	3-Level	0.193
710C	No Tail	No Tail	0.016



Solder Tail



3 Level Wire Wrap Tail

.125 Solder Tail-Gold/Tin Sleeve

Stock No.	Mfr.'s Type	No. of Positions	Length In.	Length mm	Width In.	Width mm	EACH 1-24	EACH 25-99	EACH 100-499
978-1005	DIP-306-001B	6	0.299	7.60	0.399	10.14	.18	.16	.14
978-1010	DIP-308-001B	8	0.399	10.14	0.399	10.14	.29	.26	.20
978-1015	DIP-314-001B	14	0.699	17.76	0.399	10.14	.41	.37	.31
978-1020	DIP-316-001B	16	0.799	20.32	0.399	10.14	.48	.43	.36
978-1025	DIP-318-001B	18	0.899	22.84	0.399	10.14	.52	.47	.39
978-1030	DIP-320-001B	20	0.999	25.37	0.399	10.14	.59	.53	.44
978-1035	DIP-322-001B	22	1.099	27.91	0.399	10.14	.66	.59	.49
978-1040	DIP-324-001B	24	1.199	30.45	0.399	10.14	.70	.63	.53
978-1045	DIP-328-001B	28	1.399	35.55	0.399	10.14	.82	.73	.61
978-1055	DIP-422-001B	22	1.099	27.91	0.499	12.68	.66	.59	.49
978-1060	DIP-424-001B	24	1.200	30.48	0.500	12.70	.70	.63	.53
978-1065	DIP-624-001B	24	1.199	30.45	0.699	17.76	.70	.63	.53
978-1070	DIP-628-001B	28	1.399	35.55	0.699	17.76	.82	.73	.61
978-1075	DIP-632-001B	32	1.600	40.64	0.700	17.78	.95	.86	.71
978-1085	DIP-640-001B	40	1.999	50.79	0.699	17.76	1.18	1.06	.88
978-1090	DIP-648-001B	48	2.399	60.96	0.699	17.76	1.41	1.26	1.05

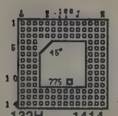
.180 Solder Tail-Gold Clip/Tin Sleeve

Stock No.	Mfr.'s Type	No. of Positions	Length In.	Length mm	Width In.	Width mm	EACH 1-24	EACH 25-99	EACH 100-499
978-1305	DIP-306-054B	6	0.299	7.60	0.399	10.14	.34	.31	.26
978-1310	DIP-308-054B	8	0.399	10.14	0.399	10.14	.45	.41	.34
978-1315	DIP-314-054B	14	0.699	17.76	0.399	10.14	.79	.71	.59
978-1320	DIP-316-054B	16	0.799	20.32	0.399	10.14	.91	.82	.68
978-1325	DIP-318-054B	18	0.899	22.84	0.399	10.14	1.02	.92	.77
978-1330	DIP-320-054B	20	0.999	25.37	0.399	10.14	1.13	1.02	.85
978-1340	DIP-324-054B	24	1.199	30.45	0.399	10.14	1.36	1.22	1.02
978-1345	DIP-328-054B	28	1.399	35.55	0.399	10.14	1.59	1.43	1.19
978-1350	DIP-420-054B	20	0.999	25.37	0.499	12.68	1.13	1.02	.85
978-1355	DIP-422-054B	22	1.099	27.91	0.499	12.68	1.25	1.12	.94
978-1360	DIP-624-054B	24	1.199	30.45	0.699	17.76	1.36	1.22	1.02
978-1365	DIP-628-054B	28	1.399	35.55	0.699	17.76	1.59	1.43	1.19
978-1370	DIP-640-054B	40	1.999	50.79	0.699	17.76	2.27	2.04	1.70
978-1375	DIP-648-054B	48	2.399	60.96	0.699	17.76	2.74	2.47	2.06
978-1380	DIP-964-054B	64	3.199	81.25	0.999	25.38	3.65	3.28	2.74
—	—	—	—	—	—	—	—	—	—

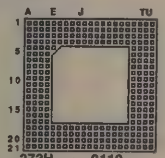
3 Level Wire Wrap-Gold Clip/Gold Sleeve

Stock No.	Mfr.'s Type	No. of Positions	Length In.	Length mm	Width In.	Width mm	EACH 1-24	EACH 25-99	EACH 100-499
978-1406	DWW-306-411B	6	0.299	7.60	0.399	10.14	.54	.49	.41
978-1411	DWW-308-411B	8	0.399	10.14	0.399	10.14	.64	.57	.48
978-1416	DWW-314-411B	14	0.699	17.76	0.399	10.14	1.33	1.17	.97
978-1421	DWW-316-411B	16	0.799	20.32	0.399	10.14	1.50	1.35	1.12
978-1426	DWW-318-411B	18	0.899	22.84	0.399	10.14	1.68	1.51	1.26
978-1431	DWW-320-411B	20	0.999	25.37	0.399	10.14	1.86	1.67	1.39
978-1436	DWW-322-411B	22	1.099	27.91	0.399	10.14	2.04	1.84	1.53
978-1441	DWW-324-411B	24	1.199	30.45	0.399	10.14	2.22	2.00	1.67
978-1446	DWW-328-411B	28	1.399	35.55	0.399	10.14	2.61	2.35	1.96
978-1451	DWW-420-411B	20	0.999	25.37	0.499	12.68	1.86	1.67	1.40
978-1456	DWW-422-411B	22	1.099	27.91	0.499	12.68	2.04	1.84	1.53
978-1548	DWW-424-411B	24	1.200	30.48	0.500	12.70	2.22	2.00	1.67
978-1461	DWW-624-411B	24	1.199	30.45	0.699	17.76	2.22	2.00	1.67
978-1466	DWW-628-411B	28	1.399	35.55	0.699	17.76	2.61	2.35	1.96
978-1471	DWW-640-411B	40	1.999	50.79	0.699	17.76	2.97	2.67	2.23
978-1476	DWW-648-411B	48	2.399	60.96	0.699	17.76	6.16	5.60	5.13
978-1481	DWW-964-411B	64	3.199	81.25	0.999	25.38	12.87	11.59	9.66
—	—	—	—	—	—	—	—	—	—

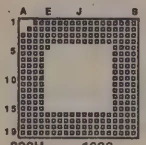
Pin Grid Array Sockets



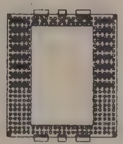
132H 1414 1



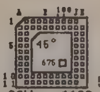
273H 2119 2



238H 1938 3

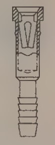


4

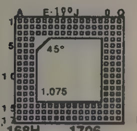


68H 1132 5

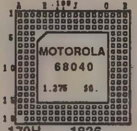
878S Male/Male Gold



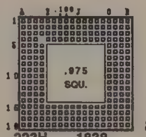
996E Compliant Pressfit Gold/Tin



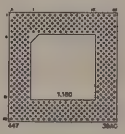
168H 1706 6



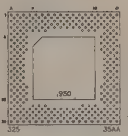
179H 1836 7



223H 1838 8

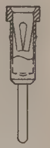


9



10

402B Wire Wrap Gold/Tin



Standard Solder Tail

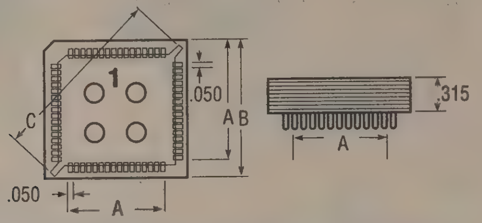
- **Footprint Options: Over 1000 Off-the-Shelf Footprints Available — Please Call!**
- **High Reliability, Ultra Low Insertion Force Pin Grid Array Sockets for Microprocessor, RISC, ASIC, FPGA, and DSP Devices**
- **Solder Tail, High Reliability Screw Machine Contacts**
- **Other Pin Options: 878S — Male/Male; 996E — Compliant Pressfit; 402B — Wire Wrap**
- **All-Solder Tail Pins**

Insulator Body Material: High-temperature 40% glass reinforced UL94V-0. **Outer Sleeve:** ½ hard brass alloy 360. **Inner Contact:** Beryllium copper alloy 172, 6-finger, 10 µ" gold over min. 50 µ" nickel. **Solder Tail Length:** 0.125". **Solder Tail Diameter:** .020". **Rated Voltage:** 100 VRMS/150 VDC. **Temperature Range:** –55°C to 200°C. **Current Rating:** 3 amp max. **Insulation Resistance:** 10 K meg Ω min.

Stock No.	Mfr.'s Type	Fig.	Device	No. of Pins	Matrix	Tail Length	EACH 1-24	EACH 25-99	EACH 100-499
978-5006	PGA 132H012B1-1414R	1	Cyrix CS486DLC Intel i386DX	132	14 × 14	.125	4.49	3.99	3.59
978-5008	PGA 273H008B5-2119R	2	Intel Pentium MPU	273	21 × 21	.125	10.81	9.46	8.03
978-5010	PGA 238H008B5-1938R	3	Intel P24T	238	19 × 19	.125	9.15	7.32	6.59
978-5012	PZA 97212-2642	4	Intel P6	387	P6	.085	24.12	20.10	17.23
978-5014	PGA 68H012B1-1132R	5	Intel 80387 Intel i286	68	11 × 11	.125	2.72	2.32	1.96
978-5016	PGA 168H008B5-1706R	6	Intel i486 Intel 80860 Intel 80960CA	168	17 × 17	.125	5.81	5.17	4.65
978-5018	PGA 179H008B5-1836R	7	MIPS R4000PC Motorola 68040	179	18 × 18	.125	7.08	6.20	5.51
978-5020	PGA 223H008B5-1838R	8	Motorola DSP96002	223	18 × 18	.125	7.73	6.87	6.18
978-5022	PZA 447H011A-39AC	9	MIPS R4000SC and R4400SC	447	39 × 39	.125	26.08	23.94	21.30
978-5024	PZA 325H011A-35AA	10	Texas Instruments TMS320C40	325	35 × 35	.125	18.96	17.42	15.51

PLCC Sockets

Thru-Hole PLCC Sockets

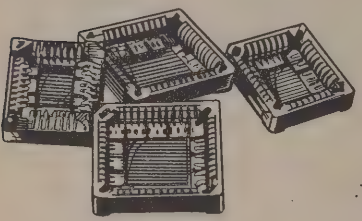


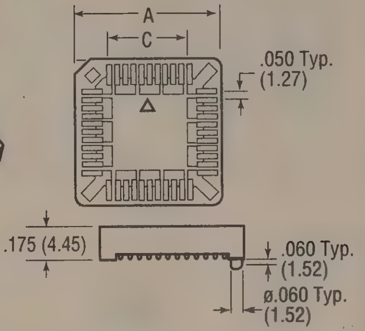
- ▶ Conforms to EIA JEDEC Outline (Type A) for Plastic Lead Chip Carriers
- ▶ Polarization Indicators Assure Positive Chip Carrier Alignment
- ▶ Closed Bottom Prevents Solder Wicking
- ▶ Open Center and Stand-Offs Provide for Cooling and Thorough Cleaning After Soldering
- ▶ .310" Above PCB Profile

Insulator: High-temp. PPS, UL94V-0. **Contacts:** Phosphor bronze 5210. **Plating:** 200 µ" Tin/50 µ" Nickel. **Temperature Range:** PBT — –55°C to +140°C; PPS — –55°C to +220°C.

Stock No.	Mfr.'s Type	No. of Leads	Dimension A		Dimension B		Dimension C		EACH		
			In.	mm	In.	mm	In.	mm	1-24	25-99	100-499
978-2200	PLCC 20P-T	20	0.200	5.08	0.613	15.57	0.722	18.34	.86	.78	.65
978-2205	PLCC 28P-T	28	0.300	7.62	0.713	18.11	0.866	22.00	.86	.78	.65
978-2207	PLCC 32P-T	32	0.400	10.16	0.795	20.19	0.929	23.60	.95	.86	.71
978-2210	PLCC 44P-T	44	0.500	12.70	0.913	23.19	1.145	29.08	.97	.88	.73
978-2215	PLCC 52P-T	52	0.600	15.24	1.060	26.92	1.304	33.12	1.00	.90	.75
978-2220	PLCC 68P-T-2	68	0.800	20.32	1.217	30.91	1.584	40.23	1.07	.96	.80
978-2225	PLCC 84P-T-2	84	1.000	25.40	1.417	35.99	1.865	47.37	1.20	1.08	.90
978-2227	PLCC 100P-T	100	1.200	30.48	1.663	42.24	2.136	54.25	2.77	2.49	2.08

Surface Mount PLCC Sockets





- ▶ Lowest Profile Available: .175" (4.44 mm)
- ▶ Socket Has Standard JEDEC Mounting Pad Layout
- ▶ May Be Reflow Soldered By All Conventional Processes
- ▶ All Solder Joints Are Inspectable
- ▶ Polarization Notch Ensures Correct Alignment
- ▶ Pick and Place Tab for Automated Assembly Equipment (Add -P to Mfr.'s Type)
- ▶ Packaged in Tubes or Tape and Reel

Insulator: High-temp. PPS, UL94V-0. **Contacts:** Phosphor bronze. **Plating:** 150 µ" Tin/40 µ" Nickel. **Temperature Range:** –55°C to +220°C. **Current Rating:** 1 amp.

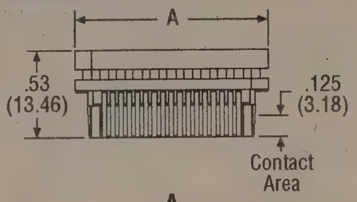
Stock No.	Mfr.'s Type	No. of Leads	Dimension A		Dimension C		EACH		
			In.	mm	In.	mm	1-24	25-99	100-499
978-2100	PLCC 20P-T-SMT	20	0.600	15.24	0.200	5.08	1.02	.92	.77
978-2105	PLCC 28P-T-SMT	28	0.700	17.78	0.300	7.62	1.02	.92	.77
978-2110	PLCC 32P-T-SMT	32	0.700	17.78	0.400	10.16	1.02	.92	.77
978-2115	PLCC 44P-T-SMT	44	0.900	22.86	0.500	12.70	1.20	1.08	.90
978-2120	PLCC 52P-T-SMT	52	1.000	25.40	0.600	15.24	1.50	1.35	1.12
978-2125	PLCC 68P-T-SMT	68	1.213	30.81	0.800	20.32	1.54	1.39	1.16
978-2130	PLCC 84P-T-SMT	84	1.413	35.89	1.000	25.40	1.70	1.53	1.28

PLCC Extraction Tool

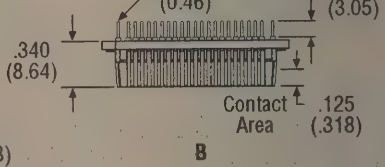
Easy to use extraction tool provides positive protection for both socket and device during removal. **Two Versions Available:** XT-2 for economy and XT-HD for higher performance.

978-2235. TOL PLCC-XT-2. Economy Tool ....EACH 19.38
978-2236. TOL PLCC-XT-HD. Precision Tool ....EACH 134.64

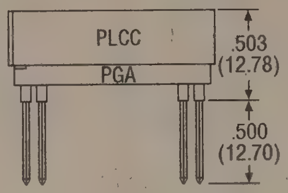
Adapters



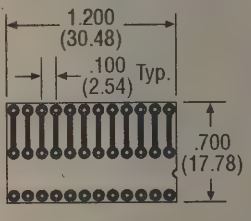
A



B



C



D

PGA to PLCC Adapters — Fig. A

Stock No.	Mfr.'s Type	PGA Top	PLCC Bottom	EACH		
				1-24	25-99	100-499
978-2602	ADP 44PGA/PLCC	8 × 8	44	44.84	40.76	34.49
978-2604	ADP 52PGA/PLCC	9 × 9	52	48.43	44.03	37.25
978-2606	ADP 68PGA/PLCC	11 × 11	68	44.37	40.34	34.13
978-2608	ADP 84PGA/PLCC	13 × 13	84	59.90	54.45	46.07

PLCC to PGA Adapters — Fig. B

978-2610	ADP 44PLCC/PGA	8 × 8	44	43.74	39.76	33.64
978-2612	ADP 52PLCC/PGA	9 × 9	52	28.58	25.98	21.99
978-2614	ADP 68PLCC/PGA	11 × 11	68	40.92	37.20	31.48
978-2616	ADP 84PLCC/PGA	13 × 13	84	66.30	60.27	51.00

PLCC 3-Level Wire Wrap Adapters — Fig. C

Stock No.	Mfr.'s Type	PLCC	EACH		
			1-24	25-99	100-499
978-2620	ADP PLCC20-410B	20	7.55	6.86	5.81
978-2622	ADP PLCC28-410B	28	8.92	8.11	6.86
978-2624	ADP PLCC32-410B	32	9.98	9.07	7.67
978-2626	ADP PLCC44-410B	44	8.67	7.88	6.67
978-2628	ADP PLCC52-410B	52	9.49	8.46	7.16
978-2630	ADP PLCC68-410B	68	12.04	11.14	9.26
978-2632	ADP PLCC84-410B	84	15.16	13.75	11.60
978-2634	ADP PLCC100-410B	100	20.32	18.10	15.32

DIP Package Converters — Fig. D

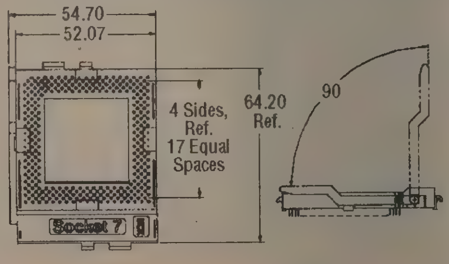
- ▶ Converts .3" DIP Devices to a .6" PCB Configuration for Either 24 or 28 Pin Devices and .6" DIP Devices to a .3" PCB Configuration for 24 and 28 Pin Devices
- ▶ Gold Clip/Tin Shell
- ▶ Hi-Rel Screw Machine Contacts

Stock No.	Mfr.'s Type	Pin Count	PCB Row to Row	Device Row to Row	EACH		
					1-24	25-99	100-499
978-2638	ADP 324/624-011B	24	0.6	0.3	7.95	7.09	6.00
978-2640	ADP 328/628-011B	28	0.6	0.3	8.87	7.90	6.69
978-2642	ADP 624/324-011B	24	0.3	0.6	7.95	7.09	6.00
978-2644	ADP 628/328-011B	28	0.3	0.6	8.87	7.90	6.69

ZIF Sockets

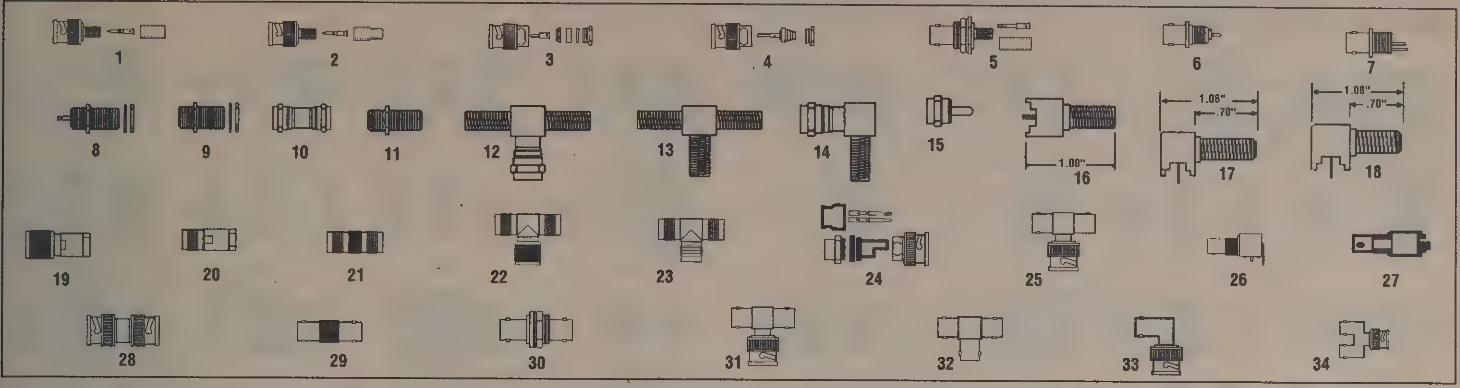
- ▶ Housing: LCP, Glass Filled, UL 94V-0 Rated
- ▶ Contact: Phosphor Bronze
- ▶ Plating (Contact Area): 30 µ" Gold Over 50 µ" Nickel
- ▶ Plating (Soldertail): 100 µ" Tin-Lead Over 50 µ" Nickel
- ▶ Actuator: Die Cast Zinc Alloy
- ▶ Operating Temperature: –55°C to 105°C
- ▶ Operating Voltage: 250 VAC

Stock No.	Mfr.'s Type	Socket No.	No. of Pins	Matrix	EACH		
					1-24	25-99	100-499
978-5000	ZIF 97000-2010	#3	237	19 × 19	5.71	5.10	4.25
978-5002	ZIF 97050-2020	#5	320	19 × 19	9.25	8.32	6.94
978-5004	ZIF 97054-2020	#7	321	19 × 19	9.25	8.32	6.94



RF Connectors For Data Interconnect

BOMAR
INTERCONNECT PRODUCTS, INC.



These high quality RF connectors are approved for use by the major manufacturers of computer networks and are used extensively for all interconnecting and accessory cables and panels.

BNC 3 Piece Crimp Plugs For Cable Mount

These 3 piece, dual crimp connectors feature Posi-Click contacts that "click" into place when installed insuring a perfect assembly. All crimp pins are gold plated and have a vent hole for optional soldering.

Stock No.	Mfr.'s Type	Fig.	RG/U Cable	EACH		
				1-24	25-99	100-499
202-0101	310A205A18	1	6 (18 AWG)	**2.39**	**2.01**	**1.78**
202-0102	310A205F	1	58 Stranded Conductor, 141	**1.98**	**1.67**	**1.48**
202-0104	310A205FS	1	58 Solid Conductor	**2.06**	**1.73**	**1.54**
202-0106	310A205FV	2	58 Thin-Net Plenum	**2.06**	**1.73**	**1.54**
202-0108	310A205FV2	2	RGB Monitor Cable	**2.51**	**2.11**	**1.88**
202-0110	310A204G	1	59, 62, 210 PVC	**2.02**	**1.70**	**1.51**
202-0112	310A205MV	2	174, 188, 316 (4 Pc.)	**2.31**	**1.94**	**1.72**
202-0114	310A205N	2	179, 187 (4 Pc.)	**2.31**	**1.94**	**1.72**
202-0116	310A205P	1	223	**2.06**	**1.73**	**1.54**
202-0118	310B205Q	1	True 75 Ohm/8281	**3.34**	**2.81**	**2.49**
202-0120	310A204T	2	59, 62 Plenum	**2.14**	**1.80**	**1.60**
202-0122	310A208W2	1	Mini 59 Coax, RGB 26 AWG	**1.85**	**1.56**	**1.38**

BNC Clamp Type Plugs, Standard and Taper Grip

Regular clamp types use a five piece construction while taper grip styles are of three piece design and require little cable preparation. Both types tightly clamp the shield to the connector body. Soldering on the contact pin is required. All materials are machined brass with gold contacts.

Stock No.	Mfr.'s Type	Fig.	RG/U Cable	EACH		
				1-24	25-99	100-499
202-0172	310A105F	3	58, 58A, 58C, 141	**2.31**	**1.94**	**1.72**
202-0174	310A105G	3	59, 62, 214	**2.55**	**2.15**	**1.91**
202-0178	310A304F	4	58, 58A, 58C, 141	**3.79**	**3.18**	**2.83**
202-0180	310A304G	4	59, 62, 214	**3.71**	**3.12**	**2.77**

BNC Bulkhead Jacks

Versions available for front mounting (F/M), rear mounting (R/M), crimp types, panel grounded, or isolated. These jacks are held in the panel by a hex-nut and lock washer. All units feature nickel plated brass bodies, gold/phosphor bronze contacts.

Stock No.	Mfr.'s Type	Fig.	Description	EACH		
				1-24	25-99	100-499
202-0200	321A245A	5	R/M Crimp, 6½"	**4.00**	**3.43**	**3.08**
202-0202	321A245F	5	R/M Crimp, 58½"	**4.12**	**3.46**	**3.08**
202-0206	321A245G	5	R/M Crimp, 59, 62, 214, ½"	**4.12**	**3.46**	**3.08**
202-0208	321A245M	5	R/M Crimp 174, 178, 316, ½"	**4.12**	**3.46**	**3.08**
202-0210	326A515	6	F/M Solder (Grounded) ⅜"	**1.44**	**1.21**	**1.08**
202-0212	326R515	7	F/M Solder (Isolated) ⅜"	**1.77**	**1.47**	**1.32**

Color Coded BNC Bulkhead Jacks

In addition to Bomar's white Valox isolated bulkhead jack, three new versions are available with a red, green, and blue insulated panel bushing and the matching color internal insulator. These are excellent for RGB interconnect applications — instantly color codes your panel ports. For panel thicknesses up to .125 inch. Special colors available with minimum order requirements.

Stock No.	Mfr.'s Type	Fig.	Description.	EACH		
				1-24	25-99	100-499
202-0212	326R515	7	F/M Solder (Isolated) White Bushing	**1.77**	**1.47**	**1.32**
202-0216	326R515RD	7	F/M Solder (Isolated) Red Bushing	**2.67**	**2.14**	**1.78**
202-0218	326R515GN	7	F/M Solder (Isolated) Green Bushing	**2.67**	**2.14**	**1.78**
202-0220	326R515BL	7	F/M Solder (Isolated) Blue Bushing	**2.67**	**2.14**	**1.78**

"F Jacks and Adapters" — *NEW* —

F type jacks for bulkhead, inline or PC Board, and a variety of adapters are all machined brass construction. Variations of these items and special configurations are available upon request.

Stock No.	Mfr.'s Type	Fig.	Description	EACH		
				1-24	25-99	100-499
202-0221	826B519	8	Bulkhead Jack, Solder Tab	**.56**	**.48**	**.41**
202-0222	832A519N	9	Inline Female/Female with Nut and Washer	**.67**	**.58**	**.50**
202-0224	830A509	10	Inline, Male/Male	**1.25**	**1.07**	**.94**
202-0226	832A519	11	Inline, Female/Female	**.60**	**.52**	**.44**
202-0228	843A509	12	"T" Adapter, Female/Male/Female	**2.07**	**1.77**	**1.53**
202-0230	845A509	13	"T" Adapter, Female/Female/Female	**3.86**	**3.31**	**2.81**
202-0232	851A509	14	Right Angle Adapter, Male/Female	**1.44**	**1.24**	**1.10**
202-0234	F0884	15	75 Ohm Male Terminator	**.44**	**.38**	**.32**
202-0236	861A509	16	PC Board Jack, Vertical	**.83**	**.72**	**.61**
202-0240	864B509	17	PC Board Jack, Right Angle, Long	**1.56**	**1.39**	**1.16**
202-0242	864B509S	18	PC Board Jack, Right Angle, Short	**1.48**	**1.29**	**1.06**

Connectors For Twinax Cables

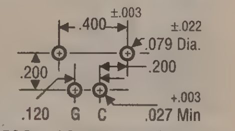
Standard Twinax connectors are impedance matched for 100 ohm cables and are used extensively with IBM computer systems. BNC *Satconn Twin* is a crimp (or solder) plug with a patented design that simplifies assembly and uses a comparatively inexpensive Bomar hand tool. For .242" diameter twinaxial cables.

Stock No.	Mfr.'s Type	Fig.	Description	EACH		
				1-24	25-99	100-499
202-0400	210A104R	19	Twinax Cable Plug	**5.40**	**4.63**	**4.15**
202-0402	220A106R	20	Twinax Cable Jack	**9.12**	**7.82**	**7.02**
202-0404	232A006	21	Twinax Fem./Fem. Inline	**6.96**	**5.97**	**5.35**
202-0406	243A006	22	Twinax "T" F/M/F	**17.60**	**15.09**	**13.54**
202-0408	245A006	23	Twinax "T" F/F/F	**15.20**	**13.03**	**11.69**
202-0410	410A903Y1	24	BNC Twin Crimp Plug	**6.24**	**5.35**	**4.80**
202-0412	443A505	25	BNC Twin F/M/F "T"	**11.60**	**9.94**	**8.92**

202-0414. BD10410. Crimp Tool For 410A903Y1 ....**EACH 130.00**

Printed Circuit Board BNC Jacks

These popular BNC board jacks meet or exceed the highest industry standards. They are available in many standard configurations as shown. Additional versions are available upon request. All isolated jacks are constructed with molded Valox, in White or Black, over nickel plated zinc bodies. Contacts are Phosphor Bronze and plated with tin or gold. All metal versions are fully shielded. They are nickel plated zinc and utilize the same phosphor bronze contacts in either tin or gold plating.



PC Board Configuration (Top View)

Stock No.	Mfr.'s Type	Fig.	Type	Description	EACH		
					1-24	25-99	100-499
202-0250	364A595	26	Right Angle	Standard Profile, White, Gold	**1.44**	**1.21**	**1.08**
202-0254	364A595B	26	Right Angle	Standard Profile, Black, Gold	**2.06**	**1.73**	**1.54**
202-0258	364A595BL	26	Right Angle	Low Profile, White, Gold	**1.44**	**1.21**	**1.08**
202-0262	364A595BLB	26	Right Angle	Low Profile, Black, Gold	**1.98**	**1.67**	**1.48**
202-0266	364M595	26	Right Angle	Standard Profile, Metal, Gold	**2.72**	**2.28**	**2.03**
202-0270	364M595L	26	Right Angle	Low Profile, Metal, Gold	**2.72**	**2.28**	**2.03**
202-0274	364S595	27	Vertical	Standard Profile, White, Gold	**2.06**	**1.73**	**1.54**
202-0278	364S595B	27	Vertical	Standard Profile, Black, Gold	**2.10**	**1.77**	**1.57**
202-0282	364S595M	27	Vertical	Standard Profile, Metal	**2.68**	**2.25**	**2.00**
202-0286	364LW	—	Hardware	Lock Washer For Panel Mounting	**.08**	**.07**	**.06**
202-0288	364NT	—	Hardware	Jam Nut For Panel Mounting	**.16**	**.14**	**.12**

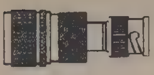
BNC Adapters and *"The Goalie"*

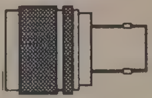
The internal design offers the lowest possible reflected signal (VSWR) and guarantees no oxidation at the internal contact points as the connector ages. *"The Goalie"* is rated at 3 GHz with a VSWR of 1.12:1.

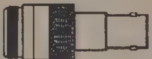
Stock No.	Mfr.'s Type	Fig.	Description	EACH		
				1-24	25-99	100-499
202-0300	330A505	28	Male/Male Inline splice	**3.79**	**3.18**	**2.83**
202-0302	332A505	29	Fem./Fem. Inline splice	**2.27**	**1.91**	**1.69**

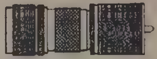
Stock No.	Mfr.'s Type	Fig.	Description	EACH		
				1-24	25-99	100-499
202-0304	335A544	30	Fem./Fem. Bulkhead	**3.79**	**3.18**	**2.83**
202-0306	335R544	30	Fem./Fem. Bulkhead *Isolated*	**4.57**	**3.85**	**3.42**
202-0308	343A505	31	Fem./Male/Fem. "T"	**3.03**	**2.55**	**2.26**
202-0310	345A505	32	Fem./Fem./Fem. "T"	**5.15**	**4.33**	**3.85**
202-0312	351A505	33	Fem./Male Right Angle	**4.28**	**3.81**	**3.20**
202-0314	383U505	34	The Goalie	**7.85**	**6.28**	**5.23**
202-0535	383K505	34	*The Brute Goalie*	**8.07**	**6.91**	**5.95**

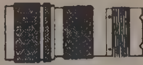
Between Series Adapters

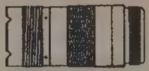

1

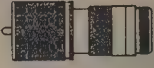

2

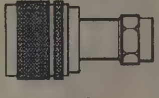

3

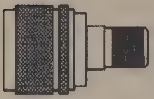

4

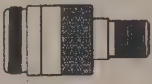

5

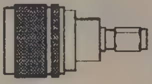

6

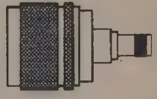

7

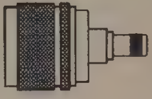

8

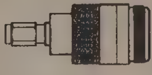

9

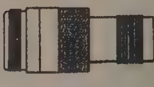

10

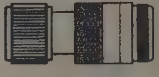

11

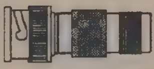

12

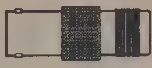

13

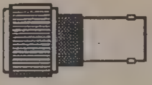

14

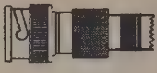

15

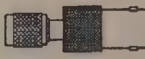

16

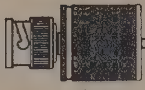

17

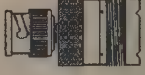

18

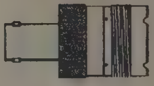

19

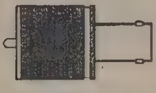

20

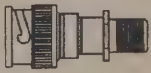

21

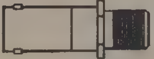

22

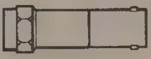

23

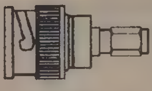

24

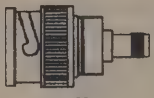

25

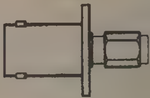

26

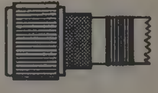

27

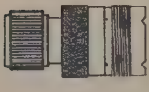

28

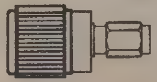

29

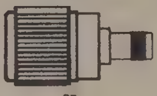

30

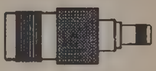

31

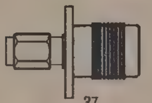

32

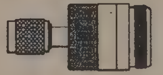

33

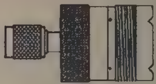

34

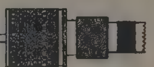

35

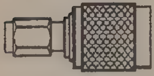

36

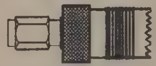

37

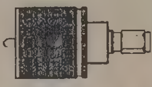

38

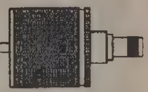

39

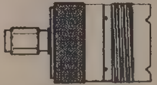

40

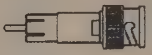

41

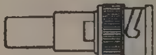

42

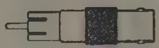

43

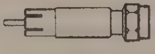

44

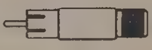

45

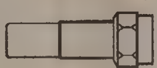

46

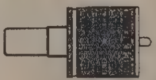

47

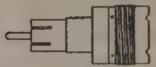

48


49


50


51


52

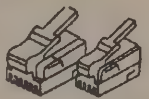

53

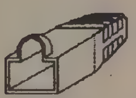
Between Series Adapters solve a variety of connection problems where connectors of different types could ordinarily not be mated together. Each adapter has a different type coupling at each end allowing for a wide variety of interconnections to fit almost all interconnection situations. All adapters are constructed of machined brass and are nickel plated.

Stock No.	Mfr.'s Type	Fig.	Description	EACH		
				1-24	25-99	100-499
202-0605	1303505	1	N Male to Bnc Male	22.40	19.20	16.00
202-0610	1313505	2	N Male to Bnc Female	8.13	6.97	5.81
202-0615	1323505	3	N Female to BNC Female	9.90	8.49	7.07
202-0620	1307505	4	N Male to UHF Male	8.13	6.97	5.81
202-0625	1317505	5	N Male to UHF Female	11.07	9.49	7.90
202-0630	1327505	6	N Female to UHF Female	11.37	9.74	8.12
202-0635	7311505	7	UHF Male to N Female	8.97	7.69	6.40
202-0640	1308505	8	N Male to F Male	7.87	6.74	5.62
202-0645	1318505	9	N Male to F Female	9.30	7.97	6.64
202-0650	1328505	10	N Female to F Female	8.10	6.94	5.79
202-0655	1309505	11	N Male to SMA Male	8.97	7.69	6.40
202-0660	1319505	12	N Male to SMA Female	8.43	7.23	6.02
202-0665	1329505	13	N Female to SMA Female	8.43	7.23	6.02
202-0670	9311505	14	SMA Male to N Female	10.20	8.74	7.29
202-0675	1325505	15	N Female to TNC Female	7.57	6.49	5.40
202-0680	5311505	16	TNC Male to N Female	7.57	6.49	5.40
202-0685	3315505	17	BNC Male to TNC Female	5.47	4.69	3.90
202-0690	3325505	18	BNC Female to TNC Female	7.00	6.00	5.00
202-0695	5313505	19	TNC Male to BNC Female	5.77	4.94	4.12
202-0700	3316505	20	BNC Male to Mini-UHF Female	5.23	4.49	3.74
202-0705	6313505	21	Mini-UHF Male to BNC Female	4.19	3.52	2.90
202-0710	3307505	22	BNC Male to UHF Male	6.40	5.49	4.57
202-0715	3317505	23	BNC Male to UHF Female	5.53	4.74	3.95
202-0720	3327505	24	BNC Female to UHF Female	6.10	5.23	4.36
202-0725	7313505	25	UHF Male to BNC Female	8.13	6.97	5.81
202-0730	3318505	26	BNC Male to F Female	4.81	4.04	3.33
202-0735	3328505	27	BNC Female to F Female	5.13	4.40	3.67
202-0740	8313505	28	F Male to BNC Female	7.57	6.49	5.40
202-0745	3309505	29	BNC Male to SMA Male	7.57	6.49	5.40
202-0750	3319505	30	BNC Male to SMA Female	8.73	7.49	6.24
202-0755	9313505	31	SMA Male to BNC Female	11.63	9.97	8.31
202-0760	5316505	32	TNC Male to Mini-UHF Female	4.26	3.63	3.02
202-0765	5317505	33	TNC Male to UHF Female	5.08	4.27	3.52
202-0770	5309505	34	TNC Male to SMA Male	7.57	6.49	5.40
202-0775	5319505	35	TNC Male to SMA Female	8.73	7.49	6.24
202-0780	5329505	36	TNC Female to SMA Female	7.87	6.74	5.62
202-0785	9315505	37	SMA Male to TNC Female	7.57	6.49	5.40
202-0790	6311505	38	Mini-UHF Male to N Female	6.70	5.74	4.79
202-0795	6317505	39	Mini-UHF Male to UHF Female	5.60	4.80	4.00
202-0800	7316505	40	UHF Male to Mini-UHF Female	9.67	8.29	6.90
202-0805	9306505	41	SMA Male to MIni-UHF Male	7.87	6.74	5.62
202-0810	9316505	42	SMA Male to Mini-UHF Female	7.87	6.74	5.62
202-0815	7309505	43	UHF Male to SMA Male	7.87	6.74	5.62
202-0820	7319505	44	UHF Female to SMA Male	7.87	6.74	5.62
202-0825	9317505	45	SMA Female to UHF Male	8.13	6.97	5.81
202-0830	R0842	46	RCA Male to BNC Male	5.37	4.60	3.83
202-0835	R0843	47	RCA Female to BNC Male	3.22	2.72	2.24
202-0840	R0844	48	RCA Male to BNC Female	4.24	3.46	2.78
202-0845	R0847	49	RCA Male to F Male	3.43	2.89	1.88
202-0850	R0849	50	RCA Male to F Female	2.99	2.51	2.07
202-0855	R0851	51	RCA Female to F Male	2.71	2.28	1.88
202-0860	R0811	52	RCA Female to UHF Male	4.37	3.74	3.12
202-0865	R0822	53	RCA Male to UHF Female	2.91	2.33	1.94
—	—	—	—	—	—	—

RJ45 Category 5 Plugs and Boots

Category 5 Liner Plugs are supplied with an insertable liner for the conductors. The separated conductors are inserted into the liner, cut off squarely at bottom, inserted into RJ45 plug, then perfectly crimped. CXB300 series boots finish the installation with a color-coded strain relief assuring optimum performance.

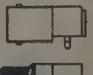


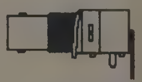


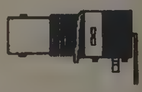
Stock No.	Mfr.'s Type	Description	EACH		
			1-24	25-99	100-499
202-1000	300568	8P8C Category 5 Plug for Round Twisted Pair, Solid	.58	.48	.43
202-1002	300568L	8P8C Category 5 Liner Plug for Round Twisted Pair, Solid	1.32	1.11	.98
202-1004	300568S	8P8C Category 5 Shielded Liner Plug for Round Twisted Pair, Solid	2.02	1.71	1.51
202-1006	300168	8P8C Non-Category 5 Plug for Round Twisted pair, Solid	.45	.38	.34
202-1008	300268	8P8C Non-Category 5 Plug for Round Twisted Pair, Stranded	.41	.34	.31
202-1010	300068S	8P8C Non-Category 5 Shielded for Round Twisted Pair, Solid	1.60	1.37	1.23
202-120X	CXB300	RJ45 Strain Relief Cable Boot (Color*)	.41	.34	.31

*Replace "X" in Stock No. for Color Selected; 1 — Beige, 2 — Black, 3 — Blue, 4 — Gree, 7 — White, 8 — Yellow:

Super-Low™ Profile and Filtered BNC Jacks


A


B


C

Super-Low™

This right angle BNC jack is the lowest profile available anywhere. It is fully shielded because it is constructed of a zinc alloy and then plated with nickel. The phosphor bronze contact is plated with 15 micro inches of gold.

Filtered

These BNC right angle BNC printed circuit board jacks are capacitively decoupled by using two 4700 pf chip capacitors. This is the most cost effective way to efficiently filter out noise and eliminate ground loops on coaxial interconnections. Valox bodies are standard in black, but are available in white.

Stock No.	Mfr.'s Type	Fig.	Description	EACH		
				1-24	25-99	100-499
202-0574	364M595M	A	Super-Low Profile R/A PC BNC Jack	2.43	2.04	1.82
202-0575	364F595BLB	B	Filtered Low-Profile PC Jack, White 9400 pF	5.16	4.42	3.97
202-0580	364F595BL	C	Filtered Low-Profile PC Jack, Black 9400 pF	5.16	4.42	3.97

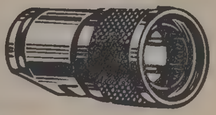
BNC Plugs

Crimp center conductor. Crimp braid with cable strain relief. Attractive wrap-around crimp sleeve flange; **Nominal Impedance:** 50 Ohms. **Working Voltage:** 500 Volts, RMS at Sea Level. **Insulation Resistance:** 500 Megohms Min. **Dielectric Withstanding Voltage:** 1500 Volts, RMS at Sea Level VSWR 1.3 Max at 4 GHz.

Stock No.	Mfr.'s Type	For Cables	EACH	
			1-99	100-499
716-0258	CPMC-88-1	RG-58, 141	1.90	1.60
716-0259	CPMC-88-2	RG-59, RG-62	1.90	1.60

Keyed Twinax Plugs

Impedance: 95 Ohms Nominal. **Frequency Range:** 0-200 MHz. (Usage to 500 MHz with caution). **Voltage Rating:** 500 Volts Peak. **Material:** Contact – Brass, silver plated. **Other Metal Parts:** Brass non-tarnish finish. **Insulator:** Copolymer.



Stock No.	Mfr.'s Type	For Cables	EACH	
			1-99	100-499
716-0450	CP-TX-60	Belden 9207	5.90	5.31
716-0455	CP-TX-62	Belden TFE89207	7.50	6.75

BNC Twist-On Connectors

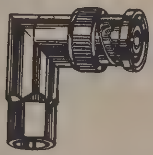
Features patented twist-on cable attachment. No solder or special tools necessary. One-piece construction; utilizes patented self-contained, self-energizing contact.

Male Plugs

Stock No.	Mfr.'s Type	Style	For Cables	EACH			
				1-99	100-499	500-999	1000-Up
716-0881	CPFI-UG88-1	BNC	RG-58	2.16	1.82	1.54	1.39
716-0882	CPFI-UG88-2	BNC	RG-59, RG-62	2.16	1.82	1.54	1.39
716-0883	CPFI-UG88-3	BNC	Belden 8281	2.81	2.36	2.11	1.90
716-0885	CPFI-UG88-5	BNC	RG-6	2.81	2.36	2.11	1.90
716-0890	CPFI-UG88-10	BNC	RG-TFE-59	2.81	2.36	2.11	1.90

Female Jacks

716-0981	CPFI-UG89-1	BNC	RG-58	3.79	3.18	2.84	2.55
716-0982	CPFI-UG89-2	BNC	RG-59, RG-62	3.24	2.73	2.43	2.19

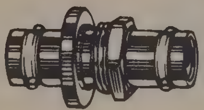


Male Right Angle Plugs

716-0911	CPFI-RA-1	BNC	RG-58	4.94	4.36	3.89	3.50
716-0912	CPFI-RA-2	BNC	RG-59, RG-62	4.94	4.36	3.89	3.50

BNC Adapters

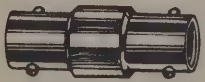
Made of brass (QQ-B-626, Alloy 360, ½ hard), beryllium copper (Alloy No. 25), zamack (QQ-2-363-Comp A), and polyethylene (MIL-P-22748, Class A, Grade 5).



BNC Bulkhead Jack-Jack

Panel Mount Female-Female, ½" "D" Mounting Hole

Stock No.	Mfr.'s Type	Description	EACH			
			1-99	100-499	500-999	1000-Up
716-0411	CP-AD556	BNC Bulkhead Jack-Jack	4.33	3.64	3.24	2.92

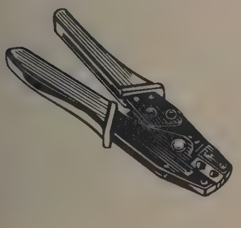


BNC Jack-Jack

Female-Female Splice, 1.275" Length

716-0412	CP-AD555	BNC Jack-Jack	2.60	2.22	1.98	1.78

Controlled Cycle Hand Crimp Tool

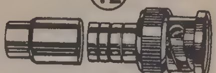


Features interchangeable tool steel dies and controlled ratchet crimp cycle.

Stock No.	Mfr.'s Type	For Cables	EACH	
			1-4	5-9
716-2003	24-300P	RG-58 (2pc)	110.00	99.00
716-1999	24-304P	RG-58 (3pc)	110.00	99.00
716-1998	24-301P	RG-59, 62 (2pc)	110.00	99.00
716-2001	24-305P	RG-59, 62 (3pc)	110.00	99.00
716-2002	24-306P	RG-174	110.00	99.00

BNC Crimp-On Connectors

Features patented one-step termination with strain relief. No crimping center contact or solder needed. Two-piece connector construction; utilizes patented self-contained, self-energizing contact. Same electrical characteristics as BNC twist-on connectors.



Male Plugs

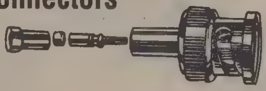
Stock No.	Mfr.'s Type	For Cables	EACH			
			1-99	100-499	500-999	1000-Up
716-8810	CP-88-1	RG-58, 141	2.16	1.82	1.50	1.32
716-8820	CP-88-2	RG-59, RG-62	2.16	1.82	1.50	1.32

Female Jacks

716-8910	CP-89-1	RG-58	3.03	2.55	2.27	2.04
716-8920	CP-89-2	RG-59, RG-62	3.03	2.55	2.27	2.04

BNC Mini Coaxial Crimp-On Connectors

Features crimp center conductor and crimp braid with cable strain relief. Same electrical characteristics as TNC twist-on connectors.

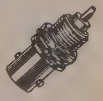


Stock No.	Mfr.'s Type	For Cables	EACH			
			1-99	100-499	500-999	1000-Up*
716-0274	CPM-88-19	RG-174, 188, 316	3.24	2.73	2.43	2.19
716-0279	CPM-88-20	RG-179	3.24	2.73	2.43	2.19

*Contact the Allied sales office nearest to you for price and delivery.

BNC Bulkhead Receptacles

Made of Brass (QQ-B-626, Alloy 360, ½ hard), beryllium copper (Alloy No. 25), zamack (QQ-2-363-Comp A), and polyethylene (MIL-P-22748, Class A, Grade 5). Same electrical characteristics as BNC twist-on connectors, no VSWR. Derlin insulation.



Stock No.	Mfr.'s Type	Style	Length	EACH			
				1-99	100-499	500-999	1000-Up
716-1094*	CP-1094-AST	BNC	1.187"	1.48	1.24	1.05	.95
716-1095	CP-1094-U	BNC	1.062"	1.13	.96	.75	.66
716-1092**	CP-625-U	BNC	1.062"	1.13	.96	.75	.66

*With solder tab. **Diameter .446", flat .188" – other diameters .382", flat .157".

TNC Twist On Connectors

Stock No.	Mfr.'s Type	Style	For Cables	EACH			
				1-99	100-499	500-999	1000-Up*
716-0681	CPFI-T-1	TNC	RG-58	3.24	2.73	2.43	2.19
716-0682	CPFI-T-2	TNC	RG-59, RG-62	3.24	2.73	2.43	2.19

*Contact the Allied sales office nearest to you for price and delivery.

BNC Boots and Hoods

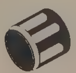


Fig. A

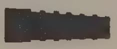


Fig. B

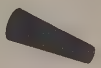
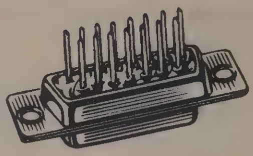


Fig. C
Available in Black Only

Colors Available: 1-Black, 2-Red, 3-Green, 4-Blue, 5-Yellow. Insert color number where N appears in the stock number.

Stock No.	Mfr.'s Type	Fig.	Description	EACH			
				1-99	100-499	500-999	1000-Up
716-220N	25-7960	A	BNC Hood for 3 pc.Crimp plug	.33	.29	.24	.22
716-230N	25-7958	B	BNC Boot for RG-58, 141	.18	.15	.13	.12
716-240N	25-7959	B	BNC Boot for RG-59, 62	.18	.15	.13	.12
716-2501	25-B58	C	BNC Boot for RG-58, 141	.18	.15	.13	.12
716-2511	25-B58-TN	C	BNC Boot for RG-58 Thin NET	.18	.15	.13	.12

Basic D, D-Sub Miniature Connectors



This economical series is ideal for commercial applications. **Insulator Material:** Two-piece nylon. **Contact Material:** Machine copper alloy with gold over nickel contact plating. **Voltage Rating:** 1250 VAC rms at sea level. **Current Rating:** 5 amps. **Operating Temperature:** –65°F to +250°F. Non-removable contacts.

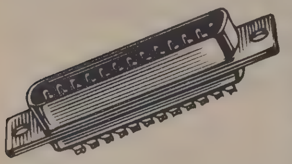
Solder Pot Contacts with Standard Shell

Stock No.	Mfr.'s Type	Description	Contacts	EACH			
				1-24	25-49	50-99	100-249
750-6700	DE-9P	Plug	9	2.81	2.04	1.79	1.55
750-6701	DE-9S	Socket	9	3.96	2.87	2.52	2.17
750-6702	DA-15P	Plug	15	3.74	2.70	2.50	2.15
750-6703	DA-15S	Socket	15	5.53	4.19	3.69	3.17
750-6704	DB-25P	Plug	25	4.07	3.09	2.72	2.34
750-6705	DB-25S	Socket	25	5.42	4.11	3.80	3.27
750-6706	DC-37P	Plug	37	7.20	5.46	5.05	4.35
750-6707	DC-37S	Socket	37	11.80	8.95	8.28	7.13
750-6708	DD-50P	Plug	50	9.48	7.19	6.65	5.73
750-6709	DD-50S	Socket	50	15.55	11.79	10.92	9.39

Wire Wrap

750-6710	DE-9P-F179	Plug	9	3.84	2.81	2.56	2.20
750-6711	DE-9S-F179	Socket	9	5.27	4.01	3.71	3.18
750-6712	DA-15P-F179	Plug	15	5.25	3.99	3.69	3.17
750-6713	DA-15S-F179	Socket	15	7.19	5.46	5.05	4.35
750-6714	DB-25P-F179	Plug	25	7.66	5.81	5.38	4.62
750-6715	DB-25S-F179	Socket	25	11.20	8.50	7.86	6.76
750-6716	DC-37P-F179	Plug	37	10.34	7.85	7.26	6.24
750-6717	DC-37S-F179	Socket	37	15.94	12.09	11.19	9.63
750-6718	DD-50P-F179	Plug	50	13.66	10.35	9.58	8.24
750-6719	DD-50S-F179	Socket	50	20.98	15.91	14.73	12.67

Basic D II Connectors



The low cost version with all the performance characteristics of the Basic D Series. (They cost less because they have stamped instead of machined contacts.) Ideal for commercial applications where cost is a factor. **Insulation Material:** Two-piece nylon. **Contact Material:** Copper alloy (stamped) with gold over nickel plating. **Voltage Rating:** 1250 VAC rms at sea level. **Current Rating:** 5 amps. **Temperature Range:** –65°F to +250°F.

Basic D II Plugs

Stock No.	Mfr.'s Type	Contacts	EACH			
			1-24	25-49	50-99	100-249
750-6768	DE-9PII	9	2.17	1.56	1.38	1.17
750-6770	DA-15PII	15	3.02	2.19	1.92	1.66
750-6772	DB-25PII	25	4.29	3.24	2.85	2.46
750-6774	DC-37PII	37	5.54	4.20	3.89	3.35
750-6776	DD-50PII	50	7.31	5.54	5.14	4.40

Basic D II Sockets

750-6769	DE-9SII	9	3.07	2.21	1.94	1.68
750-6771	DA-15SII	15	4.05	3.07	2.84	2.45
750-6773	DB-25SII	25	5.26	3.99	3.69	3.18
750-6775	DC-37SII	37	9.11	6.91	6.39	5.50
750-6777	DD-50SII	50	12.27	9.29	8.60	7.41

Series 1 Commercial and Military Connectors

Series 1 connectors consist of monoblock glass fiber-filled diallyl phthalate insulation material. **Contact Termination:** Non-removable solder pot. **Contact Material:** Copper alloy with gold over copper plating. **Voltage Rating:** 1250 VAC rms at sea level. **Current Rating:** 5 amps. **Operating Temperature:** –65°F to 300°F.

Stock No.	Mfr.'s Type	Description	Contacts	EACH			
				1-24	25-49	50-99	100-249
750-6738	DEM-9P	Plug	9	5.73	4.35	4.02	3.46
750-6739	DEM-9S	Socket	9	8.26	6.26	5.79	4.99
750-6740	DAM-15P	Plug	15	8.33	6.31	5.85	5.02
750-6741	DAM-15S	Socket	15	12.23	9.27	8.58	7.39
750-6742	DBM-25P	Plug	25	12.67	9.61	8.88	7.65
750-6743	DBM-25S	Socket	25	19.34	14.67	13.57	11.68
750-6744	DCM-37P	Plug	37	17.78	13.48	12.48	10.73
750-6745	DCM-37S	Socket	37	27.66	20.97	19.42	16.69
750-6746	DDM-50P	Plug	50	23.14	17.56	16.24	13.98
750-6747	DDM-50S	Socket	50	36.58	27.73	25.68	22.07

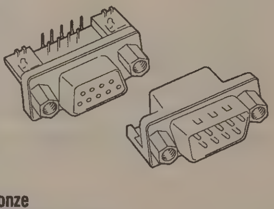
Series 3 Mil-C-24308 Military Connectors

High-reliability connectors with improved heat resistance. An outstanding feature of these connectors is the crimp, snap-in, rear release contacts. They are ideal for field repair and replacement. **Insulation Material:** Monoblock glass fiber-filled diallyl per MIL-M-14, type GDI-30-F. **Contact Material:** Copper alloy with gold over copper plating. **Current Rating:** 5 amps. **Operating Temperature:** –65°F to +300°F.

Stock No.	Mfr.'s Type	Description	Contacts	EACH			
				1-24	25-49	50-99	100-249
750-6758	M24308/4-1F	Plug	9	8.18	6.20	5.73	4.93
750-6759	M24308/2-1F	Socket	9	10.56	8.00	7.41	6.37
750-6760	M24308/4-2F	Plug	15	11.09	8.42	7.80	6.71
750-6761	M24308/2-2F	Socket	15	15.04	11.40	10.55	9.07
750-6762	M24308/4-3F	Plug	25	16.00	12.13	11.24	9.66
750-6763	M24308/2-3F	Socket	25	22.51	17.06	15.79	13.59
750-6764	M24308/4-4F	Plug	37	21.79	16.53	15.30	13.16
750-6765	M24308/2-4F	Socket	37	31.39	23.80	22.02	18.96
750-6766	M24308/4-5F	Plug	50	33.95	25.74	23.81	20.50
750-6767	M24308/2-5F	Socket	50	46.96	35.62	32.95	28.35

D*KL Series "The Low Cost Interconnect Alternative"

Metal Front Shell Right Angle PCB Connector .318 Mount

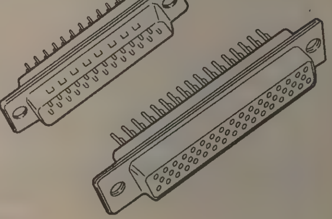


- ► Contact Tails Are Formed at 90° Angle to Front Face of Connector for PCB Mounting
- ► Boardlocks Allow for Grounding of Front Shell to PC Board and Are Tin Plated for Solderability
- ► Boardlocks Provide Mechanical Fastening to Board for Stability during Wave Soldering Processes
- ► 4-40 Threaded Hole Facilitates Secure Mounting to Panels
- ► Insulation Material: Black UL94V-0 Rated Glass-Filled Polyester
- ► Mates with Industry Compatible Connectors
- ► Contact Material: Plug — Brass; Socket — Phosphorus Bronze
- ► Contact Plating: Gold Over Nickel in Mating Area; Tin Over Nickel on Tails
- ► Shell/Boardlock Material: Steel
- ► Shell/Boardlock Plating: Tin Plated
- ► Available with Female Screwlocks
- ► Operating Temperature: –55°C to +105°C

Stock No.	Mfr.'s Type	Description	Contacts	EACH		
				1-24	25-49	50-99
750-0132	DEKL-09PATI-E	Plug*	9	.73	.66	.60
750-0134	DEKL-09SAT-E	Socket	9	.70	.63	.57
750-0136	DAKL-15PATI-E	Plug*	15	.84	.76	.69
750-0138	DAKL-15SAT-E	Socket	15	.81	.73	.66
750-0140	DBKL-25PATI-E	Plug*	25	1.04	.93	.85
750-0142	DBKL-25SAT-E	Socket	25	1.23	1.11	1.01

*With Grounding Indents.

Metal Shell Straight PCB Connector .109" (2.77 mm) Density



- ► Tin Lead Plating on Contact Tails to Meet Solderability Per MIL-STD-202. Method 208
- ► Mates with Industry Compatible Connectors
- ► Insulation Material: Black, UL94V-0 Rated, Glass-Filled PBT
- ► Contact Material: Plug — Brass; Socket — Phosphor Bronze
- ► Contact Plating: Gold Over Nickel in Mating Area; Tin/Lead Over Nickel on Tails
- ► .125" PC Board Thickness
- ► Shell Material: Steel
- ► Shell Plating: Tin Plated
- ► Operating Temperature: –55°C to +105°C

Stock No.	Mfr.'s Type	Description	Contacts	EACH		
				1-24	25-49	50-99
750-0100	DEKL-09PUTI	Plug*	9	.41	.37	.34
750-0102	DEKL-09SUT	Socket	9	.39	.35	.32
750-0104	DAKL-15PUTI	Plug*	15	.50	.45	.41
750-0106	DAKL-15SUT	Socket	15	.53	.48	.44
750-0108	DBKL-25PUTI	Plug*	25	.69	.62	.56
750-0110	DBKL-25SUT	Socket	25	.65	.58	.53

*With Grounding Indents.

Econo D Connectors

The D*U series has a two-piece insulator as well as crimp, snap-in-rear contacts that can be inserted by hand. An economical connector ideal for commercial applications where field replacement of contacts is required at a lower cost than high-reliability connectors. **Insulator Material:** Two-piece thermoplastic polyester UL-94-VO rated. **Voltage Rating:** 1000 VAC rms at sea level. **Current Rating:** 5 Amps. **Operating Temperature:** –65°F to + 125°F. The D*U version is UL recognized. **Contact Material:** Copper alloy (machined), cadmium copper (stamped) with gold over nickel plating.

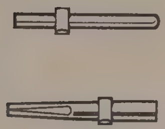
D*U Connectors with Machined Contacts

Stock No.	Mfr.'s Type	Description	Contacts	EACH 1-24	25-49	50-99	100-249
750-8604	DEU-9P	Plug	9	3.54	2.54	2.36	2.03
750-8606	DEU-9S	Socket	9	4.40	3.34	3.09	2.66
750-8608	DAU-15P	Plug	15	4.70	3.56	3.29	2.83
750-8610	DAU-15S	Socket	15	6.53	4.95	4.58	3.93
750-8612	DBU-25P	Plug	25	7.00	5.30	4.91	4.23
750-8614	DBU-25S	Socket	25	9.90	7.50	6.95	5.96
750-8616	DCU-37P	Plug	37	9.91	7.51	6.96	5.97
750-8618	DCU-37S	Socket	37	14.08	10.67	9.88	8.50
750-8620	DDU-50P	Plug	50	12.77	9.68	8.96	7.70
750-8622	DDU-50S	Socket	50	18.39	13.94	12.90	11.09

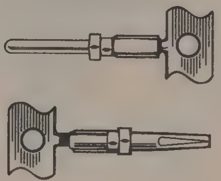
D*U Connectors Less Contacts

750-6808	DEU-9P-FO	Plug	9	1.62	1.17	1.02	.88
750-6809	DEU-9S-FO	Socket	9	1.62	1.17	1.02	.88
750-6810	DAU-15P-FO	Plug	15	1.68	1.21	1.06	.92
750-6811	DAU-15S-FO	Socket	15	1.68	1.21	1.06	.92
750-6812	DBU-25P-FO	Plug	25	1.92	1.39	1.22	1.04
750-6813	DBU-25S-FO	Socket	25	1.72	1.23	1.09	.94
750-6814	DCU-37P-FO	Plug	37	2.33	1.69	1.48	1.28
750-6815	DCU-37S-FO	Socket	37	2.25	1.61	1.41	1.22
750-6816	DDU-50P-FO	Plug	50	2.44	1.77	1.55	1.33
750-6817	DDU-50S-FO	Socket	50	2.31	1.66	1.46	1.27

Machined Contacts



Stamped Contacts



Econo D Machined Contacts

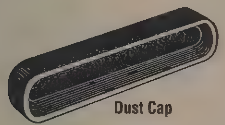
Stock No.	Mfr.'s Type	Description	EACH* 100-4900
750-6784	030-1952-000	Pin	.17
750-6785	030-1953-000	Socket	.28

Econo D Stamped Contacts

750-6786	030-1960-005	Pin	.18
750-6787	030-1957-005	Socket	.20

*Sold each in multiples of 50.

Dust Caps



Polyethylene dust caps to protect D-Subs from dust, moisture, and other contaminants that affect performance.

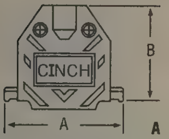
For D-Sub Socket Connectors

Stock No.	Mfr.'s Type	Shell Size	Connector Contacts	EACH 1-24	25-49	50-99
750-7038	DE-59-20	E	9	1.60	1.15	1.01
750-7039	DA-59-20	A	15	1.60	1.15	1.01
750-7040	DB-59-20	B	25	1.54	1.12	.99

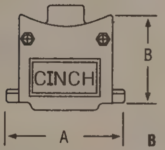
For D-Sub Plug Connectors

750-7033	DE-60-20	E	9	1.60	1.15	1.01
750-7034	DA-60-20	A	15	1.60	1.15	1.01
750-7035	DB-60-20	B	25	1.54	1.12	.99
750-7036	DC-60-20	C	37	1.60	1.15	1.01
750-7037	DD-60-20	D	50	1.60	1.15	1.01

Back Shells



A



B

These backshells fit both standard and high-density D-Subminiature Connectors. All listed items include a set of PVC compression inserts that enable them to fit a range of cable sizes. All items have zinc-plated steel hardware. Series DPH has a cover of black ABS polymer. Series DCH (metallized plastic) has the same and is plated with nickel over copper. Series DMH is die-cast zinc.

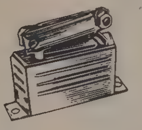
Plastic and Metallized Plastic Two-Piece Backshells — Fig. A

Stock No.	Mfr.'s Type	Conn. Contacts Std./1.5 Density	Dim. B Height	Cable Dia. (In.)	EACH 1-24	25-49	50-99
750-7045	DPH-E-001	9/15	1.397	0.190/0.350	1.60	1.15	1.01
750-7046	DCH-E-001	9/15	1.397	0.190/0.350	2.34	1.71	1.50
750-7049	DPH-B-001	25/44	1.655	0.190/0.460	1.96	1.42	1.25
750-7050	DCH-B-001	25/44	1.655	0.190/0.460	2.96	2.24	2.08
750-7051	DPH-C-001	37/62	1.830	0.300/0.680	2.44	1.76	1.55

Two-Piece Diecast EMI/RFI Shielded Backshells — Fig. B

750-7062	DMH-E-001	9/15	1.465	0.190/0.350	3.37	2.43	2.26
750-7068	DMH-C-001	37/62	1.800	0.300/0.680	5.29	4.02	3.71

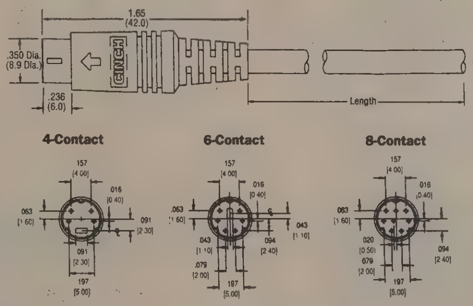
Deep Straight Clamp Junction Shell



Stock No.	Mfr.'s Type	Shell Size	EACH 1-24	25-49	50-99
750-6980	DA-24658	9	4.10	3.10	2.86
750-6982	DB-24659	15	3.51	2.52	2.35
750-6984	DC-24660	25	3.66	2.66	2.45
750-6986	DD-24661	37	4.10	2.96	2.74
750-6988	DE-24657	50	4.18	3.17	2.94

Circular Mini-DIN Plugs

Single-Ended Cable Assembly



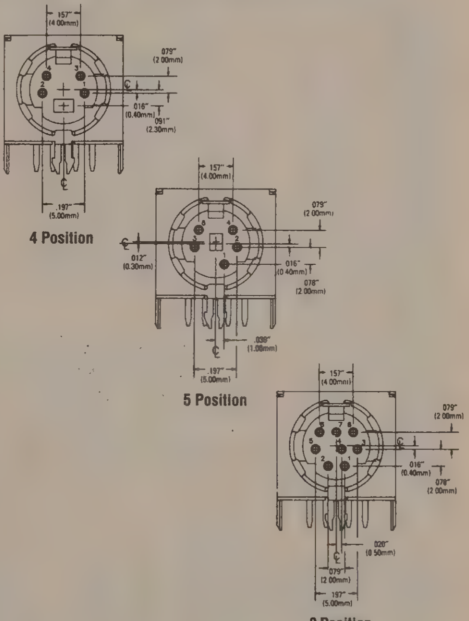
- ► Pre-Assembled with Standard Shielded Cable Lengths
- ► Molded-In Strain Relief
- ► Shielding System Designed to Meet FCC Requirements for EMI/RFI Suppression
- ► Insulation Material: Plug Insulator — UL94V-0 Rated Nylon; Plug Overmold — PVC (Black or Beige); Cable Jacket — PVC (Black or Beige)
- ► UL Recognized: File E19071; CSA Certified: File LR31996-6
- ► Contact Material: Plug — Phosphor Bronze
- ► Shield Material: Steel
- ► Shield Plating: Nickel
- ► Standard Cable Composition: Shielded Cable with 0.197 Inch OD Jacket over 28 AWG Stranded Wire Conductors

Contact Plating: Gold Flash Over Nickel

Stock No.	Mfr.'s Type	No. of Contacts	Description	EACH 1-24	25-49	50-99
750-0198	MDC-4P13	4	2 m, Black	12.96	9.83	9.10
750-0210	MDC-6P05	6	1 m, Black	11.29	8.56	7.92
750-0218	MDC-6P15	6	3 m, Black	16.59	12.58	11.64
750-0234	MDC-8P05	8	1 m, Black	12.27	9.31	8.61
750-0238	MDC-8P13	8	2 m, Black	14.92	11.32	10.47

Shielded I/O Connector Circular Mini-DIN Socket

Right Angle PCB Mounted Super-Shielded Socket



- ► Improved Design Maximizes Shielding and Saves Space
- ► Tail Aligner Positions Contacts for Reliable Insertion into PCB
- ► "Super-Shielding" on Front Face of Sockets Helps Reduce EMI/RFI/ESD
- ► Boardlocks Provide Mechanical Holddown During Wave Soldering Processes
- ► Compatible with Defacto Industry Standard Mini-DIN Plugs
- ► Suitable for Robotic Assembly
- ► Durability: Withstands Minimum 500 Mating/Unmating Cycles
- ► Solderability: Meets MIL-STD-202; Method 208
- ► Insulation Material: UL94V-0 Rated Glass-Filled Polyester; Black on Front Face, Platinum Color on Base
- ► Contact Material: Phosphor Bronze
- ► Contact Plating: 30 μin. (0.76 Micron) Min. Gold Over Nickel in Mating Area; Tin/Lead Over Nickel on Tails
- ► Shield: Material — Phosphor Bronze; Plating — Bright Electro-Tin Lead Over Nickel, Tin Over Nickel on Econo Version
- ► Contact Rating: 2 Amps at 12 VDC; 1 Amp at 100 VAC

Stock No.	Mfr.'s Type	No. of Contacts	Description	EACH 1-24	25-49	50-99
750-0170	MDSS-4S	4	Straight Leg	1.08	.79	.72
750-0174	MDSS-5S	5	Straight Leg	1.12	.82	.75
750-0178	MDSS-6S	6	Straight Leg	1.13	.82	.75
750-0186	MDSS-8S	8	Straight Leg	1.22	.89	.82

Barrier Terminal Blocks

Interposing barriers between each terminal position yields substantially higher electrical ratings and provides an additional safeguard against shorting from frayed wires. The wide size range of "Jones" barrier terminal blocks, plus the several termination options and the available accessories permit flexibility of end use applications.

Series 100

Electrical Specifications

Series	Max. Volts RMS Without Marker Strip	Max. Volts RMS With Marker Strip	Max. Current In Amps	Max. Watts Per Terminal
140	1100	2000	15	3750
141	1100	2400	20	5000
142	1600	2600	30	7500

Dimensions

Dim.	Series 140		Series 141		Series 142	
	In.	mm	In.	mm	In.	mm
A	0.875	22.23	1.125	28.58	1.312	33.34
B	0.688	17.46	0.875	22.23	1.062	26.99
C	0.313	7.94	0.422	10.72	0.500	12.70
D	0.375	9.53	0.438	11.11	0.563	14.29
E	0.406	10.32	0.500	12.70	0.625	15.88
F	0.250	6.35	0.313	7.94	0.375	9.53
G	0.160	4.06	0.175/0.185	4.45/4.70	0.209	5.31
H	5/40		6/32		8/32	
J	0.141	3.57	0.156	3.97	0.203	5.16

Series 140
With binding head screw, for up to #16 solid wire.

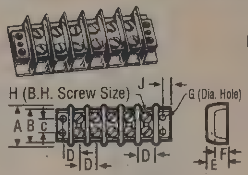
Stock No.	Mfr.'s Type	Terminals	EACH			
			1-24	25-49	50-99	100-249
750-4002	2-140	2	.84	.64	.55	.53
750-4003	3-140	3	1.00	.75	.67	.57
750-4004	4-140	4	1.14	.81	.71	.62
750-4005	5-140	5	1.29	.94	.82	.71
750-4006	6-140	6	1.65	1.18	1.04	.89
750-4007	7-140	7	1.76	1.29	1.12	.96
750-4008	8-140	8	2.03	1.46	1.28	1.10
750-4009	9-140	9	2.33	1.62	1.47	1.26
750-4010	10-140	10	2.46	1.87	1.59	1.41
750-4012	12-140	12	2.96	2.14	1.88	1.61
750-4014	14-140	14	3.41	2.34	2.27	1.94
750-4015	15-140	15	3.49	2.50	2.31	1.90
750-4016	16-140	16	3.71	2.60	2.48	2.13
750-4018	18-140	18	4.00	2.89	2.67	2.29
750-4020	20-140	20	4.35	3.30	3.04	2.62
750-4024	24-140	24	5.19	3.92	3.65	3.12
750-4025	25-140	25	5.46	4.15	3.83	3.30

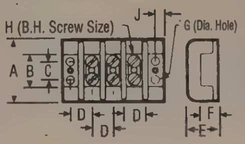
Series 140-Y
With Y terminal, for up to #16 solid wire.

750-4104	4-140-Y	4	1.70	1.22	1.07	.92
750-4106	6-140-Y	6	2.35	1.69	1.49	1.27
750-4108	8-140-Y	8	2.81	2.02	1.88	1.61
750-4110	10-140-Y	10	3.39	2.44	2.26	1.93
750-4112	12-140-Y	12	4.35	3.30	3.05	2.62
750-4114	14-140-Y	14	4.85	3.67	3.39	2.93
750-4116	16-140-Y	16	5.03	3.82	3.53	3.04
750-4120	20-140-Y	20	6.28	4.76	4.41	3.79

Series 141
With binding head screw, for up to #14 solid wire.

750-4302	2-141	2	.84	.64	.55	.47
750-4303	3-141	3	1.55	1.13	1.00	.84
750-4304	4-141	4	1.55	1.13	1.00	.84
750-4305	5-141	5	1.76	1.29	1.12	.96
750-4306	6-141	6	2.03	1.46	1.28	1.10
750-4307	7-141	7	2.50	1.80	1.57	1.39
750-4308	8-141	8	2.61	1.89	1.66	1.44
750-4310	10-141	10	3.09	2.23	1.95	1.68
750-4312	12-141	12	3.52	2.54	2.34	2.01
750-4314	14-141	14	4.01	3.03	2.80	2.40
750-4315	15-141	15	4.30	3.26	3.02	2.58
750-4316	16-141	16	4.51	3.42	3.14	2.70
750-4318	18-141	18	4.76	3.61	3.35	2.88
750-4320	20-141	20	5.63	4.25	3.93	3.39





Series 100 (continued)

Series 142
Accommodates up to #10 solid wires.

Stock No.	Mfr.'s Type	Terminals	EACH			
			1-24	25-49	50-99	100-249
750-4602	2-142	2	1.43	1.05	.91	.78
750-4603	3-142	3	1.72	1.25	1.10	.93
750-4604	4-142	4	2.02	1.45	1.26	1.08
750-4605	5-142	5	2.90	2.08	1.84	1.57
750-4606	6-142	6	3.97	2.87	2.65	2.27
750-4607	7-142	7	4.13	3.12	2.89	2.49
750-4608	8-142	8	4.30	3.26	3.02	2.60
750-4609	9-142	9	6.60	5.00	4.63	3.98
750-4610	10-142	10	6.94	5.26	4.87	4.25
750-4612	12-142	12	7.29	5.52	5.11	4.38
750-4614	14-142	14	8.59	6.51	6.03	5.17
750-4615	15-142	15	8.61	6.53	6.05	5.19
750-4616	16-142	16	9.19	6.97	6.45	5.54

500 Series
The 500 Series Jones barrier terminal blocks have high barriers and are designed for applications where electrical and mechanical performance requirements are especially critical. Bottoms are closed so insulating strips are not required. UL Recognized.

Dimensions

Dim.	Series 540		Series 541		Series 542	
	In.	mm	In.	mm	In.	mm
A	1.125	28.58	1.375	34.93	1.625	41.28
B	5.940	15.08	0.750	19.05	0.875	22.23
C	0.313	7.94	0.422	10.72	0.500	12.70
D	0.375	9.53	0.438	11.11	0.563	14.29
E	0.609	15.48	0.688	17.46	0.875	22.23
F	0.328	8.33	0.375	9.53	0.500	12.70
G	0.160	4.06	0.175/0.185	4,45/4.70	0.209	5.31
H	5/40 × 3/16		6/32 × 1/4		8/32 × 5/16	
J	0.141	3.57	0.156	3.97	0.203	5.16

Series 540
Creepage Distance: 1/2". 2300 V rms/15 A

Stock No.	Mfr.'s Type	Terminals	EACH			
			1-24	25-49	50-99	100-249
750-5402	2-540	2	3.28	2.35	2.20	1.88
750-5404	4-540	4	5.12	3.88	3.60	3.09
750-5406	6-540	6	5.86	4.44	4.11	3.52
750-5410	10-540	10	8.93	6.76	6.27	5.39
750-5412	12-540	12	10.43	7.90	7.31	6.29
750-5414	14-540	14	12.93	9.81	9.07	7.81

Series 541
Creepage Distance: 5/8". 2800 V rms/20 A.

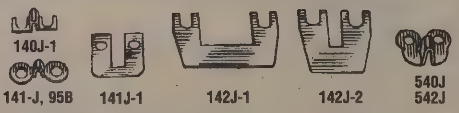
750-5504	4-541	4	3.07	2.21	2.04	1.77
750-5506	6-541	6	8.88	6.72	6.23	5.35
750-5508	8-541	8	9.28	7.02	6.51	5.58
750-5510	10-541	10	16.61	12.58	11.66	10.03
750-5512	12-541	12	17.00	12.89	11.93	10.25

Series 542
Creepage Distance: 3/4". 4000 V rms/30 A.

750-5604	4-542	4	7.89	5.98	5.54	4.76
750-5606	6-542	6	10.56	7.99	7.41	6.35
750-5610	10-542	10	16.03	12.16	11.26	9.69
750-5612	12-542	12	16.77	12.73	11.78	10.25

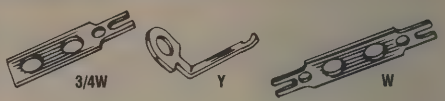
Jumpers

For making connection between adjacent terminals. Model 142J-1 connects two alternate terminals. All jumpers are brass with a nickel-plated finish.



Stock No.	Mfr.'s Type	For Use With	EACH			
			1-24	25-49	50-99	100-249
750-7661	140J-1	140	.21	.15	.13	.11
750-7662	141-J	141	.26	.17	.15	.13
750-7663	141J-1	141	.35	.27	.23	.17
750-7664	95B	142	.78	.58	.51	.45
750-7665	142J-1	142/542	.35	.28	.26	.22
750-7666	142J-2	142/542	.21	.15	.13	.11
750-7667	540J	540	1.59	1.13	1.01	.85
750-7669	542J	542	1.81	1.31	1.14	.99

Solder Terminals



Optional terminals for use with barrier blocks. Refer to ordering information below for type and terminal block cross-reference.

Stock No.	Mfr.'s Type	For Use With	EACH			
			1-24	25-49	50-99	100-249
750-7650	3/4W-140	140/540	.35	.27	.23	.20
750-7652	Y-140	140/540	.35	.27	.23	.20
750-7654	W-141	141/542	.50	.38	.33	.29
750-7656	3/4W-142	142/542	.67	.51	.45	.37
750-7658	Y-142	142/542	.67	.51	.45	.34

Marker Strips

Marker strips identify terminal positions on barrier terminal blocks and insulate exposed portions of terminals from a conductive mounting surface. Marker strips for Series 140 are 1/32" thick, flame-retardant material and mount under the terminal strip. **Shipping Weight.:** 2 oz. 1/8" white numerals standard.

Series 140

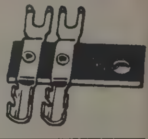
Stock No.	Mfr.'s Type	Terminals	EACH			
			1-24	25-49	50-99	100-249
750-5704	MS-4-140	4	.53	.39	.36	.30
750-5706	MS-6-140	6	.53	.39	.36	.30
750-5708	MS-8-140	8	.67	.49	.42	.37
750-5710	MS-10-140	10	.72	.53	.46	.40
750-5712	MS-12-140	12	.72	.53	.46	.40
750-5714	MS-14-140	14	.82	.63	.53	.46
750-5716	MS-16-140	16	.93	.72	.63	.52
750-5720	MS-20-140	20	1.20	.87	.77	.67

Series 141

750-5902	MS-2-141	2	.53	.39	.36	.30
750-5904	MS-4-141	4	.53	.39	.36	.30
750-5905	MS-5-141	5	.67	.49	.42	.37
750-5906	MS-6-141	6	.67	.49	.42	.37
750-5908	MS-8-141	8	.78	.56	.50	.44
750-5910	MS-10-141	10	.72	.53	.46	.40
750-5912	MS-12-141	12	.82	.63	.53	.46
750-5920	MS-20-141	20	1.66	1.20	1.05	.90

Fanning Strips

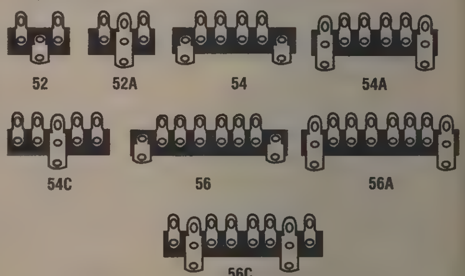
160 Series



- ► **Fits 140 Series**
- ► **Barrier Blocks**
- ► **3/8" Terminal Centers**

Stock No.	Mfr.'s Type	Terminals	EACH			
			1-24	25-49	50-99	100-249
750-6310	10-160-L	10	5.02	3.80	3.53	3.02
750-6312	12-160-L	12	6.66	5.04	4.66	4.01
750-6320	20-160-L	20	10.54	7:98	7.39	6.35

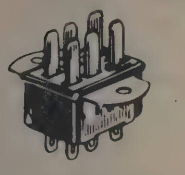
Lug Type Terminal Strips

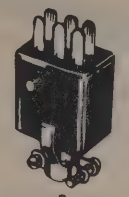


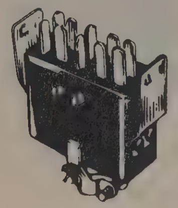
Cadmium plated steel lugs on .375" (9.53 mm) density with .140" mounting hole diameter. **Insulation Material:** UL94HB rated chocolate XPC.

Stock No.	Mfr.'s Type	Description	Mtg. Center (In.)	EACH			
				1-24	25-49	50-99	100-249
750-6620	52	2 lugs	—	.39	.30	.27	.22
750-6621	52A	3 lugs, 1 Gnd.	—	.51	.38	.34	.30
750-6627	54	4 lugs	1.875	.75	.58	.49	.42
750-6628	54A	6 lugs, 2 Gnd.	1.875	.88	.67	.59	.49
750-6630	54C	5 lugs, 1 Gnd.	—	.75	.58	.49	.42
750-6634	56	6 lugs	—	1.09	.78	.70	.61
750-6635	56A	8 lugs, 2 Gnd.	2.625	1.09	.78	.70	.61
750-6636	56C	8 lugs, 2 Gnd.	1.875	1.09	.78	.70	.61

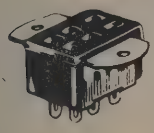
300 Series


A

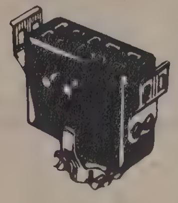

B


C

D


E

F


G

H

UL recognized file No. E19071. Rated 730 Volts rms. **Contact Resistance:** .016 ohms max. **Rated Current:** 10 amps.

Plugs with Angle Brackets — Fig. A

Stock No.	Mfr.'s Type	No. of Contacts	EACH			
			1-24	25-49	50-99	100-249
750-3000	P-302-AB	2	1.24	.87	.75	.64
750-3002	P-303-AB	3	1.28	.93	.82	.69
750-3004	P-304-AB	4	1.40	.98	.88	.75
750-3006	P-306-AB	6	1.81	1.30	1.14	.99
750-3008	P-308-AB	8	2.09	1.52	1.33	1.13
750-3012	P-312-AB	12	2.10	1.53	1.34	1.14

Plugs with Cable Clamp In Top — Fig. B

750-3200	P-302-CCT	2	2.24	1.60	1.41	1.21
750-3202	P-303-CCT	3	2.44	1.76	1.55	1.33
750-3204	P-304-CCT	4	2.74	1.98	1.73	1.50
750-3206	P-306-CCT	6	2.97	2.15	1.89	1.62
750-3208	P-308-CCT	8	3.12	2.24	2.06	1.79
750-3210	P-310-CCT	10	3.21	2.32	2.15	1.84
750-3212	P-312-CCT	12	3.43	2.47	2.28	1.95
750-3214	P-315-CCT	15	5.06	3.83	3.54	3.04
750-3216	P-318-CCT	18	5.21	3.93	3.65	3.13
750-3218	P-321-CCT	21	6.25	4.74	4.38	3.78
750-3220	P-324-CCT	24	7.37	5.57	5.15	4.44

Plugs — Cable Clamp In Top with Locks — Fig. C

750-3300	P-302-CCT-L	2	3.86	2.78	2.58	2.22
750-3302	P-303-CCT-L	3	4.16	3.14	2.92	2.51
750-3304	P-304-CCT-L	4	4.07	3.08	2.84	2.44
750-3306	P-306-CCT-L	6	4.30	3.25	3.02	2.59

Plugs with Deep Brackets For Recessed Mounting — Fig. D

750-3400	P-304-DB	4	3.28	2.35	2.18	1.88
750-3402	P-306-DB	6	3.44	2.48	2.29	1.96
750-3404	P-308-DB	8	3.66	2.65	2.44	2.11
750-3406	P-312-DB	12	4.38	3.34	3.08	2.65

Sockets with Angle Brackets — Fig. E

Stock No.	Mfr.'s Type	No. of Contacts	EACH			
			1-24	25-49	50-99	100-249
750-3001	S-302-AB	2	1.24	.89	.78	.67
750-3003	S-303-AB	3	1.53	1.11	.96	.83
750-3005	S-304-AB	4	1.61	1.16	1.03	.86
750-3007	S-306-AB	6	2.11	1.53	1.35	1.14
750-3009	S-308-AB	8	2.50	1.80	1.58	1.37
750-3013	S-312-AB	12	5.24	3.96	3.67	3.15

Sockets with Cable Clamp In Top — Fig. F

750-3201	S-302-CCT	2	2.37	1.71	1.50	1.28
750-3203	S-303-CCT	3	2.75	1.99	1.77	1.50
750-3205	S-304-CCT	4	2.81	2.01	1.78	1.52
750-3207	S-306-CCT	6	3.19	2.29	2.02	1.73
750-3209	S-308-CCT	8	3.65	2.65	2.44	2.11
750-3211	S-310-CCT	10	4.13	2.99	2.76	2.36
750-3213	S-312-CCT	12	4.49	3.39	3.13	2.69
750-3215	S-315-CCT	15	6.38	4.84	4.48	3.85
750-3217	S-318-CCT	18	6.84	5.17	4.78	4.12
750-3219	S-321-CCT	21	7.79	5.90	5.45	4.68
750-3221	S-324-CCT	24	8.29	6.30	5.81	5.00

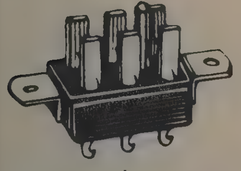
Sockets — Cable Clamp In Top with Keepers — Fig. G

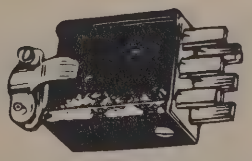
750-3301	S-302-CCT-K	2	3.95	2.86	2.64	2.26
750-3303	S-303-CCT-K	3	4.49	3.39	3.13	2.69
750-3305	S-304-CCT-K	4	4.35	3.30	3.04	2.61
750-3307	S-306-CCT-K	6	4.76	3.61	3.35	2.87

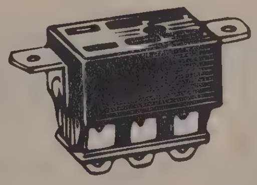
Sockets with Deep Brackets For Recessed Mounting — Fig. H

750-3401	S-304-DB	4	3.56	2.58	2.36	2.04
750-3403	S-306-DB	6	4.07	2.94	2.71	2.34
750-3405	S-308-DB	8	4.24	3.23	2.98	2.57
750-3407	S-312-DB	12	5.54	4.19	3.87	3.34

2400 Series


J


K


L

M

Designed for medium duty. **Rated Voltage:** 1100 V. **Contact Resistance:** .001 ohm avg. **Rated Current:** 15 amps.

Plugs with Angle Brackets — Fig. J

Stock No.	Mfr.'s Type	No. of Contacts	EACH			
			1-24	25-49	50-99	100-249
750-8624	P-2404-AB	4	3.28	2.69	2.47	2.28
750-8626	P-2406-AB	6	4.16	3.78	3.47	3.20
750-8628	P-2408-AB	8	6.28	5.71	5.24	4.83

Plugs with Cable Clamp On Top — Fig. K

750-8630	P-2402-CCT	2	7.41	5.62	5.18	4.46
750-8632	P-2404-CCT	4	6.49	4.91	4.55	3.90
750-8634	P-2406-CCT	6	7.38	5.58	5.17	4.44
750-8636	P-2408-CCT	8	7.66	5.80	5.36	4.62
750-8638	P-2410-CCT	10	8.89	6.73	6.23	5.36
750-8640	P-2412-CCT	12	9.24	7.00	6.47	5.56

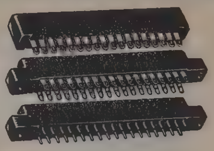
Sockets with Angle Brackets — Fig. L

Stock No.	Mfr.'s Type	No. of Contacts	EACH			
			1-24	25-49	50-99	100-249
750-8642	S-2404-AB	4	4.19	3.03	2.80	2.40
750-8644	S-2406-AB	6	5.00	3.80	3.49	3.02
750-8646	S-2408-AB	8	6.33	4.80	4.44	3.82

Sockets with Cable Clamp On Top — Fig. M

750-8648	S-2402-CCT	2	16.73	5.11	4.73	4.07
750-8650	S-2404-CCT	4	17.84	5.92	5.48	4.70
750-8652	S-2406-CCT	6	19.02	6.85	6.32	5.43
750-8654	S-2408-CCT	8	10.35	7.84	7.26	6.23
750-8656	S-2410-CCT	10	11.17	8.47	7.84	6.73
750-8658	S-2412-CCT	12	12.93	9.80	9.07	7.79

Cardcon® Edge Connectors



For .062" thickness single and double-sided PC boards. Blue glass-filled polyester 94 V-0 insulator. Meets requirements of MIL-C-21097. **Contact Style:** Semi-bellows bifurcated. **Contact Material:** Spring brass alloy 260. **Contact Plating:** Gold on contact area and gold flash on tail with copper underplate. **Termination:** Solder eyelet; dip solder with either .200" (5.08 mm) or .140" (3.56 mm) between row spacing. Available with or without mounting ears and 128" holes. **Test Voltage:** 1800 VAC rms at sea level. **Current:** 5 amps.

.156" Contact-to-Contact Spacing, Dip Solder Tails. Double Readout, with Mounting Ears .200" Row Spacing, Tails .156" Long

Stock No.	Mfr.'s Type*	Contacts	EACH			
			1-24	25-49	50-99	100-Up
750-1257	50-20SN-1	10	1.84	1.33	1.15	1.00
750-1259	50-30SN-1	15	2.60	1.87	1.65	1.42
750-1260	50-36SN-1	18	2.94	2.13	1.86	1.61
750-1261	50-44SN-1	22	2.94	2.12	1.97	1.69

.156" Contact-to-Contact Spacing, Dip Solder Tails. Double Readout, No Mounting Ears .200" Row Spacing, Tails .156" Long

Stock No.	Mfr.'s Type*	Contacts	1-24	25-49	50-99	100-Up
750-1272	50-24SN-3	12	3.08	2.22	1.96	1.68
750-1273	50-30SN-3	15	3.68	2.66	2.46	2.11
750-1274	50-36SN-3	18	3.83	2.76	2.55	2.19
750-1275	50-44SN-3	22	4.16	3.21	2.83	2.43
750-1277	50-50SN-3	25	4.66	3.53	3.27	2.81

.156" Contact-to-Contact Spacing, Dip Solder Single Readout, with Mounting Ears, Tails .156" Long

Stock No.	Mfr.'s Type*	Contacts	1-24	25-49	50-99	100-Up
750-1280	50-12SN-5	12	2.37	1.73	1.50	1.30
750-1281	50-15SN-5	15	2.88	2.08	1.83	1.58
750-1282	50-18SN-5	18	3.62	2.61	2.41	2.08
750-1283	50-22SN-5	22	3.96	2.85	2.64	2.28
750-1285	50-25SN-5	25	4.49	3.40	3.15	2.71

.156" Contact-to-Contact Spacing, Solder Eyelet — Single Readout, with Mounting Ears

Stock No.	Mfr.'s Type*	Contacts	1-24	25-49	50-99	100-Up
750-1286	50-6SN-7	6	1.77	1.27	1.12	.97
750-1287	50-10SN-7	10	1.97	1.43	1.26	1.07
750-1289	50-15SN-7	15	2.88	2.08	1.83	1.58
750-1290	50-18SN-7	18	3.62	2.61	2.41	2.08
750-1291	50-22SN-7	22	4.04	3.06	2.71	2.33

*Board retention PC tails allow wave soldering.

Commercial Edge Connectors

Feature .156" contact-to-contact spacing. .200" row spacing on double row versions. Dip solder tails are .156" in length. These connectors will accept single or double sided .062" (1.59 mm) thick PC boards. **Current Rating:** 5 amps.

Single Readout
Solder Eyelet

Stock No.	Mfr.'s Type	Contact Position	EACH			
			1-24	25-49	50-99	100-Up
750-1100	50-6A-20	6	2.24	1.59	1.41	1.21
750-1105	50-10A-20	10	2.48	1.79	1.57	1.35
750-1110	50-12A-20	12	2.85	2.05	1.88	1.62
750-1119	50-15A-20	15	3.43	2.48	2.31	1.98
750-1124	50-18A-20	18	4.31	3.25	3.02	2.59
750-1137	50-22A-20	22	4.82	3.65	3.38	2.90
750-1140	50-25A-20	25	5.62	4.26	3.94	3.40

5/32" Dip Solder

Stock No.	Mfr.'s Type	Contact Position	1-24	25-49	50-99	100-Up
750-1106	50-22B-10	22	4.72	3.58	3.30	2.84

Double Readout
Solder Eyelet

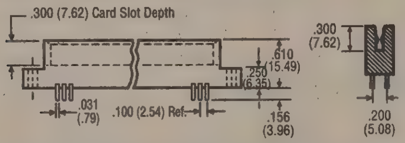
Stock No.	Mfr.'s Type	Contact Position	1-24	25-49	50-99	100-Up
750-1199	50-12A-30	6	1.60	1.14	1.01	.85
750-1166	50-20A-30	10	2.04	1.47	1.29	1.11
750-1167	50-24A-30	12	2.28	1.64	1.44	1.25
750-1168	50-30A-30	15	2.60	1.88	1.66	1.42
750-1169	50-36A-30	18	3.32	2.39	2.20	1.90
750-1170	50-44A-30	22	3.82	2.76	2.54	2.18
750-1171	50-50A-30	25	4.19	3.03	2.80	2.41

5/32" Dip Solder

Stock No.	Mfr.'s Type	Contact Position	1-24	25-49	50-99	100-Up
750-1172	50-12B-10	6	1.59	1.14	1.00	.85
750-1173	50-20B-10	10	2.29	1.65	1.44	1.25
750-1174	50-24B-10	12	2.55	1.93	1.79	1.52
750-1176	50-36B-10	18	3.49	2.52	2.34	2.01
750-1177	50-44B-10	22	3.69	2.66	2.46	2.11

.100" (2.54 mm) Density Card Edge Connectors

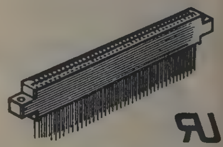
CARDCON™ Commercial Edge Connectors



.100" contact-to-contact spacing. **Dip Solder Tails:** Double readout, with mounting ears. 200" row spacing. **Tails:** .156" long. **Current Rating:** 3 amps. **Insulation:** UL 94V-O rated black glass-filled polyester. UL recognized — file #E19071. Accepts .062" (1.59 mm) thick PC boards.

Stock No.	Mfr.'s Type	Pos./ Cont.	EACH			
			1-24	25-49	50-99	100-249
750-1060	50-12SN-11	12/24	1.07	.92	.84	.78
750-1062	50-15SN-11	15/30	1.33	.98	.83	.73
750-1064	50-18SN-11	18/36	1.61	1.15	1.02	.87
750-1066	50-22SN-11	22/44	1.96	1.42	1.25	1.06
750-1068	50-25SN-11	25/50	2.25	1.60	1.41	1.22
750-1070	50-30SN-11	30/60	2.68	1.93	1.70	1.46
750-1072	50-36SN-11	36/72	3.06	2.19	2.05	1.75
750-1074	50-43SN-11	43/86	3.64	2.76	2.54	2.18
750-1076	50-50SN-11	50/100	4.05	3.07	2.83	2.45

High Reliability Edge Connectors



.100" contact-to-contact spacing. Double readout on .200" (5.08 mm) center. Bifurcated cantilever type contacts. **Contact Material:** High-tensile brass alloy. **Contact Plating:** 30 μ inch gold over 30 μ inch nickel in contact area; 5 μ inch gold overall. **Insulation:** Green glass fiber-filled diallyl phthalate. **Withstand Voltage:** 600 VAC rms. **Current Rating:** 3 amps. Accepts .062" (1.58 mm) thick double sided PC boards. UL recognized — file #E19071.

Solder Tab
.250" tail length, .025" dia. pins.

Stock No.	Mfr.'s Type	Pos./ Cont.	EACH			
			1-24	25-49	50-99	100-249
750-1219	50-30C-10	15/30	7.73	5.86	5.42	4.66
750-1220	50-44C-10	22/44	9.41	7.14	6.60	5.68
750-1221	50-72C-10	36/72	12.94	9.81	9.07	7.81

Stock No.	Mfr.'s Type	Pos./ Cont.	EACH			
			1-24	25-49	50-99	100-249
750-1222	50-80C-10	40/80	13.78	10.45	9.67	8.32
750-1223	50-86C-10	43/86	14.66	11.11	10.29	8.85
750-1224	50-100C-10	50/100	16.32	12.37	11.44	9.86

Dip Solder
.109" tail length, .025" dia. pins (without mounting ears).

Stock No.	Mfr.'s Type	Pos./ Cont.	1-24	25-49	50-99	100-249
750-1207	50-30C-20	15/30	6.78	5.15	4.75	4.10
750-1208	50-44C-20	22/44	8.32	6.30	5.84	5.02
750-1209	50-72C-20	36/72	11.56	8.77	8.11	6.97

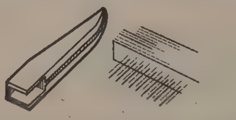
Stock No.	Mfr.'s Type	Pos./ Cont.	1-24	25-49	50-99	100-249
750-1210	50-80C-20	40/80	12.45	9.46	8.76	7.52
750-1211	50-86C-20	43/86	13.38	10.15	9.39	8.08
750-1212	50-100C-20	50/100	15.15	11.47	10.62	9.15

Wire Wrap
.600" tail length, .025" dia. pins.

Stock No.	Mfr.'s Type	Pos./ Cont.	1-24	25-49	50-99	100-249
750-1160	50-30C-30	15/30	6.91	5.23	4.84	4.16
750-1161	50-44C-30	22/44	8.48	6.42	5.94	5.10
750-1162	50-72C-30	36/72	11.83	8.97	8.30	7.15

Stock No.	Mfr.'s Type	Pos./ Cont.	1-24	25-49	50-99	100-249
750-1163	50-80C-30	40/80	12.57	9.52	8.81	7.58
750-1164	50-86C-30	43/86	13.46	10.21	9.46	8.13
750-1165	50-100C-30	50/100	15.43	11.69	10.83	9.30

Edge Connector Accessories



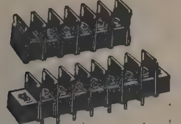
Card Guides

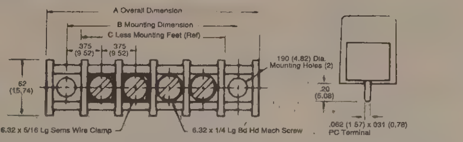
Stock No.	Mfr.'s Type	Color	EACH			
			1-24	25-49	50-99	100-Up
750-1237	50-GP-1	Green	.82	.62	.55	.46
750-1238	50-GP-1B	Black	.82	.62	.55	.46

Polarizing Keys

Stock No.	Mfr.'s Type	Description	EACH			
			1-24	25-49	50-99	100-Up
750-1240	50-PK-1	In-Contact Type .156 Center	.17	.14	.12	.10
750-1241	50-PK-2	Between-Contact Type .156 Center	.17	.14	.12	.10

38000 and 38010 Series Terminal Blocks




A Overall Dimension
B Mounting Dimension
C Less Mounting Feet (Ref)
.375 (9.52)
.375 (9.52)
.62 (15.74)
.190 (4.82) Dia. Mounting Holes (2)
.20 (5.08)
6.32 x 5/16 Lg Sems Wire Clamp
6.32 x 1/4 Lg Bd Hd Mach Screw
.062 (1.57) x .031 (0.78) PC Terminal

3/8" centerline terminal blocks. Available in two surface mount styles — no bottom termination (Type 38000) or printed circuit pin (Type 38010). For wire range of 22-12 AWG. Excellent chemical resistance. 3000 (typical) breakdown voltage; .03% water absorption; 94 V-0 flammability rating. 300 V, 20 A. Terminals are brass, tin plated. Polypropylene housing.

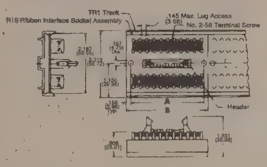
38000 Series — Surface Mount Closed Back, No Bottom Termination

Stock No.	Mfr.'s Type	No. Of Terminals	A±.031 Overall Dimension (In.)	B±.031 Mounting Dimension (In.)	C±.031 Less Mtg. Ft. (Ref.) (In.)	EACH		
						1-49	50-99	100-249
764-0050	38000-2	2	1.575	1.125	.825	**.66**	**.59**	**.51**
764-0051	38000-3	3	1.950	1.500	1.200	**.91**	**.81**	**.70**
764-0052	38000-4	4	2.325	1.875	1.575	**1.21**	**1.04**	**.90**
764-0053	38000-5	5	2.700	2.250	1.950	**1.47**	**1.26**	**1.09**
764-0054	38000-6	6	3.075	2.625	2.325	**1.73**	**1.48**	**1.28**
764-0055	38000-8	8	3.825	3.375	3.075	**2.14**	**1.84**	**1.67**
764-0056	38000-10	10	4.575	4.125	3.825	**2.64**	**2.27**	**2.06**
764-0057	38000-12	12	5.325	4.875	4.575	**3.13**	**2.69**	**2.44**

38010 Series — Surface Mount, Printed Circuit Pin

Stock No.	Mfr.'s Type	No. Of Terminals	A±.031 Overall Dimension (In.)	B±.031 Mounting Dimension (In.)	C±.031 Less Mtg. Ft. (Ref.) (In.)	1-49	50-99	100-249
764-0058	38010-2	2	1.575	1.125	.825	**.79**	**.69**	**.58**
764-0059	38010-3	3	1.950	1.500	1.200	**1.10**	**.92**	**.78**
764-0060	38010-4	4	2.325	1.875	1.575	**1.44**	**1.18**	**1.01**
764-0061	38010-5	5	2.700	2.250	1.950	**1.72**	**1.42**	**1.21**
764-0062	38010-6	6	3.075	2.625	2.325	**2.08**	**1.72**	**1.46**
764-0063	38010-8	8	3.825	3.375	3.075	**2.55**	**2.11**	**1.89**
764-0064	38010-10	10	4.575	4.125	3.825	**3.13**	**2.58**	**2.32**
764-0065	38010-12	12	5.325	4.875	4.575	**3.71**	**3.06**	**2.75**

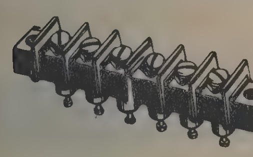
Ribbon Or Flat Cable Interface Sockets

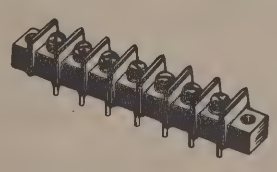

TR1 Track
RIS Ribbon Interface Socket Assembly
.145 Max. Lug Access (3.68)
No. 2-58 Terminal Screw
A
B
Header

Features convenient mating, track mounting, and wire clamp on terminal blocks. Rated at 1 A, 125 V. **Terminal Blocks:** Break-resistant thermoplastic. **Terminals:** No. 2-56 screws with clamp, 1/4" center to center spacing. **Wire:** Up to No. 16 AWG. **Headers:** 2 rows of .025" square tin-plated pins on .100" centers with hook retainers. Designed to mate with all standard connectors.

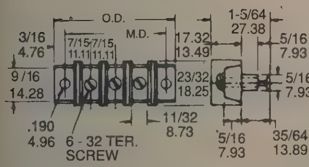
Stock No.	Mfr.'s Type	No. Of Pins	A (In.)	B (In.)	EACH			
					1-9	10-24	25-49	50-99
764-0530	RIS20	20	2.688	3.000	**30.76**	**25.64**	**21.13**	**20.54**
764-0531	RIS26	26	3.438	3.750	**31.75**	**29.93**	**25.41**	**24.71**
764-0532	RIS34	34	4.438	4.750	**39.40**	**37.15**	**31.55**	**30.67**
764-0533	RIS40	40	5.188	5.500	**45.43**	**42.84**	**36.37**	**35.36**
764-0534	RIS50	50	6.438	6.750	**54.49**	**51.38**	**43.63**	**42.42**

Feed-Through Terminal Blocks

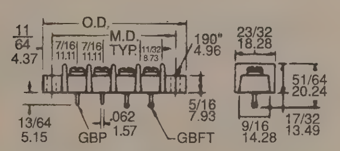




GFT



GBP



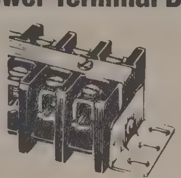
Rated 20 A, 300 V, with a 150°C (302°F) continuous use temperature rating. **Max. Width:** .718" ±0.030". Terminals on 7/16" center to center spacing. The blocks are made from black thermo-set phenolic. The screw terminals have a No. 6-32 plated steel screw which accepts wire from 22 AWG to 12 AWG (per UL).

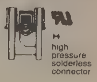
Type GFTXW

Similar to type GFT but the blocks are made from thermoplastic (UL rated for 105° continuous use) and also have wire clamps included. The two items listed are offered at special pricing. 2-26 terminal types are available by special order with a 10 piece minimum required per item.

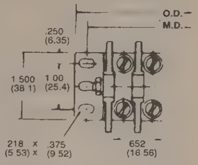
Stock No.	Mfr.'s Type	No. Of Terminals	EACH			
			1-9	10-24	25-49	50-99
764-0523	GFTXW-3	3	**2.53**	**2.18**	**1.99**	**1.81**
764-0525	GFTXW-5	5	**4.28**	**3.59**	**3.25**	**2.90**

Type H Sectional, High-Power Terminal Blocks



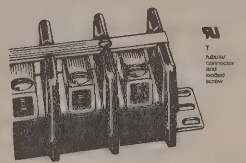


These blocks have a maximum diameter of 2.0" and .652" center to center spacing. The housing is thermoplastic-polyester with a white fiber circuit marking strip. Rated 75 A, 600 V and 130°C (266°F) continuous use temperature. Unique bar and traveling collar design eliminates the lugging of wire. UL recognized for wire sizes 16 AWG to 4 AWG. Copper terminals with high-pressure solderless connectors. Items with 11-30 terminals are available by special order. Special order minimum is 10 pieces for each item.

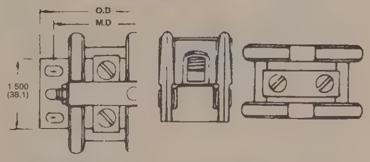


Stock No.	Mfr.'s Type	No. Of Terminals	Mounting Dimension (In.)	Overall Dimension (In.)	EACH		
					1-9	10-24	25-49
764-0001	H-1	1	1.676	2.355	**3.69**	**2.92**	**2.51**
764-0002	H-2	2	2.328	3.006	**5.73**	**4.78**	**4.09**
764-0003	H-3	3	2.979	3.658	**8.00**	**6.66**	**5.71**
764-0004	H-4	4	3.631	4.309	**10.22**	**8.52**	**7.30**
764-0005	H-5	5	4.282	4.961	**12.44**	**10.37**	**8.89**
764-0006	H-6	6	4.934	5.612	**14.67**	**12.22**	**10.48**
764-0007	H-7	7	5.585	6.264	**16.93**	**14.11**	**12.09**
764-0008	H-8	8	6.237	6.915	**19.16**	**15.96**	**13.68**
764-0009	H-9	9	6.888	7.567	**21.38**	**17.82**	**15.27**
764-0010	H-10	10	7.540	8.218	**23.62**	**19.69**	**16.87**

Type T High Current Terminal Blocks


T
tubular connector and slotted screw

UL Standard 1059, CSA Guide No. 184-N-90. These blocks have a maximum diameter of 2.5" and 1.169" ±0.030" center to center spacing. The housing is black phenolic rated for 125 A, 600 V, and for 150°C (302°F) continuous use. Tubular, high-pressure solderless connections of electrolytically pure copper accommodate wire without lugging and provide 100% conductivity. The thermo-set phenolic molding has a white fiber marking strip. Thru-bolt construction. UL recognized for wire 6 AWG to 10 AWG. Available in 1-6 terminals. Items not listed are available by special order. A minimum of 10 pieces per item is required on unlisted items.



Stock No.	Mfr.'s Type	No. Of Terminals	Mounting Dimension (In.)	Overall Dimension (In.)	EACH			
					1-9	10-24	25-49	50-99
764-0601	T-1	1	2.183	2.683	**11.00**	**10.00**	**9.16**	**7.85**
764-0602	T-2	2	3.342	3.842	**19.58**	**17.80**	**16.32**	**13.99**
764-0603	T-3	3	4.500	5.000	**28.72**	**26.11**	**23.94**	**20.52**
764-0604	T-4	4	5.659	6.159	**37.86**	**34.42**	**31.55**	**27.04**
764-0605	T-5	5	6.817	7.317	**47.02**	**42.75**	**39.19**	**33.59**

Type GBP. Printed Circuit Board Design — UL Standard 1059, CSA Guide 184-N-90

The printed circuit pin is tin-plated brass and is .062" in diameter. 21-26 terminal types are available by special order with a minimum of 10 pieces required per item.

Stock No.	Mfr.'s Type	No. Of Terminals	Mounting Dimension (M.D.) (In.)	Overall Dimension (O.D.) (In.)	EACH			
					1-9	10-24	25-49	50-99
764-0402	GBP-2	2	1.312	1.687	**1.21**	**1.03**	**.94**	**.91**
764-0403	GBP-3	3	1.750	2.125	**1.70**	**1.45**	**1.32**	**1.28**
764-0404	GBP-4	4	2.187	2.562	**2.18**	**1.86**	**1.70**	**1.65**
764-0405	GBP-5	5	2.625	3.000	**2.86**	**2.39**	**2.09**	**2.02**
764-0406	GBP-6	6	3.062	3.437	**3.16**	**2.70**	**2.47**	**2.39**
764-0407	GBP-7	7	3.500	3.875	**3.65**	**3.12**	**2.85**	**2.76**
764-0408	GBP-8	8	3.937	4.312	**4.14**	**3.53**	**3.23**	**3.13**
764-0409	GBP-9	9	4.375	4.750	**4.63**	**3.95**	**3.61**	**3.50**
764-0410	GBP-10	10	4.812	5.187	**5.11**	**4.37**	**3.99**	**3.87**
764-0412	GBP-12	12	5.682	6.062	**6.09**	**5.20**	**4.75**	**4.61**
764-0414	GBP-14	14	6.567	6.937	**7.10**	**6.06**	**5.54**	**5.37**
764-0415	GBP-15	15	7.000	7.375	**7.59**	**6.48**	**5.92**	**5.74**
764-0416	GBP-16	16	7.437	7.812	**8.07**	**6.89**	**6.30**	**6.10**
764-0420	GBP-20	20	9.187	9.562	**10.03**	**8.56**	**7.83**	**7.58**

Type GFT. Fully Insulated Terminals UL Standard 059, CSA Guide 184-N-90

The turret-type solder pin is tin-plated brass. .074" typical diameter with a .114" typical diameter turret at the end. 21-26 terminal types are available by special order with a minimum of 10 pieces required per item.

Stock No.	Mfr.'s Type	No. Of Terminals	Mounting Dimension (M.D.) (In.)	Overall Dimension (O.D.) (In.)	1-9	10-24	25-49	50-99
764-0502	GFT-2	2	1.312	1.687	**1.32**	**1.13**	**1.03**	**1.00**
764-0503	GFT-3	3	1.750	2.125	**1.90**	**1.62**	**1.48**	**1.43**
764-0504	GFT-4	4	2.187	2.562	**2.49**	**2.13**	**1.95**	**1.89**
764-0505	GFT-5	5	2.625	3.000	**3.10**	**2.65**	**2.42**	**2.35**
764-0506	GFT-6	6	3.062	3.437	**3.71**	**3.16**	**2.89**	**2.80**
764-0507	GFT-7	7	3.500	3.875	**4.31**	**3.68**	**3.36**	**3.26**
764-0508	GFT-8	8	3.937	4.312	**4.91**	**4.19**	**3.83**	**3.72**
764-0509	GFT-9	9	4.375	4.750	**5.52**	**4.71**	**4.31**	**4.17**
764-0510	GFT-10	10	4.812	5.187	**6.09**	**5.20**	**4.75**	**4.61**
764-0512	GFT-12	12	5.682	6.062	**7.30**	**6.23**	**5.70**	**5.52**
764-0514	GFT-14	14	6.567	6.937	**8.51**	**7.26**	**6.64**	**6.43**
764-0515	GFT-15	15	7.000	7.375	**9.11**	**7.78**	**7.11**	**6.89**
764-0516	GFT-16	16	7.437	7.812	**9.71**	**8.29**	**7.58**	**7.34**
764-0518	GFT-18	18	8.312	8.687	**10.89**	**9.30**	**8.50**	**8.23**
764-0520	GFT-20	20	9.187	9.562	**12.10**	**10.33**	**9.44**	**9.15**

All dimensions shown are ± .030".

Heavy Duty Han® Series Industrial Power Connectors

Listed below are the most popular configurations in Harting's versatile Han® series of power connectors. Application possibilities are extensive — both electronic and electrical. All series have UL and CSA approvals. The HAN D®, HAN E®, HAN A®, and HAN® HsB series have several international approvals.

Inserts feature leading protective ground, polarization, interchangability of male and female inserts in hoods and housings, and the ability to use the inserts without hoods for rack and panel applications.

Hoods and housings are in accordance with International Standard IEC529 (DIN40050) degree of protection IP65 which complies in full with NEMA Type 4. They feature electrical connection with protective ground and high mechanical strength and vibration resistance.

Founded in 1945 HARTING ELEKTRONIK has become one of the World's leading manufacturers and suppliers of Industrial Power Connectors designed to meet demanding industrial applications and environments.

HARTING Heavy Duty Han® Connectors are applicable in a wide variety of electronic and electrical applications including for example:

Power Utilities
Chemical Plants
Machine Tool Controls
Industrial Instrumentation
Conveyor Equipment

and many more.

All Harting Han® series connectors are:

UL Recognized under file # E 80178 and

CSA Approved under certified file # 18753.

All hoods and housings are in accordance with International Standard IEC 529 (DIN 40050) degree of protection IP 65 which specifies that enclosures are protected against windblown dust and rain, splashing water and hose directed water.

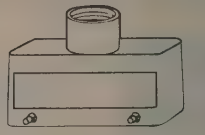
This degree of protection complies in full with NEMA Type 4 (Publication No. 250-1979) requirements.

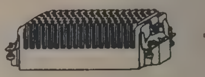
A complete connector consists of the following components:

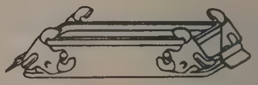
Hoods with
- top or side entry
- low or high profile
- single or double locking lever

Male/Female inserts with
- screw clamp or
- crimp contact or
- cage-clamp spring termination

Housings (panel or surface mount)
- one or two side entry
- low or high profile
- single or double locking lever
- with or without plastic spring cover
- protective covers available
- labels according to CSA-approval



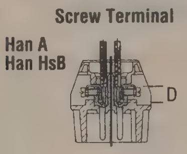


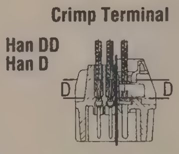


Inserts

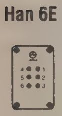
View From Termination Side

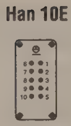
All inserts are with an integrated ground clip.

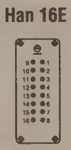


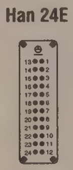


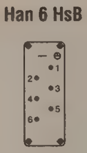
Inserts	Max. Wire Gauge (Sq. Inch)	Stripping Length A (Inch)
Han 3A	3.875×10^{-3}	0.177
Han A	3.875×10^{-3}	0.276
Han HsB	9.300×10^{-3}	0.453

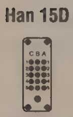


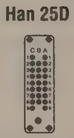


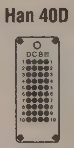


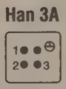


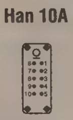


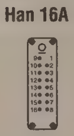












Wire Gauge		Internal Diameter ø (Inch)	Stripping Length A (Inch) Han DD Han D
mm²	AWG		
0.14 ... 0.37	26-22	0.0354	0.315
0.50	20	0.0433	0.315
0.75 ... 1.00	18	0.0571	0.315
1.50	16	0.0689	0.315
2.50	14	0.0886	0.236
4.00	12	0.1122	—

Material: Thermoplastic resin. **Contacts:** Copper alloy, hard-silver plated.

Han A® Inserts. Screw terminal contacts included.

Male Insert

Stock No.	Mfr.'s Type	No. of Cont.	Hood/ Housing Series	EACH	
				1-9	10-24
597-1250	09.20.003.2611	3	Han 3A	6.19	5.58
597-1260	09.20.010.2612	10	Han 10A	13.01	11.71
597-1270	09.20.016.2612	16	Han 16A	17.18	15.47

Female Insert

Stock No.	Mfr.'s Type	No. of Cont.	Hood/ Housing Series	1-9	10-24
597-1255	09.20.003.2711	3	Han 3A	6.43	5.79
597-1265	09.20.010.2812	10	Han 10A	14.11	12.70
597-1275	09.20.016.2812	16	Han 16A	20.30	18.27

Han D® Inserts. Crimp contacts ordered separately.

Male Insert

Stock No.	Mfr.'s Type	No. of Cont.	Hood/ Housing Series	1-9	10-24
597-1150	09.21.007.3031*	7	Han 3A	4.06	3.41
597-1160	09.21.015.3001	15	Han 10A	8.94	7.47
597-1170	09.21.025.3001	25	Han 16A	8.53	7.68
597-1180	09.21.040.3001	40	Han 16E	10.87	9.79
597-1190	09.21.064.3001	64	Han 24E	11.28	10.16

Female Insert

Stock No.	Mfr.'s Type	No. of Cont.	Hood/ Housing Series	1-9	10-24
597-1155	09.21.007.3131*	7	Han 3A	4.06	3.41
597-1165	09.21.015.3101	15	Han 10A	8.94	7.47
597-1175	09.21.025.3101	25	Han 16A	8.53	7.68
597-1185	09.21.040.3101	40	Han 16E	11.04	9.94
597-1195	09.21.064.3101	64	Han 24E	11.42	10.28

*For plastic hoods/housings only.

Han® HSB Inserts. Screw terminal contacts included.

Male Insert

Stock No.	Mfr.'s Type	No. of Cont.	Hood/ Housing Series	EACH	
				1-9	10-24
597-1050	09.31.006.2601	6	Han 16E	19.38	17.44

Female Insert

Stock No.	Mfr.'s Type	No. of Cont.	Hood/ Housing Series	1-9	10-24
597-1055	09.31.006.2701	6	Han 16E	20.48	18.43

*For plastic hoods/housings only.

Han® D/DD Crimp Contacts (Silver-Plated)

Male Insert

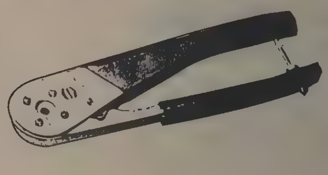
Stock No.	Mfr.'s Type	AWG	PER PK./100
597-1500	09.15.000.6106	14	51.14
597-1502	09.15.000.6101	16	51.14
597-1504	09.15.000.6102	18	51.14
597-1506	09.15.000.6103	20	51.14
597-1509	09.15.000.6107	22-26	51.14

Female Insert

Stock No.	Mfr.'s Type	AWG	PER PK./100
597-1510	09.15.000.6206	14	51.55
597-1512	09.15.000.6201	16	51.55
597-1514	09.15.000.6202	18	51.55
597-1516	09.15.000.6203	20	51.55
597-1519	09.15.000.6207	22-26	51.55

Crimp Tool and Accessories

BUCHANAN Crimp Tool



597-1525. 09.99.000.0001 .... **EACH 701.88**

Locator for D/DD

597-1530. 09.99.000.0311 .... **EACH 5.32**

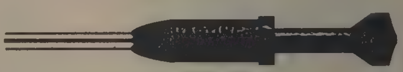
Depth Adjustment Gauge

Stock No.	Mfr.'s Type	AWG	EACH
597-1532	09.99.000.0230	14	39.18
597-1534	09.99.000.0231	16	44.12
597-1536	09.99.000.0007	18-20	44.14

Insertion Tool

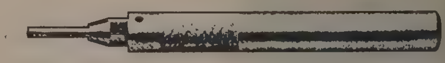
597-1540. 09.99.000.0059 .... **EACH 20.42**

Mini Removal Tool



597-1550. 09.99.000.0052 .... **EACH 15.74**

Removal Tool

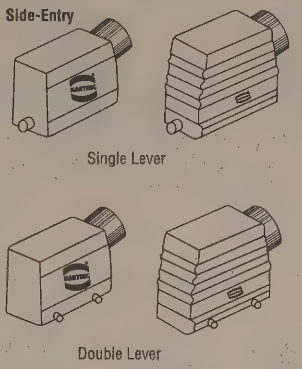


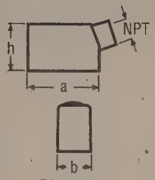
597-1545. 09.99.000.0012 .... **EACH 77.14**

Replacement Tip

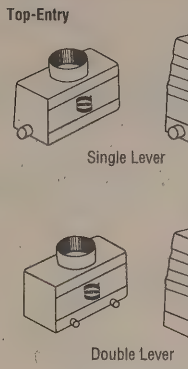
597-1547. 09.99.000.0004 .... **EACH 1.37**

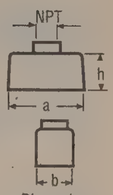
Standard Hoods





Dimensions in Inches





Dimensions in Inches

Hoods are in accordance with International Standard IEC 529 (DIN40050) degree of protection IP65 which complies in full with NEMA Type 4. They feature electrical connection with protective ground and high mechanical strength and vibration resistance.

Provide excellent mechanical and electrical protection in demanding environments. **Material:** light metal alloy or thermoplastic. **Color:** Silver Grey. Can be used with either male or female inserts.

CSA Recognized File # E 80178

UL Certified File # E18753

Hoods (Mate with Housings)

Hoods with single lever peg mate with housing with a single lever.

Han 6E. Side-entry, single lever peg.

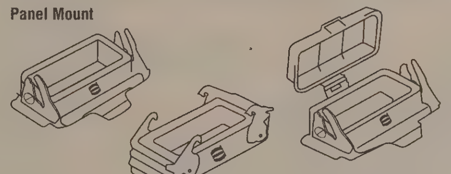
Stock No.	Mfr.'s Type	Dimensions (In.)				EACH	
		a	b	h	NPT	1-9	10-24
597-2000	09.30.506.1541	2.362	1.693	1.69	½	**12.66**	**10.55**
597-2002	09.30.506.0542	2.362	1.693	2.76	¾	**18.42**	**15.35**
597-2004	09.30.506.0543	2.362	1.693	2.76	1	**15.59**	**12.99**
Han 6E. Top-entry, single lever peg.							
597-2100	09.30.506.1441	2.362	1.693	1.58	½	**14.93**	**12.44**
597-2102	09.30.506.0442	2.362	1.693	2.76	¾	**18.08**	**15.07**
597-2104	09.30.506.0443	2.362	1.693	2.76	1	**16.21**	**13.51**
Han 10A. Side-entry, single lever peg.							
597-2210	09.20.510.1541	2.480	1.161	2.15	½	**16.31**	**13.59**
597-2212	09.20.510.0541	2.480	1.417	2.54	¾	**22.55**	**18.79**
Han 10A. Top-entry, single lever peg.							
597-2260	09.20.510.1440	2.480	1.161	1.85	½	**16.22**	**13.52**
597-2262	09.20.510.0441	2.480	1.417	2.54	¾	**24.68**	**20.57**
Han 10E. Side-entry, single lever peg.							
597-2010	09.30.510.0542	2.874	1.693	2.76	¾	**26.50**	**22.04**
597-2012	09.30.510.0543	2.874	1.693	2.76	1	**29.56**	**24.63**
Han 16A. Side-entry, single lever peg.							
597-2220	09.20.516.1541	3.130	1.161	2.15	½	**17.39**	**14.49**
597-2222	09.20.516.0541	3.130	1.417	2.78	¾	**21.99**	**15.33**
Han 16A. Top-entry, single lever peg.							
597-2270	09.20.516.1441	3.130	1.161	1.85	½	**18.79**	**15.66**
597-2272	09.20.516.0441	3.130	1.417	2.78	¾	**25.66**	**21.39**

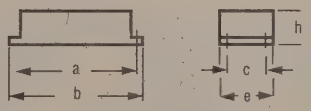
Han 16E. Side-entry, single lever peg.

Stock No.	Mfr.'s Type	Dimensions (In.)				EACH	
		a	b	h	NPT	1-9	10-24
597-2022	09.30.516.1540	3.681	1.693	2.36	¾	**20.09**	**16.75**
597-2024	09.30.516.0541	3.681	1.693	2.99	1	**30.79**	**25.66**
Han 16E. Top-entry, single lever peg.							
597-2122	09.30.516.1440	3.681	1.693	1.77	¾	**21.87**	**18.22**
597-2126	09.30.516.0441	3.681	1.693	2.99	1	**29.47**	**24.56**
Han 24E. Side-entry, single lever peg.							
597-2030	09.30.524.1540	4.724	1.693	2.36	¾	**26.09**	**21.74**
597-2032	09.30.524.0541	4.724	1.693	2.99	1	**31.06**	**25.88**
Han 24E. Top-entry, single lever peg.							
597-2130	09.30.524.0440	4.724	1.693	2.99	¾	**36.83**	**30.69**
597-2132	09.30.524.0441	4.724	1.693	2.99	1	**31.04**	**25.88**
Han 32A*. Side-entry, double lever peg.							
597-2230	09.20.532.0521	3.228	2.205	2.95	1	**30.97**	**25.81**
Han 32A*. Top-entry, double lever peg.							
597-2280	09.20.532.0421†	3.228	2.205	2.95	1	**28.41**	**23.67**
Han 48E†. Side-entry, single lever peg.							
597-2050	09.30.548.0540	5.197	3.543	3.86	1	**70.55**	**58.79**
Han 48E†. Top-entry, single lever peg.							
597-2150	09.30.548.0441	5.197	3.543	3.86	1¼	**65.91**	**54.93**

*Holds 2 inserts that fit Han 16A. †Han 48E holds 2 inserts that fit Han 24E.

Standard Housings





Dimensions in Inches

Housings are in accordance with International Standard IEC 529 (DIN40050) degree of protection IP65 which complies in full with NEMA Type 4. They feature electrical connection with protective ground and high mechanical strength and vibration resistance.

Provide excellent mechanical and electrical protection in demanding environments. **Material:** Light metal alloy or thermoplastic. **Color:** Silver Grey. Can be used with either male or female inserts.

CSA Recognized File # E 80178

UL Certified File # E18753

Housings (Mate with Hoods)

Single lever mate with single lever peg.

Panel Mount

Han 6E. Dim: A — 2.756"; B — 3.150"; single lever.

Stock No.	Mfr.'s Type	Dimensions (In.)			EACH	
		c	e	h	1-9	10-24
597-2300	09.30.006.0301	1.260	1.693	1.12	**11.89**	**10.70**
597-2302	09.30.006.0302[1]	1.260	1.693	1.12	**18.52**	**16.67**
Han 10A. Dim: A — 2.756"; B — 3.189"; single lever.						
597-2510	09.20.010.0301	0.689	1.142	1.02	**11.93**	**10.74**
Han 10E. Dim: A — 3.268"; B — 3.661"; single lever.						
597-2310	09.30.010.0303[1]	1.260	1.693	1.12	**24.98**	**22.49**
Han 16A. Dim: A — 3.386"; B — 3.780"; single lever.						
597-2520	09.20.016.0301	0.689	1.142	1.02	**16.12**	**14.51**
Han 16E. Dim: A — 4.055"; B — 4.449"; single lever.						
597-2320	09.30.016.0306[1]	1.260	1.693	1.12	**26.59**	**23.93**

Han 16E. Dim: A — 4.055"; B — 4.449"; double lever.

Stock No.	Mfr.'s Type	Dimensions (In.)			EACH	
		c	e	h	1-9	10-24
597-2326	09.30.016.0301	1.260	1.693	1.12	**18.39**	**16.55**
Han 24E. Dim: A — 5.118"; B — 5.512"; single lever.						
597-2330	09.30.024.0307	1.260	1.693	1.12	**20.81**	**18.73**
597-2332	09.30.024.0304[1]	1.260	1.693	1.12	**30.45**	**27.41**
Han 24E. Dim: A — 5.118"; B — 5.512"; double lever.						
597-2336	09.30.024.0301	1.260	1.693	1.12	**19.89**	**17.90**
Han 32A*. Dim: A — 3.622"; B — 4.016"; double lever.						
597-2530	09.20.032.0301	1.654	2.205	1.12	**22.82**	**20.54**
Han 48E†. Dim: A — 5.827"; B — 6.496"; single lever.						
597-2350	09.30.048.0301	2.756	3.543	1.58	**73.60**	**66.24**

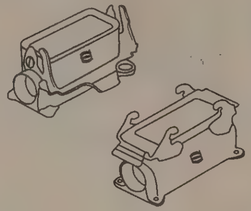
*Han 32A holds 2 inserts that fit Han 16A. †Han 48E holds 2 inserts that fit Han 24E. [1]With thermoplastic spring cover.

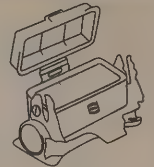
Standard Housings

Housings are in accordance with International Standard IEC 529 (DIN40050) degree of protection IP65 which complies in full with NEMA Type 4. They feature electrical connection with protective ground and high mechanical strength and vibration resistance.

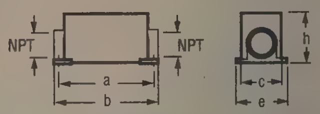
Provide excellent mechanical and electrical protection in demanding environments. **Material:** Light metal alloy or thermoplastic. **Color:** Silver Grey. Can be used with either male or female inserts.

Surface Mount





Spring Cover



Dimensions in Inches

Recognized File # E 80178

Certified File # E18753

Surface Mount (Two-Sided Entry Except Han 3A)
Han 6E. Dim: A — 2.756'; B — 3.228'; single lever.

Stock No.	Mfr.'s Type	Dimensions (In.)				EACH	
		c	e	h	NPT	1-9	10-24
597-2400	09.30.506.1291	1.575	2.047	2.03	½	**18.43**	**16.59**
597-2402	09.30.506.1296[1]	1.575	2.047	2.03	½	**32.17**	**28.95**

Han 10A. Dim: A — 1.890"; B — 2.500"; single lever.

597-2560	09.20.510.0291	1.575	1.969	2.05	½	**22.79**	**20.51**

Han 10E. Dim: A — 3.228"; B — 3.701"; single lever.

597-2470	09.30.510.0292	1.772	2.244	2.36	¾	**28.86**	**25.97**
597-2414	09.30.510.0298[1]	1.772	2.244	2.36	1	**33.70**	**30.33**

Han 16A. Dim: A — 2.520"; B — 3.150"; single lever.

597-2570	09.20.516.0291	1.575	1.969	2.24	½	**26.33**	**23.70**

Han 16E. Dim: A — 4.134"; B — 4.606"; single lever.

597-2420	09.30.516.1290	1.772	2.244	2.21	¾	**27.76**	**24.98**
597-2422	09.30.516.0291	1.772	2.244	3.03	1	**55.78**	**50.20**

Han 16E. Dim: A — 4.134"; B — 4.606"; double lever.

Stock No.	Mfr.'s Type	Dimensions (In.)				EACH	
		c	e	h	NPT	1-9	10-24
597-2426	09.30.516.1270	1.772	2.244	2.21	¾	**27.89**	**25.70**
597-2428	09.30.516.0271	1.772	2.244	3.03	1	**53.80**	**48.42**

Han 24E. Dim: A — 5.197"; B — 5.699"; single lever.

597-2430	09.30.524.1295[1]	1.772	2.244	2.21	¾	**36.51**	**32.86**
597-2432	09.30.524.0296[1]	1.772	2.244	3.15	1	**59.92**	**53.93**

Han 24E. Dim: A — 5.197"; B — 5.699"; double lever.

597-2436	09.30.524.1270	1.772	2.244	2.21	¾	**28.71**	**25.84**

Han 32A*. Dim: A — 3.701"; B — 4.173"; double lever.

597-2580	09.20.532.0271	1.811	2.244	3.23	1	**40.67**	**36.60**

Han 48E†. Dim: A — 4.870"; B — 5.551"; single lever.

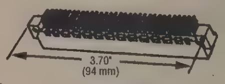
597-2450	09.30.548.0296[1]	4.173	4.724	3.90	1¼	**149.61**	**134.65**

*Han 32A holds 2 inserts that fit Han 16A. †Han 48E holds 2 inserts that fit Han 24E. [1] With thermoplastic spring cover.

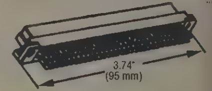
Gds A Series Printed Circuit Board DIN 41612 Connectors

— NEW —

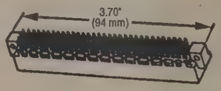
Based on the requirements of DIN Standard 41612 these male and female connectors are available in many termination techniques — straight and right angle solder pins for printed circuits, solder lugs for discrete wiring, press-in for backplanes. All offer low insertion/withdrawal force and high vibration resistance. Feature glass-fiber filled thermoplastic resin moldings. Copper alloy contacts are gold plated in contact zone according to performance level 2 and tinned in termination zone for greater solderability. 0.100" (2.54 mm) contact spacing. Certified according to DIN ISO 9001. All versions are CSA certified; types B, C, Q and R are UL recognized.



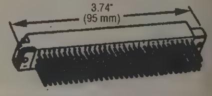
Type B Male Angle



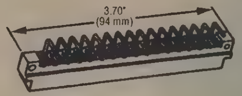
Type B Female Solder Lugs



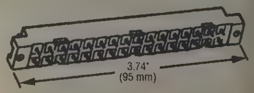
Type C Male Straight



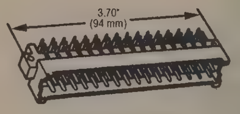
Type C Female Wrap Posts



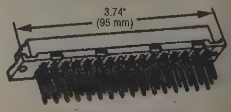
Type D Male Angle



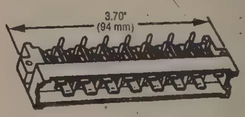
Type D Female Straight



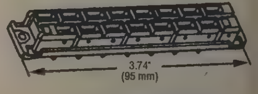
Type F Male Angle



Type F Female Press-In



Type H Male Angle



Type H Female Straight

Gds A-B Series — Type B Connectors, 2 Amps

Stock No.	Mfr.'s Type	DIN Style	Contacts	Termination	EACH	
					1-9	10-24
597-9993	09.02.164.6921	Male	64	Right Angle Solder Pins for 0.063" (1.6 mm) PCB	**2.60**	**2.36**
597-8602	09.02.164.6824	Female	64	Straight Solder Pins for 0.063" (1.6 mm) PCB	**4.56**	**4.14**
597-8604	09.02.164.6825	Female	64	Straight Solder Pins for 0.126" (3.2 mm) PCB	**4.45**	**4.04**
597-8606	09.02.164.6821	Female	64	Straight Wrap Post 0.512" (13 mm) Long	**5.01**	**4.55**
597-8608	09.02.164.6823	Female	64	Solder Lugs	**6.24**	**5.67**

Gds A-C Series — Type C Connectors, 2 Amps

597-8610	09.03.196.6922	Male	96	Straight Solder Pins for 0.063" (1.6 mm) PCB	**4.04**	**3.67**
597-8612	09.03.196.6921	Male	96	Right Angle Solder Pins for 0.063" (1.6 mm) PCB	**3.70**	**3.37**
597-8614	09.03.164.6921	Male	64	Right Angle Solder Pins for 0.063" (1.6 mm) PCB	**2.77**	**2.52**
597-8616	09.03.196.6935	Male	96	Right Angle Press-In Compliant Pin, 0.216" (5.5 mm)	**10.42**	**9.48**
597-8618	09.03.196.6824	Female	96	Straight Solder Pins 0.234" (2.5 mm) long for 0.125" (3.2 mm) PCB	**5.21**	**4.74**
597-8620	09.03.164.6824	Female	64	Straight Solder Pins 0.234" (2.5 mm) long for 0.125" (3.2 mm) PCB	**4.62**	**4.20**
597-8622	09.03.196.6825	Female	96	Straight Solder Pins 0.275" (7 mm) long for 0.125" (3.2 mm) PCB	**4.59**	**4.17**
597-8624	09.03.164.6825	Female	64	Straight Solder Pins 0.275" (7 mm) long for 0.125" (3.2 mm) PCB	**4.62**	**4.20**
597-8626	09.03.196.6821	Female	96	Straight Wrap Post 0.512" (13 mm) long	**6.44**	**5.85**
597-8628	09.03.196.6823	Female	96	Solder Lugs	**8.83**	**8.03**
597-8630	09.03.196.6850	Female	96	Press-In Compliant Pin, 0.216" (5.5 mm)	**7.27**	**6.61**
597-8632	09.03.196.6851	Female	96	Press-in Compliant Pin, 0.511" (13 mm)	**10.11**	**9.19**

Gds A-D Series — Type D Connectors, 6 Amps

597-8634	09.04.132.6921	Male	32	Right Angle Solder Pin for 0.063" (1.6 mm) PCB	**3.46**	**3.14**
597-8636	09.04.232.6831	Female	32	Straight Solder Pin, 0.157" (4 mm) long for 0.125" (3.2 mm) PCB	**7.63**	**6.94**
597-8638	09.04.232.6826	Female	32	Right Angle Solder Pin for 0.039" × 0.039" (1 × 1 mm) for 0.063" (1.6 mm) PCB	**12.04**	**10.94**

Gds A-F Series — Type F Connectors, 6 Amps

597-0001	09.06.148.6901	Male	48	Right Angle Solder Pin for 0063" (1.6 mm) PCB	**8.26**	**7.51**
597-8640	09.06.248.6835	Female	48	Straight Solder Pin 0.177" (4.5 mm) long for 0.125" (3.2 mm) PCB	**6.90**	**6.27**
597-8642	09.06.248.6832	Female	48	Press-In Compliant Pin, 0.216" (5.5 mm) long	**14.60**	**13.27**

Gds A-H Series — Type H Connectors, 15 Amps

597-8644	09.06.115.2911	Male	15	Right Angle Solder Pin for 0.063" (1.6 mm) PCB	**8.54**	**7.76**
597-8646	09.06.215.2821	Female	15	Straight Solder Pin, 0.157" (4 mm) long for 0.063" (1.6 mm) PCB	**9.54**	**8.67**

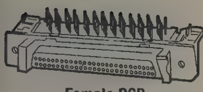
har-mik® Microelectronic Connectors

A comprehensive range of miniature connectors designed to meet the requirements of internal and external connections of the future.

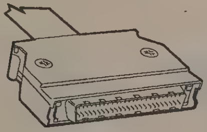
Pin and Socket I/O Connectors

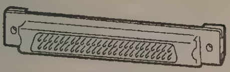
S.C.S.I.
I.P.I.
HI.P.P.I.
RS 232 E

Series 60.01/02/03

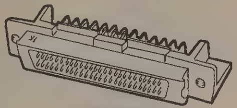


Female PCB
with Right Angled Solder Pins

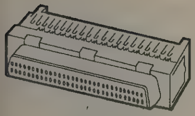




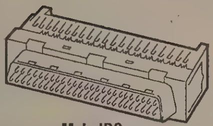
Male PCB
with Straight Solder Pins



Male PCB
with Right Angled Solder Pins



Female IDC



Male IDC

- ► **Reduced Size: Contact Pitch of 1.27 mm (.050 inches)**
- ► **High Contact Density: Double Standard D-Sub**
- ► **E.M.I./R.F.I. Protected: Metal Shells and Hoods for Optimum Screening**
- ► **Polarized by "D" Shape**
- ► **Locking Device: Quick Latch and Jackscrew**
- ► **Male and Female IDC Versions for Discrete Wire 28 to 30 AWG**
- ► **Male and Female Connector with Straight and Angled Solder Pins**
- ► **Many Connector Sizes: From 20 to 100 Ways**

PCB Female Connectors

Stock No.	Mfr.'s Type	No. of Contacts	Termination*	EACH
				1-25
597-3014	60.01.026.5102	26	S	**5.22**
597-3018	60.01.050.5102	50	S	**5.92**
597-3020	60.01.050.5140	50	R/A	**5.81**
597-3022	60.01.068.5102	68	S	**9.16**
597-3024	60.01.068.5140	68	R/A	**8.83**

PCB Male Connectors

Stock No.	Mfr.'s Type	No. of Contacts	Termination*	EACH 1-25
597-3026	60.01.020.5202	20	S	**5.44**
597-3028	60.01.020.5232	20	R/A	**5.08**
597-3030	60.01.050.5202	50	S	**6.58**
597-3032	60.01.050.5232	50	R/A	**5.81**
597-3034	60.01.068.5202	68	S	**10.19**
597-3036	60.01.068.5232	68	R/A	**9.49**

*Termination for PCB Female Connectors — S = Straight Solder Pins; R/A = Right Angled Solder Pins with Snap-in Clips (Snap-in clips only available for Female Connectors); Termination for PCB Male Connectors — S = Straight Solder Pins; R/A = Right Angled Solder Pins with M2.5 Thread (Male Connector **not** available with snap-in clips).

Cable Female Connectors

Stock No.	Mfr.'s Type	No. of Contacts	Ø	EACH
				1-25
597-3041	60.03.050.5100	50	.5 - .65 mm	**6.25**
597-3042	60.03.050.5120	50	.8 - .88 mm	**6.25**
597-3044	60.03.068.5100	68	.5 - .65 mm	**8.35**
597-3046	60.03.068.5120	58	.8 - .88 mm	**8.35**

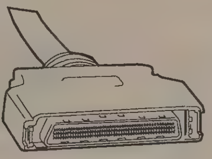
Cable Male Connectors

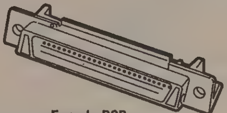
Stock No.	Mfr.'s Type	No. of Contacts	Ø	EACH 1-25
597-3054	60.03.050.5200	50	.5 - .65 mm	**5.37**
597-3056	60.03.050.5210	50	.65 - .8 mm	**5.37**
597-3058	60.03.068.5200	68	.5 - .65 mm	**7.54**
597-3060	60.03.068.5210	68	.65 - .8 mm	**7.54**

Bellows Contact I/O Connectors

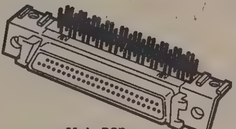
IEEE 1284C

Series 60.11/13

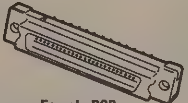




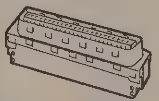
Female PCB
with Right Angle Solder Pins



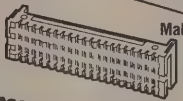
Male PCB
with Right Angle Solder Pins

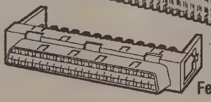


Female PCB
with Straight Solder Pins



Male IDC





Female IDC

- ► **Reduced Size: Contact Pitch of 1.27 mm (.050 inches)**
- ► **High Contact Density: Double Standard Delta Ribbon**
- ► **E.M.I./R.F.I. Protected: Metal Shells and Hoods for Optimum Screening**
- ► **Polarized by "D" Shape**
- ► **Locking Device: Quick Latch**
- ► **Male and Female IDC Versions for Discrete Wire 28 to 30 AWG**
- ► **Male and Female Connectors with Straight and Angled Solder Pins**
- ► **Many Connector Sizes: From 20 to 96 Ways**

PCB Female Connectors

Stock No.	Mfr.'s Type	No. of Contacts	Termination*	EACH
				1-25
597-3077	60.11.036.5140	36	R/A	**5.89**
597-3078	60.11.050.5102	50	S	**6.58**
597-3079	60.11.050.5140	50	R/A	**6.03**
597-3082	60.11.068.5102	68	S	**10.19**
597-3084	60.11.068.5140	68	R/A	**9.16**

PCB Male Connectors

Stock No.	Mfr.'s Type	No. of Contacts	Termination*	EACH 1-25
597-3090	60.11.050.5232	50	R/A	**5.81**
597-3092	60.11.068.5232	68	R/A	**8.90**

*Termination for PCB Female Connectors — S = Straight Solder Pins; R/A = Right Angled Solder Pins with Snap-in Clips (Snap-in clips only available for Female Connectors); Termination for PCB Male Connectors — S = Straight Solder Pins; R/A = Right Angled Solder Pins with M2.5 Thread (Male Connector **not** available with snap-in clips).

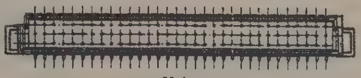
Cable Female Connectors

Stock No.	Mfr.'s Type	No. of Contacts	Ø	EACH
				1-25
597-3098	60.13.068.5100	68	.5 - .65 mm	**8.13**

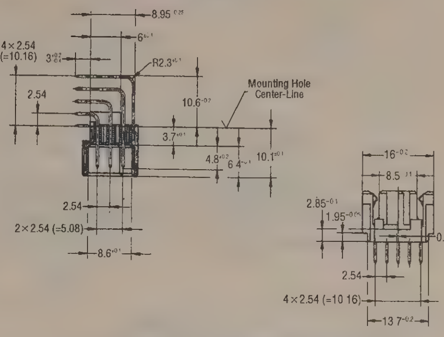
Cable Male Connectors

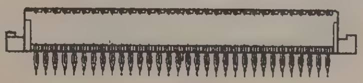
Stock No.	Mfr.'s Type	No. of Contacts	Ø	EACH 1-25
597-3102	60.13.026.5200	26	.5 - .65 mm	**5.08**
597-3103	60.13.036.5200	36	.5 - .65 mm	**5.81**
597-3104	60.13.050.5200	50	.5 - .65 mm	**6.14**
597-3106	60.13.068.5200	68	.5 - .65 mm	**12.06**

har-bus 64



Male



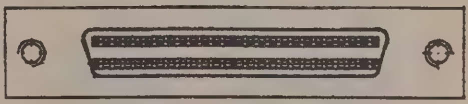


Female

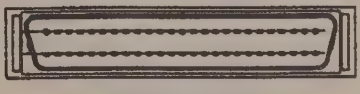
Harting Elektronik, Inc. introduces har-bus 64 — the new VME64 extension connector system. har-bus 64 is 100% backward compatible to existing eurocard systems and Harting's Gds A-C. Two row, z and d, have been added to the VME P1/J1 and P2/J2 connectors.

597-3031. 02.01.160.2101. Male, 160 contacts ....**EACH 17.45**
597-3033. 02.02.160.2201. Female, 160 contacts..............................**EACH 17.27**

SCSI II and III Flat Cable Mount Connector



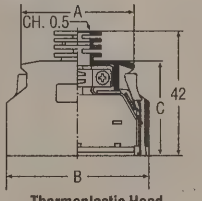
IDC Panel Female Connector



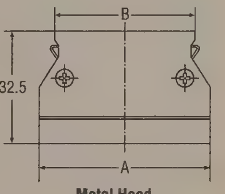
IDC Male Connector

Stock No.	Mfr.'s Type	No. of Contacts	Description	EACH
				1-25
597-3035	60.04.050.5344	50	Panel female connector	**9.07**
597-3037	60.04.068.5344	68	Panel female connector	**10.29**
597-3039	60.06.050.5440	50	IDC male connector	**7.91**
597-3043	60.06.068.5440	68	IDC male connector	**6.25**

Hoods



Thermoplastic Hood



Metal Hood

Thermoplastic with Internal Metal Screen

For male bellows cable connectors.

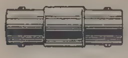
Stock No.	Mfr.'s Type	Size	B	EACH
				1-25
597-3111	60.13.036.0153	36	39.81 mm	**5.08**
597-3112	60.13.050.0153	50	48.70 mm	**5.70**
597-3114	60.13.068.0153	68	60.13 mm	**6.36**

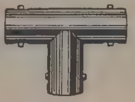
Metal

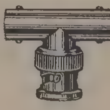
For male and female pin and socket and female bellows cable connectors.

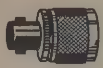
Stock No.	Mfr.'s Type	Size	B	EACH 1-25
597-3116	60.03.020.0155	20	28.95 mm	**8.83**
597-3120	60.03.050.0155	50	48.00 mm	**6.70**
597-3122	60.03.068.0155	68	59.43 mm	**7.25**

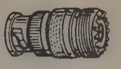
Coaxial/Triaxial Connectors and Adapters

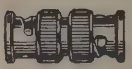

3283
BNC (f/f)

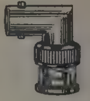

3284
BNC (f/f/f)

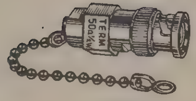

3285
BNC (f/m/f)


3286/3288
BNC (f)/UHF (m)
BNC (f)/N (m)

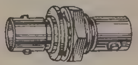

3287
BNC (m)/UHF (f)

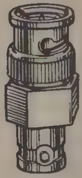

3533
BNC (m/m)

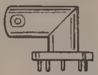

3534
BNC (f/m)

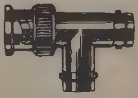


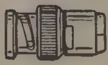
3840

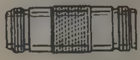

3846
BNC (f/f)

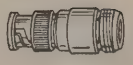

4119

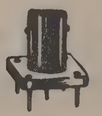

4788

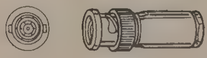

4896
BNC (m/f/f)

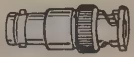

4488/5079

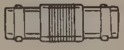

3841
"N" (f/f)

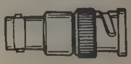

3535
BNC (m)/"N" (f)

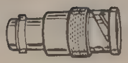

4578

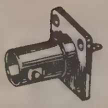

3600/5056/5218
Triax (m)

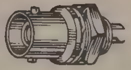

5090
BNC (f)/2 Lug Triax (m)

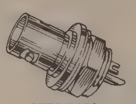

5290
Triax (f/f) 2 Lug

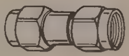

5298/5299
2/3 Lug Triax (f)/BNC (m)

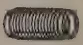

5300
BNC (f)/3 Lug Triax (m)

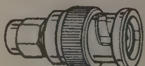

2451/2451A
BNC (f)

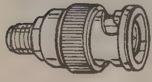

3580
Triax (f)

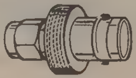

3778/4160
BNC (f)

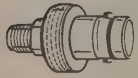

4283
SMA (m/m)

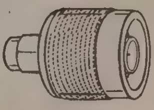

4284
SMA (f/f)

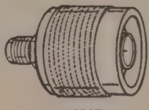

4288
SMA (m)/BNC (m)

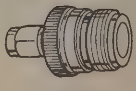

4289
SMA (f)/BNC (m)

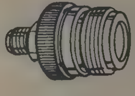

4290
SMA (m)/BNC (f)

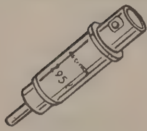

4291
SMA (f)/BNC (f)

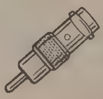

4296
SMA (m)/"TNC" (m)

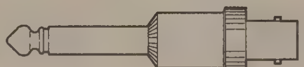

4297
SMA (f)/"N" (m)

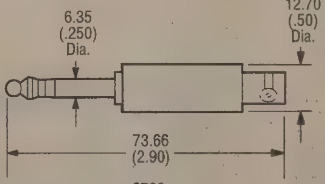

4298
SMA (m)/"N" (f)


4299
SMA (f)/"N" (f)

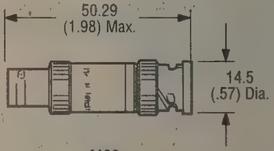

2957


5319


1297



2798



4108

Coaxial Adapters, Accessories, Terminations, Mounts

885-0750.	3283. BNC Female to Female	EACH	4.65
885-0751.	3284. BNC "T", 3 Females	EACH	13.55
885-0752.	3285. BNC "T", Female/Male/Female	EACH	12.25
885-3286.	3286. BNC Female to UHF Male	EACH	8.05
885-3287.	3287. UHF Female to BNC Male	EACH	12.20
885-3533.	3533. BNC Male to Male	EACH	8.70
885-0800.	3534. Right Angle BNC Female/BNC Male	EACH	10.60
885-0940.	3840-50. BNC Resistor Termination, 50 Ohm	EACH	10.05
885-0941.	3840-75. BNC Resistor Termination, 75 Ohm	EACH	10.05
885-0943.	3840-600. BNC Resistor Termination, 600 Ohm	EACH	10.05
885-0945.	3846. Isolated Ground BNC Female/Female	EACH	15.00
885-4119.	4119-50. BNC Feed-Thru Termination, 50 Ohm	EACH	45.00
885-4118.	4119-75. BNC Feed-Thru Termination, 75 Ohm	EACH	45.00
885-4788.	4788. BNC Right Angle Female PC Mount	EACH	15.50
885-4896.	4896. BNC "T", Male/Female/Female	EACH	18.90
885-4488.	4488. BNC Male Cable Plug (2)	EACH	4.05
885-5079.	5079. BNC Male Cable Plug, 75 Ohm (1)	EACH	9.25

Type N Adapters

885-3288.	3288. BNC Female/Type N Male	EACH	8.40
885-3841.	3841. Type N Female/Female	EACH	10.30
885-3535.	3535. BNC Male/Type N Female	EACH	12.00

PC Mount

885-4578.	4578. BNC Female PC Mount	EACH	9.80

Triaxial Connectors

885-3600.	3600. 2 Lug Male Cable Plug Belden 9272	EACH	16.55
885-5056.	5056. 2 Lug Male Cable Plug Belden 9222	EACH	19.65
885-5218.	5218. 3 Lug Male Cable Plug Belden 9222	EACH	21.25
885-5090.	5090. 2 Lug BNC Female/Triaxial Male	EACH	21.35
885-5291.	5290. 2 Lug Triaxial Female/Female	EACH	16.90
885-5298.	5298. 2 Lug Triaxial Female/BNC Male	EACH	20.05
885-5299.	5299. 3 Lug Triaxial Female/BNC Male	EACH	19.05
885-5306.	5300. 3 Lug BNC Female/Triaxial Male	EACH	19.60

Panel and Bulkhead Receptacles

885-2450.	2451. BNC Female Panel	EACH	4.50
885-2451.	2451A. BNC Female Panel	EACH	4.50
885-0850.	3580. 2 Lug Bulkhead Female	EACH	14.40
885-0899.	3778. BNC Isolated Ground Female Bulkhead	EACH	8.80
885-4160.	4160. BNC Female Bulkhead	EACH	3.40
885-6069.	5219. 3 Lug Triaxial Bulkhead Female	EACH	14.80

SMA Adapters

885-4283.	4283. SMA Male/Male	EACH	32.15
885-4284.	4284. SMA Female/Female	EACH	32.05
885-4288.	4288. SMA Male to BNC Male	EACH	28.95
885-4289.	4289. SMA Female to BNC Male	EACH	30.00
885-4290.	4290. SMA Male to BNC Female	EACH	22.85
885-4292.	4291. SMA Female to BNC Female	EACH	23.15
885-4296.	4296. SMA Male to "N" Male	EACH	36.75
885-4297.	4297. SMA Female to "N" Male	EACH	34.45
885-4298.	4298. SMA Male to "N" Female	EACH	30.55
885-4299.	4299. SMA Female to "N" Female	EACH	26.40

Phone Adapters/Plugs/Jacks

885-2957.	2957. BNC Female to Phono Plug, 1.95° L	EACH	8.40
885-5319.	5319. BNC Female to Phono Plug, 1:53° L	EACH	5.35
885-1297.	1297. BNC Female to Phone Plug	EACH	9.80
885-9976.	2798. BNC Female to PJ-051/WE-310 Phone Plug	EACH	18.75
885-4054.	4054. Phono Jack to BNC Male	EACH	14.60

BNC 50 Ohm Attenuators

Type 4108-3dB. Attenuation: 3 dB. **VSWR:** 1.1 to 1 GHz. **Attenuation Tolerance:** +0.4 dB to 1 GHz.

885-4108.	4108-3dB	EACH	56.00

Type 4108-6dB. Attenuation: 6 dB. **VSWR:** 1.2 to 2 GHz. **Attenuation Tolerance:** +0.45 dB to 2 GHz.

885-4109.	4108-6dB	EACH	56.00

Type 4108-10dB. Attenuation: 10 dB. **VSWR:** 1.35 to 4 GHz. **Attenuation Tolerance:** +0.65 dB to 4 GHz.

885-4110.	4108-10dB	EACH	56.00

BNC 50 Ohm Attenuators (continued)

Type 4108-14dB. Attenuation: 14 dB. **VSWR:** 1.45 to 6 GHz. **Attenuation Tolerance:** +0.75 dB to 6 GHz.

885-4111.	4108-14dB	EACH	56.00

Type 4108-20dB. Attenuation: 20 dB. **VSWR:** 1.65 to 8 GHz. **Attenuation Tolerance:** +1.0 dB to 8 GHz.

885-4112.	4108-20dB	EACH	56.00

Universal Adapter Kits

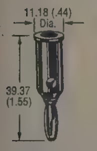
Models 5698 and 5748 Adapter Kits allow users to make their own adapter combinations, such as SMA to BNC or BNC to double banana plug. Adapter ends are joined with coupling nuts.

Universal Adapter Kit. Kit contains 2 pcs. each: BNC male, BNC female, TNC male, TNC female, SMA male, SMA female, "N" male, "N" female, four intermediate couplers, one double banana plug and one double banana jack.

885-5698.	5698. Black	EACH	114.00

Maxi Universal Adapter Kit. Kit contains 2 pcs. each: BNC male, BNC female, TNC male, TNC female, SMA male, SMA female, "N" male, "N" female, UHF male, UHF female, Mini UHF male, Mini UHF female, "F" male, "F" female, RCA male, RCA female, six intermediate couplers, one double banana plug, one double banana jack and one sampler.

885-5748.	5748	EACH	230.00

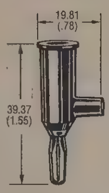


Solderless Stackup Banana Plug

Wire firmly held in place with internal setscrew, eliminating soldering. Assembly of test leads simplified. **Upper:** Banana jack. 4.22 mm (.166) dia., brass. **Lower:** Banana plug. Spring, one piece heat treated beryllium copper. Fits standard 4.22 mm (.166) dia. banana jack. **Rating:** 5000 WVDC, 15 amps, +50°C (+122°F) max. +150°C (+302°F).

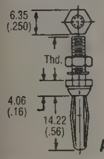
885-0301. 1325-0. Black	**PER PKG./10**	**12.50**
885-0302. 1325-2. Red	**PER PKG./10**	**12.50**
885-1327. 1325-4. Yellow	**PER PKG./10**	**12.50**
885-0305. 1325-5. Green	**PER PKG./10**	**12.50**

Solderless Stackup Standard Banana Plug with Safety Collar

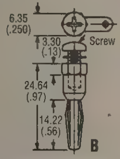


Features integral safety collar that insulates exposed wire leads. Wire firmly held in place with internal setscrew, eliminates soldering, simplifies assembly of test leads. **Upper:** Banana jack. 4.22 mm (.166) dia., brass. **Lower:** Banana plug. Spring, one piece heat treated beryllium copper. Fits standard 4.22 mm (.166) dia. banana jack. **Rating:** 5000 WVDC, 15 amps, +50°C (+122°F) max.

885-0460. 1825-0. Black	**PER PKG./10**	**12.50**
885-0462. 1825-2. Red	**PER PKG./10**	**12.50**
885-1827. 1825-3. Orange	**PER PKG./10**	**12.50**
885-0464. 1825-4. Yellow	**PER PKG./10**	**12.50**
885-0465. 1825-5. Green	**PER PKG./10**	**12.50**
885-1830. 1825-6. Blue	**PER PKG./10**	**12.50**
885-0469. 1825-9. White	**PER PKG./10**	**12.50**



A



B

Banana Plugs

Material: Banana plug body, brass. Spring, one piece heat treated beryllium copper. Fits standard 4.22 mm (.166) dia. banana jack. **Finish:** Nickel plated. **Rating:** 5000 WVDC, 15 amps.

Banana Plug with Threaded Stud — Fig. A

Threaded stud for rapid mounting. Furnished with hex nut and tin plated solder lug.

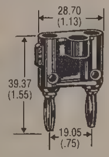
885-3263. 3263. 6.32 × 12.7 (.50) Thread	**PER PKG./10**	**13.50**

Banana Plug with Screw — Fig. B

Mounts to various size panels. Furnished with screw and tin plated solder lug.

885-3265. 3265. 6.32 × 6.4 (.25) Screw	**PER PKG./10**	**16.00**
885-3266. 3266. 8.32 × 6.4 (.25) Screw	**PER PKG./10**	**16.00**

Standard Banana Plugs



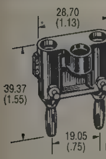
Standard Double Banana Plug

Setscrews secure leads. Simplifies cable construction or component mounting. **Upper:** Double banana jack. 4.22 mm (.166) dia., brass. **Lower:** Double banana plug. Spring, one piece heat treated beryllium copper. Fits standard 4.22 mm (.166) dia. banana jack. **Rating:** 5000 WVDC, 15 amps, +50°C (+122°F) max.

885-0100. MDP-0. Black	**EACH**	**2.15**
885-0101. MDP-2. Red	**EACH**	**2.15**

Triple Banana Plug

885-2970. 2970-0. Black	**EACH**	**4.30**
885-2971. 2970-2. Red	**EACH**	**4.30**



C

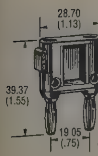
Double Banana Plugs

Upper: Double banana jack. 4.22 mm (.166) dia., brass, nickel-plated. **Lower:** Double banana plug. Spring, one piece heat treated beryllium copper, nickel plated. Fits standard 4.22 mm (.166) dia. banana jack.

Double Banana Plug with Solder Turret Terminals — Fig. C

MDP-ST standard double banana plug with solder turrets. **Rating:** 5000 WVDC; 15 amps, +55°C. Similar to Model MDP, except has bright tin plated solder turret terminals for permanent noise-free connections of cables and components. Black Polypropylene insulation.

885-0021. MDP-ST	**EACH**	**3.00**

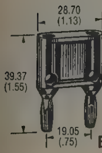


D

Component Mounting Double Banana Plug — Fig. D

Setscrews secure leads. Features recess for mounting small components. ABS Insulation.

885-1330. 1330-0. Black	**EACH**	**2.35**
885-1331. 1330-2. Red	**EACH**	**2.35**

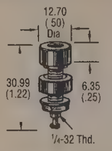


E

Double Banana Plug with Shorting Bar — Fig. E

Banana plug internally shorted with #18 AWG wire. Banana jacks provide top stackup. Cross holes 4.22 mm (.166) dia. in body provide side stackup connections. ABS Insulation.

885-0110. MDP-S-0. Black	**EACH**	**3.50**
885-0023. MDP-S-2. Red	**EACH**	**3.50**
885-0024. MDP-S-9. White	**EACH**	**3.50**



Banana Jack

Closed entry jack 4.22 mm (.166) dia. × 23.37 (.920) deep. Mounts in panels from 1.60 mm (.063) to 9.53 mm (.375) thick. Nickel plated lockwasher and ¼-32 hex nut. **Material:** Brass. **Rating:** 2500 WVDC, 15 amps, +115°C (+239°F) max.

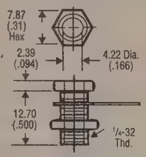
Bright Tin Plated Brass

885-0400. 1581-0. Black	**PER PKG./10**	**9.00**
885-0401. 1581-2. Red	**PER PKG./10**	**9.00**
885-1583. 1581-4. Yellow	**PER PKG./10**	**9.00**
885-1584. 1581-5. Green	**PER PKG./10**	**9.00**
885-1585. 1581-6. Blue	**PER PKG./10**	**9.00**
885-1586. 1581-9. White	**PER PKG./10**	**9.00**

Gold Plated Brass

885-2854. 2854-0. Black	**PER PKG./10**	**18.50**
885-2855. 2854-2. Red	**PER PKG./10**	**18.50**
885-2856. 2854-4. Yellow	**PER PKG./10**	**18.50**
885-2857. 2854-5. Green	**PER PKG./10**	**18.50**
885-2859. 2854-6. Blue	**PER PKG./10**	**18.50**
885-2860. 2854-9. White	**PER PKG./10**	**18.50**

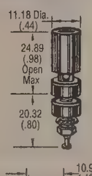
Uninsulated Banana Jack



Threaded for rapid mounting. Used with standard banana plugs. Furnished with hex nut and solder lug. **Material:** Banana jack and hex nut, brass. Solder lug, copper. **Finish:** Banana jack and hex nut, nickel plated. Solder lug, tin plated. **Rating:** 15 amps.

885-3267. 3267. Unassembled	**PER PKG./10**	**8.50**

Binding Post and Shorting Link

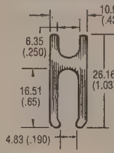


F

Standard Binding Post — Fig. F

Accepts standard banana plug. Thin line design for high-density packaging. Nickel plated 8-32 hex nut and lockwasher included. 2.54 mm (.100) dia. cross hole is perpendicular with flat on insulator. Mounts in panels 1.57 mm (0.62) to 6.35 mm (.250) thick. **Rating:** 2500 WVDC, 15 amps, +115°C (+239°F) max.

885-3760. 3760-0. Black	**EACH**	**2.45**
885-3761. 3760-2. Red	**EACH**	**2.45**
885-3762. 3760-5. Green	**EACH**	**2.45**
885-3750. 3750-0. Black	**EACH**	**3.60**
885-3755. 3750-2. Red	**EACH**	**3.60**
885-6051. 3770-0. Black	**EACH**	**5.00**
885-6052. 3770-2 . Red	**EACH**	**5.00**

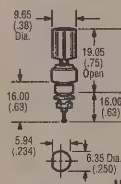


G

Shorting Link for Standard Binding Posts — Fig. G

Shorting link for standard binding posts on 19.05 mm (.750) centers. A snap-on feature holds link on post when short not needed. **Material:** Brass, 0.79 mm (.031) thick. **Finish:** Nickel plated. **Rating:** 15 amps.

---	---	
885-4115. 4115	**PER PKG./10**	**7.00**

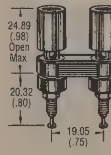


H

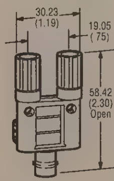
Miniature Binding Post — Fig. H

Accepts miniature banana plug. #8-32 hex nut and lockwasher included. 2.2 (.086) dia. cross hole is perpendicular with flat on insulator. Mounts in panels up to 4.8 (.188) thick. **Material:** Binding post body, captive thumb nut and hex nut, brass. Lockwasher, steel. **Finish:** Binding post with one captive thumb nut, gold or bright tin plated. Hex nut and lockwasher, nickel plated. **Insulation:** Polycarbonate. **Rating:** 1500 VDC, 5 amps, +115°C (+239°F) max.

885-2382. 2382-0. Black	**EACH**	**3.85**
885-2383. 2382-2. Red	**EACH**	**3.85**
885-2384. 2382-1. Brown	**EACH**	**3.85**
885-2385. 2382-3. Orange	**EACH**	**3.85**
885-2386. 2382-4. Yellow	**EACH**	**3.85**
885-2387. 2382-5. Green	**EACH**	**3.85**
885-2388. 2382-6. Blue	**EACH**	**3.85**
885-2389. 2382-7. Violet	**EACH**	**3.85**
885-2391. 2382-8. Gray	**EACH**	**3.85**
885-2393. 2382-9. White	**EACH**	**3.85**
885-2439. 2439-0. Black	**EACH**	**2.90**
885-2440. 2439-2. Red	**EACH**	**2.90**
885-2441. 2439-1. Brown	**EACH**	**2.90**
885-2442. 2439-3. Orange	**EACH**	**2.90**
885-2443. 2439-4. Yellow	**EACH**	**2.90**
885-2444. 2439-5. Green	**EACH**	**2.90**
885-2445. 2439-6. Blue	**EACH**	**2.90**
885-2446. 2439-7. Violet	**EACH**	**2.90**
885-2447. 2439-8. Gray	**EACH**	**2.90**
885-2448. 2439-9. White	**EACH**	**2.90**



I



J

Double Binding Post Assembly — Fig. I

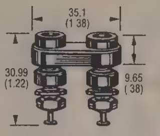
Nickel-plated 8-32 hex nut and lockwasher included. One red and one black tin plated binding post (type 3760) with double mounting base. **Material:** Double binding post with captive thumb nut, brass. Accepts standard banana plug. **Finish:** Bright tin plated. **Insulation:** Polycarbonate. **Rating:** 2500 WVDC, 15 amps, +115°C (+239°F) max.

885-4243. 4243-0. Black, unassembled	**EACH**	**4.85**
885-4244. 4243-2. Red, unassembled	**EACH**	**4.85**

Binding Posts to BNC Female — Fig. J

Permits single or double banana plugs to be used with equipment having a BNC male. Cross holes 4.2 (.166) dia. in body provide side stackup connections. **Upper:** Double binding post. Body with captive thumb nut, brass, nickel plated. Accepts standard banana plugs. Polycarbonate insulation. One black and one red. **Insulation:** ABS, black. **Lower:** BNC female. **Impedance:** 50 ohms. **Rating:** 500 VRMS max., +50°C (+122°F) max.

885-1452. 1452	**EACH**	**9.05**



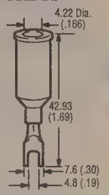
Double Banana Jack

Closed entry receptacle 4.22 mm (.166) dia. × 23.37 (.920) deep on 19.05 mm (.750) centers. Mounts in panels from 1.60 mm (.063) to 9.53 mm (.375) thick. Nickel plated lockwasher and ¼-32 hex nut. One black and one red jack. Choice of black or red mounting base. **Material:** Brass. **Finish:** Bright tin plated. **Rating:** 2500 WVDC, 15 amps +115°C (+239°F) max.

885-2269. 2269-0. Black	**EACH**	**2.50**
885-2270. 2269-2. Red	**EACH**	**2.50**

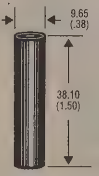
Insulated Barrier Strip Spade Lug to Banana Jack

— NEW —



Permits single banana plug to be used with equipment having barrier strips. Lugs fit a no. 8 or 10 screw. **Upper:** Banana jack. 4.2 (.166) dia., brass, nickel plated. **Insulation:** ABS. **Lower:** 0.8 (.03) thick spade lug. Copper, electro-tin plated. **Rating:** 5000 VDC, 15 amps, +50°C (+122°F) max.

885-3777. 3777-0. Black	**EACH**	**3.10**
885-3778. 3777-2. Red	**EACH**	**3.10**

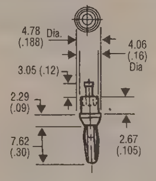


Single Banana Plug Splice

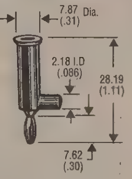
Provides rapid method for splicing single banana plug patch cords. Reduces the necessity of storing extra long patch cords. Molded thermoplastic body provides protective insulation. 4.22 mm (.166) dia. banana jack. **Material:** Brass. **Finish:** Nickel plated. **Insulation:** Polypropylene. **Rating:** 5000 WVDC, 15 amps, +55°C.(+131°F) max.

885-1829. 1829-0. Black	**PER PKG./10**	**14.00**

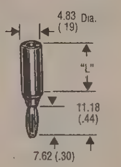
Miniature Banana Plugs



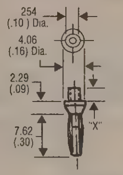
K



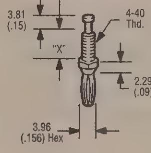
L



M



N



O

Rivet Type with Turret — Fig. K

Excellent for riveting to panels or boards. Solder turret for rapid attachment of wires. Mount in 1.57 mm (.062) panel. **Material:** Miniature banana plug body, brass. Spring, one piece heat treated beryllium copper. Fits miniature 2.64 mm (.104) dia. banana jack. **Finish:** Gold plated. **Rating:** 2500 WVDC, 5 amps.

885-3273. 3273	**PER PKG./10**	**10.00**

Solderless Stackup with Safety Collar — Fig. L

Wire firmly held in place with setscrew: The integral collar insulates leads and acts as a strain relief by preventing the flexing of lead at setscrew. **Upper:** Miniature banana jack. 2.64 mm (.104) dia., brass, gold plated. **Insulation:** ABS. **Lower:** Miniature banana plug. Spring, one piece heat treated beryllium copper, gold plated. Fits miniature 2.64 mm (.104) dia. banana jack. **Rating:** 2500 WVDC, 5 amps, +50°C (+122°F) max.

885-2945. 2945-0. Black	**EACH**	**3.00**
885-2946. 2945-2. Red	**EACH**	**3.00**

Solder Type — Fig. M

Miniature in-line plug for use with miniature binding posts or banana jacks. Wire is soldered directly to threaded plug. **Material:** Miniature banana plug body, brass. Spring, one piece heat treated beryllium copper. Fits miniature 2.64 mm (.104) dia. banana jack. **Finish:** Gold plated. **Insulation:** Nylon. **Rating:** 2500 WVDC, 5 amps, +80°C (+176°F) max.

885-3690. 3690-0. Black; Dim. "L" = 11.43 (.45)	**PER PKG./10**	**16.50**
885-3691. 3690-2. Red; Dim. "L" = 11.43 (.45)	**PER PKG./10**	**16.50**

Rivet Type — Fig. N

Excellent for riveting to panels or boards. **Material:** Miniature banana plug body, brass. Spring, one piece heat treated beryllium copper. Fits miniature 2.64 mm (.104) dia. banana jack. **Finish:** Gold plated. **Rating:** 2500 WVDC, 5 amps.

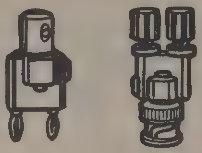
885-3268. 3268. Dim. "X" = 2.39 (.094)	**PER PKG./10**	**10.00**
885-3272. 3272. Dim. "X" = 3.96 (.156)	**PER PKG./10**	**10.00**

With Threaded Stud — Fig. O

Threaded stud for rapid mounting. Solder turret for attachment of wires. Furnished with nickel plated 4-40 hex nut, unassembled. **Material:** Miniature banana plug body, brass. Spring, one piece heat treated beryllium copper. Fits miniature 2.6 (.104) dia. banana jack. **Finish:** Gold plated. **Rating:** 2500 VDC, 5 amps.

885-3276. 3276. Dim. "X" = 5.8 (.230). Unassembled	**PER PKG./10**	**11.50**
885-4513. 4513. Dim. "X" = 12.2 (.480). Unassembled	**PER PKG./10**	**16.50**

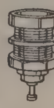
Coaxial Adapters



Type 3269 BNC female to miniature double banana plug fits miniature .104" diameter banana jacks. **Rating:** 500 VRMS, +50°C. Type 3296 miniature binding posts to BNC male rated same as 3269.

Stock No.	Mfr.'s Type	Description	EACH
885-3269	3269	BNC Female to Mini. Dbl. Banana — Black	10.20
885-3296	3296	Mini, Binding Post to BNC Male — Black	19.25

Standard Banana Jacks

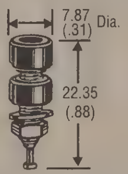


Type 4921 panel mount banana jack fits Type 4933 and other special Pomona sheathed plugs. **Rating:** 1200 VAC or DC, 15 amps, +115°C.

Stock No.	Mfr.'s Type	Description	EACH
885-4921	4921-0	Black	2.50
885-4922	4921-2	Red	2.50

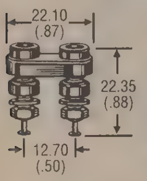
Miniature Banana Jacks

Insulated Banana Jack



Closed entry 2.64 mm (.104) dia. jack. Mounts in panels up to 6.35 mm (.250) thick. Nickel plated 8-32 hex nut and lockwasher included. **Material:** Brass. **Finish:** Gold plated **Insulation:** Polycarbonate. **Rating:** 1500 WVDC, 5 amps, +115°C. (+239°F). max.

885-2140. 2142-0. Black........................**PER PK./10 11.50**
885-2142. 2142-2. Red........................**PER PK./10 11.50**
885-2145. 2142-5. Green........................**PER PK./10 11.50**
885-2146. 2142-6. Blue........................**PER PK./10 11.50**
885-2149. 2142-9. White........................**PER PK./10 11.50**

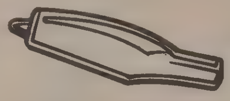


Insulated Double Banana Jack

Closed entry 2.64 mm (.104) dia. jack. Mounts in panels up to 4.77 mm (.188) thick. Nickel plated 8-32 hex nut and lockwasher included. **Material:** Brass. **Finish:** Gold plated. **Insulation:** Polycarbonate. One black and one red jack. Choice of black or red mounting base. **Rating:** 1500 WVDC, 5 amps, +115°C (+239°F) max.

885-2143. 2143-0. Black........................**EACH 3.10**

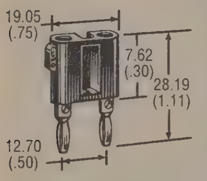
Type 5363 Clip Adapters



Insulated minigator clip to .025" square pin rated 1000 WVDC, 3 amps, +50°C.

Stock No.	Mfr.'s Type	Description	EACH
885-5000	5363-0	Insulated Minigator Clip — Black	3.15
885-5010	5363-2	Insulated Minigator Clip — Red	3.15

Miniature Double Banana Plugs

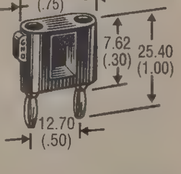


Miniature Double Banana Plug with Setscrews

Internal setscrews to secure cable or component leads. **Upper:** Miniature double banana jack. Brass, gold plated. **Insulation:** ABS. **Lower:** Miniature double banana plug. Spring, one piece heat treated beryllium copper, gold plated. Fits miniature 2.64 mm (.104) dia. banana jack. Setscrew, steel, cadmium plated. **Rating:** 2500 WVDC, 5 amps, +50°C (+122°F) max.

885-2240. 2244-0. Black........................**EACH 4.20**
885-2242. 2244-2. Red........................**EACH 4.20**

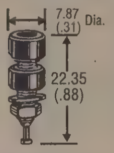
Miniature Double Banana Plug with Shorting Bar



Upper: Miniature double banana jack. Brass, gold plated. **Insulation:** ABS. **Lower:** Miniature double banana plug. Spring, one piece heat treated beryllium copper, gold plated. Fits miniature 2.64 mm (.104) dia. banana jack. **Rating:** 2500 WVDC, 5 amps, +50°C (+122°F) max.

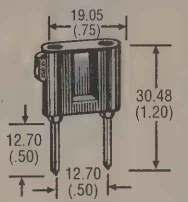
885-2030. 2035-0. Black........................**EACH 4.55**
885-2032. 2035-2. Red........................**EACH 4.55**

Pin Jack



Closed entry 2.03 mm (.080) pin jack. Mounts in panels to 6.35 mm (.250) mm thick. Nickel plated 8-32 hex nut and lockwasher included. **Material:** Pin jack body, brass. Spring, beryllium copper. **Finish:** Pin jack, gold plated, **Insulation:** Polycarbonate. **Rating:** 1500 WVDC, 5 amps, +115°C (+239°F) max.

885-3540. 3542-0. Black........................**PER PK./10 13.50**
885-3542. 3542-2. Red........................**PER PK./10 13.50**
885-3545. 3542-5. Green........................**PER PK./10 13.50**
885-3549. 3542-9. White........................**PER PK./10 13.50**

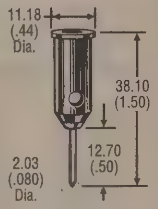


Miniature Double Pin Tip Plug with Shorting Bar

Ideal as a connecting link for use with 12.70 mm (.500) spaced pin jacks. 2.03 mm (.500) spaced pin jacks. 2.03 mm (.080) double pin tip plug internally solder-bonded with #20 AWG wire. "Shorting bar" stamped on insulation. **Upper:** Double pin jack. Spring, beryllium copper, gold plated. **Insulation:** ABS. **Lower:** Double pin tip plug. Brass, gold plated. **Rating:** 3000 WVDC, 5 amps, +50°C (+122°F) max.

885-3452. 3452-0. Black........................**EACH 4.20**

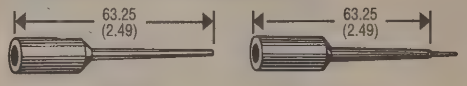
Banana Jack to Pin Tip Plug



Permits standard banana plug patch cords to be used with equipment having tip jacks. Cross hold 4.22 mm (.166) dia. provides side stackup connection. **Upper:** Banana jack. 4.22 mm (.166) dia. brass, nickel plated. **Insulation:** ABS. **Lower:** Pin tip plug. Brass, nickel plated. **Rating:** 3000 WVDC, 5 amps, +50°C (+122°F) max.

885-1430. 1432-0. Black........................**PER PK./10 10.50**
885-1432. 1432-2. Red........................**PER PK./10 10.50**

Connector Test Adapters



Socket Type   Pin Type

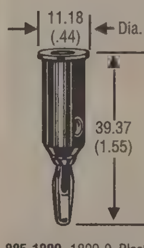
An ideal test adapter for rapid testing of the hard-to-get at contacts or multipin/socket rack or panel connectors. Flexible tip allows testing of adjacent contacts. Flexibility and full insulation protects against shorting or contact damage. The model 4690 also fits .635 mm (.025) sq. pins. **Upper:** Banana jack. 4.22 mm (.166) dia., brass, nickel plated. **Insulation:** Polyvinyl chloride (PVC). **Lower:** Socket type, copper. Pin type, brass. Gold plated. See tab block. **Rating:** 2500 WVDC, +50°C (+122°F) max.

Socket Type

Stock No.	Mfr.'s Type	Color	Contact Size	Amps	EACH
885-4690	4690-0	Black	22/0.762 (.030) Dia.	5.0	4.05
885-4692	4690-2	Red	22/0.762 (.030) Dia.	5.0	4.05
885-3560	3560-0	Black	20/1.020 (.040) Dia.	7.5	3.10
885-3562	3560-2	Red	20/1.020 (.040) Dia.	7.5	3.10
885-3561	3562-0	Black	16/1.600 (.063) Dia.	13.0	3.35
885-3566	3562-2	Red	16/1.600 (.063) Dia.	13.0	3.35
885-3564	3564-0	Black	12/2.360 (.093) Dia.	23.0	5.45
885-3563	3564-2	Red	12/2.360 (.093) Dia.	23.0	5.45

Pin Type

Stock No.	Mfr.'s Type	Color	Contact Size	Amps	EACH
885-4790	4691-0	Black	22/0.762 (.030) Dia.	5.0	3.10
885-4792	4691-2	Red	22/0.762 (.030) Dia.	5.0	3.10
885-3660	3561-0	Black	20/1.020 (.040) Dia.	7.5	3.35
885-3662	3561-2	Red	20/1.020 (.040) Dia.	7.5	3.35
885-3664	3563-0	Black	16/1.600 (.063) Dia.	13.0	2.95
885-3666	3563-2	Red	16/1.600 (.063) Dia.	13.0	2.95
885-3667	3565-0	Black	12/2.360 (.093) Dia.	23.0	2.95
885-3565	3565-2	Red	12/2.360 (.093) Dia.	23.0	2.95



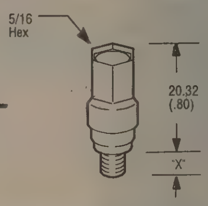
Pin Jack to Banana Plug

Permits pin tip cords to be used with equipment having banana jacks. **Upper:** Pin jack. Spring, beryllium copper, gold plated. Accepts 2.03 mm (.080) dia. pin. **Insulation:** ABS. **Lower:** Banana plug. Body, brass. Spring, one piece heat treated beryllium copper. Nickel plated. **Rating:** 2500 WVDC, 5 amps, +50°C (+122°F) max

885-1809. 1809-0. Black........................**PER PK./10 19.50**
885-1810. 1809-2. Red........................**PER PK./10 19.50**

Terminal Strip Banana Jack Adapter

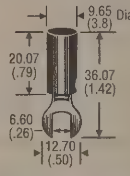
— NEW —



This adapter provides a banana jack connection by replacing the screw in a terminal screw. Secure connections can be made with standard banana plug patch cords without breaking the connection to the terminal strip. **Material:** Banana Jack 4.2 (.166) diameter, brass. **Finish:** Nickel plated. **Insulation:** Nylon.

Stock No.	Mfr.'s Type*	Thread	VRMS	Torque in/lb.	Dim. "X"	EACH
885-5699	5699-0	6-32	1100	7	6.4 (.25)	3.10
885-5700	5699-2	6-32	1100	7	6.4 (.25)	3.10
885-5701	5699-3	6-32	1100	7	6.4 (.25)	3.10
885-5702	5699-4	6-32	1100	7	6.4 (.25)	3.10
885-5703	5699-5	6-32	1100	7	6.4 (.25)	3.10
885-5704	5699-6	6-32	1100	7	6.4 (.25)	3.10
885-5705	5699-9	6-32	1100	7	6.4 (.25)	3.10
885-5706	5700-0	8-32	1600	16	8.1 (.32)	3.10
885-5707	5700-2	8-32	1600	16	8.1 (.32)	3.10
885-5708	5700-3	8-32	1600	16	8.1 (.32)	3.10
885-5709	5700-4	8-32	1600	16	8.1 (.32)	3.10
885-5710	5700-5	8-32	1600	16	8.1 (.32)	3.10
885-5712	5700-6	8-32	1600	16	8.1 (.32)	3.10
885-5713	5700-9	8-32	1600	16	8.1 (.32)	3.10
885-5714	5701-0	10-32	1700	25	8.1 (.32)	3.10
885-5715	5701-2	10-32	1700	25	8.1 (.32)	3.10
885-5716	5701-3	10-32	1700	25	8.1 (.32)	3.10
885-5717	5701-4	10-32	1700	25	8.1 (.32)	3.10
885-5718	5701-5	10-32	1700	25	8.1 (.32)	3.10
885-5719	5701-6	10-32	1700	25	8.1 (.32)	3.10
885-5720	5701-9	10-32	1700	25	8.1 (.32)	3.10

***Standard Colors:** -0 Black, -2 Red, -3 Orange, -4 Yellow, -5 Green, -6 Blue, -9 White.



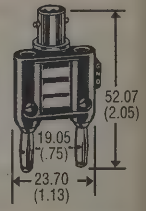
Insulated Spade Lug

Upper: Model 1614, banana jack, brass, nickel plated. **Insulation:** ABS. **Lower:** 1.52 mm (.060) thick spade lug, brass, nickel plated. **Rating:** 5000 WVDC, 15 amps, +50°C (+122°F) max.

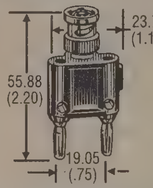
885-1610. 1614-0. Black................**EACH 1.90**
885-1612. 1614-2. Red................**EACH 1.90**

BNC Adapters

BNC Female to Double Banana Plug



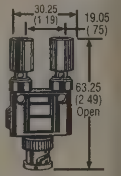
Permits BNC male to be used with equipment having banana jacks. Excellent for adapting laboratory VTVM, oscilloscopes and signal generator inputs to readily available coaxial cables. Cross holes 4.22 mm (.166) dia. in body provide side stackup connections. **Upper:** BNC female. **Impedance:** 50 ohms. **Insulation:** ABS, black. **Lower:** Double banana plug. Body, brass. Spring, one piece heat treated beryllium copper. Nickel plated. **Rating. Operating Voltage:** 500 VRMS max., +50°C (+122°F) max.
885-0250. 1269........................**EACH 5.80**



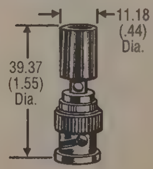
BNC Male to Double Banana Plug

Permits BNC female to be used with equipment having banana jacks. Cross holes 4.22 mm (.166) dia. in body provide side stackup connections. **Upper:** BNC male. **Impedance:** 50 ohms. **Insulation:** ABS, black. **Lower:** Double banana plug. Body, brass. Spring, one piece heat treated beryllium copper. Nickel plated. **Rating. Operating Voltage:** 500 VRMS max., +50°C (+122°F) max.
885-1270. 1270........................**EACH 9.05**

Standard Double Binding Posts to BNC Male



Permits single or double plugs to be used with equipment having a BNC female. **Upper:** Double binding post with captive thumb nut. Brass, nickel plated. Accepts standard banana plugs. Polycarbonate insolation. One black and one red. **Insulation:** ABS, black. **Lower:** BNC male. **Impedance:** 50 ohms. **Rating. Operating Voltage:** 500 VRMS max., +50°C (+122°F) max.
885-0255. 1296........................**EACH 10.75**



Single Binding Post to BNC Male

Permits single banana plug to be used with equipment having a BNC female. **Upper:** Binding post with captive thumb nut. Brass, nickel plated. Accepts standard banana plugs. **Insulation:** Polycarbonate. **Lower:** BNC Male. **Impedance:** 50 ohms. **Rating. Operating Voltage:** 500 VRMS max., +115°C (+239°F) max.
885-3430. 3430-0. Black................**EACH 5.35**
885-3432. 3430-2. Red................**EACH 5.35**

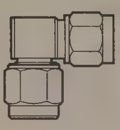
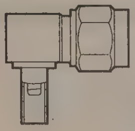
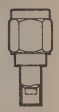
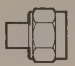
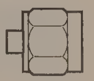
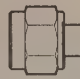
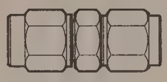
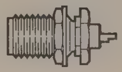
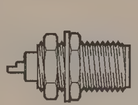
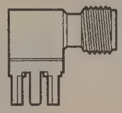
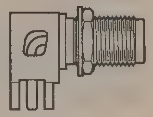
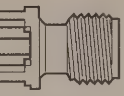
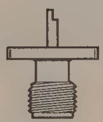
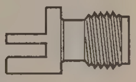
SMA Coaxial Connectors — 50 Ohm

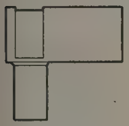
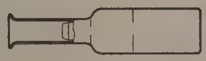
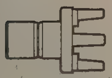
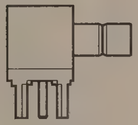
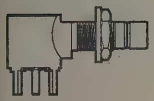
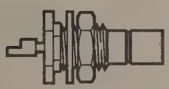
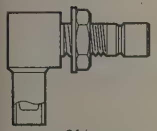
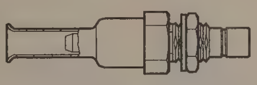
Plugs

Stock No.	Mfr.'s Type	Fig.	Description	For RG Cable	Plating	EACH 1-9	EACH 10-49
528-0241	142-0203-101	1	Right Angle, Clamp Type	161, 174, 188, 316	Gold over Brass	**10.20**	**9.18**
528-2000	142-0403-101	2	Right Angle, Crimp Type	161, 174, 188, 316	Gold over Brass	**8.11**	**7.30**
528-2002	142-0403-106	2	Right Angle, Crimp Type	161, 174, 188, 316	Nickel over Brass	**7.60**	**6.84**
528-2004	142-0403-011	3	Straight, Solder or Crimp Type	161, 174, 188, 316	Gold over Brass	**6.63**	**5.97**
528-2006	142-0403-016	3	Straight, Solder or Crimp Type	161, 174, 188, 316	Nickel over Brass	**6.02**	**5.42**
528-2008	142-0694-021	4	Straight, Solder without Contact, Slide-On Nut, Thick Wall	.141 Semi-Rigid	Gold over Brass	**2.24**	**2.02**
528-2010	142-0693-001	5	Straight, Solder with Contact, Captive Nut, Thick Wall	.086 Semi-Rigid	Gold over Brass	**3.98**	**3.58**
528-2012	142-0694-011	6	Straight Solder, without Contact, Thread-On Nut, Thin Wall	.141 Semi-Rigid	Gold over Brass	**1.63**	**1.47**
528-0242	142-0203-011	7	Straight Clamp Type	174, 188, 316	Gold over Brass	**12.65**	**11.38**

Jack Receptacles

Stock No.	Mfr.'s Type	Fig.	Description	For RG Cable	Plating	EACH 1-9	EACH 10-49
528-0240	142-0701-401	8	Rear-Mount Bulkhead Jack	—	Gold over Brass	**6.22**	**5.60**
528-0239	142-0701-411	9	Front-Mount Bulkhead Jack	—	Gold over Brass	**7.04**	**6.33**
528-0229	142-0701-321	10	0.281" Right Angle PC Mount Jack, Solder Type	—	Gold over Brass	**11.42**	**10.28**
528-0230	142-0701-326	10	0.281" Right Angle PC Mount Jack, Solder Type	—	Nickel over Brass	**10.71**	**9.64**
528-2014	142-0701-301	10	0.155" Right Angle PC Mount Jack, Solder Type	—	Gold over Brass	**9.23**	**8.31**
528-2016	142-0701-306	10	0.155" Right Angle PC Mount Jack, Solder Type	—	Nickel over Brass	**8.82**	**7.94**
528-2018	142-0701-501	11	0.155" Right Angle Bulkhead Jack, Solder Type	—	Gold over Brass	**11.12**	**10.01**
528-3231	142-0701-211	12	0.281" Straight PC Mount Jack, Solder Type	—	Gold over Brass	**7.60**	**6.84**
528-0233	142-0701-201	12	0.200" Straight PC Mount Jack, Solder Type	—	Gold over Brass	**6.37**	**5.74**
528-0234	142-0701-631	13	4-Hole Flange Mount Jack, Solder Type	—	Gold over Brass	**6.88**	**6.20**
528-0235	142-0701-621	13	2-Hole Flange Mount Jack, Solder Type	—	Gold over Brass	**6.97**	**6.27**
528-0238	142-0701-801	14	End Launch PC Mount Jack for 0.062" PC Board	—	Gold over Brass	**6.88**	**6.20**


1

2

3

4

5

6

7

8

9

10

11

12

13

14


15

16

17

18

19

20

21

22

SMB Coaxial Connectors — 50 Ohm

Plugs

Stock No.	Mfr.'s Type	Fig.	Description	For RG Cable	Plating	EACH 1-9	EACH 10-49
528-0243	131-1402-101	15	Right Angle, Crimp Type, for Flexible Cable	178, 196	Gold over Die Cast Zinc	**5.81**	**5.23**
528-0244	131-1402-116	15	Right Angle, Crimp Type, for Flexible Cable	178, 196	Nickel over Die Cast Zinc	**5.00**	**4.50**
528-0247	131-1403-101	15	Right Angle, Crimp Type, for Flexible Cable	174, 188, 316	Gold over Die Cast Zinc	**5.35**	**4.82**
528-0248	131-1403-116	15	Right Angle, Crimp Type, for Flexible Cable	174, 188, 316	Nickel over Die Cast Zinc	**4.59**	**4.13**
528-0245	131-1403-001	16	Straight Crimp Type, for Flexible Cable	174, 188, 316	Gold over Die Cast Zinc	**5.86**	**5.28**
528-0246	131-1403-016	16	Straight Crimp Type, for Flexible Cable	174, 188, 316	Nickel over Die Cast Zinc	**4.95**	**4.45**

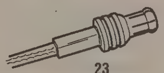
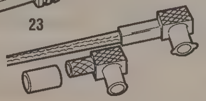
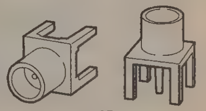
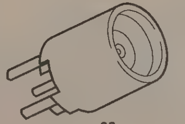
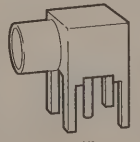
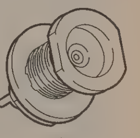
Jack Receptacles

Stock No.	Mfr.'s Type	Fig.	Description	For RG Cable	Plating	EACH 1-9	EACH 10-49
528-0249	131-1701-201	17	0.155" Straight PC Mount Jack	—	Gold over Die Cast Zinc	**2.29**	**2.07**
528-0250	131-1701-206	17	0.155" Straight PC Mount Jack	—	Nickel over Die Cast Zinc	**2.14**	**1.93**
528-2020	131-1701-211	17	0.095" Straight PC Mount Jack	—	Gold over Die Cast Zinc	**2.52**	**2.27**
528-2022	131-1701-216	17	0.095" Straight PC Mount Jack	—	Nickel over Die Cast Zinc	**2.24**	**2.02**
528-0251	131-3701-301	18	0.155" Right Angle PC Mount Jack	—	Gold over Brass	**5.13**	**4.62**
528-0252	131-3701-306	18	0.155" Right Angle PC Mount Jack	—	Nickel over Brass	**4.69**	**4.22**
528-2024	131-1701-371	18	0.155" Right Angle PC Mount Jack	—	Gold over Die Cast Zinc	**4.59**	**4.13**
528-2026	131-1701-376	18	0.155" Right Angle PC Mount Jack	—	Nickel over Die Cast Zinc	**4.39**	**3.95**
528-2028	131-3701-341	19	0.155" Right Angle Bulkhead Jack, PC Mount	—	Gold over Brass	**6.53**	**5.88**
528-2030	131-3701-346	19	0.155" Right Angle Bulkhead Jack, PC Mount	—	Nickel over Brass	**6.17**	**5.55**
528-0253	131-3701-401	20	Rear-Mount Bulkhead Jack	—	Gold over Brass	**5.46**	**4.91**
528-0254	131-3701-406	20	Rear-Mount Bulkhead Jack	—	Nickel over Brass	**5.25**	**4.73**
528-2032	131-3303-501	21	Right Angle Bulkhead Jack, Crimp Type	161, 174, 179, 187, 188, 316	Gold over Brass	**7.19**	**6.47**
528-2034	131-3303-406	22	Straight Bulkhead Jack, Crimp Type	161, 174, 179, 187, 188, 316	Nickel over Brass	**7.04**	**6.33**

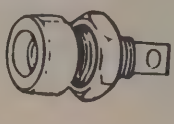
MCX Coaxial Connectors

- **30% Smaller than the SMB Connectors**

Stock No.	Mfr.'s Type	Fig.	Description	For RG Cable	Plating	EACH 1-9	EACH 10-49
528-2036	133-3403-001	23	Straight Cable Plug	316	Gold over Brass	**6.10**	**5.61**
528-2038	133-3402-101	24	Right Angle Cable Plug	178	Gold over Brass	**5.40**	**4.97**
528-2040	133-3403-101	24	Right Angle Cable Plug	316	Gold over Brass	**5.40**	**4.97**
528-2042	133-3701-201	25	.155" Straight PC Mount Jack	—	Gold over Brass	**4.05**	**3.64**
528-2044	133-3701-211	25	.110" Straight PC Mount Jack	—	Gold over Brass	**4.00**	**3.60**
528-2046	133-3701-221	25	.068" Straight PC Mount Jack	—	Gold over Brass	**4.05**	**3.64**
528-2048	133-3701-231	26	.100" Straight PC Mount Jack	—	Gold over Brass	**4.75**	**4.28**
528-2050	133-3701-301	27	.155" Right Angle PC Mount Jack	—	Gold over Brass	**7.80**	**7.18**
528-2052	133-3701-311	27	.110" Right Angle PC Mount Jack	—	Gold over Brass	**8.00**	**7.36**
528-2054	133-3701-401	28	Front Mount Bulkhead Jack	—	Gold over Brass	**5.68**	**5.23**


23

24

25

26

27

28

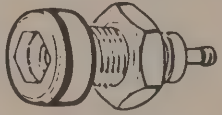
Nylon Insulated Banana Jacks



For standard .175" banana plug. Formed brass contact, bright-tinned finish. Come with nickel-plated nut. **Panel Thickness:** to .343". **Current:** 15 A. **Contact Resistance:** 0.010 ohms.

Stock No.	Mfr.'s Type	Color	EACH		
			1-24	25-99	100-999
528-0157	108-0901-001	White	.49	.42	.34
528-0158	108-0902-001	Red	.49	.42	.34
528-0159	108-0903-001	Black	.49	.42	.34
528-0160	108-0904-001	Green	.49	.42	.34
528-0161	108-0906-001	Orange	.49	.42	.34
528-0162	108-0907-001	Yellow	.49	.42	.34
528-0163	108-0908-001	Brown	.49	.42	.34
528-0164	108-0910-001	Blue	.49	.42	.34
528-0165	108-0912-001	Violet	.49	.42	.34
528-0166	108-0912-001	Gray	.49	.42	.34

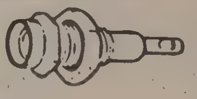
Military Insulated Metal-Clad Tip Jacks



For .080" diameter standard tip plug. Comes with nylon body and nickel-plated brass jacket. Gold-plated turret terminal contact with wrap-around beryllium copper spring. Come with nickel-plated washer and nut. Mount panels to .218" thick. **Breakdown Voltage:** 8000 VDC. **Current:** 10 A. Conform with MS-16108, Rev. F of MIL-STD-242A and MIL-C-39024/10.

Stock No.	Mfr.'s Type	Color	EACH		
			1-24	25-99	100-999
528-0107	105-0201-200	White	2.06	1.75	1.40
528-0108	105-0202-200	Red	2.06	1.75	1.40
528-0109	105-0203-200	Black	2.06	1.75	1.40

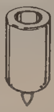
Insulated Metal-Clad Standard Tip Jacks



For .080" diameter standard tip plug. Nylon body and nickel-plated threaded, brass jacket. Silver-plated contact is phosphor bronze with slotted terminal. Come with nickel-plated nut. Mount panels to .218" thick. **Breakdown Voltage:** 5700 Vrms minimum. **Current:** 10 A.

Stock No.	Mfr.'s Type	Color	EACH		
			1-24	25-99	100-999
528-0184	105-0251-001	White	.88	.75	.60
528-0185	105-0252-001	Red	.88	.75	.60
528-0186	105-0253-001	Black	.88	.75	.60

Vertical Test Jacks



Mount through .052" hole and require minimum mounting area. Accepts .080" dia. tip plugs. Silver-plated machined or formed beryllium copper contacts. 5 amps.

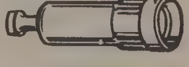
Machined Contacts

Stock No.	Mfr.'s Type	Color	EACH		
			1-24	25-99	100-999
528-0213	105-0851-001	White	.57	.49	.39
528-0214	105-0852-001	Red	.57	.49	.39
528-0215	105-0853-001	Black	.57	.49	.39

Formed Contacts

528-0219	105-2201-201	White	.51	.44	.35
528-0220	105-2202-201	Red	.51	.44	.35
528-0221	105-2203-201	Black	.51	.44	.35

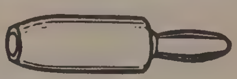
Rib-Loc® Tip Jacks



Accept standard 0.080" diameter tip plugs. Simply press into mounting hole. Silver-plated terminals. **Current:** 5 A. **Breakdown Voltage:** 3500 Vrms. **Contact Resistance:** 0.005 ohm max.

Stock No.	Mfr.'s Type	Color	EACH		
			1-24	25-99	100-999
528-0208	105-1041-001	White	.91	.78	.62
528-0209	105-1042-001	Red	.91	.78	.62
528-0210	105-1043-001	Black	.91	.78	.62

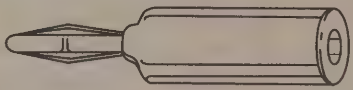
Insulated Solderless Banana Plugs



For standard .175" banana jack. Tapered insulated nylon handle. Connect with wire up to 16 gauge. Nickel-plated brass body with nickel silver plug spring. **Current:** 15 A. **Contact Resistance:** 0.010 ohms.

Stock No.	Mfr.'s Type	Color	EACH		
			1-24	25-99	100-999
528-0147	108-0301-001	White	.89	.76	.61
528-0302	108-0302-001	Red	.89	.76	.61
528-0149	108-0303-001	Black	.89	.76	.61
528-0304	108-0304-001	Green	.89	.76	.61
528-8306	108-0306-001	Orange	.89	.76	.61
528-0152	108-0307-001	Yellow	.89	.76	.61
528-0310	108-0310-001	Blue	.89	.76	.61
528-0155	108-0312-001	Violet	.89	.76	.61
528-0156	108-0313-001	Gray	.89	.76	.61

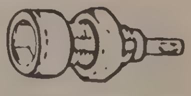
Insulated Hex Body Banana Plugs



For standard banana jacks of 0.175" across flats. Wire can be soldered to threaded-stud or flared and held by stud for solderless connection. Accept up to 16-gauge wire. Nylon insulated handle is UL approved for self extinguishing. Plug is nickel-plated brass with a current rating of 15 amps, breakdown voltage of 3500 Vrms minimum, and contact resistance of 0.010 ohms maximum.

Stock No.	Mfr.'s Type	Color	EACH		
			1-24	25-99	100-999
528-0197	108-1762-101	Red	1.50	1.28	1.02
528-0198	108-1763-101	Black	1.50	1.28	1.02

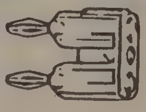
Insulated Standard Tip Jacks



For standard .080" diameter tip plug. Nylon body, phosphor bronze contact. **Panel Thickness:** .437" max. **Current:** 10 A. **Breakdown Voltage:** 5700 Vrms minimum.

Stock No.	Mfr.'s Type	Color	EACH		
			1-24	25-99	100-999
528-0174	105-0801-001	White	.60	.52	.41
528-0175	105-0802-001	Red	.60	.52	.41
528-0176	105-0803-001	Black	.60	.52	.41
528-0179	105-0807-001	Yellow	.60	.52	.41
528-0181	105-0810-001	Blue	.60	.52	.41

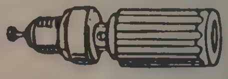
Insulated Stacking Dual Banana Plugs



Molded body incorporates polarity indication and stain relief for wire leads. Machined brass studs extend length of pins. **Voltage Breakdown:** 3500 Vrms. **Capacity Plug to Plug:** 1.3 pf. **Current Capacity:** 15 amps. Set screw to 14 AWG.

Stock No.	Mfr.'s Type	Color	EACH		
			1-24	25-99	100-999
528-0225	108-0252-001	Red	4.84	4.12	3.30
528-0226	108-0253-001	Black	4.84	4.12	3.30

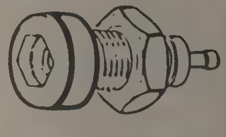
Insulated Standard Binding Posts



For standard .175" diameter banana plug. Flatted, insulating nylon body prevents turning. Silver-plated brass stud has turret termination. Come with nickel-plated nut. **Current:** 15 A. **Breakdown Voltage:** 5700 Vrms minimum. **Panel Thickness:** .281" max.

Stock No.	Mfr.'s Type	Color	EACH		
			1-24	25-99	100-999
528-0137	111-0101-001	White	1.63	1.39	1.11
528-0138	111-0102-001	Red	1.63	1.39	1.11
528-0139	111-0103-001	Black	1.63	1.39	1.11
528-0140	111-0104-001	Green	1.63	1.39	1.11
528-0141	111-0106-001	Orange	1.63	1.39	1.11
528-0142	111-0107-001	Yellow	1.63	1.39	1.11
528-0143	111-0108-001	Brown	1.63	1.39	1.11
528-0144	111-0110-001	Blue	1.63	1.39	1.11
528-0146	111-0113-001	Gray	1.63	1.39	1.11

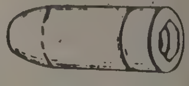
Insulated Deluxe Tip Jacks



For .080" diameter standard tip plug. Machined silver-plated brass contact with turret terminal and wrap-around beryllium copper spring. Come with threaded nylon body and nickel-plated nut. Mount in panels to .437" thick. **Current:** 10 A. **Breakdown Voltage:** 5700 Vrms minimum.

Stock No.	Mfr.'s Type	Color	EACH		
			1-24	25-99	100-999
528-0117	105-0601-001	White	.95	.81	.65
528-0118	105-0602-001	Red	.95	.81	.65
528-0119	105-0603-001	Black	.95	.81	.65
528-0120	105-0604-001	Green	.95	.81	.65
528-0123	105-0608-001	Brown	.95	.81	.65
528-0124	105-0610-001	Blue	.95	.81	.65

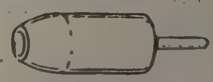
Insulated Tip Jacks With Sleeve Assembly



For standard .080" diameter tip plug. Machined, silver-plated brass contact with turret terminal and wrap-around beryllium copper spring. Assembled body and handle are nylon. For panel thicknesses to .125"; 10 A. **Contact Resistance:** 0.010 ohms.

Stock No.	Mfr.'s Type	Color	EACH		
			1-24	25-99	100-999
528-0101	105-0701-001	White	1.19	1.01	.81
528-0102	105-0702-001	Red	1.19	1.01	.81
528-0103	105-0703-001	Black	1.19	1.01	.81

Insulated Solderless Tip Plugs



For .080" diameter standard tip jacks. Nylon insulating handle with nickel-plated brass plug contact. Accept wire sizes to 16 gauge. Head recessed to reduce shock hazard. **Current:** 10 A. **Breakdown Voltage:** 3500 Vrms.

Stock No.	Mfr.'s Type	Color	EACH		
			1-24	25-99	100-999
528-0127	105-0301-001	White	.70	.59	.47
528-0128	105-0302-001	Red	.70	.59	.47
528-0129	105-0303-001	Black	.70	.59	.47
528-0130	105-0304-001	Green	.70	.59	.47

Panel Mount Uninsulated Banana Plugs And Jacks

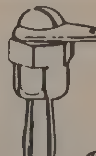


Fig. 1

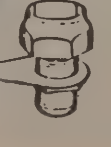


Fig. 2

Brass body per QQ-B-626D. Plugs have nickel silver springs per QQ-C-585. **Screw Type Plugs (Fig. 1):** 108-0753, for standard jack; .125" panel thickness, 14 gauge wire: 15 A. 108-0771, jumbo jack, panel thickness .093" to .500"; 12 gauge; 40 A. **Jacks Have Nickel Finish (Fig. 2):** Type 108-0740, .375" panel thickness; 12 gauge wire; 15 A; pierced lug.

Stock No.	Mfr.'s Type	Fig.	Description	EACH		
				1-24	25-99	100-999
528-0169	108-0753-001	1	Plug, 6-32 screw	1.01	.86	.69
528-0171	108-0771-001	1	Jumbo plug with screw	2.91	2.48	1.98
528-0172	108-0740-001	2	Standard jack	1.10	.94	.75

TNC and N Type Coaxial Connectors

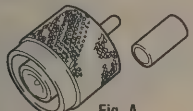


Fig. A

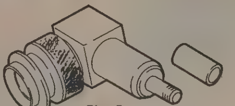


Fig. B

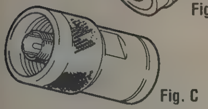


Fig. C

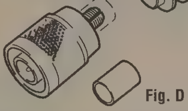


Fig. D

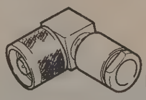


Fig. E

Connectors below all have silver or TR-5 plated bodies and silver or gold-plated contacts, except for connectors which are Mil-C-39012, they have silver bodies and gold contacts.

TNC Type

Stock No.	Mfr.'s Type	Fig.	For RG/U Cables	MIL-No. 39012/	EACH	
					1-24	25-99
517-3500	KA-59-400-M06	A	Belden 1478, 9880	—	**8.00**	**6.67**
517-3502	KA-59-69	A	174, 188, 316, 179, 187	—	**9.89**	**8.24**
517-3504	KA-59-406-M06	A	58, 141, 303	—	**4.94**	**4.15**
517-3506	KA-59-236	B	55, 142, 223, 400	30-0011	**15.81**	**13.18**

N Type

Stock No.	Mfr.'s Type	Fig.	For RG/U Cables	MIL-No. 39012/	1-24	25-99
517-3508	KN-59-176	C	8, 213, 11, 9, 214, 216, 393	01-0005	**13.61**	**11.31**
517-3510	KN-59-239	D	9, 214, 225, 393	01-0501	**10.04**	**8.33**
517-3512	KN-59-242	D	55, 142, 223, 400	01-0503	**12.64**	**10.53**
517-3514	KN-59-298	E	8, 9, 213, 214	05-0101	**52.22**	**43.52**

High Voltage Connectors

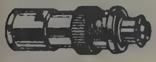


Fig. F

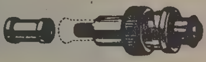


Fig. G

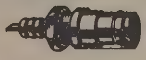


Fig. H

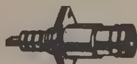


Fig. J

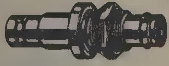


Fig. K

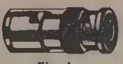


Fig. L

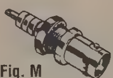


Fig. M

These connectors use bayonet-type coupling, do not intermate with other high voltage series or with BNC Connectors.

SHV-Series

Manufactured to National Bureau of Standards specification ND 545. These connectors feature an improved interface over MHV connectors. Center contacts are recessed to prevent shock hazards when the connectors are unmated. **Material Bodies and Fittings:** brass, QQ-B-626 — Alloy 360½H. **Insulators:** Teflon, MIL-P-19468. **Bodies, Fittings and Outer Contacts Finish:** TR-5® except where noted. **Ratings at Sea Level:** Operating — 3500 VAC or 5000 VDC; Test — 5,000 VAC; 10,000 VDC.

Plugs — Conventional Construction with Female Contact

Stock No.	Mfr.'s Type	Fig.	For RG/U Cables	Special Features	EACH	
					1-24	25-99
517-1000	1705-14	F	59, 59A, 59B, 62, 62A, 62B, 62C, 71, 71A, 71B, 210	—	**16.51**	**13.76**

Plugs — Weatherproof K-Grip Jr® Construction with Female Contact

Stock No.	Mfr.'s Type	Fig.	For RG/U Cables	Special Features	1-24	25-99
517-1010	1705-2	G	58*, 58A*, 58C, 141, 141A	Crimp Contact	**14.07**	**11.72**
517-1015	1705-1	G	59, 59A, 59B, 62, 62A, 62B, 62C, 210	Crimp Contact	**14.15**	**11.80**

*Crimping the center conductor isn't recommended for these cable types.

Bulkhead Receptacle with Male Contact

Stock No.	Mfr.'s Type	Fig.	Special Features	EACH	
				1-24	25-99
517-1090	1704-1	H	Front Mounting	**9.35**	**7.79**

Panel Receptacles with Male Contact

Stock No.	Mfr.'s Type	Fig.	Special Features	1-24	25-99
517-1100	1707-1	J	—	**14.78**	**12.32**
517-1155	1709-1	K	Jack-Jack Bulkhead (Male-Male)	**23.56**	**19.64**

MHV Connector

This forerunner of the SHV-series was designed for high voltage applications of BNC connectors. They aren't intermateable with BNC Connectors. **Ratings:** 3500 VAC, 5000 VDC Operating; 5000 VAC, 6500 VDC test.

Plugs — Conventional Construction with Silver Finish

Stock No.	Mfr.'s Type	Fig.	For RG/U Cables	EACH	
				1-24	25-99
517-1502	UG-932A/U	L	59, 59A, 59B, 62, 62A, 62B, 62C, 210, 71, 71A, 71B	**14.66**	**12.22**

Plugs — Conventional Construction with TR-5® Finish

Stock No.	Mfr.'s Type	Fig.	For RG/U Cables	1-24	25-99
517-1504	KV-59-26	L	59, 59A, 59B, 62, 62A, 62B, 62C, 210, 71, 71A, 71B	**12.71**	**10.59**

Bulkhead Receptacles

Stock No.	Mfr.'s Type	Fig.	Description	EACH	
				1-24	25-99
517-1510	KV-79-15	M	Front Mount TR-5® Finish	**15.50**	**12.92**
517-1512	KV-79-16	M	Front Mount Silver Finish	**19.47**	**16.22**

BNC — Miniature Coaxial Connectors

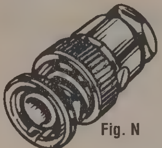


Fig. N

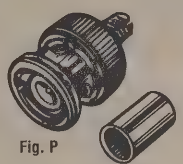


Fig. P

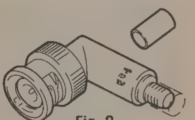


Fig. Q

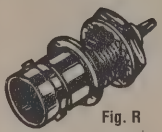


Fig. R

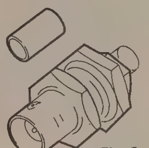


Fig. S

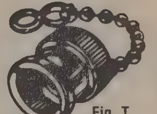


Fig. T

These connectors are rated at 500 Volt RMS. **Frequency Range:** 0-4 GHz. **Impedance:** 50 Ohm except for the 75 Ohm impedance listings. Silver-plated bodies are finished with TR-4® chromate treatment to resist tarnish and salt spray. The rest are finished with TR-5® electro-deposited plating that has superior resistance to tarnish and corrosion.

Straight Plugs — Silver-Plated with TR-4® Finish

Stock No.	Mfr.'s Type	Fig.	For RG/U Cables	MIL-No. M39012/	EACH	
					1-24	25-99
517-3001	KC-59-544	N	58, 58A, 58C, 141, 141A, 55A, 142, 142A, 223, 55, 55B, 142B	16-0101	**4.03**	**3.36**
517-3003	KC-59-545	N	59, 59A, 59B, 62, 62A, 62B, 62C, 210, 71, 71A, 71B	16-0102	**4.31**	**3.59**
517-3024	KC-59-347	P	58, 58A, 58C, 141, 141A	16-0013	**3.78**	**3.15**
517-3029	KC-59-348	P	59, 59A, 59B, 62, 62A, 62B, 62C, 210	16-0015	**3.78**	**3.15**

Straight Plugs — Non-Ferrous Body with TR-5® Plating

Stock No.	Mfr.'s Type	Fig.	For RG/U Cables	MIL-No. M39012/	1-24	25-99
517-3004	KC-59-557-M06	P	179, 179B, 187, 187A, 174, 188, 188A, 316	—	**4.01**	**3.43**
517-3005	KC-59-152	P	174, 188, 188A, 316	—	**6.62**	**5.51**
517-3022	KC-59-291	P	58, 58A, 58C, 141, 141A	—	**4.20**	**3.50**
517-3012	KC-59-294	P	59, 59A, 59B, 62, 62A, 62B, 62C, 210	—	**3.57**	**2.98**
517-3013	KC-59-299	P	Belden 8281, WE 724	—	**3.44**	**2.87**

Straight Plugs — 75 Ohm Impedance — Gold Contact

Stock No.	Mfr.'s Type	Fig.	For RG/U Cables	MIL-No. M39012/	1-24	25-99
517-3516	2025-44-9	P	735A	—	**4.68**	**3.90**
517-3518	2025-76-9	P	734A, 734D	—	**4.79**	**3.99**
517-3017	2025-58-9	P	Belden 8281, 8281B, 8281F, 9141, 88281	—	**2.98**	**2.49**
517-3030	2025-51-9	P	Belden 1426A, 8241F, 9259, 1505A	—	**3.09**	**2.57**
517-3031	2025-59-9	P	Belden 8241, 8241A, RG59	—	**2.86**	**2.38**
517-3520	2025-79-9	P	Belden 1694A, 9248	—	**4.41**	**3.68**

Right Angle Plugs — 75 Ohm Impedance — Gold Contact

Stock No.	Mfr.'s Type	Fig.	For RG/U Cables	MIL-No. M39012/	1-24	25-99
517-3522	2026-16-9	Q	734A, 734D	—	**23.04**	**19.20**
517-3524	2026-17-9	Q	735A	—	**21.95**	**18.29**

Bulkhead Receptacles — Silver Plated with TR-4® Finish

Stock No.	Mfr.'s Type	Fig.	Description	MIL-No. M39012/	EACH	
					1-24	25-99
517-3076	KC-79-105	R	Front Mount	21-0001	**5.23**	**4.36**
517-3077	KC-79-106	R	Front Mount	21-0002	**2.94**	**2.45**
517-3046	UG-1094/U	R	Front Mount	—	**2.41**	**1.93**

Bulkhead Receptacles — 75 Ohm Impedance — Gold Contact

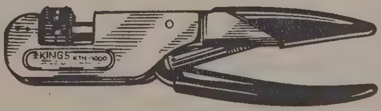
Stock No.	Mfr.'s Type	Fig.	Description	MIL-No. M39012/	1-24	25-99
517-3526	2022-17-29	S	734A, 734D	—	**31.58**	**26.32**
517-3527	2022-18-29	S	735A	—	**26.48**	**22.07**

Accessory

Stock No.	Mfr.'s Type	Fig.	Description	MIL-No. M39012/	1-24	25-99
517-3084	KC-89-87	T	Cap with Beaded Chain	25-0006	**3.47**	**2.89**

Crimp Tools and Dies

KTH-1000



Ratched Tool won't release until a crimp is complete. The tool features removable/replaceable die sets for termination of a variety of cables on a variety of connectors. Die sets sold as separate items.

Stock No.	Mfr.'s Type	Description	EACH
517-3090	KTH-1000	Tool frame	**284.05**
517-3091	KTH-2001	Die for connectors on RG-58, 141	**68.90**
517-3092	KTH-2002	Die for connectors on RG-59, 62	**76.02**
517-3093	KTH-2021	Die for connectors on RG-174	**70.54**
517-3094	KTH-2061	Die for SHV on RG-58, 141	**122.40**
517-3095	KTH-2062	Die for SHV on RG-59, 62	**122.40**

PC Board Terminal Blocks

KRES, KS and KRM Series Terminal Blocks feature a high-density modular screw-clamp wire connection system designed for PCB applications. Each contact is wire-protected for clean, safe connections. KRES Series available in straight, 90°, and 45° angle mount. The 2-piece KCS Series is available in straight and 90° versions. KRM Series offers a low profile package in a "dove-tail" design. Spacing includes 3.5 mm, 5 mm, and 5.08 mm. **Material:** PA 6/6, Light grey (5 mm), Dark grey (5.08 mm).

Female Socket, 5 mm (.197") Pitch, Upright Version

10 A, 250 V; Mates with KSC Blocks.

Stock No.	Mfr.'s Type	No. of Poles	Block Length (In.)	EACH			
				1-99	100-499	500-999	1000-Up
742-0002	KB2	2	0.394	.46	.43	.39	.36
742-0004	KB3	3	0.591	.74	.63	.57	.53
742-0006	KB4	4	0.787	.84	.75	.70	.66
742-0008	KB6	6	1.181	.84	.75	.70	.66

Female Socket, 5 mm (.197") Pitch, 90° Version

10 A, 250 V. Mates with KSC Blocks.

742-0022	KBW2	2	0.394	.46	.43	.39	.36
742-0024	KBW3	3	0.591	.67	.61	.57	.53
742-0026	KBW4	4	0.787	.85	.71	.65	.60
742-0028	KBW6	6	1.181	.91	.75	.70	.65

Terminal Block, 5 mm (.197") Pitch

10 A, 250 V, 12-22 AWG. Mates with Female Sockets KB, KBW. **Height:** .665".

742-0073	KSC2	2	0.394	.76	.64	.58	.54
742-0075	KSC3	3	0.591	1.00	.84	.77	.72
742-0076	KSC4	4	0.787	1.18	.99	.90	.84
742-0079	KSC6	6	1.181	1.59	1.43	1.29	1.20

Terminal Block, 5 mm (.197") Pitch, Upright Version with Holes for Test Clips

15 A, 250 V, 12-22 AWG. **Height:** .551".

742-0033	KRES2	2	0.394	.81	.67	.63	.58
742-0034	KRES3	3	0.591	.88	.75	.68	.63
742-0035	KRES4	4	0.787	.96	.80	.74	.69
742-0036	KRES6	6	1.181	1.09	.91	.84	.78
742-0038	KRES8	8	1.575	1.49	1.24	1.15	1.07
742-0039	KRES10	10	1.969	2.24	1.87	1.72	1.60

Terminal Block, 5 mm (.197") Pitch, 90° Angle Version

15 A, 250 V, 12-22 AWG. **Height:** .327".

742-0040	KRESL2	2	0.394	.61	.51	.47	.44
742-0042	KRESL3	3	0.591	.73	.67	.62	.58
742-0043	KRESL4	4	0.787	.89	.74	.69	.64
742-0045	KRESL5	5	0.984	1.24	1.03	.95	.88
742-0044	KRESL6	6	1.181	1.46	1.21	1.12	1.04
742-0046	KRESL8	8	1.575	1.93	1.61	1.49	1.38
742-0048	KRESL10	10	1.969	2.09	1.74	1.61	1.50

Two-Tier Terminal Block, 5 mm (.197") Pitch

15 A, 250 V, 12-22 AWG. **Height:** 1.142".

742-1600	KRD8	8	0.886	3.45	2.87	2.65	2.46

Terminal Block, 5 mm (.197") Pitch, Upright Version

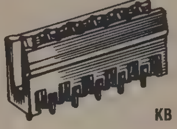
15 A, 250 V, 12-22 AWG. **Height:** .551".

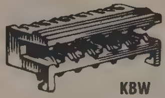
742-0050	KRESS2	2	0.394	.50	.42	.39	.36
742-0052	KRESS3	3	0.591	.64	.53	.49	.46
742-0054	KRESS4	4	0.787	.78	.65	.60	.56
742-0056	KRESS5	5	0.984	.85	.71	.65	.60
742-0058	KRESS6	6	1.181	1.00	.84	.77	.72
742-0059	KRESS8	8	1.575	1.36	1.13	1.05	.97
742-0060	KRESS10	10	1.969	1.70	1.42	1.31	1.22
742-0061	KRESS12	12	2.364	1.98	1.65	1.52	1.42

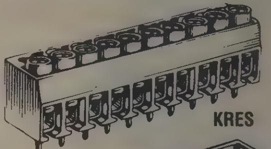
Terminal Block, 5 mm (.197") Pitch, 45° Angle Version

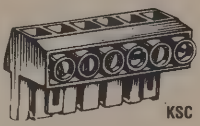
15 A, 250 V, 12-22 AWG. **Height:** .551".

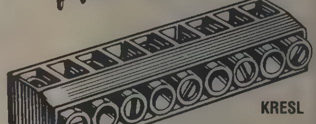
742-0062	KRESW2	2	0.394	.65	.54	.50	.46
742-0064	KRESW3	3	0.591	.80	.66	.61	.57
742-0065	KRESW4	4	0.787	.97	.81	.74	.69
742-0067	KRESW5	5	0.984	1.16	.97	.90	.83
742-0066	KRESW6	6	1.181	1.51	1.26	1.16	1.08
742-0068	KRESW8	8	1.575	1.78	1.48	1.37	1.27
742-0070	KRESW10	10	1.969	2.23	1.86	1.71	1.59

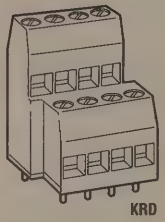

KB

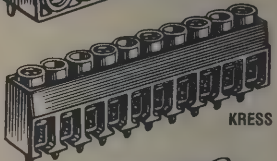

KBW

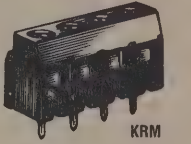

KRES

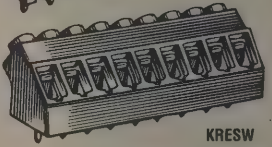

KSC

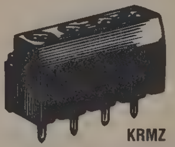

KRESL

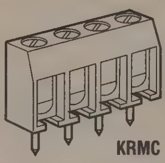

KRD

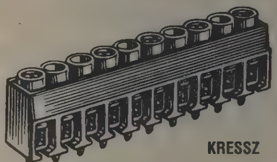

KRESS


KRM


KRESW


KRMZ


KRMC


KRESSZ

Terminal Block, 5.08 mm (.200") Pitch, Upright Version

15 A, 250 V, 12-22 AWG. **Height:** .551.

Stock No.	Mfr.'s Type	No. of Poles	Block Length (In.)	EACH			
				1-99	100-499	500-999	1000-Up
742-0150	KRESSZ2	2	0.400	.51	.42	.39	.36
742-0152	KRESSZ3	3	0.600	.72	.60	.56	.52
742-0154	KRESSZ4	4	0.800	.88	.73	.68	.63
742-0156	KRESSZ6	6	0.120	1.00	.84	.77	.72
742-0158	KRESSZ8	8	0.160	1.36	1.13	1.05	.97
742-0160	KRESSZ10	10	0.200	1.70	1.42	1.31	1.22

Miniature Terminal Block, 5.08 mm (.200") Pitch, Upright Version, Clamp with Wire Protection

Height: .394".

742-0082	KRMZ2	2	0.400	.37	.31	.28	.26
742-0083	KRMZ3	3	0.600	.56	.46	.42	.38
742-0084	KRMZ4	4	0.800	.80	.66	.61	.57
742-0086	KRMZ8	8	1.600	1.67	1.22	1.13	1.05

Miniature Terminal Block, 5 mm (.197") Pitch, Upright Version, Clamp with Wire Protection

Height: .394".

742-1602	KRM2	2	0.394	.37	.31	.28	.26
742-1604	KRM3	3	0.591	.56	.46	.42	.39
742-1606	KRM4	4	0.787	.80	.66	.61	.57
742-1608	KRM6	6	1.181	1.25	1.04	.96	.83
742-1610	KRM8	8	1.575	1.47	1.22	1.13	1.05

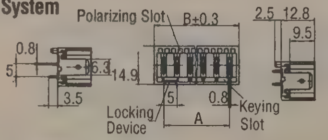
Miniature Terminal Block, 3.5 mm (.138") Pitch, Upright Version, Clamp with Wire Protection

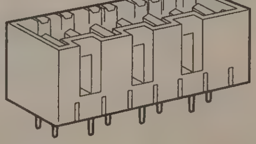
6 A, 250 V, 16 AWG. **Height:** .323".

742-1612	KRMC2	2	0.276	.41	.34	.31	.29
742-1614	KRMC3	3	0.413	.61	.49	.45	.42
742-1616	KRMC4	4	0.551	.81	.66	.61	.57
742-1618	KRMC6	6	0.827	1.20	1.00	.93	.86
742-1620	KRMC8	8	1.102	1.61	1.34	1.25	1.15

Macromodul Connectors 5.0 mm

Rast 5 System

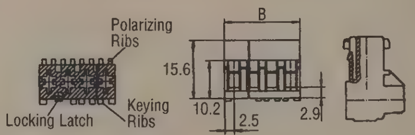


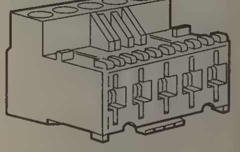


Contact Header, Upright Version

Nominal Current: 6 A/60°C. **Nominal Voltage:** 250 VAC.

Stock No.	Mfr.'s Type	No. of Poles	Dimension (mm)		EACH	
			A	B	1-99	100-249
742-7074	3641 02 K01	2	5	12	.61	.51
742-7076	3641 03 K01	3	10	17	.75	.62
742-7078	3641 04 K01	4	15	22	.91	.75
742-7080	3641 05 K01	5	20	27	1.08	.90





Indirect Connector

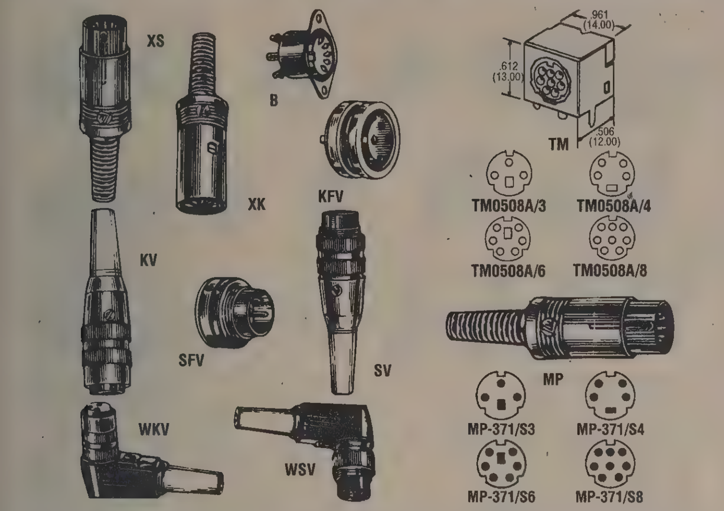
Wire section up to 4.0 mm², with screw terminals. **Nominal Current:** 10 A/60°C. **Nominal Voltage:** 250 VAC.

Stock No.	Mfr.'s Type	No. of Poles	Dim. (mm)		EACH	
			A	B	1-99	100-249
742-7066	3611 02 K01	2	5	10	1.65	1.38
742-7068	3611 03 K01	3	10	15	2.08	1.73
742-7070	3611 04 K01	4	15	20	2.64	2.20
742-7072	3611 05 K01	5	20	25	2.94	2.49

IDT, Circular DIN Connectors and Relay Sockets

lumberg

Circular DIN-Locking, Mini-DIN and Snap-In DIN Connectors

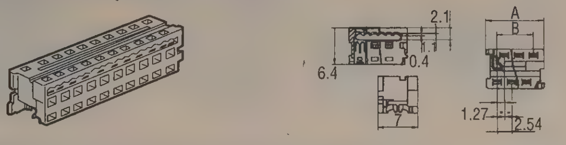


Designed for a wide variety of applications — ideal for new designs and replacements. Precision-built to exacting standards; outside metal housing and coupling nut on locking DINs. Available in 3 to 12 contacts; male and female configurations, solder contacts standard.

Stock No.	Mfr.'s Type	Description	No. of Contacts	EACH 1-99	EACH 100-249
742-1100	XS32	Male plastic shielded plug; mates with XK or B Series	3	.67	.55
742-1102	XS52		5	.90	.82
742-1104	XS62		6	1.26	.98
742-1107	XS82		8	1.25	.97
742-1108	XK32	Female plastic shielded plug; mates with XS Series	3	1.08	.91
742-1110	XK52		5	1.08	.91
742-1112	XK62		6	1.31	1.11
742-1114	XK82		8	1.45	1.22
742-1116	B31	Shielded chassis socket, mates with XS Series	3	1.00	.92
742-1118	B51		5	1.16	.98
742-1120	B61		6	1.52	1.27
742-1122	B81		8	1.61	1.35
742-1124	KFV30	Female chassis socket, with lock-ring; mates with SV, WSV Series	3	3.69	3.10
742-1126	KFV50		5	3.54	2.98
742-1128	KFV60		6	3.73	3.14
742-1129	KFV70		7	4.41	3.71
742-1130	KFV80		8	4.09	3.44
742-1132	KV30	Female plug, dull chrome, with flush lock-ring; mates with SV, WSV, SFV Series	3	7.70	6.42
742-1134	KV50		5	8.07	6.72
742-1136	KV60		6	8.25	6.87
742-1138	KV80		8	8.61	7.17
742-1140	SFV30	Male chassis socket, with lock-ring; mates with KV, WKV Series	3	2.62	2.18
742-1142	SFV50		5	2.79	2.33
742-1144	SFV60		6	3.02	2.55
742-1146	SFV80		8	3.22	2.71
742-1148	SV30	Male plug, dull chrome, with flush lock-ring; mates with KV, WKV, KFV Series	3	7.23	6.03
742-1150	SV50		5	7.39	6.16
742-1152	SV60		6	7.65	6.38
742-1154	SV80		8	7.82	6.52
742-1156	WKV30	Female plug, right-angle style, with flush lock-ring; mates with SFV, SV, WSV Series	3	8.15	6.79
742-1158	WKV50		5	8.49	7.08
742-1160	WKV60		6	8.69	7.24
742-1162	WKV80		8	9.03	7.53
742-1164	WSV30	Male plug, right-angle style, with flush lock-ring; mates with KFV, KV, WKV Series	3	6.93	5.77
742-1166	WSV50		5	7.12	5.94
742-1168	WSV60		6	7.32	6.10
742-1170	WSV80		8	7.56	6.30
742-1540	TM 0508A/3	Mini-DIN miniature female receptacles for PCBs with metal cover	3	1.00	.88
742-1542	TM 0508A/4		4	1.05	.93
742-1544	TM 0508A/6		6	1.13	1.00
742-1548	TM 0508A/8		8	1.22	1.07
742-1550	MP-371/S3	Mini-DIN miniature male plugs	3	.95	.84
742-1552	MP-371/S4		4	1.06	.89
742-1554	MP-371/S6		6	1.20	1.00
742-1556	MP-371/S8		8	1.37	1.14

Micromodul Connectors 1.27 mm

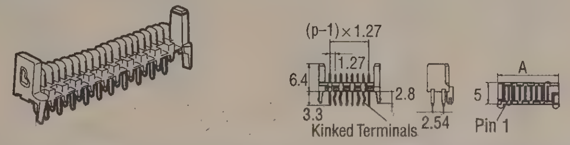
Micromodul Insulation Displacement Connectors



Contact Distance: 1.27 mm. **Nominal Power:** 1.2 A. **Nominal Voltage:** 250 VAC.

Stock No.	Mfr.'s Type	No. of Poles	Dimension (mm) A	Dimension (mm) B	EACH 1-99	EACH 100-249
742-7000	MICA 4	4	7.59	3.81	.53	.44
742-7002	MICA 6	6	10.13	6.35	.45	.38
742-7004	MICA 8	8	12.67	8.89	.58	.48
742-7006	MICA 10	10	15.21	11.43	1.22	1.00
742-7008	MICA 20	20	27.91	24.13	1.39	1.13
742-7010	MICA 36	36	48.23	44.45	2.42	2.02

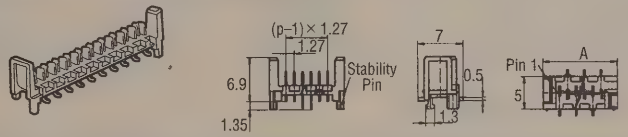
Micromodul — Contact Header



Dual row, staggered. PCB spacing 2.54 mm. **Contact Distance:** 1.27 mm. **Nominal Power:** 1.2 A. **Nominal Voltage:** 250 VAC.

Stock No.	Mfr.'s Type	No. of Poles	Dimension (mm) A	Dimension (mm) B	EACH 1-99	EACH 100-249
742-7012	MICS 4	4	8.86	—	.20	.16
742-7014	MICS 6	6	11.40	—	.32	.27
742-7016	MICS 8	8	13.94	—	.45	.38
742-7018	MICS 10	10	16.48	—	.60	.48
742-7020	MICS 20	20	29.18	—	1.22	1.02
742-7022	MICS 36	36	49.50	—	1.43	1.19

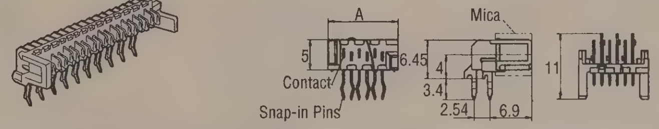
Micromodul — Contact Header, Surface Mount



Dual row staggered. PCB spacing 2.54 mm. **Contact Distance:** 1.27 mm. **Nominal Power:** 1.2 A. **Nominal Voltage:** 250 VAC.

Stock No.	Mfr.'s Type	No. of Poles	Dimension (mm) A	Dimension (mm) B	EACH 1-99	EACH 100-249
742-7056	MICS/SMD 4	4	8.86	—	.56	.47
742-7058	MICS/SMD 6	6	11.40	—	.67	.56
742-7060	MICS/SMD 8	8	13.94	—	.80	.66
742-7062	MICS/SMD 10	10	16.48	—	.91	.75
742-7064	MICS/SMD 20	20	29.18	—	1.51	1.25

Micromodul Contact Headers, Right Angle Version



Dual row, staggered. PCB spacing 2.54 mm. **Contact Distance:** 1.27 mm. **Nominal Power:** 1.2 A. **Nominal Voltage:** 250 VAC.

Stock No.	Mfr.'s Type	No. of Poles	Dimension (mm) A	Dimension (mm) B	EACH 1-99	EACH 100-249
742-7024	MICSW 4	4	8.86	—	.72	.66
742-7026	MICSW 6	6	11.40	—	1.03	.86
742-7028	MICSW 8	8	13.94	—	1.13	.94
742-7030	MICSW 10	10	16.48	—	1.24	1.12
742-7034	MICSW 20	20	29.18	—	1.86	1.53

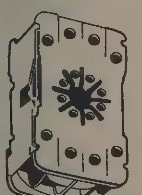
Ribbon Cable (Gray)

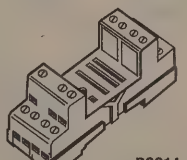
1.27 mm pitch stranded wire 28 AWG. **Nominal Voltage:** 300 V. **Nominal Power:** 1.2 A per conductor.

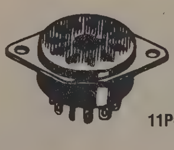
Stock No.	Mfr.'s Type	No. of Conductors	PER ROLL/ 50 METERS
742-7036	1.27 LIYV 4	4	39.78
742-7038	1.27 LIYV 6	6	58.14
742-7040	1.27 LIYV 8	8	76.50
742-7042	1.27 LIYV 10	10	94.86
742-7044	1.27 LIYV 20	20	186.66

Relay Sockets

Ⓤ Ⓛ ⓈⒶ


108PGS


RSS14


11PGF

Din Rail Mount Relay Sockets

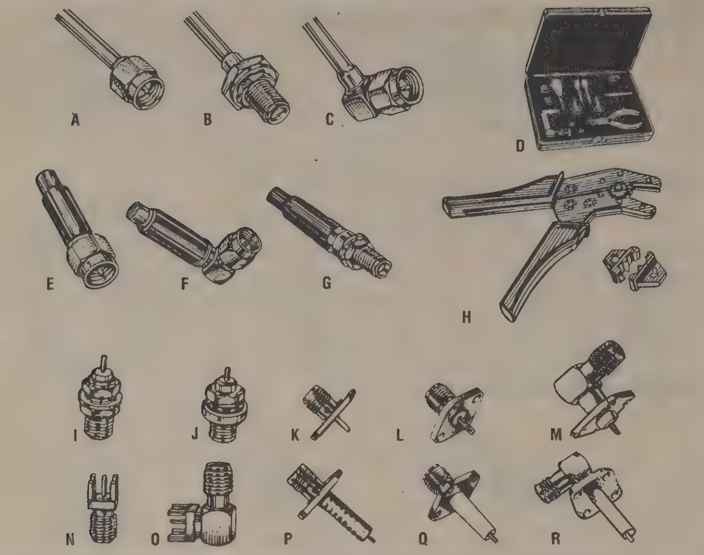
Stock No.	Mfr.'s Type	Description	No. of Contacts	EACH 1-9	EACH 10-24	EACH 25-99
742-1240**	108PGS	8 pole octal base	8	4.83	4.27	3.91
742-1241**	111PGS	11 pole octal base†	11	5.48	4.95	4.57
742-1242*	RSS14	14 pole octal base	14	7.65	6.38	5.88

Chassis-Mount Rated 380 Volt, 10 Amp

Stock No.	Mfr.'s Type	Description	No. of Contacts	EACH 1-9	EACH 10-24	EACH 25-99
742-1258	11 PGF	11 pole socket with metal flange	11	1.95	1.73	1.57

*Rated 250 Volts 5 Amps. **Rated 250 Volts 10 Amps. †Not shown.

SMA Series Coaxial Plug and Jack Connectors



All SMA miniature connectors meet or exceed requirements of MIL-C-39012. Part number suffix-02 indicates passivated stainless steel finish, while part number suffix-00 indicates gold plated finish.

Semi-Rigid Cable, Direct Solder Attachment: RG 402/U (.141 In.), RG 405/U (.085 In.)

Stock No.	Mfr.'s Type	Fig.	Description	RG/U Cable	EACH
					1-9
513-1001	2001-5003-02	A	Std. Plug with Contact	402	**5.92**
513-1005	2001-7985-02	A	Std. Plug with Contact	405	**7.14**
513-1010	2004-7941-00	B	Bulkhead Jack	402	**14.86**
513-1015	2004-7985-00	B	Bulkhead Jack	405	**13.42**
513-1020	2007-7941-02	C	Right Angle Plug	402	**14.96**
513-1025	2007-7985-02	C	Right Angle Plug	405	**16.76**
513-1030	2098-5066-54	D	Solder Assembly Kit	402/405	**696.76**

Flexible Cable, Solder Attachment

Stock No.	Mfr.'s Type	Fig.	Description	RG/U Cable	EACH 1-9
513-1042	2031-5002-02	E	Std. Plug	55, 58, 141, 142, 223, 303, 400	**7.91**
513-1043	2037-5005-02	F	Right Angle Plug	55, 58, 141, 142, 223, 303, 400	**16.61**
513-1044	2031-5003-02	E	Std. Plug	174, 188, 316	**7.00**
513-1045	2034-5008-00	G	Bulkhead Jack	174, 188, 316	**23.60**
513-1050	2037-5006-02	F	Right Angle Plug	174, 188, 316	**16.61**

Flexible Cable, Crimp Attachment

Stock No.	Mfr.'s Type	Fig.	Description	RG/U Cable	EACH 1-9
513-1055	2034-5005-02	G	Bulkhead Jack	174, 188, 316	**13.01**
513-1060	2034-5031-02	G	Bulkhead Jack	178, 196	**17.02**
513-1065	2037-5008-02	F	Right Angle Plug	174, 188, 316	**16.66**
513-1070	2037-5100-02	F	Right Angle Plug	178, 196	**20.62**

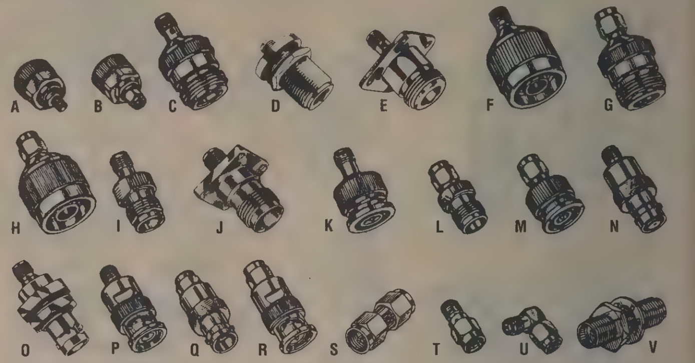
Econo-Crimp Assembly Tool for Flexible Cable — Fig. H

Includes five exchangeable hex dies — .105, .128, .178, .213, .255 inch.
513-1075. 2598-5005-54 .... **EACH 232.79**

Panel Mount Receptacles

Stock No.	Mfr.'s Type	Fig.	Description	Terminal	EACH
					1-9
513-1080	2058-0000-02	I	Bulkhead Jack	Solder Pot	**11.93**
513-1085	2056-0000-02	J	Bulkhead Jack	Solder Pot	**7.35**
513-1086	2052-1350-02	K	2-Hole Flange Jack	Solder Pot	**7.85**
513-1087	2052-0000-02	L	4-Hole Flange Jack	Solder Pot	**6.58**
513-1088	2054-0000-02	M	4-Hole Flange Rt. Ang. Jack	Straight	**15.61**
513-1090	2062-0000-00	N	Std. P.C. Mount Jack	Straight	**8.36**
513-1095	2064-0000-00	O	Right Angle P.C. Jack	Straight	**11.66**
513-1096	2052-1352-00	P	2-Hole Flange Jack	Straight	**7.60**
513-1097	2052-1201-02	Q	4-Hole Flange Jack	Straight	**6.34**
513-1098	2054-1201-02	R	4-Hole Flange Rt. Ang. Jack	Straight	**12.98**

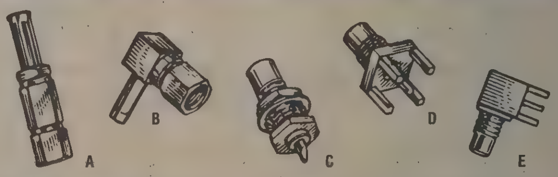
SMA Coaxial Adapters



Stock No.	Mfr.'s Type	Fig.	Description	EACH
				1-9
513-1500	2082-2700-00	A	7 mm Precision to SMA Jack	**112.00**
513-1505	2081-2700-00	B	7 mm Precision to SMA Plug	**112.00**
513-1510	3080-2240-00	C	N Jack to SMA Jack	**64.04**
513-1512	3084-2240-00	D	N Bulkhead Jack to SMA Jack	**79.89**
513-1513	3080-2242-00	E	N Jack to SMA Jack Flange	**73.70**
513-1515	3082-2240-00	F	N Plug to SMA Jack	**47.73**
513-1520	3082-2241-00	G	N Jack to SMA Plug	**55.56**
513-1525	3081-2241-00	H	N Plug to SMA Plug	**59.82**
513-1530	3180-2240-00	I	TNC Jack to SMA Jack	**58.22**
513-1533	3180-2242-00	J	TNC Jack to SMA Jack Flange	**69.33**
513-1535	3182-2240-00	K	TNC Plug to SMA Jack	**50.87**
513-1540	3182-2241-00	L	TNC Jack to SMA Plug	**59.36**
513-1545	3181-2241-00	M	TNC Plug to SMA Plug	**57.64**
513-1550	3280-2240-00	N	BNC Jack to SMA Jack	**26.78**
513-1553	3284-2240-00	O	BNC Bulkhead Jack to SMA Jack	**41.80**
513-1555	3282-2240-00	P	BNC Plug to SMA Jack	**26.64**
513-1560	3282-2241-00	Q	BNC Jack to SMA Plug	**28.68**
513-1565	3281-2241-00	R	BNC Plug to SMA Plug	**28.10**
513-1567	2081-0000-02	S	SMA Plug to Plug	**18.85**
513-1570	2082-5133-02	T	SMA Plug to Jack Connector Saver	**21.71**
513-1575	2088-1230-02	U	SMA Plug to Jack Right Angle	**24.73**
513-1577	2084-0000-02	V	SMA Jack to Jack Bulkhead Feed Through	**18.72**

Contact the closest sales office for quantity pricing.

SMC Series Screw-On Coaxial Plug and Jack Connectors



M/A-COM uses beryllium copper center contacts and brazed right angle bodies for increased durability in all SMC Series connectors. All connectors are gold plated.

Flexible Cable Crimp Attachment

Stock No.	Mfr.'s Type	Fig.	Description	Coaxial Cable	EACH
					1-9
513-1200	5031-5014-09	A	Std. Flex. Cable Plug	174, 188, 316	**7.59**
513-1205	5031-5007-09	A	Std. Flex. Cable Plug	178, 196	**7.59**
513-1210	5037-7188-09	B	Right Angle Plug	174, 188, 316	**9.26**
513-1215	5037-7196-09	B	Right Angle Plug	178, 196	**9.52**

Panel Mount

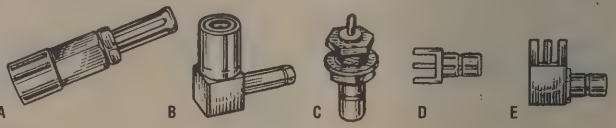
Stock No.	Mfr.'s Type	Fig.	Description	Terminal	EACH
					1-9
513-1220	5056-0000-09	C	Bulkhead Jack	Solder Pot	**4.47**
513-1225	5062-5003-09	D	Std. P.C. Mount Jack	Straight	**5.79**
513-1230	5064-5003-09	E	Right Angle P.C. Jack	Straight	**9.84**

SMB Series Snap-on Coaxial Plug and Jack Connectors

M/A-COM uses beryllium copper center contacts and brazed right angle bodies for increased durability in all SMB Series connectors. All connectors are gold plated.

Flexible Cable Crimp Attachment

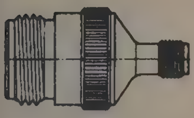
Stock No.	Mfr.'s Type	Fig.	Description	Coaxial Cable	EACH
					1-9
513-1100	5131-5007-09	A	Std. Flex. Cable Plug	174, 188, 316	**7.62**
513-1105	5131-5011-09	A	Std. Flex. Cable Plug	178, 196	**7.89**
513-1110	5137-5010-09	B	Right Angle Plug	174, 188, 316	**9.13**
513-1115	5137-5011-09	B	Right Angle Plug	178, 196	**10.90**

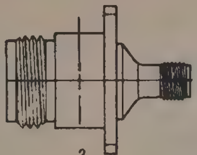


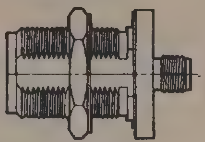
Panel Mount

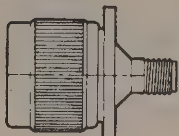
Stock No.	Mfr.'s Type	Fig.	Description	Terminal	EACH
					1-9
513-1120	5156-0000-09	C	Bulkhead Jack	Solder Pot	**4.11**
513-1125	5162-5013-09	D	Std. P.C. Mount Jack	Straight	**5.47**
513-1130	5164-5003-09	E	Right Angle P.C. Jack	Straight	**9.34**
—	—	—	—	—	—

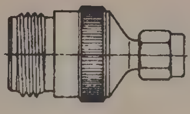
Coaxial, Between-Series Adapters

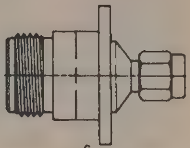

1

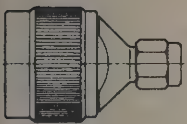

2

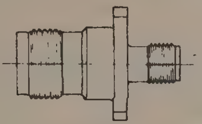

3

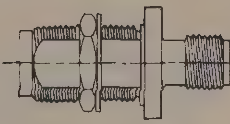

4

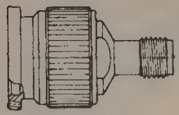

5

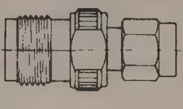

6

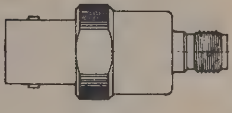

7

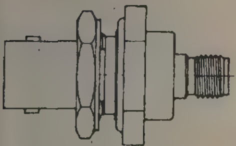

8

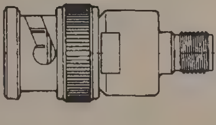

9

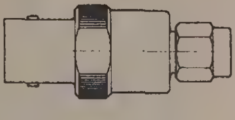

10

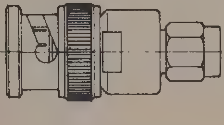

11

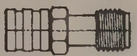

12

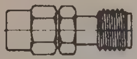

13

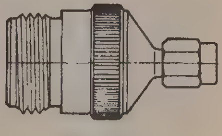

14

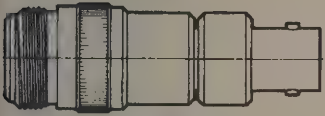

15

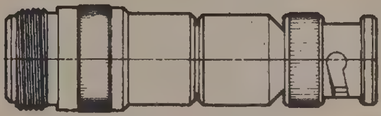

16

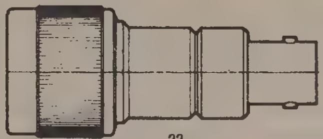

17

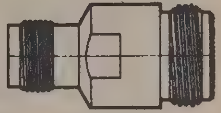

18

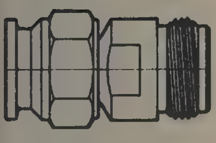

19

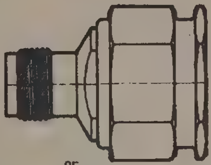

20

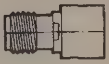

21

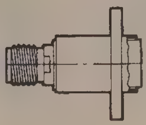

22

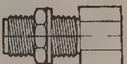

23

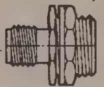

24

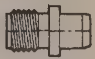

25

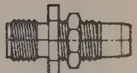

26


27


28


29


30

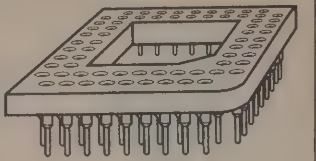

31

M/A-COM Between-Series Coaxial Transmission Line Adapters provide convenient transitions between all popular series coaxial connectors. The adapter design provides a minimum length consistent with good electrical performance. The small, low VSWR, and broad frequency coverage permits a wide range of applications in both measurement and systems use. All dielectrics are TFE fluorocarbon. The center contacts are made of beryllium copper, gold plated.

Stock No.	Mfr.'s Type	Fig.	Description	Operating Frequency	EACH 1-9	EACH 10-24
513-1510	3080-2240-00	1	Type N Jack to OSM (SMA) Jack	DC-12 GHz* 12.4-15.0 GHz**	**64.04**	**60.58**
513-1700	3680-2240-00	1	Type N Jack to OSM (SMA) Jack	High Freq.-18.0 GHz**	**89.74**	**83.33**
513-1513	3080-2242-00	2	Flange Mount-N to OSM (SMA) Jack	DC-12 GHz* 12.4-15.0 GHz**	**73.70**	**68.03**
513-1702	3680-2242-00	2	Flange Mount-N to OSM (SMA) Jack	High Freq.-18.0 GHz**	**104.78**	**97.80**
513-1512	3084-2240-00	3	Bulkhead Mount-N Jack to OSM (SMA) Jack with Gasket	DC-12 GHz* 12.4-15.0 GHz**	**79.89**	**74.18**
513-1704	3684-2240-00	3	Bulkhead Mount-N Jack to OSM (SMA) Jack with Gasket	High Freq.-18.0 GHz**	**98.11**	**91.57**
513-1706	3082-2242-00	4	Flange Mount-N Plug to OSM (SMA) Jack	DC-12 GHz* 12.4-15.0 GHz**	**79.10**	**73.45**
513-1520	3082-2241-00	5	N Jack to OSM (SMA) Plug	DC-12 GHz• 12.4-15.0 GHz**	**55.56**	**52.56**
513-1708	3682-2241-00	5	N Jack to OSM (SMA) Plug	High Freq.-18.0 GHz**	**89.74**	**83.33**
513-1710	3082-2243-00	6	Flange Mount-N Jack to OSM (SMA) Plug	DC-12 GHz• 12.4-15.0 GHz**	**87.96**	**81.67**
513-1525	3081-2241-00	7	N Plug to OSM (SMA) Plug	DC-12 GHz• 12.4-18.0 GHz**	**59.82**	**55.55**
513-1533	3180-2242-00	8	Flange Mount-TNC Jack to OSM (SMA) Jack	DC-15.0 GHz†	**69.33**	**63.99**
513-1712	3780-2242-00	8	Flange Mount-TNC Jack to OSM (SMA) Jack	Mode Free to 18.0 GHz†	**118.78**	**110.29**
513-1714	3184-2240-00	9	Bulkhead Mount-TNC to OSM (SMA) Jack	DC-15.0 GHz†	**99.98**	**92.83**
513-1716	3784-2240-00	9	Bulkhead Mount-TNC to OSM (SMA) Jack	Mode Free to 18.0 GHz†	**114.22**	**106.07**
513-1535	3182-2240-00	10	TNC Plug to OSM (SMA) Jack	DC-15.0 GHz+	**50.87**	**47.24**
513-1718	3782-2240-00	10	TNC Plug to OSM (SMA) Jack	Mode Free to 18.0 GHz†	**98.64**	**91.60**
513-1540	3182-2241-00	11	TNC Jack to OSM (SMA) Plug	DC-15.0 GHz†	**59.36**	**55.12**
513-1550	3280-2240-00	12	BNC Jack to OSM (SMA) Jack	—	**26.78**	**24.72**
513-1553	3284-2240-00	13	Bulkhead Mount-BNC Jack to OSM (SMA) Jack with Gasket	—	**41.80**	**38.59**
513-1555	3282-2240-00	14	BNC Plug to OSM (SMA) Jack	—	**26.64**	**24.59**
513-1560	3282-2241-00	15	BNC Jack to OSM (SMA) Plug	—	**28.68**	**26.47**
513-1565	3281-2241-00	16	BNC Plug to OSM (SMA) Plug	—	**28.10**	**25.94**
513-1720	5182-2240-00	17	SMB Plug to OSM (SMA) Jack	—	**49.60**	**46.06**
513-1722	5082-2240-00	18	SMC Plug to OSM (SMA) Jack	—	**42.88**	**39.80**
513-1724	3082-2201-00	19	N Jack to OSSM Plug	DC-12.4 GHz‡	**146.99**	**136.49**
513-1726	3080-2320-00	20	N Jack to BNC Jack	—	**95.46**	**88.64**
513-1728	3082-2321-00	21	N Jack to BNC Plug	—	**106.32**	**98.72**
513-1730	3082-2320-00	22	N Plug to BNC Jack	—	**95.46**	**88.64**
513-1732	3680-2310-02	23	TNC Jack to N Jack	—	**101.31**	**94.07**
513-1734	3682-2311-02	24	TNC Plug to N Jack	—	**108.28**	**100.54**
513-1736	3682-2310-02	25	TNC Jack to N Plug	—	**108.28**	**100.54**
513-1738	4580-2240-02	26	OSM (SMA) Jack to OSP (BMA) Jack	DC-18.0 GHz•	**34.63**	**32.16**
513-1740	4584-2242-02	27	Floating Flange Mount — OSM (SMA) Jack to OSP (BMA) Jack	DC-18.0 GHz•	**90.81**	**84.32**
513-1742	4584-2244-02	28	Bulkhead Mount — OSM (SMA) Jack to OSP (BMA) Jack	DC-18.0 GHz•	**81.52**	**75.70**
513-1744	4584-2240-02	29	Bulkhead Mount — OSM (SMA) Jack to OSP(BMA) Jack	DC-18.0 GHz•	**48.83**	**45.35**
513-1746	4582-2240-02	30	OSM (SMA) Jack to OSP (BMA) Plug	DC-18.0 GHz•	**31.67**	**29.41**
513-1748	4585-2240-02	31	Bulkhead Mount — OSM (SMA) Jack to OSP (BMA) Plug	DC-18.0 GHz•	**56.54**	**52.50**

*Max. VSWR 1.06+.005 fGHz. **Max. VSWR .83+.023 fGHz. •Max. VSWR 1.05+.005 fGHz. †Max. VSWR 1.07+.015 fGHz. ‡Max. VSWR 1.09+.009 fGHz.

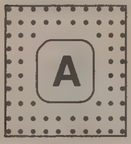
Pin Grid Array Sockets



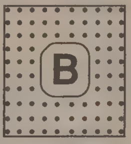
Electrical
- Rated Current: 1 A Per Contact
- Rated Voltage: 100 VRMS/150 VDC
- Contact Resistance: 10 mΩ Max.
- Insulation Resistance: 10,000 MΩ Min.
- Capacitance: 1 pF Max.
- Operating Temperature: –55 to +125°C

Material
- Insulator Body Material: Glass-Filled Thermoplastic Polyester UL-94 V-O Rated
- Pin (Outer Sleeve): Brass Per QQ-B-626, Precision Machined
- Inner Contact: Beryllium Copper Per QQ-C-533, Heat Treated
- Plating Pin: 200 μ" Tin-Lead Over Nickel; Inner Contact: 30 μ" Gold Over Nickel

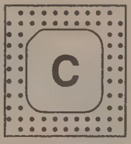
PGA Footprints — Top View of Socket



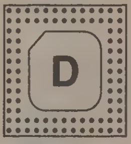
68 Pin (10 × 10)



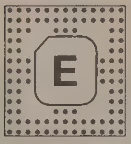
84 Pin (10 × 10)



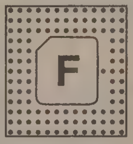
68 Pin (11 × 11)



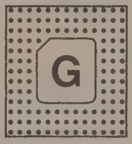
88 Pin (13 × 13)



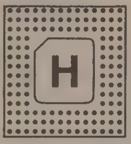
101 Pin (13 × 13)



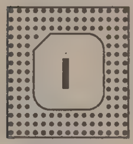
114 Pin (13 × 13)



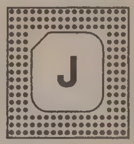
121 Pin (13 × 13)



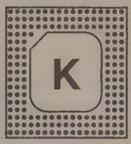
132 Pin (14 × 14)



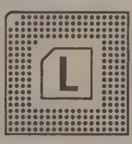
145 Pin (15 × 15)



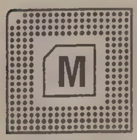
168 Pin (17 × 17)



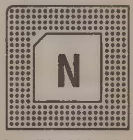
169 Pin (17 × 17)



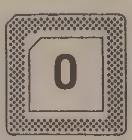
238 Pin (19 × 19)



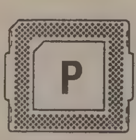
237 Pin (19 × 19)



273 Pin (21 × 21)



296 Pin (19 × 19)



320 Pin (19 × 19)

Standard Solder Tail

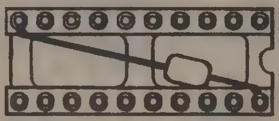
Stock No.	Mfr.'s Type	No. of Pins	Foot Print	Length and Width	EACH		
					1-24	25-99	100-499
900-0074	510-93-068-10-041001	68	A	1.000 sq.	**2.74**	**2.49**	**2.08**
900-0076	510-93-084-10-031001	84	B	1.000 sq.	**3.08**	**2.80**	**2.35**
900-0078	510-93-068-11-061001	68	C	1.100 sq.	**2.74**	**2.49**	**2.08**
900-0080	510-93-088-13-081001	88	D	1.300 sq.	**3.25**	**2.95**	**2.47**
900-0082	510-93-101-13-061001	101	E	1.300 sq.	**3.48**	**3.16**	**2.65**
900-0084	510-93-114-13-062001	114	F	1.300 sq.	**3.70**	**3.36**	**2.98**
900-0086	510-93-121-13-061001	121	G	1.300 sq.	**4.16**	**3.75**	**3.15**
900-0088	510-93-132-14-071001	132	H	1.400 sq.	**4.57**	**4.15**	**3.47**
900-0092	510-93-145-15-081001	145	I	1.500 sq.	**4.99**	**4.54**	**3.80**
900-0094	510-93-168-17-101002	168	J	1.700 sq.	**5.78**	**5.26**	**4.37**
900-0096	510-93-169-17-101002	169	K	1.700 sq.	**5.83**	**5.30**	**4.41**
900-0124	510-93-238-19-086002	238	L	1.900 sq.	**9.10**	**8.20**	**7.37**
900-0125	510-93-237-19-086003	237	M	1.900 sq.	**10.24**	**9.22**	**8.30**
900-0126	510-93-273-21-125002	273	N	2.100 sq.	**10.44**	**9.40**	**8.50**
900-0127	518-93-296-19-125002	296	O*	1.900 sq.	**25.66**	**23.10**	**20.79**
900-0128	518-93-320-19-126004	320	P†	1.900 sq.	**27.74**	**24.97**	**22.47**

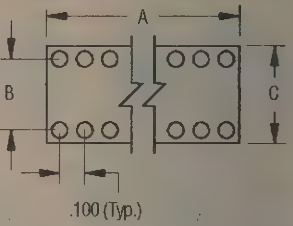
3-Level Wrapost

Stock No.	Mfr.'s Type	No. of Pins	Foot Print	Length and Width	1-24	25-99	100-499
900-0098	523-93-068-10-041001	68	A	1.000 sq.	**7.06**	**6.42**	**5.37**
900-0100	523-93-084-10-031001	84	B	1.000 sq.	**16.06**	**13.19**	**12.31**
900-0102	523-93-068-11-061001	68	C	1.100 sq.	**7.06**	**6.42**	**5.37**
900-0104	523-93-088-13-081001	88	D	1.300 sq.	**8.58**	**7.80**	**6.50**
900-0106	523-93-101-13-061001	101	E	1.300 sq.	**9.83**	**8.94**	**7.47**
900-0108	523-93-114-13-062001	114	F	1.300 sq.	**11.88**	**10.08**	**8.42**
900-0110	523-93-121-13-061001	121	G	1.300 sq.	**11.77**	**10.70**	**8.93**
900-0112	523-93-132-14-071001	132	H	1.400 sq.	**12.95**	**11.76**	**9.75**
900-0116	523-93-145-15-081001	145	I	1.500 sq.	**13.99**	**12.72**	**10.62**
900-0118	523-93-168-17-101002	168	J	1.700 sq.	**16.19**	**14.72**	**12.28**
900-0120	523-93-169-17-101002	169	K	1.700 sq.	**16.30**	**14.82**	**12.37**

*Without heatsink tabs. †With heatsink tabs.

IC Sockets with Integral Decoupling Capacitor





Low profile IC-Socket with integral decoupling capacitor. 100 nF 20% — 50 V multilayer ceramic epoxy encapsulated. **Temperature Range:** –25°C to +85°C. **Insertion Characteristics:** 4-finger standard.

Pin — 200 μ" Tin, Solder Tab; Contact — 30 μ" Gold

Stock No.	Mfr.'s Type	No. of Pins	Dimensions			EACH		
			A	B	C	1-24	25-99	100-499
900-0130	110-93-314-41-801	14	0.700	0.300	0.400	**1.40**	**1.26**	**1.14**
900-0132	110-93-316-41-801	16	0.800	0.300	0.400	**1.50**	**1.35**	**1.22**
900-0134	110-93-318-41-801	18	0.900	0.300	0.400	**1.60**	**1.45**	**1.31**
900-0136	110-93-320-41-801	20	1.000	0.300	0.400	**1.63**	**1.47**	**1.33**
900-0138	110-93-324-41-801	24	1.200	0.300	0.400	**1.86**	**1.68**	**1.52**
900-0140	110-93-624-41-801	24	1.200	0.600	0.700	**2.06**	**1.85**	**1.67**
900-0142	110-93-628-41-801	28	1.400	0.600	0.700	**2.22**	**2.00**	**1.80**
900-0144	110-93-640-41-801	40	2.000	0.600	0.700	**2.62**	**2.36**	**2.13**

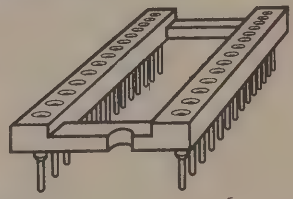
Pin — 10 μ" Gold, Solder Tab: Contact — 30 μ" Gold

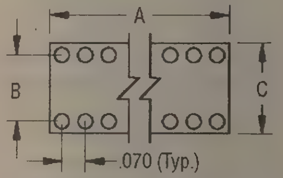
Stock No.	Mfr.'s Type	No. of Pins	A	B	C	1-24	25-99	100-499
900-0146	110-13-314-41-801	14	0.700	0.300	0.400	**1.66**	**1.49**	**1.34**
900-0148	110-13-316-41-801	16	0.800	0.300	0.400	**1.81**	**1.63**	**1.47**
900-0150	110-13-318-41-801	18	0.900	0.300	0.400	**1.94**	**1.74**	**1.57**
900-0152	110-13-320-41-801	20	1.000	0.300	0.400	**2.00**	**1.80**	**1.62**
900-0154	110-13-324-41-801	24	1.200	0.300	0.400	**2.31**	**2.08**	**1.88**
900-0156	110-13-624-41-801	24	1.200	0.600	0.700	**2.51**	**2.26**	**2.04**
900-0158	110-13-628-41-801	28	1.400	0.600	0.700	**2.72**	**2.45**	**2.21**
900-0160	110-13-640-41-801	40	2.000	0.600	0.700	**3.22**	**2.90**	**2.61**

Pin — 200 μ" Tin, 3 Level Wrapost, .515 Length; Contact — 30 μ" Gold

Stock No.	Mfr.'s Type	No. of Pins	A	B	C	1-24	25-99	100-499
900-0162	123-93-314-41-801	14	0.700	0.300	0.400	**2.26**	**2.04**	**1.84**
900-0164	123-93-316-41-801	16	0.800	0.300	0.400	**2.50**	**2.25**	**2.03**
900-0166	123-93-318-41-801	18	0.900	0.300	0.400	**2.71**	**2.43**	**2.19**
900-0168	123-93-320-41-801	20	1.000	0.300	0.400	**2.82**	**2.54**	**2.29**
900-0170	123-93-324-41-801	24	1.200	0.300	0.400	**3.47**	**3.13**	**2.82**
900-0172	123-93-624-41-801	24	1.200	0.600	0.700	**3.47**	**3.13**	**2.82**
900-0174	123-93-628-41-801	28	1.400	0.600	0.700	**3.87**	**3.48**	**3.14**
900-0176	123-93-640-41-801	40	2.000	0.600	0.700	**4.88**	**4.39**	**3.95**

Shrink DIP Sockets — Solder Tail (Open Frame)

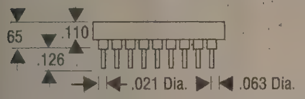


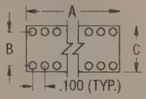


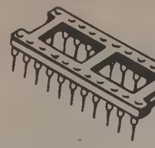
High density, dual-in-line sockets and strips for devices featuring .070" lead spacing. Four-finger beryllium copper contacts meet high vibration and shock requirements. **Insertion Characteristics:** 4-finger standard.

Stock No.	Mfr.'s Type	No. of Pins	Dimensions			EACH		
			A	B	C	1-24	25-99	100-499
900-0180	117-93-316-41-005	16	0.572	0.300	0.390	**1.07**	**.96**	**.87**
900-0182	117-93-428-41-005	28	0.992	0.400	0.490	**1.81**	**1.63**	**1.47**
900-0184	117-93-430-41-005	30	1.062	0.400	0.490	**1.93**	**1.74**	**1.57**
900-0186	117-93-448-41-005	48	1.692	0.400	0.490	**3.10**	**2.78**	**2.51**
900-0188	117-93-620-41-005	20	0.712	0.600	0.690	**1.29**	**1.16**	**1.05**
900-0190	117-93-628-41-005	28	0.992	0.600	0.690	**1.81**	**1.63**	**1.47**
900-0192	117-93-640-41-005	40	1.412	0.600	0.690	**2.58**	**2.32**	**2.09**
900-0194	117-93-642-41-005	42	1.482	0.600	0.690	**4.09**	**3.51**	**2.97**
900-0196	117-93-648-41-005	48	1.692	0.600	0.690	**3.10**	**2.79**	**2.51**
900-0198	117-93-652-41-005	52	1.832	0.600	0.690	**3.26**	**2.93**	**2.64**
900-0200	117-93-656-41-005	56	1.972	0.600	0.690	**3.51**	**3.16**	**2.85**
900-0202	117-93-664-41-005	64	2.252	0.600	0.690	**4.01**	**3.61**	**3.25**
900-0204	117-93-668-41-005	68	2.392	0.600	0.690	**4.26**	**3.83**	**3.45**
900-0206	117-93-764-41-005	64	2.252	0.750	0.840	**4.01**	**3.61**	**3.25**

Standard Solder Tail DIP Sockets







Most popular line of standard low profile IC-Sockets. Open frame design leaves space beneath IC for improved heat dissipation, easier PCB cleaning and inspection.

Pin — 200µ" Tin; Contact — 30µ" Gold

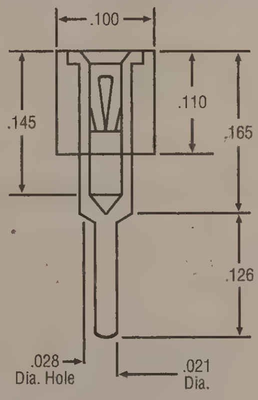
Stock No.	Mfr.'s Type	No. of Pins	Dim. — Inches			EACH		
			A	B	C	1-24	25-99	100-499
900-0002	110-93-306-41-001	6	.300	.300	.400	.19	.17	.15
900-0004	110-93-308-41-001	8	.400	.300	.400	.24	.22	.20
900-0006	110-93-314-41-001	14	.700	.300	.400	.45	.41	.35
900-0008	110-93-316-41-001	16	.800	.300	.400	.50	.45	.38
900-0010	110-93-318-41-001	18	.900	.300	.400	.55	.50	.43
900-0012	110-93-320-41-001	20	1.000	.300	.400	.55	.50	.48
900-0014	110-93-324-41-001	24	1.200	.300	.400	.73	.66	.57
900-0015	110-93-328-41-001	28	1.400	.300	.400	.86	.78	.70
900-0016	110-93-422-41-001	22	1.100	.400	.500	.68	.62	.53
900-0017	110-93-424-41-001	24	1.200	.400	.500	.74	.67	.60
900-0018	110-93-624-41-001	24	1.200	.600	.700	.70	.64	.58
900-0020	110-93-628-41-001	28	1.400	.600	.700	.89	.81	.68
900-0022	110-93-632-41-001	32	1.600	.600	.700	1.00	.94	.78
900-0024	110-93-640-41-001	40	2.000	.600	.700	1.24	1.13	.95
900-0025	110-93-648-41-001	48	2.400	.500	.700	1.48	1.33	1.20
900-0207	110-93-950-41-001	50	2.500	.900	1.000	1.54	1.39	1.25
900-0209	110-93-964-41-001	64	3.200	.900	1.000	1.98	1.78	1.60

Pin — 200µ" Tin; Contact — 200µ" Tin

900-0220	110-99-306-41-001	6	.300	.300	.400	.15	.13	.12
900-0222	110-99-308-41-001	8	.400	.300	.400	.19	.17	.16
900-0224	110-99-314-41-001	14	.700	.300	.400	.34	.30	.27
900-0226	110-99-316-41-001	16	.800	.300	.400	.38	.35	.31
900-0228	110-99-318-41-001	18	.900	.300	.400	.43	.39	.35
900-0230	110-99-320-41-001	20	1.000	.300	.400	.48	.43	.39
900-0232	110-99-324-41-001	24	1.200	.300	.400	.58	.52	.47
900-0234	110-99-328-41-001	28	1.400	.300	.400	.67	.60	.55
900-0236	110-99-424-41-001	24	1.200	.400	.500	.58	.52	.47
900-0238	110-99-624-41-001	24	1.200	.600	.700	.58	.52	.47
900-0240	110-99-628-41-001	28	1.400	.600	.700	.67	.60	.55
900-0242	110-99-632-41-001	32	1.600	.600	.700	.77	.69	.62
900-0244	110-99-640-41-001	40	2.000	.600	.700	.96	.87	.78
900-0246	110-99-648-41-001	48	2.400	.600	.700	1.15	1.04	.93
900-0248	110-99-964-41-001	64	3.200	.900	1.000	1.54	1.38	1.25

Strip Sockets Solder Tail

On .100 Centers



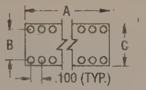
Materials. Insulator Body: Glass-filled thermoplastic polyester, self-extinguishing rated; UL94V-9; color — black; resistant against detergents, mineral acids, solvents, greases and oils (short time). **Receptacle (Sleeve):** Screw-machined brass, plated 200µ" tin-lead. **Pin:** Phosphor bronze, plated 200µ" tin-lead over 80-120µ" nickel. **Contact:** Stamped beryllium-copper, plated 30µ" gold. **Mechanical Life:** 100 cycles minimum.

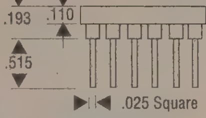
Electrical Data. Rated Current: 1A. **Rated Voltage:** 100 VRMS/150VDC. **Contact Resistance:** 10mΩ max. **Insulation Resistance:** 10,000MΩ min. **Dielectric Strength:** 1000 VRMS min. **Capacitance:** 0.3 pF max.

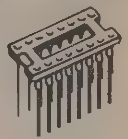
Environmental Data. Operating Temperature Range: –55°C to +125°C. **Vibration:** 10-2000 Hz, 15g. **Shock (No Elect. Discontinuity Greater Than 1 µs):** 150 g. **Solderability:** IEC 68-2-20 Ta. **Resistance to Soldering Heat:** IEC 68-2-20, 260°C, 5s. **Resistance to Atmospheric Corrosion:** IEC 68-2-42 and 43.

Stock No.	Mfr.'s Type	No. of Pins	Length of Socket	EACH		
				1-24	25-99	100-499
900-0251	310-93-108-41-001	8	.800	.28	.25	.23
900-0255	310-93-110-41-001	10	1.000	.35	.31	.28
900-0260	310-93-114-41-001	14	1.400	.49	.44	.40
900-0265	310-93-120-41-001	20	2.000	.70	.63	.56
900-0270	310-93-130-41-001	30	3.000	1.04	.94	.85
900-0275	310-93-132-41-001	32	3.200	1.11	1.00	.90
900-0280	310-93-164-41-001	64	6.400	2.23	2.00	1.80

3-Level Wrapost DIP Sockets





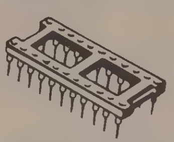


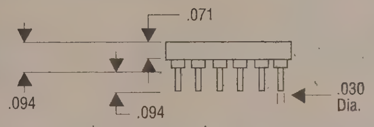
Solderless wrapost terminals are firmly locked in the insulator body to withstand torque of wrapping tool. Length of terminal for three-level wrapping.

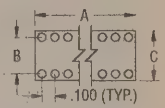
Pin — 200µ" Tin; Contact — 30µ" Gold

Stock No.	Mfr.'s Type	No. of Pins	Dim. — Inches			EACH		
			A	B	C	1-24	25-99	100-499
900-0026	123-93-306-41-001	6	.300	.300	.400	.43	.39	.33
900-0028	123-93-308-41-001	8	.400	.300	.400	.62	.50	.42
900-0030	123-93-314-41-001	14	.700	.300	.400	.96	.87	.73
900-0032	123-93-316-41-001	16	.800	.300	.400	1.09	.99	.83
900-0034	123-93-318-41-001	18	.900	.300	.400	1.22	1.11	.93
900-0036	123-93-320-41-001	20	1.000	.300	.400	1.36	1.24	1.02
900-0038	123-93-324-41-001	24	1.200	.300	.400	1.65	1.50	1.25
900-0039	123-93-328-41-001	28	1.400	.300	.400	1.90	1.71	1.54
900-0040	123-93-422-41-001	22	1.100	.400	.500	1.76	1.36	1.12
900-0041	123-93-424-41-001	24	1.200	.400	.500	1.63	1.46	1.32
900-0042	123-93-624-41-001	24	1.200	.600	.700	1.63	1.48	1.23
900-0044	123-93-628-41-001	28	1.400	.600	.700	1.88	1.71	1.45
900-0046	123-93-632-41-001	32	1.600	.600	.700	2.18	1.98	1.65
900-0048	123-93-640-41-001	40	2.000	.600	.700	2.68	2.44	2.07
900-0049	123-93-648-41-001	48	2.400	.600	.700	5.86	5.27	4.74
900-0211	123-93-950-41-001	50	2.500	.900	1.000	3.39	3.05	2.75
900-0213	123-93-964-41-001	64	3.200	.900	1.000	4.34	3.91	3.52

Ultra Low Profile DIP Sockets





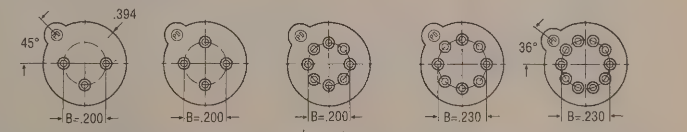


"Ultra low profile" dual-in-line sockets are equipped with specially designed contacts allowing .094" height above PCB. Special short contact requires .075" insertion depth only. **Solder Tail Diameter:** .030".

Pin — 200µ" Tin; Contact — 30µ" Gold

Stock No.	Mfr.'s Type	No. of Pins	Dim. — Inches			EACH		
			A	B	C	1-24	25-99	100-499
900-0052	115-93-308-41-003	8	.400	.300	.400	.43	.39	.33
900-0054	115-93-314-41-003	14	.700	.300	.400	.69	.63	.54
900-0056	115-93-316-41-003	16	.800	.300	.400	.79	.72	.62
900-0058	115-93-318-41-003	18	.900	.300	.400	.91	.83	.70
900-0060	115-93-320-41-003	20	1.000	.300	.400	.98	.89	.75
900-0062	115-93-324-41-003	24	1.200	.300	.400	1.16	1.05	.88
900-0064	115-93-422-41-003	22	1.100	.400	.500	1.07	.97	.82
900-0065	115-93-424-41-003	24	1.200	.400	.500	1.15	1.04	.94
900-0066	115-93-624-41-003	24	1.200	.600	.700	1.16	1.05	.88
900-0068	115-93-628-41-003	28	1.400	.600	.700	1.34	1.22	1.04
900-0070	115-93-632-41-003	32	1.600	.600	.700	1.54	1.40	1.28
900-0072	115-93-640-41-003	40	2.000	.600	.700	1.94	1.76	1.49
900-0073	115-93-648-41-003	48	2.400	.600	.700	2.31	2.08	1.87

Transistor Sockets



Series 917 TO Package Sockets exist with 3, 4, 8 and 10 contacts. Two 8 pin version feature pin centers either on a .200" or a .230" circle. **Plating Sleeve (Pin):** 200µ" Sn. **Plating Contact (Clip):** 30µ" Au.

Stock No.	Mfr.'s Type	No. of Pins	Type	Dim.	EACH		
				B	1-24	25-99	100-499
900-0290	917-93-103-41-005	3	TO-5	.200	.45	.40	.36
900-0292	917-93-104-41-005	4	TO-5	.200	.59	.53	.48
900-0294	917-93-108-41-005	8	TO-5	.200	1.14	1.02	.92
900-0296	917-93-208-41-005	8	TO-100	.230	1.14	1.02	.92
900-0298	917-93-210-41-005	10	TO-100	.230	1.36	1.23	1.10

Pin Receptacles

200 μ" tin-plated precision machine brass shell fitted with stamped and hardened, 30 μ" gold-plated beryllium copper multi-finger spring contact.

PC Solder Mount

Stock No.	Mfr.'s Type	Fig.	Spring Range	Mounting Hole	Dimensions				PER PK./100	
					A Dia.	B Dia.	C Length	D Length	1-5	6-10
900-0500	0548-015011127100	1	.015-.021"	.038"	.058"	.034"	.031"	.155"	**7.55**	**6.29**
900-0502	0552-115011127100	2	.015-.021"	.043"	.055"	.038"	.016"	.136"	**4.08**	**3.40**
900-0504	0552-215011127100	2	.015-.021"	.043"	.055"	.038"	.016"	.170"	**4.14**	**3.45**
900-0506	1407-015011127100	4	.015-.021"	.043"	.055"	.038"	.031"	.146"	**4.73**	**3.94**
900-0508	0554-015011127100	5	.015-.021"	.043"	.056"	.038"	.038"	.160"	**9.02**	**7.51**
900-0510	0677-015013027100	6	.015-.025"	.054"	.063"	.049"	.041"	.248"	**10.59**	**8.82**
900-0512	0555-015012027100	7	.015-.025"	.056"	.072"	.051"	.038"	.160"	**31.62**	**26.35**
900-0514	0667-015013027100	8	.015-.025"	.060"	.072"	.055"	.016"	.161"	**5.06**	**4.22**
900-0516	0665-015013027100	10	.015-.025"	.064"	.080"	.058"	.088"	.180"	**8.18**	**6.82**
900-0518	0295-015010627100	12	.022-.032"	.065"	.077"	.060"	.014"	.259"	**11.49**	**9.57**
900-0520	0292-015010627100	13	.022-.032"	.073"	.093"	.068"	.030"	.250"	**10.40**	**8.67**
900-0522	0294-015010627100	14	.022-.032"	.078"	.090"	.073"	.018"	.206"	**10.40**	**8.67**
900-0524	0300-115014727100	16	.025-.037"	.045"	.078"	.040"	.210"	.320"	**12.16**	**10.13**
900-0526	0300-215014727100	16	.025-.037'	.045"	.078"	.040"	.210"	.397"	**14.36**	**11.97**
900-0528	0331-015011827100	17	.037-0.43"	.074"	.090"	.069"	.025"	.150"	**13.81**	**11.51**
900-0530	0327-015013427100	18	.032-.047"	.077"	.090"	.072"	.018"	.206"	**10.40**	**8.67**
900-0532	0329-015013427100	19*	.032-.047"	.077"	.090"	.072"	.018"	.221"	**23.50**	**19.58**
900-0534	0317-015013427100	24	.032-.047"	.093"	.120"	.088"	.032"	.253"	**15.08**	**12.56**
900-0536	0322-015013427100	25	.032-.047"	.090"	.125"	.085"	.192"	.317"	**18.69**	**15.57**
900-0538	0316-015013427100	26	.032-.047"	.090"	.125"	.085"	.036"	.236"	**12.95**	**10.79**
900-0540	0314-015013427100	27†	.032-.047"	.090"	.125"	.085"	.036"	.236"	**12.97**	**10.81**
900-0542	0355-015010227100	32	.040-.050"	.105"	.118"	.100"	.016"	.290"	**12.83**	**10.69**
900-0544	0364-015011327100	34	.048-.064"	.103"	.120"	.098"	.018"	.213"	**16.71**	**13.92**
900-0546	0393-015010727100	38	.065-.082"	.147"	.188"	.142"	.100"	.412"	**28.15**	**23.46**
900-0548	0390-015010827100	40	.084-.102"	.147"	.188"	.142"	.105"	.465"	**34.07**	**28.39**

Hex Press Fit

Stock No.	Mfr.'s Type	Fig.	Spring Range	Mounting Hole	A Dia.	B Dia.	C Length	D Length	1-5	6-10
900-0550	0553-115011127100	3	.015-.021"	.041"	.055"	.038"	.016"	.140"	**8.02**	**6.68**
900-0552	0553-215011127100	3	.015-.021"	.041"	.055"	.038"	.016"	.170"	**8.08**	**6.73**
900-0554	0252-015013227100	9	.015-.025"	.057"	.072"	.053"	.031"	.170"	**10.28**	**8.57**
900-0556	0279-015014727100	15	.025-.037"	.061"	.078"	.057"	.028"	.200"	**14.52**	**12.10**
900-0558	0328-015013427100	23	.032-.047"	.076"	.090"	.071"	.028"	.206"	**13.06**	**10.88**
900-0560	0365-015012327100	37	.045-.067"	.104"	.120"	.098"	.026"	.223"	**20.87**	**17.39**

PC Swage Mount 0.063" Thick Board

Stock No.	Mfr.'s Type	Fig.	Spring Range	Mounting Hole	A Dia.	B Dia.	C Length	D Length	1-5	6-10
900-0562	0326-219010627100	11	.022-.032"	.060"	.094"	.058"	.200"	.294"	**21.71**	**18.09**
900-0564	0344-219013427100	20	.032-.047"	.067"	.125"	.065"	.230"	.324"	**23.38**	**19.48**

Knurled Press Fit

Stock No.	Mfr.'s Type	Fig.	Spring Range	Mounting Hole	A Dia.	B Dia.	C Length	D Length	1-5	6-10
900-0566	0357-015013427100	22	.032-.047"	.078"	.102"	.072"	.080"	.220"	**15.03**	**12.53**
900-0568	0359-015013427100	28	.032-.047"	.089"	.110"	.080"	.037"	.250"	**15.18**	**12.65**
900-0570	0360-015013427100	29†	.032-.047"	.089"	.110"	.080"	.037"	.250"	**16.03**	**13.36**
900-0572	0358-015013427100	30	.032-.047"	.089"	.110"	.082"	.240"	.343"	**15.87**	**13.23**
900-0574	0366-015011327100	36†	.048-.064"	.108"	.136"	.102'	.037"	.250"	**20.56**	**17.14**
900-0576	0040-117013027020	35¹	.015-.025"	.055"	.072"	.053"	.200"	.460"	**8.24**	**6.87**
900-0578	0039-217013027020	35²	.015-.025"	.055"	.072"	.053"	.200"	.560"	**6.42**	**5.34**
900-0580	0038-317013027020	35³	.015-.025"	.055"	.072"	.053"	.200"	.700"	**7.20**	**6.00**

Crimp Barrel

Stock No.	Mfr.'s Type	Fig.	Spring Range	Mounting Hole	A Dia.	B Dia.	C Length	D Length	1-5	6-10
900-0582	0348-033013427100	31‡	.032-.047"	—	.105"	.049"	.224"	.530"	**34.54**	**28.78**
900-0584	0370-019010727100	39•	.065-.082"	—	.100"	.050"	.440"	.690"	**37.27**	**31.06**

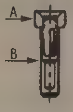
Lobed Press Fit

Stock No.	Mfr.'s Type	Fig.	Spring Range	Mounting Hole	A Dia.	B Dia.	C Length	D Length	1-5	6-10
900-0586	0333-042013427100	21	.032-.047"	.076"	.102"	.074"	.080"	.220"	**22.03**	**18.36**

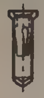
Quintagonal Press Fit

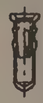
Stock No.	Mfr.'s Type	Fig.	Spring Range	Mounting Hole	A Dia.	B Dia.	C Length	D Length	1-5	6-10
900-0588	0354-015010227100	33	.040-.050"	.103'	.118"	.088"	.020"	.290"	**18.01**	**15.01**

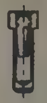
*Knockout Bottom. †Thru Hole. ‡#20A. •#18A. ¹1-Level Wrapost. ²2-Level Wrapost. ³3-Level Wrapost.

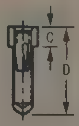


1

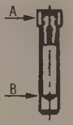

2


3

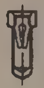

4

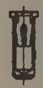


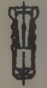
5

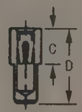


6

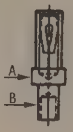

7


8

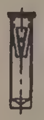

9

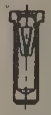


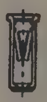
10

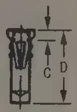


11

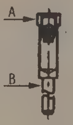

12


13

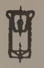

14

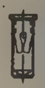


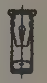
15

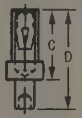


16

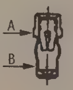

17


18

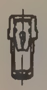

19

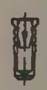


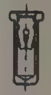
20

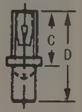


21

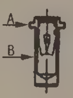

22


23

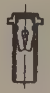

24

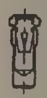


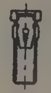
25

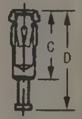


26

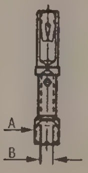

27


28

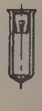

29

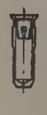


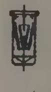
30

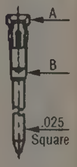


31

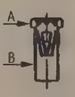

32


33

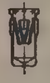

34

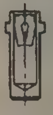


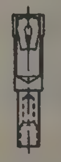
35

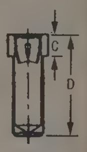


36


37

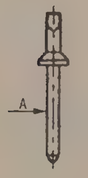

38


39

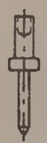


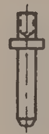
40

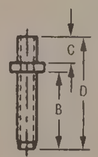
Printed Circuit Pins



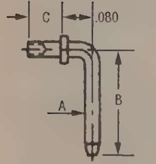
1


2

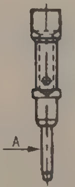

3



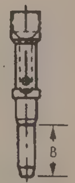
4



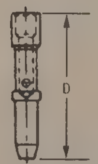
5



6



7



8

Precision machined, 20 μ" gold plated brass pins mate with receptacles. Annealed for crimping to wires or swaging to circuit boards. Receptacles above ordered separately.

PC Swage Mount

Stock No.	Mfr.'s Type	Fig.	Mounting Hole	Dimensions				Board Thickness	PER PK./100	
				A Dia.	B Length	C Length	D Length		1-5	6-10
900-0590	3117-100210000080	1	.035"	.025"	.188"	.047"	.206"	.0313"	**4.28**	**3.57**
900-0592	3117-200210000080	1	.035"	.025"	.188"	.078"	.291"	.0625"	**33.86**	**28.22**
900-0594	3112-100210000080	2	.043"	.025"	.125"	.051"	.201"	.0313"	**4.22**	**3.52**
900-0596	3112-200210000080	2	.043"	.025"	.125"	.082"	.232"	.0625"	**3.43**	**2.86**
900-0598	3101-100210000080	3	.043"	.040"	.150"	.051"	.221"	.0313"	**3.67**	**3.06**
900-0600	3101-200210000080	3	.043"	.040"	.150"	.082"	.252"	.0625"	**2.16**	**1.80**
900-0602	3102-100210000080	3	.043"	.040"	.188"	.051"	.259"	.0313"	**3.90**	**3.25**
900-0604	3102-200210000080	3	.043"	.040"	.188"	.082"	.290"	.0625"	**4.10**	**3.42**
900-0606	3103-100210000080	3	.043"	.040"	.300"	.051"	.371"	.0313"	**5.67**	**4.73**
900-0608	3103-200210000080	3	.043"	.040"	.300"	.082"	.402"	.0625"	**4.86**	**4.05**
900-0610	3222-200210000080	4	.043"	.040"	.150"	.082"	.252"	.0625"	**6.69**	**5.58**
900-0612	3301-214210000080	5	.043"	.040"	.257"	.082"	—	.0625"	**13.50**	**11.25**

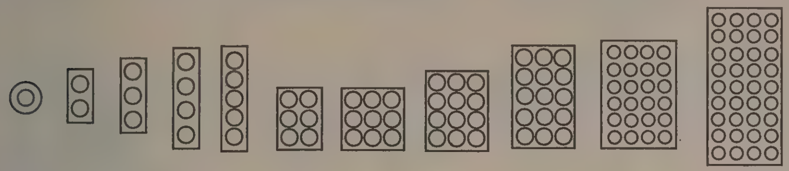
#20A Crimp Barrel

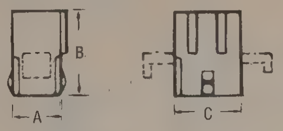
Stock No.	Mfr.'s Type	Fig.	Mounting Hole	A Dia.	B Length	C Length	D Length	Board Thickness	1-5	6-10
900-0614	3603-007210000080	6	—	.040"	.188"	—	.588"	—	**22.09**	**18.41**
900-0616	3602-007210000080	7	—	.062"	.188"	—	.588"	—	**23.38**	**19.48**
900-0618	3601-107210000080	8	—	.080"	.200"	—	.506"	—	**20.50**	**17.08**

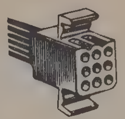
Nylon Housing Connectors and Accessories

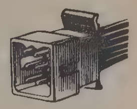
Terminal Housings

Inexpensive nylon housing. Crimp contacts are available as a separate item. Tools are available to assist with termination and insertion/extraction. Rated 5 amp, 250 volt.






Receptacle


Plug

Miniature .062" Terminal Housings

Receptacles with Mounting Ears and Detent Windows/Detent

Stock No.	Mfr.'s Type	No. of Circuits	Dimensions (In.) A	B	C	Qty. Per Pack	PER PKG. 1-9
863-0107	03-06-1022	2	0.192	0.810	0.340	10	**3.60**
863-0115	03-06-1038	3	0.192	0.780	0.484	10	**3.98**
863-0125	03-06-1041	4	0.192	0.780	0.630	10	**5.36**
863-0135	03-06-1055	5	0.192	0.780	0.775	5	**3.73**
863-0145	03-06-1061	6	0.494	0.780	0.344	5	**3.03**
863-0165	03-06-1091	9	0.494	0.780	0.489	5	**3.07**
863-0175	03-06-1121	12	0.494	0.780	0.634	5	**3.52**
863-0185	03-06-1151	15	0.487	0.780	0.776	5	**4.71**
863-0195	03-06-1241	24	0.634	0.750	0.918	5	**9.55**
863-0205	03-06-1361*	36	0.689	0.780	1.505	5	**18.76**

Plugs with Mounting Ears and Detent Windows/Detent

Stock No.	Mfr.'s Type	No. of Circuits	A	B	C	Qty. Per Pack	1-9
863-0104	03-06-2024	2	0.300	0.780	0.440	10	**3.30**
863-0112	03-06-2033	3	0.300	0.750	0.590	10	**3.98**
863-0120	03-06-2041	4	0.295	0.750	0.730	10	**5.14**
863-0130	03-06-2054	5	0.310	0.750	0.890	5	**2.96**
863-0140	03-06-2062	6	0.600	0.750	0.450	5	**3.03**
863-0160	03-06-2091	9	0.590	0.750	0.590	5	**3.07**
863-0170	03-06-2121	12	0.590	0.750	0.740	5	**2.53**
863-0180	03-06-2151	15	0.590	0.750	0.880	5	**4.13**
863-0190	03-06-2241	24	0.740	0.750	1.040	5	**9.55**
863-0200	03-06-2361	36	0.802	0.750	1.612	5	**12.51**

Receptacles with Detent Windows/Detent

Stock No.	Mfr.'s Type	No. of Circuits	A	B	C	Qty. Per Pack	1-9
863-0105	03-06-1011	1	—	0.780	0.183	10	**1.92**
863-0108	03-06-1023	2	0.192	0.810	0.340	10	**3.26**
863-0116	03-06-1032	3	0.192	0.780	0.484	10	**3.98**
863-0126	03-06-1042	4	0.192	0.780	0.630	10	**5.36**
863-0136	03-06-1056	5	0.192	0.780	0.775	5	**3.73**
863-0146	03-06-1062	6	0.494	0.780	0.344	5	**3.03**
863-0166	03-06-1092	9	0.494	0.780	0.489	5	**3.07**
863-0176	03-06-1122	12	0.494	0.780	0.634	5	**3.52**
863-0186	03-06-1152	15	0.487	0.780	0.776	5	**4.71**

Plugs with Detent Windows

Stock No.	Mfr.'s Type	No. of Circuits	A	B	C	Qty. Per Pack	1-9
863-0100	03-06-2011	1	—	0.750	—	10	**1.92**
863-0103	03-06-2023	2	0.300	0.750	0.440	10	**3.30**
863-0111	03-06-2032	3	0.300	0.750	0.590	10	**3.98**
863-0121	03-06-2042	4	0.295	0.750	0.730	10	**5.14**
863-0131	03-06-2055	5	0.310	0.750	0.890	5	**2.96**
863-0141	03-06-2061	6	0.600	0.750	0.450	5	**3.03**
863-0161	03-06-2092	9	0.590	0.750	0.590	5	**3.03**
863-0171	03-06-2122	12	0.590	0.750	0.740	5	**3.52**
863-0181	03-06-2152	15	0.590	0.750	0.880	5	**4.13**
863-0191	03-06-2242	24	0.740	0.750	1.040	5	**9.55**

*With mounting ears only.

Standard .093" Terminal Housings

Receptacles with Mounting Ears and Detent Lock

Stock No.	Mfr.'s Type	No. of Circuits	Dimensions (In.) A	B	C	Qty. Per Pack	PER PKG. 1-9
863-0319	03-09-1027	2	0.250	1.030	0.536	10	**3.15**
863-0325	03-09-1081	3	0.236	1.015	0.670	10	**5.00**
863-0335	03-09-1041	4	0.236	1.000	0.868	10	**4.52**
863-0355	03-09-1061	6	0.632	1.015	0.434	5	**3.60**
863-0365	03-09-1091	9	0.625	1.015	0.666	5	**3.57**
863-0375	03-09-1121*	12	0.633	1.015	0.871	5	**3.92**
863-0385	03-09-1151*	15	0.632	1.015	1.066	5	**5.08**

Plugs with Mounting Ears and Detent Lock

Stock No.	Mfr.'s Type	No. of Circuits	A	B	C	Qty. Per Pack	1-9
863-0310	03-09-2021	2	0.352	1.000	0.639	10	**4.18**
863-0320	03-09-2031	3	0.340	0.970	0.770	10	**4.38**
863-0330	03-09-2041	4	0.338	1.000	0.971	10	**4.52**
863-0350	03-09-2061	6	0.733	1.000	0.536	5	**3.63**
863-0360	03-09-2091	9	0.730	0.970	0.770	5	**3.72**
863-0374	03-09-2122	12	0.737	1.000	0.975	5	**4.08**
863-0380	03-09-2152	15	0.734	1.000	1.169	5	**4.86**

Receptacles without Ears or Detent Lock

Stock No.	Mfr.'s Type	No. of Circuits	A	B	C	Qty. Per Pack	1-9
863-0316	03-09-1022	2	0.250	1.030	0.536	10	**3.83**
863-0327	03-09-1033	3	0.236	1.015	0.670	10	**4.38**
863-0357	03-09-1063	6	0.632	1.015	0.434	5	**2.88**
863-0367	03-09-1093	9	0.625	1.015	0.666	5	**3.57**
863-0376	03-09-1122	12	0.633	1.015	0.871	5	**3.92**
863-0386	03-09-1152	15	0.632	1.015	1.066	5	**5.08**

Receptacles with Detent Lock Only

Stock No.	Mfr.'s Type	No. of Circuits	A	B	C	Qty. Per Pack	1-9
863-0305	03-09-1011	1	0.234	1.000	—	10	**2.08**
863-0316	03-09-1022	2	0.250	1.030	0.536	10	**3.83**
863-0326	03-09-1032	3	0.236	1.015	0.670	10	**4.77**
863-0336	03-09-1042	4	0.236	1.000	0.868	10	**4.52**
863-0345	03-09-1052	5	0.243	1.000	1.066	5	**3.60**
863-0358	03-09-1064	6	0.632	1.015	0.434	5	**2.88**
863-0368	03-09-1094	9	0.625	1.015	0.666	5	**3.57**
863-0379	03-09-1126	12	0.632	1.015	0.871	5	**3.92**

Plugs without Mounting Ears

Stock No.	Mfr.'s Type	No. of Circuits	A	B	C	Qty. Per Pack	1-9
863-0300	03-09-2011	1	0.358	1.000	—	10	**2.08**
863-0311	03-09-2022	2	0.352	1.000	0.639	10	**3.83**
863-0321	03-09-2032	3	0.340	0.970	0.770	10	**4.38**
863-0331	03-09-2042	4	0.338	1.000	0.971	10	**4.52**
863-0341	03-09-2057	5	0.338	0.969	1.169	5	**2.76**
863-0351	03-09-2062	6	0.733	1.000	0.536	5	**2.88**
863-0361	03-09-2092	9	0.730	0.970	0.770	5	**3.57**
863-0370	03-09-2121	12	0.737	1.000	0.975	5	**4.08**

*With mounting ears only.

Crimp Type Terminals

Female

Male

Stock No.	Mfr.'s Type	Series	Type	Mating Dia. (In.)	Wire AWG Range	Use Hand Tool	PER PKG./100 1-4	5-9
863-0391	02-09-1104	Standard	Female	0.093	20-14	W-HT-1919	**11.30**	**6.80**
863-0395	02-09-2103	Standard	Male	0.093	20-14	W-HT-1919	**11.30**	**6.80**
863-0209	02-09-1119	Standard	Female	0.093	22-18	W-HT-1919	**11.30**	**6.80**
863-0405	02-09-2118	Standard	Male	0.093	22-18	W-HT-1919	**11.30**	**6.80**
863-0411	02-09-1144	Standard	Female	0.093	30-24	W-HT-1919	**12.00**	**7.20**
863-0415	02-09-2143	Standard	Male	0.093	30-24	W-HT-1919	**12.00**	**7.20**
863-0420	02-09-1134	PC Tail	Female	0.093	—	—	**17.30**	**10.30**
863-0425	02-09-2134	PC Tail	Male	0.093	—	—	**17.30**	**10.30**
863-0210	02-06-1103	Miniature	Female	0.062	24-18	W-HT-1921	**11.20**	**7.30**
863-0215	02-06-2103	Miniature	Male	0.062	24-18	W-HT-1921	**11.20**	**7.30**
863-0220	02-06-1132	Miniature	Female	0.062	30-24	W-HT-1921	**11.20**	**7.30**
863-0225	02-06-2132	Miniature	Male	0.062	30-24	W-HT-1921	**11.20**	**7.30**
863-0230	02-06-7103	PC Tail	Female	0.062	—	—	**17.20**	**15.70**
863-0235	02-06-8103	PC Tail	Male	0.062	—	—	**17.20**	**15.70**

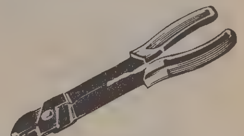
Nylon Connector Tools

Prototype Crimping Tools

Balanced and weighted, machined from hardened steel.

Type W-HT-1919. For .093" pin terminals.
863-0520. W-HT-1919 .... **EACH 15.64**

Type W-HT-1921. For .062" pin terminals.
863-0500. W-HT-1921 .... **EACH 15.64**


Crimping Tool

Production Crimp Tools

Type W-HTR-1031-E. For .093" terminals, 14-22 AWG wires.
863-0560. W-HTR-1031-E .... **EACH 161.28**

Type W-HTR-1719-C. For .062" terminals, 18-24 AWG wires.
863-0565. W-HTR-1719-C .... **EACH 204.80**

Type W-HTR-2262-A. For .062" terminals, 24-30 AWG wires.
863-0550. W-HTR-2262-A .... **EACH 183.90**

Extractor Tool

Extractor Tools

Remove terminal from connector housing without damage.

Type W-HT-2038. For .093" pin terminals.
863-0530. W-HT-2038 .... **EACH 15.06**

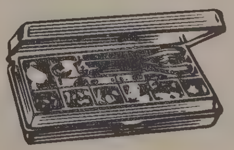
Type W-HT-2285. For .062" pin terminals.
863-0510. W-HT-2285 .... **EACH 16.94**

Nylon Connector Designer Kits

Polarized nylon connector kits include male and female housings in all circuit capacities, terminals and tools, in individual compartments. Lightweight, unbreakable; snap-lock.

Type WM-72 Miniature Kit. 56 connectors using .062" terminals, crimp and ejector tools.
863-0600. WM-72 .... **EACH 56.52**

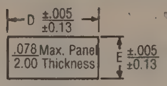
Type WM-50 Standard Kit. 45 connectors using .093" terminals, crimp and ejector tools.
863-0610. WM-50 .... **EACH 64.42**

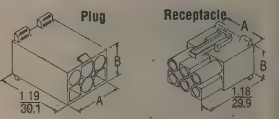


.093" Power Connectors

International Series

- UL Recognized, CSA Certified and TUV Licensed
- Positive Lock
- 600 Volt Rating
- Up to 12 Amperes Per Circuit
- Fully Isolated Terminals
- CSA File No. LR 19980, TUV License No. R-75107
- For Tooling and Crimp Terminals See Page 275





Receptacles

Stock No.	Mfr.'s Type	No. of Circuits	Dim. (In.)		PER PK./10	
			A	B	1-4	5-9
863-3000	19-09-1029	2	0.56	0.30	4.93	2.96
863-3005	19-09-1039	3	0.83	0.30	5.49	3.29
863-3010	19-09-1049	4	1.09	0.30	5.70	3.42
863-3015	19-09-1069	6	0.83	0.56	6.67	4.00
863-3020	19-09-1099	9	0.83	0.83	7.61	4.57

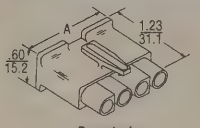
Panel Mount Plug

Stock No.	Mfr.'s Type	No. of Circuits	Dim. (In.)		PER PK./10	
			A	B	1-4	5-9
863-3025	19-09-2028	2	0.58	0.32	4.93	2.96
863-3030	19-09-2038	3	0.85	0.32	5.49	3.29
863-3035	19-09-2048	4	1.11	0.32	5.70	3.42
863-3040	19-09-2068	6	0.85	0.59	6.39	3.83
863-3045	19-09-2098	9	0.85	0.87	7.29	4.38

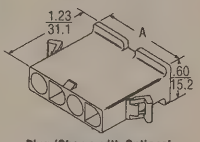
Freehanging Plug

Stock No.	Mfr.'s Type	No. of Circuits	Dim. (In.)		PER PK./10	
			A	B	1-4	5-9
863-3050	19-09-2029	2	0.58	0.32	4.93	2.96
863-3055	19-09-2039	3	0.85	0.32	5.49	3.29
863-3060	19-09-2049	4	1.11	0.32	5.70	3.42
863-3065	19-09-2069	6	0.85	0.59	6.39	3.83
863-3070	19-09-2099	9	0.85	0.87	7.29	4.38

.125" Power Connectors



Receptacle



Plug (Shown with Optional Panel Mounting Ears)

- HCS-125 Series Is a High Current Power Connector
- Accommodates 10-18 AWG Wire
- UL File No. E29179, CSA File No. 19980
- 94V-2 Rated

Plugs

Stock No.	Mfr.'s Type	No. of Circuits	Type	PER PK./5
863-4700	03-12-2015	1	Panel mount	3.47
863-4702	03-12-2016	1	Free hanging	3.47
863-4704	03-12-2025	2	Panel mount	5.35
863-4706	03-12-2026	2	Free hanging	5.35
863-4708	03-12-2035	3	Panel mount	6.12
863-4710	03-12-2036	3	Free hanging	6.12
863-4712	03-12-2045	4	Panel mount	6.71
863-4714	03-12-2046	4	Free hanging	6.71

Tooling

Stock No.	Mfr.'s Type	For AWG Wire	EACH
863-4735	11-01-0040	10-14	274.59
863-0560	W-HTR-1031-E	16-18	161.28

Receptacles

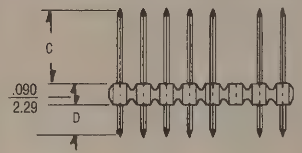
Stock No.	Mfr.'s Type	No. of Circuits	PER PK./5
863-4716	03-12-1016	1	3.47
863-4718	03-12-1026	2	5.35
863-4720	03-12-1036	3	6.12
863-4722	03-12-1046	4	6.71

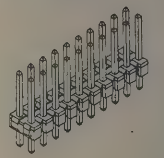
Terminals (Brass)

Stock No.	Mfr.'s Type	Wire AWG	Type	PER PK./100
863-4724	18-12-2602	10-14	Male	17.40
863-4726	18-12-2222	16-18	Male	17.40
863-4728	18-12-1602	10-14	Female	17.40
863-4730	18-12-1222	16-18	Female	17.40

Dual Row Straight Pin Breakaway Headers

- Stackable Side-to-Side and End-to-End (on Unbroken Edges)
- Easy Breakaway to Smaller Sizes
- Standoffs Facilitate Post Solder Cleaning
- Drawn .025" Square Wire Provides 4-Sided Smooth Surface for Quality Interface





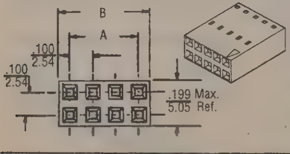
Mates with female connectors on .100" grid. **Single and Dual Row PCB Connectors.** e.g. 70192, 7990. **Single and Dual Row IDT Connectors.** e.g. 70400-A, 70451-A. **Single and Dual Row Crimp Connectors.** e.g. 70068-A, 70450-A. **Ribbon Cable Connectors.** e.g. 40312. **Flat Flexible Connectors.** e.g. 70430-A. **40556 Shunts.** e.g. 7859, 90058.

.100" — Dimension C = .240"

Stock No.	Mfr.'s Type	No. of Circuits	Dimension (In.)	EACH		
			D	1-49	50-99	100-249
863-3075	10-89-1061	6	0.110	.77	.64	.55
863-3080	10-89-1081	8	0.110	.92	.78	.66
863-3085	10-89-1101	10	0.110	1.08	.90	.78
863-3090	10-89-1161	16	0.110	1.57	1.31	1.12
863-3095	10-89-1201	20	0.110	1.88	1.57	1.35
863-3100	10-89-1261	26	0.110	2.47	2.02	1.73
863-3105	10-89-1301	30	0.110	2.98	2.53	2.13
863-3110	10-89-1341	34	0.110	3.31	2.75	2.32
863-3115	10-89-1401	40	0.110	3.63	3.07	2.59
863-3120	10-89-1501	50	0.110	5.17	4.31	3.69

.100" — Dimension C = .320"

Stock No.	Mfr.'s Type	No. of Circuits	Dimension (In.)	EACH		
			D	1-49	50-99	100-249
863-3125	10-89-1063	6	0.110	.81	.68	.58
863-3130	10-89-1083	8	0.110	.97	.81	.70
863-3135	10-89-1103	10	0.110	1.14	.95	.82
863-3140	10-89-1163	16	0.110	1.68	1.37	1.19
863-3145	10-89-1203	20	0.110	1.98	1.65	1.41
863-3150	10-89-1263	26	0.110	2.59	2.12	1.82
863-3155	10-89-1303	30	0.110	3.13	2.61	2.27
863-3160	10-89-1343	34	0.110	3.41	2.84	2.47
863-3165	10-89-1403	40	0.110	3.89	3.18	2.76
863-3170	10-89-1503	50	0.110	5.43	4.60	3.88



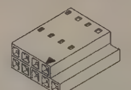
Dual Row Crimp Connector Housing

- End-to-End and Side-by-Side Stackable on .100" Grid
- For Use with 70058 and 71851 Box Crimp Terminal
- Mates with Molex Dual Row Headers 8723, 8724, 7723, 70203 and 8624; Also Mates with Molex Interim Clip 70013

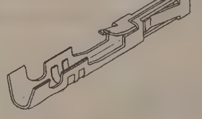
Stock No.	Mfr.'s Type	No. of Circuits	Dimensions		PER PK./10	
			A	B	1-4	5-9
863-3175	22-55-2061	6	0.200	0.299	21.26	12.75
863-3180	22-55-2081	8	0.200	0.399	22.23	13.33
863-3185	22-55-2101	10	0.400	0.499	23.27	13.96
863-3190	22-55-2161	16	0.700	0.799	26.19	15.71
863-3195	22-55-2201	20	0.900	0.999	28.20	16.92
863-3200	22-55-2261	26	1.200	1.299	31.19	18.71
863-3215	22-55-2401	40	1.900	1.999	38.14	22.88

Single Row Crimp Connector Housing

- "A" Version, Non-Polarized, End-to-End and Side-by-Side Stackable
- For Use with Crimp Terminals 70021, 70058 and 71851
- Mates with Unshrouded Headers 7723, 70203, 8624, 70343 and 70344



Stock No.	Mfr.'s Type	No. of Circuits	PER PK./10	
			1-4	5-9
863-3250	50-57-9002	2	5.14	3.08
863-3255	50-57-9003	3	6.67	4.00
863-3260	50-57-9004	4	6.95	4.17
863-3265	50-57-9005	5	7.20	4.33
863-3270	50-57-9008	8	8.68	5.21
863-3275	50-57-9010	10	9.79	5.88
863-3280	50-57-9014	14	13.41	8.04



Crimp Terminals and Polarization Pin

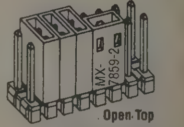
- For Single and Dual Crimp Connector Housings
- For Use With All Versions of Connector Housings 70066 and 70450
- Terminals Accommodate Wire Ranges 22 and 24, 24-30, and 32-36
- Dual Beam, Fully Enclosed Box Contact with Locking Lance
- Mates with .100" Center Single or Dual-Row Headers or .025" Pins

Stock No.	Mfr.'s Type	Wire Range	Plating	Insulation Max. OD	PER PK./100
863-3225	16-02-0104	22-24	30 µ" gold	0.064	19.10
863-3230	16-02-0096	24-30	Tin plated	0.060	9.20
863-3235	16-02-0097	24-30	15 µ" gold	0.060	15.40
863-3240	16-02-0098	24-30	30 µ" gold	0.060	19.10

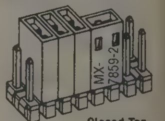
Polarization Pin (Universal)
863-3245. Model 15-04-0292 .... **PER PK./10 1.85**

Two Circuit Shunt or Jumper

- Mates with .100" Grid Male Connectors: Dual or Single Row Headers — e.g. 8824 and 70343, .025" Square and Round Wire Pins — e.g. 4168
- Easily Applied — No Soldering
- Reliable — No Accidental Disconnects
- Low Cost Alternative to DIP Switches
- Increases Current Flow and Decreases Resistance vs. DIP Switches
- Dual Beam Terminals: 2 Points of Contact Per Pin
- Open and Closed Top Versions
- Closed Top Prevents Upside Down Mating
- Stackable End-to-End and Side-to-Side



Open Top



Closed Top

Specifications. Terminal Material: Phosphor Bronze. **Housing:** Glass filled polyester. U.L recognized 94V-0. **Contact Resistance:** 15 milliohms maximum (gold). **Current Rating:** 2 amps at 30°C rise over ambient.

863-3285. 15-29-1024. Open top. 15 µ gold plating .... **PER PK./10 5.42**
863-3290. 15-29-1025. Closed top. 15 µ gold plating .... **PER PK./10 4.90**
863-3295. 15-38-1024. Open top. 200 µ tin plating .... **PER PK./10 4.17**

K.K.® Series PC Board Connectors

Waldom Electronics Inc. molex

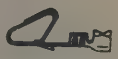


Fig. A

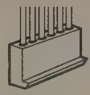


Fig. B-1
With Locking Ramp

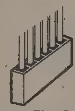


Fig. B-2
Without Locking Ramp

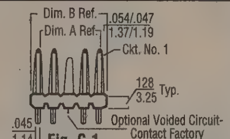


Fig. C-1

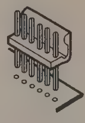


Fig. C-2

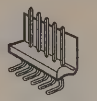


Fig. D

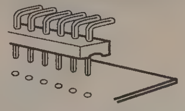


Fig. E

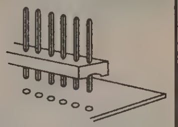


Fig. F

.156 Series Crimp Terminals

Rated: 250 VAC maximum; 7 amps maximum (with 18 AWG wire) per UL.

PC Board Pins (Tin Plated)

863-0905. 08-50-0401. .045" square, .750" long press fit pin. **1-9** ....PER PK./100 6.80

Tin Plated Contacts

Stock No.	Mfr.'s Type	Fig.	Wire Range	Insulation O.D.	PER PK./100 1-9
863-0900	08-50-0106	A	18-24 AWG	0.110 (2.79 mm) max.	**5.90**
863-0910	08-50-0108	A	22-26 AWG	0.065 (1.65 mm) max.	**5.90**

20 Millionths Min. Gold in Contact Area with a Flash Overall

863-0915	08-56-0106	A	18-24 AWG	0.110 (2.79 mm) max.	**14.70**

.156 Terminal Housing

Fig. B-1 mates with C and D, Fig. B-2 mates with E and F.

With Locking Ramp			Without Locking Ramp			Circuits	PER PK./10
Stock No.	Mfr.'s Type	Fig.	Stock No.	Mfr.'s Type	Fig.		1-9
863-1005	09-50-3021	B-1	**863-1000**	09-50-7021	B-2	2	**1.69**
863-1015	09-50-3031	B-1	**863-1010**	09-50-7031	B-2	3	**2.53**
863-1025	09-50-3041	B-1	**863-1020**	09-50-7041	B-2	4	**3.38**
863-1035	09-50-3051	B-1	**863-1030**	09-50-7051	B-2	5	**4.01**
863-1045	09-50-3061	B-1	**863-1040**	09-50-7061	B-2	6	**4.58**
863-1048	09-50-3071	B-1	**863-1049**	09-50-7071	B-2	7	**5.35**
863-1055	09-50-3081	B-1	**863-1050**	09-50-7081	B-2	8	**6.11**
863-1058	09-50-3091	B-1	**863-1052**	09-50-7091	B-2	9	**6.88**
863-1065	09-50-3101	B-1	**863-1060**	09-50-7101	B-2	10	**7.64**
863-1075	09-50-3121	B-1	**863-1070**	09-50-7121	B-2	12	**9.17**

.156" (.045" Square Pins) Friction Lock Header

Stock No.	Mfr.'s Type	Fig.	Circuits	PER PK./10 1-9
863-1505	26-48-1025	C-1	2	**1.69**
863-1510	26-48-1035	C-1	3	**2.53**
863-1515	26-48-1045	C-1	4	**3.20**
863-1520	26-48-1055	C-1	5	**4.05**
863-1525	26-48-1065	C-1	6	**4.62**
863-1530	26-48-1085	C-1	8	**6.20**
863-1535	26-48-1105	C-1	10	**7.75**
863-1540	26-48-1125	C-1	12	**9.25**
863-1560	26-48-1245*	C-1	24	**13.40**

.156" (.045" Square Pins) Right Angle Friction Lock Header

Mates with Fig. B-1.

863-1605	26-48-1026	D	2	**1.94**
863-1610	26-48-1036	D	3	**2.90**
863-1615	26-48-1046	D	4	**3.71**
863-1620	26-48-1056	D	5	**4.39**
863-1625	26-48-1066	D	6	**5.24**
863-1630	26-48-1086	D	8	**7.06**
863-1635	26-48-1106	D	10	**8.82**

.156" (.045" Square Pins) Right Angle Header

Mates with Fig. B-2.

863-1305	26-48-1022	E	2	**1.52**
863-1310	26-48-1032	E	3	**2.27**
863-1315	26-48-1042	E	4	**3.06**
863-1320	26-48-1052	E	5	**3.56**
863-1325	26-48-1062	E	6	**4.10**
863-1330	26-48-1082	E	8	**5.48**
863-1335	26-48-1102	E	10	**6.87**

.156" (.045" Square Pins) Straight Header

Mates with Fig. B-2.

863-1405	26-48-1021	F	2	**1.31**
863-1410	26-48-1031	F	3	**2.00**
863-1415	26-48-1041	F	4	**2.69**
863-1420	26-48-1051	F	5	**3.15**
863-1425	26-48-1061	F	6	**3.80**
863-1430	26-48-1081	F	8	**4.82**
863-1435	26-48-1101	F	10	**6.10**
863-1440	26-48-1121	F	12	**7.29**

*Make the desired 1-23 circuit versions from this 24-circuit breakaway model.

Tools

863-0520. W-HT-1919. Crimp handtool for 08-50-0106....................EACH 15.64
863-0540. W-HTR-2445-A. Crimp production tool....................EACH 152.55
863-0500. W-HT-1921. Crimp handtool for 08-50-0108....................EACH 15.64
863-0515. W-HT-1884. Extractor tool....................EACH 3.17

.156" Centers KK® Kit

Included in the plastic case are 48 crimp terminal housings (2, 4, 5, 6, and 10 circuit), 24 straight headers, 24 right angle headers, 100 crimp terminals (18-24 AWG), 1 HT-1919 crimp tool, and 1 HT-1884 extractor tool.
863-0930. KK-156 ....EACH 41.30

.100 Series Crimp Terminals

Rated: for 250 VAC maximum; 2.5 amps maximum (with 22 AWG wire) per UL.

Tin Plated

For Fig. B-1 and B-2.

Stock No.	Mfr.'s Type	Fig.	Wire Range	Insulation O.D.	PER PK./100 1-9
863-0920	08-50-0114	A	22-30 AWG	0.062 (1.57 mm) max.	**9.40**

20 Millionths Min. Gold in Contact Area with Gold Flash Overall

863-0925	08-56-0110	A	22-30 AWG	0.062 (1.57 mm) max.	**15.20**

.100 Terminal Housing

B-1 mates with Fig. C and D, B-2 mates with Fig. E and F.

With Locking Ramp			Without Locking Ramp			Circuits	PER PK./10
Stock No.	Mfr.'s Type	Fig.	Stock No.	Mfr.'s Type	Fig.		1-9
863-2000	22-01-2027	B-1	**863-2005**	22-01-2021	B-2	2	**1.30**
863-2012	22-01-2037	B-1	**863-2014**	22-01-2031	B-2	3	**2.00**
863-2010	22-01-2047	B-1	**863-2015**	22-01-2041	B-2	4	**2.81**
863-2020	22-01-2057	B-1	**863-2025**	22-01-2051	B-2	5	**3.30**
863-2030	22-01-2067	B-1	**863-2035**	22-01-2061	B-2	6	**3.91**
863-2040	22-01-2087	B-1	**863-2045**	22-01-2081	B-2	8	**4.79**
863-2050	22-01-2107	B-1	**863-2055**	22-01-2101	B-2	10	**5.97**
863-2060	22-01-2127	B-1	**863-2065**	22-01-2121	B-2	12	**7.15**

.100" Center (.025" Square Pins) Straight Header

Mates with Fig. B-1.

Stock No.	Mfr.'s Type	Fig.	Circuits	PER PK./10 1-9
863-2405	22-23-2021	C-2	2	**3.15**
863-2410	22-23-2031	C-2	3	**4.24**
863-2415	22-23-2041	C-2	4	**4.65**
863-2420	22-23-2051	C-2	5	**5.83**
863-2425	22-23-2061	C-2	6	**6.11**
863-2435	22-23-2081	C-2	8	**7.36**
863-2445	22-23-2101	C-2	10	**8.34**
863-2455	22-23-2121	C-2	12	**10.00**

.100" Center (.025" Square Pins) Right Angle Header

Mates with Fig. B-1.

863-2505	22-05-3021	D	2	**5.90**
863-2510	22-05-3031	D	3	**6.74**
863-2515	22-05-3041	D	4	**7.57**
863-2520	22-05-3051	D	5	**8.27**
863-2525	22-05-3061	D	6	**9.24**
863-2535	22-05-3081	D	8	**11.25**
863-2545	22-05-3101	D	10	**11.81**
863-2555	22-05-3121	D	12	**13.34**

.100" (.025" Square Pins) Right Angle

Mates with Fig. B-2.

863-2205	22-05-2021	E	2	**2.43**
863-2210	22-05-2031	E	3	**3.60**
863-2215	22-05-2041	E	4	**4.83**
863-2220	22-05-2051	E	5	**5.49**
863-2225	22-05-2061	E	6	**6.60**
863-2235	22-05-2081	E	8	**8.82**
863-2245	22-05-2101	E	10	**10.00**
863-2255	22-05-2121	E	12	**11.95**

.100" (.025" Square Pins) Straight Header

Mates with Fig. B-2.

863-2105	22-03-2021	F	2	**2.14**
863-2110	22-03-2031	F	3	**3.30**
863-2115	22-03-2041	F	4	**4.16**
863-2120	22-03-2051	F	5	**4.93**
863-2125	22-03-2061	F	6	**5.90**
863-2135	22-03-2081	F	8	**6.95**
863-2145	22-03-2101	F	10	**7.85**
863-2155	22-03-2121	F	12	**9.52**

Tools

863-0500. W-HT-1921. Crimp handtool ....EACH 15.64
863-0550. W-HTR-2262A. Crimp production tool ....EACH 183.90
863-0515. W-HT-1884. Extractor tool....................EACH 3.17

.100" Centers KK® Kit

Included in the plastic case are 36 crimp terminal housings (2, 4, 6, 8, and 10 circuit), 18 straight headers, 18 right angle headers, 10 shunts, 100 crimp terminals (22-30 AWG), 1 HT-1921 crimp tool, and 1 HT-1884 extractor tool.
863-0940. KK-100 ....EACH 52.14

Mini-Fit, Jr. and Socket Connectors

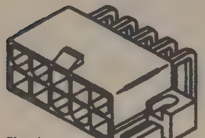


Fig. 1

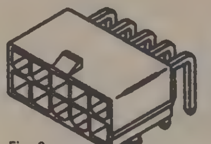


Fig. 2

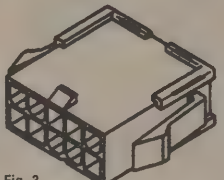


Fig. 3

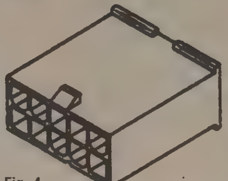


Fig. 4

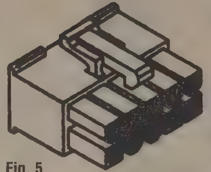


Fig. 5

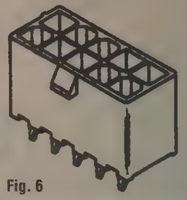


Fig. 6

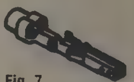


Fig. 7

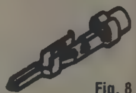


Fig. 8

Can handle standard equipment I/O currents despite its small size. Positive lock. Audible "clicks" confirm correct contact insertion and correct mating of housing. **Voltage Rating:** 250 V. UL recognized, CSA certified, TUV licensed. **Width:** 0.378" (9.60).

Right Angle Headers Tin Plated with PCB Mounting Flanges

Stock No.	Mfr.'s Type	Fig.	No. of Circuits	Rating	PER PK./10
					1-9
863-1100	39-29-1028	1	2	94V-2	10.58
863-1101	39-29-1048	1	4	94V-2	14.57
863-4002	39-29-1047	1	4	94V-0	17.40
863-1102	39-29-1068	1	6	94V-2	18.41
863-4004	39-29-1067	1	6	94V-0	22.11
863-1103	39-29-1088	1	8	94V-2	22.47
863-4006	39-29-1087	1	8	94V-0	25.70
863-1104	39-29-1108	1	10	94V-2	26.31
863-4008	39-29-1107	1	10	94V-0	31.60
863-1105	39-29-1128	1	12	94V-2	30.22
863-4010	39-29-1127	1	12	94V-0	34.73
863-4012	39-29-1147	1	14	94V-0	39.32
863-1107	39-29-1168	1	16	94V-2	38.05
863-4014	39-29-1167	1	16	94V-0	43.83

Right Angle Headers Tin Plated with PCB Mounting Pegs

863-4016	39-30-1020	2	2	94V-2	10.84
863-4018	39-30-0020	2	2	94V-0	12.85
863-4020	39-30-1040	2	4	94V-2	14.66
863-4022	39-30-0040	2	4	94V-0	17.37
863-4024	39-30-1060	2	6	94V-2	18.34
863-4026	39-30-0060	2	6	94V-0	21.88
863-4028	39-30-1080	2	8	94V-2	22.23
863-4030	39-30-0080	2	8	94V-0	26.40
863-4032	39-30-1100	2	10	94V-2	25.91
863-4034	39-30-0100	2	10	94V-0	30.98
863-4036	39-30-1120	2	12	94V-2	29.66
863-4038	39-30-0120	2	12	94V-0	35.43
863-4040	39-30-1140	2	14	94V-2	33.41
863-4042	39-30-0140	2	14	94V-0	40.01
863-4044	39-30-1160	2	16	94V-2	37.16
863-4046	39-30-0160	2	16	94V-0	44.53

Plug Housing — Panel Mount

Stock No.	Mfr.'s Type	Fig.	No. of Circuits	Rating	PER PK./10
					1-9
863-1108	39-01-2021	3	2	94V-2	4.49
863-4048	39-01-2026	3	2	94V-0	7.22
863-1109	39-01-2041	3	4	94V-2	5.00
863-4050	39-01-2046	3	4	94V-0	8.54
863-1110	39-01-2061	3	6	94V-2	5.80
863-4052	39-01-2066	3	6	94V-0	9.86
863-1111	39-01-2081	3	8	94V-2	6.04
863-4054	39-01-2086	3	8	94V-0	10.42
863-1112	39-01-2101	3	10	94V-2	6.96
863-4056	39-01-2106	3	10	94V-0	11.04
863-1113	39-01-2121	3	12	94V-2	7.02
863-4058	39-01-2126	3	12	94V-0	11.53
863-1114	39-01-2141	3	14	94V-2	9.52
863-4060	39-01-2146	3	14	94V-0	13.68
863-1115	39-01-2161	3	16	94V-2	12.90
863-4062	39-01-2166	3	16	94V-0	16.74

Plug Housing — Free Hanging

863-4064	39-01-3023	4	2	94V-2	4.49
863-4070	39-01-3049	4	4	94V-0	8.54
863-4072	39-01-3063	4	6	94V-2	5.80
863-4074	39-01-3069	4	6	94V-0	9.86
863-4078	39-01-3089	4	8	94V-0	10.42
863-4080	39-01-3103	4	10	94V-2	6.67
863-4082	39-01-3109	4	10	94V-0	11.04
863-4086	39-01-3129	4	12	94V-0	11.53
863-4087	39-01-3143	4	14	94V-2	9.52
863-4088	39-01-3149	4	14	94V-0	13.68
863-4090	39-01-3163	4	16	94V-2	12.36
863-4092	39-01-3169	4	16	94V-0	16.74

Receptacle Housing

Stock No.	Mfr.'s Type	Fig.	No. of Circuits	Rating	PER PK./10
					1-9
863-1122	39-01-2020	5	2	94V-2	4.35
863-4094	39-01-2025	5	2	94V-0	7.32
863-1123	39-01-2040	5	4	94V-2	4.86
863-4096	39-01-2045	5	4	94V-0	8.48
863-1124	39-01-2060	5	6	94V-2	6.09
863-4098	39-01-2065	5	6	94V-0	10.07
863-1125	39-01-2080	5	8	94V-2	6.96
863-4100	39-01-2085	5	8	94V-0	11.67
863-1126	39-01-2100	5	10	94V-2	7.76
863-4102	39-01-2105	5	10	94V-0	12.18
863-1127	39-01-2120	5	12	94V-2	8.26
863-4104	39-01-2125	5	12	94V-0	12.47
863-1128	39-01-2140	5	14	94V-2	10.65
863-4106	39-01-2145	5	14	94V-0	13.96
863-1129	39-01-2160	5	16	94V-2	12.97
863-4108	39-01-2165	5	16	94V-0	18.05

Vertical Header Assemblies — Tin Plated

863-1130	39-28-1023	6	2	94V-2	8.70
863-4110	39-28-8020	6	2	94V-0	10.14
863-1131	39-28-1043	6	4	94V-2	12.03
863-4112	39-28-8040	6	4	94V-0	13.82
863-1132	39-28-1063	6	6	94V-2	15.29
863-4114	39-28-8060	6	6	94V-0	18.27
863-1133	39-28-1083	6	8	94V-2	18.65
863-4116	39-28-8080	6	8	94V-0	22.18
863-1134	39-28-1103	6	10	94V-2	21.74
863-4118	39-28-8100	6	10	94V-0	25.08
863-1135	39-28-1123	6	12	94V-2	24.93
863-1136	39-28-1143	6	14	94V-2	28.27
863-4122	39-28-8140	6	14	94V-0	32.51
863-1137	39-28-1163	6	16	94V-2	31.46
863-4124	39-28-8160	6	16	94V-0	36.19

Accessories

Mini-Fit, Jr. Series Terminals

Stock No.	Mfr.'s Type	Fig.	Type	Wire AWG Range	Insulation Range (In.)	Contact Plating	PER PK./100
							1-9
863-1116	39-00-0039	7	Female	24-18	0.051-0.122	Brass (Tin Plated)	16.00
863-1117	39-00-0041	8	Male	24-18	0.051-0.122	Brass (Tin Plated)	16.00
863-1118	39-00-0047	7	Female	28-22	0.035-0.071	Brass (Tin Plated)	16.00
863-1119	39-00-0049	8	Male	28-22	0.035-0.071	Brass (Tin Plated)	16.00
863-1120	39-00-0060	7	Female	24-18	0.051-0.122	Phosphor Bronze (Tin Plated)	16.00
863-1121	39-00-0062	8	Male	24-18	0.051-0.122	Phosphor Bronze (Tin Plated)	23.36

Mini-Fit, Jr. Crimp Tools

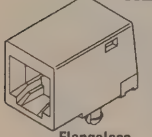
24-18 AWG
863-1141. 11-01-0197 ....EACH 285.28

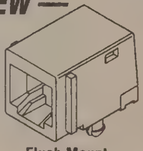
28-22 AWG
863-1151. 11-01-0198 ....EACH 342.33

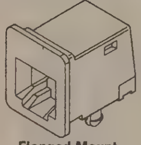
Polarization Key
863-4999. 15-04-0211 ....EACH .28

— *NEW* —

Right Angle Modular Jacks


Flangeless


Flush Mount

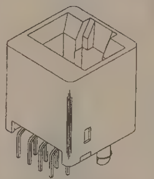

Flanged Mount

- ► Duplex Plated 50 Microinches of Gold Meets FCC Part 68 Requirements
- ► Meets UL 1863 Sec. 8 Electrical Probe and UL 1863 Sec. 20 Child Finger Test
- ► UL File No. E107635
- ► CSA File No. LR19980
- ► For PCB Thickness: .062" (1.57 mm)

Stock No.	Mfr.'s Type	No. of Pos.	Loaded Contacts	Mount Type	EACH		
					1-499	500-999	1000-4999
529-0560	15-43-8544	4	4	Flangeless	.65	.59	.55
529-0561	15-43-7564	6	4	Flush	.68	.62	.57
529-0562	15-43-7586	6	6	Flush	.71	.65	.61
529-0563	15-43-6588	8	8	Flange	.74	.87	.62
529-0564	15-43-7588	8	8	Flush	.74	.67	.62
529-0565	15-43-8588	8	8	Flangeless	.74	.67	.62

Top Entry Modular Jacks

— *NEW* —


Standard Height

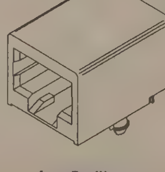
- ► Duplex Plated 50 Microinches of Gold Meets FCC Part 68 Requirements
- ► Meets UL 1863 Sec. 8 Electrical Probe and UL 1863 Sec. 20 Child Finger Test
- ► UL File No. E107635
- ► CSA File No. LR19980

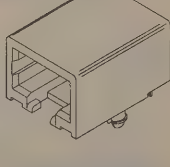
Stock No.	Mfr.'s Type	No. of Pos.	Loaded Contacts	Mount Type	EACH		
					1-499	500-999	1000-4999
529-0566	42410-6314	6	4	Flangeless	.83	.76	.71
529-0567	42410-8312	8	8	Flush	.94	.87	.81
529-0568	42410-8414	8	8	Flangeless	.94	.87	.81

Low Profile, Right Angle Modular Jacks

— *NEW* —

- ► Surface Mount Compatible
- ► Duplex Plated 50 Microinches of Gold Meets FCC Part 68 Requirements
- ► Meets UL 1863 Sec. 8 Electrical Probe and UL 1863 Sec. 20 Child Finger Test
- ► UL File No. E107635
- ► CSA File No. LR19980
- ► 430202-Series Is Ultra Low Profile


Low Profile


Ultra Low Profile

Stock No.	Mfr.'s Type	No. of Pos.	Loaded Contacts	Mount Type	EACH		
					1-499	500-999	1000-4999
529-0569	43249-8004	8	8	Flush	.91	.85	.79
529-0270	43249-8104	8	8	Flangeless	.91	.85	.79
529-0271	43249-8110	8*	8*	Flangeless	2.40	2.20	2.06
529-0272	43202-4101	4	4	Flangeless	.73	.68	.63
529-0273	43202-6104	6	4	Flangeless	.77	.71	.66
529-0274	43202-6101	6	6	Flangeless	.79	.72	.67
529-0275	43202-8104	8	8	Flangeless	.83	.77	.72
529-0276	43202-8110	8*	8*	Flangeless	2.31	2.13	1.98

*Shielded with ground tabs.

Need Larger Quantity Prices? Call 1-800-433-5700 For Prompt Handling

Micro-Fit 3.0 mm (.118") Rugged Signal Connector System

The Micro-Fit 3.0™ is a unique interconnect system designed to meet the need for a rugged signal connector, and incorporates many of the features previously found only on large power connectors.

Plugs (with Ears)*

Panel Mount		Free Hanging		No. of Circuits	Dimensions (In.)			EACH		
Stock No.	Mfr.'s Type	Stock No.	Mfr.'s Type		A	B	C	1-499	500-999	1000-2499
529-0500	43020-0200	**529-0501**	43020-0201	2	0.152	—	0.161	**.24**	**.18**	**.17**
529-0502	43020-0400	**529-0503**	43020-0401	4	0.270	0.118	0.279	**.27**	**.21**	**.19**
529-0504	43020-0600	**529-0505**	43020-0601	6	0.388	0.236	0.397	**.33**	**.26**	**.23**
529-0506	43020-0800	**529-0507**	43020-0801	8	0.506	0.354	0.515	**.38**	**.29**	**.27**
529-0508	43020-1000	**529-0509**	43020-1001	10	0.624	0.472	0.633	**.44**	**.34**	**.31**
529-0510	43020-1200	**529-0511**	43020-1201	12	0.742	0.591	0.751	**.52**	**.40**	**.37**
529-0512	43020-1400	**529-0513**	43020-1401	14	0.860	0.709	0.869	**.61**	**.47**	**.43**
529-0514	43020-1600	**529-0515**	43020-1601	16	0.978	0.827	0.987	**.71**	**.54**	**.50**
529-0516	43020-1800	**529-0517**	43020-1801	18	1.096	0.945	1.105	**.79**	**.61**	**.56**
529-0518	43020-2000	**529-0519**	43020-2001	20	1.215	1.063	1.223	**.88**	**.68**	**.62**
529-0520	43020-2200	**529-0521**	43020-2201	22	1.333	1.181	1.341	**.97**	**.74**	**.68**
529-0522	43020-2400	**529-0523**	43020-2401	24	1.451	1.299	1.459	**1.05**	**.81**	**.74**

*Use female terminals 43030-XXXX.

Receptacles**

Stock No.	Mfr.'s Type	No. of Circuits	Dimensions (In.)		EACH		
			A	B	1-499	500-999	1000-2499
529-0524	43025-0200	2	0.152	—	**.24**	**.18**	**.17**
529-0525	43025-0400	4	0.270	0.118	**.27**	**.21**	**.19**
529-0526	43025-0600	6	0.388	0.236	**.33**	**.26**	**.23**
529-0527	43025-0800	8	0.506	0.354	**.38**	**.29**	**.27**
529-0528	43025-1000	10	0.624	0.472	**.44**	**.34**	**.31**
529-0529	43025-1200	12	0.742	0.591	**.52**	**.40**	**.37**
529-0530	43025-1400	14	0.860	0.709	**.61**	**.47**	**.43**
529-0531	43025-1600	16	0.978	0.827	**.71**	**.54**	**.50**
529-0532	43025-1800	18	1.096	0.945	**.79**	**.61**	**.56**
529-0533	43025-2000	20	1.215	1.063	**.88**	**.68**	**.62**
529-0534	43025-2200	22	1.333	1.181	**.97**	**.74**	**.68**
529-0535	43025-2400	24	1.451	1.299	**1.05**	**.81**	**.74**

**Use male terminal 43031-XXXX.

Right Angle PCB Headers

Through-hole with Peg. (tin plated).

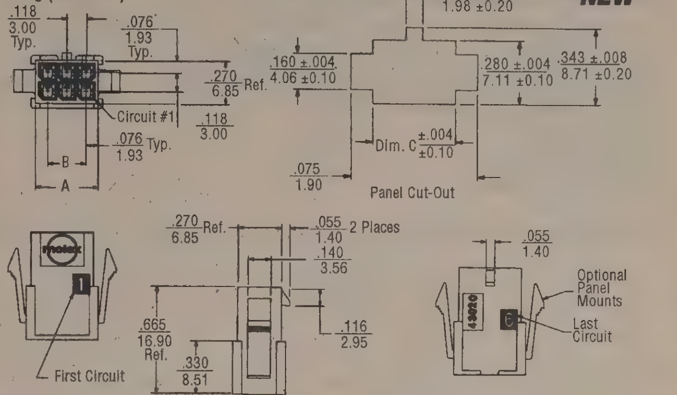
Stock No.	Mfr.'s Type	No. of Circuits	Dimensions (In.)		EACH	
			A	B	1-499	500-999
529-0547	43045-0200	2	0.152	—	**.62**	**.48**
529-0548	43045-0400	4	0.270	0.118	**.86**	**.66**
529-0549	43045-0600	6	0.388	0.236	**1.08**	**.83**
529-0550	43045-0800	8	0.506	0.354	**1.32**	**1.02**
529-0551	43045-1000	10	0.624	0.472	**1.55**	**1.19**
529-0552	43045-1200	12	0.742	0.591	**1.79**	**1.37**
529-0553	43045-1400	14	0.860	0.709	**2.01**	**1.54**
529-0554	43045-1600	16	0.978	0.827	**2.24**	**1.88**
529-0555	43045-1800	18	1.096	0.945	**2.52**	**2.10**
529-0556	43045-2000	20	1.215	1.063	**2.80**	**2.34**
529-0557	43045-2200	22	1.333	1.181	**3.08**	**2.58**
529-0558	43045-2400	24	1.451	1.299	**3.36**	**2.81**

Tooling

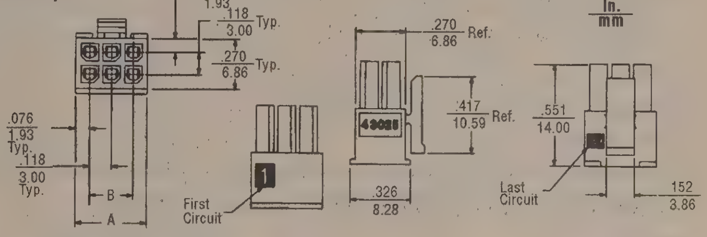
529-0544. 11-01-0200. Crimp tool for female terminals .... **EACH 152.31**
529-0545. 11-01-0201. Crimp tool for male terminals .... **EACH 152.31**
529-0546. 11-03-0043. Extraction tool .... **EACH 13.85**

— NEW —

Plug (with Ears)

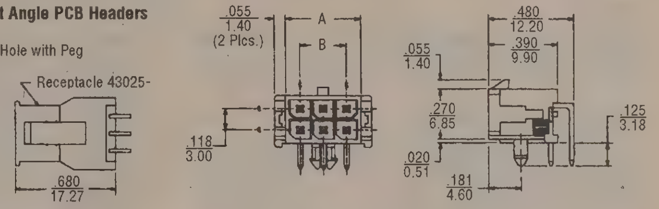


Receptacle



Right Angle PCB Headers

Thru Hole with Peg

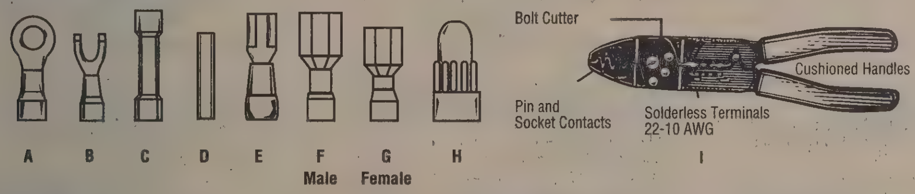


Terminals

Stock No.	Mfr.'s Type	Description	Wire AWG	Plating	EACH	
					1-4999	5000-9999
529-0536	43031-0007	Male	20-24	Tin	**.09**	**.07**
529-0537	43030-0007	Female	20-24	Tin	**.09**	**.07**
529-0538	43031-0010	Male	26-30	Tin	**.09**	**.07**
529-0539	43030-0010	Female	26-30	Tin	**.09**	**.07**
529-0540	43031-0009	Male	20-24	Gold†	**.14**	**.11**
529-0541	43030-0009	Female	20-24	Gold†	**.12**	**.09**
529-0542	43031-0012	Male	26-30	Gold†	**.14**	**.11**
529-0543	43030-0012	Female	26-30	Gold†	**.12**	**.09**

†30 microinches of gold.

Solderless Terminals



Ring Tongue Terminals — Fig. A

Vinyl Insulated
863-1200. A-232-06X. #6 Stud. 22-18 AWG. **1-9** .... **PER PK./100 5.70**
863-1201. A-221-08X. #8 Stud. 22-18 AWG. **1-9** .... **PER PK./100 5.70**
863-1202. B-237-06X. #6 Stud. 16-14 AWG. **1-9** .... **PER PK./100 5.70**
863-1203. B-237-08X. #8 Stud. 16-14 AWG. **1-9** .... **PER PK./100 5.70**
863-1204. B-237-10X. #10 Stud. 16-14 AWG. **1-9** .... **PER PK./100 5.70**
863-1205. C-228-08X. #8 Stud. 12-10 AWG. **1-9** .... **PER PK./100 7.70**
863-1206. C-228-10X. #10 Stud. 12-10 AWG. **1-9** .... **PER PK./100 7.70**
863-1207. C-230-14X. #1/4 Stud. 12-10 AWG. **1-9** .... **PER PK./100 8.70**

Nylon Insulated
863-1208. AA-832-06. #6 Stud. 22-18 AWG. **1-9** .... **PER PK./100 9.00**
863-1209. AA-821-08. #8 Stud. 22-18 AWG. **1-9** .... **PER PK./100 9.00**
863-1210. BB-837-06. #6 Stud. 16-14 AWG. **1-9** .... **PER PK./100 9.00**
863-1211. BB-837-08. #8 Stud. 16-14 AWG. **1-9** .... **PER PK./100 9.00**
863-1212. BB-837-10. #10 Stud. 16-14 AWG. **1-9** .... **PER PK./100 9.00**
863-1213. C-828-08. #8 Stud. 12-10 AWG. **1-9** .... **PER PK./100 11.80**
863-1214. C-828-10. #10 Stud. 12-10 AWG. **1-9** .... **PER PK./100 11.80**
863-1215. C-830-14. #1/4 Stud. 12-10 AWG. **1-9** .... **PER PK./100 12.20**

Fork Tongue Terminals — Fig. B

Vinyl Insulated
863-1216. A-238-06X. #6 Stud. 22-18 AWG. **1-9** .... **PER PK./100 5.70**
863-1217. A-234-08X. #8 Stud. 22-18 AWG. **1-9** .... **PER PK./100 5.70**

Fork Tongue Terminals — Fig. B (continued)

Vinyl Insulated
863-1218. B-2781-06X. #6 Stud. 16-14 AWG. **1-9** .... **PER PK./100 5.70**
863-1219. B-2781-08X. #8 Stud. 16-14 AWG. **1-9** .... **PER PK./100 5.70**
863-1221. C-241-08X. #8 Stud. 12-10 AWG. **1-9** .... **PER PK./100 6.60**
863-1222. C-241-10X. #10 Stud. 12-10 AWG. **1-9** .... **PER PK./100 6.60**
863-1223. C-268-14X. #1/4 Stud. 12-10 AWG. **1-9** .... **PER PK./100 8.40**

Nylon Insulated
863-1224. AA-838-06. #6 Stud. 22-18 AWG. **1-9** .... **PER PK./100 9.00**
863-1225. AA-834-08. #8 Stud. 22-18 AWG. **1-9** .... **PER PK./100 9.00**
863-1226. BB-884-10. #10 Stud. 16-14 AWG. **1-9** .... **PER PK./100 9.10**
863-1227. C-841-08. #8 Stud. 12-10 AWG. **1-9** .... **PER PK./100 11.60**
863-1228. C-841-10. #10 Stud. 12-10 AWG. **1-9** .... **PER PK./100 11.60**

Butt Splices

Vinyl Insulated
863-1229. A-245X. Fig. C. 22-18 AWG. **1-9** .... **PER PK./100 5.10**
863-1230. B-231X. Fig. C. 16-14 AWG. **1-9** .... **PER PK./100 5.10**
863-1231. C-246X. Fig. C. 12-10 AWG. **1-9** .... **PER PK./100 7.50**

Nylon Insulated
863-1232. AS-N-345. Fig. D. 22-18 AWG. **1-9** .... **PER PK./100 5.80**
863-1233. BS-N-331. Fig. D. 16-14 AWG. **1-9** .... **PER PK./100 5.80**
863-1234. CS-N-346. Fig. D. 12-10 AWG. **1-9** .... **PER PK./100 11.60**

Female Quick-Disconnects — Fig. E

Nylon Insulated
Type AA-8140. 22-18 AWG. .250 × .032 tab size.
863-1235. AA-8140. **1-9** .... **PER PK./100 8.60**
Type BB-8141. 16-14 AWG. .250 × .032 tab size.
863-1236. BB-8141. **1-9** .... **PER PK./100 8.60**

Fully Insulated Male and Female Quick-Disconnects

Nylon Insulated
863-1237. AA-2260. Fig. F. Male. 22-18 AWG. **1-9** .... **PER PK./100 10.10**
863-1238. BB-2262. Fig. F. Male. 16-14 AWG. **1-9** .... **PER PK./100 10.10**
863-1239. AA-2201. Fig. G. Female. 22-18 AWG. **1-9** .... **PER PK./100 10.50**
863-1240. BB-2206. Fig. G. Female. 16-14 AWG. **1-9** .... **PER PK./100 10.50**

Closed-End Connector — Fig. H

Nylon Insulated
Type NC-2212. 2 #16 max. and 2 #22 min. AWG.
863-1241. NC-2212. **1-9** .... **PER PK./100 5.10**
Type NC-1610. 2 #12 max. and 4 #18 min. AWG.
863-1242. NC-1610. **1-9** .... **PER PK./100 6.94**

Multi-Purpose Hand Crimper — Fig. I

Type ABC-500. For use with 22-AWG through 10-AWG, cuts and strips wire, cuts and rethreads bolts. Constructed of tempered steel alloy.
863-1250. ABC-500 .... **EACH 21.81**

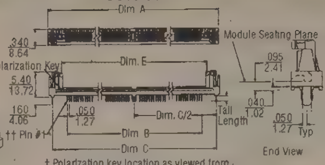
Solderless Terminal Kits

Type K-130. Deluxe non-insulated and insulated solderless terminal kit.
863-1260. K-130 .... **EACH 38.95**
Type K-140. Deluxe insulated solderless terminal kit.
863-1270. K-140 .... **EACH 46.95**
Type K-120. Deluxe non-insulated solderless terminal kit.
863-1280. K-120 .... **EACH 29.95**
Type K-220. Deluxe non-insulated quick-disconnect terminal kit.
863-1290. K-220 .... **EACH 34.95**

1.27 mm (.050") Pitch SIMM Sockets

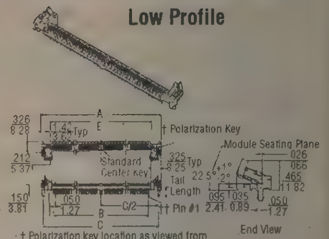
- Zero Insertion Force Contacts Improve Socket and Module Life and Provide for Fast On-Line Assembly
- Guaranteed 2 Points of Contact Per Readout With Standard JEDEC Module
- Anti-Overstress Latch Feature Provides Extra Protection During Module Removal
- Polarization Posts Provide Orientation for Proper Loading of Socket into Printed Circuit Board
- Polarization Rib Properly Orients Module to Socket
- EIA Standard Dimensions
- UL File No.: E29179
- CSA File No.: LR19980
- Mates With JEDEC Modules
- Housing: Black LCP, UL 94V-0
- Durability: 25 Cycles

Vertical



† Polarization key location as viewed from module insertion side of SIMM socket.
†† Circuit 1, polarization key and small post are located at the same end, whether right or left.

Low Profile



† Polarization key location as viewed from module insertion side of SIMM socket.
†† Circuit 1, polarization key and small post are located at the same end, whether right or left

Left Polarization, Vertical, Single Row with Metal Latch and Center Post (.110 Tail Length)

Stock No.	Mfr.'s Type	No. of Cont.	Contact Plating	Dimensions (In.)						EACH	
				A	B	C	D	E	F	1-99	100-249
529-0005	15-82-0775	72	Tin	4.550	3.750	4.400	1.750	3.980	—	**3.80**	**3.51**
529-0010	15-82-0762	72	Gold	4.550	3.750	4.400	1.750	3.980	—	**4.32**	**3.99**

Left Polarization, Low Profile (22.5°), Single Row, Metal Latch and Center Post (.110 Tail Length)

Stock No.	Mfr.'s Type	No. of Cont.	Contact Plating	A	B	C	D	E	F	1-99	100-249
529-0015	15-82-0678	72	Tin	4.550	3.750	4.400	1.750	3.980	—	**4.32**	**3.99**
529-0020	15-82-0675	72	Gold	4.550	3.750	4.400	1.750	3.980	—	**5.19**	**4.79**

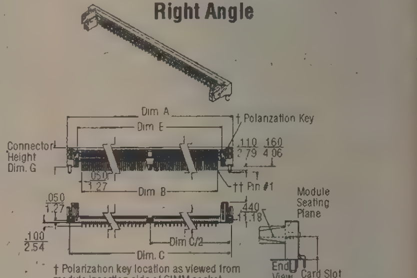
Left Polarization, Low Profile (22.5°), Single Row, Plastic Latch and Center Post (.110 Tail Length)

Stock No.	Mfr.'s Type	No. of Cont.	Contact Plating	A	B	C	D	E	F	1-99	100-249
529-0025	15-82-0671	72	Tin	4.550	3.750	4.400	1.750	3.980	—	**3.75**	**3.46**

Left Polarization, Right Angle, Single Row, with Plastic Latch and Center Post

Stock No.	Mfr.'s Type	No. of Cont.	Contact Plating	A	B	C	D	E	F	1-99	100-249
529-0030	15-82-0374	72	Tin	.4550	.3750	4.400	1.750	0.448	.250	**5.19**	**4.79**

Right Angle

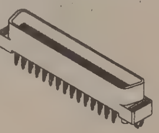


† Polarization key location as viewed from module insertion side of SIMM socket.
†† Circuit 1, polarization key and small post are located at the same end, whether right or left

1.27 mm (.050") Pitch EBBI™ 50D Connector System

Vertical Plug

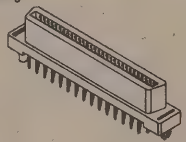
- Polarized D-Shaped Leaf-Contact Connector for Parallel Board Stacking
- SMT Compatible, High Temperature 94V-0 LCP
- Metal Retention Clips for Mechanical Hold Down Before and After Processing
- Low Profile — 12.50 mm Stack Height
- Recommended for 1.60 mm (.062") PCB
- Meets VESA Standards for Advanced Video and Graphics Cards (68 and 80 Circuits)
- UL File No.: 92NK28881 and 92NK28882
- CSA File No.: LR19980-239A
- Durability: 500 Cycles Minimum
- Contact Area Plating: 30 Micro Inches of Gold
- Tail Length: 3.40 mm (.134")



Stock No.	Mfr.'s Type	No. of Cont.	Overall Length (In.)	EACH	
				1-99	100-249
529-0035	15-92-2068	68	2.149	**7.06**	**6.52**
529-0040	15-92-2080	80	2.449	**7.41**	**6.84**

Vertical Receptacle

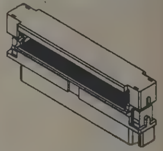
- Polarized D-Shaped Leaf-Contact Connector for Parallel Board Stacking
- SMT Compatible, High Temperature 94V-0 LCP
- Chamfered Lead-In On Tails for PCB Mounting
- Metal Retention Clips for Mechanical Hold Before and After Processing
- Low Profile — 12.50 mm Stack Height
- Mates to Standard .062" PCB Cartridge
- UL File No.: 92NK28881 and 92NK28882
- CSA File No.: LR19980-239A
- Durability: 500 Cycles Minimum
- Contact Area Plating: 30 Micro Inches of Gold
- Tail Length: 3.40 mm (.134")



Stock No.	Mfr.'s Type	No. of Cont.	Overall Length (In.)	EACH	
				1-99	100-249
529-0045	15-92-1068	68	2.149	**6.75**	**6.23**
529-0050	15-92-1080	80	2.449	**7.05**	**6.51**

Vertical IDT Receptacle

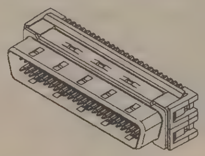
- Polarized D-Shaped Leaf-Contact Connector for Parallel Board Stacking
- Terminates to 30 AWG Solid or Stranded .025" Ribbon Cable or Laminated Discrete Wire Cable
- Card Slot Accommodates Standard .062" PCB
- Polarizing Key Orients Connector to PCB
- Selectively Gold Plated to Control Costs
- Meets VESA Standards for Advanced Video and Graphics Cards (68 and 80 Circuit)
- UL File No.: 92NK28881
- CSA File No.: LR19980-239A
- Durability: 500 Cycles Minimum
- Contact Area Plating: 30 Micro Inches of Gold



Stock No.	Mfr.'s Type	No. of Cont.	Overall Length (In.)	EACH	
				1-99	100-249
529-0055	15-92-3068	68	2.145	**8.12**	**7.50**
529-0060	15-92-3080	80	2.445	**8.52**	**7.87**

SCSI+ High Density I/O System

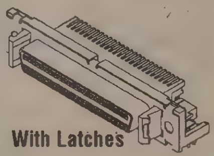
1.27 mm (.050") Pitch Shielded Plug for Discrete Wire



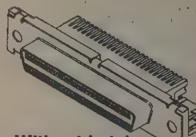
- Full Conformance to SCSI Specifications
- Strain Relieved Plug Subassembly
- Closed Back End
- UL File No.: E29179
- CSA File No.: LR19980A-28
- Housing: Black Glass-Filled Polyester, UL 94V-0
- Plating in Contact Area: 30 Micro Inches of Gold

Stock No.	Mfr.'s Type	No. of Cont.	Overall Length (In.)	EACH	
				1-99	100-249
529-0065	15-87-1050	50	1.530	**8.73**	**8.06**
529-0070	15-87-1068	68	1.980	**12.56**	**11.60**

1.27 mm (.050") Pitch Shielded Receptacle Right Angle



With Latches

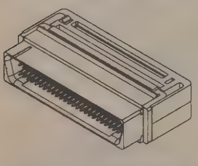


Without Latches

- LCP Housing Is Compatible with SMT Processing
- Blanked Tuning Fork Terminal, Smooth Contact Surface
- Optimum Tail True Position Control
- Date-Coded Assembly
- Fork Lock Retention to Board
- UL File No.: E29179
- CSA File No.: LR19980A-281
- Housing: Black Glass-Filled Polyester, UL 94V-0
- Plating in Contact Area: 30 Micro Inches of Gold
- Recommended PCB Thickness: .062"

Stock No.	Mfr.'s Type	No. of Cont.	Thread Type	With Latches	Overall Length (In.)	EACH	
						1-99	100-249
529-0080	15-87-6010	50	2-56	Yes	2.065	**7.35**	**6.78**
529-0085	15-87-6200	68	4-40	No	2.515	**11.32**	**10.45**

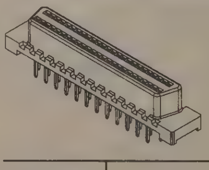
1.27 mm (.050") Pitch Unshielded Plug for .025" Ribbon Cable, All Plastic



- Conforms to SCSI Requirements
- UL File No.: E29179
- CSA File No. LR19980A-281
- Housing: Black Glass-Filled Polyester, UL 94V-0
- Plating in Contact Area: 30 Micro Inches of Gold

Stock No.	Mfr.'s Type	No. of Cont.	Overall Length (In.)	EACH	
				1-99	100-249
529-0075	70498-4068	68	2.027	**13.25**	**12.24**

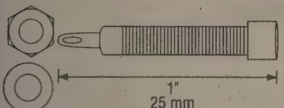
1.27 mm (.050") Pitch Unshielded Receptacle Vertical, All Plastic



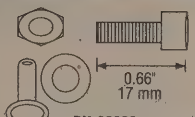
- LCP Housing Is Compatible with SMT Processing
- Board Polarization Peg
- Date-Coded Assembly
- Smooth Contact Surface, Blanked Terminal
- UL File No.: E29179
- CSA File No.: LR19980A-281
- Housing: Black Glass-Filled Polyester, UL 94V-0
- Plating in Contact Area: 30 Micro Inches of Gold

Stock No.	Mfr.'s Type	No. of Cont.	Overall Length (In.)	Tail Length (In.)	EACH	
					1-99	100-249
529-0090	15-87-0305	68	2.095	.125	**8.72**	**8.05**
529-0095	15-87-0311	68	2.095	.080	**8.72**	**8.05**

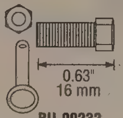
General Purpose Banana Jacks and Binding Posts



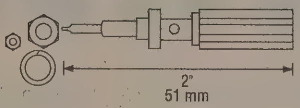
BU-00234



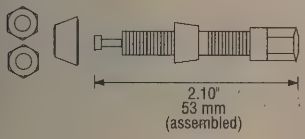
BU-00233



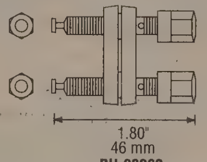
BU-00232



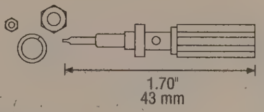
BU-00281



BU-00282



BU-00283

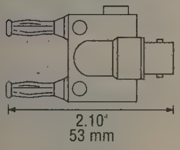


BU-00284

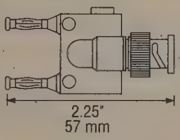
Feature nickel-plated brass with phosphor-bronze springs. Durable nylon, brass or ABS construction. Banana jacks mate with 0.16" (4) banana plugs, ordered separately below. **Current Rating:** 15 amps. Type number suffix 0 = black, suffix 2 = red.

Stock No.	Mfr.'s Type	Description	Material	Includes	EACH
860-4675	BU-00234-0	Phone-Tip Banana Jack	ABS	Nut and Washer	.65
860-4676	BU-00234-2	Phone-Tip Banana Jack	ABS	Nut and Washer	.65
860-4677	BU-00233-0	Insulated Banana Jack	Nylon	Nut and Lug	.60
860-4678	BU-00233-2	Insulated Banana Jack	Nylon	Nut and Lug	.60
860-4679	BU-00232	Threaded Banana Jack	Brass	Nut and Lug	.55
860-4680	BU-00281-0	Five-Way Binding Post	Nylon	Nut and Washer	1.45
860-4682	BU-00281-2	Five-Way Binding Post	Nylon	Nut and Washer	1.45
860-4683	BU-00282-0	Five-Way Binding Post	Nylon	2 Nuts and Washer	2.00
860-4684	BU-00282-2	Five-Way Binding Post	Nylon	2 Nuts and Washer	2.00
860-4685	BU-00283	Dual Five-Way Binding Post	Nylon	2 Nuts and 2 Washers	3.20
860-4686	BU-00284-0	Slim-Line Binding Post	Nylon	Nut and Washer	1.45
860-4687	BU-00284-2	Slim-Line Binding Post	Nylon	Nut and Washer	1.45

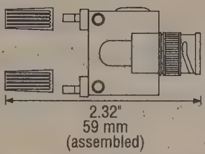
General Purpose BNC to Banana Adapters



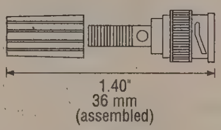
BU-00260



BU-00261



BU-00262

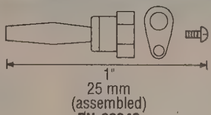


BU-00263

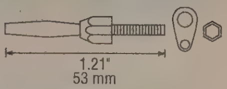
Feature nickel-plated brass with premium beryllium copper cage springs. Adapter bodies constructed of black nylon. Plugs and sockets are industry standard 0.16" (4). BNC coaxial connectors have gold-plated center conductor and nickel-plated brass bodies. Polarity is color coded.

Stock No.	Mfr.'s Type	Description	Length	EACH
860-7690	BU-00260	BNC Female to Banana Plug Adapter	2.06" (52.32)	4.75
860-7695	BU-00261	BNC Male to Banana Plug Adapter	2.06" (52.32)	7.95
860-7692	BU-00262-0	BNC Male to Banana Jack Adapter	2.32" (58.93)	6.20
860-7693	BU-00263-0	BNC Male to Banana Jack Adapter	1.40" (35.56)	3.85

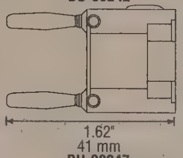
General Purpose Banana Plugs



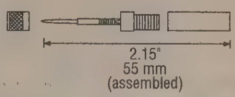
BU-00242



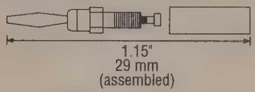
BU-00241



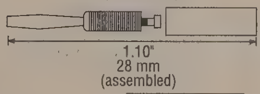
BU-00247



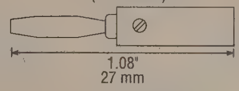
BU-00248



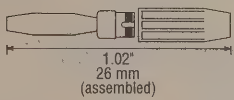
BU-00244



BU-00243



BU-00245

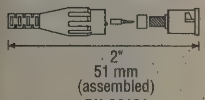


BU-00246

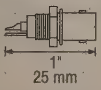
Feature nickel-plated brass with phosphor-bronze springs. Durable nylon or ABS construction. Mate with 0.16" (4) banana jacks and binding posts, ordered separately above. **Current Rating:** 15 amps. **Maximum AWG:** 18/stranded. Type number suffix 0 = black, suffix 2 = red.

Stock No.	Mfr.'s Type	Description	EACH
860-4688	BU-00242	Banana Plug with Screw and Solder Lug	.55
860-4689	BU-00241	Threaded Banana Plug with Nut and Lug	.50
860-4690	BU-00247-0	Dual Banana Plug with Strain Relief	1.85
860-4691	BU-00248-0	Insulated Phone Tip Plug	.65
860-4692	BU-00248-2	Insulated Phone Tip Plug	.65
860-3500	BU-00244-0	Solderless Banana Plug	.75
860-3501	BU-00244-2	Solderless Banana Plug	.75
860-4693	BU-00243-0	Solderless Banana Plug	.80
860-4694	BU-00243-2	Solderless Banana Plug	.80
860-4695	BU-00245-0	Solderless Banana Plug with Set Screw	.75
860-4696	BU-00245-2	Solderless Banana Plug with Set Screw	.75
860-4697	BU-00246-0	Solderless Banana Plug with Tapered Handle	.75
860-4698	BU-00246-2	Solderless Banana Plug with Tapered Handle	.75

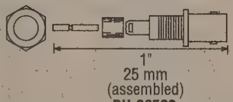
Safety Banana and BNC Jacks and Connectors



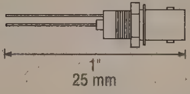
BU-30101



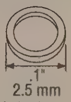
BU-30501



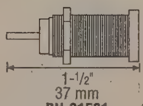
BU-30502



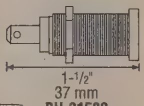
BU-30503



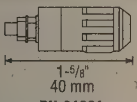
BU-31500



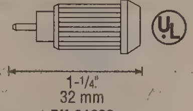
BU-31501



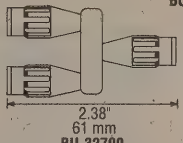
BU-31502



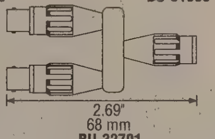
BU-31601



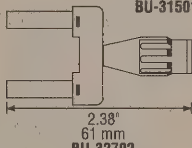
BU-31602



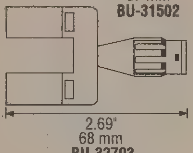
BU-32700



BU-32701



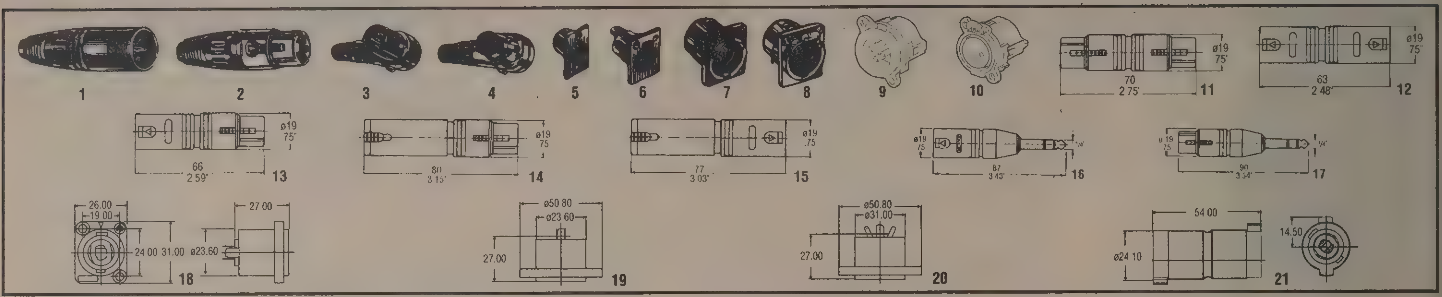
BU-32702



BU-32703

Banana jacks accept shielded 4 mm plug assemblies. Connector terminations may be made by solder tab or 0.25" (6.35) lug. BNC connectors fully insulated. Crimp connectors designed for RG58 (50 ohm) coaxial cable. "0" suffix in type number designates black; "2" suffix designates red.

Stock No.	Mfr.'s Type	Description	Length	Rating	EACH
860-4545	BU-30101-0	BNC Male	2.0" (50.80)	300 V	8.15
860-4555	BU-30501-0	BNC Female	1.0" (25.40)	300 V	6.40
860-4560	BU-30502-0	BNC Female	1.0" (25.40)	300 V	6.75
860-4565	BU-30503-0	BNC Female	1.0" (25.40)	300 V	6.00
860-4568	BU-31500-0	Build-up disk	—	—	.50
860-4569	BU-31500-2	Build-up disk	—	—	.50
860-4571	BU-31501-0	Solder tab, jack	1.5" (38.10)	1000 V	2.25
860-4570	BU-31501-2	Solder tab, jack	1.5' (38.10)	1000 V	2.25
860-4573	BU-31502-0	0.25" Lug jack	1.5" (38.10)	1000 V	2.40
860-4572	BU-31502-2	0.25" Lug jack	1.5" (38.10)	1000 V	2.40
860-4577	BU-31601-0	Solder tab, jack	1.5" (38.10)	1000 V	4.70
860-4576	BU-31601-2	Solder tab, jack	1.5" (38.10)	1000 V	4.70
860-4579	BU-31602-0	0.25" Lug jack	1.5" (38.10)	1000 V	2.15
860-4578	BU-31602-2	0.25" Lug jack	1.5" (38.10)	1000 V	2.15
860-7677	BU-32700	BNC Male/female	2.4" (60.96)	—	30.40
860-7678	BU-32701	BNC Male/female	2.7" (68.58)	—	30.40
860-7679	BU-32702	BNC Male/jack	2.4" (60.96)	—	24.00
860-7680	BU-32703	BNC Female/plug	2.7" (68.58)	—	24.00



XLR "X" Series Cable Connectors

Shells: Die cast zinc. **Insets:** Fiberglass reinforced hard polyester. Satin nickel housing and silver contacts standard — "B" suffix on the type number designates black chrome housing and gold contacts. **Wire Diameter Range:** .11" to .315". Also available in 6 and 7 pin.

Satin Nickel Housing with Silver Contacts

Stock No.	Mfr.'s Type	Fig.	No. of Contacts	Gender	EACH		
					1-9	10-24	25-99
514-1016	NC3MX	1	3	Male	3.13	2.42	2.28
514-1017	NC3FX	2	3	Female	3.64	2.79	2.62
514-1080	NC4MX	1	4	Male	4.13	3.61	3.32
514-1081	NC4FX	2	4	Female	5.40	4.51	4.14
514-1082	NC5MX	1	5	Male	5.23	4.28	3.92
514-1083	NC5FX	2	5	Female	6.46	5.16	4.86

Black Chrome Housing with Gold Contacts

514-1018	NC3MX-B	1	3	Male	4.03	3.19	3.00
514-1019	NC3FX-B	2	3	Female	5.00	4.16	3.74
514-1086	NC4MX-B	1	4	Male	4.92	4.45	4.09
514-1087	NC4FX-B	2	4	Female	6.86	5.80	5.33
514-1088	NC5MX-B	1	5	Male	6.18	5.34	4.91
514-1089	NC5FX-B	2	5	Female	7.74	6.67	6.13

XLR "XY" Series Cable Connectors

Non soldering 3 pin XLR. Utilizes IDC technology so no tools are required. Uses the same basic components as our "X" series.

Stock No.	Mfr.'s Type	Fig.	Shell/ Contact	Gender	EACH		
					1-9	10-24	25-99
514-1202	NC3MXY	1	Nickel/Silver	Male	3.13	2.42	2.28
514-1204	NC3FXY	2	Nickel/Silver	Female	3.64	2.79	2.62
514-1206	NC3MXY-B	1	Black/Gold	Male	4.03	3.19	3.00
514-1208	NC3FXY-B	2	Black/Gold	Female	5.00	4.16	3.74

XLR "RC" Series Right Angle Cable Connectors

Shells: Die cast zinc. **Insets:** Fiberglass reinforced hard polyester. Satin nickel housing and silver contacts standard — "B" suffix on the type number designates black chrome housing and gold contacts. **Wire Diameter Range:** .11" to .315". Seven indexing positions for high-density packaging. Self-retentive, release latch hook. Compatible with all XLR connectors. Also available in 6 pin.

Satin Nickel Housing with Silver Contacts

Stock No.	Mfr.'s Type	Fig.	No. of Contacts	Gender	EACH		
					1-9	10-24	25-99
514-1020	NC3MRC	3	3	Male	9.21	7.07	6.66
514-1021	NC3FRC	4	3	Female	9.96	7.61	7.16
514-1022	NC4MRC	3	4	Male	9.28	7.24	6.82
514-1023	NC4FRC	4	4	Female	11.40	9.00	8.78
514-1024	NC5MRC	3	5	Male	13.12	10.15	9.54
514-1025	NC5FRC	4	5	Female	14.48	11.17	10.51

Black Chrome Housing with Gold Contacts

514-1028	NC3MRC-B	3	3	Male	9.58	7.32	6.89
514-1029	NC3FRC-B	4	3	Female	10.42	8.97	7.60
514-1030	NC4MRC-B	3	4	Male	10.65	9.19	8.50
514-1031	NC4FRC-B	4	4	Female	12.52	10.00	9.10
514-1032	NC5MRC-B	3	5	Male	14.00	11.00	10.00
514-1033	NC5FRC-B	4	5	Female	16.32	15.01	13.80

XLR "P" Series Panel Receptacles

Solder contacts. Zinc diecast housing. Compatible with Cannon and Switchcraft equivalents. Also available in 6 pin. 7 pin available in FP-1 only.

Satin Nickel Housing with Silver Contacts

Stock No.	Mfr.'s Type	Fig.	No. of Contacts	Gender	EACH		
					1-9	10-24	25-99
514-1056	NC3MP	5	3	Male	3.60	2.63	2.45
514-1057	NC3FP-1	6	3	Female	4.47	3.39	3.10
514-1058	NC4MP	5	4	Male	4.19	3.13	2.94
514-1059	NC4FP-1	6	4	Female	6.60	5.50	4.97
514-1060	NC5MP	5	5	Male	6.99	5.47	5.15
514-1061	NC5FP-1	6	5	Female	10.52	8.05	7.27

Black Chrome Housing with Gold Contacts

514-1064	NC3MP-B	5	3	Male	4.58	4.16	3.82
514-1065	NC3FP-1-B	6	3	Female	5.38	4.95	4.55
514-1066	NC4MP-B	5	4	Male	5.44	5.00	4.58
514-1067	NC4FP-1-B	6	4	Female	7.98	6.14	5.77
514-1068	NC5MP-B	5	5	Male	7.87	6.29	5.92
514-1069	NC5FP-1-B	6	5	Female	11.00	8.81	8.29

XLR "D" Series Panel Receptacles

Available in three mounting styles. Standard nickel housing with silver contacts. "BAG" suffix designates black chrome housing with silver contacts. "MD-L-1" and "FD-L-1" available in 4, 5, 6 and 7 pin. "B" suffix designates black chrome housing with gold contacts. Horizontal PC versions available in 4 and 5 pins.

Stock No.	Mfr.'s Type	Fig.	Mounting Style	Gender	EACH		
					1-9	10-24	25-99
514-1044	NC3MD-L-1	7	Solder	Male	4.06	3.09	2.83
514-1099	NC3FD-L-1	8	Solder	Female	4.31	3.26	2.99
514-1052	NC3MD-L-1-B	7	Solder	Male	5.45	4.12	3.78
514-1051	NC3FD-L-1-B	8	Solder	Female	5.58	4.22	3.87
514-1053	NC3MD-L-1-BAG	7	Solder	Male	5.09	3.85	3.53
514-1054	NC3FD-L-1-BAG	8	Solder	Female	5.26	3.98	3.65

XLR "K" Series Panel Receptacles

One piece plastic 3 pin XLR. Metal bracket secures the receptacle to the PCB, machine insertable. M3 thread mounting screw holes.

Stock No.	Mfr.'s Type	Fig.	Mounting Style	Gender	EACH		
					1-9	10-24	25-99
514-1210	NC3MK-H	9	Hor. PCB	Male	3.20	2.34	2.20
514-1212	NC3FK-H	10	Hor. PCB	Female	3.44	2.51	2.36

"XLR" Adapters

These adapters can be ordered pre-wired with addition of /W to part no.

Stock No.	Mfr.'s Type	Fig.	Description	EACH		
				1-9	10-24	25-99
514-8600	NA3FF	11	Female to Female	7.75	7.05	6.46
514-8602	NA3MM	12	Male to Male	6.69	6.08	5.58
514-8604	NA3FM	13	Male to Female	7.75	7.05	6.46
514-8606	NA3FJ	14	Female to ¼" Jack	8.08	7.34	6.73
514-8608	NA3MJ	15	Male to ¼" Jack	7.85	7.14	6.54
514-8610	NA3FP	16	Female to ¼" Plug	7.02	6.38	5.85
514-8612	NA3MP	17	Male to ¼" Plug	7.28	6.62	6.07

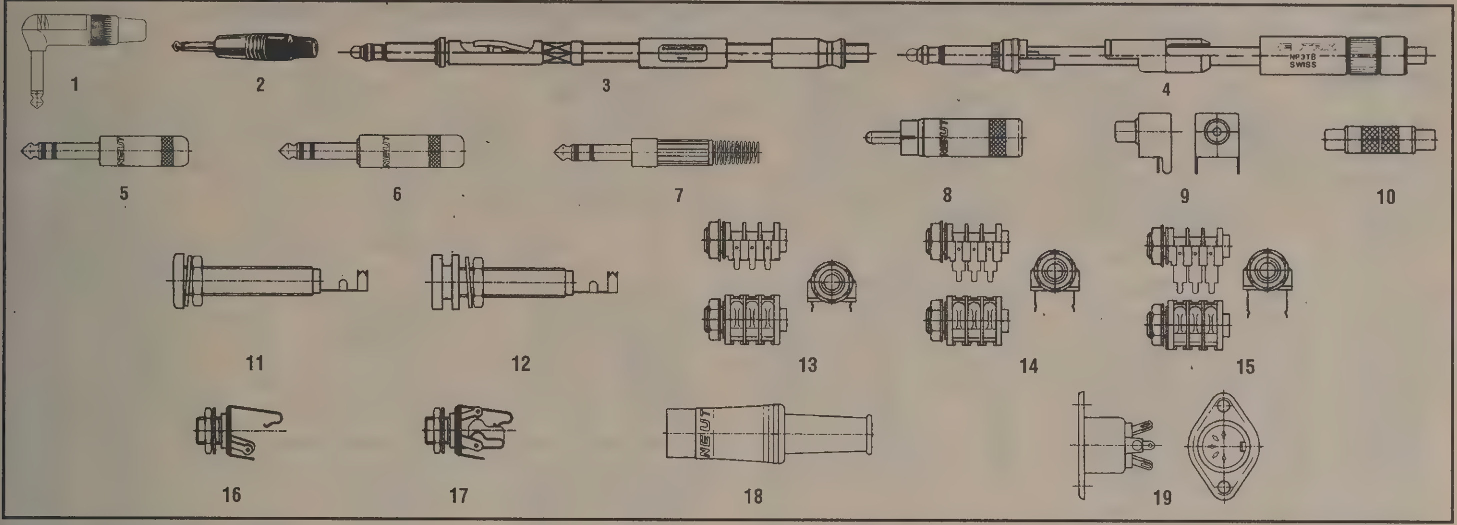
Speakon® Loudspeaker Amplifier Connectors

Types NL4 are 4 pole for cable 6-15 mm. Types NL8 are 8 pole for cable 8-20 mm. **Terminations:** Cable mount — solder or set screw; Panel mount — solder or quick disconnect tab.

Stock No.	Mfr.'s Type	Fig.	Mounting Style	Gender	EACH		
					1-9	10-24	25-99
514-1110	NL4FC	—	Cable Mount	Female	6.30	5.70	5.60
514-1112	NL4MP	18	Panel Mount	Male	3.59	2.77	2.61
514-1114	NL4MPR*	19	Panel Mount	Female	4.30	3.62	3.41

Stock No.	Mfr.'s Type	Fig.	Mounting Style	Gender	EACH		
					1-9	10-24	25-99
514-1116	NL8FC	—	Cable Mount	Male	10.70	8.62	8.12
514-1118	NL8MPR*	20	Panel Mount	Female	7.90	6.47	6.09
514-1111	NL4MM	21	Cable Adapter	Female	8.32	7.68	7.50

*Round Flange.



Right Angle Phone Plugs

Right angle plugs have 1/4" nickel plated brass sleeves and are for 0.1" - 0.28" diameter cable.

Stock No.	Mfr.'s Type	Fig.	No. of Contacts	Shell	EACH 1-9	10-24	25-99
514-1074	NP2RC	1	2	Nickel	5.10	4.16	3.92
514-1078	NP2RCS*	1	2	Nickel	3.00	2.73	2.50
514-1101	NP3RC	1	3	Nickel	6.00	5.91	4.71

*New slim line right angle plug

¼" Vertical PC Mount Phone Jacks

PCB mount jacks mate with standard .250" mono or stereo plugs. Separation of retention and electrical contact aids retention and product life. Gold plated contact area. Cap snaps on for quick assembly, twist to open.

Stock No.	Mfr.'s Type	Fig.	Type	Contact Type	EACH 1-9	10-24	25-99
514-1150	NJ2FD-V	—	Mono	T/S	.76	.58	.52
514-1152	NJ3FD-V	—	Stereo	T/R/S	.81	.61	.55
514-1154	NJ5FD-V	—	Stereo	T/TN/R/RN/S	.95	.73	.65
514-1156	NJ6FD-V	—	Stereo	T/TN/R/RN/S/SN	1.17	.90	.80

Straight Phone Plugs

Standard plugs have 1/4" nickel plated brass sleeves and are for 0.1" - 0.28" diameter cable.

Stock No.	Mfr.'s Type	Fig.	No. of Contacts	Shell	EACH 1-9	10-24	25-99
514-1072	NP2C	2	2	Nickel	3.05	2.39	2.25
514-1073	NP3C	2	3	Nickel	4.30	3.47	3.29
514-1075	NP2C-BAG	2	2	Black	3.14	2.73	2.54
514-1076	NP3C-BAG	2	3	Black	4.41	3.61	3.35

TT and ¼" Long Frame Patch Cords

TT patch cords utilize Neutrik's NP3TT bantam plugs. 1/4" long frame patch cords utilize Neutrik's NP3TB long frame plugs. Patch panels available.

Stock No.*	Mfr.'s Type	Fig.	Length	Type	EACH 1-9	10-24	25-99
514-125X	NKTT04-X	3	18"	TT	11.51	11.01	10.37
514-126X	NKTT05-X	3	24"	TT	11.75	11.24	10.59
514-127X	NKTT1-X	3	36"	TT	12.24	11.70	11.02
514-129X	NKTB05-X	4	24"	TB	21.74	18.46	17.39
514-130X	NKTB1-X	4	36"	TB	22.52	18.68	17.59

*To order correct color, insert number of color desired where X appears in Stock No. **Colors:** 0-Blue, 1-Black, 2-Green, 3-Red, 4-Yellow.

¼" Professional Phone Plugs — *NEW* —

- ► AWG: 14 AWG — 224L; 18 AWG — 201, 202, 203, 204, 224, 228
- ► 500 Vrms

Stock No.	Mfr.'s Type	Fig.	Description	EACH 1-9	10-24	25-99
514-8614	NYS 201	5	2 pole short barrel	1.16	1.06	.97
514-8616	NYS 202	5	3 pole short barrel	1.63	1.48	1.36
514-8618	NYS 224	6	2 pole long barrel shielded handle	1.20	1.09	1.00
514-8620	NYS 224L	6	2 pole long barrel shielded large handle	1.26	1.15	1.05
514-8622	NYS 228	6	3 pole long barrel shielded handle	2.22	2.02	1.85
514-8624	NYS 203	7	2 pole plastic shell with plastic strain relief	1.10	1.00	.92
514-8626	NYS 204	7	3 pole plastic shell with plastic strain relief	1.20	1.09	1.00

Phono "RCA" Connectors — *NEW* —

- ► 500 Vrms

Stock No.	Mfr.'s Type	Fig.	Description	EACH 1-9	10-24	25-99
514-8628	NYS 352	8	2 pole long barrel large shielded handle, cable dia. range up to .25	.84	.76	.70
514-8630	NYS 354	9	2 pole right angle PCB phono jack	.51	.46	.43
514-8632	NYS 355	10	2 pole phono to phono female adapter	1.71	1.56	1.43

¼" Phone Jacks — *NEW* —

- ► 500 Vrms

Stock No.	Mfr.'s Type	Fig.	Description	EACH 1-9	10-24	25-99
514-8634	NYS 220	11	2 pole solder lugs with strain relief clamp	1.94	1.76	1.61
514-8636	NYS 221	12	3 pole solder lugs with strain relief clamp	2.02	1.84	1.68
514-8637	NYS 212*	—	3 pole solder tab	.61	.56	.51
514-8638	NYS 215*	13	3 pole right angle washer and chrome nut, .322"	.75	.69	.63
514-8640	NYS 216*	13	3 pole right angle nut and washer, .322"	.61	.56	.51
514-8642	NYS 218*	14	3 pole right angle nut and washer, .492"	.61	.56	.51
514-8644	NYS 219*	15	3 pole right angle nut and washer, .590"	.61	.56	.51
514-8646	NYS 229	16	2 pole solder lug insulated washer, .0375" mounting hole	.88	.80	.73
514-8650	NYS 230	17	3 pole solder lug insulated washer, .0375" mounting hole	.98	.89	.82

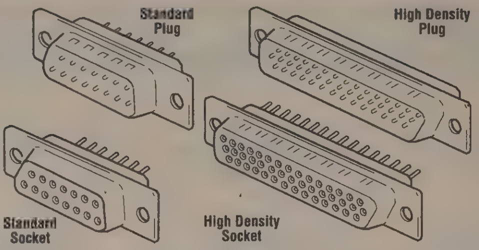
*Mono version is available as a special order by adding /2 to the part no.

DIN Connectors — *NEW* —

- ► 500 Vrms

Stock No.	Mfr.'s Type	Fig.	Description	EACH 1-9	10-24	25-99
514-8652	NYS 321	18	3 pin 180° male	1.14	1.04	.95
514-8654	NYS 322	18	5 pin 180° male	1.18	1.08	.99
514-8656	NYS 323	18	7 pin 270° male	1.45	1.32	1.21
514-8658	NYS 324	19	3 contact 180° female	.47	.43	.39
514-8660	NYS 325	19	5 contact 180° female	.53	.48	.44
514-8662	NYS 326	19	7 contact 270° female	.59	.54	.49

D-Series Solder Cup Connectors



Shell: Steel with yellow-zinc chromate or tin plating. **Insert:** PBT Glass-filled (UL94V0). **Contacts:** Stamped and formed. **Pin:** Brass. **Socket:** Phosphor Bronze.

Zinc Plated

Stock No.	Mfr.'s Type	Description	EACH 1-24	EACH 25-99	EACH 100-249
810-6000	D9PS	9 Contact Plug	.50	.45	.41
810-6002	D9SS	9 Contact Socket	.52	.47	.42
810-6004	D15PS	15 Contact Plug	.70	.63	.57
810-6006	D15SS	15 Contact Socket	.72	.65	.59
810-6008	D25PS	25 Contact Plug	.82	.74	.67
810-6010	D25SS	25 Contact Socket	.84	.76	.68
810-6012	D37PS	37 Contact Plug	1.42	1.28	1.15
810-6014	D37SS	37 Contact Socket	1.54	1.39	1.25
810-6016	D50PS	50 Contact Plug	3.36	3.03	2.72
810-6018	D50SS	50 Contact Socket	3.44	3.10	2.79

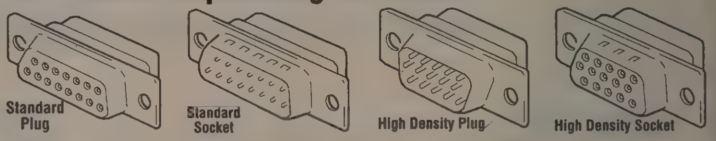
Tin Plated Shells (Plugs with Ground Indents)

Stock No.	Mfr.'s Type	Description	EACH 1-24	EACH 25-99	EACH 100-249
810-6020	D9PTES	9 Contact Plug	.50	.45	.41
810-6022	D9STS	9 Contact Socket	.52	.47	.42
810-6024	D15PTES	15 Contact Plug	.70	.63	.57
810-6026	D15STS	15 Contact Socket	.72	.65	.59
810-6028	D25PTES	25 Contact Plug	.82	.74	.67
810-6030	D25STS	25 Contact Socket	.84	.76	.68
810-6032	D37PTES	37 Contact Plug	1.42	1.28	1.15
810-6034	D37STS	37 Contact Socket	1.54	1.39	1.25
810-6036	D50PTES	50 Contact Plug	3.36	3.03	2.72
810-6038	D50STS	50 Contact Socket	3.44	3.10	2.79

High Density

Stock No.	Mfr.'s Type	Description	EACH 1-24	EACH 25-99	EACH 100-249
810-6040	D3-15PTES	15 Contact Plug	1.76	1.59	1.43
810-6042	D3-15STS	15 Contact Socket	1.98	1.78	1.61
810-6044	D3-26PTES	26 Contact Plug	2.50	2.25	2.03
810-6046	D3-26STS	26 Contact Socket	2.70	2.43	2.19
810-6048	D3-44PTES	44 Contact Plug	3.90	3.51	3.16
810-6050	D3-44STS	44 Contact Socket	4.30	3.87	3.49
810-6052	D3-62PTES	62 Contact Plug	5.48	4.93	4.44
810-6054	D3-62STS	62 Contact Socket	6.08	5.47	4.93

DC – Series Crimp Housing and Contacts



Shell: Steel with yellow-zinc chromate or tin plating. **Insert:** Black PBT Glass-filled (UL94V0).

Zinc Plated Shells (Housings)

Stock No.	Mfr.'s Type	Description	EACH 1-24	EACH 25-99	EACH 100-249
810-6056	DC9P	9 Contact Plug	.52	.47	.42
810-6058	DC9S	9 Contact Socket	.54	.49	.44
810-6060	DC15P	15 Contact Plug	.60	.54	.49
810-6062	DC15S	15 Contact Socket	.64	.58	.52
810-6064	DC25P	25 Contact Plug	.60	.54	.49
810-6066	DC25S	25 Contact Socket	.64	.58	.52
810-6068	DC37P	37 Contact Plug	1.18	1.06	.96
810-6070	DC37S	37 Contact Socket	1.38	1.24	1.12

Tin Plated Shells (Housings) (Plugs with Ground Indents)

Stock No.	Mfr.'s Type	Description	EACH 1-24	EACH 25-99	EACH 100-249
810-6072	DC9PTE	9 Contact Plug	.52	.47	.42
810-6074	DC9ST	9 Contact Socket	.54	.49	.44
810-6076	DC15PTE	15 Contact Plug	.60	.54	.49
810-6078	DC15ST	15 Contact Socket	.64	.58	.52
810-6080	DC25PTE	25 Contact Plug	.60	.54	.49
810-6082	DC25ST	25 Contact Socket	.64	.58	.52
810-6084	DC37PTE	37 Contact Plug	1.18	1.06	.96
810-6086	DC37ST	37 Contact Socket	1.38	1.24	1.12
810-6088	DC50PTE	50 Contact Plug	2.86	2.58	2.32
810-6090	DC50ST	50 Contact Socket	2.86	2.58	2.32

High Density (Housings)

Stock No.	Mfr.'s Type	Description	EACH 1-24	EACH 25-99	EACH 100-249
810-6092	DC3-15PTE	15 Contact Plug	1.58	1.42	1.28
810-6094	DC3-15ST	15 Contact Socket	1.78	1.60	1.44
810-6096	DC3-26PTE	26 Contact Plug	2.12	1.91	1.72
810-6098	DC3-26ST	26 Contact Socket	2.32	2.09	1.88

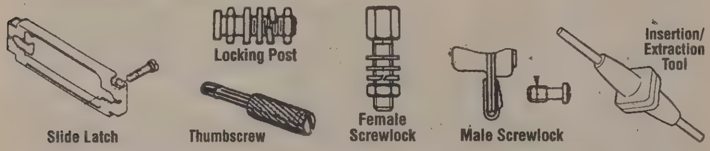
Contacts for Standard Crimp Type (20 – 26 AWG)

810-6100. DCTPX1020AF. Male Contact (Pin)....................PER PK/1000 34.91
810-6102. DCTSX1020AF. Female Contact (Socket)....................PER PK/1000 37.79

Contacts for High Density Crimp Type (22 – 26 AWG)

810-6104. DCHPX1022AF. Male Contact (Pin)....................PER PK/1000 38.46
810-6106. DCHSX1022AF. Female Contact (Socket)....................PER PK/1000 41.54

Hardware and Accessories

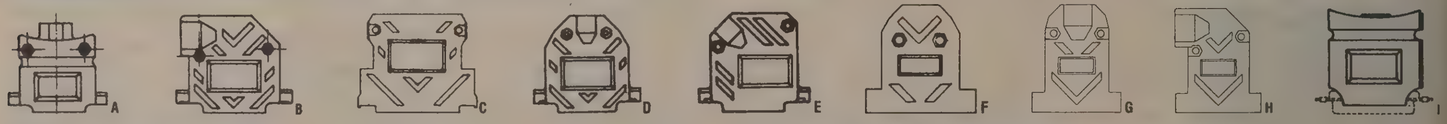


Stock No.	Mfr.'s Type	Description	EACH 1-24	EACH 25-99	EACH 100-249
810-6108	TEDS15	Slide Latch Assy.	1.20	1.08	.97
810-6110	C89014006	Locking Posts ST/2	.54	.45	.38
810-6112	WLJ10S	Thumbscrew	.24	.22	.20
810-6114	A29993000	Female Screwlock	.40	.36	.33
810-6117	R4814	Male Screwlock ST/2	.51	.43	.36

810-6119. WCT-001. Insertion/Extraction Tool....................EACH 2.81

D-Subminiature Hoods

(All Hood Kits Include: Backshell, Grommets and Hardware)



EMI/RFI Shielded Metal Backshells

Stock No.	Mfr.'s Type	No. of Positions	Fig.	Description	EACH 1-24	EACH 25-49	EACH 50-99
810-8000	C88000218	9	A	Straight	2.54	2.30	2.07
810-8005	C88000207	15	A	Straight	2.65	2.41	2.17
810-8010	C88000203	25	A	Straight	2.71	2.55	2.30
810-8015	C88000206	37	A	Straight	3.69	3.32	2.84
810-8020	C88000208	50	A	Straight	3.74	3.37	2.97
810-8025	C88421000	25	B	Right Angle 90°	3.53	3.18	2.71
810-8030	C88521000	25	C	For Flat-Cable D-Subs	3.00	2.70	2.65

Metallized Plastic Backshells

Stock No.	Mfr.'s Type	No. of Positions	Fig.	Description	EACH 1-24	EACH 25-49	EACH 50-99
810-8035	C88301000	9	D	Straight	1.17	1.06	.95
810-8040	C88311000	15	D	Straight	1.24	1.12	1.01
810-8045	C88321000	25	D	Straight	1.35	1.22	1.10
810-8050	C88331000	37	D	Straight	2.00	1.80	1.62
810-8055	C88341000	50	D	Straight	2.48	2.24	2.01
810-8060	C88201000	9	E	45°	1.22	1.10	1.00
810-8065	C88211000	15	E	45°	1.31	1.18	1.07
810-8070	C88221000	25	E	45°	1.42	1.28	1.16
810-8075	C88231000	37	E	45°	2.09	1.88	1.70

Die Cast Metal Ethernet Backshells

Stock No.	Mfr.'s Type	No. of Positions	Fig.	Description	EACH 1-24	EACH 25-49	EACH 50-99
810-8080	C88611000	15	F	Straight/Short	3.24	2.92	2.63
810-8085	C88611001	15	G	Straight/Long	3.24	2.92	2.63
810-8090	C88611002	15	H	Right Angle	3.37	3.04	2.74

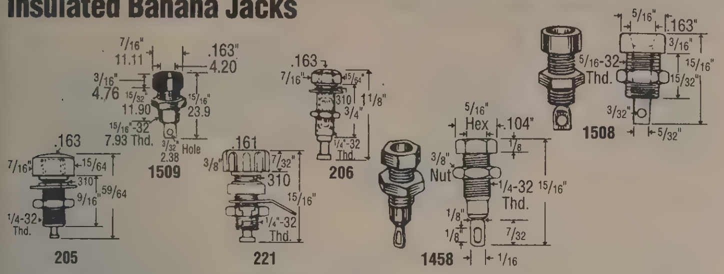
Non-Shielded Plastic 2-Piece Backshells

Stock No.	Mfr.'s Type	No. of Positions	Fig.	Description	EACH 1-24	EACH 25-49	EACH 50-99
810-8095	C88301005	9	D	Straight/Gray	.66	.60	.54
810-8100	C88301004	9	D	Straight/Black	.66	.60	.54
810-8105	C88311005	15	D	Straight/Gray	.73	.66	.60
810-8110	C88311004	15	D	Straight/Black	.73	.66	.60
810-8115	C88321005	25	D	Straight/Gray	.82	.74	.67
810-8120	C88321004	25	D	Straight/Black	.82	.74	.67
810-8125	C88331005	37	D	Straight/Gray	.93	.84	.76
810-8130	C88331004	37	D	Straight/Black	.93	.84	.76
810-8135	C88201005	9	E	45°/Gray	.69	.62	.56
810-8140	C88201004	9	E	45°/Black	.69	.62	.56
810-8145	C88211005	15	E	45°/Gray	.77	.70	.63
810-8150	C88211004	15	E	45°/Black	.77	.70	.63
810-8155	C88221005	25	E	45°/Gray	.86	.78	.71
810-8160	C88221004	25	E	45°/Black	.86	.78	.71
810-8165	C88231005	37	E	45°/Gray	.98	.89	.80
810-8170	C88231004	37	E	45°/Black	.98	.89	.80

Non-Shielded Plastic 1-Piece Backshells

Stock No.	Mfr.'s Type	No. of Positions	Fig.	Description	EACH 1-24	EACH 25-49	EACH 50-99
810-8175	C88001000	9	I	Straight/Black	.46	.42	.38
810-8180	C88000263	15	I	Straight/Black	.51	.46	.42
810-8185	C88000273	25	I	Straight/Black	.55	.50	.45

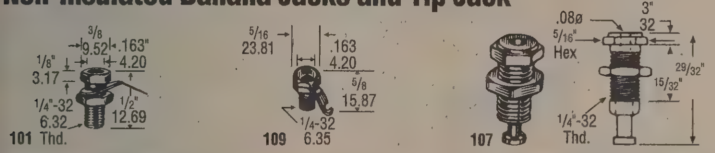
Insulated Banana Jacks



Type 205 supplied with fiber washer. **Shipping Weight:** 2 oz.

Stock No.	Mfr.'s Type	Color	Description	PER PKG./5			
				1-9	10-24	25-99	100
920-0205	205-102	Red	Plastic head; nickel-plated brass body. For 5/16" hole, panels up to 3" thick. Head captivated to body.	6.44	4.95	4.45	4.01
920-0224	205-107	Yellow		6.44	4.95	4.45	4.01
920-0210	205-104	Green		6.46	4.96	4.46	4.01
920-0211	205-105	Blue		6.44	4.95	4.46	4.01
920-0209	205-103	Black		6.44	4.95	4.46	4.01
920-1485	1509-102	Red	Molded nylon jack. Locks into panel by means of double "D" body. For 5/16" hole, panel to 5/16". All insulated.	4.76	3.64	3.18	2.87
920-1519	1509-103	Black		4.76	3.64	3.18	2.87
920-1526	1509-107	Yellow		4.76	3.64	3.18	2.87
920-1527	1509-104	Green		4.76	3.64	3.18	2.87
920-1528	1509-105	Blue		4.76	3.64	3.18	2.87
920-0261	221-102	Red	Nylon head; fit 5/16" mtg. hole; for panels up to 1/4".	9.27	7.22	6.49	5.85
920-0260	221-103	Black		9.27	7.22	6.49	5.85
920-0225	206-102	Red	Plastic head; nickel-plated brass body; takes banana plug or tip plug; beryllium copper spring. For 1/4" hole, up to 5/8" panel.	12.92	10.07	9.07	8.17
920-0227	206-104	Green		12.92	10.07	9.07	8.17
920-0226	206-103	Black		12.92	10.07	9.07	8.17
920-1490	1458-102	Red	Molded polycarbonate head; brass nickel-plated body. Miniature. Insulated from panel in 5/16" holes.	7.03	5.47	4.91	4.42
920-1491	1458-103	Black		7.03	5.47	4.91	4.42
920-1492	1458-104	Green		7.03	5.48	4.92	4.43
920-1535	1508-102	Red	Molded polycarbonate head; brass nickel-plated body. Insulated from panel in 5/16" holes.	4.76	3.64	3.18	2.87
920-1536	1508-103	Black		4.76	3.64	3.18	2.87
920-1537	1508-104	Green		4.76	3.64	3.18	2.87

Non-Insulated Banana Jacks and Tip Jack



Non-Insulated Banana Jacks

Bare brass, nickel-plated body. Fits 1/4" hole. 3/8" panel. Hex nut. 2 oz.

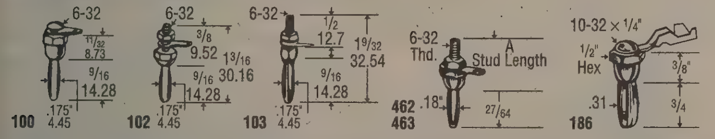
Stock No.	Mfr.'s Type	Color	Description	PER PK./5		
				1-9	10-24	25-99
920-0101	101	Metal	Tinned lug	4.81	3.62	3.24
920-0109	109	Metal	With solder lug	4.91	3.70	3.32

Non-Insulated Tip Jack

All metal. Nickel-plated brass body, phosphor-bronze contact. With nut. **Rated:** 15 amps AC for 10°C temperature rise, continuous duty. **Shipping Weight:** 2 oz.

920-0107	107	Nickel-plated	Mounts in 1/4" hole; fits panels to 3/8" thick. Sold EACH.	8.76	7.30	6.81

Non-Insulated Banana Plugs

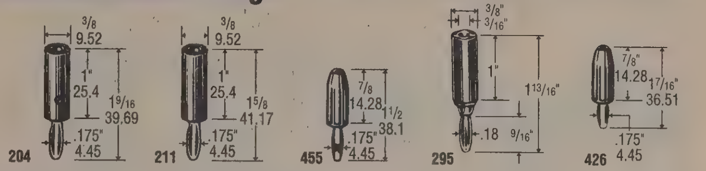


Feature four-leaved, beryllium copper nickel-plated springs. Each is supplied with terminal lug and hex nut. **Shipping Weight:** 2 oz. **Type 462. Stud Length:** 3/8". **Type 463. Stud Length:** 1/2".

Stock No.	Mfr.'s Type	Color	Description	PER PKG./5			
				1-9	10-24	25-99	100
920-0100	100**	Nickel-plated	Panel-mtg. type; 6-32 tapped body. Intern'l threads for panel use.	8.85	7.38	6.80	6.15
920-0102	102**	Nickel-plated	External threaded-shank type; 4-leaf beryllium copper spring.	7.69	5.95	5.31	4.75
920-0104	103**	Nickel-plated	External threaded-shank type.	9.08	7.07	6.38	5.75
920-0462	462*	Nickel-plated	Threaded stud (L=3/8") and nut; short std. beryllium copper spring.	7.04	5.48	4.93	3.91
920-0463	463*	Nickel-plated	Threaded stud (L=1/2") and nut; short std. beryllium copper spring.	7.05	5.48	4.91	3.93
920-0464	186†	Nickel-plated	Threaded stud and nut type; giant. Beryllium copper spring.	24.60	19.19	17.07	13.19

*10 amp. **15 amp. †25 amp.

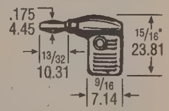
Insulated Banana Plugs



Insulated banana plugs with unbreakable plastic handles. All are machined of the best materials, and inspected. Have sufficient spring tension to assure good holding power and minimum contact resistance. Nickel-plated. **Average Shipping Weight:** 2 oz.

Stock No.	Mfr.'s Type	Color	Description	PER PKG./5			
				1-9	10-24	25-99	100-499
920-0204	204-102	Red	4-leaved beryllium copper nickel-plated spring. Lead wire conn. with set screw thru handle.	11.46	8.92	7.99	7.20
920-0216	204-107	Yellow		11.46	8.92	7.99	7.20
920-0203	204-103	Black		11.46	8.92	7.99	7.20
920-0185	211-102	Red	4-leaved beryllium copper nickel-plated spring. Wire solders to plug or stud; or stud locks wire for solderless connection.	10.76	8.37	7.50	6.75
920-0186	211-103	Black		10.76	8.37	7.50	6.75
920-0237	211-107	Yellow		10.76	8.37	7.50	6.75
920-0233	211-104	Green		10.76	8.37	7.50	6.75
920-0232	211-105	Blue		10.76	8.37	7.50	6.75
920-0238	211-101	White		10.76	8.37	7.50	6.75
920-0569	455-102	Red	4-leaf beryllium copper nylon. Solderless.	11.05	8.52	7.65	6.89
920-0570	455-103	Black		11.05	8.52	7.65	6.89
920-0360	295-102	Red	4-leaved nickel-plated phos. bronze spring. Threaded space for solderless conn.	11.74	9.14	8.18	6.54
920-0361	295-103	Black		11.40	8.87	7.94	6.35
920-0525	426-102	Red	4-leaf, phos. bronze spring nylon. Short.	8.97	6.95	6.24	4.98
920-0528	426-103	Black		9.24	7.16	6.43	5.13

Insulated Banana Plugs

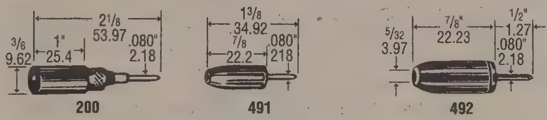


Right-angle plugs with plastic handles. Half shells assemble with one screw and nut. Lead wire solders to body.

Stock No.	Mfr.'s Type	Color	Description	EACH			
				1-9	10-24	25-99	100-499
920-0307	255-103	Black	4-leaved beryllium copper springs, *Banana.	2.21	1.67	1.49	1.35
920-0308	255-102	Red	4-leaved beryllium copper springs, *Banana.	2.21	1.67	1.49	1.35

*Nickel-plated. **Shipping Weight:** 2 oz.

Insulated Phone Tip Plugs



Feature nickel-plated brass construction for heavier current applications. Handles are molded phenolic. Types 491 and 492 molded nylon. 12 amps AC. **Average Shipping Weight:** 2 oz.

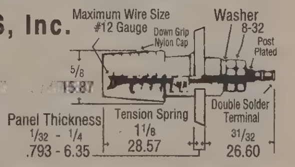
Stock No.	Mfr.'s Type	Color	Description	PER PK./5		
				1-9	10-24	25-99
920-8000	200-102	Red	Solderless; wire tightens securely under knurled collar	7.81	6.12	5.47
920-8001	200-103	Black		7.79	6.10	5.46
920-0578	491-102	Red	Short, tip plug (7" handle). Inserts flush, no metal exposed; molded nylon handle; solder type.	5.31	4.12	3.70
920-0577	491-103	Black		5.31	4.12	3.70
920-0590	491-107	Yellow		5.31	4.12	3.70
920-0580	491-104	Green		5.31	4.12	3.70
920-0571	492-102	Red	Solderless; inserts flush; no metal exposed; molded nylon handle	5.25	4.13	3.52
920-0572	492-103	Black		5.25	4.13	3.52
920-0280	235-103	Black	Maximum wire insulation, 9/64". Phone tip.	2.27*	1.74*	1.54*
920-0281	235-102	Red		2.27*	1.74*	1.54*

*Sold EACH.

Type AL2000 Quick Connect/Disconnect Binding Posts

SERVING THE ELECTRONICS INDUSTRY A C I

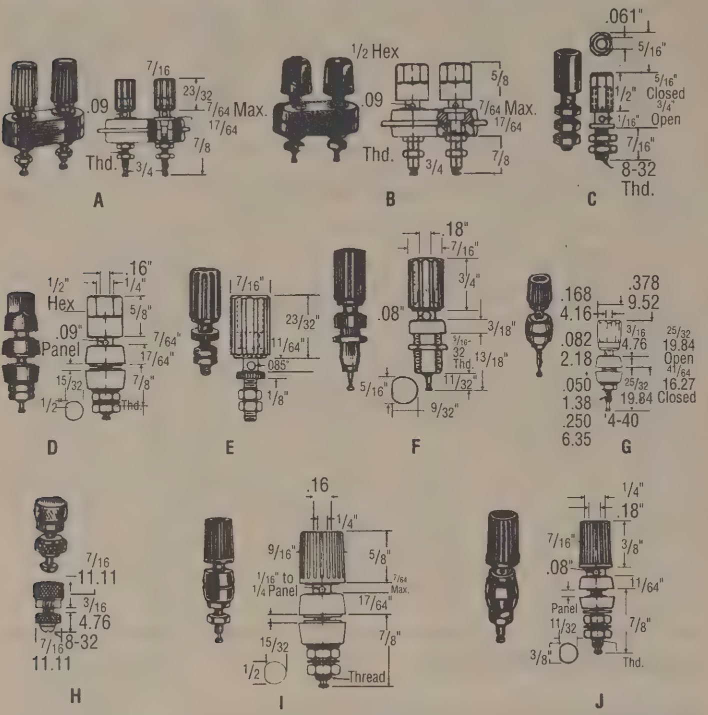
ADMIRAL CONTROLS, Inc.


Maximum Wire Size #12 Gauge
Down Grip Nylon Cap
Washer
8-32
Post Plated
5/8 15.87
Panel Thickness 1/32 - 1/4 .793 - 6.35
Tension Spring 11/8 28.57
Double Solder Terminal
31/32 26.60

Accepts variety of wire terminals, test prods, spades or plugs. Ideal for confined areas. Eliminates needle-eye threading and wrap-around spreading common to conventional binding posts. **Capacity:** 30 amps, 1000 Vrms.

721-0031. AL2000B. Black. **1-99**............**PER PK./5 7.75**
300-499............**PER PK./5 4.65**
721-0032. AL2000R. Red. **1-99**............**PER PK./5 7.75**
300-499............**PER PK./5 4.65**
100-299............**PER PK./5 5.10**
500-Up............**PER PK./5 4.40**
100-299............**PER PK./5 5.10**
500-Up............**PER PK./5 4.40**

Single And Dual Binding Posts



Type 137. Head: Captive, octagonal, nickel-plated. **Body:** Brass, nickel-plated. **Accepts:** Phone tip, spade lug, banana plug, alligator clip or wire strand. Can be completely insulated from panel. With two hex nuts. **Type 1482. Head:** Captive, molded lexan. **Body:** Brass, nickel-plated. **Accepts:** Phone tip plug, spade lug, banana plug, alligator clip or wire strand. Can be completely insulated from panel. With 2 hex nuts. **Type 1517. Head:** Captive, molded lexan with brass, gold-plated insert. **Body:** Brass, gold-plated. **Washer:** Molded lexan, with brass, gold-plated inserts. **Accepts:** phone tip plug, spade lug, banana plug, alligator clip or wire strand. Molded washers completely insulate post from panel. Miniature washers and narrow fluted head require min. panel space. Mounts in 3/8" round or "D" hole in panel as indicated. Wrap-around solder terminal on stud for direct connection. **Type 899.** Standard multiple connection insulated hex head binding post, mounts in 1/2" round or D hole, includes all mounting hardware. **Type 3015.** Miniature multiple connection insulated binding post, mounts in 1/4" round or D hole, includes all mounting hardware. **Type 110.** All metal binding post, brass nickel-plated, mounts in #8 clearance hole, includes all mounting hardware. **Type 459.** Standard multiple connection all insulated fluted head binding post, mounts in 1/2" round or D hole, includes all mounting hardware. Accepts standard banana plugs, .080 phone tips, wire, alligator clips and spade lug. Accepts miniature banana plugs, .080 phone tips, wire, alligator clips and spade lug. 1 K volts 60 cycle AC continuous working voltage, when insulated from panel as recommended. **Capacitance:** 5.0 mmfd. (Type 1517, 3.0 mmfd).

Dual Binding Posts Type 1477 and 269. Standard dual insulated binding posts, mounts in two 1/2" holes on 3/4" centers, panels up to 1/4" thick, includes all mounting hardware.

Dual Binding Posts

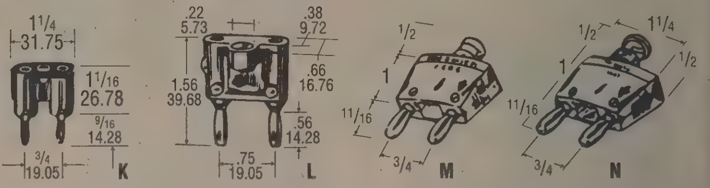
Stock No.	Mfr.'s Type	Fig.	Color	EACH			
				1-9	10-24	25-99	100-499
920-1477	1477BB*	A	Black/black	7.33	5.85	5.22	4.18
920-1478	1477RB	A	Red/black	7.33	5.85	5.22	4.18
920-0325	269BB**	B	Black/black	6.69	5.34	4.76	3.82
920-0326	269RB**	B	Red/black	6.69	5.34	4.76	3.82

Single Binding Posts

Stock No.	Mfr.'s Type	Fig.	Color	1-9	10-24	25-99	100-499
920-0137	137†•	C	Metal	13.32	10.63	9.48	8.54
920-0130	257	D	Red	5.34	4.28	3.81	3.43
920-0131	257	D	Black	5.34	4.28	3.81	3.43
920-0312	899	D	Black	3.56	2.79	2.46	2.22
920-9061	899	D	Green	3.56	2.79	2.46	2.22
920-9062	899	D	White	3.56	2.79	2.46	2.22
920-9063	899	D	Red	4.02	3.14	2.77	2.50
920-1482	1482†	E	Red	3.17	2.48	2.19	1.98
920-1483	1482†	E	Black	3.17	2.48	2.19	1.98
920-1460	1463	F	Red	4.17	3.26	2.89	2.61
920-1461	1463	F	Black	4.18	3.27	2.88	2.60
920-2814	3015‡	G	Red	5.36	4.28	3.82	2.54
920-2815	3015‡	G	Black	5.36	4.28	3.82	2.54
920-0110	110•	H	Metal	11.92	9.51	8.48	7.64
920-0563	459	I	Red	5.03	3.95	3.49	3.15
920-0561	459	I	Black	5.03	3.95	3.49	3.15
920-1275	1275	J	Red	4.79	3.75	3.31	2.98
920-1276	1275	J	Black	4.79	3.75	3.31	2.98
920-1517	1517†	J	Red	5.23	4.17	3.72	3.35
920-1518	1517†	J	Black	5.23	4.17	3.72	3.35

***Capacitance:** 2.0 mmfd between conductors, 3.0 mmfd top panel. **Rated at 15 amps AC for 10° temp. rise continuous duty, 2 kV volts cycle AC continuous working voltage. †Rated at 15 amps AC for 10° temp. rise continuous duty. ‡Rated at 5 amps AC for 10° temp. rise continuous duty, 2 kV 60 cycle AC continuous working voltage. •Sold in packages of 5.

Dual Banana Plug Adapters

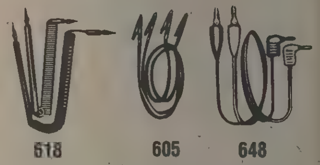


All are molded standard dual banana plugs on 3/4" centers. **Type 210.** Takes up to #12 wire; stackable; molded polystyrene body. **Type 1675.** Set screws to secure leads to conductor. **Type 1676.** Turret terminals for solder connection of component leads. **Type 1686.** To BNC female. **Type 1687**. To BNC male.

Stock No.	Mfr.'s Type	Fig.	Color	EACH			
				1-9	10-24	25-99	100-499
920-0230	210*	K	Black	6.42	4.98	4.46	3.43
920-9070	1675*	L	Black	4.73	4.24	3.84	3.18
920-9071	1675*	L	Red	4.73	4.24	3.84	3.18
920-9078	1676AA	L	Black	5.12	4.68	4.29	3.58
920-9085	1686	M	Black	8.94	8.18	7.46	6.38
920-9086	1687	N	Black	12.58	11.49	10.51	8.98

*Rated at 15 amps AC for 10° temp. rise continuous duty, 5 kV

Test Leads and Test Prods



No. 20 rubber-covered wire 50" long (unless otherwise stated); 5000 V test. Handles and plugs are molded butyrated per MIL-L-P349A, Type 3, Class MS; fiber per MIL-F-1148A, Grade CH; molded thermosetting plastic per MIL-P-14CFG.

Type 618 Solderless Retractile Test Leads

12" to 6' coil. Nickel-plated brass tips. Butyrate handle. 4000 volts. **Nominal O.D.:** .165".

920-0618. 1-9	**PER PAIR 28.33**
10-24	**PER PAIR 25.89**
25-99	**PER PAIR 23.68**

Alligator Clip Test Leads

Cadmium-plated steel clips. Type 717 has midget clips.

Stock No.	Mfr.'s Type	Length Inches	PER PAIR		
			1-9	10-24	25-99
920-0605	605*	24	3.81	3.41	3.09
920-0657	657†	24	4.46	4.01	3.62
920-0717	717†	18	4.88	4.39	3.96

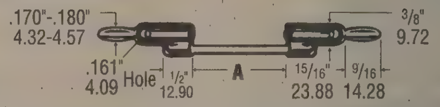
*Standard steel clips. †Have vinyl plastic boots.

Crocodile Clip Test Leads with Boots

Clips are cadmium-plated steel. Thermosetting elbows. Vinyl boots.

Stock No.	Mfr.'s Type	Meter End	PER PAIR		
			1-9	10-24	25-99
920-0648	648	Banana plugs	7.80	7.13	6.52

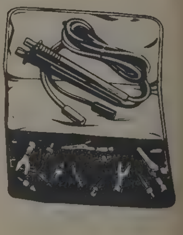
Stacking Patch Cords



Type 1510. In-line and cross patch stacking banana plug cords. Standard ber. copper nickel plated banana plugs each end, #18 AWG 10 kV PVC 10 kV wire.

Stock No.	Mfr.'s Type	Color	Length Inches	PER PK./5		
				1-9	10-24	25-99
920-9042	1510-12	Black	12	20.20	18.56	16.94
920-9043	1510-12	Red	12	20.24	18.56	16.94
920-9044	1510-24	Black	24	21.62	19.80	18.03
920-9045	1510-24	Red	24	21.62	19.80	18.03

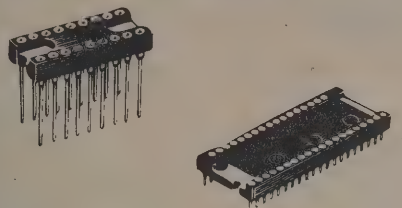
Model 699 Universal Test Lead Kit



Universal Test Lead Kit offers 50 leads in one for complete interchangeability. Retrofits to most existing equipment. **Kit Includes:** prod (made of KJB-Type ABS plastic 94V-0), 4 phone tips, 2 needle tips, 2 alligator clips, 2 spade lugs, 2 banana plugs, 18 PVC-covered wire (48" nom. overall length), and 1 red and 1 black lead. Prod features ribbed finger grip and non-slip finger guard.

920-0699. 1-9	**EACH 22.14**
10-24	**EACH 20.23**
25-99	**EACH 18.51**
100-Up	**EACH 15.81**

ICA Series Screw Machine Sockets



Feature four finger beryllium copper contacts with high retention design. Low profile body with mounting holes. "S" in Mfr.'s Type number indicates solder dip sockets. "WB" in Mfr.'s Type number indicates 3-level wire wrap. **Body Material:** Glass-filled black polyester. **PCB Hole:** .035" ±.002". IC lead and socket leads are coincident. **Plating:** TG30 has 30 µ inch minimum gold on contact area. 200 µ inch minimum tin in the terminal area. TG30 includes an underplate of 50 µ inch minimum nickel. **Temperature Range:** –65°C to +125°C.

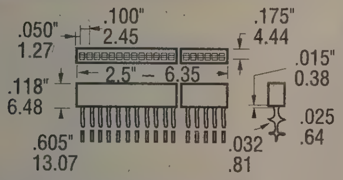
3-Level Wire Wrap

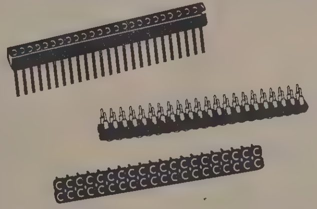
Stock No.	Mfr.'s Type	No. of Contacts	Length		Width		EACH		
			In.	mm	In.	mm	1-99	100-499	500-999
906-5150	ICA-083-WB-TG30	8	0.395	10.03	0.395	10.03	**.83**	**.75**	**.64**
906-5155	ICA-143-WB-TG30	14	0.695	17.65	0.395	10.03	**1.22**	**1.11**	**.94**
906-5160	ICA-163-WB-TG30	16	0.795	20.19	0.395	10.03	**1.32**	**1.20**	**1.02**
906-5165	ICA-203-WB-TG30	20	0.995	25.27	0.395	10.03	**1.74**	**1.54**	**1.37**
906-5170	ICA-246-WB-TG30	24	1.195	30.35	0.695	17.65	**1.99**	**1.81**	**1.53**
906-5185	ICA-286-WB-TG30	28	1.395	35.43	0.695	17.65	**2.43**	**2.21**	**1.87**
906-5190	ICA-406-WB-TG30	40	1.995	50.67	0.695	17.65	**3.80**	**3.45**	**2.92**

Solder DIP

906-5000	ICA-083-S-TG30	8	0.395	10.03	0.395	10.03	**.66**	**.51**	**.45**
906-5005	ICA-143-S-TG30	14	0.695	17.65	0.395	10.03	**.72**	**.56**	**.50**
906-5010	ICA-163-S-TG30	16	0.795	20.19	0.395	10.03	**.82**	**.64**	**.57**
906-5015	ICA-183-S-TG30	18	0.895	22.73	0.395	10.03	**.92**	**.72**	**.64**
906-5020	ICA-203-S-TG30	20	0.995	25.27	0.395	10.03	**1.02**	**.80**	**.71**
906-5035	ICA-246-S-TG30	24	1.195	30.35	0.695	17.65	**1.23**	**.96**	**.86**
906-5040	ICA-286-S-TG30	28	1.395	35.43	0.695	17.65	**1.43**	**1.12**	**1.00**
906-5045	ICA-406-S-TG30	40	1.995	50.67	0.695	17.65	**2.05**	**1.61**	**1.43**
906-6005	ICA-083-S-TT	8	0.395	10.03	0.395	10.03	**.51**	**.39**	**.35**
906-6009	ICA-143-S-TT	14	0.695	17.65	0.395	10.03	**.55**	**.43**	**.38**
906-6015	ICA-163-S-TT	16	0.795	20.19	0.395	10.03	**.63**	**.49**	**.44**
906-6025	ICA-203-S-TT	20	0.995	25.27	0.395	10.03	**.79**	**.63**	**.55**
906-6035	ICA-243-S-TT	24	1.195	30.35	0.695	17.65	**.95**	**.74**	**.66**
906-6040	ICA-286-S-TT	28	1.395	35.43	0.695	17.65	**1.11**	**.86**	**.77**
906-6050	ICA-406-S-TT	40	1.995	50.67	0.695	17.65	**1.58**	**1.24**	**1.11**

SBE Series Strip Socket

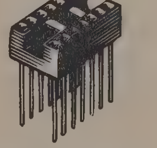




SBE Series. Solder dip strip socket. Accepts .015" dia. pins. **Body Material:** Black polyester, glass-filled. **Contact Material:** Phosphor bronze. **Contact Finish:** Gold. **Mounting Instructions. PCB Hole:** .035° ±.002" (0.89 ±0.05 mm). Socket is offset .026" (.66 mm) from IC leads. **Temperature Range:** –65°C to + 125°C. Accepts .016"-.021" dia. pins. **S Solder Tail:** .040" ±.022". **WB Wire Wrap Tail:** .055" ±002". **Flammability:** UL 94V-0. **Temperature Range:** –65°C to +105C.

Stock No.	Mfr.'s Type	No. of Contacts	EACH		
			1-99	100-499	500-999
906-6511	SBE-640-WB-TG	64 Single	**8.79**	**7.99**	**6.76**
906-6516	SBE-640-S-TG	64 Single	**3.29**	**2.99**	**2.53**

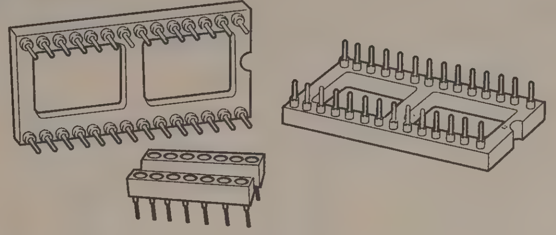
ICN Series Wire Wrap Sockets



Types with WB in Mfr.'s Type number are wire wrap sockets and include terminal barbs which allow self-lock into PC board, rugged socket body design and RN side wipe contact design. **PCB Hole:** .037 ±.002" (.94 ±.05 mm). Socket leads are offset .018" (.46 mm) from IC leads. Suffix "T" denotes tin contact finish. **Temperature Range:** –65°C to +125°C.

Stock No.	Mfr.'s Type	No. of Contacts	Length		Width		EACH		
			In.	mm	In.	mm	1-99	100-499	500-999
906-5401	ICN-083-WB-T	8	0.395	10.03	0.440	11.18	**.62**	**.47**	**.43**
906-5406	ICN-143-WB-T	14	0.695	17.65	0.440	11.18	**.80**	**.61**	**.56**
906-5411	ICN-163-WB-T	16	0.795	20.19	0.440	11.18	**.92**	**.70**	**.64**
906-5416	ICN-183-WB-T	18	0.895	22.73	0.440	11.18	**1.04**	**.79**	**.72**
906-5421	ICN-203-WB-T	20	0.995	25.27	0.440	11.18	**1.16**	**.88**	**.81**
905-5431	ICN-246-WB-T	24	1.195	30.35	0.740	18.80	**1.39**	**1.05**	**.97**
906-5436	ICN-286-WB-T	28	1.395	35.43	0.740	18.80	**1.62**	**1.23**	**1.13**
906-5441	ICN-406-WB-T	40	1.995	50.67	0.740	18.80	**2.31**	**1.76**	**1.62**

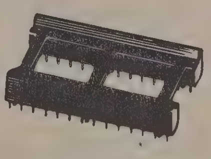
ICE Series Open Body Screw Machine Sockets *— NEW —*



Features four finger beryllium copper contact that accepts short IC leader. Open body provides connection cooling. Solder DIP sockets. **Body Material:** Black polyester, glass filled. **Shell:** Half hard brass. **Mounting Information:** .030" + .002" PCB hole. **Contact Plating:** TG — 10 µ inch minimum gold on contact area, 200 µ inch minimum tin/lead on terminal area; TG30 — 30 µ inch minimum gold on contact area, 200 µ inch minimum tin/lead on terminal area. Both include 50 µ inch minimum nickel underplate. **Temperature Range:** –65°C to +125°C.

Stock No.	Mfr.'s Type	No. of Contacts	Length		Width		EACH		
			In.	mm	In.	mm	1-99	100-499	500-999
906-9989	ICE-063-S-TG	6	0.295	7.49	0.395	10.03	**.49**	**.43**	**.36**
906-8688	ICE-063-S-TG30	6	0.295	7.49	0.395	10.03	**.53**	**.46**	**.39**
906-5905	ICE-083-S-TG	8	0.395	10.03	0.395	10.03	**.49**	**.43**	**.36**
906-8690	ICE-083-S-TG30	8	0.395	10.03	0.395	10.03	**.53**	**.46**	**.39**
906-5910	ICE-143-S-TG	14	0.695	17.65	0.395	10.03	**.53**	**.47**	**.39**
906-8692	ICE-143-S-TG30	14	0.695	17.65	0.395	10.03	**.62**	**.54**	**.46**
906-5915	ICE-163-S-TG	16	0.795	20.19	0.395	10.03	**.61**	**.53**	**.45**
906-8694	ICE-163-S-TG30	16	0.795	20.19	0.395	10.03	**.70**	**.62**	**.52**
906-8696	ICE-183-S-TG	18	0.895	22.73	0.395	10.03	**.68**	**.60**	**.51**
906-8698	ICE-183-S-TG30	18	0.895	22.73	0.395	10.03	**.79**	**.69**	**.59**
906-5920	ICE-203-S-TG	20	0.995	25.27	0.395	10.03	**.76**	**.67**	**.56**
906-8700	ICE-203-S-TG30	20	0.995	25.27	0.395	10.03	**.88**	**.77**	**.65**
906-8702	ICE-243-S-TG	24	1.195	30.35	0.395	10.03	**.91**	**.80**	**.67**
906-8704	ICE-243-S-TG30	24	1.195	30.35	0.395	10.03	**1.06**	**.92**	**.78**
906-8706	ICE-244-S-TG	24	1.195	30.35	0.495	12.57	**1.17**	**1.02**	**.86**
906-8708	ICE-244-S-TG30	24	1.195	30.35	0.495	12.57	**1.35**	**1.18**	**1.00**
906-5925	ICE-246-S-TG	24	1.195	30.35	0.695	17.65	**.91**	**.80**	**.67**
906-8710	ICE-246-S-TG30	24	1.195	30.35	0.695	17.65	**1.06**	**.92**	**.78**
906-8712	ICE-283-S-TG	28	1.395	35.43	0.395	10.03	**1.36**	**1.19**	**1.00**
906-8714	ICE-283-S-TG30	28	1.395	35.43	0.395	10.03	**1.58**	**1.38**	**1.17**
906-5930	ICE-286-S-TG	28	1.395	35.43	0.695	17.65	**1.06**	**.93**	**.79**
906-8716	ICE-286-S-TG30	28	1.395	35.43	0.695	17.65	**1.23**	**1.08**	**.91**
906-5935	ICE-326-S-TG	32	1.595	40.51	0.695	17.65	**1.21**	**1.06**	**.90**
906-8718	ICE-326-S-TG30	32	1.595	40.51	0.695	17.65	**1.40**	**1.23**	**1.04**
906-5940	ICE-406-S-TG	40	1.995	50.67	0.695	17.65	**1.52**	**1.33**	**1.12**
906-8720	ICE-406-S-TG30	40	1.995	50.67	0.695	17.65	**1.76**	**1.54**	**1.30**
906-8722	ICE-649-S-TG	64	3.195	81.15	0.995	25.27	**3.08**	**2.70**	**2.28**
906-8724	ICE-649-S-TG30	64	3.195	81.15	0.995	25.27	**3.56**	**3.12**	**2.63**

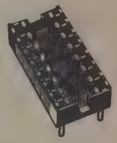
ICN Series Solder DIP Production Sockets



The ICN Series features the RN dual leaf side wipe contact design which increases the contact area by 100% over edge-bearing type contacts. The S4 series configuration offers the E-Z entry feature to help guide leads on large LSI devices into the contact area. The contacts are protected from damage by closed entry mold design. Contacts are designed to accept leads up to .015 inch thick. The S4 series has rib type body structure which improves convection cooling. Are supplied with anti-wicking wafers and standoffs for easy flux removal. **Body Material:** Black polyester, glass-filled. **Contact Material:** Phosphor bronze. **Contact Finish:** Suffix G — 10 µ inch (.254 m) min. gold over 50 µ inch (1.27 µm) min. nickel; Suffix T — 30 µ inch (.762 µm) min. hot tin dip and wipe. **Temperature Range:** –65°C to +125°C. **Flammability:** UL 94V-0. **PCB Hole:** .035" ±.002" (0.89 ±0.05 mm). Socket Leads are offset .026" (0.66 mm) from IC leads.

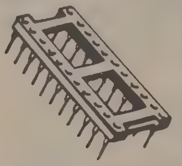
Stock No.	Mfr.'s Type	No. of Contacts	Length		Width		EACH		
			In.	mm	In.	mm	1-99	100-499	500-999
906-5300	ICN-063-S3-G	6	0.295	7.49	0.405	10.28	**.66**	**.49**	**.45**
906-5305	ICN-083-S3-G	8	0.395	10.03	0.405	10.28	**.61**	**.46**	**.42**
906-5310	ICN-143-S3-G	14	0.695	17.65	0.405	10.28	**.84**	**.63**	**.58**
906-5315	ICN-163-S3-G	16	0.795	20.19	0.405	10.28	**.94**	**.71**	**.65**
906-5325	ICN-203-S3-G	20	0.995	25.27	0.405	10.28	**1.23**	**.93**	**.85**
906-5335	ICN-246-S4-G	24	1.195	30.35	0.775	19.68	**1.37**	**1.04**	**.95**
906-5340	ICN-286-S4-G	28	1.395	35.43	0.775	19.68	**1.61**	**1.22**	**1.12**
906-5345	ICN-406-S4-G	40	1.995	50.67	0.775	19.68	**2.27**	**1.72**	**1.59**
906-5307	ICN-083-S3-T	8	0.395	10.03	0.405	10.28	**.34**	**.26**	**.24**
906-5313	ICN-143-S3-T	14	0.695	17.65	0.405	10.28	**.38**	**.28**	**.26**
906-5317	ICN-163-S3-T	16	0.795	20.19	0.405	10.28	**.42**	**.31**	**.29**
906-5323	ICN-183-S3-T	18	0.895	22.73	0.405	10.28	**.47**	**.36**	**.33**
906-5327	ICN-203-S3-T	20	0.995	25.27	0.405	10.28	**.53**	**.40**	**.37**
906-5337	ICN-246-S4-T	24	1.195	30.35	0.775	19.68	**.65**	**.49**	**.45**
906-5347	ICN-406-S4-T	40	1.995	50.67	0.775	19.68	**.98**	**.74**	**.68**

ICB Series Solder DIP Production Sockets



Dual contact, low profile socket allows dense board-to-board spacing. Features closed bottom body design and self-locking tail. Dual wiping contact design offers high compression for gas-tight reliability. Beryllium copper contacts. **Body:** Black polyester, glass-filled. **Contact Finish:** 200 µ inch min. tin/lead in contact area; 100 µ inch tin/lead on terminal area. **Terminal Area:** 100 µ inch min. electro tin over 50 µ inch min. nickel. **Temperature Range Rating:** –65°C to +125°C. **PCB Hole Mounting:** .040° ±.002" 3 dia.

Stock No.	Mfr.'s Type	No. of Contacts	Length		Width		EACH		
			In.	mm	In.	mm	1-99	100-499	500-999
906-8670	ICB-083-S8-T	8	0.395	10.03	0.400	10.16	**.21**	**.19**	**.17**
906-8672	ICB-143-S8-T	14	0.695	17.65	0.400	10.16	**.22**	**.20**	**.18**
906-8674	ICB-163-S8-T	16	0.795	20.19	0.400	10.16	**.26**	**.23**	**.21**
906-8676	ICB-203-S8-T	20	0.995	25.27	0.400	10.16	**.32**	**.29**	**.26**
906-8678	ICB-243-S8-T	24	1.195	30.35	0.400	10.16	**.38**	**.35**	**.31**
906-8680	ICB-246-S8-T	24	1.195	30.35	0.700	17.78	**.38**	**.35**	**.31**
906-8682	ICB-286-S8-T	28	1.395	35.43	0.700	17.78	**.45**	**.40**	**.37**
906-8684	ICB-406-S8-T	40	1.995	50.67	0.700	17.78	**.64**	**.58**	**.52**
906-8686	ICB-649-S8-T	64	3.195	81.15	0.900	22.86	**3.08**	**2.77**	**2.53**

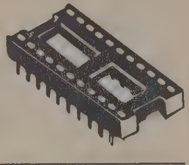


ICE Series Open Body Screw Machine Sockets

Body: Black polyester. **Contacts:** Beryllium copper. **Shell:** Hard brass. **Flammability Rating:** UL94V-0. **Mounting Information. PCB Hole:** .035 ±.002". **Location:** IC lead and socket leads are coincident. **Current Rating:** 1 ampere. **Plating:** Minimum 10 µ" minimum gold contact area. 200 µ" minimum tin/lead on terminal area.

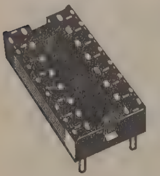
Stock No.	Mfr.'s Type	No. of Contacts	Length		Width		EACH		
			In.	mm	In.	mm	1-99	100-499	500-999
906-5905	ICE-083-S-TG	8	0.395	10.03	0.395	10.03	**.57**	**.44**	**.39**
906-5910	ICE-143-S-TG	14	0.695	17.65	0.395	10.03	**.62**	**.48**	**.43**
906-5915	ICE-163-S-TG	16	0.795	20.19	0.395	10.03	**.71**	**.55**	**.49**
906-5920	ICE-203-S-TG	20	0.995	25.27	0.395	10.03	**.89**	**.70**	**.62**
906-5925	ICE-246-S-TG	24	1.195	30.35	0.695	17.65	**1.06**	**.83**	**.74**
906-5930	ICE-286-S-TG	28	1.395	35.43	0.695	17.65	**1.24**	**.97**	**.86**
906-5935	ICE-326-S-TG	32	1.595	40.51	0.695	17.65	**1.40**	**1.14**	**1.00**
906-5940	ICE-406-S-TG	40	1.995	50.67	0.695	17.65	**1.77**	**1.39**	**1.24**
906-5945	ICE-426-S-TG	42	2.095	53.21	0.695	17.65	**2.04**	**1.82**	**1.68**
906-5950	ICE-486-S-TG	48	2.395	60.83	0.695	17.65	**2.34**	**2.12**	**1.93**

ICL Series Solder Dip Production Sockets



Designed primarily for high volume applications. Low profile (.150") allows very dense board-to-board spacing; the socket is stackable side-to-side and end-to-end to optimize board surface usage. The body material is glass-filled black polyester. **Contacts:** Beryllium copper. Suffix "T" denotes tin contact finish, "TG" denotes gold over nickel contact finish. **Terminal Range:** –65°C to +125°C. **PCB Hole:** .031° ±.002" (.79 ±.05 mm). IC leads and socket leads are coincident. **Temperature Range:** –65°C to +125°C.

Stock No.	Mfr.'s Type	No. of Contacts	Length		Width		EACH		
			In.	mm	In.	mm	1-99	100-499	500-999
906-5200	ICL-083-S6-TG	8	0.395	10.03	0.395	10.03	**.40**	**.30**	**.27**
906-5205	ICL-143-S6-TG	14	0.695	17.65	0.395	10.03	**.44**	**.33**	**.30**
906-5210	ICL-163-S6-TG	16	0.795	20.19	0.395	10.03	**.50**	**.38**	**.35**
906-5215	ICL-183-S6-TG	18	0.895	22.73	0.300	7.62	**.56**	**.42**	**.39**
906-5220	ICL-203-S6-TG	20	0.995	25.27	0.395	10.03	**.63**	**.47**	**.43**
906-5230	ICL-246-S7-TG	24	1.195	30.35	0.695	17.65	**.75**	**.57**	**.52**
906-5235	ICL-286-S7-TG	28	1.395	35.43	0.695	17.65	**.88**	**.66**	**.61**
906-5240	ICL-406-S7-TG	40	1.995	50.67	0.695	17.65	**1.25**	**.95**	**.87**



Dual Wipe Sockets

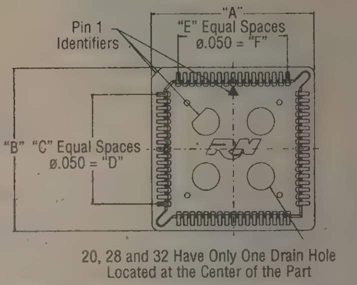
— NEW —

CICO version offers an economical alternative. **Body:** Black polyester, glass-filled. **Contacts:** Phosphor bronze. **Contact Plating:** 80 µ inch min. tin/lead over nickel flash. **PCB Hole:** .040" ±.002". IC leads and socket leads are coincident. **Body Height:** .201". S8 has a self-locking barb. S8A is for auto insert and has a straight lead.

Stock No.	Mfr.'s Type	No. of Contacts	Length		Width		EACH		
			In.	mm	In.	mm	1-99	100-499	500-999
906-8600	CICO-063-S8A-T	6	0.295	7.49	0.400	10.16	**.07**	**.06**	**.05**
906-8602	CICO-083-S8A-T	8	0.395	10.03	0.400	10.16	**.07**	**.06**	**.05**
906-8604	CICO-083-S8-T	8	0.395	10.03	0.400	10.16	**.07**	**.06**	**.05**
906-8606	CICO-143-S8A-T	14	0.695	17.65	0.400	10.16	**.07**	**.06**	**.05**
906-8608	CICO-143-S8-T	14	0.695	17.65	0.400	10.16	**.07**	**.06**	**.05**
906-8610	CICO-163-S8A-T	16	0.795	20.19	0.400	10.16	**.07**	**.06**	**.05**
906-8612	CICO-163-S8-T	16	0.795	20.19	0.400	10.16	**.07**	**.06**	**.05**
906-8618	CICO-203-S8A-T	20	0.995	25.27	0.400	10.16	**.09**	**.08**	**.07**
906-8620	CICO-203-S8-T	20	0.995	25.27	0.400	10.16	**.09**	**.08**	**.07**
906-8626	CICO-243-S8A-T	24	1.195	30.35	0.400	10.16	**.11**	**.10**	**.09**
906-8628	CICO-243-S8-T	24	1.195	30.35	0.400	10.16	**.11**	**.10**	**.09**
906-8630	CICO-246-S8A-T	24	1.195	30.35	0.700	17.78	**.11**	**.10**	**.09**
906-8632	CICO-246-S8-T	24	1.195	30.35	0.700	17.78	**.11**	**.10**	**.09**
906-8634	CICO-283-S8A-T	28	1.395	35.43	0.400	10.16	**.12**	**.11**	**.10**
906-8636	CICO-283-S8-T	28	1.395	35.43	0.400	10.16	**.12**	**.11**	**.10**
906-8638	CICO-286-S8A-T	28	1.395	35.43	0.700	17.78	**.12**	**.11**	**.10**
906-8640	CICO-286-S8-T	28	1.395	35.43	0.700	17.78	**.12**	**.11**	**.10**
906-8646	CICO-406-S8A-T	40	1.995	50.67	0.700	17.78	**.18**	**.16**	**.14**
906-8648	CICO-406-S8-T	40	1.995	50.67	0.700	17.78	**.18**	**.16**	**.14**

Plastic Leaded Chip Carrier Sockets

— NEW —



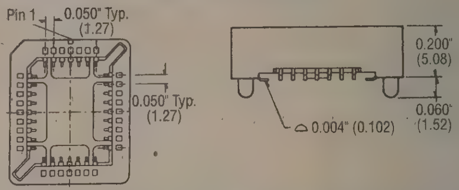
20, 28 and 32 Have Only One Drain Hole Located at the Center of the Part

Housing: High temperature thermoplastic. **Contacts:** Copper alloy. **Plating:** 100 µ inch min. tin/lead on contact area. **Underplating:** 50 µ inch min. nickel. **Contact Resistance:** 20 milliohms. **Temperature Rating:** –55°C to +105°C for small package design. Thru-hole mount.

Stock No.	Mfr.'s Type	No. of Leads	Dimensions			EACH		
			A/B	C/E	D/F	1-99	100-499	500-999
906-8658	PLCCE-020-S1-TT	20	0.590	4	0.200	**1.42**	**1.24**	**1.05**
906-8660	PLCCE-028-S1-TT	28	0.690	6	0.300	**1.48**	**1.30**	**1.10**
906-8662	PLCCE-032-S1-TT	32	0.690*	6†	0.300‡	**1.56**	**1.37**	**1.15**
906-8664	PLCCE-044-S1-TT	44	0.890	10	0.500	**1.60**	**1.40**	**1.18**
906-8666	PLCCE-052-S1-TT	52	0.990	12	0.600	**1.98**	**1.73**	**1.47**
906-8668	PLCCE-068-S1-TT	68	1.190	16	0.800	**2.18**	**1.91**	**1.61**
906-6551	PLCCE-084-S1-TT	84	1.390	20	1.000	**2.46**	**2.15**	**1.82**

*B = .790. †E = 8. ‡F = .400.

PLCC-SMT Series Surface Mount Plastic Leaded Chip Carrier Sockets



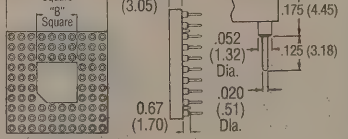
High-density, low profile 0.200" (5.08) maximum height. Open frame design allows for visual inspection of solder joints. Footprint matches device. Phosphor bronze contacts with tin-over-nickel plating. High-temperature, black polyphenylene sulfide insulator, rated UL94V-0, is compatible with IR reflow and wave soldering. **Insertion Force:** 180 g/pin maximum. **Withdrawal Force:** 28.35 g/pin minimum. **Contact Resistance:** 20 mΩ. **Current Rating:** 1 A. **Temperature Range:** –55°C to +105°C. For automatic assembly. Available with or without location posts.

Stock No.	Mfr.'s Type	Contacts	Configuration	EACH		
				1-24	25-99	100-499
906-6600	PLCC-20-SMTL-TT	20	0.600" (15.24) Square	**1.87**	**1.68**	**1.52**
906-6605	PLCC-28-SMTL-TT	28	0.700" (17.78) Square	**2.23**	**2.00**	**1.80**
906-6610	PLCC-32-SMTL-TT	32	0.700" (17.78) × 0.800" (20.32) Rectangular	**2.36**	**2.12**	**1.91**
906-6615	PLCC-44-SMTL-TT	44	0.900" (22.86) Square	**2.91**	**2.62**	**2.36**
906-6620	PLCC-52-SMTL-TT	52	1.000" (25.40) Square	**3.10**	**2.79**	**2.51**
906-6625	PLCC-68-SMTL-TT	68	1.200" (30.48) Square	**3.65**	**3.29**	**2.96**
906-6630	PLCC-84-SMTL-TT	84	1.400" (35.56) Square	**4.27**	**3.84**	**2.83**

Surface Mount PLCC Sockets without Location Posts

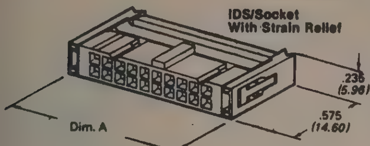
Stock No.	Mfr.'s Type	Contacts	Configuration	1-24	25-99	100-499
906-6560	PLCC-20-SMT-TT	20	0.600" (15.24) Square	**1.70**	**1.49**	**1.21**
906-6565	PLCC-28-SMT-TT	28	0.700" (17.78) Square	**2.02**	**1.77**	**1.44**
906-6570	PLCC-32-SMT-TT	32	0.700" (17.78) × 0.800" (20.32) Rectangular	**2.14**	**1.87**	**1.53**
906-6575	PLCC-44-SMT-TT	44	0.900" (22.86) Square	**2.64**	**2.31**	**2.00**
906-6580	PLCC-52-SMT-TT	52	1.000" (25.40) Square	**2.82**	**2.47**	**2.01**
906-6585	PLCC-68-SMT-TT	68	1.200" (30.48) Square	**3.32**	**2.91**	**2.37**
906-6590	PLCC-84-SMT-TT	84	1.400" (35.56) Square	**3.88**	**3.40**	**2.51**

Pin Grid Array Sockets



6-point contact provides consistent insertion/withdrawal and contact resistance. Low insertion force (2.5 ounces) for easy installation and removal. Beryllium copper contacts finished with 10 micro-inch gold on contact area and 200 µ" tin/lead on terminal area over 50 µ" nickel underplate. Precision machined half hard brass shell that protects against flux contamination and solder wicking. Standard 0.125" long solder tall termination. **Current Rating:** 1 A. **Temperature Range:** –65°C to +125°C. Black polyester, glass-filled body. **Rated:** UL94V-0.

Stock No.	Mfr.'s Type	Pins	Grid	A Inches	B Inches	EACH		
						1-24	25-99	100-499
906-7120	PGA-068BH3-S-TG	68	10 × 10	1.000	0.400	**3.59**	**3.23**	**2.91**
906-7122	PGA-068CH3-S-TG	68	11 × 11	1.100	0.500	**3.59**	**3.23**	**2.91**
906-7124	PGA-084BH3-S-TG	84	10 × 10	1.000	0.400	**4.45**	**4.00**	**3.60**
906-7126	PGA-088CH3-S-TG	88	13 × 13	1.300	0.500	**4.64**	**4.18**	**3.76**
906-7128	PGA-101AH3-S-TG	101	13 × 13	1.300	0.500	**5.32**	**4.80**	**4.31**
906-7130	PGA-114MH3-S-TG	114	13 × 13	1.300	0.500	**6.03**	**5.43**	**4.88**
906-7132	PGA-121AH3-S-TG	121	13 × 13	1.300	0.500	**6.38**	**5.74**	**5.17**
906-7134	PGA-128AH3-S-TG	128	13 × 13	1.300	0.500	**6.75**	**6.08**	**5.48**
906-7136	PGA-132AH3-S-TG	132	14 × 14	1.400	0.600	**6.97**	**6.28**	**5.65**
906-7138	PGA-180CH3-S-TG	180	15 × 15	1.500	0.500	**9.51**	**8.55**	**7.70**



IDS-NPK and IDS-PK Series 0.100 × 0.100" (2.54 × 2.54) Grid IDC Socket Connectors

For quick connect/disconnect with all 0.025" post headers. IDS -NPK series sockets offer total compatibility to MIL-C-83503. IDS-PK series sockets incorporate a center polarization tab to meet DIN-41651 and BT-224. Phosphor bronze copper contacts plated with 10µ" Robex™ on contact area and 100µ" tin on terminal area over 50 micro-inch nickel. Black, glass-filled polyester body and lid, rated UL94V-O. 0.420" wide × 0.235" high. **Grid:** 0.100 × 0.100". **Temperature range:** -55°C to +105°C. Order strain reliefs separately below. UL recognized, CSA certified.

IDS-NPK Series

Stock No.	Mfr.'s Type	Contacts	Dim. "A"	EACH	
				1-99	100-499
906-3002	IDS-C10NPK-TR	10	0.680" (17.27)	.55	.50
906-3004	IDS-C14NPK-TR	14	0.880" (22.35)	.59	.54
906-3006	IDS-C16NPK-TR	16	0.980" (24.89)	.61	.56
906-3008	IDS-C20NPK-TR	20	1.180" (29.97)	.63	.58
906-3010	IDS-C26NPK-TR	26	1.480" (37.59)	.67	.61
906-3012	IDS-C34NPK-TR	34	1.880" (47.75)	.88	.80
906-3014	IDS-C40NPK-TR	40	2.180" (55.37)	1.00	.91
906-3016	IDS-C50NPK-TR	50	2.680" (68.07)	1.17	1.07
906-3018	IDS-C60NPK-TR	60	3.180" (80.77)	1.36	1.23

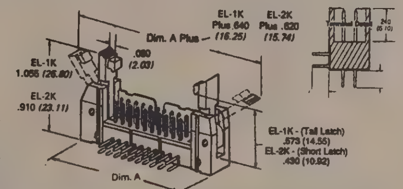
IDS-PK Series

Stock No.	Mfr.'s Type	Contacts	Dim. "A"	1-99	100-499
906-3020	IDS-C10PK-TR	10	0.680" (17.27)	.55	.50
906-3022	IDS-C14PK-TR	14	0.880" (22.35)	.59	.54
906-3024	IDS-C16PK-TR	16	0.980" (24.89)	.61	.56
906-3026	IDS-C20PK-TR	20	1.180" (29.97)	.63	.58
906-3028	IDS-C26PK-TR	26	1.480" (37.59)	.67	.61
906-3030	IDS-C34PK-TR	34	1.880" (47.75)	.88	.80
906-3032	IDS-C40PK-TR	40	2.180" (55.37)	1.00	.91
906-3034	IDS-C50PK-TR	50	2.680" (68.07)	1.17	1.07
906-3036	IDS-C60PK-TR	60	3.180" (80.77)	1.36	1.23

Black, Glass-Filled Polyester Strain Reliefs

Stock No.	Mfr.'s Type	Fit Connectors With	EACH	
			1-99	100-499
906-3040	SR-10K-IDS	10 Contacts	.25	.17
906-3042	SR-14K-IDS	14 Contacts	.25	.17
906-3044	SR-16K-IDS	16 Contacts	.25	.17
906-3046	SR-20K-IDS	20 Contacts	.25	.17
906-3048	SR-26K-IDS	26 Contacts	.25	.17
906-3050	SR-34K-IDS	34 Contacts	.25	.17
906-3052	SR-40K-IDS	40 Contacts	.25	.17
906-3054	SR-50K-IDS	50 Contacts	.25	.17
906-3056	SR-60K-IDS	60 Contacts	.25	.17

IDH-PK Series 4-Sided 0.025" (0.635) Square Post IDC Headers



Four-sided body design provides foolproof socket polarization and pin protection. Mounting configurations include headers for straight (vertical) or right angle (horizontal) applications. MIL-C83503, DIN 41651 and BT-224 compatible. Allows convenient multiple sourcing. Phosphor bronze contacts plated with 10µ" Robex™ on contact area and 100µ" tin on terminal area over 50µ" nickel. **Temperature range:** -65°C to +125°C. Housed in black, glass-filled polyester, rated UL94V-O. All solder tails are rounded to 0.028" for easy PCB insertion. UL recognized, CSA certified. Order socket ejector latches separately at right.

Straight Solder Tail

Stock No.	Mfr.'s Type	Contacts	Dim. "A"	EACH	
				1-99	100-499
906-3102	IDH-20PK-S3-TR	20	1.760" (44.70)	.96	.87
906-3104	IDH-26PK-S3-TR	26	2.060" (52.32)	1.08	.98
906-3106	IDH-34PK-S3-TR	34	2.460" (62.48)	1.33	1.21
906-3108	IDH-40PK-S3-TR	40	2.760" (70.10)	1.56	1.42
906-3110	IDH-50PK-S3-TR	50	3.260" (82.80)	1.78	1.61
906-3112	IDH-60PK-S3-TR	60	3.760" (95.50)	2.61	2.37

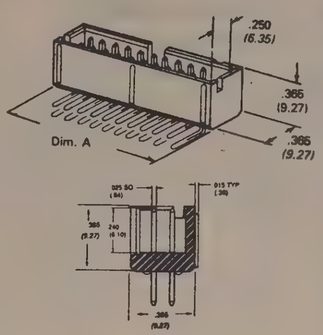
Right Angle Solder Tail

Stock No.	Mfr.'s Type	Contacts	Dim. "A"	1-99	100-499
906-3114	IDH-20PK-SR3-TR	20	1.760" (44.70)	.96	.87
906-3116	IDH-26PK-SR3-TR	26	2.060" (52.32)	1.08	.98
906-3118	IDH-34PK-SR3-TR	34	2.360" (62.48)	1.33	1.21
906-3120	IDH-40PK-SR3-TR	40	2.760" (70.10)	1.56	1.42
906-3122	IDH-50PK-SR3-TR	50	3.260" (82.80)	1.78	1.61
906-3124	IDH-60PK-SR3-TR	60	3.760" (95.50)	2.61	2.37

Socket Ejector Latches for IDH-PK Series Headers

Minimizes PC space required and allows dense packaging design.

Stock No.	Mfr.'s Type	Description	EACH	
			1-99	100-499
906-3132	EL-1K	0.573" Tall Latch	.09	.08
906-3134	EL-2K	0.430" Short Latch	.09	.08



IDH-LP Series Low-Profile 0.025" (0.635) Square Post Headers

- ► **Robex™ Plating: Provides "better than gold" cycling and environment performance.**

Designed for use where space saving is critical, these low profile headers provide mechanical polarization with full shrouding when mated with socket connectors that have center polarization tab. Available for straight or right angle applications. Phosphor bronze contacts plated with 10µ" Robex™ on contact area and 100µ" tin on terminal area over 50µ" nickel. **Temperature range:** -65°C to +125°C. Housed in black, glass filled polyester, rated UL94V-O. **Tail length:** 0.102" (2.59). All solder tails are rounded to 0.028" for easy 0.062" thick PCB insertion. UL recognized, CSA certified.

Straight Solder Tail

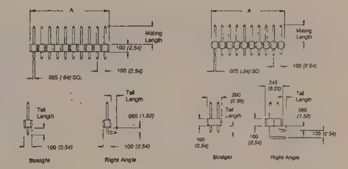
Stock No.	Mfr.'s Type	Contacts	Dim. "A"	EACH	
				1-99	100-499
906-3060	IDH-10LP-S3-TR	10	0.800" (20.32)	.61	.55
906-3062	IDH-14LP-S3-TR	14	1.000" (25.40)	.80	.73
906-3064	IDH-16LP-S3-TR	16	1.100" (27.94)	.89	.81
906-3066	IDH-20LP-S3-TR	20	1.300" (33.02)	.96	.87
906-3068	IDH-26LP-S3-TR	26	1.600" (40.64)	1.08	.98
906-3070	IDH-34LP-S3-TR	34	2.000" (50.80)	1.33	1.21
906-3072	IDH-40LP-S3-TR	40	2.300" (58.42)	1.56	1.42
906-3074	IDH-50LP-S3-TR	50	2.800" (71.12)	1.78	1.61
906-3076	IDH-60LP-S3-TR	60	3.300" (83.82)	2.61	2.37

Right Angle Solder Tail

Stock No.	Mfr.'s Type	Contacts	Dim. "A"	1-99	100-499
906-3080	IDH-10LP-SR3-TR	10	0.800" (20.32)	.61	.55
906-3082	IDH-14LP-SR3-TR	14	1.000" (25.40)	.80	.73
906-3084	IDH-16LP-SR3-TR	16	1.100" (27.94)	.89	.81
906-3086	IDH-20LP-SR3-TR	20	1.300" (33.02)	.96	.87
906-3088	IDH-26LP-SR3-TR	26	1.600" (40.64)	1.08	.98
906-3090	IDH-34LP-SR3-TR	34	2.000" (50.80)	1.33	1.21
906-3092	IDH-40LP-SR3-TR	40	2.300" (58.42)	1.56	1.42
906-3094	IDH-50LP-SR3-TR	50	2.800" (71.12)	1.78	1.61
906-3096	IDH-60LP-SR3-TR	60	3.300" (83.82)	2.61	2.37

NSH Series 0.025" (0.635) Square Post Non-Shrouded Headers

Notched body design allows easy break-to-length capability. 0.100" (2.54) spacing. Phosphor bronze contacts available with Robex™ plating on contact area and tin on terminal area over nickel for types with TR suffix; or tin over nickel for types with a T suffix. **Current rating:** 1A at maximum temperature range: -65° to -125°C. Available in 36 contact single row or 80 contact dual row design, in straight or right angle termination. UL recognized, E73764.



36 Contacts Single Row, 3.60" (91.44) Wide

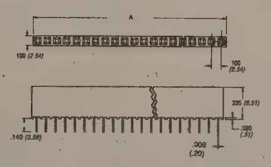
Stock No.	Mfr.'s Type	Mount	Dim. "A"	EACH	
				1-99	100-499
906-3140	NSH-36SA-S2-T	Straight	0.318" (8.08)	.88	.80
906-3142	NSH-36SA-S2-TR	Straight	0.318" (8.08)	1.54	1.38
906-3144	NSH-36SA-SR2-TR	Right Angle	0.318" (8.08)	1.26	1.14
906-3146	NSH-36SB-SR2-TR	Right Angle	0.230" (5.84)	1.19	1.08

80 Contacts Dual Row, 4.00" (101.60) Wide

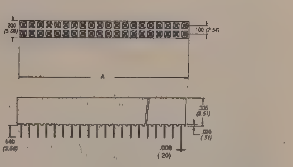
Stock No.	Mfr.'s Type	Mount	Dim. "A"	1-99	100-499
906-3148	NSH-80DA-S2-T	Straight	0.318" (8.08)	1.96	1.78
906-3150	NSH-80DA-S2-TR	Straight	0.318" (8.08)	2.80	2.54
906-3152	NSH-80DA-SR2-TR	Right Angle	0.318" (8.08)	2.80	2.54
906-3154	NSH-80DB-SR2-TR	Right Angle	0.230" (5.84)	2.49	2.26

SBQ Series 0.025" (0.635) Square Post Receptacles

Single Row

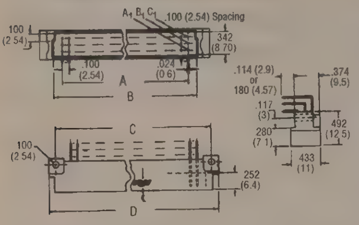


Dual Row



Socket mates to square post non-shrouded headers. Available in single or dual rows: 0.100" × 0.100" (2.54 × 2.54) contact spacing. High-temperature back thermoplastic body can be cut to size; rated UL94V-0. Excellent for add-on cards. Phosphor bronze contacts plated with 10µ" gold over nickel on contact area and 100µ" tin on terminal area. **Current rating:** 1A. **Temperature range:** -65°C to +105°C.

Stock No.	Mfr.'s Type	Rows	Contacts	EACH	
				1-99	100-499
906-3172	SBQ-36P-S-100-TG	Single	36	1.73	1.57
906-3174	SBQ-72P-D-100-TG	Dual	72	3.63	3.30



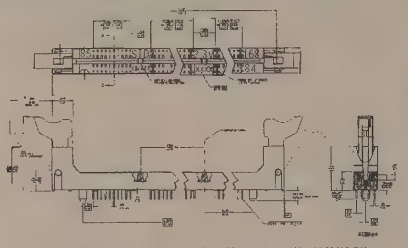
CP Series Standard DIN Plug Connectors

DIN 41612 compatible plug designed for daughter board mounting. Features 3 row, 0.100" (2.54) grid that permits high density packaging. Retent clip secures connector during wave solder. Grey, thermoplastic glass-filled body. Copper alloy contacts. Termination style/tall length: Solder, right angle/0.114" (2.90 mm). Plating is 10 µ" min. Robex™ on contact area. 100 µ" tin on terminal area. 50µ" Nickel underplate. **Current rating:** 1 A @ 100°C. PC board hole: 0.039 0.002". UL recognized, rated UL 94V-0.

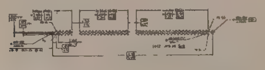
Contacts	A	B	C	D
48 64/96	1.500" (38.10)" 3.100" (78.74)	1.754" (44.55) 3.354" (85.19)	1.900" (48.26) 3.500" (88.90)	2.100" (53.34) 3.700" (93.98)

Stock No.	Mfr.'s Type	No. Contacts/ Pin Arrangements	EACH	
			1-99	100-499
906-3176	DIN-64CPB-SR1-TR	64/Rows A,C	**1.80**	**1.63**
906-3178	DIN-96CPC-SR1-TR	64/Rows A, B, C	**2.33**	**2.11**
906-3180	DIN-48CPC-SR1-TR	48/Rows A, B, C	**1.57**	**1.43**

DIMS Series Dual Inline Memory Sockets — *NEW* —



Min. required movement to eject module — Max. movement is .550" (13.97)



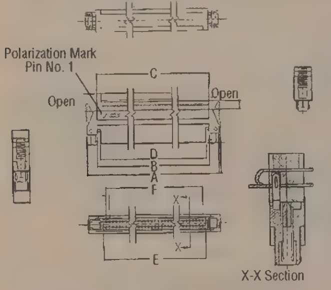
Recommended Printed Circuit Board Pattern

- ► **Effectively Provides Double Density Packaging**
- ► **Vertical Entry Allows Insertion/Removal Without Disturbing "Neighboring DIMMs"**

Body: High temperature black LCP. **Ejector:** High temperature white LCP. **Contacts:** Copper alloy. **Plating:** ROBEX®. 7 µ inch minimum palladium nickel with 3 µ inch minimum gold flash on contact point. 100 µ inch tin/lead on terminals. Agency Approval UR # E73746. **Accepts:** JEDEC Standard Module per MO-161. **DIMM Thickness:** .050" ± 004".

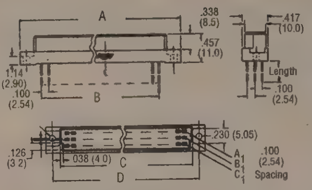
Stock No.	Mfr.'s Type	Contacts	Volts DRAM	EACH		
				1-99	100-499	500-999
906-8726	DIMS-168BD3-TR	168	3.3	**6.18**	**5.22**	**4.66**
906-8728	DIMS-168BD5-TR	168	5.0	**6.18**	**5.22**	**4.66**

RN PAK-50® P25E and P50E Series 50 MIL IDC Sockets



Accepts 30 AWG, 25 mil center flat cable P25E and P50E sockets are designed to mate with P50E series IDC board mount plugs, ordered separately on this page. Offer 3-dimensional mating: vertical, horizontal and parallel. Latching eject mechanism facilitates mating/unmating. The P25E provides daisy chain capability. The P50E socket accommodates backward and forward capability in that standard .100" and .050" connectors can be used on one cable assembly. Redundant ribbon contact design provides lower insertion/withdrawal forces, lower contact resistance, high normal force and high wear resistance. Contacts are recessed and fully protected on three sides, minimizing pin deformation. Phosphor bronze contacts plated with gold over nickel on contact area, tin over nickel on terminal area. **Contact Resistance:** 30 MΩ. **Current Rating:** 0.5 A. Black, glass-filled nylon body, rated UL94V-0. **Temperature range:** -55°C to +105°C.

Stock No.	Mfr.'s Type	Contacts	A	B	C	EACH	
						1-99	100-499
906-3202	P25E-020-S-TG	20	1.096"	0.702"	0.450"	**7.18**	**6.46**
906-3204	P25E-026-S-TG	26	1.246"	0.852"	0.600"	**7.60**	**6.84**
906-3206	P25E-034-S-TG	34	1.446"	1.052"	0.800"	**8.19**	**7.37**
906-3208	P25E-040-S-TG	40	1.596"	1.202"	0.950"	**8.51**	**7.66**
906-3210	P25E-050-S-TG	50	1.846"	1.452"	1.200"	**9.44**	**8.50**
906-3212	P25E-060-S-TG	60	2.096"	1.702"	1.450"	**10.21**	**9.19**
906-3214	P25E-080-S-TG	80	2.596"	2.202"	1.950"	**11.48**	**10.33**
906-3216	P25E-100-S-TG	100	3.096"	2.702"	2.450"	**12.67**	**11.40**
906-3218	P50E-020-S-TG	20	1.096"	0.702"	0.607"	**5.88**	**5.29**
906-3220	P50E-026-S-TG	26	1.246"	0.852"	0.757"	**6.37**	**5.73**
906-3222	P50E-034-S-TG	34	1.446"	1.052"	0.957"	**7.02**	**6.32**
906-3224	P50E-040-S-TG	40	1.596"	1.202"	1.107"	**7.42**	**6.68**
906-3226	P50E-050-S-TG	50	1.846"	1.452"	1.357"	**8.25**	**7.43**
906-3228	P50E-060-S-TG	60	2.096"	1.702"	1.607"	**8.41**	**8.02**
906-3230	P50E-080-S-TG	80	2.596"	2.222"	2.202"	**10.00**	**9.00**
906-3232	P50E-100-S-TG	100	3.096"	2.722"	2.702"	**11.45**	**10.31**



CS Series Standard DIN Socket Connectors

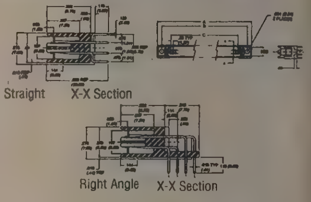
Compatible with VME Bus backplane applications. Mate with C-Form and R-Form plugs. Types with Si suffix have solder termination. 0.157" (3.99 mm) tall, and retent clip. Type with PS suffix has FLEXPRESS® contacts that permit solderless mounting; 0.236" (5.99 mm) tall. Grey thermoplastic, glass-filled body. Phosphor bronze contacts. Same plating and current rating as C-Form plugs above UL recognized, rated UL 94V-0.

Contacts	A	B	C	D
48 64/96	2.140" (54.36)" 3.740" (95.00)	1.500" (38.10) 3.100" (78.74)	1.746" (44.40) 3.346" (84.98)	1.943" (49.35) 3.543" (90.00)

Stock No.	Mfr.'s Type	No. Contacts/ Pin Arrangements	EACH	
			1-99	100-499
906-3182	DIN-48CSC-S1L-TR*	48/Rows A, B, C	**2.53**	**2.30**
906-3184	DIN-64CSB-S1L-TR*	64/Rows A, C	**2.80**	**2.54**
906-3186	DIN-96CSC-S1L-TR*	96/Rows A, B, C	**3.63**	**3.30**
906-3188	DIN-96CSC-PSL-TR†	96/Rows A, B, C	**3.96**	**3.60**

*Solder. †Press fit.

RN PAK-50® P50E Series Board Mount 50 MIL IDC Plugs



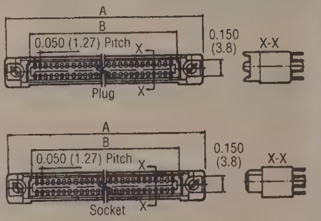
Mate with P25E and P50E series IDC sockets, ordered separately on this page. Offer 3-dimensional mating: vertical, horizontal and parallel. Latching eject mechanism facilitates mating/unmating. Available in straight or right-angle termination styles. Redundant ribbon contact design provides lower insertion/withdrawal forces, lower contact resistance, high normal force and high wear resistance. Contacts are recessed and fully protected on three sides, minimizing pin deformation. Phosphor bronze contacts plated gold over nickel on contact area, tin over nickel on terminal area. **Contact Resistance:** 30 MΩ. **Current Rating:** 0.5A. Black, glass-filled nylon body, rated UL94V-0. **Temperature Range:** -55°C to +105°C.

Straight Soldermount 0.118" (3.0) Terminals

Stock No.	Mfr.'s Type	Contacts	A	B	C	EACH	
						1-99	100-499
906-3282	P50E-020-P1-S1-TG	20	1.096"	0.900"	0.450"	**3.45**	**3.13**
906-3284	P50E-026-P1-S1-TG	26	1.246"	1.050"	0.600"	**2.80**	**2.54**
906-3286	P50E-034-P1-S1-TG	34	1.446"	1.250"	0.800"	**2.65**	**2.39**
906-3288	P50E-040-P1-S1-TG	40	1.596"	1.400"	0.950"	**2.86**	**2.52**
906-3290	P50E-050-P1-S1-TG	50	1.846"	1.650"	1.200"	**4.49**	**4.08**
906-3292	P50E-060-P1-S1-TG	60	2.096"	1.900"	1.450"	**4.08**	**3.71**
906-3294	P50E-080-P1-S1-TG	80	2.596"	2.400"	1.950"	**5.08**	**4.62**
906-3296	P50E-100-P1-S1-TG	100	3.096"	2.900"	2.450"	**5.73**	**5.21**

Right Angle Solder Mount 0.118" (3.0) Terminals

Stock No.	Mfr.'s Type	Contacts	A	B	C	EACH 1-99	EACH 100-499
906-3298	P50E-020-P1-SR1-TG	20	1.096"	0.900"	0.450"	**3.45**	**3.13**
906-3300	P50E-026-P1-SR1-TG	26	1.246"	1.050"	0.600"	**3.15**	**2.84**
906-3302	P50E-034-P1-SR1-TG	34	1.446"	1.250"	0.800"	**3.40**	**3.06**
906-3304	P50E-040-P1-SR1-TG	40	1.596"	1.400"	0.950"	**4.08**	**3.71**
906-3306	P50E-050-P1-SR1-TG	50	1.846"	1.650"	1.200"	**3.85**	**3.47**
906-3308	P50E-060-P1-SR1-TG	60	2.096"	1.900"	1.450"	**4.22**	**3.80**
906-3310	P50E-080-P1-SR1-TG	80	2.596"	2.400"	1.950"	**5.20**	**4.68**
906-3312	P50E-100-P1-SR1-TG	100	3.096"	2.900"	2.450"	**5.83**	**5.25**



RN PAK-50® 2-PC. 50-MIL Pitch Connectors

RN PAK-50® interconnect system features a redundant ribbon contact that provides lower insertion/withdrawal forces, lower contact resistance, high normal forces and high wear resistance. 3-dimensional mating versatility-horizontal, vertical and packaging. Both male and female contacts are recessed and fully protected on 3 sides, minimizing pin deformation. Available in 20-100 pin positions. 0.118" (3.00) long straight and right-angle soldered terminals with retention clip to eliminate hardware and secure connector during wave soldering. Phosphor bronze contacts plated with gold on contact area and tin on terminal area over nickel. **Contact Resistance:** 25 MΩ maximum. **Current Rating:** 0.5 A/contact. Black, glass-filled nylon housing with flange, rated UL94V-0. **Insulation Resistance:** 1000 MΩ minimum @ 500 VDC.

Solder Terminal Straight Sockets

Stock No.	Mfr.'s Type	Contacts	A	B	C	EACH	
						1-99	100-499
906-3242	P50-020S-R1-TG	20	25.43	20.32	13.43	**2.86**	**2.60**
906-3244	P50-026S-R1-TG	26	29.24	24.13	16.84	**2.91**	**2.62**
906-3246	P50-034S-R1-TG	34	34.32	29.21	21.92	**3.73**	**3.39**
906-3248	P50-040S-R1-TG	40	38.13	33.02	25.73	**2.84**	**2.58**
906-3250	P50-050S-R1-TG	50	44.48	39.37	32.08	**3.05**	**2.75**
906-3252	P50-060S-R1-TG	60	50.83	45.72	38.43	**3.53**	**3.21**
906-3254	P50-080S-R1-TG	80	63.53	58.42	51.13	**4.10**	**3.73**
906-3256	P50-100S-R1-TG	100	76.23	71.12	64.23	**4.82**	**4.38**

Solder Terminal Straight Plugs

Stock No.	Mfr.'s Type	Contacts	A	B	C	EACH 1-99	EACH 100-499
906-3258	P50-020P-R1-TG	20	25.43	20.32	13.43	**2.86**	**2.60**
906-3260	P50-026P-R1-TG	26	29.24	24.13	17.24	**2.91**	**2.62**
906-3262	P50-034P-R1-TG	34	34.32	29.21	22.32	**3.73**	**3.39**
906-3264	P50-040P-R1-TG	40	38.13	33.02	26.13	**2.84**	**2.58**
906-3266	P50-050P-R1-TG	50	44.48	39.37	32.48	**3.05**	**2.75**
906-3268	P50-060P-R1-TG	60	50.83	45.72	38.83	**3.53**	**3.21**
906-3270	P50-080P-R1-TG	80	63.53	58.42	51.53	**4.10**	**3.73**
906-3272	P50-100P-R1-TG	100	76.23	71.12	64.23	**4.82**	**4.38**

5-Way® Binding Posts

Fig. 1

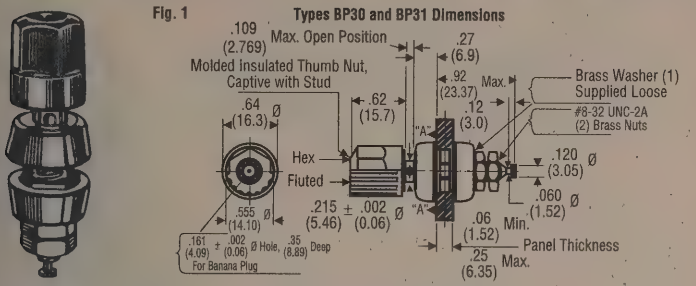

Types BP30 and BP31 Dimensions
.109 (2.769) Max. Open Position
.27 (6.9)
Molded Insulated Thumb Nut, Captive with Stud
.92 (23.37) Max.
Brass Washer (1) Supplied Loose
.64 (16.3) Ø
.62 (15.7)
.12 (3.0)
#8-32 UNC-2A (2) Brass Nuts
"A"
Hex
Fluted
.120 (3.05) Ø
.060 (1.52) Ø
.555 (14.10) Ø
.215 ± .002 (5.46) (0.06) Ø
"A"
.06 (1.52) Min.
.161 (4.09) ± .002 (0.06) Ø Hole, .35 (8.89) Deep For Banana Plug
Panel Thickness
.25 (6.35) Max.

Fig. 2

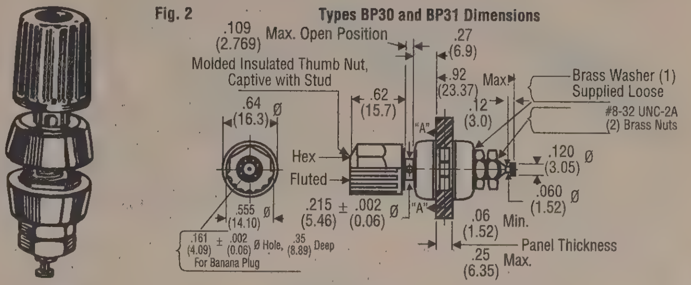

Types BP30 and BP31 Dimensions
.109 (2.769) Max. Open Position
.27 (6.9)
Molded Insulated Thumb Nut, Captive with Stud
.92 (23.37) Max.
Brass Washer (1) Supplied Loose
.64 (16.3) Ø
.62 (15.7)
.12 (3.0)
#8-32 UNC-2A (2) Brass Nuts
"A"
Hex
Fluted
.120 (3.05) Ø
.060 (1.52) Ø
.555 (14.10) Ø
.215 ± .002 (5.46) (0.06) Ø
"A"
.06 (1.52) Min.
.161 (4.09) ± .002 (0.06) Ø Hole, .35 (8.89) Deep For Banana Plug
Panel Thickness
.25 (6.35) Max.

Fig. 3

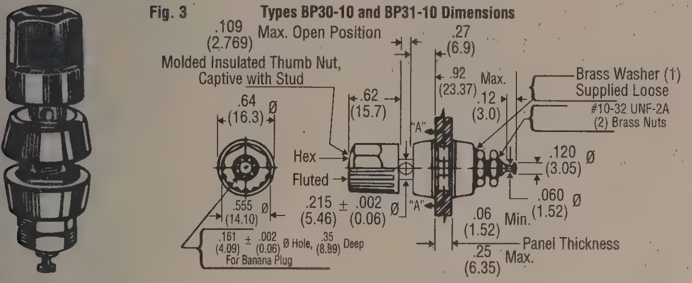

Types BP30-10 and BP31-10 Dimensions
.109 (2.769) Max. Open Position
.27 (6.9)
Molded Insulated Thumb Nut, Captive with Stud
.92 (23.37) Max.
Brass Washer (1) Supplied Loose
.64 (16.3) Ø
.62 (15.7)
.12 (3.0)
#10-32 UNF-2A (2) Brass Nuts
"A"
Hex
Fluted
.120 (3.05) Ø
.060 (1.52) Ø
.555 (14.10) Ø
.215 ± .002 (5.46) (0.06) Ø
"A"
.06 (1.52) Min.
.161 (4.09) ± .002 (0.06) Ø Hole, .35 (8.89) Deep For Banana Plug
Panel Thickness
.25 (6.35) Max.

Fig. 4

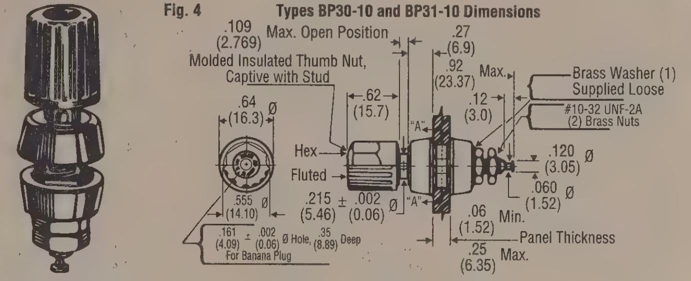

Types BP30-10 and BP31-10 Dimensions
.109 (2.769) Max. Open Position
.27 (6.9)
Molded Insulated Thumb Nut, Captive with Stud
.92 (23.37) Max.
Brass Washer (1) Supplied Loose
.64 (16.3) Ø
.62 (15.7)
.12 (3.0)
#10-32 UNF-2A (2) Brass Nuts
"A"
Hex
Fluted
.120 (3.05) Ø
.060 (1.52) Ø
.555 (14.10) Ø
.215 ± .002 (5.46) (0.06) Ø
"A"
.06 (1.52) Min.
.161 (4.09) ± .002 (0.06) Ø Hole, .35 (8.89) Deep For Banana Plug
Panel Thickness
.25 (6.35) Max.

Fig. 5

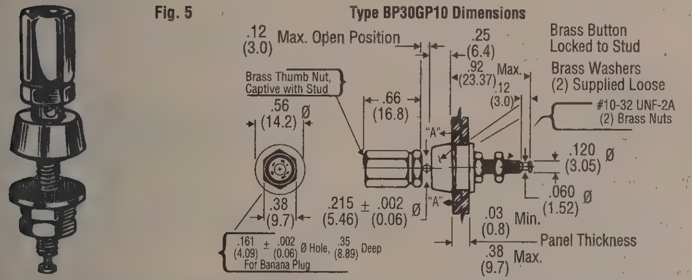
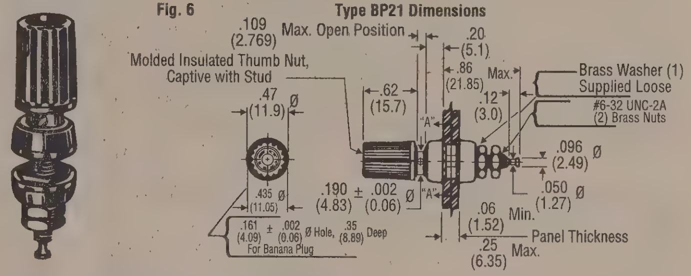

Type BP30GP10 Dimensions
.12 (3.0) Max. Open Position
.25 (6.4)
Brass Button Locked to Stud
Brass Thumb Nut, Captive with Stud
.92 (23.37) Max.
Brass Washers (2) Supplied Loose
.56 (14.2) Ø
.66 (16.8)
.12 (3.0)
#10-32 UNF-2A (2) Brass Nuts
"A"
.120 (3.05) Ø
.060 (1.52) Ø
.38 (9.7)
.215 ± .002 (5.46) (0.06) Ø
"A"
.03 (0.8) Min.
.161 (4.09) ± .002 (0.06) Ø Hole, .35 (8.89) Deep For Banana Plug
Panel Thickness
.38 (9.7) Max.

Fig. 6


Type BP21 Dimensions
.109 (2.769) Max. Open Position
.20 (5.1)
Molded Insulated Thumb Nut, Captive with Stud
.86 (21.85) Max.
Brass Washer (1) Supplied Loose
.47 (11.9) Ø
.62 (15.7)
.12 (3.0)
#6-32 UNC-2A (2) Brass Nuts
"A"
.096 (2.49) Ø
.050 (1.27) Ø
.435 (11.05) Ø
.190 ± .002 (4.83) (0.06) Ø
"A"
.06 (1.52) Min.
.161 (4.09) ± .002 (0.06) Ø Hole, .35 (8.89) Deep For Banana Plug
Panel Thickness
.25 (6.35) Max.

BP31 Series have LEXAN polycarbonate resin insulating parts. All others have nylon plastic per MIL-P-20693A, Type IV. All metal grounding type designed for rapid ground connections. Made of machined brass, gold plated and polished. Design complements other hex nut 5-way binding post. Hex and fluted nut types are rated for 30 amps, 1000 volts working, except BP21 which is 15 amps. UL recognized standard 1244. IEC 348.p30 ANSI C39.5-1974. Double assembly type are for use where binding posts are mounted on ³/₄" (19 mm) centers. Rated for 30 amps, 1000 volts working.

Stock No.	Mfr.'s Type	Fig.	Color	Nut Type	EACH	
					1-9	10-24
645-0030	BP30B	1	Black	Hex	**3.65**	**3.25**
645-0032	BP30R	1	Red	Hex	**3.65**	**3.25**
645-0220	BP30BL	1	Blue	Hex	**3.65**	**3.25**
645-0221	BP30Y	1	Yellow	Hex	**3.65**	**3.25**
645-0223	BP30WT	1	White	Hex	**3.65**	**3.25**
645-0031	BP31R	2	Red	Fluted	**3.65**	**3.25**
645-0033	BP31B	2	Black	Fluted	**3.65**	**3.25**
645-0060	BP31DG	2	Green	Fluted	**3.65**	**3.25**
645-0065	BP31BL	2	Blue	Fluted	**3.65**	**3.25**
645-0070	BP31WT	2	White	Fluted	**3.65**	**3.25**
645-3010	BP30-10R	3	Red	Hex	**3.65**	**3.25**
645-3012	BP30-10B	3	Black	Hex	**3.65**	**3.25**
645-9901	BP30-10GN	3	Green	Hex	**3.65**	**3.25**
645-9902	BP30-10WT	3	White	Hex	**3.65**	**3.25**
645-3110	BP31-10B	4	Black	Fluted	**3.65**	**3.25**
645-3111	BP31-10R	4	Red	Fluted	**3.65**	**3.25**
645-3011	BP30GP10*	5	Metal	Hex	**3.65**	**3.25**
645-0218	BP21B	6	Black	Fluted	**3.65**	**3.25**
645-0219	BP21R	6	Red	Fluted	**3.65**	**3.25**
—	—	—	—	—	—	—

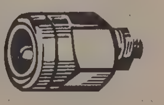
*Nickel plated. **Note:** Also available from factory in white, blue, yellow, and green. Also available as double assembly (1 black and 1 red) and with nickel or tin plated current carrying brass parts.

Supercon® Electrical Connectors

A

C

B


D

For safe, quick positive panelboard connections. Available in 25, 50, 100, and 250 amp capacities. 25, 50, and 100 amp types are rated 125-250 VAC or DC current interrupting; 600 V unenergized connector disconnect use only. CSA certified, File #LR-17812. 250 amp types rated 600 V unenergized connect or disconnect use only. **Plugs:** Wiring connections to the same plugs can be either soldered or solderless. Cable fastening screws are provided for accommodation of a wide range of cable sizes. **Grips:** Two-piece threaded construction. **Receptacles:** Color-matched nylon caps and bodies. Wiring connection is made to a threaded stud by wire wrap-around, lug, or bus bar connection.

Stock No.	Mfr.'s Type	Fig.	Color	Amps	Overall Length (In.)	Overall Dia. (In.)	EACH
							1-19
645-0029	PP25GR	A	Red	25	2.66	0.81	**15.25**
645-0025	PP25GB	A	Black	25	2.66	0.81	**15.25**
645-0023	RS25GR	B	Red	25	1.50	0.81	**15.25**
645-0028	RS25GB	B	Black	25	1.50	0.81	**15.25**
645-0034	PS25GR	C	Red	25	2.72	0.81	**15.25**
645-0027	PS25GB	C	Black	25	2.72	0.81	**15.25**
645-0024	RP25GR	D	Red	25	1.50	0.81	**15.25**
645-0026	RP25GB	D	Black	25	1.50	0.81	**15.25**
645-0054	PP50GR	A	Red	50	3.22	1.00	**19.00**
645-0050	PP50GB	A	Black	50	3.22	1.00	**19.00**
645-0048	RS50GR	B	Red	50	2.00	1.25	**19.00**
645-0053	RS50GB	B	Black	50	2.00	1.25	**19.00**
645-0055	PS50GR	C	Red	50	3.12	1.00	**19.00**
645-0052	PS50GB	C	Black	50	3.12	1.00	**19.00**
645-0049	RP50GR	D	Red	50	2.00	1.25	**19.00**
645-0051	RP50GB	D	Black	50	2.00	1.25	**19.00**
645-0104	PP100GR	A	Red	100	3.66	1.25	**25.00**
645-0100	PP100GB	A	Black	100	3.66	1.25	**25.00**
645-0098	RS100GR	B	Red	100	2.50	1.50	**25.00**
645-0103	RS100GB	B	Black	100	2.50	1.50	**25.00**
645-0105	PS100GR	C	Red	100	3.81	1.25	**25.00**
645-0102	PS100GB	C	Black	100	3.81	1.25	**25.00**
645-0099	RP100GR	D	Red	100	2.50	1.50	**25.00**
645-0101	RP100GB	D	Black	100	2.50	1.50	**25.00**
645-0254	PP250GR	A	Red	250	4.94	1.50	**42.00**
645-0250	PP250GB	A	Black	250	4.94	1.50	**42.00**
645-0248	RS250GR	B	Red	250	3.87	2.00	**42.00**
645-0253	RS250GB	B	Black	250	3.87	2.00	**42.00**
645-0255	PS250GR	C	Red	250	5.00	1.50	**42.00**
645-0252	PS250GB	C	Black	250	5.00	1.50	**42.00**
645-0249	RP250GR	D	Red	250	3.86	2.00	**42.00**
645-0251	RP250GB	D	Black	250	3.86	2.00	**42.00**

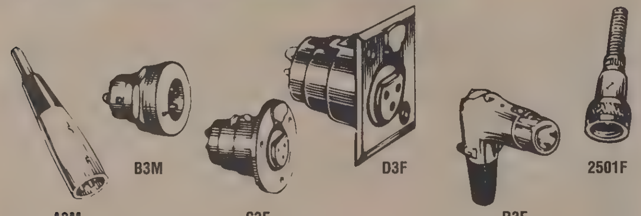
Note: Also available from factory in white, blue, yellow, and green.

Male and Female Tini Q-G® Miniature Connectors

Similar to the standard Q-G® Connectors plugs and receptacles offer up to 5 contacts. Neoprene cable strain relief. Die cast or precision machined with nickel finish. Receptacles mate with all miniature connectors.

Stock No.	Mfr.'s Type	Description	EACH	
			1-9	10-24
932-1200	TA3F	Connector, female plug 3 contacts	6.12	5.57
932-1201	TA3FL	Connector, female plug, locking 3 contacts	6.04	5.49
932-1202	TA4F	Connector, female plug 4 contacts	7.57	6.88
932-1203	TA4FL	Connector, female plug, locking 4 contacts	7.47	6.79
932-1204	TA5F	Connector, female plug 5 contacts	8.12	7.39
932-1205	TA5FL	Connector, female plug, locking 5 contacts	7.08	6.44
932-1206	TA3M	Connector, male plug 3 contacts	5.79	5.27
932-1207	TA3ML	Connector, male plug, locking 3 contacts	5.06	4.60
932-1208	TA4M	Connector, male plug 4 contacts	6.30	5.73
932-1209	TA4ML	Connector, male plug, locking 4 contacts	6.20	5.64
932-1210	TA5M	Connector, male plug 5 contacts	7.00	6.37
932-1211	TA5ML	Connector, male plug, locking, 5 contacts	8.16	7.42
932-1212	TY3F	Connector, female panel receptacle 3 contacts	8.81	8.01
932-1213	TY4F	Connector, female panel receptacle 4 contacts	9.55	8.68
932-1214	TY5F	Connector, female panel receptacle 5 contacts	10.16	9.24
932-1215	TB3M	Connector, male panel receptacle 3 contacts	6.39	5.80
932-1216	TB4M	Connector, male panel receptacle 4 contacts	7.04	6.40
932-1217	TB5M	Connector, male panel receptacle 5 contacts	8.98	8.16
932-1218	TRA3M	Connector, male right angle PC mount receptacle 3 contacts	7.87	7.16

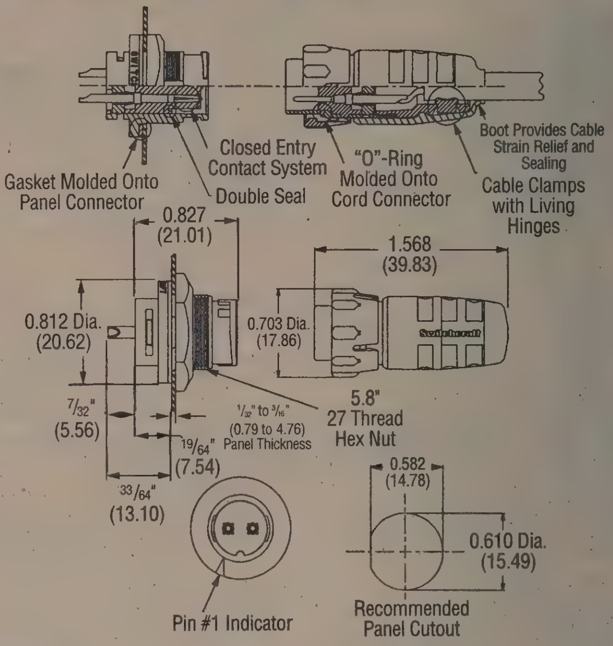
Male and Female Q-G® Audio Connectors



Plugs and receptacles offer up to 5-contact versatility by means of up to four circuit contacts plug electrically integrated ground terminal on shell. Neoprene cable strain relief bushing keyed to shell; ribbed for easy access to male plugs. Die-cast zinc alloy with satin-nickel finish. Receptacles will mate with all standard audio connectors. Right angle configuration reduces "cable clutter."

Stock No.	Mfr.'s Type	Description	EACH	
			1-9	10-24
932-1027	A3F	Connector, female plug 3 contacts	4.10	3.73
932-1028	A3FB	Connector, female plug 3 contacts (black)	4.65	4.23
932-1029	A3M	Connector, male plug 3 pins	3.41	3.10
932-1030	A3MB	Connector, male plug 3 pins (black)	4.12	3.79
932-0008	B3F	Connector, female panel receptacle with spanner nut 3 pins	12.14	11.04
932-0009	B3M	Connector, male panel receptacle with locknut 3 pins	7.35	6.68
932-0011	C3F	Connector, female panel receptacle, 3 contacts	7.00	6.36
932-0012	C3M	Connector, male panel receptacle with screws 3 pins	5.00	4.54
932-1044	D3F	Connector, female panel receptacle, 3 contacts	5.24	4.77
932-0016	D3M	Connector, male panel receptacle with screws 3 pins	3.88	3.52
932-0160	R3F	Connector, right angle female plug, 3 contacts	15.59	14.17
932-0161	R3M	Connector, right angle male plug, 3 pins	13.09	11.08
932-1040	A4F	Connector, female plug 4 contacts	6.49	5.90
932-1041	A4M	Connector, male plug 4 pins	4.21	3.82
932-0044	C4F	Connector, female panel receptacle, 4 contacts	8.85	8.05
932-0045	C4M	Connector, male panel receptacle with screws, 4 pins	5.30	4.82
932-0037	D4F	Connector, female panel receptacle, 4 contacts	8.77	7.97
932-0038	D4M	Connector, male panel receptacle with screws, 4 pins	5.43	4.93
932-0017	A5F	Connector, female plug 5 pins	10.59	9.63
932-0018	A5M	Connector, male plug 5 pins	7.41	6.18
932-0046	C5F	Connector, female panel receptacle, 5 contacts	14.18	12.89
932-0047	C5M	Connector, male panel receptacle with screws, 5 pins	9.37	8.52
932-1045	2501F	Connector, small female MIC with coupling ring	3.75	3.41

EN3™ Mini Weathertight Connectors


Gasket Molded Onto Panel Connector
Closed Entry Contact System
Double Seal
"O"-Ring Molded Onto Cord Connector
Boot Provides Cable Strain Relief and Sealing
Cable Clamps with Living Hinges
0.827 (21.01)
1.568 (39.83)
0.812 Dia. (20.62)
0.703 Dia. (17.86)
7/32" (5.56)
1/32" to 3/16" (0.79 to 4.76) Panel Thickness
19/64" (7.54)
5.8" 27 Thread Hex Nut
33/64" (13.10)
0.582 (14.78)
0.610 Dia. (15.49)
Pin #1 Indicator
Recommended Panel Cutout

Applications

- Transportation
- Process Control
- Communication
- Marine Electronics
- Medical Instrumentation
- Geothermal Instrumentation
- General Industrial Electronics

Features and Benefits

- Superior Leakage Protection; Contact Area Is Double-Sealed for Excellent Moisture and Chemical Resistance
- Reduced Part Count for Reduced Labor to Assemble
- Thermoplastic Rubber Body Simulates Closed Entry Contact System to Prevent Probe Damage or Accidental Loss of Spring Retention Due to Misaligned or Bent Pins
- Exceeds Coast Guard Specifications for Water Tightness (CFR 46 Part 110.20)
- Integral O-Ring and Gasket; O-Ring Is Molded Onto Cord Housing Assembly and Gasket Is Molded Onto Panel Housing Assembly to Prevent Leakage and Eliminate Need for Additional O-Rings and Gaskets
- Abrasion-Resistant Thermoplastic Boot Provides Strain Relief and Accepts Cable Diameter .195" to .265"
- Contact Terminal: Solder Cup Contacts (Factory Assembled Into Panel/Cord Connector Housings Ready to be Terminated)
- No Grommets; Cable Clamp Assembly Features Living Hinges, which Snap Easily Onto and Holds the Cable
- Easy Contact Removal
- Low Insertion Force Required
- Housing Rated UL 94V-O Against Flammability

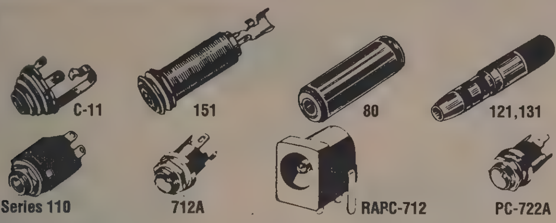
Cable (Cord) Connectors

Stock No.	Mfr.'s Type	No. of Pos.	Description	EACH		
				1-24	25-49	50-99
932-3300	EN3C3F	3	Female	4.00	3.33	3.08
932-3302	EN3C3M	3	Male	2.80	2.40	2.21
932-3304	EN3C4F	4	Female	4.79	4.00	3.69
932-3306	EN3C4M	4	Male	3.33	2.77	2.56
932-3308	EN3C5F	5	Female	5.59	4.66	4.30
932-3310	EN3C5M	5	Male	3.77	3.15	2.90
932-3312	EN3C6F	6	Female	6.39	5.32	4.91
932-3314	EN3C6M	6	Male	4.22	3.52	3.25
932-3316	EN3C8F	8	Female	7.98	6.65	6.14
932-3318	EN3CAP	—	Cap	.72	.65	.55

Panel Connectors

Stock No.	Mfr.'s Type	No. of Pos.	Description	EACH		
				1-24	25-49	50-99
932-3320	EN3P3F	3	Female	3.53	3.21	2.71
932-3322	EN3P3M	3	Male	2.53	2.30	1.95
932-3324	EN3P4F	4	Female	4.30	3.91	3.31
932-3326	EN3P4M	4	Male	2.98	2.71	2.29
932-3328	EN3P5F	5	Female	5.06	4.60	3.89
932-3330	EN3P5M	5	Male	3.43	3.12	2.64
932-3332	EN3P6F	6	Female	5.83	5.30	4.49
932-3334	EN3P6M	6	Male	3.88	3.52	2.98
932-3336	EN3P8M	8	Male	4.79	4.36	3.69
932-3318	EN3CAP	—	Cap	.72	.65	.55

Jacks



Littel Jax® Phone Jacks

Mate with standard .25" (6.35 mm) or .21" (5.33 mm) phone plugs. Notched insulating washers. Mounts in single .375" (9.52 mm) hole, panels up to .156" (3.96 mm) thick, except Types L-11 and L-12A in panels up to .25" (6.35 mm) thick.

Stock No.	Mfr.'s Type	No. of Conductors	Mating Plug	Description	EACH 1-9	10-24	25-99
932-1001	11	2	250	Open circuit	**1.51**	**1.40**	**1.18**
932-0013	C11	2	440, 445, 470	With locating pin	**2.39**	**2.17**	**1.84**
932-0023	L11	2	250	0.375" lg. bushing	**1.71**	**1.55**	**1.29**
932-0033	S11	2	S-250	0.210" I.D. bushing	**2.04**	**1.89**	**1.57**
932-1002	12A	2	250	Tip shunt	**1.73**	**1.54**	**1.32**
932-0014	C12A	2	440, 445, 470	M641/12-1	**3.62**	**3.22**	**2.93**
932-0024	L12A	2	250	0.375" lg. bushing	**1.80**	**1.66**	**1.40**
932-0050	13	2	250	Isolated "make" circuit	**4.75**	**4.27**	**3.85**
932-0051	13A	2	250	Transfer circuit	**4.79**	**4.27**	**3.61**
932-0055	13E	2	250	Isolated "break" circuit	**4.94**	**4.49**	**3.80**
932-0042	12B	3	267	Double open circuit	**1.81**	**1.64**	**1.37**
932-0015	C12B	3	480	M641/5-1	**3.41**	**3.10**	**2.66**
932-0025	L12B	3	267	0.375" lg. bushing	**1.92**	**1.78**	**1.60**
932-0035	S12B	3	480	0.21" I.D. bushing	**3.06**	**2.83**	**2.39**
932-0052	13B	3	267	Tip shunt	**4.87**	**4.34**	**3.73**
932-1003	14B	3	267	Double closed circuit	**4.35**	**3.88**	**3.56**

Jack Covers

Spring loaded phone jack covers seal jack openings when phone plug is removed. Use with standard 3/8" 32 threaded bushing type phone jacks.

932-1280	512	—	—	Bright nickel	**7.14**	**6.50**	**5.95**
932-1283	515	—	—	Black	**7.45**	**6.09**	**5.22**

Thick-Panel Jax®

Brass, nickel-plated phone jacks with long bushing. Mounts in .469" (11.91 mm) dia. hole in panels up to 1.25" (31.75 mm) thick. Solder lug terminals.

932-1009	151	2	240, 245, 250 255, 270, 280	Standard 0.25"	**6.29**	**5.22**	**4.46**
932-1010	152B	3	260, 267, 269 297, 260, 267	Standard 0.25"	**6.95**	**6.20**	**5.68**

Cable Extension Jax®

Standard .25" (6.35 mm) extension phone jacks. **Size:** .688" (17.48 mm) O.D.; 2156" (54.76 mm) lg. **Types 121 and 131.** .5" (12.7 mm) O.D.; 2.5" (63.5 mm) lg. Shielded handles are brass, bright nickel plated. Black handles are plastic.

932-1006	80	2	240	Screw term., black handle	**5.33**	**4.43**	**4.36**
932-1007	120	2	270	Screw term., shielded	**6.95**	**6.20**	**4.87**
932-1008	121	2	280	Solder term., shielded	**5.91**	**5.27**	**4.86**
932-0065	125	2	740, 745, 750	Solder term., shielded	**4.25**	**3.47**	**3.02**
932-0071	131	3	297	Solder term., shielded	**7.33**	**6.09**	**5.13**
932-0083	830	3	260	Screw term., black handle	**7.41**	**6.15**	**5.19**
932-0123	1238	3	297	Solder term., shielded	**7.67**	**5.94**	**5.44**

Hi-D Jax® Enclosed Phone Jacks

Mate with standard .25" (6.35 mm) phone plugs. Molded body protects integral silver-plated springs. Mounts on .625" (15.88 mm) center in single .375" (9.52 mm) hole in panels up to .156" (3.96 mm) thick.

932-9390	111	2	250	Open circuit	**1.62**	**1.46**	**1.33**
932-9400	N111	2	250	Molded nylon bushing	**1.69**	**1.53**	**1.29**
932-9391	112A	2	250	Closed circuit	**1.67**	**1.51**	**1.26**
932-9392	N112A	2	250	Molded nylon bushing	**1.98**	**1.80**	**1.65**
932-9393	112B	3	267	Double open circuit	**1.71**	**1.55**	**1.29**
932-9394	N112B	3	267	Molded nylon bushing	**2.02**	**1.84**	**1.58**
932-9395	113B	3	267	Single closed circuit	**2.53**	**2.30**	**1.95**
932-9396	N113B	3	267	Molded nylon bushing	**2.94**	**2.67**	**2.26**
932-9397	114B	3	267	Double closed circuit	**2.27**	**2.06**	**1.74**
932-9398	N114B	3	267	Molded nylon bushing	**3.06**	**2.78**	**2.55**

Tini-Jax® Miniature Phone Jacks

Miniature phone jacks approximately 1/3 the size of Littel-Jax jack, otherwise similar in construction. Mounts in .25" (6.35 mm) dia. hole; panels up to .125" (3.18 mm) thick.

932-1004	41	2	750	Open circuit	**1.23**	**1.02**	**.93**
932-1005	42A	2	750	Closed circuit	**1.79**	**1.60**	**1.45**

Micro Jax® Subminiature Phone Jacks

Silver plated, special tempered nickel silver springs. Fits .190" (4.83 mm) dia. hole in panels to .094" (2.39 mm) thick. Only 1/25th the size of standard phone jacks.

932-9404	TR2A	2	850, 880	Closed circuit	**2.04**	**1.71**	**1.49**

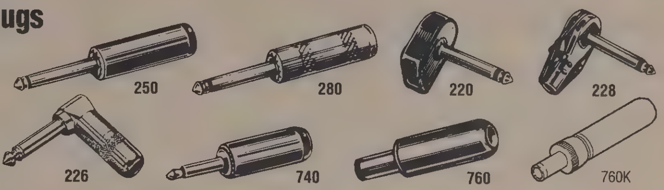
Power Jax

Power jacks are 2-cond. type with shunted sleeve. Recessed center pin (712A) .100" (2.54 mm) dia.; (722A) .08" (2.03 mm) dia., split to hold mating plug firmly.

Stock No.	Mfr.'s Type	Pin Dia. (In.)*	Mating Plug	Description	EACH 1-9	10-24	25-99
932-9403	712A	0.10	Solder lugs	760, 765	**2.00**	**1.78**	**1.64**
932-9412	PC712A	0.10	Straight PC terms.	760, 765	**2.47**	**2.27**	**2.06**
932-9415	RAPC712	0.10	Right angle PC terms.	760, 765	**.94**	**.80**	**.68**
932-9405	722A	0.08	Solder lugs	S-760, S-765	**2.06**	**1.84**	**1.69**
932-9420	PC722A	0.08	Straight PC terms.	S-760, S-765	**2.54**	**2.27**	**2.06**
932-9425	RAPC722	0.08	Right angle PC terms.	S-760, S-765	**.84**	**.71**	**.61**

*Center pin diameter.

Plugs



Littel-Plug® Phone Plugs

Fit standard .25" (6.35 mm) phone jacks. Solder terminal plugs have built-in cable clamp. **Shielded Metal Handles. Nickel-Plated Brass or Durable Molded Plastic:** 1.688" (42.88 mm) long × .5" (12.7 mm) dia. **Max. Cable Diameter:** 2.97" (7.54 mm).

Stock No.	Mfr.'s Type	No. of Conductors	Handle	Terminals	EACH 1-9	10-24	25-99
932-1014	240	2	Black	Screw	**2.55**	**2.32**	**1.99**
932-0945	245	2	Red	Screw	**3.39**	**3.08**	**2.65**
932-1015	250	2	Black	Solder lugs	**2.46**	**2.17**	**1.99**
932-0955	255	2	Red	Solder lugs	**3.25**	**2.95**	**2.45**
932-1018	270	2	Shielded	Screw	**4.83**	**4.38**	**3.70**
932-1019	280	2	Shielded	Solder lugs	**3.37**	**3.06**	**2.59**
932-0950	S250*	2	Black	Solder lugs	**3.49**	**3.08**	**2.60**
932-0980	S280*	2	Shielded	Solder lugs	**4.71**	**4.23**	**3.81**
932-1016	260	3	Black	Screw	**5.30**	**4.82**	**4.42**
932-0960	S260*	3	Black	Screw	**6.94**	**6.31**	**5.34**
932-1017	267	3	Black	Solder lugs	**3.37**	**3.06**	**2.81**
932-0969	269	3	Red	Solder lugs	**4.62**	**4.12**	**3.74**
932-1020	290	3	Shielded	Screw	**5.87**	**5.23**	**4.80**
932-0997	297	3	Shielded	Solder lugs	**4.02**	**3.72**	**3.14**

Two Conductor Phone Plugs for Littel Jax® No. 11

932-0040	40	2	Black	Screw	**4.37**	**3.93**	**3.57**
932-0070	70	2	Shielded	Screw	**5.88**	**5.34**	**4.90**
932-0170	170	2	Shielded	Screw	**6.99**	**6.24**	**5.72**

Three Conductor Phone Plugs for Littel Jax® No. 12B

932-0060	60	3	Black	Solder	**4.31**	**3.88**	**3.52**
932-0191	190A	3	Shielded	Solder	**6.94**	**6.31**	**5.78**

Flat-Plug Phone Plugs

.25" (6.35 mm) phone plugs have flat, space-savings handles.

932-0220	220†	2	Black	Screw	**4.08**	**3.64**	**3.30**
932-0227	227†	2	Black	Solder	**2.78**	**2.47**	**2.25**
932-1013	228†	2	Shielded	Solder	**3.73**	**3.35**	**3.05**
932-1021	226	2	Shielded	Clamp	**3.73**	**3.32**	**3.01**
932-0230	230‡	3	Black	Screw	**5.87**	**5.23**	**4.80**
932-0237	237‡	3	Black	Solder	**5.25**	**4.36**	**3.73**
932-0238	238‡	3	Shielded	Solder	**5.55**	**4.70**	**4.02**

Tini-Plug® Miniature Phone Plugs

For use with Tini-Jax jacks. 1/3 size of standard phone plugs. **Overall Length:** 1.609" (40.87 mm). **Handles:** plastic or nickel-plated brass. **Max. Cable Diameter:** .218" (5.54 mm).

932-1022	740	2	Black	Screw	**2.49**	**2.11**	**1.78**
932-0745	745	2	Red	Screw	**3.03**	**2.71**	**2.45**
932-0750	750	2	Black	Solder	**2.19**	**1.79**	**1.53**
932-0755	755	2	Red	Solder	**2.86**	**2.38**	**2.04**
932-1023	770	2	Shielded	Screw	**4.20**	**3.49**	**2.99**
932-0780	780	2	Shielded	Solder	**3.33**	**2.82**	**2.38**

Micro-Plug® Subminiature Phone Plug

Only 1.106" (25.81 mm) long; .25" (6.35 mm) O.D., .097" (2.46 mm) diameter sleeve. Screw-on anodized aluminum handles. For cables up to .125" (3.28 mm) diameter. Integral cable clamps mates with TR-2A.

932-1024	850	2	Black	—	**2.23**	**2.01**	**1.82**
932-0855	855	2	Red	—	**3.05**	**2.67**	**2.42**
932-0880	880	2	Natural	—	**2.73**	**2.27**	**2.06**

Power-Plug Battery Charger Plugs

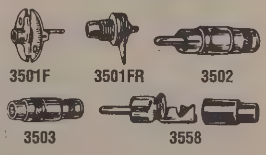
Mates with sockets used on transistorized portable radios, tape recorders, appliances which have AC adapters, and/or battery chargers. .218" (5.54 mm) O.D. × .375" (9.53 mm) long sleeve. An .062" (1.57 mm) wide insulator. Ring at tip of sleeve insulates and recesses a hollow pin conductor with a center hole of .100" (2.54 mm) I.D.

932-0760	760	2	Black	Solder lugs	**2.08**	**1.84**	**1.69**
932-0761	760K•	2	Black	Solder lugs	**4.29**	**3.56**	**3.05**
932-0765	765	2	Red	Solder lugs	**2.47**	**2.27**	**2.06**
932-0766	765K•	2	Red	Solder lugs	**6.24**	**5.57**	**5.10**

*.206 diameter. †Mates with No. 11. ‡Mates with No. 12B. •Locking power plug.

Phone Jacks and Plugs

Type 3501FP for front panel mount in .25" (6.35 mm) holes in panels up to .125" thick. Type 3501FR for rear panel mount in .375" hole in panels up to .203" thick. Type 3502 has unique cable clamp with .406" O.D. shielded removable handle. Type 3503 extension jack has shielded removable handle .406" O.D. with cable clamp. Series 3558 are phono plugs with cable clamp and "snap-on" color-coded plastic handles in red, black, and white.



Stock No.	Mfr.'s Type	No. of Conductors	Description	EACH 1-9	10-24	25-99
932-1011	3501F	2	Phono jack	**1.47**	**1.34**	**1.22**
932-3502	3501FP	2	Front of panel jack	**1.17**	**.97**	**.82**
932-3503	3501FR	2	Rear mount jack	**1.23**	**1.11**	**1.01**
932-1025	3502	2	Shielded plug	**1.35**	**1.17**	**1.07**
932-1012	3503	2	Extension plug	**2.33**	**1.94**	**1.66**
932-1098	35581	2	Red plug	**1.25**	**1.13**	**1.02**
932-1099	35582	2	Black plug	**1.25**	**1.02**	**.89**
932-1097	35585	2	White plug	**1.25**	**1.13**	**1.02**

Primary Power Receptacles

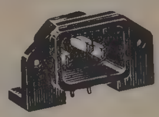
UL and CSA Approved, International Standard CCE-22

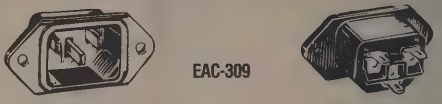
Shell: Black glass reinforced thermoplastic polyester. UL flammability rating 94 V-O, yellow card #E45575. **Pins:** Silver-plated brass. **Terminals:** Electrotinned brass except EAC-333, silver-plated brass.

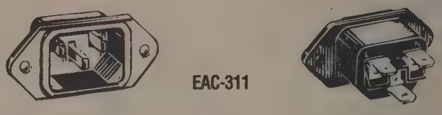
EAC-333. 3-pin male receptacle with right angle housing for PC board mount. Rear of panel mounting. PC terminals project .125" to extend through PC board. Ground pin is integral with the ground solder lug on rear of receptacle. Two additional .136" holes for fastening to panel or chassis. **EAC-309.** 3-pin male receptacle with standard lug terminals. Mounts from front or rear of panel with two #5 screws or .125" rivets (not supplied). **EAC-311.** 3-pin male receptacle with FASTON terminals. Mounts from front or rear of panel with two #5 screws or .125" diameter rivets (not supplied). **EAC-305.** 3-contact female receptacle front mount with two #4 screws or .094" rivets (not supplied). **EAC-405.** 3-contact female receptacle with standard solder lug terminals. Snap-in panel mounting. **EAC-409.** 3-pin male receptacle with standard solder lug terminals. Snap-in panel mounting. **EAC-411.** 3-pin male receptacle with FASTON terminals. Snap-in panel mounting.

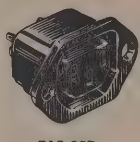
Stock No.	Mfr.'s Type	Rating	Mating Power Cord	EACH	
				1-9	10-24
932-0093	EAC-333	10 A, 250 VAC	523, 535, 545, 537	1.71	1.53
932-0099	EAC-309	10 A, 250 VAC	523, 535, 545, 537	1.31	1.16
932-0101	EAC-311	10 A, 250 VAC	545, 537	1.39	1.24
932-0097	EAC-305	10 A, 250 VAC	551, 552	1.81	1.62
932-0108	EAC-405040*	10 A, 250 VAC	551, 552	2.32	2.06
932-0110	EAC-409040*	10 A, 250 VAC	523, 535, 545, 537	1.94	1.73
932-0112	EAC-411040*	10 A, 250 VAC	545, 537	2.83	2.53

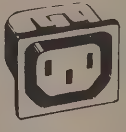
*Panel mounts are for .040 panel thickness. Snap-in for other panel thickness also available.

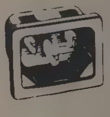

EAC-333


EAC-309

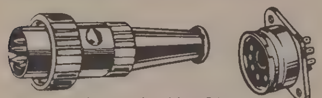

EAC-311

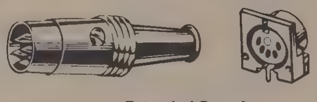

EAC-305

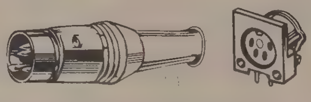

EAC-405


EAC-409,
EAC-411

DIN Plugs and Sockets


With 30° Locking Ring


Extended Barrel


Shielded Barrel

DIN is the name given to this high-quality family of versatile miniature audio connectors. Features include solder lug or PC terminations, as well as bright nickel-plated or colorful plastic snap-on shells. Designed for audio circuitry, they are also ideal for test equipment, computers and other types of low level circuits. Precision manufactured. The parts listed are a small representation of a large and growing family. Call the closest sales office for parts not shown.

Right Angle Receptacles for PC Mounting

Shielded

Stock No.	Mfr.'s Type	Description	EACH	
			1-9	10-24
932-0183	57PC5FS	Mates with 3 or 5 pins, 5 contacts at 180°	1.92	1.57
932-0198	62PC8FS	Mates with 8 pins, 8 contacts at 270°	3.01	2.69

Unshielded

932-0200	57PC5F	Mates with 3 or 5 pins, 5 contacts at 180°	1.95	1.53
932-0201	61PC5F	Mates with 5 pins, 5 contacts at 240°	1.94	1.73
932-0202	62PC8F	Mates with 8 pins, 8 contacts at 270°	2.50	2.23

Straight Cord Plugs

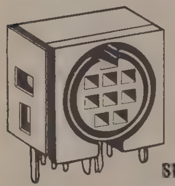
Stock No.	Mfr.'s Type	Description	EACH	
			1-9	10-24
932-0153	05CL3M	With 30° locking ring, 3 pins at 180°	5.38	4.31
932-0154	05CL5M	With 30° locking ring, 5 pins at 180°	6.21	5.64
932-0166	12CL5M	With 30° locking ring, 5 pins at 240°	5.21	4.73
932-0156	05GM3M	Shielded barrel, 3 pins at 180°	2.56	2.29
932-0157	05GM5M	Shielded barrel, 5 pins at 180°	3.20	2.85
932-0165	12GM5M	Shielded barrel, 5 pins at 240°	3.68	3.28
932-0167	12GM6M	Shielded barrel, 6 pins at 240°	3.89	3.47
932-0168	15GM7M	Shielded barrel, 7 pins at 270°	4.08	3.64
932-0178	15GM8M	Shielded barrel, 8 pins at 270°	4.30	3.83
932-0162	05BL3M	Extended barrel, 3 pins at 180°	2.59	2.31
932-0155	05BL5M	Extended barrel, 5 pins at 180°	3.89	3.47
932-0164	12BL5M	Extended barrel, 5 pins at 240°	3.89	3.47
932-0163	12BL6M	Extended barrel, 6 pins at 240°	3.59	3.21
932-0169	15BL8M	Extended barrel, 8 pins at 270°	3.91	3.48

Straight Receptacles

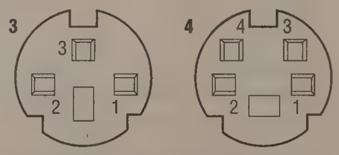
932-0182	57HA3F	For locking ring plugs, 3 contacts at 180°	2.21	1.97
932-0185	57HA5F	For locking ring plugs, 5 contacts at 180°	2.40	2.14
932-0186	57HB5F*	For locking ring plugs, 5 contacts at 180°	2.72	2.42
932-0188	61HA5F	For locking ring plugs, 5 contacts at 240°	2.63	2.34
932-0187	57GB3F	For shielded and extended barrel plugs, 3 contacts at 180°	1.72	1.43
932-0181	57GB5F	For shielded and extended barrel plugs, 5 contacts at 180°	2.06	1.89
932-0195	61GA5F	For shielded and extended barrel plugs, 5 contacts at 240°	2.10	1.88
932-0196	61GB6F	For shielded and extended barrel plugs, 6 contacts at 240°	2.46	2.19
932-0197	62GB7F	For shielded and extended barrel plugs, 7 contacts at 270°	2.50	2.23
932-0199	62GB8F	For shielded and extended barrel plugs, 8 contacts at 270°	3.22	2.87

*Flared solder terminals.

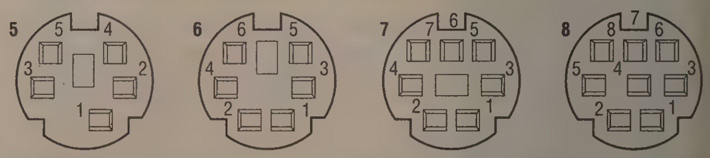
Right Angle, PC Mount Receptacles


SMD8FRAX21

Mini-DIN Receptacles



Contact Arrangements (Viewed from Contact Side)



Miniature DIN connectors are designed for personal computer and enhancements, as well as data communications, medical and instrumentation equipment and systems. Available with 3 thru 8 contacts, receptacles also have a separate ground contact system. Ground terminal is "snap in" type. "Snap-in" terminal is bifurcated to assure tight hold down on PC board...before, during and after soldering. Also solder wicking around the terminal adds a greater measure of physical strength to the connection. Additionally, PC terminals are staggered to assure more "hold down" capability during soldering. Receptacle/plug retention is "friction" type, with a separate outer shield.

Miniature Right Angle PC Receptacles — Shielded

Stock No.	Mfr.'s Type*	Contacts	External Shield	Snap-In Ground Terminal	EACH	
					1-9	10-24
932-4010	SMD3FRA111	3	Yes	No	1.59	1.38
932-4015	SMD4FRA111	4	Yes	No	1.71	1.36
932-4020	SMD5FRA111	5	Yes	No	1.84	1.62
932-4025	SMD6FRA111	6	Yes	No	1.94	1.46
932-4030	SMD7FRA111	7	Yes	No	2.10	1.84
932-4035	SMD8FRA111	8	Yes	No	2.27	1.99

*Silver contact. Gold contact product also available on special order.

Miniature Right Angle PC Receptacles — Shielded with Snap-In Ground Terminal

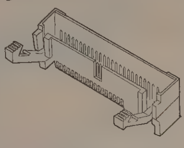
Stock No.	Mfr.'s Type*	Contacts	External Shield	Snap-In Ground Terminal	EACH	
					1-9	10-24
932-4040	SMD3FRA121	3	Yes	Yes	1.59	1.39
932-4045	SMD4FRA121	4	Yes	Yes	1.68	1.42
932-4050	SMD5FRA121	5	Yes	Yes	1.84	1.62
932-4055	SMD6FRA121	6	Yes	Yes	1.97	1.73
932-4060	SMD7FRA121	7	Yes	Yes	2.10	1.84
932-4065	SMD8FRA121	8	Yes	Yes	2.27	1.99

(.050) Fine Pitch Connector System (SCSI II/III Compatible)

Thomas&Betts

System 311 Header, 2-Row, Straight Tail with Optional Space Saving Vertical Ejectors

LR49571 E60980



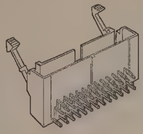
Physical Properties. Insulation Material: Glass reinforced thermoplastic rated UL 94V-0, infrared and vapor phase process compatible, black. **Contacts:** Copper alloy, 30 microinches gold over nickel plating in the mating area, tin/lead plating in the termination area. **Environmental Properties. Temperature Rating:** –55°C to 125°C.

PCB = 1.57 mm (.062"); Tail Length = 2.90 mm (.114")

Stock No.	Mfr.'s Type	No. of Pos.	Overall Length	With Ejectors	EACH 1-24	EACH 25-49
515-5000	311-026D272	26	0.964"	No	3.70	3.33
515-5005	311-026D272E	26	0.964"	Yes	4.40	3.96
515-5010	311-040D272	40	1.314"	No	4.24	3.82
515-5015	311-040D272E	40	1.314"	Yes	5.04	4.54
515-5020	311-050D272	50	1.564"	No	4.62	4.16
515-5025	311-050D272E	50	1.564"	Yes	5.50	4.95
515-5030	311-068D272	68	2.014"	No	5.32	4.79
515-5035	311-068D272E	68	2.014"	Yes	6.30	5.67
515-5040	311-080D272	80	2.314"	No	5.76	5.19
515-5045	311-080D272E	80	2.314"	Yes	6.94	6.16
515-5050	311-100D272	100	2.814"	No	6.54	5.89
515-5055	311-100D272E	100	2.814"	Yes	7.78	7.00

System 311 Header, 4-Row, Right Angle Tails With Optional Space Saving Vertical Ejectors

LR49571 E60980



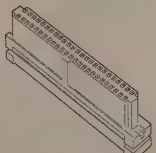
Physical Properties. Insulation Material: Glass reinforced thermoplastic rated UL 94V-0, infrared and vapor phase process compatible, black. **Contacts:** Copper alloy, 30 microinches gold over nickel plating in the mating area, tin/lead plating in the termination area. **Environmental Properties. Temperature Rating:** –55°C to 125°C.

PCB = 1.57 mm (.062"); Tail Length = 2.90 mm (.114")

Stock No.	Mfr.'s Type	No. of Pos.	Overall Length	With Ejectors	EACH 1-24	EACH 25-49
515-5060	311-026072	26	0.964"	No	5.82	5.24
515-5065	311-026072E	26	0.964"	Yes	6.93	6.24
515-5070	311-040072	40	1.314"	No	6.67	6.01
515-5075	311-040072E	40	1.314"	Yes	7.93	7.14
515-5080	311-050072	50	1.564"	No	7.27	6.55
515-5085	311-050072E	50	1.564"	Yes	8.66	7.80
515-5090	311-068072	68	2.014"	No	8.32	7.49
515-5095	311-068072E	68	2.014"	Yes	9.92	8.93
515-5100	311-080072	80	2.314"	No	9.00	8.10
515-5105	311-080072E	80	2.314"	Yes	10.69	9.62
515-5110	311-100072	100	2.814"	No	10.22	9.20
515-5115	311-100072E	100	2.814"	Yes	12.16	10.95

System 311 Female Socket with .050 Contact Spacing for .025 Pitch Flat Cable

LR49571 E60980



Physical Properties. Insulation Material: Glass reinforced thermoplastic rated UL 94V-0, black. **Contacts:** Beryllium copper, 30 microinches gold over nickel plating in the mating area, tin/lead plating in the termination area. **Environmental Properties. Temperature Rating:** –55°C to 125°C. **Cable Requirements. PVC Insulation:** 30 AWG solid .025 pitch; 30 AWG stranded .025 pitch. **Teflon:** 30 AWG solid .025 pitch; 32 AWG stranded .025 pitch.

Stock No.	Mfr.'s Type	No. of Pos.	Overall Length	EACH 1-24	EACH 25-49
515-5180	311-026302	26	0.958"	7.15	6.44
515-5185	311-040302	40	1.308"	9.13	8.22
515-5190	311-050302	50	1.558"	10.55	9.50
515-5195	311-068302	68	2.008"	13.10	11.79
515-5200	311-080302	80	2.308"	14.69	13.22
515-5205	311-100302	100	2.808"	17.50	15.75

System 311 Unshrouded Header, 2-Row, Straight Tail, Vertical Mount and 2-Row, Right Angle

LR49571 E60980

Physical Properties. Insulation Material: Glass reinforced thermoplastic rated UL 94V-0, black. **Contacts:** Copper alloy, 30 microinches gold over nickel plating in the mating area, tin/lead plating in the termination area. **Environmental Properties. Temperature Rating:** –65°C to 125°C.

Vertical (Straight Tail)

Stock No.	Mfr.'s Type	No. of Pos.	Overall Length	EACH 1-24	EACH 25-49
515-5120	311-D026ST2911	26	0.650"	2.34	2.11
515-5125	311-D040ST2911	40	1.000"	2.88	2.59
515-5130	311-D050ST2911	50	1.250"	3.28	2.95
515-5135	311-D068ST2911	68	1.700"	3.96	3.57
515-5140	311-D080ST2911	80	2.000"	4.42	3.98
515-5145	311-D100ST2911	100	2.500"	5.20	4.68

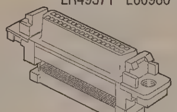
Right Angle

Stock No.	Mfr.'s Type	No. of Pos.	Overall Length	EACH 1-24	EACH 25-49
515-5150	311-D026RA2911	26	0.650"	2.34	2.11
515-5155	311-D040RA2911	40	1.000"	2.88	2.59
515-5160	311-D050RA2911	50	1.250"	3.28	2.95
515-5165	311-D068RA2911	68	1.700"	3.96	3.57
515-5170	311-D080RA2911	80	2.000"	4.42	3.98
515-5175	311-D100RA2911	100	2.500"	5.20	4.68

System 311 IDC Metal Shell "D-Sub" Receptacle

LR49571 E60980

► Terminates to .025" Cable



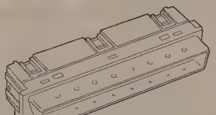
Physical Properties. Insulation Material: Glass reinforced thermoplastic rated UL 94V-0, black. **Contacts:** Beryllium copper, 30 microinches gold over nickel plating in the mating area, tin/lead plating in the termination area. **Environmental Properties. Temperature Rating:** –55°C to 125°C.

Stock No.	Mfr.'s Type	No. of Pos.	Bulkhead Mounting Style	EACH 1-24	EACH 25-49
515-5210	311-026SM29C	26	4-40 Flush threads	7.20	6.48
515-5215	311-026SM29J	26	2-56 Latch w/ rails	7.20	6.48
515-5220	311-040SM29J	40	2-56 Latch w/ rails	9.20	8.28
515-5225	311-040SM29N	40	2-56 Latch w/o rails	9.20	8.28
515-5230	311-050SM29C	50	4-40 Flush threads	9.76	8.79
515-5235	311-050SM29J	50	2-56 Latch w/ rails	9.76	8.79
515-5240	311-050SM29N	50	2-56 Latch w/o rails	9.76	8.79
515-5245	311-068SM29C	68	4-40 Flush threads	12.10	10.89
515-5250	311-080SM29C	80	4-40 Flush threads	13.28	11.95
515-5255	311-100SM29C	100	4-40 Flush threads	15.80	14.22

Mounting Hardware (for Mounting Style C). 2 required per connector.
515-5260. 8700040001 ....EACH .30

Plug Connector, Fine Pitch D-Sub Discrete Wire Cable

LR49571 E60980



The Thomas & Betts Discrete Wire Cable Connector System utilizes the time proven crimp on contact termination process. **Physical Properties. Insulation Material:** Glass reinforced thermoplastic rated UL 94V-0, black. **Metal Shell:** Steel with bright tin plate 100 microinches min. over 50 microinches nickel min. **Environmental Properties. Temperature Rating:** –55°C to 125°C.

Stock No.	Mfr.'s Type	No. of Pos.	EACH 1-24	EACH 25-49
515-5330	HFM026A	26	1.80	1.62
515-5335	HFM040A	40	1.88	1.69
515-5340	HFM050A	50	1.88	1.69
515-5345	HFM068A	68	1.92	1.73
515-5350	HFM080A	80	2.00	1.80
515-5355	HFM100A	100	2.10	1.89

Contacts
515-5360. 1016029L-01. 28-32 AWG, duplex 30 μ gold **PK/100 16.00**
515-5365. 1016049L-01. 28-32 AWG, flash and 30 μ gold **PK/100 16.50**

Tooling
515-5370. 600112. Crimp Tool ....**EACH 305.39**
515-5375. 600113. Contact Removal Tool ....**EACH 44.62**

Fine Pitch "D-Sub" Connector Right Angle Receptacle

LR49571 E60980

Physical Properties. Insulation Material: Thermoplastic rated UL 94V-0, black. **Contacts:** High strength copper alloy, nickel underplate overall, selectively plated gold in contact area, tin/lead solder plate on tails. **Latch Block Material:** Nickel plated zinc alloy. **Metal Shell Material:** Nickel plated steel. **Ground Strap Material:** High strength copper alloy. **Insert Material:** Nickel plated brass. **Environmental Properties. Temperature Rating:** –55°C to 125°C.

With Grounded Snaplatch; Tail Length = .130

Stock No.	Mfr.'s Type	No. of Pos.	Bulkhead Mounting Style	EACH 1-24	EACH 25-49
515-5265	HFR026RA29BS1	26	2-56 Stand off	8.59	7.73
515-5270	HFR026RA29CS1	26	4-40 Flush	7.96	7.17
515-5275	HFR026RA29JS1	26	2-56 Latch w/ rails	7.96	7.17
515-5280	HFR026RA29NS1	26	2-56 Latch w/o rails	7.96	7.17
515-5285	HFR040RA29JS1	40	2-56 Latch w/ rails	9.54	8.59
515-5290	HFR050RA29JS1	50	2-56 Latch w/ rails	10.67	9.61
515-5295	HFR050RA29NS1	50	2-56 Latch w/o rails	10.67	9.61
515-5300	HFR068RA29BS1	68	2-56 Stand off	13.98	12.58
515-5305	HFR068RA29CS1	68	4-40 Flush	13.35	12.01
515-5310	HFR080RA29BS1	80	2-56 Stand off	15.78	14.20
515-5315	HFR080RA29CS1	80	4-40 Flush	15.27	13.75
515-5320	HFR100RA29BS1	100	2-56 Stand off	19.22	17.30
515-5325	HFR100RA29CS1	100	4-40 Flush	18.74	16.87

Mounting Hardware (for Mounting Style C). 2 required per connector.
515-5260. 8700040001 ....**EACH .30**

.025" Pitch Flat Cable 136 Series — 30 AWG Solid PVC 137 Series — 30 AWG Stranded PVC

LL53375 E41651

136 Series

Physical Properties. Insulation Material: Flexible PVC, blue/gray. **Conductors:** 30 AWG, solid bare copper. **Environmental Properties. Temperature Rating:** –20°C to 105°C. **Electrical Properties. Voltage Rating:** 150 V rms. **Insulation Resistance:** >10^{10} ohms. **Impedance:** 80 ohms. **Capacitance @ 1 MHz:** 62.3 pF/m (19.0 pF/ft.). **Inductance @ 1 MHz:** .49 μH/m (.15 μH/ft.). **Propagation Delay:** –5.25 nSec./m (1.60 nSec./ft.).

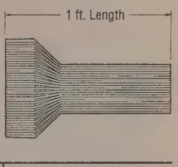
137 Series

Physical Properties. Insulation Material: Flexible PVC, blue/gray conductors — 30 AWG, 7/38 tinned, stranded copper. **Electrical Properties. Voltage Rating:** 150 Vrms. **Insulation Resistance:** >10^{10} ohms. **Impedance:** 70 ohms. **Capacitance @ 1 MHz:** 82.0 pF/m (25.0 pF/ft.). **Inductance @ 1 MHz:** .46 μH/m (.14 μH/ft.). **Propagation Delay:** –5.08 nSec./m (1.55 nSec./ft.). **Environmental Properties. Temperature Rating:** –20°C to 105°C.

136 Series		137 Series		No. of Cond.	Width	PER COIL/100'
Stock No.	Mfr.'s Type	Stock No.	Mfr.'s Type			
515-5420	136-026	515-5450	137-026	26	0.650	56.68
515-5425	136-040	515-5455	137-040	40	1.000	87.20
515-5430	136-050	515-5460	137-050	50	1.250	109.00
515-5435	136-068	515-5465	137-068	68	1.700	148.24
515-5440	136-080	515-5470	137-080	80	2.000	174.40
515-5445	136-100	515-5475	137-100	100	2.500	218.00

Transition Cable One Spread End .025" To .050" (30 AWG Solid PVC)

LR58162 E47817



Physical Properties. Insulation Material: Flexible PVC, blue/gray. **Conductors:** 30 AWG, solid bare copper. **Environmental Properties. Temperature Rating:** –20°C to 105°C. **Electrical Properties. Voltage Rating:** 150 Vrms, **Insulation Resistance:** >10^{10} ohms. **Impedance:** 80 ohms. **Capacitance @ 1 MHz:** 62.3 pF/m (19.0 pF/ft.). **Inductance @ 1 MHz:** .49 μH/m (.15 μH/ft.). **Propagation Delay:** –5.25 nSec./m (1.60 nSec./ft.).

Stock No.	Mfr.'s Type	No. of Cond.	EACH 1-24	EACH 25-49
515-5480	136-026-0100	26	6.12	5.51
515-5485	136-040-0100	40	6.62	5.96
515-5490	136-050-0100	50	8.16	7.35

Tooling for 311 System and .025" Pitch Cable

Stock No.	Mfr.'s Type	Description	EACH
515-4100	779-2100	Tool frame less die	240.13
515-5500	779-3112151	Die for 311 female sockets	54.95
515-5505	779-3112179	Die for 311 IDC D-subs	100.77
515-4160	779-5030M	Flat cable cutter	89.90

Backshell Kit, Fine Pitch "D" Sub Discrete Wire Cable Connector

Squeeze To Release

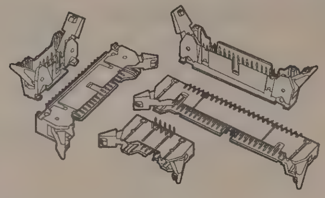
Stock No.	Mfr.'s Type	No. of Pos.	Max Cable Dia.	EACH 1-24	EACH 25-49
515-5380	300102-026AS3	26	.270"	4.40	3.96
515-5385	300102-040AS4	40	.320"	5.76	5.19
515-5390	300102-050AS5	50	.400"	5.18	4.66
515-5395	300102-050AS6	50	.435"	5.18	4.66

Jackscrew

Stock No.	Mfr.'s Type	No. of Pos.	Max Cable Dia.	EACH 1-24	EACH 25-49
515-5400	300102-026BS3	26	.270	4.40	3.96
515-5405	300102-068BS6	68	.420	6.20	5.58
515-5410	300102-080BS7	80	.450	7.50	6.75
515-5415	300102-100BS8	100	.500	9.06	8.16

Ansley® standard and low profile headers are also available with ejectors, add suffix "E" for headers with short ejector latches to accommodate female sockets without strain reliefs; add suffix "ES" for headers with long ejectors to accommodate female sockets with strain relief. "E" and "ES" options are stocking items. Contact your local Allied sales office for price and availability.

Ansley® Standard
PCB Male Headers



These headers mate with socket connectors with center polarization tab. .100" × .100" centers. **Insulation Material:** Glass filled thermoplastic rated UL 94V-0. **Color:** Blue. **Contact Material:** Phosphor bronze with 30 µ inches min. gold over 50 µ inches min. nickel plating. **Current Rating:** 1 amp. **Insulation Resistance:** .1 × 10⁹ ohms @ 500 VDC. **Dielectric Strength:** >1000 VRMS @ sea level. **Temperature Rating:** –55°C to 125°C.

Right Angle Contacts — Without Ejector Latches

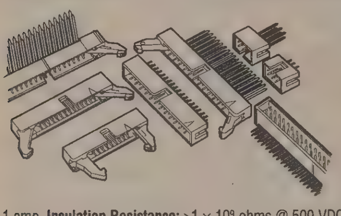
Stock No.	Mfr.'s Type	No. of Positions	Fits PCB		EACH		
			mm	In.	1-24	25-99	100-499
515-1500	609-1004	10	1.57	0.062	**1.54**	**1.40**	**1.28**
515-1506	609-1404	14	1.57	0.062	**1.68**	**1.53**	**1.40**
515-1512	609-1604	16	1.57	0.062	**1.76**	**1.60**	**1.47**
515-1518	609-2004	20	1.57	0.062	**1.88**	**1.71**	**1.57**
515-1524	609-2604	26	1.57	0.062	**2.33**	**2.12**	**1.94**
515-1530	609-3404	34	1.57	0.062	**3.02**	**2.75**	**2.52**
515-1536	609-4004	40	1.57	0.062	**3.45**	**3.14**	**2.88**
515-1542	609-5004	50	1.57	0.062	**4.15**	**3.77**	**3.46**
515-1548	609-1014	10	3.18	0.125	**1.66**	**1.51**	**1.38**
515-1554	609-1414	14	3.18	0.125	**1.78**	**1.62**	**1.48**
515-1560	609-1614	16	3.18	0.125	**1.86**	**1.69**	**1.55**
515-1566	609-2014	20	3.18	0.125	**2.04**	**1.86**	**1.70**

Right Angle Contacts — Without Ejector Latches (Continued)

Stock No.	Mfr.'s Type	No. of Positions	Fits PCB		EACH		
			mm	In.	1-24	25-99	100-499
515-1572	609-2614	26	3.18	0.125	**2.53**	**2.30**	**2.11**
515-1578	609-3414	34	3.18	0.125	**3.25**	**2.95**	**2.71**
515-1584	609-4014	40	3.18	0.125	**3.66**	**3.33**	**3.06**
515-1590	609-5014	50	3.18	0.125	**4.45**	**4.05**	**3.71**

Straight Contacts — Without Ejector Latches

Stock No.	Mfr.'s Type	No. of Positions	mm	In.	1-24	25-99	100-499
515-1600	609-1024	10	1.57	0.062	**1.53**	**1.40**	**1.28**
515-1606	609-1424	14	1.57	0.062	**1.68**	**1.53**	**1.40**
515-1612	609-1624	16	1.57	0.062	**1.76**	**1.60**	**1.47**
515-1618	609-2024	20	1.57	0.062	**1.88**	**1.71**	**1.57**
515-1624	609-2624	26	1.57	0.062	**2.33**	**2.12**	**1.94**
515-1630	609-3424	34	1.57	0.062	**3.02**	**2.75**	**2.52**
515-1636	609-4024	40	1.57	0.062	**3.45**	**3.14**	**2.88**
515-1642	609-5024	50	1.57	0.062	**4.15**	**3.77**	**3.46**
515-1648	609-1034	10	3.18	0.125	**1.66**	**1.51**	**1.38**
515-1654	609-1434	14	3.18	0.125	**1.78**	**1.62**	**1.48**
515-1660	609-1634	16	3.18	0.125	**1.86**	**1.69**	**1.55**
515-1666	609-2034	20	3.18	0.125	**2.04**	**1.86**	**1.70**
515-1672	609-2634	26	3.18	0.125	**2.53**	**2.30**	**2.11**
515-1678	609-3434	34	3.18	0.125	**3.25**	**2.95**	**2.71**
515-1684	609-4034	40	3.18	0.125	**3.66**	**3.33**	**3.06**
515-1690	609-5034	50	3.18	0.125	**4.45**	**4.05**	**3.71**
—	—	—	—	—	—	—	—



Low Profile
PCB Male Headers

The Low Profile PCB Male Header is designed to provide stability, reliability, convenience, and positive polarization when mated with a Female Socket Transition Connector in PC board applications which require repeated connection and disconnection. **Insulation Material:** Glass filled thermoplastic, rated 94V-0, blue. **Contact Material:** Phosphor bronze; 30 µ inches minimum gold over 50 µ inches nickel in contact zone; tin-lead over nickel in termination area. **Current Rating:** 1 amp. **Insulation Resistance:** >1 × 10⁹ ohms @ 500 VDC. **Dielectric Strength:** >1000 VRMS @ sea level. **Temperature Rating:** –55°C to 125°C.

Right Angle Contacts — Without Ejector Latches

Stock No.	Mfr.'s Type	No. of Positions	Fits PCB		EACH		
			mm	In.	1-24	25-99	100-499
515-0200	609-1007	10	1.57	0.062	**1.53**	**1.40**	**1.28**
515-0202	609-1407	14	1.57	0.062	**1.68**	**1.53**	**1.40**
515-0204	609-1607	16	1.57	0.062	**1.70**	**1.60**	**1.47**
515-0205	609-2007	20	1.57	0.062	**1.88**	**1.71**	**1.57**
515-0210	609-2607	26	1.57	0.062	**2.33**	**2.12**	**1.94**
515-0215	609-3407	34	1.57	0.062	**3.03**	**2.76**	**2.53**
515-0220	609-4007	40	1.57	0.062	**3.45**	**3.14**	**2.88**
515-0225	609-5007	50	1.57	0.062	**4.15**	**3.77**	**3.46**
515-0226	609-6007	60	1.57	0.062	**5.05**	**4.59**	**4.21**
515-0230	609-1017	10	3.18	0.125	**1.66**	**1.51**	**1.38**
515-0232	609-1417	14	3.18	0.125	**1.81**	**1.64**	**1.51**
515-0234	609-1617	16	3.18	0.125	**1.85**	**1.69**	**1.55**

Right Angle Contacts — Without Ejector Latches (Continued)

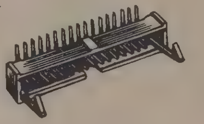
Stock No.	Mfr.'s Type	No. of Positions	Fits PCB		EACH		
			mm	In.	1-24	25-99	100-499
515-0235	609-2017	20	3.18	0.125	**2.04**	**1.86**	**1.70**
515-0240	609-2617	26	3.18	0.125	**2.53**	**2.30**	**2.11**
515-0245	609-3417	34	3.18	0.125	**3.24**	**2.95**	**2.70**
515-0250	609-4017	40	3.18	0.125	**3.68**	**3.34**	**3.07**
515-0255	609-5017	50	3.18	0.125	**4.45**	**4.05**	**3.71**
515-0256	609-6017	60	3.18	0.125	**5.41**	**4.92**	**4.51**

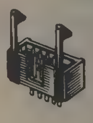
Straight Contacts — Without Ejector Latches

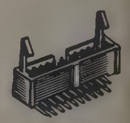
Stock No.	Mfr.'s Type	No. of Positions	mm	In.	1-24	25-99	100-499
515-0300	609-1027	10	1.57	0.062	**1.53**	**1.40**	**1.28**
515-0302	609-1427	14	1.57	0.062	**1.68**	**1.53**	**1.40**
515-0304	609-1627	16	1.57	0.062	**1.76**	**1.60**	**1.47**
515-0305	609-2027	20	1.57	0.062	**1.88**	**1.71**	**1.57**
515-0310	609-2627	26	1.57	0.062	**2.33**	**2.12**	**1.94**
515-0315	609-3427	34	1.57	0.062	**3.03**	**2.76**	**2.53**
515-0320	609-4027	40	1.57	0.062	**3.45**	**3.14**	**2.88**
515-0325	609-5027	50	1.57	0.062	**4.15**	**3.77**	**3.46**
515-0326	609-6027	60	1.57	0.062	**5.05**	**4.59**	**4.21**
515-0330	609-1037	10	3.18	0.125	**1.66**	**1.51**	**1.38**
515-0332	609-1437	14	3.18	0.125	**1.81**	**1.64**	**1.51**
515-0334	609-1637	16	3.18	0.125	**1.85**	**1.69**	**1.55**
515-0335	609-2037	20	3.18	0.125	**2.04**	**1.86**	**1.70**
515-0340	609-2637	26	3.18	0.125	**2.53**	**2.30**	**2.11**
515-0345	609-3437	34	3.18	0.125	**3.24**	**2.95**	**2.70**
515-0350	609-4037	40	3.18	0.125	**3.68**	**3.34**	**3.07**
515-0355	609-5037	50	3.18	0.125	**4.45**	**4.05**	**3.71**
515-0356	609-6037	60	3.18	0.125	**5.41**	**4.92**	**4.51**

Vertical Ejector Headers

Unlike conventional designs where the ejector latches swing left and right, the "vertical" ejector latches swing front and back, permitting headers to be soldered end-to-end with no wasted board space. **Insulation Material:** Glass filled thermoplastic, rated 94V-0, blue. **Contact Material:** Phosphor bronze; 30 µ inches minimum gold over 50 µ inches nickel in contact zone; tin-lead over nickel in termination area. **Current Rating:** 1 amp. **Insulation Resistance:** >1 × 10⁹ ohms @ 500 VDC. **Dielectric Strength:** >1000 VRMS @ sea level. **Temperature Rating:** –55°C to 125°C.







Right Angle Contacts

Stock No.	Mfr.'s Type*	No. of Positions	Fits PCB		EACH		
			mm	In.	1-24	25-99	100-499
515-0500	501-1007E	10	1.57	0.062	**2.02**	**1.84**	**1.69**
515-0502	501-2007E	20	1.57	0.062	**2.43**	**2.21**	**2.03**
515-0504	501-2607E	26	1.57	0.062	**2.94**	**2.68**	**2.45**
515-0506	501-3407E	34	1.57	0.062	**3.62**	**3.29**	**3.01**
515-0508	501-4007E	40	1.57	0.062	**4.08**	**3.71**	**3.40**
515-0510	501-5007E	50	1.57	0.062	**4.88**	**4.44**	**4.07**
515-0512	501-1017E	10	3.18	0.125	**2.17**	**1.97**	**1.81**
515-0514	501-2017E	20	3.18	0.125	**2.43**	**2.21**	**2.03**
515-0516	501-2617E	26	3.18	0.125	**2.94**	**2.68**	**2.45**
515-0518	501-3417E	34	3.18	0.125	**3.62**	**3.59**	**3.01**
515-0520	501-4017E	40	3.18	0.125	**4.08**	**3.71**	**3.40**
515-0522	501-5017E	50	3.18	0.125	**4.88**	**4.44**	**4.07**
515-0524	501-1007ES	10	1.57	0.062	**2.02**	**1.84**	**1.69**
515-0526	501-2007ES	20	1.57	0.062	**2.43**	**2.21**	**2.03**
515-0528	501-2607ES	26	1.57	0.062	**2.94**	**2.68**	**2.45**
515-0530	501-3407ES	34	1.57	0.062	**3.62**	**3.29**	**3.01**
515-0532	501-4007ES	40	1.57	0.062	**4.08**	**3.71**	**3.40**
515-0534	501-5007ES	50	1.57	0.062	**4.88**	**4.44**	**4.07**
515-0536	501-1017ES	10	3.18	0.125	**2.17**	**1.97**	**1.81**
515-0538	501-2017ES	20	3.18	0.125	**2.43**	**2.21**	**2.03**
515-0540	501-2617ES	26	3.18	0.125	**2.94**	**2.68**	**2.45**
515-0542	501-3417ES	34	3.18	0.125	**3.62**	**3.29**	**3.01**
515-0544	501-4017ES	40	3.18	0.125	**4.08**	**3.71**	**3.40**
515-0546	501-5017ES	50	3.18	0.125	**4.88**	**4.44**	**4.07**

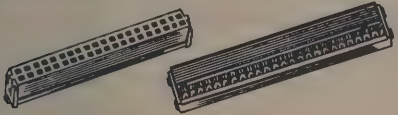
*Suffix "E" indicates headers with ears for Female sockets WITHOUT Strain Relief. Suffix "ES" for sockets WITH Strain Relief.

Straight Contacts

Stock No.	Mfr.'s Type	No. of Positions	Fits PCB		EACH		
			mm	In.	1-24	25-99	100-499
515-0550	501-1027E	10	1.57	0.062	**2.02**	**1.84**	**1.69**
515-0552	501-2027E	20	1.57	0.062	**2.43**	**2.21**	**2.03**
515-0554	501-2627E	26	1.57	0.062	**2.94**	**2.68**	**2.45**
515-0556	501-3427E	34	1.57	0.062	**3.62**	**3.29**	**3.01**
515-0558	501-4027E	40	1.57	0.062	**4.08**	**3.71**	**3.40**
515-0560	501-5027E	50	1.57	0.062	**4.88**	**4.44**	**4.07**
515-0562	501-1037E	10	3.18	0.125	**2.17**	**1.97**	**1.81**
515-0564	501-2037E	20	3.18	0.125	**2.43**	**2.21**	**2.03**
515-0566	501-2637E	26	3.18	0.125	**2.94**	**2.68**	**2.45**
515-0568	501-3437E	34	3.18	0.125	**3.62**	**3.59**	**3.01**
515-0570	501-4037E	40	3.18	0.125	**4.08**	**3.71**	**3.40**
515-0572	501-5037E	50	3.18	0.125	**4.88**	**4.44**	**4.07**
515-0574	501-1027ES	10	1.57	0.062	**2.02**	**1.84**	**1.69**
515-0576	501-2027ES	20	1.57	0.062	**2.43**	**2.21**	**2.03**
515-0578	501-2627ES	26	1.57	0.062	**2.94**	**2.68**	**2.45**
515-0580	501-3427ES	34	1.57	0.062	**3.62**	**3.29**	**3.01**
515-0582	501-4027ES	40	1.57	0.062	**4.08**	**3.71**	**3.40**
515-0584	501-5027ES	50	1.57	0.062	**4.88**	**4.44**	**4.07**
515-0586	501-1037ES	10	3.18	0.125	**2.17**	**1.97**	**1.81**
515-0588	501-2037ES	20	3.18	0.125	**2.43**	**2.21**	**2.03**
515-0590	501-2637ES	26	3.18	0.125	**2.94**	**2.68**	**2.45**
515-0592	501-3437ES	34	3.18	0.125	**3.62**	**3.29**	**3.01**
515-0594	501-4037ES	40	3.18	0.125	**4.08**	**3.71**	**3.40**
515-0596	501-5037ES	50	3.18	0.125	**4.88**	**4.44**	**4.07**

Female Sockets and Flat Cable

Female Socket Connectors
622 Series



The Thomas & Betts 622 Female Socket Connector is designed to mate with a wide variety of Male Headers in PC board applications which require repeated connection and disconnection. **Insulation Material:** Glass filled thermoplastic, rated 94 V-0, blue. **Contact Material:** Beryllium copper; 30 µ inches minimum gold over 50 µ inches nickel in contact zone; tin-lead over nickel in termination area. **Current Rating:** 1 amp. **Insulation Resistance:** >1 × 109 ohms @ 500 VDC. **Dielectric Strength:** >1000 VRMS @ sea level. **Temperature Rating:** –55°C to 125°C.

Socket Connector

Stock No.	Mfr.'s Type	No. of Positions	EACH 1-24	25-99	100-499
515-0900	622-1000	10	**.66**	**.60**	**.55**
515-0905	622-1400	14	**.88**	**.80**	**.74**
515-0910	622-1600	16	**.98**	**.90**	**.82**
515-0915	622-2000	20	**1.17**	**1.06**	**.97**
515-0920	622-2400	24	**1.37**	**1.25**	**1.14**
515-0925	622-2600	26	**1.45**	**1.32**	**1.21**
515-0930	622-3400	34	**1.86**	**1.69**	**1.55**
515-0935	622-4000	40	**2.17**	**1.97**	**1.81**
515-0940	622-5000	50	**2.68**	**2.43**	**2.23**
515-0945	622-6000	60	**3.19**	**2.90**	**2.66**

Polarized Socket Connector

Stock No.	Mfr.'s Type	No. of Positions	EACH 1-24	25-99	100-499
515-1400	622-1030	10	**.66**	**.60**	**.55**
515-1405	622-1430	14	**.88**	**.80**	**.74**
515-1410	622-1630	16	**.98**	**.90**	**.82**
515-1415	622-2030	20	**1.17**	**1.06**	**.97**
515-1420	622-2430	24	**1.37**	**1.25**	**1.14**
515-1425	622-2630	26	**1.45**	**1.32**	**1.21**
515-1430	622-3430	34	**1.86**	**1.69**	**1.55**
515-1435	622-4030	40	**2.17**	**1.97**	**1.81**
515-1440	622-5030	50	**2.68**	**2.43**	**2.23**
515-1445	622-6030	60	**3.19**	**2.90**	**2.66**

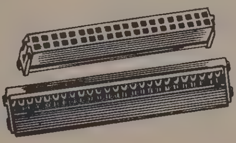
Socket Connector with Strain Relief

Stock No.	Mfr.'s Type	No. of Positions	EACH 1-24	25-99	100-499
515-0950	622-1001	10	**.94**	**.86**	**.79**
515-0955	622-1401	14	**1.17**	**1.06**	**.97**
515-0960	622-1601	16	**1.27**	**1.15**	**1.06**
515-0965	622-2001	20	**1.45**	**1.32**	**1.21**
515-0970	622-2401	24	**1.66**	**1.51**	**1.38**
515-0975	622-2601	26	**1.74**	**1.58**	**1.45**
515-0980	622-3401	34	**2.19**	**1.99**	**1.82**
515-0985	622-4001	40	**2.49**	**2.27**	**2.08**
515-0990	622-5001	50	**3.00**	**2.73**	**2.50**
515-0995	622-6001	60	**3.51**	**3.19**	**2.93**

Polarized Socket Connector with Strain Relief

Stock No.	Mfr.'s Type	No. of Positions	EACH 1-24	25-99	100-499
515-1450	622-1041	10	**.94**	**.86**	**.79**
515-1455	622-1441	14	**1.17**	**1.06**	**.97**
515-1460	622-1641	16	**1.27**	**1.15**	**1.06**
515-1465	622-2041	20	**1.45**	**1.32**	**1.21**
515-1470	622-2441	24	**1.66**	**1.51**	**1.38**
515-1475	622-2641	26	**1.74**	**1.58**	**1.45**
515-1480	622-3441	34	**2.19**	**1.99**	**1.82**
515-1485	622-4041	40	**2.49**	**2.27**	**2.08**
515-1490	622-5041	50	**3.00**	**2.73**	**2.50**
515-1495	622-6041	60	**3.51**	**3.19**	**2.93**

Female Socket Connectors



- Positive Cable Stop Version
- Polarization Keyways Standard
- 30 µ" Minimum Gold Plating on the Contact Mating Area

Standard Socket with Positive Cable Stop

Stock No.	Mfr.'s Type	No. of Positions	EACH 1-24	25-99	100-499
515-0800	609-1000CE	10	**1.94**	**1.77**	**1.62**
515-0805	609-1600CE	16	**2.55**	**2.32**	**2.13**
515-0810	609-2000CE	20	**2.84**	**2.58**	**2.37**
515-0815	609-2600CE	26	**3.66**	**3.33**	**3.05**
515-0820	609-3400CE	34	**4.76**	**4.33**	**3.97**
515-0825	609-4000CE	40	**5.55**	**5.05**	**4.63**
515-0830	609-5000CE	50	**6.98**	**6.35**	**5.82**

Polarized Socket with Positive Cable Stop

Stock No.	Mfr.'s Type	No. of Positions	EACH 1-24	25-99	100-499
515-0850	609-1030CE	10	**1.94**	**1.77**	**1.62**
515-0855	609-1630CE	16	**2.55**	**2.32**	**2.13**
515-0860	609-2030CE	20	**2.84**	**2.58**	**2.37**
515-0865	609-2630CE	26	**3.66**	**3.33**	**3.05**
515-0870	609-3430CE	34	**4.76**	**4.33**	**3.97**
515-0875	609-4030CE	40	**5.55**	**5.05**	**4.63**
515-0880	609-5030CE	50	**6.98**	**6.35**	**5.82**

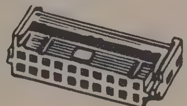
Female Socket Connectors

- Polarization Keyways Standard, Polarization Tabs Optional
- Snap-On Strain Reliefs (Optional)
- One-Piece Connector Design with Mechanical Side Latches
- Positive Cable Stop Design
- Ridges in Connector Top Align with Ansley® Flat Cable
- 30 Microinches (Minimum) Gold Plating in Contact Mating Area

Socket Connectors with Strain Relief

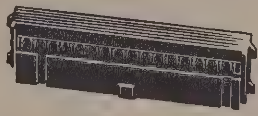
Stock No.	Mfr.'s Type	No. of Positions	EACH 1-24	25-99	100-499
515-0400	609-1001M	10	**2.23**	**2.03**	**1.86**
515-0405	609-2001M	20	**3.09**	**2.81**	**2.57**
515-0410	609-2601M	26	**3.86**	**3.51**	**3.22**
515-0415	609-3401M	34	**5.06**	**4.60**	**4.22**
515-0420	609-4001M	40	**5.86**	**5.33**	**4.88**
515-0425	609-5001M	50	**7.27**	**6.61**	**6.06**
—	—	—	—	—	—
—	—	—	—	—	—
—	—	—	—	—	—

Standard without Center Polarization Bump



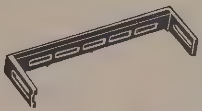
Stock No.	Mfr.'s Type	No. of Positions	EACH 1-24	25-99	100-499
515-0401	609-1000M	10	**1.94**	**1.77**	**1.62**
515-0402	609-1400M	14	**2.37**	**2.16**	**1.98**
515-0404	609-1600M	16	**2.55**	**2.32**	**2.13**
515-0406	609-2000M	20	**2.84**	**2.58**	**2.37**
515-0411	609-2600M	26	**3.66**	**3.32**	**3.05**
515-0416	609-3400M	34	**4.76**	**4.33**	**3.97**
515-0421	609-4000M	40	**5.55**	**5.05**	**4.63**
515-0426	609-5000M	50	**6.98**	**6.35**	**5.82**
515-0431	609-6000M	60	**8.59**	**7.81**	**7.15**
515-0433	609-6400M	64	**9.15**	**8.32**	**7.63**

With Center Polarization Bump



Stock No.	Mfr.'s Type	No. of Positions	EACH 1-24	25-99	100-499
515-0700	609-1030	10	**1.94**	**1.77**	**1.62**
515-0705	609-1430	14	**2.37**	**2.16**	**1.98**
515-0710	609-1630	16	**2.55**	**2.32**	**2.13**
515-0715	609-2030	20	**2.84**	**2.58**	**2.37**
515-0720	609-2630	26	**3.66**	**3.32**	**3.05**
515-0725	609-3430	34	**4.76**	**4.33**	**3.97**
515-0730	609-4030	40	**5.55**	**5.05**	**4.63**
515-0735	609-5030	50	**6.98**	**6.35**	**5.82**
515-0740	609-6030	60	**8.59**	**7.81**	**7.15**
515-0745	609-6430	64	**9.15**	**8.32**	**7.63**

Strain Relief Clips



Stock No.	Mfr.'s Type	No. of Positions	EACH 1-24	25-99	100-499
515-0435	609-1031HD	10	**.25**	**.23**	**.21**
515-0440	609-1431HD	14	**.25**	**.23**	**.21**
515-0445	609-1631HD	16	**.25**	**.23**	**.21**
515-0450	609-2031HD	20	**.25**	**.23**	**.21**
515-0455	609-2631HD	26	**.25**	**.23**	**.21**
515-0460	609-3431HD	34	**.29**	**.26**	**.24**
515-0465	609-4031HD	40	**.29**	**.26**	**.24**
515-0470	609-5031HD	50	**.29**	**.26**	**.24**
515-0475	609-6031HD	60	**.29**	**.26**	**.24**
515-0480	609-6431	64	**.29**	**.26**	**.24**

Flat Cable

Ansley® flat cable is designed to mass terminate all types of Ansley® connectors without wire stripping or soldering. The flexible, symmetrical cable is extruded, not laminated, in order to maintain exacting .050" (1.27 mm) pitch tolerance from conductor to conductor. Connectors can be terminated to flat cable in up or down configurations or 180° from each other.

Series 171 — Standard Flat Cable

Dark red stripe on number 1 conductor for positive polarization. 28 AWG stranded conductors .050" (1.27 mm) conductor spring. 105°C/PVC insulated, 300 VRMS. UL style 2651. Primarily designed for intra-cabinet wiring applications.

Stock No.	Mfr.'s Type	No. of Conductors	PER 100' ROLL 1-4	5-9
515-6000	171-9	9	**11.52**	**10.56**
515-6001	171-10	10	**12.80**	**11.73**
515-6004	171-14	14	**17.92**	**16.43**
515-6005	171-15	15	**19.20**	**17.60**
515-6006	171-16	16	**20.48**	**18.77**
515-6008	171-20	20	**25.60**	**23.46**
515-6010	171-25	25	**31.99**	**29.33**
515-6011	171-26	26	**33.27**	**30.50**
515-6013	171-34	34	**39.87**	**36.60**
515-6015	171-37	37	**43.40**	**40.06**
515-6018	171-40	40	**46.92**	**43.31**
515-6020	171-50	50	**58.65**	**54.14**
515-6025	171-60	60	**70.38**	**64.97**
515-6030	171-64	64	**75.07**	**69.30**

Series 201 — Color Coded Flat Cable

28 AWG stranded conductors. 1.27 mm (.050") conductor spacing. Industry standard color coded color coding. PVC insulation. 105 °C, 300 VRMS, UL 20067.

Stock No.	Mfr.'s Type	No. of Conductors	PER 100' ROLL 1-4	5-9
515-6201	201-10	10	**28.34**	**25.98**
515-6204	201-14	14	**36.23**	**33.44**
515-6206	201-16	16	**42.31**	**39.06**
515-6208	201-20	20	**51.67**	**47.69**
515-6210	201-25	25	**65.09**	**60.09**
515-6211	201-26	26	**67.25**	**62.08**
515-6213	201-34	34	**85.94**	**79.32**
515-6217	201-40	40	**100.95**	**93.18**
515-6220	201-50	50	**114.33**	**106.17**

Flat Cable Cutter

515-4160. 779-5030M. Cable Cutter for up to 64 conductor flat cable .... **EACH 98.85**

Flat Cable Test Data

Catalog Series	Insulation	Rating (°C)	Voltage Rating (RMS)	Impedance Ohms	Capacitance pF/FT	Velocity of Propagation nS/FT	Typical Crosstalk Characteristics, 10 ft. Sample, 1 Line Driven: Rise Time nSec		Near End%		Far End%	
171	PVC	105	300	100	14.0	1.38	3.00	7.00	5.00	3.20	6.70	2.70
201	PVC	105	300	100	14.0	1.38	3.00	7.00	5.00	3.20	6.70	2.70

Thomas&Betts — NEW — 636 Series Mass Termination IDC System

The 636 Series Connectors provide customers the design flexibility they need to meet their market requirements. For markets such as: 1 — Personal Computing (desktop and laptop); 2 — Computer Peripherals; and 3 — Contract Manufacturers, etc., the New 636 Series Connectors with copper alloy and 30 or 15 microinch gold contacts give the equipment/systems designer an added Thomas & Betts design option. For other markets that traditionally require high performance/reliability such as: 1 — Test and Instrumentation; 2 — Medical; and 3 — Telecommunications, Thomas & Betts' 622 Series Connectors with beryllium copper and 30 microinch gold contacts are the preferred choice.

Female Socket Connectors with 15 μ Inches of Gold .100" × .100" Centers

LR92984 E60980

Physical Properties. Insulation Material: Glass filled thermoplastic rated UL 94V-0. **Color:** Black. **Contacts:** Phosphor bronze 15 μ inches minimum gold over 50 μ inches nickel in contact zone; tin/lead over nickel in termination area. **Electrical Properties. Current Rating:** 1 amp. **Insulation Resistance:** >1 × 10⁹ ohms @ 500 VDC. **Dielectric Strength:** >1000 Vrms at sea level. **Environmental Properties. Temperature Rating:** –55°C to 125°C.

Socket Connector

Stock No.	Mfr.'s Type	No. of Cont.	EACH 1-249	EACH 250-499	EACH 500-999
515-1862	636-1000	10	**.51**	**.47**	**.43**
515-1864	636-1400	14	**.74**	**.67**	**.62**
515-1866	636-1600	16	**.78**	**.71**	**.65**
515-1868	636-2000	20	**.80**	**.73**	**.67**
515-1870	636-2400	24	**.96**	**.88**	**.80**
515-1872	636-2600	26	**.98**	**.90**	**.82**
515-1874	636-3000	30	**1.09**	**.99**	**.91**
515-1876	636-3400	34	**1.11**	**1.01**	**.92**
515-1878	636-4000	40	**1.21**	**1.10**	**1.01**
515-1880	636-5000	50	**1.53**	**1.40**	**1.28**
515-1882	636-6000	60	**1.82**	**1.66**	**1.52**
515-1884	636-6400	64	**2.00**	**1.82**	**1.67**

Polarized Socket Connector

Stock No.	Mfr.'s Type	No. of Cont.	EACH 1-249	EACH 250-499	EACH 500-999
515-1910	636-1030	10	**.51**	**.47**	**.43**
515-1912	636-1430	14	**.74**	**.67**	**.62**
515-1914	636-1630	16	**.78**	**.71**	**.65**
515-1916	636-2030	20	**.80**	**.73**	**.67**
515-1918	636-2430	24	**.96**	**.88**	**.80**
515-1920	636-2630	26	**.98**	**.90**	**.82**
515-1922	636-3030	30	**1.09**	**.99**	**.91**
515-1924	636-3430	34	**1.11**	**1.02**	**.92**
515-1926	636-4030	40	**1.21**	**1.10**	**1.01**
515-1928	636-5030	50	**1.53**	**1.40**	**1.28**
515-1930	636-6030	60	**1.82**	**1.66**	**1.52**
515-1932	636-6430	64	**2.00**	**1.82**	**1.67**

Socket Connector with Strain

Stock No.	Mfr.'s Type	No. of Cont.	EACH 1-249	EACH 250-499	EACH 500-999
515-1886	636-1001	10	**.76**	**.69**	**.63**
515-1888	636-1401	14	**.98**	**.90**	**.82**
515-1890	636-1601	16	**1.02**	**.93**	**.85**
515-1892	636-2001	20	**1.05**	**.95**	**.87**
515-1894	636-2401	24	**1.21**	**1.10**	**1.01**
515-1896	636-2601	26	**1.23**	**1.12**	**1.02**
515-1898	636-3001	30	**1.33**	**1.21**	**1.11**
515-1900	636-3401	34	**1.39**	**1.27**	**1.16**
515-1902	636-4001	40	**1.49**	**1.36**	**1.25**
515-1904	636-5001	50	**1.82**	**1.66**	**1.52**
515-1906	636-6001	60	**2.11**	**1.92**	**1.76**
515-1908	636-6401	64	**2.29**	**2.08**	**1.91**

Polarized Socket Connector with Strain Relief

Stock No.	Mfr.'s Type	No. of Cont.	EACH 1-249	EACH 250-499	EACH 500-999
515-1934	636-1041	10	**.76**	**.69**	**.63**
515-1936	636-1441	14	**.98**	**.90**	**.82**
515-1938	636-1641	16	**1.02**	**.93**	**.85**
515-1940	636-2041	20	**1.05**	**.95**	**.87**
515-1942	636-2441	24	**1.21**	**1.10**	**1.01**
515-1944	636-2641	26	**1.23**	**1.12**	**1.02**
515-1946	636-3041	30	**1.33**	**1.21**	**1.11**
515-1948	636-3441	34	**1.39**	**1.27**	**1.16**
515-1950	636-4041	40	**1.49**	**1.36**	**1.25**
515-1952	636-5041	50	**1.82**	**1.66**	**1.52**
515-1954	636-6041	60	**2.11**	**1.92**	**1.76**
515-1956	636-6441	64	**2.29**	**2.08**	**1.91**

Tooling and Polarization Key

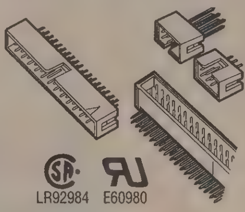
Type 779-2100. Tool frame only.
515-4100. Type 779-2100 .... **EACH 254.86**

Type 779-2151. Die only.
515-4106. Type 779-2151 .... **EACH 52.02**

Type 636-0000. Polarization key.
515-1962. Type 636-0000 .... **EACH .08**

High Temperature Low Profile Headers Straight and Right Angle .100" × .100" Centers

Physical Properties. Insulation Material: Glass filled thermoplastic rated UL 94V-0; infrared and vapor phase process compatible. **Color:** Black. **Contact Material:** Brass with 15 μ inches min. gold over 50 μ inches min. nickel plating. **Electrical Properties. Current Rating:** 1 amp. **Insulation Resistance:** >1 × 10⁹ ohms @ 500 VDC. **Dielectric Strength:** >1000 Vrms @ sea level. **Environmental Properties. Temperature Rating:** –55°C to 125°C.


LR92984 E60980

Straight Pins

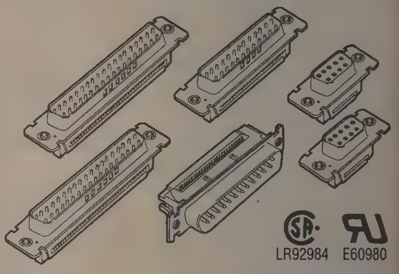
Stock No.	Mfr.'s Type	No. of Cont.	Fits PCB mm	Fits PCB In.	Tail Length (In.)	EACH 1-249	EACH 250-499	EACH 500-999
515-1814	636-1027	10	1.57	.062	.102	**.51**	**.47**	**.43**
515-1816	636-1427	14	1.57	.062	.102	**.70**	**.64**	**.58**
515-1818	636-1627	16	1.57	.062	.102	**.78**	**.71**	**.65**
515-1820	636-2027	20	1.57	.062	.102	**.88**	**.80**	**.74**
515-1822	636-2427	24	1.57	.062	.102	**1.02**	**.93**	**.85**
515-1824	636-2627	26	1.57	.062	.102	**1.11**	**1.01**	**.92**
515-1826	636-3027	30	1.57	.062	.102	**1.31**	**1.19**	**1.09**
515-1828	636-3427	34	1.57	.062	.102	**1.39**	**1.27**	**1.16**
515-1830	636-4027	40	1.57	.062	.102	**1.62**	**1.47**	**1.35**
515-1832	636-5027	50	1.57	.062	.102	**1.94**	**1.77**	**1.62**
515-1834	636-6027	60	1.57	.062	.102	**2.35**	**2.14**	**2.14**
515-1836	636-6427	64	1.57	.062	.102	**2.45**	**2.23**	**2.04**
515-1838	636-1037	10	3.18	.125	.165	**.51**	**.47**	**.43**
515-1840	636-1437	14	3.18	.125	.165	**.70**	**.64**	**.58**
515-1842	636-1637	16	3.18	.125	.165	**.78**	**.71**	**.65**
515-1844	636-2037	20	3.18	.125	.165	**.88**	**.80**	**.74**
515-1846	636-2437	24	3.18	.125	.165	**1.02**	**.93**	**.85**
515-1848	636-2637	26	3.18	.125	.165	**1.11**	**1.01**	**.92**
515-1850	636-3037	30	3.18	.125	.165	**1.31**	**1.19**	**1.09**
515-1852	636-3437	34	3.18	.125	.165	**1.39**	**1.27**	**1.16**
515-1854	636-4037	40	3.18	.125	.165	**1.62**	**1.47**	**1.35**
515-1856	636-5037	50	3.18	.125	.165	**1.94**	**1.77**	**1.62**
515-1858	636-6037	60	3.18	.125	.165	**2.35**	**2.14**	**2.14**
515-1860	636-6437	64	3.18	.125	.165	**2.45**	**2.23**	**2.04**

Right Angle Contacts

Stock No.	Mfr.'s Type	No. of Cont.	Fits PCB mm	Fits PCB In.	Tail Length (In.)	EACH 1-249	EACH 250-499	EACH 500-999
515-1764	636-1007	10	1.57	.062	.102	**.56**	**.51**	**.46**
515-1766	636-1407	14	1.57	.062	.102	**.74**	**.67**	**.62**
515-1768	636-1607	16	1.57	.062	.102	**.82**	**.75**	**.68**
515-1770	636-2007	20	1.57	.062	.102	**.94**	**.86**	**.79**
515-1772	636-2407	24	1.57	.062	.102	**1.09**	**.99**	**.91**
515-1774	636-2607	26	1.57	.062	.102	**1.17**	**1.06**	**.97**
515-1776	636-3007	30	1.57	.062	.102	**1.41**	**1.28**	**1.18**
515-1778	636-3407	34	1.57	.062	.102	**1.45**	**1.32**	**1.21**
515-1780	636-4007	40	1.57	.062	.102	**1.70**	**1.54**	**1.42**
515-1782	636-5007	50	1.57	.062	.102	**2.02**	**1.84**	**1.69**
515-1784	636-6007	60	1.57	.062	.102	**2.43**	**2.21**	**2.03**
515-1786	636-6407	64	1.57	.062	.102	**2.53**	**2.30**	**2.11**
515-1790	636-1017	10	3.18	.125	.165	**.56**	**.51**	**.46**
515-1792	636-1417	14	3.18	.125	.165	**.74**	**.67**	**.62**
515-1794	636-1617	16	3.18	.125	.165	**.82**	**.75**	**.68**
515-1796	636-2017	20	3.18	.125	.165	**.94**	**.86**	**.79**
515-1798	636-2417	24	3.18	.125	.165	**1.09**	**.99**	**.91**
515-1800	636-2617	26	3.18	.125	.165	**1.17**	**1.06**	**.97**
515-1802	636-3017	30	3.18	.125	.165	**1.41**	**1.28**	**1.18**
515-1804	636-3417	34	3.18	.125	.165	**1.45**	**1.32**	**1.21**
515-1806	636-4017	40	3.18	.125	.165	**1.70**	**1.54**	**1.42**
515-1808	636-5017	50	3.18	.125	.165	**2.02**	**1.84**	**1.69**
515-1810	636-6017	60	3.18	.125	.165	**2.43**	**2.21**	**2.03**
515-1812	636-6417	64	3.18	.125	.165	**2.53**	**2.30**	**2.11**

Low Profile Metal Shell D-Sub Connectors

Physical Properties. Insulation Material: Glass reinforced thermoplastic rated UL 94V-0. **Color:** Black. **Contacts:** Copper alloy; selective gold over 50 microinches min. nickel underplate overall. **Shell:** Tin plated steel. **Electrical Properties. Current Rating:** 1 amp. **Insulation Resistance:** >1000 megohms @ 500 VDC. **DWV:** >500 Vrms at sea level. **Environmental Properties. Temperature Rating:** –55°C to 125°C.


LR92984 E60980

Plug with Pin Contacts

Stock No.	Mfr.'s Type	No. of Cont.	Mounting Style	Contact Plating*	EACH 1-249	EACH 250-499	EACH 500-999
515-1700	636-09PM	9	.120 Min. Thru Hole	1	**2.66**	**2.42**	**2.22**
515-1702	636-09PM1	9	Threaded Insert 4-40 UNC-2B Thru	1	**2.74**	**2.49**	**2.28**
515-1704	636-09PMP001	9	.120 Min. Thru Hole	2	**3.04**	**2.77**	**2.54**
515-1706	636-09PM1P001	9	Threaded Insert 4-40 UNC-2B Thru	2	**3.13**	**2.84**	**2.61**
515-1708	636-15PM	15	.120 Min. Thru Hole	1	**3.15**	**2.86**	**2.62**
515-1710	636-15PM1	15	Threaded Insert 4-40 UNC-2B Thru	1	**3.23**	**2.93**	**2.69**
515-1712	636-15PMP001	15	.120 Min. Thru Hole	2	**3.60**	**3.27**	**3.00**
515-1714	636-15PM1P001	15	Threaded Insert 4-40 UNC-2B Thru	2	**3.70**	**3.36**	**3.08**
515-1716	636-25PM	25	.120 Min. Thru Hole	1	**3.57**	**3.25**	**2.98**
515-1718	636-25PM1	25	Threaded Insert 4-40 UNC-2B Thru	1	**3.66**	**3.32**	**3.05**
515-1720	636-25PMP001	25	.120 Min. Thru Hole	2	**4.06**	**3.70**	**3.39**
515-1722	636-25PM1P001	25	Threaded Insert 4-40 UNC-2B Thru	2	**4.15**	**3.77**	**3.46**
515-1724	636-37PM	37	.120 Min. Thru Hole	1	**6.68**	**6.07**	**5.56**
515-1726	636-37PM1	37	Threaded Insert 4-40 UNC-2B Thru	1	**6.96**	**6.33**	**5.80**
515-1728	636-37PMP001	37	.120 Min. Thru Hole	2	**7.25**	**6.54**	**6.04**
515-1730	636-37PM1P001	37	Threaded Insert 4-40 UNC-2B Thru	2	**7.33**	**6.66**	**6.11**

Receptacle with Socket Contacts

Stock No.	Mfr.'s Type	No. of Cont.	Mounting Style	Contact Plating*	EACH 1-249	EACH 250-499	EACH 500-999
515-1732	636-09SM	9	.120 Min. Thru Hole	1	**2.66**	**2.42**	**2.22**
515-1734	636-09SM1	9	Threaded Insert 4-40 UNC-2B Thru	1	**2.74**	**2.49**	**2.28**
515-1736	636-09SMP001	9	.120 Min. Thru Hole	2	**3.04**	**2.77**	**2.54**
515-1738	636-09SM1P001	9	Threaded Insert 4-40 UNC-2B Thru	2	**3.13**	**2.84**	**2.61**
515-1740	636-15SM	15	.120 Min. Thru Hole	1	**3.15**	**2.86**	**2.62**
515-1742	636-15SM1	15	Threaded Insert 4-40 UNC-2B Thru	1	**3.23**	**2.93**	**2.69**
515-1744	636-15SMP001	15	.120 Min. Thru Hole	2	**3.60**	**3.27**	**3.00**
515-1746	636-15SM1P001	15	Threaded Insert 4-40 UNC-2B Thru	2	**3.70**	**3.36**	**3.08**
515-1748	636-25SM	25	.120 Min. Thru Hole	1	**3.57**	**3.25**	**2.98**
515-1750	636-25SM1	25	Threaded Insert 4-40 UNC-2B Thru	1	**3.66**	**3.32**	**3.05**
515-1752	636-25SMP001	25	.120 Min. Thru Hole	2	**4.06**	**3.70**	**3.39**
515-1754	636-25SM1P001	25	Threaded Insert 4-40 UNC-2B Thru	2	**4.15**	**3.77**	**3.46**
515-1756	636-37SM	37	.120 Min. Thru Hole	1	**6.68**	**6.07**	**5.56**
515-1758	636-37SM1	37	Threaded Insert 4-40 UNC-2B Thru	1	**6.96**	**6.33**	**5.80**
515-1760	636-37SMP001	37	.120 Min. Thru Hole	2	**7.25**	**6.54**	**6.04**
515-1762	636-37SM1P001	37	Threaded Insert 4-40 UNC-2B Thru	2	**7.33**	**6.66**	**6.11**

***Contact Plating:** 1 — 15 microinches of gold on contact area; 2 — Selectively plated 30 marea over 50 microinches min. nickel underplate.

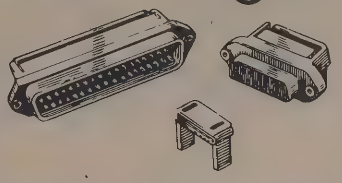
Tooling

Type 779-2100. Tool frame only.
515-4100. Type 779-2100 .... **EACH 254.86**

Type 779-2166M636. Die only.
515-1960. Type 799-2166M636 .... **EACH 52.02**

"D" Connectors, Plastic for Flat Cables

► **For Tooling See Page 301**



Plastic "D" Connectors are used in panel-mounted I/O applications, providing mass termination, convenience and IDC integrity while maintaining compatibility with all industry-standard "D" connectors. **Insulation Material:** Glass filled thermoplastic, rated 94V-0, blue. **Contact Material:** Beryllium copper — 30 µ inches minimum gold over 50 µ inches nickel in contact zone; tin-lead over nickel in termination area. **Metal Shell:** Steel with tin plating. **Current Rating:** 1 amp. **Insulation Resistance:** >1 × 10⁹ ohms @ 500 VDC. **Dielectric Strength:** >1000 VRMS @ sea level. **Temperature Rating:** – 55°C to 125°C.

Plugs with Pin Contacts

Stock No.	Mfr.'s Type	No. of Contacts	EACH 1-24	EACH 25-99	EACH 100-499
515-3300	609-9P	9	**3.72**	**3.38**	**3.10**
515-3305	609-15P	15	**4.94**	**4.49**	**4.12**
515-3310	609-25P	25	**6.31**	**5.74**	**5.26**
515-3315	609-37P	37	**9.29**	**8.44**	**7.74**
515-3321	622-50P	50	**11.61**	**10.56**	**9.68**

Receptacles with Socket Contacts

Stock No.	Mfr.'s Type	No. of Contacts	EACH 1-24	EACH 25-99	EACH 100-499
515-3400	609-9S	9	**4.33**	**3.94**	**3.61**
515-3405	609-15S	15	**5.92**	**5.38**	**4.93**
515-3410	609-25S	25	**7.25**	**6.59**	**6.04**
515-3415	609-37S	37	**10.78**	**9.80**	**8.98**
515-3421	622-50S	50	**12.26**	**11.15**	**10.22**

Standard Backshells (Plastic) for Flat Cable

Stock No.	Mfr.'s Type	No. of Contacts	EACH 1-24	EACH 25-99	EACH 100-499
515-3500	609-09	9	**1.09**	**.99**	**.91**
515-3505	609-015	15	**1.23**	**1.12**	**1.02**
515-3510	609-025	25	**1.39**	**1.27**	**1.16**
515-3515	609-037	37	**1.53**	**1.40**	**1.28**
515-3520	609-050D	50	**2.29**	**2.09**	**1.91**

Right Angle

Stock No.	Mfr.'s Type	No. of Contacts	EACH 1-24	EACH 25-99	EACH 100-499
515-3501	609-09R	9	**.72**	**.65**	**.60**
515-3506	609-015R	15	**.86**	**.78**	**.72**
515-3511	609-025R	25	**.94**	**.86**	**.79**
515-3516	609-037R	37	**1.05**	**.95**	**.87**

Backshells for Flat Cable D-Connectors

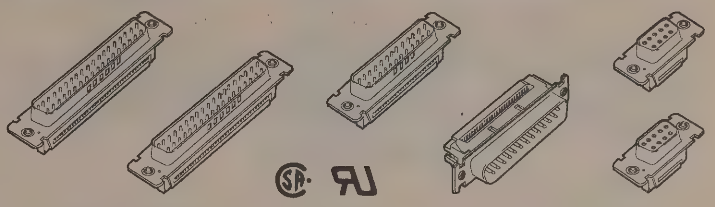
Unplated Glass Reinforced Thermoplastic UL94-VO

Stock No.	Mfr.'s Type	No. of Contacts In Housing	EACH 1-24	EACH 25-99	EACH 100-499
515-3201	622-009D	9	**1.23**	**1.12**	**1.03**
515-3206	622-015D	15	**1.92**	**1.74**	**1.60**
515-3211	622-025D	25	**2.09**	**1.90**	**1.74**
515-3216	622-037D	37	**2.29**	**2.08**	**1.91**
515-3221	622-050D	50	**2.53**	**2.30**	**2.11**

Plated Glass Reinforced Thermoplastic UL94-VO

Stock No.	Mfr.'s Type	No. of Contacts In Housing	EACH 1-24	EACH 25-99	EACH 100-499
515-3202	622-009DM	9	**2.21**	**2.01**	**1.84**
515-3207	622-015DM	15	**3.68**	**3.34**	**3.07**
515-3212	622-025DM	25	**4.23**	**3.84**	**3.52**
515-3217	622-037DM	37	**4.37**	**3.97**	**3.64**
515-3222	622-050DM	50	**4.53**	**4.12**	**3.78**

Ansley® Metal Shell Low Profile "D" Connectors



► **For Tooling See Page 301**

Low Profile Metal Shell "D" Connectors are designed for reliable EMI/RFI protected "D" connector interfaces in modern, high-density applications. The low-profile "D" can be integrated into even the most dense applications.

Insulation Material: Glass filled thermoplastic, rated 94V-0, blue. **Contact Material:** Beryllium copper — 30 µ inches minimum gold over 50 µ inches nickel in contact zone; tin-lead over nickel in termination area. **Metal Shell:** Steel with tin plating. **Current Rating:** 1 amp. **Insulation Resistance:** >1 × 10⁹ ohms @ 500 VDC. **Dielectric Strength:** >1000 VRMS @ sea level. **Temperature Rating:** – 55°C to 125°C.

Plugs with Pin Contacts

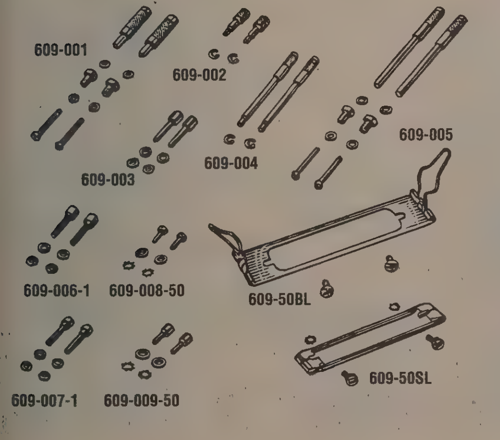
Stock No.	Mfr.'s Type	No. of Contacts	Mounting Hole Inserts	EACH 1-24	EACH 25-99	EACH 100-499
515-2998	622-09PM	9	None	**2.94**	**2.68**	**2.45**
515-2999	622-09PM1	9	Unified 4-40 thread	**3.17**	**2.88**	**2.64**
515-3000	622-09PM2	9	3 mm metric thread	**3.17**	**2.88**	**2.64**
515-3002	622-15PM	15	None	**3.90**	**3.55**	**3.25**
515-3003	622-15PM1	15	Unified 4-40 thread	**4.13**	**3.75**	**3.44**
515-3005	622-15PM2	15	3 mm metric thread	**4.13**	**3.75**	**3.44**
515-3007	622-25PM	25	None	**5.15**	**4.68**	**4.29**
515-3008	622-25PM1	25	Unified 4-40 thread	**5.37**	**4.88**	**4.48**
515-3010	622-25PM2	25	3 mm metric thread	**5.37**	**4.88**	**4.48**
515-3012	622-37PM	37	None	**7.31**	**6.64**	**6.09**
515-3013	622-37PM1	37	Unified 4-40 thread	**7.53**	**6.85**	**6.28**
515-3015	622-37PM2	37	3 mm metric thread	**7.53**	**6.85**	**6.28**
515-3018	622-50PM1	50	Unified 4-40 thread	**11.92**	**10.84**	**9.93**
515-3020	622-50PM2	50	3 mm metric thread	**11.92**	**10.84**	**9.93**

Receptacles with Socket Contacts

Stock No.	Mfr.'s Type	No. of Contacts	Mounting Hole Inserts	EACH 1-24	EACH 25-99	EACH 100-499
515-3098	622-09SM	9	None	**3.64**	**3.31**	**3.03**
515-3099	622-09SM1	9	Unified 4-40 thread	**3.86**	**3.51**	**3.22**
515-3100	622-09SM2	9	3 mm metric thread	**3.86**	**3.51**	**3.22**
515-3102	622-15SM	15	None	**4.98**	**4.53**	**4.15**
515-3103	622-15SM1	15	Unified 4-40 thread	**5.21**	**4.74**	**4.34**
515-3105	622-15SM2	15	3 mm metric thread	**5.21**	**4.74**	**4.34**
515-3107	622-25SM	25	None	**6.10**	**5.55**	**5.09**
515-3108	622-25SM1	25	Unified 4-40 thread	**6.33**	**5.76**	**5.28**
515-3110	622-25SM2	25	3 mm metric thread	**6.33**	**5.76**	**5.28**
515-3112	622-37SM	37	None	**8.74**	**7.94**	**7.28**
515-3113	622-37SM1	37	Unified 4-40 thread	**8.96**	**8.15**	**7.47**
515-3115	622-37SM2	37	3 mm metric thread	**8.96**	**8.15**	**7.47**
515-3118	622-50SM1	50	Unified 4-40 thread	**12.57**	**11.43**	**10.48**
515-3120	622-50SM2	50	3 mm metric thread	**12.57**	**11.43**	**10.48**

Strain Reliefs

Stock No.	Mfr.'s Type	No. of Contacts	EACH 1-24	EACH 25-99	EACH 100-499
515-3525	622-09SR	9	**.41**	**.38**	**.34**
515-3530	622-15SR	15	**.41**	**.38**	**.34**
515-3535	622-25SR	25	**.41**	**.38**	**.34**
515-3540	622-37SR	37	**.41**	**.38**	**.34**



"D" Connector Hardware

Screwlock Assembly. To retain two "D" connectors (plastic only) to each other through a panel or PC board. Stainless steel.
515-4000. Type 609-001 .... **PER SET 4.10**

Backshell Screwlock Assembly. Used with backshell strain relief to retain two "D" connectors to each other through a panel or PC board. Stainless steel.
515-4020. Type 609-005 .... **PER SET 6.82**

Jackscrew Assembly. Used with 609-003 to retain two "D" connectors (plastic only) to each other as a mated pair cable splice. Stainless steel.
515-4005. Type 609-002 .... **PER SET 3.47**

Backshell Jackscrew Assembly. Used with backshell strain relief and 609-003 to retain two "D" connectors to each other as a mated pair cable splice. Stainless steel.
515-4015. Type 609-004 .... **PER SET 3.78**

Slide Lock Post. Used with slide lock retainer assembly 609-50-SL. Discard flat washer for 3/32" panel; retain for 1/16" panel. Discard lock washer when No. 609-008-50 is used with No. 609-50S-M(1) or 609-50P-M(2).
515-4040. Type 609-008-50 .... **PER SET 1.43**

Jacksocket. Used to lock a 50-position "D" connector to a metal shell "D" connector with jackscrew. Mounting holes in panel are 3.99 mm +.05 mm (.157" + .002") diameter.
515-4045. Type 609-009-50 .... **PER SET 1.43**

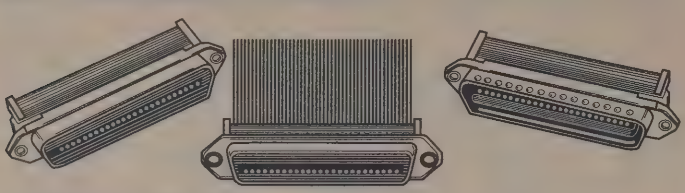
Jacksocket Assembly. Used with 609-002 for front panel mounting or 609-004. Stainless steel.
515-4010. Type 609-003 .... **PER SET 3.08**

Rear Panel Mount Jacksocket Assembly. 609-006 for .090" panels, 609-007 for .125" panels.
515-4025. Type 609-006-1 .... **PER SET 3.09**
515-4030. Type 609-007-1 .... **PER SET 3.08**

Slide Lock Retainer. Used to lock a mated pair of 50-position "D" connectors. Must be used with slide lock post 609-008-50. Discard lock washers when 609-50SL is used with 609-50S-M(1) or 609-50P-M(2).
515-4035. Type 609-50SL .... **PER SET 2.66**

Bale Lock Assembly. To lock a mated pair of 50-position "D" connectors with a backshell. **Bracket Material:** Stainless steel, spring temper. **Screw:** Zinc-plated.
515-4050. Type 609-50BL .... **PER SET 1.68**

Metal Shell Ribbon Connectors



- **For Tooling and Flat Cable, See Page 301**

Metal Shell Ribbon Connectors are designed primarily for I/O applications where EMI/RFI suppression is required. **Insulation Material:** Glass filled thermoplastic, rated 94V-0, blue. **Contact Material:** Beryllium copper: 30 µ inches minimum gold over 50 µ inches nickel in contact zone; tin-lead over nickel in termination area. **Current Rating:** 1 Amp. **Insulation Resistance:** ›1 x 10^9 Ohms @ 500 VDC. **Dielectric Strength:** ›1000 VRMS @ sea level. **Temperature Rating:** -55°C to 125°C.

Male

Thru-Hole Mount		Ball Mount		No. of Contacts	EACH		
Stock No.	Mfr.'s Type	Stock No.	Mfr.'s Type		1-24	25-99	100-499
515-2005	622-24MM	515-2025	622-24MAM	24	4.57	4.16	3.81
515-2010	622-36MM	515-2030	622-36MAM	36	5.63	5.12	4.70
515-2015	622-50MM	515-2035	622-50MAM	50	6.64	6.03	5.53

Female

515-2105	622-24FM	515-2125	622-24FAM	24	4.45	4.05	3.71
515-2110	622-36FM	515-2130	622-36FAM	36	5.55	5.05	4.63
515-2115	622-50FM	515-2135	622-50FAM	50	6.21	5.64	5.17

Ribbon Connector Hardware

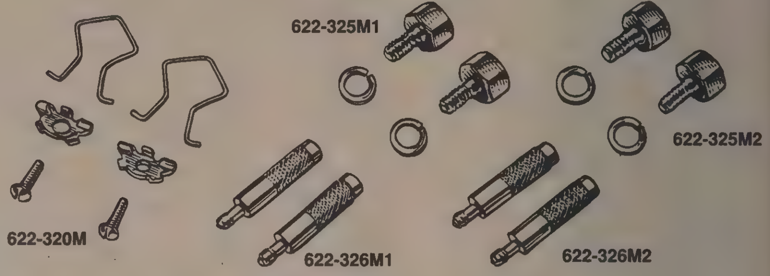
Type 622-320M. Ball Mounting Clip with 4-40 mounting screw. (Use w/622-XXX on 2 scales).
515-2200 .... **PER SET 1.13**

Type 622-325M1. Jacksocket Assembly (METRIC).
515-2205 .... **PER SET 1.86**

Type 622-325M2. Jacksocket Assembly (4-40).
515-2210 .... **PER SET 1.86**

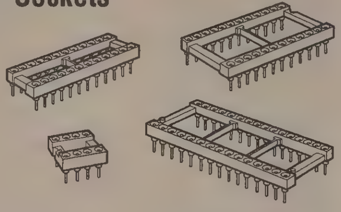
Type 622-326M1. Jackscrew Assembly (METRIC).
515-2215 .... **PER SET 1.86**

Type 622-326M2. Jackscrew Assembly (4-40). UNC2A.
515-2220 .... **PER SET 1.86**



Low Profile Open Frame DIP Sockets

- **Open Frame Construction, With Reinforcing "X" Supports In .100 x .600 x .900" Sockets**
- **End-to-End, and Side-to-Side Stackable On .100" Spacing Without Pin Position Loss**
- **Polarity Notch for Identification and Auto-Insertion Applications**
- **Precision Machined Sleeves**



.125" (3.18 mm) Solder Tail—Tin Plated

Stock No.	Mfr.'s Type	Number of Leads	EACH		
			1-99	100-499	500-999
515-7000	SMO-06-S6T	6	.31	.28	.26
515-7005	SMO-08-S6T	8	.41	.38	.34
515-7010	SMO-14-S6T	14	.74	.67	.62
515-7015	SMO-16-S6T	16	.82	.75	.68
515-7020	SMO-18-S6T	18	.92	.84	.77
515-7025	SMO-20-S6T	20	1.02	.93	.85
515-7030	SMO-22-S6T	22	1.15	1.04	.96
515-7035	SMO-24-S6T	24	1.23	1,12	1.02
515-7040	SMO-243-S6T	24	1.25	1.14	1.04
515-7045	SMO-28-S6T	28	1.43	1.30	1.19
515-7050	SMO-32-S6T	32	1.66	1.51	1.38
515-7055	SMO-36-S6T	36	1.84	1.67	1.53
515-7060	SMO-40-S6T	40	2.07	1.88	1.72
515-7065	SMO-48-S6T	48	2.47	2.25	2.06
515-7070	SMO-64-S6T	64	3.31	3.01	2.76

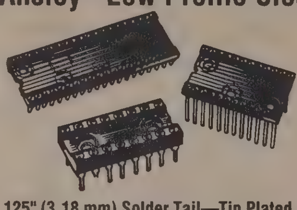
.125" (3.18 mm) Solder Tail—Gold Plated

515-7001	SMO-06-S6G	6	.43	.39	.36
515-7006	SMO-08-S6G	8	.56	.51	.46
515-7011	SMO-14-S6G	14	.98	.90	.82
515-7016	SMO-16-S6G	16	1.15	1.04	.96
515-7021	SMO-18-S6G	18	1.27	1.15	1.06
515-7026	SMO-20-S6G	20	1.41	1.28	1.18
515-7031	SMO-22-S6G	22	1.58	1.43	1.31
515-7036	SMO-24-S6G	24	1.70	1.54	1.42
515-7041	SMO-243-S6G	24	1.70	1.54	1.42
515-7046	SMO-28-S6G	28	1.98	1.80	1.65
515-7051	SMO-32-S6G	32	2.27	2.06	1.89
515-7056	SMO-36-S6G	36	2.55	2.32	2.13
515-7061	SMO-40-S6G	40	2.84	2.58	2.37
515-7066	SMO-48-S6G	48	3.39	3.08	2.83
515-7071	SMO-64-S6G	64	4.53	4.12	3.78

.546" (13.87 mm) Wire Wrap Tails—Gold Plated

515-7100	SMO-06-W3G	6	.82	.75	.68
515-7105	SMO-08-W3G	8	1.17	1.06	.97
515-7110	SMO-14-W3G	14	1.76	1.60	1.47
515-7115	SMO-16-W3G	16	2.02	1.84	1.69
515-7120	SMO-18-W3G	18	2.47	2.25	2.06
515-7125	SMO-20-W3G	20	2.84	2.58	2.37
515-7130	SMO-22-W3G	22	2.96	2.69	2.47
515-7135	SMO-24-W3G	24	3.35	3.05	2.79
515-7140	SMO-243-W3G	24	3.41	3.10	2.84
515-7145	SMO-28-W3G	28	3.76	3.42	3.13
515-7150	SMO-32-W3G	32	3.02	2.75	2.52
515-7155	SMO-36-W3G	36	4.67	4.25	3.89
515-7160	SMO-40-W3G	40	5.21	4.73	4.34
515-7165	SMO-48-W3G	48	6.27	5.70	5.22
515-7170	SMO-64-W3G	64	8.33	7.57	6.94

Ansley® Low Profile Closed Frame DIP Sockets



- **Extremely Low Profile Frame .115" (2.92 mm) Thick**
- **Accepts .011" x .018" (.28 mm x .46 mm) Rectangular and .016" to .021" (.40 mm x .53 mm) Diameter Round IC Leads in Lengths From .100" (2.54 mm) to .155" (3.94 mm)**
- **End-to-End and Side-to-Side Stacking for Maximum IC Packaging Density**
- **Precision Machined Sleeves Recommended PCB Hole Diameter .035" (.88 mm) for Solder Tail Pin and .045" (1.14 mm) for Wrap Post Pin**

.125" (3.18 mm) Solder Tail—Tin Plated

Stock No.	Mfr.'s Type	Number of Leads	EACH		
			1-99	100-499	500-999
515-7200	CMO-06-S6T	6	.29	.26	.24
515-7205	CMO-08-S6T	8	.43	.40	.36
515-7210	CMO-14-S6T	14	.76	.69	.63
515-7215	CMO-16-S6T	16	.84	.77	.70
515-7220	CMO-18-S6T	18	.94	.86	.79
515-7225	CMO-20-S6T	20	1.07	.97	.89
515-7230	CMO-22-S6T	22	1.17	1.06	.97
515-7235	CMO-24-S6T	24	1.29	1.17	1.08
515-7240	CMO-28-S6T	28	1.47	1.34	1.23
515-7245	CMO-40-S6T	40	2.13	1.93	1.77

.125" (3.18 mm) Solder Tail—Gold Plating Over Nickel

515-7201	CMO-06-S6G	6	.43	.39	.36
515-7206	CMO-08-S6G	8	.54	.49	.45
515-7211	CMO-14-S6G	14	.98	.90	.82
515-7216	CMO-16-S6G	16	1.15	1.04	.96
515-7221	CMO-18-S6G	18	1.27	1.15	1.06
515-7226	CMO-20-S6G	20	1.41	1.28	1.18
515-7231	CMO-22-S6G	22	1.58	1.43	1.31
515-7236	CMO-24-S6G	24	1.70	1.54	1.42
515-7241	CMO-28-S6G	28	1.88	1.71	1.57
515-7246	CMO-40-S6G	40	2.84	2.58	2.37

.546" (13.87 mm) Wire Wrap Tail Gold Plating Over Nickel

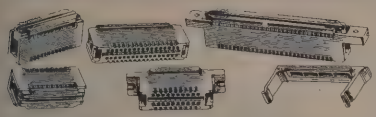
515-7251	CMO-06-W3G	6	.84	.77	.70
515-7256	CMO-08-W3G	8	1.19	1.08	.99
515-7261	CMO-14-W3G	14	1.82	1.66	1.52
515-7266	CMO-16-W3G	16	2.09	1.90	1.74
515-7271	CMO-18-W3G	18	2.53	2.30	2.11
515-7276	CMO-20-W3G	20	2.92	2.66	2.44
515-7281	CMO-22-W3G	22	3.04	2.77	2.54
515-7286	CMO-24-W3G	24	3.51	3.19	2.93
515-7291	CMO-28-W3G	28	3.86	3.51	3.22
515-7296	CMO-40-W3G	40	5.35	4.86	4.46

SIP Socket (Single In-Line Package)

- **64 Position Strip—Easily Separated Into Smaller Sizes**
- **.100" (2.54 mm) Contact Spacing**
- **Housing Flammability Rating UL94V-0**

.126" Straight Pins

Stock No.	Mfr.'s Type	Description	EACH		
			1-99	100-499	500-999
515-7310	SIP-64-S6TT1	Tin Plated	2.45	2.23	2.04
515-7315	SIP-64-S6TG2	15µ Gold on clip	2.76	2.51	2.30
515-7320	SIP-64-S6TG3	30µ Gold on Clip	3.37	3.06	2.81



Card Edge Connectors

Ansley® Card Edge Connectors are designed to provide a high-performance flat cable interface to double-sided printed circuit boards. A variety of mounting options provide for application versatility. **Specifications. Insulation Material:** Glass reinforced thermo-plastic, rated 94 V-O. **Contact Material:** Beryllium copper. **Contact Plating:** Gold over nickel. **Current Rating:** 1 amp. **Insulation Resistance:** >1 × 10^9 ohms @ 500 VDC. **DWV:** >500 V rms (sea level). **Temperature Rating:** –55° to +125°C. **Color:** Blue.

With Mounting Ears

Stock No.	Mfr.'s Type	No. of Positions	EACH		
			1-24	25-99	100-499
515-1000	622-1005	10	**2.11**	**1.92**	**1.76**
515-1005	622-2005	20	**4.19**	**3.81**	**3.49**
515-1010	622-2605	26	**4.45**	**4.05**	**3.71**
515-1015	622-3405	34	**5.82**	**5.29**	**4.85**
515-1020	622-4005	40	**6.86**	**6.24**	**5.72**
515-1025	622-5005	50	**7.35**	**6.68**	**6.12**
515-1030	622-6005	60	**8.82**	**8.02**	**7.35**

With Half Mounting Ears

515-1100	622-1025	10	**2.11**	**1.92**	**1.76**
515-1105	622-2025	20	**4.19**	**3.81**	**3.49**
515-1110	622-2625	26	**4.45**	**4.05**	**3.71**
515-1115	622-3425	34	**5.82**	**5.29**	**4.85**
515-1120	622-4025	40	**6.86**	**6.24**	**5.72**
515-1125	622-5025	50	**7.35**	**6.68**	**6.12**
515-1130	622-6025	60	**8.82**	**8.02**	**7.35**

Without Mounting Ears

515-1200	622-1015	10	**2.11**	**1.92**	**1.76**
515-1205	622-2015	20	**4.19**	**3.81**	**3.49**
515-1210	622-2615	26	**4.45**	**4.05**	**3.71**
515-1215	622-3415	34	**5.82**	**5.29**	**4.85**
515-1220	622-4015	40	**6.86**	**6.24**	**5.72**
515-1225	622-5015	50	**7.35**	**6.68**	**6.12**
515-1230	622-6015	60	**8.82**	**8.02**	**7.35**

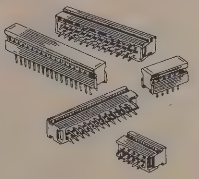
Strain Reliefs

515-1300	622-1035	10	**.31**	**.28**	**.26**
515-1305	622-2035	20	**.31**	**.28**	**.26**
515-1310	622-2635	26	**.31**	**.28**	**.26**
515-1315	622-3435	34	**.41**	**.38**	**.34**
515-1320	622-4035	40	**.41**	**.38**	**.34**
515-1325	622-5035	50	**.41**	**.38**	**.34**
515-1328	622-6035	60	**.41**	**.38**	**.34**

Polarizing Key

For 622-1005, 1015 and 1025 Series card edge connectors.
515-1330. 622-0005 .... **EACH .11**

Slimline PCB Solder Transition Connectors



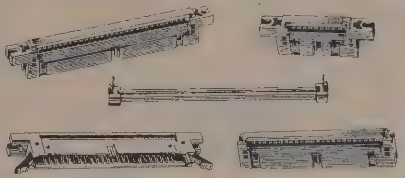
- **PCB Solder Transition Connectors Provide Fast, Permanent Termination of Flat Cable to Printed Circuit Boards**
- **Available in Solder Tail Lengths for 1.57 mm (0.62") or 3.18 mm (.125") Board Thickness**
- **Narrow Design Maximizes Packaging Density — Designed to Fit into a Standard 2.54 mm × 2.54 mm (.100" × .100") Male Header Grid Pattern**
- **Contact Material: Beryllium Copper, 100 μ Inches Tin Over 50 μ Inches Nickel in Contact Zone; Tin-Lead Over Nickel in Termination Area**

For .062" (1.57 mm) PC Boards

Stock No.	Mfr.'s Type	No. of Positions	EACH		
			1-24	25-99	100-499
515-0005	622-1053	10	**.92**	**.84**	**.77**
515-0010	622-2053	20	**1.84**	**1.67**	**1.53**
515-0015	622-2653	26	**2.35**	**2.14**	**1.96**
515-0020	622-3453	34	**3.08**	**2.80**	**2.57**
515-0025	622-4053	40	**3.60**	**3.27**	**3.00**
515-0030	622-5053	50	**4.43**	**4.03**	**3.69**

For .125" (3.17 mm) PC Boards

515-0100	622-1063	10	**.92**	**.84**	**.77**
515-0105	622-2063	20	**1.84**	**1.67**	**1.53**
515-0110	622-2663	26	**2.35**	**2.14**	**1.96**
515-0115	622-3463	34	**3.08**	**2.80**	**2.57**
515-0120	622-4063	40	**3.60**	**3.27**	**3.00**
515-0125	622-5063	50	**4.43**	**4.03**	**3.69**



Male Connectors

Ansley® Male Connectors are designed to mate with female socket transition connectors. Used primarily for in-line cable splice and "T" tap applications, they are available with optional mounting ears for I/O applications, as well as optional retainer/ejector latches for ease of disconnect. **Specifications. Insulation Material:** Glass reinforced thermo-plastic; rated 94 V-O. **Contact Material:** Beryllium copper. **Contact Plating:** Gold over nickel. **Current Rating:** 1 A. **Insulation Resistance:** >1 × 10^9 ohms @ 500 VDC. **DWV:** >500 V rms (sea level). **Temperature Rating:** –55° to +125°C. **Color:** Blue. **Note:** Part numbers shown indicate connector without ejector/retainer latches. The following options are available as special order items — add suffix "E" for latches to accommodate female socket connectors without strain relief; add suffix "ES" for latches to accommodate female socket connectors with strain relief.

Without Mounting Ears

Stock No.	Mfr.'s Type	No. of Positions	EACH		
			1-24	25-99	100-499
515-0600	622-1006	10	**4.59**	**4.18**	**3.83**
515-0605	622-2006	20	**5.23**	**4.75**	**4.36**
515-0610	622-2606	26	**5.74**	**5.22**	**4.78**
515-0615	622-3406	34	**6.55**	**5.96**	**5.46**
515-0620	622-4006	40	**7.23**	**6.57**	**6.02**
515-0625	622-5006	50	**8.35**	**7.59**	**5.96**

With Half Mounting Ears

515-0650	622-1016	10	**4.59**	**4.18**	**3.83**
515-0655	622-2016	20	**5.23**	**4.75**	**4.36**
515-0660	622-2616	26	**5.74**	**5.22**	**4.78**
515-0665	622-3416	34	**6.55**	**5.96**	**5.46**
515-0670	622-4016	40	**7.23**	**6.57**	**6.02**
515-0675	622-5016	50	**8.35**	**7.59**	**5.96**

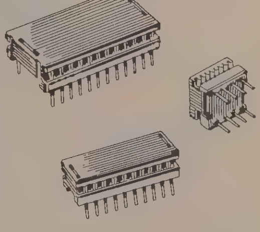
Strain Reliefs and Misc. Accessories

515-0692	622-1066	10	**.41**	**.38**	**.34**
515-0693	622-2066	20	**.41**	**.38**	**.34**
515-0694	622-2666	26	**.41**	**.38**	**.34**
515-0695	622-3466	34	**.51**	**.47**	**.43**
515-0696	622-4066	40	**.51**	**.47**	**.43**
515-0697	622-5066	50	**.51**	**.47**	**.43**

Polarizing Key

515-0603. 622-0056p .... **EACH .11**

Low Profile DIP Plugs with Heavy Duty Pins



Ansley® Low Profile DIP Plug Connectors are primarily used as a disconnectable interface to DIP sockets. DIP plugs with heavy duty contacts are used in disconnect applications with DIP sockets. DIP plugs with tin plated contacts provide a permanent flat cable transition to printed circuit boards. **Insulation Material:** Glass filled thermoplastic, rated 94 V-O, blue. **Contact Material:** Beryllium copper — 30 μ inches minimum gold over 50 μ inches nickel in contact zone; tin-lead over nickel in termination area. **Current Rating:** 1 amp. **Insulation Resistance:** >1 × 10^9 ohms @ 500 VDC. **Dielectric Strength:** >1000 VRMS @ sea level. **Temperature Rating:** –55° to +125°C.

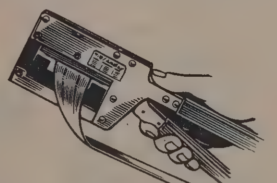
With Gold Plated Pins

Stock No.	Mfr.'s Type	No. of Leads	EACH		
			1-24	25-99	100-499
515-7500	609-M085H	8	**1.31**	**1.19**	**1.04**
515-7503	609-M145H	14	**1.41**	**1.28**	**1.18**
515-7505	609-M165H	16	**1.60**	**1.45**	**1.33**
515-7510	609-M185H	18	**1.94**	**1.77**	**1.62**
515-7515	609-M205H	20	**2.25**	**2.05**	**1.88**
515-7520	609-M225H	22	**2.53**	**2.30**	**2.11**
515-7525	609-M245H	24	**2.60**	**2.36**	**2.16**
515-7530	609-M407H	40	**4.23**	**3.84**	**3.52**
515-7535	609-M485H	48	**4.72**	**4.29**	**3.93**

Tin-Plated Pins

515-7540	609-M085TH	8	**1.21**	**1.10**	**1.01**
515-7542	609-M145TH	14	**1.25**	**1.14**	**1.04**
515-7544	609-M165TH	16	**1.37**	**1.25**	**1.14**
515-7548	609-M205TH	20	**1.84**	**1.67**	**1.53**
515-7552	609-M245TH	24	**2.23**	**2.03**	**1.86**
515-7554	609-M407TH	40	**3.47**	**3.16**	**2.89**
515-7556	609-M485TH	48	**3.96**	**3.60**	**3.30**

Model 779-2100 Hand Crimp Tool Frame and Dies



Features and Benefits

- **Allows Mass Termination of Up to 64-Conductor Flat Cable with Ansley® IDC Connector, for Wide Application Flexibility**
- **Hand Tool Terminates in Seconds without Wire Stripping or Soldering, for Low Installed Cost**
- **Shure Stake™ Mechanism Eliminates Operator Guesswork, Assures a Reliable Crimp Cycle Every Time**

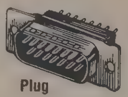
Type 779-2100. Tool frame accommodates snap-in interchangeable dies to install the entire range of Ansley® IDC connectors.
515-4100 .... **EACH 254.86**

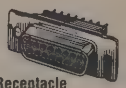
Dies for Hand Tool

Stock No.	Mfr.'s Type	Description For Use With	EACH
515-4105	779-2150	609-Series female socket transition connectors	52.02
515-4106	779-2151	622-Series female socket transition connectors	52.02
515-4111	779-2175	622-Series slimline PCB connectors	52.02
515-4113	779-2155	All low profile DIP plugs	52.02
515-4114	779 2156	All standard profile DIP plugs	52.02
515-4135	779-2164	All card edge connectors	52.02
515-4140	779-2166	All plastic shell D-Subs except 50 position	52.02
515-4142	779-2179	All metal shell D-Subs except 50 position	52.02
515-4145	779-2167	Metal and plastic 50 position D-Subs	52.02
515-4146	779-2168A	609-XX06 and 609-XX16 "male" connectors	52.02
515-4147	779-2172	Plastic or metal ribbon connectors	52.02

.240 Straight Connectors

Metal Shell D-Subs


Plug


Receptacle

Basic Connector With Thru Holes

Plug		Receptacle		No. of Contacts	EACH		
Stock No.	Mfr.'s Type	Stock No.	Mfr.'s Type		1-24	25-99	100-499
515-4280	H4M09ST29A	515-4281	H4R09ST29A	9	1.90	1.73	1.59
515-4282	H4M15ST29A	515-4283	H4R15ST29A	15	2.45	2.23	2.04
515-4284	H4M25ST29A	515-4285	H4R25ST29A	25	2.88	2.62	2.40
515-4286	H4M37ST29A	515-4287	H4R37ST29A	37	3.29	2.99	2.74

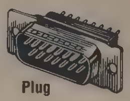
Round Standoff (4-40 THD)

515-4288	H4M09ST29B	515-4289	H4R09ST29B	9	2.17	1.97	1.81
515-4290	H4M15ST29B	515-4291	H4R15ST29B	15	2.68	2.43	2.23
515-4292	H4M25ST29B	515-4293	H4R25ST29B	25	3.06	2.79	2.55
515-4294	H4M37ST29B	515-4295	H4R37ST29B	37	3.57	3.25	2.98

Flush Threaded Insert (4-40 THD)

515-4296	H4M09ST29C	515-4297	H4R09ST29C	9	2.11	1.92	1.76
515-4298	H4M15ST29C	515-4299	H4R15ST29C	15	2.68	2.43	2.23
515-4300	H4M25ST29C	515-4301	H4R25ST29C	25	2.90	2.64	2.42
515-4302	H4M37ST29C	515-4303	H4R37ST29C	37	3.49	3.18	2.91

All Plastic D-Subs


Plug

Receptacle

Basic Connector With Thru Holes

Plug		Receptacle		No. of Contacts	EACH		
Stock No.	Mfr.'s Type	Stock No.	Mfr.'s Type		1-24	25-99	100-499
515-4248	H2M09ST29A	515-4249	H2R09ST29A	9	1.78	1.62	1.48
515-4250	H2M15ST29A	515-4251	H2R15ST29A	15	1.96	1.79	1.64
515-4252	H2M25ST29A	515-4253	H2R25ST29A	25	2.47	2.25	2.06
515-4254	H2M37ST29A	515-4255	H2R37ST29A	37	3.88	3.63	3.23

Round Standoff (4-40 THD)

515-4256	H2M09ST29B	515-4257	H2R09ST29B	9	1.94	1.77	1.62
515-4258	H2M15ST29B	515-4259	H2R15ST29B	15	2.71	2.50	2.32
515-4260	H2M25ST29B	515-4261	H2R25ST29B	25	2.76	2.51	2.35
515-4262	H2M37ST29B	515-4263	H2R37ST29B	37	3.37	3.06	2.81

Flush Threaded Insert (4-40 THD)

515-4264	H2M09ST29C	515-4265	H2R09ST29C	9	1.88	1.71	1.57
515-4266	H2M15ST29C	515-4267	H2R15ST29C	15	2.19	1.99	1.82
515-4268	H2M25ST29C	515-4269	H2R25ST29C	25	2.70	2.42	2.25
515-4270	H2M37ST29C	515-4271	H2R37ST29C	37	3.31	3.01	2.76

Plastic Standoff (4-40 THD)

515-4272	H2M09ST29D	515-4273	H2R09ST29D	9	1.68	1.53	1.40
515-4274	H2M15ST29D	515-4275	H2R15ST29D	15	1.98	1.80	1.65
515-4276	H2M25ST29D	515-4277	H2R25ST29D	25	2.49	2.27	2.08
515-4278	H2M37ST29D	515-4279	H2R37ST29D	37	3.11	2.82	2.59

.318 Right Angle PCB Connectors

Plug

Receptacle

Metal Shell D-Subs

Flush Threaded Insert (4-40 THD)

Plug		Receptacle		No. of Contacts	EACH		
Stock No.	Mfr.'s Type	Stock No.	Mfr.'s Type		1-24	25-99	100-499
515-4216	H5M09RA29C	515-4217	H5R09RA29C	9	2.31	2.10	1.93
515-4218	H5M15RA29C	515-4219	H5R15RA29C	15	2.66	2.42	2.21
515-4220	H5M25RA29C	515-4221	H5R25RA29C	25	3.21	2.92	2.67
515-4222	H5M37RA29C	515-4223	H5R37RA29C	37	3.88	3.53	2.23

Threaded Standoff Insert (4-40 THD)

515-4224	H5M09RA29B	515-4225	H5R09RA29B	9	2.39	2.18	1.99
515-4226	H5M15RA29B	515-4227	H5R15RA29B	15	2.72	2.42	2.27
515-4228	H5M25RA29B	515-4229	H5R25RA29B	25	3.29	2.99	2.74
515-4230	H5M37RA29B	515-4231	H5R37RA29B	37	3.94	3.58	3.29

Flush Threaded Insert (4-40 THD) With Metal Snap Latch

515-4232	H5M09RA29CS	515-4233	H5R09RA29CS	9	2.51	2.29	2.10
515-4234	H5M15RA29CS	515-4235	H5R15RA29CS	15	2.86	2.60	2.38
515-4236	H5M25RA29CS	515-4237	H5R25RA29CS	25	3.41	3.10	2.84
515-4238	H5M37RA29CS	515-4239	H5R37RA29CS	37	4.08	3.71	3.40

Threaded Standoff Insert (4-40 THD) With Metal Snap Latch

515-4240	H5M09RA29BS	515-4241	H5R09RA29BS	9	2.60	2.36	2.16
515-4242	H5M15RA29BS	515-4243	H5R15RA29BS	15	2.92	2.66	2.44
515-4244	H5M25RA29BS	515-4245	H5R25RA29BS	25	3.49	3.18	2.91
515-4246	H5M37RA29BS	515-4247	H5R37RA29BS	37	4.15	3.77	3.46

All Plastic D-Subs

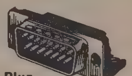
Flush Threaded Insert (4-40 THD)

515-4200	H3M09RA29C	515-4201	H3R09RA29C	9	2.09	1.90	1.74
515-4202	H3M15RA29C	515-4203	H3R15RA29C	15	2.43	2.21	2.03
515-4204	H3M25RA29C	515-4205	H3R25RA29C	25	2.98	2.71	2.49
515-4206	H3M37RA29C	515-4207	H3R37RA29C	37	3.88	3.53	3.23

Threaded Standoff Insert (4-40 THD)

515-4208	H3M09RA29B	515-4209	H3R09RA29B	9	2.15	1.95	1.79
515-4210	H3M15RA29B	515-4211	H3R15RA29B	15	2.49	2.27	2.08
515-4212	H3M25RA29B	515-4213	H3R25RA29B	25	3.06	2.79	2.55
515-4214	H3M37RA29B	515-4215	H3R37RA29B	37	3.74	3.40	3.12

.590 Right Angle PCB Connectors


Plug

Receptacle

Metal Shell D-Subs

Flush Threaded Insert (4-40 THD) With Metal Snap Latch

Plug		Receptacle		No. of Contacts	EACH		
Stock No.	Mfr.'s Type	Stock No.	Mfr.'s Type		1-24	25-99	100-499
515-4320	H4M09RA29CS	515-4321	H4R09RA29CS	9	2.51	2.29	2.10
515-4322	H4M15RA29CS	515-4323	H4R15RA29CS	15	2.86	2.60	2.38
515-4324	H4M25RA29CS	515-4325	H4R25RA29CS	25	3.41	3.10	2.84
515-4326	H4M37RA29CS	515-4327	H4R37RA29CS	37	4.08	3.71	3.40

Flush Threaded Insert (4-40 THD) With Inside Ground Strap

515-4328	H4M09RA29CM43	515-4329	H4R09RA29CM43	9	2.82	2.56	2.35
515-4330	H4M15RA29CM43	515-4331	H4R15RA29CM43	15	3.17	2.88	2.64
515-4332	H4M25RA29CM43	515-4333	H4R25RA29CM43	25	3.72	3.38	3.10
515-4334	H4M37RA29CM43	515-4335	H4R37RA29CM43	37	4.39	3.99	3.66

Flush Threaded Insert (4-40 THD) With Outside/Inside Ground Strap

515-4336	H4M09RA29CM45	515-4337	H4R09RA29CM45	9	2.51	2.29	2.10
515-4338	H4M15RA29CM45	515-4339	H4R15RA29CM45	15	3.35	3.05	2.79
515-4340	H4M25RA29CM45	515-4341	H4R25RA29CM45	25	3.41	3.10	2.84
515-4342	H4M37RA29CM45	515-4343	H4R37RA29CM45	37	4.08	3.71	3.40

Round Standoff Insert (4-40 THD) With Metal Snap Latch

515-4344	H4M09RA29BS	515-4345	H4R09RA29BS	9	2.60	2.36	2.16
515-4346	H4M15RA29BS	515-4347	H4R15RA29BS	15	2.92	2.66	2.44
515-4348	H4M25RA29BS	515-4349	H4R25RA29BS	25	3.49	3.18	2.91
515-4350	H4M37RA29BS	515-4351	H4R37RA29BS	37	4.15	3.77	3.46

Round Standoff Insert (4-40 THD) With Outside/Inside Ground Strap

515-4352	H4M09RA29BM45	515-4353	H4R09RA29BM45	9	2.60	2.36	2.16
515-4354	H4M15RA29BM45	515-4355	H4R15RA29BM45	15	2.92	2.66	2.44
515-4356	H4M25RA29BM45	515-4357	H4R25RA29BM45	25	3.49	3.18	2.91
515-4358	H4M37RA29BM45	515-4359	H4R37RA29BM45	37	4.15	3.77	3.46

All Plastic D-Subs

Flush Threaded Insert (4-40 THD)

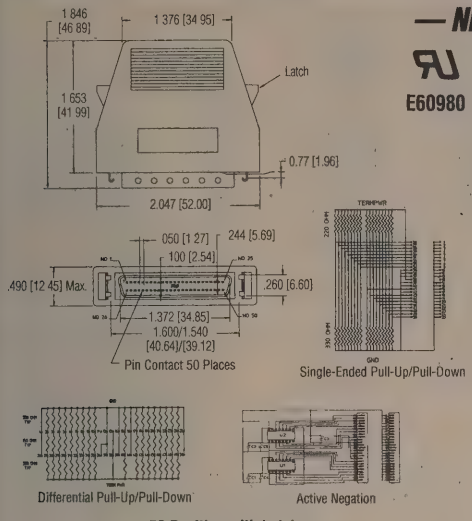
515-4304	H2M09RA29C	515-4305	H2R09RA29C	9	2.09	1.90	1.74
515-4306	H2M15RA29C	515-4307	H2R15RA29C	15	2.43	2.21	2.03
515-4308	H2M25RA29C	515-4309	H2R25RA29C	25	2.98	2.71	2.49
515-4310	H2M37RA29C	515-4311	H2R37RA29C	37	3.68	3.34	3.06

Round Standoff Insert (4-40 THD)

515-4312	H2M09RA29B	515-4313	H2R09RA29B	9	2.15	1.95	1.79
515-4314	H2M15RA29B	515-4315	H2R15RA29B	15	2.68	2.43	2.23
515-4316	H2M25RA29B	515-4317	H2R25RA29B	25	3.06	2.79	2.55
515-4318	H2M37RA29B	515-4319	H2R37RA29B	37	3.74	3.40	3.12

— NEW —

E60980 LR92984

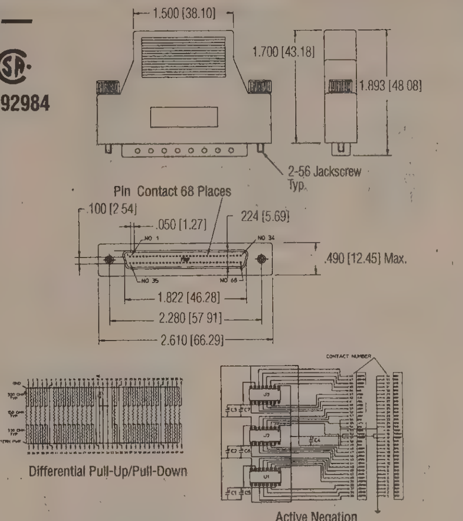


Single-Ended Pull-Up/Pull-Down

Differential Pull-Up/Pull-Down

Active Negation

50 Position with Latches



Differential Pull-Up/Pull-Down

Active Negation

68 Position with Thumb Screws

Fine Pitch "D" — Shielded Terminators (FP Series)

- ▶ Application: SCSI 2 and SCSI 3 Systems Having Two I/O Ports; Shield Allows Use in Equipment with Separate Enclosures
- ▶ Current Rating: 1 Amp
- ▶ Configuration: External, End of Line, Unshielded
- ▶ Maximum Operating Voltage: 50 Volts
- ▶ Insulation Material: Thermoplastic Rated UL94V-0
- ▶ Contacts: High Strength Copper Alloy; 30 µ Inches Minimum Gold over 50 µ Inches Nickel in Contact Zone; Tin Lead over Nickel in Termination Area
- ▶ Temperature Rating: 0°C to 70°C

Stock No.	Mfr.'s Type	No. of Contacts	Style	EACH	
				1-9	10-24
515-3600	TRM050FPO	50	Single-Ended	20.01	18.58
515-3602	TRM050FPDIFO	50	Differential	22.13	20.55
515-3604	TRM050FPANO	50	Active Negation	23.78	22.08
515-3606	TRM068FPDIFO	68	Differential	26.05	24.19
515-3608	TRM068FPANO	68	Active Negation	26.99	25.07

Standard DIN Connectors — NEW —

- ▶ Color: Gray
- ▶ Level 2 — 400 Mating Cycles
- ▶ Insulation Material: Glass Filled Thermoplastic Rated UL94V-0

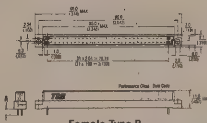
E60980 LR92984

Male Connectors

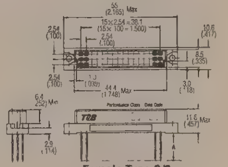
Stock No.	Mfr.'s Type	No. of Contacts	DIN Type	Dim. A	EACH		
					1-24	25-99	100-249
515-3610	161-44830-3008	48	C/2	0.114	2.60	2.36	2.00
515-3612	161-66430-3008	64	B	0.114	2.55	2.32	1.97
515-8603	161-96450-3008	64	C	0.114	2.49	2.27	1.92
515-3616	161-99630-3008	96	C	0.114	3.09	2.81	2.37

Female Connectors

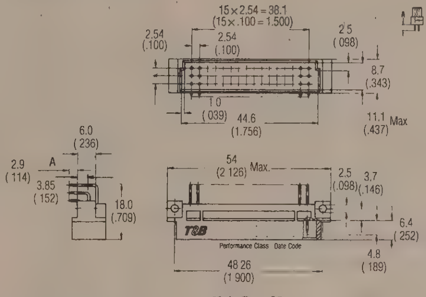
Stock No.	Mfr.'s Type	No. of Contacts	DIN Type	Dim. A	1-24	25-99	100-249
515-3618	162-44830-7058	48	C/2	0.114	3.30	3.03	2.56
515-3620	162-66430-7058	64	B	0.114	3.76	3.42	2.89
515-3622	162-96450-7058	64	C	0.114	3.66	3.32	2.81
515-3624	162-99630-7058	96	C	0.114	4.47	4.07	3.44



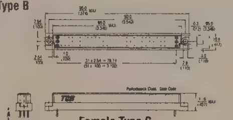
Female Type B



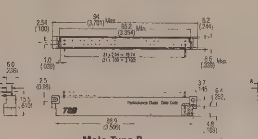
Female Type C/2



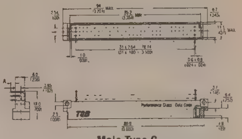
Male Type C2



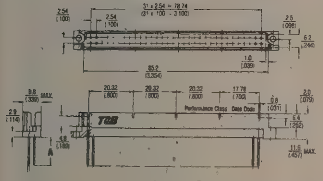
Female Type C



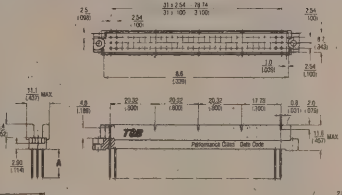
Male Type B



Male Type C



Male Type Q



Male Type R

Inverse DIN Connectors — NEW —

E60980 LR92984

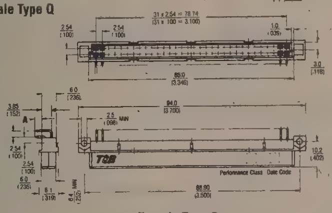
- ▶ Color: Gray
- ▶ Level 2 — 400 Mating Cycles
- ▶ Insulation Material: Glass Filled Thermoplastic Rated UL94V-0

Male Connectors

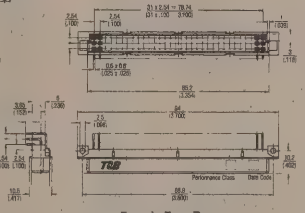
Stock No.	Mfr.'s Type	No. of Contacts	DIN Type	Dim. A	EACH		
					1-24	25-99	100-249
515-3626	211-66430-7008	64	Q	0.177	3.00	2.73	2.31
515-3628	211-96450-7008	64	R	0.177	3.09	2.81	2.37
515-3630	211-99630-7008	96	R	0.177	3.82	3.47	2.94
515-3632	211-99630-6008	96	R	0.114	3.68	3.34	2.83

Female Connectors

Stock No.	Mfr.'s Type	No. of Contacts	DIN Type	Dim. A	1-24	25-99	100-249
515-3634	212-66430-3058	64	Q	0.114	6.02	5.48	4.63
515-3636	212-96450-3058	64	R	0.114	6.37	5.79	4.90
515-3638	212-99630-3058	96	R	0.114	7.10	6.46	5.47



Female Type Q



Female Type R

PC Card Edge Connectors

.156, .125, and .100 Centered Card Edge

.156 Dip Solder Double Readout Without Mounting Ears

Stock No.	Mfr.'s type	No. of Contact Pairs	EACH		
			1-24	25-99	100-249
515-4360	A6D10DS29C2	10	1.98	1.80	1.53
515-4361	A6D22DS29C2	22	3.27	2.97	2.52
515-4362	A6D28DS29C2	28	3.90	3.55	3.00
515-4363	A6D43DS29C2	43	5.49	4.99	4.23

.156 Wire Wrap, .125" Mounting Holes, Double Readout

Stock No.	Mfr.'s type	No. of Contact Pairs	1-24	25-99	100-249
515-4364	A6D15WW29A3	15	3.43	3.12	2.64
515-4365	A6D22WW29A3	22	4.45	4.05	3.43
515-4366	A6D28WW29A3	28	5.35	4.86	4.12

.125 Dip Solder Double Readout, Flush Mount (.125" Holes)

Stock No.	Mfr.'s type	No. of Contact Pairs	1-24	25-99	100-249
515-4367	A7D28DS29D2	28	3.78	3.44	2.91

.125 Dip Solder Double Readout Without Mounting Ears

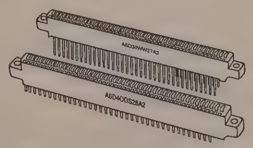
Stock No.	Mfr.'s type	No. of Contact Pairs	EACH		
			1-24	25-99	100-249
515-4368	A7D10DS29C2	10	1.82	1.66	1.40
515-4369	A7D15DS29C2	15	2.31	2.10	1.78
515-4370	A7D28DS29C2	28	3.55	3.23	2.74
515-4371	A7D36DS29C2	36	4.33	3.94	3.33
515-4372	A7D50DS29C2	50	5.66	5.14	4.35

.125 Dip Solder Double Readout, .125" Mounting Holes

Stock No.	Mfr.'s type	No. of Contact Pairs	1-24	25-99	100-249
515-4373	A7D28DS29A2	28	3.55	3.23	2.74

.125 Dip Solder Double Readout, .125" Mounting Holes

Stock No.	Mfr.'s type	No. of Contact Pairs	1-24	25-99	100-249
515-4374	A7D10WW29A3	10	2.47	2.25	1.90
515-4375	A7D28WW29A3	28	4.84	4.40	3.72

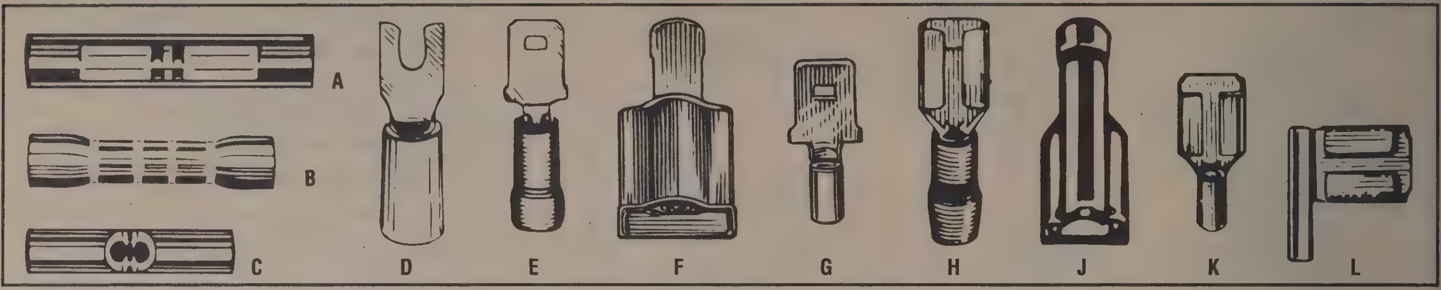


.100 Dip Solder Double Readout Without Mounting Ears

Stock No.	Mfr.'s type	No. of Contact Pairs	EACH		
			1-24	25-99	100-249
515-4376	A8D20DS29C2	20	2.53	2.30	1.95
515-4377	A8D22DS29C2	22	2.70	2.45	2.08
515-4378	A8D25DS29C2	25	2.94	2.68	2.26
515-4379	A8D30DS29C2	30	3.35	3.05	2.58

.100 Wire Wrap Double Readout, .125" Mounting Holes

Stock No.	Mfr.'s type	No. of Contact Pairs	1-24	25-99	100-249
515-4380	A8D15WW29A3	15	2.90	2.64	2.23
515-4381	A8D22WW29A3	22	3.70	3.36	2.85



These same products are available in larger, bulk packaging at substantial savings. Add 1 to the Allied Stock No. to get the same part in bulk.

Butt-Type Splices

Nylon Insulated — Fig. A

Stock No.	Mfr.'s Type	Wire Range	Length	Width	Pkg. Qty.	PER PKG. 1-4	PER PKG. 5-9
534-0660	2RA18	22-18	1.19	0.18	100	35.82	30.70
534-0665	2RB14	16-14	1.19	0.21	100	35.82	30.70
534-0670	2RC10	12-10	1.26	0.28	50	26.23	22.49
534-0675	2RD8	8	1.69	—	25	27.33	23.43
534-0680	2RE6	6	1.85	—	20	25.55	21.90
534-0685	2RF4	4	1.85	—	15	22.60	19.37

Vinyl Insulated — Fig. B

534-0690	2RA18X	22-18	1.13	0.25	100	27.85	23.87
534-0695	2RB14X	16-14	1.13	0.26	100	27.56	23.62
534-0700	2RC10X	12-10	1.31	0.31	50	20.44	17.52

Non-Insulated — Fig. C

534-0705	2A-18	22-18	0.62	0.12	100	19.11	16.38
534-0710	2B-14	16-14	0.62	0.16	100	19.96	17.11
534-0715	2C-10	12-10	0.72	0.22	50	13.91	11.92
534-0720	2D-8	9-8-7	1.03	0.28	25	17.04	14.61
534-0725	2E-6	6-5	1.12	0.37	20	19.26	16.51
534-0730	2F-4	4-3	1.25	0.44	15	20.55	17.62
534-0735	2G21	2-1	1.72	0.55	5	9.01	7.73

Locking Fork Terminals

Vinyl Insulated — Fig. D

These have a specially designed tongue that lets them go on like a fork and stay on like a ring.

Stock No.	Mfr.'s Type	Wire Range	Bolt Hole	Length	Width	Pkg. Qty.	PER PKG. 1-4	PER PKG. 5-9
534-0740	18RA-6FL	22-18	6	0.97	0.25	100	28.78	24.67
534-0745	18RA-8FL	22-18	8	0.97	0.29	100	28.78	24.67
534-0750	18RA-10FL	22-18	10	0.97	0.29	100	28.78	24.67
534-0755	14RB-6FL	16-14	6	0.97	0.25	100	29.99	25.71
534-0760	14RB-8FL	16-14	8	0.97	0.29	100	29.99	25.71
534-0765	14RB-10FL	16-14	10	0.97	0.29	100	29.99	25.71
534-0770	10RC-6FL	12-10	6	1.09	0.31	50	19.23	16.48
534-0775	10RC-8FL	12-10	8	1.09	0.37	50	19.23	16.48
534-0780	10RC-10FL	12-10	10	1.09	0.37	50	20.06	17.20
534-0782	10RC-14FL	12-10	1/4"	1.09	0.49	50	23.62	20.25

Nylon Insulated — Fig. D

534-0785	RA18-6FL	22-18	6	0.86	0.25	100	39.27	33.66
534-0790	RA18-8FL	22-18	8	0.86	0.29	100	39.27	33.66
534-0795	RA18-10FL	22-18	10	0.86	0.29	100	39.27	33.66
534-0800	RB14-6FL	16-14	6	0.87	0.25	100	39.27	33.66
534-0805	RB14-8FL	16-14	8	0.87	0.29	100	39.27	33.66
534-0810	RB14-10FL	16-14	10	0.87	0.29	100	39.27	33.66
534-0815	RC10-6FL	12-10	6	0.97	0.31	50	23.04	19.75
534-0820	RC10-8FL	12-10	8	1.00	0.37	50	24.79	21.25
534-0825	RC10-10FL	12-10	10	1.00	0.37	50	24.79	21.25
534-0830	RC10-14FL	12-10	1/4"	1.12	0.50	50	25.04	21.47

Insulated Male Tabs

Mate with female disconnects on this page. **Material:** Brass. **Finish:** Tin-plated.

Vinyl Self-Insulated Male Tabs

Stock No.	Mfr.'s Type	Fig.	Wire Range	Tab Size (In.)	Pkg. Qty.	PER PKG. 1-4	PER PKG. 5-9
534-0575	18RA-250T	E	22-18	0.250 × 0.032	100	36.14	30.98
534-0580	18RAD-187	E	22-18	0.187 × 0.032	100	39.20	33.60
534-0585	18RAD-188	E	22-18	0.187 × 0.020	100	39.20	33.60
534-0590	14RB-250T	E	16-14	0.250 × 0.032	100	37.32	31.99
534-0595	14RBD-187	E	16-14	0.187 × 0.032	100	36.19	31.03
534-0600	14RBD-188	E	16-14	0.187 × 0.020	100	33.65	28.84
534-0605	10RC-250T	E	12-10	0.250 × 0.032	50	20.96	17.97

Nylon Fully Insulated Male Tabs

Stock No.	Mfr.'s Type	Fig.	Wire Range	Tab Size (In.)	Pkg. Qty.	PER PKG. 1-4	PER PKG. 5-9
534-0610	18RA-251T	F	22-18	0.250 × 0.032	50	18.70	16.03
534-0615	14RB-251T	F	16-14	0.250 × 0.032	50	19.32	16.56
534-0620	10RC-251T	F	12-10	0.250 × 0.032	25	11.91	10.21

Non-Insulated Male Tabs

Stock No.	Mfr.'s Type	Fig.	Wire Range	Tab Size (In.)	Pkg. Qty.	PER PKG. 1-4	PER PKG. 5-9
534-0625	A18-251T	G	22-18	0.250 × 0.032	100	21.88	18.76
534-0640	B14-251T	G	16-14	0.250 × 0.032	100	24.18	20.72
534-0655	C10-251T	G	12-10	0.250 × 0.032	50	12.66	10.85

Nylon Insulated Female Disconnects

Stock No.	Mfr.'s Type	Fig.	Wire Range	Tab Size (In.)	Pkg. Qty.	PER PKG. 1-4	PER PKG. 5-9
534-0400	RA18-250F	H	22-18	0.250 × 0.032	100	38.25	32.79
534-0405	RAD18-183	H	22-18	0.187 × 0.032	100	39.37	33.75
534-0410	RAD18-182	H	22-18	0.187 × 0.020	100	39.37	33.75
534-0415	RA18-111F	H	22-18	0.110 × 0.020	100	40.53	34.74
534-0420	RA18-110F	H	22-18	0.110 × 0.032	100	40.53	34.74
534-0425	18RA-2577	J	22-18	0.250 × 0.032	100	38.98	33.41
534-0430	18RAD-18377	J	22-18	0.187 × 0.032	100	37.78	32.38
534-0435	18RAD-18277	J	22-18	0.187 × 0.020	100	37.78	32.38
534-0440	RB14-250F	H	16-14	0.250 × 0.032	100	39.85	34.16
534-0445	RBD14-183	H	16-14	0.187 × 0.032	100	44.86	38.46
534-0450	RBD14-182	H	16-14	0.187 × 0.020	100	44.86	38.46
534-0455	RB14-111F	H	16-14	0.110 × 0.020	100	44.86	38.46
534-0460	RB14-110F	H	16-14	0.110 × 0.032	100	40.53	34.74
534-0465	14RB-2577	J	16-14	0.250 × 0.032	100	38.63	33.11
534-0470	14RBD-18377	J	16-14	0.187 × 0.032	100	37.42	32.07
534-0475	14RBD-18277	J	16-14	0.187 × 0.020	100	37.42	32.07
534-0480	RC10-250F	H	12-10	0.250 × 0.032	50	26.08	22.36
534-0485	10RC-2577	J	12-10	0.250 × 0.032	50	23.73	20.34

Vinyl Insulated Female Disconnects

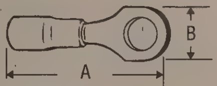
Stock No.	Mfr.'s Type	Fig.	Wire Range	Tab Size (In.)	Pkg. Qty.	PER PKG. 1-4	PER PKG. 5-9
534-0490	18RA-250F	H	22-18	0.250 × 0.032	100	37.42	32.07
534-0495	18RAD-183	H	22-18	0.187 × 0.032	100	35.40	30.34
534-0500	18RAD-182	H	22-18	0.187 × 0.020	100	35.40	30.34
534-0505	14RB-250F	H	16-14	0.250 × 0.032	100	37.42	32.07
534-0510	14RBD-183	H	16-14	0.187 × 0.032	100	32.83	28.14
534-0515	14RBD-182	H	16-14	0.187 × 0.020	100	32.83	28.14
534-0520	10RC-250F	H	12-10	0.250 × 0.032	50	23.32	19.99

Non-Insulated Female Disconnects

Stock No.	Mfr.'s Type	Fig.	Wire Range	Tab Size (In.)	Pkg. Qty.	PER PKG. 1-4	PER PKG. 5-9
534-0525	A18-250	K	22-18	0.250 × 0.032	100	21.68	18.58
534-0530	A18-250A	L	22-18	0.250 × 0.032	50	12.28	10.52
534-0535	AD18-183	K	22-18	0.187 × 0.032	100	23.97	20.55
534-0540	AD18-182	K	22-18	0.187 × 0.020	100	23.97	20.55
534-0545	B14-250	K	16-14	0.250 × 0.032	100	21.68	18.58
534-0550	B14-250A	L	16-14	0.250 × 0.032	50	13.24	11.35
534-0555	BD14-183	K	16-14	0.187 × 0.032	100	23.97	20.55
534-0560	BD14-182	K	16-14	0.187 × 0.020	100	23.97	20.55
534-0565	C10-250F	K	12-10	0.250 × 0.032	50	21.54	18.47
534-0570	C10-250A	L	12-10	0.250 × 0.032	50	22.80	19.54

These same terminals are available in larger, bulk packaging at substantial savings. Add 1 to the Allied Stock No. to get the same part in bulk.

Vinyl Insulated Ring — Insulation Support

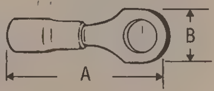


STA-KON terminals and tools exceed test specifications requirements of military, UL and CSA. These ring terminals are insulated with a PVC insulation sleeve of extra length to give protection and relieve bending stress at wire's flex point. Brazed seam barrel is serrated to obtain high pull-out value. Terminal is made of high conductivity electrolytic copper, electro-tin plated. Insulation material is color coded.

Stock No.	Mfr.'s Type	Wire Range	Bolt Hole	A Length (In.)	B Width (In.)	PER PKG./100	
						1-4	5-9
534-0100	18RA-6	22-18	6	0.94	0.25	**25.98**	**22.27**
534-0105	18RA-8	22-18	8	0.97	0.31	**25.98**	**22.27**
534-0110	18RA-10	22-18	10	0.97	0.31	**27.08**	**23.22**
534-0120	14RB-6	16-14	6	0.97	0.31	**27.08**	**23.22**
534-0125	14RB-8	16-14	8	0.97	0.31	**27.08**	**23.22**
534-0130	14RB-10	16-14	10	0.97	0.31	**27.08**	**23.22**
534-0135	10RC-6	12-10	6	1.06	0.31	**16.78***	**14.39***
534-0140	10RC-8	12-10	8	1.06	0.31	**17.48***	**14.98***
534-0145	10RC-10	12-10	10	1.06	0.31	**17.51***	**15.01***
534-0150	10RC-14	12-10	1/4"	1.16	0.50	**21.24***	**18.20***

*Package of 50.

Nylon Insulated Ring — Insulation Grip

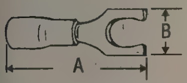


Self-insulated with high dielectric-strength nylon sleeves, these ring terminals are recommended for temperatures up to 105°C. An inner bronze insulation grip sleeve lengthens the flexing radius of the conductor and eliminates conductor creep. The nylon jacket is color-coded.

Stock No.	Mfr.'s Type	Wire Range	Bolt Hole	A Length (In.)	B Width (In.)	PER PKG./100	
						1-4	5-9
534-0155	RA18-6	22-18	6	0.83	0.26	**38.03**	**32.60**
534-0160	RA18-8	22-18	8	0.83	0.26	**38.03**	**32.60**
534-0165	RA18-10	22-18	10	0.86	0.31	**39.65**	**33.98**
534-0170	RB14-6	16-14	6	0.87	0.31	**39.65**	**33.98**
534-0175	RB14-8	16-14	8	0.87	0.31	**39.65**	**33.98**
534-0180	RB14-10	16-14	10	0.87	0.31	**39.65**	**33.98**
534-0185	RC10-6	12-10	6	1.00	0.37	**22.89***	**19.62***
534-0190	RC10-8	12-10	8	1.00	0.31	**23.84***	**20.43***
534-0195	RC10-10	12-10	10	1.00	0.31	**23.84***	**20.43***

*Package of 50.

Vinyl Insulated Fork — Insulation Support

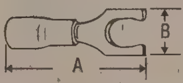


These fork terminals have extra-long PVC insulation sleeve for protection and stress relief at wire's flex point. Brazed seam barrel is serrated for high pull-out value. Terminal is high conductivity electrolytic copper, electro-tin plated. Insulation is color coded.

Stock No.	Mfr.'s Type	Wire Range	Bolt Hole	A Length (In.)	B Width (In.)	PER PKG./100	
						1-4	5-9
534-0200	18RA-6F	22-18	6	0.94	0.25	**27.08**	**23.22**
534-0205	18RA-8F	22-18	8	0.97	0.31	**27.08**	**23.22**
534-0210	18RA-10F	22-18	10	0.97	0.31	**27.08**	**23.22**
534-0220	14RB-6F	16-14	6	0.97	0.31	**27.08**	**23.22**
534-0225	14RB-8F	16-14	8	0.97	0.31	**27.08**	**23.22**
534-0230	14RB-10F	16-14	10	0.97	0.31	**27.08**	**23.22**
534-0240	10RC-6F	12-10	6	1.09	0.38	**16.78***	**14.39***
534-0245	10RC-8F	12-10	8	1.09	0.38	**17.48***	**14.98***
534-0250	10RC-10F	12-10	10	1.09	0.38	**17.51***	**15.01***

*Package of 50.

Nylon Insulated Fork — Insulation Grip

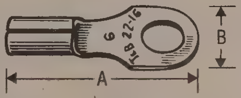


Fork terminals with nylon insulation sleeves, recommended for temperatures up to 105°C. Inner bronze insulation grip sleeve lengthens flex radius of conductor and eliminates conductor creep. Nylon jacket is color coded.

Stock No.	Mfr.'s Type	Wire Range	Bolt Hole	A Length (In.)	B Width (In.)	PER PKG./100	
						1-4	5-9
534-0255	RA18-6F	22-18	6	0.83	0.25	**39.65**	**33.98**
534-0260	RA18-8F	22-18	8	0.83	0.31	**39.65**	**33.98**
534-0265	RA18-10F	22-18	10	0.86	0.31	**39.65**	**33.98**
534-0270	RB14-6F	16-14	6	0.87	0.31	**39.65**	**33.98**
534-0275	RB14-8F	16-14	8	0.87	0.31	**39.65**	**33.98**
534-0280	RB14-10F	16-14	10	0.87	0.38	**39.65**	**33.98**
534-0285	RC10-6F	12-10	6	1.00	0.31	**22.89***	**19.62***
534-0290	RC10-8F	12-10	8	1.00	0.37	**23.84***	**20.43***
534-0295	RC10-10F	12-10	10	1.00	0.37	**23.84***	**20.43***

*Package of 50.

Non-Insulated Ring

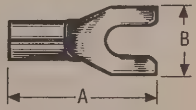


These non-insulated ring terminals are made of electrolytic copper for high conductivity and have a brazed seam barrel which provides maximum tensile strength. The wire barrel is serrated which increases grip on wire.

Stock No.	Mfr.'s Type	Wire Range	Bolt Hole	A Length (In.)	B Width (In.)	PER PKG./100	
						1-4	5-9
534-0300	A18-6	22-18	6	0.72	0.25	**15.88**	**13.61**
534-0305	A18-8	22-18	8	0.75	0.31	**15.88**	**13.61**
534-0310	A18-10	22-18	10	0.75	0.31	**15.88**	**13.61**
534-0315	B14-6	16-14	6	0.75	0.31	**15.88**	**13.61**
534-0320	B14-8	16-14	8	0.75	0.31	**16.56**	**14.20**
534-0325	B14-10	16-14	10	0.75	0.31	**16.56**	**14.20**
534-0330	C10-6	12-10	6	0.82	0.31	**11.12***	**9.53***
534-0335	C10-8	12-10	8	0.82	0.31	**11.12***	**9.53***
534-0340	C10-10	12-10	10	0.85	0.38	**11.59***	**9.93***
534-0345	C10-14	12-10	1/4"	0.91	0.50	**13.77***	**11.81***

*Package of 50.

Non-Insulated Fork



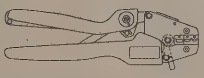
These non-insulated fork terminals are made of electrolytic copper for high conductivity and have a brazed seam barrel which provides maximum tensile strength. Serrated barrel increases grip on wire.

Stock No.	Mfr.'s Type	Wire Range	Bolt Hole	A Length (In.)	B Width (In.)	PER PKG./100	
						1-4	5-9
534-0355	A18-6F	22-18	6	0.72	0.25	**15.88**	**13.61**
534-0360	A18-8F	22-18	8	0.75	0.31	**15.88**	**13.61**
534-0365	A18-10F	22-18	10	0.75	0.31	**15.88**	**13.61**
534-0370	B14-6F	16-14	6	0.75	0.31	**15.88**	**13.61**
534-0375	B14-8F	16-14	8	0.75	0.31	**16.56**	**14.20**
534-0380	B14-10F	16-14	10	0.75	0.31	**16.56**	**14.20**
534-0385	C10-8F	12-10	8	0.82	0.38	**11.12***	**9.53***
534-0390	C10-10F	12-10	10	0.82	0.38	**11.59***	**9.93***
534-0395	C10-14F	12-10	1/4"	0.98	0.50	**12.78***	**10.95***

*Package of 50.

Application Tools

WT111M/WT112M


ERG-Series

WT2000

WT145A, WT145C

Stock No.	Mfr.'s Type	For Use with STA-KON Series	EACH
534-1000	WT111M	A, B, C, PT non-insulated terminals and splices	**31.01**
534-1001	WT112M	RA, RB, A, B, C non-insulated and RC insulated nylon and vinyl terminal and splices	**29.87**
534-1005	WT2000	A, B, C, PT, RA, RB, RC insulated and non-insulated terminals and splices	**34.81**
534-1101	ERG-2001*	RA, RB, RC nylon and vinyl terminals, splices, and disconnects	**165.09**
534-1102	ERG-2002*	A, B, C non-insulated terminals, splices, and disconnects	**150.09**
534-1103	ERG-2003*	RA, RB nylon and vinyl terminals, splices, and disconnects	**165.09**
534-1120	WT145A	Nylon terminal, splices, disconnects	**255.69**
534-1130	WT145C	Nylon vinyl terminals, splices, disconnects	**293.03**
534-1628	WT1255	Installing tool for heatshrinkable terminals	**68.68**

*Comfort Crimp™ Series.

Heat Shrinkable Disconnects and Butt Splices

Disconnect

Butt Splice

Stock No.	Mfr.'s Type	Wire Range	Max. Ins.	Tab Size	Connector Type	PER PKG./25	
						1-4	5-9
534-1616	RAS18-250AX	22-18	0.170	0.250 × 0.032	Female disconnect	**19.08**	**16.35**
534-1618	RBS14-250AX	16-14	0.200	0.250 × 0.032	Female disconnect	**19.08**	**16.35**
534-1620	RCS10-250AX	12-10	0.250	0.250 × 0.032	Female disconnect	**20.64**	**17.69**
534-1622	18RAS-251TX	22-18	0.170	0.250 × 0.032	Male disconnect	**19.08**	**16.35**
534-1624	14RBS-251TX	16-14	0.200	0.250 × 0.032	Male disconnect	**19.08**	**16.35**
534-1626	10RCS-251TX	12-10	0.250	0.250 × 0.032	Male disconnect	**20.64**	**17.69**
534-9995	2RAS18X	22-18	0.170	—	Butt splice	**39.66***	**34.00***
534-1630	2RBS14X	16-14	0.200	—	Butt splice	**39.66***	**34.00***
534-1632	2RCS10X	12-10	0.250	—	Butt splice	**21.48**	**18.41**

*Package of 50.

XTRAFLEX™ System — Conduit

Smooth Liquidtight Nonmetallic Conduit Type B

- Industrial Grade UL/CSA Listed
- Black Color Standard
- Lightweight
- Liquidtight
- Fast Installation — Even In Tight, Cramped Spaces
- Smooth Inner Diameter Allows Easy Wire Pulling
- Smooth Outer Jacket — Uses Material Approved for Outdoor Use, Is Sunlight Resistant and Oil Resistant
- Temperature Range: –18°C to +105°C (–2°F to +221°F)
- Market at One-Foot Intervals for Fast, Easy Measuring and Cutting

Recommended Industrial Applications

- Machine Tools
- Motor Hookups
- Food Processing Equipment
- Extensions from Wireways
- Sensor and Microswitch Wiring Found in Control Consoles
- UL Listed, UL File No. E95745
- CSA Certified, CSA File No. LL80349

Stock No.	Mfr.'s Type	Conduit Size	I.D. (in.)		O.D. (in.)		Feet Per Roll	PER ROLL	
			Min.	Max.	Min.	Max.		1-4	5-9
534-9100	LTC038	3/8"	.484	.504	.690	.710	100	82.84	76.92
534-9102	LTC050	1/2"	.622	.642	.820	.840	100	89.90	83.48
534-9104	LTC075	3/4"	.820	.840	1.030	1.050	100	121.05	112.40
534-9106	LTC100	1"	1.041	1.066	1.290	1.315	100	172.30	149.33
534-9108	LTC125	1 1/4"	1.380	1.410	1.630	1.660	100	210.95	196.89
534-9110	LTC150	1 1/2"	1.575	1.600	1.865	1.900	50	163.37	141.59
534-9112	LTC200	2"	2.020	2.045	2.340	2.375	50	209.19	195.24

Corrugated Flexible Nonmetallic Tubing

- OEM Grade UL Recognized
- Maximum Flexibility in Tight Applications
- Extremely Fast Installation
- Liquidtight with Specified Fittings
- Good Tensile Strength Provides Excellent Pullout Protection
- Smooth Inner Diameter Allows Easy Wire Pulling
- Broad Operating Temperature Range: –18°C to +60°C (–2°F to +140°F)

Recommended Industrial Applications

- Protection of Fiber Optic Cable
- Installation of Instrumentation and Control Cable
- Indoor/Outdoor Lighting
- Packaging Equipment
- Marine and Shipboard Wiring
- Flexing: Component Wiring Protection on Robots, Graphic Arts Equipment, etc.
- UL File No. 96548
- CSA File No. 067241

Stock No.	Mfr.'s Type	Conduit Size	I.D. (in.)		O.D. (in.)		Feet Per Roll	PER ROLL	
			Min.	Max.	Min.	Max.		1-4	5-9
534-9114	EFC038	3/8"	.484	.504	.690	.710	100	89.15	82.78
534-9116	EFC050	1/2"	.622	.642	.820	.840	100	89.90	83.48
534-9118	EFC075	3/4"	.820	.840	1.030	1.050	100	121.05	112.40
534-9120	EFC100	1"	1.041	1.066	1.290	1.315	100	185.58	160.83
534-9122	EFC125	1 1/4"	1.380	1.410	1.630	1.660	100	210.95	196.89
534-9124	EFC150	1 1/2"	1.575	1.600	1.865	1.900	50	163.37	141.50
534-9126	EFC200	2"	2.020	2.045	2.340	2.375	50	209.19	195.24

Plastic Bullet® Liquidtight Fittings for T&B LTC Nonmetallic Liquidtight Conduit Type B and T&B EFC Flexible Tubing

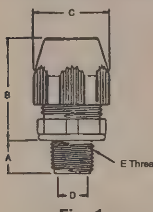


Fig. 1

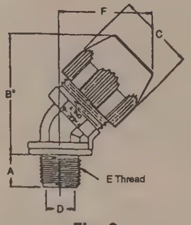


Fig. 2

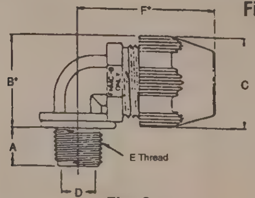


Fig. 3

- U.L. Listed (File # E23018)
- CSA Certified (File # LR52391)
- CSA 22.2 #227.2 and CSA 22.2 #227.3
- ANSI/UL514B-1988
- Federal Standard H28 (NPT Threads)

- Watertight Requirements of NEMA Type 4 and NEMA Type 6 Enclosures
- Suitable for Hazardous Locations: Class 1 Div. 2; Class II Div. 1 and 2: Groups E, F and G; Class III Per NEC; Article 501-4, 502-4 and 503-3

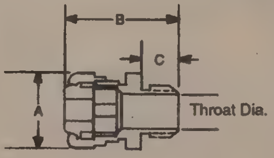
Connector assembles to conduit without disassembly and is designed to be installed with a positive installation criteria (gland bottoms on body shoulder). Performance of connector unaffected by exposure to detergents, cleaners, and sanitizers commonly encountered in food processing plants and typical industrial environment; also unaffected by cutting fluids, wiring pulling compounds and Marine environment. The connector meets industry standards for cold impact and simulated hammer blow.

Standard Material/Finish. Body Gland: Weather stabilized thermoplastic (black). **"O" Ring:** Nitrile (blue). **Locknut:** Steel/electro zinc plated. **Material Temperature Rating:** Thermoplastic — –40°C to 105°C. **Material Flammability Rating:** UL94-V2.

Stock No.	Mfr.'s Type	Trade Size	Fig.	Description	Dimensions (In.)					EACH		
					A	B	C	D	E	1-9	10-24	25-49
534-9128	LT38P	3/8"	1	Straight	.570	1.595	1.354	.417	1/2-14	2.72	2.47	2.27
534-9130	LT438P	3/8"	2	45 Degree	.570	2.012	1.354	.417	1/2-14	4.23	3.84	3.52
534-9132	LT938P	3/8"	3	90 Degree	.570	1.380	1.354	.417	1/2-14	4.23	3.84	3.52
534-9134	LT50P	1/2"	1	Straight	.570	1.636	1.448	.550	1/2-14	2.80	2.55	2.33
534-9136	LT450P	1/2"	2	45 Degree	.570	2.092	1.448	.550	1/2-14	4.23	3.84	3.52
534-9138	LT950P	1/2"	3	90 Degree	.570	1.489	1.448	.550	1/2-14	4.23	3.84	3.52
534-9140	LT75P	3/4"	1	Straight	.582	1.757	1.740	.740	3/4-14	3.88	3.53	3.24
534-9142	LT475P	3/4"	2	45 Degree	.582	2.452	1.740	.740	3/4-14	5.85	5.36	4.95
534-9144	LT975P	3/4"	3	90 Degree	.582	1.790	1.740	.740	3/4-14	5.85	5.36	4.95
534-9146	LT100P	1"	1	Straight	.726	1.923	2.068	.940	1-11 1/2	5.20	4.76	4.40
534-9148	LT4100P	1"	2	45 Degree	.726	2.684	2.068	.940	1-11 1/2	11.00	10.15	9.43
534-9150	LT9100P	1"	3	90 Degree	.726	2.104	2.068	.940	1-11 1/2	10.87	10.03	9.32
534-9152	LT125P	1 1/4"	1	Straight	.750	2.164	2.494	1.257	1 1/4-11 1/2	8.94	8.19	7.56
534-9154	LT4125P	1 1/4"	2	45 Degree	.750	3.264	2.494	1.257	1 1/4-11 1/2	16.95	15.64	14.53
534-9156	LT9125P	1 1/4"	3	90 Degree	.750	2.564	2.494	1.257	1 1/4-11 1/2	16.82	15.52	14.41
534-9158	LT150P	1 1/2"	1	Straight	.767	2.353	2.784	1.453	1 1/2-11 1/2	11.66	10.76	9.99
534-9160	LT4150P	1 1/2"	2	45 Degree	.767	3.605	2.784	1.453	1 1/2-11 1/2	20.44	18.87	17.52
534-9162	LT9150P	1 1/2"	3	90 Degree	.767	2.854	2.784	1.453	1 1/2-11 1/2	20.31	18.75	17.41
534-9164	LT200P	2"	1	Straight	.794	2.605	3.362	1.883	2-8	19.70	18.29	17.30
534-9166	LT4200P	2"	2	45 Degree	.794	4.210	3.362	1.883	2-8	27.58	25.61	24.23
534-9168	LT9200P	2"	3	90 Degree	.794	3.432	3.362	1.883	2-8	27.34	25.39	24.02

Power Cord Connectors

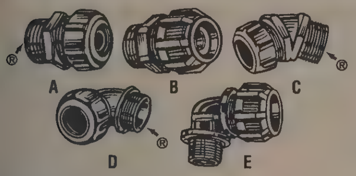
Liquidtight Strain Relief Connectors



A liquidtight connector to connect flexible cord or power cable to a box or enclosure and provide adequate strain relief. **Standard Material. Gland, Body:** Steel, malleable iron, zinc die cast. **Retaining Ring:** Thermoplastic, stainless steel. **Bushing:** Neoprene. **"O" Ring:** Buna N. **Standard Finish:** Electro zinc plated and chromate coated. **UL Listed File No.:** E-13938. **CSA Certified:** LR-589, LR-4484. Conforms to UL 514, CSA 22.2 No. 18, ANSI C33.84, NFPA 70-1978 (ANSI).

Stock No.	Mfr.'s Type	Cable Size Range min. max.	Hub Size	Throat Dia. Min.	Dimensions (In.)			EACH		
					A	B	C	1-9	10-24	25-49
534-9174	2520	.125-.250	1/2"	9/16"	1 1/8	1 21/32	9/16	4.55	4.17	3.85
534-9176	2521	.250-.375	1/2"	9/16"	1 1/8	1 21/32	9/16	4.55	4.17	3.85
534-9178	2522	.375-.500	1/2"	9/16"	1 1/8	1 21/32	9/16	4.55	4.17	3.85
534-9180	2523	.450-.560	1/2"	9/16"	1 1/8	1 21/32	9/16	4.55	4.17	3.85
534-9182	2524*	.500-.625	1/2"	5/8"	1 3/8	1 3/4	19/32	5.07	4.65	4.29
534-9184	2525*	.625-.750	1/2"	5/8"	1 3/8	1 3/4	19/32	5.07	4.65	4.29
534-9186	2530	.125-.250	3/4"	13/16"	1 3/8	1 3/4	9/16	4.87	4.46	4.12
534-9188	2531	.250-.375	3/4"	13/16"	1 3/8	1 3/4	9/16	4.87	4.46	4.12
534-9190	2532	.375-.500	3/4"	13/16"	1 3/8	1 3/4	9/16	5.07	4.65	4.29
534-9192	2534	.500-.625	3/4"	13/16"	1 3/8	1 3/4	9/16	5.07	4.65	4.29
534-9194	2535	.625-.750	3/4"	13/16"	1 3/8	1 3/4	9/16	5.07	4.65	4.29
534-9196	2536*	.750-.880	3/4"	3/4"	1 3/8	1 15/16	5/8	6.72	6.16	5.69
534-9198	2541	.250-.375	1"	49/64"	1 11/16	1 23/32	9/16	6.30	5.78	5.33
534-9200	2542	.375-.500	1"	49/64"	1 11/16	1 23/32	9/16	6.30	5.78	5.33
534-9202	2544	.500-.625	1"	49/64"	1 11/16	1 23/32	9/16	6.72	6.16	5.69
534-9204	2545	.625-.750	1"	49/64"	1 11/16	1 23/32	9/16	6.72	6.16	5.69
534-9206	2546	.750-.880	1"	63/64"	1 11/16	1 7/8	9/16	7.01	6.42	5.93
534-9208	2547	.875-.985	1"	63/64"	1 11/16	1 7/8	9/16	6.72	6.16	5.69
534-9210	2548*	.880-1.065	1"	29/32"	2 1/16	2 3/8	25/32	15.95	14.81	14.01
534-9212	2549*	1.065-1.205	1"	29/32"	2 1/16	2 3/8	25/32	14.95	13.88	13.13

*Remove sufficient outer covering of cable to permit conductors to pass through connector body.



Liquid Tight Strain Relief Connectors for Flexible Cord

The Ranger. Liquid tight strain relief connectors. The only connector to take a .250 inch cable range UL File No. E 13938, CSA File No. 52391.

Straight — Fig. A

Stock No.	Mfr.'s Type	Hub Size (In.)	Throat Dia. (In.)	Cord Range	EACH 1-9	EACH 10-24
534-3700	2920	1/2	9/16	.125-.375	**4.47**	**4.10**
534-3705	2921	1/2	9/16	.310-.560	**4.47**	**4.10**
534-3710	2922	1/2	9/16	.500-.750	**4.47**	**4.10**
534-3715	2930	3/4	13/16	.125-.375	**4.61**	**4.22**
534-3720	2931	3/4	13/16	.310-.560	**4.91**	**4.50**
534-3725	2932	3/4	13/16	.500-.750	**4.91**	**4.50**
534-3730	2940	1	49/64	.310-.560	**5.90**	**5.41**
534-3735	2941	1	49/64	.500-.750	**6.07**	**5.57**
534-3740	2942	1	49/64	.700-.950	**6.07**	**5.57**

Non-Metallic Straight — Fig. B

Stock No.	Mfr.'s Type	Hub Size (In.)	Throat Dia. (In.)	Cord Range	EACH 1-9	EACH 10-24
534-3745	2920NM	1/2	0.55	.125-.375	**4.59**	**4.21**
534-3750	2921NM	1/2	0.55	.310-.560	**4.59**	**4.21**
534-3755	2922NM	1/2	0.55	.500-.750	**4.59**	**4.21**
534-3760	2930NM	3/4	0.79	.125-.375	**4.66**	**4.27**
534-3765	2931NM	3/4	0.79	.310-.560	**4.97**	**4.56**
534-3770	2932NM	3/4	0.79	.500-.750	**4.97**	**4.56**
534-3775	2940NM	1	0.98	.310-.560	**6.17**	**5.66**
534-3780	2941NM	1	0.98	.500-.750	**6.17**	**5.66**
534-3785	2942NM	1	0.98	.700-.950	**6.58**	**6.03**

45° Angle — Fig. C

Stock No.	Mfr.'s Type	Hub Size (In.)	Throat Dia. (In.)	Cord Range	EACH 1-9	EACH 10-24
534-3790	4920	1/2	37/64	.125-.375	**6.68**	**6.16**
534-3795	4921	1/2	37/64	.310-.560	**6.68**	**6.16**
534-3800	4922	1/2	37/64	.500-.750	**6.68**	**6.16**

90° Angle — Fig. D

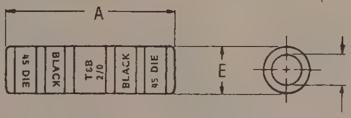
Stock No.	Mfr.'s Type	Hub Size (In.)	Throat Dia. (In.)	Cord Range	EACH 1-9	EACH 10-24
534-3835	4960	1/2	19/32	.125-.375	**6.68**	**6.16**
534-3840	4961	1/2	19/32	.310-.560	**7.12**	**6.57**
534-3845	4962	1/2	19/32	.500-.750	**6.68**	**6.16**
534-3850	4970	3/4	25/32	.125-.375	**8.90**	**8.22**
534-3855	4971	3/4	25/32	.310-.560	**8.90**	**8.22**
534-3860	4972	3/4	25/32	.500-.750	**8.90**	**8.22**

Non-Metallic 90° Angle — Fig. E

Stock No.	Mfr.'s Type	Hub Size (In.)	Throat Dia. (In.)	Cord Range	EACH 1-9	EACH 10-24
534-3880	4960NM	1/2	0.55	.125-.375	**7.34**	**6.78**
534-3885	4961NM	1/2	0.55	.310-.560	**7.34**	**6.78**
534-3890	4970NM	3/4	0.79	.125-.375	**8.97**	**8.28**
534-3895	4971NM	3/4	0.79	.310-.560	**8.97**	**8.28**
534-3900	4972NM	3/4	0.79	.560-.750	**8.97**	**8.28**

Color-Keyed® Short Barrel Two-Way Connectors for 600 V Applications

Two-way connectors provide high pullout values, are easy to insulate, and provide a low resistance connection of high quality and low installed cost. **Material:** High conductivity wrought copper finish, electro tin plate.



Stock No.	Mfr.'s Type	Cable Size	Color Key	Dim. (In.) A	Dim. (In.) E	EACH 1-9	EACH 10-49
534-4504	54504	#8 Str. or #8 Weld	Red	1.03	.27	**1.85**	**1.68**
534-4505	54505	#6 Str. or #6 Weld	Blue	1.00	.30	**2.93**	**2.68**
534-4506	54506	#4 Str.	Grey	1.00	.37	**2.30**	**3.03**
534-4507	54507	#2 or #4 Weld	Brown	1.25	.41	**4.18**	**3.84**
534-4508	54508	#1 or #2 Weld	Green	1.50	.47	**4.80**	**4.40**
534-4509	54509	1/0 AWG or #1 Weld	Pink	1.56	.52	**4.76**	**4.39**

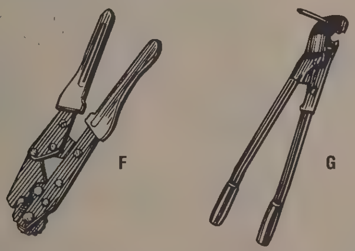
Color-Keyed® One Hole Lugs for 600 V Applications

Color-keyed connectors and die assure complete compression. Connections are permanent, with high pullout value and low resistance. Made of high conductivity copper, tin plated.

Stock No.	Mfr.'s Type	Cable Size	Color Key	Bolt Size	EACH 1-9	EACH 10-49
534-3500	54104*	#8 Str. or #8 Weld	Red	10	**1.30**	**1.19**
534-3505	54130		Red	1/4	**1.30**	**1.19**
534-3510	54131		Red	5/16	**1.28**	**1.17**
534-3515	54132		Red	3/8	**1.28**	**1.17**
534-3520	54134	#6 Str. or #6 Weld	Blue	10	**1.39**	**1.26**
534-3525	54105*		Blue	1/4	**1.43**	**1.30**
534-3530	54135		Blue	5/16	**1.41**	**1.29**
534-3535	54136		Blue	3/8	**1.40**	**1.27**
534-3540	54138	#4 Str. or #4 Weld	Grey	10	**1.86**	**1.69**
534-3545	54106*		Grey	1/4	**1.87**	**1.70**
534-3550	54139		Grey	5/16	**1.84**	**1.68**
534-3555	54140		Grey	3/8	**1.79**	**1.63**
534-3560	54107*	#2 Str.	Brown	1/4	**3.31**	**3.04**
534-3565	54142		Brown	5/16	**3.21**	**2.94**
534-3570	54143		Brown	3/8	**3.35**	**3.07**
534-3575	54145		Brown	1/2	**3.27**	**3.00**
534-3580	54108*	#1 Str. or #2 Weld	Green	1/4	**3.46**	**3.17**
534-3585	54147		Green	5/16	**3.35**	**3.07**
534-3590	54148		Green	3/8	**3.32**	**3.04**
534-3595	54150		Green	1/2	**3.43**	**3.14**
534-3600	54152	1/0 AWG or #1 Weld	Pink	1/4	**3.71**	**3.40**
534-3605	54153		Pink	5/16	**3.60**	**3.30**
534-3610	54109*		Pink	3/8	**3.70**	**3.39**
534-3615	54155		Pink	1/2	**3.60**	**3.30**

*NEMA drilling.

Color-Keyed® Installing Tools



Model TBM25S — Fig. F. Terminates code copper lugs and connectors from #8 to #2. Features color-keyed dial that operator rotates to match color-coded connectors. Equipped with "Shure Stake" mechanism.
534-3621. Model TBM25S ....**EACH 202.24**

Model TBM5 — Fig. G. Terminates copper conductors from #8 to 250 MCM lugs, splices joints and taps. Includes dies.
534-3625. Model TBM5 ....**EACH 359.94**

Model TBM5-S — Fig G. Type TBM5-S installs same range of wire and cable as TBM5 above but is provided with "Shure Stake" feature to insure positive compression.
534-3630. Model TBM5-S ....**EACH 497.58**

SHRINK-KON® Heat Shrinkable Insulating Tubing for Thick Wall Applications — NEW —

- ► **Heavy Duty Protection**
- ► **Field Proven Reliability — Rated 600 V, 90°C**
- ► **Improved Protection Against Moisture**
- ► **Color: Black**

16-12 AWG

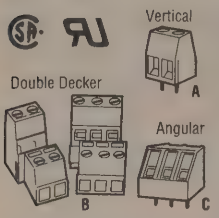
Stock No.	Mfr.'s Type	Min. I.D. Expanded	Max. I.D. Recovered	Nom. Recovered Wall	Package Type	EACH
534-1600	HS16-12	.300	.100	.055	3" Pcs., Pk./25	**97.90**
534-1602	HS16-12L	.300	.100	.055	6" Pcs., Pk./25	**122.40**
534-1604	HS16-12-4	.300	.100	.055	4' Pcs., Pk./5	**113.14**
534-1606	HS16-12-25*	.300	.100	.055	25' Roll	**62.96**

12-6 AWG

Stock No.	Mfr.'s Type	Min. I.D. Expanded	Max. I.D. Recovered	Nom. Recovered Wall	Package Type	EACH
534-1608	HS12-6	.400	.150	.060	3" Pcs., Pk./25	**97.90**
534-1610	HS12-6L	.400	.150	.060	6" Pcs., Pk./25	**127.66**
534-1612	HS12-6-4	.400	.150	.060	4' Pcs., Pk./5	**113.14**
534-1614	HS12-6-25*	.400	.150	.060	25' Roll	**62.96**

*Not U.L. listed.

Electric Heat Gun. Dual speed. **Temperature:** 450-1000°F. 1400 watts. Requires 12-18 amp outlet.
534-1400. Model WT1400 ....**EACH 109.09**



Euro-Style Connectors (5 mm)

- ► Cage Clamp
- ► UL94 V-0
- ► Captive Screws

Interlocking feature allows any length connector to be assembled in modular fashion — also available completely assembled. **Contact System:** Brass, tin plated. **Terminal Spacing:** 5 mm and 10 mm. **Insulating Material:** Polybutylene Terephthalate. **Flammability:** UL94 V-0. **Color:** Blue. **Temperature Range:** –30°C to +105°C tin. **Tightening Torque:** Up to 0.5 Nm (4.4 in.-lbs.). **Electrical:** 15 A/20 A, 300 V, 12-22 AWG, 16 KV/mm.

Vertical

Stock No.	Mfr.'s Type	Fig.	No. of Term.	EACH	
				1-24	25-49
515-2500	B02C4V02T	A	2	.49	.45
515-2502	B02C4V03T	A	3	.70	.64
515-2504	B02C4V04T	A	4	1.00	.91
515-2506	B07C4V02T	B	4	1.62	1.47
515-2508	B07C4V03T	B	6	2.55	2.32
515-2510	B07C4V04T	B	8	4.02	3.66
515-2512	B04C4V02T	C	2	.70	.64
515-2514	B04C4V03T	C	3	1.02	.93
515-2516	B04C4V04T	C	4	1.37	1.25

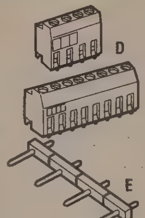
Horizontal

Stock No.	Mfr.'s Type	Fig.	No. of Term.	1-24	25-49
515-2518	B02C4H02T	A*	2	.49	.45
515-2520	B02C4H03T	A*	3	.74	.67
515-2522	B02C4H04T	A*	4	1.00	.91

*Vertical shown.

Flush Mount Plug-In Connector/Header (5 mm and 5.08 mm)

- ► Cage Clamp
- ► UL94 V-0
- ► Captive Screws



Allows for vertical mounting with 1.3 mm diameter round pin or 1 mm square pin headers. Up to 24 terminals in 5 mm design. **Contact System:** Brass, tin plated. **Terminal Spacing:** 5 mm and 10 mm. **Insulating Material:** Polymide type 6/6. **Flammability:** UL94 V-0. **Color:** Black. **Temperature Range:** –60°C to +105°C tin. **Tightening Torque:** 0.5 Nm (4.4 in.-lbs.). **Electrical:** 15 A, 300 V, 12-30 AWG.

Connectors (Fig. D)

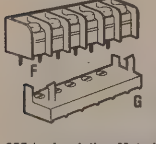
Stock No.	Mfr.'s Type	Spacing/ Type	No. of Term.	EACH	
				1-24	25-49
515-2524*	B51C4U02T	5.00 mm, Universal	2	1.21	1.10
515-2526*	B51C4U03T	5.00 mm, Universal	3	1.60	1.45
515-2528*	B51C4U04T	5.00 mm, Universal	4	1.84	1.67
515-2530*	B51C8U02T	5.08 mm, Universal	2	2.71	2.49
515-2532*	B51C8U03T	5.08 mm, Universal	3	2.97	2.72
515-2534*	B51C8U04T	5.08 mm, Universal	4	3.45	3.17

Headers (Fig. E)

Stock No.	Mfr.'s Type	Spacing/ Type	No. of Term.	1-24	25-49
515-2536	B71N4V02T	5.00 mm, Vertical	2	.25	.23
515-2538	B71N4V03T	5.00 mm, Vertical	3	.39	.36
515-2540	B71N4V04T	5.00 mm, Vertical	4	.51	.47
515-2542	B71N8V02T	5.08 mm, Vertical	2	.29	.26
515-2544	B71N8V03T	5.08 mm, Vertical	3	.43	.39
515-2546	B71N8V04T	5.08 mm, Vertical	4	.60	.54

*Can be used with vertical or horizontal headers.

Fixed or Plug-In Tri-Barrier Strip (.325 In.)

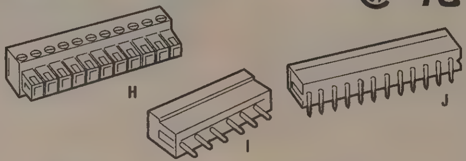


- ► Wire Ready, Clamping Plate Screws
- ► Max. Circuit Isolation

Connector Mounting: F — direct; G — socket. Secure mating with built-in locking arms. Sockets available in up to 12 terminals and can be end-to-end stackable to create longer sizes. **Contact System:** Brass, tin plated. **Terminal Spacing:** .325 in. **Insulating Material:** F — polypropylene; G — nylon. **Flammability:** UL94 V-0. **Color:** Black. **Temperature Range:** –60°C to +105°C. **Tightening Torque:** 9.0 in.-lbs. **Electrical:** 15 A, 300 V, 14-22 AWG

Stock No.	Mfr.'s Type	Description	Fig.	No. of Term.	EACH	
					1-24	25-49
515-2548	RSB3VP021202	Connector	F	2	.77	.70
515-2550	USB3B02S	Socket	G	2	1.09	.99
515-2552	RSB3VP031202	Connector	F	3	.82	.75
515-2554	USB3B03S	Socket	G	3	1.39	1.27
515-2556	RSB3VP041202	Connector	F	4	1.09	.99
515-2558	USB3B04S	Socket	G	4	1.47	1.34

Plug-In Connector/Shrouded Header (3.5 mm)



- ► Cage Clamp
- ► UL94 V-0
- ► Captive Screws

Mounts with closed-end shrouded headers in vertical or horizontal options. Up to 24 terminals in 3.5 mm; 12 terminals in 7 mm. **Contact System:** Brass, tin plated. **Terminal Spacing:** 3.5 mm and 7 mm. **Insulating Material:** Polybutylene Terephthalate. **Flammability:** UL94 V-0. **Color:** Blue. **Temperature Range:** –30°C to +105°C. **Tightening Torque:** 0.34 Nm (3.0 in.-lbs.). **Electrical:** 8 A, 300 V, 14-22 AWG.

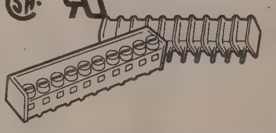
Connectors (Fig. H)

Stock No.*	Mfr.'s Type	Spacing/ Type	No. of Term.	EACH	
				1-24	25-49
515-2560	B52C3U02T	3.5 mm, Universal	2	.86	.78
515-2562	B52C3U03T	3.5 mm, Universal	3	1.29	1.17
515-2564	B52C3U04T	3.5 mm, Universal	4	1.70	1.54

*Can be used with vertical or horizontal headers.

Headers

Stock No.	Mfr.'s Type	Spacing/ Type	Fig.	No. of Term.	EACH	
					1-24	25-49
515-2566	B73N3V02T	3.5 mm, Vertical	I	2	.31	.28
515-2568	B73N3V03T	3.5 mm, Vertical	I	3	.47	.43
515-2570	B73N3V04T	3.5 mm, Vertical	I	4	.62	.56
515-2572	B73N3H02T	3.5 mm, Horizontal	J	2	.33	.30
515-2574	B73N3H03T	3.5 mm, Horizontal	J	3	.49	.45
515-2576	B73N3H04T	3.5 mm, Horizontal	J	4	.66	.60



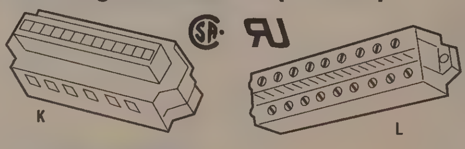
Tri-Barrier Strip (.250 In.)

- ► Wire Ready, Clamping Plate Screws
- ► Max. Circuit Insulation

High density tri-barrier strip in lengths of 2-16 terminals. Insulator standoffs allow flux and solvents to drain during cleaning. Phil-slot screws accept both blade and Phillips screwdrivers. **Contact System:** Brass, tin plated. **Terminal Spacing:** .250 in. **Insulating Material:** Polypropylene. **Flammability:** UL94 V-0. **Color:** Black. **Temperature Range:** –60°C to +105°C. **Tightening Torque:** 5.5 in.-lbs. **Electrical:** 10 A, 300 V, 18-22 AWG.

Stock No.	Mfr.'s Type	No. of Term.	EACH	
			1-24	25-49
515-2578	RSB2VP021102	2	.92	.84
515-2580	RSB2VP031102	3	1.09	.99
515-2582	RSB2VP041102	4	1.29	1.17
515-2584	RSB2VP051102	5	1.47	1.34
515-2586	RSB2VP061102	6	1.64	1.49
515-2588	RSB2VP071102	7	1.84	1.67
515-2590	RSB2VP081102	8	2.02	1.84
515-2592	RSB2VP091102	9	2.21	2.01

Card Edge Connectors (.156 In.)

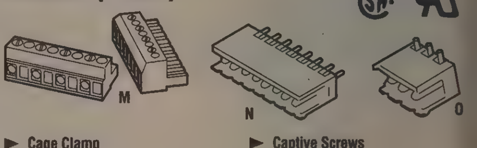


- ► Wire Ready, Captive Screws
- ► High Pressure Tuning Fork Contact
- ► Dead Front Construction

Card Edge Connectors provide quick connect/disconnect while keeping wiring organized. Available in up to 43 terminals. **Contact System:** Tin over nickel. **Terminal Spacing:** .156 in. **Insulating Material:** Polyester. **Flammability:** UL94 V-0. **Color:** Black. **Temperature Range:** –65°C to +140°C. **Tightening Torque:** 7.0 in.-lbs. **Electrical:** 10 A, 250 V, 12-26 AWG (#12 AWG stranded only).

Stock No.	Mfr.'s Type	Fig.	No. of Term.	EACH	
				1-9	10-24
515-2594	PCB2B06S	K	6	9.22	8.56
515-2596	PCB2B08S	K	8	9.47	8.79
515-2598	PCB2B12S	K	12	10.89	10.12
515-2600	PCB1B10S	L	10	9.89	9.18
515-2602	PCB1B15S	L	15	13.20	12.26
515-2604	PCB2B18S	L	18	15.40	14.30

Plug-In Connector/Shrouded Header (5 mm)



- ► Cage Clamp
- ► UL94 V-0
- ► Captive Screws

Locking fingers provide secure "vibration-proof" connection. Mounts with closed-end or open-end shrouded headers in vertical or horizontal options. Up to 12 terminals in 5 mm; 6 terminals in 10 mm. **Contact System:** Brass, tin plated. **Terminal Spacing:** 5 mm and 10 mm. **Insulating Material:** Polybutylene Terephthalate. **Flammability:** UL94 V-0. **Color:** Blue. **Temperature Range:** –30°C to +105°C tin. **Tightening Torque:** 0.8 Nm (7.0 in.-lbs.). **Electrical:** 12 A, 300 V, 12-26 AWG.

Connectors (Fig. M)

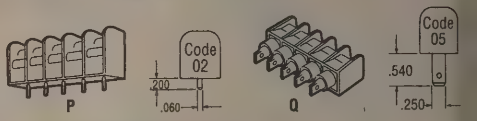
Stock No.*	Mfr.'s Type	Spacing/ Type	No. of Term.	EACH	
				1-24	25-49
515-2606	B52C4U02T	5 mm, Universal	2	.86	.78
515-2608	B52C4U03T	5 mm, Universal	3	1.29	1.17
515-2610	B52C4U04T	5 mm, Universal	4	1.72	1.56

*Can be used with vertical or horizontal headers.

Headers

Stock No.	Mfr.'s Type	Spacing/ Type	Fig.	No. of Term.	EACH	
					1-24	25-49
515-2612	B73N4V02T	5 mm, Vertical	N	2	.33	.30
515-2614	B73N4V03T	5 mm, Vertical	N	3	.49	.45
515-2616	B73N4V04T	5 mm, Vertical	N	4	.66	.60
515-2618	B73N4H02T	5 mm, Horizontal	O	2	.35	.32
515-2620	B73N4H03T	5 mm, Horizontal	O	3	.51	.47
515-2622	B73N4H04T	5 mm, Horizontal	O	4	.66	.60

Single Screw Barrier Strip — 600 V (.4375 In.)

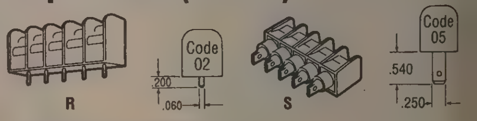


- ► Wire Ready, Clamping Plate Screws
- ► Closed or Turret Bases

Mounting: P — PCB; Q — panel. Turret bases for extra isolation. **Contact System:** Brass, tin plated. **Terminal Spacing:** .4375 in. **Insulating Material:** Polypropylene. **Flammability:** UL94 V-2. **Color:** Black. **Temperature Range:** –60°C to +105°C tin. **Tightening Torque:** 8.0 in.-lbs. **Electrical:** 15/20 A, 600 V, 12-22 AWG.

Stock No.	Mfr.'s Type	Description	Fig.	EACH	
				1-24	25-49
515-2624	SSB7FP020202	PCB Pin	P	1.02	.93
515-2626	SSB7TE020502	Turret	Q	2.47	2.25
515-2628	SSB7FP030202	PCB Pin	P	1.15	1.04
515-2630	SSB7TE030502	Turret	Q	2.62	2.38
515-2632	SSB7FP040202	PCB Pin	P	1.55	1.41
515-2634	SSB7TE040502	Turret	Q	2.74	2.49

Single Screw Barrier Strip — 300 V (.375 In.)



- ► Wire Ready, Clamping Plate Screws
- ► Closed or Turret Bases

Mounting: R — PCB; S — panel. Turret bases for extra isolation. **Contact System:** Brass, tin plated. **Terminal Spacing:** .375 in. **Insulating Material:** Polypropylene. **Flammability:** UL94 V-2. **Color:** Black. **Temperature Range:** –60°C to +105°C tin. **Tightening Torque:** 8.0 in.-lbs. **Electrical:** 15/20 A, 300 V, 12-22 AWG.

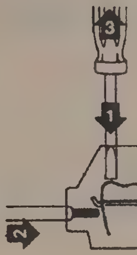
Stock No.	Mfr.'s Type	Description	Fig.	EACH	
				1-24	25-49
515-2636	SSB6FP020202	PCB Pin	R	1.02	.93
515-2638	SSB6TE020502	Turret	S	2.47	2.25
515-2640	SSB6FP030202	PCB Pin	R	1.05	.95
515-2642	SSB6TE030502	Turret	S	2.49	2.27
515-2644	SSB6FP040202	PCB Pin	R	1.07	.97
515-2646	SSB6TE040502	Turret	S	2.51	2.29

Modular Chassis-Mount Through Terminal Blocks

► **Strip Length: 8-9 mm**

260 Series. Height: 17 mm. **Length:** 25 mm. **AWG:** 18-28. **Ratings:** UL — 300 V, 10 A; CSA — 300 V, 10 A. **261 Series. Height:** 18 mm. **Length:** 28 mm. **AWG:** 14-28. **Ratings:** UL — 300 V, 15 A; CSA — 300 V, 10 A.

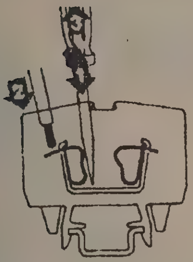
Stock No.	Mfr.'s Type	Color	Width (mm)	Conductor	EACH 1-99	EACH 100-Up
848-0500	260-301	Grey	5	2	.38	.34
848-0502	260-303	Lt. Grey	5	2	.40	.36
848-0504	260-304	Blue	5	2	.40	.36
848-0506	206-306	Orange	5	2	.38	.34
848-0508	260-307	Green-Yellow	5	2	.40	.36
848-0510	260-331	Grey	8	4	.60	.55
848-0512	260-333	Lt. Grey	8	4	.64	.58
848-0514	260-334	Blue	8	4	.64	.58
848-0516	260-336	Orange	8	4	.60	.55
848-0518	260-337	Green-Yellow	8	4	.64	.58
848-0530	261-301	Grey	6	2	.47	.43
848-0532	261-303	Lt. Grey	6	2	.50	.45
848-0534	261-304	Blue	6	2	.50	.45
848-0536	261-306	Orange	6	2	.47	.43
848-0538	261-307	Green-Yellow	6	2	.50	.45
848-0540	261-331	Grey	10	4	.80	.73
848-0542	261-333	Lt. Grey	10	4	.84	.76
848-0544	261-334	Blue	10	4	.84	.76
848-0546	261-336	Orange	10	4	.80	.73
848-5048	261-337	Green-Yellow	10	4	.84	.76



ISO 9001
TÜV CERT
No. 74 100 5536
WAGO - USA

Accessories

Stock No.	Mfr.'s Type	Description	EACH 1-99	EACH 100-Up
848-0560	209-132	Jumper Tool	3.55	3.00
848-0564	260-402	Jumper	.31	.28
848-0565	261-402	Jumper	.32	.29
848-0570	260-361	End Plate (Grey)	.10	.09
848-0571	261-361	End Plate (Grey)	.11	.09



Miniature Through Terminal Blocks for TS-35 Rail

► **Strip Length: 8-9 mm**
► **Available in Chassis Mount and TS15 Rail Versions**

264 Series. Height: 24.5 mm. **Length:** 38 mm. **AWG:** 12-28. **Ratings:** UL — 600 V, 20 A; CSA — 600 V, 25 A.

Stock No.	Mfr.'s Type	Color	Width (mm)	Conductor	EACH 1-99	EACH 100-Up
848-0600	264-711	Grey	6	2	.97	.88
848-0602	264-714	Blue	6	2	1.01	.92
848-0604	264-716	Orange	6	2	.97	.88
848-0610	264-731	Grey	10	4	1.45	1.32
848-0612	264-734	Blue	10	4	1.52	1.38
848-0614	264-735	Orange	10	4	1.45	1.32
848-0616	264-737	Lt. Green	10	4	2.69	2.45

Accessories

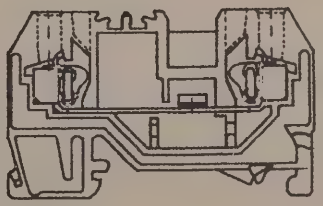
848-0620. 210-112. TS35 Rail........EACH 11.50
848-0625. 248-501. Plain Marker (2 Conductor)........EACH 2.60
848-0635. 210-110. Marking Pen........EACH 3.36
848-0655. 280-432. Jumper Tool........EACH 3.07
848-0640. 264-369. End Plate. **1-99**........EACH .22 **100-Up**........EACH .20
848-0645. 264-402. Jumper. **1-99**........EACH .41 **100-Up**........EACH .37
848-0650. 249-116. End Stop. **1-99**........EACH .67 **100-Up**........EACH .61

Front Entry Through Terminal Blocks for TS-35 Rail

► **Strip Length: 8-9 mm**

280 Series. Height: 28 mm. **Length:** 53 mm. **AWG:** 12-28. **Ratings:** UL — 600 V, 20 A; CSA — 600 V, 25 A. **281 Series. Height:** 29 mm. **Length:** 59 mm. **AWG:** 12-28. **Ratings:** UL — 600 V, 20 A; CSA — 600 V, 25 A.

Stock No.	Mfr.'s Type	Color	Width (mm)	Conductor	EACH 1-99	EACH 100-Up
848-0700	280-901	Grey	5	2	1.28	1.16
848-0702	280-902	Orange	5	2	1.31	1.19
848-0704	280-904	Blue	5	2	1.32	1.20
848-0706	280-907	Green-Yellow	5	2	4.28	3.89
848-0710	281-901	Grey	6	2	1.56	1.42
848-0712	281-902	Orange	6	2	1.63	1.48
848-0714	281-904	Blue	6	2	1.62	1.47
848-0716	281-907	Green-Yellow	6	2	4.28	3.89



Accessories

848-0620. 210-112. TS35 Rail........EACH 11.50
848-0750. 209-566. Marker (1-50)........EACH 3.18
848-0755. 209-507. Marker (51-100)........EACH 3.18
848-0760. 209-501. Plain Marker........EACH 2.79
848-0635. 210-110. Marking Pen........EACH 3.36
848-0765. 280-309. End Plate (280 Series). **1-99**........EACH .54
100-Up........EACH .49
848-0770. 281-329. End Plate (281 Series). **1-99**........EACH .54
100-Up........EACH .49
848-0775. 280-402. Jumper (280 Series). **1-99**........EACH .42
100-Up........EACH .38
848-0780. 281-402. Jumper (281 Series). **1-99**........EACH .45
100-Up........EACH .41
848-0650. 249-116. End Stop. **1-99**........EACH .67
100-Up........EACH .61
848-0785. 280-409. Alt. Jumper (280 Series). **1-99**........EACH .74
100-Up........EACH .67
848-0790. 281-409. Alt. Jumper (281 Series). **1-99**........EACH .80
100-Up........EACH .72

Modular PCB Terminal Blocks

► **Strip Length: 5-6 mm**

256 Series. Height: 18.2 mm. **Length:** 17.6 mm. **AWG:** 12-28. **Ratings:** UL — 300 V, 15 A; CSA — 300 V, 15 A.

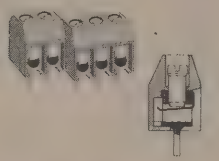
Terminal Blocks

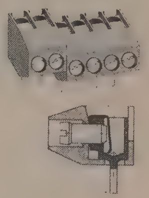
Stock No.	Mfr.'s Type	Color	Width (mm)	Conductor	EACH 1-99	EACH 100-Up
848-0800	256-401	Grey	5	1	.32	.29
848-0802	256-742	Dark Grey	5	1	.34	.31
848-0804	256-743	Lt. Grey	5	1	.34	.31
848-0806	256-744	Blue	5	1	.34	.31
848-0808	256-746	Orange	5	1	.32	.29
848-0810	256-747	Lt. Green	5	1	.34	.31

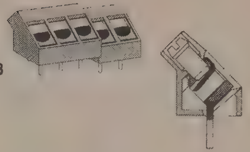
Accessories

Stock No.	Mfr.'s Type	Description	EACH 1-99	EACH 100-Up
848-0820	256-100	End Plate for 256-401	.10	.09
848-0825	256-200	End Plate for 256-742	.10	.09
848-0830	256-300	End Plate for 256-743	.10	.09
848-0835	256-400	End Plate for 256-744	.10	.09
848-0840	256-600	End Plate for 256-746	.10	.09
848-0845	256-700	End Plate for 256-747	.10	.09

Screw Connectors For Printed Circuit Boards — Series 93 To 97


1

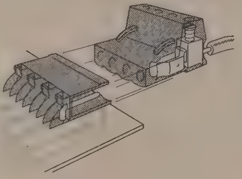

2


3

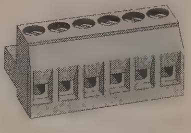
All products feature dovetail interlocking which allows for assembly to the required number of poles while maintaining center to center spacing. **Specifications. Insulating Material:** Polyamide, self extinguishing to UL 94, V-0, color grey. **Temperature Limits:** Short time — 140°C/284°F; Continuous — 80°C/176°F; Low limit — -40°C/-40°F. **Comparative Tracking Index:** CTI >600. **Oxygen Index Rating:** 32%. UL File E69841. CSA File LR24322.

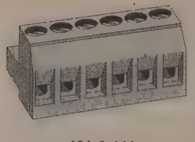
Stock No.	Mfr.'s Type	Fig.	Poles	Center-Center Spacing		Height		Width		UL Rating			CSA Rating			EACH
				mm	In.	mm	In.	mm	In.	Volts	Amps	AWG	Volts	Amps	AWG	1-99
924-0201	930-T-DS/02	1	2	3.50	.138	8.7	.34	8.0	.31	300	7	16-26	150	7	18-26	.33
924-0202	930-T-DS/03	1	3	3.50	.138	8.7	.34	8.0	.31	300	7	16-26	150	7	18-26	.49
924-0330	931-T-DS/02	2	2	3.50	.138	8.0	.31	8.7	.34	300	7	16-26	150	7	18-26	.33
924-0335	931-T-DS/03	2	3	3.50	.138	8.0	.31	8.7	.34	300	7	16-26	150	7	18-26	.49
924-0220	950-T-DS/02	1	2	5.00	.197	10.0	.39	8.0	.31	300	15	14-26	300	15	14-26	.33
924-0225	950-T-DS/03	1	3	5.00	.197	10.0	.39	8.0	.31	300	15	14-26	300	15	14-26	.49
924-4012	970-T-DS/02	1	2	5.00	.197	13.0	.51	9.0	.35	300	20	12-26	300	15	10-26	.33
924-4014	970-T-DS/03	1	3	5.00	.197	13.0	.51	9.0	.35	300	20	12-26	300	15	10-26	.49
924-4000	974-T-DS/02	3	2	5.00	.197	12.0	.47	12.5	.49	300	20	12-26	300	15	10-26	.33
924-4002	974-T-DS/03	3	3	5.00	.197	12.0	.47	12.5	.49	300	20	12-26	300	15	10-26	.49
924-0300	951-T-DS/02	2	2	5.00	.197	8.0	.31	10.0	.39	300	15	14-26	300	15	14-26	.33
924-0305	951-T-DS/03	2	3	5.00	.197	8.0	.31	10.0	.39	300	15	14-26	300	15	14-26	.49
924-0320	971-T-DS/02	2	2	5.00	.197	9.0	.35	13.0	.51	300	20	12-26	300	15	10-26	.33
924-0325	971-T-DS/03	2	3	5.00	.197	9.0	.35	13.0	.51	300	20	12-26	300	15	10-26	.49
924-0210	940-T-DS/02	1	2	5.08	.200	11.5	.45	8.0	.31	300	15	14-26	300	15	14-26	.33
924-0215	940-T-DS/03	1	3	5.08	.200	11.5	.45	8.0	.31	300	15	14-26	300	15	14-26	.49
924-0230	960-T-DS/02	1	2	5.08	.200	13.5	.53	9.0	.35	300	20	12-26	300	15	10-26	.33
924-0235	960-T-DS/03	1	3	5.08	.200	13.5	.53	9.0	.35	300	20	12-26	300	15	10-26	.49
924-0256	964-T-DS/02	3	2	5.08	.200	12.0	.47	12.5	.49	300	20	12-26	300	15	10-26	.33
924-0257	964-T-DS/03	3	3	5.08	.200	12.0	.47	12.5	.49	300	20	12-26	300	15	10-26	.49
924-0290	941-T-DS/02	2	2	5.08	.200	8.0	.31	11.5	.45	300	15	14-26	300	15	14-26	.33
924-0295	941-T-DS/03	2	3	5.08	.200	8.0	.31	11.5	.45	300	15	14-26	300	15	14-26	.49
924-0310	961-T-DS/02	2	2	5.08	.200	9.0	.35	13.5	.53	300	20	12-26	300	15	10-26	.33
924-0315	961-T-DS/03	2	3	5.08	.200	9.0	.35	13.5	.53	300	20	12-26	300	15	10-26	.49
924-0251	977-T-DS/02	1	2	7.50	.295	13.0	.51	9.5	.37	300	15	12-26	300	15	10-26	.33
924-0252	977-T-DS/03	1	3	7.50	.295	13.0	.51	9.5	.37	300	15	12-26	300	15	10-26	.49
924-4004	976-T-DS/02	3	2	7.50	.295	12.0	.47	12.5	.49	300	15	12-26	300	15	10-26	.33
924-4006	976-T-DS/03	3	3	7.50	.295	12.0	.47	12.5	.49	300	15	12-26	300	15	10-26	.49
924-0326	977-THM-DS/02	2	2	7.50	.295	9.5	.37	13.0	.51	300	15	12-26	300	15	10-26	.33
924-0327	977-THM-DS/03	2	3	7.50	.295	9.5	.37	13.0	.51	300	15	12-26	300	15	10-26	.49

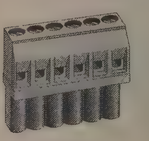
Plug-In Screw Connector System For Printed Circuit Boards — Series 120 and 121

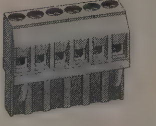


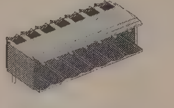
Conecta® Series plug and header connectors provide reliable contact for applications which require frequent disconnections. Headers are shrouded to ensure proper mating. **Specifications. Center To Center Spacing:** Series 120 — 5 mm/.197"; Series 121 — 5.08 mm/.200". **Insulating Material:** Polyamide, self extinguishing to UL 94, V-0, color grey. **Temperature Limits:** Short time — 140°C/284°F; Continuous — 80°C/176°F; Low limit — -40°C/-40°F. **Comparative Tracking Index:** CTI >600. **Oxygen Index Rating:** 33%. **Screw:** M3. UL File E69841 — 10 A, 300 V, 12-26 AWG. CSA File LR24322 — 10 A, 300 V, 12-26 AWG. Functionally equivalent to Phoenix Contact Series MSTB, Weidmüller Series BL/SL and Wieland Series 8113. Larger pole configurations are available on request.

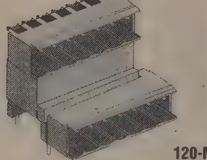

120-A-111

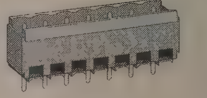

121-A-111

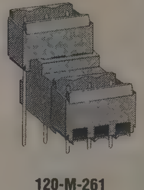

120-D-111


120-D-121


120-M-211


120-M-251


120-M-221


120-M-261

Horizontal Plug

Stock No.	Mfr.'s Type	Center-Center Spacing		Stock No.	Mfr.'s Type	Center-Center Spacing		Poles	EACH
		mm	In.			mm	In.		1-9
924-0400	120-A-111/02	5.00	.197	924-0401	121-A-111/02	5.08	.200	2	.83
924-0405	120-A-111/03	5.00	.197	924-0406	121-A-111/03	5.08	.200	3	1.16
924-0410	120-A-111/04	5.00	.197	924-0411	121-A-111/04	5.08	.200	4	1.54
924-0415	120-A-111/05	5.00	.197	924-0416	121-A-111/05	5.08	.200	5	1.92
924-0420	120-A-111/06	5.00	.197	924-0421	121-A-111/06	5.08	.200	6	2.31
924-0425	120-A-111/07	5.00	.197	924-0426	121-A-111/07	5.08	.200	7	2.69
924-0430	120-A-111/08	5.00	.197	924-0431	121-A-111/08	5.08	.200	8	3.07
924-0435	120-A-111/09	5.00	.197	924-0436	121-A-111/09	5.08	.200	9	3.46
924-0440	120-A-111/10	5.00	.197	924-0441	121-A-111/10	5.08	.200	10	3.84
924-0445	120-A-111/11	5.00	.197	924-0446	121-A-111/11	5.08	.200	11	4.23
924-0450	120-A-111/12	5.00	.197	924-0451	121-A-111/12	5.08	.200	12	4.64

Vertical Plug

924-5000	120-D-111/02	5.00	.197	924-5022	120-D-121/02	5.00	.197	2	.96
924-5002	120-D-111/03	5.00	.197	924-5024	120-D-121/03	5.00	.197	3	1.34
924-5004	120-D-111/04	5.00	.197	924-5026	120-D-121/04	5.00	.197	4	1.73
924-5006	120-D-111/05	5.00	.197	924-5028	120-D-121/05	5.00	.197	5	2.00
924-5008	120-D-111/06	5.00	.197	924-5030	120-D-121/06	5.00	.197	6	2.63
924-5010	120-D-111/07	5.00	.197	924-5032	120-D-121/07	5.00	.197	7	2.97
924-5012	120-D-111/08	5.00	.197	924-5034	120-D-121/08	5.00	.197	8	3.47
924-5014	120-D-111/09	5.00	.197	924-5036	120-D-121/09	5.00	.197	9	3.76
924-5016	120-D-111/10	5.00	.197	924-5038	120-D-121/10	5.00	.197	10	4.13
924-5018	120-D-111/11	5.00	.197	924-5040	120-D-121/11	5.00	.197	11	4.48
924-5020	120-D-111/12	5.00	.197	924-5044	120-D-121/12	5.00	.197	12	4.81

Single Level Horizontal Header

924-0452	120-M-211/02	5.00	.197	924-0453	121-M-211/02	5.08	.200	2	.29
924-0454	120-M-211/03	5.00	.197	924-0455	121-M-211/03	5.08	.200	3	.42
924-0456	120-M-211/04	5.00	.197	924-0457	121-M-211/04	5.08	.200	4	.56
924-0458	120-M-211/05	5.00	.197	924-0459	121-M-211/05	5.08	.200	5	.70
924-0460	120-M-211/06	5.00	.197	924-0461	121-M-211/06	5.08	.200	6	.84
924-0462	120-M-211/07	5.00	.197	924-0463	121-M-211/07	5.08	.200	7	.99
924-0464	120-M-211/08	5.00	.197	924-0465	121-M-211/08	5.08	.200	8	1.13
924-0466	120-M-211/09	5.00	.197	924-0467	121-M-211/09	5.08	.200	9	1.27
924-0468	120-M-211/10	5.00	.197	924-0469	121-M-211/10	5.08	.200	10	1.41
924-0470	120-M-211/11	5.00	.197	924-0471	121-M-211/11	5.08	.200	11	1.55
924-0472	120-M-211/12	5.00	.197	924-0473	121-M-211/12	5.08	.200	12	1.69

Double Level Horizontal Header

Stock No.	Mfr.'s Type	Center-Center Spacing		Stock No.	Mfr.'s Type	Center-Center Spacing		Poles	EACH
		mm	In.			mm	In.		1-9
924-5046	120-M-251/04	5.00	.197	924-5068	121-M-251/04	5.08	.200	4	.85
924-5048	120-M-251/06	5.00	.197	924-5070	121-M-251/06	5.08	.200	6	1.22
924-5050	120-M-251/08	5.00	.197	924-5072	121-M-251/08	5.08	.200	8	1.63
924-5052	120-M-251/10	5.00	.197	924-5074	121-M-251/10	5.08	.200	10	2.04
924-5054	120-M-251/12	5.00	.197	924-5076	121-M-251/12	5.08	.200	12	2.45
924-5056	120-M-251/14	5.00	.197	924-5078	121-M-251/14	5.08	.200	14	2.86
924-5058	120-M-251/16	5.00	.197	924-5080	121-M-251/16	5.08	.200	16	3.26
924-5060	120-M-251/18	5.00	.197	924-5082	121-M-251/18	5.08	.200	18	3.67
924-5062	120-M-251/20	5.00	.197	924-5084	121-M-251/20	5.08	.200	20	4.08
924-5064	120-M-251/22	5.00	.197	924-5086	121-M-251/22	5.08	.200	22	4.49
924-5066	120-M-251/24	5.00	.197	924-5088	121-M-251/24	5.08	.200	24	4.90

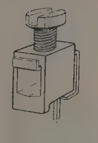
Single Level Vertical Header

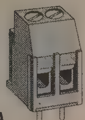
924-0478	120-M-221/02	5.00	.197	924-0479	121-M-221/02	5.08	.200	2	.29
924-0480	120-M-221/03	5.00	.197	924-0481	121-M-221/03	5.08	.200	3	.43
924-0482	120-M-221/04	5.00	.197	924-0483	121-M-221/04	5.08	.200	4	.56
924-0484	120-M-221/05	5.00	.197	924-0485	121-M-221/05	5.08	.200	5	.70
924-0486	120-M-221/06	5.00	.197	924-0487	121-M-221/06	5.08	.200	6	.84
924-0488	120-M-221/07	5.00	.197	924-0489	121-M-221/07	5.08	.200	7	.99
924-0490	120-M-221/08	5.00	.197	924-0491	121-M-221/08	5.08	.200	8	1.19
924-0492	120-M-221/09	5.00	.197	924-0493	121-M-221/09	5.08	.200	9	1.27
924-0494	120-M-221/10	5.00	.197	924-0495	121-M-221/10	5.08	.200	10	1.41
924-0496	120-M-221/11	5.00	.197	924-0497	121-M-221/11	5.08	.200	11	1.54
924-0498	120-M-221/12	5.00	.197	924-0499	121-M-221/12	5.08	.200	12	1.69

Double Level Vertical Header

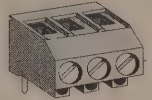
924-5090	120-M-261/04	5.00	.197	924-5112	121-M-261/04	5.08	.200	4	.82
924-5092	120-M-261/06	5.00	.197	924-5114	121-M-261/06	5.08	.200	6	1.22
924-5094	120-M-261/08	5.00	.197	924-5116	121-M-261/08	5.08	.200	8	1.63
924-5096	120-M-261/10	5.00	.197	924-5118	121-M-261/10	5.08	.200	10	2.04
924-5098	120-M-261/12	5.00	.197	924-5120	121-M-261/12	5.08	.200	12	2.45
924-5100	120-M-261/14	5.00	.197	924-5122	121-M-261/14	5.08	.200	14	2.86
924-5102	120-M-261/16	5.00	.197	924-5124	121-M-261/16	5.08	.200	16	3.26
924-5104	120-M-261/18	5.00	.197	924-5126	121-M-261/18	5.08	.200	18	3.67
924-5106	120-M-261/20	5.00	.197	924-5128	121-M-261/20	5.08	.200	20	4.08
924-5108	120-M-261/22	5.00	.197	924-5130	121-M-261/22	5.08	.200	22	4.49
924-5110	120-M-261/24	5.00	.197	924-5132	121-M-261/24	5.08	.200	24	4.90

Screw Connectors For Printed Circuit Boards With Elevator Style Clamping Mechanism — Series 150

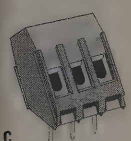




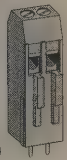
A



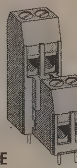
B



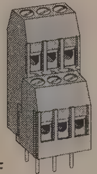
C



D



E

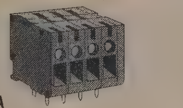


F

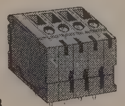
Series 150 Multilift connectors feature elevator style clamping, captive screws, test holes and dovetail interlocking which allows for assembly to the required number of poles while maintaining center to center spacing. **Specifications. Center To Center Spacing:** 5 mm/.197". **Insulating Material:** Polyamide, self extinguishing to UL 94, V-0, color grey. **Temperature Limits:** Short time — 140°C/284°F; Continuous — 80°C/176°F; Low limit — –40°C/–40°F. **Comparative Tracking Index:** CTI >600. **Oxygen Index Rating:** 33%. **Screw:** M3. UL File E69841 — 20 A, 300 V, 10-26 AWG. CSA File LR24322 — 20 A, 300 V, 10-26 AWG.

Stock No.	Mfr.'s Type	Poles	Fig.	EACH
				1-99
924-2561	150-A-111/02	2	A	**.77**
924-2562	150-A-111/03	3	A	**1.08**
924-2563	150-A-121/02	2	B	**1.42**
924-2564	150-A-121/03	3	B	**1.30**
924-2565	150-C-111/02	2	C	**.75**
924-2566	150-C-111/03	3	C	**1.05**
924-5134	150-B-111/02	2	D	**.96**
924-5136	150-B-111/03	3	D	**1.15**
924-5138	150-B-151/04	4	E	**1.52**
924-5140	150-B-151/06	6	E	**2.14**
924-5142	150-B-153/04	4	F	**1.55**
924-5144	150-B-153/06	6	F	**2.14**

Parallel Screw and Wire Entry Terminal Blocks For Printed Circuit Boards — Series 180



A



B

Series 180 features dual PCB pins which provide a more stable platform and higher torque absorption during the screw tightening process. **Specifications. Center To Center Spacing:** 5 mm/.197". **Insulating Material:** Polyamide, self extinguishing to UL 94, V-0, color grey. **Temperature Limits:** Short time — 140°C/284°F; Continuous — 80°C/176°F; Low limit — –40°C/–40°F. **Comparative Tracking Index:** CTI >600. **Oxygen Index Rating:** 33%. **Screw:** M2.5. UL File E69841 — 15 A, 300 V, 12-26 AWG. CSA File LR24322 — 20 A, 300 V, 12-26 AWG.

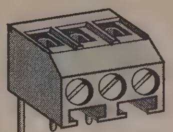
Front Entry — Fig. A

Stock No.	Mfr.'s Type	Poles	EACH
			1-99
924-0650	180-A-111/02	2	**2.07**
924-0652	180-A-111/03	3	**2.98**
924-0654	180-A-111/04	4	**3.89**
924-0656	180-A-111/05	5	**4.79**
924-0658	180-A-111/06	6	**5.70**
924-0660	180-A-111/07	7	**6.61**
924-0662	180-A-111/08	8	**6.90**
924-0664	180-A-111/09	9	**8.42**
924-0666	180-A-111/10	10	**9.33**
924-0668	180-A-111/11	11	**10.23**
924-0670	180-A-111/12	12	**11.14**

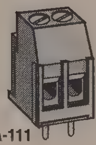
Top Entry — Fig. B

924-0672	180-A-121/02	2	**1.87**
924-0674	180-A-121/03	3	**3.00**
924-0676	180-A-121/04	4	**3.91**
924-0678	180-A-121/05	5	**4.82**
924-0680	180-A-121/06	6	**5.74**
924-0682	180-A-121/07	7	**6.65**
924-0684	180-A-121/08	8	**7.56**
924-0686	180-A-121/09	9	**8.48**
924-0688	180-A-121/10	10	**9.39**
924-0690	180-A-121/11	11	**10.30**
924-0692	180-A-121/12	12	**11.22**

Low Profile Screw Connectors For Printed Circuit Boards With Elevator Style Clamping Mechanism — Series 140



140-A-121



140-A-111

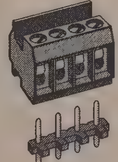
Series 140 low profile connectors feature elevator style clamping and captive screws. Versions are available from 2 to 24 poles. **Specifications. Center to Center Spacing:** 5 mm/.197". **Insulating Material:** Polyamide, self extinguishing to UL 94, V-0, color grey. **Temperature Limits:** Short time — 140°C/284°F; Continuous — 80°C/176°F; Low limit — –40°C/–40°F. **Comparative Tracking Index:** CTI >600. **Oxygen Index Rating:** 33%. **Screw:** M3. UL File E69841 — 15 A, 300 V, 30-14 AWG. CSA File LR24322 — 15 A, 300 V, 30-14 AWG.

Stock No.	Mfr.'s Type	Poles	EACH
			1-99
924-8644	140-A-121/02	2	**.52**
924-8646	140-A-121/03	3	**.72**
924-8648	140-A-121/04	4	**.92**
924-8650	140-A-121/05	5	**1.13**
924-8652	140-A-121/06	6	**1.35**
924-8654	140-A-121/07	7	**1.53**
924-8656	140-A-121/08	8	**1.79**
924-8658	140-A-121/09	9	**1.97**
924-8660	140-A-121/10	10	**2.16**
924-8662	140-A-121/11	11	**2.34**
924-8664	140-A-121/12	12	**2.53**
924-8666	140-A-111/02	2	**.52**
924-8668	140-A-111/03	3	**.72**
924-8670	140-A-111/04	4	**.92**
924-8672	140-A-111/05	5	**1.13**
924-8674	140-A-111/06	6	**1.35**
924-8676	140-A-111/07	7	**1.53**
924-8678	140-A-111/08	8	**1.79**
924-8680	140-A-111/09	9	**1.97**
924-8682	140-A-111/10	10	**2.16**
924-8684	140-A-111/11	11	**2.34**
924-8686	140-A-111/12	12	**2.53**

Plug-In Screw Connector Systems For Printed Circuit Boards — Series 93-FL and 95-TFL

These two-part plug and pinstrip combinations provide a small footprint, low profile design. Versions are available with 3.5 mm (.138") or 5 mm (.197") center to center spacing. Series 95-TFL can be interlocked to form larger pole configurations.

Series 93-FL



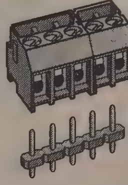
Specifications. Center To Center Spacing: 3.5 mm/.138". **Insulating Material:** Polyamide, self extinguishing to UL 94, V-0, color grey. **Temperature Limits:** Short time — 140°C/284°F; Continuous — 80°C/176°F; Low limit — –40°C/–40°F. **Comparative Tracking Index:** CTI >600. **Oxygen Index Rating:** 32%. **Screw:** M2. UL File E69841 — 6 A, 300 V, 18-30 AWG. CSA File LR24322 — 6 A, 300 V, 20-28 AWG.

Stock No.	Mfr.'s Type	Poles	EACH
			1-99
924-2050	930-FL-DS/02	2	**.61**
924-2052	930-FL-DS/03	3	**.87**
924-2054	930-FL-DS/04	4	**1.12**
924-2056	930-FL-DS/05	5	**1.39**
924-2058	930-FL-DS/06	6	**1.66**
924-2060	930-FL-DS/07	7	**1.90**
924-2062	930-FL-DS/08	8	**2.26**
924-2064	930-FL-DS/09	9	**2.42**
924-2066	930-FL-DS/10	10	**2.69**
924-2068	930-FL-DS/11	11	**2.94**
924-2070	930-FL-DS/12	12	**3.18**

Pinstrip

924-2096	931-SLS/16	16	**1.40**

Series 95-TFL



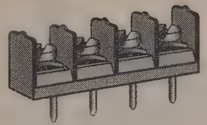
Specifications. Center To Center Spacing: 5 mm/.197". **Insulating Material:** Polyamide, self extinguishing to UL 94, V-0, color grey. **Temperature Limits:** Short time — 140°C/284°F; Continuous — 80°C/176°F; Low limit — –40°C/–40°F. **Comparative Tracking Index:** CTI >600. **Oxygen Index Rating:** 32%. **Screw:** M2.6. UL File E69841 — 10 A, 300 V, 14-26 AWG. CSA File LR24322 — 10 A, 300 V, 14-26 AWG.

924-0540	950-TFL-DS-02	2	**.99**
924-0542	950-TFL-DS-03	3	**1.57**
924-0544	950-TFL-DS-08	8	**4.08**

Pinstrip

924-0549	971-SLK/64	64	**6.37**

Barrier Style Screw Connectors For Printed Circuit Boards — Series 98



The use of flexible polyamide in this series of blocks provides greater resistance to breakage than barrier strips made from more rigid and brittle materials. The screw and washer combinations are fixed together to allow easier wire insertion.

Specifications. Insulating Material: Polyamide, self extinguishing to UL 94, V-2, color grey. **Temperature Limits:** Short time — 140°C/284°F; Continuous — 80°C/176°F; Low limit — –40°C/–40°F. **Comparative Tracking Index:** CTI >600. **Oxygen Index Rating:** 25%. **Screw:** 980 — M3; 982 — M3.5; 983 — M4 . **UL File E69841:** 980 — 7 A, 250 V, 22-18 AWG; 982 and 983 — 20 A, 300 V, 20-12 AWG. **CSA File LR24322:** 980 — 20 A, 300 V, 22-18 AWG; 982 and 983 — 20 A, 300 V, 22-12 AWG.

.250 In./6.3 mm Spacing

Stock No.	Mfr.'s Type	Poles	EACH
			1-99
924-8602	980-S/02	2	**.80**
924-8604	980-S/03	3	**1.12**
924-8606	980-S/04	4	**1.49**
924-8608	980-S/05	5	**1.81**
924-8610	980-S/06	6	**2.13**
924-8612	980-S/07	7	**2.46**
924-8614	980-S/08	8	**2.89**
924-8616	980-S/09	9	**3.44**
924-8618	980-S/10	10	**3.52**
924-8620	980-S/11	11	**3.84**
924-8622	980-S/12	12	**4.16**

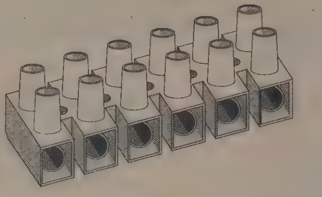
.375 In./9.5 mm Spacing

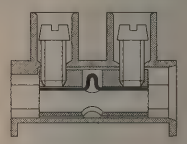
924-8624	982-S/02	2	**.96**
924-8626	982-S/03	3	**1.38**
924-8628	982-S/04	4	**1.82**
924-8630	982-S/05	5	**2.22**
924-8632	982-S/06	6	**2.74**
924-8634	982-S/07	7	**3.14**
924-8636	982-S/08	8	**3.56**
924-8638	982-S/09	9	**4.00**
924-9992	982-S/10	10	**4.35**
924-8640	982-S/11	11	**4.78**
924-8642	982-S/12	12	**5.16**

.394 In./10 mm Spacing

924-5212	983-S/02	2	**1.05**
924-5214	983-S/03	3	**1.49**
924-5216	983-S/04	4	**1.97**
924-5218	983-S/05	5	**2.41**
924-5220	983-S/06	6	**3.01**
924-5224	983-S/07	7	**3.44**
924-5226	983-S/08	8	**3.89**
924-5228	983-S/09	9	**4.33**
924-5230	983-S/10	10	**4.78**
924-5232	983-S/11	11	**5.23**
924-5234	983-S/12	12	**5.67**

Screw Terminal Strips For Panel/Chassis Mounting — Series 300





Series 300 terminal strips are used for connecting stripped, unterminated, solid or stranded copper wires, ranging from 6 to 26 AWG depending on the product selected. Each strip has 12 circuits and can be easily cut to the required number of poles. Mounting holes are provided between each circuit. Captive screws are backed out and ready for wiring.

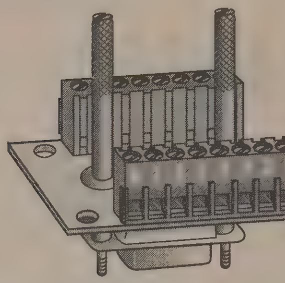
Each circuit has a wire protector to prevent damage to the wire from the turning screw. All metal parts are completely recessed in the flexible polyamide moulding. This dead front design ensures safety and prevents short circuiting. **Specifications. Insulating Material:** Polyamide, self extinguishing to UL 94, V-0 or V-2, natural. **Temperature Limits:** Short time — 140°C/284°F; Continuous — 80°C/176°F; Low limit — –40°C/–40°F. **Comparative Tracking Index:** CTI >600. **Oxygen Index Rating:** 25% (33% for types 326 and 327). UL File E69841. CSA File LR24322.

Stock No.	Mfr.'s Type	No. Of Circuits	Length		Height		Width		Center-Center Spacing		Screw Size	Mounting Hole Diameter		Spacing Between Current Carrying Parts				Screw Tightening Torque (Lb./In.)	Wire Stripping Length		UL Rating			CSA Rating			EACH	
														Through Air		Over Surface												
			mm	In.	mm	In.	mm	In.	mm	In.		mm	In.	mm	In.	mm	In.		mm	In.	Volts	Amps	AWG	Volts	Amps	AWG	1-99	100-Up
924-0100	302-N-HDS/12	12	94	3.70	12.0	.47	16	.63	8.0	.315	M2.6	2.8	.11	4.3	.17	3.2	.13	3.5	5.0	.20	300	20	12-20	300	20	14-26	**2.03**	**1.69**
924-0110	302-HDS/12	12	94	3.70	15.0	.59	16	.63	8.0	.315	M2.6	2.8	.11	5.8	.23	5.8	.23	3.5	5.0	.20	300	20	20-12	300	20	14-26	**1.84**	**1.53**
924-0120	323-HDS/12	12	117	4.59	16.0	.65	21	.83	10.0	.394	M3	3.5	.14	6.1	.24	6.1	.24	4.5	6.5	.25	600	30	10-22	300	25	10-26	**1.99**	**1.68**
924-0130	323-FU-16.5-HDS/12‡	12	117	4.59	16.5	.65	21	.83	10.0	.394	M3	3.5	.14	6.3	.25	11.1	.44	4.5	6.5	.25	600	30	10-22	600	25	10-26	**2.20**	**2.00**
924-0140	323-FU-18.5-HDS/12‡	12	117	4.59	18.5	.73	21	.83	10.0	.394	M3	3.5	.14	8.5	.33	11.9	.47	4.5	6.5	.25	600	30	10-22	600	25	10-26	**2.07**	**1.72**
924-0150	324-HDS/12	12	135	5.30	18.5	.73	22	.87	11.5	.453	M3.5	3.5	.14	6.1	.24	6.1	.24	7.0	7.0	.28	600	35	8-26	600	40	10-26	**2.74**	**2.28**
924-0160	324-FU-HDS/12	12	135	5.30	21.3	.84	22	.87	11.5	.453	M3.5	3.5	.14	9.2	.36	11.2	.44	7.0	7.0	.28	600	35	8-26	600	40	10-26	**2.87**	**2.39**
924-0170	326-HDS/12	12	171	6.73	22.5	.87	30	1.18	14.5	.571	M4	4.3	.17	7.9	.31	7.9	.31	10.0	9.0	.35	600	50	8-14	600	55	8-14	**7.02**	**5.85**
924-0180	327-HDS/12	12	171	6.73	25.0	.98	30	1.18	14.5	.571	M5	4.3	.17	7.5	.30	9.6	.38	16.0	9.0	.35	600	65	6-14	600	80	6-14	**8.02**	**6.69**
924-0190	327-FU-HDS/12	12	171	6.73	28.5	1.12	30	1.18	14.5	.571	M5	4.3	.17	11.0	.42	13.1	.52	16.0	9.0	.35	600	65	6-14	600	80	6-14	**8.43**	**7.02**

‡FU16,5 has a 3 mm (.12") raised base. FU18,5 has a 5 mm (.197") raised base.

Low Profile D-Subminiature Interface Modules — Series MTDA

— NEW —



Type MTDA interface modules were designed for use in motor control machinery, electronic assembly equipment, material handling, specialty machinery and multi-axis systems, etc. Its particular advantage is that it provides a low profile interface between discrete wiring and a D-Subminiature connector.

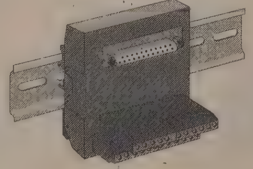
Male D-Subminiature Connector

Stock No.	Mfr.'s Type	Poles	EACH 1-99
924-8688	MTDA-009-MM	9	**20.11**
924-8690	MTDA-015-MM	15	**21.38**
924-8692	MTDA-025-MM	25	**23.36**
924-8694	MTDA-037-MM	37	**27.52**

Female D-Subminiature Connector

Stock No.	Mfr.'s Type	Poles	EACH 1-99
924-8698	MTDA-009-FM	9	**20.11**
924-8700	MTDA-015-FM	15	**21.38**
924-8702	MTDA-025-FM	25	**23.36**
924-8704	MTDA-037-FM	37	**27.52**

D-Subminiature Interface Modules — Series MTD



MTD D-Subminiature interface modules are intended for application in electronic industrial control circuits, such as microprocessor interfaces with conventional process control components. **Nominal Rated Voltage:** 125 VAC. **Nominal Rated Current:** 1.5 A.

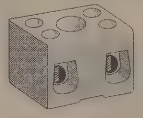
Male D-Subminiature Connector

Stock No.	Mfr.'s Type	Poles	EACH 1-9
924-1000	MTD009-1PZ	9	**36.80**
924-1005	MTD015-1PZ	15	**45.41**
924-1010	MTD025-1PZ	25	**50.74**
924-1015	MTD037-1PZ	37	**69.77**
924-1020	MTD050-1PZ	50	**94.98**

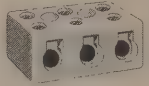
Female D-Subminiature Connector

Stock No.	Mfr.'s Type	Poles	EACH 1-9
924-1030	MTD009-2PZ	9	**38.43**
924-1035	MTD015-2PZ	15	**47.00**
924-1040	MTD025-2PZ	25	**56.67**
924-1045	MTD037-2PZ	37	**58.97**
924-1050	MTD050-2PZ	50	**94.98**

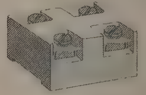
Ceramic Terminal Blocks



2-DIN-46284



4011-B



560-K4DF-V2A

382-K

Ceramic terminal blocks are designed for high temperature applications. Type 560-K4DF-V2A is equipped with stainless steel components and will withstand operating temperatures up to 500°C/940°F. **Specifications. Insulating Material:** Glazed porcelain KER 111, DIN 40685, color white. **Upper Temperature Limit:** 240°C/464°F. UL File E69841. CSA File LR24322.

CSA: 20 A, 300 V, 12-18 AWG

Stock No.	Mfr.'s Type	Poles	L × W × H (mm)	Mount Holes No./Spacing/ø	EACH 1-99
924-0640	2-DIN-46284-ST	2	20 × 21 × 18	1/-/4	**1.37**
924-0642	3-DIN-46284-ST	3	34 × 21 × 18	2/12/4	**2.46**

UL: 50 A, 600 V, 8-14 AWG

924-2492	4010-B	2	34 × 30 × 22	1/-/4.5	**2.75**
924-2494	4011-B	3	50 × 30 × 22	2/18/4.5	**3.26**

Specifications. Insulating Material: Glazed steatite KER 220, DIN 40685, color white. **Upper Temperature Limit:** 240°C/464°F (382-K, 384-K); 500°C/940°F (560-K4DF-V2A). UL File E69841. CSA File LR24322.

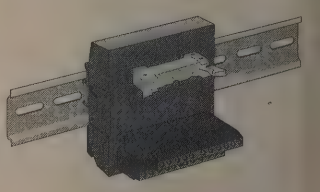
UL: 20 A, 300 V, 12-20 AWG; CSA: 25 A, 600 V, 12-20 AWG

924-0546	560-K4DF-V2A	2	40 × 31 × 20	1/-/4.5	**8.83**

CSA: 26 A, 240 V, 10-20 AWG

924-2496	382-K	2	33 × 23 × 14	2/12/4.8	**4.90**
924-2498	384-K	4	56 × 23 × 14	2/12/4.8	**8.32**

Ribbon Cable Interface Modules — Series MTB



MTB interface modules are designed to facilitate the connection of flat ribbon cables to discrete wires. Standard modules are equipped with 10 to 64 pole IDC connectors with ejectors according to DIN 41651. They are designed to mate with DIN 41651 female plugs equipped with strain relief clamps. When plugged, the ejectors lock the plug in place. **Nominal Rated Voltage:** 60 VAC. **Nominal Rated Current:** 1 A.

Stock No.	Mfr.'s Type	Poles	EACH 1-9
924-1055	MTB010-PZ	10	**30.48**
924-1060	MTB014-PZ	14	**34.03**
924-1065	MTB016-PZ	16	**37.45**
924-1070	MTB020-PZ	20	**43.57**
924-1075	MTB026-PZ	26	**79.56**
924-1080	MTB034-PZ	34	**65.36**
924-1085	MTB040-PZ	40	**62.87**
924-1090	MTB050-PZ	50	**89.84**
924-1095	MTB060-PZ	60	**110.65**
924-1097	MTB064-PZ	64	**116.89**

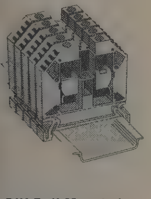
DIN Rail Terminal Blocks and Wire Duct

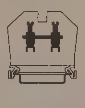
WECO®

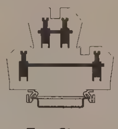
DIN EN 50022 Rail Mounted Terminal Blocks — Series EURO

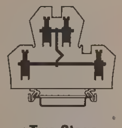
DIN rail mounted terminal blocks provide a flexible connection system with a wide capacity range, an efficient use of space, and a built-in capacity to monitor and maintain electrical systems.

The EURO Series also offers logical organization and a flexible and clear marking system that allows efficient and safe monitoring and maintenance of the system. **Specifications. Insulating Material:** Polyamide, self extinguishing to UL 94, V-2, color grey or yellow/green. **Temperature Limits:** Short time — 140°C/284°F; Continuous — 80°C/176°F; Low limit — -40°C/-40°F. **Comparative Tracking Index:** CTI >600. **Oxygen Index Rating:** 28%. UL File E155961. CSA File LR24322.

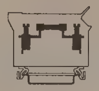

DIN Rail Mounted Terminal Blocks


Feed Through


Two Stage


Two Stage Cross Connect

Ground


Fuse

Feed Through

Stock No.	Mfr.'s Type	L × W × H (mm)	AWG	EACH
924-2009	EURO-2.5-GR-35	44 × 5 × 36	12-18	**1.26**
924-2010	EURO-4-GR-35	44 × 6 × 36	12-18	**1.26**
924-2012	EURO-6-GR-35	50 × 7 × 44	8-18	**1.90**
924-2014	EURO-10-GR-35	50 × 9 × 44	6-18	**2.52**
924-2017	EURO-25-GR-35	56 × 12 × 49	4-14	**3.60**
924-2018	EURO-50-GR-35	62 × 16 × 61	1/0-14	**5.51**
924-2020	EURO-70-GR-35	74 × 26 × 75	3/0-4	**16.52**

Two Stage

924-2222	EURO-D4-GR-35	72 × 6 × 55	12-18	**2.52**

Two Stage Cross Connect

924-2223	EURO-D4-1-GR-35	72 × 6 × 55	12-18	**3.71**

Ground

924-2030	EURO-E4-35	44 × 7 × 36	12-18	**5.51**
924-2032	EURO-E6-35	58 × 8 × 44	8-18	**3.88**
924-2034	EURO-E10-35	58 × 10 × 44	6-18	**6.12**
924-2036	EURO-E25-35	58 × 12 × 49	4-14	**7.34**
924-2038	EURO-E50-35	62 × 16 × 60	1/0-14	**9.18**

Fuse

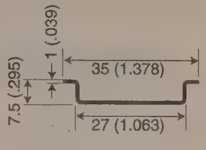
Stock No.	Mfr.'s Type	L × W × H (mm)	AWG	Recommended Fuse	EACH
924-2026	EURO-S10-35	82 × 10 × 50	6-18	1/4" × 1 1/4"	**5.51**
924-2028	EURO-S10-5-35	82 × 10 × 50	6-18	5 × 20 mm 5 × 25 mm	**5.51**
924-2029	EURO-S4-35	68 × 8 × 44	12-18	5 × 20 mm 5 × 25 mm	**4.94**

DIN EN 50022 Mounting Rails

Materials: Steel, zinc plated and chromated.

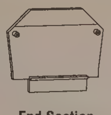
Unperforated
924-2040. H-35-ST-UP-200.0CM. 2 meters....................**EACH 6.73**

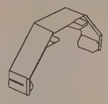
Perforated
924-2042. H-35-ST-P1-200.0CM. 2 meters....................**EACH 7.34**

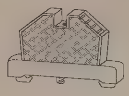


Mounting Rail Dimensions mm (In.)

Rail Mounted Terminal Block Accessories


End Section and Separator


Cover


End Bracket

Jumper Comb

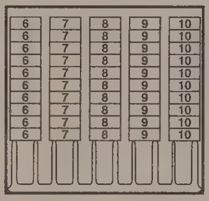
Accessory	EURO-4			EURO-6			EURO-10		
	Stock No.	Mfr.'s Type	EACH	Stock No.	Mfr.'s Type	EACH	Stock No.	Mfr.'s Type	EACH
End Section	**924-2112**	EURO-4-ES	**.63**	**924-2114**	EURO-6-ES	**.63**	**924-2116**	EURO-10-ES	**.63**
Cover	**924-2104**	EURO-4-CO	**.63**	**924-2115**	EURO-6-CO	**.63**	**924-2106**	EURO-10-CO	**.63**
End Bracket	**924-2101**	EURO-4-EBH	**1.20**	**924-5236**	EURO-6-EBH	**1.20**	**924-5238**	EURO-10-EBH	**1.20**
Jumper 2 Pos.	**924-2120**	EURO-4-J2	**.63**	**924-2122**	EURO-6-J2	**.63**	**924-2124**	EURO-10-J2	**.63**
Jumper 3 Pos.	**924-2130**	EURO-4-J3	**1.20**	**924-2132**	EURO-6-J3	**1.20**	**924-2134**	EURO-10-J3	**1.20**
Jumper 4 Pos.	**924-2140**	EURO-4-J4	**1.20**	**924-2142**	EURO-6-J4	**1.80**	**924-2144**	EURO-10-J4	**1.80**

Accessory	EURO-25			EURO-50			EURO-75		
	Stock No.	Mfr.'s Type	EACH	Stock No.	Mfr.'s Type	EACH	Stock No.	Mfr.'s Type	EACH
End Section	**924-5240**	EURO-25-ES	**.63**	**924-2118**	EURO-50-ES	**.63**	—	—	—
Cover	**924-2108**	EURO-25-CO	**.63**	**924-2110**	EURO-50-CO	**.63**	—	—	—
End Bracket	**924-5242**	EURO-25-EBH	**1.20**	**924-5244**	EURO-50-EBH	**1.20**	**924-5246**	EURO-70-EBH	**1.20**
Jumper 2 Pos.	**924-2126**	EURO-25-J2	**.63**	**924-2128**	EURO-50-J2	**1.80**	—	—	—
Jumper 3 Pos.	**924-2136**	EURO-25-J3	**1.20**	**924-2138**	EURO-50-J3	**2.40**	—	—	—
Jumper 4 Pos.	**924-2146**	EURO-25-J4	**1.80**	**924-2148**	EURO-50-J4	**1.20**	—	—	—

Marking Tag Cards

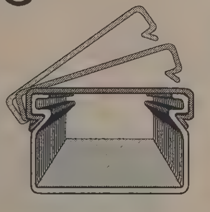
Each card contains 5 rows of ten tags, or 50 symbols. The tags are made of white thermoplastic material with black marking.

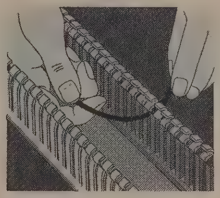
Stock No.	Mfr.'s Type	Marking	EACH
924-2440	Card-A1	1-10	**1.32**
924-2441	Card-A2	11-20	**1.32**
924-2442	Card-A3	21-30	**1.32**
924-2443	Card-A4	31-40	**1.32**
924-2444	Card-A5	41-50	**1.32**
924-2445	Card-A6	51-60	**1.32**
924-2446	Card-A7	61-70	**1.32**
924-2447	Card-A8	71-80	**1.32**
924-2448	Card-A9	81-90	**1.32**
924-2449	Card-B1	91-100	**1.32**
924-2450	Card-BK	Blank	**1.32**



Wiring Duct — Series LKV

Series LKV wiring duct provides an organized routing of electrical wiring for control panel applications. The design also protects and enables easy location of the wires. Slots on either side of the duct allow wiring to exit in order to connect equipment or components. All ducts are suitable for horizontal or vertical mounting.



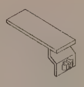


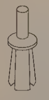
Ducts and covers are shipped assembled in 2 meter lengths (6.5') which can easily be cut as required. Series LKV ducts may also be mounted to DIN EN 50022 mounting rails with the use of type LK-RA DIN rail adapter. **Specifications. Insulating Material:** Rigid PVC, grey — RAL 7030. **Temperature Limits:** Short time — 80°C/176°F; Continuous — 60°C/140°F; Low limit — -20°C/-4°F. **Comparative Tracking Index:** CTI >400. CSA File LR25478-2.

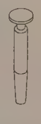
Stock No.	Mfr.'s Type	L × H × W (mm)	No. of Wires (14 AWG)	EACH
924-5256	LKV-1-1	2000 × 25 × 25	25	**15.00**
924-5258	LKV-1.5-1	2000 × 37.5 × 25	40	**18.00**
924-5260	LKV-1.5-1.5	2000 × 37.5 × 37.5	60	**21.00**
924-5262	LKV-2-1	2000 × 50 × 25	50	**24.00**
924-5264	LKV-2-1.5	2000 × 50 × 37.5	75	**24.00**
924-5266	LKV-2-2	2000 × 50 × 50	100	**27.00**
924-5268	LKV-2-3	2000 × 50 × 75	150	**33.00**
924-5270	LKV-3-1	2000 × 75 × 25	75	**30.00**
924-5272	LKV-3-1.5	2000 × 75 × 37.5	115	**30.00**
924-5274	LKV-3-2	2000 × 75 × 50	150	**39.00**
924-5276	LKV-3-3	2000 × 75 × 75	225	**48.00**
924-5278	LKV-3-4	2000 × 75 × 100	300	**54.00**
924-5280	LKV-3-5	2000 × 75 × 125	375	**60.00**
924-5282	LKV-4-1.5	2000 × 100 × 37.5	150	**36.00**
924-5284	LKV-4-2	2000 × 100 × 50	300	**48.00**
924-5286	LKV-4-3	2000 × 100 × 75	300	**54.00**
924-5288	LKV-4-4	2000 × 100 × 100	400	**63.00**

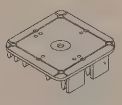
Wiring Duct Accessories

Stock No.	Mfr.'s Type	Accessory	EACH
924-5248	LK-WR	Wire Retainer	**1.20**
924-5250	LK-ER	Expanding Rivet	**.60**
924-5252	LK-RTB	Rivet Installation Tool	**84.60**
924-5254	LK-RA	DIN Rail Adapter	**.62**

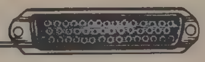

Wire Retainer

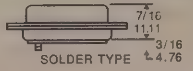

Expanding Rivet

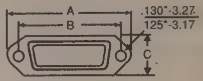

Rivet Installation Tool


DIN Rail Adapter

Original Poke-Home® D-Sub 17 Series







Poke-home blocks accept a wide variety of contact types. **Temperature Range:** –67°F to +257°F (–55°C to +125°C). **Current Rating:** 7.5A. **Voltage Rating:** 500 VAC (RMS) at sea level; 150 VAC(RMS) at 90,000 feet. **Dielectric:** Ztyel 101 nylon per MIL M-20693. **Shells:** Steel clear chromated over zinc. **Contacts:** Gold over nickel plated copper alloy. **Wire Size:** Solder Contacts — up to No. 20 AWG; Crimp Contacts — No. 20, No. 22, and No. 24 AWG. The package for each connector includes the specified number of standard crimp type or solder-type contacts.

Solder Type Contacts (Included)

Stock No.	Mfr.'s Type	Number of Contacts	EACH 1-24	EACH 25-49	EACH 50-99
719-0214	17-10090*	9	**4.20**	**3.71**	**3.31**
719-0218	17-10150*	15	**5.90**	**5.31**	**4.78**
719-0221	17-10250*	25	**8.72**	**7.85**	**7.06**
719-0224	17-10370*	37	**12.44**	**11.20**	**10.08**
719-0227	17-10500*	50	**15.80**	**14.22**	**12.80**
719-0230	17-20090†	9	**3.42**	**2.87**	**2.56**
719-0232	17-20150†	15	**4.34**	**3.54**	**2.98**
719-0234	17-20250†	25	**6.20**	**5.58**	**5.02**
719-0236	17-20370†	37	**15.40**	**14.00**	**11.85**
719-0238	17-20500†	50	**11.08**	**9.97**	**8.98**

*Socket Contacts. †Pin Contacts.

Crimp Type Contacts (Included)

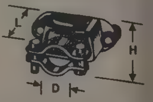
Stock No.	Mfr.'s Type	Number of Contacts	EACH 1-24	EACH 25-49	EACH 50-99
719-0250	17-10090-1*	9	**4.49**	**3.96**	**3.53**
719-0252	17-10150-1*	15	**5.90**	**5.31**	**4.78**
719-0254	17-10250-1*	25	**8.72**	**7.85**	**7.06**
719-0256	17-10370-1*	37	**12.44**	**11.20**	**10.08**
719-0258	17-10500-1*	50	**15.80**	**14.22**	**12.80**
719-0260	17-20090-1†	9	**3.42**	**2.87**	**2.56**
719-0262	17-20150-1†	15	**4.39**	**3.87**	**3.45**
719-0264	17-20250-1†	25	**6.20**	**5.58**	**5.02**
719-0266	17-20370-1†	37	**8.72**	**7.85**	**7.06**
719-0268	17-20500-1†	50	**19.58**	**16.32**	**13.99**

*Socket Contacts. †Pin Contacts.

17 Series Tools (Not Shown)

Stock No.	Mfr.'s Type	Description	EACH
719-8005	356-200	Handle for insertion/removal bits	**38.50**
719-8021	357-100	Hand crimp tool (Socket contacts)	**433.40**
719-8024	357-300-02	Location bushing for 357-100	**93.10**
719-8022	357-101	Hand crimp tool (Pin contacts)	**498.96**
719-8010	356-400-1	Insertion tool bit*	**59.58**
719-8015	356-400-5	Removal tool bit* (Socket contacts)	**38.50**
719-8016	356-400-6	Removal tool bit* (Pin contacts)	**38.50**

*Use with 356-200.

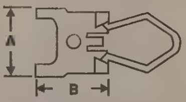


Cable Clamp Assemblies

Metallic straight cable housing, clear chromate finish, with cable clamp.

Stock No.	Mfr.'s Type	For Sizes (Contacts)	EACH 1-24	EACH 25-49	EACH 50-99
719-0202	17-310-1	9	**3.70**	**3.11**	**2.77**
719-0204	17-311-1	15	**2.66**	**2.23**	**1.99**
719-0206	17-312-1	25	**3.67**	**3.34**	**2.82**
719-0208	17-313-1	37	**5.96**	**5.36**	**4.83**
719-0210	17-314-1	50	**6.50**	**5.85**	**5.27**

D-Sub Hardware



Spring Latches

Made of steel with clear chromate finish.

Stock No.	Mfr.'s Type	For Sizes (Contacts)	Dimensions A	Dimensions B	SET/2 1-24	SET/2 25-49	SET/2 50-99
719-8070	17-529	9-37	.567"	.614"	**1.42**	**1.10**	**1.00**
719-8071	17-770	50	.681"	.614"	**1.71**	**1.43**	**1.22**

Screw Lock Assembly

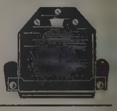
Stock No.	Mfr.'s Type	Description	SET/2 1-24	SET/2 25-49	SET/2 50-99
719-8073	17-768	Screw lock assembly for Sizes 9-37	**2.04**	**1.76**	**1.39**
719-8074	17-893	Jack Socket (2 sockets, lock washers and parts)	**2.46**	**2.11**	**1.90**
719-8075	17-894	Jack Screw (2 screws, washers and retaining rings)	**3.93**	**3.37**	**3.03**
719-8076	17-895	Complete assembly (both of the above)	**5.42**	**4.88**	**4.39**

D-Sub Hoods (Backshells)

Plastic 2-Piece Backshell

Top entry, internal cable clamp, screw lock.

Stock No.	Mfr.'s Type	For Sizes (Contacts)	Cable dia. (Min./Max.)	EACH 1-24	EACH 25-49	EACH 50-99
719-0085	17-1724-1	9	.190/.350"	**1.44**	**1.23**	**1.01**
719-0086	17-1725-1	15	.190/.350"	**1.92**	**1.65**	**1.41**
719-0087	17-1726-1	25	.190/.460"	**1.72**	**1.52**	**1.23**
719-0088	17-1727-1	37	.300/.680"	**2.46**	**2.11**	**1.90**
719-0089	17-1728-1	50	.300/.680"	**3.44**	**2.95**	**2.66**



Metallized Plastic 2-Piece Backshell

Top entry, internal cable clamp, screw lock.

Stock No.	Mfr.'s Type	For Sizes (Contacts)	Cable dia. (Min./Max.)	EACH 1-24	EACH 25-49	EACH 50-99
719-0080	17-1724-2	9	.190/.350"	**2.16**	**1.89**	**1.52**
719-0081	17-1725-2	15	.190/.350"	**2.73**	**2.34**	**2.11**
719-0082	17-1726-2	25	.190/.460"	**2.75**	**2.36**	**2.12**
719-0083	17-1727-2	37	.300/.680"	**6.42**	**5.78**	**5.20**
719-0084	17-1728-2	50	.300/.680"	**7.12**	**6.41**	**5.77**

Die Cast D-Subminiature Backshell for Round Cable

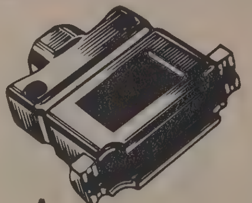
Rugged new backshell for round cable D-Subminiature applications. Meets FCC docket 20780. Shields out EMI/ESD. Available in sizes to fit 9, 15, 25, 37, and 50 contact configurations. Includes compression inserts to accommodate a wide range of braided or foil shielded cables. Easy to assemble. **Materials:** Cover — Die-cast zinc with clear zinc plate finish; Hardware — Steel with clear zinc finish; Inserts — PVC. **Fig. A**

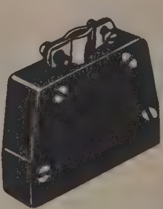
Stock No.	Mfr.'s Type	For Sizes (Contacts)	Cable dia. (Min./Max.)	EACH 1-24	EACH 25-49	EACH 50-99
719-8080	17-1657-9	9	.190/.350"	**3.84**	**3.29**	**2.97**
719-8081	17-1657-15	15	.190/.350"	**4.45**	**3.93**	**3.50**
719-8082	17-1657-25	25	.190/.460"	**4.61**	**4.07**	**3.63**
719-8083	17-1657-37	37	.300/.680"	**6.74**	**6.07**	**5.46**
719-8084	17-1657-50	50	.300/.680"	**7.52**	**6.77**	**6.09**

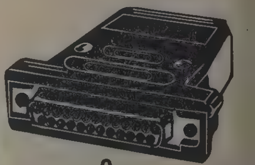
Thermoplastic Hoods with External Clamps

For top or side entry. **Fig. B**

Stock No.	Mfr.'s Type	For Sizes (Contacts)	EACH 1-24	EACH 25-49	EACH 50-99
719-0070	17-1370	9	**3.19**	**2.74**	**2.46**
719-0071	17-1371	15	**4.26**	**3.77**	**3.35**
719-0072	17-1372	25	**4.31**	**3.80**	**3.39**
719-0073	17-1373	37	**4.24**	**3.57**	**3.18**
719-0074	17-1374	50	**4.51**	**3.98**	**3.55**


A


B

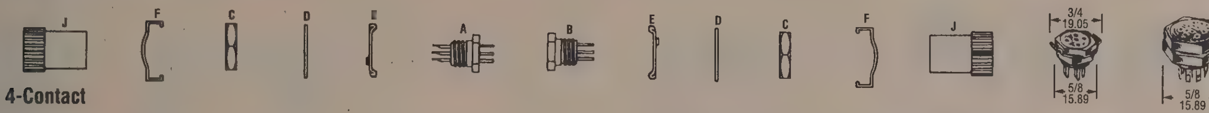

C

Thermoplastic Hoods With Internal Clamps and Jack Screws

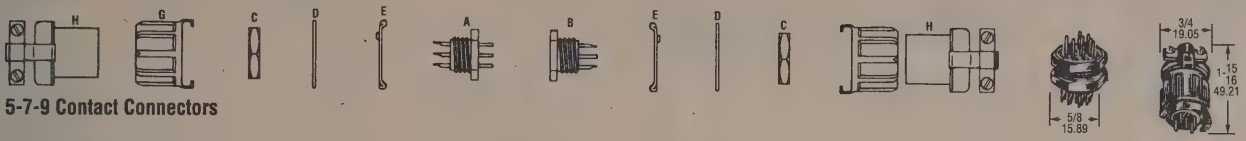
Fig. C

Stock No.	Mfr.'s Type	For Sizes (Contacts)	EACH 1-24	EACH 25-49	EACH 50-99
719-0075	17-1587-6	9	**2.64**	**2.09**	**1.78**
719-0076	17-1588-6	15	**2.72**	**2.17**	**1.84**
719-0077	17-1589-6	25	**3.15**	**2.70**	**2.43**
719-0078	17-1590-6	37	**3.09**	**2.65**	**2.38**
719-0079	17-1591-6	50	**3.21**	**2.75**	**2.48**

Miniature Hexagonal Connectors



4-Contact



5-7-9 Contact Connectors

Dielectric of black thermoplastic. **Contacts:** #20 AWG for 20 gauge or smaller wire. Gold over copper plate. **Hardware:** Nickel plated solid brass. Rated 7.5 amps, 500 VAC (RMS) at sea level. **Temperature Range:** – 60°C to +125°C. **Ordering Information:** To obtain the part required, select the desired parts from the possibilities shown above. Each part is identified with a letter. The tables below indicate the parts included with each stock number. **Example:** Stock number 719-4517 includes parts A, G, and H.

Stock No.	Mfr.'s Type	Type	Includes Parts	EACH 1-49	50-99	100-249
719-4500	126-010	Male Recep.	A, C*	4.84	4.27	3.81
719-4515	126-191	Male Recep.	A, C†	5.22	4.70	4.23
719-4502	126-012	Male Recep.	A, C‡	8.76	7.88	7.10
719-4522	126-214-1000	Male Plug	A, F, J**	5.62	5.06	4.55
719-4526	126-217	Male Plug	A, G, H*	6.78	6.10	5.49
719-4517	126-195	Male Plug	A, G, H†	7.91	5.69	4.75
719-4529	126-220	Male Plug	A, G, H‡	8.86	7.98	7.18
719-4523	126-214	Male Recep.	A, C, E**	5.38	4.84	4.36
719-4525	126-216	Male Recep.	A, C, E*	4.26	3.76	3.35
719-4519	126-197	Male Recep.	A, C, E†	5.58	5.02	4.52
719-4528	126-219	Male Recep.	A, C, E‡	6.60	5.94	5.35
719-4501	126-011	Fem. Recep.	B, C*	6.00	5.40	4.86
719-4516	126-192	Fem. Recep	B, C†	6.28	5.65	5.09
719-4503	126-013	Fem. Recep.	B, C‡	9.46	8.51	7.66
719-4524	126-215	Fem. Plug	B, F, J**	8.40	7.56	6.80
719-4532	126-223	Fem. Plug	B, G, H*	7.80	7.02	6.32
719-4518	126-196	Fem. Plug	B, G, H†	12.10	10.89	9.80
719-4531	126-222	Fem. Plug	B, G, H‡	14.00	12.60	11.34
719-4533	126-233	Fem. Recep.	B, C, E**	6.26	5.63	5.07
719-4527	126-218	Fem. Recep.	B, C, E*	4.86	4.29	3.82
719-4520	126-198	Fem. Recep.	B, C, E†	7.98	7.18	6.47
719-4530	126-221	Fem. Recep.	B, C, E‡	9.86	8.88	7.99

Contacts: * = 5, † = 7, ‡ = 9, ** = 4.

4-Contact Components

Stock No.	Mfr.'s Type	Description	Fig.	EACH 1-49	50-99	100-249
719-4550	126-1427	Male body	A	3.53	3.02	2.72
719-4522	126-1429	Female body	B	5.32	4.79	4.31
719-4554	126-1428	Clip #1	E	.95	.85	.73
719-4556	43-737	Lockwasher	D	.36	.33	.28
719-4558	41-153	Hex nut	C	.30	.27	.23
719-4560	126-1430	Clip #2	F	2.08	1.78	1.60
719-4562	126-1425	Rear hood	J	1.80	1.54	1.31

5, 7, and 9 Contact Components

Stock No.	Mfr.'s Type	Description	Fig.	EACH 1-49	50-99	100-249
719-4564	126-1083	5-con. male body	A	3.19	2.74	2.46
719-4566	126-1059	7-con. male body	A	4.03	3.46	3.11
719-4568	126-1080	9-con. male body	A	4.78	4.18	3.76
719-4570	126-1085	5-con. female body	B	4.20	3.60	3.24
719-4572	126-1057	7-con. female body	B	5.78	5.20	4.68
719-4574	126-1082	9-con. female body	B	8.84	7.96	7.16
719-4576	41-108	Hex nut	C	.26	.23	.19
719-4578	43-469	Lockwasher	D	.45	.40	.34
719-4580	126-1069-02	Clip	E	.31	.22	.18
719-4582	126-1064-02	Lock sleeve	G	1.33	1.00	.88
719-4584	126-1063	Hood and cable clamp	H	2.64	1.81	1.50

Series 26 Blue Ribbon Connectors

- ► Self-Cleaning Contacts
- ► For Heavy-Duty Applications
- ► Matching Positive Polarization

Rugged, heavy duty interconnections for when larger gauge wires must be used and size is not a limiting factor. High-impact diallyl phthalate dielectric with molded-in mounting plates of corrosion-resistant passivated stainless steel. Float mount bushings provide .028" radial movement. Contacts .000030" gold over copper base. Self cleaning wiping action. Solder eyelet tails. **Maximum Wire Size:** 16 gauge. Rated 5 amps per contact, 750 VDC at sea level, 300 VDC at 60,000 feet. Estimated service life of 25 years in mated condition. UL recognized.

Plug

Stock No.	Mfr.'s Type	Contacts	EACH 1-9	10-49	50-99
719-0610	26-4100-8P	8	7.52	6.36	5.56
719-0611	26-4100-16P	16	10.01	8.47	7.44
719-0612	26-4100-24P	24	12.30	11.07	9.96
719-0600	26-159-16	16	12.46	10.53	8.60
719-0601	26-159-24	24	15.10	13.59	12.23

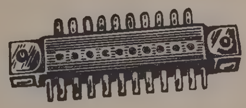
Receptacle

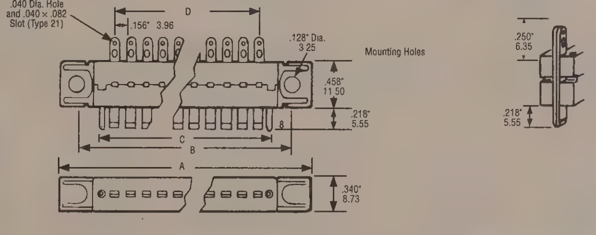
Stock No.	Mfr.'s Type	Contacts	EACH 1-9	10-49	50-99
719-0618	26-4200-8S	8	8.47	7.14	5.83
719-0619	26-4200-16S	16	18.16	15.56	14.52
719-0620	26-4200-24S	24	14.34	12.91	11.62
719-0605	26-190-16	16	15.44	13.90	12.51
719-0606	26-190-24	24	19.94	17.95	16.15

Series 133 .156" Center PC Plugs

Mate with 143 Series. Brass, cadmium plated guide pins; cadmium plated end caps; gold over albaloy plated brass contacts. Two .128" holes for bolting to wiring board. Last two digits in type number indicate tail style. **Type 21.** Eyelet tail, 600 V rms. 5 amps. 3250 VDC breakdown. **Shipping Weight:** 2 ozs.

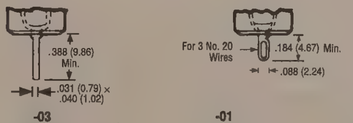
Stock No.	Mfr.'s Type	Contacts	EACH 1-49	50-99	100-249
719-4712	133-010-21	10	20.78	18.70	16.83
719-4729	133-015-21	15	28.10	25.29	22.76
719-4743	133-022-21	22	52.48	41.24	36.54





Series 143 .156" Contact Center PC Connectors

Mate with .054" to .070" PC boards or 133 Series plugs. Last two digits indicate tail type. **Type 01.** Solder eyelet. **Type 03:** dip solder. Mineral-filled diallyl phthalate dielectric per MIL-M-14 type MDG, blue. 5,000 megohms minimum resistance. **Contacts:** phosphor bronze and copper alloy. .000020" gold over nickel plating. Rated 5 amps, 600 VAC (RMS) at sea level. **Temperature Range:** – 65°C to 125°C.

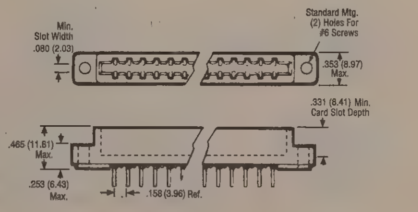


-03
Dip Solder

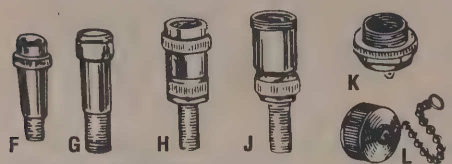
-01
Solder Eyelet

Stock No.	Mfr.'s Type	Contacts	EACH 1-49	50-99	100-249
719-4800	143-006-01	6	4.88	4.31	3.84
719-4809	143-010-01	10	4.76	4.20	3.74
719-4816	143-012-01	12	5.02	4.52	4.07
719-4825	143-015-01	15.	5.02	4.52	4.07
719-4833	143-018-01	18	6.92	6 23	5.61

Stock No.	Mfr.'s Type	Contacts	EACH 1-49	50-99	100-249
719-4841	143-022-01	22	8.32	7.49	6.74
719-4811	143-010-03	10	5.20	4.68	4.21
719-4827	143-015-03	15	5.86	5.27	4.75
719-4843	143-022-03	22	8.56	7.70	6.93
—	—	—	—	—	—



Microphone Connectors



Series 80—2-Contact Types

Chrome plated machined brass shells with threaded coupling and black phenolic dielectric. Panel receptacle mounting hole 5/8" diameter, maximum chassis thickness 11/32". Cable diameter up to 5/16" for cable plugs and jacks. Both male and female contacts are rated for 3 amps, 600 volts.

Stock No.	Mfr.'s Type	Fig.	Description	EACH	
				1-49	50-99
719-3106	80-MC2F	G	Fem. cable jack	9.92	8.93
719-3107	80-MC2F1	F	Fem. cable plug	9.50	8.55
719-3105	80-MC2M	F	Male cable plug	6.92	6.23
719-3109	80-MC2M1	G	Male cable jack	9.32	8.39
719-3110	80-PC2F	K	Female recept.	5.16	4.09
719-3111	80-PC2M	K	Male receptacle	5.94	4.95

Series 91

Chrome plated machined brass shells with threaded coupling and black phenolic dielectric. Panel receptacle mounting hole 27/32" diameter. Maximum chassis thickness 1/8". Cable diameters — 3 contact .281 max. 4-6 contact .385" max. Rated for 600 volts. Male contacts rated for 5 Amps, female contacts for 3 Amps.

3-Contact Types

719-4011	91-MC3F	J	Fem. cable jack	13.86	12.47
719-4012	91-MC3F1	H	Fem. cable plug	13.38	12.04
719-4013	91-MC3M	H	Male cable plug	10.88	9.79
719-4033	91-PC3F	K	Female recept.	7.42	5.91
719-4035	91-PC3M	K	Male receptacle	7.24	6.52

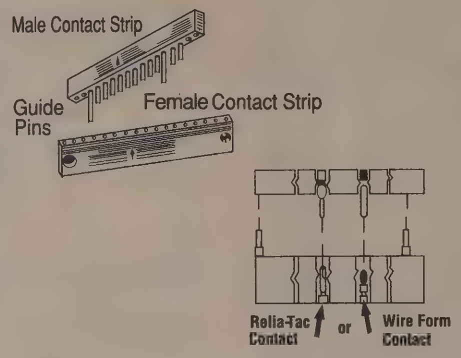
4-Contact Types

719-4017	91-MC4F	J	Fem. cable jack	14.44	13.00
719-4018	91-MC4F1	H	Fem. cable plug	13.38	12.04
719-4019	91-MC4M	H	Male cable plug	8.18	7.36
719-4034	91-PC4F	K	Female recept.	7.22	6.02
719-4037	91-PC4M	K	Male receptacle	8.78	7.90

6-Contact Types

719-4025	91-MC6F	J	Fem. cable jack	15.42	13.88
719-4026	91-MC6F1	H	Fem. cable plug	15.24	13.72
719-4027	91-MC6M	H	Male cable plug	10.68	9.62
719-4043	91-PC6F	K	Female recept.	11.14	10.03
719-4045	91-PC6M	K	Male panel recept.	8.78	7.90
719-4046	91-CCC3	L	Cap and chain	8.64	7.78

221-Series STRIP Connectors



Use full length as is, or cut to specific length. Two or more strips can be stacked or epoxied together for multirow connector. When stacked, contact centers are .100" for both connectors. Use guide pins at least every 3" for mating alignment and keying. Guide pins replace both pin and socket contact. Supplied less contacts and guide pins; listed below. Spacing .100" except *.075". Av. wt. 1 oz. Use "Relia-Tac" contacts.

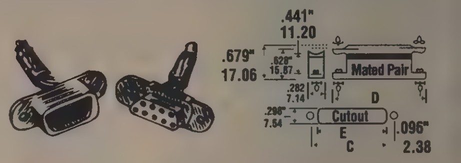
Stock No.	Mfr.'s Type	Contacts	Description	EACH		
				1-49	50-99	100-249
719-5860	221-1560	60	6" Plug	2.87	2.41	2.16
719-5861	221-1660	60	6" Recept	2.87	2.41	2.16
719-5862	221-2553	53*	4" Plug	3.39	3.08	2.42
719-5854	221-2653	53*	4" Recept	3.39	3.08	2.42

"Relia-Tac" Contact Tools

Hand crimping tools. Adjustable 4-indent miniature to MIL-T-22520. Requires contact locator busing for specific contact used. Tool handle requires insertion bit or correct removal bit to accommodate desired contact. See Table below. Av. shpg. wt. 12 oz.

Stock No.	Mfr.'s Type	Description	For Contact	EACH	
				1-4	5-Up
719-8021	357-100	Hand Crimp Tool	—	433.40	344.57
719-8013	357-300-1	Contact Locator	220-S01/ S02/P01	92.66	83.40
719-8005	356-200	Tool Hdle. Only	—	38.50	34.65
719-8017	356-400-11	Insertion bit	ALL	116.62	92.93
719-8020	356-400-14	Removal bit	220-S02	47.32	42.59

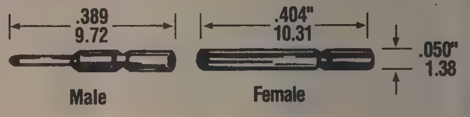
223-Series "Tiny Tim"® Connectors



For circuit modules, potted-in or surface mtg.; Micro-miniature cable-to-cable use. Contact spacing, .100" ctrs, Screw mtg. **Less contacts:** Use "Relia-Tac" contacts.

Stock No.	Mfr.'s Type	Contacts	Desc.	Mtg. Ctrs. In.	EACH		
					1-49	50-99	100-249
719-5950	223-1505	5	Plug	.593	2.16	1.82	1.62
719-5955	223-1605	5	Recept.	.593	2.16	1.82	1.62
719-5951	223-1509	9	Plug	.793	2.18	1.84	1.64
719-5956	223-1609	9	Recept.	.793	2.18	1.84	1.64
719-5952	223-1517	17	Plug	1.193	2.38	2.00	1.78
719-5957	223-1617	17	Recept.	1.193	2.38	2.00	1.78

"Relia-Tac" Contacts

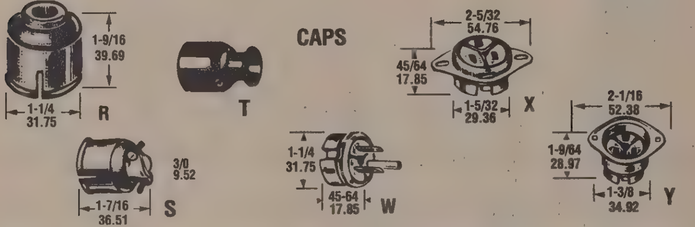


Rated 3 amps and types take 22, 24, 26 solid wire; 24, 26 stranded wire. Relia-Tac also takes 28 solid wire. Relia-Tac gold-over-nickel on copper alloy body; male .389 x .050"; female, .404 x .050". Guide pins will fit either type. Av. shpg. wt. per pkg. 1 oz.

Stock No.	Mfr.'s Type	Description	PER PKG./100		
			1-9	10-49	50-99
719-5802	220-P02-100	Relia-Tac Male	25.46	22.91	20.64
719-5805	220-S02-100	Relia-Tac Fem.	45.58	41.02	36.92
719-5806	220-834-102	Male pin tail for PC mount	26.34	21.95	18.81
719-5807	220-883-202-100	Fem pin tail for PC mount	75.74	68.17	61.35
719-5808	220-830-02	Male solder cup	35.10	31.59	28.43
719-5809	220-831-02-100	Fem. solder cup	79.28	71.35	64.22

Type 221-535 Universal Guide Pins
719-5853. 1-49 ....EACH 1.65 50-UP......................EACH 1.38

Plug and Socket Connectors



Make inexpensive cable connectors of standard sockets, plugs, and receptacles. Type 86-3-13 is steel end outlet 7/16" I.D., has a wire insulator and a black epoxy finish. 86-3-24 is steel, has a cable clamp, 3/8", wire insulator and a black epoxy finish. Type 86-3-858 is black thermoplastic and has a 5/16" end outlet with strain relief. Use with the connectors in this section that don't have mounting plates.

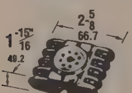
Stock No.	Mfr.'s Type	Fig.	EACH		
			1-49	50-99	100-249
719-0018	86-3-13	R	2.14	1.81	1.47
719-0019	86-3-24	S	3.97	3.40	3.06
719-0020	86-3-858	T	3.76	3.06	2.47

Plugs and Receptacles

Two Pole with Ground

Molded thermoplastic bodies. Rated 125V at 15A. UL approved. 160-2N and 3N have steel mounting plates. 160-4N and 5N consist of inserts 160-10N and 11N in a cadmium steel shell for below surface mounting.

Stock No.	Mfr.'s Type	Fig.	Description	EACH		
				1-49	50-99	100-249
719-0055	160-10N	—	Receptacle insert	16.10	14.49	13.04
719-0056	160-11N	W	Plug insert	16.46	14.81	13.33
719-0051	160-2N	X	Receptacle w/plate	12.38	11.14	10.03
719-0052	160-3N	—	Plug with plate	19.76	17.78	16.01
719-0053	160-4N	Y	Receptacle w/shell	26.34	23.71	21.34
719-0054	160-5N	—	Plug with shell	24.78	22.71	19.47



Barrier-Type Octal Relay Socket

Phenolic body withstands 300°F. continuous. Longer termination screws with captivated pressure plates. Rated 5 amps at 1250 V rms. UL file No. E56473.
719-0050. Model 146-103. 1-49 ....EACH 11.18
50-99 ....EACH 10.06 100-249* ....EACH 9.06

***Contact the closest sales office for quantity pricing.**

Miniature Plugs and Sockets

Black phenolic body. Rated 3A for sockets, 5A for plugs, at 500 V rms. Sockets have retainer ring mounting in a 5/8" diameter hole. Plugs have nickel plated brass contacts.

Stock No.	Mfr.'s Type	Contacts	Type	EACH		
				1-49	50-99	100-249
719-0009	78-S3S	3	Socket	2.31	1.98	1.78
719-0012	78-S6S	6	Socket	3.42	2.93	2.64
719-0021	86-71-3S	3	Plug	1.60	1.37	1.17
719-0022	86-71-6S	6	Plug	2.10	1.80	1.54

MIP Sockets

Black phenolic with a sturdy nickel plated steel mounting plate and retainer ring. Dimensions are the same as the "S" type.

Stock No.	Mfr.'s Type	Contacts	EACH		
			1-49	50-99	100-249
719-0002	77MIP-8	8-octal	3.66	2.91	2.33
719-0005	78-88-8	8-octal	4.88	4.06	3.48
719-0003	77MIP11	11	4.94	4.36	3.89

CP Plugs

For use as chassis connectors with plug-in units, 4 contact without a center post, but has two larger diameter pins for polarization.

719-0023	86-CP-4	4	2.48	2.12	1.91
719-0024	86-CP-8	8-octal	2.50	2.14	1.93
719-0025	86-CP-11	11	2.50	2.14	1.93

Standard Sockets

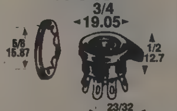
Type S. Black phenolic body, brass contacts on 4 contact, luballoy on 8 and 11 contact. Retainer ring mounted, 1.172" mounting hole. Sockets notched around circumference for rotation to convenient wiring position.

719-0010	78S4	4	3.20	2.69	2.40
719-0014	78S8	8-octal	3.01	2.47	2.08
719-0016	78S11	11	5.03	4.43	3.95

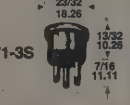
Replacement Type with Mounting Plate

719-0006	78RS4	4	6.38	5.74	5.17
719-0007	78RS8	8-octal	5.20	4.68	4.21

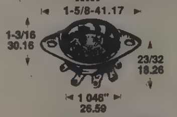
78-S-6S



78-71-3S

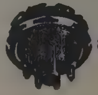


MIP

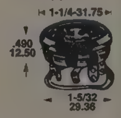


86-CP-4S

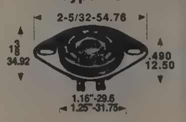
86-CP-8



Type S



Type RS

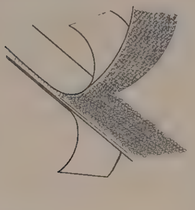


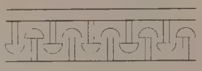
Hardware and Tools

Manufacturers Index Page
3M 318
Allied Tool Kits 319, 320
AMP® 321
Augat/Alcoswitch 322
Bondhus 323
Davies 324, 325, 326
EHC 327, 328
Engineered Static Solutions 329, 330
Erem 331
G.C. Electronics (Thorsen Tools) 332
Greenlee 333
Hempe 323
Ideal 334, 335
Jonard 336, 337
Keystone Electronics 338-342
Klein Tools 343
NT•T/HH Smith 344
Paladin Tools 345
Panavise 346
RAF 347, 348
Richco 349
Russell 350
Wiha 351
Xcelite 352-355

Product Index Page
ABS Knobs 327, 328
Adjustable Wire Stripper/Cutter 343
Air Ionizers 329
Alignment and Adjusting Tools 337
All-Purpose Tool 343
Allen Hex Socket Screwdrivers 354
Aluminum Hex Standoffs 344
Aluminum Knobs 322
Aluminum Round Spacers 344
Aluminum Round Threaded Standoffs 344
Anti-Fatigue Floor Mats 330
Anti-Static Alignment Tool Kit 332
Anti-Wicking Tweezers 331
Attache Case Tool Kit 320, 354
Balldriver Hex Tools 323
Balldriver L-Wrench Sets 323
Bases 346
Bits-Selector 351
BNC Coaxial Connector Kits 321
BNC/TNC Connector Removal Tools 335
Brand Hook and Fastening Systems 318
Brass Male/Female Standoffs 344
Bumpers 318, 341, 350
Burnishers 337
Cable Clamps 349
Cable Cutters 333, 843
Cable-Check 345
Caterpillar Grommets 344, 350
Chain Nose Pliers 352
Circuit Board Holders 346
Circuit Board Supports 349
Circuit Tracer 333
Clamp-Type Knobs 328
Coax Stripper 345
Coax Termination Kit 335
Coax-Check Tester and Remote 345
Collapsible Instrument Handles 326
Collapsible Tray Handles 326
Compact Convertible Tool Sets 355
Conductive Foam 329
Continuity Tester 343
Control Knobs 324, 327, 328
Crimper Tools 321, 334, 343, 345
CSR Repair Kits 320
Curved Nose Pliers 352
Cutters 332, 334
D-Subminiature Kits 321
Diagonal Cutting Pliers 343
Diagonal Pliers 353
Dual Lock Fastener 318
Electrician's Scissors 343
Electricians Chain Nose Pliers 353
Electricians Insulated Sets 351
Electricians Knife 353
Electronic Equipment Terminal Mats 329
Ergonomic Hand Tools 331
Extraction and Insertion Tools 321, 337
Fasteners 318
Female PC Quick-Fit Terminals 338
Ferrules for Round Handles 342
Field Service Kits 319, 329, 354, 355
Flat Nose Pliers 353
Flexible Table Mats 330
Fold Up Tool Sets 323
Fuse Pullers 335
Gas Lamp Tester 333
Grommets 341, 344, 350
Grounding System 335
Hand Tools 321, 352, 353
Hand Wrapping Tools 336
Handle Kits 351
Handles 326, 347, 355
Hard Wire Cutter 353
Heat Gun 334
Heat Shrink Tubing Kit 321
Hex and Round Threaded Standoffs 339, 340
Hex Male/Female Threaded Standoffs 339
IC Tools 321, 331
Industry Standard Tools and Kits 321
Insertion and Removal Tool Kits 336
Instrument Handles 344
Instrument Knobs 324, 325, 327
Insulated Nylon Flange Bushing 344
Jack Screws 340
Knob Locks 328
Knobs 322, 324, 325, 326, 327, 328
Kwik Stepper Step Bits 333
Kwik-Bits Bit Box Screwdriver Set 333
LAN Tool Kit 320
LED Spacer Mounts 341
Locking Pliers 354
Lockwasher and Solder Terminals 338
Long Needle Nose Pliers 343
Long Nose Pliers 352
Long-Nose All-Purpose Tool 343
Magnetizer/Demagnetizer 351
Magnifiers 332
Male PC Quick-Fit Terminals 338
Male Quick-Fit Terminals — Rivet Mount 338
Male Sturdi-Mount PC Quick-Fit Headers 338
Male Sturdi-Mount PC Quick-Fit Terminals 338
Manual Quick-Wrap Gun 336
Micro Series Shearcutter — General Purpose 353
Micro Series Shearcutter — Heavy Duty 353
Micro Wire Saddles 349
Midget Slim Nose Pliers 343
Miniature Clamp Knobs 324
Modular Plug Hand Tool Kit 321
Modular Test Adapter 335
Mounting Brackets 342
Multi-Purpose 6-In-1 Tool 343
Needle Nose Pliers 353
Network Kit 321
Nibbling Tool 332
Nutdriver Set 355
Nylon Round Spacers 344
Nylon Spacer Supports 342
Nylon Strain Reliefs 344
Oval Head Cutters 352
Patch-Check 345
Pathfinders 335
PC Test Point Terminals 338
PC Test Points Snap-In Mounting Color Coded 338
PCB Cutters 331
Phenolic Knobs 322
Phillips Screwdrivers 354
Pliers 332
Pointer Control Knobs 325, 327
Power Bit Adapter 355
Precision Ceramic Set 351
Precision Electronic Tools 351
Precision Knife Set 332
Precision Knives and Blades 354
Precision Measuring Tools 323
Precision Tool Kit 336
Presses 346
Professional Wire Cutters 345
Pull-Out Carrying Handles 326
Punch Down Tool 335
Punches 333
Recessed Bumpers 341
Recessed Bumpers with Clearance Hole 344
Reclosable Fastening Systems 318
Reusable Plastic Ties 349
Roll-Up Kits 355
Round Blade Screwdriver Set 355
Round Ceramic Threaded Standoffs 340
Round Clear Hole Spacers 341
Round Instrumentation Handles 342
Round Nose Pliers 352
Screw Mount C.B. Supports 349
Screwdriver Sets 332, 333, 354, 355
Screws 347
Service Kits 355
Shears 332
Slim Line Tapered Head 352
Slim Long Nose Pliers 343
Slim Pointed Nose Pliers 343
Snap Button Hole Plugs 344
Spacer Organizer 340
Spacers and Standoffs 348
Special Long-Reach Designer Pliers 343
Specialty Series Knobs 325
Specialty Tools 323, 332
Stainless Diagonal Cutting 353
Standard Nose, High-Leverage Cutter 343
Standard Pliers 353
Static Shielding Bags 329
Strippers 334, 335, 345
Tapered Nose, Midget Jaw, Full-Flush Pliers 343
Telecommunication Tools 336
Tension Gauges 337
Terminal Kits with Hand Tools 321
Test Tools 332
Testers 335
Thin Long Nose Pliers 352
Tool Carriers 334
Tool Kits 332, 334, 336, 354, 355
Torx Screwdrivers 355
Touch'n Type 329
Tubing Tools 323
TV Tool Kit 332
Tweezers 331, 332
Universal and Threaded Mounting Brackets 342
Universal Tool Kit 336
Utility Pliers 353
UTP Termination Kit 345
Vacuum Cleaners and Electronics 318
Variable Pitch Bi-Metal Hole Saw 333
Vertical P.C. Test Jacks 340
Vises 346
Voltage Indicators 333
Warning Labels 329
Wire and Cable Clamps 344
Wire Marking Supplies 334
Wire Saddles 349
Wire Strippers 332, 343, 345
Wire-Marker Booklets 334
Wire-Nut Wire Connectors 335
Work Centers 346
Workstation Kit 330
Wrenches 332, 354
Wrist Straps and Heel Grounders 330

Dual Lock™ Brand Reclosable Fastening Systems





SJ-3541

- ► Backing Attachment: Pressure Sensitive Rubber Adhesive
- ► Operating Temperature: –20°F to 120°F Continuous, –20°F to 158°F Intermittent with No Static Charge
- ► General Purpose — Bonds to Most Surfaces
- ► Mating Stem Type: 400
- ► Self Mating

SJ-3560

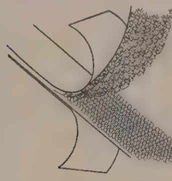
- ► Backing Attachment: Clear, Pressure Sensitive Very High Bond Scotch™ VHB™ Acrylic Adhesive
- ► Operating Temperature: –20°F to 200°F
- ► UV Resistant/Plasticizer Resistant
- ► Self Mating

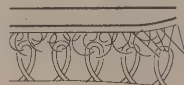
When Dual Lock™ brand reclosable fasteners are pressed together, hundreds of mushroom-shaped stems interlock with one another. An audible snap announces that the fastener is locked. Compared to hook and loop fasteners, you get improved tensile strength with five times more holding power. Open and close hundreds of times during the life of your product.

617-5311. MP-3541/42. Black. 1" × 4.9 Yds.	PER ROLL	39.58
604-0040. SJ-3541. Black. 1" × 3" Pcs.	PER PK./8	3.76
617-5312. MP-3551/52*. Black. 1" × 4.9 Yds.	PER ROLL	55.42
617-5313. MP-3560. Clear. 1" × 4.9 Yds.	PER ROLL	63.74
604-0045. SJ-3560. Clear. 1" × 3" Pcs.	PER PK./8	5.72

*Very high bond adhesive.

Scotchmate™ Brand Hook and Loop Fastening Systems



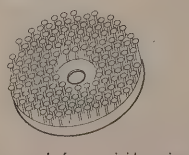


When the two sides of a Scotchmate™ hook and loop fastener are pressed together, hundreds of tiny, stiff hooks mesh with a surface of pliable loops. You simply press together to fasten and pull apart to open. And do it thousands of times during the life of your product. For use in environments where temperatures climb to levels difficult for some adhesives. **Operating Temperature:** MP-3401/02 — up to 250°F cont.; MP-3526/27 — –20°F to 120°F cont.

Stock No.	Mfr.'s Type	Color	Backing/ Attachment*	Roll/Pack Size	PER ROLL
617-5309	MP-3401/02	Black	1	1' × 4.9 Yds.	**15.26**
617-5310	MP-3401/02	White	1	1" × 4.9 Yds.	**15.26**
617-8627	MP-3526/27	Black	2	1" × 4.9 Yds.	**27.93**
617-8628	MP-3526/27	White	2	1" × 4.9 Yds.	**27.93**
604-0005	SJ-3526/27	Black	2	1" × 3' pcs., Mated	**4.37†**
617-5314	SJ-3401	Black	1	1" × 50 Yds., Loop	**16.09**
617-5315	SJ-3401	White	1	1" × 50 Yds., Loop	**16.09**
617-5316	SJ-3402	Black	1	1" × 50 Yds., Hook	**16.09**
617-5317	SJ-3402	White	1	1" × 50 Yds., Hook	**16.09**
617-8623	SJ-3526	Black	2	1" × 50 Yds., Hook	**77.21**
617-8625	SJ-3526	White	2	1" × 50 Yds., Hook	**77.21**
617-8624	SJ-3527	Black	2	1" × 50 Yds., Loop	**77.21**
617-8626	SJ-3527	White	2	1" × 50 Yds., Loop	**77.21**

***Backing/Attachment:** 1 — Plain, standard sew on; 2 — Pressure sensitive rubber adhesive. †PER PK./8.

Dual Lock™ Fastener

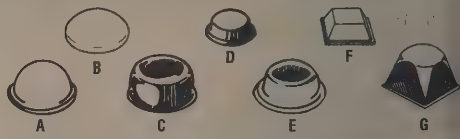


SJ3463 is a round fastener made from a rigid version of the Dual Lock™ SJ-3441. It has a recessed center hole for attachment to metal, plastic or wood with pop rivets, screws or bolts or via ultrasonic heading to a plastic stud.

604-0050. SJ3463. Black. 13/16" Diameter.............................PER PK./10 3.21

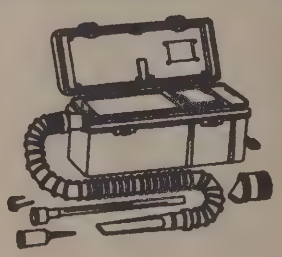
Bumpon™ Protective Bumpers

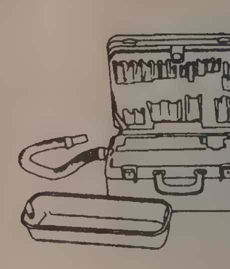
3M offers an array of self sticking protective bumpers for all your requirements from door stops to calculator feet. Self sticking polyurethane bumpers serve as high performance cushions, feet, spacers and protectors.



Dimensions		Form	Fig.	Small Pack				Bulk Pack			
Height In.	Width In.			Stock No.	Mfr.'s Type	Pkg. Qty.	PER PACK	Stock No.	Mfr.'s Type	Pkg. Qty.	PER PACK
0.200	0.440	8 × 7 Matrix	A	**617-6600**	SJ-5003SP (Black)	100	**6.39**	**617-6601**	SJ-5003 (Black)	3000	**96.39**
0.200	0.440	8 × 7 Matrix	A	**617-6602**	SJ-5003SP (Brown)	100	**6.39**	**617-6603**	SJ-5003 (Brown)	3000	**96.39**
0.200	0.440	8 × 7 Matrix	A	**617-6604**	SJ-5003SP (Gray)	100	**6.39**	**617-6605**	SJ-5003 (Gray)	3000	**96.39**
0.200	0.440	8 × 7 Matrix	A	**617-6606**	SJ-5003SP (White)	100	**6.39**	**617-6607**	SJ-5003 (White)	3000	**96.39**
0.310	0.630	5 × 8 Matrix	A	**617-6608**	SJ-5027SP (Black)	100	**16.07**	**617-6609**	SJ-5027 (Black)	1000	**87.00**
0.310	0.630	5 × 8 Matrix	A	**617-6610**	SJ-5027SP (Brown)	100	**16.07**	**617-6611**	SJ-5027 (Brown)	1000	**87.00**
0.310	0.630	5 × 8 Matrix	A	**617-6612**	SJ-5027SP (Gray)	100	**16.07**	**617-6613**	SJ-5027 (Gray)	1000	**87.00**
0.310	0.630	5 × 8 Matrix	A	**617-6614**	SJ-5027SP (White)	100	**16.07**	**617-6615**	SJ-5027 (White)	1000	**87.00**
0.380	0.750	4 × 10 Matrix	A	**617-6616**	SJ-5017SP (Black)	100	**15.24**	**617-6617**	SJ-5017 (Black)	1000	**111.40**
0.380	0.750	4 × 10 Matrix	A	**617-6618**	SJ-5017SP (Brown)	100	**15.24**	**617-6619**	SJ-5017 (Brown)	1000	**111.40**
0.380	0.750	4 × 10 Matrix	A	**617-6620**	SJ-5017SP (Gray)	100	**15.24**	**617-6621**	SJ-5017 (Gray)	1000	**111.40**
0.380	0.750	4 × 10 Matrix	A	**617-6622**	SJ-5017SP (White)	100	**15.24**	**617-6623**	SJ-5017 (White)	1000	**111.40**
0.085	0.312	8 × 18 Matrix	B	**617-6624**	SJ-5302SP (Clear)	100	**7.73**	**617-6625**	SJ-5302 (Clear)	3000	**113.97**
0.400	0.880	3 × 8 Matrix	C	**617-6626**	SJ-5009SP (Black)	100	**19.08**	**617-6627**	SJ-5009 (Black)	1000	**145.26**
0.400	0.880	3 × 8 Matrix	C	**617-6628**	SJ-5009SP (Brown)	100	**19.08**	**617-6629**	SJ-5009 (Brown)	1000	**145.26**
0.400	0.880	3 × 8 Matrix	C	**617-6630**	SJ-5009SP (Gray)	100	**19.08**	**617-6631**	SJ-5009 (Gray)	1000	**145.26**
0.400	0.880	3 × 8 Matrix	C	**617-6632**	SJ-5009SP (White)	100	**19.08**	**617-6633**	SJ-5009 (White)	1000	**145.26**
0.140	0.500	8 × 7 Matrix	D	**617-6634**	SJ-5012SP (Black)	100	**6.39**	**617-6635**	SJ-5012 (Black)	3000	**103.77**
0.140	0.500	8 × 7 Matrix	D	**617-6636**	SJ-5012SP (Brown)	100	**6.39**	**617-6637**	SJ-5012 (Brown)	3000	**103.77**
0.140	0.500	8 × 7 Matrix	D	**617-6638**	SJ-5012SP (Gray)	100	**6.39**	**617-6639**	SJ-5012 (Gray)	3000	**103.77**
0.140	0.500	8 × 7 Matrix	D	**617-6640**	SJ-5012SP (White)	100	**6.39**	**617-6641**	SJ-5012 (White)	3000	**103.77**
0.140	0.500	8 × 7 Matrix	D	**617-6642**	SJ-5312SP (Clear)	100	**7.93**	**617-6643**	SJ-5312 (Clear)	3000	**120.06**
0.660	1.880	—	E	**617-6644**	SJ-5532 (Black)	100	**122.94**	—	—	—	—
0.660	1.880	—	E	**617-6646**	SJ-5532 (Brown)	100	**122.94**	—	—	—	—
0.660	1.880	—	E	**617-6648**	SJ-5532 (Gray)	100	**122.94**	—	—	—	—
0.660	1.880	—	E	**617-6650**	SJ-5532 (White)	100	**122.94**	—	—	—	—
0.100	0.400	9 × 12 Matrix	F	**617-6652**	SJ-5007SP (Black)	100	**6.08**	**617-6653**	SJ-5007 (Black)	3000	**92.79**
0.120	0.500	8 × 10 Matrix	F	**617-6654**	SJ-5008SP (Black)	100	**6.08**	**617-6655**	SJ-5008 (Black)	3000	**92.79**
0.120	0.500	8 × 10 Matrix	F	**617-6656**	SJ-5008SP (Brown)	100	**6.08**	**617-6657**	SJ-5008 (Brown)	3000	**92.79**
0.120	0.500	8 × 10 Matrix	F	**617-6658**	SJ-5008SP (Gray)	100	**6.08**	**617-6659**	SJ-5008 (Gray)	3000	**92.79**
0.120	0.500	8 × 10 Matrix	F	**617-6660**	SJ-5008SP (White)	100	**6.08**	**617-6661**	SJ-5008 (White)	3000	**92.79**
0.230	0.500	8 × 10 Matrix	F	**617-6662**	SJ-5018SP (Black)	100	**10.09**	**617-6663**	SJ-5018 (Black)	3000	**158.64**
0.230	0.500	8 × 10 Matrix	F	**617-6664**	SJ-5018SP (Brown)	100	**10.09**	**617-6665**	SJ-5018 (Brown)	3000	**158.64**
0.230	0.500	8 × 10 Matrix	F	**617-6666**	SJ-5018SP (Gray)	100	**10.09**	**617-6667**	SJ-5018 (Gray)	3000	**158.64**
0.230	0.500	8 × 10 Matrix	F	**617-6668**	SJ-5018SP (White)	100	**10.09**	**617-6669**	SJ-5018 (White)	3000	**158.64**
0.300	0.810	4 × 9 Matrix	F	**617-6670**	SJ-5023SP (Black)	100	**15.24**	**617-6671**	SJ-5023 (Black)	1000	**82.87**
0.240	1.250	—	F	**617-6672**	SJ-5705SP (Black)	100	**63.90**	**617-6673**	SJ-5705 (Black)	1000	**306.86**
0.520	0.810	4 × 1 Row	G	**617-6674**	SJ-5514SP (Black)	100	**33.99**	**617-6675**	SJ-5514 (Black)	1000	**198.55**
0.520	0.810	4 × 1 Row	G	**617-6676**	SJ-5514SP (Brown)	100	**33.99**	**617-6677**	SJ-5514 (Brown)	1000	**198.55**
0.520	0.810	4 × 1 Row	G	**617-6678**	SJ-5514SP (Gray)	100	**33.99**	**617-6679**	SJ-5514 (Gray)	1000	**198.55**
0.520	0.810	4 × 1 Row	G	**617-6680**	SJ-5514SP (White)	100	**33.99**	**617-6681**	SJ-5514 (White)	1000	**198.55**

Electronics Vacuum Cleaners and Filters





- ► 3 Year Warranty

Features

- ► **Stretch Hose — The Stretch Hose Extends from 32" to Seven Feet Long; Long Enough to Reach into Large Machines Without Lifting the Vacuum, Yet Compact for Easy Storage**
- ► **Disposable Filters — A Choice of Two Conveniently Disposable Filters to Fit Your Specific Applications**
- ► **Roomy Storage Compartment for Attachments — Attachments and Power Cord Are Easily Stored Inside the Cover and Held Securely in Place with an Internal Door**
- ► **Replaceable 1 HP Motor — A Replaceable One-Horsepower Motor Gives You All the Cleaning Power You Need and Is Easy to Service**
- ► **Strong Resilient Case — High Impact Plastic Case Is Tough All Over for Years of Hard Work**
- ► **Two Durable Latches — Two Sturdy Latches Keep the Lid on Tight and the Attachments Inside During Transit**
- ► **Current-Limiting Attachments — Technician Safety Is Increased Because 3M's Current-Limiting Attachments, Which Include a Crevice Tool, a Wand to Reach Hard-To-Get-At-Places and a Brush to Loosen Toner and Dust Particles**
- ► **Detachable Power Cord — Power Cord Is Detachable for Effortless Storage**

The 3M service vacuum cleaner, the professionals' choice, is a powerful unit developed for high efficiency cleanup of most business equipment. Designed to be easier to use than ever, this portable vacuum makes even difficult jobs a breeze. And with a high-quality filtration system and advanced safety features, it's the only service vacuum designed specifically with the professionals' needs in mind. Convenience, quality and safety make the 3M service vacuum cleaner far and away the professionals' choice for cleaning office equipment. Transporting the 3M service vacuum cleaner is easier, too. A replaceable handle, two replaceable latches and new hinges mean it travels well. The case is made of high impact plastic, so it's tough on the job or on the road. The new 3M service vacuum cleaner features a hose assembly, wand and crevice tool made with a new plastic that slows down the flow of electricity and drains away static, dramatically reducing potential for shock. These important current-limiting features help to protect customer engineers from the potential danger of contact with electrical power and the annoyance o electrostatic discharge (ESD). They also reduce the risk of shock damage to sensitive electronic components.

Specifications. Electrical: 115 VAC, 50/60 Hz, 5.0 amps. **Dimensions:** Length — 17.80" (45.2 cm); Width — 7.75" (19.7 cm); Height — 9.25" (23.5 cm); Weight — 9 lbs., 14 oz. **Certification:** UL listed, CSA listed. **Motor:** Continuous duty rated with one sealed ball bearing and one sleeve bearing lubricated for life. Thermally protected with automatic reset. Conducted RFI filtered (reduces EMI to be below FCC requirements). Comes complete with hose, 32" - 10 ft., wand, crevice tool, crevice tool brush, dusting brush, needle nozzle, 3 year warranty. **Tool Case Vacuum:** The tool case vacuum comes with pallet for tools. **Comes With:** 25"-10 stretch hose, wand, crevice tool, creative tool brush, dusting brush and needle nozzle. Three year warranty.

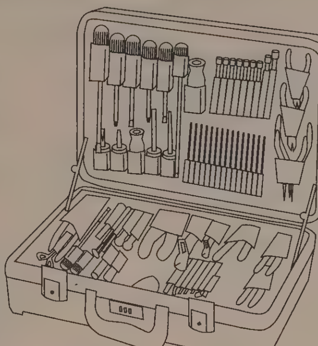
Vacuum Cleaners

617-8500. SV-Model 497AJM. 3M Electronics Service Vacuum Cleaner	EACH	218.5
617-8501. SV-Model 497AJN. 3M Tool Case Vacuum Cleaner	EACH	339.6

Replacement Filters

617-8505. SV-SPF1. Type I – Small Particle	EACH	33.9
617-8506. SV-MPF2. Type II – Medium Particle	EACH	16.1

2797 Field Service Kit with Standard Polypropylene Case



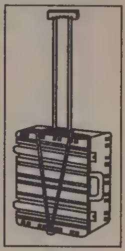
- **Popular Tool Kit Services a Wide Range of Electronic Equipment**
- **Features an Extensive Selection of Installation, Service and Repair Tools**
- **Two Removable Pallet Surfaces Organize Tools**
- **Black Polypropylene Tool Case**

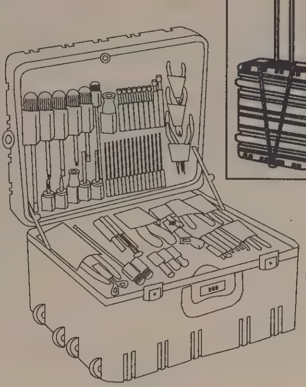
Designed to service a wide range of electronic equipment, this kit is a favorite of field service engineers. Use it for such diverse industries as computer field service, office products repair, automated process maintenance and medical equipment repair. An extensive selection of tools for installing, servicing and repairing sophisticated electronic equipment is organized on two removable pallet surfaces. All the tools listed below are supplied in a standard-depth black polypropylene two-pallet tool case. **Inside Case Dimensions:** 17.75" × 12.75" × 6.5". **Kit Weight:** 20 lbs.

Kit Includes:
Solder aid, brush and fork
Inspection mirror
Metal rule — 6"
Utility plier — 10"
Chain nose plier — 4"
Diagonal cutter — 4"
Center punch — ⅛"
2 pin punches — 1⁄16", ⅛"
Thickness gauge — 15 leaf
Offset combo screwdriver
Reverse action tweezer
Burnishing tools (3 per pkg.)
Screwholding screwdriver
Solder (pocket pack)
Machinist's scriber
Internal ring plier
External ring plier
Electrician's scissors
2 adjustable wrenches — 4", 8"
Diagonal cutter — 5" (41-5)
Long nose with cutter — 6"
Precision knife #1
Regular handle
Junior handle
Electrician's knife
9 nutdriver blades — 3⁄16", 7⁄32", ¼", 9⁄32", 5⁄16", 11⁄32", ⅜", 7⁄16", ½"
Allen hex blade — .050"
8 Allen hex blades — 1⁄16", 5⁄64", 3⁄32", ⅛", 5⁄32", 3⁄16", 7⁄64", 9⁄64"
6 spline blades — .048", .060", .069", .072", .076", .096"
7 slot screwdrivers — ¼ × 4, ⅛ × 2, ⅛ × 8, 3⁄16 × 3, 3⁄32 × 2, 5⁄16 × 6, ¼ × 1
Phillips stubby screwdriver
3 Phillips screwdrivers — #0, #1, #2
Super champ crimp tool
Alignment tool — nonmetallic
Alignment tool — duplex
T7 stripper (45-1831)
Injection-molded tool case, 6" black

820-2797. Model 2797 .... EACH **488.00**
820-0216. Model 216. Case Only .... EACH **139.00**

2799 Field Service Kit with Built-in Luggage Cart





- **Combination of Best-Selling Field Engineer Kit and Most Popular Luggage Cart Assembly**
- **Two Removable Tool Pallet Surfaces**
- **Black Heavy-Duty Polyethylene Case**

Service a wide range of electronic equipment with this truly portable tool kit. The black heavy-duty polyethylene case features a built-in rugged luggage cart. Pile on extra cases or gear, flip up the handles, lock the bar in place and go. Low-profile rubber wheels are permanently mounted, and handles are recessed. Metal rails protect it from stair or curb damage. The guts of the cart are hidden under a removable plastic tray below the bottom tool pallet. **Inside Case Dimensions:** 17.75" × 14.5" × 9.5". **Kit Weight:** 29 lbs.

Kit Includes:
Solder aid, brush and fork
Inspection mirror
Metal rule — 6"
Utility plier — 10"
Chain nose plier — 4"
Diagonal cutter — 4"
Center punch — ⅛"
2 pin punches — 1⁄16", ⅛"
Thickness gauge — 15 leaf
Offset combo screwdriver
Reverse action tweezer
Burnishing tools (3 per pkg.)
Screwholding screwdriver
Solder (pocket pack)
Machinist's scriber
Internal ring plier
External ring plier
Electrician's scissors
2 adjustable wrenches — 4", 8"
Diagonal cutter — 5" (41-5)
Long nose with cutter — 6"
Precision knife #1
Regular handle
Junior handle
Electrician's knife
9 nutdriver blades — 3⁄16", 7⁄32", ¼", 9⁄32", 5⁄16", 11⁄32", ⅜", 7⁄16", ½"
Allen hex blade — .050"
8 Allen hex blades — 1⁄16", 5⁄64", 3⁄32", ⅛", 5⁄32", 3⁄16", 7⁄64", 9⁄64"
6 spline blades — .048", .060", .069", .072", .076", .096"
7 slot screwdrivers — ¼ × 4, ⅛ × 2, ⅛ × 8, 3⁄16 × 3, 3⁄32 × 2, 5⁄16 × 6, ¼ × 1
Phillips stubby screwdriver
3 Phillips screwdrivers — #0, #1, #2
Super champ crimp tool
Alignment tool — nonmetallic
Alignment tool — duplex
T7 stripper (45-1831)
Tote case, 9.5" (7"-2.5") black

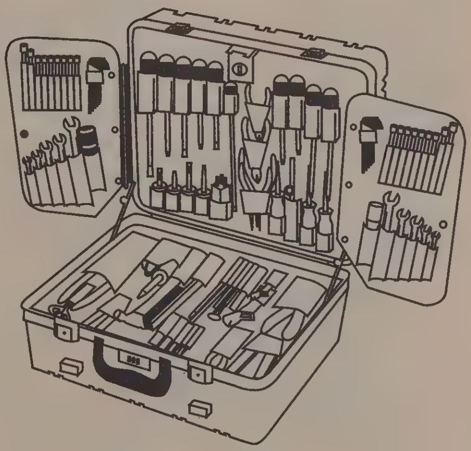
820-2799. Model 2799 .... EACH **782.00**
820-0594. Model 594. Case Only .... EACH **193.00**

2798 Comprehensive Inch/Metric Service Kit

- **The Most Versatile Tool Set of Its Kind Anywhere**
- **Features a Diverse Assortment of Fasteners for Servicing a Wide Variety of Equipment**
- **Includes the Industry's Most Common Fastening Tools**
- **Dual Winged Tool Pallet Design for Extra Storage**
- **Black Heavy-Duty Polyethylene Tool Case**

This versatile tool kit is designed for the technician who services a wide variety of third-party or systems-type equipment. You get a diverse assortment of the industry's most common fastening tools in one comprehensive kit. It includes inch and metric nutdrivers, ball-end hex drivers and combination wrenches plus a complete set of Torx™ drivers, receptacle analyzer, soldering/desoldering tools and a complete selection of standard screwdrivers, pliers and cutters, adjustable wrench and much more.

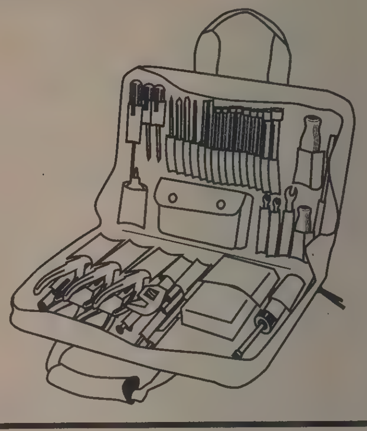
The innovative winged pallet design makes this kit special by putting an incredible number of tools at your fingertips. Over 100 individual tools are mounted on the two main pallets. Inch-type and metric tools are conveniently arranged on two separate winged pallets attached to open out from the top pallet. A special heavy-duty black polyethylene material with extra-deep exterior ridges (ribs) makes this tool case almost indestructible. A full 4 inches of diced foam in the bottom cushions any delicate equipment transported to or from the job site. This foam can be removed easily if not required. **Inside Case Dimensions:** 17.25" × 13.75" × 9". **Kit Weight:** 28 lbs.



Kit Includes:
Inspection mirror
Utility plier — 10"
Chain nose plier — 4"
Diagonal cutter — 4"
Center punch — ⅛"
2 pin punches — 1⁄16", ⅛"
Reamer — screwdriver handle
Parts cleaning brush
Combo spring hook tool
Burnishing tools (3 per pkg.)
Solder (pocket pak)
Reversible retaining ring plier
Electrician's scissor
Hemostat — straight 6"
2 adjustable wrenches — 4", 8"
Ball peen hammer — 4-oz.
Diagonal cutter — 5" (41-5)
Long nose with cutter — 6"
Soldering iron — 25 watt-3 watt
Precision knife — #1
Regular handle
Ratcheting blade handle
9 metric nutdriver blades — 99-4 mm, 99-4.5 mm, 99-5 mm, 99-5.5 mm, 99-6 mm, 99-7 mm, 99-8 mm, 99-9 mm, 99-10 mm
9 nutdriver blades — 3⁄16", 7⁄32", ¼", 9⁄32", 5⁄16", 11⁄32", ⅜", 7⁄16", ½"
6 slot screwdrivers — ¼ × 4, ⅛ × 2, ⅛ × 8, 3⁄16" × 3, 5⁄16 × 6, ¼ × 1
Phillips stubby screwdriver
3 Phillips screwdrivers — #0, #1, #2
6 Torx drivers — T10, T15, T20, T25, T27, T30
Slot screwholder — 8"
Desolder tool with standard tip
Balldriver hex key set
Metric balldriver key set
Super champ crimp tool
Alignment tool, nonmetallic
Alignment tool, duplex
Standard locking plier — 5"
5 combination wrenches — ⅜", 7⁄16", ½", 9⁄16", ⅝"
5 combination wrenches — 8 mm, 10 mm, 12 mm, 13 mm, 15 mm
T5 stripper (45-1828)
T7 stripper (45-1831)
Spline key set — 10-piece
Three-wire circuit tester
Tool case shell — 9" black

820-2798. Model 2798 .... EACH **711.00**
820-0516. Model 516P. Case Only .... EACH **362.00**

2802 Standard CSR Repair Kit

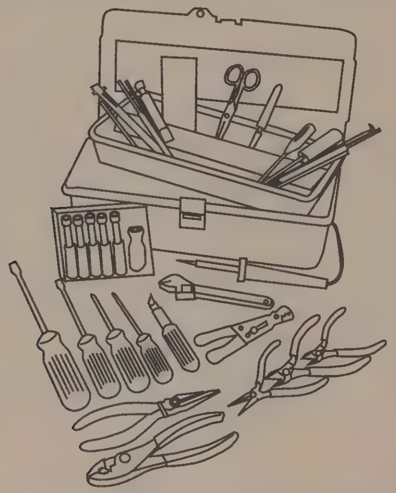


Originally designed for computer terminal and printer support, popular zipper-type tool kit is now used throughout the industry. Its universal tool complement is ideal for almost any type of electronic equipment. The black Cordura® case includes individual pockets for all tools, interior pouch for small parts, full-sized DMM pocket and three roomy exterior pouches for additional equipment or manuals. Case also available separately. **Dimensions:** 15" × 10.5" × 2.5". **Weight:** 8 lbs.

2802 Kit Includes:
3 screwdriver blades — slot
3 screwdriver blades — Phillips
Miniature screwdriver — slot
Miniature screwdriver — Phillips
Regular handle
7" Extension
Screwholding screwdriver
Desolder bulb
Hex key set — .050"-⅜"
Spline key set
5 ignition wrenches — 7⁄32"-7⁄16"
Junior handle
25-watt soldering iron
9 nutdriver blades — 3⁄16"-½"
Offset screwdriver — slot
Offset screwdriver — Phillips
Jeweler's screwdriver
Fuse puller — small
6" scale
6" adjustable wrench
Diagonal cutter
Internal/external pliers
6" slip joint pliers
6" long nose with side cutter
Wire stripper — 16-26 gauge
60/40 Rosin solder
Telephone line tester
Spring hook tool
Padded zipper case, black

820-2802. 2802 ....**EACH 325.00** **820-0828.** 828. Black padded zipper case.......**EACH 83.00**

2800 Conductive Tech Bench Kit

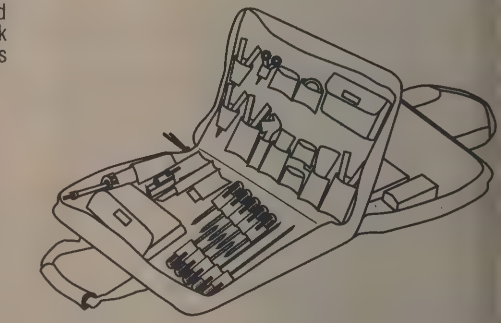


General service kit features professional, top-quality tools for bench technicians or inspecting engineers facing a variety of assemblies. Strong, compact conductive box contains all tools for quick completion of basic electronic assembly and production line tasks. Molded from carbon-filled high-impact material, the black conductive tool box is designed for maximum strength and static protection. Lightweight with comfortable full-grip handle and handy lift-out tray, it stores, protects and transports static-sensitive parts. Tool box also available separately. **Dimensions:** 14.25" × 6.5" × 4.5". **Weight:** 5.6 lbs.

2800 Kit Includes:
Solder aid — brush and fork
Inspection mirror
Metal rule — 6"
Chain nose plier — 4"
Diagonal cutter — 4"
Center punch
2 pin punches — 1⁄16", ⅛"
Thickness gauge — 15 leaf
Offset combo screwdriver
Reverse action tweezer
Burnishing tools (3 per pkg.)
Screwholding screwdriver
Solder (pocket pack)
Machinist scriber
Internal ring plier
External ring plier
Deluxe case
Electricians scissor
2 adjustable wrenches — 4", 8"
Diagonal cutter — 5"
Long nose with cutter — 6"
Soldering iron — 25-watt
Precision knife #1
Regular handle
Junior handle
9 nutdriver blades — 3⁄16"-½"
9 Allen hex blades — .050"-9⁄64"
6 spline blades — .048"-.096"
7 slot screwdrivers — ¼" × 4"-¼" × 1"
3 Phillips screwdrivers — #0, #1, #2
Super champ crimp tool
Alignment tool — nonmetallic
Alignment tool — duplex
T7 wire stripper
Electrician's knife
Conductive tool box, black

820-2800. 2800 ....**EACH 257.00**
820-1480. 14800-2C. Conductive black tool box ....**EACH 34.00**

2801 Twisted-Pair LAN Tool Kit

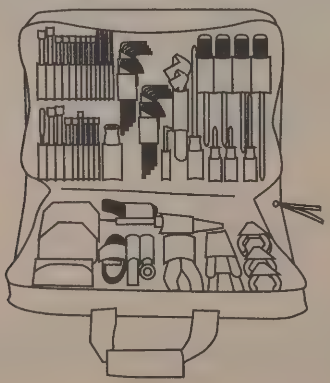


Field service kit is the network supervisor's or LAN manager's installation and repair solution. Use custom-tailored equipment and supplies in a twisted-pair environment (10BASE-T). Maintain the physical integrity of the network plus PCs, printers and peripheral equipment associated with it. Install premise wiring, connectorize cables, repair boards and perform basic network troubleshooting. Double-sided black case features two pallets of tools and adapters plus briefcase filing insert. Exterior features document pouch and three divided pouches. Case also available separately. **Dimensions:** 18" × 10.75" × 5". **Weight:** 12.3 lbs.

2801 Kit Includes:
Slip joint pliers — 6"
Chain nose pliers — 4"
Standard locking pliers — 5"
Long-nosed with cutter — 6"
Electrician's scissors
Adjustable wrench — 6"
Metric tape measure
Slot and Phillips screwholder
3 Phillips screwdrivers — #0, #1, #2
3 slot screwdrivers — ⅛" × 4-5⁄16" × 6"
4 Torx drivers — T10, T15, T20, T25
Hex and metric Balldriver key sets
Precision knife — #1
Soldering iron — 25-watt, 3-watt
Solder (pocket pack)
Desolder braid — 5' spool
Impact tool
110-type replacement blade
T6 Stripper
Circuit tester
2 gender changers — DB25 FF, DB25 MM
2 couplers — RJ-11, RJ-45
2 Telco cables — 14': RJ-11, RJ-45
Telephone line tester
Pocket flashlight
Diagonal cutter — 4"
Universal cable — 4"
Crimper with dyes
Connectors
Plastic box
Clear plastic luggage tag
Softside Cordura case, black

820-2801. 2801...**EACH 628.00** **820-0082.** 887. Softside black Cordura case ....**EACH 128.00**

2803 Complete Attaché Zipper Tool Kit

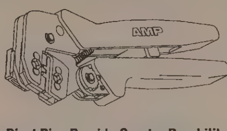


Technicians' zipper kit is designed for electronics service professionals who demand the highest quality tools. Service state-of-the-art medical equipment or sophisticated electronics with this unique complement of tools. Lightweight black Cordura zipper-style case features exterior full-size document pouch, two exterior large instrument pouches and shoulder strap. Case also available separately. **Dimensions:** 18" × 13" × 3.5". **Weight:** 14 lbs.

2803 Kit Includes:
Utility pliers — 8"
Offset ratchet screwdriver
2 adjustable wrenches — 4", 8"
Screwstarter — slot/Phillips
Soldering iron
Regular handle
4" blade extension
9 nutdriver blades — 3⁄16"-½"
8 nutdriver blades — 4-11 mm
2 slot screwdriver blades
2 Phillips screwdriver blades
5 slot screwdrivers — ¼" × 4"-5⁄32" × 4"
3 Phillips screwdrivers — #0, #1, #2
Desoldering tool
Deluxe hex wrench set — .050"-5⁄16"
Deluxe hex wrench set — 1.5-10 mm
Crimping tool
Vise Grip pliers — 6"
T-Type wire stripper
Needle nose pliers — 5"
Flush cutting pliers — 4"
Diagonal cutting pliers — 5"
Mag-Lite flashlight with batteries
Conductive wrist strap — adjustable
Large Cordura zipper case — black

820-2803. 2803 ....**EACH 493.00**
820-0838. 838. Large black Cordura zipper case..**EACH 119.00**

PRO-CRIMPER™ II Hand Tools and Dies



- Ratchet Control Provides Complete Crimping Cycle
- Emergency Ratchet Release
- Angled Head Provides a Comfortable Hand and Wrist Position
- One Tool with Interchangeable Die Sets Can Crimp Many Different Types of Connectors
- Accommodates Multiple Terminal Sizes in One Die Set
- Precision Construction of Durable High-Carbon Steel
- Extra Strength Pivot Pins Provide Greater Durability
- Produced Under a Quality Management System Certified to ISO 9001

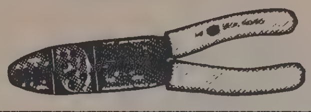
Hand Tool (without Die Sets)

Stock No.	Mfr.'s Type	Description	EACH
512-2599	354940-1	Hand tool frame without die sets	66.69

Die Sets Only

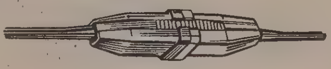
Stock No.	Mfr.'s Type	Crimps Connector Type	RG/U Cable or Wire Size	EACH
512-8614	58436-1	50 ohm BNC/TNC/N-type	58, 62, 59	36.88
512-2002	58436-3	50 ohm BNC	174, 188, 316, 179, 161, 187	36.88
512-2047	58436-2	50 ohm BNC	Belden 8281, 9141	36.88
512-2009	58425-2	75 ohm BNC	179, 161, 187	35.31
512-2038	58425-1	75 ohm BNC	62, 59	35.31
512-2071	58425-3	75 ohm BNC	Double braid 59, Belden 8281, 9141	35.31
512-9808	58485-1	50 ohm N-type	8, 213, 11, 216, 9, 214	45.51
512-9809	58485-2	50 ohm N-type	393, Belden 8214	45.51
512-9810	58494-1	Mini UHF	141, 223	260.44
512-2501	58489-1	50 ohm military SMB	174, 316, 188, 179, 161, 187, RD316, 188 double braid	45.41
512-9811	58046-1	50 ohm commercial SMB	178, 196, 174, 316, 188, 179, 161, 187	339.32
512-8748	58423-1	Insulated terminals	22-10 AWG	36.88
512-9812	58545-1	Uninsulated terminals	22-10 AWG	101.27
512-9813	58448-3	D-sub 20DF pin and sockets	28-20 AWG	87.88
512-9814	90800-2	D-sub 22DF pin and sockets	28-20 AWG	96.90
512-8952	90872-2	Soft shell .093 pin and pockets	24-18 AWG	84.74
512-8954	90871-2	Soft shell .093 pin and sockets	20-14 AWG	84.74
512-8942	90870-2	Soft shell .062 pin and sockets	30-24 AWG	84.74
512-8944	90869-2	Soft shell .062 pin and sockets	24-18 AWG	84.74

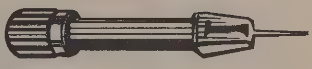
SUPER CHAMP® Crimp Tools



Stock No.	Mfr.'s Type	Description/ Crimps Connector Type	EACH
512-9186	47100-1	SUPER CHAMP®, insulated terminals and splices 22-10 AWG	14.95
512-8675	604252-1	SUPER CHAMP® IV, insulated and uninsulated terminals and splices, 22-10 AWG	16.95
512-8658	29564	SUPER CHAMP® FT, push-on type terminals 22-14 AWG	24.50
512-8615	90287-1	SERVICE TOOL I, all-purpose, insulated and uninsulated terminals 22-10 AWG	24.50
512-8634	90330-1	SERVICE TOOL II, appliance repair/all-purpose, insulated and uninsulated terminals 22-10 AWG	24.50
512-5831	189710-1	SUPER CHAMP®, modular plugs 2, 4, 6, and 8 pos.	33.15
512-2387	220146-1	SUPER CHAMP®, BNC, coaxial cable RG58	22.50
512-2389	220147-1	SUPER CHAMP®, BNC, coaxial cable RG59	22.50
512-9051	220148-1	SUPER CHAMP®, UHF, coaxial cable RG58, 59	22.50
512-9053	58124-1	SUPER CHAMP®, mini UHF, coaxial cable RG58, 188	22.50

D-Sub Pin and Socket Contact Extraction and Insertion Tools

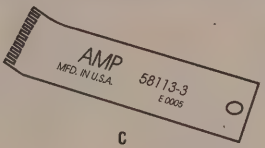

A


B

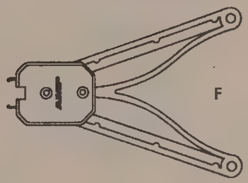
Stock No.	Mfr.'s Type	Fig.	Description	EACH
512-9045	91067-1	A	M81969/1-04, for size 22	4.15
512-9110	91067-2	A	M81969/1-02, for size 20	4.15
512-0470	91285-1	B	For size 20 crimp and solder	11.62

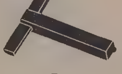
IC Socket Tools

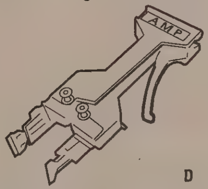
Stock No.	Mfr.'s Type	Fig.	Description	EACH
512-9815	58113-1	C	5 blade PGA extraction tool	9.98
512-9816	58113-3	C	10 blade PGA extraction tool	10.58
512-9817	58113-4	C	13 blade PGA extraction tool	13.19
512-9818	58113-5	C	16 blade PGA extraction tool	15.54
512-9819	58417-1	D	10 × 10 to 16 × 16 PGA insertion/extraction tool	108.56
512-9820	58417-2	D	17 × 17 to 25 × 25 PGA insertion/extraction tool	108.56
512-7244	382264-1	E	SIMM extraction tool	1.42
512-7426	822011-1	F	20 pos. PLCC extraction tool	41.19
512-7428	822045-1	F	28 pos. PLCC extraction tool	41.19
512-7432	821981-1	F	44 pos. PLCC extraction tool	41.19
512-7434	822049-1	F	52 pos. PLCC extraction tool	41.19
512-7436	822026-1	F	68 pos. PLCC extraction tool	41.19
512-7438	822268-1	F	84 pos. PLCC extraction tool	41.19
512-7440	822154-1	G	ALL purpose PLCC tool	.92



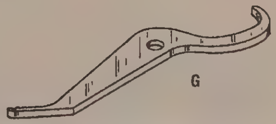
C


F


E

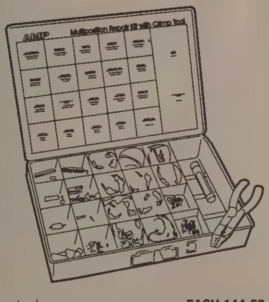


D


G

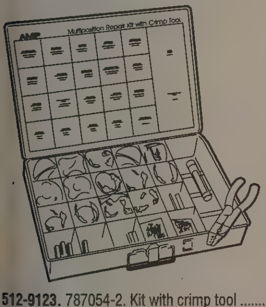
D-Subminiature Kits

AMPLIMITE® HDP-20 Subminiature D RS-232 Repair Kit



Designed for quick, reliable repairs on site. The kit is packaged in a sturdy metal carrying case for ease of job-to-job portability. **Each Kit Contains:** 100 socket contacts; 100 pin contacts; 6 (25 pos.) receptacles; 18 (25 pos.) plugs; 14 (25 pos.) cable clamps; 1 insertion/extraction tool; and 1 crimp tool.

512-9122. 787053-2. Kit with crimp tool ....**EACH 144.53**
512-9056. 787053-1. Kit without crimp tool ....**EACH 111.74**



AMPLIMITE® HDP-20 Subminiature D Multi-Position Repair Kit

Designed to cover on site repairs of the more popular Subminiature D connector applications. **Each Kit Contains:** 100 socket contacts; 100 pin contacts; 3 of each receptacle (9, 15, 25, and 37 pos.); 6 of each plug (9, 15, 25, and 37 pos.); 6 of each cable clamp (9, 15, 25, and 37 pos.); 1 insertion/extraction tool; and 1 crimp tool.

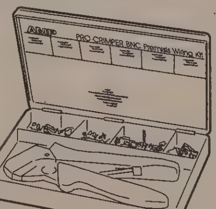
512-9123. 787054-2. Kit with crimp tool ....**EACH 193.29**
512-9057. 787054-1. Kit without crimp tool ....**EACH 160.50**

Modular Plug Hand Tool Kit

Kit consists of a hinged-top clear plastic case, with a cushioned compartment for the low-cost SUPER CHAMP® Service hand tool and six smaller compartments containing an assortment of popular size modular plugs (2, 4, 6, and 8 pos.).

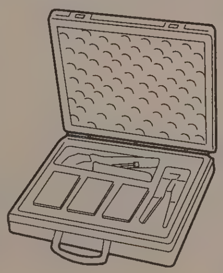
512-9058. 224685-1 ....**EACH 61.98**

BNC Premise Wiring Kit



Includes PRO-CRIMPER™ II hand tool, BNC plugs 5 RG-58, 10 RG-59/62, 5 RG-58 plenum and RG- 59/62 plenum sizes; adapters — 2 jack-to-jack and 2 "T".

512-8477. 58477-1 .....**EACH 114.00**



Local Area Network Kit

Includes 8 position Modular Plug Professional Hand Tool, PRO-CRIMPER™ II frame, fiber optic connector die sets, coaxial connector die sets, and carrying case.

512-9825. 58513-1..........**EACH 629.00**

BNC Coaxial Connector Kits

Each of the following kits contains 20 connectors and a SUPER CHAMP® crimp tool in a steel box with compartments.

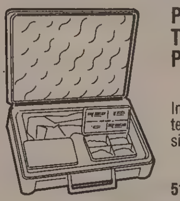
512-9821. 314971-1. BNC kit for RG-58 cable ....**EACH 107.83**
512-9822. 314972-1. BNC kit for RG-59/62 cable ....**EACH 107.83**
512-9823. 314973-1. UHF kit for RG-58, 59, 62 cable ....**EACH 107.83**

Terminal Kits with Hand Tool

PLASTI-GRIP® Terminal Kit

Steel case contains 20 different types of basic terminals and a SUPER CHAMP® crimp tool. Includes 500 terminals and splices most often used, wire sizes 22-10 AWG.

512-9201. 604200-1........**EACH 90.34**



PIDG® and PLASTI-GRIP® Terminal Kit with PRO-CRIMPER™ II Hand Tool

Includes hand tool, 225 insulated ring and spade terminals in 12-10, 16-14, and 22-16 AWG wire sizes.

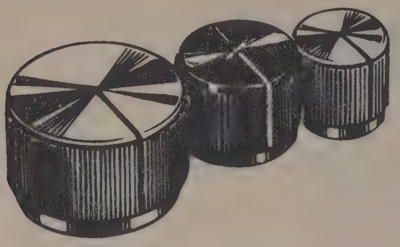
512-9236. 55823-1............................**EACH 83.79**

Heat Shrink Tubing Kit

Kit contains 103 pieces of tubing in assorted colors, 3/32 to 1/2 dia. × 4" length. Packaged in a sturdy plastic hinged lip case.

512-9824. 607243-1 ....**EACH 46.28**

K/PK Series



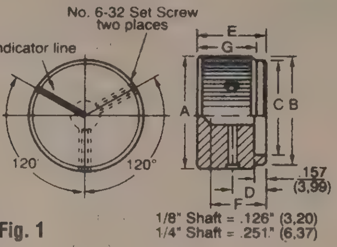

No. 6-32 Set Screw two places
Indicator line
120°
120°
E
G
A
C B
D
F
.157 (3.99)
1/8" Shaft = .126" (3.20)
1/4" Shaft = .251" (6.37)

Fig. 1

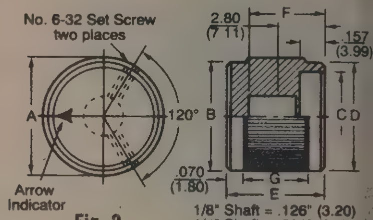

No. 6-32 Set Screw two places
Arrow Indicator
A
120° B
2.80 (7.11)
F
.157 (3.99)
C D
.070 (1.80)
G
E
1/8" Shaft = .126" (3.20)
1/4" Shaft = .251" (6.37)

Fig. 2

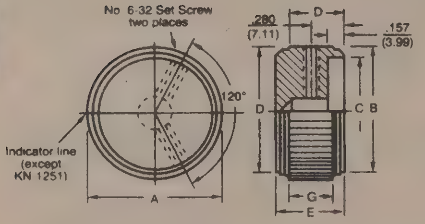


Fig. 3

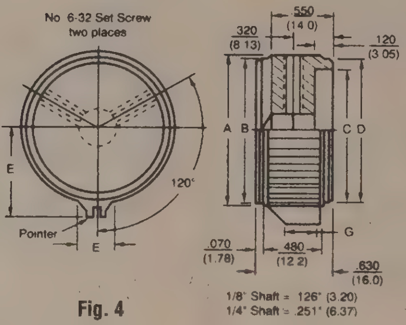


Fig. 4

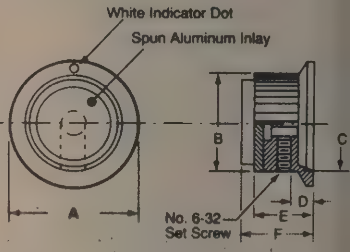


Fig. 5

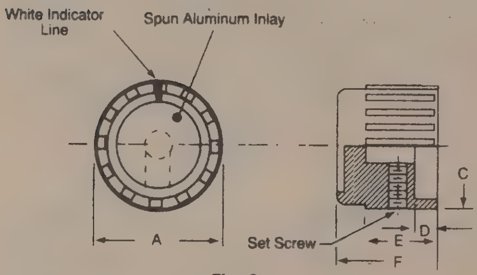


Fig. 6

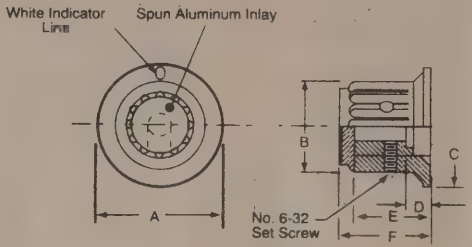


Fig. 7

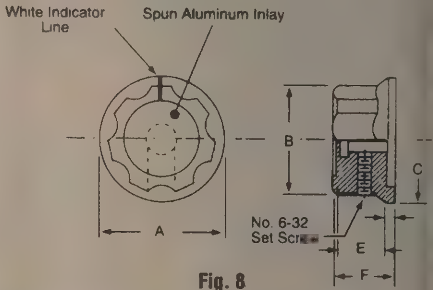


Fig. 8

Stock No.	Mfr.'s Type	Description	Fig.	Dimensions mm (In.)							EACH	
				A	B	C	D	E	F	G	1-99	100-249
759-1500	KLN500B1/8	Straight Knurl w/Top and Side Indicator Line — Aluminum — Black	1	12.7 (.500)	11.4 (.450)	9.65 (.380)	7.11 (.280)	16.0 (.630)	13.0 (.510)	13.5 (.530)	**3.75**	**3.20**
759-1175	KLN700A1/4	Straight Knurl w/Top and Side Indicator Line — Aluminum — Natural	1	19.0 (.750)	17.8 (.700)	14.9 (.590)	7.11 (.280)	16.0 (.630)	13.0 (.510)	13.5 (.530)	**4.40**	**3.65**
759-1180	KLN700B1/4	Straight Knurl w/Top and Side Indicator Line — Aluminum — Black	1	19.0 (.750)	17.8 (.700)	14.9 (.590)	7.11 (.280)	16.0 (.630)	13.0 (.510)	13.5 (.530)	**4.40**	**3.65**
759-1190	KLN900B1/4	Straight Knurl w/Top and Side Indicator Line — Aluminum — Black	1	23.9 (.940)	22.3 (.880)	18.0 (.710)	7.11 (.280)	16.0 (.630)	13.0 (.510)	13.5 (.530)	**5.20**	**4.70**
759-1505	KN501BA1/8	Straight Knurl w/Arrowhead Ind. — Aluminum — Black Body/Natural Top	2	12.7 (.500)	11.4 (.450)	9.65 (.380)	11.4 (.450)	16.0 (.630)	13.0 (.510)	11.7 (.460)	**4.15**	**3.55**
759-1515	KN500B1/4	Straight Knurl with Indicator Line — Aluminum — Black	3	12.7 (.500)	11.4 (.450)	9.65 (.380)	11.4 (.450)	16.0 (.630)	13.0 (.510)	11.7 (.460)	**3.65**	**3.30**
759-1220	KN700B1/4	Straight Knurl with Indicator Line — Aluminum — Black	3	19.0 (.750)	17.8 (.700)	14.9 (.590)	17.8 (.700)	16.0 (.630)	13.0 (.510)	11.7 (.460)	**4.20**	**3.78**
759-1295	KPN700B1/4	Straight Knurl w/Pointer and Indicator Line — Aluminum — Black	4	19.0 (.750)	17.8 (.700)	15.0 (.590)	7.8 (.700)	13.2 (.520)	6.09 (.240)	9.90 (.390)	**9.40**	**8.40**
759-1305	KPN900B1/4	Straight Knurl w/Pointer and Indicator Line — Aluminum — Black	4	23.9 (.940)	22.3 (.880)	18.0 (.710)	22.3 (.880)	16.00 (.630)	7.11 (.280)	8.89 (.350)	**11.00**	**9.90**
759-1070	PK50B1/4	Straight Knurl w/Dot Indicator on Skirt — Phenolic	5	19.0 (.750)	14.5 (.571)	14.7 (.580)	1.4 (.055)	11.7 (.461)	14.0 (.550)	—	**1.00**	**.90**
759-1520	PKG90B1/4	Ribbed w/Indicator Line — Phenolic (2 Setscrews #6-32)	6	21.8 (.860)	20.6 (.810)	18.3 (.720)	2.03 (.080)	10.4 (.410)	14.0 (.550)	—	**2.15**	**1.90**
759-1100	PKA50B1/4	Ribbed w/Skirt and Pointer w/Indicator Line — Phenolic	7	20.0 (.790)	14.7 (.580)	13.7 (.540)	2.03 (.080)	11.0 (.430)	15.0 (.590)	—	**1.25**	**1.05**
759-1125	PKES90B1/4	Fluted w/Skirt and Indicator Line — Phenolic	8	25.4 (1.00)	22.6 (.890)	22.1 (.870)	2.03 (.080)	11.9 (.470)	14.4 (.570)	—	**1.50**	**1.35**

BONDHUS® Speciality Tools

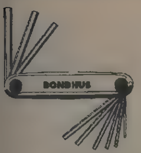


Fig. 1

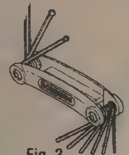


Fig. 2

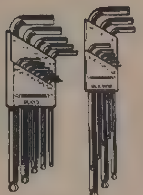


Fig. 3

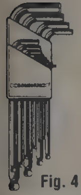


Fig. 4

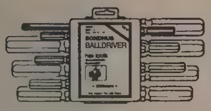


Fig. 5

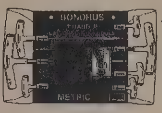


Fig. 6

- Faster, Easier Maintenance and Assembly
- Angle Entry to 25°
- Guaranteed
- Industrial Quality Hardened Blades
- Ergonomic Design

BONDHUS® Gorilla Grip Fold Up Tool Sets — Fig. 1

- Stronger than Steel
- No Loose Tools
- Precision Fit Chamfer
- High Torque
- Marked for Size
- Color-Coded for Easy Set Identification

951-2591. 12591. .050-3/16....EACH 4.68
951-2589. 12589. 5/64-1/4....EACH 4.78
951-2592. 12592. 1.5-6 mm....EACH 4.73
951-2587. 12587. 2-8 mm....EACH 5.78
951-2632. 12632. T6-T25....EACH 11.70

BONDHUS® Ballpoint Foldup Key Sets — Fig. 2

- For Hex and Star Recessed Screws, Including Torx® Brand Screws
- Compact — Fits Easily into Pocket or Tool Box
- Ball Ends Allow Quick and Easy Access
- Chamfered Ends Eliminate Burring
- Comfortable Handle Provides Sturdy Grip
- Guaranteed

951-1248. 12489. 5/64-1/4....EACH 6.68
951-1247. 12487. 2-8 mm....EACH 7.04

L-Wrench Double Pack — Fig. 3

- 13 Inch Sizes: 050, 1/16, 5/64, 3/32, 7/64, 1/8, 9/64, 5/32, 3/16, 7/32, 1/4, 5/16, 3/8
- 9 Metric Sizes: 1.5, 2, 2.5, 3, 4, 5, 6, 8, 10 mm

951-2019. 20199. 13 Inch Sizes and 9 Metric Sizes....EACH 25.40

BALLDRIVER® L-Wrench Sets — Fig. 4

BALLDRIVER® L-wrench sets feature the patented Bondhex™ case. Each wrench slips easily into its own marked slot and locks securely into place. The compact BALLDRIVER® L-wrench sets are ideal where multiple sizes are needed.

951-0936. 10936. BLX 12.050-5/16....PER SET 12.46
951-0937. 10937. BLX 13.050-3/8....PER SET 15.93
951-0938. 10938. BLX 101/16-1/4....PER SET 9.98
951-0932. 10932. BLX 8.050-5/32....PER SET 7.24
951-0999. 10999. BLX 9 mm 1.5-10 mm....PER SET 12.97
951-0946. 10946. BLX 6 mm 1.5-5 mm....PER SET 5.93

BALLDRIVER® Hex Tools — Fig. 5

BALLDRIVER® tools make standard hex tools obsolete. Made of AISI-SAE 8650 heat-treated alloy steel, handles and blade length are proportioned to ball size allowing you to tighten manually without fear of breakage. Tighten or loosen at angle up to 25°.

951-0632. 10632. BSX 8S .050-5/32....PER SET 14.82
951-0637. 10637. BSX 13.050-3/8....PER SET 35.67
951-0687. 10687. BSX 7 mm 1.27-5 mm....PER SET 14.26
951-0699. 10699. BSX 9 mm 1.5-10 mm....PER SET 28.10

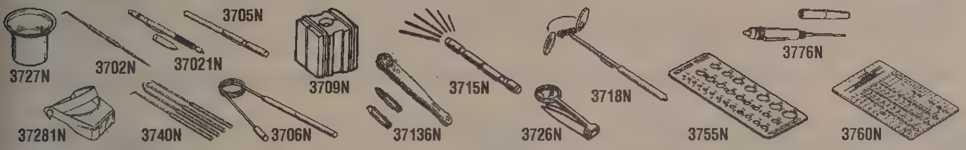
BALLDRIVER® T-Handle Hex Tool Sets — Fig. 6

Balldriver® T-handles are available individually and as sets, in both inch and metric. Industrial strength in every way, they feature welded steel handles with cushion grips sized for maximum torque while protecting ballpoint and screw from rounding or stripping: Each tool provides for long reach with its 8650 steel blade. Sizes are clearly marked on each color-coded handle.

951-1318. 13187. 2.5*, 3*, 4, 5, 6, 8, 10 mm....EACH 34.89
951-1316. 13146. 5/32, 3/16, 7/32, 1/4, 5/16, 3/8....EACH 33.61

*Straight hex only.

Hempe® Speciality Tools — NEW —



Eye Loupe

- Durable Plastic Housing
- 5 ×s
- Unbreakable, Scratch Resistant Lens

824-3727. 37271N....EACH 3.99

Magnifying Visor

- Tiltable Lens Frame
- Replaceable Lens
- For Hands-Free Work on Small Objects
- Padded Head Band with Adjustable Sizes
- 2.25 ×s

824-3728. 37281N....EACH 15.99

Scriber

- Interchangeable 2 Points
- Hardened/Ground Steel Points
- One Bent and One Straight Point
- Knurled Grip
- Blade Length: 2 1/4"

824-3702. 3702N....EACH 2.50

Scriber/Magnet

- Permanent Tungsten Carbide Tip
- Blade Length: 1/8"
- High-Power Neodymium Magnet
- Lifts 1 1/2 Lbs.

824-3703. 37021N....EACH 4.50

4 Piece Wire Separators

- 4 Different Shaped Picks at Different Angles
- High Carbon, Ground Points
- Lightweight, Hex Shaped Aluminum Handles
- Use for Separating Wires, Scribing, Retrieving Small Parts, "O" Ring Removal

824-3740. 3740N....EACH 6.30

Pocket Magnet

- High-Power Neodymium Magnet
- Lifts 1 1/2 Lbs.

824-3705. 3705N....EACH 3.99

Bend-It-Magnet

- 16" Bendable Shaft (Shape and Reshapes)
- Retrieve Parts/Tools from Hard-to-Reach Areas (21 1/4" Reach)
- High-Power Neodymium Magnet
- Lifts 1 1/2 Lbs.

824-3706. 3706N....EACH 6.99

Magnetizer/Demagnetizer

- Magnetize/Demagnetize Metal Objects
- Converts Tools into Magnetic Pick-Up

824-3709. 3709N....EACH 2.25

Ratchet Screwdriver

- Reverse Action by Turning Over Handle
- Screwdriver Sizes: Standard — 1/4"; Phil — #2

824-3713. 37136N....EACH 6.25

Precision Drill Set

- 6 Drill Bits for Small Hole Boring
- Sizes Bits (#52, #56, #60, #66, #70, #74)

824-3715. 3715N....EACH 9.99

Magnifying Tweezers

- 3 ×s Magnifier and Tweezers
- Patented Micro-Point Tips

824-3726. 3726N....EACH 3.99

Inspection Mirror

- 1 1/4" Round, Copper Backed Clear View Glass Mirror
- 8" Overall Length with Pocket Clip

824-3718. 3718N....EACH 3.99

Drill Gauge

- 29 Fractional Drills 1/16" to 1/2" by 64ths
- Reads in Fractions with Decimal Equivalents

824-3755. 3755N....EACH 4.75

Precision Oiler

- Brush Aluminum Finish with O-Ring Sealed Oil Compartment
- Distribute Oil One Drop at a Time
- Push Bottom Control with Cover and Pocket Clip

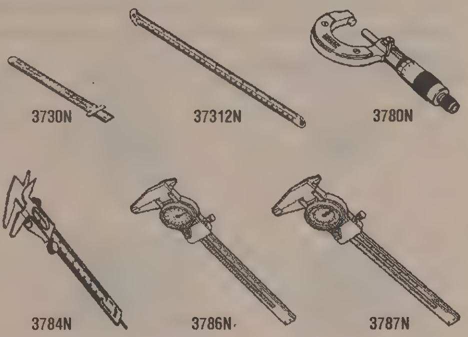
824-3776. 3776N....EACH 8.99

Screw ID Gauge

- Tapped Holes to Test Screws for Pitch
- For Sizes 1/16" to 5/16" (SAE)

824-3760. 3760N....EACH 9.99

Hempe® Precision Measuring Tools — NEW —



Stainless Steel Rulers

6" Steel Pocket Ruler

- Decimal Equivalent
- Permanent Etched Markings
- 1 Side Measures 32nds, mm
- 2 Side Measures Decimal Equiv.

824-3730. 3730N....EACH 1.84

12" Steel Hook Ruler

- Permanent Etched Markings
- 1 Side Measures 32nds, mm
- 2 Side Measures 32nds, mm

824-3731. 37312N....EACH 7.25

1" Micrometer

- Adjustable Realignment to Zero
- 1" Capacity by .001

824-3780. 3780N....EACH 15.25

Vernier Caliper

- 4 3/4"/120 mm Capacity by 1/16"/ 1/10 mm
- Stainless Steel
- Friction Stop Roller and Thumb Screw Lockout
- 3-Way Measure: Inside, Outside, Depth
- Measures by 16ths/1/10 mm

824-3784. 3784N....EACH 8.33

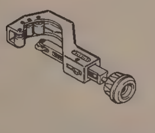
6" Dial Caliper

- Direct Dial Reading in Inches and mm Readout on Bar Scale
- Reinforced Nylon (Won't Shrink) with Milled Jaws
- Easy Glide Rollers (Smooth Movement), Friction Stop Wheel, Thumb Lock Holds Measurement
- Adjustable Bezel for Realignment to Zero
- 4-Way Measurement: Inside, Outside, Depth, Step
- Measure Capacity up to 6 1/8"/155 mm

824-3786. 3786N. 6" Dial Caliper (by .001)....EACH 27.99
824-3787. 3787N. 6" Dial Caliper (by .01 and 64ths)....EACH 23.50

Hempe® Tubing Tools — NEW —

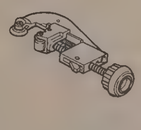
All Purpose Tubing/Pipe Cutter



- Black Powder Coated Heavy Duty Die Cast Body
- 2 Wheels — 1 for Steel/Tubing and 1 for Plastic
- Cuts Tubing/Plastic to 2 5/8" and Steel to 1"
- 4 Grooved Rollers and Pull Out Deburring Blade
- Cuts Copper, Brass, Aluminum, Thin Conduit
- Cutting Capacity: 5/8" to 2 5/8"

824-3830. 3830N....EACH 23.25

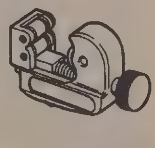
1 1/2" Professional Tubing Cutter



- Fast-Action, Push Button Control
- 2 Grooved Rollers and Pullout Deburring Blade
- Includes 1 Premium Tube Cutting Wheel
- Easy Changeable Wheels
- Cuts Copper, Brass, Aluminum, Thin Conduit
- Cutting Capacity: 1/8" to 1 1/2"

824-3820. 38205N....EACH 14.25

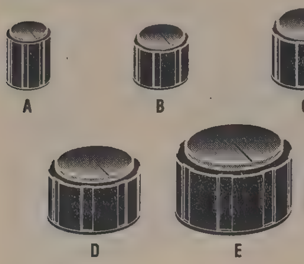
Mini Tubing Cutter

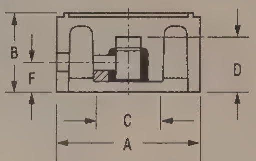


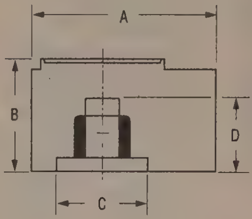
- Black Powder-Coated Die Cast Body
- Fine Action for Better Cutting Control
- Easy Changeable Wheels
- Includes: 1 Premium Tube Cutting Wheel
- Operates in Compact Areas
- Mtl. Cuts Copper
- Cutting Capacity: 1/8" to 5/8"

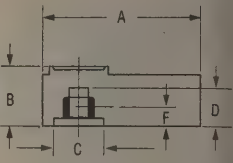
824-3810. 3810N....EACH 5.59

Control Knobs







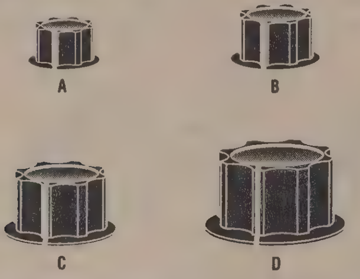


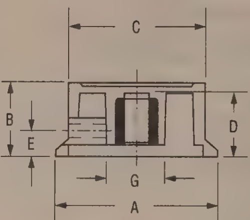
Knobs manufactured from the highest quality heat and impact resistant phenolic resin.

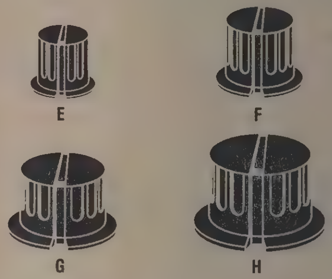
Stock No.	Mfr.'s Type	Fig.	Dimensions					Plain Hole*	Set Screw	EACH			
			A Length	B Height	C Cen. Bore Dia.	D Hole Height	F Set Screw Height			1-99	100-499	500-999	1000-Up
543-1200	1200W	A	1/2	5/8	—	7/16	7/32	1/4 × 7/16 (SCL)	6-32	**1.02**	**.92**	**.83**	**.74**
543-1202	1202BA	B	3/4	5/8	21/32	17/32	9/32	1/4 × 17/32 (SCL)	8-32	**1.14**	**1.03**	**.92**	**.83**
543-1203	1204AZ	C	1	11/16	11/16	17/32	9/32	1/4 × 17/32 (SCL)	8-32	**1.28**	**1.15**	**1.04**	**.93**
543-1206	1206AW	D	1 3/8	3/4	1 11/64	17/32	9/32	1/4 × 17/32 (SCL)	8-32	**1.46**	**1.31**	**1.18**	**1.07**
543-1208	1208AY	E	1 25/32	13/16	1 35/64	17/32	9/32	1/4 × 17/32 (SCL)	8-32	**1.68**	**1.51**	**1.36**	**1.23**
543-1210	1210AX	F	1 1/32	5/8	21/32	17/32	9/32	1/4 × 17/32 (SL)	8-32	**1.18**	**1.06**	**.96**	**.86**
543-1212	1214A	G	1 5/8	5/8	21/32	17/32	9/32	1/4 × 5/16 FI†	8-32	**1.42**	**1.28**	**1.15**	**1.04**

*SL — Silver Cap; SCL — Silver Cap Lined. †Brass Bushing.

Instrument Knobs





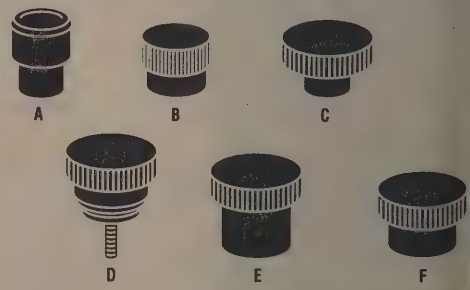


Distinctive knobs for special applications. Glossy or satin finish phenolic for durability and good appearance. Line or slot for indicating a setting.

Stock No.	Mfr.'s Type	Fig.	Dimensions						Brass Bushing Set Screw	EACH			
			A Total Dia.	B Height	C Top Dia.	D Hole Height	F Set Screw Height	G Cen. Bore Dia.		1-99	100-499	500-999	1000-Up
543-1100	1100	A	25/32	15/32	41/64	13/32	7/32	15/32	1/4" with 8-32 SS	**.82**	**.74**	**.66**	**.60**
543-1105	1105	B	1 1/16	39/64	15/16	5/16	1/4	27/32	1/4" with 8-32 SS	**1.08**	**.97**	**.88**	**.80**
543-1110	1110	C	1 9/32	21/32	1 11/64	1/2	5/16	1 1/32	1/4" with 8-32 SS	**1.24**	**1.12**	**1.00**	**.90**
543-1120	1120	D	1 3/4	13/16	1 1/2	43/64	5/16	1 15/32	1/4" with 8-32 SS	**1.56**	**1.40**	**1.26**	**1.14**
543-1140	1140	E	19/32	9/16	31/64	21/64	1/4	23/64	1/4" with 8-32 SS	**.82**	**.74**	**.66**	**.60**
543-1145	1145	F	25/32	39/64	5/8	7/16	7/32	7/16	1/4" with 8-32 SS	**.94**	**.85**	**.76**	**.69**
543-1150	1150	G	15/16	25/32	51/64	11/16	3/8	9/16	1/4" with 8-32 SS	**1.10**	**.99**	**.89**	**.80**
543-1155	1155	H	1 3/8	23/32	1 9/64	9/16	9/32	57/64	1/4" with 8-32 SS	**1.22**	**1.10**	**.99**	**.89**

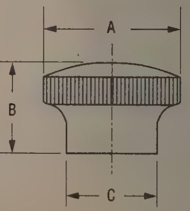
Miniature Clamp Knobs

Available with a wide flange female insert for positive contact, as in battery posts. Good electrical properties in small clamp knobs. A wide range of other uses — pulls, feet, clamping, fine adjustments, etc.

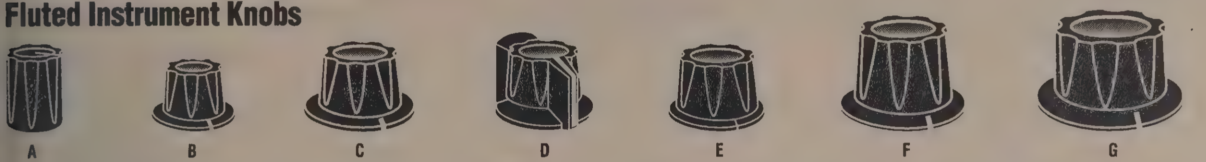


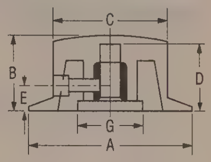
Stock No.	Mfr.'s Type	Fig.	Dimensions			Insert	Shaft*	EACH			
			A	B	C			1-99	100-499	500-999	1000-Up
543-1700	1700	A	31/64	1/2	3/8	8-32 × 1/4	FI	**.26**	**.23**	**.21**	**.19**
543-1702	1770F	A	31/64	1/2	3/8	6/32 × 1/4	FI	**.26**	**.23**	**.21**	**.19**
543-1704	2700E	B	9/16	1/2	1/2	10-32 × 5/16	FI	**.44**	**.40**	**.38**	**.35**
543-1708	2710B	C	3/4	1/2	1/2	8-32 × 5/16	FI	**.36**	**.32**	**.29**	**.26**
543-1710	2710H	C	3/4	1/2	1/2	10-24 × 5/16	TH	**.24**	**.21**	**.19**	**.18**
543-1706	2710	C	3/4	1/2	1/2	10-32 × 5/16	FI	**.34**	**.30**	**.28**	**.25**
543-1712	2715A	D	3/4	9/16	7/16	8-32 × 9/16	PS	**.42**	**.38**	**.34**	**.31**
543-1714	2715G	D	3/4	9/16	7/16	10-32 × 1/2	PS	**.52**	**.47**	**.42**	**.38**
543-1722	2720Q	E	5/8	9/16	7/16	8-32 × 1/4	FI	**.56**	**.50**	**.45**	**.41**
543-1720	2720L	E	5/8	9/16	7/16	8-32 × 3/8	PS	**.58**	**.52**	**.47**	**.42**
543-1718	2720	E	5/8	9/16	7/16	10-32 × 5/16	FI	**.60**	**.54**	**.49**	**.44**
543-1726	2730G	F	13/16	33/64	7/16	10-24 × 5/8	PS	**.72**	**.65**	**.58**	**.53**
543-1724	2730B	F	13/16	33/64	7/16	10-32 × 3/4	PS	**.72**	**.65**	**.58**	**.53**

*FI — Female Insert; PS — Projecting Stud; TH — Thru-Hole.



Fluted Instrument Knobs



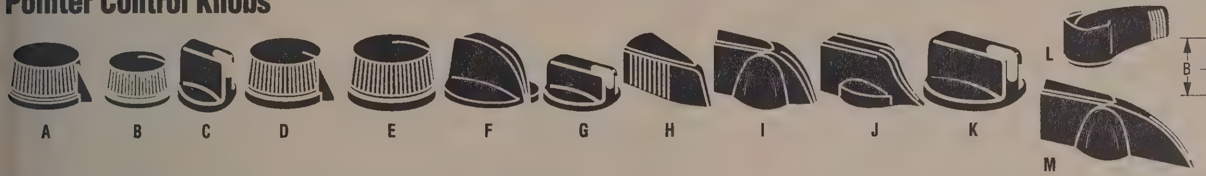


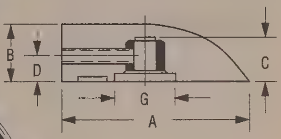
Terrific range of sizes, including a family of skirted knobs. Fluted for precise controls. All include indicator line unless otherwise noted. High gloss phenolic.

Stock No.	Mfr.'s Type	Fig.	Dimensions						Set Screw	Insert•	Shaft*	EACH			
			A	B	C	D	E	G				1-99	100-499	500-999	1000-Up
543-0400	1900H	A	1/2	5/8	15/32	1/2	3/16	—	6-32	1/4 × 1/2	PH	.80	.72	.65	.60
543-1910	1910CQ	B	3/4	1/2	17/32	13/32	7/32	9/16	8-32	1/4 × 13/32 (SD)	PH	1.08	.97	.88	.80
543-0402	1910CS	B	3/4	1/2	17/32	13/32	7/32	9/16	8-32	1/4 × 13/32	PH	.78	.70	.63	.57
543-0403	1910CV	B	3/4	1/2	17/32	13/32	7/32	9/16	8-32	1/4 × 13/32 (SDL)	PH	1.08	.97	.88	.80
543-0404	1910EL	B	3/4	1/2	17/32	13/32	7/32	9/16	8-32†	1/8 × 5/16	FI	1.18	1.06	.96	.86
543-1914	1913BC	C	1 1/8	5/8	13/16	1/2	9/32	11/16	8-32	1/4 × 1/2 (SD)	PH	1.18	1.06	.96	.86
543-1915	1913BE	C	1 1/8	5/8	13/16	1/2	9/32	11/16	8-32	1/4 × 1/2 (SDL)	PH	1.18	1.06	.96	.86
543-1916	1913BW	C	1 1/8	5/8	13/16	1/2	9/32	11/16	8-32	1/4 × 1/2	PH	.86	.77	.70	.63
543-1917	1919AE	D	1 1/4	5/8	—	1/2	9/32	11/16	8-32	1/4 × 3/8	FI	1.40	1.26	1.13	1.02
543-1925	1925AW	E	1 1/4	23/32	31/32	Thru	9/32	11/16	8-32	1/4 (SD)	PH	1.20	1.08	.97	.88
543-1930	1930BQ	F	1 1/2	7/8	1 1/64	3/4	9/32	13/16	8-32	1/4 × 3/4	PH	1.42	1.28	1.15	1.04
543-1940	1940AL	G	2	15/16	1 3/8	13/16	5/16	13/16	8-32	1/4 × 13/16 (SD)	PH	1.82	1.64	1.47	1.35
543-1941	1940BE	G	2	27/32	1 3/8	13/16	5/16	13/16	8-32 (2)	1/4 × 13/16 (SDL)	PH	2.30	2.07	1.86	1.68
543-1942	1940BG	G	2	27/32	1 3/8	13/16	5/16	13/16	8-32*	1/4 × 13/16 (SDL)	PH	2.06	1.85	1.67	1.50

*PH — Plain Hole; FI — Female Insert/Brass Bushing. •SD — Silver Disc; SDL — Silver Disc Lined. †8-32 — Allen Type Set Screw. ‡Flatted to 0.188".

Pointer Control Knobs



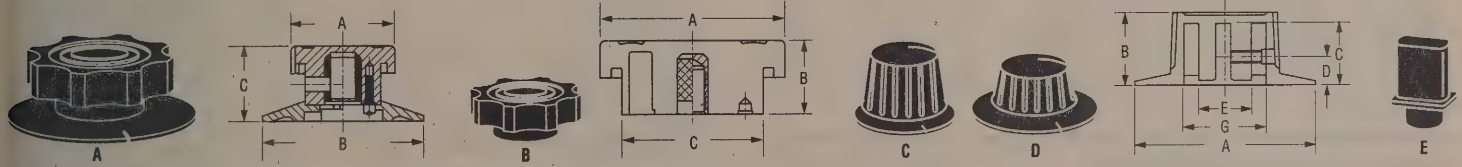


Terrific range of sizes, including a family of skirted knobs. High gloss phenolic.

Stock No.	Mfr.'s Type	Fig.	Dimensions					Set Screw	Insert	Shaft*	EACH			
			A	B	C	D	G				1-99	100-499	500-999	1000-Up
543-1401	1400W	A	11/16	13/32	11/32	3/16	—	8-32	1/4 × 5/16	FI	.78	.70	.63	.57
543-1400	1400	A	11/16	13/32	11/32	3/16	—	8-32	1/4 × 11/32	PH	.54	.49	.44	.39
543-1450	1450	B	11/16	13/32	11/32	3/16	—	8-32	1/4 × 11/32	PH	.52	.47	.42	.38
543-1510	1510AH	C	3/4	9/16	13/32	7/32	9/16	8-32	1/4 × 13/32	PH	.76	.68	.62	.55
543-1470	1470AQ	D	1	1/2	7/16	9/32	11/16	8-32	1/4 × 7/16	PH	.70	.63	.57	.51
543-1475	1475	E	1	1/2	—	7/16	11/16	8-32	1/4 × 7/16	PH	.65	.58	.50	.49
543-1550	1550AG	F	1 1/8	5/8	7/16	9/32	11/16	8-32	1/4 × 7/16	PH	.64	.58	.52	.47
543-1500	1500AU	G	1 1/8	9/16	1/2	9/32	11/16	8-32	1/4 × 1/2	PH	.62	.56	.50	.45
543-2310	2310	H	1 3/16	1/2	7/16	1/4	—	8-32	1/4 × 7/16	PH	.44	.40	.36	.32
543-2301	2300BT	I	1 1/4	5/8	13/32	9/32	21/32	8-32	1/4 × 13/32	FI	.84	.76	.68	.61
543-2300	2300BM	I	1 1/4	5/8	1/2	9/32	21/32	8-32	1/4 × 1/2	PH	.48	.43	.39	.35
543-2150	2150V	J	1 1/4	9/16	1/2	9/32	5/8	8-32	1/4 × 1/2	PH	.76	.68	.62	.55
543-1520	1520S	K	1 1/2	3/4	5/8	5/16	13/16	8-32	1/4 × 5/8	PH	1.30	1.17	1.05	.95
543-1521	1520X	K	1 1/2	3/4	7/16	5/16	13/16	8-32	1/4 × 5/16	FI	1.62	1.46	1.31	1.18
543-2120	2110	L	1 5/8	19/32	7/16	1/4	5/8	8-32	1/4 × 11/32	FI	1.22	1.10	.99	.89
543-2351	2350AH	M	2	5/8	13/32	1/4	21/32	8-32	1/4 × 13/32	FI	1.14	1.03	.92	.83
543-2312	2350AF	M	2	5/8	15/32	1/4	21/32	8-32	1/4 × 15/32	PH	.62	.56	.50	.45

*PH — Plain Hole; FI — Female Insert/Brass Bushing. †Flatted to 0.156".

Specialty Series Knobs



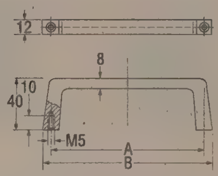
These parts were designed for the customer who has a unique requirement in mind, whether it be size, shape, or mounting. High gloss phenolic.

Stock No.	Mfr.'s Type	Fig.	Dimensions						Set Screw	Insert	Shaft*	EACH			
			A	B	C	D	E	G				1-99	100-499	500-999	1000-Up
543-1600	1600BM	D	1 1/2	11/16	9/16	9/32	15/16	5/8	8-32	1/4 × 9/16	PH	.60	.54	.49	.44
543-1610	1610AA	C	29/32	19/32	7/16	9/32	19/32	1/4	8-32	1/4 × 7/16	PH	.68	.61	.55	.50
543-4100	4100	B	1 1/8	5/8	13/16	—	—	—	8-32	1/4 × 15/32	FI	1.20	1.08	.97	.88
543-4108	4108BJ	A	1 5/8	2 1/16	29/32	—	—	—	10-32	1/4 × 13/32	FI	3.08	2.77	2.50	2.25

*PH — Plain Hole; FI — Female Insert/Brass Bushing.

543-2190. 5149-A. Fig. E. Length 1/2, height 51/64 self locating friction fit for use on flat wire shaft .050 × .187. **1-99** .... **EACH .40**
100-499 .... **EACH .36** **500-999** .... **EACH .32** **1000-Up** .... **EACH .29**

Handle Series S1

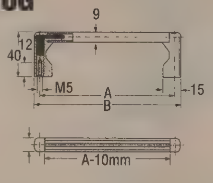


Versatile and attractive series for 19" drawers and instruments. Made from cut profile extruded aluminum AlMgSi 0.5. Surface finish is anodized with a matte finish.

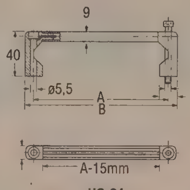
Stock No.	Mfr.'s Type	Dim. A*	Dim. B*	Height of Rack G	HE†	Color	EACH 1-9	EACH 10-100	EACH 101-500
543-3000	S 1-12.025.01	25.0	40.0	44.0	1	Natural	**5.22**	**4.70**	**4.23**
543-3004	S 1-12.055.01	55.0	69.0	88.1	2	Natural	**5.22**	**4.70**	**4.23**
543-3008	S 1-12.088.01	88.0	102.0	132.5	3	Natural	**5.76**	**5.18**	**4.67**
543-3012	S 1-12.120.01	120.0	134.0	177.0	4	Natural	**6.66**	**5.99**	**5.39**
543-3016	S 1-12.133.01	133.4	146.5	177.0	4	Natural	**7.10**	**6.39**	**5.75**
543-3020	S 1-12.177.01	177.8	191.0	221.5/266.0	5/6	Natural	**8.40**	**7.56**	**6.80**
543-3024	S 1-12.180.01	180.0	194.0	221.5/266.0	5/6	Natural	**8.46**	**7.61**	**6.85**
543-3028	S 1-12.235.01	235.0	249.0	266.0/310.5	6/7	Natural	**10.08**	**9.07**	**8.17**
543-3002	S 1-12.025.04	25.0	40.0	44.0	1	Black	**5.76**	**5.18**	**4.67**
543-3006	S 1-12.055.04	55.0	69.0	88.1	2	Black	**5.76**	**5.18**	**4.67**
543-3010	S 1-12.088.04	88.0	102.0	132.5	3	Black	**6.32**	**5.69**	**5.12**
543-3014	S 1-12.120.04	120.0	134.0	177.0	4	Black	**7.36**	**6.67**	**5.96**
543-3018	S 1-12.133.04	133.4	146.5	177.0	4	Black	**7.84**	**7.06**	**6.35**
543-3022	S 1-12.177.04	177.8	191.0	221.5/266.0	5/6	Black	**9.26**	**8.33**	**7.50**
543-3026	S 1-12.180.04	180.0	194.0	221.5/266.0	5/6	Black	**9.32**	**8.39**	**7.55**
543-3030	S 1-12.235.04	235.0	249.0	266.0/310.5	6/7	Black	**11.10**	**9.99**	**8.99**

*Dimensions are mm. †HE=Units of Height.

Handle Series UG



UG-03



UG-04

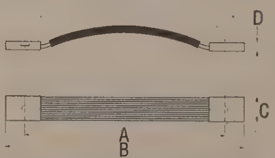
Universal usability and are assembled by fitting the grip ledge to the two elbow side sections. Aluminum tubing for grip ledge with elbow section of highly durable plastic and matte black finish. Type UG-03 features full steel core, stress resistance 50 Kp per handle. Type UG-04 screw-attachment from in front, steel plate reinforcement, stress resistance 50 Kp per handle. Nickel-plated cheese head screws with hexagon socket M 5 x 45 DIN 912 and galvanized, self-locking ratchet nuts included.

Stock No.	Mfr.'s Type	Dim. A*	Dim. B*	Color	EACH 1-9	EACH 10-100	EACH 101-500
543-3102	UG-03.055.01	55	65	Natural	**7.20**	**6.48**	**5.83**
543-3106	UG-03.088.01	88	98	Natural	**7.64**	**6.88**	**6.19**
543-3110	UG-03.100.01	100	110	Natural	**7.76**	**6.98**	**6.29**
543-3114	UG-03.120.01	120	130	Natural	**8.02**	**7.22**	**6.50**
543-3118	UG-03.180.01	180	190	Natural	**8.76**	**7.88**	**7.10**
543-3122	UG-03.235.01	235	245	Natural	**9.48**	**8.53**	**7.68**
543-3104	UG-03.055.04	55	65	Black	**7.64**	**6.88**	**6.19**
543-3108	UG-03.088.04	88	98	Black	**8.22**	**7.40**	**6.66**
543-3112	UG-03.100.04	100	110	Black	**8.44**	**7.60**	**6.85**
543-3116	UG-03.120.04	120	130	Black	**8.76**	**7.88**	**7.10**
543-3120	UG-03.180.04	180	190	Black	**9.84**	**8.86**	**7.97**
543-3124	UG-03.235.04	235	245	Black	**10.80**	**9.72**	**8.75**
543-3126	UG-04.055.01	55	70	Natural	**7.20**	**6.48**	**5.83**
543-3130	UG-04.088.01	88	103	Natural	**7.64**	**6.88**	**6.19**
543-3134	UG-04.100.01	100	115	Natural	**7.76**	**6.98**	**6.29**
543-3138	UG-04.120.01	120	135	Natural	**8.02**	**7.22**	**6.50**
543-3142	UG-04.180.01	180	195	Natural	**8.76**	**7.88**	**7.10**
543-3146	UG-04.235.01	235	250	Natural	**9.48**	**8.53**	**7.68**
543-3128	UG-04.055.04	55	70	Black	**7.64**	**6.88**	**6.19**
543-3132	UG-04.088.04	88	103	Black	**8.22**	**7.40**	**6.66**
543-3136	UG-04.100.04	100	115	Black	**8.44**	**7.60**	**6.85**
543-3140	UG-04.120.04	120	135	Black	**8.76**	**7.88**	**7.10**
543-3144	UG-04.180.04	180	195	Black	**9.84**	**8.86**	**7.97**
543-3148	UG-04.235.04	235	250	Black	**10.80**	**9.72**	**8.75**

*Dimensions are mm.

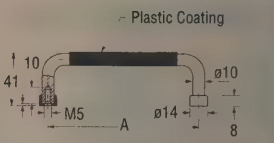
Pull-Out Carrying Handles MA

For instruments, cases, and similar applications. Black handles of soft plastic. Types MA-23 with steel spring inside. Nickel-plated steel cover cap. *Dimensions in table are mm.



Stock No.	Mfr.'s Type	A* Ctr-Ctr Mounting	B* Total Length	C* Width	D* Height	EACH 1-9	EACH 10-100	EACH 101-500
543-3096	MA-23.187.84	187	223	23.0	7.5	**9.02**	**8.12**	**7.31**
543-3098	MA-23.205.84	205	241	23.3	8.6	**9.02**	**8.12**	**7.31**
543-3100	MA-20.228.84	228	238	20.5	12.0	**12.20**	**10.98**	**9.88**

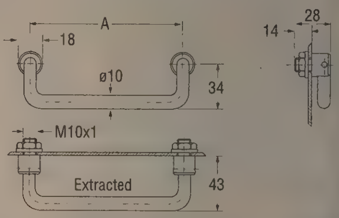
Handle Series SS



High quality handles for front panels and similar applications. Precision ground and matte gloss chromium plated steel. Handle arms with smooth plastic covering. Includes matte gloss chromium plated brass end caps. *Dimensions are mm.

Stock No.	Mfr.'s Type	Dim. A*	EACH 1-9	EACH 10-100	EACH 101-500
543-3032	SS-10.055.28	55	**10.70**	**9.63**	**8.67**
543-3034	SS-10.088.28	88	**12.02**	**10.82**	**9.74**
543-3036	SS-10.100.28	100	**12.50**	**11.25**	**10.13**
543-3038	SS-10.102.28	102	**12.58**	**11.32**	**10.19**
543-3040	SS-10.115.28	115	**13.10**	**11.79**	**10.61**
543-3042	SS-10.120.28	120	**13.34**	**12.00**	**10.81**
543-3044	SS-10.136.28	136	**13.98**	**12.58**	**11.32**
543-3046	SS-10.180.28	180	**15.74**	**14.17**	**12.75**
543-3048	SS-10.200.28	200	**16.56**	**14.90**	**13.41**
543-3050	SS-10.235.28	235	**17.96**	**16.16**	**14.55**
543-3052	SS-10.250.28	250	**18.56**	**16.70**	**15.03**

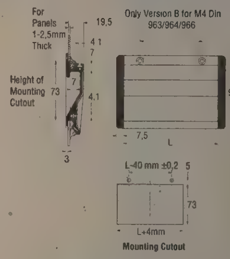
Collapsible Instrument Handles MK



Available in two versions. **Version A:** Precision ground and chromium-plated mirror finish. **Version B:** As version A but grip ledge with smooth plastic coating. Stress capacity to 100 per pair due to one-piece shank. Galvanized washers and nuts. *Dimensions are mm.

Stock No.	Mfr.'s Type	Version	Dim. A*	EACH 1-9	EACH 10-100	EACH 101-500
543-3054	MK-10.100.22	A	100	**21.48**	**19.33**	**17.40**
543-3056	MK-10.120.22	A	120	**21.78**	**19.60**	**17.64**
543-3058	MK-10.180.22	A	180	**22.76**	**20.48**	**18.44**
543-3060	MK-10.100.23	B	100	**25.34**	**22.81**	**20.53**
543-3062	MK-10.120.23	B	120	**26.30**	**23.67**	**21.30**
543-3064	MK-10.180.23	B	180	**29.20**	**26.28**	**23.65**

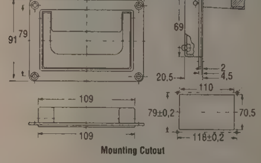
Tray Handle SG



Profile extruded aluminum tray handle available in three lengths featuring ease of installation. Anodized with a matte finish in natural or black. Does not require screws for metal thicknesses of 1-2.5 mm. Two rubber inserts guarantee tight and secure installation. Two cross-slotted grooves for M4 screws offset by 90° provides firm connection or may be used as mounting aids. **Version A:** Installation by means of an upper rubber insert that pushes in from the back. **Version B:** Installation by means of two countersunk screws from outside. *Dimensions are mm.

Stock No.	Mfr.'s Typé	Version	Dim. L*	Mounting Cutout	Color	EACH 1-9	EACH 10-100	EACH 101-500
543-3066	SG-73.100.A1	A	100	—	Natural	**12.82**	**11.59**	**10.43**
543-3070	SG-73.118.A1	A	118	—	Natural	**13.78**	**12.40**	**11.16**
543-3074	SG-73.167.A1	A	167	—	Natural	**16.30**	**14.67**	**13.20**
543-3068	SG-73.100.A4	A	100	—	Black	**13.96**	**12.56**	**11.31**
543-3072	SG-73.118.A4	A	118	—	Black	**15.08**	**13.57**	**12.22**
543-3076	SG-73.167.A4	A	167	—	Black	**18.22**	**16.40**	**14.76**
543-3078	SG-73.100.B1	B	100	104 × 73	Natural	**13.90**	**12.51**	**11.26**
543-3082	SG-73.118.B1	B	118	122 × 73	Natural	**14.88**	**13.39**	**12.05**
543-3086	SG-73.167.B1	B	167	171 × 73	Natural	**17.38**	**15.64**	**14.08**
543-3080	SG-73.100.B4	B	100	104 × 73	Black	**15.04**	**13.54**	**12.18**
543-3084	SG-73.118.B4	B	118	122 × 73	Black	**16.09**	**14.48**	**13.03**
543-3088	SG-73.167.B4	B	167	171 × 73	Black	**19.34**	**17.41**	**15.67**

Collapsible Tray Handles SK



Handles feature contemporary design and are used wherever both durability and attractive styling are required. Mounts either to the front or inside of the casing panel. Stress capacity is up to 100 Kp per pair. Made of pressure-molded aluminum GD AlSi 8 Cu 3. Tray and handle in black or light grey enamel, half-matte finish. Dimensions are mm.

Stock No.	Mfr.'s Type	Version	EACH 1-9	EACH 10-100	EACH 101-500
543-3090	SK-79.118.44	Black	**29.46**	**26.51**	**23.86**
543-3092	SK-79.118.52	Light Grey	**34.18**	**30.76**	**27.69**
543-3094	SK-79.118.00	Without Enamel, Unassembled	**34.18**	**30.76**	**27.69**

MS91528 Style, Black, Knobs

Explanation of Type Numbers

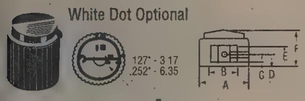
70-3-BL-2G

- (70) **Diameter:** 50 — 1/2"; 70 — 3/4"; 90 — 1"; 125 — 1¼".
- (-3) **Type:** 1 — Plain Round; 2 — Round/Ring Skirt, 3 — Round-Dial Skirt; 4 — Plain Pointer Bar; 5 — Pointer/Ring Skirt Bar; 6 — Crank.
- (BL) **Style:** WD — White Dot; BL — Backlighted Skirt.
- (-2) **Shaft Hole Size:** 1 — .127"; 2 — .252".
- (G) **Finish:** Mirror Finish, G — Matte Finish (both black).

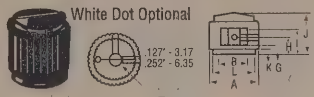
All are molded from high-impact polycarbonate with corrosion-resistant aluminum inserts for maximum strength. Two setscrews: 4-40 UNC-3A on 50, 70 series and 1/8" shaft models; 8-32 UNC-3A on others. Meets or exceeds requirements of MIL-K-3926.

Knob Dimensions for Standard Series Knobs (Figs. A, B, C, D, E, F)

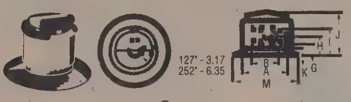
Series	A ±.030 −.010	B min.	C min.	D max.	E min.	F ±.303	G min.	H max.	I min.	J ±.030	K max.	L max.	M max.	N ±.050	P ±.025	Q max.	R ±.025 −.005	S max.
50	.500	.435	.026	.158	.405	.510	.177	.325	.560	.655	.175	.460	.900	—	—	—	.490	.690
70	.700	.485	.026	.187	.405	.610	.188	.369	.568	.782	.187	.680	1.150	—	—	—	.680	1.000
90	.900	.640	.114	.260	.520	.790	.320	.484	.730	1.010	.235	.845	1.525	—	—	—	.885	1.345
125	1.250	.750	.114	.260	.455	.700	.250	.427	.605	.850	.175	1.185	1.837	1.350	.580	1.133	—	—



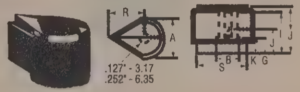
A



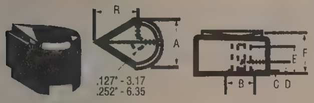
B



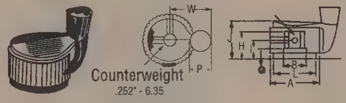
C



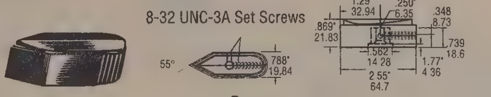
D



E



F



G

Stock No.	Mfr.'s Type	Fig.	Shaft Dia. In.	Shaft Dia. mm	EACH 1-99	EACH 100-499	EACH 500-999
904-3010	50-1WD-1G	A	.125	3.17	**4.40**	**4.05**	**3.75**
904-3011	50-2-1	B	.125	3.17	**2.75**	**2.50**	**2.30**
904-3013	50-2WD-1G	B	.125	3.17	**5.80**	**5.30**	**4.90**
904-5010	70-1-2	A	.250	6.35	**2.45**	**2.30**	**2.10**
904-5011	70-1-2G	A	.250	6.35	**3.25**	**3.00**	**2.75**
904-5012	70-1WD-2G	A	.250	6.35	**4.55**	**4.20**	**3.85**
905-5013	70-2-2	B	.250	6.35	**3.25**	**2.95**	**2.75**
904-5015	70-2-2G	B	.250	6.35	**2.50**	**2.30**	**2.10**
904-5016	70-2WD-2	B	.250	6.35	**4.80**	**4.40**	**4.05**
904-5243	70-3-2	C	.250	6.35	**6.70**	**6.15**	**5.65**
904-5244	70-3-2G	C	.250	6.35	**4.05**	**3.70**	**3.40**
904-5270	90-3-2G	C	.250	6.35	**5.05**	**4.60**	**4.25**
904-5155	90-4-2G	D	.250	6.35	**3.95**	**3.60**	**3.30**
904-5156	G90-4-2G†	D	.250	6.35	**5.40**	**4.95**	**4.55**
904-5161	90-5-2G	E	.250	6.35	**5.25**	**4.80**	**4.45**
904-5330	125-3-2G	C	.250	6.35	**5.15**	**4.70**	**4.35**
904-5136	125-6-2G	F	.250	6.35	**17.20**	**15.70**	**14.55**
904-5358	125-7-2G	G	.252	—	**11.35**	**10.35**	**9.60**

†Gray.

Black ABS Knobs, Brass Bushing, 2 Set Screws, Spun Alum Inlay, High Quality "Instrument" Knobs

Fig. 1

Fig. 2

Fig. 3

Fig. 4

Fig. 5

Fig. 6

Fig. 7

Fig. 8

Fig. 9

Fig. 10

Fig. 11

Fig. 12

EH 71 — "0" Series .500 Dia. for .125 Shaft

Stock No.	Mfr.'s Type	Fig.	Description	EACH 1-99	EACH 100-499
904-7100	EH71-0N1S	1	Round	**1.95**	**1.75**
904-7101	EH71-0C1S	2	Round with Line	**2.30**	**2.15**
904-7102	EH71-0D1S	3	Ring Skirted	**2.10**	**1.90**
904-7103	EH71-0E1S	4	Ring Skirted with Line	**2.35**	**2.15**
904-7104	EH71-0F1S	5	Dial with Arrow	**2.95**	**2.70**
904-7105	EH71-0P1S	6	Pointer	**2.15**	**1.95**
904-7106	EH71-0K1S	7	Ring Skirted Pointer	**5.35**	**4.90**
904-7107	EH71-0NP1S	12	Round with Pointer	**2.40**	**2.05**

EH 71 — "1" Series .700 Dia. for .250 Shaft

Stock No.	Mfr.'s Type	Fig.	Description	EACH 1-99	EACH 100-499
904-7108	EH71-1N2S	1	Round	**1.85**	**1.70**
904-7109	EH71-1C2S	2	Round with Line	**2.70**	**2.25**
904-7110	EH71-1D2S	3	Ring Skirted	**2.40**	**1.95**
904-7111	EH71-1E2S	4	Ring Skirted with Line	**2.85**	**2.45**
904-7112	EH71-1F2S	5	Dial with Arrow	**2.90**	**2.60**
904-7113	EH71-1P2S	6	Pointer	**2.45**	**2.05**
904-7114	EH71-1K2S	7	Ring Skirted Pointer	**2.75**	**2.25**
904-7115	EH71-1SB2S	8	Single Bar	**2.80**	**2.50**
904-7116	EH71-1DSB2S	9	Ring Skirted Single Bar	**2.85**	**2.40**
904-7117	EH71-1GG2S	10	Double Bar	**2.95**	**2.50**
904-7118	EH71-1HH2S	11	Ring Skirted Double Bar	**3.00**	**2.55**
904-7119	EH71-1NP2S	12	Round with Pointer	**2.70**	**2.25**

EH 71 — "2" Series .900 Dia. for .250 Shaft

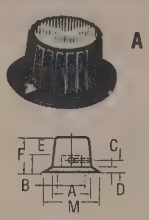
Stock No.	Mfr.'s Type	Fig.	Description	EACH 1-99	EACH 100-499
904-7120	EH71-2N2S	1	Round	**2.05**	**1.90**
904-7121	EH71-2C2S	2	Round with Line	**2.50**	**2.30**
904-7122	EH71-2D2S	3	Ring Skirted	**2.25**	**2.05**
904-7123	EH71-2E2S	4	Ring Skirted with Line	**2.55**	**2.35**
904-7124	EH71-2F2S	5	Dial with Arrow	**3.50**	**3.25**
904-7125	EH71-2P2S	6	Pointer	**2.30**	**2.10**
904-7126	EH71-2K2S	7	Ring Skirted Pointer	**2.80**	**2.35**
904-7128	EH71-2SB2S	8	Single Bar	**2.95**	**2.50**
904-7129	EH71-2DSB2S	9	Ring Skirted Single Bar	**3.05**	**2.55**
904-7130	EH71-2GG2S	10	Double Bar	**2.95**	**2.50**
904-7131	EH71-2HH2S	11	Ring Skirted Double Bar	**3.00**	**3.55**
904-7132	EH71-2NP2S	12	Round with Pointer	**2.80**	**2.35**

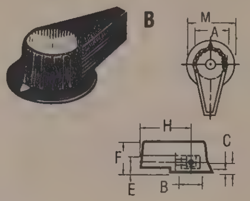
EH 71 — "3" Series 1.250 Dia. for .250 Shaft

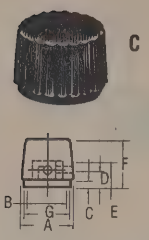
Stock No.	Mfr.'s Type	Fig.	Description	EACH 1-99	EACH 100-499
904-7133	EH71-3N2S	1	Round	**2.60**	**2.30**
904-7134	EH71-3C2S	2	Round with Line	**2.80**	**2.35**
904-7135	EH71-3D2S	3	Ring Skirted	**2.60**	**2.30**
904-7136	EH71-3E2S	4	Ring Skirted with Line	**2.55**	**2.35**
904-7137	EH71-3F2S	5	Dial with Arrow	**3.95**	**3.25**
—	—	—	—	—	—

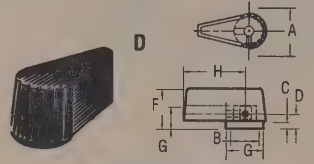
EH 71 — "4" Series 1.750 Dia. for .250 Shaft

Stock No.	Mfr.'s Type	Fig.	Description	EACH 1-99	EACH 100-499
904-7140	EH71-4N2S	1	Round	**2.80**	**2.35**
904-7141	EH71-4C2S	2	Round with Line	**2.95**	**2.45**
904-7142	EH71-4D2S	3	Ring Skirted	**2.85**	**2.40**
904-7143	EH71-4E2S	4	Ring Skirted with Line	**2.95**	**2.45**









400 Series and Industrial Heavy Duty Series

The 400 Series is made of durable, high-impact ABS plastic. The 400 Series has a lusterless finish and contains a cast aluminum bushing and set screws (4-40 UNC 3A).

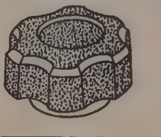
Dimensions for 400 Series and Panelrama Series Knobs

Series	A ±.025 −.005	B min.	C min.	D max.	E min.	F ±.030	G max.	H max.	J max.	K max.	M max.
407	.720	.520	.120	.290	.625	.813	.640	1.120	—	—	1.050
409	.875	.660	.120	.290	.625	.813	.800	1.375	1.540	.500	1.270
412	1.250	1.041	.120	.290	.625	.813	1.170	2.000	1.540	.500	1.710

Stock No.	Mfr.'s Type*	Fig.	EACH 1-49	50-99	100-249	250-499
904-5383	407R2K1	C	3.90	3.35	2.95	2.65
904-5392	407D2K1	A	4.28	3.85	3.50	3.15
904-5397	412D2K1	A	4.75	4.25	3.85	3.45
904-5401	409P2K1	D	3.80	3.40	3.06	2.75
904-5290	407D1K1	A	4.45	3.99	3.60	3.25
904-5215	407PD2K1	B	4.00	3.40	3.15	3.00
904-5217	407P2K1	D	2.65	2.25	2.05	1.85

***Prefix Indicates Diameter:** 407 = 3/4"; 409 = 7/8"; 412 = 1 1/4". **Suffix Colors:** K1 — black.

Clamp-Type Knobs
CORONADA SERIES — ABS Molded Black, Brass Insert Studs



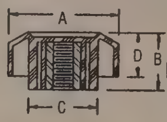


Fig. 1

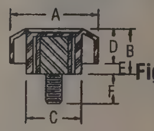


Fig. 2

EI "20" Series Female Insert Type. Dimensions: A — 1.38; B — .75; C — .80; D — .39.

Stock No.	Mfr.'s Type	Fig.	F Dim.	Thread	EACH 1-99	100-249	250-Up
904-2083	EI20-832	1	—	8-32	4.00	3.50	3.20
904-2010	EI20-1032	1	—	10-32	4.00	3.50	3.20
904-2025	EI20-2520	1	—	1/4-20	4.00	3.50	3.20
904-2031	EI20-3118	1	—	5/16-18	4.00	3.50	3.20

ES "20" Series Threaded Stud Type. Dimensions: A — 1.38; B — .75; C — .80; D — .39.

Stock No.	Mfr.'s Type	Fig.	F Dim.	Thread	EACH 1-99	100-249	250-Up
904-2050	ES20-252050	2	1/2	1/4-20	7.60	6.55	5.65
904-2062	ES20-252062	2	5/8	1/4-20	7.60	6.55	5.65
904-2075	ES20-252075	2	3/4	1/4-20	7.60	6.55	5.65
904-2011	ES20-252010	2	1	1/4-20	7.80	6.75	6.20
904-2014	ES20-252014	2	1 1/4	1/4-20	7.80	6.75	6.20
904-1862	ES20-311862	2	5/8	5/16-18	4.95	4.25	3.85
904-1810	ES20-311810	2	1	5/16-18	7.65	6.85	6.25
904-1815	ES20-311815	2	1 1/2	5/16-18	7.65	6.85	6.25
904-1675	ES20-371675	2	3/4	3/8-16	7.65	6.85	6.25
904-1610	ES20-371610	2	1	3/8-16	7.65	6.85	6.25

EI "30" Series Female Insert. Dimensions: A — 1.75; B — .88; C — 1.25; D — .44.

Stock No.	Mfr.'s Type	Fig.	F Dim.	Thread	EACH 1-99	100-249	250-Up
904-2032	EI30-1032	1	—	10-32	5.10	4.50	3.70
904-2520	EI30-2520	1	—	1/4-20	5.10	4.50	3.70
904-3118	EI30-3118	1	—	5/16-18	5.40	4.50	3.85
904-3716	EI30-3716	1	—	3/8-16	5.40	4.50	3.85

ES "30" Series Threaded Type. Dimensions: A — 1.75; B — .88; C — 1.25; D — .44.

Stock No.	Mfr.'s Type	Fig.	F Dim.	Thread	EACH 1-99	100-249	250-Up
904-3050	ES30-252050	2	1/2	1/4-20	7.15	6.50	5.95
904-3062	ES30-252062	2	5/8	1/4-20	7.15	6.50	5.95
904-3075	ES30-252075	2	3/4	1/4-20	7.15	6.50	5.95
904-3077	ES30-252010	2	1	1/4-20	7.85	7.10	6.05
904-3014	ES30-252014	2	1 1/4	1/4-20	7.85	7.10	6.05
904-3060	ES30-311862	2	5/8	5/16-18	7.85	7.10	6.05
904-3015	ES30-311810	2	1	5/16-18	7.15	6.50	5.95
904-3025	ES30-311815	2	1 1/2	5/16-18	7.80	7.05	6.30
904-3076	ES30-371675	2	3/4	3/8-16	7.15	6.50	5.95
904-3026	ES30-371610	2	1	3/8-16	7.80	7.05	6.30
904-3016	ES30-371615	2	1 1/2	3/8-16	7.80	7.05	6.30
—	—	—	—	—	—	—	—

EI "40" Series Female Insert Type. Dimensions: A — 2.38; B — 1; C — 1.38; D — .50.

Stock No.	Mfr.'s Type	Fig.	F Dim.	Thread	EACH 1-99	100-249	250-Up
904-2521	EI40-2520	1	—	1/4-20	4.70	3.85	3.30
904-3119	EI40-3118	1	—	5/16-18	4.70	3.85	3.30
904-3717	EI40-3716	1	—	3/8-16	4.10	3.60	3.25
904-3027	EI40-5013	1	—	1/2-13	4.10	3.60	3.25

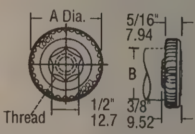
ES "40" Series Threaded Stud Series. Dimensions: A — 2.38; B — 1; C — 1.38; D — .50.

Stock No.	Mfr.'s Type	Fig.	F Dim.	Thread	EACH 1-99	100-249	250-Up
904-4050	ES40-252050	2	1/2	1/4-20	7.15	6.50	5.95
904-4062	ES40-252062	2	5/8	1/4-20	7.15	6.50	5.95
904-4075	ES40-252075	2	3/4	1/4-20	7.15	6.50	5.95
904-4010	ES40-252010	2	1	1/4-20	7.80	7.05	6.30
904-4014	ES40-252014	2	1 1/4	1/4-20	7.80	7.05	6.30
904-4063	ES40-311862	2	5/8	5/16-18	7.80	7.05	6.30
904-4011	ES40-311810	2	1	5/16-18	7.80	7.05	6.30
904-4015	ES40-311815	2	1 1/2	5/16-18	7.80	7.05	6.30
904-4076	ES40-371675	2	3/4	3/8-16	7.25	6.25	5.60
904-4012	ES40-371610	2	1	3/8-16	7.80	7.05	6.30
904-4016	ES40-371615	2	1 1/2	3/8-16	8.05	7.15	6.45
904-4017	ES40-501310	2	1	1/2-13	7.80	7.05	6.30
904-4018	ES40-501315	2	1 1/2	1/2-13	7.80	7.05	6.30
904-4020	ES40-501320	2	2	1/2-13	7.80	7.05	6.30

Knob Locks

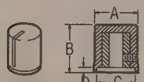
Knob locks are positive friction locking devices for holding knobs in a specific position under conditions of shock and vibration. Knob locks used only with standard round and pointer knobs. **Knob Diameter:** 3/4". **Thread:** 3/8-32. **Dimensions:** A — 1" (25.4 mm); B — .721" (18.3 mm).

Stock No.	Mfr.'s Type	EACH 1-99	100-249	250-499	500-999
904-5185	KL701	5.85	4.95	4.50	4.05
904-5186	KL701G	6.05	5.15	4.60	4.20
904-5700	KL702	9.80	8.90	8.20	7.55

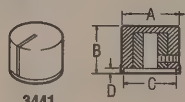


3000 Series ABS Plastic Fine Knurl Knob

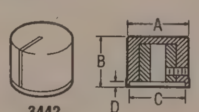
— NEW —



3440



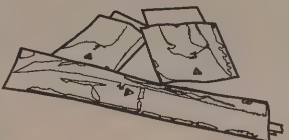
3441



3442

Stock No.	Mfr.'s Type	Shaft Hole	Color	Dimensions A	B	C	D	EACH 1-99	100-249	250-499
904-3400	3440-1-B	1/8" Round	Matte Black	.500	.625	.430	.070	2.10	1.89	1.70
904-3401	3440-2-B	1/4" Round	Matte Black	.500	.625	.430	.070	2.10	1.89	1.70
904-3402	3441-1-B	1/8" Round	Matte Black	.850	.600	.680	.125	2.24	2.02	1.80
904-3403	3441-2-B	1/4" Round	Matte Black	.850	.600	.680	.125	2.24	2.02	1.80
904-3404	3442-1-B	1/8" Round	Matte Black	.975	.750	.810	.225	2.60	2.35	2.10
904-3405	3442-2-B	1/4" Round	Matte Black	.975	.750	.810	.225	2.60	2.35	2.10
904-3406	3440-1-S	1/8" Round	Gloss Black	.500	.625	.430	.070	2.10	1.89	1.70
904-3407	3440-2-S	1/4" Round	Gloss Black	.500	.625	.430	.070	2.10	1.89	1.70
904-3408	3441-1-S	1/8" Round	Gloss Black	.850	.600	.680	.125	2.24	2.02	1.80
904-3409	3441-2-S	1/4" Round	Gloss Black	.850	.600	.680	.125	2.24	2.02	1.80
904-3410	3442-1-S	1/8" Round	Gloss Black	.975	.750	.810	.225	2.60	2.35	2.10
904-3411	3442-2-S	1/4" Round	Gloss Black	.975	.750	.810	.225	2.60	2.35	2.10

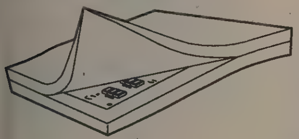
Transparent Static Shielding Bags



Static sensitive electronic components must be protected from electrostatic discharge while in storage, shipping and transport, as well as during assembly and handling operations. Static shielding bags ensure that static electricity will have a controlled, nondestructive path to ground, independent of environmental factors. By using static shielding bags, premature product failure, due to static related damage, can be eliminated. **Specifications. Thickness:** 3.1 mil (79 microns), ASTM D374. **Tensile Strength:** 9700 lbs./in.^{2} (67 N/mm^2), ASTM D882. **Seal Strength:** 5 lbs./in.^{2} (870 N/m^2), ASTM D882.

Stock No.	Mfr.'s Type	Size W × L	PER PKG./100		
			1-4	5-9	10-Up
725-0080	ASB-35	3 × 5"	12.50	11.00	10.00
725-0085	ASB-44	4 × 4"	12.50	11.00	10.00
725-0090	ASB-46	4 × 6"	16.00	14.50	13.50
725-0095	ASB-58	5 × 8"	22.00	20.00	18.50
725-0096	ASB-424	4 × 24"	51.65	46.96	43.04
725-0100	ASB-510	5 × 10"	26.00	23.50	21.50
725-0105	ASB-610	6 × 10"	30.00	26.25	24.00
725-0106	ASB-616	6 × 16"	46.53	42.30	38.78
725-0107	ASB-626	6 × 26"	73.72	66.65	61.10
725-0110	ASB-88	8 × 8"	31.00	27.50	25.00
725-0115	ASB-810	8 × 10"	38.00	33.00	30.00
725-0120	ASB-812	8 × 12"	43.00	39.00	35.00
725-0121	ASB-818	8 × 18"	64.50	58.64	53.75
725-0125	ASB-1012	10 × 12"	51.00	45.50	42.00
725-0130	ASB-1014	10 × 14"	59.00	52.00	48.00
725-0135	ASB-1115	11 × 15"	68.00	61.00	56.00
725-0140	ASB-1216	12 × 16"	78.00	70.75	65.00
725-0145	ASB-1218	12 × 18"	87.00	78.00	72.00
725-0150	ASB-1418	14 × 18"	99.00	89.00	82.00
725-0155	ASB-1518	15 × 18"	109.00	95.00	87.00
725-0157	ASB-1818	18 × 18"	193.15	154.60	135.30
725-0158	ASB-1824	18 × 24"	169.01	153.65	140.85

Conductive Foam



Conductive foam protects static-sensitive electronic devices in-plant and during shipment. Two types, cushioning and semi-rigid are both non-corrosive. **Cushioning (CFC):** Low density spongy material for delicate parts subjected to rough handling. **Semi-Rigid (CFSR):** High density design protects IC leads from static damage and deformation. **Specifications. Cushioning (CFC). Polyurethane Density:** 2-2.5 lbs./ft.^{3} (32-40 kg/m^3). **Semi-Rigid (CFSR). Polyurethane Density:** 2-2.5 lbs./ft.^{3} (40-48 kg/m^3). **Both Products. Surface Resistivity:** 10^3-10^4 ohms per unit square. **Volume Resistivity:** 10^3-10^4 ohms-cm. Test Standard-ASTM D257.

Non-Corrosive Conductive Foam

Low Density Cushioning Material — 24" × 36" Sheet

Stock No.	Mfr.'s Type	Thickness	EACH SHEET	
			1-14	15-Up
725-0010	CFC-125	1/8"	13.10	12.30
725-0015	CFC-250	1/4"	16.25	14.80
725-0020	CFC-375	3/8"	18.95	17.25
725-0025	CFC-500	1/2"	21.70	19.70
725-0030	CFC-750	3/4"	26.20	23.80
725-0035	CFC-1000	1"	28.05	25.45

Semi-Rigid, High Density Foam for Insertion of I.C. Leads — 24" × 36" Sheet

725-0050	CFSR-125	1/8"	16.25	14.80
725-0055	CFSR-250	1/4"	19.50	17.65
725-0060	CFSR-375	3/8"	22.75	20.70
725-0065	CFSR-500	1/2"	25.95	23.60
725-0070	CFSR-750	3/4"	36.02	32.66
725-0075	CFSR-1000	1"	44.85	40.66

Low Density Cushioning Material — 24" × 50 Ft. Roll

Stock No.	Mfr.'s Type	Thickness	EACH ROLL	
			1	2-5
725-0040	CFC-125-50	1/8"	196.00	157.00
725-0045	CFC-250-50	1/4"	236.00	188.00

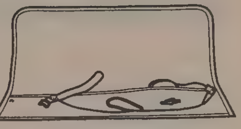
Warning Labels

A must to ensure that personnel are aware of static-sensitive components. Labels are designed for use with bags, boxes, and other carriers in which the contents are static sensitive. They are available for single use or reusable forms, using the accepted industry static symbols.

Stock No.	Mfr.'s Type	Description	Size W × L	PER ROLL/500		
				1-9	10-19	20-Up
725-0210†	ASL-1OB	Reusable, Orange	2 1/2 × 1 3/4"	15.45	13.07	11.33
725-0215†*	ASL-2YB	Destructible, Yellow	2 1/2 × 1 3/4"	13.00	11.00	9.50
725-0220‡	ASL-3YB	Reusable, Yellow	2 1/2 × 1 3/4"	15.45	13.07	11.33
725-0225‡*	ASL-4YB	Destructible, Yellow	2 1/2 × 1 3/4"	15.00	12.50	11.00

†JEDEC-14 (Joint Electron Device Engineering Council). ‡Military Standard 129H. *Labels also provide space where contents may be identified. Supplied in rolls of 500 labels on a 3-inch I.D. core.

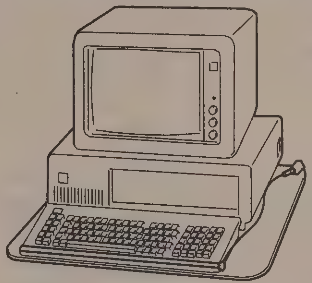
Portable Field Service Grounding Kit



Now you can remove and prevent static build-up during field service of electronic systems with this portable kit. **Components include:** One portable grounding work surface made of static dissipative vinyl 24" × 18" with reinforced edges and corners. This surface provides two integral pockets 11" × 6" as well as two male ground snaps and an interconnect snap (AIS-1). One (AWCC) wrist strap with coiled ground cord (max. extension 5 ft.) and one (AGC-18-15) straight ground cord.

725-0320. Model ASGK-1. **1-49**	EACH 50.07
50-249	EACH 46.75
250-Up	EACH 43.81

Electronic Equipment Terminal Mats

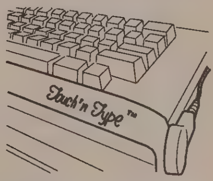


Protects You From:
- ▶ **Loss of Critical Data**
- ▶ **Garbled Printouts**
- ▶ **System Shut Down**
- ▶ **Personnel Discomfort**

Electrostatic discharge can cause costly breakdowns and malfunctions of your electronic systems. Terminal mats overcome static problems while providing the protection electronic systems require. The terminal mat is a flexible mat apparatus to serve as a safe, non-destructive ground path for static. **Specifications. Thickness:** 3/32". **Weight:** 1 lb./ft.^{2}. **Surface Resistivity:** 10^9 ohms per unit square. **Volume Resistivity:** 10^9 ohms-cm. **Static Decay Time:** Less than 0.05 seconds.

Stock No.	Mfr.'s Type	Size W × L	EACH		
			1-4	5-9	10-Up
725-0195	APM-1024	10 × 24"	28.25	24.21	21.60
725-0200	APM-1824	18 × 24"	31.89	29.61	27.64
725-0205	APM-22	24 × 24"	39.90	35.70	33.10

Touch'n Type

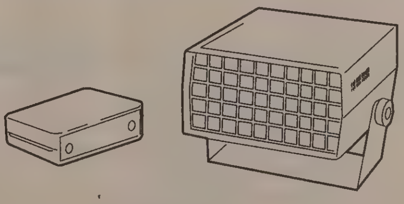


Ideal For:
- ▶ **Word Processors**
- ▶ **Computers**
- ▶ **Electronic Cash Registers, Scales, and Typewriters**
- ▶ **Teletype Machines**
- ▶ **Photo Copiers**

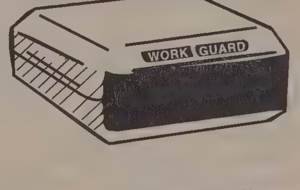
The Touch'n Type™ strip is the best method available to quickly route dangerous static electricity away from electronic equipment. Electronic memories can be modified or erased completely and entire computer system failures can be caused by static electricity discharges. Easily mounted on electronic equipment. As soon as the operator makes contact with the Touch'n Type™ strip, the static is safely drained away. **Specifications. Thickness:** 3/64" (1.2 mm). **Surface Resistivity:** 10^8-10^{11} ohms per unit squares. **Volume Resistivity:** 10^{10}-10^{12} ohms-cm. **Static Decay Time:** Less than .05 sec. **Dimensions:** 3/4" × 30" × 3/64". Includes 15 ft. ground cord, alligator clip and extra ring terminal.

725-0190. Model TNT-1. **1-24**	EACH 23.80
25-99	EACH 21.73
100-Up	EACH 20.00

Work-Guard™ and Work-Guard B™ Air Ionizers



Work-Guard™



Work-Guard B™

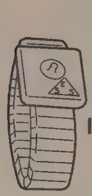
Work-Guard™. Ends static problems in work areas. The standard is a non-blown ionizer that generates ions through corona discharge at two needle points. Propagation to the work area is done by coulomb repulsion. **Specifications. Power Input:** 110 VAC (also available with 220 VAC adapter). **Ion Output:** Positive and negative. **Induced Voltage:** <100 V on 10 pf object 12" from unit. Below computer/microprocessor interference. **Dimensions:** 4" × 4 1/2" × 1 1/2" (101.6 × 114.2 × 38.1 mm). **Weight:** 1.5 lbs. (680.5 g).

Work-Guard B™. Ionizer with blower, operates on the same principle of ionization as the standard Work-Guard. Low velocity air stream increases the effective area of operation. **Specifications. Power Input:** 110 VAC or 220 VAC. **Ion Input:** positive and negative. **Induced Voltage:** 100 V on 10 pf object 12" from unit. EMI-RFI; below computer/microprocessor interference. **Dimensions:** 6" × 6 1/4" × 3 1/4" (152 × 158.8 × 82.6 mm.) **Weight:** 3.1 lbs. (1420 g). Available with or without heater.

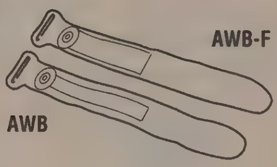
Stock No.	Mfr.'s Type	Description	EACH
725Q0175	ION-1	Non-fan-blown air ionizer	386.25
725Q0180	ION-B	Fan blown air ionizer	442.00

Wrist Straps and Heel Grounders

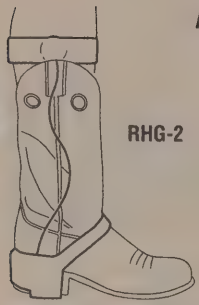
ESS straps safely remove static electricity from personnel who handle static-sensitive devices. The strap is worn on the wrist of the user, and a ground cord is attached to the strap, thereby serving as a drain path for static electricity. The wrist strap is available in light blue velcro material and is adjustable to fit most wrist sizes. It features excellent skin contact, washability and operator comfort. Ground cords are available in both straight and coiled cord models and in a variety of lengths and termination configurations. All ESS ground cords have a one megohm resistor built into the cord for user safety.


IMB

AECC


AWB-F

AWB


RHG-2

AHG-1

Wrist Wraps/Heel Grounders

Stock No.	Mfr.'s Type	Description	EACH
725-0350	AWB	One-size-fits-all Velcro wrist strap c/w conductive strip	4.58
725-0355	AWB-F	One-size-fits-all Velcro wrist strap c/w conductive strip with extra comfort conductive foam liner	5.40
725-0470	AHG-1	Heel grounder with conductive rubber ribbon to slip into users shoe	12.99
725-0475	GT-1	Replacement conductive ribbon for AHG-1 (Pack of 10)	24.99
725-0480	RHG-2	Heel grounder with shin band and 15" interconnect cord with built-in one megohm resistor	39.00
725-0485	AEB	Adjustable elastic wrist band c/w conductive strands contacting full circumference of users wrist, One-size-fits-all	6.00
725-0490	IMB	Adjustable insulated metal wrist band watch style	14.93

Wrist Wraps with Coiled Ground Cord*

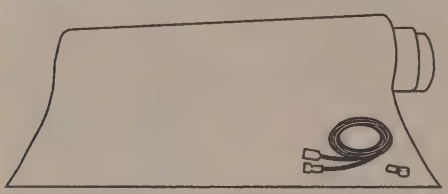
Stock No.	Mfr.'s Type	Description	EACH 1-24	EACH 25-99	EACH 100-Up
725-0375	AWCC	Wrist strap (AWB) with 5 ft. extendable coil cord (CC-5)	14.58	13.46	12.50
725-0380	AWCC-F	Wrist strap (AWB-F) with 5 ft. extendable coil cord (CC-5)	16.25	13.65	12.65
725-0396	AECC	Wrist strap (AEB) with 5 ft. extendable coil cord (CC-5)	18.66	16.59	14.90
725-0397	IMCC	Wrist band (IMB) with 5 ft. extendable coil cord (CC-5)	28.04	24.92	22.43

Wrist Straps with Straight Ground Cord*

Stock No.	Mfr.'s Type	Description	1-24	25-99	100-Up
725-0400	AWSC	Wrist strap (AWB) with 5 ft. straight ground cord (SC-5)	12.50	11.85	10.50
725-0405	AWSC-F	Wrist strap (AWB-F) with 5 ft. straight ground cord (SC-5)	13.45	12.40	11.45
725-0421	AESC	Wrist strap (AEB) with 5 ft. straight ground cord (SC-5)	15.37	13.66	12.30
725-0422	IMSC	Wrist band (IMB) with 5 ft. straight ground cord (SC-5)	26.54	23.59	21.23

*Note: All above wrist strap-cord combinations also include an alligator clip for grounding flexibility. All ESS ground cords have one megohm resistor built into the cord for user safety.

Flexible Table Mats



- **Permanently Static Dissipative**
- **Will Not Curl on Work Surface**
- **Durable and Flexible**
- **Eliminates Capacitance Surge (Common in Laminated Material)**
- **Heat- and Flame-Resistant**
- **Humidity Independent**
- **Acid- and Alkali-Resistant**
- **Durable and Flexible**

ESS work surface table mats provide a static dissipative surface to protect sensitive electronic components from damaging electrostatic discharge (ESD) during manufacturing. Static charges from personnel and conductive objects placed in contact with the mats are quickly and safely drained to ground. Because the mats are static dissipative, sparking electrostatic discharge is eliminated, reducing the electrostatic damage and discomfort to personnel. **Specifications. Thickness:** $^{3}/_{32}$ in. (2.4 mm). **Unit Weight:** 1 lb./ft.^{2} (4.9 kg/m^2). **Surface Resistivity:** 109 ohms per unit square. **Color:** Beige (light blue on request). **Rigid mats also available.**

Stock No.	Mfr.'s Type	Size W × L	Description	EACH 1-24	EACH 25-Up
725-0228	ATM-23	24" × 36"	Each table mat includes one 15 ft. ground cord AGC-18-15 and two male snap fasteners	46.66	40.80
725-0230	ATM-24	24" × 48"	Each table mat includes one 15 ft. ground cord AGC-18-15 and two male snap fasteners	49.00	45.00
725-0235	ATM-304†	30" × 48"	Each table mat includes one 15 ft. ground cord AGC-18-15 and two male snap fasteners	72.00	65.50
725-0240	ATM-364†	36" × 48"	Each table mat includes one 15 ft. ground cord AGC-18-15 and two male snap fasteners	98.18	90.10

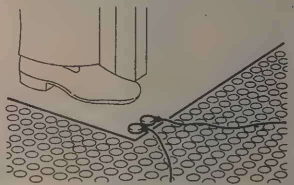
Stock No.	Mfr.'s Type	Size W × L	Description	EACH 1-5	EACH 6-10
725Q0245	ATM-245	24" × 45'	Snaps, ground cords not incl. Use of ESS AMS snaps, AGC-18-15 ground cord is recommended	476.00	441.17
725Q0252	ATM-3045†	30" × 45'	Snaps, ground cords not incl. Use of ESS AMS snaps, AGC-18-15 ground cord is recommended	632.09	588.19
725Q0255	ATM-3645†	36" × 45'	Snaps, ground cords not incl. Use of ESS AMS snaps, AGC-18-15 ground cord is recommended	690.00	640.00

†Available in light blue only.

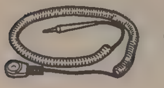
Anti-Fatigue Floor Mats

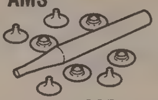
Reduces foot, leg and back discomfort while draining away annoying and dangerous electrostatic charges. Protects electronic systems from damage and disruption. Springy vinyl mats are .375" thick and weigh .72 lbs./ft.^{2} **Surface Resistivity:** 10^{10} ohms per unit square. **Color:** Ash grey. Rigid floor mats also available.

Model AFM-36. Includes one 15' ground cord AGC-18-15 and four male snap fasteners installed. **Size:** 3' × 6'.
725-0260. Model AFM-36. **1-24**....................**EACH 129.00** **25-Up**....................**EACH 119.00**
Model AFM-360. Snaps and ground cords not included. Use of ESS AMS snaps and AGC-18-15 ground cord is recommended. **Size:** 3' × 60'.
725Q0265. Model AFM-360. **1-5**....................**EACH 810.00** **6-Up**....................**EACH 749.00**

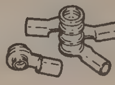


Accessories


CC-5, CC-10


AMS

ASP


AIS-1

All ESS ground cords have a one megohm resistor built into the cord for user safety.

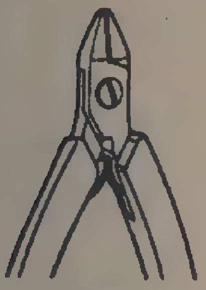
Stock No.	Mfr.'s Type	Description	EACH
725-0425	SC-5	5 ft. Straight cord c/w one megohm resistor and alligator clip	10.50
725-0430	CC-5	6 ft. Extendable coil c/w one megohm resistor and alligator clip	12.75
725-0435	CC-10	12 ft. Extendable coil cord c/w one megohm resistor and alligator clip	15.50
725-0440	AGC-18-15	15 ft. Ground cord for grounding table and/or floor mat c/w one megohm resistor and alligator clip	10.10
725-0445	AIC-18-5	5 ft. Interconnected cord to connect table to floor mat c/w one megohm resistor	7.60
725-0450	AIS-1	Interconnected snaps can be snapped one on top of the other, to form a multi-cord ground point	1.63
725-0455	AMS	Male snap fastener, can be installed anywhere on table or floor mats for customized ground cord attachments, packages ten (10) per bag, use punch (ASP) and a hammer to install	4.28
725-0460	ASP	Snap punch, specially designed to be used to install snap fasteners (AMS)	27.39
725-0465	AC	Alligator clip	2.52

Workstation Kit

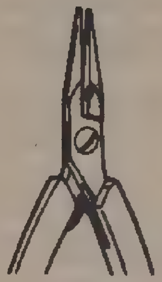
Model AWSK-1. Kit Contains: One ATM 24 table mat; one 15 ft. ground cord AGC-18-15; one AFM 36 floor mat; one AWCC wrist strap and coil cord; one 5 ft. interconnected cord AIC-18-5; one interconnected snap AIS-1. **NOTE:** Complete kit required to set up a static-free workstation in a manufacturing facility.

725-0322. Model AWSK-1. **1-24**....................**EACH 170.67** **25-49**....................**EACH 146.29** **50-Up**....................**EACH 136.53**

Ergonomic Hand Tools



2161E



"2100" Series

- **Meets The Optimum Criteria For Ergonomic Hand Tools**
- **Provides More Gripping Accuracy; Long Finger Bearing Surface Reduces Pressure on Sides of Fingers Decreasing the Risk of Skin, Nerve and Blood Vessel Damage**
- **Exclusive, Smooth, Soft Foam Cushion Grips; Are Free of Abrupt Edges and Finger Indentations Reducing Pinching or Finger Nerves and Blood Vessels**
- **E Designates "Accu-Lite" Ergonomic Design With Anti-Static Foam Grips. Available Only on MS54 Series, GA54 Series, LN54 Series, NN54 Series, LN755 Series and all Erem Tools**

Erem "2100" Series Cutters

General purpose long life tool. Small with an oval head. High grade tool steel. Precision double screw joint system. Anti-glare finish.

984-5535. 2140E. 4¼" diag. semi-flush oval, anti-static grip **EACH 51.70**
984-5538. E2140E. Ergonomic design version of 2140E **EACH 63.70**
984-5536. 2141E. 4¼" diag. full-flush oval, anti-static grip **EACH 52.76**
984-5539. E2141E. Ergonomic design version of 2141E **EACH 64.76**
984-0340. 2150E. 4¾" diag. semi-flush oval anti-static grip **EACH 52.76**
984-0341. E2150E. Ergonomic design version of 2150E **EACH 64.76**
984-0342. 2151E. 4¾" diag. full-flush oval, anti-static grip **EACH 52.76**
984-0343. E2151E. Ergonomic design version of 2151E **EACH 64.76**
984-0344. 2160E. 5¼" diag. semi-flush oval, anti-static grip **EACH 68.10**
984-0345. E2160E. Ergonomic design version of E2160E **EACH 80.10**
984-0346. 2161E. 5¼" diag. full-flush oval, anti-static grip **EACH 68.10**
984-0347. E2161E. Ergonomic design version of 2161E **EACH 80.10**

Erem "2100" Series Pliers ***— NEW —***

This is a selection of pliers to meet electronics assembly applications. These tools offer high grade tool steel, precision double screw joints system and an anti-glare finish.

984-0350. 2111. Plier, chain nose, anti-static grip **EACH 48.70**
984-0351. E2111. Ergonomic design version of 2111 **EACH 60.70**
984-0352. 2111P. Plier, slim line fine tip **EACH 52.38**
984-0353. E2111P. Ergonomic design version of 2111P **EACH 64.38**
984-0354. 2142. Plier, flat nose anti-static grip **EACH 48.70**
984-0355. E2142. Ergonomic design version of 2142 **EACH 60.70**
984-0356. 2143. Plier, round nose anti-static grip **EACH 48.70**
984-0357. E2143. Ergonomic design version of 2143 **EACH 60.70**

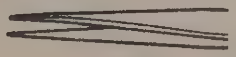
Xcelite Ergonomic Hand Tools

984-5545. E-MS54. 4" diag. semi-flush plier with ergonomic handle **EACH 27.22**
984-5546. E-MS54J. 4" diag. flush-cutting plier with ergonomic handle **EACH 29.16**
Type E-MS543J. 4" diag. flush-cutting, relieved throat with ergonomic handle.
984-5547. E-MS543J **EACH 29.32**
Type E-MS545J. 4" diag. flush-cutting, tapered head with ergonomic handle
984-5548. E-MS545J **EACH 28.22**
984-5549. E-MS549J. 4" diag. flush-cutting with ergonomic handle **EACH 28.80**
984-5550. E-GA54J. 4" angled flush-cutting with ergonomic handle **EACH 39.20**
984-5551. E-LN54. 5" long nose, serrated jaws with ergonomic handle **EACH 28.66**
For more information on the Xcelite hand tools refer to Allied's hand tool pages.

High Precision, Fine-Tip Tweezers

2ASA

5SA



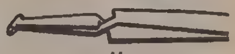
Fine Tips

984-5505. AASA. Strong but fine points, anti-magnetic, Swiss quality **EACH 14.72**
984-5506*. EROPAASA. Strong but fine points, anti-magnetic, India **EACH 6.76**
984-5507. 2SA. Medium points, anti-magnetic, Swiss quality **EACH 22.96**
984-5508*. 2SASL. Medium points, anti-magnetic, Italy **EACH 11.24**
984-5509. 2ASA. Flat and round points, anti-magnetic, Swiss quality **EACH 21.40**
984-5511*. EROP2ASA. Flat and round points, anti-magnetic, India **EACH 6.76**
Type 3SA. Most popular for microelectronics, ultra fine, anti-magnetic, Swiss quality.
984-5512. 3SA **EACH 26.52**
Type EROP3SA. Most popular for microelectronics, ultra fine, anti-magnetic, India.
984-5514*. EROP3SA **EACH 6.82**
984-5515. 3CSA. Shorter version of 3SA, Swiss quality **EACH 18.62**
984-5517*. EROP3CSA. Shorter version of EROP3SA, India **EACH 6.82**
Type 5SA. Superfine points, special shaping, for handling very fine wires, miniature components such as speed diodes, Swiss quality.
984-5518. 5SA **EACH 31.44**
Type EROP5SA. Superfine points, special shaping, for handling very fine wires, miniature components such as speed diodes, India.
984-5520*. EROP5SA **EACH 6.82**
984-5521. 7SA. Curved for easy manipulation in confined areas, Swiss quality **EACH 26.68**
984-5523*. EROP7SA. Curved for easy manipulation in confined areas, India **EACH 6.82**
Type OOSA. Flat inside edges. Very resistant. General purpose electronic assembly, Swiss quality.
984-5524. OOSA **EACH 18.62**
Type EROPOOSA. Flat inside edges. Very resistant. General purpose electronic assembly, India.
984-5526*. EROPOOSA **EACH 6.82**

*These are more economical versions than the Swiss quality.

Anti-Wicking Tweezers ***— NEW —***

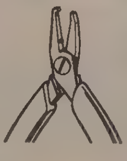
The heat-sink tweezers drilled holes are guaranteed perfectly round and centered. Controls wicking — protects plastic insulation on wire while soldering. Dissipates heat. Inside tips flat, large inside hole only for insulation.



44

984-0365. 44. For tiny wires sizes up to AWG 30 (.010) **EACH 39.28**
984-0366. 45. For wire sizes AWG 24 to 26 (.015-.020) **EACH 47.42**
984-0367. 46. For wire sizes AWG 20 to 22 (.025-.032) **EACH 47.42**
984-0368. 47. For wire sizes AWG 16 to 18 (.040-.050) **EACH 49.84**

PCB Cutters

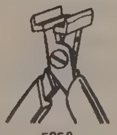


Type 530E. 4¾" transverse anti-shock shear cutters. Cuts the lead to a predetermined length. Reduces mechanical shock on components. Standard cut off at .040.
984-5564. 530E **EACH 116.46**

Type 530S. 4½" cuts, flattens leads enabling components to remain on printed circuit board.
984-0360. 530S **EACH 123.28**

IC Tools

Type 505C. For 14-16 Pins, .300" width.
984-5563. 505C **EACH 145.34**

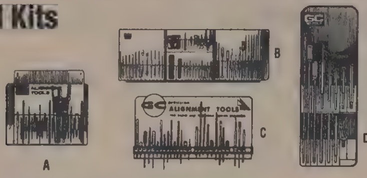


505C

Type 593-AE. 4¾"; cuts DIP leads from rear; cuts pins on dense PCBs, angled tip, full flush.
984-0362. 593-AE **EACH 106.30**

593-AE

Tool Kits



Type 8280 TV Tool Kit — Fig. A

Contains 15 TV alignment tools in a handy roll-up plastic case. **Includes:** "Shorty" duplex aligner; 1/8" sq. socket wrench; K-Tran tool; 0.100 hex wrench; recessed screwdriver; others. Tip of Delrjn, extra-hard bone fiber, or hardened spring steel.
796-8280. Type 8280 .... **EACH 45.17**

Alignment and Specialty Tool Kit — Fig. B

This kit contains a selection of popular alignment and service tools in a handsome carrying case, ideal for the technician and engineer. Each tool's application is described on inside of case. The kit, containing 44 tools, includes: five hex tools, three hex wrenches, four screwdrivers, eight aligners, three Tel-A-Turn tools, wirestripper, wrench kit, inspection mirror, K-Tran tool, Neo-Lite tester, Lo Volt tester, fuse puller, tweezers, TV channel tuning tool, capacitor tool, two 2-IN-1 tools, oiler, reamer tool, heat sink, solder probe, brush/scraper tool, ruler, burnishing tool, transistor tool, and double end tool.
796-5060. Type 5050 .... **EACH 144.54**

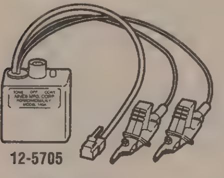
GC Type 9200 Alignment Tool Kit — Fig. C

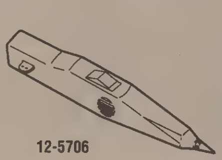
Wall mounting kit includes 27 most needed radio-TV alignment tools. Housed in sturdy, 3-color steel panel with 2-hole mounting. Precision made of the finest materials including low-loss plastics and extra-hard bone fiber; tips are hardened spring steel. Includes: various length alignment screwdrivers, special short tools; alignment wrenches; channel tuners; core aligners; oscillator adjust tools; trimmer, IF aligners; solder probe; nylon replacement tip for long reach aligner; hex tools; etc. panel is 9 3/4" high and 18 3/4" wide.
796-9200. Type 9200 .... **EACH 81.74**

Anti-Static Alignment Tool Kit — Fig. D

Kit contains all nine anti-static alignment tools. The wide range of tip styles and sizes assures that the user will have a tool for adjusting or aligning any conventional component. Supplied with pocket storage case.
796-0145. Type AS-5007 .... **EACH 17.47**

Test Tools *— NEW —*


12-5705


12-5706

Tone Test Set

- **Locates Broken Pairs/Cables in Walls**
- **Tone Generator Emits R.F. Signal Detectable by 12-5706 Station Man Probe**
- **Provides Talk Power on a Dead Pair**
- **Checks for Shorts or Opens, Using a Long-Life Light-Emitting Diode (LED)**
- **Continuity Test**
- **Tip and Ring Identifications**
- **Line Condition Identification: A. Clear Line, B. Busy Line, C. Ringing Line**
- **Positive Line Verification**
- **Heavy Duty Nickel Silver "6A" Type Alligator Clips**
- **Heavy Duty Boots Made Especially for the "6A" Type Alligator Clip**

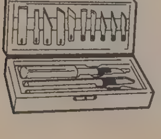
Specifications: Integrated circuit. **Dual Tone Capability:** A — 1000 Hz continuous tone; B — 500/1000 Hz alternating tone. **Power Source 9 Volt Battery:** 216 Eveready, VS323 RCA, 006P import or equivalent; Sold Separately. **Weight:** 3 1/2 oz.; leather carrying case — 3 oz. Heavy duty yellow ABS case.
796-2530. 12-5705 .... **EACH 51.07**

Stationman Probe

- **Leads of Lineman's Test Set Are Clipped to the "Ears" of the Probe Automatically Energizing the Probe**
- **High Input Impedance to Permit Capacitive Coupling with Pair Carrying the Test Signal**
- **Output Impedance Is Low to Match the Impedance of the Telephone Handset**
- **Quickly and Easily Locates the Proper Cable Pair Containing the Tone Signal**
- **An Audible Speaker So That the Speaker Probe May Be Used with or without a Lineman's Test Set**

New locking and non-locking switch which is field adjustable. The test probe is supplied with a cone-shaped tip and a duckbill tip that is longer and flatter, permitting insertion into larger cables, or cables under tension where slack cannot be obtained.
796-2535. 12-5706 .... **EACH 68.09**

Precision Knife Set

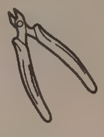


A kit of three knife handles with commonly used blades plus an assortment of ten extra blades. This kit is useful in PC artwork, lab use for cutting cambric, etc. Supplied in wooden case with magnetic spare-blade holder in lid. 16 pieces total.

796-9814. Model 12-007. **1-5** .... **PER SET 26.09**
6-11 .... **PER SET 18.62**

Wire Strippers *— NEW —*

UTP Wire Stripper



- **Safety — the Cutting Blade Is Recessed Into the Housing**
- **Self-Adjusting — Will Provide the User with the Widest Range of Stripping Options; The Tool Will Adjust Automatically to Cut PVC, Plenum Rated Materials and Others without Damaging the Braids, Foils or Conductors**
- **One Piece Design — the Tool Comes Complete and Ready to Use Right Out of the Package**
- **Typical Applications: Data — Ethernet (10 Base T), Token Ring (IBM Cabling Types 1 and 6), Appletalk, and ISDN; Voice — Premis Distribution**
- **Ten Packed in GC Tool Countertop Display**

Specifications. Stripping Capacity: Round/oval cables up to 0.43" (11 mm) in diameter. **Dimensions:** 3.54" (90 mm) × 1.50" (38 mm) × .71" (18 mm). **Weight:** 1.34 oz. (35 gms.)
796-2540. 12-545 .... **EACH 19.98**

One Step Stripper

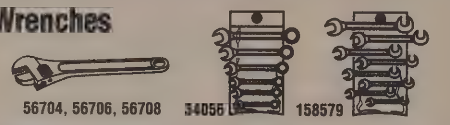
- **Quickly and Easily Strips RG-59 and RG-6 Cables for CATV**
- **No Adjustments Needed — String Action Adjusts Cutting Depth Automatically**
- **Replaceable Blade Cassette Lasts 1,000 - 2,000 Strips**
- **Convenient Built-In Belt Clip**

796-2545. 12-551. One Step Stripper .... **EACH 9.22**
796-2550. 12-552. Replacement Blade .... **EACH 4.73**

Speed-O-Matic Wire Stripper

Features "Fully Automatic Delayed Action" to prevent crushing fine wires. Speed-O-Matic has narrow, easy-grip, handles and interchangeable blades. Patent No. 2,755,691.
796-2900. 766. For sizes 12 to 20 wire .... **EACH 29.86**
796-2905. 766-A. For sizes 14 to 30 wire ... **EACH 31.59**
796-2925. 766-IP. For sizes 8 to 22 wire .... **EACH 32.22**

Wrenches



Adjustable Wrenches

796-6009. Model 56704. 4" Adjustable Wrench .... **EACH 5.69**
796-6010. Model 56706. 6" Adjustable Wrench .... **EACH 6.62**
796-6011. Model 56708. 8" Adjustable Wrench .... **EACH 15.19**

6 Piece Combination Wrench Set

Set Contains: 3/8", 7/16", 1/2", 9/16", 5/8", 3/4" combination wrenches with vinyl pouch.
796-6007. Model 34056 .... **EACH 16.51**

8 Piece Ignition Wrench Set

Set Contains: Eight drop forged ignition wrenches. Each wrench has both 15 and 60 open ends. Sizes range from 13/64" to 3/8". Vinyl roll included.
796-6008. Model 158579 .... **EACH 12.50**

Nibbling Tool

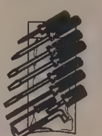
Type GC-805. This precision, hand operated tool is easy to use. Cuts sheet metal like a chassis punch. Start with a 3/8" hole and nibble to desired shape and size. Cuts up to 18 ga. steel 1/16" copper, aluminum or plastic.

796-3660. Model 805 .... **EACH 27.57**
796-3665. Model 806 (Deluxe) .... **EACH 25.55**

Screwdriver Sets

8-Piece Precision Electronic Screwdriver Set

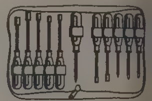
Easily locate the right tool every time with color-coded end caps and handy professional rack to keep screwdrivers organized. **Precision Flat Blade Sizes:** 1.0 mm, 1.4 m, 2.0 mm, 2.4 mm, 3.0 mm. **Phillips Sizes:** 1.6 mm, 2.0 mm, 2.4 mm. Short length 80 mm handles. Includes convenient benchtop rack with tray for holding loose screws.
796-9803. Model 12-6931. **1-5** .... **PER SET 21.89**
6-11 .... **PER SET 16.12**



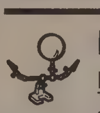
9 Piece Chrome Vanadium Screwdriver Set

Set Contains: 1/8", 3" Pocket Screwdriver, 3/16" × 4" Cabinet Screwdriver, 3/16" × 6" Cabinet Screwdriver, 1/4" × 1 1/2" Stubby Screwdriver, 1/4" × 4" Square Shank Screwdriver, 1/4" × 6" Square Shank Screwdriver, 3/16" × 3" #1 Phillips Screwdriver, 1/4" × 4" #2 Phillips Screwdriver, and 1/4" × #2 Phillips Comb. Offset Screwdriver.
796-6012. Model 156259 .... **EACH 28.60**

12 Piece Nutdriver/Screwdriver Set



Set Contains: 3/16", 1/4", 5/16", 11/32", 3/8", 7/16", 1/2" Nutdrivers, T10, T15 Reversible Torx Driver, 1/8" × 3" Screwdriver, 3/16" × 3" Screwdriver, 3/16" × 3" #1 Phillips Screwdriver with vinyl zipper case.
796-6025. Model 23-012 .... **EACH 29.73**



Magnifiers

Extra Hands with Magnifier

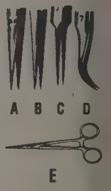
Two alligator spring clamps and double ball joints hold work at any angle. Third clamp holds 2" magnifying lens for doubling size of hard to read part numbers and verifying repair accuracy. Spring clip holds objects at any angle leaving both hands free to glue, solder, repair or assemble with ease. Heavy cast-iron metal base provides stable error-free assistance.
796-9802. Model 12-053. **1-5** .... **EACH 10.99**
6-11 .... **EACH 9.99**

Micro Inspection Magnifier

2 1/2" dia. precision ground and polished glass. Non-tip base. Chrome plated arms and rims. Head swings a full 350°. Adjustable magnifier. Positive-lock swivel adjustments. Base 2 1/4" deep, 2" wide.
796-2386. Type 22-386 .... **EACH 23.12**

Tweezers

Precision Assembly Tweezers



For electronics assembly of miniature and micro-fine scale. Finest quality steel; workmanship assures freedom from misalignment. Points are ground flat on the inside. Precision sharp and shaped points, tension spring action.
796-7948. 7948*. Fig. A. 4 1/2" .... **EACH 4.69**
796-7993. 7993. Fig. A. 4 1/8" .... **EACH 7.20**
796-7992. 7992. Fig. B. 5 1/2" .... **EACH 19.67**
796-7994. 7994. Fig. C. 4 1/4" .... **EACH 7.20**
796-7995. 7995. Fig. D. 4 1/2" .... **EACH 7.20**
*Nickel plated forged steel. All others are stainless steel.

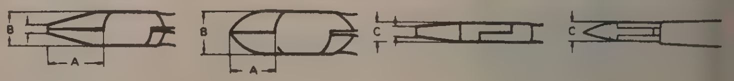
Scissor Tweezer — Fig. E

This tool holds wires, acts as a heat sink and retrieves parts. Versatile tool clamps firmly to hold wires for soldering; acts as a heat sink — retrieves small parts from hard-to-reach places. Has two-position snap lock, serrated jaws, box-joint construction. Precision machined from stainless steel.
796-7977. Type 7977. 6" Straight Nose. 3 oz. .... **EACH 17.56**
796-7979. Type 7979. 6" Curved Nose. 3 oz. .... **EACH 17.56**

Shears

796-2520. 1207402. Small Blade Copper Wire .... **EACH 12.33**
796-2521. 12-7401. Copper Wire .... **EACH 8.04**
796-2522. 12-7403. Static Dissipative Grip .... **EACH 19.45**

Pliers and Cutters



- **Lifetime Warranty**
- **Dual Leaf Springs Reduce Tension for Ease of Operation**
- **Static Dissipative Handles Provide Greater Operator Comfort and Protect Electronic Components from Electro Static Discharge (ESD)**
- **Pliers and Cutters Are Made From Solid 420 Stainless Steel, MIRROR Polished and Correctly Hardened for Long Lasting Service; These Tools Will Not Rust**
- **Box Joint Construction: A Unique Joint That Allows the Two Parts of the Plier or Cutter to be Mated During the Early Stage of the Manufacturing Process, Creating a Precision Fit; Dual Bearing Surfaces on Each Handle of the Tool Eliminate "Slack" or "Play" in the Joint Producing Perfect Joint Alignment and Long Wear**

Stock No.	Mfr.'s Type	Description	Dimensions			EACH
			A	B	C	
796-2500	12-7311	5" Chain Nose	1.20"	0.30"	0.22"	16.80
796-2501	12-7312	5" Bent Nose	1.20"	0.36"	0.22"	16.80
796-2502	12-7313	6" Bent Nose	2.00"	0.36"	0.30"	16.80
796-2503	12-7314	5 1/4" Needle Nose	1.95"	0.40"	0.40"	16.80
796-2504	12-7315	4 3/4" Long Nose with Side Cutter	1.08"	0.38"	0.22"	16.80
796-2505	12-7333	6" Long Nose	1.52"	0.48"	0.30"	17.69
796-2506	12-7330	4 1/2" Flush Tip Cutter	0.68"	0.36"	0.25"	17.22
796-2507	12-7321 (Semi Flush)	4 1/2" Oval Head Cutter	0.68"	0.46"	0.28"	17.22
796-2508	12-7323 (Flush)	4 1/2" Oval Head Cutter	0.68"	0.46"	0.28"	17.22
796-2509	12-7322 (Semi Flush)	5" Oval Head Cutter	0.70"	0.60"	0.38"	17.22
796-2510	12-7324 (Flush)	5" Oval Head Cutter	0.70"	0.60"	0.38"	17.22
796-2511	12-7325 (Semi Flush)	4 1/2" Tapered Head Cutter	0.56"	0.45"	0.30"	17.22
796-2512	12-7326 (Flush)	4 1/2" Tapered Head Cutter	0.56"	0.45"	0.30"	17.22
796-2513	12-7331	4 1/2" Mini Tapered Flesh Cutter	0.36"	0.34"	0.24"	17.22
796-2514	12-7332	4 1/2" Mini Oval Head Cutter	0.36"	0.34"	0.24"	17.22

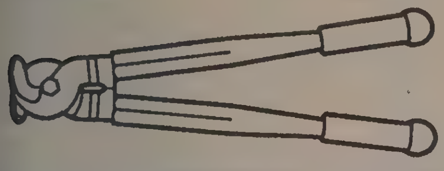
Cable Cutters

727 Cable Cutter

Model 727 cable cutter has forged steel blades for cutting up to 2/0 aluminum or copper cable. Cutter has heat-treated, precision ground shear action blades for clean cuts. High leverage handles are plastic coated for extra comfort and grip.

799-0727.	Model 727	EACH	24.53

718 Cable Cutter



Model 718 cable cutter is lightweight and compact. The 18" overall length cutter has shearing action heat-treated and precision ground blades for dependable service. Steel handles have rubber grips. For 350 MCM copper and aluminum, not for cutting steel, ACSR or live circuits.

799-0718.	Model 718	EACH	56.80

Screwdrivers

TRI-GRIP™ Insulated Screwdrivers

- **Carries The Industry's Highest Insulation Rating For Maximum Protection**
- **User-Friendly TRI-GRIP™ Handle Design Delivers Excellent Driving Power With Reduced Manual Effort**
- **Meets IEC/VDE Standards**

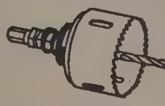
799-4741.	47430. Slotted, $\frac{3}{32}$" × 3" (2.4 × 76.2 mm)	EACH	8.28
799-4742.	47431. Slotted, $\frac{5}{32}$" × 4" (4.0 × 101.6 mm)	EACH	8.96
799-4743.	47432. Slotted, $\frac{7}{32}$" × 4" (5.6 × 101.6 mm)	EACH	9.37
799-4744.	47433. Slotted, $\frac{1}{4}$" × 5" (6.4 × 127.0 mm)	EACH	10.34
799-4745.	47434. Slotted, $\frac{5}{16}$" × 6" (7.9 × 152.4 mm)	EACH	12.82
799-4746.	47435. Slotted, $\frac{3}{8}$" × 7" (9.5 × 177.8 mm)	EACH	16.83
799-4747.	47436. Phillips, #1 × 3" (76.2 mm)	EACH	7.31
799-4748.	47437. Phillips, #2 × 4" (101.6 mm)	EACH	8.53
799-4749.	47438. Phillips, #3 × 6" (152.8 mm)	EACH	11.15

Super TRI-GRIP™ Insulated Screw Holding Screwdriver

- **Insulation Properties Reduce The Potential For Shock While Working Around Live Currents**
- **Large, Super TRI-GRIP™ Handle Gives User The Ultimate In Turning Force And Comfort**
- **Meets IEC/VDE Standards**

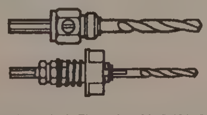
799-4750.	47608. Slotted, $\frac{3}{32}$" × 3" (2.4 × 76.2 mm)	EACH	13.12
799-4751.	47609. Slotted, $\frac{1}{8}$" × 4" (3.2 × 101.6 mm)	EACH	14.91
799-4752.	47610. Slotted, $\frac{5}{32}$" × 5" (4.0 × 127.0 mm)	EACH	18.22
799-4753.	47611. Slotted, $\frac{3}{16}$" × 6" (4.8 × 152.4 mm)	EACH	20.71
799-4754.	47612. Slotted, $\frac{1}{4}$" × 7" (6.4 × 177.8 mm)	EACH	23.87
799-4755.	47613. Phillips, #0 × 4" (101.6 mm)	EACH	17.66
799-4756.	47614. Phillips, #1 × 6" (152.4 mm)	EACH	21.54
799-4757.	47615. Phillips, #2 × 7" (177.8 mm)	EACH	24.57

Variable Pitch Bi-Metal Hole Saw



799-1934.	19134. $\frac{3}{4}$" (19.0 mm). $\frac{1}{2}$" I.D. Copper Pipe Size	EACH	7.73
799-1936.	19136. $\frac{7}{8}$" (22.2 mm). $\frac{5}{8}$" I.D. Copper Pipe Size	EACH	7.73
799-1941.	19141. $1\frac{1}{8}$" (28.6 mm). $\frac{3}{4}$" I.D. Copper Pipe Size	EACH	8.15
799-1946.	19146. $1\frac{3}{8}$" (35.0 mm)	EACH	8.64
799-1952.	19152. $1\frac{3}{4}$" (44.4 mm). $1\frac{1}{2}$" I.D. Copper Pipe Size	EACH	10.78
799-1962.	19162. $2\frac{1}{2}$" (63.5 mm). 2" I.D. Copper Pipe Size	EACH	14.37

Arbors With Replacement High Speed Pilot Drills



Model 37157. $\frac{1}{4}$" (64 mm) Round Shank with 3 Flats for $\frac{9}{16}$"-$\frac{13}{16}$" (14.3-30.2 mm) diameter hole saws.

799-3757.	Model 37157	EACH	8.32

Model 37155. $\frac{7}{16}$" (11.1 mm) Hex Shank for $\frac{9}{16}$"-$1\frac{13}{16}$" (14.3-30.2 mm) diameter hole saws and all HoleBuster™ sizes.

799-3755.	Model 37155	EACH	9.86

Model 37156. $\frac{7}{16}$" (11.1 mm) Hex Shank for $\frac{5}{8}$"-$1\frac{13}{16}$" (15.9 mm) Hex Shoulder for $1\frac{1}{4}$"-6" (31.8-152.4 mm) diameter hole saws and all Greenlee Recessed Light Hole Saws.

799-3756.	Model 37156	EACH	17.67

Kwik Stepper™ Step Bits

Kwik Stepper™ Step Bits Set

Two fluted design for fast, cooler cutting of 10 gauge mild steel plus copper, brass, wood, plastics and laminates. Self-starting tip resists walking or skidding. Multi-hole bit. Three bit set ($\frac{1}{2}$", $\frac{7}{8}$" and $1\frac{1}{8}$") in case.

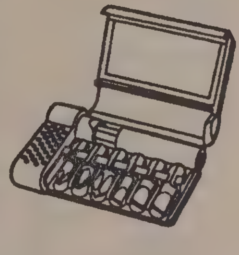
799-5884.	35884	EACH	111.16

Kwik Stepper™ Step Bits

- **Cuts Through 10 Gauge (3.5 mm) Mild Steel Plus Copper, Brass, Wood, Plastics and Laminates with Just One Drill Bit**
- **Two Flute Design Operates Cooler**
- **Self-Starting Tip Resists Walking or Skidding**

799-3401.	34401. $\frac{1}{2}$" (12.7 mm) Multi-Hole	EACH	25.55
799-3403.	34403. $\frac{7}{8}$" (22.2 mm) Multi-Hole	EACH	35.85
799-3410.	34410. $\frac{1}{2}$" (12.7 mm) Single-Hole	EACH	21.86
799-3411.	34411. $\frac{7}{8}$" (12.7 mm) Single-Hole	EACH	37.11
799-3420.	36020. 30.5 mm Multi-Hole	EACH	59.01
799-3402.	36402. $\frac{1}{2}$" (12.7 mm) Multi-Hole	EACH	28.29
799-3413.	36413. $1\frac{1}{8}$" (28.6 mm) Multi-Hole	EACH	49.74
799-3414.	36414. $1\frac{3}{8}$" (34.9 mm) Multi-Hole	EACH	59.76

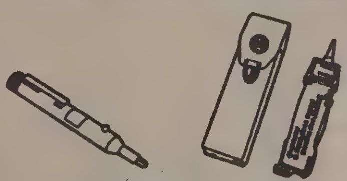
Kwix-Bits™ Bit Box Screwdriver Set



- **Pocket-Sized Bit Holder Stores Six Screwdriver Bits and a Magnetic Chuck**
- **Unique Case Design Can Be Used as a Hand Held Screwdriver as Well as a Large Storage Compartment**
- **Kwik Bits™ Bit Box Screwdriver Set Includes: $\frac{5}{32}$" slotted, $\frac{7}{32}$" slotted, $\frac{1}{4}$" slotted, #1 Phillips, #2 Phillips, #3 Phillips, Magnetic Chuck, Magnetic Bit Holder**

799-4781.	47819	EACH	17.17

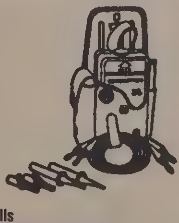
Volt Tick™ Contactless Voltage Indicators



Hand held voltage testers for easy use. Sense the presence of AC voltage without making contact, 2010 has adjustable sensitivity. Comes in both pocket and belt sizes. Small size allows checking fuses in a cabinet and individual line voltage presence is indicated. Audio and visual indicators assure operation. 2010 has light at the base for use with hot stick. Model 2010H comes with holster.

799-1010.	Model 1010 (50-500 VAC)	EACH	21.01
799-2010.	Model 2010H (24-1500 VAC)	EACH	94.38

Gas Lamp Tester



- **Test All Gas-Filled Lamps including: Fluorescent, High And Low, Pressure Sodium, Neon, Mercury Vapor And Metal Halide**
- **Indicates AC/DC Voltage Up To 500 V; Continuity Up To 300 Ohms**
- **Detachable Antenna Extends to 27" (686 mm)**
- **Visual And Audible Indicators**
- **Checks Ballasts, Ignitors, Starters, Capacitors, Resisters And Photo Electric Cells**
- **Batteries, Lead Probes, Clamps, Antenna And Holster Included**

799-5715.	Model 5715	EACH	226.92

Voltage Testers

Model 6706. Voltage and Continuity Tester 600 Volt.

799-6706.	Model 6706	EACH	92.68

Model 6708. Voltage and Continuity Tester 400 Volt.

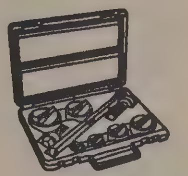
799-6708.	Model 6708	EACH	92.68

Model 6709. Voltage Tester 600 Volt.

799-6709.	Model 6709	EACH	66.32

Punches

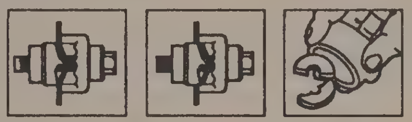
Slug-Buster® Punch Set



Slug-Buster knock out punch design splits slug in half so slug falls freely without effort. Works to 10 gauge mild steel. Punches clean, uniform holes in plastic and fiberglass as well. Use with manual, ratchet or hydraulic drivers. Model 7238SB includes ratchet.

799-7235.	7235BB. $\frac{1}{2}$"-$1\frac{1}{4}$" Conduit Size	EACH	141.25
799-7237.	7237BB. $1\frac{1}{2}$"-2" Conduit Size	EACH	139.60
799-7238.	7238SB. $\frac{1}{2}$"-2" Conduit Size	EACH	280.84

Slug Buster® Punches



- **Each Unit Includes Punch, Die And Draw Stud**
- **Splits Slugs For Easy Removal**
- **Use Manually With Greenlee Ball Bearing Draw Studs Or With Greenlee Ratchet Or Hydraulic Drivers**

799-2030.	7211BB-$\frac{1}{2}$. $\frac{1}{2}$" Punch Unit	EACH	30.52
799-2035.	7211BB-$\frac{3}{4}$. $\frac{3}{4}$" Punch Unit	EACH	45.66
799-2040.	7211BB-1. 1" Punch Unit	EACH	52.22
799-2045.	7211BB-$1\frac{1}{4}$. $1\frac{1}{4}$" Punch Unit	EACH	56.66
799-2038.	7211BB-$1\frac{1}{2}$. $1\frac{1}{2}$" Punch Unit	EACH	72.10

Round Punches

Model 730. Round hole punches for use in 16 gauge mild steel. With manual drive draw studs.

799-3212.	$\frac{1}{2}$"	EACH	24.02
799-3216.	$\frac{9}{16}$"	EACH	27.98
799-3214.	$\frac{5}{8}$"	EACH	27.98
799-3218.	$\frac{11}{16}$"	EACH	29.17
799-3220.	$\frac{3}{4}$"	EACH	29.17
799-3222.	$\frac{13}{16}$"	EACH	29.17
799-3224.	$\frac{7}{8}$"	EACH	26.30
799-3226.	$\frac{15}{16}$"	EACH	27.98
799-3228.	1"	EACH	33.69
799-3230.	$1\frac{1}{6}$"	EACH	33.69
799-3238.	$1\frac{1}{4}$"	EACH	33.07
799-3239.	$1\frac{5}{16}$"	EACH	33.69
799-3240.	$1\frac{3}{8}$"	EACH	45.24
799-3242.	$1\frac{1}{2}$"	EACH	51.39
799-3243.	$1\frac{5}{8}$"	EACH	57.75
799-3246.	$1\frac{3}{4}$"	EACH	63.10
799-3248.	2"	EACH	77.54
799-3249.	$2\frac{1}{8}$"	EACH	81.79
799-3250.	$2\frac{1}{4}$"	EACH	89.30
799-3251.	$2\frac{1}{2}$"	EACH	129.18
799-3252.	$2\frac{3}{4}$"	EACH	182.75

Model 730M. Meter punch. **Hole Size:** $2\frac{25}{32}$".

799-3254		EACH	186.41

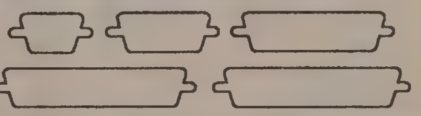
Model 60246. $1\frac{7}{32}$" punch for oil tight control units.

799-3255		EACH	55.20

Model 730-T. $3\frac{1}{8}$" punch for instrument panels.

799-7300		EACH	261.56

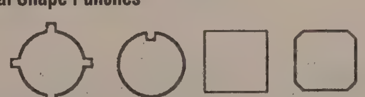
Electronic Connector Connector Panel Punches



Drill one $\frac{7}{16}$" hole and punch hole for front or rear mount D-subminiature connectors. (Cinch, ITT Canon DB-25P and DB-25S or equivalent). Manual or hydraulic operation. For 22-18 gauge mild steel and $\frac{1}{8}$" aluminum.

799-0229.	229. 9 Pins	EACH	390.44
799-0231.	231. 15 Pins	EACH	377.84
799-0275.	RS-232. 25 Pins	EACH	390.44
799-0234.	234. 37 Pins	EACH	407.24
799-0238.	238. 50 Pins	EACH	407.24

Special Shape Punches



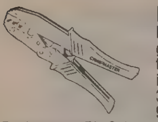
For custom size punches and dies, contact your local Allied sales office.

Power Finder™ Closed Circuit Tracer

- **Identify Breakers and Fuses**
- **Trace Wiring in Walls, Under Floors, and Underground**
- **Trace Conduit**
- **Finds Shorts to Ground**

799Q2007.	Model 2007	EACH	390.69

Stripping and Crimping Tools



IDEAL Crimpmaster™ Crimp Tools

Full cycle, compound leverage and triple ratcheted to give exact precision to every crimp connection. All the dies in the Crimpmaster™ Series are interchangeable.

30-506. IDEAL Crimpmaster™ Crimp Tool Frame.
954-0506. 30-506. .... **EACH 35.99**

Replacement Die Sets
30-576. RG174 Mini 59 BNC/TNC Connectors (Hex, 0.178, 0.128, 0.068).
988-5030. 30-576 .... **EACH 20.95**
30-577. N-Series and RG8/11 Connector s (Hex, 0.429, 0.100, 0.080).
988-5035. 30-577 .... **EACH 20.95**
30-578. RG59, RG6, and 8281 50 and 75 Ω cables (Hex, 0.324, 0.255, 0.068, 0.042).
988-5040. 30-578 .... **EACH 20.95**
30-579. 22-10 AWG insulated terminals/color coded nests.
988-5045. 30-579 .... **EACH 20.95**
30-581. RG58, RG59/62 BNC/TNC coax connectors (Hex, 0.255, 0.213, 0.068).
988-5050. 30-581 .... **EACH 20.95**
30-582. RG59, RG6 F-type CATV connectors (Hex, 0.350, 0.320, 0.255).
988-5055. 30-582 .... **EACH 20.95**
30-586. 22-12 AWG non-insulated open barrel connectors, commercial type.
988-5060. 30-586 .... **EACH 20.95**
30-591. Plenum and teflon cables RG58 and 59 (Hex, 0.213, 0.190, 0.68, 0.042).
988-5065. 30-591 .... **EACH 20.95**

IDEAL Crimpmaster™ Universal Modular Crimp Tools

IDEAL INDUSTRIES, INC. now offers a complete line of modular crimping tools and die sets which are compatible with the standard Crimpmaster™ series of tools for coax applications. Now you can have one style crimp frame and can include coax dies or modular dies in the same crimp tool frame.

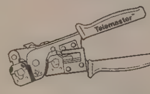
30-520. Universal RJ11 2, 4 and 6 position crimp tool for AMP RJ-11 modular plugs.
988-5070. 30-520 .... **EACH 69.00**
30-521. Universal RJ45 8 position crimp tool for AMP RJ45 modular plugs.
988-5075. 30-521 .... **EACH 69.00**
30-522. Universal RJ45 8 position crimp tool for keyed or non-keyed modular plugs.
988-5080. 30-522 .... **EACH 69.00**
988-5085. 30-523. Universal RJ45 10 position crimp tool .... **EACH 69.00**
30-524. Universal RJ11 crimp tool for 2, 4 or 6 position modular plugs.
988-5090. 30-524 .... **EACH 69.00**
30-525. Universal RJ11 crimp tool for DEC MMJ 6 position modular plugs with an off-set release tab.
988-5095. 30-525 .... **EACH 68.18**

IDEAL PremierMaster™ Crimp Tools

The IDEAL PremierMaster™ crimp tool is designed to give maximum comfort and reduce operator fatigue. The ergonomical design and the smaller size of the full cycle compound leverage frame allows operators with small hands to make crimps to meet MS39012 and UL standards.

954-3622. 28-500. IDEAL PremierMaster™ Crimp Tool Frame .... **EACH 58.80**
Replacement Die Sets
28-810. 24-14 AWG open barrel contact commercial-type pins and sockets.
954-6010. 28-810 .... **EACH 47.97**
28-812. 30-18 AWG open barrel D-sub RS232 pins and sockets.
954-6112. 28-812 .... **EACH 48.95**

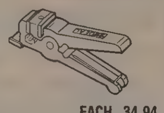
IDEAL Telemaster™ Telephone Tool



Multi-function telephone tool crimps, cuts and strips for easy on-the-job one tool application.

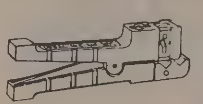
30-496. Tool for RJ11 (1, 2, 3 pair) and RJ-45 (4 pair) plugs (black handles).
988-3016. 30-496 .... **EACH 50.78**
30-497. Tool for RJ-45 (4 pair) and DECconnect MMJ (RJ-11, 3 pair) (blue handles).
954-3018. 30-497 .... **EACH 50.78**
30-498. Tool for RJ-11 (1, 2, 3 pair) and DECconnect MMJ (RJ-11, 3 pair) (red handles).
954-3020. 30-498 .... **EACH 50.78**
30-499. Tool for RJ-22 (handset) and RJ-11 (1, 2, 3 pair) (yellow handles).
954-3019. 30-499 .... **EACH 50.78**
LB 1747. Replacement cut and strip blade set for 30-496, 30-497, 39-499 and/or 30-498.
988-5600. LB 1747 .... **EACH 8.55**

ProAx Coax Strippers



Adjustable coax wire strippers allow blade adjustment for 2 or 3-step stripping of RG-58, RG-59/62, RG-8281, Twinax, RG-6 or RG-8/11 coaxial cable. Specific adjustments needed for each cable size.

954-3678. 45-520. For BNC and TNC connectors .... **EACH 34.94**
954-3682. 45-526. For F-Type connectors .... **EACH 34.94**
954-3641. 45-528. For N-Series Ethernet connectors .... **EACH 34.94**



Coax Cable Stripper

These lightweight, compact strippers are inexpensive and simple to operate. The adjustable blades can be set for any depth to help assure nick-free strips on a variety of coaxial cable up to 9/16" in diameter. Also used for shielded twisted-pair wire, tightly wrapped stranded cables, CATV cable, CB antenna cable, SO, SJ, SJT, and other types of flexible power cords.

988-4562. 45-162. Up to 1/8" O.D. (Gray) (RJ174, RG187) .... **EACH 20.19**
45-163. 1/8" to 7/32" O.D. (Blue) (RG58, CB Antenna Cable).
988-4563. 45-163 .... **EACH 20.53**
988-4564. 45-164. 1/4" to 9/16" O.D. (Blue) (RG8) .... **EACH 35.65**
45-165. 3/16" to 5/16" O.D. (Black) (RG59, CATV Cable).
988-4565. 45-165 .... **EACH 20.19**
L-9225. Replacement Blade Set (consisting of 3 straight blades and one round blade) for 45-162, 45-163 and 45-165.
988-9225. L-9225 .... **EACH 5.40**
L-9226. Replacement Blade Set for 45-164.
988-9226. L-9226 .... **EACH 6.45**

IDEAL Cyclops® Data Cable Stripper

Fast, easy removal of outer sheath insulations (PVC and Plenum types) from all UTP, STP and multicore cables up to 11 mm in diameter.

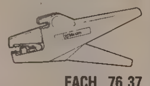
954-1009. 45-514 .... **EACH 39.50**

IDEAL Toggle® Coax Stripper

Select from a variety of IDEAL Toggle® Tools for stripping Ethernet, Thinnet, RG62 or RG59 coax cable and other cable sizes. Each tool does 2 or 3 step strips with no adjustment.

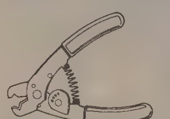
954-1006. 45-516. For Ethernet (Thicknet).... **EACH 39.48**
954-1001. 45-517. For RG59 .... **EACH 39.48**

Maxim Wire Stripper



Self-adjusts to different wire sizes and insulation densities. Strips 10-26 AWG solid or stranded wires. Strip lengths adjustable from 1/8" to 3/4".

954-4532. 45-327. Maxim Wire Stripper .... **EACH 76.37**
988-5610. LA-2524. Replacement Blade Set Cartridge .... **EACH 30.28**

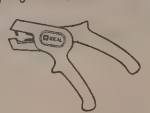


V-Notch Stripper

This handy tool strips and cuts solid and stranded copper and aluminum wire from 10-28 AWG. It features a convenient dial-type adjustment.

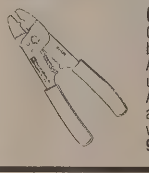
954-4502. 45-100. Without spring .... **EACH 6.18**
954-4501. 45-101. With spring .... **EACH 7.08**

IDEAL Grip-N-Strip™ End Stripper



This handy tool features self-adjusting stripping blades. Strips 12 AWG solid through 20 AWG stranded PVC insulated wire, including U.S. type THHN and THWN wire.

954-3656. 45-227T .... **EACH 33.04**

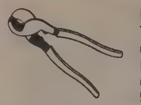


Combo Tool

One tool performs four functions — wire stripping, bolt cutting, crimping, and wire cutting. Strips 8-20 AWG solid and 10-22 AWG stranded wire. Cuts unhardened 4-40, 6-32, 8-32, 10-24 and 10-32 bolts. Accurate crimping of both bare and insulated terminals as well as IDEAL's 30-410 crimp sleeves. Anvil-type wire cutting 10 AWG solid to 22 AWG stranded wire.

954-3028. 30-428 .... **EACH 27.27**

Cutting Tools



Cable Cutter

The hardened, high-grade carbon-steel cutting edges of this tool are precision ground to give clean cuts with minimum cable distortion. Cuts 2/0 aluminum and copper. Not recommended for steel or ACSR.

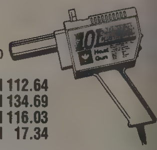
988-3552. 35-052. 9½" Cable Cutter .... **EACH 34.45**

Round Cable Cutter

Round cable and wire cutter cuts coaxial cable up to RG9U, multi conductor cable up to .500" and solid or stranded wire up to #8 AWG.

954-3685. 35-051 .... **EACH 23.08**

101 PLUS Heat Gun



Designed for smaller target areas. Perfectly suited to the unique requirements of electronic assembly.

954-4601. 46-013. 120 V, 60 Hz, 4.5 A .... **EACH 112.64**
954-4602. 46-113. With ESD Case, 120 V .... **EACH 134.69**
954-4603. 46-014. 250 V, 50/60 Hz, 2.0 A .... **EACH 116.03**
954-4604. 46-105. Heat Gun Stand .... **EACH 17.34**

Nozzles
988-0921. 46-921. Green, 325 Watts, 1110 BTU, 600°-800°F .... **EACH 19.97**
988-4622. 46-922. Gold, 475 Watts, 1620 BTU, 800°-1000°F .... **EACH 19.97**
988-4623. 46-923. Green, 525 Watts, 1790 BTU, 1000°-1250°F ... **EACH 19.97**

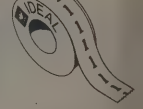
Wire-Marking Supplies

Wire-Marker Dispenser

Carry all the wire-marker legends needed for the job in one convenient, easy-to-use package. Measures 3" × 6".

42-301. Dispenser with 0-9 Legend Rolls.
988-4201. 42-301 .... **EACH 30.64**
988-4203. 42-303. Dispenser Only ..... **EACH 11.79**

Wire-Marker Dispenser Refill Rolls



A range of handy refill rolls for the IDEAL Wire-Marker Dispenser. **Temperature Range:** –40°F-266°F.

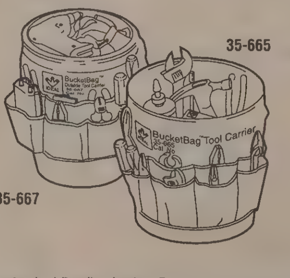
988-4239. 42-399. 0-9 .... **PER PK./10 20.33**
988-4240. 42-400. 0 .... **PER PK./10 20.33**
988-4241. 42-401. 1 .... **PER PK./10 20.33**
988-4242. 42-402. 2 .... **PER PK./10 20.33**
988-4243. 42-403. 3 .... **PER PK./10 20.33**
988-4244. 42-404. 4 .... **PER PK./10 20.33**
988-4245. 42-405. 5 .... **PER PK./10 20.33**
988-4246. 42-406. 6 .... **PER PK./10 20.33**
988-4247. 42-407. 7 .... **PER PK./10 20.33**
988-4248. 42-408. 8 .... **PER PK./10 20.33**
988-4249. 42-409. 9 .... **PER PK./10 20.33**

Wire-Marker Booklets

Include plastic-impregnated cloth markers which resist abrasion, moisture, dirt and oil. 1-12" markers are perforated and can be separated into half-length sizes. **Temperature Range:** –40°F-150°F.

988-4401. 44-101. 45 Each: 0-9 .... **EACH 12.01**
988-4402. 44-102. 10 Each: A-Z, 0-15, +, –, / ... **EACH 12.01**
988-4403. 44-103. 10 Each: 1-45 .... **EACH 12.01**
988-4404. 44-104. 10 Each: 46-90 .... **EACH 12.01**
988-4405. 44-105. 150 Each: 1, 2, 3 .... **EACH 12.01**
988-4406. 44-106. 150 Each: A, B, C .... **EACH 12.01**
988-4407. 44-107. 150 Each: T1, T2, T3 .... **EACH 12.01**
988-4408. 44-108. 150 Each: L1, L2, L3 .... **EACH 12.01**
44-109. 6 Each: 1-15; 4 Each: 16-90; 2 Each: A-Z, +, –, /, 0.
988-4409. 44-109 .... **EACH 12.01**
44-110. 45 Each: 1, 2, 3, A, B, C; 30 Each: T1, T2, T3, L1, L2, L3.
988-4410. 44-110 .... **EACH 12.01**
44-111. 45 Each: +, –, AC, DC. 33 Each: POS, NEG, GND; 27 Each: NEUT; 21 Each: SPARE, BLANK.
988-4411. 44-111 .... **EACH 12.01**

Tool Carriers



— NEW —

IDEAL BucketBag™ Tool Carriers

Two styles of 11½" deep bags fit perfectly over the rim of a standard 5-gallon bucket. Forty-three pockets on the IDEAL BucketBag™ Tool Carrier handle all your tool storage needs. Thirty-six pleated outside pockets and seven inside tool storage pockets. Twenty-two pleated outside pockets on the IDEAL Outside BucketBag™ Tool Carrier allows completes access to bucket interior without interference. Rugged nylon polyester construction assures lasting durability.

954-3530. 35-665. IDEAL BucketBag™ tool carrying bag with forty-three inside/outside pockets .... **EACH 26.99**
954-3540. 35-667. IDEAL Outside BucketBag™ Tool Carrying Bag .... **EACH 19.99**

IDEAL Divider Pouch™ Small Parts Bag

Available in either canvas or nylon polyester. Six internally divided pockets provide ample capacity for small parts, 5" depth. Five bag colors separate and differentiate parts storage for easy job site identification. Outside drawstring allows closing of pouch, protecting contents from spillage. Bags are sized to stack in 5-gallon buckets.

954-3460. 35-653. Blue Canvas .... **EACH 21.99**
954-3470. 35-654. Yellow canvas .... **EACH 21.99**
954-3480. 35-655. IDEAL blue polyester .... **EACH 15.99**
954-3490. 35-656. Yellow polyester .... **EACH 15.99**
954-3500. 35-657. Standard dark blue polyester .... **EACH 15.99**
954-3510. 35-658. Orange polyester .... **EACH 15.99**
954-3520. 35-659. Black polyester .... **EACH 15.99**

IDEAL Tool Porter™ Tool Bags

Large capacity bag (10" D × 17" L × 6¼" W) provides ample storage capacity. Rugged zipper closure helps prevent tool loss. Nineteen outside pockets offer easy access to commonly used hand tools and supplies. Reinforced bottom increases durability and ease of carrying. Cooler compartment in IDEAL Tool Porter™ Model 35-416 can be easily removed. Shoulder straps are rated to handle 40 lbs. of equipment. Straps include a "quick release" buckle and can be completely removed from tool bag if desired.

954-3350. 35-415. With shoulder strap. Natural Color .... **EACH 52.31**
954-3360. 35-416. With shoulder strap and 9" high cooler. Blue .... **EACH 39.22**
954-3370. 35-417. With shoulder strap. Blue .... **EACH 30.89**

IDEAL Tool Carrier™ Natural Canvas Bag

Compact tool bag measures 7½" D × 14¾" L × 5¾" W. Velcro® closure secures contents of bags from loss or spillage. Eighteen stitched, outer pockets provide quick access to small tools, parts and personal items. Twelve pockets are 2⅓" W × 5⅞" D and six are 4⅔" W × 7⅜" D. Natural canvas color.

954-3440. 35-533 .... **EACH 37.99**

IDEAL Electrician's™ Carrier Tool Bag

Made from heavy-duty (18 oz.) canvas, this tool bag is designed for convenient storage and portability of commonly used tools and supplies. Wide inner compartment — (10" D × 17" L × 6¼" W) with open top provides easy access to bag contents. Thirty stitched outer pockets allow easy access to frequently needed tools.

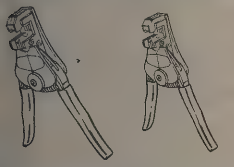
954-3450. 35-534 .... **EACH 46.99**

Strippers

IDEAL Coax Stripmaster® Wire Stripper

Speeds wire stripping of RG-6, RG-58, RG-59 or RG-62 coaxial cable. Designed with spring action stripping grips. Strips in one motion. Knife type blades feature multiple hole diameters sized for removal of outer and inner insulations.

954-3659. 45-262. RG6 with Blade LB-740	EACH	30.30
954-3660. 45-264. RG58 with Blade LB-742	EACH	29.89
954-3661. 45-265. RG59 with Blade LB-743	EACH	30.30
954-3662. 45-266. RG62 with Blade LB-744	EACH	30.26



IDEAL Stripmaster® and Stripmaster® Lite Wire Strippers

The IDEAL Stripmaster® and Stripmaster® Lite wire strippers have knife-type blades. One step stripping action reduces stripping time for increased productivity and reduced operator fatigue.

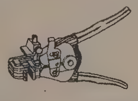
IDEAL Stripmaster®

988-4592. 45-092. 10-22 AWG with Blade L-4421	EACH	28.68
988-4593. 45-093. 14-22 AWG with Blade L-4422	EACH	30.55
988-4597. 45-097. 16-26 AWG with Blade L-4994	EACH	30.64

IDEAL Stripmaster® Lite

988-4509. 45-671. 16-22 AWG with Blade LB-1001	EACH	35.65

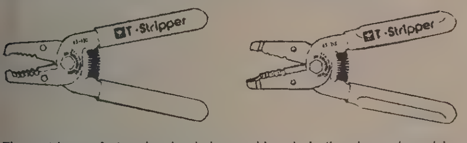
IDEAL Custom Stripmaster®



Precision, counter-bored, die-type blades meet Military Stripping Specifications. Strip solid and stranded wire and assure nick-free wire stripping.

988-4586. 45-186. 10-14 AWG with Blade L-5559	EACH	154.88
988-4587. 45-187. 16-26 AWG with Blade L-5560	EACH	150.98
988-4588. 45-188. 26-30 AWG with Blade L-5561	EACH	150.98

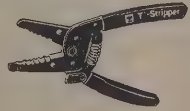
IDEAL T®-Strippers and Premium T®-Strippers



These strippers feature looping holes, cushioned plastic grips and precision, form-ground, knife-type blades. The IDEAL Premium T®-Strippers are designed for greater operator comfort and feature a versatile plier-type nose.

954-4520. 45-120. Standard T®-5 (10-18 AWG Solid)	EACH	12.12
954-4521. 45-121. Standard T®-6 (16-26 AWG Stranded)	EACH	11.97
954-4522. 45-125. Standard T®-7 (22-30 AWG Solid)	EACH	11.97
954-4525. 45-124. Standard T®-8 (8-16 AWG Stranded)	EACH	11.98
954-4526. 45-215. Premium T®-5 (10-18 AWG Solid)	EACH	16.02
954-4527. 45-216. Premium T®-6 (16-26 AWG Stranded)	EACH	15.95
954-4528. 45-217. Premium T®-7 (22-30 AWG Solid)	EACH	15.95
954-4529. 45-218. Premium T®-8 (8-16 AWG Stranded)	EACH	15.95

IDEAL Super T®-Stripper, Static Dissipative Model



Designed specifically for the ESD/Electronics Market. ESD comfort grips disperse static charge build-up in the tool through the operator to ground. Operator must be grounded via wrist strap or other grounding device.

Type 45-316. Super T®-6 with Static Dissipative Grips (16-26 AWG Stranded).

954-3670. 45-316	EACH	25.62

Type 45-317. Super T®-7 with Static Dissipative Grips (22-30 AWG Solid).

954-3671. 45-317	EACH	25.62

7-In-1 Stripper

This 7-function tool strips 6-16 AWG solid and 8-18 AWG stranded wire, cuts stranded, solid, Romex and U.F. wire up to 6 gauge, crimps bare and insulated terminals for 10-22 AWG wires sizes, cuts unhardened, commonly sized bolts and screws, gauges solid and stranded wire, loops wire, and reams and de-burrs conduit.

954-3029. 45-777. 7-In-1 Stripper	EACH	25.53

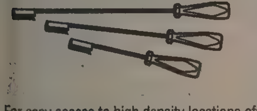
IDEAL Safe-T-Grip® Fuse Pullers

This tool provides maximum efficiency and convenience when removing or replacing cartridge-type fuses. Constructed of fully-insulated, reinforced, high-dielectric glass filled polypropylene.

988-3401. 34-001. MIDGET for small fuses, 9/32" to 1/2" dia. 5" long.	EACH	5.06
988-3402. 34-002. POCKET for 0-100 A, 250 V, 600 V, 7 1/2" long	EACH	9.48

Type 34-003. GIANT for 31-600 A, 250 V, 31-400 A, 600 V, 11 3/4" long.

988-3403. 34-003	EACH	23.30

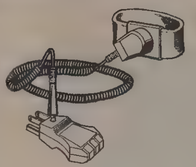


BNC/TNC Connector Removal Tools

For easy access to high density locations of connectors.

954-0009. 35-041. 8" Overall Length, 4 1/2" Blade Length	EACH	21.78
954-0007. 35-042. 12" Overall Length, 8" Blade Length	EACH	21.78
954-0008. 35-043. 16" Overall Length, 12" Blade Length	EACH	21.78

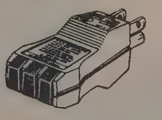
IDEAL Stat-Gard™ ESD Grounding System



This unique static prevention system consists of a grounding plug, wrist strap and lead set. It continuously drains static charges from a person's body. The individual is able to handle static-sensitive components without fear of expensive electro-static discharge (ESD) damage.

988-6146. 61-046. Includes 61-038, 61-044, 61-039	EACH	55.83
988-6138. 61-038. Grounding Plug	EACH	28.76
988-6143. 61-043. Medium Wrist Strap	EACH	11.55
988-6144. 61-044. Large Wrist Strap	EACH	10.73

Testers

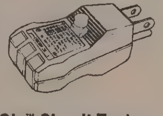


E-Z Check® Receptacle Circuit Tester

Used for fast, simple testing and fault identification in 3-wire, 125 V circuits, without probes or meters. Tests for open ground, reverse polarity, open hot, open neutral, hot and ground reversed, hot on neutral, and hot open.

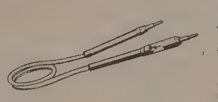
954-6135. 61-035	EACH	15.00

E-Z Check® Plus GFI Circuit Tester



Checks for correct wiring, open ground, reverse polarity, open hot, open neutral, hot on neutral, hot and ground reversed with open hot and ground fault interruption.

988-6151. 61-051	EACH	29.07

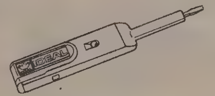


IDEAL Test-Glo™ Circuit Tester

This industrial-quality tester is designed to check electrical circuits, spark-plugs, motors, fuses, etc. For use with 80-660 V AC or DC.

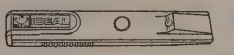
954-3644. 61-040	EACH	17.63

IDEAL Vol-Test™ Pocket Tester



This compact pocket tester performs continuity, polarity and voltage testing to verify electrical connections. Also features a handy screwdriver tip.

954-3686. 61-050	EACH	10.78

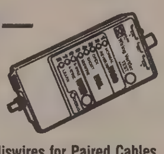


IDEAL Powr-Glo™ Pocket Tester

Checks voltage from 12-440 V AC or DC without contact on electrical lines.

954-3688. 61-060. Powr-Glo™ Electronic Voltage Detector	EACH	15.25
954-3689. 61-061. Powr-Glo™ Audible	EACH	22.17

IDEAL Wiring Verifier Patch Cable Tester — *NEW* —



Applications

- **Patch Cables**
- **Line Cords**
- **Jumper Cables**
- **Interface Cables**
- **Coaxial Cables**

- **Single Tester Identifies Shorts, Opens, and Miswires for Paired Cables and Opens or Shorts for Coaxial Cables for Versatile on the Job Usage**
- **Learn Mode Allows Wiring Schematics, Including EIA/TIA 568 A/B, USOC, 10Base-T, Token Ring, and TP-PMD, As Well As Custom Configurations to Be Quickly and Easily Learned for Verification**
- **High Intensity LED Indicators Provide Clear Visual Analysis of Cable Condition**
- **Multi-Color Mylar Legend Plate Makes Cable Status Check Fast and Easy**
- **Optional Audible Signal Confirms Completion of Test**
- **Automatic Off Feature Turns Unit Off After a Period of Inactivity and Prevents Unnecessary Battery Discharge**
- **Premium Grade RJ45 Jacks and Coaxial Port Insures Long Life**
- **Sealed Push Buttons Provide Dust and Moisture Resistant Protection for Circuit Board**
- **Durable ABS Case Provides Impact Protection**

954-3550. 62-050. IDEAL Wiring Verifier	EACH	115.38
954-3560. 62-055. IDEAL Wiring Verifier Pouch	EACH	9.99

IDEAL Wire-Nut® Wire Connectors

The Original IDEAL Wire-Nut® wire connectors continue to set industry standards. Twist-on quickly and easily. Fixed, square-wire spring creates its own threads as it draws the conductors all the way into the connector.

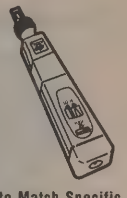
988-3071. 30-071. Gray	PER PK./100	5.67
988-3072. 30-072. Blue	PER PK./100	6.30
988-3073. 30-073. Orange	PER PK./100	7.13
988-3074. 30-074. Yellow	PER PK./100	8.36
988-3076. 30-076. Red	PER PK./100	12.07

Basic Coax Termination Kit — *NEW* —

Contains tools to cut, strip, trim, and crimp a variety of coaxial cable terminations with additional storage space available for expansion of replacement dies and connectors. Included is an IDEAL Crimpmaster™ full cycle ratchet crimping tool for BNC RG58 and RG59 connectors, a round cable cutter, a coaxial center conductor trimmer, and coaxial wire stripper for RG58, RG59 and RG6 cable.

954-3300. 33-210	EACH	163.15

IDEAL Punchmaster™ Punch Down Tool — *NEW* —



- **Neoprene Rubber Cushioned Grip Surfaces**
- **Convenient Storage Compartment for Spare Blades**
- **Precision Blades Spread the Terminal Prongs to Allow the Insertion of the Wire into the Contact, Providing a "Gas Tight" Termination That Resists Corrosion; The Blade Finishes the Job in the Same Motion By Neatly Cutting Off Excess Wire**
- **High/Low Actuation Setting Can Be Changed to Match Specific Termination Requirements or Operator Preferences**
- **IDEAL Sure-Lock™ Blade Holder Provides Fast, Easy Blade Changes and Prevents Blade Pull-Out During Operation**
- **Adjustable Spring Loaded Mechanism in the Tool Body Releases the Driving Force with Sudden Impact Completing the Job Automatically**

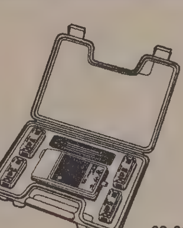
Insert and cut cable terminations effortlessly.

954-3380. 35-484. Punch Down Tool Body Only	EACH	53.50
954-3390. 35-486. Punch Down Tool with 110 Blade	EACH	63.00
954-3400. 35-488. Punch Down Tool with 66 Blade	EACH	63.00
954-3410. 35-490. Punch Down Tool Pouch Only	EACH	8.99
954-3420. 35-496. 110 Replacement Blade	EACH	18.99
954-3430. 35-498. 66 Replacement Blade	EACH	18.99

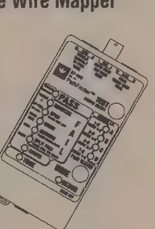
6

Pathfinder — *NEW* —

Combination Wiring Tester and Remote Wire Mapper



33-812



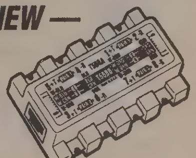
62-080

- **Quickly and Reliably Tests Installed Twisted-Pair, Coax Cabling, USOC and Other LAN-Based Cabling**
- **Evaluates One- to Four-Pair Cabling for Reversals, Opens, Shorts, Miswires and Split Pairs**
- **Use to Test T568A, T468B, 10BASE-T, TP-PMD, Token Ring and USOC Wiring Schemes**
- **Will Test Coax Cabling for Opens and Shorts**
- **Learn Mode Will Learn and Test Installed Custom or Nonstandard Wiring Configurations**
- **Features Tone Generation on Either Coax or Twisted-Pair Wiring**
- **Master and Four Remote Units (A, B, C and D) Are Used to Test Twisted-Pair Wiring**

The Pathfinder Kit includes master unit, four remotes (A, B, C and D), five modular cords wired straight through and 500 Ω terminator packaged in a gray carrying case. Order 62-080 for the Pathfinder coax/twisted-pair tester only. Remotes A-D also are available separately. One year warranty.

954-3700. 33-812. Pathfinder Kit	EACH	265.00
954-3710. 62-080. Tester Only	EACH	134.59
954-3720. 62-081. Remote Unit A	EACH	31.99
954-3730. 62-082. Remote Unit B	EACH	31.99
954-3740. 62-083. Remote Unit C	EACH	31.99
954-3750. 62-084. Remote Unit D	EACH	31.99

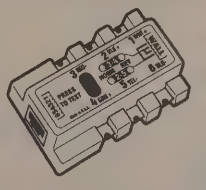
Data8™ Modular Test Adapter — *NEW* —



- **Data Wired Modular Unit for Data Applications**

Ideal's Data8™ Modular Test Adapter with straight-through data wiring construction allows testing of T568A, T568B, 10BASE-T, Token Ring and TP-PMD systems. Use it with tone generation, butt-in test sets and other test devices to provide access to data lines without service interruption. Put tone on a line to trace lines. An easy-to-read label indicates individual conductors and pins defined with number, color and polarity identifications.

954-3760. 62-098. Data8™ Adapter	EACH	31.99



Smart6™ Modular Tester — *NEW* —

- **Telco Wired Modular Unit for Voice Circuit Applications**

Smart6™ is a reverse-wired modular adapter designed especially for voice circuit testing. Use it with a tone probe or tone generator to put tone on a line to trace lines. Four bright LEDs display power, polarity, ac voltage conditions, jack addresses and incoming call identification for typical on-the-job applications. A test button tests one or two paris (pins 4-5 and/or 3-6) for the presence of voltage on the line. It allows access to the circuit as a modular test adapter without disrupting service. Ring detection tests phone number and line.

954-3780. 62-096. Smart6™ Tester	EACH	34.99

Contact Insertion and Removal Tool Kits

Includes
A4600
A4599
A4598

KA-260 Contact Insertion Kit

Includes
R9461
R4602
R4601

KR-260 Contact Removal Kit

These kits provide invaluable assistance to the technician. They include the specialized tools required for the insertion and removal of the most popular connectors, all contained in a small handy case. Designed for use with subminiature connectors conforming to MIL-C-26482, MIL-C-26500, MIL-C-26518, and MIL-C-81703 standards, these kits include the most common and popular tools in the industry. They are completely compatible with "original manufacturer" tooling from all major suppliers such as AMP, Amphenol, Bendix, Burndy, Cannon and Deutsch and will work with virtually any connector of this type. The KA260 Insertion Kit includes the three most popular sized insertion tools for contact sizes 12 (yellow), 16 (blue) and 20 (red). The KR-260 Extraction Kit includes the three most popular sized extraction tools for contact sizes 12 (yellow), 16 (blue) and 20 (red). Both kits are packaged in a durable leather padded zipper case and have been carefully designed to save both time and effort, plus ensure efficient, on-the-job operation.

Stock No.	Mfr.'s Type	Contact Size	EACH	
			1-3	4-Up
830-5000	KA-260	12, 16, 20	243.78	225.03
830-5001	KR-260	12, 16, 20	267.75	247.15

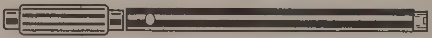
KA-260 Insertion Tool Kit Tools

Stock No.	Mfr.'s Type	MIL STD	Color Code	Contact Size	EACH
830-4600	A-4600	M81969/17-05	Yellow	12	81.26
830-4599	A-4599	M81969/17-04	Blue	16	81.26
830-4598	A-4598	M81969/17-03	Red	20	81.26

KR-260 Removal Tool Kit Tools

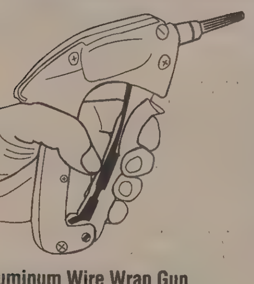
Stock No.	Mfr.'s Type	MIL STD	Color Code	Contact Size	EACH
830-9461	R-9461	M81969/19-02	Yellow	12	89.25
830-4602	R-4602	M81969/19-01	Blue	16	89.25
830-4601	R-4601	M81969/19-06	Red	20	89.25

Hand Wrapping Tools



This wire wrap tool has a handle and shell, each covered with a sleeve of insulating material. It has a .073" diameter hole and .750" deep to accommodate a terminal, and a hole near the handle to facilitate removal of broken wires. It is used on terminals of wire spring relays, number 5 crossbar wire spring number group, and other components having similar terminals.

Stock No.	Mfr.'s Type	Western Electric P/N	Wire Gauge	EACH
830-2426	WDI-2426	#635B	24-26	88.40
830-2224	WDI-2224	#635A	22-24	88.40



Manual Quick-Wrap Gun, Bit and Sleeve

Hand operated wrapping gun uses interchangeable bits and sleeves. Bits conform to terminal height, width and wire size combinations. Sleeves selected to fit over the bit. Insulated to prevent shorting of adjacent connections. **Terminal Diameter × Depth:** .075" × .750" for wire gauge 24-26; .075" × .807" for wire gauge 22-24.

Lexan Wire Wrapping Gun
830-3501. Model WG-350L....................**EACH 79.00**

Aluminum Wire Wrap Gun
830-3500. Model WG-350....................**EACH 199.99**

Quick-Wrap Bit

Stock No.	Mfr.'s Type	Wire Gauge	Wrap	EACH
830-2600	BW-2600	26	Regular	31.24
830-2428	BW-2224	22-24	Regular	27.33

Quick-Wrap Sleeve

Stock No.	Mfr.'s Type	Wire Gauge	Wrap	EACH
830-2429	SW-2426	24-26	Regular	16.25
830-2430	SW-2224	22-24	Regular	16.25

31-Piece Precision Tool Kit

These high quality tools were specifically designed for the servicing, adjusting, and trouble-shooting of complex electronic equipment. The special assortment makes it easy and economical for use in assembly work. The durable zipper leather case contains the following tools — three pliers, three screwdrivers, pen light, soldering iron and accessories, tweezer, two alignment tools, four spring hooks, inspection mirror, pocket and finger burnishers, IC extractor, spudger and trimpot tool.

830-0350. Model K-600. **1-3...EACH 203.32** **4-Up**....................**EACH 187.68**

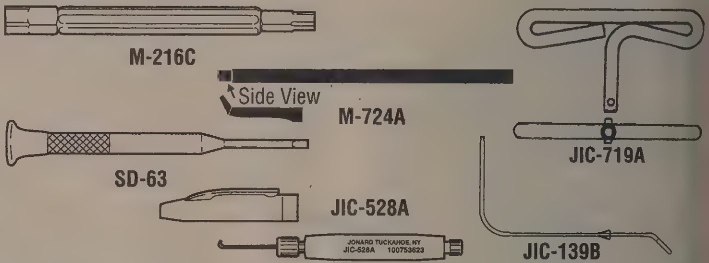
84-Piece Universal Tool Kit

Now, with just one tool kit, you can install, adjust, service and maintain central office systems (inside and outside plant), telecommunications systems, and a wide variety of instruments. You will also be able to perform precise general repair work in labs and service shops for all industries. No loss of time for lack of certain tools!

All tools are securely mounted in individual pockets in an extra heavy-duty, high impact polyethylene case, measuring 18" × 15" × 6". Wing and removable pallets provide easy access to ample space in bottom of case for additional tools and equipment. Comes with both combination and key locks. The kit includes — force gauge, eight pliers, insertion tool, extraction tool, wrapping tool, unwrapping tool, 12 screwdrivers, four nutdrivers, soldering iron, finger burnishers, lamp extractors circuit tester, two soldering accessories, pocket and angled burnishers, trimpot, hemostat, three alignment tools, four spring hooks, two needle files, nickel silver brush, precision oiler, wire extraction tool, thickness gauge set, five birchwood sticks, inspection mirror, IC extractor, parts holder box, six spring adjusters, two tweezers, spudger penlight and five wrenches

830Q0550. Model TK-500. **1-3**....................**EACH 1052.56**
4-Up....................**EACH 977.38**

Telecommunication Tools — *NEW* —



Type M-216C. Can socket wrench, double end, 3/8" and 7/16" hex, plastic handle, 7" long. Used in placing fuses in cable terminals and connecting wires to fuses and binding posts. The walls on both sockets are thin enough so they can be used to work locking devices on most terminals and cabinets.
830-0566. Model M-216C....................**EACH 13.50**

Type M-724A Wire Extractor. Metal tool with insulated handle to remove wire from quickconnect clips and terminal blocks. 3/16" dia. × 5 1/2" long. **Slot Width:** .052".
830-0724. M-724A. Wire extractor. **1-9**....................**EACH 22.24**
10-Up....................**EACH 20.47**

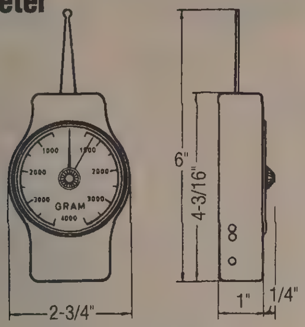
Type SD-63 Jeweler's Type Screwdriver. Precision screwdriver with swivel head, knurled body for ease of use. Solid blade is made of high quality hardened tool steel and is non-brittle. **Blade Width:** .100" × 4" overall length.
830-0063. SD-63. Jeweler's type screwdriver. **1-9**....................**EACH 7.65**
10-Up....................**EACH 7.06**

Type JIC-528A Key Slot Cleaner. Interchangeable two tools in one. One formed rod produced from music wire is held in place by a chuck, while other rod is stored in the pen barrel. Diameters of the rods are .024" and .035" thick. Used for cleaning and maintaining various mechanical devices. A popular use is cleaning out the key slots of the locks on coin collectors.
830-0528. JIC-528A. Key Slot Cleaner. **1-9**....................**EACH 23.21**
10-Up....................**EACH 21.42**

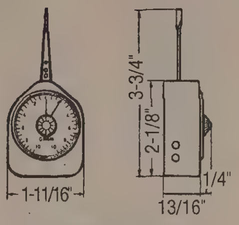
Type JIC-719A T Key Tool. A comfortable hand grip tool, produced from a formed metal rod containing a metal roll pin. Used to release the housing and door locking mechanisms of the No. 1A type coin telephone sets after first opening the locks with keys.
830-0719. JIC-719A. T key tool. **1-9**....................**EACH 3.83**
10-Up....................**EACH 3.53**

Type JIC-139B Coin Leveling Tool. Used for leveling coins in coin collectors when the coin receptacle becomes so full as to interfere with operation of collector. May also be used to measure the degree of fullness by means of calibrated scale and metal slider.
830-0139. JIC-139B. Coin leveling tool. **1-9**....................**EACH 23.21**
10-Up....................**EACH 21.42**

Dynamometer Tension Gauges



Large Gauge (Round Tip)



Small Gauge (Flat Tip)

These precision dial type gauges deliver accurate measurement of forces required to actuate relays and other sensitive mechanisms. Reading can be taken in both directions: clockwise and counter-clockwise. Maximum reading indicator moves with indicator when testing and remains at maximum force measured until reset. No need to look at dial hand while measuring, thus avoiding reading errors. Measuring springs are of hard tempered annealed beryllium copper. Dial is protected by breakproof glass. Each unit packaged in rigid, fitted case for protection. 0.1% accuracy. Dynamometer gauges are available in 2 sizes and 13 different ranges. Easy to use. Easy to read.

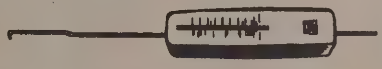
Small Gauges

Stock No.	Mfr.'s Type	Range In Grams	Graduation In Grams	EACH
830-0437	GD-1	0-10	0.25	162.52
830-0439	GD-3	4-35	1.00	162.52
830-0440	GD-5	6-50	1.00	162.52
830-0450	GD-10	10-100	2.50	162.52
830-0455	GD-15	15-150	5.00	162.52
830-0465	GD-25	30-250	10.00	162.52
830-0470	GD-30	40-350	10.00	162.52

Large Gauges

Stock No.	Mfr.'s Type	Range In Grams	Graduation In Grams	EACH
830-0490	GD-50	60-500	20.00	329.72
830-0500	GD-100	100-1000	25.00	329.72
830-0510	GD-200	200-2000	50.00	329.72
830-0520	GD-400	400-4000	100.00	345.95

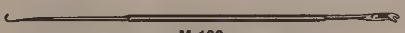
Economy Push-Pull Tension Gauges



- **These High Impact Polystyrene Cased Instruments Are Low Priced; Simplified in Construction Yet with Accuracies to 1 Graduation**
- **Ideal for Field Service Use, Tape Recorder Adjustments, for Schools and Many Other Applications Requiring Maintenance-Free Gauges**
- **Excellent Dial Readability with Bold Numbers Against Glare-Free Background; Gauges Are Graduated in Both Metric and Avoirdupois**
- **Size: 1$^1/_2$" Wide × 1" deep × 14$^1/_2$" Long Overall**

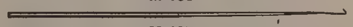
Stock No.	Mfr.'s Type	Avoirdupois Capacity	Metric Capacity	EACH
830-0433	GPP-8	8 oz. × .25 oz.	220 g × 5 g	88.23
830-0434	GPP-36	36 oz. × .5 oz.	1020 g × 20 g	88.23
830-0435	GPP-72	72 oz. × 1 oz.	2025 g × 25 g	88.23
830-0436	GPP-15	15 lbs. × 4 oz.	6800 g × 100 g	88.23

Alignment and Adjusting Tools

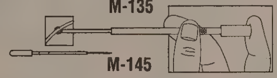


M-130

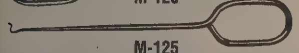
M-120



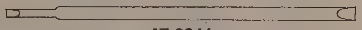
M-135



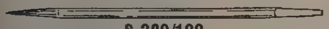
M-145



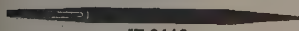
M-125



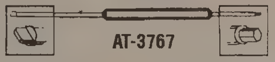
AT-6241



S-389/100



AT-3112



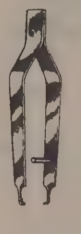
AT-3767

Stock No.	Mfr.'s Type	Size	EACH 1-9	EACH 10-Up
830-0620	M-120	Hook, spring; pull, 6"L	9.78	7.38
830-0625	M-125	Hook, spring; push, 6"L	9.78	7.38
830-0630	M-130	Hook, spring; pull and lifter, 8"L	12.85	10.04
830-3767	AT-3767	TRIMPOT 5"	1.78	1.65
830-0635	M-135	Hook, pull; for very fine springs, 7"L	9.27	8.55
830-0640	AT-3112	SPUDGER $^5/_{16}$" Dia. × 5$^1/_2$"L	5.75	5.25
830-0706	S-389/100	Orange Stick — $^3/_{16}$" Dia. × 7"L PK./100	32.74	29.45
830-0805	AT-6241	2 in 1 — 7" plastic alignment tool	1.53	1.41
830-1145	M-145	Captive Spring Hook	13.18	12.16

Extraction Tools

S-339

S-42

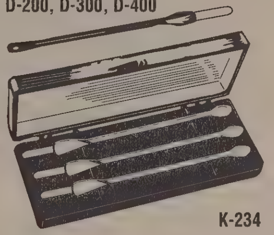


S-340

Stock No.	Mfr.'s Type	Description	EACH 1-9	EACH 10-Up
830-0710	S-339	Switchboard lamp extractor, inside dia. $^3/_8$", handle dia. $^1/_2$", length 4"	23.00	21.23
830-0715	S-42	Plier lamp cap, overall length 5"	50.83	46.92
830-0716	S-340	Extractor, tweezer type, overall length 3$^1/_2$"	13.09	12.08

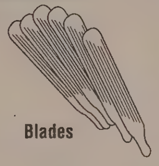
Burnishers

D-200, D-300, D-400



K-234

Pocket-Type

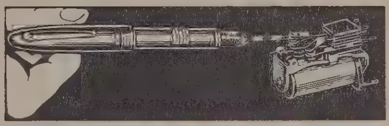


PB-3, PB-7, PB-3R

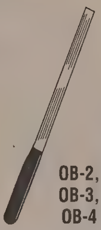
Blades

Rods

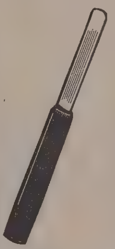
Penfile-Type



P-4, P-6



OB-1



OB-2, OB-3, OB-4

Blades

Diamfile, Diamond Cleaner-Burnishers for Contacts and Relays

Stock No.	Mfr.'s Type	Description	EACH 1-9	EACH 10-Up
830-0240	D-200	Coarse, two diamond faces, .019" thick, 6" long	42.67	39.39
830-0244	D-300	Medium, two diamond faces, .017" thick, 6" long	42.67	39.39
830-0248	D-400	Fine, single diamond face, .011" thick, 6 " long	42.67	39.39

Diamfile, Diamond Cleaner-Burnisher Kit

Stock No.	Mfr.'s Type	Description	EACH 1-9	EACH 10-Up
830-2340	K-234	Diamfile Kit (contains 1 D-200, 1 D-300 and 1 D-400)	128.01	118.16

Economy Burnishers

Stock No.	Mfr.'s Type	Description	EACH 1-9	EACH 10-Up
830-0418	OB-1/12	For fine contacts. Abrasive. .007" thick. 3$^1/_2$"L × $^3/_{16}$"W. Pkg./12	23.33	21.53
830-0419	OB-2/12	For extra sensitive points. Abrasive. .007" thick. 3$^1/_2$"L × $^1/_4$"W. Pkg./12	30.09	27.78
830-0420	OB-3/12	For general purpose use. Abrasive. .010" thick. 3$^1/_2$"L × $^1/_4$"W. Pkg./12	53.47	49.35
830-0421	OB-4/12	For industrial use. Abrasive. .020" thick 3$^1/_2$"L × $^1/_4$"W. Pkg./12	64.41	59.60

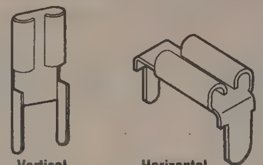
Pocket-Type Burnishers

Stock No.	Mfr.'s Type	Description	EACH 1-9	EACH 10-Up
830-0356	PB-3	Pen with 6 blades, .0035" thick	25.75	23.77
830-0357	PB-7	Pen with 6 blades, .0070" thick	25.25	23.30
830-0422	PB-3R	Pen with 6 blades, .0035" thick plus 6 abrasive rods	29.08	26.85
830-0211	B-3/25	Replacement blades for PB-3, .0035" thick. Pkg./25	29.08	26.85
830-0212	B-7/25	Replacement blades for PB-7, .0070" thick. Pkg./25	29.08	26.85

Penfile-Type Burnishers

Stock No.	Mfr.'s Type	Description	EACH 1-9	EACH 10-Up
830-0366	P-4	Penfile with 12 blades, $^1/_4$" wide, 1$^1/_4$" long, .007" thick	29.08	26.85
830-0370	P-6	Penfile with 12 blades, $^3/_{16}$" wide, 1$^3/_4$" long, .007" thick	29.08	26.85
830-0375	RB-4/25	Replacement blades for P-4, $^1/_4$" wide, Pkg./25	29.08	26.85
830-0377	RB-6/25	Replacement blades for P-6, $^3/_{16}$" wide, Pkg./25	29.08	26.85

Female PC Quick-Fit Terminals



Vertical Horizontal

Material: Brass, nickel plate.

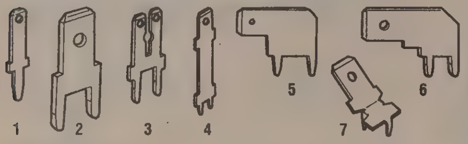
Vertical Terminals

Stock No.	Mfr.'s Type	Accepts Tab	PER PK./100
839-3255	3534	0.110" × 0.020"	8.25
839-3256	3544	0.110" × 0.032"	8.25
839-3257	3548	0.187" × 0.020"	17.50
839-3258	3551	0.187" × 0.032"	17.50
839-3259	3525	0.205" × 0.020"	8.25
839-3522	3522	0.205" × 0.032"	8.25
839-3260	3528	0.250' × 0.032"	8.25

Horizontal Terminals

Stock No.	Mfr.'s Type	Accepts Tab	PER PK./100
839-3261	3545	0.110" × 0.020"	22.50
839-3262	3549	0.110" × 0.032"	22.50
839-3263	3546	0.205" × 0.020"	23.45
839-3264	3550	0.205" × 0.025"	23.45
839-3265	3547	0.250" × 0.032"	24.60

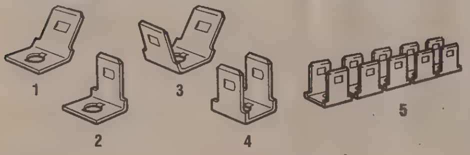
Male PC Quick-Fit Terminals



Material: Brass, tin plate.

Stock No.	Mfr.'s Type	Fig.	Terminal Size (In.)	PER PK./100
839-1267	1267	1	0.110 × 0.020	5.75
839-1211	1211	1	0.110 × 0.032	6.30
839-2402	1285	2	0.187 × 0.020	4.40
839-1212	1212	2	0.187 × 0.032	5.40
839-2403	1286	2	0.205 × 0.020	4.65
839-1213	1213	2	0.205 × 0.032	5.45
839-2404	1287	3	0.250 × 0.032 × 0.400	5.45
839-1289	1289	3	0.250 × 0.032 × 0.631	5.55
839-1281	1281	4	0.250 × 0.032	8.70
839-3289	4903	5	0.110 × 0.020	11.75
839-3290	4906	5	0.110 × 0.032	11.85
839-3291	4904	5	0.187 × 0.020	11.25
839-3292	4907	5	0.187 × 0.032	11.35
839-3293	4966	6	0.250 × 0.032 × 0.560	6.45
839-1266	1266	6	0.250 × 0.032 × 0.760	6.45
839-3294	4908	7	0.250 × 0.032	15.95

Male Quick-Fit Terminals — Rivet Mount



Material: Brass, bright finish.

45° and 90° Single Terminals

Stock No.	Mfr.'s Type	Fig.	Degree	Terminal Size (In.)	No. of Pairs	PER PK./100
839-3295	2004	1	45°	0.110 × 0.020	—	9.40
839-3296	1271	1	45°	0.187 × 0.020	—	9.40
839-3297	1280	1	45°	0.250 × 0.032	—	8.55
839-3298	2002	2	90°	0.110 × 0.020	—	9.40
839-3299	1261	2	90°	0.187 × 0.020	—	9.40
839-3300	1256	2	90°	0.250 × 0.032	—	4.45

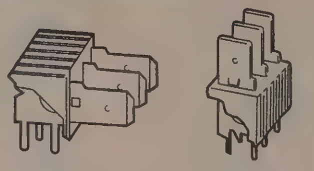
45° and 90° Dual Terminals — Brass, Bright Finish

Stock No.	Mfr.'s Type	Fig.	Degree	Terminal Size (In.)	No. of Pairs	PER PK./100
839-3301	2005	3	45°	0.110 × 0.020	—	9.80
839-3302	1263	3	45°	0.187 × 0.020	—	9.20
839-3303	1258	3	45°	0.250 × 0.032	—	10.25
839-3304	2003	4	90°	0.110 × 0.020	—	9.80
839-3305	1262	4	90°	0.187 × 0.020	—	13.45
839-3306	1257	4	90°	0.250 × 0.032	—	5.35

Multiple 0.250" × 0.032" Terminals

Stock No.	Mfr.'s Type	Fig.	Degree	Terminal Size (In.)	No. of Pairs	PER PK./100
839-3307	1005	5	—	0.250 × 0.032	2	27.75
839-3308	1006	5	—	0.250 × 0.032	3	30.40
839-3309	1007	5	—	0.250 × 0.032	4	35.85
839-3310	1008	5	—	0.250 × 0.032	5	32.10

Male Sturdi-Mount PC Quick-Fit Headers



Horizontal Vertical

Terminals: Brass or steel, tin plate. **Insulator:** Noryl, UL 94V-O.

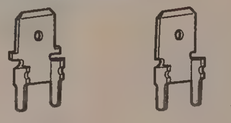
Horizontal .250" × .032" Headers

No. of Tabs	Brass			Steel		
	Stock No.	Mfr.'s Type	EACH	Stock No.	Mfr.'s Type	EACH
2	839-3266	7802	.78	839-3271	7822	.46
3	839-3267	7803	1.04	839-3272	7823	.69
4	839-3268	7804	1.16	839-3273	7824	.76
5	839-3269	7805	1.40	839-3274	7825	.95
6	839-3270	7806	1.54	839-3275	7826	1.05

Vertical .250" × .032" Headers

No. of Tabs	Brass Stock No.	Brass Mfr.'s Type	Brass EACH	Steel Stock No.	Steel Mfr.'s Type	Steel EACH
2	839-3276	7812	.78	839-3281	7832	.46
3	839-3277	7813	1.04	839-3282	7833	.69
4	839-3278	7814	1.16	839-3283	7834	.76
5	839-3279	7815	1.40	839-3284	7835	.95
6	839-3280	7816	1.54	839-3285	7836	1.05

Male Sturdi-Mount PC Quick-Fit Terminals

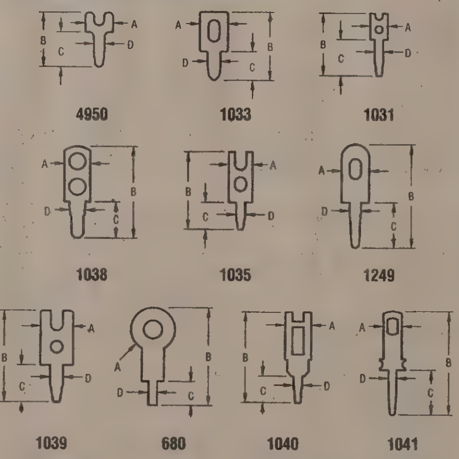


4900, 4901 4902

Material: Brass, tin plate.

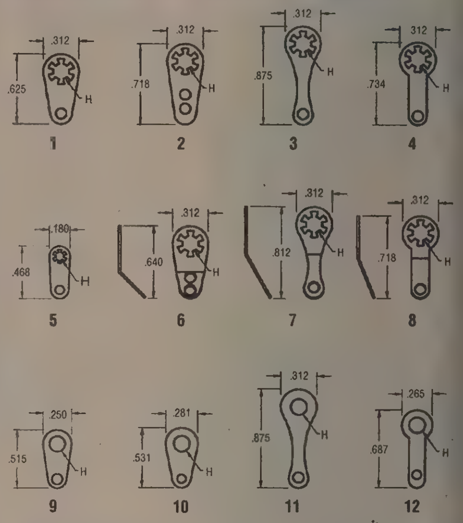
Stock No.	Mfr.'s Type	Terminal Size (In.)	Height (In.)	PER PK./100
839-3286	4900	0.187 × 0.020	0.416	7.50
839-3287	4901	0.250 × 0.032	0.537	7.50
839-3288	4902	0.250 × 0.032	0.438	7.50

PC Test Point Terminals



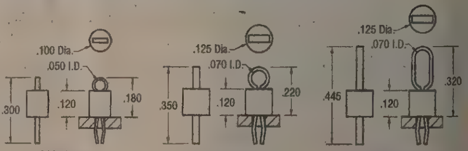
Stock No.	Mfr.'s Type	Material	Dim. (In.)				PER PK./100
			A	B	C	D	
839-4950	4950	.025" Brass, Tin Plate	.098	.197	.126	.039	8.05
839-9001	1033	.025" Brass, Tin Plate	.118	.296	.125	.054	5.80
839-1031	1031	.020" Brass, Tin Plate	.075	.270	.156	.035	6.10
839-9015	1038	.020" Brass, Tin Plate	.110	.395	.156	.069	5.90
839-1035	1035	.020" Brass, Tin Plate	.100	.335	.117	.039	5.65
839-1249	1249	.025" Brass, Tin Plate	.118	.445	.195	.047	6.15
839-1039	1039	.025" Brass, Tin Plate	.138	.394	.160	.055	5.95
839-0680	680	.015" Brass, Tin Plate	.312	.718	.172	.062	7.45
839-1040	1040	.025" Brass, Tin Plate	.110	.390	.115	.039	5.30
839-1041	1041	.032" Brass, Tin Plate	.110	.630	.275	.055	7.55

Lockwasher and Solder Terminals



Stock No.	Mfr.'s Type	Fig.	Material	Dim. (In.)	PER PK./100
				H	
839-2380	908	1	.018" Brass, Tin Plate	0.120 (#4)	5.80
839-2381	914	1	.018" Brass, Tin Plate	0.140 (#6)	5.80
839-2382	915	1	.018" Brass, Tin Plate	0.171 (#8)	5.80
839-2383	910	2	.018" Brass, Tin Plate	0.120 (#4)	5.80
839-2384	918	2	.018" Brass, Tin Plate	0.140 (#6)	5.80
839-2385	906	2	.018" Brass, Tin Plate	0.171 (#8)	5.80
839-2389	903	3	.018" Brass, Tin Plate	0.120 (#4)	5.80
839-2390	904	3	.018" Brass, Tin Plate	0.140 (#6)	5.80
839-2391	905	4	.018" Brass, Tin Plate	0.171 (#8)	5.80
839-2386	909	4	.018" Brass, Tin Plate	0.120 (#4)	5.80
839-2387	916	4	.018" Brass, Tin Plate	0.140 (#6)	5.80
839-2388	917	4	.018" Brass, Tin Plate	0.171 (#8)	5.80
839-2401	907	5	.013" Brass, Tin Plate	—	11.50
839-2392	7311	6	.018" Brass, Tin Plate	0.120 (#4)	5.80
839-2393	7312	6	.018" Brass, Tin Plate	0.140 (#6)	5.80
839-2394	7313	6	.018" Brass, Tin Plate	0.171 (#8)	5.80
839-2398	7317	7	.018" Brass, Tin Plate	0.120 (#4)	5.80
839-2399	7318	7	.018" Brass, Tin Plate	0.140 (#6)	5.80
839-2400	7319	7	.018" Brass, Tin Plate	0.171 (#8)	5.80
839-2395	7314	8	.018" Brass, Tin Plate	0.120 (#4)	5.80
839-2396	7315	8	.018" Brass, Tin Plate	0.140 (#6)	5.80
839-2397	7316	8	.018" Brass, Tin Plate	0.171 (#8)	5.80
839-9990	4004	9	.016" Brass, Tin Plate	—	5.50
839-4005	7328	10	.015" Brass, Tin Plate	0.120 (#4)	6.10
839-4006	7329	10	.015" Brass, Tin Plate	0.140 (#6)	6.10
839-4007	7330	10	.015" Brass, Tin Plate	0.171 (#8)	6.10
839-4008	7331	11	.020" Brass, Tin Plate	0.120 (#4)	6.10
839-4009	7332	11	.020" Brass, Tin Plate	0.140 (#6)	6.10
839-4010	7333	11	.020" Brass, Tin Plate	0.171 (#8)	6.10
839-4011	7325	12	.020" Brass, Tin Plate	0.120 (#4)	6.10
839-4012	7326	12	.020" Brass, Tin Plate	0.140 (#6)	6.10
839-4013	7327	12	.020" Brass, Tin Plate	0.171 (#8)	6.10

PC Test Points Snap-In Mounting Color Coded



Miniature Compact Multipurpose

Miniature

Material: Brass wire, tin plate. **Base:** Glass filled nylon, UL 94 V-0.

Stock No.	Mfr.'s Type	Description	Price
839-3600	5000	Red Base Color	PER PK./100 15.10
839-3601	5001	Black Base Color	PER PK./100 15.10
839-3602	5002	White Base Color	PER PK./100 15.10
839-3603	5003	Orange Base Color	PER PK./100 15.10
839-3604	5004	Yellow Base Color	PER PK./100 15.10

Compact

Material: Brass wire, tin plate. **Base:** Valox, UL 94 V-0.

Stock No.	Mfr.'s Type	Description	Price
839-3605	5005	Red Base Color	PER PK./100 15.60
839-3606	5006	Black Base Color	PER PK./100 15.60
839-3607	5007	White Base Color	PER PK./100 15.60
839-3608	5008	Orange Base Color	PER PK./100 15.60
839-3609	5009	Yellow Base Color	PER PK./100 15.60

Multipurpose

Material: Phos. br., tin plate. **Base:** Valox, UL 94 V-0.

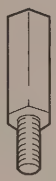
Stock No.	Mfr.'s Type	Description	Price
839-3610	5010	Red Base Color	PER PK./100 15.60
839-3611	5011	Black Base Color	PER PK./100 15.60
839-3612	5012	White Base Color	PER PK./100 15.60
839-3613	5013	Orange Base Color	PER PK./100 15.60
839-3614	5014	Yellow Base Color	PER PK./100 15.60

Hex Male/Female Threaded Standoffs

► English and Metric ► Nylon, Stainless, Brass and Aluminum

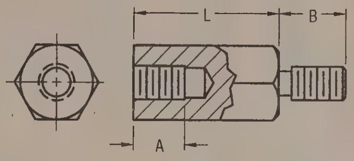
4-40 Threaded Standoffs — .250" Hex

Dimensions (In.)			Nylon 6/6			Stainless Steel			Brass Nickel Plate			Aluminum Clear Iridite		
L	A	B	Stock No.	Mfr.'s Type	PER PK./100	Stock No.	Mfr.'s Type	EACH	Stock No.	Mfr.'s Type	PER PK./100	Stock No.	Mfr.'s Type	PER PK./100
0.250	.140	.187	839-4800	4800	22.00	839-8712	8712	1.15	839-8713	8713	21.65	839-8714	8714	18.60
0.375	.250	.187	839-4801	4801	22.45	839-7001	2087	1.20	839-2332	7200	23.90	839-8001	8400	21.05
0.500	.375	.187	839-4802	4802	23.30	839-7002	2088	1.26	839-2333	1944	31.20	839-8002	8401	29.45
0.625	.375	.187	839-4803	4803	23.80	839-7003	2089	1.31	839-2334	1945	31.65	839-8003	8402	31.65
0.750	.375	.187	839-4804	4804	24.25	839-7004	2090	1.36	839-2335	1946	37.70	839-8004	8403	32.15
0.875	.375	.187	839-4805	4805	24.70	839-7005	2091	1.42	839-2336	7201	38.15	839-8005	8404	34.95
1.000	.375	.187	839-4806	4806	25.15	839-7006	2092	1.47	839-2337	1947	42.30	839-8006	8405	36.95
1.125	.375	.187	839-4807	4807	25.45	839-7007	2093	3.09	839-2338	7202	45.75	839-8007	8406	45.25
1.250	.375	.187	839-4808	4808	25.60	839-7008	2094	3.20	839-2339	1948	65.80	839-8008	8407	45.75
1.375	.375	.187	839-4809	4809	26.10	839-7009	2095	3.32	839-2340	1949	67.35	839-8009	8408	54.35
1.500	.375	.187	839-4810	4810	26.45	839-7010	2096	3.38	839-2341	1950	70.55	839-8010	8409	55.60
1.625	.375	.187	839-4811	4811	26.95	839-7011	2097	3.43	839-2342	7203	71.20	839-8011	8410	57.20
1.750	.375	.187	839-4812	4812	27.45	839-7012	2098	3.48	839-2343	7205	79.45	839-8012	8411	58.45
2.000	.375	.187	839-4813	4813	27.90	839-7013	2099	3.62	839-2344	1951	80.05	839-8013	8412	60.35



6-32 Threaded Standoffs — .250 Hex

0.250	.140	.250	839-4814	4814	22.00	839-8715	8715	.92	839-8716	8716	21.05	839-8717	8717	20.65
0.375	.250	.250	839-4815	4815	22.45	839-6001	2119	.94	839-2345	7210	24.65	839-8413	8413	21.90
0.500	.375	.250	839-4816	4816	23.30	839-6002	2120	1.00	839-2346	1952	26.90	839-8414	8414	22.10
0.625	.375	.250	839-4817	4817	23.80	839-6003	2121	1.06	839-2347	1953	34.15	839-8415	8415	27.90
0.750	.375	.250	839-4818	4818	24.25	839-6004	2122	1.22	839-2348	1954	35.95	839-8416	8416	28.20
0.875	.375	.250	839-4819	4819	24.70	839-6005	2123	1.26	839-2349	7211	41.25	839-8417	8417	30.65
1.000	.375	.250	839-4820	4820	25.15	839-6006	2124	1.27	839-2350	1644	42.50	839-8418	8418	32.15
1.125	.375	.250	839-4821	4821	25.45	839-6007	2125	1.55	839-2351	7212	45.25	839-8419	8419	33.20
1.250	.375	.250	839-4822	4822	25.60	839-6008	2126	1.67	839-2352	1955	53.55	839-8420	8420	35.40
1.375	.375	.250	839-4823	4823	26.10	839-6009	2127	3.35	839-2353	1956	58.10	839-8421	8421	40.20
1.500	.375	.250	839-4824	4824	26.45	839-6010	2128	3.40	839-2354	1645	58.80	839-8422	8422	46.00
1.625	.375	.250	839-4825	4825	26.95	839-6011	2129	3.42	839-2355	7214	71.20	839-8423	8423	46.75
1.750	.375	.250	839-4826	4826	27.45	839-6012	2130	3.51	839-2356	7215	79.45	839-8424	8424	49.05
2.000	.375	.250	839-4827	4827	27.90	839-6013	2131	3.65	839-2357	1646	80.05	839-8425	8425	50.10



8-32 Threaded Standoffs — .250 Hex

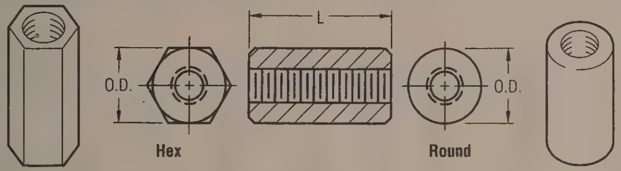
0.250	.140	.375	839-4828	4828	22.00	—	—	—	—	—	—	—	—	—
0.375	.250	.375	839-4829	4829	22.45	839-2149	2149	1.68	839-2358	7220	29.65	839-8426	8426	28.85
0.500	.375	.375	839-4830	4830	23.30	839-0150	2150	1.72	839-2359	1957	38.85	839-8427	8427	29.45
0.625	.375	.375	839-4831	4831	23.80	839-0151	2151	1.75	839-2360	1958	40.20	839-8428	8428	31.65
0.750	.375	.375	839-4832	4832	24.25	839-0152	2152	1.86	839-2361	1959	42.30	839-8429	8429	33.70
0.875	.375	.375	839-4833	4833	24.70	839-0153	2153	1.99	839-2362	7221	46.25	839-8430	8430	37.45
1.000	.375	.375	839-4834	4834	25.15	839-0154	2154	2.02	839-2363	1960	48.50	839-8431	8431	39.70
1.125	.375	.375	839-4835	4835	25.45	839-0155	2155	3.46	839-2364	7222	52.70	839-8432	8432	54.10
1.250	.375	.375	839-4836	4836	25.60	839-0156	2156	3.59	839-2365	1961	65.80	839-8433	8433	55.95
1.375	.375	.375	839-4837	4837	26.10	839-0157	2157	3.68	839-2366	1962	67.35	839-8434	8434	60.35
1.500	.375	.375	839-4838	4838	26.45	839-0158	2158	3.73	839-2367	1963	70.55	839-8435	8435	61.05
1.625	.375	.375	839-4839	4839	26.95	839-0159	2159	3.78	839-2368	7224	71.20	839-8436	8436	61.55
1.750	.375	.375	839-4840	4840	27.45	839-0160	2160	3.84	839-2369	7225	79.45	839-8437	8437	62.30
2.000	.375	.375	839-4841	4841	27.90	839-0161	2161	3.97	839-2370	1964	80.05	839-8438	8438	62.95

Metric M3 × 0.5 mm Threaded Standoffs — Hex Brass Nickel Plate

Dim. (mm)			5.0 mm			5.5 mm		
L	A	B	Stock No.	Mfr.'s Type	PER PK./100	Stock No.	Mfr.'s Type	PER PK./100
10.0	8.0	8.0	839-4313	4313	36.85	839-4319	4319	38.15
12.0	8.0	8.0	839-4314	4314	37.75	839-4320	4320	39.30
15.0	8.0	8.0	839-4315	4315	39.40	839-4321	4321	41.40
18.0	8.0	8.0	839-4316	4316	42.60	839-4322	4322	44.90
20.0	8.0	8.0	839-4317	4317	43.30	839-4323	4323	46.45
25.0	8.0	8.0	839-4318	4318	48.25	839-4324	4324	51.30

Hex and Round Threaded Standoffs

► English and Metric ► Brass and Aluminum



Metric M3 Threaded Standoffs — Hex Brass Nickel Plate

Dim. (mm)	5.0 mm			5.5 mm		
L	Stock No.	Mfr.'s Type	PER PK./100	Stock No.	Mfr.'s Type	PER PK./100
5.0	839-4390	4390	24.20	839-4395	4395	24.70
10.0	839-4391	4391	28.65	839-4396	4396	29.65
15.0	839-4392	4392	31.80	839-4397	4397	33.40
20.0	839-4393	4393	37.55	839-4398	4398	40.10
25.0	839-4394	4394	41.20	839-4399	4399	44.40

2-56 Threaded Standoffs

Dim. (In.)		Hex Aluminum Clear Iridite			Round Aluminum Clear Iridite			Hex Brass Zinc Plate			Round Brass Zinc Plate		
L	O.D.	Stock No.	Mfr.'s Type	PER PK./100	Stock No.	Mfr.'s Type	PER PK./100	Stock No.	Mfr.'s Type	PER PK./100	Stock No.	Mfr.'s Type	PER PK./100
0.187	.156	839-2035	1797A	31.70	839-2129	1801A	29.75	839-2082	1798A	37.20	839-2176	1802A	29.55
0.250	.156	839-2036	1797B	34.00	839-2130	1801B	29.55	839-2083	1798B	31.25	839-2177	1802B	31.70
0.312	.156	839-2037	1797C	35.40	839-2131	1801C	31.95	839-2084	1798C	48.20	839-2178	1802C	32.90
0.375	.156	839-2038	1797D	26.90	839-2132	1801D	36.90	839-2085	1798D	44.80	839-2179	1802D	32.90

4-40 Threaded Standoffs

0.250	.187	839-2039	1891	14.25	839-2133	2025	13.85	839-2086	1450	15.05	839-2180	1547	13.85
0.375	.187	839-2040	1892	16.60	839-2134	2026	16.40	839-2087	1803	17.25	839-2181	1864	21.00
0.500	.187	839-2041	1893	19.35	839-2135	2027	17.90	839-2088	1656	20.50	839-2182	1657	20.05
0.625	.187	839-2042	1894	21.00	839-2136	2028	19.45	839-2089	1804	27.55	839-2183	1865	23.65
0.750	.187	839-2043	1895	23.60	839-2137	2029	22.70	839-2090	1656A	26.15	839-3421	1657A	25.50
0.875	.187	839-2044	1896	26.05	839-2138	2030	24.40	839-2091	1805	33.80	839-2184	1866	32.65
1.000	.187	839-2045	1897	34.15	839-2139	2031	34.15	839-2092	1656B	33.80	839-3422	1657B	32.45
0.250	.250	839-2046	2201	13.95	839-2140	3478	12.00	839-2093	1450A	13.95	839-2185	1547A	20.30
0.375	.250	839-2047	2202	15.40	839-2141	3479	13.95	839-2094	1450B	16.20	839-2186	1547B	23.70
0.500	.250	839-2048	2203	17.00	839-2142	3480	15.05	839-2095	1450C	20.35	839-2187	1547C	28.85
0.625	.250	839-2049	1808	18.70	839-2143	1839	22.15	839-2096	1829	27.50	839-2188	1867	32.60
0.750	.250	839-2050	2204	20.35	839-2144	3481	18.70	839-2097	1450D	32.05	839-2189	1547D	36.65
0.875	.250	839-2051	1809	28.10	839-2145	1846	27.50	839-2098	1830	33.40	839-2190	1876	41.25
1.000	.250	839-2052	2205	31.30	839-2146	3482	30.40	839-2099	1450E	32.45	839-2191	1547E	45.95
1.500	.250	893-2053	2206	53.00	839-2147	3483	51.30	839-2100	1831	83.95	839-2192	1877	81.40
2.000	.250	839-2054	2207	61.30	839-2148	3484	59.45	839-2101	1832	86.05	839-2193	1878	83.15

6-32 Threaded Standoffs

0.250	.250	839-2055	2208	13.95	839-2149	3485	12.00	839-2102	1451A	13.95	839-2194	1548A	12.85
0.375	.250	839-2056	2209	15.40	839-2150	3486	13.95	839-2103	1451B	16.20	839-2195	1548B	15.05

6-32 Threaded Standoffs (Continued)

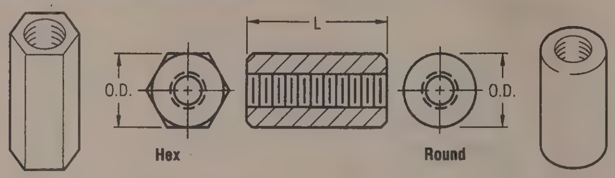
Dim. (In.)		Hex Aluminum Clear Iridite			Round Aluminum Clear Iridite			Hex Brass Zinc Plate			Round Brass Zinc Plate		
L	O.D.	Stock No.	Mfr.'s Type	PER PK./100	Stock No.	Mfr.'s Type	PER PK./100	Stock No.	Mfr.'s Type	PER PK./100	Stock No.	Mfr.'s Type	PER PK./100
0.500	.250	839-2057	2210	17.00	839-2151	3487	15.05	839-2104	1451C	20.35	839-2196	1548C	19.45
0.625	.250	839-2058	1813	19.05	839-2152	1847	21.85	839-2105	1451D	27.50	839-2197	1548D	26.15
0.750	.250	839-2059	2211	20.35	839-2153	3488	18.70	839-2106	1451E	32.05	839-2198	1548E	31.35
0.875	.250	839-2060	1816	21.55	839-2154	1848	20.45	839-2107	1833	33.40	839-2199	1879	32.55
1.000	.250	839-2061	2212	31.30	839-2155	3489	30.40	839-2108	1635	32.45	839-2200	1548F	31.90
1.250	.250	839-2062	1818	46.95	839-2156	1853	46.05	839-2109	1636	57.75	839-2201	1881	56.65
1.500	.250	839-2063	2213	53.00	839-2157	3490	51.30	839-2110	1637	66.65	839-2202	1882	81.40
1.750	.250	839-2064	1819	55.45	839-2158	1855	54.50	839-2111	1638	85.00	839-2203	1883	82.45
2.000	.250	839-2065	2214	61.30	839-2159	3491	59.45	839-2112	1639	86.05	839-2204	1884	82.25
2.250	.250	839-2066	1820	68.00	839-2160	1856	66.15	839-2113	1642	87.80	839-2205	1885	85.25
2.500	.250	839-2067	1825	74.40	839-2161	1857	72.55	839-2114	1643	90.20	839-2206	1886	87.80

8-32 Threaded Standoffs

0.250	.250	839-2068	2215	13.95	839-2162	3492	12.00	839-2115	1474A	15.60	839-2207	1692A	24.25
0.375	.250	839-2069	2216	15.40	839-2163	3493	13.95	839-2116	1474B	16.20	839-2208	1692B	25.50
0.500	.250	839-2070	2217	17.00	839-2164	3494	15.05	839-2117	1474C	20.35	839-2209	1692C	32.40
0.625	.250	839-2071	1827	22.20	839-2165	1858	17.20	839-2118	1834	27.50	839-2210	1887	37.00
0.750	.250	839-2072	2218	23.90	839-2166	3495	18.70	839-2119	1474D	32.05	839-2211	1692D	43.85
0.875	.250	839-2073	1828	29.70	839-2167	1859	20.45	839-2120	1836	33.40	839-2212	1888	42.10
1.000	.250	839-2074	2219	31.30	839-2168	3496	30.40	839-2121	1474E	32.45	839-2213	1692E	45.25
1.500	.250	839-2075	2220	53.00	839-2169	3497	51.30	839-2122	1837	83.95	839-2214	1889	81.40
2.000	.250	839-2076	2221	61.30	839-2170	3498	59.45	839-2123	1838	86.05	839-2215	1899	87.55
0.375	.375	839-2077	1926A	27.45	839-2171	2315A	43.00	839-2124	1452A	35.30	839-2216	1549A	47.70
0.500	.375	839-2078	1926B	28.70	839-2172	2315B	45.50	839-2125	1452B	45.45	839-2217	1549B	51.45
0.625	.375	839-2079	1926C	37.55	839-2173	2315C	49.05	839-2126	1452C	58.70	839-2218	1549C	56.65
0.750	.375	839-2080	1926D	43.65	839-2174	2315D	52.60	839-2127	1452D	63.35	839-2219	1549D	62.20
1.000	.375	839-2081	1926E	52.90	839-2175	2315E	62.85	839-2128	1452E	81.65	839-2220	1549E	76.40

Hex and Round Threaded Standoffs

— NEW —



► Nylon 6/6 (UL 94-V0 and UL 94-V2) and Phenolic (PBE Grade, Natural)

4-40 Threaded Standoffs

Dimensions (In.)		Hex Nylon 6/6 UL94-V0			Hex Nylon 6/6 UL94-V2			Round Phenolic PBE Natural		
L	O.D.	Stock No.	Mfr.'s Type	PER PK./100	Stock No.	Mfr.'s Type	PER PK./100	Stock No.	Mfr.'s Type	PER PK./100
0.250	0.250	839-2245	1902A	22.70	839-4017	8440A	34.15	839-4024	376	27.75
0.375	0.250	839-2246	1902B	23.15	839-4018	8440B	34.90	839-4025	377	30.15
0.500	0.250	839-2247	1902C	24.25	839-4019	8440C	36.25	839-4026	378	32.65
0.625	0.250	839-4015	1902F	28.70	839-4020	8440D	39.80	—	—	—
0.750	0.250	839-2248	1902D	31.05	839-4021	8440E	43.35	839-4027	379	37.40
0.875	0.250	839-4016	1902G	32.35	839-4022	8440F	44.90	—	—	—
1.000	0.250	839-2249	1902E	31.15	839-4023	8440G	46.95	839-4028	380	43.20
1.500	0.250	—	—	—	—	—	—	839-4029	381	64.80
2.000	0.250	—	—	—	—	—	—	839-4030	382	78.10

6-32 Threaded Standoffs

L	O.D.	Stock No.	Mfr.'s Type	PER PK./100	Stock No.	Mfr.'s Type	PER PK./100	Stock No.	Mfr.'s Type	PER PK./100
0.250	0.250	839-2250	1903A	22.70	839-4033	8441A	34.15	839-4040	383	27.60
0.375	0.250	839-2251	1903B	23.15	839-4034	8441B	34.90	839-4041	384	30.00
0.500	0.250	839-2252	1903C	24.25	839-4035	8441C	36.25	839-4042	385	32.35
0.625	0.250	839-4031	1903F	28.70	839-4036	8441D	39.80	—	—	—
0.750	0.250	839-2253	1903D	31.05	839-4037	8441E	43.35	839-4043	386	37.30
0.875	0.250	839-4032	1903G	32.35	839-4038	8441F	44.90	—	—	—
1.000	0.250	839-2254	1903E	31.15	839-4039	8441G	46.95	839-4044	387	43.10
1.500	0.250	—	—	—	—	—	—	839-4045	388	64.65
2.000	0.250	—	—	—	—	—	—	839-0389	389	77.60

8-32 Threaded Standoffs

L	O.D.	Stock No.	Mfr.'s Type	PER PK./100	Stock No.	Mfr.'s Type	PER PK./100	Stock No.	Mfr.'s Type	PER PK./100
0.250	0.250	839-2255	1904A	22.70	839-4049	8442A	34.15	839-4062	390	27.50
0.375	0.250	839-2256	1904B	23.15	839-4056	8442B	34.90	839-4063	391	29.75
0.500	0.250	839-2257	1904C	24.25	839-4057	8442C	36.25	839-4064	392	32.25
0.625	0.250	839-4047	1904F	28.70	839-4058	8442D	39.80	—	—	—
0.750	0.250	839-2258	1904D	31.05	839-4059	8442E	43.35	839-4065	393	37.05
0.875	0.250	839-4048	1904G	32.35	839-4060	8442F	44.90	—	—	—
1.000	0.250	839-2259	1904E	31.15	839-4061	8442G	46.95	839-4066	394	42.85
1.500	0.250	—	—	—	—	—	—	839-4067	395	64.30
2.000	0.250	—	—	—	—	—	—	839-4068	396	76.95
0.250	0.312	—	—	—	—	—	—	839-4069	460	34.25
0.375	0.312	—	—	—	—	—	—	839-4070	461	36.75
0.500	0.312	—	—	—	—	—	—	839-4071	462	39.10
0.750	0.312	—	—	—	—	—	—	839-4072	463	43.95
1.000	0.312	—	—	—	—	—	—	839-4073	464	49.25
1.500	0.312	—	—	—	—	—	—	839-4074	465	73.85
2.000	0.312	—	—	—	—	—	—	839-4075	466	113.45

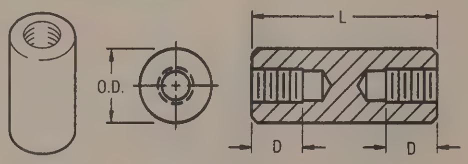
10-32 Threaded Standoffs

L	O.D.	Stock No.	Mfr.'s Type	PER PK./100	Stock No.	Mfr.'s Type	PER PK./100	Stock No.	Mfr.'s Type	PER PK./100
0.250	0.312	—	—	—	—	—	—	839-4076	467	33.60
0.375	0.312	—	—	—	—	—	—	839-4077	468	35.80
0.500	0.312	—	—	—	—	—	—	839-4078	469	38.00
0.750	0.312	—	—	—	—	—	—	839-4079	470	42.70
1.000	0.312	—	—	—	—	—	—	839-4080	471	47.75
1.500	0.312	—	—	—	—	—	—	839-4081	472	71.60
2.000	0.312	—	—	—	—	—	—	839-4082	473	109.55

Note: Sizes not shown are available on special order.

Round Ceramic Threaded Standoffs

— NEW —

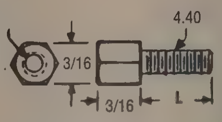


► Grade L5 Ceramic

Stock No.	Mfr.'s Type	Thread Size	Dimensions (In.)			NL#	EACH
			L	O.D.	D		
839-7710	7710	6-32	0.250	0.250	THRU	Commercial	1.13
839-7711	7711	6-32	0.500	0.250	0.156	Commercial	1.27
839-7712	7712	6-32	0.375	0.375	0.156	Commercial	1.07
839-7713	7713	6-32	0.500	0.375	0.187	Commercial	1.10
839-7714	7714	6-32	0.500	0.500	0.140	Commercial	1.20
839-7715	7715	6-32	0.750	0.500	0.250	Commercial	1.27
839-7716	7716	6-32	1.000	0.500	0.375	Commercial	1.33
839-7717	7717	6-32	1.500	0.500	0.562	Commercial	1.60
839-7718	7718	6-32	2.500	0.500	0.500	Commercial	2.03
839-7719	7719	1/4-20	2.500	0.750	0.750	Commercial	2.90
839-7720	7720	1/4-20	4.000	0.750	0.750	Commercial	3.50
839-7661	7661	6-32	0.500	0.375	0.156	NL523W01-004	1.27
839-7662	7662	6-32	0.625	0.375	0.250	NL523W01-005	1.30
839-7663	7663	8-32	0.625	0.500	0.187	NL523W02-005	1.40
839-7664	7664	6-32	0.750	0.375	0.250	NL523W01-006	1.40

Stock No.	Mfr.'s Type	Thread Size	Dimensions (In.)			NL#	EACH
			L	O.D.	D		
839-9072	7665	8-32	0.750	0.500	0.250	NL523W02-006	1.43
839-7666	7666	6-32	1.000	0.375	0.375	NL523W01-008	1.43
839-7667	7667	8-32	1.000	0.500	0.375	NL523W02-008	1.50
839-7668	7668	10-32	1.000	0.750	0.375	NL523W03-008	2.36
839-9985	7669	6-32	1.250	0.375	0.375	NL523W01-010	1.50
839-7670	7670	8-32	1.250	0.500	0.375	NL523W02-010	1.57
839-7671	7671	1/4-20	1.250	1.000	0.437	NL523W04-010	3.46
839-7672	7672	6-32	1.500	0.375	0.375	NL523W01-012	1.63
839-7673	7673	8-32	1.500	0.500	0.375	NL523W02-012	1.77
839-7674	7674	10-32	1.500	0.750	0.375	NL523W03-012	2.63
839-7675	7675	1/4-20	1.500	1.000	0.500	NL523W04-012	3.86
839-7676	7676	6-32	2.000	0.375	0.375	NL523W01-016	1.80
839-7677	7677	8-32	2.000	0.500	0.375	NL523W02-016	1.93
839-7678	7678	10-32	2.000	0.750	0.375	NL523W03-016	2.90
—	—	—	—	—	—	—	—

Jack Screws

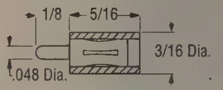


"D" subminiature connector mounting screw. Per MIL-C-24308/26. Equivalent to AMP, CANNON and TRW Jack screws. Other sizes upon request. **Material:** Steel, Zinc Plate and Gold Iridite.

Stock No.	Mfr.'s Type	Dim. (In.)	PER PK./100	
		L	1-9	10-Up
839-7228	7228*	0.250	16.45	14.40
839-7229	7229†	0.250	21.40	18.75
839-2429	7230*	0.312	12.40	10.90
839-2430	7232*	0.625	33.40	29.15
839-2431	7231†	0.312	17.40	15.30
839-2432	7233†	0.625	38.30	33.60

*Jack only. †Jack with hardware (2 flat washers, lock washer, and nut) supplied unassembled bulk. **Note:** Also available with Zinc and Clear Chromate finish. Add -5 to basic part number.

Vertical P. C. Test Jack



Accepts .80" Tip. This low profile vertical jack allows dense packing where space is limited. Mounts into a .052" diameter home. Provides easy access and positive electrical contact. The contact is recessed to prevent accidental shorting. Capacitance between two adjacent jacks less than 1.0 pF at 1 MHz. **Operating Voltage:** 1500 volts RMS. **Current Rating:** 5 amps max. **Material Specifications. Body:** Nylon per ASTM D4066. **Contact:** Beryllium copper silver plated.

Stock No.	Mfr.'s Type	Color	EACH	
			1-99	100-499
839-6036	6036	White	.58	.47
839-6037	6037	Red	.58	.47
839-6038	6038	Black	.58	.47
839-6039	6039	Yellow	.58	.47
839-6040	6040	Green	.58	.47
839-6041	6041	Blue	.58	.47

Spacer Organizer

Avail yourself of all practical sizes and types of spacers and standoffs. Maintain a neat complete inventory of the most frequently used parts in day-to-day operations. An assortment of various sizes and styles in brass, aluminum and nylon with tapped or thru-hole. Metal cabinet designed to be stacked on one another or wall mounted. Clear plastic drawers labeled for easy identification. The following organizer kits are available from stock!

1/4" Hex Threaded

Brass Zinc Plated. Assortment of 1500 pieces 1/4", 3/8", 1/2", 3/4", and 1" lengths. With threaded sized of 4-40, 6-32 and 8-32. 100 pieces of each size complete with cabinet.
839-0014. STH-14 .... **EACH 354.46**

Aluminum Iridite Finish. Assortment of 1500 pieces in 1/4", 3/8", 1/2", 3/4", and 1" lengths. With threaded sizes of 4-40, 6-32 and 8-32. 100 pieces of each size complete with cabinet.
839-0022. STH-22 .... **EACH 244.89**

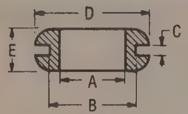
1/4" Round

Clear Nylon 6/6. Assortment of 1500 pieces in 1/4", 3/8", 1/2", 3/4", and 1" lengths. With clearance holes for #4, #6, and #8. 100 pieces of each size complete with cabinet.
839-0008. SPR-8 .... **EACH 174.01**

1/4" Hex Male/Female

Brass Nickel Plated. Assortment of 750 pieces in 1/2", 3/4", 1", 1 1/4" and 1 1/2", lengths. With threaded sizes of 4-40, 6-32 and 8-32. 50 pieces of each size complete with cabinet.
839-0019. STH-19 .... **EACH 322.22**

Rubber Grommets

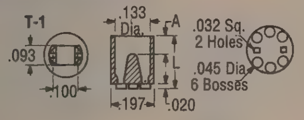


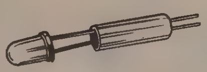
For electrical insulation and mechanical damping. Made of BUNA S.

Stock No.	Mfr.'s Type	Dimensions (In.) I.D. A	Hole Size B	Panel Size C	O.D. D	Height E	PER PK./100 1-4	5-9
839-2443	730	0.125	0.187	0.062	0.312	0.187	6.35	5.35
839-2444	733	0.125	0.250	0.062	0.343	0.156	5.70	4.95
839-2445	734	0.125	0.437	0.062	0.625	0.187	58.85	50.00
839-2446	735	0.125	0.375	0.093	0.500	0.312	21.35	18.20
839-2447	736	0.187	0.312	0.062	0.437	0.187	6.85	5.90
839-2448	731	0.187	0.312	0.062	0.437	0.218	6.85	5.90
839-2449	737	0.187	0.281	0.093	1.437	0.218	16.50	14.00
839-2450	738	0.250	1.437	0.062	1.625	0.187	17.10	14.55
839-2451	739	0.250	0.375	0.062	0.500	0.218	8.80	7.40
839-2452	740	0.250	0.376	0.093	1.500	0.250	14.65	12.60
839-2453	741	0.312	0.562	0.062	1.625	0.281	30.75	26.10
839-2454	742	0.312	0.437	0.062	0.625	0.281	11.90	10.15
839-2455	743	0.312	0.437	0.093	0.625	0.312	18.35	15.60
839-2456	744	0.357	0.625	0.062	0.875	0.312	33.00	28.10
839-2457	745	0.375	0.500	0.062	0.625	0.250	9.45	8.05
839-2458	732	0.437	0.562	0.062	0.750	0.250	11.70	10.20
839-2459	746	0.437	0.687	0.062	0.937	0.312	36.65	31.05
839-2460	747	0.500	0.812	0.062	1.062	0.312	36.90	31.40
839-2461	748	0.500	1.250	0.062	1.500	0.250	46.35	39.40
839-2462	749	0.500	0.750	0.093	0.875	0.343	22.65	19.25
839-2463	750	0.562	0.812	0.062	1.062	0.312	44.80	38.10
839-2464	752	0.625	0.875	0.062	1.125	0.312	23.75	20.10
839-2465	753	0.625	1.250	0.062	1.500	0.250	67.35	57.25
839-2466	755	0.750	1.062	0.062	1.375	0.375	68.80	58.45
839-2467	756	0.750	1.437	0.062	1.812	0.375	151.10	128.50
839-2468	757	0.875	1.250	0.062	1.625	0.437	105.19	89.40

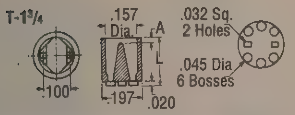
LED Spacer Mounts

T-1





T-1³/₄

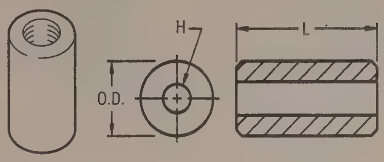


- ► Internal Design Eliminates Crimping or Shorting of Leads
- ► Positive Self-Alignment of Leads On .100 Centers
- ► Cost and Labor Saving
- ► No Special Tools Required

"Future-Tech" designed for T-1 and T-1³/₄ LEDs. These unique, new self-aligning LED mounting spacers simplify preassembly to the printed circuitboard. The spacer features an internally tapered barrier which guides the leads. The bosses serve the dual purpose of heat dissipation and easy post soldering cleanup. Natural nylon, UL rated 94V-2.

Dimensions (In.) L	A	T-1³/₄ Stock No.	Mfr.'s Type	PER PK./100 1-4	5-9	T-1 Stock No.	Mfr.'s Type	PER PK./100 1-4	5-9
0.120	0.040	839-8311	8311	7.85	6.75	839-7351	7351	7.65	6.55
0.140	0.060	839-8312	8312	7.85	6.75	839-7352	7352	7.65	6.55
0.160	0.080	839-8313	8313	7.85	6.75	839-7353	7353	7.65	6.55
0.180	0.100	839-8314	8314	7.85	6.75	839-7354	7354	7.65	6.55
0.200	0.120	839-8315	8315	7.85	6.75	839-7355	7355	7.65	6.55
0.220	0.140	839-8316	8316	7.85	6.75	839-7356	7356	7.65	6.55
0.240	0.160	839-8317	8317	7.85	6.75	839-7357	7357	7.65	6.55
0.250	0.045	839-8318	8318	7.85	6.75	839-7358	7358	7.65	6.55
0.260	0.055	839-8319	8319	7.85	6.75	839-7359	7359	7.65	6.55
0.280	0.075	839-8320	8320	7.85	6.75	839-7360	7360	7.65	6.55
0.300	0.095	839-8321	8321	8.25	7.00	839-7361	7361	8.00	6.80
0.320	0.115	839-8322	8322	8.25	7.00	839-7362	7362	8.00	6.80
0.340	0.135	839-8323	8323	8.25	7.00	839-7363	7363	8.00	6.80
0.350	0.145	839-8324	8324	8.25	7.00	839-7364	7364	8.00	6.80
0.360	0.155	839-8325	8325	8.25	7.00	839-7365	7365	8.00	6.80
0.380	0.050	839-8326	8326	8.25	7.00	839-7366	7366	8.00	6.80
0.400	0.070	839-8327	8327	8.25	7.00	839-7367	7367	8.00	6.80
0.420	0.090	839-8328	8328	8.25	7.00	839-7368	7368	8.00	6.80
0.440	0.110	839-8329	8329	8.25	7.00	839-7369	7369	8.00	6.80
0.450	0.120	839-8330	8330	8.25	7.00	839-7370	7370	8.00	6.80
0.460	0.130	839-8331	8331	8.25	7.00	839-7371	7371	8.00	6.80
0.480	0.150	839-8332	8332	8.25	7.00	839-7372	7372	8.00	6.80
0.500	0.045	839-8333	8333	8.70	7.30	839-7373	7373	8.40	7.05
0.550	0.095	839-8334	8334	8.70	7.30	839-7374	7374	8.40	7.05
0.600	0.145	839-8335	8335	8.70	7.30	839-7375	7375	8.40	7.05
0.650	0.070	839-8336	8336	8.70	7.30	839-7376	7376	8.40	7.05
0.700	0.120	839-8337	8337	8.70	7.30	839-7377	7377	8.40	7.05
0.750	0.045	839-8338	8338	8.95	7.50	839-7378	7378	8.70	7.30
0.800	0.095	839-8339	8339	8.95	7.50	839-7379	7379	8.70	7.30
0.850	0.145	839-8340	8340	8.95	7.50	839-7380	7380	8.70	7.30
0.900	0.195	839-8341	8341	8.95	7.50	839-7381	7381	8.70	7.30

Round Clear Hole Spacers



► **Nylon 6/6 (UL 94-V2) and Phenolic (PBE Grade, Natural)**

#4

Dimensions (In.) L	H	O.D.	Nylon 6/6 UL94-V2 Stock No.	Mfr.'s Type	PER PK./100	Round Phenolic PBE Natural Stock No.	Mfr.'s Type	PER PK./100
0.125	0.120	0.250	839-2221	875	7.45	—	—	—
0.250	0.120	0.250	839-2222	876	8.20	839-4083	360	12.05
0.375	0.120	0.250	839-2223	877	10.20	839-4084	361	14.06
0.500	0.120	0.250	839-2224	878	11.30	839-4085	362	17.60
0.625	0.120	0.250	839-2225	879	11.75	—	—	—
0.750	0.120	0.250	839-2226	880	12.70	839-4086	363	23.40
0.875	0.120	0.250	839-2227	881	14.00	—	—	—
1.000	0.120	0.250	839-2228	882	15.25	839-4087	364	28.80
1.500	0.120	0.250	—	—	—	839-4088	365	52.85
2.000	0.120	0.250	—	—	—	839-4089	366	62.60

#6

L	H	O.D.	Stock No.	Mfr.'s Type	PER PK./100	Stock No.	Mfr.'s Type	PER PK./100
0.125	0.140	0.250	839-2229	883	7.45	—	—	—
0.250	0.140	0.250	839-2230	884	8.20	839-0367	367	11.55
0.375	0.140	0.250	839-2231	885	10.20	839-4090	368	14.40
0.500	0.140	0.250	839-2232	886	11.30	839-4091	369	17.25
0.625	0.140	0.250	839-2233	887	11.75	—	—	—
0.750	0.140	0.250	839-2234	888	12.70	839-4092	370	23.15
0.875	0.140	0.250	839-2235	889	14.00	—	—	—
1.000	0.140	0.250	839-2236	890	15.25	839-4093	371	30.30
1.500	0.140	0.250	—	—	—	839-4094	372	52.30
2.000	0.140	0.250	—	—	—	839-4095	373	55.75

#8

L	H	O.D.	Stock No.	Mfr.'s Type	PER PK./100	Stock No.	Mfr.'s Type	PER PK./100
0.125	0.171	0.250	839-2237	891	7.45	—	—	—
0.250	0.171	0.250	839-2238	892	8.20	839-4096	1490	12.00
0.375	0.171	0.250	839-2239	893	10.20	839-4097	1491	14.20
0.500	0.171	0.250	839-2240	894	11.30	839-4098	1492	17.10
0.625	0.171	0.250	839-2241	895	11.75	—	—	—
0.750	0.171	0.250	839-2242	896	12.70	839-4099	1493	23.00
0.875	0.171	0.250	839-2243	897	14.00	—	—	—
1.000	0.171	0.250	839-2244	898	15.25	839-4100	1494	30.00
1.500	0.171	0.250	—	—	—	839-4101	374	43.75
2.000	0.171	0.250	—	—	—	839-4102	375	50.35

#10

L	H	O.D.	Stock No.	Mfr.'s Type	PER PK./100	Stock No.	Mfr.'s Type	PER PK./100
0.250	0.200	0.312	—	—	—	839-4111	453	11.00
0.375	0.200	0.312	—	—	—	839-4112	454	13.45
0.500	0.200	0.312	—	—	—	839-4113	455	16.50
0.750	0.200	0.312	—	—	—	839-4114	456	22.15
1.000	0.200	0.312	—	—	—	839-4115	457	28.15
1.500	0.200	0.312	—	—	—	839-4116	458	48.90
2.000	0.200	0.312	—	—	—	839-4117	459	65.20

Note: Sizes not shown are available on special order.

Recessed Bumpers

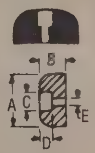


Fig. 1

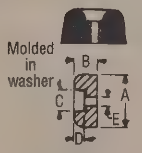


Fig. 2

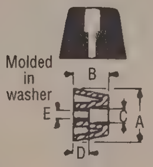


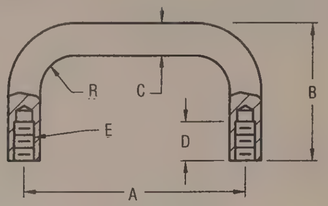
Fig. 3

Excellent traction and shock absorption. Available with our without molded-in washer. Made of rubber and BUNA S (Fig. 1,2) or rubber vinyl (Fig. 3). **Color:** Black.

Stock No.	Mfr.'s Type	Fig.	Screw Size	Dimensions (In.) A	B	C	D	E	EACH 1-499	500
839-2433	720	1	4	0.500	0.250	0.250	0.125	0.125	.11	.09
839-2434	721	1	4	0.625	0.312	0.250	0.187	0.125	.17	.15
839-2435	722	1	4	0.718	0.437	0.250	0.218	0.125	.35	.30
839-2436	723	2	8	0.937	0.375	0.375	0.187	0.187	.34	.29
839-2437	724*	3	6	0.687	0.250	0.343	0.125	0.155	.26	.22
839-2438	725*	3	8	0.875	0.312	0.406	0.187	0.187	.48	.41
839-2439	726*	3	10	1.062	0.437	0.468	0.234	0.200	.59	.51
839-2440	727	3	4	0.562	0.375	0.218	0.187	0.115	.31	.27
839-2441	728	3	6	0.750	0.437	0.265	0.250	0.148	.35	.30
839-2442	729	3	8	0.937	0.625	0.359	0.328	0.174	.52	.44

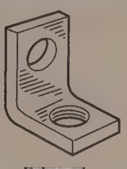
*Gray.

Round Instrumentation Handles

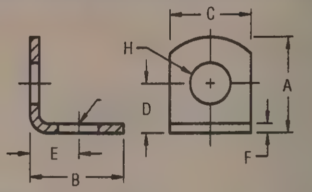


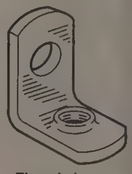
Dimensions (In.)						Brass, Nickel Plate			Aluminum, Black Anodize		
Mtg. Ctrs. A	Height B	Thread E	Depth D	Radius R	Dia. C	Stock No.	Mfr.'s Type	EACH	Stock No.	Mfr.'s Type	EACH
1.250	1.000	4-40	0.375	0.156	0.156	**839-7140**	7140	**2.22**	**839-7170**	7170	**1.84**
2.000	1.000	4-40	0.375	0.156	0.156	**839-7141**	7141	**2.36**	**839-7171**	7171	**2.03**
3.000	1.000	4-40	0.375	0.156	0.156	**839-7142**	7142	**2.41**	**839-7172**	7172	**2.06**
1.250	0.625	4-40	0.250	0.187	0.187	**839-9100**	9100	**2.22**	**839-9110**	9110	**1.84**
1.500	0.625	4-40	0.250	0.187	0.187	**839-9101**	9101	**2.22**	**839-9111**	9111	**1.84**
1.500	0.750	4-40	0.250	0.187	0.187	**839-9104**	9104	**2.44**	**839-9114**	9114	**2.02**
1.750	0.625	4-40	0.250	0.187	0.187	**839-9102**	9102	**2.24**	**839-9112**	9112	**1.93**
1.750	0.750	4-40	0.250	0.187	0.187	**839-9105**	9105	**2.36**	**839-9115**	9115	**2.03**
2.000	0.625	4-40	0.250	0.187	0.187	**839-9103**	9103	**2.36**	**839-9113**	9113	**2.03**
1.250	1.000	6-32	0.250	0.187	0.187	**839-9106**	9106	**2.44**	**839-9116**	9116	**2.02**
1.500	1.000	6-32	0.250	0.187	0.187	**839-9107**	9107	**2.66**	**839-9117**	9117	**2.21**
2.000	1.000	6-32	0.250	0.187	0.187	**839-9108**	9108	**2.60**	**839-9118**	9118	**2.23**
3.000	1.000	6-32	0.250	0.187	0.187	**839-9109**	9109	**2.65**	**839-9119**	9119	**2.27**
3.000	1.500	8-32	0.562	0.250	0.250	**839-7143**	7143	**2.75**	**839-7173**	7173	**2.36**
3.000	1.750	8-32	0.562	0.250	0.250	**839-0485**	485	**2.75**	**839-0515**	515	**2.36**
3.500	1.500	8-32	0.562	0.250	0.250	**839-0480**	480	**2.81**	**839-0510**	510	**2.43**
4.000	1.500	8-32	0.562	0.250	0.250	**839-7144**	7144	**2.86**	**839-7174**	7174	**2.56**
4.000	1.750	8-32	0.562	0.250	0.250	**839-0486**	486	**2.86**	**839-0516**	516	**2.56**
4.500	1.500	8-32	0.562	0.250	0.250	**839-0481**	481	**2.93**	**839-0511**	511	**2.63**
4.500	1.750	8-32	0.562	0.250	0.250	**839-0487**	487	**2.93**	**839-0517**	517	**2.63**
5.000	1.500	8-32	0.562	0.250	0.250	**839-0482**	482	**3.01**	**839-0512**	512	**2.70**
5.000	1.750	8-32	0.562	0.250	0.250	**839-0488**	488	**3.01**	**839-0518**	518	**2.70**
5.500	1.500	8-32	0.562	0.250	0.250	**839-0483**	483	**3.07**	**839-0513**	513	**2.79**
6.000	1.500	8-32	0.562	0.250	0.250	**839-0484**	484	**3.14**	**839-0514**	514	**2.86**
6.000	1.750	8-32	0.562	0.250	0.250	**839-0489**	489	**3.14**	**839-0519**	519	**2.86**
3.000	1.500	10-32	0.562	0.312	0.312	**839-7145**	7145	**3.06**	**839-7175**	7175	**2.83**
4.000	1.500	10-32	0.562	0.312	0.312	**839-7146**	7146	**3.23**	**839-7176**	7176	**2.96**
4.000	1.750	10-32	0.562	0.312	0.312	**839-0493**	493	**3.23**	**839-0523**	523	**2.96**
4.500	1.500	10-32	0.562	0.312	0.312	**839-0490**	490	**3.32**	**839-0520**	520	**3.04**
4.500	1.750	10-32	0.562	0.312	0.312	**839-0494**	494	**3.32**	**839-0524**	524	**3.04**
4.562	1.500	10-32	0.562	0.312	0.312	**839-7147**	7147	**3.31**	**839-7177**	7177	**3.00**
5.000	1.500	10-32	0.562	0.312	0.312	**839-0491**	491	**3.39**	**839-0521**	521	**3.11**
5.000	1.750	10-32	0.562	0.312	0.312	**839-0495**	495	**3.39**	**839-0525**	525	**3.11**
5.500	1.500	10-32	0.562	0.312	0.312	**839-0492**	492	**3.46**	**839-0522**	522	**3.18**
6.000	1.500	10-32	0.562	0.312	0.312	**839-7148**	7148	**3.67**	**839-7178**	7178	**3.10**
6.000	1.750	10-32	0.562	0.312	0.312	**839-0496**	496	**3.67**	**839-0526**	526	**3.15**
6.437	1.750	10-32	0.562	0.312	0.312	**839-7149**	7149	**3.79**	**839-7179**	7179	**3.17**
4.000	1.375	10-32	0.375	0.375	0.375	**839-7150**	7150	**3.56**	**839-7180**	7180	**2.84**
6.000	1.375	10-32	0.375	0.375	0.375	**839-7151**	7151	**3.67**	**839-7181**	7181	**3.15**

Universal and Threaded Mounting Brackets



Universal





Threaded

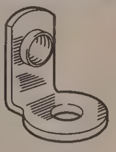
Universal Mounting Brackets

Stock No.	Mfr.'s Type	Dimensions (In.)								Material Finish	PER PK./100
		A	B	C	D	E	F	G Dia.	H Dia.		
839-0610	610	0.171	0.171	0.125	0.109	0.109	0.018	0.067	0.067	Brass, Tin Plate	**19.70**
839-0633	633	0.375	0.375	0.281	0.218	0.218	0.032	0.140	0.140	Brass, Nickel Plate	**5.05**
839-0613	613	0.390	0.453	0.375	0.234	0.299	0.032	0.128	0.147	Brass, Nickel Plate	**17.60**
839-0615	615	0.420	0.343	0.281	0.281	0.203	0.062	0.125	0.144	Brass, Tin Plate	**6.60**
839-4335	4335	0.562	0.562	0.500	0.412	0.411	0.062	0.120	0.120	Steel, Nickel Plate	**12.85**
839-4336	4336	0.562	0.562	0.500	0.412	0.412	0.062	0.144	0.144	Steel, Nickel Plate	**12.85**
839-0618	618	0.628	0.628	0.375	0.378	0.378	0.050	0.169	0.169	Brass, Nickel Plate	**24.00**
839-0619	619	0.687	0.687	0.375	0.500	0.500	0.032	0.144	0.144	Steel, Tin Plate	**11.60**
839-4326	4326	1.013	0.487	0.312	0.816	0.332	0.050	0.140	0.140	Steel, Nickel Plate	**18.45**
839-0620	620	1.156	0.656	0.375	0.906	0.406	0.032	0.169	0.169	Steel, Tin Plate	**20.90**

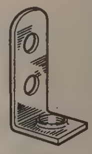
Threaded Mounting Brackets

Stock No.	Mfr.'s Type	A	B	C	D	E	F	G Dia.	H Dia.	Material Finish	PER PK./100
839-0612	612	0.343	0.375	0.250	0.203	0.250	0.062	4-40	0.130	Steel, Zinc Plate	**10.30**
839-0621	621	0.343	0.375	0.250	0.203	0.250	0.062	4-40	4-40	Steel, Zinc Plate	**13.25**
839-0616	616	0.453	0.312	0.250	0.265	0.187	0.047	4-40	0.136	Brass, Tin Plate	**24.50**
839-0634	634	0.375	0.375	0.281	0.218	0.218	0.032	6-32	0.140	Brass, Nickel Plate	**13.85**
839-0614	614	0.420	0.343	0.312	0.250	0.197	0.032	6-32	0.144	Brass, Tin Plate	**13.25**
839-4334	4334	0.562	0.562	0.500	0.412	0.412	0.062	6-32	6-32	Steel, Nickel Plate	**35.00**
839-0617	617	0.578	0.500	0.500	0.328	0.299	0.062	6-32	0.165	Steel, Tin Plate	**24.20**
839-0611	611	0.375	0.422	0.312	0.234	0.250	0.037	8-32	0.135	Brass, Tin Plate	**27.05**

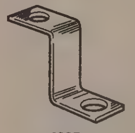
Mounting Brackets



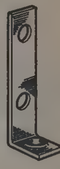
4332, 4333



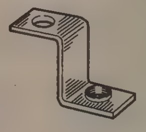
631



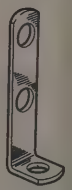
4325



708



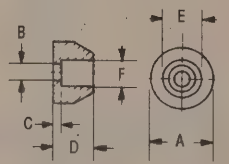
630



1564

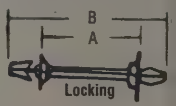
839-4332. 4332. 0.062" Brass, Nickel Plate .... **PER PK./100 45.00**
839-4333. 4333. 0.062" Brass, Nickel Plate .... **PER PK./100 45.00**
839-4325. 4325. 0.050" Steel, Nickel Plate .... **PER PK./100 21.10**
839-6300. 630. 0.032" Brass, Tin Plate .... **PER PK./100 51.90**
839-6301. 631. 0.037" Steel, Tin Plate .... **PER PK./100 23.65**
839-9009. 708. 0.062" Steel, Nickel Plate .... **PER PK./100 43.35**
839-1564. 1564. 0.062" Steel, Nickel Plate .... **PER PK./100 21.70**

Ferrules for Round Handles

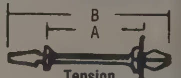


Dimensions (In.)							Brass, Nickel Plate			Aluminum, Black Anodize		
For Dia. Thread	A	B	C	D	E	F	Stock No.	Mfr.'s Type	PER PK./100	Stock No.	Mfr.'s Type	PER PK./100
0.156/4-40	0.250	0.116	0.047	0.125	0.200	0.161	**839-7162**	7162	**46.05**	**839-7192**	7192	**65.30**
0.187/4-40	0.312	0.116	0.062	0.125	0.265	0.203	**839-9120**	9120	**51.65**	**839-9122**	9122	**75.05**
0.187/6-32	0.312	0.141	0.062	0.125	0.265	0.203	**839-9121**	9121	**51.65**	**839-9123**	9123	**75.05**
0.250/8-32	0.375	0.204	0.062	0.187	0.320	0.260	**839-7163**	7163	**51.65**	**839-7193**	7193	**75.05**
0.312/10-32	0.562	0.218	0.062	0.250	0.406	0.320	**839-7164**	7164	**75.25**	**839-7194**	7194	**77.00**

Nylon Spacer Supports



Locking



Tension

- ► Easy to Install
- ► Low Cost
- ► Secure and Stable
- ► Releasable
- ► Flame Retardant Nylon Per 94V-0

Two Styles Available: Locking and tension.

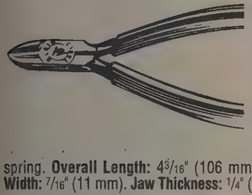
Stock No.	Mfr.'s Type	Type	Dim. (In.)		PER PK./100	
			A	B	1-4	5-9
839-1927	1927A	Tension	1/4	0.937	**6.20**	**5.30**
839-1917	1927B	Locking	1/4	0.890	**7.65**	**6.40**
839-1928	1928A	Tension	3/8	1.062	**6.45**	**5.55**
839-1918	1928B	Locking	3/8	1.015	**7.90**	**6.80**
839-1929	1929A	Tension	1/2	1.187	**6.85**	**5.90**
839-1919	1929B	Locking	1/2	1.140	**8.65**	**7.30**
839-1930	1930A	Tension	5/8	1.312	**7.55**	**6.30**
839-1910	1930B	Locking	5/8	1.265	**9.10**	**7.70**
839-1931	1931A	Tension	3/4	1.437	**7.95**	**6.85**
839-1911	1931B	Locking	3/4	1.390	**9.70**	**8.30**
839-1932	1932A	Tension	7/8	1.562	**8.55**	**7.20**
839-1912	1932B	Locking	7/8	1.515	**10.45**	**8.80**
839-1933	1933A	Tension	1	1.687	**15.55**	**13.20**
839-1913	1933B	Locking	1	1.640	**18.35**	**15.60**

Standard Diagonal Cutting Pliers

Basic diagonal cutting pliers with tapered nose and standard bevel cutting knives. Model D245-5C has coil spring to hold jaws open. Red plastic-dipped handles. **Dimensions. Overall Length:** 5" (127 mm). **Jaw Length:** 11/16" (17 mm). **Jaw Width:** 9/16" (14 mm). **Jaw Thickness:** 3/8" (10 mm).

726-1000. D245-5. Standard Diagonal Cutter .... **EACH 18.76**
726-1005. D245-5C. Standard Diagonal Cutter with Coil Spring ...... **EACH 19.56**

Standard Nose, Semi-Flush Cutting Pliers



General-purpose cutter with short, strong, tapered nose. Knives are semi-flush cutting. With coil spring. **Overall Length:** 4 3/16" (106 mm). **Jaw Length:** 1/2" (13 mm). **Jaw Width:** 7/16" (11 mm). **Jaw Thickness:** 1/4" (6 mm).

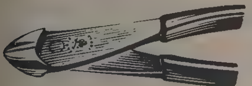
726-1030. D257-4C .... **EACH 20.82**

Slim Pointed Nose Pliers

Semi-flushed cutting pliers are relieved in the back to permit entry into confined areas. Specifically designed for tip cutting. With coil spring. Plastic-dipped handles. **Overall Length:** 5" (106 mm). **Jaw Length:** 1/2" (11 mm). **Jaw Thickness:** 1/4" (6 mm).

726-1035. D219-4C. Semi-Flush Cutting .... **EACH 21.26**
726-1040. D219-5C. Semi-Flush Cutting .... **EACH 23.04**

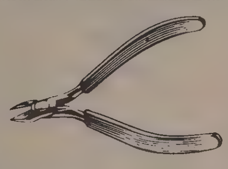
Standard Nose, High-Leverage Cutter



High-leverage design provides a 36% greater mechanical cutting and gripping advantage than regular 7" and 8" heavy-duty diagonal cutters. Standard bevel cutting knives. Red plastic-dipped handles.

726-2288. D228-8........ **EACH 20.14**
726-2287. D228-7........ **EACH 20.42**

Tapered Nose, Midget Jaw, Full-Flush Cutting Pliers



These small, diagonal cutting, clean room electronics pliers are designed to permit working in very close quarters with maximum visibility. Fully polished head and neck. With coil spring. Plastic-dipped handles. **Overall Length:** 4 3/16" (106 mm). **Jaw Length:** 1/2" (13 mm). **Jaw Width:** 3/8" (10 mm). **Jaw Thickness:** 1/4" (6 mm).

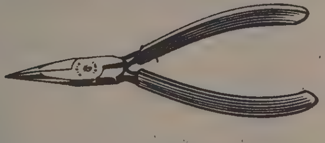
726-1050. D295-4C .... **EACH 21.86**

Special Long-Reach Designer Pliers

Longer handles for more convenient use and greater jaw gripping power. Knurled jaws. Yellow plastic-dipped handles. **Overall Length:** 8" (203 mm). **Jaw Length:** 1 15/16" (49 mm). **Jaw Width:** 11/16" (17 mm). **Jaw Thickness:** 3/8" (10 mm). **Point Thickness:** 3/32" (2 mm).

726-1125. D314-8........ **EACH 17.92**

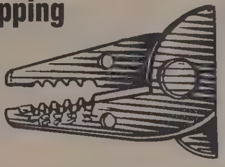
Midget Slim Nose



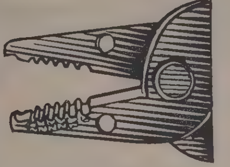
This small, light, slim nose plier is designed for precision subminiature assembly work. Knurled jaws. With coil spring. Plastic-dipped handles. **Overall Length:** 4 3/4" (121 mm). **Jaw Length:** 1 1/16" (27 mm). **Jaw Width:** 7/16" (11 mm). **Jaw Thickness:** 1/4" (6 mm). **Point Thickness:** 1/32 × 1/16" (.8 × 1.6 mm).

726-1130. D321-41/2C .... **EACH 17.52**

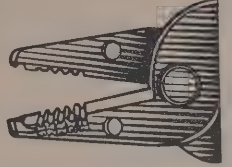
Wire-Stripping



11045



11046

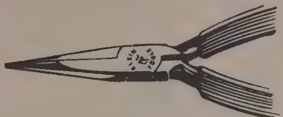


11047

Compact, lightweight strippers gauge, cut, strip and loop wire. Spring-loaded, self-opening action. Flat design makes them easy to store and carry. Narrow nose fits into tight places. Strip wire quickly, cleanly, evenly. Strong, hardened-steel with precision-ground stripping holes. Clear gauge markings on both sides. Black oxide finish. Comfortable plastic-dipped handles. **Overall Length:** 6" (152 mm). Do not use on live electrical circuits.

726-1215. 11045. Yellow Handle. Solid Wire. Strips AWG Gauges No. 10, 12, 14, 16, 18 (2.6, 2.1, 1.6, 1.3, 1.0 mm) .... **EACH 12.70**
726-1220. 11046. Red Handle. Stranded Wire. Strips AWG Gauges No. 16, 18, 20, 22, 24, 26 (1.2, 1.0, .81, .64, .51, .40 mm) .... **EACH 12.70**
726-1225. 11047. Yellow Handle. Solid Wire. Strips AWG Gauges No. 22, 24, 26, 28, 30 (.64, .51, .40, .32, .25 mm) .... **EACH 12.70**

Slim Long Nose Pliers



Longer nose and handles for deeper reach into work. Knurled jaws. With or without coil spring. Yellow plastic-dipped handles. **Overall Length:** 5 9/16" (141 mm). **Jaw Length:** 1 3/4" (44 mm). **Jaw Width:** 17/32" (13 mm). **Jaw Thickness:** 5/16" (8 mm). **Point Thickness:** 1/16" (1.6 mm).

726-1145. D307-5 1/2C. With Coil Spring .... **EACH 18.68**

Long Needle Nose Pliers

Designed for accurate assembly work in hard to reach areas. Provides maximum visibility. Features knurled jaws, coil spring, and yellow plastic-dipped handles. **Overall Length:** 5 13/32" (137 mm). **Jaw Length:** 1 3/4" (44 mm). **Jaw Width:** 1/2" (13 mm). **Jaw Thickness:** 5/16" (8 mm). **Point Thickness:** 1/16" (1.6 mm).

726-1155. D318-5 1/2C........ **EACH 19.48**

Cable Cutters

This handy, economical tool handles most cable-cutting jobs with ease. Special high-leverage design gives it amazing cutting capability for its size. Cable-gripping, shear-type jaws cut up to 4/0 aluminum (Not ACSR)...up to 2/0 soft copper...up to 100-pair, 24-gauge communication cable. Makes clean, efficient cuts. Compact...only 9 1/2" (241 mm) long, can be carried in tool pouch or Klein No. 5112 or No. 5112T tool holders. Ideal for working in confined spaces. Tough comfortable, red plastic-dipped handles. Not designed for cutting steel or ACSR.

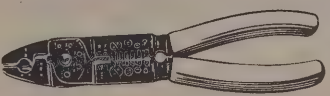
726-6305. 63050 .... **EACH 26.62**

Multi-Purpose 6-In-1 Tool

Designed for a variety of applications — shears bolts clean; cuts, strips, and gauges wire; measures stud sizes; crimps insulated terminals. With red plastic-covered handles. **Length:** 7 1/2" (191 mm).

726-1230. 1000........ **EACH 18.84**

All-Purpose Tool



Will crimp insulated and non-insulated terminals, lugs, and splices; cut and strip wire; cut bolts; crimp 7 mm ignition and distributor terminals. For sizes 10 to 22 AWG. Features wire cutter in nose and full-sized red-plastic-covered handles. **Length:** 8 1/2" (216 mm).

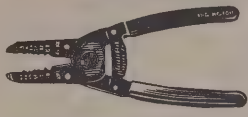
726-1235. 1002........ **EACH 22.22**

Long-Nose All-Purpose Tool

Combination cutter/crimper features crimping dies for insulated and non-insulated connectors from 10-22 gauge, and cutters for 4-40, 5-40, 6-32, 8-32, 10-32, and 10-24 screws. Designed to cut screws and cut, strip, and crimp wire. Cutters and strippers located in front of the pivot. With narrow serrated plier jaws to pull, loop, and bend wire, and blue plastic-covered handles. **Length:** 8 1/4" (210 mm).

726-1245. 1010........ **EACH 19.40**

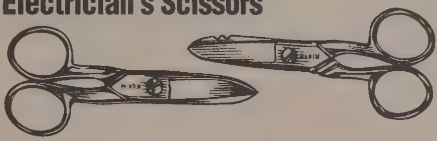
Adjustable Wire Stripper/Cutter



Strips six standard wire sizes without nicking wire: No. 10 through 20 AWG and 5.3 through .5 metric. Scissors action of 1/2" wide cutter makes clean cuts with little effort. Serrated nose jaws to bend, shape, or pull wire; holes for looping wire ends. Compact; only 6" long. Coil spring reduces fatigue. Comfortable, blue plastic-covered handles.

726-1011. 1011........ **EACH 13.32**

Electrician's Scissors

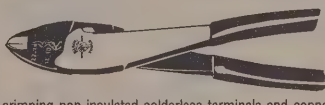


Designed for heavy-duty use. Strong, tough, tempered steel. Nickel-plated finish. Scraper and file on outside of both blades. Sharp points. Screw hinge permits adjustment. **Overall Length:** 5" (12.7 cm).
726-2100. 2100-5 .... **EACH 13.12**

Stripping Notches

Similar to No. 2100-5 above, but with lower blade serrated to minimize slippage of wire when cutting. Upper blade has notches for stripping 19- and 23-gauge wire. Rounded points. **Overall Length:** 5" (12.7 cm).
726-2107. 2100-7 .... **EACH 15.24**

Crimping Tools



Type 1006. For crimping non-insulated solderless terminals and connectors (10 to 22 AWG.) Features tapered nose containing specially hardened wire cutter and plastic-dipped handles (one black, one red). **Length:** 9 3/4" (248 mm).
726-1240. 1006........ **EACH 25.82**

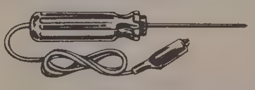
Type 1005. For insulated and non-insulated terminals and connectors; will handle wire from 10 to 22 AWG. Features thin nose for work in tight areas, wire cutter in nose, and red plastic-dipped handles. **Length:** 9 3/4" (248 mm).
726-1250. 1005........ **EACH 25.00**

Wire Stripping Tools

Strips AWG Gauges: 10, 12, 14, 16, 18, 20, 22 (2.6, 2.1, 1.6, 1.3, 1.0, .81, .64 mm).

726-1226. 11062..**EACH 38.64**

Continuity Tester

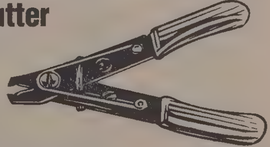


- **Extra Long 36" Lead Wire**
- **Deluxe Comfordome® Amberyl Handle**

Checks for defective controls and switches, broken leads or lines, motors, appliances, etc. Tests for continuity of circuit with power off. Bulb in handle glows when circuit in complete. Pointed 3 3/4" probe. Large 4" handle with removable nylon cap holds replaceable bulb and battery. Long 36" test lead with alligator clip. **Shipping Weight:** 1 lb.

979-7000. 69133 .... **EACH 11.66**

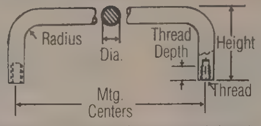
Wire Stripper-Cutter



A handy, light, compact tool for stripping insulation from wire. Convenient hole for looping or bending wire. With or without hold-open spring. Yellow plastic-dipped handles.

726-1237. 1004. With Spring. 5" (127 mm) .... **EACH 7.67**
726-1236. 1003. Without Spring. 5" (127 mm) .... **EACH 6.86**

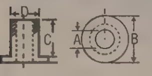
Instrument Handles



Internal thread; 1/4" dia., 1 1/2" ht., 1/4" rad.: 1620, 1624 (chrome plated); 1618 (round aluminum, satin finish); 1619, 1627 (round aluminum, black anodized). Internal thread; 5/16' dia., 1 1/2" ht., 5/16' rad.; 2057 (chrome plated). 5/8" dia., 1 3/4" ht., 1/2" rad.; 1654 (oval aluminum, black anodized).

Stock No.	Mfr.'s Type	Mtg. Ctr.	Thread and Depth	EACH 1-9	EACH 10-24	EACH 25-99
920-6153	1620	3"	8-32 × 9/16	5.02	4.49	3.59
920-6154	1624	4"	8-32 × 9/16	5.55	4.96	3.97

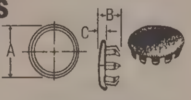
Insulated Nylon Flange Bushing



Molded of corrosion-resistant nylon. Non-conductive; ideal where insulation of electronic components is essential. Meets MIL-P-20683A specifications.

Stock No.	Mfr.'s Type	I.D. (A)	B In.	C In.	D In.	E In.	PER PK./100 1-4	PER PK./100 5-9	PER PK./100 10-49
920-2534	2534	#4 (.125)	.235	3/64	1/4	.140	15.10	13.10	10.60
920-2537	2537	#10 (.203)	.399	1/16	3/8	.266	15.10	13.10	10.60

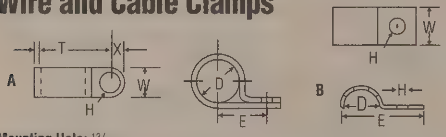
Snap Button Hole Plugs



Metal plugs for covering punched or drilled holes. Spring action prongs are nickel plated steel; give a firm grip. **Average Shipping Weight:** 8 oz.

Stock No.	Mfr.'s Type	Hole In.	A In.	B In.	C In.	PER PK./100 1-4	PER PK./100 5-9	PER PK./100 10-49
920-0650	650	1/4	13/32	15/64	1/16	31.60	27.90	23.30
920-0651	651	5/16	7/16	1/4	1/16	19.60	16.30	15.10
920-0652	652	3/8	1/2	15/64	1/16	34.30	30.20	25.20
920-0653	653	1/2	21/32	9/32	5/64	25.60	22.00	18.30
920-0654	654	5/8	13/16	19/64	5/64	40.80	36.00	30.00
920-0655	655	3/4	59/64	19/64	5/64	33.80	29.90	24.90
920-0608	608	7/8	1 1/16	19/64	1/16	69.91	61.70	51.40

Wire and Cable Clamps

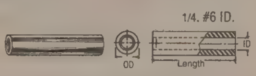


Mounting Hole: 13/64.

Stock No.	Mfr.'s Type	Materials	Fig.	Dimensions (In.) E	Dimensions (In.) T	Dimensions (In.) W	PER PK./100 1-4	PER PK./100 5-9
920-1471	1471	S	B	.625	—	3/8	28.90	24.80
920-6143	8956	N	A	.378	.050	3/8	9.00	8.30
920-1470	1470	S	B	.750	—	3/8	20.20	19.10
920-8942	8942	N	A	.457	.050	1/2	9.40	8.70
920-8943	8943	N	A	.495	.050	1/2	9.56	8.84
920-8944	8944	N	A	.529	.050	1/2	9.90	9.10

Note: N=Nylon, Black; S=Steel, Cad. finish.

Aluminum Round Spacers



Stock No.	Mfr.'s Type	Length (In.)	PER PK./100 1-4	PER PK./100 5-9	PER PK./100 10-49
920-6044	8500	1/8	15.00	13.00	10.50
920-8401	8501	1/4	15.80	13.70	11.10
920-6045	8502	3/8	16.90	14.70	11.80
920-8403	8503	1/2	17.60	15.30	12.40

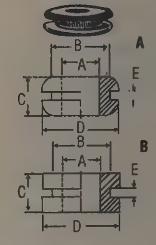
Thread Depth Chart #2

Thread specs for male/female hex threaded spacers.

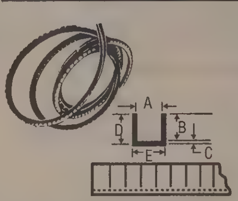
Thread Size	Body Length Range	Thread Depth	Thread Length
4-40	1/4 to 3/8" 1/2 to 3"	3/16" 1/4"	3/16"
6-32	1/4 to 3/8" 1/2 to 3"	3/16" 3/8"	1/4"
8-32	1/4 to 3/8" 1/2 to 3"	3/16" 7/16"	3/8"

Grommets

Materials: Rubber (Black Buna-S synthetic rubber (SBR), approx. 60 durometer); Vinyl (Polyvinyl chloride (PVC), black).



Stock No.	Mfr.'s Type	Fig.	Inside Dia. "A"	Mtg. Hole "B"	Chassis Thkns. "E"	Outside Dia. "D"	Thickness "C"	PER PK./100 1-4	PER PK./100 5-9	PER PK./100 10-49
920-6148	91114	A	1/8	1/4	1/16	11/32	3/16	15.00	13.40	11.10
920-2172	2172	A	3/16	1/4	1/16	7/16	3/16	10.90	9.70	8.10
920-2170	2170	A	1/4	3/8	1/16	5/8	1/4	12.90	11.50	9.60
920-9014	91116	B	5/16	1/2	1/8	3/4	3/8	27.00	24.00	20.00
920-2174	2174	A	5/16	7/16	1/16	5/8	1/4	17.20	15.20	12.60
920-2175	2175	A	3/8	1/2	1/16	21/32	1/4	20.20	17.90	14.90
920-2177	2177	A	7/16	9/16	1/16	3/4	1/4	20.20	17.90	14.90

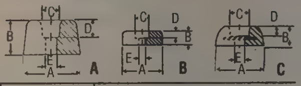


Extruded "Caterpillar" Grommets

Grommets to fit any size or shape opening. Made of non-conductive Black Nylon, Type 6/6, fungus resistant to conform to MIL-M-20693A, Type 1.

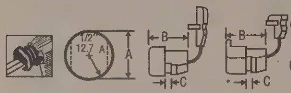
Stock No.	Mfr.'s Type	Dimensions A	Dimensions B	Dimensions C	Dimensions D	Dimensions E	PER COIL/25' 1-9	PER COIL/25' 10-24	PER COIL/25' 25-99
920-2692	2692	.052	.150	.040	.190	.125	22.48	19.98	17.49
920-2693	2693	.085	.155	.045	.200	.162	26.03	23.13	20.24
920-2694	2694	.125	.175	.045	.220	.206	27.84	24.75	21.65

Recessed Bumpers With Clearance Hole



Materials: Rubber (Black Buna-S synthetic rubber (SBR), approximately 60 durometer); Vinyl (Polyvinyl chloride (PVC), black). **Accessories:** Molded-in metal washers are steel. Vinyl chassis feet have brass eyelets in hole.

Stock No.	Mfr.'s Type	Fig.	Material and Accessories	O.D. "A"	Height "B"	Recess Dia. "C"	Recess Depth "D"	Screw Cir. I.D. "E"	PER PK./100 1-4	PER PK./100 5-9	PER PK./100 10-49
920-2192	2192	A	Rubber	1/2	1/4	1/4	1/8	1/8	12.20	10.40	9.20
920-2193	2193	B	Rubber	5/8	5/16	1/4	3/16	1/8	23.70	20.70	17.80
920-2194	2194	B	Rubber	3/4	3/8	9/32	3/16	1/8	29.90	26.20	22.40
920-2135	2135	C	Rubber-Washer	15/16	3/8	3/8	3/16	3/16	34.36	30.06	25.79



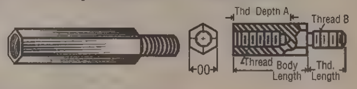
A = Chassis Hole
B = Length
C = Max. Chassis Thickness

Nylon Strain Reliefs

Straight thru style nylon strain reliefs. Rugged one-piece construction absorbs pull and twist. Wire full anchored and insulated at chassis entrance.

Stock No.	Mfr.'s Type	Wire Type	Approx. Wire Size	A	B	C	PER PK./100 1-4	PER PK./100 5-9	PER PK./100 10-49
920-0938	938	SPT-1	.12 × .22	.437"	.410"	.062"	12.40	11.00	9.10
920-0939	939	SV, SVT, HPD	.250 - .290	.500"	.438"	.100"	12.40	11.00	9.10
920-0823	823	SJ, SJT, SJO	.330 - .360	.625"	.580"	.062"	25.60	22.00	18.30

Brass Male/Female Standoffs

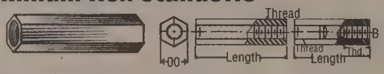


Hex threaded. See Thread Depth Chart #2.

Stock No.	Mfr.'s Type	Length (In.)	PER PK./100 1-4	PER PK./100 5-9
920-6026	8216*	1/4	33.40	29.10
920-6027	8217*	3/8	35.50	30.90
920-6028	8218*	1/2	37.10	32.20
920-6029	8220*	3/4	41.30	36.00
920-6030	8222*	1	59.00	51.40
920-6031	8248°	1/4	35.50	30.90
920-6032	8250°	1/2	37.10	32.20
920-6033	8251°	5/8	39.30	34.20
920-6034	8252°	3/4	41.30	36.00
920-6036	8254°	1	59.00	51.40
920-6041	8284†	3/4	41.30	36.00
920-6042	8286†	1	59.00	51.40

*#4. °#6. †#8.

Aluminum Hex Standoffs

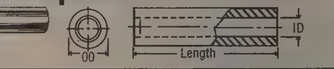


1/4" (920-6092, 920-6094 — 5/16") OD. See Thread Depth Chart #2.

Stock No.	Mfr.'s Type	Length (In.)	PER STANDARD PACK 1-4	PER STANDARD PACK 5-9	PER STANDARD PACK 10-49
920-6070	8403#°	1/2	20.00	17.40	14.00
920-6072	8405#°	3/4	29.00	25.20	20.30
920-6074	8407#°	1	33.50	29.10	23.50
920-6077	8422*°	3/8	18.60	16.11	13.00
920-6078	8423*°	1/2	20.00	17.40	14.00
920-6082	8427*°	1	33.50	29.10	23.50
920-6085	8433*‡	3	41.15	39.15	34.05
920-6092	8463†°	1/2	27.10	23.60	19.00
920-6094	8467†°	1	58.20	50.60	40.80

#4-40. *6-32. †10-32 Thread. °PK./100, ‡PK./50.

Nylon Round Spacers



1/4" O.D.

Stock No.	Mfr.'s Type	Length (In.)	PER PK./100 1-4	PER PK./100 5-9	PER PK./100 10-49
920-6103	4000*	1/8	18.10	15.70	12.70
920-6104	4006*	1/4	19.80	17.30	13.90
920-6106	4001†	1/8	18.10	15.70	12.70
920-6107	4007†	1/4	19.80	17.30	13.90
920-6108	4019†	1/2	23.50	20.40	16.50

*#4 I.D., †#6 I.D.

Aluminum Hex Male/ Female Standoffs

Stock No.	Mfr.'s Type	Length (In.)	PER PK./100 1-4	PER PK./100 5-9	PER PK./100 10-49
920-6095	8001C*	1/4	35.80	31.20	25.10
920-6096	8001G*	1/2	38.10	33.10	26.70
920-6097	8001L*	3/4	40.30	35.10	28.30
920-6098	8001Q*	1	44.80	39.00	31.40
920-6102	8002Q†	1	44.80	39.00	31.40

1/4" O.D. *6-32 Thread. †8-32 Thread. See Thread Depth Chart #2.

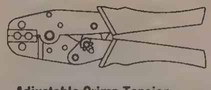
Aluminum Round Threaded Standoffs

1/4" OD. Thread: See Thread Depth Chart #2. #6-32 Thread.

Stock No.	Mfr.'s Type	Length (In.)	PER STD. PACK 1-4	PER STD. PACK 5-9
920-8343	8343*	1/2	19.30	16.80
920-8347	8347*	1	37.10	32.30
920-8349	8349**	1 1/2	29.55	28.15
920-8351	8351**	2	37.45	35.65

*PK./100. **PK./50.

1300 Series Crimping Tool with Interchangeable Dies for Telecom Coax and Terminal Crimps



- Coaxial Connectors
- Fiber-Optic Connectors
- Open Barrel Contacts
- Solderless Terminals
- Wire Ferrules
- Modular Telephone Plugs
- Fully Ratcheting Cycle
- Manual Ratchet Release
- EZ1-Change™ Die Set Screws
- Adjustable Crimp Tension
- Hardened Dies for Long Life
- Dies Fully Interchangeable

Order complete tool, or frame or dies separately.

Complete Tool

Stock No.	Specifications	EACH
889-1305	Insulated term. AWG 22-12	48.18
889-1306	Non-insulated term. AWG 22-12	48.18
889-1307	RJ45 modular telephone plugs (WE)	48.18
889-1317	RG58/59/62AU BNC/TNC	48.18
889-1319	N type for RG8/11/213/216	48.18
889-1338	RG174 BNC/TNC	48.18
889-1342	RJ45 AMP plugs	48.18

Frame Only

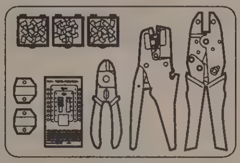
889-1302	Frame	29.12

Die Only

889-2035	Insulated term. AWG 22-12	18.85
889-2033	Open barrel AWG 22-12	18.85
889-2034	RG58/59/62AU BNC/TNC	18.85
889-2042	CATV "F" connector RG59/6	18.85
889-2027	AMP RG58	18.85
889-2051	RG174 BNC/TNC	18.85
889-2062	RJ11 modular telephone plugs	18.85
889-2068	RJ45 10 position modular telephone plugs	18.85
889-2076	RG6/58 BNC/TNC	18.85

More dies available — call for information.

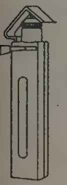
UTP — *NEW* — Termination Kit



Contents: Stripax professional (1101); Cable stripper (1160); Crimper frame (1302); Patch-check (1529); RJ45 die set (2061); RJ11 die set (2062); RJ11 Connectors (9520B) — 30; RJ45 Connectors (9521B) — 15; RJ45 Connector/Solidwire (9543) — 15.

889-1587. 1587. Kit	EACH 216.67

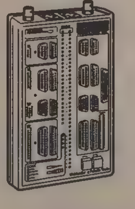
AM1 Stripping and Slitting Tool for Up to 1" Dia.



889-1820. AM1 Tool	EACH 35.28
889-2109. AM1 Tool replacement blade	EACH 11.16

PC and Mac Cable-Check — *NEW* —

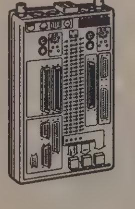
PC Cable-Check



- Tests Continuity of PC Cables
- Identifies Open, Shorted and Cross Connected Wires
- Test Combinations of Coax RG58, 59, 62 BNC; RJ45 and RJ11 Telephone Cables; D-Sub 9 Pin (Male/Female); D-Sub 15 Pin (Including H.D. and Male/Female); D-Sub 25 Pin (Male/Female); Centronics 36 Pin (Printer)
- Tested Shield Continuity
- Battery Included

889-1570. 1570. 36 oz.	EACH 149.95

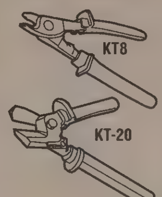
Mac Cable-Check



- Tests Continuity of Macintosh® and Apple™ Cables
- Identifies Open, Shorted and Cross Connected Wires
- Test Combinations of Coax RG 58, 59, 62 BNC; RJ45 and RJ11 Telephone Cables; D-Sub 9 Pin (Male Female); D-Sub 15 Pin (Male/Female); D-Sub 25 Pin (Female); Centronics 50 Pin (Male/Female); Mini Din 4/8 (Male/Female); Din 5 (Male)
- Tests Shield Continuity
- Battery Included

889-1575. 1575. 36 oz.	EACH 199.65

Professional Wire Cutters — *NEW* —

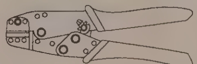


KT8 and KT-20

- Precision Hardened Cutting Blades
- 6 AWG Copper and Aluminum (KT8 Only)
- 2/0 AWG Copper and Aluminum (KT-20 Only)

889-9002. 900265. KT8. 6 oz.	EACH 22.53
889-1813. 1813. KT-20. 14 oz.	EACH 85.00

1600 Series Crimping Tool for Open Barrel and "D" Sub RS232 Connectors

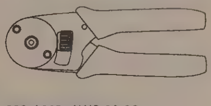


Uninsulated Terminals

- Amp Ultra-Fast™ and Faston™ Connectors
- Open Barrel Contacts
- Wire Ferrules
- Fully Ratcheting Cycle
- Manual Ratchet Release
- Adjustable Crimp Tension

889-1631. Open barrel contacts. AWG 14-24	EACH 125.78
889-1635. Slide on connectors. AWG 14-22	EACH 183.59
889-1645. Open barrel contacts. AWG 18-30	EACH 101.95
889-1646. D-Sub-RS232 open barrel contacts. AWG 20-28	EACH 157.12

1400 Series Crimping Tool for Producing a Four-Way Indent Crimp in D-Sub RS232 Machine Contacts



- Full Ratchet Cycle
- Four-Way Indent Crimp to MIL-C-22520 Requirements
- Built-In Contact Locator
- Crimps D-Subminiature, Contacts for RS232 Interface Connectors

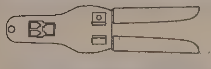
889-1440. AWG 20-26	EACH 31.74
889-1441. AWG 12-20	EACH 31.74

Punch Down Tool for 66, 110 and 630 Punch Down Blocks

- Terminates and Cuts Wire on 66 and 110 Type Terminals
- Reversible Clip-In Blade
- Adjustable Spring-Loaded Impact Mechanism
- Spare Blade Storage in Handle

889-3527. Punch down tool-66	EACH 48.33
889-3528. Punch down tool-110	EACH 48.33
889-4527. Spare blade-66	EACH 12.32
889-4528. Spare blade-110	EACH 12.32
889-4529. Spare blade-630	EACH 12.32

All-In-One Telephone Tool — Crimps RJ45, 11 and Handset Plugs (Stewart) and Strips and Cuts the Wire



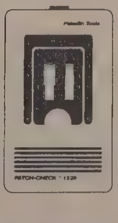
- RJ45, RJ11 and Handset Plugs
- Full Cable Preparation with Built-In Cutting and Stripping

All-In-One Telephone Tool. Also available for "AMP" connectors.

889-1532. PA1530R	EACH 116.62
889-1540. All-in-one telephone tool. AMP	EACH 125.78

Patch-Check and Patch-Check Plus

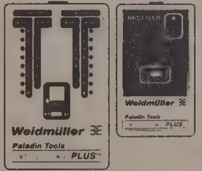
Patch-Check Telephone/Data Wiring Tester



Patch-Check™ is a hand held instrument designed to test telephone (RJ11) and computer data-link (RJ45) wiring. Patch-Check™ identifies open, shorted and cross connected wires with a clear LED display. Depress the pushbutton to review a sequential comparison of the wire position and continuity of the plugs at each end of the cable. The instrument is powered by a 9 volt battery supplied with each unit.

889-1529. Patch-Check	EACH 66.67

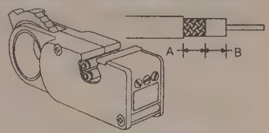
Patch-Check Plus Tester for Installed Telephone/Data Wiring



Patch-Check Plus Verifies continuity of each wire of RJ11 or RJ45 cable installations up to 1200 feet in length from one end. Patch-Check Plus identifies open shorted and cross connected wire with a clear LED display and audible signal. Each touch of the test button connects the relationship of one pin on the transmit side with the corresponding pin at the far end receiver. Transmitter and receiver are shipped with 9 volt batteries installed and system interconnects for RJ11, RJ45 and MMJ (DEC).

889-1531. Patch-Check Plus	EACH 249.95

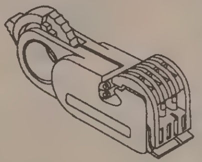
CST-Vario Coax-Stripper



Interchangeable blade cassettes for 2 and 3 level strips.

Strip A	Dim. B	Frame with Cassette			Blade Cassettes	
		Stock No.	Description	EACH	Stock No.	EACH
.279	.201	889-1240	With 2240 cassette[1]	55.78	889-2240	22.56
.256	—	889-1241	With 2241 cassette[2]	55.78	889-2241	22.56
.472	—	889-1242	With 2242 cassette[3]	55.78	889-2242	22.56
.295	.137	889-1243	With 2243 cassette[4]	55.78	889-2243	22.56
.236	—	889-1244	With 2244 cassette[5]	55.78	889-2244	22.56
.153	—	889-1246	With 2246 cassette[6]	55.78	889-2246	22.56
.327	.146	889-1247	With 2247 cassette[7]	55.78	889-2247	22.56

*Colors: 1=Green; 2=Blue; 3=Yellow; 4=Brown; 5=Red; 6=Grey; 7=Orange.

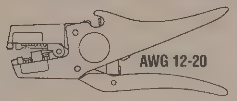


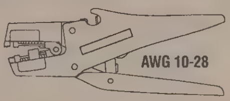
CST-Vario Coax-Stripper

- For .100 to .315 Dia. Coax Cables with 3 Variable Position Blades
- 2 or 3 Level Strips Can Be Set in 1 mm Increments

889-3240. CST-Vario	EACH 55.78

Stripax Wire Strippers


AWG 12-20


AWG 10-28

Stripax Wire Stripper AWG 12-20

For use with 12-20 PVC.

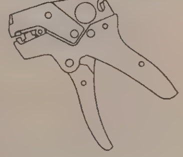
889-1100. Stripax wire stripper	EACH 70.98
889-2101. Stripax replacement blade	EACH 28.22

Professional Stripax Wire Stripper AWG 10-28

Wide range of wire stripping for the professional.

889-1101. Professional Stripax wire stripper	EACH 70.98
889-2131. Professional Stripax replacement blade	EACH 28.22

Mini-Stripax Plus Wire Stripper

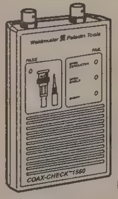


Curved ergonomic handles make this an ideal production tool.

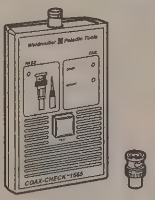
Mini-Stripax Plus Wire Stripper includes blade for 18-28 AWG.

889-1115. 1115-P	EACH 70.97
889-2108. Replacement blade. AWG 18-28. PVC	EACH 20.30
889-2144. Replacement blade. AWG 30-32. Teflon	EACH 35.10
889-2143. Replacement blade. AWG 26-28. Teflon	EACH 35.10
889-2142. Replacement blade. AWG 22-24. Teflon	EACH 35.10
889-2141. Replacement blade. AWG 20. Teflon	EACH 35.10
889-2140. Replacement blade. AWG 18. Teflon	EACH 35.10

Coax-Check Tester and Remote



Coax-Check



Coax-Check Remote

Coax-Check

- Tests Continuity of Coaxial Cables
- Tests RG58, 59 and 62 BNC Connections
- Provides Pass/Fail Diagnosis
- Identifies Open Conductor or Braid/Shield and Shorted Connection
- Battery Included

889-1560. 1560. 5 oz.	EACH 50.00

Coax-Check Remote — *NEW* —

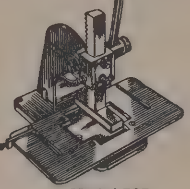
- Tests Continuity of Installed Coaxial Cables
- Tests RG58, 59 and 62 BNC Connections
- Provides Pass/Fail Diagnosis
- Identifies Open and Shorted Connection
- Battery Included

889-1565. 1565. 5 oz.	EACH 55.00

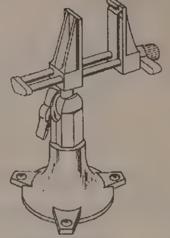
Work Centers, Presses, Vises, and Bases

PanaPress®

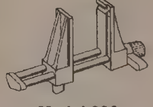
Model 502



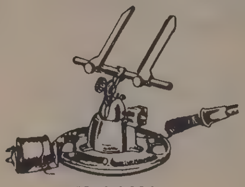
Model 505



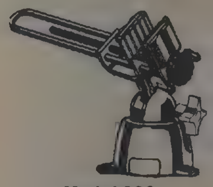
Model 201



Model 203

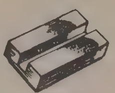


Model 324

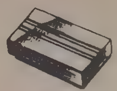


Model 396

Model 510

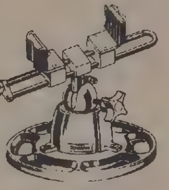


Model 511



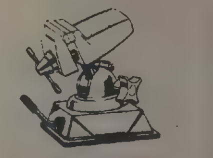
Model 512

Model 513



Model 350

Model 301



Model 381

Model 502 Panapress. This small, less than 7" high, arbor press has a rated capacity of 500 psi. The ram is fully reversible with 4 nylon adjusting gibs for accurate direction control. The arbor and table plate are of pressure die cast Zimac and the operating mechanism and operating lever are hardened and ground steel. The leverage ratio is 13.25:1. The throat depth is 2¹/₂" and vertical capacity is 3¹/₂".
890-5050. Model 502....EACH 109.99

Model 505 IDC Bench Assembly Press. ¹/₄-ton manual press with assembly base and standard platen. Mass termination of up to 64-conductor cable in seconds without wire stripping or soldering. Full series of base plates available. For IDC connectors on flat (ribbon) cable.
890-5055. Model 505....EACH 166.99

Model 510. Base plate for installing female socket transition connectors.
890-5060. Model 510....EACH 26.99

Model 511. Base plate for installing card edge connectors.
890-5065. Model 511....EACH 26.99

Model 512. Base plate for installing all standard DIP plugs.
890-5070. Model 512....EACH 26.99

Model 513. Base plate for installing D-Sub connectors.
890-5075. Model 513....EACH 26.99
*Other plates are available from the factory.

Model 324 Electronic Work Center. This handy work center is convenient yet economical. Angle of solder iron holder maintains iron at proper heat and solder holder self centers wire. Sturdy, stable, yet easily mobile, the 324 keeps everything right at hand. (Combination of Models 315, 300, 312, and 371).
890-4400. Model 324....EACH 76.99

Model 396 Wide Opening Head. Designed to hold projects in any position for assembly or repairs, the PanaVise 396 is a combination of the 366 Wide Opening Head and the 300 Standard Base. Each full turn of the insulated handle permits micro-adjustments to the exact pressure required.
890-4500. Model 396....EACH 45.99

Model 350 Multi-Purpose Work Center. This Multi-Purpose Work Center can be used to work on objects up to 9 inches in size as well as those tiny hard-to-hold objects. The Standard base tilts, turns and rotates to any work position and the tray base mount keeps small parts and tools right at hand. (Combination of Models 376, 300, and 312).
890-4410. Model 350....EACH 74.99

Model 301 Standard PanaVise. This all-purpose Standard PanaVise tilts, turns and rotates. Consisting of a Standard Base Model 300 and a 303 head, the 301 has nylon jaws with a satin finish for a firm grip. Just one convenient control knob locks work firmly in any position.
890-4451. Model 301....EACH 42.99

Model 381 Vacuum Base PanaVise. The 380 Vacuum Base is combined with the Model 303 Standard Head to create the same versatility of the Standard PanaVise with portability. Half turn of the mount lever attaches and releases powerful suction pad to allow setups in a variety of locations with a smooth non-porous surface.
890-4464. Model 381....EACH 54.99

Model 201 PanaVise® Jr. PanaVise® Jr. uses the famous Panavise® design that tilts, turns, twists and rotates. One quick turn of the control knob and you securely position your work exactly where you want it. **Overall Height:** 6³/₄" (17 cm). **Total Weight:** 1 lb. 4 oz. (567 g). **Base Specifications. Bolt Circle:** 4⁵/₁₆" b.c. **Material:** Die cast zinc. **Jaw Specifications. Min. Opening:** 0" (0 cm). **Max. Opening:** 2⁷/₈" (7.3 cm).
890-0201. Model 201....EACH 19.95

Model 203 PanaVise® Jr. Vise Head. ⁵/₈" diameter machines aluminum shaft fits all 300 Series bases.
890-0203. Model 203....EACH 18.99

Circuit Board Holders, Base and Base Mounts

Model 333 Rapid Assembly Circuit Board Holder
This holder features 8 position rotating adjustment and 6 lock positions in the vertical plane. Cross bars are available up to 30 inches in length to hold larger boards. Spring loaded, the 333 features tilt angle and height adjustment and quickboard rotations for easy component insertion and soldering. Includes 12" cross bar.
890-4420 Model 333....EACH 64.99

Model 300. Standard PanaVise® Base.
890-4457 Model 300....EACH 19.99

Model 311. Bench clamp base mount.
890-4450. Model 311....EACH 38.99

Model 303. Standard head.
890-4460. Model 303....EACH 23.99

Model 371. Solder and iron holder.
890-4411. Model 371....EACH 10.99

Model 312. Tray base mount.
890-4458. Model 312....EACH 19.99

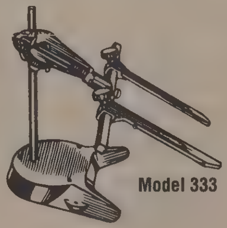
Model 315. Circuit board holder. Holds PC boards up to 12" W.
890-4498. Model 315....EACH 29.99

Model 380. Vacuum base
890-4461. Model 380....EACH 31.99

Model 305. Low-profile base.
890-4515. Model 305....EACH 19.99

Model 366. Wide opening head. Opens a full 6" with a jaw width of 1³/₄".
890-4505. Model 366....EACH 30.99

Model 376. Self-centering extra-wide opening head. Jaws open to 9".
890-4510. Model 376....EACH 41.99

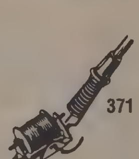


Model 333

300

311

303



371

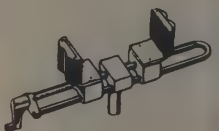
312

315

380

305

366

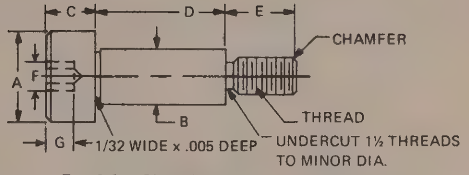


376

Screws

Precision Shoulder Screws — Socket Head. Stainless Steel: ASTM-A-581, A-582.

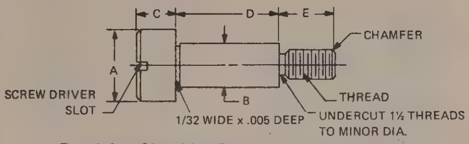
Stock No.	Mfr.'s Type	Thread	Material	Dimensions A ±.004	B +.000 −.001	C ±.010	D +.002 −.000	E ±.005	F	G Min.	EACH 1-49	50-99	100-Up
219-6901	6901-SS	4-40	Stainless Steel	¼"	.1245	⅛"	.1250	5⁄32"	5⁄64"	1⁄16"	**1.18**	**1.07**	**0.97**
219-6903	6903-SS	4-40	Stainless Steel	¼"	.1245	⅛"	.2500	5⁄32"	5⁄64"	1⁄16"	**1.32**	**1.19**	**1.08**
219-6905	6905-SS	4-40	Stainless Steel	¼"	.1245	⅛"	.3750	5⁄32"	5⁄64"	1⁄16"	**1.46**	**1.32**	**1.19**
219-6907	6907-SS	4-40	Stainless Steel	¼"	.1245	⅛"	.5000	5⁄32"	5⁄64"	1⁄16"	**1.86**	**1.68**	**1.52**
219-6908	6908-SS	6-32	Stainless Steel	9⁄32"	.1560	⅛"	.1250	3⁄16"	3⁄32"	5⁄64"	**1.64**	**1.48**	**1.34**
219-6910	6910-SS	6-32	Stainless Steel	9⁄32"	.1560	⅛"	.2500	3⁄16"	3⁄32"	5⁄64"	**1.78**	**1.61**	**1.45**
219-6912	6912-SS	6-32	Stainless Steel	9⁄32"	.1560	⅛"	.3750	3⁄16"	3⁄32"	5⁄64"	**1.84**	**1.66**	**1.50**
219-6914	6914-SS	6-32	Stainless Steel	9⁄32"	.1560	⅛"	.5000	3⁄16"	3⁄32"	5⁄64"	**1.94**	**1.75**	**1.58**
219-6916	6916-SS	6-32	Stainless Steel	9⁄32"	.1560	⅛"	.6250	3⁄16"	3⁄32"	5⁄64"	**1.79**	**1.62**	**1.46**
219-6918	6918-SS	6-32	Stainless Steel	9⁄32"	.1560	5⁄32"	.7500	3⁄16"	3⁄32"	5⁄64"	**2.50**	**2.25**	**2.03**
219-6919	6919-SS	8-32	Stainless Steel	5⁄16"	.1870	5⁄32"	.1250	3⁄16"	3⁄32"	5⁄64"	**1.42**	**1.28**	**1.16**
219-6921	6921-SS	8-32	Stainless Steel	5⁄16"	.1870	5⁄32"	.2500	3⁄16"	3⁄32"	5⁄64"	**1.64**	**1.48**	**1.34**
219-6923	6923-SS	8-32	Stainless Steel	5⁄16"	.1870	5⁄32"	.3750	3⁄16"	3⁄32"	5⁄64"	**1.89**	**1.71**	**1.54**
219-6925	6925-SS	8-32	Stainless Steel	5⁄16"	.1870	5⁄32"	.5000	3⁄16"	3⁄32"	5⁄64"	**2.17**	**1.96**	**1.77**
219-6927	6927-SS	8-32	Stainless Steel	5⁄16"	.1870	5⁄32"	.6250	3⁄16"	3⁄32"	5⁄64"	**2.22**	**2.00**	**1.80**
219-6929	6929-SS	8-32	Stainless Steel	5⁄16"	.1870	5⁄32"	.7500	3⁄16"	3⁄32"	5⁄64"	**2.63**	**2.37**	**2.14**
219-6931	6931-SS	8-32	Stainless Steel	5⁄16"	.1870	5⁄32"	1.000	3⁄16"	3⁄32"	5⁄64"	**2.91**	**2.62**	**2.36**



Precision Shoulder Screws — Socket Head

Precision Shoulder Screws — Slotted Head. Stainless Steel: ASTM-A-581, A-582.

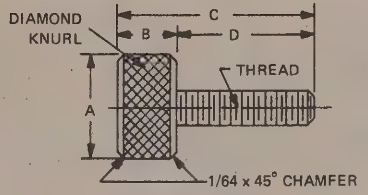
219-7001	7001-SS	4-40	Stainless Steel	¼"	.1245	⅛"	.1250	5⁄32"	—	—	**1.03**	**0.93**	**0.84**
219-7003	7003-SS	4-40	Stainless Steel	¼"	.1245	⅛"	.2500	5⁄32"	—	—	**1.13**	**1.02**	**0.92**
219-7005	7005-SS	4-40	Stainless Steel	¼"	.1245	⅛"	.3750	5⁄32"	—	—	**1.28**	**1.16**	**1.05**
219-7007	7007-SS	4-40	Stainless Steel	¼"	.1245	⅛"	.5000	5⁄32"	—	—	**1.41**	**1.27**	**1.15**
219-7008	7008-SS	6-32	Stainless Steel	9⁄32"	.1560	⅛"	.1250	3⁄16"	—	—	**1.21**	**1.09**	**0.99**
219-7010	7010-SS	6-32	Stainless Steel	9⁄32"	.1560	⅛"	.2500	3⁄16"	—	—	**1.29**	**1.17**	**1.06**
219-7012	7012-SS	6-32	Stainless Steel	9⁄32"	.1560	⅛"	.3750	3⁄16"	—	—	**1.38**	**1.25**	**1.13**
219-7014	7014-SS	6-32	Stainless Steel	9⁄32"	.1560	⅛"	.5000	3⁄16"	—	—	**1.47**	**1.33**	**1.20**
219-7016	7016-SS	6-32	Stainless Steel	9⁄32"	.1560	⅛"	.6250	3⁄16"	—	—	**1.56**	**1.41**	**1.27**
219-7018	7018-SS	6-32	Stainless Steel	9⁄32"	.1560	⅛"	.7500	3⁄16"	—	—	**1.66**	**1.50**	**1.35**
219-7019	7019-SS	8-32	Stainless Steel	5⁄16"	.1870	5⁄32"	.1250	3⁄16"	—	—	**1.13**	**1.02**	**0.92**
219-7021	7021-SS	8-32	Stainless Steel	5⁄16"	.1870	5⁄32"	.2500	3⁄16"	—	—	**1.32**	**1.19**	**1.08**
219-7023	7023-SS	8-32	Stainless Steel	5⁄16"	.1870	5⁄32"	.3750	3⁄16"	—	—	**1.46**	**1.32**	**1.19**
219-7025	7025-SS	8-32	Stainless Steel	5⁄16"	.1870	5⁄32"	.5000	3⁄16"	—	—	**1.52**	**1.37**	**1.24**
219-7027	7027-SS	8-32	Stainless Steel	5⁄16"	.1870	5⁄32"	.6250	3⁄16"	—	—	**1.70**	**1.53**	**1.38**
219-7029	7029-SS	8-32	Stainless Steel	5⁄16"	.1870	5⁄32"	.7500	3⁄16"	—	—	**1.84**	**1.66**	**1.50**
219-7031	7031-SS	8-32	Stainless Steel	5⁄16"	.1870	5⁄32"	1.0000	3⁄16"	—	—	**2.13**	**1.92**	**1.73**



Precision Shoulder Screws — Slotted Head

Plain Thumb Screws. Stainless Steel: ASTM-A-581, A-582.

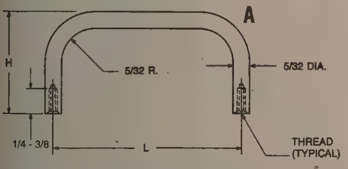
Stock No.	Mfr.'s Type	Thread	Material	Dimensions A +.020 −.000	B ±.015	C ±.015	D ±.010	EACH 1-49	50-99	100-Up
219-7120	7120-SS	4-40	Stainless Steel	5⁄16"	3⁄16"	½"	5⁄16"	**1.32**	**1.19**	**1.08**
219-7121	7121-SS	4-40	Stainless Steel	5⁄16"	3⁄16"	9⁄16"	⅜"	**1.32**	**1.19**	**1.08**
219-7122	7122-SS	4-40	Stainless Steel	5⁄16"	3⁄16"	⅝"	7⁄16"	**1.64**	**1.48**	**1.34**
219-7123	7123-SS	4-40	Stainless Steel	5⁄16"	3⁄16"	11⁄16"	½"	**1.72**	**1.55**	**1.40**
219-7124	7124-SS	6-32	Stainless Steel	5⁄16"	3⁄16"	½"	5⁄16"	**1.42**	**1.28**	**1.16**
219-7125	7125-SS	6-32	Stainless Steel	5⁄16"	3⁄16"	9⁄16"	⅜"	**1.42**	**1.28**	**1.16**
219-7126	7126-SS	6-32	Stainless Steel	5⁄16"	3⁄16"	⅝"	7⁄16"	**1.64**	**1.48**	**1.34**
219-7127	7127-SS	6-32	Stainless Steel	5⁄16"	3⁄16"	11⁄16"	½"	**1.70**	**1.53**	**1.38**
219-7128	7128-SS	8-32	Stainless Steel	⅜"	3⁄16"	9⁄16"	⅜"	**1.94**	**1.75**	**1.58**
219-7129	7129-SS	8-32	Stainless Steel	⅜"	3⁄16"	⅝"	7⁄16"	**1.99**	**1.80**	**1.62**
219-7130	7130-SS	8-32	Stainless Steel	⅜"	3⁄16"	11⁄16"	½"	**2.03**	**1.83**	**1.65**
219-7131	7131-SS	8-32	Stainless Steel	⅜"	3⁄16"	¾"	9⁄16"	**2.06**	**1.86**	**1.68**
219-7132	7132-SS	8-32	Stainless Steel	⅜"	3⁄16"	13⁄16"	⅝"	**2.13**	**1.92**	**1.73**

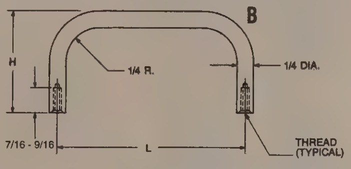


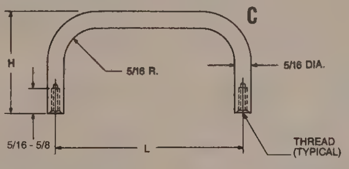
Plain Thumb Screws

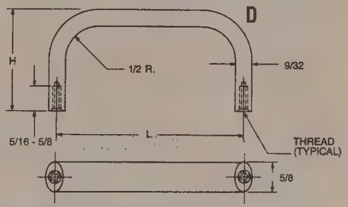
Handles

Aluminum: QQA-225/3, QQA-225/8, QQA-200/9. **Plating:** Black Anodize. **Brass:** ASTM-B-16. **Plating:** Nickel.









5⁄32 Round Internal Thread Handles — Fig. A

Stock No.	Mfr.'s Type*	Thread	Length ±1⁄32	Height ±1⁄32	EACH 1-24	25-49	50-Up
219-8001	8042-440-A-24	4-40	1¼"	1"	**2.34**	**2.11**	**1.90**
219-8002	8042-440-B-5	4-40	1¼"	1"	**2.90**	**2.61**	**2.35**
219-8003	8045-440-A-24	4-40	2"	1"	**2.58**	**2.33**	**2.10**
219-8004	8045-440-B-5	4-40	2"	1"	**3.02**	**2.72**	**2.45**
219-8005	8047-440-A-24	4-40	3"	1"	**2.64**	**2.38**	**2.15**
219-8006	8047-440-B-5	4-40	3"	1"	**3.06**	**2.76**	**2.49**

¼ Round Internal Thread Handles — Fig. B

219-8007	8128-832-A-24	8-32	3"	1½"	**3.00**	**2.70**	**2.43**
219-8008	8128-832-B-5	8-32	3"	1½"	**3.46**	**3.12**	**2.81**
219-8009	8129-832-A-24	8-32	3½"	1½"	**3.06**	**2.76**	**2.43**
219-8010	8129-832-B-5	8-32	3½"	1½"	**3.52**	**3.17**	**2.86**
219-8011	8130-832-A-24	8-32	4"	1½"	**3.26**	**2.94**	**2.65**
219-8012	8130-832-B-5	8-32	4"	1½"	**3.62**	**3.26**	**2.94**
219-8013	8132-832-A-24	8-32	4½"	1½"	**3.32**	**2.99**	**2.70**
219-8014	8132-832-B-5	8-32	4½"	1½"	**3.70**	**3.33**	**3.00**
219-8015	8133-832-A-24	8-32	5"	1½"	**3.46**	**3.12**	**2.81**
219-8016	8133-832-B-5	8-32	5"	1½"	**3.76**	**3.39**	**3.06**
219-8017	8134-832-A-24	8-32	6"	1½"	**3.60**	**3.24**	**2.92**
219-8018	8134-832-B-5	8-32	6"	1½"	**3.92**	**3.53**	**3.18**

5⁄16 Round Internal Thread Handles — Fig. C

Stock No.	Mfr.'s Type*	Thread	Length ±1⁄32	Height ±1⁄32	EACH 1-24	25-49	50-Up
219-8019	8178-1032-A-24	10-32	3"	1½"	**3.58**	**3.23**	**2.91**
219-8020	8178-1032-B-5	10-32	3"	1½"	**3.90**	**3.51**	**3.16**
219-8021	8182-1032-A-24	10-32	4"	1½"	**3.74**	**3.37**	**3.04**
219-8022	8182-1032-B-5	10-32	4"	1½"	**4.12**	**3.71**	**3.34**
219-8023	8184-1032-A-24	10-32	4½"	1½"	**3.84**	**3.46**	**3.12**
219-8024	8184-1032-B-5	10-32	4½"	1½"	**4.22**	**3.80**	**3.42**
219-8025	8185-1032-A-24	10-32	49⁄16"	1½"	**3.80**	**3.42**	**3.08**
219-8026	8185-1032-B-5	10-32	49⁄16"	1½"	**4.20**	**3.78**	**3.41**
219-8027	8187-1032-A-24	10-32	5"	1½"	**3.92**	**3.53**	**3.18**
219-8028	8187-1032-B-5	10-32	5"	1½"	**4.28**	**3.86**	**3.48**
219-8029	8189-1032-A-24	10-32	5½"	1½"	**4.00**	**3.60**	**3.24**
219-8030	8189-1032-B-5	10-32	5½"	1½"	**4.34**	**3.91**	**3.52**
219-8031	8191-1032-A-24	10-32	6"	1½"	**3.94**	**3.55**	**3.20**
219-8032	8191-1032-B-5	10-32	6"	1½"	**4.66**	**4.20**	**3.78**
219-8033	8197-1032-A-24	10-32	4"	1¾"	**3.74**	**3.37**	**3.04**
219-8034	8197-1032-B-5	10-32	4"	1¾"	**4.12**	**3.71**	**3.34**
219-8035	8199-1032-A-24	10-32	4½"	1¾"	**3.84**	**3.46**	**3.12**
219-8036	8199-1032-B-5	10-32	4½"	1¾"	**4.22**	**3.80**	**3.42**
219-8037	8203-1032-A-24	10-32	5"	1¾"	**3.92**	**3.53**	**3.18**
219-8038	8203-1032-B-5	10-32	5"	1¾"	**4.28**	**3.86**	**3.48**
219-8039	8208-1032-A-24	10-32	6"	1¾"	**4.02**	**3.62**	**3.26**

5⁄16 Round Internal Thread Handles — Fig. C

Stock No.	Mfr.'s Type*	Thread	Length ±1⁄32	Height ±1⁄32	EACH 1-24	25-49	50-Up
219-8040	8208-1032-B-5	10-32	6"	1¾"	**4.66**	**4.20**	**3.78**
219-8041	8210-1032-A-24	10-32	67⁄16"	1¾"	**4.06**	**3.66**	**3.30**
219-8042	8210-1032-B-5	10-32	67⁄16"	1¾"	**4.80**	**4.32**	**3.89**

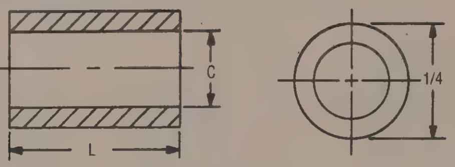
⅝ × 9⁄32 Oval Internal Thread Handles — Fig. D

219-8043	8377-1032-A-24	10-32	4"	1¾"	**5.58**	**5.03**	**4.53**
219-8044	8377-1032-B-5	10-32	4"	1¾"	**16.14**	**14.53**	**13.08**
219-8045	8379-1032-A-24	10-32	4½"	1¾"	**5.88**	**5.30**	**4.77**
219-8046	8379-1032-B-5	10-32	4½"	1¾"	**16.76**	**15.09**	**13.59**
219-8047	8381-1032-A-24	10-32	5"	1¾"	**6.00**	**5.40**	**4.86**
219-8048	8381-1032-B-5	10-32	5"	1¾"	**17.42**	**15.68**	**14.12**
219-8049	8382-1032-A-24	10-32	5½"	1¾"	**6.18**	**5.57**	**5.02**
219-8050	8382-1032-B-5	10-32	5½"	1¾"	**18.12**	**16.31**	**14.68**
219-8051	8383-1032-A-24	10-32	6"	1¾"	**6.40**	**5.76**	**5.19**
219-8052	8383-1032-B-5	10-32	6"	1¾"	**18.76**	**16.89**	**15.21**
219-8053	8384-1032-A-24	10-32	67⁄16"	1¾"	**6.62**	**5.96**	**5.37**
219-8054	8384-1032-B-5	10-32	67⁄16"	1¾"	**19.48**	**17.54**	**15.79**
—	—	—	—	—	—	—	—

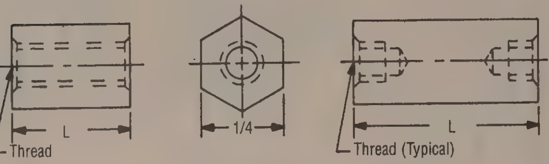
*A = Aluminum, B = Brass, -24 = Black Anodize, -5 = Nickel Plate.

Spacers and Standoffs

A



C



¼ Round Spacers — Fig. A. Aluminum: QQA-225/3, QQA-225/8, QQA-200-9. **Plating:** Iridite. **Brass: ASTM-B-16. Plating:** Zinc.

Stock No.	Mfr.'s Type*	Hole Clearance	Length	PER PK./100		
				1-9	10-24	25-Up
219-2001	1122-4-A-7	.115	⅛"	7.63	6.87	6.19
219-2002	1122-4-B-12	.115	⅛"	10.52	9.47	8.53
219-2003	1122-6-A-7	.140	⅛"	7.63	6.87	6.19
219-2004	1122-6-B-12	.140	⅛"	10.52	9.47	8.53
219-2005	1122-8-A-7	.166	⅛"	7.63	6.87	6.19
219-2006	1122-8-B-12	.166	⅛"	10.52	9.47	8.53
219-2007	1124-4-A-7	.115	¼"	8.90	8.01	7.21
219-2008	1124-4-B-12	.115	¼"	11.96	10.77	9.70
219-2009	1124-6-A-7	.140	¼"	8.90	8.01	7.21
219-2010	1124-6-B-12	.140	¼"	11.96	10.77	9.70
219-2011	1124-8-A-7	.166	¼"	8.90	8.01	7.21
219-2012	1124-8-B-12	.166	¼"	11.96	10.77	9.70
219-2013	1126-4-A-7	.115	⅜"	10.59	9.54	8.59
219-2014	1126-4-B-12	.115	⅜"	12.73	11.46	10.32
219-2015	1126-6-A-7	.140	⅜"	10.59	9.54	8.59
219-2016	1126-6-B-12	.140	⅜"	12.73	11.46	10.32
219-2017	1126-8-A-7	.166	⅜"	10.59	9.54	8.59
219-2018	1126-8-B-12	.166	⅜"	12.73	11.46	10.32
219-2019	1128-4-A-7	.115	½"	11.56	10.41	9.37
219-2020	1128-4-B-12	.115	½"	15.24	13.72	12.35
219-2021	1128-6-A-7	.140	½"	11.56	10.41	9.37
219-2022	1128-6-B-12	.140	½"	15.24	13.72	12.35
219-2023	1128-8-A-7	.166	½"	11.56	10.41	9.37
219-2024	1128-8-B-12	.166	½"	15.24	13.72	12.35

³⁄₁₆ Hex Female Standoffs — Fig. B. Aluminum: QQA-225/3, QQA-225/8, QQA-200-9. **Plating:** Iridite. **Brass: ASTM-B-16. Plating:** Zinc.

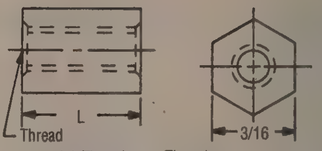
Stock No.	Mfr.'s Type*	Thread	Length	Thread Length	PER PK./100		
					1-9	10-24	25-Up
219-2025	2053-440-A-7	4-40	¼"	Thru	12.02	10.82	9.74
219-2026	2053-440-B-12	4-40	¼"	Thru	13.47	12.13	10.92
219-2027	2055-440-A-7	4-40	⅜"	Thru	14.13	12.72	11.45
219-2028	2055-440-B-12	4-40	⅜"	Thru	15.79	14.22	12.80
219-2029	2057-440-A-7	4-40	½"	Thru	15.55	14.00	12.60
219-2030	2057-440-B-12	4-40	½"	Thru	18.54	16.69	15.03
219-2031	2059-440-A-7	4-40	⅝"	Thru	18.28	16.46	14.82
219-2032	2059-440-B-12	4-40	⅝"	Thru	22.53	20.28	18.26
219-2033	2061-440-A-7	4-40	¾"	Thru	20.24	18.22	16.40
219-2034	2061-440-B-12	4-40	¾"	Thru	25.47	22.93	20.64
219-2035	2063-440-A-7	4-40	⅞"	Thru	22.29	20.07	18.07
219-2036	2063-440-B-12	4-40	⅞"	Thru	31.25	28.13	25.32
219-2037	2065-440-A-7	4-40	1"	Thru	24.45	22.01	19.81
219-2038	2065-440-B-12	4-40	1"	Thru	32.84	29.56	26.61

¼ Hex Female Standoffs — Fig. C. Aluminum: QQA-225/3, QQA-225/8, QQA-200-9. **Plating:** Iridite. **Brass: ASTM-B-16. Plating:** Zinc.

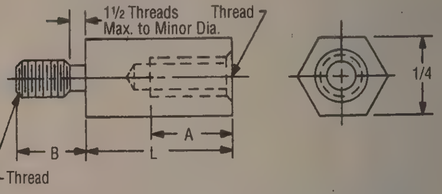
219-2039	2100-440-A-7	4-40	¼"	Thru	11.63	10.47	9.43
219-2040	2100-440-B-12	4-40	¼"	Thru	12.59	11.34	10.21
219-2041	2100-632-A-7	6-32	¼"	Thru	11.63	10.47	9.43
219-2042	2100-632-B-12	6-32	¼"	Thru	12.59	11.34	10.21
219-2043	2102-440-A-7	4-40	⅜"	Thru	13.02	11.72	10.55
219-2044	2102-440-B-12	4-40	⅜"	Thru	15.77	14.20	12.78
219-2045	2102-632-A-7	6.32	⅜"	Thru	13.02	11.72	10.55
219-2046	2102-632-B-12	6-32	⅜"	Thru	15.77	14.20	12.78
219-2047	2104-440-A-7	4-40	½"	Thru	14.42	12.98	11.69
219-2048	2104-440-B-12	4-40	½"	Thru	18.25	16.43	14.79
219-2049	2104-632-A-7	6-32	½"	Thru	14.42	12.98	11.69
219-2050	2104-632-B-12	6-32	½"	Thru	18.25	16.43	14.79
219-2051	2106-440-A-7	4-40	⅝"	Thru	15.53	13.98	12.59
219-2052	2106-440-B-12	4-40	⅝"	Thru	24.62	22.16	19.95
219-2053	2106-632-A-7	6-32	⅝"	Thru	16.42	14.78	13.31
219-2054	2106-632-B-12	6-32	⅝"	Thru	24.62	22.16	19.95
219-2055	2108-440-A-7	4-40	¾"	Thru	17.54	15.79	14.22
219-2056	2108-440-B-12	4-40	¾"	Thru	28.18	25.37	22.84
219-2057	2108-632-A-7	6-32	¾"	Thru	17.54	15.79	14.22
219-2058	2108-632-B-12	6-32	¾"	Thru	28.18	25.37	22.84
219-2059	2110-440-A-7	4-40	⅞"	Thru	19.98	17.99	16.20
219-2060	2110-440-B-12	4-40	⅞"	Thru	29.95	26.96	24.27
219-2061	2110-632-A-7	6-32	⅞"	Thru	18.68	16.82	15.14
219-2062	2110-632-B-12	6-32	⅞"	Thru	29.95	26.96	24.27
219-2063	2112-440-A-7	4-40	1"	Thru	22.29	20.07	18.07
219-2064	2112-440-B-12	4-40	1"	Thru	31.72	28.55	25.70
219-2065	2112-632-A-7	6-32	1"	Thru	22.29	20.06	18.05
219-2066	2112-632-B-12	6-32	1"	Thru	31.72	28.55	25.69

*A-7 = Aluminum, Clear Iridite; B-12 = Brass, Zinc Plate; SS = Stainless Steel.

B



D



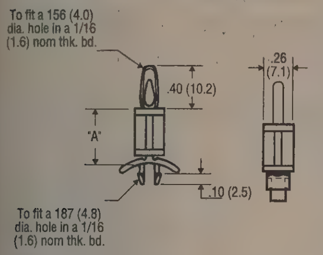
¼ Hex Female Standoffs — Fig. C. Aluminum: QQA-225/3, QQA-225/8, QQA-200-9. **Plating:** Iridite. **Brass: ASTM-B-16. Plating:** Zinc.

Stock No.	Mfr.'s Type*	Thread	Length	Thread Depth	PER PK./100		
					1-9	10-24	25-Up
219-2067	2116-632-A-7	6-32	1¼"	⅜"	33.66	30.29	27.26
219-2068	2116-632-B-12	6-32	1¼"	⅜"	41.30	37.17	33.45
219-2069	2120-440-A-7	4-40	1½"	¼"	37.90	34.11	30.69
219-2070	2120-440-B-12	4-40	1½"	¼"	60.06	54.05	48.64
219-2071	2120-632-A-7	6-32	1½"	⅜"	37.90	34.11	30.69
219-2072	2120-632-B-12	6-32	1½"	⅜"	47.74	42.97	38.67

¼ Hex Male-Female Standoffs — Fig. D. Aluminum: QQA-225/3. **Plating:** Iridite. **Brass:** ASTM-B-16. **Plating:** Nickel. **Stainless Steel:** ASTM-A-581, A-582.

Stock No.	Mfr.'s Type*	Thread	Length	Thread Length		PER PK./100		
				A	B	1-9	10-24	25-Up
219-2073	4530-440-A-7	4-40	¼"	¼"	³⁄₁₆"	23.97	21.41	19.27
219-2074	4530-440-B-12	4-40	¼"	¼"	³⁄₁₆"	28.38	25.54	22.98
219-2075	4530-440-SS	4-40	¼"	¼"	³⁄₁₆"	57.75	41.97	46.77
219-2076	4530-632-A-7	6-32	¼"	⅜"	¼"	24.48	22.03	19.82
219-2077	4530-632-B-12	6-32	¼"	⅜"	¼"	29.69	26.72	24.05
219-2078	4530-632-SS	6-32	¼"	⅜"	¼"	66.90	60.21	54.19
219-2079	4532-440-A-7	4-40	⅜"	¼"	³⁄₁₆"	24.99	22.49	20.24
219-2080	4532-440-B-12	4-40	⅜"	¼"	³⁄₁₆"	30.71	27.64	24.87
219-2081	4532-440-SS	4-40	⅜"	¼"	³⁄₁₆"	62.99	56.69	51.02
219-2082	4532-632-A-7	6-32	⅜"	⅜"	¼"	25.69	23.12	20.80
219-2083	4532-632-B-12	6-32	⅜"	⅜"	¼"	31.01	27.90	25.11
219-2084	4532-632-SS	6-32	⅜"	⅜"	¼"	71.66	64.49	58.04
219-2085	4534-440-A-7	4-40	½"	¼"	³⁄₁₆"	26.20	23.58	21.22
219-2086	4534-440-B-12	4-40	½"	¼"	³⁄₁₆"	32.29	29.06	26.16
219-2087	4534-440-SS	4-40	½"	¼"	³⁄₁₆"	67.75	60.97	54.87
219-2088	4534-632-A-7	6-32	½"	⅜"	¼"	26.72	24.05	21.64
219-2089	4534-632-B-12	6-32	½"	⅜"	¼"	32.29	29.06	26.16
219-2090	4534-632-SS	6-32	½"	⅜"	¼"	76.18	68.56	61.71
219-2091	4536-440-A-7	4-40	⅝"	¼"	³⁄₁₆"	27.58	24.82	22.34
219-2092	4536-440-B-12	4-40	⅝"	¼"	³⁄₁₆"	32.98	29.68	26.71
219-2093	4536-440-SS	4-40	⅝"	¼"	³⁄₁₆"	72.99	65.69	59.12
219-2094	4536-632-A-7	6-32	⅝"	⅜"	¼"	28.10	25.29	22.76
219-2095	4536-632-B-12	6-32	⅝"	⅜"	¼"	32.98	29.68	26.71
219-2096	4536-632-SS	6-32	⅝"	⅜"	¼"	81.42	73.28	65.95
219-2097	4538-440-A-7	4-40	¾"	¼"	³⁄₁₆"	28.62	25.76	23.18
219-2098	4538-440-B-12	4-40	¾"	¼"	³⁄₁₆"	33.67	30.30	27.27
219-2099	4538-440-SS	4-40	¾"	¼"	³⁄₁₆"	77.99	70.19	63.17
219-2100	4538-632-A-7	6-32	¾"	⅜"	¼"	29.31	26.38	23.74
219-2101	4538-632-B-12	6-32	¾"	⅜"	¼"	33.67	30.30	27.27
219-2102	4538-632-SS	6-32	¾"	⅜"	¼"	86.19	77.57	69.81
219-2103	4540-440-A-7	4-40	⅞"	¼"	³⁄₁₆"	29.83	26.85	24.16
219-2104	4540-440-B-12	4-40	⅞"	¼"	³⁄₁₆"	34.57	31.11	28.00
219-2105	4540-440-SS	4-40	⅞"	¼"	³⁄₁₆"	82.28	74.05	66.64
219-2106	4540-632-A-7	6-32	⅞"	⅜"	¼"	30.53	27.47	24.72
219-2107	4540-632-B-12	6-32	⅞"	⅜"	¼"	34.57	31.11	28.00
219-2108	4540-632-SS	6-32	⅞"	⅜"	¼"	91.43	82.29	74.06
219-2109	4542-440-A-7	4-40	1"	¼"	³⁄₁₆"	31.04	27.94	25.14
219-2110	4542-440-B-12	4-40	1"	¼"	³⁄₁₆"	35.71	32.13	28.92
219-2111	4542-440-SS	4-40	1"	¼"	³⁄₁₆"	87.51	78.75	70.88
219-2112	4542-632-A-7	6-32	1"	⅜"	¼"	31.74	28.56	25.70
219-2113	4542-632-B-12	6-32	1"	⅜"	¼"	35.71	32.13	28.92
219-2114	4542-632-SS	6-32	1"	⅜"	¼"	96.19	86.57	77.91
219-2115	4544-440-A-7	4-40	1⅛"	¼"	³⁄₁₆"	34.57	31.11	28.00
219-2116	4544-440-B-12	4-40	1⅛"	¼"	³⁄₁₆"	37.75	33.98	30.58
219-2117	4544-440-SS	4-40	1⅛"	¼"	³⁄₁₆"	94.70	85.23	76.71
219-2118	4544-632-A-7	6-32	1⅛"	⅜"	¼"	34.57	31.11	28.00
219-2119	4544-632-B-12	6-32	1⅛"	⅜"	¼"	37.53	33.78	30.40
219-2120	4544-632-SS	6-32	1⅛"	⅜"	¼"	104.36	93.92	84.53
219-2121	4546-440-A-7	4-40	1¼"	¼"	³⁄₁₆"	35.94	32.35	29.11
219-2122	4546-440-B-12	4-40	1¼"	¼"	³⁄₁₆"	47.08	42.37	38.13
219-2123	4546-440-SS	4-40	1¼"	¼"	³⁄₁₆"	99.94	89.94	80.95
219-2124	4546-632-A-7	6-32	1¼"	⅜"	¼"	35.94	32.35	29.11
219-2125	4546-632-B-12	6-32	1¼"	⅜"	¼"	47.08	42.37	38.13
219-2126	4546-632-SS	6-32	1¼"	⅜"	¼"	111.30	100.17	90.15
219-2127	4548-440-A-7	4-40	1⅜"	¼"	³⁄₁₆"	37.23	33.50	30.15
219-2128	4548-440-B-12	4-40	1⅜"	¼"	³⁄₁₆"	48.22	43.39	39.05
219-2129	4548-440-SS	4-40	1⅜"	¼"	³⁄₁₆"	104.94	94.44	85.00
219-2130	4548-632-A-7	6-32	1⅜"	⅜"	¼"	37.75	33.97	30.57
219-2131	4548-632-B-12	6-32	1⅜"	⅜"	¼"	48.22	43.39	39.05
219-2132	4548-632-SS	6-32	1⅜"	⅜"	¼"	116.06	104.45	94.01
219-2133	4550-440-A-7	4-40	1½"	¼"	³⁄₁₆"	38.44	34.59	31.13
219-2134	4550-440-B-12	4-40	1½"	¼"	³⁄₁₆"	50.49	45.44	40.90
219-2135	4550-440-SS	4-40	1½"	¼"	³⁄₁₆"	109.70	48.73	88.85
219-2136	4550-632-A-7	6-32	1½"	⅜"	¼"	38.96	35.06	31.55
219-2137	4550-632-B-12	6-32	1½"	⅜"	¼"	50.49	45.44	40.90
219-2138	4550-632-SS	6-32	1½"	⅜"	¼"	121.30	109.17	98.25

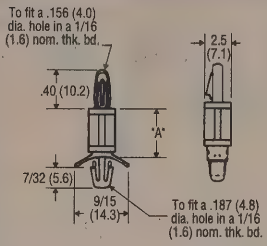
Circuit Board Supports


To fit a 156 (4.0) dia. hole in a 1/16 (1.6) nom thk. bd.
.40 (10.2)
"A"
.26 (7.1)
.10 (2.5)
To fit a 187 (4.8) dia. hole in a 1/16 (1.6) nom thk. bd.

Board supports are easily installed by hand. Assembled boards are readily mounted, lock in place and are easily removed for replacement or repair. Made from strong, tough nylon. Positive spring locking action, yet are easily removed. Snap into .187" hole in chassis .030-.093" thick. **Av. Shpg. Wt.:** 4 oz.

Stock No.	Mfr.'s Type	Height Inches	PER PK./1000	
			1-10	11-Up
911-3000	CBS-4-01	1/4	**126.63**	**71.84**
911-3001	CBS-6-01	3/8	**133.20**	**75.56**
911-3002	CBS-8-01	1/2	**140.95**	**79.95**
911-3003	CBS-10-01	5/8	**153.06**	**86.82**
911-3004	CBS-12-01	3/4	**163.11**	**92.53**
911-3005	CBS-14-01	7/8	**173.94**	**98.66**

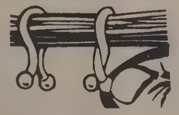
Locking Circuit Board Supports


To fit a .156 (4.0) dia. hole in a 1/16 (1.6) nom. thk. bd.
.40 (10.2)
"A"
2.5 (7.1)
7/32 (5.6)
9/15 (14.3)
To fit a .187 (4.8) dia. hole in a 1/16 (1.6) nom. thk. bd.

Nylon Circuit Board Supports feature a locking tension flange which laps over the board to hold securely in position. Supports up to 100 lbs. No need for tools. An arrow-type locking head snaps into a .187" dia. hole in the chassis where it expands to lock permanently in position. A squeeze of the fingers permits removal of the board from the support for repair or replacement.

Stock No.	Mfr.'s Type	Height Inches	PER PKG./1000	
			1-10	11-Up
911-3010	LCBS-3-01	3/16	**138.48**	**78.56**
911-3011	LCBS-4-01	1/4	**147.36**	**83.59**
911-3012	LCBS-6-01	3/8	**154.75**	**87.78**
911-3013	LCBS-7-01	7/16	**160.91**	**91.28**
911-3014	LCBS-8-01	1/2	**166.45**	**94.41**
911-3015	LCBS-10-01	5/8	**178.00**	**100.97**

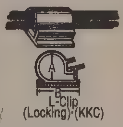
Twist-Lok Reusable Plastic Ties



Just slip in place. Holds bundles firmly. Reusable white nylon. **4 Lengths:** .2 to .8" bundles.

Stock No.	Mfr.'s Type	Approx. Overall Ht.	Wire Bundle Diameter	PER PKG./1000
911-7100	TL-250	0.900"	.2-.3"	**62.44**
911-7110	TL-350	1.030"	.3-.4"	**66.80**
911-7120	TL-450	1.200"	.4-.5"	**72.04**
911-7130	TL-750	1.550"	.7-.8"	**87.32**

KWIK-KLIP

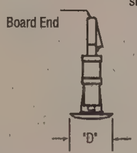


Offer convenient, secure fastening for a variety of electrical applications. Strip off protective backing and press in place permanently. For anchoring cable, tubing, pipe, rod. Constructed of strong, resilient PVC. KKL is locking type. **Shpg. Wt.:** 10 oz.

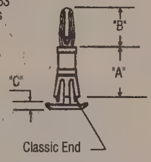
Stock No.	Mfr.'s Type	Diameter		Width × Length		PER PKG./100
		In.	mm	In.	mm	
911-3018	KKL-4RT	.250	6.35	.75 × .75	19.05 × 19.05	**51.53**
911-3019	KKL-8RT	.500	12.70	1 × 1	25.40 × 25.40	**64.80**
911-3020	KKL-12RT	.750	19.05	1 × 1	25.40 × 25.40	**93.25**

Reverse Locking Circuit Board Supports

- **The Advantage of This Support Is That it Inserts Into Both Holes From Chassis Underside**
- **Minimal Protrusion Under Chassis**
- **Material: Nylon 6/6, RMS-01; Flame Retardant Nylon, RMS-19 Available By Special Order**
- **Attractive Button Head**
- **Spring Lock Support Installs and Releases By Hand**
- **Color: Natural; Black Available By Special Order**
- **Panel Thickness: 1/6"**
- **Bd. Hole Dia: .125**
- **Chassis Hole Dia: .187**

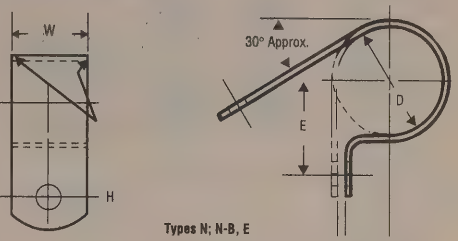


Note: RLCBSR Series snap locks into a .059-.063 (1.50-.50) thick chassis



Stock No.	Mfr.'s Type	Dimensions				PER PKG./1000	
		A	B	C	D	1-10	11-Up
911-3050	RLCBSR-4-01	1/4"	11/32"	0.06"	3/8"	**175.94**	**99.80**
911-3051	RLCBSR-5-01	5/16"	11/32"	0.06"	3/8"	**180.40**	**102.33**
911-3052	RLCBSR-6-01	3/8"	11/32"	0.06"	3/8"	**184.66**	**104.75**
911-3053	RLCBSR-7-01	7/16"	11/32"	0.06"	3/8"	**191.74**	**108.77**
911-3054	RLCBSR-8-01	1/2"	11/32"	0.06"	3/8"	**198.73**	**112.72**
911-3055	RLCBSR-9-01	9/16"	11/32"	0.06"	3/8"	**205.54**	**116.60**
911-3056	RLCBSR-10-01	5/8"	11/32"	0.06"	3/8"	**212.41**	**120.49**

Cable Clamps



Types N; N-B, E

Type "E" 1/2" Wide (Ethyl Cellulose)

Ethocel combines light weight and chemical resistance with excellent shock resisting properties in a temperature range from +185°F to –40°F. Ethocel clamps feature toughness and excellent electrical properties to satisfy unlimited fastening problems throughout the electrical industry. Approved 7-21-44 Army-Navy Aeronautical AN742. **Thickness:** 0.055" (±0.005"). **Hole Dia.:** .199"/.204".

Stock No.	Mfr.'s Type	Dimensions			PER PKG./1000
		D	E	H	
911-3025	E-2	1/8"	.328"	—	**76.98**
911-3026	E-3	3/16"	.390"	—	**79.40**
911-3027	E-4	1/4"	.421"	—	**85.96**
911-3028	E-5	5/16"	.453"	—	**86.47**
911-3029	E-6	3/8"	.483"	—	**97.36**
911-3030	E-7	7/16"	.531"	—	**108.19**
911-3031	E-8	1/2"	.562"	—	**115.48**
911-3032	E-10	5/8"	.610"	—	**149.16**

Type "N-B" 1/2" Wide (Nylon)

Stock No.	Mfr.'s Type	D	E	H	PER PKG./1000
911-3034	N-3B	3/16"	25/64"	13/64"	**82.24**
911-3035	N-4B	1/4"	27/64"	13/64"	**89.45**
911-3036	N-6B	3/8"	31/64"	13/64"	**106.10**
911-3037	N-9B	9/16"	19/32"	13/64"	**113.41**
911-3038	N-10B	5/8"	5/8"	13/64"	**119.27**
911-3039	N-12B	3/4"	49/64"	13/64"	**141.49**

***/16" on all types.**

Type "N" 3/8" Wide (Nylon)

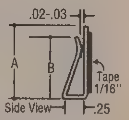
Stock No.	Mfr.'s Type	Dimensions			PER PKG./1000
		D	E	H	
911-1101	N-1*	1/16"	9/32"	1/8"	**44.17**
911-1102	N-2	1/8"	21/64"	11/64"	**45.00**
911-1103	N-3	3/16"	25/64"	11/64"	**51.66**
911-1104	N-4	1/4"	27/64"	11/64"	**53.67**
911-1105	N-5	5/16"	29/64"	11/64"	**54.28**
911-1127	N-7	7/16"	17/32"	11/64"	**61.12**

*Thickness 3/64"; all others 1/16".

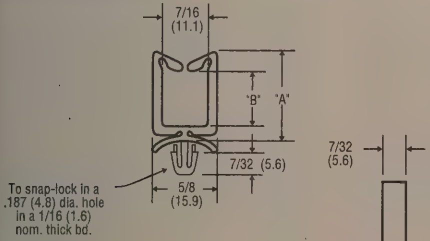
Type CFCC Flat Cable Clamps

Designed for routing one to six layers of 26-30 AWG flat or woven cable. Self-adhesive backing eliminates need for tools or mounting holes. **Type CFCC-4 Dimensions:** A — 1/2", B — .30". **Type CFCC-8 Dimensions:** A —1", B — .85".

911-3045. Type CFCC-4-05A-RT.......**PER PK./1000 336.89**
911-3046. Type CFCC-8-05A-RT.......**PER PK./1000 420.39**



Wire Saddles

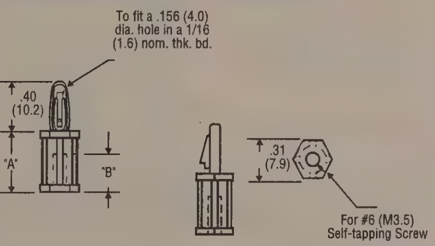

7/16 (11.1)
"B"
"A"
7/32 (5.6)
5/8 (15.9)
To snap-lock in a .187 (4.8) dia. hole in a 1/16 (1.6) nom. thick bd.
7/32 (5.6)

- **Easily Installed By Hand**
- **Secure Hold in Any Position**
- **Assures Precision Routing**
- **Cuts Cost By Speeding Assembly**
- **Have Funnel Entry**
- **Material: Nylon 6/6, RMS-01**
- **Snap Into a .187" (4.8 mm) Dia. Hole in 1/16" (1.6 mm) Nominal Thick Chassis**
- **Color: Natural**

Stock No.	Mfr.'s Type	Dim. B	Dim. A	PER PKG./1000
911-5191	WS-A-1-01	0.19	0.51	**111.45**
911-5192	WS-A-2-01	0.39	0.75	**115.14**
911-5193	WS-A-3-01	0.75	1.07	**155.21**
911-5194	WS-A-4-01	1.07	1.37	**168.24**

Note: Also available in flame retardant nylon, RMS-19 from factory. 1000 pc. min.

Screw Mount C.B. Supports

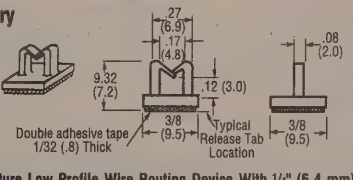

To fit a .156 (4.0) dia. hole in a 1/16 (1.6) nom. thk. bd.
.40 (10.2)
"A"
"B"
.31 (7.9)
For #6 (M3.5) Self-tapping Screw

- **Minimal Chassis Protrusion for Limited Space or Slimline Applications**
- **Board-Mount Head Locks and Releases By Hand**
- **Materials: Nylon 6/6, RMS-01 or Flame Retardant Nylon, RMS-19**
- **Color: Natural**
- **Standard Pack: 1000 Per Bag**

Stock No.	Mfr.'s Type	Dimensions		PER PKG./1000	
		A	B	1-10	11-Up
911-3057	TCBS-4-01	1/4"	13/64"	**256.14**	**145.29**
911-3058	TCBS-6-01	3/8"	13/64"	**260.44**	**147.74**
911-3059	TCBS-8-01	1/2"	13/64"	**264.86**	**150.24**
911-3060	TCBS-10-01	5/8"	13/64"	**279.59**	**158.59**
911-3061	TCBS-12-01	3/4"	5/16"	**293.96**	**166.74**
911-3062	TCBS-14-01	7/8"	5/16"	**310.22**	**175.97**
911-3063	TCBS-16-01	1"	5/16"	**319.40**	**181.18**
911-3064	TCBS-18-01	1 1/8"	5/16"	**328.63**	**186.41**
911-3065	TCBS-20-01	1 1/4"	5/16"	**334.08**	**189.50**

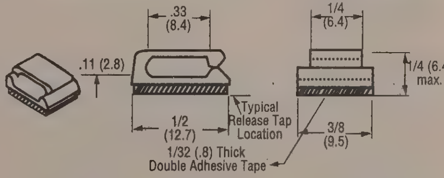
Micro Wire Saddles

Top Entry


.27 (6.9)
.17 (4.8)
9.32 (7.2)
.12 (3.0)
.08 (2.0)
3/8 (9.5)
Double adhesive tape 1/32 (.8) Thick
Typical Release Tab Location
3/8 (9.5)

- **Miniature Low Profile Wire Routing Device With 1/4" (6.4 mm) Height Will Not Exceed Standard I.C.**
- **Diminutive Base With Adhesive Backing, No Holes Required, RMS-15**
- **Material: Nylon, 6/6, RMS-01**
- **Color: Natural**

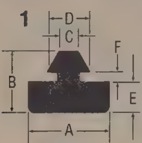
911-3070. MWSB-1-01A-RT..**PER PK./1000 232.17**


.33 (8.4)
.11 (2.8)
1/4 (6.4)
1/4 (6.4) max.
1/2 (12.7)
Typical Release Tap Location
3/8 (9.5)
1/32 (.8) Thick Double Adhesive Tape

- **Micro Wire Routing Device Has Overall Height of 9/32" (7.2 mm)**
- **Miniature Base Is 3/8" (9.5 mm) Square for Space Saving Applications**
- **With Adhesive Backing, No Holes Required, RMS-15**
- **Material: Nylon, 6/6, RMS-01**
- **Color: Natural**

911-3072. MWSSEB-1-01A-RT..**PER PK./1000 241.88**

Bumpers

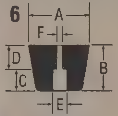

1

2

3

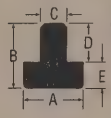
4

5


6

7

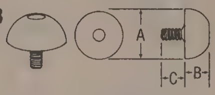
8


9

10

11

12


13

All items listed below are molded of natural and synthetic rubber compounds or reclaimed rubber in combination or blends thereof.

Button Bumpers

Stock No.	Mfr.'s Type	A Max. Dia.	B Height	C Insert Head	D Insert Head Base	E Base Height	F Chnl. Width	Nominal Durometer	Fig.	PER PK./100 1-9	PER PK./100 10-24	PER PK./100 25-Up
217-3062	BUT-3062	3/8	1/4	1/4	5/16	3/32	3/64	60	1	10.00	8.50	7.50
217-3061	BUT-3061	3/8	9/32	3/16	1/4	1/8	3/64	65	1	10.10	8.60	7.60
217-4061	BUT-4061	3/8	5/16	3/16	1/4	1/8	1/16	60	1	9.90	8.40	7.40
217-4161	BUT-4161	3/8	11/32	3/16	1/4	1/8	3/32	60	1	17.00	14.55	12.40
217-4162	BUT-4162	3/8	11/32	1/4	5/16	5/32	1/16	60	1	10.50	9.00	8.00
217-3068	BUT-3068	3/8	7/16	5/32	7/32	1/4	1/32	55	1	10.00	8.50	7.50
217-3072	BUT-3072	1/2	21/64	9/32	3/8	1/8	3/64	60	1	16.60	14.15	12.00
217-4071	BUT-4071	1/2	3/8	3/16	1/4	1/8	1/16	50	1	16.60	14.15	12.00
217-4167	BUT-4167	1/2	27/64	9/32	13/32	1/4	3/64	60	1	17.00	14.55	12.40
217-4171	BUT-4171	1/2	7/16	3/16	1/4	3/16	1/16	55	1	13.80	11.75	9.95
217-4165	BUT-4165	1/2	7/16	1/4	5/16	19/64	1/16	55	1	15.00	12.75	10.85
217-4075	BUT-4075	1/2	9/16	13/64	1/4	5/16	1/16	55	1	12.20	10.40	8.90
217-4081	BUT-4081	9/16	1/4	9/32	3/8	1/16	1/16	55	1	22.00	18.70	15.95
217-1611	BUT-611	7/8	1/2	5/16	13/32	1/4	5/64	65	1	38.60	32.85	27.90
217-4076	BUT-4076	1/2	7/16	1/4	5/16	3/16	1/16	60	2	13.20	11.25	9.75
217-3065	BUT-3065	7/16	11/32	1/4	5/16	1/8	1/16	60	2	12.20	10.40	8.90
217-1306	BUT-306	3/8	3/8	3/16	17/64	3/16	.040	55	3	10.00	8.50	7.50
217-1307	BUT-307	1/2	7/16	1/4	11/32	1/4	.040	55	3	14.40	12.25	10.50
217-1407	BUT-407	1/2	7/16	1/4	11/32	1/4	1/16	55	3	15.60	13.30	11.30
217-1317	BUT-317	1/2	1/2	1/4	11/32	1/4	1/8	55	3	15.40	13.10	11.15
217-1308	BUT-308	5/8	9/16	3/8	15/32	5/16	.040	65	3	22.60	19.25	16.30
217-4068	BUT-4068	7/16	17/64	3/16	1/4	3/32	5/64	60	4	12.20	10.40	8.90
217-3263	BUT-3263	7/16	7/16	1/4	5/16	3/16	1/8	55	4	10.00	8.50	7.50
217-4083	BUT-4083	5/8	9/32	13/32	17/32	1/8	3/32	60	5	18.20	15.50	13.15

Recessed Bumpers

Stock No.	Mfr.'s Type	A Max. Dia.	B Height	C Screw Head Depth	D Screw Shaft Depth	E Screw Base Opening	F Screw Shaft Width	Nom. Durometer	Fig.	PER PK./100 1-9	PER PK./100 10-24	PER PK./100 25-Up
217-2062	REC-2062	3/8	1/4	3/16	1/16	1/4	5/32	75	6	11.60	9.85	8.40
217-2082	REC-2082	5/8	1/2	1/4	1/4	5/16	5/32	75	6	25.80	21.95	18.65
217-2083	REC-2082S	5/8	1/2	1/4	1/4	5/16	5/32	75	6	30.00	25.50	21.70
217-2090	REC-2090	5/8	5/8	7/16	3/16	5/16	.147	75	6	22.00	18.70	15.90
217-2091	REC-2090S	5/8	5/8	7/16	3/16	5/16	.147	75	6	26.00	22.10	18.80
217-2184	REC2184S	3/4	1/4	3/16	1/16	13/32	1/8	75	6	35.40	30.10	25.60
217-2084	REC-2084	3/4	3/8	3/16	3/16	7/16	3/16	75	6	41.60	35.40	30.10
217-2085	REC-2084S	3/4	3/8	3/16	3/16	7/16	3/16	75	6	44.00	37.40	31.80
217-2097	REC-2096S	15/16	5/8	7/16	3/16	7/16	7/32	75	6	68.00	57.80	49.15
217-1206	REC-206	3/8	3/16	3/32	3/32	3/16	5/64	75	7	11.60	9.90	8.40
217-2061	REC-2061	7/16	5/32	3/32	1/16	1/4	5/32	75	7	14.40	12.25	10.45
217-1207	REC-207	1/2	1/4	1/8	1/8	1/4	1/8	75	7	15.00	12.75	10.85
217-1208	REC-207S	1/2	1/4	1/8	1/8	1/4	1/8	75	7	19.40	16.50	14.00
217-2081	REC-2081S	5/8	5/16	3/16	1/8	1/4	3/16	75	7	23.00	19.55	16.70
217-2088	REC-2088	5/8	5/16	3/16	1/8	1/4	1/8	75	7	21.60	18.40	15.65
217-2085	REC-2085	3/4	3/8	3/16	3/16	5/16	5/32	75	7	44.00	37.40	31.80
217-2086	REC-2085S	3/4	3/8	3/16	3/16	5/16	5/32	75	7	38.60	32.85	27.85
217-1209	REC-209	13/16	1/2	1/4	1/4	5/16	5/32	75	7	39.00	33.15	28.20
217-1210	REC-209S	13/16	1/2	1/4	1/4	5/16	5/32	75	7	40.60	34.50	29.35
217-2197	REC-2097	1	1	5/8	3/8	5/16	5/32	75	7	79.20	67.30	57.25
217-2098	REC-2097S	1	1	5/8	3/8	5/16	5/32	75	7	82.80	70.38	59.85
217-2099	REC-2099S	1	1 1/2	5/8	7/8	5/16	5/32	75	7	125.20	106.45	90.50
217-2095	REC-2095	15/16	3/8	3/16	3/16	3/8	5/32	75	8	44.60	37.90	32.25
217-2096	REC-2095S	15/16	3/8	3/16	3/16	3/8	5/32	75	8	50.00	42.50	36.15
217-2297	REC-2197S	1	1/2	1/4	1/4	3/8	3/16	75	8	50.00	42.50	36.15

Stem Bumpers

Stock No.	Mfr.'s Type*	A Max. Dia.	B Height	C Stem Width	D Stem Height	E Base Height	Nominal Durometer	Fig.	PER PK./100 1-9	PER PK./100 10-24	PER PK./100 25-Up
217-1602	STE-602	3/16	.134	1/8	3/32	.040	75	9	12.00	10.20	8.65
217-1607	STE-607	1/2	7/16	5/16	5/16	1/8	75	9	12.00	10.20	8.65
217-6071	STE-6071	1/2	1/2	1/4	11/32	1/8	75	9	12.00	10.20	8.65
217-1601	STE-601	1/4	5/32	1/8	3/32	1/8	75	10	12.00	10.20	8.65
217-1621	STE-601W	1/4	5/32	1/8	3/32	1/8	65	10	12.00	10.20	8.65
217-1612	STE-6011W	1/4	5/16	1/8	3/16	1/8	65	10	12.00	10.20	8.65
217-1604	STE-604	3/8	5/16	.196	3/16	1/8	75	11	12.00	10.20	8.65
217-6091	STE-6091	5/8	1/2	.507	3/8	1/8	75	12	12.00	10.20	8.65

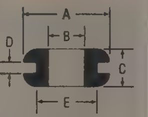
Machine Bumpers

Stock No.	Mfr.'s Type	A O.D.	B Height	C Screw Length	Screw Size	Nominal Durometer	Fig.	PER PK./100 1-9	PER PK./100 10-24	PER PK./100 25-Up
217-0051	MAC-51	1/2	1/4	1/4	8-32	75	13	58.80	49.95	42.50
217-0062	MAC-62	5/8	5/16	1/4	8-32	75	13	77.20	65.60	55.80
217-0075	MAC-75	3/4	3/8	1/4	8-32	75	13	110.40	93.85	79.80
217-0087	MAC-87	7/8	1/2	1/2	10-32	75	13	154.60	131.45	111.65
217-0100	MAC-100	1	1/2	1/2	10-32	75	13	236.00	200.60	170.50
217-0112	MAC-112	1 1/8	1/2	1/2	10-32	75	13	350.00	297.50	250.85

*__Suffix:__ S = Steel Washer Insert, W = White.

Grommets*

All items are molded of natural and synthetic rubber compounds or reclaimed rubber in combination or blends thereof. Items are listed in ascending order of diameter and height.



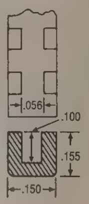
Stock No.	Mfr.'s Type	A O.D.	B I.D.	C Height	D Groove W	E Groove Dia.	Nominal Durometer	PER PK./100 1-9	PER PK./100 10-24	PER PK./100 25-Up
217-2101	GOB-2101	1/4	1/8	3/32	1/32	3/16	65	11.80	10.05	8.50
217-2104	GOB-2104	11/32	7/64	3/16	1/16	13/64	65	10.00	8.50	7.50
217-2105	GOB-2105	11/32	1/8	3/16	1/16	3/16	50	11.00	9.35	7.95
217-2110	GOB-210	11/32	1/8	3/16	1/16	1/4	65	10.40	8.85	7.55
217-2115	GOB-215	7/16	3/16	7/32	1/16	5/16	65	13.00	11.05	9.40
217-2415	GOB-415	7/16	3/16	1/4	3/32	5/16	65	13.80	11.75	9.95
217-2171	GOB-2171	1/2	3/16	3/16	1/32	3/8	65	13.80	11.75	9.95
217-2173	GOB-2173	1/2	3/16	7/32	1/16	5/16	65	17.20	14.75	12.60
217-2217	GOB-217	1/2	3/16	7/32	1/16	3/8	65	17.20	14.75	12.60
217-2172	GOB-2172	1/2	1/4	5/32	1/32	5/16	65	13.80	11.75	9.95
217-1219	GOB-219	17/32	7/32	13/32	3/32	11/32	60	20.20	17.20	14.60
217-2201	GOB-2201	9/16	3/16	3/8	1/8	7/16	60	17.20	14.65	12.50
217-2200	GOB-220	9/16	1/4	1/4	1/16	3/8	65	19.80	16.85	14.40
217-2210	GOB-221	9/16	9/32	1/4	1/16	3/8	65	26.20	22.30	18.95
217-2211	GOB-2211	9/16	9/32	1/4	1/16	13/32	65	17.20	14.65	12.50
217-1321	GOB-321	9/16	9/32	5/16	1/8	3/8	65	18.20	15.50	13.15
217-1324	GOB-324	19/32	5/16	3/8	1/8	7/16	65	19.40	16.50	14.00
217-2260	GOB-2260	5/8	1/4	9/32	1/16	3/8	65	22.00	18.70	15.95
217-3251	GOB-3251	5/8	1/4	3/8	1/8	3/8	50	19.00	16.15	13.75
217-2252	GOB-2252	5/8	5/16	1/4	1/16	7/16	65	16.60	14.15	12.00
217-2225	GOB-225	5/8	3/8	1/4	1/16	1/2	65	17.00	14.45	12.30
217-2258	GOB-2258	5/8	3/8	11/32	1/16	17/32	65	19.40	16.50	14.00
217-2261	GOB-2261	3/4	1/4	11/64	1/16	9/16	65	28.60	24.35	20.65
217-1101	GOB-1101-1	3/4	3/8	1/2	1/8	17/32	60	32.80	27.90	23.70
217-1111	GOB-1101	3/4	7/16	1/4	1/16	9/16	65	27.00	22.95	19.50
217-2300	GOB-230	13/16	1/2	9/32	1/16	5/8	65	36.80	31.30	26.60
217-2271	GOB-2271	7/8	3/8	5/16	1/16	5/8	65	41.80	35.50	30.20
217-1102	GOB-1102	1 1/16	1/2	5/16	1/16	13/16	65	61.20	52.00	44.25
217-1122	GOB-1102-2	1 1/16	1/2	11/32	1/8	13/16	65	47.60	40.45	34.40
217-2301	GOB-2301	1 1/16	11/16	1/4	1/16	13/16	65	21.20	18.00	15.30
217-1103	GOB-1103	1 1/8	5/8	5/16	1/16	7/8	65	55.20	46.95	39.85
217-1105	GOB-1105	1 1/8	13/16	1/4	3/64	15/16	65	55.20	46.95	39.85
217-1104	GOB-1104	2 1/8	1 1/2	7/16	1/16	1 3/4	65	183.00	155.55	132.25

*Military Standard Grommets are available for quotation upon request.

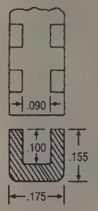
Caterpillar Grommets

Ideally suited to conform to irregular holes of any size, the "Caterpillar" Grommet requires no cementing. Available in several widths, the "Caterpillar" Grommet will fit a variety of metal thicknesses. Available from stock in 12¾" lengths, the "Caterpillar" can be easily cut to any desired length. Caterpillars can be molded in any length or size with minimum quantity orders.

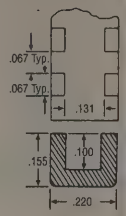
The "Caterpillar" Grommet is used extensively in aircraft and space vehicles, the computer and electronics field, appliances, office furniture, lighting fixtures, and a variety of other industries to insulate wires which must pass through a hole in sheet metal. Caterpillar Grommets conform to Military standards #MS21266, and are molded of nylon which conforms to MIL P-20693A Type 1 requirements. They are supplied in standard 12¾" long strips to be cut to size required. Spools are available for larger holes.



CAT-1



CAT-2



CAT-3

217-1001. CAT-1. For material .015 to .052 thickness. **1-9** .... **EACH 1.00**
217-1002. CAT-2. For material .052 to .085 thickness. **1-9** .... **EACH 1.16**
217-1003. CAT-3. For material .085 to .128 thickness. **1-9** .... **EACH 1.30**

Self Sticking Bumper Strips and Buttons — Pad Series

These molded bumpers apply instantly. Perfect for building maintenance or original equipment, industrial applications that require protective strips or pads.

PAD-5901. Ht.: .062". **Dia.**: .250". **Color:** Black. Round.
217-5901. PAD-5901. **1-9** .... **PER PK./100 11.00**
PAD-5802. Ht.: .062". **Dia.**: .375". **Color:** Black. Round.
217-5802. PAD-5802. **1-9** .... **PER PK./100 12.40**
PAD-5803. Ht.: .062". **Dia.**: .500". **Color:** Black. Round.
217-5803. PAD-5803. **1-9** .... **PER PK./100 12.40**
PAD-5804. Ht.: .062". **Dia.**: .750". **Color:** Black. Round.
217-5804. PAD-5804. **1-9** .... **PER PK./100 32.40**
PAD-5805. Ht.: .062". **Dia.**: 1". **Color:** Black. Round.
217-5805. PAD-5805. **1-9** .... **PER PK./100 45.60**
PAD-5302-C. Ht.: .085". **Dia.**: .312". **Color:** Clear. Round.
217-5302. PAD-5302-C. **1-9** .... **PER PK./100 12.00**
PAD-5306-C. Ht.: .150". **Dia.**: .375". **Color:** Clear. Round.
217-5306. PAD-5306-C. **1-9** .... **PER PK./100 12.80**
PAD-5312-C. Ht.: .14". **Dia.**: .500". **Color:** Clear. Round.
217-5312. PAD-5312-C. **1-9** .... **PER PK./100 12.40**
PAD-5532. Ht.: .66". **Dia.**: 1.88". **Color:** Black. Round.
217-5532. PAD-5532. **1-9** .... **PER PK./100 314.00**
PAD-5532-W. Ht.: .66". **Dia.**: 1.88". **Color:** White. Round.
217-5533. PAD-5532-W. **1-9** .... **PER PK./100 314.00**
PAD-5003. Ht.: .195". **Dia.**: .450". **Color:** Black. Round.
217-5003. PAD-5003. **1-9** .... **PER PK./100 11.00**
PAD-5003-W. Ht.: .195". **Dia.**: .450". **Color:** White. Round.
217-5004. PAD-5003-W. **1-9** .... **PER PK./100 11.00**
PAD-5017. Ht.: .380". **Dia.**: .760". **Color:** Black. Round.
217-5017. PAD-5017. **1-9** .... **PER PK./100 27.60**
PAD-5017-W. Ht.: .380". **Dia.**: .760". **Color:** White. Round.
217-5018. PAD-5017-W. **1-9** .... **PER PK./100 27.60**
PAD-5027. Ht.: .320". **Dia.**: .635". **Color:** Black. Round.
217-5027. PAD-5027. **1-9** .... **PER PK./100 26.00**
PAD-5027-W. Ht.: .320". **Dia.**: .635". **Color:** White. Round.
217-5028. PAD-5027-W. **1-9** .... **PER PK./100 26.00**
PAD-5012. Ht.: .140". **Dia.**: .500". **Color:** Black. Round.
217-5012. PAD-5012. **1-9** .... **PER PK./100 12.80**
PAD-5012-W. Ht.: .140". **Dia.**: .500". **Color:** White. Round.
217-5013. PAD-5012-W. **1-9** .... **PER PK./100 12.80**
PAD-5009. Ht.: .400". **Dia.**: .880". **Color:** Black. Round.
217-5009. PAD-5009. **1-9** .... **PER PK./100 30.00**
PAD-5009-W. Ht.: .400". **Dia.**: .880". **Color:** White. Round.
217-5010. PAD-5009-W. **1-9** .... **PER PK./100 30.00**
PAD-5808. H: .125". **L**: 2". **W**: .500". **Color:** Black. Rect.
217-5808. PAD-5808 **1-9** .... **PER PK./100 57.40**
PAD-5007. Ht.: .10". **Base:** .40". **Color:** Black. Square.
217-5007. PAD-5007. **1-9** .... **PER PK./100 11.00**
PAD-5007-W. Ht.: .10". **Base:** .40". **Color:** White. Square.
217-5008. PAD-5007-W. **1-9** .... **PER PK./100 11.00**
PAD-5514. Ht.: .52". **Base:** .81". **Color:** Black. Square.
217-5514. PAD-5514. **1-9** .... **PER PK./100 51.20**
PAD-5514-W. Ht.: .52". **Base:** .81". **Color:** White. Square.
217-5515. PAD-5514-W. **1-9** .... **PER PK./100 51.20**
PAD-5705. Ht.: .24". **Base:** 1.25". **Color:** Black. Square.
217-5705. PAD-5705. **1-9** .... **PER PK./100 78.00**
PAD-5806. Ht.: .062". **Base:** .625". **Color:** Black. Square.
217-5806. PAD-5806. **1-9** .... **PER PK./100 23.00**
PAD-5807. Ht.: .062". **Base:** .875". **Color:** Black. Square.
217-5807. PAD-5807. **1-9** .... **PER PK./100 41.60**
PAD-5023. Ht.: .3". **Base:** .812". **Color:** Black. Square.
217-5023. PAD-5023. **1-9** .... **PER PK./100 24.00**
PAD-5023-W. Ht.: .3". **Base:** .812". **Color:** White. Square.
217-5024. PAD-5023-W. **1-9** .... **PER PK./100 24.00**
PAD-5023BR. Ht.: .3". **Base:** .812". **Color:** Brown. Square.
217-5025. PAD-5023BR. **1-9** .... **PER PK./100 24.00**
PAD-5008-W. Ht.: .12". **Base:** .50". **Color:** White. Square.
217-5809. PAD-5008-W. **1-9** .... **PER PK./100 11.00**
PAD-5008-G. Ht.: .12". **Base:** .50". **Color:** Grey. Square.
217-5810. PAD-5008-G. **1-9** .... **PER PK./100 11.00**
PAD-5018. Ht.: .23". **Base:** .50". **Color:** Black. Square.
217-5811. PAD-5018. **1-9** .... **PER PK./100 18.40**
PAD-5018-W. Ht.: .23". **Base:** .50". **Color:** White. Square.
217-5812. PAD-5018-W. **1-9** .... **PER PK./100 18.40**

WIHA® Precision Electronic Tools

- ► **Rotating Cap for Precise Turning and Control with Fingertip**
- ► **Precision Handle Is High Quality Plastic, Cadmium Free**
- ► **Tapered Handle Allows Rapid Rotation**
- ► **Blade Is Chrome-Vanadium-Molybdenum-Steel, Hardened, Chrome-Plated**
- ► **Tip Is Precision Ground for Exact Fit**

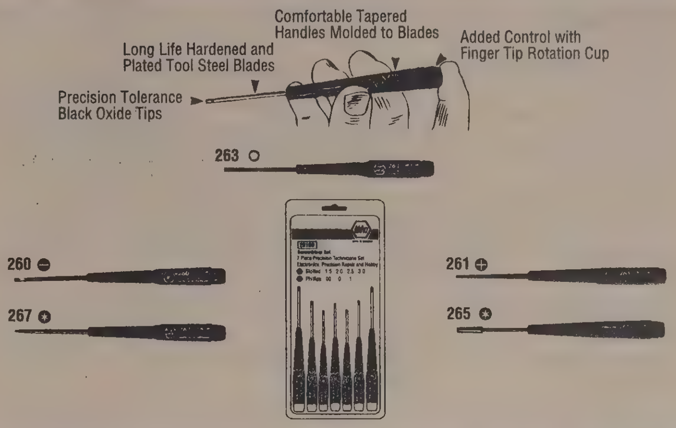
Model 26090. 6 piece set. Set contains 1 each precision slotted: 1.5 (1/16) × 40 mm; 2.0 (5/64) × 40 mm; 2.5 (3/32) × 50 mm; 3.0 (1/8) × 50 mm; 3.5 (9/64) × 60 mm; 4.0 (5/32) × 60 mm.
962-6090. 26090 .... **PER SET 21.59**

Model 26190. 7 piece set. Set contains 1 each precision slotted/Phillips: 1.5 (1/16) × 40 mm; 2.0 (5/64) × 50 mm; 2.5 (3/32) × 50 mm; 3.0 (1/8) × 60 mm; #00 × 40 mm; #0 × 50 mm; #1 × 60 mm.
962-6190. 26190 .... **PER SET 25.48**

Model 26790. 6 piece set TORX® (mm). Set contains 1 each precision TORX®: T6 × 40; T7 × 40; T8 × 40; T9 × 50; T10 × 50; T15 × 60.
962-6790. 26790 .... **PER SET 30.77**

Model 26391. 8 piece set (inch). Set contains 1 each precision hex driver: .028 × 1.6; 5/64 × 2.0; .035 × 1.6; 3/32 × 2.4; .050 × 1.6; 7/64 × 2.4; 1/16 × 2.0; 1/8 × 2.4
962-6391. 26391 .... **PER SET 28.22**

Model 26591. Precision nut drivers. 8 piece set (inch). Set contains 1 each precision nut driver: 3/32 × 2.4; 5/32 × 2.4; 7/64 × 2.4; 3/16 × 2.4; 1/8 × 2.4; 7/32 × 2.4; 9/64 × 2.4; 1/4 × 2.4.
962-6591. 26591 .... **PER SET 46.90**


Comfortable Tapered Handles Molded to Blades
Long Life Hardened and Plated Tool Steel Blades
Added Control with Finger Tip Rotation Cup
Precision Tolerance Black Oxide Tips
263 ○
260 ⊖
261 ⊕
267 ✪
265 ✪

Magnetizer/Demagnetizer

- ► **Magnetize Your Own Tools and Parts on the Job**
- ► **Powerful Permanent Magnet for Extended Life**
- ► **Magnetize or Demagnetize Tools and Small Parts Instantly**
- ► **Shatterproof Box Is Made from Durable ABS Plastics**

Powerful permanent magnet ideal for magnetizing tools and small steel parts. (+) to magnetize (−) to demagnetize. **Dimensions:** 2.1" × 2" × 1.1 (52 mm × 50 mm × 29 mm).

962-4001. 40010 .... **EACH 7.56**

WIHA® Bits-Selector

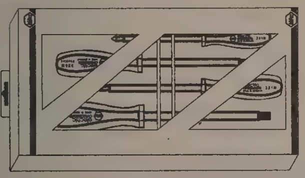
⊖ Slotted
⊕ Phillips
✪ TORX®

- ► **10 Assorted Slotted, Phillips and TORX® Bits; Durable Storage Box**
- ► **Light Weight, Compact Durable High Impact Plastic Holder**
- ► **Molded Hex Cavity Turns Box into Handle for Quick Fastening Jobs**
- ► **Quick Bit Access with Slide Out Drawer**
- ► **Includes Magnetic Adapter/Extender Also Used with Power Tools**

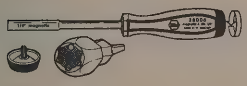
Model 79243. 11 piece set. Bit selector with slotted, Phillips and TORX® bits. **Slotted:** 4.5 mm, 5.5 mm, 6.5 mm, 8.0 mm. **Phillips:** 1, 2, 3. **TORX®:** T10, T15, T20. **Weight:** .25 lbs. **Universal Holder:** 1/4" × 2.3".

962-7924. 79243 .... **PER SET 15.26**

Electricians Insulated Sets



32090
32092



38006

- ► **Blade Is Chrome-Vanadium-Molybdenum-Steel, Salt Bath Hardened Average 58RC**
- ► **Certified for Up to 1000 Volt AC or 1500 Volt DC**
- ► **Insulation Is Molded Directly onto the Blade for Permanent Bonding**
- ► **Ergonomic PowerHandle Is Impact Resistant, Cellulose-Acetate, Cadmium Free**

Model 32090. 4 piece set. 1 each insulated. **Slotted:** 9/64" × 4", 3/16" × 5". **Phillips:** #1 × 3, #2 × 4"
962-3209. 32090 .... **PER SET 18.45**

Model 38006. Multi bit set. 1/4" insulated magnetic driver. **Slotted:** 4.5 × 25 mm, 6.0 × 25 mm, 8.0 × 25 mm. **Phillips:** #1 × 25 mm, #2 × 25 mm, #3 × 25 mm.
962-3800. 38006 .... **PER SET 15.13**

Model 32092. 6 pieces. **Slotted:** 3.5 mm × .6 mm × 100 mm, 4.5 mm × 1 mm × 125 mm, 6.5 mm × 1.2 mm × 150 mm. **Phillips:** #1 × 80 mm, #2 × 100 mm, #3 × 150 mm.
962-3210. 32092 .... **PER SET 32.90**

Compact Precision Tool Sets

- ► **New Antistatic Handles**
- ► **Hardened Reversible Tool Steel Blades**
- ► **Compact Indexed Storage Box — (3.75" × 6.25" × .68")**
- ► **Adjustable Blade Lengths**
- ► **Exact Fit Precision Tips**
- ► **Rotating Finger Tip Control Cap**

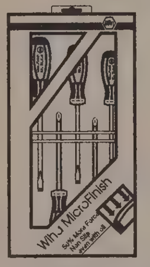
Model 26995. TORX® set. Set contains 4 blades; 7 tips: T6, T7, T8, T9, T10, T15, T20. **Weight:** .25 lbs.
962-2695 .... **PER SET 22.95**

Model 26996. Slotted and Phillips set. Set contains 4 blades; 4 slotted tips: 1.5, 2.0, 3.0, 3.5 mm; 4 Phillips tips: #000, #00, #0, #1. **Weight:** .25 lbs.
962-2696 .... **PER SET 27.20**

Model 26997. Slotted, Phillips and TORX® set. Set contains 8 blades; 4 slotted tips: 1.5, 2.0, 3.0, 3.5; 4 Phillips tips: #000, #00, #0, #1; 6 TORX® tips: T6, T7, T8, T9, T10, T15. **Weight:** .34 lbs.
962-2697 .... **PER SET 45.39**

Model 26998. Metric nutdriver set. Set contains 8 blades; 9 sizes: 2.0, 2.5, 3.0, 3.2, 3.5, 4.0, 4.5, 5.0, 5.5 mm. **Weight:** .43 lbs.
962-2698 .... **PER SET 52.70**

WIHA® Micro-Finish Handle Kits
— NEW —



52090

53390

- ► **Exact Fit Precision Ground Tip**
- ► **Blade Is Chrome-Vanadium-Molybdenum, Hardened and Tempered Tool Steel Blades for Exceptional Tool Life, Wear Resistance and High Torque Performance**
- ► **Safe High Density Material — Eliminates Risk of Sharp Objects Becoming Embedded in the Handle**
- ► **Micro-Finish Handle Is the WIHA® Ergonomic PowerHandle Combined with Micro-Finish Surface for Maximum Comfort and Exceptional Torque**

WIHA® Micro-Finish handle has a patented non-slip surface — it won't peel, crack or deteriorate. Oil and moisture flow away from the handle surface for a powerful, non-slip grip. You get maximum force and comfort with dry, oily or wet hands. Cellulose-acetate, impact resistant, non-slip, oil and grease resistant, black, cadmium free. **Blade:** Chrome-vanadium-molybdenum-steel, hardened, chrome-plated.

Model 52090. 5 piece set. **Slotted:** 4.0 mm — 100 mm shaft length; 5.5 mm — 125 mm shaft length; 8.0 mm — 150 mm shaft length. **Phillips:** 1 — 80 mm shaft length; 2 — 100 mm shaft length. **Weight:** 1.2 lbs.
962-5209. 52090 .... **PER SET 31.96**

Model 53390. 5 piece set. Hex blade extending through handle with striking plate. Hex bolster for wrench. **Slotted:** 5.5 mm — 100 mm shaft length; 6.5 mm — 125 mm shaft length; 8.0 mm — 150 mm shaft length. **Phillips:** 1 — 80 mm shaft length; 2 — 100 mm shaft length. **Weight:** 1.6 lbs.
962-5339. 53390 .... **PER SET 49.30**

Bits Selector Tamperproof Torx® Bits *— NEW —*

Model 79247. Contains One Each: Torx® (1/4" × 25 mm bits) — T7, T8, T9, T10, T15, T20, T25, T27, T30, and T40; Magnetic adapter — 1/4" × 2.3". **Weight:** .25 lbs.

962-9247. 79247 .... **PER SET 26.98**

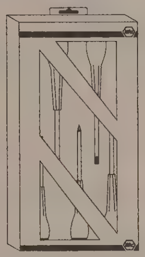
WIHA® Precision Ceramic Set *— NEW —*

- ► **Handle and Blade Are Antimagnetic and Antistatic**
- ► **Rotating Cap Facilitates Adjusting and Holding of the Tools**
- ► **Blade — High Thermic and Electric Insulation**
- ► **Precision Handle Is High Quality Plastic, Cadmium Free**
- ► **Free of Contamination, Suited for Working in Clean-Rooms**

Model 27090. Ceramic slotted-Phillips screwdriver 3 piece set, with WIHA® precision handle, out of antistatic plastic. Blade is special ceramic, antistatic, antimagnetic, for correct adjusting in high frequency areas. **WIHA® Precision Handle.** Antistatic, black, cadmium free. **Slotted:** Size — 0.9 mm, 2.6 mm; Shaft length — 15 mm. **Phillips:** Size — 0; Shaft length — 15 mm. **Weight:** .26 lbs.

962-2709. 27090 .... **PER SET 39.95**

WIHA® Dynamic Series *— NEW —*

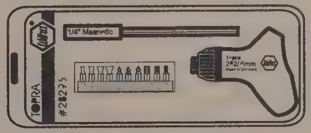


- ► **Rotating Cap Prevents User Discomfort and Blisters — Even at High Pressure and High Torque**
- ► **Allows Rapid Rotation**
- ► **Blade Is Chrome-Vanadium-Molybdenum-Steel, Hardened, Nickel-Plated**
- ► **Large Handle Generates Greater Torque**

Model 51090. 5 piece set. Slotted and Phillips with WIHA® dynamic handle. **Slotted:** 3.0 mm (1/8") — 80 mm, 3.1" shaft length; 4.0 mm (5/32") — 100 mm, 3.9" shaft length; 5.5 mm (7/32") — 125 mm, 4.9" shaft length. **Phillips:** 0 — 60 mm (2.3") shaft length; 1 — 80 mm (3.1") shaft length. **Weight:** .75 lbs.

962-5109. 51090 .... **PER SET 27.99**

WIHA® Topra Handle Set *— NEW —*



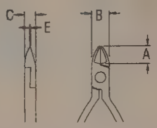
- ► **Smooth, High Torque, Silent Ratchet Handle**
- ► **Hex Retainer for 6 mm Reversible Hex Blades**
- ► **Pistol Grip Handle Is Ergonomically Designed with Free Running Mechanism; Instant Clutch Engagement Allows Constant Turning Pressure on the Fastener**
- ► **No Release of Handle Is Needed, Change of Direction Can Be Made with Index Finger and Thumb**
- ► **Allows for Quick Adjustment to Right, Left or Fixed Turning**

Model 28296. Topra set with bit holder and bits, 12 pieces. **WIHA® Topra Handle.** 1/4" magnetic bit holder and 10 hardened bits of special chrome-vanadium-molybdenum-tool steel, packaged in a clear blister pack. **Slotted:** 4.5 mm, 5.5 mm, 6.5 mm, 8.0 mm. **Phillips:** 1, 2, 3. **TORX®:** T10, T15, T20. **Weight:** .69 lbs. **Magnetic Bit Holder:** 6 mm blade.

962-2829. 28296 .... **PER SET 43.99**

Hand Tools

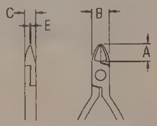
Oval Head Cutters — Semi-Flush



- Diagonal Cutting Plier/Semi-Flush
- General Purpose Cutting
- Oval Head For Long Life
- MS54 Features ESD-Safe Green Cushion Grips

Stock No.	Mfr.'s Type	Length		A		B		C		D		E		EACH
		In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	
984-9000	MS54	4	100	13/32	10	7/16	11	9/32	7	—	—	1/32	0.8	15.22

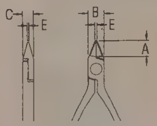
Oval Head Cutters — Flush



- Oval Head Diagonal Cutter
- General Use
- Flush Cutting
- MS54J Features ESD-Safe Green Cushion Grips

984-9021	MS54J	4	100	13/32	10	7/16	11	9/32	7	—	—	1/32	0.8	17.16

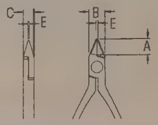
Slim Line Tapered Head



- Diagonal Cutting Pliers
- Slim Line Tapered Head
- Semi-Flush Cutting
- MS54-5 Features ESD-Safe Green Cushion Grip

984-9023	MS54-5	4	100	13/32	10	7/16	11	9/32	7	—	—	1/16 × 1/32	1.5 × 0.9	16.28

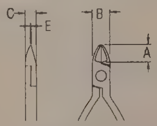
Slim Line Tapered Head



- Diagonal Cutting Pliers
- Slim Line Tapered Head
- Flush Cutting
- MS54-5J Features ESD-Safe Green Cushion Grips

984-9007	MS54-5J	4	100	13/32	10	7/16	11	9/32	7	—	—	1/16 × 1/32	1.5 × 0.9	16.22

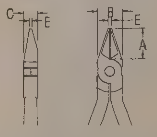
Tapered Head Diagonal Cutter



- Flush Cutting Of Leads In Restricted Spaces
- Narrow Tips Give Increased Clearance
- Tapered Head Diagonal Cutter
- MS54-9J Features ESD-Safe Green Cushion Grips

984-9001	MS54-9J	4	100	15/32	12	7/16	11	9/32	7	—	—	3/64	1.0	16.80

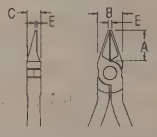
Tapered Head Diagonal Cutter



- Tapered Head Diagonal Cutter
- Used For Cutting Component Leads
- Flush Cutting
- S47-5JS Features ESD-Safe Green Cushion Grips

984-9025	S47-5JS	5	125	3/4	19	19/32	15	3/8	10	—	—	3/32 × 1/16	2.0 × 1.5	16.40

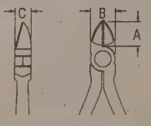
Tapered Relieved Head Diagonal Cutter



- Tapered Relieved Head Diagonal Cutter
- Flush Cutting
- For Use In Limited Access Areas
- S141-5JS Features ESD-Safe Green Cushion Grip

984-9027	S141-5JS	5	125	49/64	19	19/32	15	3/8	10	—	—	3/32 × 3/64	2.0 × 1.0	20.24

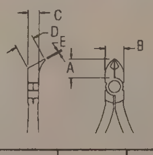
Oval Head Diagonal Cutter



- Oval Head Diagonal Cutter
- Regular Beveled Edge
- S55 Features ESD-Safe Green Cushion Grips
- S55-S Features ESD-Safe Green Cushion Grips Plus Handle Coil Spring

984-9002 984-9004	S55 S55-S	5 5	125 125	49/64 49/64	19 19	19/32 19/32	15 15	3/8 3/8	9 9	— —	— —	— —	— —	16.46 18.02

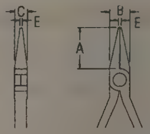
Diamond®/Xcelite® Diagonal End Cutter Pliers
Angled Diagonal End Cutter At 29°



- Angled Diagonal End Cutter At 29°
- Flush Cutting, For Cutting Directly Above The Work Area
- To Use On Closely Spaced Adjacent Components
- GA54-J Features ESD-Safe Green Cushion Grips

984-9015	GA54-J	4	100	7/16	11	7/16	11	9/32	7	7/16	11	1/32	0.8	27.20

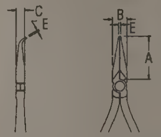
Diamond®/Xcelite® Diagonal Chain Nose Pliers
Short Chain Nose Pliers



- Short Chain Nose Pliers
- Serrated Jaws
- Heavy Duty
- LN22-5 Features ESD-Safe Green Cushion Grips

Stock No.	Mfr.'s Type	Length		A		B		C		D		E		EACH
		In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	
984-9030	LN22-5	5	125	1 9/64	29	17/32	14	9/32	7	—	—	1/16 × 1/16	1.5 × 1.5	16.62

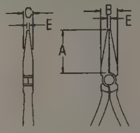
Curved Nose Pliers



- Curved Nose Pliers, Thin Tip
- CN25-5G Feature Smooth Jaws
- CN25-5, CN25-5G Feature ESD-Safe Green Cushion Grips

984-9032 984-9034	CN25-5 CN25-5G	5 5	125 125	1 15/64 1 15/64	31 31	27/64 27/64	11 11	9/32 9/32	7 7	— —	— —	3/64 3/64	1.0 1.0	20.58 21.52

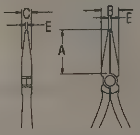
Diamond®/Xcelite® Diagonal Long Needle Nose Pliers
Thin Long Nose Pliers



- Thin Long Nose Pliers
- For Pick-Up and Wire Forming, General Purpose Use
- Serrated Jaws
- LN54 Features ESD-Safe Green Cushion Grips

984-9009	LN54	5	125	1 3/16	30	7/16	11	9/32	7	—	—	5/64 × 1/16	2.0 × 1.6	16.66

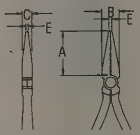
Thin Long Nose Pliers — Very Fine Point



- Thin Long Nose Pliers
- Very Fine Point For Precision Work
- For Pick-Up and Wire Forming
- Serrated Jaws
- LN54-2 Features ESD-Safe Green Cushion Grips

984-9012	LN54-2	5	125	1 3/16	30	7/16	11	9/32	7	—	—	3/64 × 1/32	1.2 × 0.8	16.12

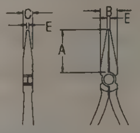
Thin Long Nose Pliers — Smooth Jaws



- Thin Long Nose Pliers With Smooth Jaws
- General Purpose Use
- For Pick-Up and Wire Forming
- LN54-G Features ESD-Safe Green Cushion Grips

984-9011	LN54-G	5	125	1 3/16	30	7/16	11	9/32	7	—	—	5/64 × 1/16	2.0 × 1.6	16.80

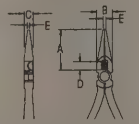
Thin Long Nose Pliers



- Thin Long Nose Pliers
- Fine Serrated Jaws
- General Purpose
- LN55 Features ESD-Safe Green Cushion Grips

984-9038	LN55	5 1/2	138	1 11/16	43	17/32	14	9/32	7	—	—	5/64 × 1/16	2.0 × 1.6	17.12

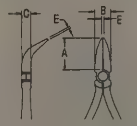
Long Nose Side Cutting Pliers



- For General Wire Applications, Serrated Jaws
- For Reaching Into Confined Working Spaces
- Long Nose Side Cutting Pliers
- SN54, SN55 Feature ESD-Safe Green Cushion Grips

984-9039 984-9040	SN54 SN55	5 5 1/2	125 138	1 3/16 1 11/16	30 43	17/32 17/32	14 14	9/32 9/32	7 7	1/4 3/8	6 10	5/64 × 1/16 5/64 × 1/16	2.0 × 1.6 2.0 × 1.6	18.72 18.70

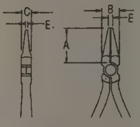
60° Curved Long Nose Pliers



- 60° Curved Long Nose Pliers
- For Reaching Between Closely Spaced Components
- Smooth Jaws
- CN54-G Features ESD-Safe Green Cushion Grips

984-9043	CN54-G	5	125	15/16	24	7/16	11	9/32	7	—	—	5/64 × 1/16	2.0 × 1.6	18.72

Round Nose Pliers

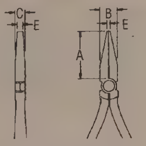


- Round, Smooth Jaws Tapered To Point
- For Looping and Forming Of Fine Wire
- Round Nose Pliers
- RN54 Features ESD-Safe Green Cushion Grips

984-9044	RN54	4 1/2	113	7/8	22	7/16	11	9/32	7	—	—	1/8 × 1/16	3.0 × 1.6	17.90

Hand Tools

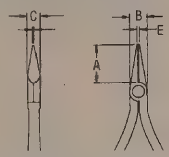
Flat Nose Pliers



- Flat Nose Pliers, Smooth Jaws
- For Holding and Forming Wire and Small Parts
- DN54-G Features ESD-Safe Green Cushion Grips

Stock No.	Mfr.'s Type	Length		A		B		C		D		E		EACH
		In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	
984-9017	DN54-G	5	125	1 3/16	30	7/16	11	9/32	7	—	—	5/64 × 9/64	2.0 × 3.6	15.22

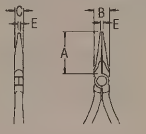
Subminiature Needle Nose Pliers



- Subminiature Needle Nose Pliers, Fine Point Allows Use In Confined Areas
- Positive Gripping Of Fine Wire Or Subminiature Components
- L4 Features ESD-Safe Green Cushion Grips and Serrated Jaws
- L4G Features ESD-Safe Green Cushion Grips and Smooth Jaws

984-9010	L4	4	100	13/16	21	3/8	10	9/32	7	—	—	3/64 × 1/32	1.2 × 0.8	15.16
984-9016	L4G	4	100	13/16	21	3/8	10	9/32	7	—	—	3/64 × 1/32	1.2 × 0.8	16.94

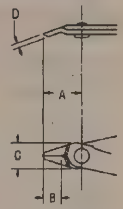
Needle Nose Pliers — Slim Line Needle Nose Pliers



- Slim Line Needle Nose Pliers, For Use Between Tightly Spaced Components
- NN54, NN54-C, NN55-C Feature ESD-Safe Green Cushion Grips and Serrated Jaws
- NN54-G, NN55-CG Feature ESD-Safe Green Cushion Grips and Smooth Jaws

984-9018	NN54	5	125	1 3/16	30	7/16	11	9/32	7	—	—	5/64 × 1/16	2.0 × 1.6	19.64
984-9048	NN54-C	5	125	1 3/16	30	7/16	11	9/32	7	—	—	5/64 × 1/16	2.0 × 1.6	20.70
984-9049	NN54-G	5	125	1 3/16	30	7/16	11	9/32	7	—	—	5/64 × 1/16	2.0 × 1.6	19.72
984-9050	NN55-C	5 1/2	138	1 11/16	43	15/32	12	1/4	6	—	—	5/64 × 1/16	2.0 × 1.6	20.56
984-9051	NN55-CG	5 1/2	138	1 11/16	43	15/32	12	1/4	6	—	—	5/64 × 1/16	2.0 × 1.6	20.78

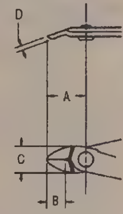
Micro Series Shearcutter — Heavy Duty



- Heavy Duty For IC Pins, Cables and Harnesses
- Maximum Durability
- Safety Clip (On Some Models) Prevent Flying Leads
- Maximum Operator Safety
- 1178M, 2178M Feature Light Blue Grips
- 1178D, 2178D Feature Static-Dissipative Black Grips
- 2178M, 2178D Feature Safety Clips
- 1178D, 2178D Especially Hardened and Plated

Stock No.	Mfr.'s Type	Length		A		B		C		D		E		EACH
		In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	
984-1178	1178M	5 5/8	143	29/32	23	13/32	10	17/32	14	1/8	3	—	—	11.06
984-3178	1178D	5 5/8	143	29/32	23	13/32	10	17/32	14	1/8	3	—	—	17.76
984-2178	2178M	5 5/8	143	29/32	23	13/32	10	17/32	14	1/8	3	—	—	13.20
984-4178	2178D	5 5/8	143	29/32	23	13/32	10	17/32	14	1/8	3	—	—	18.26

Micro Series Shearcutter — General Purpose



- Low Profile, General Purpose Cutter
- Superior Blade By-Pass Shear Cutting Action
- Better Cuts With Half The Effort
- Greatly Reduced Mechanical Shock Delivered To The Work
- 170M, 175M Feature Light Blue Grips
- 170D, 175D Feature Static-Dissipative Black Grips
- 175M, 175D Feature Safety Clips
- 170D, 175D Especially Hardened and Plated

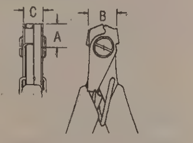
972-0170	170M	5	127	3/4	19	11/32	9	1/2	13	5/64	2	—	—	6.14
972-1170	170D	5	127	3/4	19	11/32	9	1/2	13	5/64	2	—	—	13.60
972-0175	175M	5	127	3/4	19	11/32	9	1/2	13	5/64	2	—	—	7.54
984-1175	175D	5	127	3/4	19	11/32	9	1/2	13	5/64	2	—	—	15.04

Hand Tools

Pliers and Cutters With Red Cushion Grip Handles

- The Exceptional Strength and Performance Of Xcelite® Pliers and Cutters Are The Result Of Forged Alloy Steel Construction, Precision Machining, and Scientific Proportioning
- Handles Designed To Fit The Hand Comfortably and To Provide Maximum Leverage
- Cleanly Machined and Perfectly Aligned Jaws Grip Tightly and Surely While Easy Cutting Is Assured By Hand-Honed, Mated Cutting Edges
- For Extra Working Comfort All Models Have Permanent, Red Plastic-Coated "Cushion-Grip" Handles
- These High Quality Pliers and Cutters are Featured In Xcelite® Attachê Tool Cases
- Note: When Using Cutting Pliers Always Wear Safety Glasses To Protect Eyes From Wire Clippings

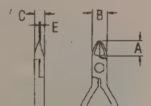
Hard Wire (Piano and Music) Cutter — 134CG



- Captures Material On Both Sides Of Jaw, Eliminates Flying Segments
- Patented Spring Loaded Hold-Down Keeps Material At 90° To Tool Blade
- Shear Cutting Action
- Ensures Square Cut Ends
- Prevents Material From Forcing Jaws Apart
- Wire Capacity: .062
- Stranded Cable Capacity: 1/16 in.

Stock No.	Mfr.'s Type	Length		A		B		C		D		E		EACH
		In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	
984-2373	134CG	5.45	140	0.55	14	0.72	18.5	0.32	8.2	—	—	—	—	60.18

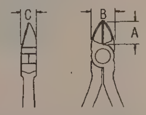
Diagonal Pliers — 54CG



- For Work In Close Quarters
- Standard Beveled Edges
- Forged Alloy Steel Construction, Precision Machining and Scientific Proportioning
- Red Plastic-Coated Cushion Grip Provides Maximum Leverage

984-0225	54CG	4	100	13/32	10	7/16	11	9/32	7	—	—	1/32	0.8	19.76

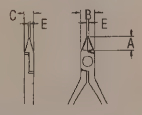
Diagonal Pliers — 55CG



- All-Purpose Pliers, Standard Beveled Edges
- forged Alloy Steel Construction, Precision Machining and Scientific Proportioning
- Exceptional Strength and Performance
- Red Plastic-Coated Cushion Grip Provides Maximum Leverage

984-0226	55CG	5	125	3/4	19	19/32	15	3/8	10	—	—	—	—	20.18

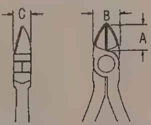
Diagonal Pliers — 64CG



- For Use In Close Quarters and Semi-Flush Tip Cutting Of Fine Wires
- Forged Alloy Steel Construction, Precision Machining and Scientific Proportioning
- Exceptional Strength and Performance
- Red Plastic-Coated Cushion Grip Provides Maximum Leverage

984-0064	64CG	4	100	13/32	10	7/16	11	9/32	7	—	—	1/32	0.8	25.06

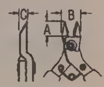
Diagonal Pliers — 66CG



- All-Purpose Pliers
- Standard Beveled Edges
- Forged Alloy Steel Construction, Precision Machining and Scientific Proportioning
- Exceptional Strength and Performance
- Red Plastic-Coated Cushion Grip Provides Maximum Leverage

984-0066	66CG	6	152	27/32	21	11/16	17	7/16	11	—	—	—	—	21.16

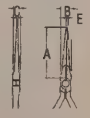
Stainless Diagonal Cutting — Slim Nose



- For Cutting Soft Non-Ferrous Wire, Max. As Specified, No. 25 Gauge (.018") and Smaller Soft Steel Wire
- Ideal For Tip Cutting In Delicate Electronic Circuity Work and Where Small Lightweight Pliers Are Required For Use By Women Engaged In Electronic Component Assembly
- Precision-Machined, Ground Flush Cutting Edges, Back Clearance, Patented Handle Spring
- Offers Up To Four Times The Life Of Regular Miniature Diagonal Pliers

Stock No.	Mfr.'s Type	Length		A		B		C		D		E		EACH
		In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	
984-0330	113CG	4 1/2	114	3/8	9	13/32	12	7/32	6	—	—	—	—	60.18
984-0335	115CG	5	127	1/2	13	1/2	3	7/32	6	—	—	—	—	60.48
984-0336	117CG	4	100	5/16	8	15/32	12	7/32	6	—	—	—	—	59.90

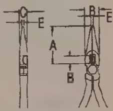
Standard Pliers — 57CG



- Standard Pliers
- For Firm Gripping and Looping Of Wire, Fine Serrated Jaw and Coil Spring
- Forged Alloy Steel Construction, Precision Machining and Scientific Proportioning
- Red Plastic-Coated Cushion Grip Provides Maximum Leverage

984-0256	57CG	5 11/16	144	—	—	15/32	12	1/4	6	—	—	1/16	1.5	21.92

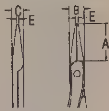
Standard Pliers — 51CG



- For Firm Gripping and Looping Of Wire, Serrated Jaw
- Forged Alloy Steel Construction, Precision Machining and Scientific Proportioning
- Side Cutter Feature
- Red Plastic-Coated Cushion Grip Provides Maximum Leverage

984-0237	51CG	6	152	1 7/8	48	11/16	17	3/8	10	1/2	13	3/32	2.4	20.96

Electricians Chain Nose Pliers — 59CG



- Electrician's Chain Nose Pliers
- Serrated Jaw For Gripping and High Leverage, Offers Long Reach
- Forged Alloy Steel Construction, Precision Machining and Scientific Proportioning
- Red Plastic-Coated Cushion Grip Provides Maximum Leverage

984-0337	59CG	8	200	1 1/2	32	9/16	14	15/32	12	—	—	3/32	2.4	25.98

Utility Pliers — 50CG Ignition Pliers

- Ignition Pliers
- Narrow Jaw For Close Work
- Forged alloy Steel Construction, Precision Machining and Scientific Proportioning
- Red Plastic-Coated Cushion Grip Provides Maximum Leverage
- 3-Jaw Opening Adjustment To 1/2 In.

Stock No.	Mfr.'s Type	Length		Blade Length		EACH
		In.	mm	In.	mm	
984-0050	50CG	5	127	1/2	12.7	16.96

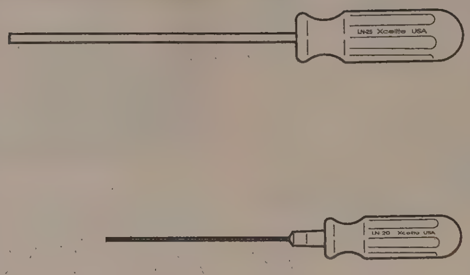
Electricians Knife

- Both A Knife and A Screwdriver
- Screwdriver Blade With Sharp Edge For Scraping Insulation

984-0022. K22. Electrician's Knife....................EACH 23.20

Allen Hex Socket Type Screwdrivers

- Screwdrivers for Recessed Socket Head Screws
- Inch Sizes
- Amber Handles



Stock No.	Mfr.'s Type	Blade Dia.	Blade Length	Full Length	EACH
984-9765	LN-20	.050"	4" (102 mm)	6 5/8" (168 mm)	5.14
984-9766	LN-21	1/16"	4" (102 mm)	6 5/8" (168 mm)	5.14
984-5050	LN-22	5/64"	4" (102 mm)	6 5/8" (168 mm)	5.14
984-9767	LN-23	3/32"	4" (102 mm)	7 1/8" (190 mm)	5.14
984-9768	LN-764	7/64"	4" (102 mm)	7 1/8" (190 mm)	5.14
984-9769	LN-24	1/8"	4" (102 mm)	7 1/8" (190 mm)	5.52
984-9770	LN-964	9/64"	4" (102 mm)	7 1/8" (190 mm)	5.52
984-9771	LN-25	5/32"	6" (152 mm)	9 1/8" (232 mm)	5.52
984-9772	LN-26	3/16"	6" (152 mm)	10 1/8" (257 mm)	5.52
984-9773	LN-27	7/32"	6" (152 mm)	10 1/8" (257 mm)	6.16
984-9774	LN-28	1/4"	6" (152 mm)	10 1/8" (257 mm)	6.16

Torx® Screwdrivers

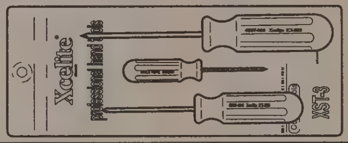
Stock No.	Mfr.'s Type	Tip Size	Blade Length	EACH
984-9782	XTD-10	T-10	3"	5.16
984-9783	XTD-15	T-15	3"	5.16
984-9784	XTD-20	T-20	3"	5.16
984-9785	XTD-25	T-25	3"	5.16
984-9786	XTD-27	T-27	4 1/2"	5.72
984-9787	XTD-30	T-30	4 1/2"	5.72

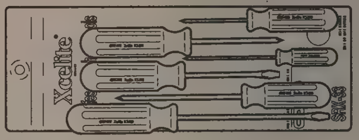
Phillips Screwdrivers

All have plastic handles. SX-101 and SX 102 are stubby type. P12-S has pocket clip. Super Tru-Tips have black oxide tips for longer wear.

Stock No.	Mfr.'s Type	Point Size	Blade Length	EACH
984-8826	X-101	1	3"	4.68
984-8827	X-102	2	4"	6.08
984-9775	X-103	3	6"	8.46
984-8825	X-104	4	8"	11.02
984-9776	X-108	1	6"	5.96
984-9777	X-1010	1	10"	7.72
984-9778	X-1020	2	10"	8.74
984-9779	SX-101	1	1 7/16"	5.02
984-9780	SX-102	2	1 5/16"	5.64
984-9781	P12-S	0	2"	3.15

Screwdriver Sets

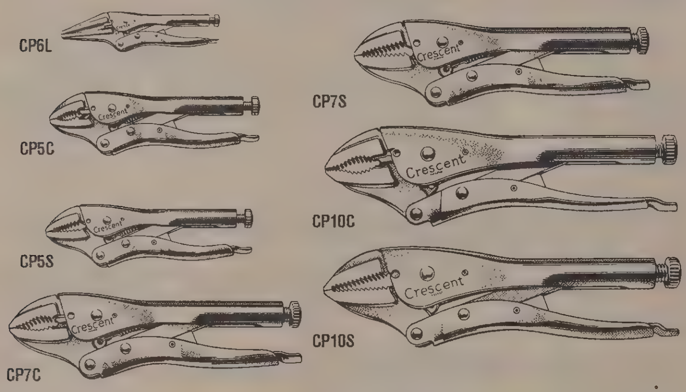




Stock No.	Mfr.'s Type	Contents	EACH
984-9760	SDX-22	Contains 5 pieces — all Phillips Catalog numbers X100, X101, X102, X103 and SX102	28.24
984-9761	XST-3	Contains 3 pieces — all Super-tru tip Phillips type Catalog numbers XST-100, XST-101 and XST-102	18.08
984-9762	XST-5	Contains 5 pieces — all Super-tru tip Phillips type Catalog numbers XST-100, XST-101, XST-102, XST-1010 and XST-1020	37.42
984-9763	SRX-33	Contains 6 pieces — 4 round blades for slotted screws and 2 Phillips types Catalog numbers R184, R3166, R144, R5166, X101 and X102	35.18

Crescent® Locking Pliers

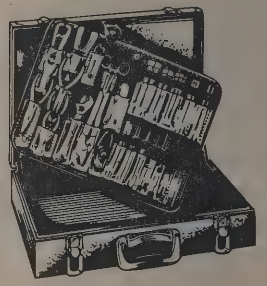
MADE IN USA



- Unique Jaw Tooth Design Improves Gripping/Turning Ability
- Straight Jaw, Long Nose and Curve Jaw with Wire Cutter Models, Available in 5" to 10" Sizes
- Compound Action for Powerful Non-Slip Locking Grip
- Convenient, Quick, One Hand Release Lever
- Accurate Adjustments with Screw Machined Ferrule
- Made in the U.S.A.

984-9790. CP6L	EACH 14.42
984-9791. CP5C	EACH 12.40
984-9792. CP5S	EACH 12.40
984-9793. CP7C	EACH 13.54
984-9794. CP7S	EACH 12.70
984-9795. CP10C	EACH 14.50
984-9796. CP10S	EACH 13.68

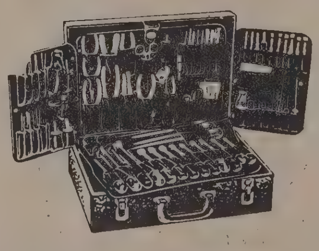
Attache Case Tool Kit



Model TC-200/ST. Quality craftsmanship inside and out. Handsome, attache-styled tool case has dovetailed, solid wood-frame construction, covered with rugged black Durahyde. Removable pallet in lid outfitted with see-thru tool pockets and spacious lower section for additional tools, prints or manuals. Attractive brass-finished hardware and hinges. Inside are 10 top-quality professionally styled hand tools and 27 interchangeable Series 99 screwdriver and nutdriver blades for use with straight or Tee handles. The Attache Case is supplied with a broad selection of tools for field service work. Case is 18 1/2" × 13 1/2" × 4 3/4" with convenient carrying handle. **Kit Contains:** 1 Straight and 1 Tee handle; 9 Hex Socket Screw Blades; Reamer; Extension; 3 Phillips Screw Blades; 4 Slotted Screw Blades; 7 Hex Nutdriver Blades; Curved Nose Seizer; Adjustable Wrench (6"); Long Nose Plier (6 1/2"); Utility Plier (7"); Diagonal Pliers (4" and 5"); Needle Nose Plier (5 1/2"); Electronic Snips; Wire Stripper/Cutter; Electrician's Knife. **Weight:** 11 lbs.

984-5001. Model TC-200/ST .... EACH 481.58

Field Engineer's Tool Set



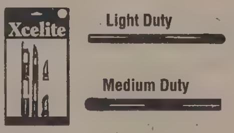
- Supplied With A Variety of Professional Tools
- See-thru Pockets for Easy Identification

Model TC-100/ST. Contains a variety of drivers plus necessary electronic speciality tools for field service work. The unique design of this sturdy, spacious tool case contains 53 individual screwdrivers, nut-drivers, pliers and wrenches, 31 Series 99 interchangeable screwdriver-nutdriver blades and handles, and two screwdriver-nutdriver sets; plus pockets for service manuals and ample room in the case bottom for additional tools, parts and test equipment. Case is of tough, chestnut-brown, leathergrain-vinyl. Top-quality, professional hand tools are mounted on removable, vinyl pallets. **Size:** 9 1/2" × 13 1/2" × 6 3/4" (495 × 343 × 171 mm). **Weight:** 23 lbs.

984-5000. Model TC-100/ST .... EACH 944.88

Precision Knives

Light and medium-duty knives for the professional and hobbyist alike. Precision made for durable life. Interchangeable blades held firm in sure-locking four-jaw chuck. Stay sharp blades are made from surgical steel and honed for closest cutting and long-lasting edge.

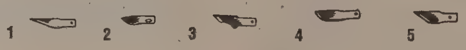


Light and Medium Duty Knife Set: XNS-100 Contains XN-100 and XN-200 knives and comes with 10 assorted blades for a wide range of cutting operations.

984-1290. XNS-100	EACH 11.32
984-1275. XN-100. Light Duty*	EACH 2.70
984-1278. XN-200. Medium Duty**	EACH 4.04

*For light-duty cutting on paper, soft and lightweight materials or wood.
**For heavy paper and medium density materials.

Blades



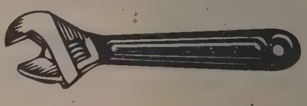
Blades for XN-100

984-1212. XNB-103. Fig. 1. Fine Pointed	PER PKG./5 2.40
984-1215. XNB-101. Fig. 2. Standard	PER PKG./5 3.42
984-1221. XNB-105. Fig. 3. Stencil	PER PKG./5 2.40

Blades for XN-200

984-1230. XNB-203. Fig. 4. General Purpose	PER PKG./5 3.76
984-1239. XNB-205. Fig. 5. Pointed	PER PKG./5 2.40

Adjustable Wrenches

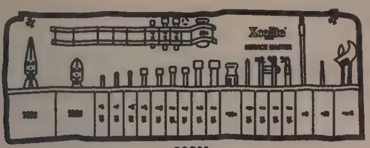


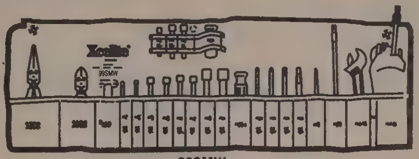
Thin-pattern design permits access where regular adjustable will not fit. Rugged construction, chrome-plated, polished heads, with quick one-hand adjustment and Cushion-Grip.

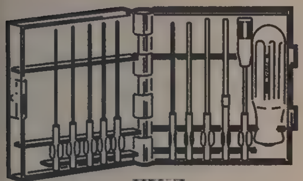
984-0044. 44CG. 4" length, 1/2" opening	EACH 19.14
984-0046. 46CG. 6" length, 3/4" opening	EACH 19.84
984-0048. 48CG. 8" length, 15/16" opening	EACH 20.84

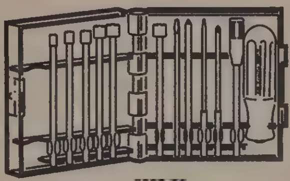
Series 99® Service Kits

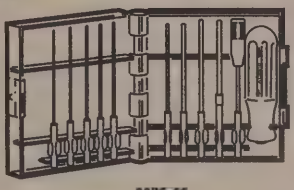
Series 99 service kits and sets are made up primarily of various screwdriver, nutdriver, and other blades which can be used interchangeably in Series 99 handles. All blades are high quality steel, hardened and tempered for optimum performance. Plastic handles have a patented spring device that holds blades firmly, yet permits quick, easy insertion and removal. Regular handles accommodate all blades, single and reversible. Stubby, Tee, and Ratchet handles can only be used with single-end blades.


99SM


99SMW


99PS-40


99PS-50


99PS-60

99SM Roll Kit

Versatile 23-piece set of quality tools in a durable, roll-up plastic-coated canvas case for easy selection and storage. Provides a variety of quick change tools and tool combinations to speed up assembly and service work. **Kit Contains:** One long nose plier, one diagonal grip plier, one wrench, one regular handle, one stubby handle, nine regular nutdrivers, one stubby nutdriver, one reamer, and one extension.

984-0404. 99SM....................EACH 174.36

99SMW Service Kit

Plastic-coated canvas case holds 26-piece set of handles and interchangeable screwdriver, nutdriver, and other blades plus wire stripper and cutter and Weller soldering iron. **Kit Contains:** One soldering iron, one tip, one wire stripper and cutter, one long nose cushion grip plier, one diagonal grip plier, one adjustable wrench, one regular handle, one stubby handle, two Phillips screwdrivers, three stubby nutdrivers, two slotted screwdrivers, one reamer, and one extension.

984-0406. 99SMW....................EACH 228.40

99PS-40 Allen Hex Socket Type Screwdriver Set — Inch Sizes

11-piece set in compact see-through plastic case. **Set Contains:** One regular handle, one extension, and nine assorted hex-type blades.

984-9969. 99PS-40....................EACH 46.96

99PS-50 Screwdriver and Nutdriver Set — Inch Sizes

13-piece set in convenient see-through stand-up plastic case. **Set Contains:** Seven assorted nutdrivers, two slotted screwdrivers, two Phillips screwdrivers, one extension, and one regular handle.

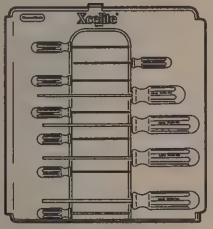
984-6041. 99PS-50....................EACH 59.26

99PS-60 Bristol Multiple-Spline Socket Type Screwdriver Set — Inch Sizes

11- piece set in convenient see-through stand-up plastic case. **Set Contains:** Nine flute Bristol spline blades, one regular handle, and one extension.

984-0412. 99PS-60....................EACH 46.96

Roll-Up Kits



For Allen Hex Socket Type — Inch Sizes

Kit Contains: A complete set of the LN series Allen hex type screwdrivers. Comes with a roll-up canvas case, plastic-coated for wear and protection.

984-0425. LN-11....................EACH 58.98

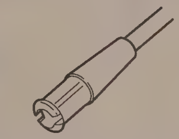
For Ballpoint Style, Allen Hex Socket Type — Inch Sizes

Kit Contains: Nine ballpoint, Allen hex socket type screwdrivers (LN-20BP through LN-26BP). Comes in roll-up canvas case.

984-0427. LN-9BP....................EACH 71.80

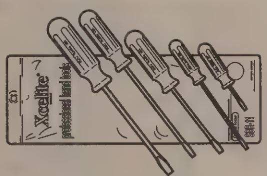
Power Bit Adapter

For use with Xcelite Series 99 blades. Fits all power tools with 1/4" hex chuck.



984-0420. 99PA.......EACH 5.84

Round Blade Screwdriver Set

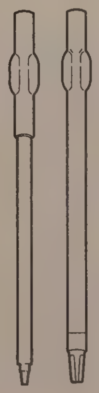


SDR-11 Set Contains: Five round blade screwdrivers for slotted screws. Catalog numbers R182, R5324, R3166, R144, and R5166.

984-3500. SDR-11....................EACH 25.94

Torx® Screwdrivers

Torx® is the trademark of Camcar Division of Textron Incorporated.



Stock No.	Mfr.'s Type	Tip Size	Dimensions		EACH
			In.	mm	
984-0415	99-8XTD	T-8	4	102	4.92
984-0416	99-10XTD	T-10	4	102	4.92
984-0417	99-15XTD	T-15	4	102	4.92

Phillips Screwdrivers

Stock No.	Mfr.'s Type	Tip Size	In.	mm	EACH
984-9820	99-820	No. 0	4	102	4.32
984-9821	99-821	No. 1	4	102	4.32
984-9822	99-822	No. 2	4	102	4.32

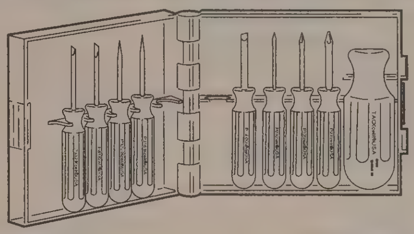
Slotted Screwdrivers

Stock No.	Mfr.'s Type	Tip Size	In.	mm	EACH
984-9823	99-125	1/8"	4	102	4.32
984-9824	99-811	3/16"	4	102	4.32
984-9825	99-250	1/4"	4	102	4.32
984-9826	99-312	5/16"	4	102	4.32

Compact Convertible Tool Sets

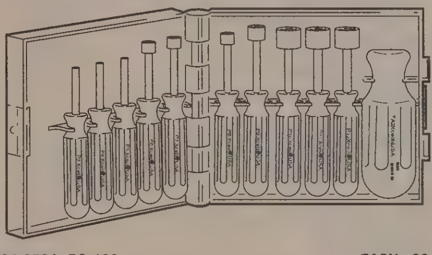
Compact convertible tool sets do more jobs with fewer tools, save bench space, and lighten the service kit. Each set is equipped with a remarkable black "Piggyback" torque amplifier handle that slips over the top of color-coded Midget drivers to provide larger gripping surface, extended reach, and increased driving power. Sets housed in attractive, easy to open, clear plastic cases. All individual screwdrivers and nutdrivers are available separately.

PS-88 Screwdriver Set — Inch Sizes (Color-Coded Handles)



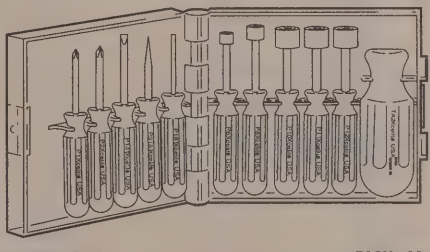
984-9901. PS88....................EACH 30.16
984-0060. M-60....................EACH 14.56

PS-120 Nutdriver Set — Inch Sizes (Color-Coded Handles)



984-3501. PS-120....................EACH 38.08

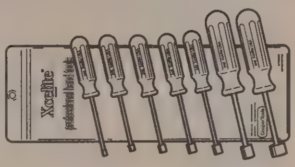
PS-130 Screwdriver and Nutdriver Set — Inch Sizes (Color-Coded Handles)



984-9910. PS-130....................EACH 39.36

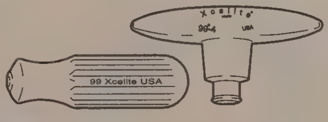
Nutdriver Set

Set Contains: Seven pieces, all hollow shaft, numbers HS6, HS8, HS10, HS11, HS12, HS14, and HS16 in plastic pouch.



984-0177. 177....................EACH 45.08

Handles



- ► Easy to Operate
- ► Use With Series 99 Blades
- ► Series 99 Interchangeable Blades and Handle Are All Available Separately, Allowing Gradual, Economical Accumulation of Whatever Items Might Be Needed for Individual Requirements
- ► Also Permits Owners of Series 99 Sets or Kits to Enlarge Them or Substitute Tools, As Necessary, At Minimal Cost

Stock No.	Mfr.'s Type	Description	Color	Dimensions		EACH
				In.	mm	
984-0991	99-1	Regular	Amber	1 3/16 × 4 1/8	30 × 105	4.54
984-0992	99-4	Tee	Black	3 1/2 × 1 5/8	89 × 41	5.92

Lamps, Lamp Products, Displays, Fiber-Optics, Magnifiers, Optocouplers, Optoelectronics, Optoswitches, Photocells, Tubes, Vactrols, Vacuum Fluorescent Displays

Manufacturer	Page	Manufacturer	Page	Manufacturer	Page
Allied	357	Hantronix	366	Luxo/Ledu	378
AND	358, 359	Hewlett-Packard	367-370	Micro Lamps, Inc.	379
Chicago Miniature Lamp	360-363	IDI (Industrial Devices, Inc.)	371-373	Osram/Sylvania	380, 381
EG&G Vactec	364	IEE	374	Silonex	382, 383
Electrix	365	Leecraft	375-377		

Product — Page

- **Analog Optoisolators-Vactrols**
  - EG&G Vactec ... 364
- **Arrays, Multielement**
  - Silonex ... 383
- **Assemblies**
  - Osram/Sylvania ... 380, 381
- **CdS/CdSe Photoconductive Cells**
  - EG&G Vactec ... 364
  - Silonex ... 382
- **Cooling Fans**
  - Electrix ... 365
- **Diodes, Light Emitting**
  - Silonex ... 383
- **Displays**
  - Segmented
    - Hewlett-Packard ... 367
  - Vacuum Fluorescent
    - IEE ... 374
- **Electrical Industry Lamps**
  - Chicago Miniature Lamp ... 362
- **Encoder, Encoder Modules**
  - Hewlett-Packard ... 368
- **Fans, Accessories**
  - Electrix ... 365
- **Fiber-Optic Components**
  - Miniature Link, Versatile Link
    - Hewlett-Packard ... 369
- **Gas Filled**
  - Chicago Miniature Lamp ... 362
  - Hewlett-Packard ... 369
- **Incandescent Lamps**
  - Chicago Miniature Lamp ... 360
  - Micro Lamps ... 379
- **Indicator Lights**
  - Circuit Board
    - General
      - IDI ... 371
    - Miniature LED T-1 Block
      - IDI ... 371
    - Super Brite LED Assembly
      - IDI ... 371
    - T-1 LED 3-Up and 4-Up
      - IDI ... 371
  - Incandescent and Solid State
    - IDI ... 373
    - Leecraft ... 375
  - Light Assembly, Tiny-Mite
    - IDI ... 373
  - Neon
    - IDI ... 373
  - Non-Relampable
    - Miniature Neon Pilot
      - IDI ... 372
    - Pilot, Various Lenses
      - IDI ... 372
  - Oil-Tight
    - IDI ... 373
    - Leecraft ... 375
  - Panel Mount LEDs
    - IDI ... 373
    - Leecraft ... 375
  - Press Fit
    - Leecraft ... 375
  - Rectangular
    - Neon-Pilot
      - IDI ... 371
    - Panel Mount
      - Leecraft ... 375
  - Relampable Lights And Sockets
    - Chicago Miniature Lamp ... 363
  - Snap Mount
    - Leecraft ... 375
  - Solid State
    - IDI ... 373
    - Leecraft ... 375
  - Tapered and Splashproof
    - Leecraft ... 375
- **IR Emitters and Phototransistors**
  - EG&G Vactec ... 364
- **Lampholders**
  - Leecraft ... 376, 377
- **LCDs**
  - AND ... 358, 359
  - Hantronix ... 366
  - Hewlett-Packard ... 367
- **LED Indicators**
  - Hewlett-Packard ... 368
  - IDI ... 371
- **LED/Photocell Optoisolators**
  - Silonex ... 382
- **LEDs**
  - 2 Chip Single and Tri-Color
    - Micro Lamps ... 379
  - Blinking
    - Micro Lamps ... 379
  - Discreet
    - AND ... 358
  - Displays
    - AND ... 358
    - Hewlett-Packard ... 368
  - Light Bars/Bar Graphs
    - Chicago Miniature Lamp ... 363
    - Hewlett-Packard ... 368
  - Mounting Accessories
    - IEE ... 374
    - Chicago Miniature Lamp ... 363
  - Outdoor Ultra Brite
    - AND ... 358
  - Standards, Rectangular
    - Chicago Miniature Lamp ... 363
    - Micro Lamps ... 379
  - Super Bright
    - Micro Lamps ... 379
  - Surface Mount
    - Hewlett-Packard ... 367
  - Thru Hole Lamps
    - Hewlett-Packard ... 367
- **Light Bars**
  - Hewlett-Packard ... 368
- **Light Emitting Diodes**
  - Silonex ... 383
- **Lights (Work)**
  - Electrix ... 365
  - Luxo/Ledu ... 378
- **Magnifiers and Accessories**
  - Electrix ... 365
  - Luxo/Ledu ... 378
- **Miniature Lamp Single Socket Assembly**
  - Osram Sylvania ... 380
- **Miniature Lamps**
  - Chicago Miniature Lamp ... 360
  - Osram Sylvania ... 380
- **Motion Control ICs**
  - Hewlett-Packard ... 368
- **Neon Lamps**
  - Chicago Miniature Lamp ... 360
- **Non-Relampable Indicator**
  - Chicago Miniature Lamp ... 362
- **Optocouplers**
  - Hewlett-Packard ... 370
- **Optoelectronics**
  - Hewlett-Packard ... 368
- **Optoisolators/Analog**
  - EG&G Vactec ... 364
- **Optoswitches**
  - EG&G Vactec ... 364
- **Outdoor Sign, Gas Filled**
  - Chicago Miniature Lamp ... 362
- **Photocell Optoisolator/LED**
  - Silonex ... 382
- **Photoconductive Cells, CDS/CDSE**
  - EG&G Vactec ... 364
  - Silonex ... 382
- **Photodiodes**
  - Planar
    - Silonex ... 383
  - Silicon, Solderable, Planar
    - EG&G Vactec ... 364
    - Silonex ... 383
  - Solderable Contacts
    - EG&G Vactec ... 364
- **Phototransistors**
  - Silonex ... 382
- **Planar Photodiodes**
  - EG&G Vactec ... 364
  - Silonex ... 383
- **Relampable Indicator Lights and Sockets**
  - Chicago Miniature Lamp ... 362
- **Sockets**
  - Leecraft ... 376, 377
- **Transceivers and Fiber-Optic Evaluation Kits**
  - Hewlett-Packard ... 369
- **Tubes (Receiving, Industrial and Special-Purpose)**
  - Allied ... 357
- **Vactrols — Analog Isolators**
  - EG&G Vactec ... 364
- **Worklights, Accessories**
  - Electrix ... 365
  - Luxo/Ledu ... 378

NOTE: Most of the tubes in this listing were purchased by their generic number from the manufacturer with the best price at the time of purchase. Should you desire a specific manufacturer or quantity pricing, please contact the Allied Facility nearest you at 1-800-433-5700.

Receiving, Industrial, and Special Purpose Tubes

RAYTHEON

With increasing demands on replacement tubes and the need to satisfy those demands becoming increasingly more difficult, we ask that you contact Allied for any requirements you may have. The list below is only a sampling of the many tube types we can supply.

Mfr.'s Type	Tube Type	EACH	
		1-9	10-24
0A2	Volt Regulator	7.31	6.75
0B2	Volt Regulator	7.31	6.75
0D3	Volt Regulator	17.51	16.16
C1K/6014	Thyratron	139.59	130.29
1P39	Photo Tube	102.00	94.50
2D21	Thyratron	8.42	7.77
2X2A	Rectifier	19.04	17.58
C3J/5632	Thyratron	131.40	121.30
C3JA/5684/7306A	Thyratron	165.75	153.00
3C23	Thyratron	103.87	95.80
3CY3/3DB3	Hi-Volt Rectifier	10.54	9.73
3GS8/3BU8	Sync. Separator	6.12	5.65
3HA5/3HM5	VHF Amp	8.67	8.00
4CX250B/7203	Beam Powered Tetrode	191.45	165.92
4CX300A/8167	Ceramic Powered Tetrode	779.91	675.90
4CX350A/8321	Ceramic Powered Tetrode	354.56	307.36
4CX1500B/8660	Ceramic Radon Tetrode	1291.48	1119.20
5U4GB/5AS4A	Full Wave Power Rectifier	21.89	18.97
5V4GA	Full Wave Power Rectifier	29.50	25.57
C6J/KF	Thyratron	356.22	308.72
6AK5/EF95	RF Amp.	4.55	4.08
6AK6	Power Pentrode	13.34	11.56
6AL5	Mini Beam Pentrode	6.12	5.65
6AQ5/6HG5/6669	Receiving Tube	13.00	10.67
6AU5GT	Beam Pentrode	10.36	8.98
6AU6WB	RF Amp.	9.86	9.10
6AU6WC-JAN	Pentrode	6.75	5.83
6AV6	Detector	6.63	6.12
6AX4GTB	Damper	7.65	6.56
6AX5GT	Full Wave Power Rectifier	23.54	20.40
6BA6/EF93	RF/IF Amp.	6.25	5.39
6BH6	Mini Pentrode	11.56	9.91
6BK4C/6EL4A	Shunt Volt Regulator	50.71	47.33
6BL8/ECF80	VHF Oscillator	3.40	2.91
6BQ5/EL84	Audio Power Amp.	9.00	7.14
6BQ7A/6BZ7/6BS8	VHF Cascode Amp.	7.41	6.84
6C4WA	RF Oscillator	17.17	15.85
6C4WA-JAN	Mini Triode	12.40	10.74
6CA7/EL34	Audio Power Amp.	13.77	11.80
6CB6A/6CF6/6676	Mini Pentrode	5.78	4.95
6CG7/6CFQ7	Mini Pentrode	21.34	18.50
	Hor-Ver Deflection OSC		
6CL6/6677	Mini Pentrode	12.90	11.22
6CW5/EL86	Audio Power Amp.	6.63	5.68
6DJ8/ECC88	P.Q. Twin Tetrode	5.78	4.95
6DQ6B/6GW6	Horizontal Deflection Amp.	11.09	9.18
6DW4B/6CJ3	Damper	12.41	10.64
6EA8	VHF Oscillator	6.63	5.68
6EJ7/EF184	IF Amp.	6.50	5.39
6EL4A/6BK4C	Shunt Volt Regulator	59.16	50.71
6EU7	Oscillator	27.25	25.43
6EW6	IF Amp.	6.97	5.97
6FQ7/6CG7	Hor-Ver Deflection OSC	23.12	19.82
6GH8A	VHF Oscillator	4.93	4.55
6GW6/6DQ6B	Horizontal Deflection Amp.	11.09	9.18
6HF5	Horizontal Deflection Amp.	32.81	30.29
6HM5/6HA5	VHF Amp.	8.67	7.43
6HV5A	Beam Triode	18.02	15.45
6H6	Duodiode	17.54	12.40
6J5	Triode	7.60	6.39
6J7GT	Pentrode	11.90	10.20
6JC6A	IF Amp.	8.50	7.85
6KD8/668A/6678	Mini Triode/Pentrode	6.47	5.54
6KE8	VHF Oscillator	10.03	8.60
6KT8	Sync. Separator	9.86	8.45
6L6GC	Audio Power Amp.	16.43	14.62
6L6WGB-JAN	Pentrode	26.60	23.05
6LF6	Receiving Tube	106.00	87.43
6SJ7	RF or AF Amp.	11.56	9.91
6SL7GT	AF Volt Amp	9.35	8.63
6SL7WGT-JAN	Twin Triode	8.80	7.00
6SN7GTB	Twin Triode	10.96	7.48
6V4/EZ80	Duodiode	11.73	10.04
6V6GTA	Audio Power Amp.	10.26	8.68
6X4WA	Full Wave Power Rectifier	10.37	8.89
6X5GT	Full Wave Power Rectifier	10.54	9.03
8AW8A	Sync. Separator	9.35	8.01
8CG7/8FQ7	Hor-Ver Deflection OSC	9.35	8.45
12AT7/ECC81/6679	Mini Twin Triode	9.86	6.63
12AT7WC-JAN	Mini Twin Triode	10.20	8.84
12AU7A/ECC82/6680	Mini Twin Triode	8.22	7.31
12AV7	Grounded Grid Amp.	5.86	4.50
12AX7A/ECC83/7025	AF Amp.	8.71	6.63
12AX7WA-JAN	Mini Twin Triode	10.20	8.84
12B4A	Triode	17.05	15.91
12BH7A	Hor-Ver Deflection OSC	21.25	19.62
12BY7A/12BY7	Video Amp.	11.22	10.47
12C5/12CU5	Audio Power Amp.	7.50	6.26
12GN7A/12HG7	Video Amp.	8.63	7.48
12SN7GT	Horizontal Multivibrator	6.63	6.12
13GF7A	Vertical Deflection OSC	13.43	11.51
C16J/5665	Thyratron	734.00	685.00
FG17/715/5557	Thyratron	117.81	100.98
20PE14/4848	Vidicon	117.30	100.54
KY21A	Thyratron	439.38	380.80
24JE6A/24LQ6	Horizontal Deflection Amp.	23.38	21.72
35W4	Half Wave Rectifier	6.97	6.43
36KD6/40KD6	Horizontal Deflection Amp.	43.71	40.80
50C5	Audio Power Amp.	17.26	14.96
EZ80/6V4	Duodiode	11.73	10.04
83	Rectifier	37.89	35.36
EL84/6BQ5	Audio Power Amp.	9.00	7.14
ECL86/6GW8	Audio Power Amp.	9.00	8.50
ECC88/6DJ8	P.Q. Twin Triode	6.80	5.83
E88CC/6922	Duotriode	6.50	5.30
EF93/6BA6	RF/IF Amp.	6.25	5.39
5560/FG95	Thyratron	433.35	409.93
T160L/572B	Triode	186.00	161.84
EF184/6EJ7	IF Amp.	6.50	5.39
FG235A/5552A	Ignitron	785.40	614.91
FG258A/B/5553B	Ignitron	1642.93	1493.57
FG271/5551A	Ignitron	528.00	480.86
DX332/5001	Microwave Magnetron	430.00	397.40
5550	Ignitron	413.40	376.00
572B/T160L	Triode	186.00	161.84
575A	Rectifier	268.00	250.00
NL615/7018	Rectifier	104.04	97.10
NL616	Rectifier	176.00	164.56
NL635L/7020	Rectifier	281.23	262.48
NL714/7021	Thyratron	144.99	135.31
715/FG17/5557	Thyratron	117.81	100.98
5544/734	Thyratron	321.00	278.80
ECF801/6GJ7	VHF Oscillator	7.99	6.85
807	Power Amplifier	16.94	14.28
811A	Triode	31.45	26.96
866A	Rectifier	63.40	54.94
872A	Rectifier	131.82	114.24
922	Phototube	75.32	65.28
931A	Photo Multiplier	67.20	64.11
931B	Photo Multiplier	77.21	66.91
2050A/2050	Thyratron	27.46	23.80
L5001A/DX332	Microwave Magnatron	437.14	408.00
557/FG17	Thyratron	117.81	100.98
5581	Photo Tube	86.15	74.66
5583	Photo Tube	97.51	80.00
5632/C3J	Thyratron	112.64	105.13
5651A	Duotriode	11.00	9.33
5651WA	Duotriode	13.00	11.19
5665/C16J	Thyratron	778.91	724.06
5684/7306A/C3JA	Thyratron	153.00	132.60
5691	Duotriode	24.48	21.22
5692	Twin Triode	25.42	22.03
5727/2D21W	Thyratron	9.50	8.47
5751	Twin Triode	12.71	11.02
5763	Beam Pentrode	51.00	44.20
5814A	Twin Triode	8.00	6.32
5814A-JAN	Twin Triode	14.28	12.38
5823	Cold Cathode Triode	68.20	63.58
5881	Beam Pentrode	14.00	10.64
5963	Twin Tetrode	5.75	4.23
6005W-JAN	Mini Tetrode	13.64	10.24
6011/7307A/NL710	Thyratron	137.00	118.00
6012	Thyratron	266.00	251.69
C1K/6014	Thyratron	139.00	130.00
6072A	Mini Twin Triode	13.20	11.79
6080WC-JAN	Twin Triode	29.03	25.16
6146A	Beam Pentrode	34.75	32.44
6146B/8298A	Beam Pentrode	37.43	32.40
6146W-JAN	Beam Pentrode	21.34	18.50
6189W-JAN	Twin Triode	18.20	15.70
6197-JAN	Mini Pentrode	13.97	12.10
6201/12AT7WB	P.Q. Twin Triode	7.00	5.81
6211	Twin Triode	7.90	7.48
6360A	Twin Tetrode	24.32	21.08
6550/6550A	Beam Pentrode	58.29	54.40
6669/	Mini Pentrode	13.00	11.02
6677/	Mini Pentrode	12.90	8.00
6U8/6KD8	Mini Triode/Pentrode	6.10	5.17
6679/12AT7/ECC81	Mini Twin Triode	7.22	6.26
6680/12AU7/A/ECC82	Mini Twin Triode	7.53	6.53
6681/12AX7A/ECC83/7025	Mini Twin Triode	9.26	8.02
6688	P.Q. Pentrode	25.58	22.17
6922/E88CC	Duotriode	6.50	5.30
6922-JAN	Mini Twin Triode	6.12	5.30
6930/NL635P	Rectifier	270.30	234.26
6989/C6JKL	Thyratron	353.00	306.00
7018/NL615	Rectifier	112.04	97.10
7020/NL635L	Rectifier	302.00	262.48
7021/NL714	Thyratron	144.99	135.32
NL710L/7509A	Thyratron	174.97	151.64
7167	Tetrode	11.90	10.36
7203/4CX250B	Beam Powered Tetrode	191.45	165.92
7306A	Thyratron	94.94	82.28
7307A	Thyratron	91.17	79.02
8170/4CX5000A	Tetrode	2351.67	2257.60
8298A/6146B	Beam Pentrode	37.43	32.44
8660/4CX1500B	Ceramic Radial Tetrode	1291.48	1119.28
8737/5894B	RF Twin Tetrode	180.46	156.00
8929	Vidicon	81.00	69.53
—	—	—	—
—	—	—	—
—	—	—	—

Ultra Bright Outdoor LEDs

- New LED Material — InGaAIP
- For the Brightest Red, Yellow and Amber/Orange LEDs
- Applications are: Illumination, Signs, Signals, Indicators

Ultra Bright LEDs — Red

Stock No.	Mfr.'s Type	Pkg. (mm)	Color/Lens	Peak (nm)	Typ. (mcd)	View Angle	EACH
505-9702	AND190HRP	10.0	Red/Water Clear	644	15000	4	**4.61**
505-0190	AND190CRP	10.0	Red/Water Clear	660	13000	4	**2.83**
505-9500	AND191CRP	10.0	Red/White Diffused	660	600	20	**4.81**
505-1800	AND180HRP	5.0	Red/Water Clear	644	6000	8	**1.18**
505-9875	AND180HSP	5.0	Red/Water Clear	623	8000	8	**1.18**
505-0180	AND180CRP	5.0	Red/Water Clear	660	4100	8	**.65**
505-9877	AND157HRP	5.0	Red/Water Clear	644	1900	22	**1.18**
505-5260	AND130CR	5.0	Red/Water Clear	660	2300	16	**.65**
505-5270	AND155CRP	5.0	Red/Water Clear	660	1280	30	**.47**
505-5280	AND120CR	5.0	Red/Water Clear	660	1280	22	**.47**
505-5290	AND134CR	5.0	Red/Red Diffused	660	680	50	**1.18**
505-5295	AND116CR	5.0	Red/Milky Diffused	660	130	60	**.65**
505-9530	AND256CR	5.0	Red/Water Clear, DUAL DIE (3.5 V)	660	350	90	**1.43**
505-9545	AND125CR	3.0	Red/Water Clear	660	400	60	**.55**
505-9540	AND126CR	3.0	Red/Milky Diffused	660	150	65	**.55**

Ultra Bright LEDs — Green

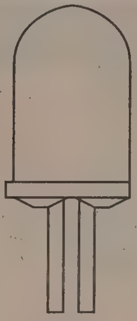
Stock No.	Mfr.'s Type	Pkg. (mm)	Color/Lens	Peak (nm)	Typ. (mcd)	View Angle	EACH
505-9555	AND190GCP	10.0	Green/Water Clear	567	700	4	**2.45**
505-9560	AND191GCP	10.0	Green/Milky Diffused	567	180	20	**2.45**
505-1830	AND183HPGP	5.0	Green/Water Clear	562	700	8	**1.33**
505-9881	AND183HGP	5.0	Green/Water Clear	574	2500	8	**1.33**
505-9883	AND158HGP	5.0	Green/Water Clear	574	370	22	**1.33**
505-9645	AND240GCP	5.0	Green/Water Clear	567	780	20	**.47**
505-9650	AND135PGP	5.0	Green/Water Clear	567	210	30	**.35**
505-9530	AND256GC	5.0	Green/Water Clear, DUAL DIE (4 V)	567	90	90	**.98**
505-5245	AND160NG	3.0	Green/Water Clear	567	250	10	**.43**

Dual/Three Color LED Lamps — Ultra Bright

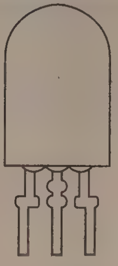
Stock No.	Mfr.'s Type	Pkg. (mm)	Color/Lens	Peak (nm)	Typ. (mcd)	View Angle	EACH
505-9660	AND178RAG	5.0	Red/Green, Water Clear	660/567	500/150	30	**1.10**
505-9665	AND188RAG	7.5	Red/Green, Water Clear	660/567	500/150	36	**1.31**

Ultra Bright LEDs — Orange

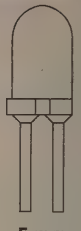
Stock No.	Mfr.'s Type	Pkg. (mm)	Color/Lens	Peak (nm)	Typ. (mcd)	View Angle	EACH
505-9884	AND190HAP	10.0	Amber/Water Clear	612	18000	4	**4.61**
505-9670	AND190AOP	10.0	Orange-Amber/Water Clear	620	12000	4	**4.69**
505-1900	AND190WOP	10.0	Orange/Water Clear	620	18000	4	**5.55**
505-9886	AND180HAP	5.0	Amber/Water Clear	612	7000	8	**.58**
505-9887	AND157HAP	5.0	Amber/Water Clear	612	2000	22	**1.18**
505-0108	AND180TOP	5.0	Orange/Water Clear	620	4100	8	**1.29**
505-9675	AND180AOP	5.0	Orange-Amber/Water Clear	620	3000	8	**1.29**
505-9680	AND156AOP	5.0	Orange-Amber/Water Clear	620	800	30	**1.29**



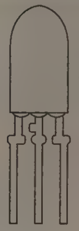
10 mm



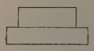
7.5 mm



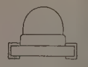
5 mm



5 mm Dual Color



Flat SMD



Dome SMD

Ultra Bright LEDs — Yellow

Stock No.	Mfr.'s Type	Pkg. (mm)	Color/Lens	Peak (nm)	Typ. (mcd)	View Angle	EACH
505-9888	AND190HYP	10.0	Yellow/Water Clear	590	18000	4	**4.18**
505-9685	AND190AYP	10.0	Yellow/Water Clear	590	6000	4	**3.86**
505-9693	AND190VYP	10.0	Yellow/Water Clear	590	13000	4	**5.77**
505-9696	AND180HYP	5.0	Yellow/Water Clear	590	8000	8	**1.18**
505-9889	ANDS4E38XX	5.0	Yellow/Water Clear	590	3500	17	**1.20**
505-9698	AND157HYP	5.0	Yellow/Water Clear	590	2300	22	**1.18**
505-9890	AND156HYP	5.0	Yellow/Water Clear	590	1200	30	**1.18**
505-9690	AND180AYP	5.0	Yellow/Water Clear	590	2500	8	**1.29**
505-9692	AND157AYP	5.0	Yellow/Water Clear	590	800	22	**.78**

Surface Mount Ultra Bright LEDs

Stock No.	Mfr.'s Type	Pkg. Lens	Color	Peak (nm)	Typ. (mcd)	View Angle	EACH
505-9850	AND4RA	Flat	Red	660	40	150	**.57**
505-9891	AND4SA	Flat	Red	635	5	150	**.41**
505-9852	AND4OA	Flat	Orange	612	60	150	**.86**
505-9854	AND4YA	Flat	Yellow	590	60	150	**.86**
505-9855	AND4GA	Flat	Green	570	15	150	**.49**
505-9893	AND4G	Flat	Green	567	9	150	**.37**
505-9892	AND4PGA	Flat	Green	555	2	150	**.37**
505-9894	AND5RA	Dome	Red	660	450	30	**.45**
505-9895	AND5SA	Dome	Red	635	25	40	**.47**
505-9896	AND5OA	Dome	Orange	612	400	40	**.78**
505-9897	AND5YA	Dome	Yellow	590	300	40	**.71**
505-9898	AND5GA	Dome	Green	570	75	40	**.51**
505-9899	AND5G	Dome	Green	567	45	40	**.41**
505-9900	AND5PGA	Dome	Green	555	12	40	**.45**

LED Discrete Lamps

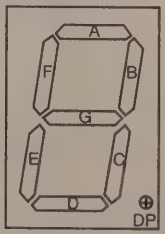
Standard Bright T-1

Stock No.	Mfr.'s Type	Pkg. Lens	Color	Peak (nm)	Typ. (mcd)	View Angle	EACH
505-2110	AND123R	Dome	Red/Red Clear	700	12.0	50	**.14**
505-2114	AND124R	Dome	Red/Red Diffused	700	3.0	60	**.14**
505-2112	AND123G	Dome	Green/Green Clear	565	50.0	50	**.16**
505-2115	AND124G	Dome	Green/Green Diffused	565	20.0	60	**.18**
505-2111	AND123Y	Dome	Yellow/Yellow Clear	590	45.0	50	**.18**
505-5120	AND124Y	Dome	Yellow/Yellow Diffused	590	20.0	60	**.18**
—	—	—	—	—	—	—	—

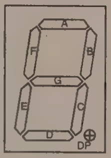
Standard Bright T-1 3/4

Stock No.	Mfr.'s Type	Pkg. Lens	Color	Peak (nm)	Typ. (mcd)	View Angle	EACH
505-2102	AND113R	Dome	Red/Red Clear	700	18.0	30	**.14**
505-2104	AND114R	Dome	Red/Red Diffused	700	5.0	60	**.13**
505-2117	AND114S	Dome	Red/Red Diffused	625	50.0	60	**.16**
505-2101	AND113G	Dome	Green/Green Clear	565	50.0	30	**.16**
505-2103	AND114G	Dome	Green/Green Diffused	565	18.0	60	**.15**
505-5100	AND113Y	Dome	Yellow/Yellow Clear	590	50.0	30	**.18**
505-5110	AND114Y	Dome	Yellow/Yellow Diffused	590	18.0	60	**.16**

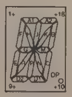
LED Displays



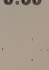
2.3"



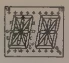
0.80"



0.80"



0.56"



0.54"

- Available in Red or Green
- Application: Numerical Readout for Instrument Products

LED Displays — 7 Segments

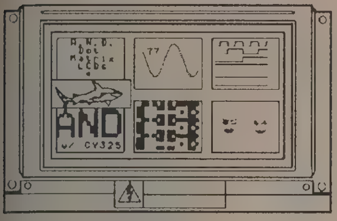
Stock No.	Mfr.'s Type	Color/Size	Peak (nm)	Iv/Seg (mcd)	EACH
505-9803	AND1510SAL*	Red/1.5"/CA	635	4.6	**4.08**
505-9810	AND2307SCL*	Red/2.3"/CC	635	7.5	**8.26**
505-9815	AND2307SAL*	Red/2.3"/CA	635	7.5	**8.26**
505-9840	AND5610SAL*	Red/0.56"/CA	635	3.3	**1.80**
505-9845	AND5610SCL*	Red/0.56"/CC	635	3.3	**1.80**

LED Displays — 16 Segments

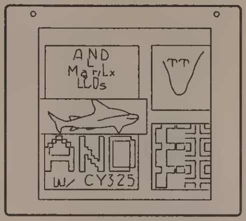
Stock No.	Mfr.'s Type	Color/Size	Peak (nm)	Iv/Seg (mcd)	EACH
505-5462	AND8010GCLB*	Green/0.80"/CC	567	3.3	**3.20**
505-5461	AND5420OCLB*	Red/0.54"/CC	635	3.3	**4.41**

*Alternate color, cathode or anode available.

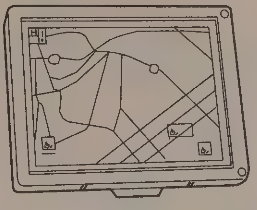
Liquid Crystal Displays

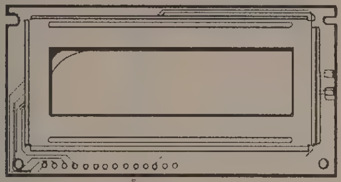


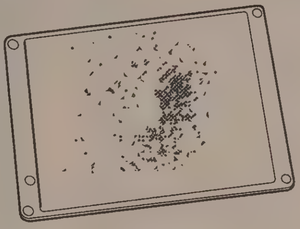
AND1741

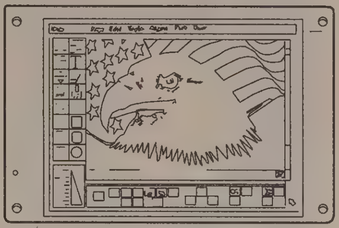


AND 1391


AND-TFT-6


AND491


AND-TFT-5


AND-CK-8

- ► **Small Size LCD Color Monitors**
- ► **Active Matrix TFT**
- ► **PAL/NTSC Analog Input**
- ► **Intelligent LCD Graphics and Alphanumeric Modules**
- ► **Film Super Twist Nematic**
- ► **Enhanced Film Super Twist Nematic**
- ► **Super Twist Nematic**

LCD Graphics Displays Dot Matrix Modules with Super Twist

Tight dot-to-dot spacing of the displays on a uniform background for excellent readability. All displays include built-in Controller/ RAM (T696C). A 30 suffix indicates transflective, EO suffix on type indicates electroluminescent panel installed (separate inverter required). Both have direct interface to external controller. **Operating Temperature Range:** 0°C to +50°C. CCFL designates Cold Cathode Fluorescent Lamp Backlighting.

Stock No.	Mfr.'s Type	No. of Dots	Characters/Features	Dimensions (mm)		EACH
				Viewing	Overall	
769-5000	AND1021ST	120 × 64	15 × 8	62.50 × 43.50	85.00 × 70.00 × 20.00	**102.03**
769-3021	AND1021ST-EO	120 × 64	EL Panel, 15 × 8	62.50 × 43.50	85.00 × 70.00 × 20.00	**132.40**
769-5010	AND1391ST	128 × 128	16 × 16	62.00 × 62.00	85.00 × 100.00 × 14.00	**120.04**
769-3391	AND1391ST-EO	128 × 128	EL Panel, 16 × 16	62.00 × 62.00	85.00 × 100.00 × 14.00	**168.05**
769-9999	AND1013ST-30	160 × 128	Transflective, 20 × 16	101.00 × 82.00	129.00 × 104.50 × 14.00	**153.03**
769-3013	AND1013ST-EO	160 × 128	EL Panel, 20 × 16	101.00 × 82.00	129.00 × 104.50 × 14.00	**210.05**
769-3301	AND1301VST-EO	240 × 128	EL Panel, 40 × 16	179.90 × 101.50	240.00 × 125.30 × 12.00	**396.71**
769-4301	AND1301VST-30	240 × 128	Transflective, 40 × 16	179.90 × 101.50	240.00 × 125.30 × 12.00	**322.59**
769-6060	AND1741MST**	240 × 128	CCFL, 12:1, 40 × 16	126.00 × 70.00	170.00 × 106.00 × 14.00	**240.06**
769-9802	AND1741BST*	240 × 128	CCFL, 16:1, 40 × 16	126.00 × 70.00	170.00 × 106.00 × 14.00	**225.06**
769-9981	AND1781MST**	240 × 64	CCFL, 12:1, 40 × 16	131.00 × 38.00	160.00 × 70.00 × 14.00	**219.06**
769-9804	AND1781BST*	240 × 64	CCFL, 6:1, 40 × 8	131.00 × 38.00	180.00 × 70.00 × 14.00	**191.30**
769-3711	AND711AST-EO	240 × 64	EL Panel, 40 × 8	131.00 × 38.00	180.00 × 65.00 × 12.00	**165.34**
769-9998	AND711AST-30	240 × 64	Transflective, 40 × 8	132.00 × 39.00	180.00 × 65.00 × 12.00	**119.70**

*Blue mode, 6:1 contrast. **Monochrome mode (white page appearance), 12:1 contrast.

LCD Character Displays with Built-in Controller/RAM-STN and TN

Close dot-to-dot spacing for excellent readability. Has 160 alphanumeric characters symbols and 'kana' letters, and 8 custom characters. Direct interface to 4- or 8- bit CPU. 11 control commands. 5 × 7 dot format plus cursor line. **Power:** Single 5 V. **Operating Temperature Range:** 0°C to +50°C. All types except AND241 have Super Twist (ST) and Super Twist with backlighting (ST-LED) options.

Stock No.	Mfr.'s Type	Characters × Lines	Descriptions	Dimensions (mm)		EACH
				Viewing	Overall	
769-2145	AND241	16 × 1	5.00 × 11.00 font	64.50 × 13.80	80.00 × 36.00 × 12.00	**28.56**
769-2150	AND671	16 × 1	0.58 × 0.78 mm dots	64.50 × 13.80	80.00 × 36.00 × 12.00	**18.90**
769-2146	AND491	16 × 2	0.55 × 0.57 mm dots	64.50 × 15.00	80.00 × 36.00 × 12.00	**23.94**
769-2147	AND501	20 × 2	0.60 × 0.75 mm dots	83.00 × 18.60	116.00 × 37.00 × 12.00	**48.60**
769-2152	AND721	20 × 4	0.56 × 0.61 mm dots	76.00 × 27.00	98.00 × 60.00 × 12.00	**62.42**
769-2154	AND771	24 × 2	0.61 × 0.69 mm dots	93.50 × 16.50	118.00 × 36.00 × 12.00	**46.20**
769-2148	AND591	40 × 2	0.60 × 0.75 mm dots	154.80 × 17.50	182.00 × 33.50 × 13.00	**57.21**

Small Color Monitors — TFT

Stock No.	Mfr.'s Type*	Pixel Count W × H	Pixel Size W × H (mm)	Dimensions (mm)		Driving Voltage (V)	Input Signal	EACH
				Viewing	Overall (W × H × D)			
769-5060	AND-TFT-5	234 × 720	0.32 × 0.42	101.60 × 74.4	120.00 × 90.00 × 18.00	9.5	NTSC compos. and analog RGB Interface	**710.96**
769-5070	AND-TFT-6	234 × 960	0.39 × 0.38	121.00 × 90.8	159.00 × 116.00 × 134.00	9.5	NTSC compos. and analog RGB Interface	**1016.61**

*AND-TFT units include backlight with power supply.

Active Matrix TFT Color LCD Design Kits

Stock No.	Mfr.'s Type*	Resolution	Overall Dimension W × H × D (mm)	Pixel Pitch (mm)	Active Area W × H (mm)	Luminance cd/m²	EACH
769-5080	AND-CK-8	640 × 480	225.00 × 158.00 × 10.50	0.25 × 0.25	160.00 × 120.00	100	**1166.12**
769-5090	AND-CK-9	640 × 480	267.00 × 180.30 × 11.60	0.30 × 0.30	192.00 × 144.00	95	**1228.54**
769-5100	AND-CK-10	640 × 480	265.00 × 188.80 × 12.00	0.33 × 0.33	211.20 × 158.40	250	**1211.45**

*Each kit consists of color LCD module with CCFL backlight inverter and cabling. Type of backlighting is side light with twin lamps.

LCD Direct Drive Panel Displays in Twisted Nematic

Features ultra low power consumption. Reflective mode, 18:1 contrast ratio. Dual-in-line pins with 0.1" (2.54) spacing. **Operating Temperature Range:** –30°C to +85°C. 100,000 hr. expected life.

Stock No.	Mfr.'s Type	Fig.	No. of Digits	Digit Height	Glass Size	EACH
769-1901	FE1901W-DU	1	2.0	0.5" (12.70)	1.10" × 1.20" (27.90 × 30.48)	**6.39**
769-1201	FE0201W-DU	2	3.5	0.5" (12.70)	2.00" × 1.20" (50.80 × 30.48)	**6.53**
769-1203	FE0203W-DU	3	3.5	0.5" (12.70)	2.00" × 1.20" (50.80 × 30.48)	**6.53**
769-1202	FE0202W-DU	4	4.0	0.5" (12.70)	2.00" × 1.20" (50.80 × 30.48)	**6.53**
769-1206	FE0206W-DU	5	4.5	0.4" (10.16)	2.00" × 1.20" (50.80 × 30.48)	**7.21**
769-1208	FE0208W-DU	6	5.0	0.4" (10.16)	2.00" × 1.20" (50.80 × 30.48)	**9.63**
769-1401	FE0401W-DU	7	6.0	0.5" (12.70)	2.75" × 1.20" (69.85 × 30.48)	**16.05**
769-1001	FE1001W-DU	8	8.0	0.5" (12.70)	3.70" × 1.20" (93.98 × 30.48)	**24.34**

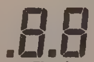


Fig. 1

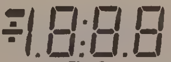


Fig. 2

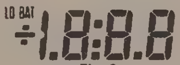


Fig. 3

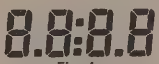


Fig. 4

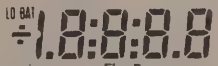


Fig. 5

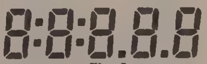


Fig. 6

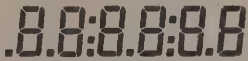


Fig. 7

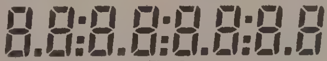


Fig. 8

Incandescent Lamps

Stock No.	Mfr.'s Type	Design		Average Life Hours	Fig.	Lamp Size	PRICE	
		V	Amps				EACH	PK./10
749-8402	PR2	2.38	0.500	15	1	B-3½	—	6.40
749-8404	PR4	2.33	0.270	10	1	B-3½	—	6.60
749-8406	PR6	2.47	0.300	30	1	B-3½	—	6.60
749-8407	PR7	3.70	0.300	30	1	B-3½	—	8.50
749-9673	1893	14.00	0.330	7500	2	T-3¼	—	6.00
749-9043	43	2.50	0.500	3000	2	T-3¼	—	9.30
749-1892	1892	14.40	0.120	1000	2	T-3¼	—	8.70
749-9671	1891	14.00	0.240	500	2	T-3¼	—	6.00
749-9180	313	28.00	0.170	500	2	T-3¼	—	8.70
749-9440	755	6.30	0.150	20000	2	T-3¼	—	8.80
749-9044	44	6.30	0.250	3000	2	T-3¼	—	4.22
749-9047	47	6.30	0.150	3000	2	T-3¼	—	3.91
749-9442	756	14.00	0.080	15000	2	T-3¼	—	10.40
749-9444	757	28.00	0.080	7500	2	T-3¼	—	8.00
749-9739	8-3995	130.00	0.020	2000	2	T-3¼	5.10	—
749-9645	1866	6.30	0.250	5000	2	T-3¼	—	7.60
749-9643	1864	28.00	0.170	1500	2	T-3¼	—	8.70
749-9605	1819	28.00	0.040	2500	2	T-3¼	—	7.90
749-1816	1816	13.00	0.330	1000	2	T-3¼	—	7.20
749-1813	1813	14.40	0.100	1000	2	T-3¼	—	6.60
749-9595	1815	14.00	0.200	3000	2	T-3¼	—	9.80
749-9635	1847	6.30	0.150	5000	2	T-3¼	—	5.30
749-1818	1818	24.00	0.170	250	2	T-3¼	—	21.70
749-1850	1850	5.00	0.090	1500	2	T-3¼	—	18.80
749-9615	1822	36.00	0.100	1000	2	T-3¼	—	10.10
749-9610	1820	28.00	0.100	1000	2	T-3¼	—	7.90
749-9620	1828	37.50	0.050	3000	2	T-3¼	—	20.90
749-9625	1829	28.00	0.070	1000	2	T-3¼	—	7.40
749-9630	1835	55.00	0.050	5000	2	T-3¼	—	23.80
749-9700	1495	28.00	0.300	500	2	T-4½	—	17.00
749-9012	12	6.30	0.150	5000	3	G-3½	—	9.50
749-9019	19	14.40	0.100	1000	3	G-3½	—	13.00
749-9013	13	3.70	0.300	15	4	G-3½	—	15.60
749-9050	50	7.50	0.220	1000	4	G-3½	—	10.60
749-9703	509K	24.00	0.180	1000	4	G-6	3.51	—
749-2068	8-967	120.00	0.025	5000	5	T-2	5.54	—
749-5070	120MB	120.00	0.025	5000	5	T-2	—	11.40
749-9140	28MB	28.00	0.040	5000	5	T-2	—	14.10
749-9135	24MB	24.00	0.073	10000	5	T-2	—	16.00
749-8362	8362	14.00	0.080	15000	6	T-1¾	—	10.90
749-9235	335	28.00	0.040	4000	6	T-1¾	—	9.80
749-9332	399	28.00	0.040	7000	6	T-1¾	—	10.60
749-1821	1821	28.00	0.170	500	6	T-3¼	—	22.20
749-9040	40	6.30	0.150	3000	6	T-3¼	—	7.10
749-9086	86	6.30	0.200	20000	7	T-1¾	—	7.40
749-9085	85	28.00	0.040	7000	7	T-1¾	—	5.80
749-9073	73	14.00	0.080	15000	7	T-1¾	—	6.10
749-9161	161	14.00	0.190	1500	8	T-3¼	—	7.10
749-9656	656	28.00	0.060	2500	8	T-3¼	—	6.60
749-9704	259	6.30	0.250	5000	8	T-3¼	—	5.10
749-9902	194	14.00	0.270	1500	8	T-3¼	—	5.15
749-9054	53	14.40	0.120	1000	9	G-3½	—	8.00
749-9052	51	7.50	0.220	1000	9	G-3½	—	7.70
749-9356	356	28.00	0.170	500	9	G-3½	—	17.40
749-9450	1450	24.00	0.035	3000	9	G-3½	—	13.00
749-9219	219	6.30	0.250	5000	9	G-3½	—	20.60
749-9055	55	7.00	0.410	500	9	G-4½	—	16.90
749-8895	1895	14.00	0.270	1500	9	G-4½	—	5.15
749-9705	1251	28.00	0.230	2000	9	G-6	3.00	—
749-9307	307	28.00	0.660	300	10	S-8	—	17.40
749-9093	93	12.80	1.040	500	10	S-8	—	15.30
749-9707	2232	28.00	0.643	2000	10	S-8	6.01	—
749-9156	1156	12.80	2.100	600	10	S-8	—	9.30

Stock No.	Mfr.'s Type	Design		Average Life Hours	Fig.	Lamp Size	PRICE	
		V	Amps				EACH	PK./10
749-9710	222	2.25	0.250	5	11	GTL-3	—	7.60
749-9320	385	28.00	0.040	10000	12	T-1¾	—	9.00
749-9322	387	28.00	0.040	7000	12	T-1¾	—	4.84
749-9394	394	12.00	0.040	10000	12	T-1¾	—	10.10
749-9310	381	6.30	0.200	20000	12	T-1¾	—	12.70
749-7333	7333	5.00	0.060	25000	12	T-1¾	—	9.30
749-7335	7335	5.00	0.115	40000	12	T-1¾	—	9.30
749-7341	7341	28.00	0.065	5000	12	T-1¾	—	9.50
749-9315	382	14.00	0.080	15000	12	T-1¾	—	9.10
749-9210	328	6.00	0.200	1000	12	T-1¾	—	9.30
749-9301	370	18.00	0.040	10000	12	T-1¾	—	11.90
749-9338	338	2.70	0.060	6000	12	T-1¾	—	10.10
749-9265	345	6.00	0.040	10000	12	T-1¾	—	9.80
749-9205	376	28.00	0.060	25000	12	T-1¾	—	7.90
749-9215	330	14.00	0.080	1500	12	T-1¾	—	6.60
749-9195	327	28.00	0.040	4000	12	T-1¾	—	5.15
749-3150	3150	5.00	0.060	5000	12	T-1¾	—	13.70
749-9323	388	28.00	0.040	7000	13	T-1¾	—	11.40
749-9398	398	6.30	0.200	5000	13	T-1¾	—	10.60
749-9225	334	28.00	0.040	4000	13	T-1¾	—	9.50
749-9321	386	14.00	0.080	15000	13	T-1¾	—	11.10
749-9240	336	14.00	0.080	1500	13	T-1¾	—	11.10
749-7153	7153	5.00	0.115	40000	14	T-¾	—	15.10
749-6833	6833	5.00	0.060	25000	14	T-¾	—	10.78
749-9714	7153AS15	5.00	0.115	40000	14	T-¾	—	15.80
749-7219	7219	12.00	0.060	10000	14	T-1	—	18.20
749-9716	715AS15	5.00	0.115	40000	14	T-1	—	12.70
749-9718	7152	5.00	0.115	40000	14	T-1	—	8.99
749-9715	715	5.00	0.115	40000	14	T-1	—	11.90
749-9680	680	5.00	0.060	60000	14	T-1	—	11.10
749-6838	6838	28.00	0.024	4000	14	T-1	—	17.00
749-9406	682	5.00	0.060	60000	15	T-1	2.25	—
749-9720	685	5.00	0.060	25000	15	T-1	2.59	—
749-9746	6839	28.00	0.024	4000	15	T-1	—	21.00
749-7839	7839	28.00	0.024	4000	16	T-1	—	21.70
749-7680	7680	5.00	0.060	60000	16	T-1	—	19.00
749-7683	7683	5.00	0.060	25000	16	T-1	—	15.30
749-9722	7265	5.00	0.060	5000	16	T-1	2.33	—
749-7715	7715	5.00	0.115	40000	16	T-1	—	18.30
749-7826	7632	28.00	0.040	1000	16	T-1¼	—	24.90
749-7876	7876	28.00	0.060	25000	16	T-1¾	—	11.10
749-2791	7328	6.00	0.200	1000	16	T-1¾	—	12.10
749-2818	7387	28.00	0.040	7000	16	T-1¾	—	9.60
749-7361	7361	5.00	0.060	25000	16	T-1¾	—	15.40
749-7374	7374	28.00	0.040	10000	16	T-1¾	—	12.20
749-9751	7373	14.00	0.100	10000	16	T-1¾	—	10.80
749-7371	7371	12.00	0.040	10000	16	T-1¾	—	11.40
749-2817	7382	14.00	0.080	15000	16	T-1¾	—	10.90
749-2790	7327	28.00	0.040	4000	16	T-1¾	—	9.50
749-2816	7381	6.30	0.200	20000	16	T-1¾	—	10.80
749-9724	12ESB	12.00	0.040	7500	17	T-2	—	12.50
749-9728	24ESB	24.00	0.040	8000	17	T-2	—	13.00
749-9729	28ESB	28.00	0.040	6000	17	T-2	—	12.40
749-4105	6PSB	6.00	0.140	20000	17	T-2	—	13.20
749-4110	12PSB	12.00	0.170	12000	17	T-2	—	11.90
749-4115	24PSB	24.00	0.073	10000	17	T-2	—	9.20
749-3995	28PSB	28.00	0.040	5000	17	T-2	—	9.20
749-4125	60PSB	60.00	0.050	7500	17	T-2	—	12.70
749-5080	120PSB	120.00	0.025	5000	17	T-2	—	10.10
749-9527	1493	6.50	2.750	100	18	S-8	4.73	—
749-9731	88	6.80	1.910	300	18	S-8	—	13.20
749-9733	1157	12.80	2.100	600	19	S-8	—	6.10
—	—	—	—	—	—	—	—	—

Neon Lamps

Stock No.	Mfr.'s Type	Design Current mA	Recom. Series Res.		Fig.	Lamp Size	PRICE	
			Ohms	Watts			PK./10	EACH
749-2100	A1A(NE-2)	0.70	100.0 K	¼	20	T-2	2.89	—
749-2110	A1B	0.30	220.0 K	¼	20	T-2	3.71	—
749-2130	A1C	1.20	47.0 K	¼	20	T-2	4.12	—
749-2155	C2A(NE-2H)	1.90	30.0 K	¼	20	T-2	4.33	—
749-9750	A1H	1.20	47.0 K	¼	21	T-1¾	—	3.39

Stock No.	Mfr.'s Type	Design Current mA	Recom. Series Res.		Fig.	Lamp Size	PRICE	
			Ohms	Watts			PK./10	EACH
749-2165	C9A(NE-2J)	1.90	30.0 K	¼	21	T-1¾	24.00	—
749-2120	B1A(NE-51)	0.30	220.0 K	¼	22	T-3¼	9.90	—
749-2125	B2A(NE-51H)	1.20	47.0 K	¼	22	T-3¼	9.90	—
749-1396	B2A-R(NE-51HR)	1.20	47.0 K	¼	22	T-3¼	—	3.99
749-2163	B7A(NE-45)	2.00	30.0 K	¼	23	T-4½	—	6.94

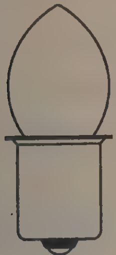


Fig. 1
B-3½ Miniature Flange Base

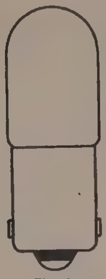


Fig. 2
T-3½ Miniature Bayonet Base
T-4½ Miniature Bayonet Base

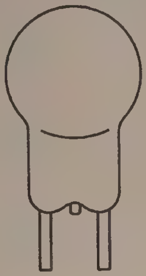


Fig. 3
G-3½ Miniature 2 Pin Base

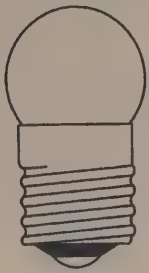


Fig. 4
G-3½ Miniature Screw Base
G-6 Candelabra Screw Base

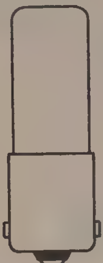


Fig. 5
T-2 Miniature Bayonet Base

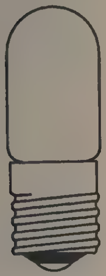


Fig. 6
T-1¾ Midget Screw Base
T-3¼ Miniature Screw Base

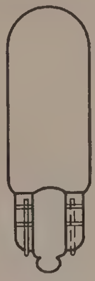


Fig. 7
T-1¾ Wedge Base

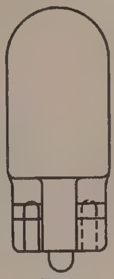


Fig. 8
T-3¼ Wedge Base

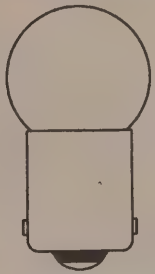


Fig. 9
G-3½ Miniature Bayonet Base
G-4½ Miniature Bayonet Base
G-6 SC or DC Bayonet Base

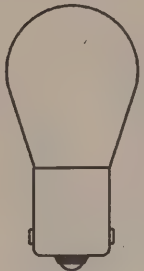


Fig. 10
S-8 Single Contact Bayonet Base

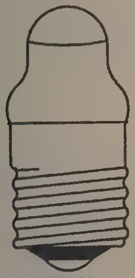


Fig. 11
GTL-3 Miniature Screw Base Lens End

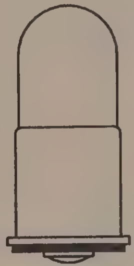


Fig. 12
T-1¾ Midget Flange Base

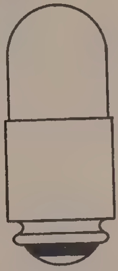


Fig. 13
T-1¾ Midget Groove Base

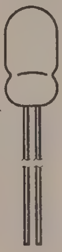


Fig. 14
T-¾ Wire Terminal
T-1 Wire Terminal

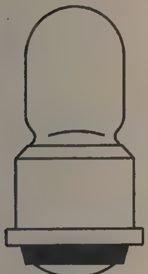


Fig. 15
T-1 Sub-Midget Flange Base

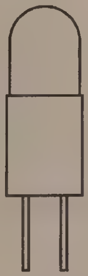


Fig. 16
T-1 Bi-Pin Base (.050")
T-1¼ Bi-Pin Base (.100")
T-1¾ Bi-Pin Base (.125")

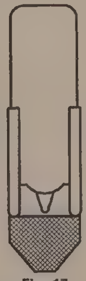


Fig. 17
T-2 Telephone Slide Base — Type 5 (Short)
T-2 Telephone Slide Base — Type 5 (Standard)

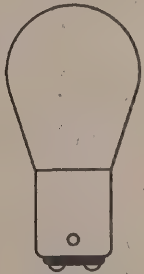


Fig. 18
S-8 Double Contact Bayonet Base

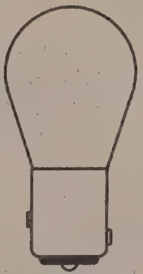


Fig. 19
S-8 Double Contact Index Base

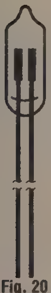


Fig. 20
T-2 Wire Terminal

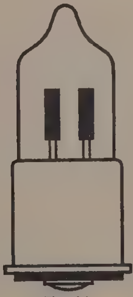


Fig. 21
T-1¾ Midget Flange Base

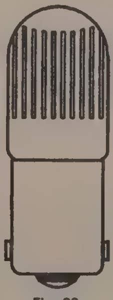


Fig. 22
T-3¼ Miniature Bayonet Base

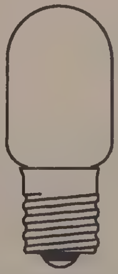


Fig. 23
T-4½ Candelabra Screw Base

Electrical Industry Lamps

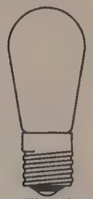


Fig. 1

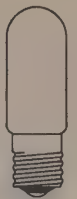


Fig. 3

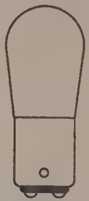


Fig. 2

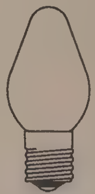


Fig. 4

Stock No.	Mfr.'s Type	Fig.	Design		Average Life Hours	PRICE	
			Volts	Watts		PK./10	EACH
749-8703	3S6/120V	1	120	3.0	3,000	**26.50**	—
749-8720	6S6/120V	1	120	6.0	1,500	**10.60**	—
749-8719	6S6/130V	1	130	6.0	1,500	**14.80**	—
749-8721	6S6/145V	1	145	6.0	1,500	**26.00**	—
749-8734	6S6/155V	1	155	6.0	1,500	—	**3.04**
749-8715	6S6/30V	1	30	6.0	1,500	**29.10**	—
749-8716	10S6DC/230	2	230	10.0	1,500	—	**1.81**
749-8722	6S6DC/120V	2	120	6.0	1,500	**18.30**	—
749-8724	6S6DC/130V	2	130	6.0	1,500	**24.80**	—
749-9735	6T4-1/2/120V	3	120	6.0	1,500	—	**4.02**
749-9736	10C7/120V	4	120	10.0	1,500	**15.50**	—
749-9737	7C7/120V	4	120	7.0	3,000	**15.50**	—

Outdoor Sign Industry Gas Filled Lamps — *NEW* —

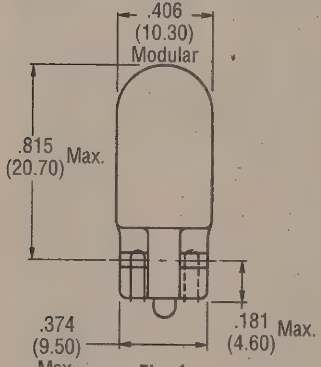


Fig. 1

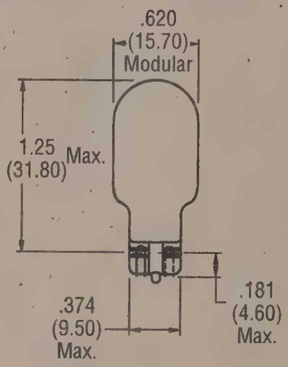


Fig. 2

Stock No.	Mfr.'s Type	Fig.	Design		Watts	Approx. Life Hours	Gas Type	EACH	
			Volts	mA				1-99	100-249
749-0015	1250X-2	1	13.5	370	5.0	2,000	Xenon	**.55**	**.50**
749-0016	5/135	1	13.5	370	5.0	500	Argon	**.55**	**.50**
749-0017	1524X	2	24.0	300	7.2	2,500	Xenon	**.77**	**.71**
749-0018	2450X	1	24.0	208	5.0	500	Xenon	**.55**	**.50**
749-0019	2860X	1	28.0	215	6.0	1,000	Xenon	**.55**	**.50**
749-0020	2470X	1	24.0	300	7.2	12,000	Xenon	**.55**	**.50**
749-0021	1522X	2	22.0	350	7.7	3,000	Xenon	**.77**	**.71**
749-0022	912	2	12.8	1,000	12.0	1,000	Argon	**.77**	**.71**
749-0023	921	2	12.8	1,400	18.0	500	Argon	**.77**	**.71**

Chicago Miniature Lamp

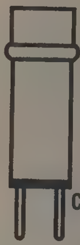
Chicago Miniature Lamp, Inc., an American owned American manufacturer, is proud to offer one of the broadest, most comprehensive lines of miniature lighted components in the industry. Chicago Miniature Lamp supports you with over 80 years of concept design and manufacturing leadership. Chicago Miniature Lamp's vast and intimate knowledge of incandescent lamps, neon lamps, halogen lamps, indicator lights and light emitting diodes (LEDs) can prove to be a valuable technical asset in your product's design and manufacture.

Non-Relampable Indicator Lights

CML Series Cartridge Indicators

Indicators with T-1¾ incandescent lamps for instrumentation, telemetry and EDP equipment. Mount holes 0.375" D (9.53) to 0.219" (5.56) panel thickness. Meet MIL-L-3661. To complete unit, order cartridge holders, mounting clips and connectors separately on page 363.

Flush Lens


Cylindrical Lens

CML Series Indicators with Flush Transparent Lens

Stock No.	Mfr.'s Type	Volts	Amps	Color	EACH
					1-99
749-9757	CML53-029-1	28.0	.04	Red	**4.41**
749-9758	CML53-029-3	28.0	.04	Amber	**4.41**
749-9759	CML53-029-2	28.0	.04	Green	**4.41**
749-9560	CML53-029-7	28.0	.04	Clear	**4.41**

CML Series Indicators with Cylindrical Transparent Lens

Stock No.	Mfr.'s Type	Volts	Amps	Color	EACH 1-99
749-9929	CML63-029-1	28.0	.04	Red	**4.41**
749-9931	CML63-029-3	28.0	.04	Amber	**4.41**
749-9930	CML63-029-2	28.0	.04	Green	**4.41**
749-9756	CML63-029-7	28.0	.04	Clear	**4.41**

CML Series Indicators with Cylindrical Translucent Lens

Stock No.	Mfr.'s Type	Volts	Amps	Color	EACH 1-99
749-9932	CML64-029-1	28.0	.04	Red	**4.41**
749-9761	CML64-029-6	28.0	.04	Yellow	**4.41**
749-9762	CML64-029-2	28.0	.04	Green	**4.41**
749-9763	CML64-029-5	28.0	.04	White	**4.41**

Neon Glo-Lite Indicators

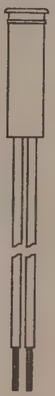
Fig. 1


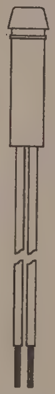
Fig. 2


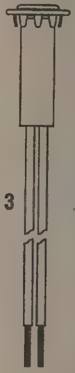
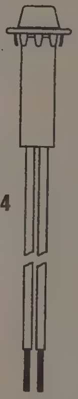
Fig. 3


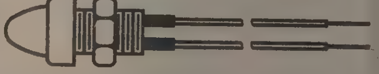
Fig. 4


Feature built-in C2A neon, high brightness, 25,000-hour lamp with current limiting series resistor for UL recognized, CSA certified 125 VAC operation. Wired units have 10" #22 AWG leads. Figures 1 and 2 mount 0.375" Dia. (9.53) hole, to 1.25" (31.75) panel thickness; figures 3 and 4 snap mount into 0.500" Dia. (12.70) hole, to 0.078" (1.98) panel thickness.

CML Series Indicators with Flush Transparent Lens

Stock No.	Mfr.'s Type	Fig.	Color	Description	EACH
					1-9
749-0631	6063-001-534R	1	Red	Flat Face	**2.02**
749-0635	6063-001-634R	2	Red	Conical Face	**3.20**
749-9764	6073-001-534R	3	Red	Flat Face	**4.43**
749-9765	6073-001-634R	4	Red	Conical Face	**4.43**
749-9766	6073-001-634W	4	White	Conical Face	**4.43**

Subminiature Solid-State Indicator Lights



Submidget style with built-in bright LED; 70 viewing angle. Resistant to shock and vibration. Can be powered with low electrical energy supply or driven directly with solid-state circuity. Operates on 1.8 to 2.8VDC. Maximum DC current: 50ma. Mounts in 0.193" (4.90) dia. "D" hole in 0.188" (4.78) thick (max.) panel, on 0.344" (8.74) centers min. 6" wire leads, 105 C PVC insulation.

Stock No.	Mfr.'s Type	Color	MCD	EACH
				1-9
749-0695	6039-004-304G	H.E. Green	3.2	**5.65**
749-0700	6039-004-304R	H.E. Red	2.0	**5.65**
749-0705	6039-004-304Y	Yellow	3.2	**5.65**

Products Not Cataloged Are Available — Call 1-800-433-5700 For Price And Delivery

LED Lamps

Fig. 1

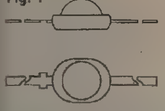


Fig. 2

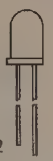


Fig. 3

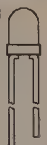


Fig. 4

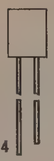


Fig. 5

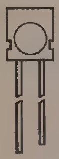


Fig. 6

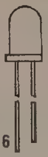
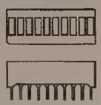


Fig. 7



Lamps use low power for IC compatibility, cool operation and long life expectancy. Shock-proof, solid lens, epoxy construction. Intense light sources available — up to 3000 mcd guaranteed luminosity. Leads are silver plated, eliminating soldering problems. Viewing angles (the angle between points where the light intensity falls to 50% of peak value) are available to 180. Order Panelmount grommets separately at bottom of page.

T-3/4 Lamps

Stock No.	Mfr.'s Type	Fig.	Emitted Color	Lens Type/ Color*	View Angle	Typical mcd/mA	PER PK./10
749-1302	CMD53B	1	Yellow	N.D.Yel	80	6.0/20	**4.33**
749-1304	CMD54B	1	Red	N.D.Red	80	3.5/20	**3.57**

*Diff. = Diffused; N.D. = Non-Diffused; P.T. = Pale Tint.

T-1 Lamps

Stock No.	Mfr.'s Type	Fig.	Emitted Color	Lens Type/ Color*	View Angle	Typical mcd/mA	EACH
							1-9
749-9838	CMD5074C	2	Red	N.D.Red	70	2.5/20	**.32**
749-9839	CMD5075C	2	Red	Diff.Red	90	1.5/20	**.36**
749-9840	CMD5374C	2	Yellow	Diff.Yel	90	9.0/20	**.46**
749-9841	CMD5474C	2	H.E.Grn	Diff.Grn	90	9.0/20	**.45**
749-9842	CMD5774C	2	H.E.Red	Diff.Red	90	9.0/20	**.45**

T-100 Lamps

749-1340	CMD54643	3	H.E.Grn	Diff.Grn	90	5.0/20	**.36**
749-9882	CMD57640	3	H.E.Red	Diff.Red	90	2.0/10	**.32**

Rectangular Lamps

749-9956	CMD54123	4	H.E.Grn	Diff.Grn	100	4.0/20	**.44**
749-9957	CMD57123	4	H.E.Red	Diff.Red	100	4.0/20	**.39**
749-9962	HLMP0300	4	H.E.Red	Diff.Red	100	2.5/20	**.71**
749-9963	HLMP0301	4	H.E.Red	Diff.Red	100	5.0/20	**1.26**
749-0765	HLMP0503	4	H.E.Grn	Diff.Grn	100	3.0/20	**.62**
749-9964	CMD53124A	5	Yellow	Diff.Yel	100	6.0/20	**.66**
749-9965	CMD54124A	5	H.E.Grn	Diff.Grn	100	6.0/20	**.66**
749-9966	CMD57124A	5	H.E.Red	Diff.Red	100	6.0/20	**.69**

T-1³/4 Lamps

749-9819	CMD5752	6	H.E.Red	N.D.Red	28	100.0/20	**.41**
749-9889	CMD5053	2	Red	Diff.Red	80	0.5/20	**.28**
749-9891	CMD5055	2	Red	Diff.Red	150	0.1/20	**.73**
749-9899	CMD5153	2	H.E.Red	Diff.Amb	65	15.0/20	**.50**
749-9892	CMD5353	2	Yellow	Diff.Yel	65	15.0/20	**.32**
749-9894	CMD5453	2	H.E.Grn	Diff.Grn	75	20.0/20	**.32**
749-9941	CMD5753	2	H.E.Red	Diff.Red	65	10.0/20	**.39**
749-9887	CMD5754A	2	H.E.Red	Diff.Red	24	25.0/20	**.32**
749-9897	CMD64531	6	H.E.Grn	Diff.Grn	75	20.0/20	**.55**
749-9805	FLV110	6	Red	Diff.Red	70	3.0/20	**.37**
749-9943	HLMP3300	6	H.E.Red	Diff.Red	65	3.5/10	**.59**
749-9944	HLMP3301	6	H.E.Red	Diff.Red	65	7.0/10	**.85**
749-9886	HLMP4700	6	H.E.Red	Diff.Red	35	2.0/2	**.43**
749-9876	CMD5054A-1	6	Red	Diff.Red	24	1.0/10	**.32**
749-9814	CMD5452	6	H.E.Grn	N.D.Grn	35	25.0/20	**.43**

Light Bars/Bar Graphs

749-1382	CMD57164	7	H.E.Red	Diff.Red	120	1.8/10	**4.77**
749-1384	CMD54164	7	H.E.Grn	Diff.Wht	120	1.8/10	**5.09**

*Diff. = Diffused; N.D. = Non-Diffused; P.T. = Pale Tint.

Mounting Accessories

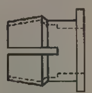


Fig. 1

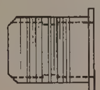
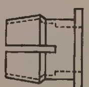


Fig. 2

Fig. 3



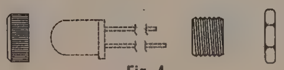


Fig. 4

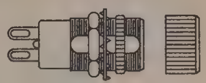
CMP Series Panel-Mounting Grommets

Two-piece grommets easily mount CMD Series lamps on any panel up to 0.125" (3.18) thickness, CMP22 for tapered side T-1³/4 LEDs and CMP52 for straight sided T-1³/4 LEDs require drilling to mount.

Stock No.	Mfr.'s Type	Fig.	LED Size	EACH
				1-9
749-0426	CMP22	1	T-1³/4	**.14**
749-0427	CMP52	1	T-1³/4	**.14**
749-9975	CMP65	2	Rectangular	**.28**
749-9970	CMP100	3	T-100	**.20**
749-9968	4999-002 (Silver)	4	T-1³/4	**.85**
749-9969	4999-003 (Black)	4	T-1³/4	**.85**

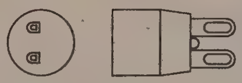
Relampable Indicator Lights and Sockets

CML Series Cartridge Holders



CML series cartridge holders fit CML series cartridge indicators types CML53, CML63 and CML64, ordered separately. Three terminal configurations available. Hardware included. UL listed CSA certified.

Stock No.	Mfr.'s Type	Terminals	EACH
			1-9
749-1400	CML10-203-1	Solder Cup	**8.76**
749-1402	CML10-202-1	Turret	**9.49**
749-1404	CML10-204-1	Flat Solder Lug	**8.46**

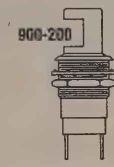


CML Series Indicator Connector

Cartridge indicator terminal pins plug into indicator connector, providing simple installations, changes, replacements. Fits CML series cartridge indicators types CML53, CML 63 and CML64, ordered separately. Sold in multiples of 10.

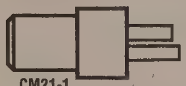
749-9906. CM21-3 .... **EACH 1.27**

900 Series Instrument Lights

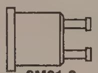


Ideal for panel, switch, meter and legend plate applications where localized light is required. Type 900-200 has fixed hood, solder lug terminals, and mounts hole 0.688" diameter to 0.406" panel thickness. Rated 120 volts, 3 watts. Accepts T-3¹/4 miniature bayonet lamp. Type 900-006 has rotatable hood, screw terminals and mounts hole 1" diameter to 0.500" panel thickness. Rated 250 volts, 1 amp, 75 watts. Accepts S-6 or C-7 candelabra screw base lamp. Order lamps separately.

749-0645. 900-200. Fixed Hood, Solder Lug Terminals .... **EACH 17.44**



CM21-1



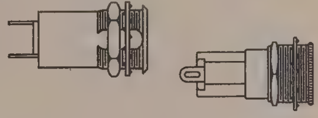
CM21-2

Bi Pin Sockets

Bi Pin Socket for use with T-³/4 and T-1 Bi Pin Lamps.
749-9903. CM21-1 .... **EACH 3.07**

Bi Pin Socket for use with T-1³/4 Bi Pin Lamps.
749-9904. CM21-2 .... **EACH 3.43**

5100, 5200 Series Relampable Indicators



Select from 5100 series standard and 5200 series deluxe indicators from table below. Standard indicators must be assembled. Order lamps (T-2 and T-3¹/4 min. bayonet based, incandescent and neon) and lenses separately below. UL recognized, CSA certified.

Stock No.	Mfr.'s Type	Max. Volts	Max. Amps	Terminals	EACH
					1-9
749-0599	5100-822	120	0.170	Solder Lugs	**3.72**
749-9910	5100-832*	125	1.800	Solder Lugs	**8.17**
749-0595	5100-842*	250	1.800	Solder Lugs	**8.07**
749-9909	5100-823	120	0.170	Screw Lugs	**6.06**
749-0598	5100-824	120	0.170	Quick Connect 0.250" Lugs	**5.77**
749-0590	5100-834*	125	1.800	Quick Connect 0.250" Lugs	**8.22**

5200 Series Standard T-3¹/4 Indicators

749-0565	5200-222	120	0.170	Solder Lugs	**6.66**
749-0575	5200-232*	125	1.800	Solder Lugs	**15.18**
749-0585	5200-242*	250	1.800	Solder Lugs	**15.48**

*Supplied with built-in integral resistor for use with based Neon lamp.

5100, 5200 Series Polycarbonate Lenses

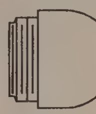


Fig. 1

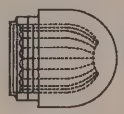


Fig. 2

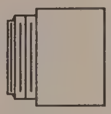


Fig. 3

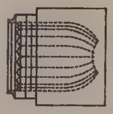
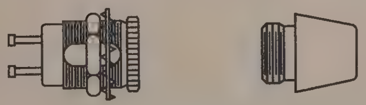


Fig. 4

Use only transparent or fluted lens with neon lamps, ordered separately above. Specify color choice when ordering. Replace X in stock number with following color code — 1=Amber, 3=Clear, 4=Green, 5=Red, 6=White, 7=Yellow.

Stock No.	Mfr.'s Type	Fig.	Colors Available	EACH
				1-9
749-020X	25P-306	1	R, A, G, C	**1.18**
749-004X	25P-307	1	R, Y, G, W	**1.18**
749-006X	25P-326	2	R, A, G, C	**1.18**
749-007X	25P-606	3	R, A, G, C	**1.18**
749-008X	25P-607	3	R, Y, G, W	**1.18**
749-065X	25P-626	4	R, A, G, C	**1.18**

Gemlite Indicator

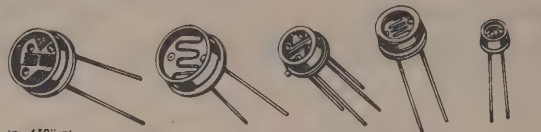


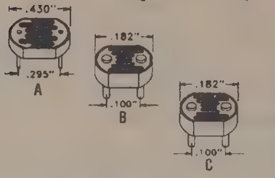
Reliable indicators used in military and commercial applications where size and lamp replacement are prime considerations. 0.218" panel thickness. Accept T-1 sub-midget flange lamp. Order lamp separately. Mount in 0.3125" diameter hole.

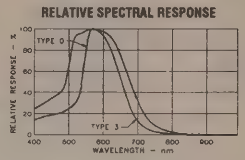
Base Only
749-1408. 5160-458. **1-49** .... **EACH 10.68** **50-99** .... **EACH 9.43**

Translucent Cylindrical Lens
For Gemlite base above, replace X in stock number with color desired — 1=Yellow, 4=Green, 5=Red, 6=White.
749-019X. 160A-604. **1-99** .... **EACH 1.73**

CdS Photoconductive Cells







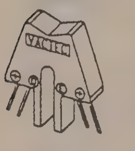
Photoconductive cells provide a very economical and technically superior solution for many many light level sensing applications. They offer wide dynamic range and sensitivity to low light levels. EG&G Vactec is a major world supplier of photoconductive cells. Vactec's photocells are available in low cost plastic encapsulated packages as well as hermetic packages (TO-46, TO-5, TO-8). The following table lists a few of the standard packages and resistance ranges available.

Electrical/Optical Characteristics @ 25°C (16 Hrs. Light Adapt, Min. @ 30-50 fc)

Stock No.	Mfr.'s Type	Resistance (Ohms) 10 Lux 2850K			Dark		Peak Spectral Response	Sensitivity (γ, typ.) Log (R10/R100) / Log (100/10)	V_{Max} (V, pk)	Response Time @ 1 fc (ms, typ.)		EACH
		Min.	Typ.	Max.	Min.	Sec.	nm			Rise (1-1/e)	Fall (1/e)	1-99
980-0100	VT43N3[1]*	16	32.0	48	500K	30	550	0.9	400	90	18	2.21
980-0105	VT935G[2,3]											1.65
	Group A	10K	18.5K	27K	1M	10	550	0.9	100	35	5	
	Group B	20K	29.0K	38K	1M	10	550	0.9	100	35	5	
	Group C	31K	40.5K	50K	1M	10	550	0.9	100	35	5	
980-9977	VT20N2[4]	16K	34.0K	52K	500K	5	565	0.8	100	78	8	4.06
980-0110	VT33N1[5]	20K	40.0K	60K	500K	5	550	0.9	100	35	5	4.50
980-0112	VT50N3[6]	16K	32.0K	48K	1M	5	565	0.8	300	78	8	5.25

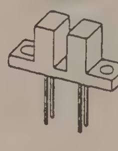
Application: [1]Street light; [2]Night light; [3]Toys/camera; [4]Low light detection; [5]Photocopier; [6]Flame detection. **Package Style/Dimensions:** [1]Fig. A; [2]Fig. B; [3]Fig. C; [4]TO-46, Hermetic; [5]TO-5, Hermetic; [6]TO-8, Hermetic. *Resistance values for this cell are @ 1fc, 6500.

Reflective



VTR

Transmissive



VTL

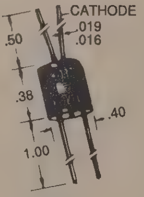
Optoswitches

These optical switches are designed for object sensing applications. These are offered in reflective and transmissive configurations.

Stock No.	Mfr.'s Type	Specific Features	Light Current mA Min.	Test Conditions IF mA	Test Conditions VCE Volts	Light Current nA Max.	Test Conditions IF mA	Test Conditions VCE Volts	Saturation V Volts Max.	Test Cond. IF mA	Test Cond. Ic mA	EACH 1-99
980-9901	VTR16D1	Sealed Case*	0.300	20	5	100	0	5	—	—	—	4.02
980-9902	VTR17D1	Sealed Case†	0.300	20	5	100	0	5	—	—	—	4.99
980-0004	VTL13D7-20	Sealed Case	0.225	20	5	100	0	10	.4	20	0.25	4.73

*P.C.B. Mount Leads. †Flying Leads.

Analog Optoisolators — VACTROLS®



Combine a solid-state light source (LED) with a photoresistor to provide input-output isolation. Sealed in an axial plastic package. Use for photochoppers, linear isolators, SCR and Triac firing, logic circuit inputs, noiseless switching, proportional control circuits. External current limiting resistor required.

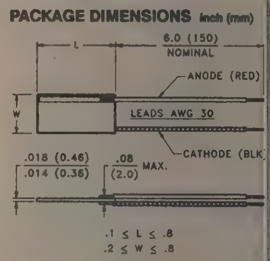
Analog Optoisolators

Stock No.	Mfr.'s Type	Output Resistance On Input Current mA	On Dark Adapted Typ.	On Light Adapted Max.	Off Resistance Min. Megohm	Response Ascent Typ. ms	Response Decay to 100 KΩ (1 MΩ) max. ms	Cell Voltage Max. Volts	EACH 1-99
980-0700	VTL5C1	40/10	200/600	500	50.0	2.5	35	100	3.75
980-0705	VTL5C2	40/10	200/800	500	1.0	3.5	500	200	3.75
980-0710	VTL5C3	40/10	1.5/5K	2000	10.0	2.5	35	250	3.75
980-0715	VTL5C4	40/10	75/125	200	0.4	6.0	1500	50	3.75

Dual Element (Specs for Each Side)

Stock No.	Mfr.'s Type	Input Current mA	Dark Adapted Typ.	Light Adapted Max.	Off Resistance Min. Megohm	Ascent Typ. ms	Decay max. ms	Cell Voltage Max. Volts	EACH 1-99
980-0725	VTL5C4/2	40/10	100/150	500	0.4	6.0	1500	30	4.24
980-0730	VTL5C3/2	40/10	2000/4500	3000	10.0	3.0	50	100	4.24

Photodiodes with Solderable Contacts



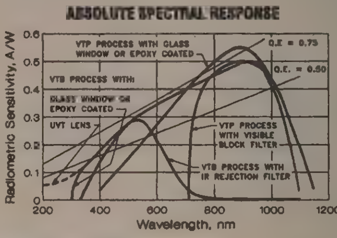
EG&G Vactec manufactures large area photodiodes with solderable contacts. They serve a variety of applications. Many of our customers have found it cost effective for us to do the value added assemblies, such as PCB assembly and/or custom testing. A sampling of popular solderable contact photodiodes is listed below.

Electrical/Optical Characteristics @ 25°C

Stock No.	Mfr.'s Type	Active Area	Short Circuit Current I_{SC}	Spectral Sensitivity S_R	Open Circuit Volt. V_{OC}		Dark Current I_D		Shunt Resist. R_{SH}	Junction Cap. C_J	EACH
			H=100 fc 2850K	A/W @ nm	2850K		H=0		V=10 mV H=0	V=0 V H=0	1-99
		in² (mm²)	µA Min.	Typ.	Volts Typ.	H (fc)	µA Max.	V_R (Volts)	MΩ Typ.	nF Typ.	
980-0115	VTS3085[1]	.032 (21)	140	0.6 @ 950	0.33	100	5.0	0.5	0.44	0.36	2.81
980-0125	VTS3072[2]	.144 (93)	550	0.3 @ 400	0.33	100	2.0	0.1	0.12	1.00	8.57

Chip Size (L × W): [1]200" × .200" (5.08 × 5.08 mm); [2].400" × 400" (10.16 × 10.16 mm).

Silicon Photodiodes



Electrical/Optical Characteristics @ 25°C

Stock No.	Mfr.'s Type	Active Area	Short Circuit Current I_{SC}		Spectral Sensitivity S_R	Dark Current I_D		Shunt Resist. R_{SH}	Special Application Range		EACH
			H=100 fc 2850K		A/W @ nm	H=0		V=10 mV H=0	$λ_{range}$ nm		1-99
		in² (mm²)	µA Min.	µA Typ.	Typ.	Max.	V_R (Volts)	Typ.	Min.	Max.	
980-2625	VTB1113[1]	.0025 (1.600)	30	60	0.19 @ 365	20 pA	2.0	7.0 GΩ	320	1100	4.27
980-9999	VTB5051B[2]	.0230 (14.80)	8	13	—	250 pA	2.0	560.0 MΩ	330	720	26.92
980-2675	VTB8441B[3]	.0080 (5.160)	4	5	—	100 pA	2.0	1.4 GΩ	330	720	2.72
980-0150	VTD34[4]	.0120 (7.450)	50	70	0.60 @ 950	30 nA	10.0	50.0 MΩ	400	1150	1.15
980-2680	VTP100[5]	.0120 (7.450)	35	55	0.50 @ 925	30 nA	10.0	250.0 MΩ	725	1150	1.44
980-0135	VTP1188S[6]	.0170 (11.00)	—	200	0.55 @ 925	30 nA	10.0	67.0 MΩ	400	1150	1.68
980-0140	VTP3310LA[7]	.0011 (0.684)	24	36	0.55 @ 925	35 nA	50.0	10.0 GΩ	400	1150	1.50

Package Style: [1]TO-46 Hermetic; [2]TO-5 Hermetic; [3]8 mm Ceramic; [4]Mini DIP, [5]Flat Sidelooker; [6]Lensed Ceramic; [7]Long T-1.

IR Emitters and Phototransistors

EG&G Vactec offers a broad line of high performance IREDs and detectors in a variety of packages and specifications. Vactec makes both GaAs (940 nm) and GaAlAs (880 nm) IREDs. GaAlAs IREDs provide almost twice the power output at the same drive current. These IREDs are often used with solid state phototransistor or photodarlington detectors having internal gains from 100 to over 100,000. A sampling of available standard package styles is listed below.

IR Emitters — Electrieal/Optical Characteristics @ 25°C

Stock No.	Mfr.'s Type	Total Power P_O		Irradiance E_e			Peak Radiant Intensity I_e	Forward Test Current I_{FT}	Forward Drop V_F @ I_{FT}		Half Power Beam Angle ø1/2	Wave-length	EACH
		mW		mW/cm²	dist.	Dia.	mW/sr	mA	Volts				1-99
		Min.	Typ.	Min.	mm	mm	Typ.		Typ.	Max.	Typ.	nm	
980-9991	VTE1285[1]	—	20.0	3.0	36.30	6.35	200.00	100	1.50	2.0	±8°	880	.79
980-0002	VTE3372LA[2]	—	3.0	2.0	10.16	2.10	5.00	20	1.30	1.8	±10°	880	1.40
980-0003	VTE7172[3]	—	2.5	0.4	16.70	4.60	1.30	20	1.30	1.8	±25°	880	1.51

Package Style: [1]T-1³/₄; [2]Long T-1; [3]Lateral.

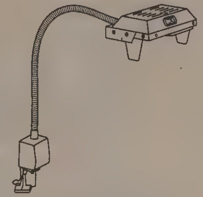
Phototransistors — Electrical/Optical Characteristics @ 25°C

Stock No.	Mfr.'s Type	Light Current I_C			Dark Current I_{CEO}		Collector Breakdown $V_{BR(CEO)}$	Emitter Breakdown $V_{BR(CEO)}$	Saturation Voltage $V_{CE(SAT)}$	Rise/Fall Time t_R/t_F	EACH
		mA		H fc (mW/cm²) VCE=5.0 V	H=0		Ic=100 µA H=0	IE=100 µA H=0	Ic=1.0 mA H=400 fc	Ic=1.0 mA RL=100 Ω	1-99
		Min.	Max.		nA Max.	VCE (Volts)	Volts Min.	Volts Min.	Volts Max.	µsec. Typ.	
980-0165	VTT3323LA[2]	2.0	—	20 (1)	100	10	30	5.0	0.25	3.0	1.14
980-0170	VTT7122[3]	1.0	—	100 (5)	100	10	30	5.0	0.25	2.0	.72

Package Style: [2]Long T-1; [3]Lateral. **Angular Response ø1/2 Typ.:** [2]±36°; [3]±42°.

Worklights and Magnifiers

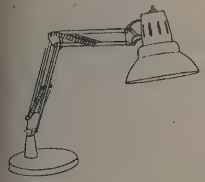
Model 7420 100 Watt Halogen Worklight



- Powerful 100 Watt Halogen Lamp (Included) Produces Crisp, Evenly Distributed Light Over Entire Work Surface
- Rugged Industrial Grade Flexible Steel Gooseneck Reaches a Full 30" In Any Direction
- Features a 700 Watt Convenience Outlet for Use with Other Electric Tools
- Comes with Fully Adjustable Zinc Cast Clamp and 9' 3-Conductor Cord
- Made in USA, UL Listed; Available in Black

593-7420.	7420. 100 Watt Halogen Worklight	EACH 114.00

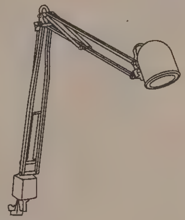
Model 2225 Universal Desk Lamp



- Portable Work Or Desk Lamp with Heavily Weighted Steel Base
- Heavy Gauge, Hand Spun 6½" Diameter Vented Shade with Porcelain Socket for Use with 100 Watt Incandescent Lamp
- 28" Reach Spring Balanced Feather Touch Articulating Arms
- Made in USA, UL Listed; Available in Black or Beige

593-2225.	2225. Black Universal Desk Lamp	EACH 59.66
593-2226.	2226. Beige Universal Desk Lamp	EACH 59.66

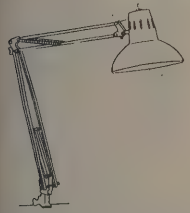
Model 7309 Halogen Long Reach Alpha



- Powerful 50 Watt Halogen Lamp (Included) Provides Twice the Light Output of a Standard 100 Watt Incandescent Lamp
- Fully Adjustable Zinc Cast Swivel Will Direct Light to Any Work Area Desired
- 45" Reach Feather Touch Articulating Arms with Adjustable Tension Control Knobs at All Joints
- Comes with Fully Adjustable Zinc Cast Clamp and 8' Cord with Convenient Remote Transformer
- Made in USA, UL Listed; Available in Black

593-7309.	7309. Halogen Long Reach Alpha	EACH 123.50

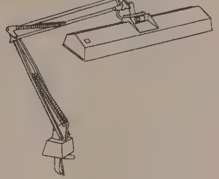
Model 2245 Professional Reach Worklight



- Heavy Gauge, Hand Spun 8" Diameter Vented Shade with Porcelain Socket for Use with 100 Watt Incandescent Lamp
- Light Multiplying Inner Reflector Spreads Bright Light Evenly Over Large Work Areas
- 45" Reach Feather Touch Articulating Arms with Adjustable Tension Control Knobs at All Joints
- Comes with Fully Adjustable Zinc Cast Clamp and 9' 3-Conductor Cord
- Made in USA, UL Listed; Available in Black or Beige

593-2245.	2245. Black Professional Reach Worklight	EACH 71.25
593-2246.	2245. White Professional Reach Worklight	EACH 71.25

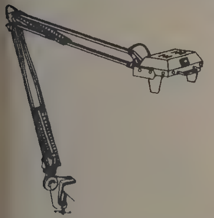
Model 7227 Long Reach Worklight



- Durable, Injection Molded Polycarbonate Shade Is Scratch Resistant, Includes a Metal Baked Enamel Reflector for Maximum Light Output
- 45" Reach Feather Touch Articulating Arms with Adjustable Tension Control Knobs at all Joints
- Comes with Fully Adjustable Zinc Cast Clamp and 9' 3-Conductor Cord
- For Use with Two 15 Watt Fluorescent Tubes, See Accessory Chart to Order
- Made in USA, UL Listed; Available in Black or Beige

593-7227.	7227. Black Long Reach Worklight	EACH 109.72
593-7228.	7227. Beige Long Reach Worklight	EACH 109.72

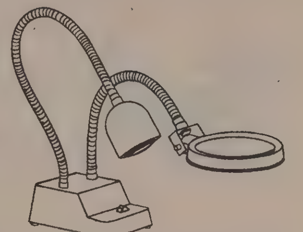
Model 7395 SLX 100 Watt Halogen Worklight



- Powerful 100 Watt Halogen Lamp (Included) Produces Crisp, Evenly Distributed Light Over Entire Work Surface
- 45" Reach Feather Touch Articulating Arms with Adjustable Tension Control Knobs At All Joints
- Fully Adjustable Zinc Cast Swivel Will Direct Light to Any Work Area Desired
- Comes with Fully Adjustable Zinc Cast Clamp and 8' Cord with Convenient Remote Transformer
- Made in USA, UL Listed; Available in Black or White

593-7395.	7395. White SLX 100 Watt Halogen Worklight	EACH 121.03
593-7396.	7395. Black SLX 100 Watt Halogen Worklight	EACH 121.03

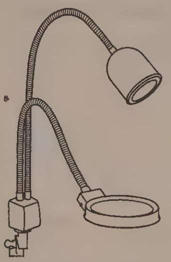
Model 7310 Halogen Dual-Flex Alpha



- 5" Diameter 3-Diopter (1.75X) Precision Ground, Distortion Free Glass Lens; for Additional Magnification, Add Mag-3 or Mag-10
- Powerful, 50 Watt Halogen Lamp (Included) Provides Bright, Clear Illumination Over Entire Work Surface
- Magnifier and Halogen Light Are Mounted on Independent Industrial Grade Flexible Steel Goosenecks for Maximum Adjustability
- Heavy Weighted Zinc Cast Base Integrates Safe, Low-Voltage Transformer
- Made in USA, UL Listed; Available in Black

593-7310.	7310. Halogen Dual-Flex Alpha	EACH 121.75

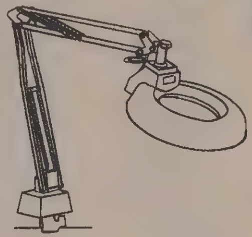
Model 7308 Halogen Long Reach Dual-Flex



- 5" Diameter 3-Diopter (1.75X) Precision Ground, Distortion Free Glass Lens; for Additional Magnification, Add Mag-3 or Mag-10
- Powerful, 50 Watt Halogen Lamp (Included) Provides Bright, Crisp Illumination Over Entire Work Surface for Detailed Inspection
- Magnifier and Halogen Light Are Mounted On Independent, 30" Reach, Industrial Grade Flexible Steel Goosenecks for Maximum Adjustability
- Comes with Fully Adjustable Zinc Cast Clamp and 8' Cord with Convenient Remote Transformer
- Made in USA, UL Listed; Available in Black

593-7308.	7308. Halogen Long Reach Dual-Flex	EACH 146.30

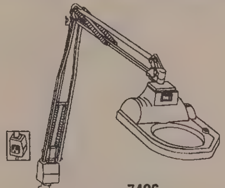
Model 7121 Fluorescent Magnifier



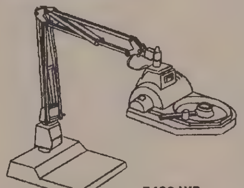
- 5" Diameter 3-Diopter (1.75X) Precision Ground, Distortion Free Glass Lens; for Additional Magnification, Add Mag-3, Mag-8, or Mag-10
- 45" Reach Feather Touch Articulating Arms with Adjustable Tension Control Knobs At All Joints
- Durable, Injection Molded, Scratch Resistant, Polycarbonate Shade
- For Use with Lamp Type 22 Watt Circline, See Accessory Chart to Order
- Comes with Fully Adjustable Zinc Cast Clamp and 9' 3-Conductor Cord
- Made in USA, UL Listed; Available in Black or Beige

593-7121.	7121. Black Fluorescent Magnifier	EACH 114.20
593-7122.	7121. Beige Fluorescent Magnifier	EACH 114.20

Model 7426 and 7426 With Base 100 Watt Halogen Magnifiers



7426



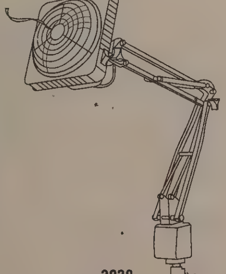
7426 WB

- 5" Diameter 3-Diopter (1.75X) Precision Ground, Distortion Free Glass Lens; for Additional Magnification, Add Mag-3, Mag-8, or Mag-10
- Powerful 100 Watt Halogen Lamp (Included) Produce Crisp, Evenly Distributed Light Over Entire Work Surface for Detailed Inspection
- 45" Reach Feather Touch Articulating Arms with Adjustable Tension Control Knobs at All Joints (30" Reach for with Base Model)
- 3-Position Hi-Lo Switch, Durable, Injection Molded Valox Shade with Built-In Handle for Easy Light Adjustment
- Comes with Fully Adjustable Zinc Cast Clamp or Heavily Weighted Base (with Base Model) and 9' 3-Conductor Cord
- Made in USA, UL Listed; Available in Black

593-7426.	7426. 100 Watt Halogen Magnifier	EACH 162.83
593-7427.	7426. 100 Watt Halogen Magnifier With Base	EACH 197.90

Fans

3037



3038

Model 3037 and 3038 Compact Adjustable Fans

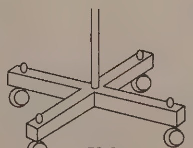
- Powerful, Compact Portable Fan or Fume Remover Measures 7½" × 6"
- Great for Workstations and Desk Tops
- Blows Air at 130 Cubic Ft./Min.
- Ratchet Mechanism for Adjustment of Air Flow Angles
- Extension Arm Model Has 30" Reach and Comes with Fully Adjustable Zinc Cast Clamp

593-3037.	3037. Portable Fan	EACH 32.11
593-3038.	3038. Extension Arm Fan	EACH 103.93

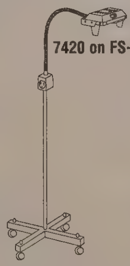
Accessories — Brackets, Bases and Bulbs

TM-1

VC-6

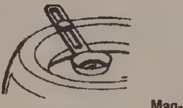


FS-2



7420 on FS-2

B-60

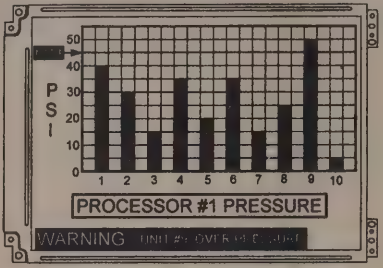


Mag-3, Mag-10

Mag-8

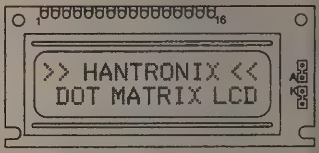
593-0100.	TM-1. Table Mount	EACH 11.00
593-0200.	VC-6. Adjustable Vice Clamp	EACH 15.00
593-0300.	FS-2. Rolling Floor Stand	EACH 110.00
593-0400.	B-60. Heavily Weighted Base	EACH 48.00
593-0500.	Mag-3. 3 Diopter (1.75X) Swing-Away Magnifier	EACH 15.00
593-0600.	Mag-10. 10 Diopter Swing-Away Magnifier	EACH 18.00
593-0700.	Mag-8. 8 Diopter (4.75X) Swing-Away Magnifier Attachment	EACH 18.00
593-1435.	1435. 100 Watt Halogen Replacement	EACH 19.80
593-0439.	439. 50 Watt Halogen Replacement	EACH 7.00
593-0550.	550. 22 Watt Circline Fluorescent	EACH 9.60
593-0370.	370. 15 Watt Fluorescent Tube	EACH 4.80

Character and Graphic LCD Modules



Applications

- Portable Computer Terminals
- Telecommunications
- Electronic Calculators
- Display Devices
- Automobile Displays
- Medical Instruments
- Hand Held Instruments



Features

- Very Low Power Consumption
- EL, LED, CCFL Back Lights
- TN, STN, FSTN, DSTN, TFT
- Monochrome or Color
- Sizes from 8 × 1 Characters to 800 × 600 Color SVGA
- Extended Temperature

TN Character Type LCD Modules

Stock No.	Mfr.'s Type	External Dimension (W × H × D) mm	Display	Viewing Area (W × H) mm	Character Size (W × H) mm	EACH 1-9	EACH 10-99	EACH 100-Up
289-0010	HDM08111H-1-000	54 × 37.0 × 10.0	8 × 1	32.0 × 16.0	2.90 × 7.60	12.15	11.21	10.37
289-0020	HDM08216H-1-000	54 × 37.0 × 10.5	8 × 2	32.0 × 16.0	2.95 × 5.15	12.15	11.21	10.37
289-0040	HDM16116H-2-000	80 × 36.0 × 10.0	16 × 1	65.6 × 13.8	3.20 × 6.35	13.88	12.80	11.87
289-0050	HDM16216H-4-000	122 × 44.0 × 10.0	16 × 2	99.0 × 24.0	4.84 × 9.66	24.93	23.01	21.37
289-0060	HDM16216H-5-000	80 × 36.0 × 10.0	16 × 2	65.6 × 13.8	2.95 × 4.35	16.42	15.15	14.07
289-0070	HDM16416H-000	87 × 60.0 × 10.0	16 × 4	61.8 × 25.2	2.95 × 4.75	26.99	24.99	22.99
289-0080	HDM20216H-3-000	116 × 37.0 × 10.0	20 × 2	83.0 × 18.6	3.20 × 5.55	22.25	20.53	19.07
289-0090	HDM20416H-000	98 × 60.0 × 10.0	20 × 4	76.0 × 25.2	2.95 × 4.75	31.36	28.95	26.95
289-0100	HDM24216H-2-000	118 × 36.0 × 10.0	24 × 2	93.5 × 15.8	3.20 × 5.55	23.95	21.95	20.47
289-0110	HDM40216H-4-000	182 × 33.5 × 10.0	40 × 2	154.5 × 15.8	3.20 × 5.55	36.50	33.50	31.22
289-0120	HDM40416H-4-000	190 × 54.0 × 10.0	40 × 4	147.0 × 29.5	2.80 × 4.91	68.33	63.07	58.57

STN Character Type LCD Modules

289-0280	HDM08111H-1-H00	54 × 37.0 × 10.0	8 × 1	32.0 × 16.0	2.90 × 7.60	15.06	13.91	12.92
289-0290	HDM08216H-1-H00	54 × 37.0 × 10.5	8 × 2	32.0 × 16.0	2.95 × 5.15	15.06	13.91	12.92
289-0310	HDM16116H-2-H00	80 × 36.0 × 10.0	16 × 1	65.6 × 13.8	3.20 × 6.35	13.32	12.29	11.41
289-0320	HDM16216H-4-H00	122 × 44.0 × 10.0	16 × 2	99.0 × 24.0	4.84 × 9.66	31.67	29.25	27.14
289-0330	HDM16216H-5-H00	80 × 36.0 × 10.0	16 × 2	65.6 × 13.8	2.95 × 4.35	20.00	18.50	17.25
289-0340	HDM16416H-H00	87 × 60.0 × 10.0	16 × 4	61.8 × 25.2	2.95 × 4.75	35.00	32.50	30.00
289-0350	HDM20216H-3-H00	116 × 37.0 × 10.0	20 × 2	83.0 × 18.6	3.20 × 5.55	28.23	26.06	24.20
289-0360	HDM20416H-H00	98 × 60.0 × 10.0	20 × 4	76.0 × 25.2	2.95 × 4.75	40.00	36.92	34.30
289-0370	HDM24216H-2-H00	118 × 36.0 × 10.0	24 × 2	93.5 × 15.8	3.20 × 5.55	32.38	29.89	27.75
289-0380	HDM40216H-4-H00	182 × 33.5 × 10.0	40 × 2	154.5 × 15.8	3.20 × 5.55	48.99	45.20	41.97
289-0390	HDM40416H-4-H00	190 × 54.0 × 10.0	40 × 4	147.0 × 29.5	2.80 × 4.91	87.88	81.12	75.33

STN Character Type LCD Modules with LED Backlight

289-0130	HDM16116L-V30	80 × 36.0 × 12.5	16 × 1	65.6 × 13.8	3.20 × 6.35	24.50	22.25	20.50
289-0140	HDM16216L-5-V30	80 × 35.0 × 13.0	16 × 2	65.6 × 13.8	2.95 × 4.35	27.56	25.44	23.50
289-0150	HDM16216L-7-V30	122 × 44.0 × 12.5	16 × 2	99.0 × 24.0	4.84 × 9.60	46.13	42.58	39.54
289-0160	HDM16416L-V30	87 × 60.0 × 12.5	16 × 4	61.8 × 25.2	2.95 × 4.75	47.23	43.60	40.50
289-0170	HDM20216L-V30	116 × 37.0 × 13.0	20 × 2	83.0 × 18.6	3.20 × 5.55	38.20	35.25	32.75
289-0180	HDM20416L-V30	98 × 60.0 × 12.5	20 × 4	76.0 × 25.2	2.95 × 4.75	54.05	49.99	46.50
289-0185	HDM24216L-U30P	118 × 38.0 × 14.0	24 × 2	93.6 × 15.8	3.20 × 5.55	35.95	33.18	30.81
289-0190	HDM40216L-V30	182 × 33.5 × 13.0	40 × 2	154.5 × 15.8	3.20 × 5.55	59.99	55.00	51.24

Inverters for CCFL Backlight

Stock No.	Mfr.'s Type	Starting Voltage	Output Voltage	Output Current	LCD Module	EACH 1-9	EACH 10-99	EACH 100-Up
289-0400	HVI3224	1000 Vrms	360 Vrms	5.25 mArms	HDM3224	29.16	26.92	25.00
289-0410	HVI6448	1000 Vrms	360 Vrms	5.25 mArms	HDM6448	29.16	26.92	25.00

Graphic LCD Modules

Stock No.	Mfr.'s Type	External Dimension (W × H × D) mm	Dot Number (W × H) Dot	Viewing Area (W × H) mm	Duty	Dot Size (W × H) mm	Backlight	Controller	EACH 1-9	EACH 10-99	EACH 100-Up
289-0211	HDM64GS12L-L30	93.0 × 70.0 × 9.4	128 × 64	70.7 × 38.8	1/64	0.48 × 0.48	LED	HD61202	67.52	62.32	57.87
289-0220	HDM64GS24Y-2-R00	180.0 × 65.0 × 10.0	240 × 64	132.0 × 39.0	1/64	0.49 × 0.49	—	HD61830	83.82	77.37	71.84
289-0230	HDM128GS12Y-R00	85.0 × 100.0 × 14.0	128 × 128	62.0 × 62.0	1/128	0.40 × 0.40	—	T6963C	79.16	73.10	67.86
289-0240	HDM3224	143.0 × 96.8 × 13.0	320 × 240	104.0 × 79.3	1/240	0.27 × 0.27	CCFL	—	137.36	126.80	117.75
289-0250	HDM6448	260.0 × 174.0 × 7.0	640 × 480	196.0 × 148.0	1/240	0.27 × 0.27	CCFL	—	279.40	257.91	239.49
289-0253	HDM640CN03C-S	264.0 × 183.0 × 8.0	640 × (R,G,B) × 480	213.2 × 160.4	1/244	0.31 × 0.31	CCFL	—	647.31	601.07	561.00
289-0261	HDM800CN01C-S	264.0 × 183.0 × 8.0	800 × (R,G,B) × 600	213.2 × 160.4	1/300	0.24 × 0.24	CCFL	—	712.04	661.18	617.10

289-0270. Data Book for Hantronix Dot Matrix LCD Modules .... **EACH 1.55**

LED Thru Hole Lamps

Standard Lamps

T1 (3 mm)

Stock No.	Mfr.'s Type	Fig.	Color	Lens	Luminous Intensity	Viewing Angle	EACH
							1-49
782-0010	HLMP-K101	1	AlGaAs	Diffused	45 mcd @ 20 mA	60°	**.33**
782-0135	HLMP-K105	1	AlGaAs	Clear	65 mcd @ 20 mA	45°	**.33**
782-1060	HLMP-1302	1	HER	Diffused	7.0 mcd @ 10 mA	60°	**.29**
782-1070	HLMP-1402	1	Yellow	Diffused	7.0 mcd @ 10 mA	60°	**.29**
782-1080	HLMP-1523	1	Green	Diffused	7.0 mcd @ 10 mA	60°	**.24**
782-0140	HLMP-1340	1	HER	Clear	45 mcd @ 20 mA	45°	**.33**
782-0145	HLMP-1440	1	Yellow	Clear	1.6 mcd @ 20 mA	45°	**.33**
782-0150	HLMP-1540	1	Green	Clear	1.6 mcd @ 20 mA	45°	**.33**

T1¾ (5 mm)

Stock No.	Mfr.'s Type	Fig.	Color	Lens	Luminous Intensity	Viewing Angle	EACH 1-49
782-0060	HLMP-3301	2	HER	Diffused	7.0 mcd @ 10 mA	60°	**.26**
782-0065	HLMP-3401	2	Yellow	Diffused	8.0 mcd @ 10 mA	60°	**.26**
782-0070	HLMP-3507	2	Green	Diffused	5.2 mcd @ 10 mA	60°	**.26**
782-0055	HLMP-D101	2	AlGaAs	Diffused	70 mcd @ 20 mA	65°	**.33**
782-0155	HLMP-D105	3	AlGaAs	Clear	240 mcd @ 20 mA	24°	**.33**
782-1090	HLMP-4000	4	Bicolor HER/Green	Untinted Diffused	HER, 5.0 mcd @ 20 mA Green, 4.0 mcd @ 20 mA	100°	**.58**

2 × 5 Rectangular

Stock No.	Mfr.'s Type	Fig.	Color	Lens	Luminous Intensity	Viewing Angle	EACH 1-49
782-1005	HLMP-S100	5	AlGaAs	Diffused	7.5 mcd @ 20 mA	110°	**.31**
782-1015	HLMP-S200	5	HER	Diffused	3.5 mcd @ 20 mA	110°	**.28**
782-1025	HLMP-S300	5	Yellow	Diffused	2.1 mcd @ 20 mA	110°	**.28**
782-1035	HLMP-S500	5	Green	Diffused	4.0 mcd @ 20 mA	110°	**.28**
782-1045	HLMP-0800	6	Bicolor HER/Green	Untinted Diffused	HER, 3.5 mcd @ 20 mA Green, 4.0 mcd @ 20 mA	35°	**.63**

High Performance Lamps

Stock No.	Mfr.'s Type*	Fig.	Color	Wavelength	Lens	Package Size	Luminous Intensity Iv (mcd)		Viewing Angle Typ.	EACH
							Min.	Typ.		1-49
782-6138	HLMA-CH00	7	AlInGaP	615 nm	Clear	T1¾ (5 mm)	1000	3000	7°	**.54**
782-6144	HLMA-DH00	8	AlInGaP	615 nm	Clear	T1¾ (5 mm)	300	800	30°	**.54**
782-6136	HLMA-CL00	7	AlInGaP	592 nm	Clear	T1¾ (5 mm)	1000	3000	7°	**.59**
782-6142	HLMA-DL00	8	AlInGaP	592 nm	Clear	T1¾ (5 mm)	300	1000	30°	**.59**
782-6134	HLMA-KH00	1	AlInGaP	615 nm	Clear	T1 (3 mm)	35	200	45°	**.54**
782-6132	HLMA-KL00	1	AlInGaP	592 nm	Clear	T1 (3 mm)	35	200	45°	**.59**
782-6140	HLMP-8100	7	TS AlGaAs	644 nm	Clear	T1¾ (5 mm)	290	1000	19°	**.43**
782-1055	HLMP-C100	8	TS AlGaAs	644 nm	Clear	T1¾ (5 mm)	290	750	30°	**.44**

*Luminous Intensity I_V @ Forward Voltage I_F = 20 mA. **Operating Temperature**: –40 to +100°C. **Storage Temperature**: –55 to +100°C.

Surface Mount LEDs

Surface Mount Indicator Lamps

Stock No.*	Mfr.'s Type	Fig.	Color	Wavelength	Lens	Luminous Intensity	Viewing Angle	EACH
								1-49
782-650X	HSMH-Tx00	9	AlGaAs	637 nm	Clear	17 mcd @ 10 mA	120°	**.30**
782-651X	HSMS-Tx00	9	HER	626 nm	Clear	5 mcd @ 10 mA	120°	**.30**
782-652X	HSMD-Tx00	9	Orange	602 nm	Clear	5 mcd @ 10 mA	120°	**.30**
782-653X	HSMY-Tx00	9	Yellow	585 nm	Clear	5 mcd @ 10 mA	120°	**.30**
782-654X	HSMG-Tx00	9	Green	572 nm	Clear	10 mcd @ 10 mA	120°	**.30**
782-655X	HSMJ-Tx25	9	Red-orange	615 nm	Clear	25 mcd @ 10 mA	120°	**.40**
782-656X	HSMD-Tx25	9	Orange	603 nm	Clear	25 mcd @ 10 mA	120°	**.40**
782-657X	HSMA-Tx25	9	Amber	590 nm	Clear	25 mcd @ 10 mA	120°	**.40**

***Replace X in Stock No. with Corresponding Number:** 4 = 12 mm tape, 7" reel, 2000 devices; 5 = 12 mm tape, 13" reel, 8000 devices; 6 = 8 mm tape, 7" reel, 2000 devices; 7 = 8 mm tape, 13" reel, 8000 devices.

Subminiature Solid State Lamps

Stock No.	Mfr.'s Type	Fig.	Color	Package Size	Lens	Luminous Intensity	Forward Voltage	EACH
								1-49
782-0120	HLMP-8300	10	HER	1.7 mm	Diffused	3.0 mcd @ 10 mA	2.2 V (10 mA)	**.31**
782-0125	HLMP-6400	10	Yellow	1.7 mm	Diffused	3.0 mcd @ 10 mA	2.2 V (10 mA)	**.31**
782-0130	HLMP-6500	10	Green	1.7 mm	Diffused	3.0 mcd @ 10 mA	2.3 V (10 mA)	**.31**

Surface Mount Chip LEDs

Stock No.	Mfr.'s Type	Fig.	Color	Footprint	Luminous Intensity	Forward Voltage	Viewing Angle	EACH
								1-49
782-6148	HSMH-C650	11	AlGaAs	3.2 × 1.60 mm	16 mcd @ 20 mA	1.8 V (20 mA)	155°	**.23**
782-6150	HSMS-C650	11	HER	3.2 × 1.60 mm	5 mcd @ 20 mA	1.9 V (20 mA)	155°	**.21**
782-6162	HSMY-C650	11	Yellow	3.2 × 1.60 mm	5 mcd @ 20 mA	2.1 V (20 mA)	155°	**.21**
782-6164	HSMG-C650	11	Green	3.2 × 1.60 mm	9 mcd @ 20 mA	2.2 V (20mA)	155°	**.21**
782-6166	HSMH-C670	12	AlGaAs	2.0 × 1.25 mm	16 mcd @ 20 mA	1.8 V (20 mA)	155°	**.26**
782-6168	HSMS-C670	12	HER	2.0 × 1.25 mm	5 mcd @ 20 mA	1.9 V (20 mA)	155°	**.19**
782-6172	HSMY-C670	12	Yellow	2.0 × 1.25 mm	5 mcd @ 20 mA	2.1 V (20 mA)	155°	**.19**
782-6174	HSMG-C670	12	Green	2.0 × 1.25 mm	9 mcd @ 20 mA	2.2 V (20 mA)	155°	**.19**
782-9000	HSMF-C655	13	Bicolor HER/Green	3.2 × 2.70 mm 3.2 × 2.70 mm	5 mcd @ 20 mA 9 mcd @ 20 mA	1.9 V (20 mA) 2.2 V (20 mA)	155°	**.32**

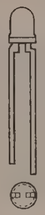


Fig. 1

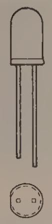


Fig. 2

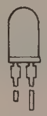


Fig. 3

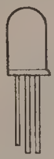


Fig. 4

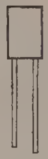


Fig. 5

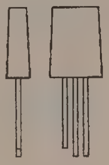


Fig. 6

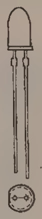


Fig. 7

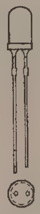


Fig. 8

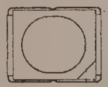


Fig. 9

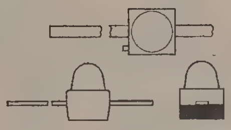


Fig. 10

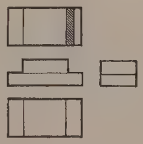


Fig. 11

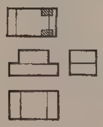


Fig. 12

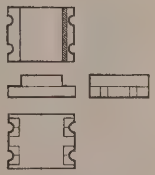


Fig. 13

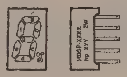


Fig. 14

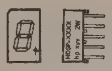


Fig. 15

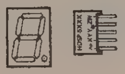


Fig. 16

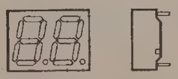


Fig. 17

Seven Segment Displays

8 mm (0.31") Ultra Mini

Stock No.	Mfr.'s Type	Fig.	Digits	Color	Typical Iv	V_F	EACH
							1-49
782-1000	HDSP-U201	14	Single	HER	980 µcd @ 5 mA	2.0 V (20 mA)	**1.96**
782-1010	HDSP-U101	14	Single	AlGaAs	3600 µcd @ 5 mA	1.6 V (1 mA)	**2.47**
782-1020	HDSP-U301	14	Single	Yellow	480 µcd @ 5 mA	2.2 V (20 mA)	**1.96**
782-1030	HDSP-U501	14	Single	Green	3000 µcd @ 10 mA	2.1 V (10 mA)	**1.96**

7.62 mm (0.3")

Stock No.	Mfr.'s Type	Fig.	Digits	Color	Typical Iv	V_F	EACH 1-49
782-0320	HDSP-7501	15	Single	HER	5390 µcd/seg. @ 20 mA DC	2.0 V (20 mA)	**1.97**
782-1040	HDSP-A151	15	Single	AlGaAs	14 mcd/seg. @ 20 mA DC	1.8 V (20 mA)	**2.40**
782-0330	HDSP-7401	15	Single	Yellow	2740 µcd/seg. @ 20 mA DC	2.2 V (20 mA)	**1.97**
782-0340	HDSP-7801	15	Single	Green	6800 µcd/seg. @ 20 mA DC	2.1 V (10 mA)	**1.81**

14.2 mm (0.56")

Stock No.	Mfr.'s Type	Fig.	Digits	Color	Typical Iv	V_F	EACH 1-49
782-0490	HDSP-5501	16	Single	HER	2800 µcd/seg. @ 10 mA DC	2.1 V (20 mA)	**1.98**
782-0500	HDSP-5521	17	Dual	HER	2800 µcd/seg. @ 10 mA DC	2.1 V (20 mA)	**3.55**
782-1050	HDSP-H151	16	Single	AlGaAs	16 mcd/seg. @ 20 mA	1.8 V (20 mA)	**2.40**
782-0520	HDSP-5701	16	Single	Yellow	1800 µcd/seg. @ 10 mA DC	2.1 V (20 mA)	**1.98**
782-0530	HDSP-5721	17	Dual	Yellow	1800 µcd/seg. @ 10 mA DC	2.1 V (20 mA)	**3.55**
782-0540	HDSP-5601	16	Single	Green	2500 µcd/seg. @ 10 mA DC	2.1 V (20 mA)	**1.98**
782-0550	HDSP-5621	17	Dual	Green	2500 µcd/seg. @ 10 mA DC	2.1 V (20 mA)	**3.55**

General Purpose Motion Control ICs

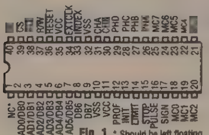


Fig. 1 * Should be left floating.

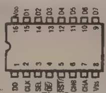
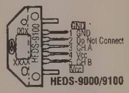


Fig. 2

HCTL-1100 is a general purpose motion control CMOS IC that provides closed loop control of DC, DC Brushless, and Step Motors, using a digital incremental encoder for feedback. 5 V operation. TTL compatible. 24 bit position counter. 4 control modes. Programmable digital filter and brushless motor commutator. 40 pin plastic DIP package. **Row Spacing:** 0.600". **Operating Temperature Range:** –20°C to +85°C. HCTL-2000/2016 are CMOS ICs that interface digital incremental encoders to microprocessor systems. The ICs include a 4X quadrature decoder, binary up/down counter, and tristate bus interface. 5 V operation. TTL compatible. Operates at clock frequencies up to 14 MHz. 16 pin plastic DIP package. **Row Spacing:** 0.300". **Operating Temperature Range:** –40°C to +85°C. HCTL-2000 has a 12 bit binary counter, HCTL-2016 has a 16 bit binary counter.

Stock No.	Mfr.'s Type	Fig.	Description	EACH
782-2000	HCTL-1100	1	CMOS Motion Controller 100KHz to 2 MHz clock	40.70
782-2005	HCTL-2000	2	CMOS 12 Bit Quadrature Decoder/Counter	12.75
782-2010	HCTL-2016	2	CMOS 16 Bit Quadrature Decoder/Counter	12.75

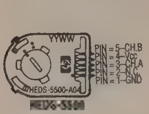
Two-Channel Encoder Modules



HEDS9000/9100 are high performance, optical-incremental encoder modules. When operated in conjunction with a codewheel, the modules detect rotary position. **Supply Input:** 5 V. Five 0.025" square pins located on 0.1" centers. **Operating Temperature Range:** –40°C to +100°C. TTL compatible HEDS-5120 are precision metal codewheels for use with the HEDS-9000/9100 encoder modules.

Stock No.	Mfr.'s Type	Optical Radius	Resolution	EACH
782-2050	HEDS-9000 A00	24 mm	500 cpr	23.67
782-2055	HEDS-9000 B00	24 mm	1000 cpr	23.67
782-2060	HEDS-9100 A00	11 mm	500 cpr	23.67
782-2065	HEDS-9100 G00	11 mm	360 cpr	23.67

2 and 3 Channel Encoders



HEDS-5500/5540 are high-performance optical incremental encoders, 2-channel/3-channel digital outputs and single 5 V supply input are accessed through five 0.025" square pins on 0.1" centers. **Operating Temperature Range:** –40°C to +100°C. These series are TIL compatible and no mechanical or electrical adjustments are needed.

Stock No.	Mfr.'s Type	Resolution	Shaft Diameter	Output	EACH
782-2015	HEDS-5500#G06	360 CPR	1/4"	2 channel	34.75
782-2020	HEDS-5500#A06	500 CPR	1/4"	2 channel	34.75
782-2025	HEDS-5500#I06	512 CPR	1/4"	2 channel	34.75
782-2130	HEDS-5540#G06	360 CPR	1/4"	3 channel	40.38
782-2145	HEDS-5540#A06	500 CPR	1/4"	3 channel	40.38
782-2155	HEDS-5540#I06	512 CPR	1/4"	3 channel	40.38

For options of various CPR and shaft diameter, please consult Hewlett-Packard OED Motion Control Catalog.

Alphanumeric LED Display

Solid-state alphanumeric LED displays are available in 16 segment monolithic smart, 5 × 7 dot matrix smart, and 5 × 7 dot matrix intelligent versions. Low power on-board CMOS IC contains memory, ASCII decoder and driver circuitry. Dual-in-line (DIP) packaging, TTL compatible, wave solderable and end-stackable. Types HPDL-1414 and HPDL-2416 decode 64 ASCII characters. Types HPLR-, HPLO-, HDLA-, and HDLG-2416 decode 128 ASCII characters. Types HDSP-2110 through -2113 decode 128 ASCII characters, have an on-board RAM that stores up to 16 user-definable characters, and feature flashing characters, full display blinking, multi-level dimming and self test. All of these devices are ideal for a variety of applications in avionics, industrial control and instrumentation.

Stock No.	Mfr.'s Type	Color	Description	EACH
				1-49
782-0600 782-0605	HPDL-1414† HPDL-2416‡	Red Red	†2.85 mm (0.112") ‡4.1 mm (0.16") 4 Character, 16 Segment, Monolithic Smart, Alphanumeric Display, Operating Temperature Range: –40°C to +85°C	15.69 16.22
782-0615 782-0620 782-6092	HDLO-2416 HDLA-2416 HDLS-2416	HER* Orange Red	5.00 mm (0.20") 5 × 7 Dot Matrix, 4 Character Smart,	18.74 18.74 22.31
782-0690 782-0635 782-0640 782-0645 782-0650	HDSP-2107 HDSP-2112 HDSP-2110 HDSP-2111 HDSP-2113	AlGaAs Red HER* Orange Yellow Green	5.00 mm (0.20") 5 × 7 Flexible Dot Matrix 19.6 mm (0.77") Package Height 8 Character Smart, Parallel Input, Decodes 128 ASCII Characters	49.65 39.95 36.88 39.95 39.95
782-0695 782-0700 782-0705 782-0710	HDSP-2502 HDSP-2500 HDSP-2501 HDSP-2503	HER* Orange Yellow Green	7.00 mm (0.27") 5 × 7 Flexible Dot Matrix 19.6 mm (0.77") Package Height 8 Character Smart, Parallel Input, Decodes 128 ASCII Characters	45.68 45.68 45.68 45.68
782-0715 782-0720 782-0725 782-0730 782-0735	HDSP-2534 HDSP-2532 HDSP-2530 HDSP-2531 HDSP-2533	AlGaAs Red HER* Orange Yellow Green	4.57 mm (0.18") 5 × 7 Flexible Dot Matrix 11.4 mm (0.45") Slimline Package Height 8 Character Smart, Parallel Input, Decodes 128 ASCII Characters	51.63 41.71 41.71 41.71 41.71
782-0740 782-0745 782-0750 782-0755 782-0760	HCMS-2965 HCMS-2962 HCMS-2964 HCMS-2961 HCMS-2963	AlGaAs Red HER* Orange Yellow Green	5.00 mm (0.20") 5 × 7 Flexible Dot Matrix 4 Character Smart, Serial Input, Individual Dot Control	26.47 20.84 20.84 20.84 20.84
782-0765 782-0770 782-0775 782-0780 782-0785	HCMS-2975 HCMS-2972 HCMS-2974 HCMS-2971 HCMS-2973	AlGaAs Red HER* Orange Yellow Green	5.00 mm (0.20") 5 × 7 Flexible Dot Matrix 8 Character Smart, Serial Input, Individual Dot Control	51.63 41.71 41.71 41.71 41.71

*High Efficiency Red.

Seven-Segment Right-Hand Decimal Point Displays

Fig. 1
7.62 mm (0.3")
Mini
0.5" H x0.3"W x 0.24"D

Fig. 3
10.16 mm (0.4")
(Dual Digit)
0.67" H x 0.9" W x 0.24"

Fig. 5
10.92 mm (0.43")
0.75" H x 0.5" W x 0.25" D

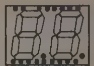


Fig. 7
14.2 mm (0.56") Dual Digit
0.67" H x 1.0" W x 0.31" D

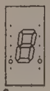


Fig. 2
7.62 mm (0.3")
0.75" H x 0.4"W x 0.18"D

Fig. 4
10.16 mm (0.4")
(Dual Digit)
0.67"H x 0.9"W x 0.24"D

Fig. 6
14.2 mm (0.56")
(Single Digit)
0.67"H x 0.49"W x 0.31"D

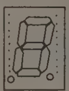


Fig. 8
20 mm (0.8")
1.09" H x 0.78" W x 0.33" D

Solid-state LED numeric displays for applications such as instruments, weighing scales, meters and point-of-sale terminals. Dual-in-line package. Available in character sizes from 7.62mm (0.3") to 20mm (0.8") and colors, red, AlGaAs deep red, high-efficiency red (HER in tables below), yellow and high-performance green, AlGaAs displays are tested and selected for their excellent low current characteristics to ensure that the segments match at low currents. Type numbers ending in "1" are Common Anode; Type numbers ending in "3" and "0" are Common Cathode.

Stock No.	Mfr.'s Type	Fig.	Color	Typical Intensity Per Segment	EACH
					1-49
782-5010	HDSP-A101	1	AlGaAs Red	600 µcd @ 1 mA	2.47
782-0320	HDSP-7501	1	High Efficiency Red	980 µcd @ 5 mA	1.97
782-0325	HDSP-7503	1	High Efficiency Red	980 µcd @ 5 mA	1.97
782-0330	HDSP-7401	1	Yellow	480 µcd @ 5 mA	1.97
782-0335	HDSP-7403	1	Yellow	480 µcd @ 5 mA	1.97
782-0345	HDSP-7803	1	Green	3000 µcd @ 10 mA	1.97
782-0360	5082-7611	2	High Efficiency Red	800 µcd @ 5 mA	1.93
782-0365	5082-7613	2	High Efficiency Red	800µ cd @ 5 mA	1.93
782-0385	5082-7623	2	Yellow	620 µcd @ 5 mA	1.93
782-0390	HDSP-3601	2	Green	2700 µcd @ 10 mA	1.93
782-6060	HDSP-F103	3	AlGaAs Red	650 µcd @ 1 mA	2.14
782-6066	HDSP-F201	3	High Efficiency Red	1200 µcd @ 5 mA	1.96
782-6082	HDSP-F501	3	Green	3500 µcd @ 10 mA	1.96
782-6062	HDSP-G101	4	AlGaAs Red	650 µcd @ 1 mA	3.80
782-6064	HDSP-G103	4	AlGaAs Red	650 µcd @ 1 mA	4.18
782-6080	HDSP-G303	4	Yellow	800 µcd @ 5 mA	3.31
782-0420	5082-7651	5	High Efficiency Red	1115 µcd @ 5 mA	1.93
782-0425	5082-7653	5	High Efficiency Red	1115 µcd @ 5 mA	1.93
782-0480	HDSP-H101	6	AlGaAs Red	700 µcd @ 1 mA	2.47
782-0485	HDSP-H103	6	AlGaAs Red	700 µcd @ 1 mA	2.47
782-0490	HDSP-5501	6	High Efficiency Red	2800 µcd @ 10 mA	1.98
782-0495	HDSP-5503	6	High Efficiency Red	2800 µcd @ 10 mA	1.98
782-0510	HDSP-5531	6	High Efficiency Red	6000 µcd @ 100 mA 1/5df	2.28
782-0515	HDSP-5533	6	High Efficiency Red	6000 µcd @ 100 mA 1/5df	2.28
782-0520	HDSP-5701	6	Yellow	1800 µcd @ 10 mA	1.98
782-0540	HDSP-5601	6	Green	2500 µcd @ 10 mA	1.98
782-0545	HDSP-5603	6	Green	500 µcd @ 10 mA	1.98
782-0550	HDSP-5621	7	Green	2500 µcd @ 10 mA	3.55
782-0500	HDSP-5521	7	High Efficiency Red	2800 µcd @ 10 mA	3.55
782-0505	HDSP-5523	7	High Efficiency Red	2800 µcd @ 10 mA	3.55
782-0530	HDSP-5721	7	Yellow	1800 µcd @ 10 mA	3.55
782-0475	HDSP-5323	7	Red	1300 µcd @ 20 mA	2.28
782-0560	HDSP-3401	8	Red	1200 µcd @ 20 mA	1.53
782-0565	HDSP-3403	8	Red	1200 µcd @ 20 mA	1.53
782-0570	HDSP-3901	8	High Efficiency Red	7000 µcd @ 100 mA 1/5df	2.75
782-0575	HDSP-3903	8	High Efficiency Red	7000 µcd @ 100 mA 1/5df	2.75
782-0585	HDSP-4203	8	Yellow	7000 µcd @ 100 mA 1/5df	2.75

LED Light Bars

Fig. 1

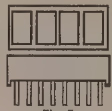


Fig. 5

Fig. 2

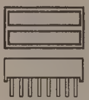


Fig. 6

Fig. 3

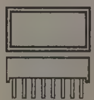


Fig. 7

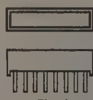


Fig. 4

LED light bars designed for fixed message annunciation. All are configured in a dual-in-line DIP package except types HLMP-2300, -2350, -2400, -2450, -2500, -2550 which are SIP packages. Each of the eight X-Y stackable package styles offers one, two or four large, uniformly illuminated light emitting surfaces. 0.100" centers; flush mountable. Available in high-efficiency red, yellow and high-performance green colors. Diffused lens. Ideal use for backlighting legends or simple indicators. For panel and legend mount capabilities, order corresponding part separately in table below. Replace the X in stock number with following color code: 1 (Red), 2 (Yellow), 3 (Green).

Stock No.	Mfr.'s Type			Fig.	No. of Pins	Device Size L × W × H	Light Emitting Areas		EACH
	Red HLMP-	Yellow HLMP-	Green HLMP-				No.	Size	1-49
782-069X	2300	2400	2500	1	4	.400 × .195 × .245"	1	.350 × .150"	1.04
782-075X	2600	2700	2800	2	8	.400 × .400 × .245"	2	.350 × .150"	1.55
782-090X	2655	2755	2855	3	8	.400 × .400 × .245"	1	.350 × .350"	1.55
782-070X	2350	2450	2550	4	8	.800 × .195 × .245"	1	.750 × .150"	1.55
782-080X	2620	2720	2820	5	16	.800 × .400 × .245"	4	.350 × .150"	2.20
782-085X	2635	2735	2835	6	16	.800 × .400 × .245"	2	.150 × .750"	2.20
782-100X	2685	2785	2885	7	16	.800 × .400 × .245"	1	.350 × .750"	2.20

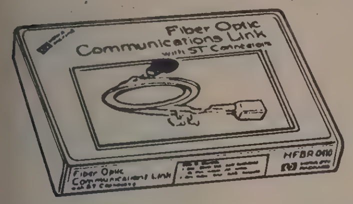
Panel and Legend Mounts

Stock No.	Mfr.'s Type	For Light Bar Type	EACH
782-0670	HLMP-2599	HLMP-2300/2400/2500	.16
782-0675	HLMP-2598	HLMP-2350/2450/2550	.16
782-0680	HLMP-2898	HLMP-2600/2700/2800/2655/2755/2855	.16
782-0685	HLMP-2899	HLMP-2620/2720/2820/2635/2735/2835/2670/2770/2870/2685/2785/2885	.16

Miniature Link Fiber-Optic Components

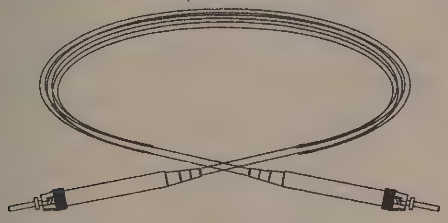
Interface directly with industry-standard ST and SMA connectors. Designed for auto insertion and wave soldering. No mounting hardware required. These components provide cost effective, high performance fiber-optic communication links for computers, central office switch, PBX, local area network and industrial-control applications.

Type HFBR-0410 Miniature Link ST Evaluation Kit


Fiber Optic Communications Link with ST Connectors
HFBR-0410
Fiber Optic Communications Link

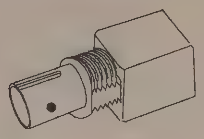
HFBR-0410 ST evaluation kit is used with ST type HFBR-1400 transmitters and type HFBR-241X-T receivers, both of which are listed separately on this page. Kit contains one each of the following: HFBR-1412 transmitter; HFBR-2412 five megabaud TTL receiver; three meters of ST connectored 62.5/125 µm fiber-optic cable with plastic ferrules; HFBR-0400 series data sheets; HP application bulletin 73; ST connector and cable data sheets.
782-2200. Type HFBR-0410.......**EACH 52.45**

Connectored Glass Fiber-Optic Cable for Miniature Link ***— NEW —***



Connectored Simplex cable is constructed of a single graded-index glass fiber surrounded by a silicone buffer, secondary jacket and aramid strength members. The cable is UL-recognized and passes UL VW-1 flame retardant specifications. **Length:** 10 m.
782-2285. Type HFBR-BXS010. ST Connector. 62.5/125 Fiber ....**EACH 136.99**

The Miniature Link Package (HFBR-0300/0400/0600 Series) ***— NEW —***



The Miniature Link family is available with 650-nm, 820-nm and 1300-nm technology. Signal rates range from dc to 175 MBd with distances up to 3 km. This family consists of separate transmitter and receiver ports with standard connectors such as ST™, SMA, SC or FC.

HFBR-0400 Transmitters with Threaded ST™ Connectors (820 nm)

Stock No.	Mfr.'s Type	Min. Output Power	Input Current		EACH
			Peak	DC	
782-4140	HFBR-1412T	–19.0 dBm	200 mA	60 mA	**19.83**
782-2215	HFBR-1414T	–15.0 dBm	200 mA	60 mA	**22.95**

HFBR-0400 Receivers with Threaded ST™ Connectors

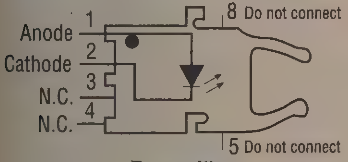
Stock No.	Mfr.'s Type	Description	Max. Supply Volts	Input Power	EACH
782-2260	HFBR-2412T	5 MBd TTL	7	102 µW	**16.50**
782-2270	HFBR-2416T	125 MHz, Analog	6	175 µW	**26.25**

Versatile Link Plastic Fiber-Optic Component

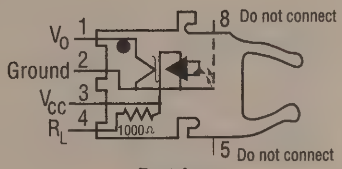
Versatile Link 1 MBd Standard Evaluation Kit
Kit contains one each of the following — Type HFB-1524 transmitter, HFBR-2524 receiver, HFBR-4506 duplex connector with crimp ring, HFBR-4501 gray simplex connector with crimp ring, HFBR-4513 blue simplex latching connector with crimp ring, HFBR-4505 gray adapter. Kit also contains 5 meters of connectored simplex cable with blue and gray latching connectors, polishing tool, 600 grit paper and data sheet with a brochure.
782-2220. Type HFBR-0501..**EACH 24.95**

Versatile Link Polishing Kit
Type HFBR-4593 polishing kit contains one each of the following — plastic polishing tool, 600-grit abrasive paper and 3 µm pink lapping film. Designed for use on all connectors. Polishes two simplex connectors simultaneously or one duplex connector.
782-2325. Type HFBR-4593 ....**EACH 2.84**

Versatile Link Transmitters and Receivers



Transmitter



Receiver

Transmitters

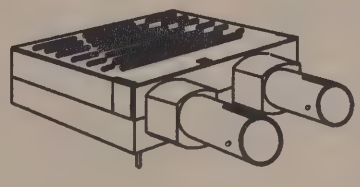
Stock No.	Mfr.'s Type	Data Rate (MBd)	Distance (m) (25 C)	Wavelength (nm)	Fiber Type	EACH 1-99
782-2230	HFBR-1521	5	30	660	Plastic	**8.05**
782-2330	HFBR-1522	1	55	660	Plastic	**8.05**
782-0012	HFBR-1523	40	120	660	Plastic	**8.06**
782-2225	HFBR-1524	1	20	660	Plastic	**6.20**
782-2335	HFBR-1527	155	50	650	Plastic	**8.35**
782-2345	HFBR-1528	10	60	650	Plastic	**8.05**

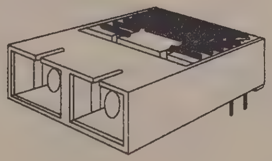
Receivers

Stock No.	Mfr.'s Type	Data Rate (MBd)	Distance (m) (25 C)	Wavelength (nm)	Fiber Type	EACH 1-99
782-2240	HFBR-2521	5	30	660	Plastic	**9.00**
782-2355	HFBR-2522	1	55	660	Plastic	**9.00**
782-0011	HFBR-2523	40	120	660	Plastic	**9.01**
782-2335	HFBR-2524	1	20	660	Plastic	**7.00**
782-2360	HFBR-2526	155	50	650	Plastic	**12.90**
782-2370	HFBR-2528	10	60	650	Plastic	**14.10**

Transceivers and Fiber-Optic Evaluation Kits ***— NEW —***

The 1 × 9 Transceiver Package (HFBR-5100/5200/5300 Series)





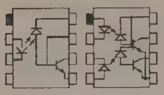
The 1 × 9 transceivers are highly integrated devices for duplex links from 10 MBd up to 266 MBd and distances up to 4,000 meters. The "1 × 9" means that they have a footprint of one row of 9 pins. The transceivers are available with duplex-SC or ST™ connectors.

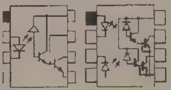
Stock No.	Mfr.'s Type	Data Rate (MBd)	Wavelength (nm)	Distance (m) (0-70 C)	EACH
782-2380	HFBR-5103	125	1300	3400	**90.00**
782-2385	HFBR-5205	155	1300	2000	**90.00**
782-2390	HFBR-5203	266	1300	1500	**125.00**

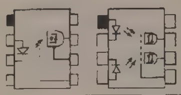
Fiber-Optic Evaluation Kits

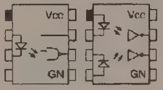
Stock No.	Mfr.'s Type	Data Rate (MBd)	Contents	EACH
782-2200	HFBR-0410	dc-5	HFBR-1412/2412, 1 meter pre-connectored 62.5/125 µm glass fiber	**52.45**
782-8100	HFBR-0414	5-70	HFBR-1414/2416, 1 meter pre-connectored 62.5/125 µm glass fiber	**99.95**
782-2220	HFBR-0501	dc-1	HFBR-1524/2524, 1 meter plastic optical fiber, connectors	**24.95**
782-2395	HFBR-0527P	10-155	HFBR-1527/2526, 1 meter pre-connectored plastic optical fiber	**200.00**

Optocouplers

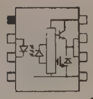

1

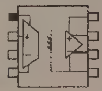

2

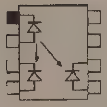

3

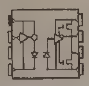


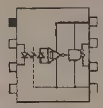
4

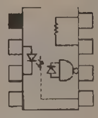

5

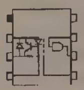

6

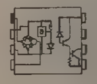

7

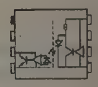

8

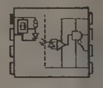

9


10


11


12


13


14

1 MBd Transistor Output (6N135/6 Type)

Stock No.	Mfr.'s Type	Fig.	Description	if mA	CTR Min. %	tprop µs	CMR V/µs Min.	Hi-Rel Package	EACH 1-49
782-0240	6N135	1	—	16.0	7	2.0	100	Yes	1.03
782-6186	HCPL-0500	1	S08 Surface Mount Package	16.0	7	2.0	100	Yes	1.57
782-6235	HCNW135	1	VDE: 1414 V 400 Mil Package	16.0	7	2.0	100	Yes	1.34
782-0275	HCPL-2530	1	Dual Channel 300 Mil Dil Package	16.0	7	2.0	100	Yes	2.49
782-2700	HCPL-0530	1	Dual Channel S08 Surface Mount Package	16.0	7	2.0	100	Yes	2.98
782-0245	6N136	1	—	16.0	19	1.0	100	Yes	1.08
782-6188	HCPL-0501	1	S08 Surface Mount Package	16.0	19	1.0	100	Yes	1.60
782-6245	HCNW136	1	VDE: 1414 V 400 Mil Package	16.0	19	1.0	100	Yes	1.43
782-0280	HCPL-2531	1	Dual Channel 300 Mil Dil Package	16.0	19	1.0	100	Yes	2.60
782-2705	HCPL-0531	1	Dual Channel S08 Surface Mount Package	16.0	19	1.0	100	Yes	3.20
782-6216	HCPL-4502	1	—	16.0	19	1.0	100	—	1.71
782-6182	HCPL-0452	1	S08 Surface Mount Package	16.0	19	1.0	100	—	2.07
782-2710	HCNW4502	1	VDE: 1414V 400 Mil Package	16.0	19	1.0	100	—	1.43
782-6230	HCPL-4503	1	—	16.0	19	1.0	15K	—	1.63
782-6184	HCPL-0453	1	S08 Surface Mount Package	16.0	19	1.0	15K	—	2.27
782-2715	HCNW4503	1	VDE: 1414 V 400 Mil Package	16.0	19	1.0	15K	—	1.83
782-2720	HCPL-4534	1	Dual Channel 300 Mil Dil Package	16.0	19	1.0	15K	—	3.65
782-2725	HCPL-0534	1	Dual Channel S08 Surface Mount Package	16.0	19	1.0	15K	—	4.48
782-2730	HCPL-4504	1	—	12.0	26	1.0	10K	—	1.73
782-2735	HCPL-0454	1	S08 Surface Mount Package	12.0	26	1.0	10K	—	1.96
782-2740	HCNW4504	1	VDE: 1414V 400 Mil Package	12.0	26	1.0	10K	—	2.01
782-2745	HCPL-4506	1	—	16.0	44	0.5	15K	—	1.90
782-2750	HCPL-0466	1	S08 Surface Mount Package	16.0	44	0.5	15K	—	2.16
782-2755	HCNW4506	1	VDE: 1414V 400 Mil Package	16.0	44	0.5	15K	—	2.22

100 Kdb High Gain Transistor Output (6N138/9 Type)

782-0255	6N138	2	—	1.6	300	10.0	100	Yes	1.06
782-6196	HCPL-0700	2	S08 Surface Mount Package	1.6	300	10.0	100	Yes	1.18
782-6249	HCNW138	2	VDE: 1414 V 400 Mil Package	1.6	300	10.0	100	Yes	1.40
782-0305	HCPL-2730	2	Dual Channel 300 Mil Dil Package	1.6	300	10.0	100	Yes	2.80
782-2760	HCPL-0730	2	Dual Channel S08 Surface Mount Package	1.6	300	10.0	100	Yes	3.14
782-0260	6N139	2	—	0.5	400	10.0	500	Yes	1.15
782-6198	HCPL-0701	2	S08 Surface Mount Package	0.5	400	10.0	500	Yes	1.68
782-6251	HCNW139	2	VDE: 1414 V 400 Mil Package	0.5	400	10.0	500	Yes	1.60
782-0310	HCPL-2731	2	Dual Channel 300 Mil Dil Package	0.5	400	10.0	500	Yes	3.17
782-2765	HCPL-0731	2	Dual Channel S08 Surface Mount Package	0.5	400	10.0	500	Yes	3.55
782-2770	HCPL-4701	2	—	40 µA	800	500.0	1K	—	1.69
782-2775	HCPL-070A	2	S08 Surface Mount Package	40 µA	800	500.0	1K	—	1.46
782-2780	HCPL-4731	2	Dual Channel 300 Mil Dil Package	40 µA	800	500.0	1K	—	3.39
782-2785	HCPL-073A	2	Dual Channel S08 Surface Mount Package	40 µA	800	500.0	1K	—	3.66

5 MBd Logic Gate

782-9001	HCPL-2200	3	—	1.6	—	0.3	1K	Yes	3.66
782-4040	HCPL-2201	3	—	1.6	—	0.3	1K	—	3.12
782-2790	HCPL-0201	3	S08 Surface Mount Package	1.6	—	0.3	1K	—	3.03
782-2795	HCNW2201	3	VDE: 1414 V 400 Mil Package	1.6	—	0.3	1K	—	3.09
782-9896	HCPL-2231	3	Dual Channel 300 Mil Dil Package	1.6	—	0.3	1K	—	5.88

5 MBd Logic Gate — Continued

Stock No.	Mfr.'s Type	Fig.	Description	if mA	CTR Min. %	tprop µs	CMR V/µs Min.	Hi-Rel Package	EACH 1-49
782-6226	HCPL-2211	3	—	1.6	—	0.3	5K	—	4.19
782-6180	HCPL-0211	3	S08 Surface Mount Package	1.6	—	0.3	5K	—	3.10
782-2800	HCNW2211	3	VDE: 1414 V 400 Mil Package	1.6	—	0.3	5K	—	3.34
782-9989	HCPL-2232	3	Dual Channel 300 Mil Dil Package	1.6	—	0.3	5K	—	6.11

1 MBd Transistor Output (6N135/6 Type)

782-0250	6N137	4	—	5.0	—	0.1	100	Yes	1.24
782-6190	HCPL-0600	4	S08 Surface Mount Package	5.0	—	0.1	100	Yes	1.40
782-6237	HCNW137	4	VDE: 1414 V 400 Mil Package	5.0	—	0.1	100	Yes	1.58
782-0295	HCPL-2630	4	Dual Channel 300 Mil Dil Package	5.0	—	0.1	100	Yes	3.33
782-2805	HCPL-0630	4	Dual Channel S08 Surface Mount Package	5.0	—	0.1	100	Yes	3.71
782-0285	HCPL-2601	4	—	5.0	—	0.1	5K	Yes	1.67
782-6192	HCPL-0601	4	S08 Surface Mount Package	5.0	—	0.1	5K	Yes	1.66
782-2601	HCNW2601	4	VDE: 1414 V 400 Mil Package	5.0	—	0.1	5K	Yes	1.88
782-0300	HCPL-2631	4	Dual Channel 300 Mil Dil Package	5.0	—	0.1	5K	Yes	3.93
782-2810	HCPL-0631	4	Dual Channel 508 Surface Mount Package	5.0	—	0.1	5K	Yes	4.37
782-6228	HCPL-2611	4	—	5.0	—	0.1	10K	—	2.35
782-6194	HCPL-0611	4	S08 Surface Mount Package	5.0	—	0.1	10K	—	3.16
782-2611	HCNW2611	4	VDE: 1414 V 400 Mil Package	5.0	—	0.1	10K	—	2.02
782-4080	HCPL-4661	4	Dual Channel 300 Mil Dil Package	5.0	—	0.1	10K	—	4.58
782-2815	HCPL-0661	4	Dual Channel S08 Surface Mount Package	5.0	—	0.1	10K	—	4.72
782-2820	HCPL-261A	4	—	2.0	—	0.1	5K	—	1.70
782-2825	HCPL-061A	4	S08 Surface Mount Package	2.0	—	0.1	5K	—	1.84
782-2830	HCPL-263A	4	Dual Channel 300 Mil Dil Package	2.0	—	0.1	5K	—	4.01
782-2835	HCPL-063A	4	Dual Channel S08 Surface Mount Package	2.0	—	0.1	5K	—	4.59
782-2840	HCPL-261N	4	—	2.0	—	0.1	10K	—	1.70
782-2845	HCPL-061N	4	S08 Surface Mount Package	2.0	—	0.1	10K	—	1.99
782-2850	HCPL-263N	4	Dual Channel 300 Mil Dil Package	2.0	—	0.1	10K	—	4.31
782-2855	HCPL-063N	4	Dual Channel S08 Surface Mount Package	2.0	—	0.1	10K	—	4.96

Integrate Gate Drive

Stock No.	Mfr.'s Type	Fig.	if mA	tprop µs	CMR V/µs Min.	Iout A Min.	EACH 1-14
782-2860	HCPL-3120	5	7	0.5	15K	2	2.79
782-2865	HCPL-3150	5	7	0.5	15K	2	2.54

Isolation Amp/Analog

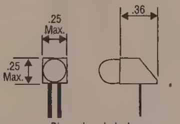
Stock No.	Mfr.'s Type	Fig.	Non Linearity	B.W. Hz	Gain Tolerance	EACH 1-49
782-9935	HCPL-7820	6	0.15%	150K	3%	5.76
782-2870	HCPL-7840	6	0.20%	100K	5%	3.72
782-2875	HCNR200	7	0.07%	1.5M	15/5%	3.20
782-2885	HCNR201	7	0.07%	1.5M	15/5%	4.30

Application Specific

Stock No.	Mfr.'s Type	Fig.	Description	Hi-Rel Package	EACH 1-49
782-6222	HCPL-7100	8	Hi-Speed 20/50 µbd, CMDS Compatible	—	4.52
782-6224	HCPL-7101	8	Hi-Speed 20/50 µbd, CMDS Compatible	—	5.50
782-0265	HCPL-2400	9	Hi-Speed 20 mbd If= 4 mA, Single/Dual	Yes	3.32
782-6220	HCPL-2430	9	Hi-Speed 20 mbd If= 4 mA, Single/Dual	Yes	7.15
782-4060	HCPL-2300	10	Low Current If= 0.50 mA, 5 mbd	—	4.23
782-4305	HCPL-2602	11	Integrate Line Termination, 10 mbd	Yes	3.99
782-0315	HCPL-3700	12	AC/DC Voltage Sense Ith= 1.6 mA	Yes	3.74
782-6214	HCPL-3760	12	AC/DC Voltage Sense Ith= 1.6 mA	Yes	4.32
782-8999	HCPL-4100	13	20 mA Current Loop Tx. Guaranteed 20 mA loop	—	3.69
782-4070	HCPL-4200	14	20 mA Current Loop Rx. Guaranteed 20 mA loop	—	4.54

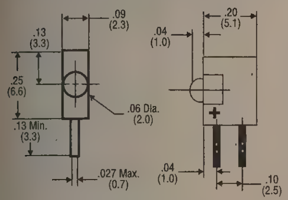
Series 5300E, 5300H, 5302H, and 5308H

- ► Easy to Mount
- ► High Contrast Ratio
- ► Includes Board Standoff to Prevent Flux Entrapment — Permits Easy Washing
- ► TTL Compatible — Requires No External Current Limiting Resistors (Series 5302H-5 V Only)
- ► Housing: Black Nylon UL94V-0



Dimensions In Inches

Stock No.	Mfr.'s Type	LED Color	Forward Volt @ mA	Brt. Med.	EACH
					1-99
679-7236	5300E1	Red	1.7 @ 20	3.0	.62
679-7161	5300H1	Red	2.0 @ 20	30.0	.36
679-7162	5300H5	Green	2.2 @ 20	30.0	.36
679-7163	5300H7	Yellow	2.1 @ 20	25.0	.36
679-7240	5302H1-5V	Red	5.0 @ 10	5.0	.85
679-7241	5302H3-5V	Amber	5.0 @ 10	7.0	.47
679-7242	5302H5-5V	Green	5.0 @ 20	10.0	.85
679-7289	5308H1	Red	2.2 @ 20	120.0	.77
679-7291	5308H5	Green	2.2 @ 20	120.0	.77
679-7292	5308H7	Yellow	2.1 @ 20	120.0	.80
679-7239	5300H1/5	Red/Green	2.2 @ 10	6.0	.85
679-7210	5300H5/1	Green/Red	2.2 @ 10	6.0	.85
679-9970	5302H1-12V	Red	12.0 @ 12	4.0	.49
679-9972	5302H3-12V	Amber	12.0 @ 12	4.0	.49
679-9974	5302H5-12V	Green	12.0 @ 12	4.0	.49



Series 5350T LEDs

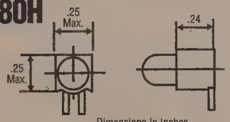
- ► Small Size Enables These to be Stacked on 0.100" Center
- ► High-Intensity Light Output
- ► Ideal for Use Where LEDs Must Align with Opening in a Cover Panel
- ► Housing: Black Nylon UL94V-0
- ► Sub-Miniature 2.0 mm LED Right Angle Mounted Simplify PC Board Mounting — Saves Assembly Time and Costs
- ► Low Current — Only 2 mA
- ► Built-in Resistor Chip; Operates at 5 Volts Without External Resistor

Stock No.	Mfr.'s Type	Lens Color	Forward Volt @ mA	EACH	
				1-99	100-499
679-8348	5350T1	Red	2.2 @ 10	.94	.49
679-8349	5350T5	Green	2.3 @ 10	.94	.49
679-8350	5350T7	Yellow	2.2 @ 10	.94	.49
679-8351	5352T1-5V	Red	5.0 @ 9.6	.52	.49
679-8352	5352T3-5V	Amber	5.0 @ 10	.52	.49
679-8353	5352T5-5V	Green	5.0 @ 10	1.07	.57
679-8358	5350T1LC*	Red	1.8 @ 2	.55	.52
679-8359	5350T5LC*	Green	1.8 @ 2	1.12	.53
679-8360	5350T7LC*	Yellow	1.9 @ 2	1.12	.60
679-8354	5352T1-5VLC*	Red	5.0 @ 3.5	1.12	.60
679-8355	5352T3-5VLC*	Amber	5.0 @ 3.5	1.12	.60
679-8356	5352T5-5VLC*	Green	5.0 @ 3.5	.62	.56

*LC = Low current, high efficiency.

Circuit Board Indicators Series 5380E, 5380H

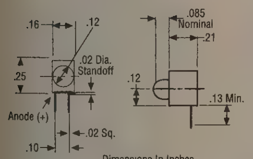
- ► Easy Mounting
- ► Includes Board Standoff to Prevent Flux Entrapment, Permits Easy Washing
- ► Needs Minimum Space
- ► Housing: Black Nylon UL94V-0



Dimensions In Inches

Stock No.	Mfr.'s Type	LED Color	Forward Volt @ mA	Brt. Med.	EACH
					1-99
679-7256	5380E1	Red	1.7 @ 20	3.0	.36
679-7260	5380H5*	Green	2.2 @ 20	30.0	.36
679-7261	5380H7	Yellow	2.1 @ 20	25.0	.62
679-9733	5380H1-5V†	Red	5.0 @ 10	5.5	.42
679-9734	5380H3-5V†	Amber	5.0 @ 10	7.0	.42
679-9735	5380H5-5V†	Green	5.0 @ 12	10.0	.85

*Super Brite 30 mcd. †Built-in Resistor.



Dimensions In Inches

Miniature Circuit Board Indicator LED T-1 Block Assembly Series 5600F, 5602F

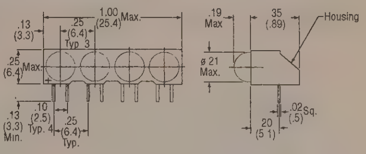
- ► Easy to Mount
- ► Includes Board Standoff to Prevent Flux Entrapment, Permits Easy Washing
- ► T-1 Size High Intensity LED
- ► Housing: Black Nylon UL94V-0

Stock No.	Mfr.'s Type	LED Color	Forward Volt @ mA	Brt. Med.	EACH
					1-99
679-7262	5600F1	Red	2.0 @ 10	6.0	.62
679-7263	5600F5	Green	2.2 @ 20	12.0	.62
679-7264	5600F7	Yellow	2.1 @ 20	20.0	.62
679-9761	5600F3	Amber	2.0 @ 10	5.0	.62
679-9765	5602F1-5V*	Red	5.0 @ 10	8.0	.85
679-9766	5602F3-5V*	Amber	5.0 @ 10	8.0	.85
679-9767	5602F5-5V*	Green	5.0 @ 12	8.0	.85

*Resistor built-in 5 volts.

Series 5640H Circuit Board Indicators

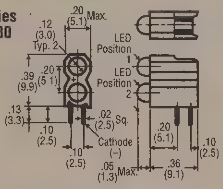
- ► Quad Assembly With Four T-1¾ LEDs Allowing For Easy Installation — Assures Matched Height and Center to Center Spacing — Reduces Assembly Time and Costs
- ► Low Current — Only 2 mA Available
- ► Super Brite LEDs Feature High Light Output and Diffused Lenses
- ► Standoffs Prevent Flux Entrapment
- ► Housing UL94V-0 Black Nylon



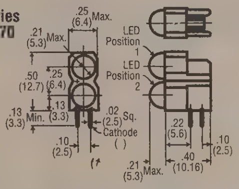
Stock No.	Mfr.'s Type	Output Color	Lum. Intensity		EACH	
			Min.	Typ.	1-99	100-499
679-1172	5640H1	Red	3.0	30.0	2.60	1.37
679-1173	5640H3	Amber	4.0	20.0	2.52	1.36
679-1174	5640H5	Green	3.0	30.0	2.60	1.37
679-1175	5640H7	Yellow	2.5	25.0	2.52	1.36

Circuit Board Indicator Super Brite LED Assemblies Series 5670H, 5680F

Series 5680



Series 5670



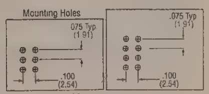
- ► Dual Mounted
- ► Allow Two LEDs in the Same Board Area Required for a Single LED
- ► High Contrast Ratio, High Intensity Light Output
- ► Includes Board Standoff to Prevent Flux Entrapment — Permits Easy Washing

Stock No.	Mfr.'s Type	LED Color	Forward Volt @ mA	Brt. Med.	EACH
					1-99
679-8670	5670H1;1*	Red/Red	2.0 @ 20	30	.82
679-8671	5670H5;5*	Green/Green	2.0 @ 20	20	.82
679-8672	5670H7;7	Yellow/Yellow	2.1 @ 20	25	.82
679-9750	5670H3;3	Amber/Amber	2.0 @ 20	20	.82
679-8680	5680F1;1	Red/Red	2.0 @ 10	6	.82
679-8681	5680F5;5	Green/Green	2.2 @ 20	12	.82
679-8682	5680F7;7	Yellow/Yellow	2.1 @ 20	20	.82
679-9760	5680F3;3	Amber/Amber	2.0 @ 10	5	.82

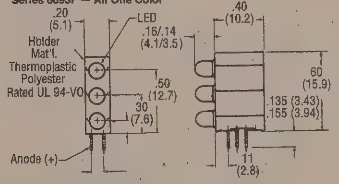
*Super Brite 30 mcd. **Note:** Allied and IDI can also supply the user who may have a special requirement, calling for various color/elec. specs.

PC Board, 3-Up and 4-Up T-1 LED Lamps

High Density — Right Angle Mounting

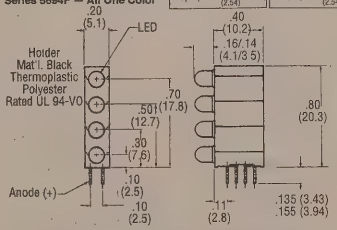


Series 5693F — All One Color



All Dimensions are in Inches (MM)

Series 5694F — All One Color



- ► 3 and 4 T-1 LEDs Stack Mounted in Single Block Saves Space and Assembly Time
- ► Black Plastic Mounting Block for High Contrast Ratio
- ► Colors Can be Mixed and Matched as MFG Specials
- ► High Brite and Super Brite Light Output
- ► Meets UL94V-0 and Bellcore Flammability Specifications
- ► Standoffs Prevent Flux Entrapment

Stock No.	Mfr.'s Type	LED Color Code No.	Color	Typical Intensity	Rated Current	Forward Voltage Typ.	EACH	
							1-99	100-499
679-9816	5693F1;1;1	1	Red	10.0 mcd	10 mA	2.2 V	2.02	1.62
679-9817	5693F3;3;3	3	Amber	6.5 mcd	10 mA	2.2 V	2.02	1.62
679-9818	5693F5;5;5	5	Green	8.5 mcd	10 mA	2.3 V	2.02	1.62
679-9819	5693F7;7;7	7	Yellow	10.0 mcd	10 mA	2.2 V	2.02	1.62
679-9820	5694F1;1;1;1	1	Red	10.0 mcd	10 mA	2.2 V	2.82	2.26
679-9821	5694F3;3;3;3	3	Amber	6.5 mcd	10 mA	2.2 V	2.82	2.26
679-9822	5694F5;5;5;5	5	Green	8.5 mcd	10 mA	2.3 V	2.82	2.26
679-9823	5694F7;7;7;7	7	Yellow	10.0 mcd	10 mA	2.2 V	2.82	2.26

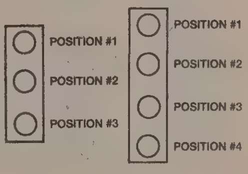
Also Available: Multi-Colored 3- and 4-Up LEDs

Call Allied at 1-800-433-5700 for Pricing

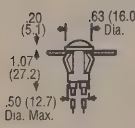
Color Code: 1 = Red, 3 = Amber, 5 = Green, 7 = Yellow. **Ordering Information:** Insert number of color desired for each position to determine Mfr.'s Type.

3-Up LEDs
Example: 5693F ____ ____ ____
Pos. #1 Pos. #2 Pos. #3

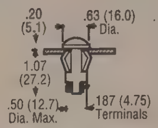
4-Up LEDs
Example: 5694F ____ ____ ____ ____
Pos. #1 Pos. #2 Pos. #3 Pos. #4



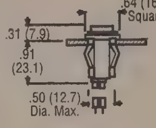
Series 1000 Neon Lamps



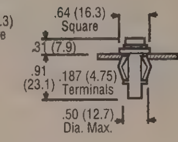
Series 1030D



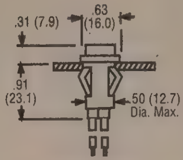
Series 1030QD



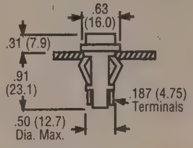
Series 1050N



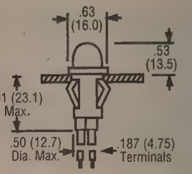
Series 1050QN



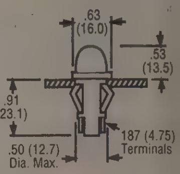
Series 1050C



Series 1050QC



Series 1050A



Series 1050QA

UL File No. E20325, CSA File No. 13346. White nylon housing will snap-fit into a .500/.505" diameter hole in panels .020/.100" thick. **Bezel:** Stainless Steel.

Pilot Lamps with Low-Profile Lenses

Stock No.	Mfr.'s Type	Lens Color	VAC	EACH		
				1-99	100-499	500-999
679-5050	1030D1†	Red	105-125	2.36	1.64	1.33
679-5060	1030D3†	Amber	105-125	2.36	1.64	1.33
679-5070	1030D4†	White	105-125	2.36	1.64	1.33
679-5080	1032D5†*	Green	105-125	3.52	2.45	1.99
679-5055	1030QD1‡	Red	105-125	2.55	1.79	1.44
679-5065	1030QD3‡	Amber	105-125	2.55	1.79	1.44
679-5075	1030QD4‡	White	105-125	2.55	1.79	1.44
679-5085	1032QD5‡*	Green	105-125	3.75	2.61	2.11
679-9768	1031D1†	Red	208-250	2.36	1.64	1.33
679-9769	1031D3†	Amber	208-250	2.36	1.64	1.33
679-9772	1031QD1‡	Red	208-250	2.55	1.79	1.44
679-9774	1033QD5*‡	Green	208-250	2.14	1.86	1.71

Pilot Lights with Square Lenses

679-6060	1050N1†	Red	105-125	2.55	1.79	1.44
679-6070	1050N3†	Amber	105-125	2.55	1.79	1.44
679-6090	1052N5†*	Green	105-125	3.75	2.61	2.11
679-6065	1050QN1‡	Red	105-125	2.76	1.92	1.55
679-6075	1050QN3‡	Amber	105-125	2.76	1.92	1.55
679-6095	1052QN5‡*	Green	105-125	3.97	2.77	2.24

*Incorporates G2B lamp and resistor. †With wire leads 4.4/4.8" long, striped 43/.57". ‡With .187"-.020" tinned brass terminals.

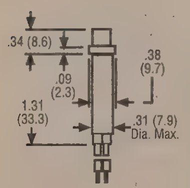
Pilot Lamps with High-Hat Lenses

Stock No.	Mfr.'s Type	Lens Color	VAC	EACH		
				1-99	100-499	500-999
679-5100	1050C1†	Red	105-125	2.36	1.64	1.33
679-5130	1050C2†	Clear	105-125	2.36	1.64	1.33
679-5110	1050C3†	Amber	105-125	2.36	1.64	1.33
679-5120	1050C4†	White	105-125	2.36	1.64	1.33
679-5140	1052C5†*	Green	105-125	3.52	2.45	1.99
679-5105	1050QC1‡	Red	105-125	2.55	1.79	1.44
679-5135	1050QC2‡	Clear	105-125	2.55	1.79	1.44
679-5115	1050QC3‡	Amber	105-125	2.55	1.79	1.44
679-5125	1050QC4‡	White	105-125	2.55	1.79	1.44
679-5145	1052QC5‡*	Green	105-125	3.75	2.61	2.11
679-9781	1051C1†	Red	208-250	1.47	1.24	1.07
679-9782	1051C3†	Amber	208-250	1.47	1.24	1.07
679-9783	1053C5*†	Green	208-250	2.21	1.84	1.62
679-9784	1051QC1†	Red	208-250	2.55	1.79	1.44
679-9785	1051QC3†	Amber	208-250	1.59	1.35	1.17
679-9786	1053QC5*†	Green	208-250	3.75	2.61	2.11

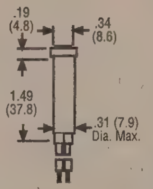
Pilot Lights with Dome Lenses

679-5150	1050A1†	Red	105-125	2.36	1.64	1.33
679-5160	1050A3†	Amber	105-125	2.36	1.64	1.33
679-5170	1050A4†	White	105-125	2.36	1.64	1.33
679-5190	1052A5†*	Green	105-125	3.52	2.45	1.99
679-5155	1050QA1‡	Red	105-125	2.39	1.67	1.34
679-5185	1050QA2‡	Clear	105-125	2.55	1.79	1.44
679-5165	1050QA3‡	Amber	105-125	2.55	1.79	1.44
679-5195	1052QA5‡*	Green	105-125	3.75	2.61	2.11
679-9787	1051A1†	Red	208-250	2.36	1.64	1.33
679-9788	1051A3†	Amber	208-250	2.29	1.62	1.33
679-9789	1053A5*†	Green	208-250	3.52	2.45	1.99
679-9790	1051QA1‡	Red	208-250	2.55	1.79	1.44
679-9791	1051QA3‡	Amber	208-250	2.55	1.79	1.44
679-9792	1053QA5*‡	Green	208-250	3.75	2.61	2.11

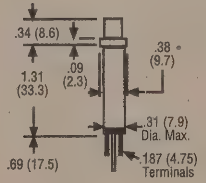
Glo-Dot Miniature Neon Pilot Lights Series 2150, 2110



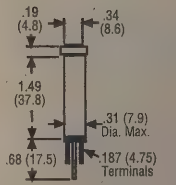
Series 2150A
High Hat
Wire Leads



Series 2110A
Flush Lens
Wire Leads



Series 2150QA
High Hat
Quick Connect



Series 2110QA
Flush Lens
Quick Connect

These miniature neon pilot lights are engineered for long service reliability. Rugged, unaffected by shock and vibration. Two lens shapes, flush and high-hat which are available in five colors — red, amber, white, clear and green. Mounting hole is .31" minimum diameter. **Average Operating Life:** 25,000 hours.

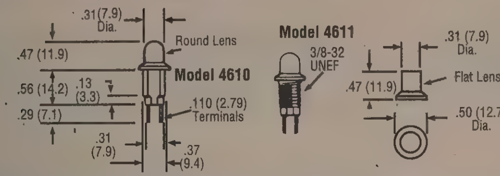
Stock No.	Mfr.'s Type	Lens Color	VAC	EACH		
				1-99	100-499	500-999
679-6400	2150A1	Red	105-125	2.50	1.74	1.40
679-6405	2150A3	Amber	105-125	2.50	1.74	1.40
679-6410	2150A4	White	105-125	2.50	1.74	1.40
679-6415	2150A2	Clear	105-125	2.50	1.74	1.40
679-6420	2152A5*	Green	105-125	4.00	2.78	2.25
679-6611	2110A1	Red	105-125	2.33	1.63	1.32
679-6613	2110A3	Amber	105-125	2.33	1.63	1.32
679-6615	2110A4	White	105-125	2.33	1.63	1.32
679-6617	2110A2	Clear	105-125	2.26	1.61	1.32
679-6620	2112A5*	Green	105-125	3.28	2.28	1.84
679-6500	2150QA1	Red	105-125	2.69	1.87	1.51
679-6505	2150QA3	Amber	105-125	2.69	1.87	1.51
679-6510	2150QA4	White	105-125	2.69	1.87	1.51
679-6520	2152QA5*	Green	105-125	4.19	2.92	2.35
679-6700	2110QA1	Red	105-125	2.52	1.76	1.42
679-6705	2110QA3	Amber	105-125	2.52	1.76	1.42
679-6710	2110QA4	White	105-125	2.52	1.76	1.42
679-6715	2110QA2	Clear	105-125	1.37	1.25	1.16
679-6720	2112QA5*	Green	105-125	3.73	2.60	2.10
679-9700	2151A1	Red	208-250	2.50	1.74	1.40

*Incorporates G2B lamp and resistor. †Incorporates T2B lamp and resistor.

UL recognized and CSA approved. Supplied with push-on speed nut (SN1287). Units supplied with 4.4"-4.8" wire terminals, stripped ½" or .187"-.020" tinned brass terminals.

Stock No.	Mfr.'s Type	Lens Color	VAC	EACH		
				1-99	100-499	500-999
679-9701	2151A2	Clear	208-250	2.43	1.72	1.40
679-9702	2151A3	Amber	208-250	2.37	1.52	1.20
679-9703	2151A4	White	208-250	2.43	1.72	1.40
679-9704	2153A5*	Green	208-250	3.19	2.37	2.15
679-9705	2153A6†	Blue	208-250	3.88	2.75	2.25
679-9706	2111A1	Red	208-250	1.28	1.16	1.07
679-9707	2111A2	Clear	208-250	2.26	1.61	1.32
679-9708	2111A3	Amber	208-250	2.26	1.61	1.32
679-9709	2111A4	White	208-250	2.26	1.61	1.32
679-9710	2113A5*	Green	208-250	3.51	1.97	1.97
679-9711	2113A6†	Blue	208-250	3.41	2.42	1.97
679-9712	2151QA1	Red	208-250	2.69	1.87	1.51
679-9713	2151QA3*	Amber	208-250	1.47	1.24	1.51
679-9714	2151QA4	White	208-250	2.61	1.85	1.51
679-9715	2153QA5*	Green	208-250	4.07	2.89	2.35
679-9716	2111QA1*	Red	208-250	1.37	1.16	1.42
679-9717	2111QA2	Clear	208-250	2.45	1.74	1.42
679-9718	2111QA3	Amber	208-250	2.45	1.74	1.42
679-9719	2111QA4	White	208-250	2.45	1.74	1.42
679-9720	2113QA5*	Green	208-250	3.62	2.57	2.10

Tiny-Mite Indicator Light Assemblies



Ordering Information: The complete assembly consists of socket plus lens plus lamp. All sold separately. **Mounting:** Model 4610 (without thread) supplied with push-on speednut can be keyed to prevent rotation. **Lens:** Polycarbonate. **Bezel:** Polished stainless steel. **Socket:** Black nylon. Model 4611 (threaded) supplied with zinc finish hex nut and internal tooth lock washer.

Sockets

Stock No.	Mfr.'s Type	Description	EACH 1-99	EACH 100-499
679-4610	4610	Unthreaded	1.62	1.13
679-4611	4611	Threaded	1.62	1.13

Sub-Miniature Wedge-Base Lamps

Stock No.	Mfr.'s Type	Design Volt.	Amps	Candle Power (Approx.)	Rated Life Hrs.	EACH 1-99	EACH 100-499
679-4556	56	5.0	0.115	0.15	20,000	.85	.60
679-4584	84	6.3	0.040	0.03	20,000	.98	.68
679-4586	86	6.3	0.200	0.40	20,000	.85	.60
679-4518	18	14.0	0.040	0.13	5,000	1.14	.80
679-4573	73	14.0	0.080	0.30	15,000	.85	.60
679-4585	85	28.0	0.040	0.30	7,000	.85	.60
679-4517	17	28.0	0.060	0.65	5,000	1.14	.80

Lenses

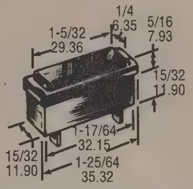
Round Lens		Flat Lens		Description	EACH	
Stock No.	Mfr.'s Type	Stock No.	Mfr.'s Type		1-99	100-499
679-4621	4621	679-4631	4631	Red	.73	.52
679-4623	4623	679-4633	4633	Amber	.73	.52
679-4625	4625	679-4635	4635	Green	.73	.52
679-4626	4626	679-4636	4636	Blue	.73	.52
679-4627	4627	679-4637	4637	Yellow	.73	.52

Rectangular Neon Pilot Lights

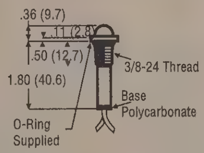
Series 2300 will snap-fit into .032/.100" thick panels without speednut and into other thicknesses with speednut. Mounting hole 1.276/1.281" × .395/.400".

Stock No.	Mfr.'s Type	Lens Color	VAC	EACH 1-99	EACH 100-499
679-5001	2330QD1‡	Red	120	2.85	1.99
679-5010	2330QD3‡	Amber	120	2.85	1.99
679-5020	2332QD5‡	Green	120	2.31	2.13
679-5005	2330D1†	Red	120	2.82	1.97

†With 4.4/4.8" long wire leads, stripped .43/.57". ‡With .250" tinned brass terminals. Speed nuts supplied.



Oil-Tight Series 6000



- ► Fully Gasketed Construction
- ► Meets NEMA Specification ICS1-110.60
- ► Neon Models Come with Built-In Current Limiting Resistor; LED Models Come With Built-In Current Limiting Resistor and a Rectifier Diode

Mounting: Supplied with internal tooth lockwasher and hex nut; requires .38" (9.65) min. dia. hole. **Wire Leads:** No. 22 AWG (105°C), 4.4/4.8" (11.8/121.9) long, stripped .43/.57" (10.9/14.5). **Lens:** Polycarbonate. **Bezel:** Stainless steel. **Gaskets:** Buna-N. **Housing:** Black nylon.

Solid State Lamps

Stock No.	Mfr.'s Type	Volts	Color	EACH 1-99	EACH 100-499
679-7283	6091M1-12V	12	Red	5.69	4.04
679-7284	6091M5-12V	12	Green	5.69	4.04
679-7285	6091M7-12V	12	Yellow	2.89	2.69
679-7286	6091M1-24V	24	Red	5.69	4.04
679-7287	6091M5-24V	24	Green	5.69	4.04
679-7288	6091M7-24V	24	Yellow	5.69	4.04

Neon Lamps

Stock No.	Mfr.'s Type	Volts	Color	EACH 1-99	EACH 100-499
679-7277	6010M1	125	Red	4.99	3.46
679-7278	6010M3	125	Amber	4.84	3.43
679-7279	6012M5	125	Green*	5.90	4.19
679-7280	6011M1	250	Red	4.99	3.46
679-7281	6011M3	250	Amber	2.86	2.45
679-7282	6013M5	250	Green*	5.90	4.19

*Incorporates G2B Lamp and Resistor.

Incandescent and Solid State Indicators

Series 1090 is identical to Series 1050 except these indicators are incandescent and are available in 6, 12, or 28 volt types. Series 1091M is solid state, complete with built-in current limiting resistor and rectifier diode. For solid state lens colors, insert 1-Red, 2-Green, 3-Yellow, where X appears in the stock number. For incandescent lens colors, insert 1-Red, 2-Green, or 3-Yellow, 4-White.

Incandescent Indicators with High-Hat Lenses

Stock No.	Mfr.'s Type	Volts	EACH 1-99	EACH 100-499	EACH 500-999
679-611X	1090C	12	3.02	2.11	1.70
679-612X	1090C	28	3.02	2.11	1.70
679-621X	1090QC	12	3.21	2.24	1.81
679-622X	1090QC	28	3.21	2.24	1.81

Incandescent Indicators with Square Lenses

679-618X	1090N	28	3.21	2.24	1.81

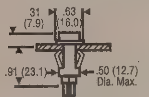
Incandescent Indicators with Dome Lenses

Stock No.	Mfr.'s Type	Volts	EACH 1-99	EACH 100-499	EACH 500-999
679-614X	1090A	12	3.02	2.11	1.70
679-615X	1090A	28	3.02	2.11	1.70

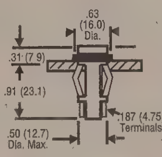
Solid State Indicators

679-708X	1091M	12	3.41	2.43	1.98
679-709X	1091M	24	3.51	2.45	1.98
679-950X	1091M*	105-125 VAC	4.11	2.87	2.31

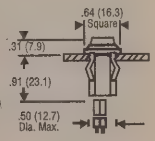
*125 VAC supplied with 6" white wire, stripped 1/2" with external 3.9 K 1/2 watt resistor attached to one lead, covered with shrink tubing insulation.



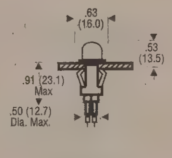
Series 1090C



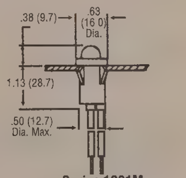
Series 1090QC



Series 1090N

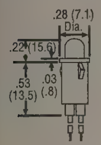


Series 1090A

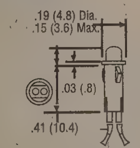


Series 1091M

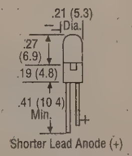
Panel Mounted LEDS



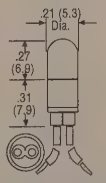
5100H



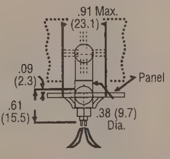
5110F



5200F



5210F



5400A

Series 5100H 1/4" Diameter. Super brite-30 mcd, low current available — only 2 mA needed. Black nylon housing will snap-in .249/.254" diameter hole in panels .031/.062" thick. Leads are 24 AWG, 6" long.

Stock No.	Mfr.'s Type	Lens Color	Forward Volt @ mA	EACH 1-99	EACH 100-499	EACH 500-999
679-7101	5100H1	Red	2.0@20	1.67	.88	.82
679-7102	5100H5	Green	2.2@20	1.56	.82	.73
679-7103	5100H7	Yellow	2.1@20	1.56	.82	.73
679-9911	5102H1-5V	Red	5@10	1.90	.99	.89
679-9912	5102H3-5V	Amber	5@10	1.90	.99	.89
679-9913	5102H5-5V	Green	5@12	1.90	.99	.89
679-9914	5102H1-12V	Red	12@13	1.90	.99	.89
679-9915	5102H3-12V	Amber	12@13	1.90	.99	.89
679-9916	5102H5-12V	Green	12@13	1.90	.99	.89

Series 5110F 5/32" Diameter. Super brite, T-1 LED, 20 mcd diffused lens. Low current available — only 2 mA needed. Black nylon housing snap-fits .155/.158" dia. hole in panels .031/.062" thick. Leads 26 AWG, 6" long stripped, 1/2".

Stock No.	Mfr.'s Type	Lens Color	Forward Volt @ mA	EACH 1-99	EACH 100-499	EACH 500-999
679-7111	5110F1	Red	2.0@10	1.72	.91	.81
679-7112	5110F5	Green	2.2@20	1.72	.91	.85
679-7113	5110F7	Yellow	2.1@20	.99	.91	.81
679-9917	5110F1-5V	Red	5@13	1.39	1.18	1.05
679-9918	5110F3-5V	Amber	5@10	1.39	1.18	1.05
679-9919	5110F5-5V	Green	5@12	1.39	1.18	1.05
679-9920	5110F1-12V	Red	12@13	1.39	1.18	1.05
679-9921	5110F3-12V	Amber	12@10	1.39	1.18	1.05
679-9922	5110F5-12V	Green	12@12	1.39	1.18	1.05

Series 5200F 3/16" Diameter. Quick push-in panel mounting. T-1 "Super-Brite" LED Assemblies will snap into .187/.192" diameter holes in panels .020/.097" thick. Wide angle visibility and high-intensity light output.

Stock No.	Mfr.'s Type	Lens Color	Forward Volt @ mA	EACH 1-99	EACH 100-499	EACH 500-999
679-7131	5200F1	Red	2.0@10	.69	.64	.61
679-7132	5200F5	Green	2.2@20	.69	.64	.61
679-7133	5200F7	Yellow	2.1@20	1.29	.69	.61

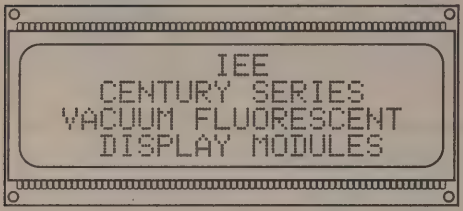
Series 5210F 3/16" Diameter. A wire version of the 5200F (sold above). This series gives protection against static discharge. Leads are 26 AWG, 4.4/4.8" long, stripped .18/.32".

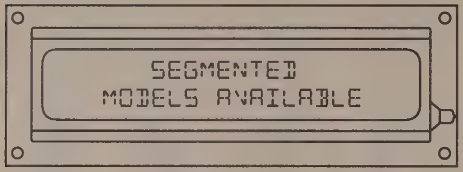
679-7164	5210F1	Red	2.0@10	2.12	1.12	1.00
679-7165	5210F5	Green	2.2@20	1.14	1.04	1.00
679-7166	5210F7	Yellow	2.1@20	1.92	1.44	.93

Series 5400A 5/16" Diameter. Two piece unit consisting of lens and LED-housing assembly. Allows pre-wiring into circuit and testing before installation. 24 AWG wire leads 4.4/4.8" long, stripped .43/.57". Natural nylon housing, polycarbonate lens, red lead positive. To install, insert lens into panel, press firmly to snap LED assembly into rear of lens.

679-5501	5400A1	Red	2.0@20	1.51	1.40	1.30
679-5502	5400A5	Green	2.1@20	1.51	1.40	1.30
679-5503	5400A7	Yellow	2.0@20	1.51	1.40	1.30

FLIP Century Series™ Premiere Line of Vacuum Fluorescent Display Modules





Software Control Features

- ► Selectable 5 × 7 Dot Matrix Character Sets: ASCII, European, Katakana, Cyrillic and Hebrew (Dot Matrix Units Only)
- ► Segmented Displays Have Standard ASCII 64-Character Set
- ► Ten User-Defined, Downloadable Characters (Dot Matrix Units Only)
- ► Vertical and Horizontal Scroll Modes
- ► Eight Software and Hardware Controlled Dimming Levels
- ► Variable Blink Fields and Rates
- ► Screen Saver Control Mode For Increased Tube Life
- ► Bell Alarm Output (Dot Matrix Units Only)

Key Features

- ► 100% Surface Mount Technology
- ► Low 5 VDC Power
- ► Interface to Intel or Motorola Host Processors
- ► Emulate Hitachi 44780 Data Input (Dot Matrix Units Only)
- ► Parallel 8-Bit or Serial EIA-232 Data to 19.2 Kb
- ► Standard Temperature Range: –20° to +70°C
- ► Extended Range Available: –40° to +85°C
- ► Hardware and Software Self-Test Modes

FLIP™ Century Series™

Stock No.	Mfr.'s Type	Character Format	Display Format	Character Height (mm)	Dimensions (In.)			Max. Current (mA)	EACH	
					Length	Width	Depth		1-4	5-99
658-9805	3602-100-05420	5 × 7 dot matrix	4 × 20	5	5.00	2.78	0.92	890	**197.06**	**183.56**
658-0010	3602-105-05220	5 × 7 dot matrix	2 × 20	5	5.00	2.25	0.88	405	**125.00**	**116.44**
658-0011	3602-106-05240	5 × 7 dot matrix	2 × 40	5	7.50	2.10	1.00	450	**164.71**	**153.42**
658-0012	3602-120-09120	5 × 7 dot matrix	1 × 20	9	8.05	1.95	0.80	480	**155.88**	**145.21**
658-0005	3602-122-09220	5 × 7 dot matrix	2 × 20	9	7.75	2.58	1.00	675	**183.82**	**171.23**
658-9820	3602-124-09420	5 × 7 dot matrix	4 × 20	9	7.75	3.40	1.00	1300	**232.35**	**216.44**
658-0013	3602-130-11220	5 × 7 dot matrix	2 × 20	11	9.90	2.73	0.95	875	**208.82**	**194.52**
658-0014	3602-151-05240	5 × 7 dot matrix	2 × 40	5	9.50	2.05	1.00	800	**222.06**	**206.85**
658-0015	3702-020-5220	14-segment	2 × 20	5	5.65	1.98	0.82	270	**91.18**	**84.93**
658-0025	3702-021-08110	14-segment	1 × 10	8	5.00	1.60	0.90	140	**60.29**	**56.16**
658-0035	3702-026-09120	14-segment	1 × 20	9	8.30	2.35	0.95	390	**77.94**	**72.60**
658-0040	3702-029-13120	14-segment	1 × 20	13	10.20	1.93	0.96	526	**89.71**	**83.56**

FLIP™ "No Frills™" and "Ninety Series™"

Stock No.	Mfr.'s Type	Line × Character	Character Height In. (mm)	Display Size H × W (In.)	EACH	
					1-4	5-99
658-0016	3601-84-040	1 × 40	.20 (5.05)	2.20 × 9.45	**133.82**	**124.66**
658-5275	3601-90-080	4 × 20	.20 (5.05)	2.40 × 5.00	**197.06**	**183.56**
658-5285	3601-95B-040	2 × 20	.20 (5.05)	2.25 × 5.00	**122.06**	**114.00**
658-9896	3601-97-032	2 × 16	.20 (5.05)	2.60 × 3.90	**129.41**	**120.55**
658-0051	3601-98-016	1 × 16	.20 (5.05)	2.18 × 4.00	**102.94**	**95.89**
658-0052	3601-96-080	2 × 40	.18 (4.60)	2.03 × 7.85	**164.71**	**153.42**

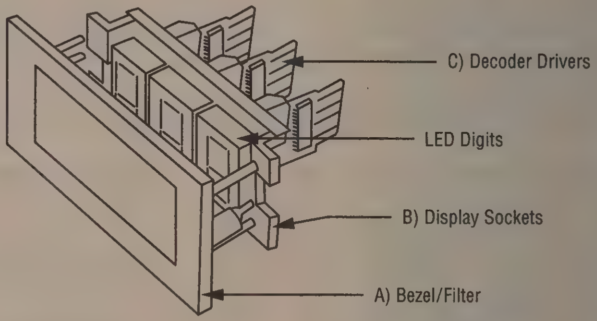
Universal Mount LED Hardware Assemblies

The Universal Mounting Hardware listed below can be used with most manufactured LED digits and can be used to construct three different LED assemblies. Each assembly starts with a socket, which accepts 1 to 8 LEDs of 0.3" or 0.6" pin row spacing. After mounting LEDs on socket, a molded bezel with integral mounting bolts and color filter is attached. This 3-piece LED mounting hardware assembly can be used alone or mounted to a decoder/driver.

For assembly using 0.27" through 0.3" high character, 0.3" standard DIP row spacing LED displays, use one DMH22463 bezel/filter, one DMH22464 socket, 2 to 8 LED displays, DMD1760 decoder/driver (order 1 per LED).

For assembly using 0.4" through 0.43" high character, 0.3" standard DIP row spacing LED displays, use one DMH23441 bezel/filter, one DMH22464 socket, 2 to 8 LED displays, DMD1760 decoder/driver (order 1 per LED).

For assembly using 0.63" through 1.02" high character, 0.6" double DIP row spacing LED displays, use one DMH24036 bezel/filter, one DMH24038 socket, 1 to 5 LED displays, DMD1760 decoder/driver (order 1 per LED).



DMH Series Bezel/Filters (Refer to A on Diagram)

DMH22463R Series Bezel/Filters. Accommodate 0.27" and 0.3" character LED displays.

Stock No.	Mfr.'s Type	Description	Width (In.)	EACH	
				1-9	10-49
658-1610	DMH22463R-02	For 2 LED displays	1.18	**9.36**	**8.97**
658-1620	DMH22463R-03	For 3 LED displays	1.68	**9.67**	**9.27**
658-1630	DMH22463R-04	For 4 LED displays	2.18	**9.91**	**9.51**
658-1640	DMH22463R-05	For 5 LED displays	2.68	**10.76**	**10.32**
658-0017	DMH22463R-06	For 6 LED displays	3.18	**11.13**	**10.67**
658-0018	DMH22463R-07	For 7 LED displays	3.68	**11.71**	**11.23**
658-0019	DMH22463R-08	For 8 LED displays	4.18	**12.03**	**11.53**

DMH23441R Series Bezel/Filters. Accommodate 0.43", 0.5", 0.54", 0.56" character height LED displays.

658-0020	DMH23441R-02	For 2 LED displays	1.18	**9.80**	**9.40**
658-0021	DMH23441R-03	For 3 LED displays	1.68	**10.47**	**10.04**
658-0002	DMH23441R-04	For 4 LED displays	2.18	**10.97**	**10.52**
658-1240	DMH23441R-05	For 5 LED displays	2.68	**11.80**	**11.32**
658-1260	DMH23441R-06	For 6 LED displays	3.18	**11.87**	**11.38**
658-0022	DMH23441R-07	For 7 LED displays	3.68	**13.64**	**13.08**
658-0023	DMH23441R-08	For 8 LED displays	4.18	**14.44**	**13.85**

DMH24036M Series Bezel/Filters. Accommodate 0.63", 0.8", 1.02" character height LED displays.

658-0024	DMH24036M-01	For 1 LED display	1.16	**14.56**	**13.96**
658-0026	DMH24036M-02	For 2 LED displays	2.06	**15.74**	**15.10**
658-0003	DMH24036M-03	For 3 LED displays	2.96	**16.09**	**15.42**
658-0027	DMH24036M-04	For 4 LED displays	3.86	**16.46**	**15.78**
658-0028	DMH24036M-05	For 5 LED displays	4.76	**16.96**	**16.26**
658-0029	DMH24036M-06	For 6 LED displays	5.66	**18.39**	**17.63**
658-0031	DMH24036M-08	For 8 LED displays	7.46	**20.03**	**19.21**

DMH Series Display Sockets (Refer to B on Diagram)

DMH22464 Series Display Sockets. For use with DMH22463 and DMH23441 bezel/filters.

Stock No.	Mfr.'s Type	Description	Width (In.)	EACH	
				1-9	10-49
658-1110	DMH22464-02	Holds 2 LED displays	1.74	**10.81**	**10.37**
658-1120	DMH22464-03	Holds 3 LED displays	2.24	**16.13**	**15.47**
658-1130	DMH22464-04	Holds 4 LED displays	2.74	**21.07**	**20.21**
658-1140	DMH22464-05	Holds 5 LED displays	3.24	**25.89**	**24.82**
658-0032	DMH22464-06	Holds 6 LED displays	3.74	**30.77**	**29.51**
658-0033	DMH22464-07	Holds 7 LED displays	4.24	**36.27**	**34.78**
658-0034	DMH22464-08	Holds 8 LED displays	4.74	**40.47**	**38.81**

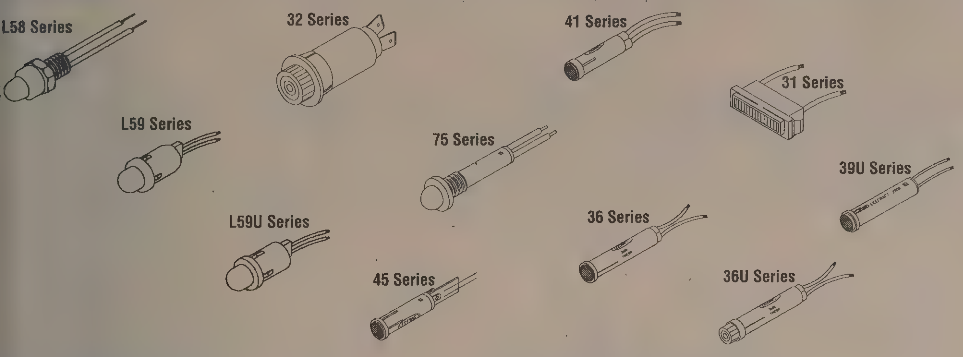
DMH24038 Series Display Sockets. For use with DMH24036 series bezel/filters.

658-0036	DMH24038-01	Holds 1 LED display	1.90	**14.91**	**14.30**
658-5590	DMH24038-02	Holds 2 LED displays	2.80	**20.74**	**19.89**
658-0037	DMH24038-03	Holds 3 LED displays	3.70	**27.74**	**26.60**
658-0038	DMH24038-04	Holds 4 LED displays	4.60	**35.43**	**33.97**
658-0039	DMH24038-05	Holds 5 LED displays	5.50	**41.76**	**40.04**

DMD Series Decoder Drivers (Refer to C on Diagram)

Stock No.	Mfr.'s Type	Description	EACH	
			1-9	10-49
658-5630	DMD1760-01	Parallel BCD Input, LHDP	**28.70**	**27.52**
658-0041	DMD1760-02	Serial Pulse Count Input, LHDP	**34.47**	**33.05**
658-0042	DMD1760-03	Parallel BCD Input, RHDP	**38.30**	**36.73**
658-0043	DMD1760-04	Serial Pulse Count Input, RHDP	**42.90**	**41.14**

Indicators



L58 Tapered and Splashproof LED Indicator for .191" Mounting Hole

Features diffused (wide viewing angle) LED; built-in integral bezel. **Termination:** 6" color-coded wire leads, red = anode (+), black = cathode (–). **Panel Range:** .187" (4.76 mm) max. **Mounting Hole:** .191" to .196". Clear LEDs are also available. **Other Options Available:** 2 volt and 6 volt LED indicators.

Stock No.	Mfr.'s Type	Color	Volts (VDC)	EACH	
				1-99	100-499
931-8095	L58D-R12-W	Red	12	**5.62**	**3.82**
931-8090	L58D-G12-W	Green	12	**5.62**	**3.82**
931-8216	L58D-Y12-W	Yellow	12	**5.62**	**3.82**
931-8105	L58D-R24-W	Red	24	**5.62**	**3.82**
931-8100	L58D-G24-W	Green	24	**5.62**	**3.82**
931-9990	L58D-Y24-W	Yellow	24	**5.62**	**3.82**

L59 Snap Mount LED Indicators for .250" Mounting Hole

Features diffused (wide viewing angle) LED; built-in integral bezel. **Termination:** 6" color coded wire leads, red = anode (+), black = cathode (–). **Mounting Hole:** .250" (6.35 mm) snapfit + .256" (6.50 mm) dia. **Panel Range:** .030"-.062" (.762-1.57 mm) max. **Other Options Available:** 2 volt and 6 volt LED indicators.

Stock No.	Mfr.'s Type	Color	Volts (VDC)	EACH
				1-49
931-8195	L59D-R12-W	Red	12	**2.80**
931-8190	L59D-G12-W	Green	12	**2.80**
931-8196	L59D-Y12-W	Yellow	12	**2.80**
931-8210	L59D-R24-W	Red	24	**2.80**
931-8205	L59D-G24-W	Green	24	**2.80**
931-8215	L59D-Y24-W	Yellow	24	**2.80**

L59U Snap Mount LED Indicators for .250" Mounting Hole

Features diffused (wide viewing angle) LED; built-in integral bezel. **Termination:** 6" color coded wire leads, red = anode (+), black = cathode (–). **Mounting Hole:** .250" (6.35 mm) snapfit. **Panel Range:** .115"-.130" (2.90-3.30 mm). **Other Options Available:** 2 volt and 6 volt LED indicators.

931-8217	L59UD-R12-W	Red	12	**3.04**
931-8218	L59UD-G12-W	Green	12	**3.04**
931-8219	L59UD-Y12-W	Yellow	12	**3.04**
931-8220	L59UD-R24-W	Red	24	**3.04**
931-8221	L59UD-G24-W	Green	24	**3.04**
931-8222	L59UD-Y24-W	Yellow	24	**3.04**

45 Series 5/16" Press Fit Panel Mount Indicator Lights

Features nickel-plated bezel; hi-hat lens (flush style lens also available); speed nut supplied. **Neon Indicators:** Feature current-limiting resistors for 125 V and 250 V. **LED Indicators:** Feature one tinned 3/16" terminal to identify the anode (+), one non-tinned terminal denotes cathode (–). **Terminations:** 3/16" Q.C. terminals. **Other Options Available:** 2 volt and 6 volt LED indicators or 6 volt incandescent indicators: also blue, white and clear neon and incandescent indicators.

Indicators for 5/16" Mounting Hole

Stock No.	Mfr.'s Type	Color	Volts	Current	Life (Hours)	EACH
						1-99
931-9400	45RN-2111T3	Red	125	1/3 W	25,000	**6.30**
931-9405	45RN-2112T3	Green	125	1/3 W	25,000	**6.30**
931-9410	45RN-2113T3	Amber	125	1/3 W	25,000	**6.30**
931-9415	45HRN-2112T3	Green	250	1/3 W	25,000	**6.30**
931-9420	45RNG3-2111T3	Red	14	.08 A	1,500*	**6.30**
931-9425	45RNG3-2112T3	Green	14	.08 A	1,500*	**6.30**
931-9430	45RNG18-2111T3	Red	28	.04 A	7,000*	**6.30**
931-9435	45RNG18-2112T3	Green	28	.04 A	7,000*	**6.30**

*14 V unit recommended to run at 12 V for 12,000 life hours; 28 V unit to run at 24 V for 32,000 life hours.

LED Solid State Indicators

Stock No.	Mfr.'s Type	Color	Volts (VDC)	EACH	
				1-99	100-499
931-1112	L45RN-R12-2111	Red	12	**4.35**	**3.30**
931-1118	L45RN-R24-2111	Red	24	**4.35**	**3.30**
931-9440	L45RN-G12-2112	Green	12	**4.35**	**3.30**
931-9445	L45RN-G24-2112	Green	24	**4.35**	**3.30**

32 Series and 35 Series
Press Fit Indicator 1/2" Mounting Hole

Features nickel-plated bezel. **Lens Styles:** flat cylindrical or flush. **LED Indicators:** Feature color-coded wire leads, red = anode (+), black = cathode (–) or one tinned 3/16" terminal to identify the anode (+), one non-tinned terminal denotes cathode. (–). **Termination:** 6" wire leads, stripped 1/2" or 3/16" Q.C. terminals designated by T suffix. **Other Options Available:** dome, square and hi-hat lens styles; 2 volt and 6 volt LED indicators or 6 volt incandescent indicators; also blue, white and clear neon and incandescent indicators.Indicators may be ordered without bezels.

32 Series and 35 Series Indicators for 1/2" Mounting Hole

Stock No.	Mfr.'s Type	Color	Lens Type	Volts	Current	Life (Hrs.)	EACH
							1-99
931-4160	32R-2111	Red	Flat cyl.	125	1/3 W	25,000	**4.24**
931-1511	32R-2112	Green	Flat cyl.	125	1/3 W	25,000	**4.24**
931-4235	35R-2111	Red	Flat cyl.	250	1/3 W	25,000	**4.24**
931-4240	35R-2112	Green	Flat cyl.	250	1/3 W	25,000	**4.24**
931-4165	32R-2111T	Red	Flat cyl.	125	1/3 W	25,000	**4.24**
931-0015	32R-2112T	Green	Flat cyl.	125	1/3 W	25,000	**4.24**
931-1591	32RG3-2111	Red	Flat cyl.	14	.08 A	1,500*	**5.65**
931-4040	32RG18-2112	Green	Flat cyl.	28	.04 A	7,000*	**5.65**
931-1503	32R-2311	Red	Flush	125	1/3 W	25,000	**4.24**
931-1513	32R-2312	Green	Flush	125	1/3 W	25,000	**4.24**
931-1523	32R-2313	Amber	Flush	125	1/3 W	25,000	**4.24**
931-1653	32R-2311T	Red	Flush	125	1/3 W	25,000	**4.24**
931-1663	32R-2312T	Green	Flush	125	1/3 W	25,000	**4.24**
931-1533	35R-2311	Red	Flush	250	1/3 W	25,000	**4.24**
931-1543	35R-2312	Green	Flush	250	1/3 W	25,000	**4.24**
931-1693	35R-2312T	Green	Flush	250	1/3 W	25,000	**4.24**

*14 V recommended to run 12 V for 12,000 life hours; 28 V unit to run at 24 V for 32,000 life hours.

LED Solid State Indicators — Amber Is Available

Unit Lens Type Flat Cylindrical	Unit Lens Type Flush	Color	Volts (VDC)	EACH	
				1-99	100-499
L32R-R12-2111	L32R-R12-2311	Red	12	**5.18**	**3.50**
L32R-G12-2112	L32R-G12-2312	Green	12	**5.18**	**3.50**
L32R-A12-2113	L32R-A12-2313	Amber	12	**5.18**	**3.50**
L32R-Y12-2116	L32R-Y12-2316	Yellow	12	**5.18**	**3.50**
L32R-R24-2111	L32R-R24-2311	Red	24	**5.18**	**3.50**
L32R-G24-2112	L32R-G24-2312	Green	24	**5.18**	**3.50**
L32R-R24-2111T	L32R-R24-2311T	Red	24	**5.18**	**3.50**
L32R-G24-2112T	L32R-G24-2312T	Green	24	**5.18**	**3.50**

75 and L75 Series Oil Tight
3/8" Panel Mount Indicator Lights

Features dome lens, nickel-plated bezel. **Neon Indicators:** Feature current-limiting resistors for 125 V and 250 V. **LED Indicators:** Feature color-coded wire leads, red = anode (+), black = cathode (–) or one tinned 3/16" terminal to identify the anode (+), one non-tinned terminal denotes cathode (–). **Termination:** 6" wire leads, stripped 1/2" or 3/16" Q.C. terminals designated by T suffix. **Other Options Available:** 2 volt and 6 volt LED indicators or 6 volt, 14 volt and 28 volt incandescent indicators: also blue, white and clear neon and incandescent indicators.

Stock No.	Mfr.'s Type	Color	Volts	Current	Life (Hours)	EACH
						1-99
931-7500	75R-2211	Red	125	1/3 W	25,000	**3.99**
931-7505	75R-2212	Green	125	1/3 W	25,000	**5.50**
931-7510	75R-2213	Amber	125	1/3 W	25,000	**3.99**
931-7515	75R-2211T	Red	125	1/3 W	25,000	**3.70**
931-7520	75HR-2212T	Green	250	1/3 W	25,000	**4.83**
931-7525	75HR-2211	Red	250	1/3 W	25,000	**3.99**
931-7530	75HR-2212	Green	250	1/3 W	25,000	**4.22**

LED Solid State Indicators — Amber Is Available

Stock No.	Mfr.'s Type	Color	Volts (VDC)	EACH	
				1-99	100-499
931-7535	L75R-R12-2211	Red	12	**3.60**	**2.29**
931-7540	L75R-G12-2212	Green	12	**3.60**	**2.29**
931-7545	L75R-A12-2213	Amber	12	**3.60**	**2.29**
931-7550	L75R-Y12-2216	Yellow	12	**3.60**	**2.29**
931-7555	L75R-R24-2211	Red	24	**4.12**	**2.78**
931-7560	L75R-G24-2212	Green	24	**4.12**	**2.78**
931-7565	L75R-R24-2211T	Red	24	**4.12**	**2.78**
931-7570	L75R-G24-2212T	Green	24	**4.12**	**2.78**

5/16" Press Fit Panel Mount Indicator Lights
36 Series Standard Front Panel Mounting
36U Low Profile 7/64" Front Panel Projection
41Series Compact Body Design

Feature nickel-plated bezel; flush lens (hi-hat style lens also available); speed nut. **36 and 36U Neon Indicators:** Feature current-limiting resistors for 125 V and 250 V. **LED Indicators:** Feature color-coded wire leads, red = anode (+), black = cathode (–). **Termination:** 6" wire leads, stripped 1/2". **Other Options Available:** 2 volt and 6 volt LED indicators or 6 volt incandescent indicators: also blue, white and clear neon and incandescent indicators.

Indicators for 5/16" Mounting Hole

Stock No.	Mfr.'s Type	Color	Volts	Current	Life (Hrs)	EACH
						1-99
931-4300	36EN-2311	Red	125	1/3 W	25,000	**4.46**
931-2451	36URN-2311	Red	125	1/3 W	25,000	**4.46**
931-2412	36HEN-2312	Green	250	1/3 W	25,000	**4.46**
931-2462	36UHRN-2312	Green	250	1/3 W	25,000	**4.46**
931-2403	36EN-2313	Amber	125	1/3 W	25,000	**4.46**
931-2571	41ENG3-2311	Red	14	.08 A	1,500*	**4.46**
931-2572	41ENG3-2312	Green	14	.08 A	1,500*	**4.46**
931-2573	41ENG3-2313	Amber	14	.08 A	1,500*	**4.46**
931-2581	41ENG18-2311	Red	28	.04 A	7,000*	**4.46**
931-2582	41ENG18-2312	Green	28	.04 A	7,000*	**4.46**

*14 V unit recommended to run at 12 V for 12,000 life hours; 28 V unit to run at 24 V for 32,000 life hours.

LED Solid State Indicators

Note: L36U — low profile unit, 2 V, 6 V and yellow and amber units are available.

Stock No.	Mfr.'s Type	Color	Volts (VDC)	EACH	
				1-99	100-499
931-9300	L36EN-G12-2312	Green	12	**3.99**	**3.02**
931-9305	L36EN-G24-2312	Green	24	**3.99**	**3.02**
931-9310	L36EN-R12-2311	Red	12	**3.99**	**3.02**
931-9315	L36EN-R24-2311	Red	24	**3.99**	**3.02**
931-9320	L41EN-G12-2312	Green	12	**3.99**	**3.02**
931-9325	L41EN-G24-2312	Green	24	**3.99**	**3.02**
931-9330	L41EN-R12-2311	Red	12	**3.99**	**3.02**
931-9335	L41EN-R24-2311	Red	24	**3.99**	**3.02**

31 Series
1.281" × .395" Rectangular Panel Mount Indicators

Features nickel-plated bezel. **Termination:** 6" wire leads, stripped 1/2", 3/16" Q.C. tab terminals, or 1/4" Q.C. tab terminals. **Panel Range:** Up to .090". "T" denotes 1/4" terminals. **Other Options Available:** 6 volt, 14 volt and 28 volt indicators: also blue, white and clear indicators are available. Customized legends available. For 3/16" tab terminals, add T3 to end of Mfr.'s Type. Call Allied for pricing.

Stock No.	Mfr.'s Type	Color	Volts	Current	Life (Hours)	EACH
						1-99
931-3201	31-2111	Red	125	1/3 W	25,000	**4.27**
931-3202	31-2112	Green	125	1/3 W	25,000	**4.27**
931-3203	31-2113	Amber	125	1/3 W	25,000	**4.27**
931-3221	31H-2111	Red	250	1/3 W	25,000	**4.27**
931-3301	31-2111T	Red	125	1/3 W	25,000	**4.27**
931-9981	31-2112T	Green	125	1/3 W	25,000	**4.27**

39U and L39U Series
5/16" Snap Fit Panel Mount Indicator Lights

Feature housing with snap fit mounting ears; nickel-plated bezel, hi-hat lens (flush style lens also available). **Panel Range:** .020" min. to .060" max. **Neon Indicators:** Feature current limiting resistors for 125 V and 250 V. **Termination:** 6" wire leads, stripped 1/2". **LED Indicators:** Feature color-coded wire leads, red = anode (+), black = cathode (–). **Other Options Available:** 2 volt and 6 volt LED indicators or 6 volt incandescent indicators; also blue, white and clear neon and incandescent indicators.

Indicators for 5/16" Mounting Hole

Stock No.	Mfr.'s Type	Color	Volts	Current	Life (Hours)	EACH
						1-99
931-1421	39UR-2111	Red	125	1/3 W	25,000	**4.46**
931-1422	39UR-2112	Green	125	1/3 W	25,000	**4.46**
931-1423	39UR-2113	Amber	125	1/3 W	25,000	**4.46**
931-1431	39UHR-2111	Red	250	1/3 W	25,000	**4.46**
931-1432	39UHR-2112	Green	250	1/3 W	25,000	**4.46**
931-0900	39URG3-2111	Red	14	.08 A	1,500*	**4.46**
931-0905	39URG3-2112	Green	14	.08 A	1,500*	**4.46**
931-0910	39URG18-2111	Red	28.	.04 A	7,000*	**4.46**
931-0915	39URG18-2112	Green	28	.04 A	7,000*	**4.46**
931-0920	39URG18-2113	Amber	28	.04 A	7,000*	**4.46**

*14 V unit recommended to run at 12 V for 12,000 life hours; 28 V unit to run at 24 V for 32,000 life hours.

LED Solid State Indicators

Stock No.	Mfr.'s Type	Color	Volts (VDC)	EACH	
				1-99	100-499
931-8030	L39UR-R12-2111	Red	12	**5.86**	**2.70**
931-8025	L39UR-G12-2112	Green	12	**5.86**	**2.70**
931-8040	L39UR-R24-2111	Red	24	**5.86**	**2.70**
931-8035	L39UR-G24-2112	Green	24	**5.86**	**2.70**
931-0925	L39UR-Y24-2116	Yellow	24	**5.86**	**2.70**

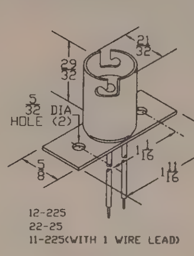


Fig. 1

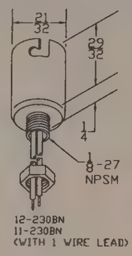


Fig. 2

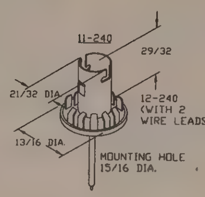


Fig. 3

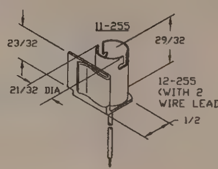


Fig. 4

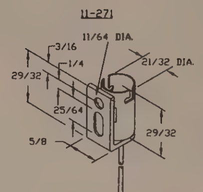


Fig. 5

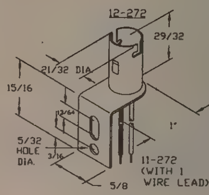


Fig. 6

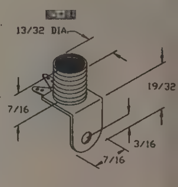


Fig. 7

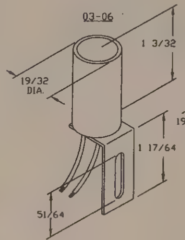


Fig. 8

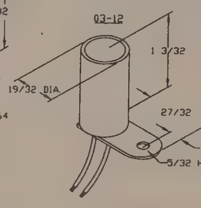


Fig. 9

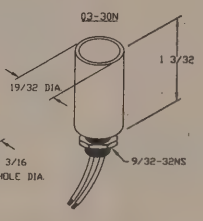


Fig. 10

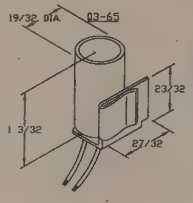


Fig. 11

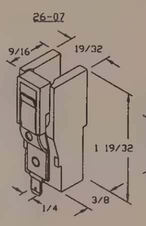


Fig. 12

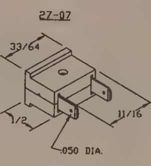


Fig. 13

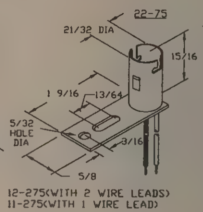


Fig. 14

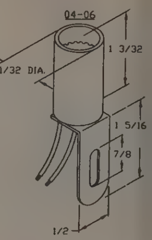


Fig. 15

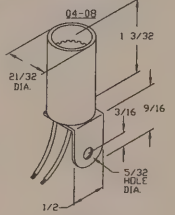


Fig. 16

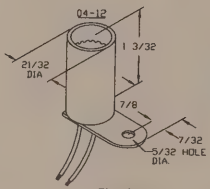


Fig. 17

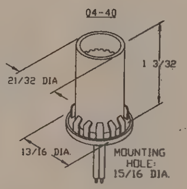


Fig. 18

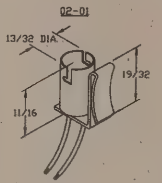


Fig. 19

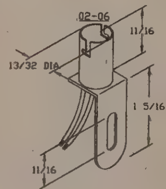


Fig. 20

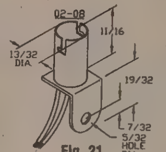


Fig. 21

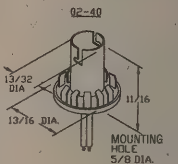


Fig. 22

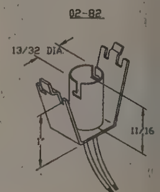


Fig. 23

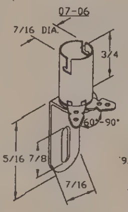


Fig. 24

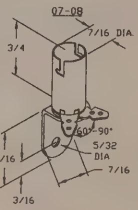


Fig. 25

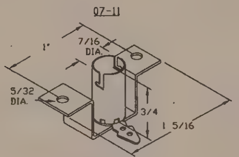


Fig. 26

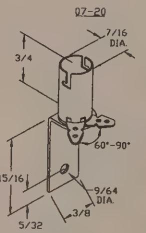


Fig. 27

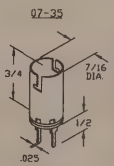


Fig. 28

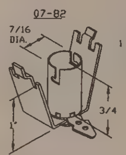


Fig. 29

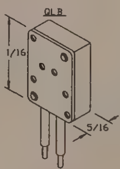


Fig. 30

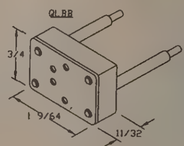


Fig. 31

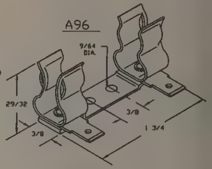


Fig. 32

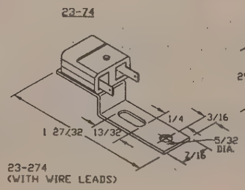


Fig. 33

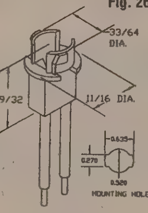


Fig. 34

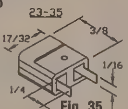


Fig. 35

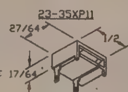


Fig. 36

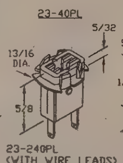


Fig. 37

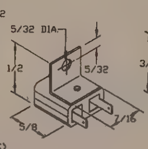


Fig. 38

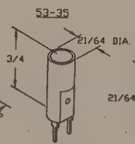


Fig. 39

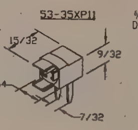


Fig. 40

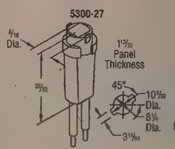


Fig. 41

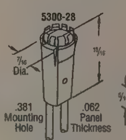


Fig. 42

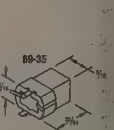


Fig. 43

Lighting Components and Design products cross to all major manufacturers. The listed lampholders and indicator lights are only a sample of some common standard products; we offer other standard and custom products with alternate termination and mountin choices. Call Allied for more information.

Candelabra Bayonet Lampholders for G-6, S-6 and NE-48 Lamps

Series 11-200 Single-Contact, Series 12-200 Double-Contact

- ► **UL Recognized**
- ► **CSA Certified**

11-200 Series. Features one center contact; one #18 AWG 6" wire lead, stripped 1/2"; mounting brackets grounded to shell. Can be supplied with wire grounded to internal spring for customers that need second wire lead for ease of installation. **12-200 Series.** Features two center contacts, two #18 AWG 6" wire leads, stripped 1/2", mounting brackets and wire leads grounded independent of contacts. Plug Button Type Lampholders 11-240 and 12-240 snap into 15/16" hole. **Maximum Ratings:** 11-200 Series — 25 watts, 12 volts; 12-200 Series — 75 watts, 125 volts.

Stock No.	Mfr.'s Type	Fig.	EACH 1-9
931-3302	11-225	1	**5.15**
931-5005	11-230BN	2	**5.59**
931-5001	11-240	3	**5.15**
931-5007	11-255	4	**5.15**
931-5003	11-271	5	**5.15**
931-5002	11-272	6	**5.15**
931-3625	12-225	1	**5.35**
931-3630	12-230BN	2	**6.78**
931-3640	12-240	3	**5.35**
931-5011	12-255	4	**5.35**
931-3671	12-271	5	**5.35**
931-3672	12-272	6	**5.35**

Series 500 Miniature Screw Lampholders for G-3½ and T-3¼ Lamps

Features shell with two solder lug terminals, tinned for eas soldering. Designed for low voltage incandescen applications. grounded lampholders are also available **Maximum Ratings:** 75 watts, 125 volts.

Stock No.	Mfr.'s Type	Fig.	EACH 1-9
931-1209	05-07	7*	**4.27**
931-2408	05-08	7	**4.71**

*Supplied without mounting bracket.

Lighting Components and Design products cross to all major manufacturers. The listed ampholders and indicator lights are only a sample of some common standard products; we offer other standard and custom products with alternate termination and mounting choices. Call Allied for more information.

Series 300
Miniature Bayonet Lampholders for G-3½, G-4½, T-3¼ and NE-51 Lamps

Features polyester housing for socket shell; two #22 AWG 6" wire leads, stripped ½". Threaded bushing Type 03-30N, ⅛"-27NPSM thread ¼" long, supplied with nut and washer. **Maximum Ratings:** 75 watts, 125 volts.

Stock No.	Mfr.'s Type	Fig.	EACH
			1-9
931-2102	03-05	8†	5.17
931-2103	03-06	8	5.17
931-0001	03-07	8*	5.95
931-5073	03-12	9	5.17
931-5076	03-30N	10	6.21
931-0003	03-65	11	5.70

*Supplied without mounting bracket. †Reversed bracket.

Series 26-00
Double Ended Single-Contact Halogen Cycle Lampholders

Features high heat-resistant ceramic housing; 26-07 designed with one ¼" tab terminal which includes .093" dia. hole for #1 screw. 26-207 designed with one 4" #18 AWG wire lead, stripped ½". Sold as individual units, two lampholders required per lamp. **Maximum Ratings:** 500 watts, 125 volts.

Stock No.	Mfr.'s Type	Fig.	EACH
			1-9
931-5096	26-07	12	7.39
931-5097	26-207	12*	7.39

*Supplied with wire lead.

Series 27-00 and 28-00
G4 Bi-Pin Halogen Lampholders

► **UL Listed, CSA Certified (27-00 Series Only)**

Feature high heat-resistant ceramic housing; 27-07 with .110" tab terminals; 28-07 with .187" tab terminals. **Maximum Ratings:** 50 watts, 14 volts. Also available with two 6" wire leads. Contact Allied for information.

Stock No.	Mfr.'s Type	Fig.	EACH
			1-9
931-7001	27-07	13	3.91
931-7002	28-07	13	3.91

Series 22-00
Halogen Lampholders Double-Contact Candelabra Bayonet Lampholders

Features two 6" #18 AWG wire leads, stripped ½"; threaded bushing Type 22-30BN ⅛"-27NPSM thread ¼" long, supplied with nut and washer. **Maximum Ratings:** 500 watts, 125 volts.

Stock No.	Mfr.'s Type	Fig.	EACH
			1-9
931-5089	22-25	1	5.93
931-5093	22-30BN	2	7.60
931-5092	22-75	14	5.93

Series 400
Candelabra Screw Lampholders for S-6, G-6, NE-45 and 10C7 Lamps

► **UL Recognized** ► **CSA Certified**

Features polyester housing for socket shell; two #18 AWG 6" wire leads, stripped ½". Plug button type lampholder 04-40 snaps into 15/16" hole. **Maximum Ratings:** 75 watts, 125 volts. Solder lugs also available in 600 series (ex. 06-06).

Stock No.	Mfr.'s Type	Fig.	EACH
			1-9
931-2302	04-06	15	6.75
931-0004	04-07	15*	6.29
931-2303	04-08	16	5.99
931-0005	04-12	17	6.76
931-0006	04-40	18	6.76

*Supplied without mounting bracket.

Series 200
Miniature Bayonet Lampholders for G-3½, G-4½ and T-3¼ Lamps

Features fiber insulating sleeve for socket shell; two #22 AWG 6" wire leads, stripped ½". Plug button type lampholder 02-40 snaps into ⅝" hole. **Maximum Ratings:** 75 watts, 125 volts.

Stock No.	Mfr.'s Type	Fig.	EACH
			1-9
931-5012	02-01	19	5.74
931-0007	02-06	20	5.74
931-5013	02-08	21	5.74
931-5017	02-40	22	5.74
931-5018	02-82	23	5.74

Series 700
Miniature Bayonet Lampholders for G-3½, G-4½ and T-3¼ Lamps

Features shell with two solder lug terminals, tinned for easy soldering. Printed circuit board version 07-35 requires .070" mounting hole with .375" spacing. Available with plug button type for ⅝" mounting hole and with optional ½' overall height low profile "J" shell, call Allied for details. **Maximum Ratings:** 10 watts, 50 volts.

Stock No.	Mfr.'s Type	Fig.	EACH
			1-9
931-9955	07-06	24	3.71
931-9907	07-07	24*	4.85
931-1201	07-08	25	5.22
931-1202	07-11	26	5.22
931-1204	07-20	27	5.22
931-1205	07-35	28	5.22
931-1208	07-82	29	5.22

*Supplied without mounting bracket.

Series QLB and QLBB for GX5.3 and GY5.3 Lamps

► **UL Recognized** ► **CSA Certified**

Features high heat-resistant ceramic housing; two 6" (QLB-6) or 12" (QLB-12) #18 AWG wire leads, stripped ½". Designed for DYH, DYT, DZA, EPX, PLH and other similar lamps. **Maximum Ratings:** 750 watts, 300 volts.

Stock No.	Mfr.'s Type	Fig.	EACH
			1-9
931-7003	QLB-6	30	2.12
931-7004	QLB-12	30	2.49
931-5050	QLBB-6	31	2.30
931-5051	QLBB-12	31	2.39

Series A96 Double Ended Lampholders, Special Automotive for Heavy Duty Applications Uses 211-2 Cartridge Lamps

Features two sturdy clips to hold bulb securely; sturdy nylon (A96N) bracket or nickel-plated steel (A96) bracket. **Maximum Ratings:** 12 watts, 13.5 volts.

Stock No.	Mfr.'s Type	Fig.	EACH
			1-9
931-5057	A96N	32	5.75
931-5056	A96	32	5.75

Series 23-00 Miniature Wedge Base Lampholders for T-3¼ and T-5 Lamps

Features nylon housing; two #22 AWG 6" wire leads or two solder lug terminals, tinned for easy soldering. Printed circuit board versions 23-35 and 23-35H require .070" mounting hole with .400" spacing. Twist and lock version 23-233TL does not require soldering. Plastic plug button types 23-40PL and 23-240PL require ⅝" mounting hole. Grounded units are also available, call Allied for details. **Maximum Ratings:** 20 watts, 28 volts.

Stock No.	Mfr.'s Type	Fig.	EACH
			1-9
931-2307	23-07	33*	2.48
931-5048	23-233T	34	3.10
931-2335	23-35	35	2.69
931-5041	23-35H	36	2.48
931-5042	23-40PL	37	2.78
931-5044	23-74	33	3.00
931-0008	23-77R	38	3.26

*Supplied without mounting bracket.

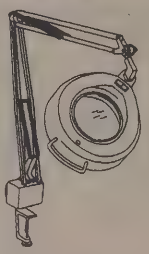
Series 53-00 and 69-00
Wedge Base Lampholders for T-1¾ Lamps, New Plug Button and Twist and Lock Lampholders

Features nylon housing; two #22 AWG 6" wire leads or two solder lug terminals, tinned for easy soldering. Printed circuit board versions 53-35, 69-35 and 53-35XP11. Twist and lock version 5300-27 does not require soldering. Plug button type 53-240PL requires ⅝" mounting hole, 5300-28 requires .382" mounting hole. **Maximum Ratings:** 10 watts, 28 volts.

Stock No.	Mfr.'s Type	Fig.	EACH
			1-9
931-5078	53-07N	39*	1.69
931-5335	53-35	39	1.69
931-5080	53-35XP11	40	3.25
931-5085	5300-27	41	1.86
931-5086	5300-28	42	1.86
931-6935	69-35	43	.99

*Supplied without mounting bracket.

Ledu Taskmaster Magnifiers

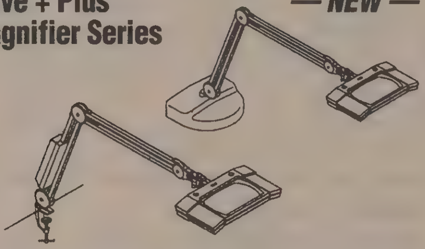


- Stamped Metal Shade Houses a 5" Diameter Lens, Available In a 3-Diopter (1.75X) and Includes a 22-Watt Fluorescent Tube
- Swivel Joint in Neck Permits Head to Rotate 90-Degrees to Left or Right of Direction Arm Faces
- A 42" Arm with External Springs Is Mounted in a Drafting Board Style Clamp
- Comes with a 3-Conductor Cord, a Built-In Convenience Outlet (Rated for 600 Watts), and Is UL Listed
- Available in Matte Black or White

Stock No.		Mfr.'s Type	Description	EACH	
Black	White			1-5	6-11
707-1036	707-1037	IM12D	Magnifier, 3-Diopter	153.84	139.39

Wave + Plus Magnifier Series

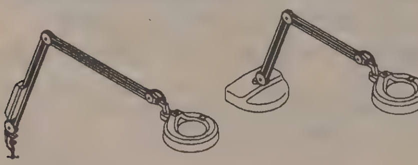
— NEW —



- Large 6.75" × 4.5" Lens, 3.5-Diopter (1.85X) Makes It Easy to See Large Areas without "Hunching" Over the Magnifier
- Dual 13-Watt Compact Fluorescent Tubes (Included) Are Individually Switched and Provide Full Illumination, or, With Only One Light On, Better 3-Dimensional Viewing; 2 Indicator Lights
- Heavy Duty K-Arms, .5" Square Tubing, Provide Superior Strength and Durability
- Choice of Arm Lengths, Mounting Options and Accessory Lenses
- Come with 3-Conductor Cord; All Models UL Listed
- Available in Light Gray or Black as Special Order

Stock No.	Mfr.'s Type	Description	EACH	
			1-5	6-11
707-1885 707-1888 707-1889	17845 17846 17847	45" Arm with Clamp 30" Arm with Clamp 30" Arm with Base	327.75 327.75 371.72	292.94 292.94 325.21

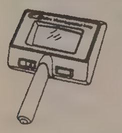
KFM Magnifier Series



- Heavy Duty, Cast Aluminum Shade with 3-Diopter Primary Lens
- Exclusive "Instant On" Switch Obsoletes Holding Down a Switch and Waiting for the Fluorescent Tube to Illuminate (Includes 22-Watt Circline Tube)
- Heavy Duty K-Arms, .5" Square Tubing, Provide Superior Strength and Durability
- Come with 3-Conductor Cord; All Models UL Listed
- Available in Black or Lt. Gray

Stock No.		Mfr.'s Type	Description	EACH	
Black	Lt. Gray			1-5	6-11
707-3000	707-3005	17113	KFM1A 45" Arm with Clamp	240.36	218.24

Handheld UV Magnifier



- The One-Piece Body Is Molded from Durable Noryl Thermoplastic and Houses a 4" × 2", 5-Diopter (2.25X) Rectangular Lens
- Comes with Two 4-Watt Ultraviolet (UV) Tubes and Two 4-Watt Standard Fluorescent Tubes
- Dual Switches Insure Only One Type Light On at a Time
- UV Tubes Used for Checking Conformal Coatings, Contaminants, Metal Fatigue and Stress Testing Where a UV Indicator Is Present; Standard Fluorescent Used in Normal Inspection Processes
- Comes with 3-Conductor Cord; UL Listed

Stock No.	Mfr.'s Type	Description	EACH	
			1-5	6-11
707-3015	16401	Handheld UV Magnifier	273.60	247.89

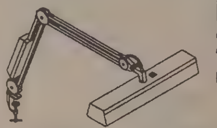
Economy Magnifier Lamp

— NEW —

- Flexible 33" Spring-Balanced Arm
- Uses 60-Watt Bulb (Not Included)
- 3-Diopter 4" Lens
- Supplied with Clamp-On Bracket
- Available in Sand or Matte Black

Stock No.		Mfr.'s Type	Description	EACH	
Black	Sand			1-5	6-11
707-0296	707-0297	IM296A	Magnifier, 3-Diopter	49.00	39.58

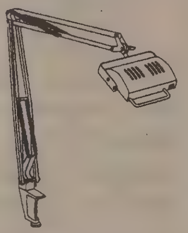
FL Series 2-Tube Fluorescent



- Two 15-Watt Fluorescent Tubes (Included) Housed in Metal Shade with an Inverted Ridge Reflector to Give Even Light Distribution Over a Large Work Area
- Available on L-Arms (Arms with External Springs); Comes On Heavy Duty K-Arm (Arm Has Enclosed Springs With .5" Square Arm Tubes) for Added Strength and Durability
- Arms Have Individually Calibrated, Heat-Treated Springs for Perfect Balance and Durability
- All Models Come with 3-Conductor Cords and Are UL Listed
- Available in Black or Lt. Gray, or White or Oyster as Special Order

Stock No.		Mfr.'s Type	Description	EACH	
Black	Lt. Gray			1-5	6-11
707-3030	707-3035	KFL1A	45" Arm with Clamp	220.00	193.86

Ledu Taskmaster Halogen Worklight



- An All Metal Shade Houses the 100-Watt (Line Voltage — 120 V) Halogen Bulb Positioned Behind a Protective Glass Filter that's Ready to Flood Your Work Area with Crisp, White Light
- A 42" Arm with External Springs Is Mounted in a Clamp-Style Bracket
- Comes with a 2-Conductor Cord and Is UL Listed
- Available in Black

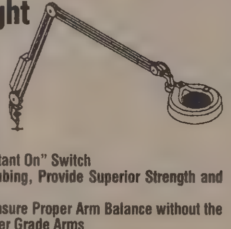
Stock No.	Mfr.'s Type	Description	EACH	
			1-5	6-11
707-3070	L554BK	Halogen Work Light	144.00	131.00

Star

Model 336. 100 watt. Clamp-on 34" reach. Vented shade; heat resistant handle. Edge clamp included. "Easy-dial" on/off switch. Available in white.

707-2000. Model 336. 1-5........EACH 29.99
6-11..EACH 25.40

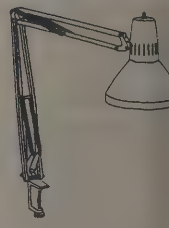
Fume Extraction Light



- Cast Aluminum Head Houses Powerful Exhaust Fan Which Delivers 100 CFM at 2900 RPM
- 3-Way Switch Permits 22-Watt Fluorescent Tube (Included) and Fan on Together, or 22-Watt Tube by Itself; Lamp Immediately Turns On Just by Touching the "Instant On" Switch
- Heavy Duty K-Arms, .5" Square Tubing, Provide Superior Strength and Durability
- Calibrated, Heat Treated Springs Insure Proper Arm Balance without the Sagging Effect Experienced in Lesser Grade Arms
- Come with 3-Conductor Cord and Filter; UL Listed
- Available in Light Gray

Stock No.	Mfr.'s Type	Description	EACH	
			1-5	6-11
707-3010	16159	45" Arm with Clamp	332.50	302.17

Ledu Taskmaster Incandescent

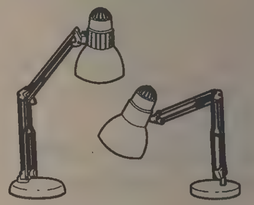


- A Durable, 7" Diameter Metal Shade with Porcelain Socket Rated for 100-Watts (Bulb Not Included)
- A 42" Arm with External Springs Is Mounted in a Drafting Board Style Clamp
- Comes with a 2-Conductor Cord and Is UL Listed
- Available in Matte Black or White

Stock No.		Mfr.'s Type	Description	EACH	
Black	White			1-5	6-11
707-2018	707-2019	UN12D	Incandescent Lamp	79.00	71.25

Knight Desk Lamp Economy Incandescent

— NEW —



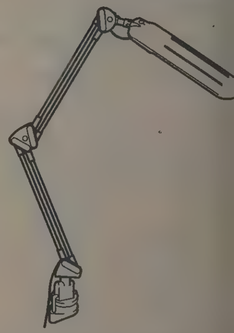
- Flexible 22" Arm with Tension Control Knobs
- Uses Up to 75-Watt Bulb Maximum (Not Included)
- Supplied with Sturdy Weighted Base

Model LE423. Economy incandescent lamps are included in Ledu's Leadi Edge Series. This sturdy, popular lamp features an easy on/off switch, he resistant grip and an attractive modern-day design. Available in white with gr accents or in matte black.

Stock No.		Mfr.'s Type	Description	EACH	
Black	White			1-5	6-11
707-0423	707-0424	LE423	22" Arm with Base	47.00	37.96

Model L359BK PL 13-Watt Task Light

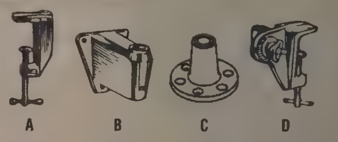
— NEW —



- PL 13-Watt Energy Efficient Task Light
- Illumination Equivalent to 75 Watts Incandescent
- Mechanical Neck Allows 4-Way Movement of Light to Meet Any Task
- U.L. Listed and C.S.A. Certified
- Color: Black With Blue Indicator Strips

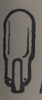
Stock No.	Mfr.'s Type	Description	EACH	
			1-5	6-11
707-0359	L359BK	13-Watt Task Light	70.00	56.52

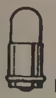
Accessories — Brackets, Bases, and Fluorescent Tubes

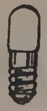


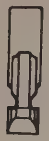
Stock No.	Mfr.'s Type	Fig.	Description	EACH
707-2045	50001LG	A	Standard Mounting Bracket	12.47
707-2046	50003BK	B	Wall Bracket	13.00
707-2047	50005LG	C	Fixed Table Bracket	13.00
707-2048	60016LG	D	Drafting Table Bracket	18.95
707-0009	31640	—	T9 Circline Fluorescent Tube	16.00

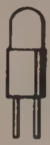
ncandescent Lamps

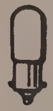

A

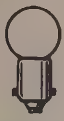

B

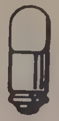

C

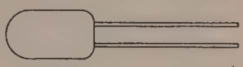

D


E


F


G


H


J

Vedge Base Incandescent Lamps

Stock No.	Mfr.'s Type	Fig.	Volts	Amps	MSCP	Avg. Life Hrs.	Bulb Style	PER PK./10
								1-9
639-0142	161	A	14.00	0.190	1.00	4.0 K	T-3¼	3.51
639-0144	194	A	14.00	0.270	2.00	1.5 K	T-3¼	2.16
639-0146	259	A	6.30	0.250	0.65	5.0 K	T-3¼	3.43
639-0150	73	A	14.00	0.080	0.30	15.0 K	T-1¾	4.69
639-0152	74	A	14.00	0.100	0.70	20.0 K	T-1¾	4.69
639-0156	86	A	6.30	0.200	0.40	50.0 K	T-1¾	4.27

lange Base Incandescent Lamps

Stock No.	Mfr.'s Type	Fig.	Volts	Amps	MSCP	Avg. Life Hrs.	Bulb Style	PER PK./10 1-9
639-0164	327	B	28.00	0.040	0.34	4.0 K	T-1¾	3.86
639-0166	328	B	6.00	0.200	0.60	1.0 K	T-1¾	4.47
639-0168	330	B	14.00	0.080	0.50	1.5 K	T-1¾	4.51
639-0178	381	B	6.30	0.200	0.40	50.0 K	T-1¾	4.69
639-0180	382	B	14.00	0.080	0.30	15.0 K	T-1¾	4.51
639-0182	385	B	28.00	0.040	0.15	10.0 K	T-1¾	4.69
639-0184	387	B	28.00	0.040	0.30	7.0 K	T-1¾	3.86
639-0186	394	B	12.00	0.040	0.12	10.0 K	T-1¾	4.86
639-0188	6839	B	28.00	0.024	0.15	4.0 K	T-1	15.53

iniature Screw Base Incandescent Lamps

Stock No.	Mfr.'s Type	Fig.	Volts	Amps	MSCP	Avg. Life Hrs.	Bulb Style	PER PK./10 1-9
639-0252	335	C	28.00	0.040	0.32	4.0 K	T-1¾	4.86
639-0254	342	C	6.00	0.040	0.03	10.0 K	T-1¾	4.77

lide Base Incandescent Lamps

Stock No.	Mfr.'s Type	Fig.	Volts	Amps	MSCP	Avg. Life Hrs.	Bulb Style	PER PK./10 1-9
639-0224	24E-2	D	24.00	0.035	0.17	8.0 K	T-2	8.71
639-0232	28ESB	D	28.00	0.040	0.25	6.0 K	T-2	8.71
639-0234	28PSB	D	28.00	0.040	0.29	5.0 K	T-2	7.87
639-0244	6PSB	D	6.00	0.140	0.12	15.0 K	T-2	7.87

Bi-Pin Base Incandescent Lamps

Stock No.	Mfr.'s Type	Fig.	Volts	Amps	MSCP	Avg. Life Hrs.	Bulb Style	PER PK./10
								1-9
639-0024	7382	E	14.00	0.080	0.30	15.0 K	T-1¾	6.10
639-0026	7387	E	28.00	0.040	0.30	7.0 K	T-1¾	6.10

Bayonet Base Incandescent Lamps

Stock No.	Mfr.'s Type	Fig.	Volts	Amps	MSCP	Avg. Life Hrs.	Bulb Style	PER PK./10 1-9
639-0042	120MB	F	120.00	0.025	0.36	5.0 K	T-2	12.08
639-0052	1815	F	14.00	0.200	1.40	3.0 K	T-3¼	3.59
639-0058	1819	F	28.00	0.040	0.34	2.5 K	T-3¼	4.16
639-0060	1820	F	28.00	0.100	1.60	1.0 K	T-3¼	4.16
639-0064	1829	F	28.00	0.070	1.00	1.0 K	T-3¼	3.94
639-0066	1835	F	55.00	0.050	1.10	5.0 K	T-3¼	6.10
639-0072	1866	F	6.30	0.250	0.65	5.0 K	T-3¼	3.36
639-0074	1891	F	14.00	0.240	2.00	500.0	T-3¼	3.65
639-0084	313	F	28.00	0.170	3.50	500.0	T-3¼	3.94
639-0086	3995*	F	120.00	0.020	0.20	5.0 K	T-3¼	3.01*
639-0088	44	F	6.30	0.250	0.90	3.0 K	T-3¼	2.10
639-0090	47	F	6.30	0.150	0.52	3.0 K	T-3¼	3.43
639-0092	51	G	7.50	0.220	1.00	1.0 K	G-3½	3.43
639-0102	6S6DC	F	120.00	6.000 W	3.25	1.5 K	S-6	8.04
639-0104	755	F	6.30	0.150	0.33	20.0 K	T-3¼	4.27
639-0106	756	F	14.00	0.080	0.31	15.0 K	T-3¼	7.00
639-0108	757	F	28.00	0.080	0.62	7.5 K	T-3¼	4.38

Miniature Groove Base Incandescent Lamps

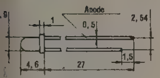
Stock No.	Mfr.'s Type	Fig.	Volts	Amps	MSCP	Avg. Life Hrs.	Bulb Style	PER PK./10 1-9
639-0112	334	H	28.00	0.040	0.34	4.0 K	T-1¾	4.51
639-0114	386	H	14.00	0.080	0.30	15.0 K	T-1¾	4.77
639-0116	388	H	28.00	0.040	0.30	7.0 K	T-1¾	4.51

Wire Terminal Incandescent Lamps

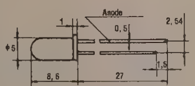
Stock No.	Mfr.'s Type	Fig.	Volts	Amps	MSCP	Avg. Life Hrs.	Bulb Style	PER PK./10 1-9
639-0126	683	J	5.00	0.060	0.05	25.0 K	T-1	3.51
639-0134	7219	J	12.00	0.060	0.15	10.0 K	T-1	8.70

*This part priced as EACH.

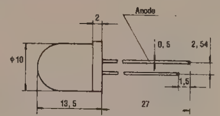
EDs



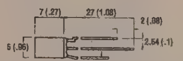
A 3 mm (T-1)



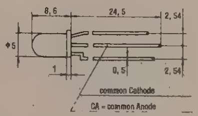
B 5 mm (T-1¾)



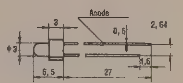
C 10 mm



D 2×5 mm



E 5 mm (T-1¾)



F 3 mm (T-1)

uper Bright LEDs

Stock No.	Mfr.'s Type	Fig.	Color		Lum. Intensity @ 20 mA (mcd)	View Angle°	EACH	
			Emitted	Lens			PK./10	1-9
39-2005	MLED-4390D13/C	A	Red	Diffused	90 - 100	60	6.90	—
39-2010	MLED-4390D13/D	A	Red	Diffused	100 - 200	60	—	1.04
39-2015	MLED-4390D13/E	A	Red	Diffused	200 - 300	60	—	1.56
39-2035	MLED-4390C13/E	A	Water	Clear	700 - 1000	50	—	1.56
39-2045	MLED-3500D13/C	B	Red	Diffused	110 - 200	60	5.56	—
39-2050	MLED-3500D13/D	B	Red	Diffused	200 - 300	60	—	1.04
39-2055	MLED-3500D13/E	B	Red	Diffused	300 - 500	60	—	1.56
39-2060	MLED-3500C13/B	B	Water	Clear	400 - 500	30	4.77	—
39-2075	MLED-3500C13/E	B	Water	Clear	2000 - 3500	30	—	1.56
39-2080	MLED-3180D12	C	Red	Diffused	20 - 100	60	5.56	—
39-2085	MLED-3180D30	C	Green	Diffused	20 - 70	60	5.56	—
39-2090	MLED-3180D20	C	Yellow	Diffused	20 - 70	60	5.87	—
39-2095	MLED-3180D22	C	Orange	Diffused	20 - 100	60	4.13	—
39-2100	MLED-3180D13/B	C	Red	Diffused	120 - 200	60	10.01	—
39-2115	MLED-3180D13/E	C	Red	Diffused	450 - 550	60	—	3.12
39-2120	MLED-3180C13/B	C	Water	Clear	500 - 1000	40	10.01	—
39-2135	MLED-3180C13/E	C	Water	Clear	2000 - 3000	40	—	3.64

andard LEDs

Stock No.	Mfr.'s Type	Fig.	Emitted	Lens	Lum. Intensity @ 20 mA (mcd)	View Angle°	PK./10	1-9
39-2140	MLED-4390D10	A	Red	Diffused	1.3 - 5	60	1.86	—
39-2145	MLED-4390D30	A	Green	Diffused	8 - 32	60	—	.23
39-2150	MLED-4390D20	A	Yellow	Diffused	8 - 32	60	—	.25
39-2155	MLED-4390D22	A	Orange	Diffused	12.5 - 50	60	2.47	—
39-2160	MLED-4390D12	A	Red	Diffused	12.5 - 50	60	2.47	—
39-2165	MLED-3500D10	B	Red	Diffused	2 - 5	60	1.73	—
39-2170	MLED-3500D30	B	Green	Diffused	5 - 32	60	1.91	—
39-2175	MLED-3500D20	B	Yellow	Diffused	5 - 32	60	2.39	—
39-2180	MLED-3500D22	B	Orange	Diffused	20 - 80	60	2.47	—

Standard LEDs (continued)

Stock No.	Mfr.'s Type	Fig.	Color		Lum. Intensity @ 20 mA (mcd)	View Angle°	EACH	
			Emitted	Lens			PK./10	1-9
639-2185	MLED-3500D12	B	Red	Diffused	20 - 80	60	2.30	—

2 Chip Single and Tri-Color LEDs

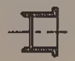
Stock No.	Mfr.'s Type	Fig.	Emitted	Lens	Lum. Intensity @ 20 mA (mcd)	View Angle°	PK./10	1-9
639-2195	MLED-9110F2230	E	White	Diffused	5 - 20/5 - 12.5	110	6.00	—
639-2200	MLED-7500F2230	B	White	Diffused	20 - 50/12.5 - 40	60	5.56	—
639-2210	MLED-7500F3020	B	White	Diffused	12.5 - 40/5 - 20	60	11.58	—
639-2215	MLED-7500D1212	B	Red	Diffused	8 - 40/8 - 40	60	6.00	—
639-2235	MLED-9500F2230	E	White	Diffused	20 - 90/20 - 70	60	6.95	—
639-2240	MLED-9500F2230-CA	E	White	Diffused	3.2 - 8/3.2 - 8	60	6.95	—
639-2245	MLED-9500F2220	E	White	Diffused	20 - 90/20 - 60	60	6.00	—
639-2250	MLED-9500F3020	E	White	Diffused	20 - 70/20 - 60	60	6.00	—
639-2255	MLED-9500C2230	E	Water	Clear	100 - 300/50 - 200	24	6.95	—
639-2260	MLED-9500C2220	E	Water	Clear	100 - 300/30 - 80	24	6.95	—
639-2265	MLED-9500C3020	E	Water	Clear	50 - 200/30 - 80	24	6.95	—

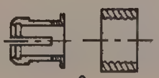
Blinking LEDs

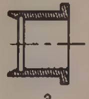
Stock No.	Mfr.'s Type	Fig.	Emitted	Lens	Lum. Intensity @ 20 mA (mcd)	View Angle°	PK./10	1-9
639-2275	MLED-6160D30-B	F	Green	Diffused	5 - 20	60	—	1.43
639-2280	MLED-6160D20-B	F	Yellow	Diffused	5 - 20	60	—	1.98
639-2285	MLED-6160D12-B	F	Red	Diffused	12.5 - 32	60	—	1.98
639-2290	MLED-6160D13-B/B	F	Red	Diffused	100 - 300	60	—	2.85
639-2295	MLED-5600D10-B	B	Red	Diffused	2 - 8	60	—	1.25
639-2300	MLED-5600D30-B	B	Green	Diffused	5 - 32	60	—	1.35
639-2305	MLED-5600D20-B	B	Yellow	Diffused	5 - 32	60	—	1.71
639-2310	MLED-5600D12-B	B	Red	Diffused	20 - 80	60	—	1.56
639-2315	MLED-5600D13-B/B	B	Red	Diffused	100 - 300	60	—	2.08

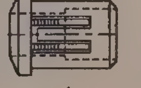
ED Lamp Holders

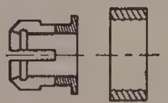
Stock No.	Mfr.'s Type	Fig.	Bulb Style	EACH
639-2345	MLED-RTC-1300	1	T-1	.14
639-2350	MLED-RTC-2300	2	T-1	.14
639-2355	MLED-RTC-1500	3	T-1¾	.09
639-2360	MLED-RTF-0105	4	T-1¾	.38
639-2365	MLED-RTC-2500	5	T-1¾	.14
639-2370	MLED-RTF-0205	6	T-1¾	.38

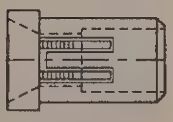

1


2


3


4


5


6

Miniature Lamps

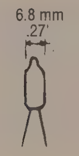


Fig.1
T-2 Bulb (Neon)
Wire Terminal

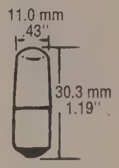


Fig. 2
T-3¼ Bulb (Neon)
Miniature
Bayonet Base

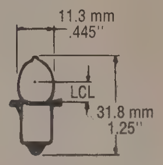


Fig. 3
B-3½ Bulb
Single Contact
Miniature
Flanged Base

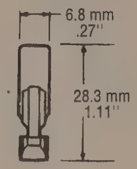


Fig. 4
T-2 Bulb
Slide Number
5 Base

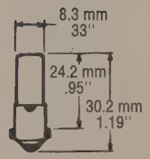


Fig. 5
T-2½ Bulb
Miniature
Bayonet Base

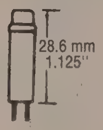


Fig. 6
T-2 Pilot
Cartridge Lamp

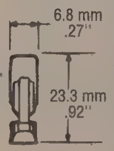


Fig. 7
T-2 Bulb
Slide Number
6 Base

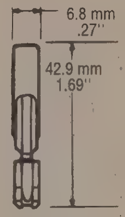


Fig. 8
T-2 Bulb
Slide Number
3 Base

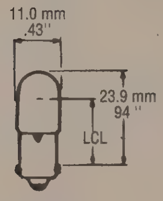


Fig. 9
T-3¼ Bulb
Miniature
Bayonet Base

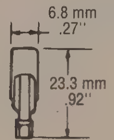


Fig. 10
T-2 Bulb
Slide Number
6 Base

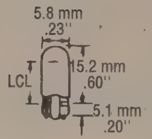


Fig. 11
T-1¾ Bulb
Subminiature
Wedge Base

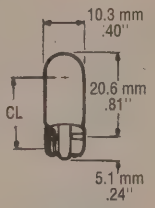


Fig. 12
T-3½ Bulb
Wedge Base

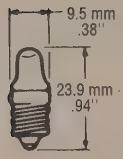


Fig. 13
TL-3 Bulb
Miniature
Screw Base

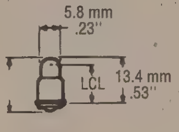


Fig. 14
T-1¾ Bulb
Single Contact
Midget Flanged Base

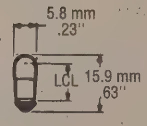


Fig. 15
T 1¾ Bulb
Midget Grooved
Base

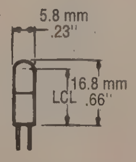


Fig. 16
T-1¾ Bulb
Bipin Base

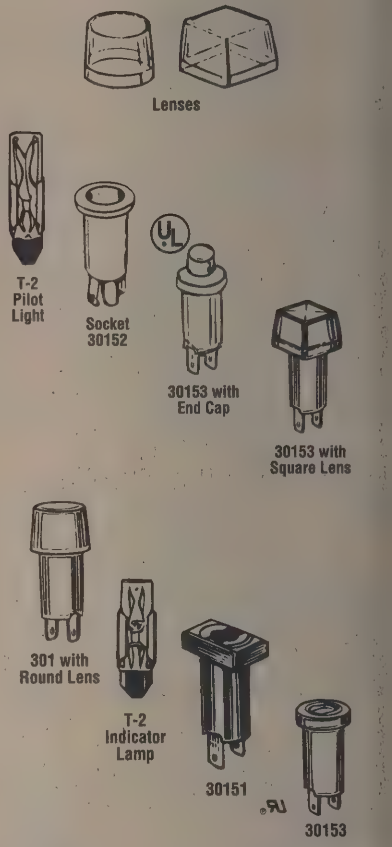
Stock No.	Mfr.'s Type	Volts	Amps	Avg. Life (Hrs.)	Fig.	Price	
						EACH	PK./10
937-7045	NE-2/A1A	105-125	0.7 mA	25 K	1	—	3.07
937-7050	NE-2A/A2A	105-125	0.7 mA	25 K	1	—	4.78
937-9600	NE-51/B1A	105-125	0.3 mA	10 K	2	.71	—
937-9605	NE-51H/B2A	105-125	1.2 mA	20 K	2	.63	—
937-7095	NE-2H/C2A	105-125	1.9 mA	25 K	1	—	4.79
937-7002	PR2	2.38	0.500	15	3	—	5.15
937-9610	PR13	4.75	0.500	15	3	.67	—
937-9615	6PSB	6.00	0.140	20 K	4	.95	—
937-9950	12MB	12.00	0.170	12 K	5	1.15	—
937-4010	12PC	12.00	0.170	12 K	6	1.69	—
937-9630	12PSB	12.00	0.170	12 K	4	.84	—
937-9635	16ESB	16.00	0.040	7.5 K	7	1.04	—
937-9645	24E	24.00	0.035	7 K	8	.59	—
937-9650	24MB	24.00	0.070	10 K	5	1.02	—
937-4070	24PC	24.00	0.073	10 K	6	1.69	—
937-9655	24ESB	24.00	0.040	8 K	7	1.04	—
937-9500	24PSB	24.00	0.073	10 K	4	.53	—
937-9665	28MB	28.00	0.050	5 K	5	1.15	—
937-4080	28PC	28.00	0.040	5 K	6	1.55	—
937-9505	28PSB	28.00	0.040	5 K	4	.52	—
937-7090	44	6.30	0.250	3 K	9	—	3.44
937-7105	47	6.30	0.150	3 K	9	—	3.44
937-7130	48C	48.00	0.035	7 K	8	1.02	—
937-9680	48PSB	48.00	0.050	10 K	4	.82	—
937-9685	51A	10.00	0.035	10 K	10	.92	—
937-7010	56	5.00	0.115	20 K	11	—	6.14
937-9705	60PSB	60.00	0.050	7.5 K	4	1.04	—

Stock No.	Mfr.'s Type	Volts	Amps	Avg. Life (Hrs.)	Fig.	Price	
						EACH	PK./10
937-9710	73	14.00	0.080	15 K	11	—	3.16
937-7035	74	14.00	0.100	500	11	—	4.66
937-7170	85	28.00	0.040	7 K	11	—	2.40
937-7005	86	6.30	0.200	20 K	11	—	3.53
937-9725	120MB	120.00	0.025	7.5 K	5	1.14	—
937-9730	120MB/6	120.00	0.052	3 K	5	1.10	—
937-5060	120PC	120.00	0.025	7.5 K	6	1.48	—
937-9735	120PSB	120.00	0.025	7.5 K	4	.72	—
937-7605	194	14.00	0.270	2.5	12	—	3.81
937-9740	222	2.25	0.250	5	13	.69	—
937-9005	313	28.00	0.170	500	9	1.09	—
937-7270	327	28.00	0.040	4 K	14	—	4.00
937-9750	330	14.00	0.080	1.5 K	14	.54	—
937-9755	334	28.00	0.040	4 K	15	.93	—
937-9765	382	14.00	0.080	15 K	14	1.11	—
937-7305	387	28.00	0.040	7 K	14	—	4.00
937-9770	388	28.00	0.040	7 K	15	.91	—
937-9010	656	28.00	0.060	2.5 K	12	—	5.16
937-7290	657	28.00	0.080	7.5 K	12	—	5.15
937-9775	755	6.30	0.150	20 K	9	.35	—
937-9015	756	14.00	0.080	15 K	9	—	8.59
937-9020	757	28.00	0.080	7.5 K	9	—	5.16
937-9025	1815	14.00	0.200	3 K	9	—	7.94
937-7440	1816	13.00	0.330	250	9	—	5.62
937-7445	1819	28.00	0.040	2.5 K	9	—	5.47
937-7455	1829	28.00	0.070	1 K	9	—	4.69
937-9790	7387	28.00	0.040	7 K	16	.73	—

Single Socket Assembly

Three Easy Steps

- ► STEP 1 — Choose Lens or Cap
- ► STEP 2 — Add a Lamp
- ► STEP 3 — Insert into Socket



STEP 1 — Lenses

Lenses, Round and Square

Stock No.	Mfr.'s Type	Description	PER PKG./10	
			1-9	10-49
937-6265	30160	Round, Red	4.80	4.40
937-6275	30170	Square, Red	4.80	4.40
937-6276	30173	Square, White	4.80	4.40
937-6274	30174	Square, Green	4.80	4.40

Note: [1]Polycarbonate end caps are press fit to lamp; cannot be used with lam rated over 1.1 watts. [2]Pyrex end caps must be cemented to the lamp v translucent silicon adhesive.

STEP 2 — Pilot and Indicator Lamps

For Pilot Lamps, select a Fig. 7 lamp from the miniature lamps left. For Indicator Lamps, select a Fig. 9 lamp from the miniatu lamps at left.

STEP 3 — Pilot and Indicator Lamps

Pilot Socket

Dimensions. Round Lens: 0.70" dia × 0.48" high. **Square Le** 0.70" × 0.70" × 0.48" high. **Socket:** 1.31" M.O.L. **Mounting Ho** 0.50" diameter.

Stock No.	Mfr.'s Type	EACH	
		1-99	100-499
937-6152	30152	1.06	.97

Indicator Socket

Dimensions. Round Lens: 0.70" dia × 0.48" high. **Square Le** 0.70" × 0.48" high. **Socket:** 1.14" M.O.L. **Mounting Hole:** .0 diameter. **Material:** Zytol #101.

Stock No.	Mfr.'s Type	PER PKG./10	
		1-99	100-499
937-6260	30151	5.52	5.06
937-6153	30153	5.04	4.62

Universal Housing for T-2 Slide Base Pilot and T-2½ and T-3¼ Min. Bayonet

imensions. **T-2 Lenses. Diameter:** 0.63:. **Height:** 0.38". **T-2 Socket. Front of Panel to End of** erminals: 0.91". **Mounting Hole:** $^{11}/_{16}$" dia. **T-2½ or T-3¼ Lenses.** Diameter: 0.63:. **Height:** 0.38". -2½ or T-3¼ **Socket. Front Panel to End of Terminals:** 1.68". **Mounting Hole:** $^{11}/_{16}$" dia.

TEP 1 — Lenses — Universal Housing for T-2 Slide Base Pilot and T-3¼ Miniature Bayonet

Stock No.	Mfr.'s Type	Fig.	Description	EACH	
				1-99	100-499
937-6205	30200	A	Flat Top Translucent Red	.79	.72
937-6204	30212	A	Flat Top Translucent Green	.79	.72
937-6207	30214	A	Flat Top Translucent Yellow	.79	.72
937-6215	30100	B	Jeweled Red	.88	.81
937-6214	30102	B	Jeweled Green	.83	.76
937-6211	30106	B	Jeweled Amber	.88	.81
937-6225	30110	C	Dome Transparent Red	.39	.36
937-6221	30111	C	Dome Transparent Amber	.52	.47
937-6224	30112	C	Dome Transparent Green	.52	.47
937-6222	30113	C	Dome Transparent Blue	.52	.47
937-6227	30114	C	Dome Transparent Yellow	.52	.47
937-6223	30116	C	Dome Transparent Clear	.52	.47
937-6245	30120	E	Dome Fluted Red	.40	.37
937-6244	30122	E	Dome Fluted Green	.40	.37
937-6242	30124	E	Dome Fluted Blue	.40	.37
937-6243	30125	E	Dome Fluted Clear	.40	.37
937-6241	30126	E	Dome Fluted Amber	.41	.38
937-6235	30130	D	Dome Translucent Red	.37	.34
937-6237	30131	D	Dome Translucent Yellow	.41	.37
937-6234	30132	D	Dome Translucent Green	.41	.37
937-6236	30133	D	Dome Translucent White	.40	.37

TEP 2 — Lamps — T-2 Pilot — Slide Base

Stock No.	Mfr.'s Type	Volts	Amps	Average Life (Hrs.)	EACH	
					1-99	100-499
937-9615	6PSB	6	.140	20,000	.95	.87
937-9630	12PSB	12	.170	12,000	.84	.53
937-9500	24PSB	24	.073	10,000	.53	.48
937-9505	28PSB	28	.040	5,000	.52	.48
937-9680	48PSB	48	.053	7,500	.82	.75
937-9705	60PSB	60	.050	7,500	1.04	.96
937-9735	120PSB	120	.025	7,500	.72	.66

TEP 3 — Sockets

Stock No.	Mfr.'s Type	Description	EACH
			1-99
937-6098	30099	Single Socket Assembly for T-2 Slide Base Pilot Lamp	1.64
937-6154	31099	Single Socket Assembly for T-2½ and T-3¼ Miniature Base	3.41

Three Easy Steps

Fig. A Flat Top Translucent

Fig. B Jeweled

Fig. C Dome Transparent

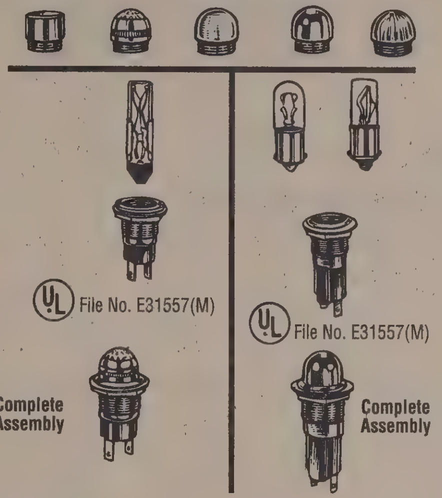
Fig. D Dome Translucent

Fig. E Dome Fluted

1 Choose your lens & color...

2 Add a T-2 Pilot Lamp...

3 And insert into socket #30099



1 Choose your lens & color...

2 Add a T-2½ or T-3¼ lamp with Min. Bay. Base...

3 And insert into socket #31099

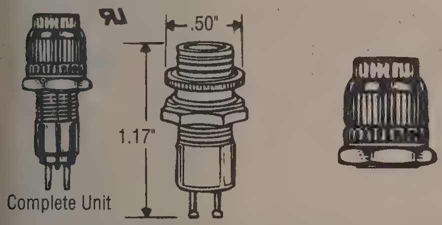
STEP 2 — Lamps — T-2½ Miniature Bayonet

Stock No.	Mfr.'s Type	Volts	Amps	Average Life (Hrs.)	EACH	
					1-99	100-499
937-9950	12MB	12.0	.170	12,000	1.15	1.06
937-9650	24MB	24.0	.070	10,000	1.02	.94
937-9665	28MB	28.0	.040	5,000	1.15	1.06
937-9725	120MB	120.0	.025	7,500	1.14	1.05

STEP 2 — Lamps — T-3¼ Miniature Bayonet

Stock No.	Mfr.'s Type	Volts	Amps	Average Life (Hrs.)	PER PKG./10		
					1-9	10-49	50-99
937-7105	47	6.3	.150	3,000	3.44	3.15	2.91
937-7355	755	6.3	.150	20,000	3.53	3.23	2.98
937-7090	44	6.3	.250	3,000	3.44	3.15	2.91
937-7440	1816	13.0	.330	1,000	5.62	5.15	4.75
937-7445	1819	28.0	.040	2,500	5.47	5.02	4.63
937-7455	1829	28.0	.070	1,000	4.69	4.30	3.97

Other Lamp Assemblies
Three Easy Steps (as above)

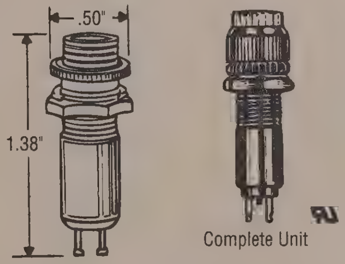


STEP 1 Lenses — Transparent

Stock No.	Mfr.'s Type	Color	EACH	
			1-99	100-Up
937-6281	30140	Amber	.99	.91
937-6283	30141	Clear	.99	.91
937-6285	30142	Red	.99	.91
937-6282	30143	Blue	.99	.91
937-6284	30144	Green	.99	.91

STEP 1 Lenses — Translucent

Stock No.	Mfr.'s Type	Color	EACH	
937-6185	30147	Red	1.20	1.10
937-6184	30149	Green	1.20	1.10
937-6187	30145	Yellow	.99	.91
937-6186	30146	White	.99	.91



STEP 2 T-2 Indicator Cartridge Lamps

Stock No.	Mfr.'s Type	Volts	Amps	Life Hours	EACH		
					1-99	100-499	500-Up
937-5819	918IC	12	.040	10,000	1.87	1.71	1.58
937-7155	926IC	16	.040	7,500	1.83	1.68	1.55
937-5933	933IC	24	.017	15,000	1.83	1.68	1.55
937-7165	934IC	24	.040	8,000	1.83	1.68	1.55
937-5938	938IC	28	.040	6,000	1.83	1.68	1.55
937-5941	941IC	48	.040	5,000	1.78	1.63	1.51

STEP 3 Socket for Above Lamps

SM1A Solder

Material: Black Phenolic. **Dimensions. Lenses:** Diameter .400". **Height:** .425". **Socket:** Front of panel to end of terminals – 1.0". **Mounting Hole:** .372" diameter.

Stock No.	Mfr.'s Type	Base	EACH
			1-99
937-3605	30098	Solder Lugs (SM1A)	4.30

Mil. Std. 18235 Mil-L-3661 A-Mil. Std. 202B.

STEP 2 T-2 Pilot Cartridge Lamps

Stock No.	Mfr.'s Type	Volts	Amps	Life Hours	EACH		
					1-99	100-499	500-Up
937-4010	12PC	12.0	.170	12,000	1.69	1.55	1.43
937-4070	24PC	24.0	.073	10,000	1.69	1.55	1.43
937-4080	28PC	28.0	.040	5,000	1.55	1.42	1.31
937-5060	120PC	120.0	.025	7,500	1.48	1.36	1.26

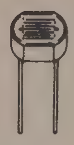
STEP 3 Socket for Above Lamps

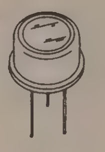
SM2A Solder

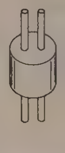
Material: Black Phenolic. **Dimensions. Lenses:** Diameter .400". **Height:** .425". **Socket:** Front of panel to end of terminals – 1.20". **Mounting Hole:** .372" diameter.

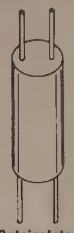
Stock No.	Mfr.'s Type	Base	EACH
			1-9
937-3625	30096	Solder Lugs (SM2A)	4.30

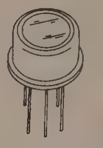
Mil. Std. 18236 Mil-L-3661 B-Mil. Std. 202B.

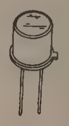

TO-5, TO-18 CdS Open

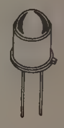

TO-5, TO-18 CdS Dual


Optoisolator


Optoisolator


TO-5, TO-8 Quad


HF-Hermetic Flat Lens


HL-Hermetic Dome Lens

CdS/CdSe Photoconductive Cells

Cells light adapted at 30-50 ftc for 16 hours minimum prior to test. All measurements conducted at 25°C ambient. 2854°K. Quantity pricing always available.

Hermetically Sealed Package

Stock No.	Mfr.'s Type	Package Type	Spectral Response Peak nm	Resistance at 2 ftc Ohms	Min. RDARK* Ohms	Max. Voltage Rating	EACH 1-99
699-9500	NSL-4970	TO-8	515 CdS	7.25 K (1 ftc)	400.0 K	320 V	2.35
699-0100	NSL-5910	TO-8	550 CdS	1.50 K	100.0 K	170 V	2.35
699-1020	NSL-6910	TO-8	690 CdSe	250.00	67.0 K	170 V	2.35
699-6023	NSL-3530	TO-5	725 CdSe	66.00 K	440.0 Meg	320 V	2.75
699-2022	NSL-4510	TO-5	515 CdS	43.00 K (1 ftc)	2.5 Meg	120 V	2.75
699-0150	NSL-4530	TO-5	515 CdS	8.00 K (1 ftc)	400.0 K	120 V	2.75
699-0170	NSL-4560	TO-5	515 CdS	155.00 K (1 ftc)	10.0 Meg	320 V	2.75
699-0180	NSL-4570	TO-5	515 CdS	65.00 K (1 ftc)	4.0 Meg	320 V	2.75
699-6025	NSL-5540	TO-5	550 CdS	30.00 K	20.0 Meg	120 V	2.75
699-0190	NSL-6510	TO-5	690 CdSe	600.00	400.0 K	120 V	2.75
699-9502	NSL-7530	TO-5	615 CdS	10.00 K	6.7 Meg	120 V	2.75
699-9504	NSL-4130	TO-18	515 CdS	30.00 K (1 ftc)	1.8 Meg	80 V	2.35
699-6020	NSL-4140	TO-18	515 CdS	14.00 K (1 ftc)	800.0 K	80 V	2.35
699-0230	NSL-4160	TO-18	515 CdS	260.00 K (1 ftc)	15.6 Meg	320 V	2.25
669-0240	NSL-4170	TO-18	515 CdS	110.00 K (1 ftc)	6.6 Meg	320 V	2.35
699-0250	NSL-4180	TO-18	515 CdS	50.00 K (1 ftc)	3.0 Meg	160 V	2.35
699-6009	NSL-5110	TO-18	550 CdS	10.00 K	670.0 K	100 V	2.35
699-0290	NSL-5150	TO-18	550 CdS	15.00 K	10.0 Meg	60 V	2.35
699-1070	NSL-5160	TO-18	550 CdS	100.00 K	67.0 Meg	100 V	2.35
699-1060	NSL-6110	TO-18	690 CdSe	2.00 K	1.3 Meg	100 V	2.35
—	—	—	—	—	—	—	—

*5 seconds after removal of test light.

Plastic Encapsulated Ceramic Package

Stock No.	Mfr.'s Type	Package Type	Spectral Response Peak nm	Resistance at 2 ftc Ohms	Min. RDARK* Ohms	Max. Voltage Rating	EACH 1-99
699-9506	NSL-4472	1"	515 CdS	5.50 K (1 ftc)	65.0 K	1000 V	1.51
699-0001	NSL-4972	TO-8	515 CdS	7.25 K (1 ftc)	400.0 K	320 V	.90
699-0310	NSL-5942	TO-8	550 CdS	9.00 K	600.0 K	250 V	.90
699-0320	NSL-6922	TO-8	690 Cds	510.00	300.0 K	170 V	.90
699-0330	NSL-6952	TO-8	690 CdS	2.70 K	720.0 K	170 V	.90
699-0370	NSL-4512	TO-5	515 CdS	43.00 K (1 ftc)	2.5 Meg	120 V	.70
699-0380	NSL-4532	TO-5	515 CdS	8.00 K (1 ftc)	400.0 K	120 V	.70
699-6051	NSL-4542	TO-5	515 CdS	3.50 K (1 ftc)	100.0 K	120 V	.70
699-9512	NSL-5512	TO-5	550 CdS	3.30 K	220.0 K	120 V	.83
699-1050	NSL-5542	TO-5	550 Cds	30.00 K	20.0 Meg	120 V	.83
699-0410	NSL-6512	TO-5	690 CdSe	600.00	400.0 K	120 V	.85
699-0420	NSL-6522	TO-5	690 CDSe	1.20 K	800.0 K	120 V	.85
699-6540	NSL-6532	TO-5	690 CdSe	30.00 K	20.0 Meg	320 V	.85
699-0002	NSL-19M51	TO-18	550 Cds	60.00 K (1 ftc)	5.0 Meg	100 V	.59
699-0440	NSL-4122	TO-18	515 CdS	75.00 K (1 ftc)	4.5 Meg	80 V	.65
699-0450	NSL-4132	TO-18	515 CdS	30.00 K (1 ftc)	1.8 Meg	80 V	.65
699-0480	NSL-4182	TO-18	515 CdS	50.00 K (1 ftc)	3.0 Meg	160 V	.65
699-6059	NSL-5152	TO-18	550 Cds	15.00 K	10.0 Meg	60 V	.63
699-1055	NSL-5162	TO-18	550 CdS	100.00 K	67.0 Meg	100 V	.63
699-9516	NSL-6112	TO-18	690 CdSe	2.00 K	1.3 Meg	100 V	.59
699-1035	NSL-7142	TO-18	615 CdS	4.50 K	3.0 Meg	60 V	.70

*5 seconds after removal of test light.

LED/Photocell Optoisolators

Axial lead LED/CdSe photoresistive cell modules for use as audio limiters, AGC, noiseless potentiometers and analog output circuits. Digital to analog isolation. NSL-32 series also available with radial conversion platform for PCB mounting. Quantity pricing always available.

Stock No.	Mfr.'s Type	LED Current mA	Resistance		Maximum Ratings			Emitter/ Detector Isolation Voltage Peak AC or DC V	EACH
			Max. on Ohms	Min. Dark[1] Ohms	Volts	Current mA	Power Dissipation[2] mW		1-99
699-5010	NSL-26	16	2000	10 Meg	120	40	125	2000	4.36
699-5012	NSL-28	16	400	10 Meg	100	40	50	2000	3.18
699-0500	NSL-28AA	16	2500	1 Meg	100	40	50	2000	3.18
699-5014	NSL-32	20	500	500 K	60	40	50	2000	1.67
699-1005	NSL-37V51	40	2000	10 Meg	100	40	175	2500	3.25

Dual Element[3]

699-9518	NSL-39V51	40	3000	10 Meg	100	40	175	2500	3.50

Stock No.	Mfr.'s Type	LED Current mA	Resistance		Maximum Ratings			Emitter/ Detector Isolation Voltage Peak AC or DC V	EACH
			Max. on Ohms	Min. Dark[1] Ohms	Volts	Current mA	Power Dissipation[2] mW		1-99
699-1015	NSL-37V52	16	3000	10 Meg	100	40	175	2500	3.25
699-1000	NSL-37V53	40	500	1 Meg	100	40	175	2500	3.25
699-5025	NSL-37V54	40	3500	100 Meg	100	40	175	2500	3.25
699-1010	NSL-37V62	40	200	400 K	100	40	175	2500	3.25
—	—	—	—	—	—	—	—	—	—
699-1040	NSL-39V62	10	500	400 K	100	40	175	2500	3.50

[1] 10 seconds after removal of LED current. [2] Power rating applies at 25°C linearly derated to 75°C. [3] Matched to ±25%.

Phototransistors

Silicon planar epitaxial phototransistors and NPN planar photodarlingtons are available with flat or high profile lens cap in TO-18 hermetically sealed packages. Quantity pricing always available.

Phototransistors

Stock No.	Mfr.'s Type	Light Current	Dark Current	Collector Breakdown	Emitter Breakdown	Saturation Voltage	Rise/Fall Time	Ang. Resp. Half Power	EACH
		IC	ICEO	VBR (CEO)	VBR (ECO)	VCE (SAT)	Tr, Tf		1-99
		H*=5 mW/cm^2 VCE=5 V 2854°K	H=0 VCE=10 V	IC=100 µA H=0	IC=100 µA H=0	IC=1 mA IB=0.5 mA H=0	IC=0.8 mA RL**=100 Ω		
		Min. (mA)	Max. (nA)	Min. (V)	Min. (V)	Max. (V)	Typ. (µsec)	Typ.	
699-9523	SLT-50HF1	0.2	50	40	7.5	0.4	3	40°	2.41
699-9525	SLT-50HF2	0.4	50	40	7.5	0.4	3	40°	2.66
699-9527	SLT-50HF3	1.0	50	40	7.5	0.4	3	40°	2.70
699-9529	SLT-50HF4	2.5	50	40	7.5	0.4	3	40°	2.75
699-9531	SLT-50HL1	0.6	50	40	7.5	0.4	3	15°	2.48
699-9533	SLT-50HL2	1.2	50	40	7.5	0.4	3	15°	2.74
699-9535	SLT-50HL3	2.4	50	40	7.5	0.4	3	15°	2.77
699-9537	SLT-50HL4	4.0	50	40	7.5	0.4	3	15°	2.79
699-0004	SLT-50HL5	6.0	50	40	7.5	0.4	3	15°	2.82
699-9541	SLT-50HL6	12.0	50	40	7.5	0.4	3	15°	2.98

Photodarlingtons

Stock No.	Mfr.'s Type	Light Current	Dark Current	Collector Breakdown	Emitter Breakdown	Saturation Voltage	Rise/Fall Time	Ang. Resp. Half Power	EACH
		IC	ICEO	VBR (CEO)	VBR (ECO)	VCE (SAT)	Tr, Tf		1-99
		H*=5 mW/cm^2 VCE=5 V 2854°K	H=0 VCE=10 V	IC=100 µA H=0	IC=100 µA H=0	IC=1 mA IB=0.5 mA H=0	IC=0.5 mA RL**=100 Ω		
		Min. (mA)	Max. (nA)	Min. (V)	Min. (V)	Max. (V)	Typ. (µsec)	Typ.	
699-9543	SLR-50HF1	0.6†	100	40	10	1.1	75	40°	2.55
699-9545	SLR-50HF2	2.0†	100	40	10	1.1	75	40°	2.75
699-9547	SLR-50HF3	4.0†	100	40	10	1.1	75	40°	2.79
699-0005	SLR-50HF4	8.0†	100	40	10	1.1	75	40°	2.86
699-0341	SLR-50HL1	0.5‡	100	40	10	1.1	75	15°	2.58
699-0351	SLR-50HL2	2.0‡	100	40	10	1.1	75	15°	2.79
699-0352	SLR-50HL3	4.0‡	100	40	10	1.1	75	15°	2.82
699-0006	SLR-50HL4	8.0‡	100	40	10	1.1	75	15°	2.89
—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—

*The light source is a frosted Tungsten Incandescent Lamp @ 2854°K. **The light source is a gallium arsenide IRED with a rise time less than 300 ns. †H=2 mW/cm^2. ‡H=0.2 mW/cm^2.

Products Not Cataloged Are Available — Call 1-800-433-5700 For Price And Delivery

Planar Photodiodes

Planar, passivated silicon photodetectors designed to operate either in photovoltaic mode or in a reverse-bias mode. Series available in five standard ID sorts. SLD-65 and SLD-87 series are available with isolated case (-J).

Stock No.	Mfr.'s Type	Short Circuit Current		Spectral Response	Dark Current	Breakdown Voltage	Junction Capacitance	Rise/Fall Time		Area	Package Type	EACH
		ISC		λ	ID	VBR	CJ	Tr	Tf	A		1-99
		H*=25 mW/cm²		Range (nm)	H=0 @ V_R=0.1 V	I_R=100 µA	V_R=0 V F=1 MHz	RL†=1 KΩ		Typ. (mm²)		
		Min. (µA)	Typ. (µA)		Max. (nA)	Typ. (V)	(pF)	Typ. (µS)				
699-0572	SLD-68E1A	150.0	225	400-1100	100	50	40	1	1.5	2.0	TO-46	2.40
699-0575	SLD-68EBG1A	7.5	11	400-700	100	50	40	1	1.5	2.0	TO-46	2.70
699-0007	SLD-68HF1A	110.0	130	400-1100	100	50	40	1	1.5	2.0	TO-46	2.48
699-0576	SLD-68HFBG1A	6.0	10	400-700	100	50	40	1	1.5	2.0	TO-46	3.65
699-0016	SLD-68HFIR1A	100.0	120	700-1100	100	50	40	1	1.5	2.0	TO-46	2.55
699-0008	SLD-68HL1A	300.0	450	400-1100	100	50	40	1	1.5	2.0	TO-46	2.62
699-0577	SLD-68HLBG1A	18.0	30	400-700	100	50	40	1	1.5	2.0	TO-46	2.63
699-0009	SLD-68HLIR1A	275.0	400	700-1100	100	50	40	1	1.5	2.0	TO-46	2.69
699-0010	SLD-67HF1A	1250.0	1600	400-1100	100	50	350	8	10.0	18.3	TO-5	3.13
699-0011	SLD-67HF2A	800.0	1100	400-1100	100	50	350	8	10.0	9.8	TO-5	2.62
699-0012	SLD-67HFBG1A	70.0	125	400-700	100	50	350	8	10.0	18.3	TO-5	5.24
699-0013	SLD-65HF1A	1100.0	1300	400-1100	100	50	380	10	12.0	20.3	TO-8	10.00
699-0014	SLD-65HFBG1A	60.0	100	400-700	100	50	380	10	12.0	20.3	TO-8	14.37

*The light source is a frosted Tungsten incandescent lamp at 2854°K. †The light source is a gallium arsenide LED with a rise time <300 ns.

Planar Photodiodes, Ceramic Package

Featuring high linearity, low dark current and fast response in a low cost ceramic package. Available with visible blocking filter or BG filter. Quantity pricing always available.

Stock No.	Mfr.'s Type	Short Circuit Current		Spectral Response	Dark Current	Breakdown Voltage	Junction Capacitance	Rise/Fall Time		Area	Package Type	EACH
		ISC		λ	ID	VBR	CJ	Tr	Tf	A		1-99
		H*=25 mW/cm²		Range (nm)	H=0 @ V_R=0.1 V	I_R=100 µA	V_R=0 V F=1 MHz	RL†=1 KΩ		Typ. (mm²)		
		Min. (µA)	Typ. (µA)		Max. (nA)	Typ. (V)	(pF)	Typ. (µS)				
699-0031	SLD-52C1A	250.0	290.0	400-1100	100	50	120	3.0	3.0	6.9	8 mm	2.36
699-0032	SLD-52IR1A	100.0	175.0	700-1100	100	50	120	3.0	3.0	6.9	8 mm	2.43
699-0587	SLD-52BG1A	12.5	14.5	400-700	100	50	120	3.0	3.0	6.9	8 mm	2.65
699-0074	SLD-53C1A	50.0	85.0	400-1100	100	50	50	1.0	1.5	2.0	6 mm	2.91
699-0589	SLD-53BG1A	2.5	4.2	400-700	100	50	50	1.0	1.5	2.0	6 mm	3.10
699-0590	SLD-69C1A	1250.0	1600.0	400-1100	100	50	350	8.0	10.0	18.3	9 mm	1.95
699-0037	SLD-69IR1A	1000.0	1200.0	700-1100	100	50	350	8.0	10.0	18.3	9 mm	1.87
699-0038	SLD-70C1A	150.0	225.0	400-1100	100	50	50	1.0	1.5	2.0	TO-5	1.38
699-0039	SLD-70IR1A	125.0	165.0	700-1100	100	50	50	1.0	1.5	2.0	TO-5	1.38
699-0040	SLD-70C2A	800.0	1100.0	400-1100	100	50	180	4.0	6.0	9.8	TO-5	1.65
699-0019	SLD-70BG2A	40.0	55.0	400-700	100	50	180	4.0	6.0	9.8	TO-5	2.74
699-0041	SLD-70CR2A	650.0	880.0	700-1100	100	50	180	4.0	6.0	9.8	TO-5	1.72

*Light source is a frosted incandescent lamp at 2854°K. †Measured in an unsaturated condition with an IR source and a load resistor of 1 KΩ.

Silicon Solderable Planar Photodiodes

Available with flexible leads, in chip form or custom configurations as single or multielement arrays.

Single Arrays

Stock No.	Mfr.'s Type	Short Circuit Current		Open Circuit Voltage	Dark Current	Breakdown Voltage	Junction Capacitance	Chip With Leads	EACH
		ISC		VOC Typ.	ID Typ.	VBD Typ.	CJ Typ.		1-99
		Min.	Typ.						
		H=500 fc 2854°K			VR=5 V (µA)	IR=100 µA (V)	OV (nF)		
		(mA)		(V)					
699-9566	SLSD-71N1	0.4	0.50	0.4	0.5	20	0.4	.1" × .2"	3.01
699-9568	SLSD-71N2	1.0	1.25	0.4	1.0	20	0.8	.2" × .2"	4.03
699-2030	SLSD-71N3	2.5	3.00	0.4	2.5	20	1.8	.2" × .4"	5.44
699-9570	SLSD-71N4	2.0	2.50	0.4	2.5	20	1.7	.1" × 1"	5.95
699-2035	SLSD-71N5	4.5	5.00	0.4	5.0	20	4.0	.4" × .4"	8.30
699-0021	SLSD-71N6	5.0	5.50	0.4	5.0	20	4.4	.2" × 1"	12.26
699-9572	SLSD-71N7	7.5	9.00	0.4	8.0	20	6.7	.35" × .76"	12.26

Multielement Arrays (Per Element)

699-0583	SLSD-71N1-6	0.4	0.50	0.4	0.5	20	0.4	6 element	5.50
699-0584	SLSD-71N1-9	0.4	0.50	0.4	0.5	20	0.4	9 element	16.66

Light Emitting Diodes

GaAs (940 nm), GaAlAs (880 nm) and GaP (700 nm) LEDs available in TO-46 hermetic high profile lens, flat lens and low profile clear epoxy for wide angle radiation emission.

Stock No.	Mfr.'s Type	Output Power	Peak Wavelength	Forward Voltage	Reverse Breakdown	Reverse Current	Ang. Resp. Half Power	EACH
		Po	λ Peak	VF	VBR	IR		1-99
		IF=50 mA	Typ.	IF=60 mA	IR=10 µA	VR=3 V		
		Min.		Max.	Min.	Max.	Typ.	
		(mW)	(nm)	(V)	(V)	(µA)		
699-0042	SLED-56HL1A	1.0	940	1.8	3.0	10	15°	1.67
699-0043	SLED-56HF1A	1.0	940	1.8	3.0	10	25°	1.65
699-0044	SLED-56E1A	1.0	940	1.8	3.0	10	40°	1.55
699-0045	SLED-56HL2A	3.0	880	1.6	5.0	10	15°	2.00
699-0046	SLED-56HF2A	3.0	880	1.6	5.0	10	25°	1.95
699-0047	SLED-56E2A	3.0	880	1.6	5.0	10	40°	1.90
699-0048	SLED-56HL3A	0.2*	700	2.4*	3.0	10	15°	1.65
699-0049	SLED-56HF3A	0.2*	700	2.4*	3.0	10	25°	1.60
699-0050	SLED-56E3A	0.2*	700	2.4*	3.0	10	40°	1.52

*IF=10 mA.

Arrays

Multielement arrays available in chip form or DIP package.

Stock No.	Mfr.'s Type	Short Circuit Current		Dark Current		Breakdown Voltage	Junction Capacitance	Area Per Element	Package Type	EACH
		ISC		ID		VBR	CJ	A		1-99
		H*=25 mW/cm²		H=0		IR=100 µA	VR=0 V F=1 MHz			
		Min. (µA)	Typ. (µA)	Max. (µA)	V_R (V)	Min. (V)	Typ. (pF)	(mm²)		
699-0022	SLCD61-094804	100	150	1.5	5.0	35	250	0.120	4 element chip	2.65
699-0023	SLCD61-094806	100	150	1.5	5.0	35	250	0.120	6 element chip	4.06
699-0024	SLCD61-094812	100	150	3.0	5.0	35	250	0.120	12 element chip	8.48

Stock No.	Mfr.'s Type	Short Circuit Current		Dark Current		Breakdown Voltage	Junction Capacitance	Area Per Element	Package Type	EACH
		ISC		ID		VBR	CJ	A		1-99
		H*=25 mW/cm²		H=0		IR=100 µA	VR=0 V F=1 MHz			
		Min. (µA)	Typ. (µA)	Max. (µA)	V_R (V)	Min. (V)	Typ. (pF)	(mm²)		
699-0600	SLD-74A1/16	100	125	0.1	0.1	50	40	2.3	18 Pin DIP	46.45
699-0601	SLD-74D1/4	800	1100	0.1	0.1	50	350	9.8	Quad 8 Pin DIP	35.00
—	—	—	—	—	—	—	—	—	—	—

*Light source is a frosted incandescent lamp at 2854°K.

Potentiometers, Resistors and Thermistors

Potentiometers

Page

- **Angstrohm**
  - Dials 385
  - Knobs 385
  - Rheostats 385
- **BI Technologies**
  - Conductive Plastic 387
  - Dials 392
  - Precision Controls 386,387
  - Trimmers
    - Cermet 388, 389, 390, 391
    - Multi-Turn 388,390
    - Single Turn 389, 391
    - Surface Mount 388, 391
  - Wirewound 386, 387
- **Bourns**
  - Dials 397, 398
  - Encoders 394
  - Fuses 424
  - Kit 398
  - Knobpots 397
  - Modular 395
  - Panel Controls 394,395
  - Precision Controls 396
  - Switches ..... See Switch Section Index
  - Trimmers
    - Adjustment Tools 398
    - Cermet 393, 398, 399, 400, 401
    - Multi-Turn 393, 399, 400, 401
    - Single Turn 393, 398, 401
    - Wirewound 393,401
- **Clarostat**
  - Dials 404
  - Encoders 406
  - Knobs 404
  - Potentiometers
    - Conductive Plastic 402, 405
    - JA Series 402
    - Modular 403
    - Multi-Turn 404
    - Precision 404
    - RV Series 402
    - Single Turn 402, 403, 405
    - Wirewound 403
  - Resistance Decade Box 404

Knobs Also Found in Hardware Section

Page

  - Rheostats 405
  - Trimmers 406
- **ETI Systems**
  - Dials 409
  - Motorized Pots 408
  - Potentiometers
    - Conductive Plastic 407, 408
    - Hybrid 408
    - Linear Motion 407
    - Multi-Turn 408
    - Single Turn 407
    - Wirewound 407, 408
- **Maurey**
  - Joysticks 410
  - Potentiometers
    - Conductive Plastic 410, 411
    - Linear Motion 411
    - Single Turn 410
    - Wirewound 411
- **Memcor Truohm**
  - Dials 412
  - Knobs 412
  - Rheostats 412
- **Mepcopal**
  - Cermet Multi-Turn 413
  - Cermet Single Turn 413
- **Ohmite**
  - Dials 414
  - Knobs 414
  - Rheostats 414
- **Spectrol**
  - Cermet 415, 418, 419
  - Conductive Plastic 415, 417
  - Dials 416
  - Encoder 415
  - Hardware and Tool 418
  - Multi-Turn 416, 418
  - Panel Controls 415
  - Precision Controls 415, 416
  - Single Turn 417, 418, 419
  - Surface Mount 419
  - Trimmers 418, 419
  - Wirewound 416, 417

Resistors

Page

- **Allied**
  - Carbon Film 420
  - Metal Film 420
  - Metal Oxide 420
- **BI Technologies**
  - Networks
    - DIP 422, 423
    - SIP 421
- **Bourns**
  - Fuses 424
  - Networks
    - DIP 424
    - SIP 424
- **Caddock**
  - Networks 425
  - Power 425
- **Century Electronics**
  - Capacitor Kits 426
  - Diode Kits 426
  - Inductor Kits 426
  - Resistor Kits 426
- **Clarostat**
  - Adjustable 427
  - Aluminum Housed 428
  - Bracket Mount 427
  - Chassis Mount 428
  - Fixed 427, 428
  - Power 427, 428
  - Silicone 428
  - Vitreous 427, 428
  - Wirewound 427,428
- **Dale**
  - Aluminum Housed 431
  - Bracket Mount 432
  - Chassis Mount 431
  - Chips (SMD) 429, 430
  - Kits 429, 430
  - Low Ohm Value 430
  - Metal Film 429
  - Networks
    - DIP 433
    - SIP 433
  - Power 432
  - RN Series 429
  - Silicone 431
  - Surface Mount 429, 430
  - Wirewound 430, 431, 432
- **Memcor Truohm**
  - Adjustable 435

Page

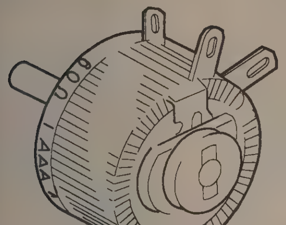
  - Bracket Mount 435
  - Silicone 434
  - Vitreous 434
  - Wirewound 434, 435
- **Ohmite**
  - Adjustable 442
  - Aluminum Housed 441
  - Bracket Mount 441, 442
  - Ceramic 440
  - Chassis Mount 441
  - Chips (SMD) 436, 443
  - Decade Box
    - Capacitance 436
    - Resistance 436
  - Hardware
  - Kits 436
  - Low Ohm Value 440, 441, 444
  - Power Chip 440
  - Radial Mount 440
  - Silicone-Ceramic 439
  - Stackohm 443
  - TA Series 440
  - Vitreous
    - Conformal 437
    - Molded 438
    - Power 441, 442, 443, 444
  - Wirewound 437, 438, 439, 440, 441, 442, 443, 444
- **Philips**
  - Carbon Film 445
  - Chips (SMD) 445
  - Metal Film 445
- **RCD**
  - Aluminum Housed 446
  - Carbon Film 447
  - Ceramic 447
  - Chassis Mount 446
  - Metal Oxide 447
  - Power 446, 447
  - Silicone 446
  - Tape and Reel 447
  - Wirewound 446, 447
- **SEI**
  - Carbon Composition 44
  - Carbon Film 44
  - Metal Film 44
  - Metal Oxide 44
  - Zero Ohm 44

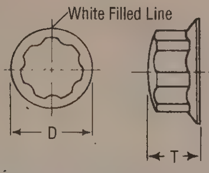
Thermistors

Page

- **Keystone Carbon**
  - Current Limiters 449
  - Fuses 449
  - Glass Beads & Probes 450
  - Kits 449
  - Sensors 450
  - Thermistors
    - Cryogenic 450
    - Glass Encapsulated 45
    - NTC 44
    - PTC 44
    - Standard 45
- **Thermometrics**
  - NTC Thermistors 45

Rheostats and Hardware





Knob No.	Knob Thick. (T)	Knob Dia. (D)
452	7/16	3/4
552	3/4	1 1/2
952	1 1/32	3

These vitreous enameled power rheostats are designed to provide exceptional reliability through the application of modern manufacturing techniques and the use of sophisticated materials. The base and ring are molded of high density ceramic. The winding is uniform to maintain maximum resolution and power dissipation. The insulator is molded of high density, porcelain/ceramic. Three terminals permit use as a potentiometer or a rheostat. Vitreous enamel provides the bonding medium necessary to securely attach the ring and base together and to lock the windings from shifting. 300° rotation. MP06A has 1/8" shaft; MP10A, MP15A, MP25A, and MP30A have 1/4" shaft; MP40A has 3/8" shaft. Standard position for the locating tab is at 6 o'clock with the terminals down. Additional features, wattages, values, and configurations available as custom orders. Manufacturer's literature available upon request.

12.5 Watts 7/8" Dia.

Stock No.	Mfr.'s Type	Ohms	EACH		
			1-9	10-24	25-49
934-7000	MP06A 1	1	21.22	19.45	17.95
934-7002	MP06A 2	2	21.22	19.45	17.95
934-7004	MP06A 3	3	21.22	19.45	17.95
934-7006	MP06A 6	6	21.22	19.45	17.95
934-7008	MP06A 8	8	21.22	19.45	17.95
934-7010	MP06A 10	10	21.22	19.45	17.95
934-7012	MP06A 15	15	21.56	19.77	18.25
934-7014	MP06A 25	25	21.56	19.77	18.25
934-7016	MP06A 50	50	21.56	19.77	18.25
934-7018	MP06A 75	75	21.56	19.77	18.25
934-7020	MP06A 100	100	21.56	19.77	18.25
934-7022	MP06A 125	125	21.56	19.77	18.25
934-7024	MP06A 175	175	21.56	19.77	18.25
934-7026	MP06A 250	250	21.56	19.77	18.25
934-7028	MP06A 350	350	21.56	19.77	18.25
934-7030	MP06A 500	500	21.56	19.77	18.25
934-7032	MP06A 1000	1000	21.56	19.77	18.25
934-7034	MP06A 1500	1500	21.56	19.77	18.25
934-7036	MP06A 2500	2500	21.56	19.77	18.25
934-7038	MP06A 3500	3500	20.18	18.50	17.08
934-7040	MP06A 5000	5000	20.18	18.50	17.08

Stock No.	Mfr.'s Type	Desc	Shaft Dia.	EACH	
				1-9	10-24
934-7075	452	Knob	1/8	1.67	1.54
934-7080	448	Dial	1/8	1.52	1.40

25 Watts 1 9/16" Dia.

Stock No.	Mfr.'s Type	Ohms	EACH		
			1-9	10-24	25-49
934-7100	MP10A 1	1	20.87	19.13	17.66
934-7102	MP10A 3	3	20.87	19.13	17.66
934-7104	MP10A 6	6	20.87	19.13	17.66
934-7106	MP10A 10	10	20.87	19.13	17.66
934-7108	MP10A 15	15	18.95	17.37	16.03
934-7110	MP10A 25	25	18.95	17.37	16.03
934-7112	MP10A 50	50	18.95	17.37	16.03
934-7114	MP10A 75	75	18.95	17.37	16.03
934-7116	MP10A 100	100	18.95	17.37	16.03
934-7118	MP10A 125	125	18.95	17.37	16.03
934-7120	MP10A 175	175	18.95	17.37	16.03
934-7122	MP10A 250	250	18.95	17.37	16.03
934-7124	MP10A 350	350	18.95	17.37	16.03
934-7126	MP10A 500	500	18.95	17.37	16.03
934-7128	MP10A 750	750	18.95	17.37	16.03
934-7130	MP10A 1000	1000	18.95	17.37	16.03
934-7132	MP10A 1500	1500	18.95	17.37	16.03
934-7134	MP10A 2500	2500	18.95	17.37	16.03
934-7136	MP10A 3500	3500	19.55	17.92	16.54
934-7138	MP10A 5000	5000	19.55	17.92	16.54

Stock No.	Mfr.'s Type	Desc	Shaft Dia.	EACH	
				1-9	10-24
934-7175	552	Knob	1/4	1.57	1.44
934-7180	548	Dial	1/4	0.98	0.90

50 Watts 2 9/32" Dia.

Stock No.	Mfr.'s Type	Ohms	EACH		
			1-9	10-24	25-49
934-7200	MP15A 1	1	32.55	29.83	27.54
934-7202	MP15A 4	4	32.55	29.83	27.54
934-7204	MP15A 6	6	32.55	29.83	27.54
934-7206	MP15A 8	8	24.55	22.50	20.77
934-7208	MP15A 16	16	24.55	22.50	20.77
934-7210	MP15A 22	22	24.55	22.50	20.77
934-7212	MP15A 35	35	24.55	22.50	20.77
934-7214	MP15A 50	50	24.55	22.50	20.77
934-7216	MP15A 100	100	24.55	22.50	20.77
934-7218	MP15A 125	125	24.55	22.50	20.77
934-7220	MP15A 150	150	24.55	22.50	20.77
934-7222	MP15A 225	225	24.55	22.50	20.77
934-7224	MP15A 500	500	24.55	22.50	20.77
934-7226	MP15A 1000	1000	24.55	22.50	20.77
934-7228	MP15A 1600	1600	24.55	22.50	20.77
934-7230	MP15A 2500	2500	24.55	22.50	20.77
934-7232	MP15A 3500	3500	25.87	23.72	21.89
934-7234	MP15A 5000	5000	25.87	23.72	21.89
934-7236	MP15A 10000	10000	25.87	23.72	21.89

Stock No.	Mfr.'s Type	Desc	Shaft Dia.	EACH	
				1-9	10-24
934-7175	552	Knob	1/4	1.57	1.44
934-7180	548	Dial	1/4	0.98	0.90

100 Watts 3 5/32" Dia.

Stock No.	Mfr.'s Type	Ohms	EACH		
			1-9	10-24	25-49
934-7300	MP25A 1	1	39.75	36.43	33.63
934-7302	MP25A 2	2	39.75	36.43	33.63
934-7304	MP25A 5	5	39.75	36.43	33.63
934-7306	MP25A 7R5	7R5	39.75	36.43	33.63
934-7308	MP25A 10	10	39.75	36.43	33.63
934-7310	MP25A 25	25	32.36	29.67	27.38
934-7312	MP25A 50	50	32.36	29.67	27.38
934-7314	MP25A 75	75	32.36	29.67	27.38
934-7316	MP25A 100	100	32.36	29.67	27.38
934-7318	MP25A 200	200	32.36	29.67	27.38
934-7320	MP25A 300	300	32.36	29.67	27.38
934-7322	MP25A 500	500	32.36	29.67	27.38
934-7324	MP25A 1000	1000	32.36	29.67	27.38
934-7326	MP25A 2500	2500	32.36	29.67	27.38
934-7328	MP25A 5000	5000	36.55	33.50	30.92

Stock No.	Mfr.'s Type	Desc	Shaft Dia.	EACH	
				1-9	10-24
934-7175	552	Knob	1/4	1.57	1.44
934-7180	548	Dial	1/4	0.98	0.90

150 Watts 4" Dia.

Stock No.	Mfr.'s Type	Ohms	EACH		
			1-9	10-24	25-49
934-7400	MP30A 1	1	44.91	41.17	38.00
934-7402	MP30A 10	10	44.91	41.17	38.00
934-7404	MP30A 50	50	41.27	37.83	34.92
934-7406	MP30A 100	100	41.27	37.83	34.92
934-7408	MP30A 150	150	41.27	37.83	34.92
934-7410	MP30A 500	500	41.27	37.83	34.92
934-7412	MP30A 1250	1250	41.27	37.83	34.92
934-7414	MP30A 2250	2250	48.18	44.17	40.77
934-7416	MP30A 4500	4500	48.18	44.17	40.77
934-7418	MP30A 10000	10000	56.91	52.17	48.15

Stock No.	Mfr.'s Type	Desc	Shaft Dia.	EACH	
				1-9	10-24
934-7175	552	Knob	1/4	1.57	1.44
934-7180	548	Dial	1/4	0.98	0.90

300 Watts 6" Dia.

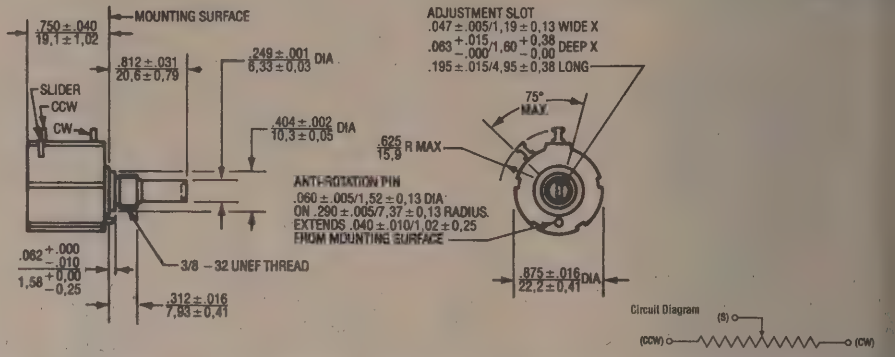
Stock No.	Mfr.'s Type	Ohms	EACH		
			1-9	10-24	25-49
934-7500	MP40A 1	1	78.00	71.50	66.00
934-7502	MP40A 10	10	78.00	71.50	66.00
934-7504	MP40A 25	25	74.49	68.28	63.03
934-7506	MP40A 50	50	74.49	68.28	63.03
934-7508	MP40A 100	100	74.49	68.28	63.03
934-7510	MP40A 400	400	74.49	68.28	63.03
934-7512	MP40A 2500	2500	98.29	90.10	83.17

Stock No.	Mfr.'s Type	Desc	Shaft Dia.	EACH	
				1-9	10-24
934-7575	952	Knob	3/8	25.93	23.87
934-7580	949	Dial	3/8	3.02	2.78

Model 7276
10-Turn Wirewound Potentiometers

The Model 7276 is a 7/8" diameter, 10-turn, wirewound precision potentiometer. They are economical, long lasting and feature a plastic 1/4" dia. shaft is 13/16" long and the plastic 3/8" dia. bushing is 5/16" long. **Rotational Load Life:** 500,000 shaft revolutions + 900 hours at rated wattage at 25°C. Rated 2 watts at 25°C derating to 0 watts at 105°C. **Electrical and Mechanical Travel:** 3600° +10° –0°. **Resistance Tolerance:** ±5%. **Operating Temperature Range:** –25°C to +105°C. **Nominal Weight:** 0.42 oz. Special features such as center tap, linearity tape, shaft lock or tighter tolerances are available as special order items. Manufacturers literature available upon request.

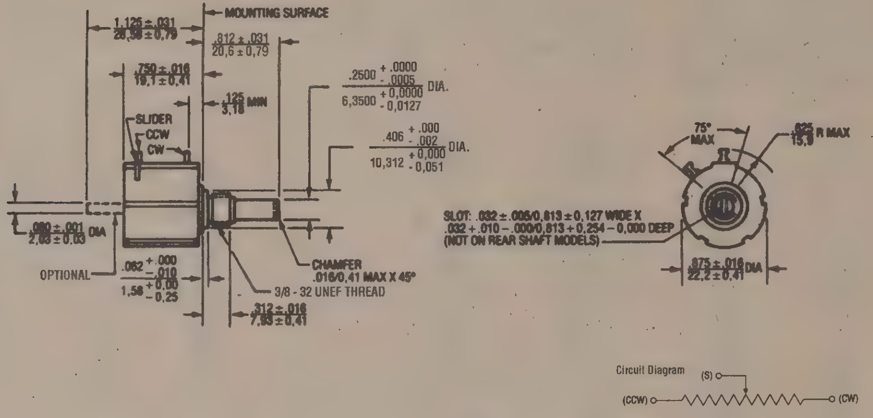
Stock No.	Mfr.'s Type	Ohms	EACH		
			1-9	10-24	25-49
525-1000	7276R100L.25	100	11.05	8.05	7.54
525-1005	7276R1KL.25	1K	9.88	7.20	6.75
525-1010	7276R5KL.25	5K	9.88	7.20	6.75
525-1015	7276R10KL.25	10K	9.88	7.20	6.75
525-1020	7276R20KL.25	20K	9.88	7.20	6.75


MOUNTING SURFACE
.750 ± .040 / 19,1 ± 1,02
.812 ± .031 / 20,6 ± 0,79
.249 ± .001 / 6,33 ± 0,03 DIA
SLIDER
CCW
CW
.404 ± .002 / 10,3 ± 0,05 DIA
ADJUSTMENT SLOT
.047 ± .005/1,19 ± 0,13 WIDE X
.063 +.015 −.000/1,60 +0,38 −0,00 DEEP X
.195 ± .015/4,95 ± 0,38 LONG
75° MAX
.625 / 15,9 R MAX
ANTI-ROTATION PIN
.060 ± .005/1,52 ± 0,13 DIA
ON .290 ± .005/7,37 ± 0,13 RADIUS.
EXTENDS .040 ± .010/1,02 ± 0,25
FROM MOUNTING SURFACE
.062 +.000 −.010 / 1,58 +0,00 −0,25
3/8 – 32 UNEF THREAD
.312 ± .016 / 7,93 ± 0,41
.875 ± .016 / 22,2 ± 0,41 DIA
Circuit Diagram
(S)
(CCW)
(CW)

Model 7286
10-Turn Wirewound Potentiometers

The Model 7286 is a 7/8" diameter, 10-turn, wirewound precision potentiometer. These economical, long lasting potentiometers feature a rotational load life of one million shaft revolutions + 900 hours at rated wattage at 70°C. The metal 1/4" dia. shaft is 13/16" long with a metal 3/8" dia. bushing that is 5/16" long. Rated 2 watts at 70°C derating to 0 watts at 125°C. **Electrical Travel:** 3600° +10° –0° > 100 ohms; 3600° +10° –5° ≤ 100 ohms. **Mechanical Travel:** 3600° +15° –0°. **Resistance Tolerance:** ±5%. **Static Operating Temperature Range:** –55°C to +125°C. **Dynamic Operating Temperature Range:** –40°C to +125°C. **Nominal Weight:** 0.75 oz. Special features such as center tap, linearity tape, rear shaft extension, flatted shaft, shaft lock, high torque, or dual ganged are available as special order items. Manufacturers literature available upon request.

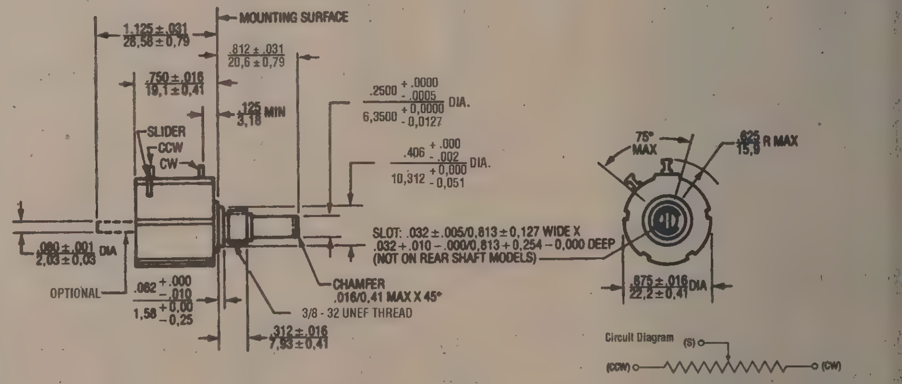
Stock No.	Mfr.'s Type	Ohms	EACH		
			1-9	10-24	25-49
525-1100	7286R100L.25	100	12.67	9.24	8.79
525-1105	7286R200L.25	200	12.67	9.24	8.79
525-1110	7286R500L.25	500	12.67	9.24	8.79
525-1115	7286R1KL.25	1K	11.51	8.39	8.05
525-1120	7286R2KL.25	2K	11.51	8.39	8.05
525-1125	7286R5KL.25	5K	11.51	8.39	8.05
525-1130	7286R10KL.25	10K	11.51	8.39	8.05
525-1135	7286R20KL.25	20K	11.51	8.39	8.05
525-1140	7286R50KL.25	50K	12.67	9.24	8.79
525-1145	7286R100KL.25	100K	12.67	9.24	8.79



Model 7486
5-Turn Wirewound Potentiometers

The Model 7486 is a 7/8" diameter, 5-turn, wirewound precision potentiometer. These economical, long lasting potentiometers feature a rotational load life of 500,000 shaft revolutions + 900 hours at rated wattage at 70°C. The metal 1/4" dia. shaft is 13/16" long with a metal 3/8" dia. bushing that is 5/16" long. Rated 1.5 watts at 70°C derating to 0 watts at 125°C. **Electrical Travel:** 1080° +10° –0° > 100 ohms; 1080° +10° –5° ≤ 100 ohms. **Mechanical Travel:** 1080° +15° –0°. **Resistance Tolerance:** ±5%. **Static Operating Temperature Range:** –55°C to +125°C. **Dynamic Operating Temperature Range:** –40°C to +125°C. **Nominal Weight:** 0.75 oz. Special features such as center tap, linearity tape, rear shaft extension, flatted shaft, shaft lock, high torque, or dual ganged are available as special order items. Manufacturers literature available upon request.

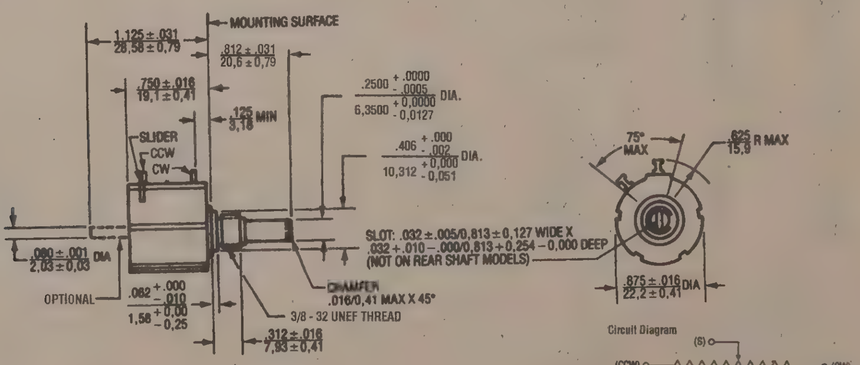
Stock No.	Mfr.'s Type	Ohms	EACH		
			1-9	10-24	25-49
525-1200	7486R1KL.25	1K	19.07	13.90	13.02
525-1205	7486R5KL.25	5K	19.07	13.90	13.02
525-1210	7486R10KL.25	10K	19.07	13.90	13.02



Model 8146
10-Turn Hybrid Potentiometer

The Model 8146 is a 7/8" diameter, 10-turn, hybrid precision potentiometer and position sensor. These economical, long lasting potentiometers feature a rotational load life of 5 million shaft revolutions + 900 hours at rated wattage at 70°C. The metal 1/4" dia. shaft is 13/16" long with a metal 3/8" dia. bushing that is 5/16" long. Rated 2 watts at 70°C derating to 0 watts at 125°C. **Electrical Travel:** 3600°. **Mechanical Travel:** 3600° +15° –0°. **Resistance Tolerance:** ±10%. **Operating Temperature Range:** –55°C to +125°C. **Nominal Weight:** 0.75 oz. Special features such as center tap, linearity tape, rear shaft extension, flatted shaft, shaft lock, high torque, or dual ganged are available as special order items. Manufacturers literature available upon request.

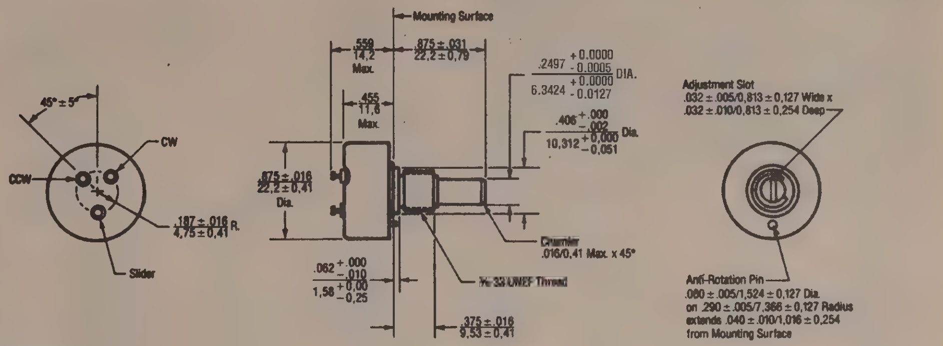
Stock No.	Mfr.'s Type	Ohms	EACH		
			1-9	10-24	25-49
525-1300	8146R1KL.25	1K	20.35	14.83	13.89
525-1305	8146R2KL.25	2K	20.35	14.83	13.89
525-1310	8146R5KL.25	5K	20.35	14.83	13.89
525-1315	8146R10KL.25	10K	20.35	14.83	13.89
525-1320	8146R20KL.25	20K	20.35	14.83	13.89



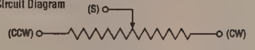
Model 6187
Single-Turn Conductive Plastic Potentiometers

The Model 6187 is a 7/8" diameter, continuous rotation, single-turn, conductive plastic precision potentiometer and position sensor. These economical, long lasting potentiometers feature a rotational load life of 5 millions shaft revolutions. The metal 1/4" dia. shaft is 7/8" long with a metal 3/8" dia. bushing that is 3/8" long. Rated 1 watt at 70°C derating to 0 watts at 125°C. **Electrical Travel:** 340°. **Mechanical Travel:** 350°. **Resistance Tolerance:** ±10%. **Static Operating Temperature Range:** −65°C to +125°C. **Dynamic Operating Temperature Range:** −40°C to +125°C. **Nominal Weight:** 0.53 oz. Special features such as center tap, slotted or flatted shaft, linearity tape, shaft lock and a stop are available as special order items. Manufacturers literature upon request.

Stock No.	Mfr.'s Type	Ohms	EACH		
			1-9	10-24	25-49
525-1400	6187R1KL1.0	1K	15.93	11.61	10.87
525-1405	6187R2KL1.0	2K	15.93	11.61	10.87
525-1410	6187R5KL1.0	5K	15.93	11.61	10.87
525-1415	6187R10KL1.0	10K	15.93	11.61	10.87



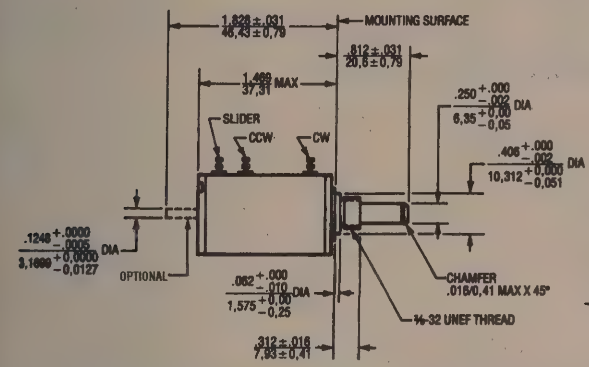
Circuit Diagram

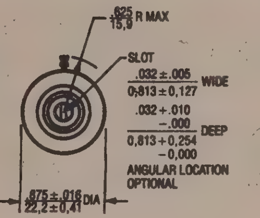


Model 7246
10-Turn Wirewound Potentiometers

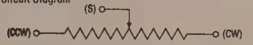
The Model 7246 is a 7/8" diameter, 10-turn, wirewound precision potentiometer. These high precision, long lasting potentiometers feature a rotational load life of 1 million shaft revolutions. The metal 1/4" dia. shaft is 13/16" long with a metal 3/8" dia. bushing that is 5/16" long. Rated 2 watts at 25°C derating to 0 watts at 85°C. **Electrical and Mechanical Travel:** 3600° +10° −0°. **Resistance Tolerance:** ±5%. **Operating Temperature Range:** −25°C to +85°C. **Nominal Weight:** 1.25 oz. Special features such as linearity tape, shaft lock, center tap, rear shaft extension and flatted shaft are available as special order items. Manufacturers literature available upon request.

Stock No.	Mfr.'s Type	Ohms	EACH		
			1-9	10-24	25-49
525-1500	7246R1KL.25	1K	38.81	28.59	26.88
525-1505	7246R5KL.25	5K	38.81	28.59	26.88
525-1510	7246R10KL.25	10K	38.81	28.59	26.88




.625 / 15,9 R MAX
SLOT
.032 ± .005 / 0,813 ± 0,127 WIDE
.032 + .010 − .000 DEEP
0,813 + 0,254 − 0,000
ANGULAR LOCATION OPTIONAL
.875 ± .016 / 22,2 ± 0,41 DIA

Circuit Diagram

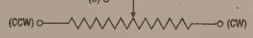


Model A
10-Turn Wirewound Potentiometer

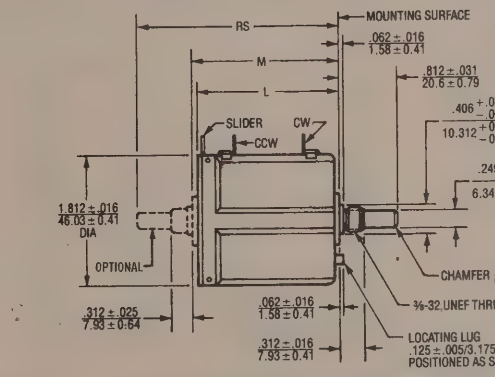
The Model A is a 1 13/16" diameter, 10-turn, wirewound precision potentiometer. These precision, long lasting potentiometers feature a rotational load life of 2 million shaft revolutions + 900 hours at rated wattage at 40°C. The metal 1/4" dia. shaft is 13/16" long with a metal 3/8" dia. bushing that is 5/16". Rated 5 watts at 40°C derating to 0 watts at 85°C. **Electrical and Mechanical Travel:** 3600° +4° −0° **Resistance Tolerance:** ±5% < 100 ohms; ±3% ≥ 100 ohms. **Static Operating Temperature Range:** −65°C to +85°C. **Dynamic Operating Temperature Range:** −40°C to +85°C. **Nominal Weight:** 4.40 oz. Special features such as linearity tape, shaft lock, center tap, rear shaft extension, color coded, slotted shaft, flatted shaft, shaft lock, and dual or triple ganged units are available as special order items. Manufacturers literature available upon request.

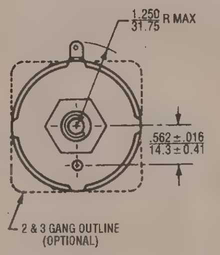
Stock No.	Mfr.'s Type	Ohms	EACH		
			1-9	10-24	25-49
525-1515	AR500L.25	500	46.40	33.81	31.67
525-1520	AR1KL.25	1K	46.40	33.81	31.67
525-1525	AR5KL.25	5K	46.40	33.81	31.67
525-1530	AR10KL.25	10K	46.40	33.81	31.67

Circuit Diagram



Dim. "L"		Dim. "M"	Dim. "RS"	No.of Gangs
2.016 51.21	MAX.	2.062±.031 52.38±0.79	2.875±.031 73.03±0.79	1
4.243 107.78	MAX.	4.205±.031 106.81±0.79	5.016±.031 127.41±0.79	2
6.143 156.04	MAX.	6.100±.031 154.94±0.79	6.906+.031 175.42±0.79	3



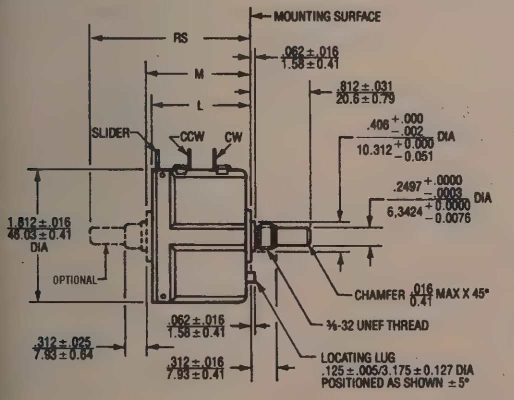


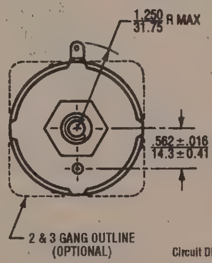
Model C
3-Turn Wirewound Potentiometer

The Model C is a 1 13/16" diameter, 3-turn, wirewound precision potentiometer. These precision, long lasting potentiometers feature a rotational load life of 2 million shaft revolutions + 900 hours at rated wattage at 40°C. The metal 1/4" dia. shaft is 13/16" long with a metal 3/8" dia. bushing that is 5/16" long. Rated 3 watts at 40°C derating to 0 watts at 85°C. **Electrical and Mechanical Travel:** 1080° +4° −0° **Resistance Tolerance:** ±5% < 100 ohms; ±3% ≥ 100 ohms. **Static Operating Temperature Range:** −65°C to +85°C. **Dynamic Operating Temperature Range:** −40°C to +85°C. **Nominal Weight:** 2.50 oz. Special features such as linearity tape, shaft lock, center tap, rear shaft extension, color coded, slotted shaft, flatted shaft, shaft lock, and dual or triple ganged units are available as special order items. Manufacturers literature available upon request.

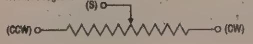
Stock No.	Mfr.'s Type	Ohms	EACH		
			1-9	10-24	25-49
525-1600	CR1KL.5	1K	45.69	33.20	30.92
525-1605	CR5KL.5	5K	45.69	33.20	30.92
525-1610	CR10KL.5	10K	45.69	33.20	30.92

Dim. "L"		Dim. "M"	Dim. "RS"	No.of Gangs
1.141 28.98	MAX	1.203 30.56	2.016 51.12	1
2.494 63.348	MAX	2.480 62.992	3.297 83.744	2
3.534 89.764	MAX	3.513 89.230	4.328 109.931	3



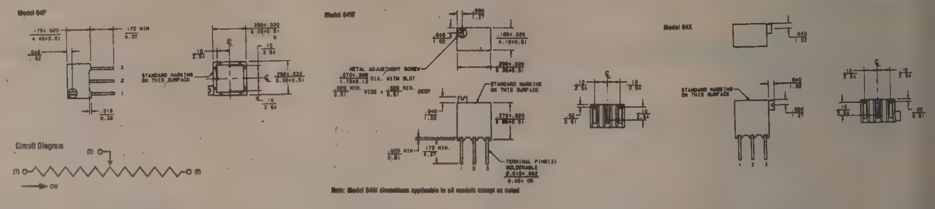


Circuit Diagram



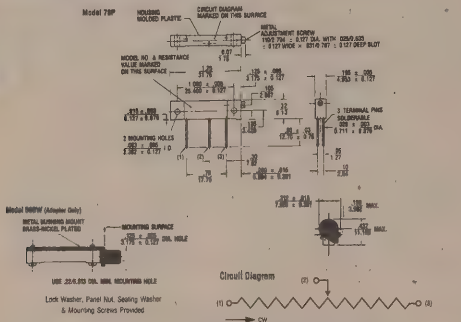
Model 64 Series 1/4" Sq. Multi-Turn Trimmer

The Model 64 is a 15-turn cermet trimming potentiometer. These essentially infinite resolution trimmers are 1/4" square. They are 1/4-watt at 85°C derating to 0 at 125°C. The metal electrical adjustment screw has a slot .02" wide × .02" deep. **Standard Tolerance:** ±10%. They are sealed to have no leaks in 85° Florinert® test. **Maximum Temperature Coefficient:** ±100 ppm/°C. **Operating Temperature Range:** –65°C to +150°C. **Rotational Life:** 200 cycles. **Load Life:** 1000 hours at 85°C at 0.25 watts. Clutch action mechanical stops at both ends. Solderable terminal pins. **Resistance to Solder Heat:** 260°C for 10 seconds. **Nominal Weight:** .014 oz. Additional pin configurations available as special order item. Manufacturer literature available upon request.


Model 64P
Model 64W
Model 64X
Circuit Diagram
(1)
(2)
(3)
CW
Standard Marking On This Surface
Metal Adjustment Screw
Terminal Pins (3) Solderable
Note: Model 64W dimensions applicable to all models except as noted

64PR Series		64WR Series		64XR Series		64YR Series		Ohms	EACH		
Stock No.	Mfr.'s Type	Stock No.	Mfr.'s Type	Stock No.	Mfr.'s Type	Stock No.	Mfr.'s Type		1-99	100-249	250-499
525-4400	64PR100	525-4500	64WR100	525-4600	64XR100	525-4700	64YR100	100	2.48	1.98	1.78
525-4405	64PR200	525-4505	64WR200	525-4605	64XR200	525-4705	64YR200	200	2.48	1.98	1.78
525-4410	64PR500	525-4510	64WR500	525-4610	64XR500	525-4710	64YR500	500	2.48	1.98	1.78
525-4415	64PR1K	525-4515	64WR1K	525-4615	64XR1K	525-4715	64YR1K	1 K	2.48	1.98	1.78
525-4420	64PR2K	525-4520	64WR2K	525-4620	64XR2K	525-4720	64YR2K	2 K	2.48	1.98	1.78
525-4425	64PR5K	525-4525	64WR5K	525-4625	64XR5K	525-4725	64YR5K	5 K	2.48	1.98	1.78
525-4430	64PR10K	525-4530	64WR10K	525-4630	64XR10K	525-4730	64YR10K	10 K	2.48	1.98	1.78
525-4435	64PR20K	525-4535	64WR20K	525-4635	64XR20K	525-4735	64YR20K	20 K	2.48	1.98	1.78
525-4440	64PR50K	525-4540	64WR50K	525-4640	64XR50K	525-4740	64YR50K	50 K	2.48	1.98	1.78
525-4445	64PR100K	525-4545	64WR100K	525-4645	64XR100K	525-4745	64YR100K	100 K	2.48	1.98	1.78
525-4450	64PR200K	525-4550	64WR200K	525-4650	64XR200K	525-4750	64YR200K	200 K	2.48	1.98	1.78
525-4455	64PR500K	525-4555	64WR500K	525-4655	64XR500K	525-4755	64YR500K	500 K	2.48	1.98	1.78
525-4460	64PR1M	525-4560	64WR1M	525-4660	64XR1M	525-4760	64YR1M	1 M	2.48	1.98	1.78

Model 78 Series 1¹/4" Rectangular Multi-Turn Trimmer

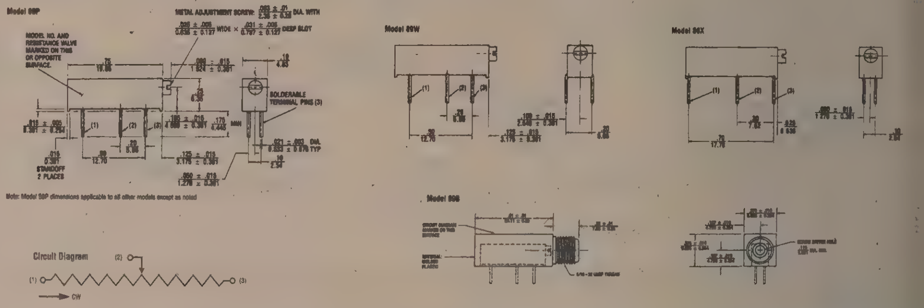

Model 78P
Model 56BW (Adapter Only)
Metal Bushing Mount Brass-Nickel Plated
Mounting Surface
Use .22/5.59 Dia. Min. Mounting Hole
Lock Washer, Panel Nut, Sealing Washer & Mounting Screws Provided
Circuit Diagram
(1)
(2)
(3)
CW

The Model 78 is a 22-turn cermet trimming potentiometer. These essentially infinite resolution trimmers are 1¹/4" rectangular. They are 1-watt at 70°C derating to 0 at 125°C. The metal electrical adjustment screw has a slot .025" wide × .031" deep. **Standard Tolerance:** ±10% (< 100 ohms = ±20%). They are sealed to have no leaks in 85° Florinert® test. **Maximum Temperature Coefficient:** ±100 ppm/°C. **Operating Temperature Range:** –55°C to +125°C. **Rotational Life:** 200 cycles. **Load Life:** 1000 hours at 70°C at 0.5 watts. Clutch action mechanical stops at both ends. Solderable terminal pins. **Resistance to Solder Heat:** 260°C for 10 seconds. **Nominal weight:** .09 oz. **56BW** adapter is used for panel mounting the **78 Series**. Additional pin configurations available as special order item. Manufacturer literature available upon request.

Stock No.	Mfr.'s Type	Ohms	EACH		
			1-99	100-249	250-499
525-4815	78PR1K	1 K	4.14	3.31	2.98
525-4820	78PR2K	2 K	4.14	3.31	2.98
525-4825	78PR5K	5 K	4.14	3.31	2.98
525-4830	78PR10K	10 K	4.14	3.31	2.98
525-4835	78PR20K	20 K	4.14	3.31	2.98
525-4840	78PR50K	50 K	4.14	3.31	2.98
525-4845	78PR100K	100 K	4.14	3.31	2.98

525-4895. 56BW. Panel Mount. **1-99** .... EACH 8.15
100-249 .... EACH 2.90
250-499 .... EACH 2.71

Model 89 Series ³/8" Rectangular Multi-Turn Trimmer


Model 89P
Model 89W
Model 89X
Model 89B
Model No. and Resistance Value Marked on This or Opposite Surface
Metal Adjustment Screw
Solderable Terminal Pins (3)
Standoff 2 Places
Note: Model 89P dimensions applicable to all other models except as noted
Circuit Diagram
(1)
(2)
(3)
CW

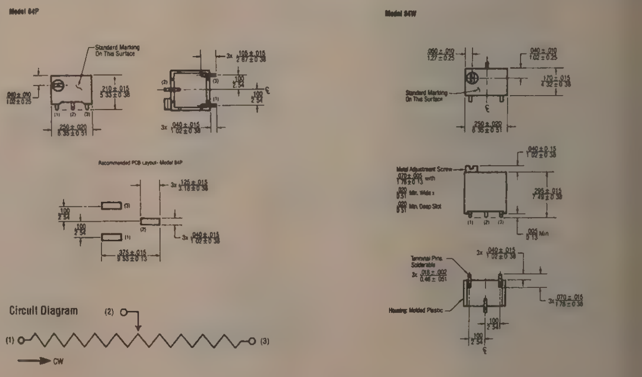
The Model 89 is a 20-turn cermet trimming potentiometer. These essentially infinite resolution trimmers are .19" wide × .25" high × .75" long. They are ³/4-watt at 85°C derating to 0 at 125°C. The metal electrical adjustment screw has a slot .025" wide × .031" deep. **Standard Tolerance:** ±10% (< 100 ohms = ±20%). They are sealed to have no leaks in85° Florinert® test. **Maximum Temperature Coefficient:** ±100 ppm/°C. **Operating Temperature Range:** –55°C to +125°C. **Rotational Life:** 200 cycles. Load life is 1000 hours at 70°C at 0.5 watts. Clutch action mechanical stops at both ends. Solderable terminal pins. **Resistance to Solder Heat:** 260°C for 10 seconds. **Nominal Weight:** .05 oz. Additional pin configurations available as special order item. Manufacturer literature available upon request.

89PR Series		89WR Series		89XR Series		Ohms	EACH		
Stock No.	Mfr.'s Type	Stock No.	Mfr.'s Type	Stock No.	Mfr.'s Type		1-99	100-249	250-499
525-4000	89PR100	525-4100	89WR100	525-4200	89XR100	100	1.26	1.01	.91
525-4005	89PR200	525-4105	89WR200	525-4205	89XR200	200	1.26	1.01	.91
525-4010	89PR500	525-4110	89WR500	525-4210	89XR500	500	1.26	1.01	.91
525-4015	89PR1K	525-4115	89WR1K	525-4215	89XR1K	1 K	1.26	1.01	.91
525-4020	89PR2K	525-4120	89WR2K	525-4220	89XR2K	2 K	1.26	1.01	.91
525-4025	89PR5K	525-4125	89WR5K	525-4225	89XR5K	5 K	1.26	1.01	.91
525-4030	89PR10K	525-4130	89WR10K	525-4230	89XR10K	10 K	1.26	1.01	.91
525-4035	89PR20K	525-4135	89WR20K	525-4235	89XR20K	20 K	1.26	1.01	.91
525-4040	89PR50K	525-4140	89WR50K	525-4240	89XR50K	50 K	1.26	1.01	.91
525-4045	89PR100K	525-4145	89WR100K	525-4245	89XR100K	100 K	1.26	1.01	.91
525-4050	89PR200K	525-4150	89WR200K	525-4250	89XR200K	200 K	1.26	1.01	.91
525-4055	89PR500K	525-4155	89WR500K	525-4255	89XR500K	500 K	1.26	1.01	.91
525-4060	89PR1M	525-4160	89WR1M	525-4260	89XR1M	1 M	1.26	1.01	.91

525-4295. 89B. Panel Mount. **1-99** .... EACH .79
100-249 .... EACH .63
250-499 .... EACH .57

Model 84 Series 1/4" Sq. Multi-Turn Trimmer

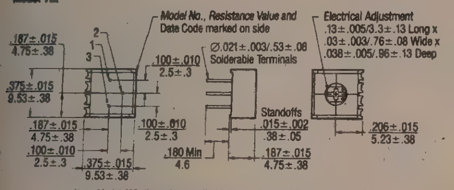
The Model 84 is a 15-turn surface mount cermet trimming potentiometer. These essentially infinite resolution trimmers are 1/4" square. They are 1/4-watt at 85°C derating to 0 at 150°C. The metal electrical adjustment screw has a slot .02" wide × .02" deep. **Standard Tolerance**: ±10%. They are sealed to have no leaks in 85° Florinert® test. **Maximum Temperature Coefficient**: ±100 ppm/°C. **Operating Temperature Range:** –65°C to +1505°C. **Rotational Life:** 200 cycles. **Load Life:** 1000 hours at 85°C at 0.5 watts. Clutch action mechanical stops at both ends. Solderable terminal pins. **Resistance to Solder Heat:** 260°C for 10 seconds. **Nominal Weight:** .014 oz. Additional pin and adjustment configurations available as special order item. Manufacturer literature available upon request.



84PR Series		84WR Series		Ohms	EACH		
Stock No.	Mfr.'s Type	Stock No.	Mfr.'s Type		1-99	100-249	250-499
525-4915	84PR1K	525-5015	84WR1K	1 K	3.04	2.43	2.19
525-4920	84PR2K	525-5020	84WR2K	2 K	3.04	2.43	2.19
525-4925	84PR5K	525-5025	84WR5K	5 K	3.04	2.43	2.19
525-4930	84PR10K	525-5030	84WR10K	10 K	3.04	2.43	2.19
525-4935	84PR20K	525-5035	84WR20K	20 K	3.04	2.43	2.19
525-4940	84PR50K	525-5040	84WR50K	50 K	3.04	2.43	2.19
525-4945	84PR100K	525-5045	84WR100K	100 K	3.04	2.43	2.19

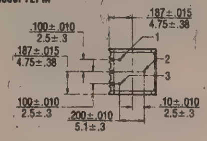
Model 72 Series Single Turn Trimmer

Model 72P

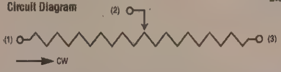

Model No., Resistance Value and Date Code marked on side
Electrical Adjustment .13±.005/3.3±.13 Long x .03±.003/.76±.08 Wide x .038±.005/.96±.13 Deep
Ø.021±.003/.53±.08 Solderable Terminals
.187±.015 / 4.75±.38
.375±.015 / 9.53±.38
.100±.010 / 2.5±.3
Standoffs .015±.002 / .38±.05
.180 Min / 4.6
.206±.015 / 5.23±.38
1
2
3

Note: Model 72P dimensions applicable to all other models except as noted

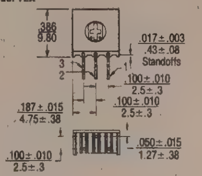
Model 72PM



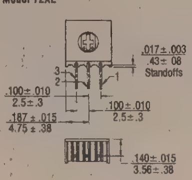
Circuit Diagram



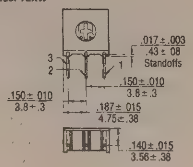
Model 72X



Model 72XL



Model 72XW



These single turn cermet trimmers are 3/8" square in a variety of lead styles. They are 1/2-watt at 85°C derating to 0 at 125°C. The flush electrical adjustment is .13" long × .03" wide × .038" deep. **Actual Electrical Travel:** 244°. Essentially infinite resolution. **Standard Resistance Tolerance:** ±20% < 10 ohms and ±10% ≥100 ohms. They are sealed to have no leaks at 85° Florinert®. **Maximum Temperature Coefficient:** ±100 ppm/°C. **Operating Temperature Range:** –55°C to +125°C. **Rotational Life:** 200 cycles. **Load Life:** 1000 hours at 70°C at 0.5 watts. Solid mechanical stops. **Resistance to Solder Heat:** 260°C for 10 seconds. **Nominal Weight:** .025 oz. Optional adjustment knob is available as a special order. Manufacturer literature available upon request.

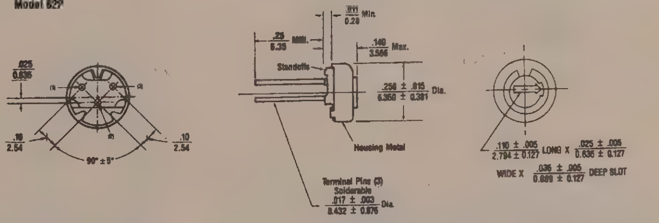
72PM Series		72PR Series		72XR Series		72XLR Series		72XWR Series		Ohms	EACH		
Stock No.	Mfr.'s Type	Stock No.	Mfr.'s Type	Stock No.	Mfr.'s Type	Stock No.	Mfr.'s Type	Stock No.	Mfr.'s Type		1-99	100-249	250-499
525-2000	72PMR50	—	—	—	—	—	—	—	—	50	.99	.80	.72
525-2005	72PMR100	525-2100	72PR100	525-2200	72XR100	—	—	—	—	10	.99	.80	.72
—	—	525-2105	72PR200	525-2205	72XR200	—	—	—	—	200	.99	.80	.72
525-2010	72PMR500	525-2110	72PR500	525-2210	72XR500	—	—	—	—	500	.99	.80	.72
525-2015	72PMR1K	525-2115	72PR1K	525-2215	72XR1K	525-2300	72XLR1K	525-2400	72XWR1K	1K	.99	.80	.72
525-2020	72PMR2K	525-2120	72PR2K	525-2220	72XR2K	525-2305	72XLR2K	525-2405	72XWR2K	2K	.99	.80	.72
525-2025	72PMR5K	525-2125	72PR5K	525-2225	72XR5K	525-2310	72XLR5K	525-2410	72XWR5K	5K	.99	.80	.72
525-2030	72PMR10K	525-2130	72PR10K	525-2230	72XR10K	525-2315	72XLR10K	525-2415	72XWR10K	10K	.99	.80	.72
525-2035	72PMR20K	525-2135	72PR20K	525-2235	72XR20K	525-2320	72XLR20K	525-2420	72XWR20K	20K	.99	.80	.72
525-2040	72PMR50K	525-2140	72PR50K	525-2240	72XR50K	525-2355	72XLR50K	525-2425	72XWR50K	50K	.99	.80	.72
525-2045	72PMR100K	525-2145	72PR100K	525-2245	72XR100K	525-2330	72XLR100K	525-2430	72XWR100K	100K	.99	.80	.72
—	—	525-2150	72PR200K	525-2250	72XR200K	—	—	—	—	200K	.99	.80	.72
—	—	525-2155	72PR500K	525-2255	72XR500K	—	—	—	—	500K	.99	.80	.72
—	—	525-2160	72PR1M	525-2260	72XR1M.	525-2335	72XLR1M	525-2435	72XWR1M	1M	.99	.80	.72
—	—	525-2165	72PR2M	525-2265	72XR2M	—	—	—	—	2M	.99	.80	.72

Model 82 Series Single Turn Trimmer

These single turn cermet trimmers are 1/4" in diameter in a variety of lead styles. They are 1/2-watt at 70°C derating to 0 at 125°C. The flush electrical adjustment is .11" long × .025" wide × .035" deep. **Actual Electrical Travel:** 220°. Essentially infinite resolution. **Standard Resistance Tolerance:** ±20% < 10 ohms and ±10% ≥100 ohms. They are sealed to have no leaks at 85° Florinert®. **Maximum Temperature Coefficient:** ±100 ppm/°C. **Operating Temperature Range:** –55°C to +125°C. **Rotational Life:** 200 cycles. **Load Life:** 1000 hours at 70°C at 0.5 watts. Solid mechanical stops. **Resistance to Solder Heat:** 260°C for 10 seconds. **Nominal Weight:** .025 oz. Manufacturer literature available upon request.

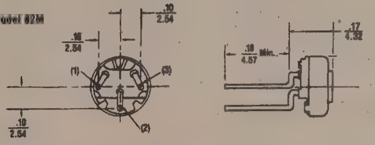
82MR Series		82PR Series		Ohms	EACH		
Stock No.	Mfr.'s Type	Stock No.	Mfr.'s Type		1-99	100-249	250-499
—	—	525-2600	82PR100	100	1.91	1.55	1.39
—	—	525-2605	82PR200	200	1.91	1.55	1.39
—	—	525-2610	82PR500	500	1.91	1.55	1.39
525-2500	82MR1K	525-2615	82PR1K	1K	1.91	1.55	1.39
525-2505	82MR2K	525-2620	82PR2K	2K	1.91	1.55	1.39
525-2510	82MR5K	525-2625	82PR5K	5K	1.91	1.55	1.39
525-2515	82MR10K	525-2630	82PR10K	10K	1.91	1.55	1.39
525-2520	82MR20K	525-2635	82PR20K	50K	1.91	1.55	1.39
525-2525	82MR50K	525-2640	82PR50K	50K	1.91	1.55	1.39
525-2530	82MR100K	525-2645	82PR100K	100K	1.91	1.55	1.39

Model 82P

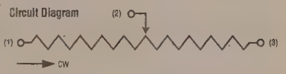

.025 / 0.635
.10 / 2.54
90° ± 5°
.25 / 6.35 Min.
0.28 Min.
.140 / 3.556 Max.
Standoffs
.250 ± .015 / 6.350 ± 0.381 Dia.
Housing Metal
Terminal Pins (3) Solderable .017 ± .003 / 0.432 ± 0.076 Dia.
.110 ± .005 / 2.794 ± 0.127 LONG X .025 ± .005 / 0.635 ± 0.127
WIDE X .035 ± .005 / 0.889 ± 0.127 DEEP SLOT

Note: Model 82P dimensions applicable to all models except as noted

Model 82M

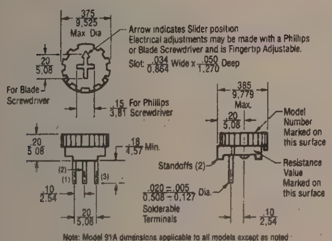


Circuit Diagram



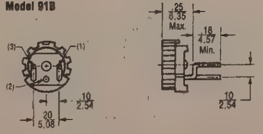
Model 91 Series Single Turn Trimmer

Model 91A

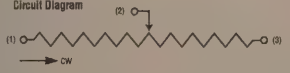

.375 / 9.525 Max Dia
Arrow indicates Slider position Electrical adjustments may be made with a Phillips or Blade Screwdriver and is Fingertip Adjustable.
Slot .034 / 0.864 Wide x .050 / 1.270 Deep
For Blade Screwdriver
.15 For Phillips / 3.81 Screwdriver
.385 / 9.779 Max.
.20 / 5.08
.18 / 4.57 Min.
Model Number Marked on this surface
Standoffs (2)
Resistance Value Marked on this surface
.020±.005 / 0.508±0.127 Dia.
Solderable Terminals
.10 / 2.54
(1)
(2)
(3)

Note: Model 91A dimensions applicable to all models except as noted

Model 91B



Circuit Diagram

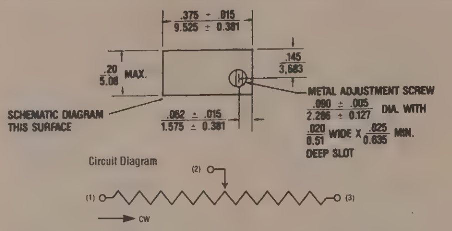


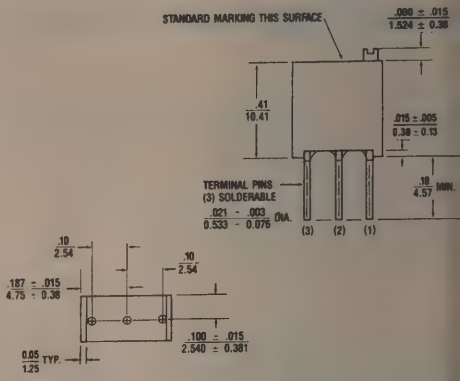
These single turn cermet trimmers are 3/8" in diameter in a variety of lead styles. They are 1/2-watt at 70°C derating to 0 at 125°C. The thumbwheel adjustment has an arrow to indicate slider position. Electrical adjustments may be made with a Philips or Blade screwdriver and is fingertip adjustable. **Actual Electrical Travel:** 174°. Essentially infinite resolution. **Standard Resistance Tolerance:** ±20%. **Maximum Temperature Coefficient:** ±100 ppm/°C. **Operating Temperature Range:** –55°C to +125°C. **Rotational Life:** 200 cycles. **Load Life:** 1000 hours at 70°C at 0.5 watts. Solid mechanical stops. **Resistance to Solder Heat:** 260°C for 10 seconds. **Nominal Weight:** .03 oz. Manufacturer literature available upon request.

Stock No.	Mfr.'s Type	Ohms	EACH		
			1-99	100-249	250-499
525-2700	91AR100	100	.72	.58	.52
525-2705	91AR200	200	.72	.58	.52
525-2710	91AR500	500	.72	.58	.52
525-2715	91AR1K	1K	.72	.58	.52
525-2720	91AR2K	2K	.72	.58	.52
525-2725	91AR5K	5K	.72	.58	.52
525-2730	91AR10K	10K	.72	.58	.52
525-2735	91AR20K	20K	.72	.58	.52
525-2740	91AR50K	50K	.72	.58	.52
525-2745	91AR100K	100K	.72	.58	.52
525-2750	91AR1M	1M	.72	.58	.52
525-2800	91BR1K	1K	.79	.64	.57
525-2805	91BR2K	2K	.79	.64	.57
525-2810	91BR5K	5K	.79	.64	.57
525-2815	91BR10K	10K	.79	.64	.57
525-2820	91BR20K	20K	.79	.64	.57
525-2825	91BR50K	50K	.79	.64	.57
525-2830	91BR100K	100K	.79	.64	.57
525-2835	91BR1M	1M	.79	.64	.57

Model 66 Series 3/8" Sq. Multi-Turn Trimmer

The Model 66 is a 20-turn cermet trimming potentiometer. These essentially infinite resolution trimmers are 3/8" square. They are 1/2-watt at 70°C derating to 0 at 125°C. The metal electrical adjustment screw has a slot .02" wide × .025" deep. **Standard Tolerance:** ±10% (< 100 ohms = ±20%). They are sealed to have no leaks in 85° Florinert® test. **Maximum Temperature Coefficient:** ±100 ppm/°C. **Operating Temperature Range:** –65°C to +150°C. **Rotational Life:** 200 cycles. **Load Life:** 1000 hours at 70°C at 0.5 watts. Clutch action mechanical stops at both ends. Solderable terminal pins. **Resistance to Solder Heat:** 260°C for 10 seconds. **Nominal Weight:** .04 oz. Additional pin and adjustment configurations available as special order item. Manufacturer literature available upon request.

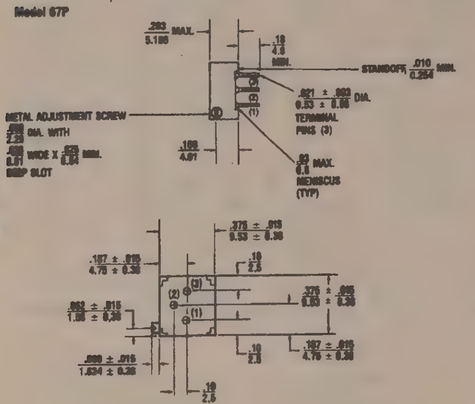


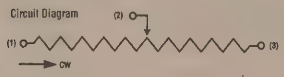


Stock No.	Mfr.'s Type	Ohms	EACH 1-99	EACH 100-249	EACH 250-499
525-4315	66WR1K	1K	4.91	3.92	3.53
525-4320	66WR2K	2K	4.91	3.92	3.53
525-4325	66WR5K	5K	4.91	3.92	3.53
525-4330	66WR10K	10K	4.91	3.92	3.53
525-4335	66WR20K	20K	4.91	3.92	3.53
525-4340	66WR50K	50K	4.91	3.92	3.53
525-4345	66WR100K	100K	4.91	3.92	3.53
—	—	—	—	—	—

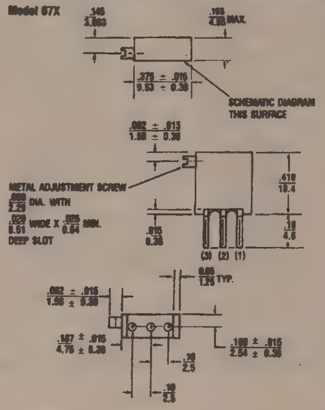
Model 67 Series 3/8" Sq. Multi-Turn Trimmer

Model 67P

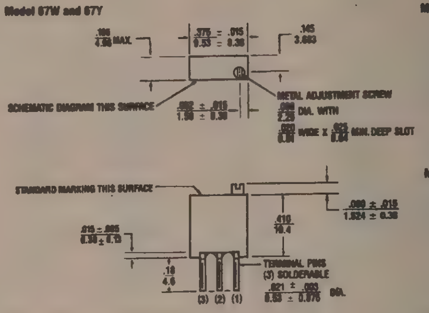




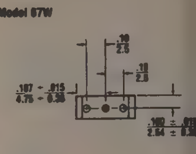
Model 67X



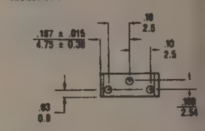
Model 67W and 67Y



Model 67W



Model 67Y

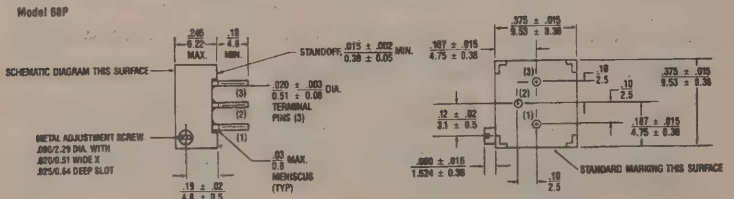


The Model 67 is a 20-turn cermet trimming potentiometer. These essentially infinite resolution trimmers are 3/8" square. They are 1/2-watt at 85°C derating to 0 at 125°C. The metal electrical adjustment screw has a slot .02" wide × .025" deep. **Standard Tolerance:** ±10% (< 100 ohms = ±20%). They are sealed to have no leaks in 85° Florinert® test. **Maximum Temperature Coefficient:** ±100 ppm/°C. **Operating Temperature Range:** –55°C to +125°C. **Rotational Life:** 200 cycles. **Load Life:** 1000 hours at 70°C at 0.5 watts. Clutch action mechanical stops at both ends. **Resistance to Solder Heat:** 260°C for 10 seconds. **Nominal Weight:** .04 oz. Additional pin configurations available as special order item. Manufacturer literature available upon request.

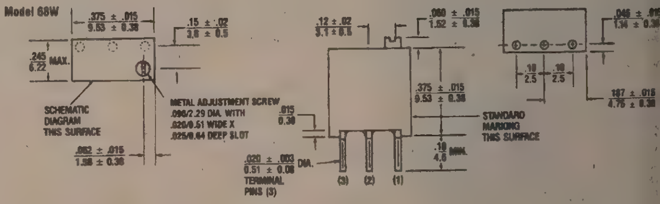
67PR Series		67WR Series		67XR Series		67YR Series		Ohms	EACH		
Stock No.	Mfr.'s Type	Stock No.	Mfr.'s Type	Stock No.	Mfr.'s Type	Stock No.	Mfr.'s Type		1-99	100-249	250-499
525-3300	67PR100	525-3400	67WR100	525-3500	67XR100	525-3600	67YR100	100	2.48	1.98	1.78
525-3305	67PR200	525-3405	67WR200	525-3505	67XR200	525-3605	67YR200	200	2.48	1.98	1.78
525-3310	67PR500	525-3410	67WR500	525-3510	67XR500	525-3610	67YR500	500	2.48	1.98	1.78
525-3315	67PR1K	525-3415	67WR1K	525-3515	67XR1K	525-3615	67YR1K	1 K	2.48	1.98	1.78
525-3320	67PR2K	525-3420	67WR2K	525-3520	67XR2K	525-3620	67YR2K	2 K	2.48	1.98	1.78
525-3325	67PR5K	525-3425	67WR5K	525-3525	67XR5K	525-3625	67YR5K	5 K	2.48	1.98	1.78
525-3330	67PR10K	525-3430	67WR10K	525-3530	67XR10K	525-3630	67YR10K	10 K	2.48	1.98	1.78
525-3335	67PR20K	525-3435	67WR20K	525-3535	67XR20K	525-3635	67YR20K	20 K	2.48	1.98	1.78
525-3340	67PR50K	525-3440	67WR50K	525-3540	67XR50K	525-3640	67YR50K	50 K	2.48	1.98	1.78
525-3345	67PR100K	525-3445	67WR100K	525-3545	67XR100K	525-3645	67YR100K	100 K	2.48	1.98	1.78
525-3350	67PR200K	525-3450	67WR200K	525-3550	67XR200K	525-3650	67YR200K	200 K	2.48	1.98	1.78
525-3355	67PR500K	525-3455	67WR500K	525-3555	67XR500K	525-3655	67YR500K	500 K	2.48	1.98	1.78
525-3360	67PR1M	525-3460	67WR1M	525-3560	67XR1M	525-3660	67YR1M	1 M	2.48	1.98	1.78

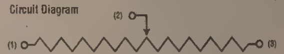
Model 68 Series 3/8" Sq. Multi-Turn Trimmer

Model 68P



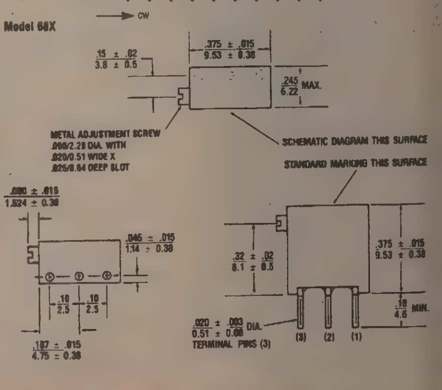
Model 68W





The Model 68 is a 20-turn cermet trimming potentiometer. These essentially infinite resolution trimmers are 3/8" square. They are 1/2-watt at 85°C derating to 0 at 125°C. The metal electrical adjustment screw has a slot .02" wide × .025" deep. **Standard Tolerance:** ±10% (< 100 ohms = ±20%). They are sealed to have no leaks in 85° Florinert® test. **Maximum Temperature Coefficient:** ±100 ppm/°C. **Operating Temperature Range:** –55°C to +125°C. **Rotational Life:** 200 cycles. **Load Life:** 1000 hours at 70°C at 0.5 watts. Clutch action mechanical stops at both ends. **Resistance to Solder Heat:** 260°C for 10 seconds. **Nominal weight:** .04 oz. Solderable terminal pins. Additional pin configurations available as special order item. Manufacturer literature available upon request.

Model 68X

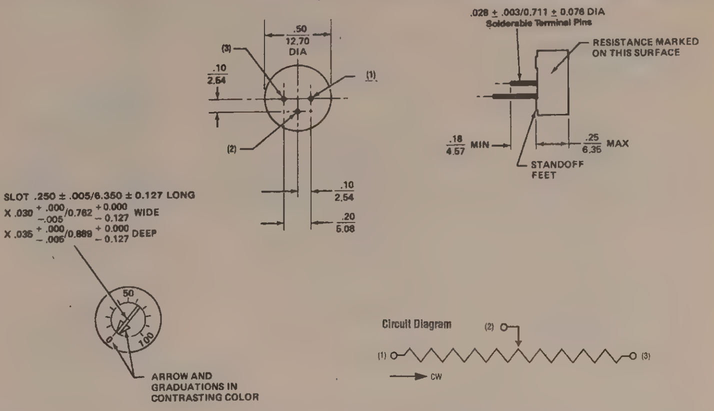


68PR Series		68WR Series		68XR Series		Ohms	EACH		
Stock No.	Mfr.'s Type	Stock No.	Mfr.'s Type	Stock No.	Mfr.'s Type		1-99	100-249	250-499
525-3700	68PR100	525-3800	68WR100	525-3900	68XR100	100	2.03	1.62	1.46
525-3705	68PR200	525-3805	68WR200	525-3905	68XR200	200	2.03	1.62	1.46
525-3710	68PR500	525-3810	68WR500	525-3910	68XR500	500	2.03	1.62	1.46
525-3715	68PR1K	525-3815	68WR1K	525-3915	68XR1K	1 K	2.03	1.62	1.46
525-3720	68PR2K	525-3820	68WR2K	525-3920	68XR2K	2 K	2.03	1.62	1.46
525-3725	68PR5K	525-3825	68WR5K	525-3925	68XR5K	5 K	2.03	1.62	1.46
525-3730	68PR10K	525-3830	68WR10K	525-3930	68XR10K	10 K	2.03	1.62	1.46
525-3735	68PR20K	525-3835	68WR20K	525-3935	68XR20K	20 K	2.03	1.62	1.46
525-3740	68PR50K	525-3840	68WR50K	525-3940	68XR50K	50 K	2.03	1.62	1.46
525-3745	68PR100K	525-3845	68WR100K	525-3945	68XR100K	100 K	2.03	1.62	1.46
525-3750	68PR200K	525-3850	68WR200K	525-3950	68XR200K	200 K	2.03	1.62	1.46
525-3755	68PR500K	525-3855	68WR500K	525-3955	68XR500K	500 K	2.03	1.62	1.46
525-3760	68PR1M	525-3860	68WR1M	525-3960	68XR1M	1 M	2.03	1.62	1.46

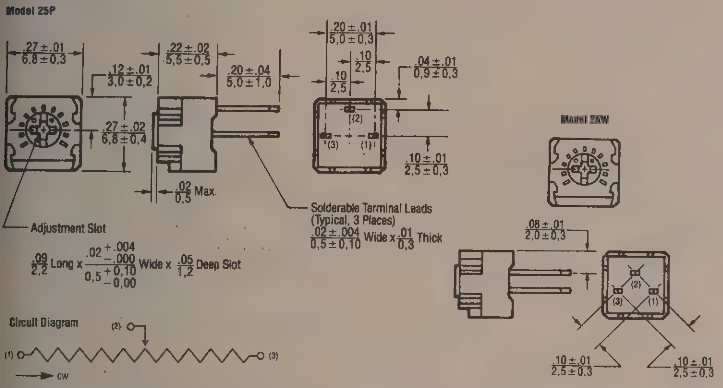
Model 93 Series Single Turn Trimmer

These single turn cermet trimmers are 1/2" in diameter with a solderable PC Pin lead style. They are 1-watt at 70°C derating to 0 at 125°C. The arrow slot is .25" long × .03" wide × .035" deep. The arrow is used to indicate slider position. The arrow and graduations are in contrasting colors for easy readability. **Actual Electrical Travel:** 270°. Essentially infinite resolution. **Standard Resistance Tolerance:** ±10% (<100Ω ±20%). They are sealed to have no leaks at 85° Florinert® test. **Maximum Temperature Coefficient:** ±100 ppm/°C. **Operating Temperature Range:** –55°C to +125°C. **Rotational Life:** 200 cycles. **Load Life:** 1000 hours at 70°C at 1-watt. Solid mechanical stops. **Resistance to Solder Heat:** 260°C for 10 seconds. **Nominal Weight:** .052 oz. Manufacturer literature available upon request.

Stock No.	Mfr.'s Type	Ohms	EACH 1-99	EACH 100-249	EACH 250-499
525-2900	93PR1K	1K	3.15	2.55	2.30
525-2905	93PR2K	2K	3.15	2.55	2.30
525-2910	93PR5K	5K	3.15	2.55	2.30
525-2915	93PR10K	10K	3.15	2.55	2.30
525-2920	93PR20K	20K	3.15	2.55	2.30
525-2925	93PR50K	50K	3.15	2.55	2.30
525-2930	93PR100K	100K	3.15	2.55	2.30
525-2935	93PR1M	1M	3.15	2.55	2.30


.50
12.70
DIA
(3)
.10
2.54
(1)
(2)
.10
2.54
.20
5.08
SLOT .250 ± .005/6.350 ± 0.127 LONG
X .030 + .000 − .005 /0.762 + 0.000 − 0.127 WIDE
X .035 + .000 − .005 /0.889 + 0.000 − 0.127 DEEP
50
0
100
ARROW AND GRADUATIONS IN CONTRASTING COLOR
.028 ± .003/0.711 ± 0.076 DIA
Solderable Terminal Pins
RESISTANCE MARKED ON THIS SURFACE
.18
4.57
MIN
.25
6.35
MAX
STANDOFF FEET
Circuit Diagram
(2)
(1)
(3)
CW

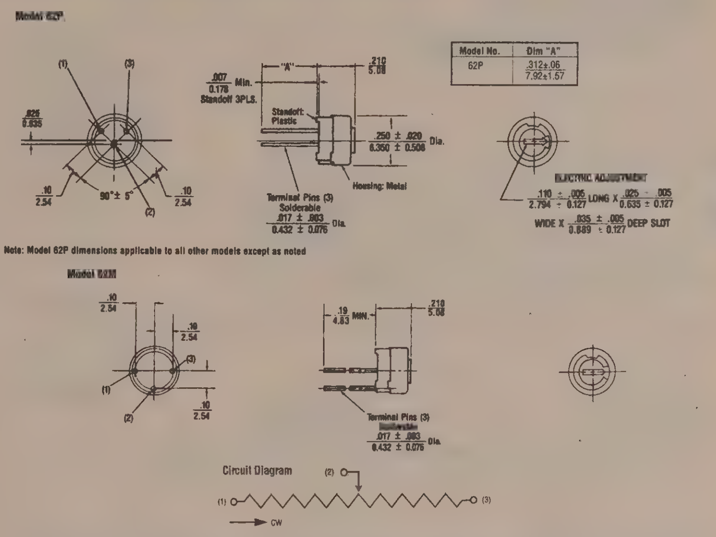
Model 25 Series Single Turn Trimmer



These single turn cermet trimmers are 1/4" square with a solderable PC Pin lead style. They are 1/2-watt at 70°C derating to 0 at 125°C. The flush adjustment slot is .09" long × .02" wide × .05" deep and is blade or Philips screwdriver adjustable. **Actual Electrical Travel:** 210°. Essentially infinite resolution. **Standard Resistance Tolerance:** ±20%. They are sealed to have no leaks at 85° Florinert® test. **Maximum Temperature Coefficient:** ±100 ppm/°C (<200 ohms = ±250/ppm/°C). **Operating Temperature Range:** –55°C to +125°C. **Rotational Life:** 100 cycles. **Load Life:** 1000 hours at 70°C at 1/2-watt. Solid mechanical stops. **Resistance to Solder Heat:** 260°C for 10 seconds. **Nominal Weight:** .01 oz. Manufacturer literature available upon request.

25P Series		25W Series		Ohms	EACH		
Stock No.	Mfr.'s Type	Stock No.	Mfr.'s Type		1-99	100-249	250-499
525-3000	25PR100	525-3065	25WR100	100	.63	.51	.46
525-3005	25PR200	525-3070	25WR200	200	.63	.51	.46
525-3010	25PR500	525-3075	25WR500	500	.63	.51	.46
525-3015	25PR1K	525-3080	25WR1K	1K	.63	.51	.46
525-3020	25PR2K	525-3085	25WR2K	2K	.63	.51	.46
525-3025	25PR5K	525-3090	25WR5K	5K	.63	.51	.46
525-3030	25PR10K	525-3095	25WR10K	10K	.63	.51	.46
525-3035	25PR20K	525-3100	25WR20K	20K	.63	.51	.46
525-3040	25PR50K	525-3105	25WR50K	50K	.63	.51	.46
525-3045	25PR100K	525-3110	25WR100K	100K	.63	.51	.46
525-3050	25PR200K	525-3115	25WR200K	200K	.63	.51	.46
525-3055	25PR500K	525-3120	25WR500K	500K	.63	.51	.46
525-3060	25PR1M	525-3125	25WR1M	1M	.63	.51	.46

Model 62 Series Single Turn Trimmer



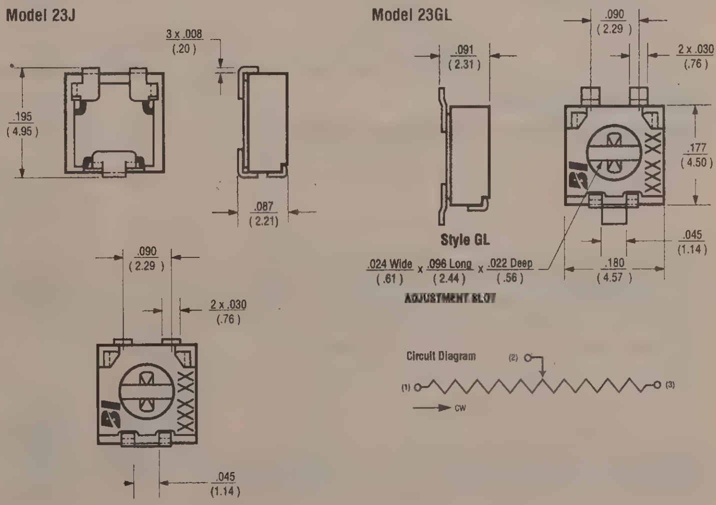
These single turn cermet trimmers are 1/4" in diameter with a solderable PC Pin lead style. They are 1/2-watt at 70°C derating to 0 at 125°C. The arrow slot is .11" long × .025" wide × .035" deep. The arrow is used to indicate slider position and is blade screwdriver adjustable. **Actual Electrical Travel:** 220°. Essentially infinite resolution. **Standard Resistance Tolerance:** ±10% (<100Ω ±20%). They are sealed to have no leaks at 85° Florinert® test. **Maximum Temperature Coefficient:** ±100 ppm/°C. **Operating Temperature Range:** –55°C to +125°C. **Rotational Life:** 200 cycles. **Load Life:** 1000 hours at 70°C at 1/2-watt. Solid mechanical stops. **Resistance to Solder Heat:** 260°C for 10 seconds. **Nominal Weight:** .02 oz. Manufacturer literature available upon request.

62PR Series		62MR Series		Ohms	EACH		
Stock No.	Mfr.'s Type	Stock No.	Mfr.'s Type		1-99	100-249	250-499
525-3150	62PR500	525-3170	62MR500	500	2.52	2.04	1.84
525-3155	62PR1K	525-3175	62MR1K	1K	2.52	2.04	1.84
525-3160	62PR5K	525-3180	62MR5K	5K	2.52	2.04	1.84
525-3165	62PR10K	525-3185	62MR10K	10K	2.52	2.04	1.84

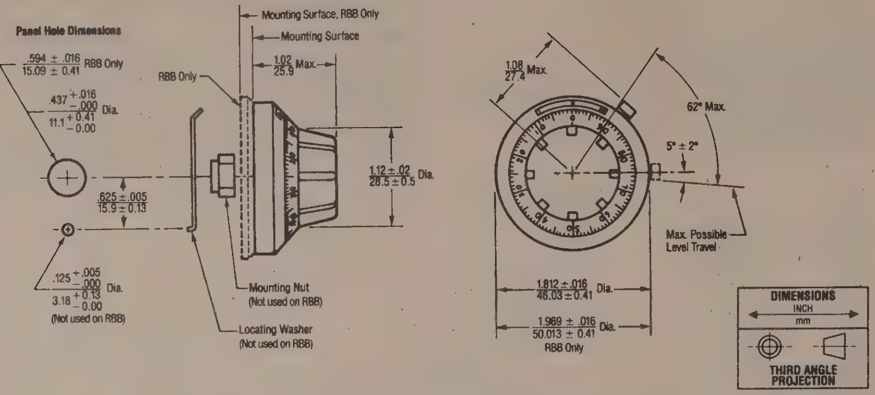
Model 23 Series Single Turn Trimmer

These single turn surface mount cermet trimmers are 4 mm square with a solderable SMD lead style. The 23J is a J-hook lead type and the 23GL is a full-wing lead type. They are 1/4-watt at 70°C derating to 0 at 125°C. The slot is .102" long × .024" wide × .024" deep. The T-cross slot is screwdriver adjustable. **Actual Electrical Travel:** 200°. Essentially infinite resolution. **Standard Resistance Tolerance:** ±20%. They are sealed to have no leaks at 85° Florinert® test. **Maximum Temperature Coefficient:** ±100 ppm/°C. **Operating Temperature Range:** –55°C to +125°C. **Rotational Life:** 100 cycles. **Load Life:** 1000 hours at 70°C at 1/4-watt. Solid mechanical stops. **Resistance to Solder Heat:** 260° C for 10 seconds. **Nominal Weight:** .005 oz. Manufacturer literature available upon request.

23J Series		23GL Series		Ohms	EACH		
Stock No.	Mfr.'s Type	Stock No.	Mfr.'s Type		1-99	100-249	250-499
525-3202	23JR100	525-3252	23GLR100	100	1.32	1.13	1.00
525-3204	23JR200	525-3254	23GLR200	200	1.32	1.13	1.00
525-3206	23JR500	525-3256	23GLR500	500	1.32	1.13	1.00
525-3208	23JR1K	525-3258	23GLR1K	1K	1.32	1.13	1.00
525-3212	23JR2K	525-3262	23GLR2K	2K	1.32	1.13	1.00
525-3214	23JR5K	525-3264	23GLR5K	5K	1.32	1.13	1.00
525-3216	23KR10K	525-3266	23GLR10K	10K	1.32	1.13	1.00
525-3218	23JR20K	525-3268	23GLR20K	20K	1.32	1.13	1.00
525-3222	23JR50K	525-3272	23GLR50K	50K	1.32	1.13	1.00
525-3224	23JR100K	525-3274	23GLR100K	100K	1.32	1.13	1.00
525-3226	23JR200K	525-3276	23GLR200K	200K	1.32	1.13	1.00
525-3228	23JR500K	525-3278	23GLR500K	500K	1.32	1.13	1.00
525-3232	23JR1M	525-3282	23GLR1M	1M	1.32	1.13	1.00
525-3234	23JR2M	525-3284	23GLR2M	2M	1.32	1.13	1.00



Model Series RB
1^{13}/$_{16}$" Dia. Turns Counting Dial

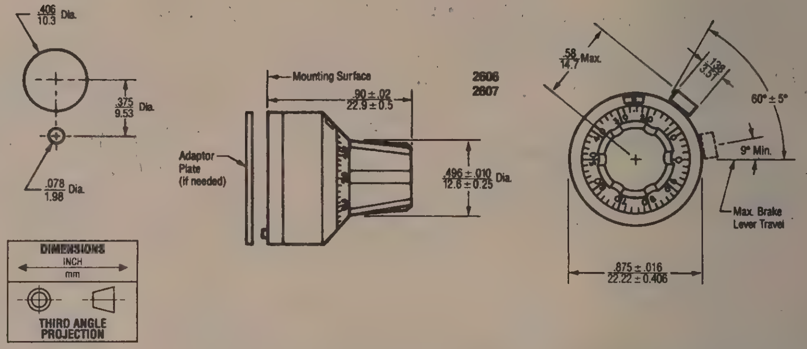

Panel Hole Dimensions
.594 ± .016 / 15.09 ± 0.41 RBB Only
.437 +.016 −.000 / 11.1 +0.41 −0.00 Dia.
.625 ± .005 / 15.9 ± 0.13
.125 +.005 −.000 / 3.18 +0.13 −0.00 Dia. (Not used on RBB)
Mounting Surface, RBB Only
Mounting Surface
1.02 / 25.9 Max.
RBB Only
1.12 ± .02 / 28.5 ± 0.5 Dia.
Mounting Nut (Not used on RBB)
Locating Washer (Not used on RBB)
1.08 / 27.4 Max.
62° Max.
5° ± 2°
Max. Possible Level Travel
1.812 ± .016 / 46.03 ± 0.41 Dia.
1.969 ± .016 / 50.013 ± 0.41 Dia. RBB Only
DIMENSIONS
INCH
mm
THIRD ANGLE PROJECTION

The RB Series is an analog 1^{13}/$_{16}$" diameter 15-turns counting dial for ^{1}/$_{4}$" diameter shafts with ^{3}/$_{8}$" bushings. Single set screw. 0.100" high numerals. Knob is black plastic. Dial has black numerals on satin chrome. Housing is satin chrome. Positive locking action mechanisms. **Weight:** 3.0 oz. **Operating Temperature Range:** –55° to +71°C.

525-0010. RB ....**EACH 19.20**

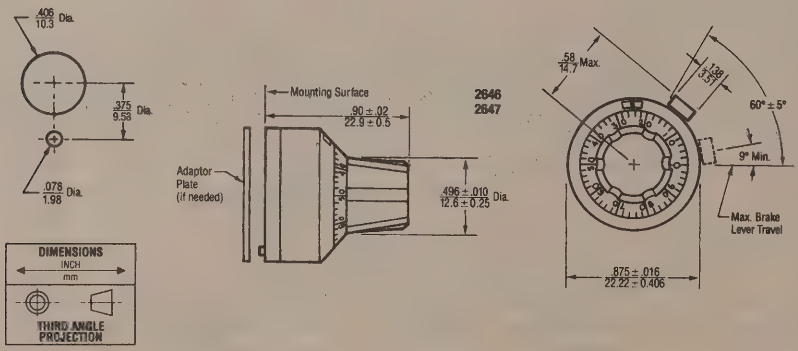
Model Series 2600
^{7}/$_{8}$" Dia. Turns Counting Dial

The 2600 Series is an analog ^{7}/$_{8}$" diameter 20-turns counting dial for ^{1}/$_{4}$" diameter shafts with ^{3}/$_{8}$" bushings. The 2606 has single set screw. The 2607 has dual set screw. Both have 0.05" high black numerals on satin chrome with black plastic knob and satin chrome housing finish. Positive locking action mechanisms. **Weight:** 0.60 oz. **Operating Temperature Range:** –55° to +71°C.



525-0020. 2606..**EACH 12.60**
525-0030. 2607..**EACH 13.40**

Model Series 2640
^{7}/$_{8}$" Dia. Turns Counting Dial

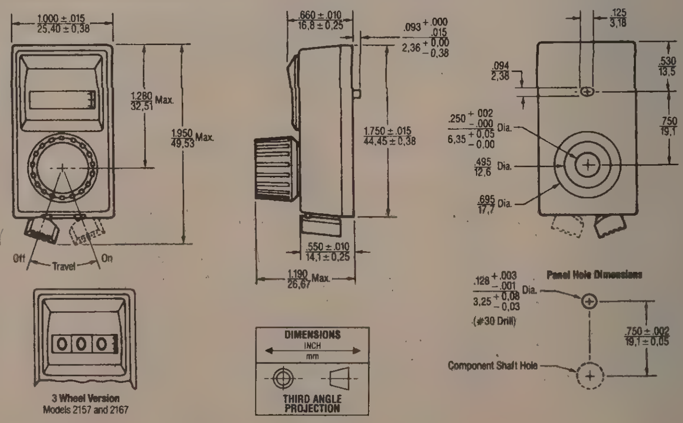


The 2640 Series is an analog ^{7}/$_{8}$" diameter 20-turns counting dial for ^{1}/$_{4}$" diameter shafts with ^{3}/$_{8}$" bushings. The 2646 has single set screw. The 2647 has dual set screw. Both have 0.05" high white numerals on black matte with black plastic knob and satin chrome housing finish. Positive locking action mechanisms. **Weight:** 0.60 oz. **Operating Temperature Range:** –55° to +71°C.

525-0040. 2646..**EACH 12.60**
525-0050. 2647..**EACH 13.40**

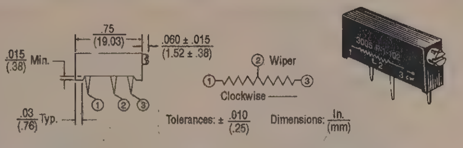
Model Series 2100
Rectangular Turns Counting Dial

The 2100 Series is a digital 1" wide 10-turn counting dial for ^{1}/$_{4}$" diameter shafts with ^{3}/$_{8}$" bushings. Dual set screws. Positive locking action mechanisms. Three 0.12" high white numerals on black background. **Weight:** 1.5 oz. **Operating Temperature Range:** –55° to +71°C.



525-0060. 2157. Clear Anodized......................**EACH 26.00**
525-0070. 2167. Black Anodized ....**EACH 26.00**

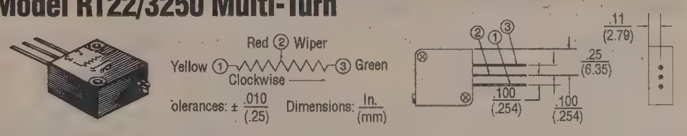
Model 3005 Multi-Turn



Wirewound resistance element, 3/4" long. Sealed to prevent contamination from fluxing, soldering and cleaning. **Power Rating:** 1 W at 70°C. **Adjustment Travel:** 20 turns nominal. **Temperature Range:** –65°C to 125°C. **Load Life:** 1000 hrs: at 70°C. **Mechanical Life:** 200 cycles. Solderable PC pins. **Tolerance:** ±10%. **Dimensions:** 3/4 × 0.16 × 0.31". **Weight:** .045 oz.

Stock No.	Mfr.'s Type	Ohms	Resolution Percent	EACH				
				1-9	10-24	25-49	50-99	100-249
754-0025	3005P-1-501	500	0.5	6.29	5.90	5.55	5.24	4.96
754-0030	3005P-1-102	1K	0.5	6.29	5.90	5.55	5.24	4.96
754-0035	3005P-1-202	2K	0.4	6.29	5.90	5.55	5.24	4.96
754-0040	3005P-1-502	5K	0.3	6.29	5.90	5.55	5.24	4.96
754-0045	3005P-1-103	10K	0.3	6.29	5.90	5.55	5.24	4.96
754-0050	3005P-1-203	20K	0.2	6.29	5.90	5.55	5.24	4.96

Model RT22/3250 Multi-Turn



Sealed, wirewound. Listed on DESC QPL for style RT22 per MIL-R-27208 and RTR22 per High-Rel MIL-R-39015. 1/2" square. **Power Rating:** 1 W at 85°C. High power dissipation in high temperature plastic case for operations up to +150°C. Humidity proof performance. **Resistance Tolerance:** ±5%. **Dielectric Strength:** 1000 VAC. **Temperature Range:** –65°C to 150°C. **Load Life:** 1000 hrs. Solderable PC pin terminals. Commercial version 3250W available at higher price.

Stock No.	Mfr.'s Type	Ohms	Resolution Percent	EACH				
				1-9	10-24	25-49	50-99	100-249
754-0310	3250W-1-102	1 K	0.36	7.44	6.98	6.57	6.20	5.88
754-0315	3250W-1-202	2 K	0.26	7.44	6.98	6.57	6.20	5.88
754-0320	3250W-1-502	5 K	0.20	7.44	6.98	6.57	6.20	5.88
754-0325	3250W-1-103	10 K	0.16	7.44	6.98	6.57	6.20	5.88
754-0330	3250W-1-203	20 K	0.14	7.44	6.98	6.57	6.20	5.88

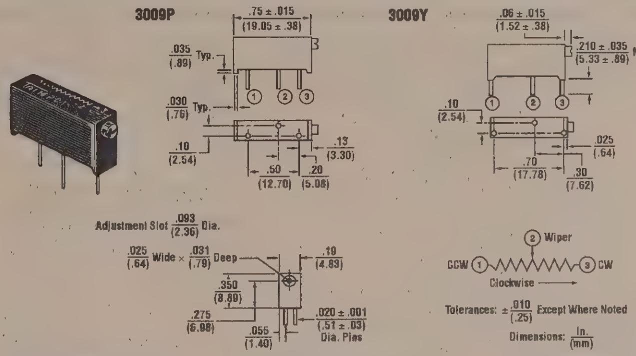
Model 3009 Multi-Turn Cermet

Sealed to withstand soldering and board wash process. **Low Temperature Coefficient:** ±100 ppm/°C. Stable, infinite resolution cermet element. CRV 1.0% or 1 ohm. **Temperature Range:** –55°C to +125°C. Meet humidity requirements of MIL-STD-202, method 103. **Power Rating:** .25 W at +70°C. **Resistance Tolerance:** ±10%.

Stock No.*	Mfr.'s Type	EACH				
		1-9	10-24	25-49	50-99	100-249
754-14XX	3009P-1-	2.20	2.06	1.94	1.83	1.74
754-15XX†	3009Y-1-	2.20	2.06	1.94	1.83	1.74

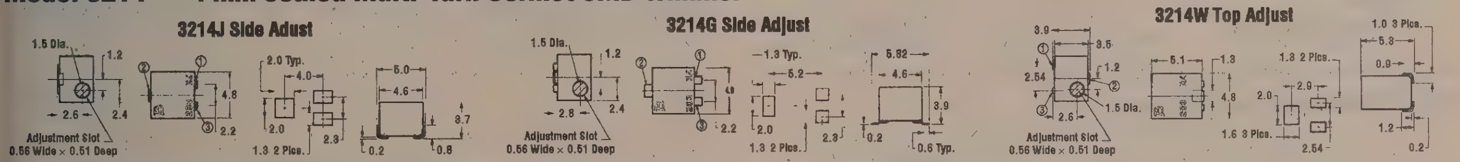
†200, 200 K, 1 M not available. *Using Ohm Chart below replace "XX" in Stock No. with numbers that correspond with desired OHM value.

Ohms	XX	Ohms	XX	Ohms	XX	Ohms	XX	Ohms	XX
50	03	500	06	5K	09	50K	12	500K	15
100	04	1K	07	10K	10	100K	13	1Meg	16
200	05	2K	08	20K	11	200K	14	—	—



Model 3214 — 4 mm Sealed Multi-Turn Cermet SMD Trimmer

— NEW —



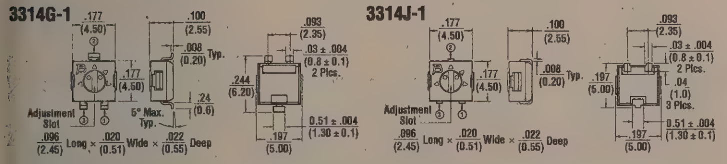
Sealed to withstand board wash processing. Pick and place centering design, with flush adjustment. 4 mm design meets EIA/EIAJ/IPC/VRCI SMD standard trimmer footprint. Patent #5047746 advanced drive/wiper mechanism. **Power Rating:** .25 W at 85°C. **Tolerance:** 10%. **Rotational Life:** 200 cycles.

Stock No.	Mfr.'s Type	EACH
754-2450	3214J-1-101E	1.58
754-2452	3214J-1-501E	1.58
754-2454	3214J-1-102E	1.58
754-2456	3214J-1-202E	1.58
754-2458	3214J-1-502E	1.58
754-2460	3214J-1-103E	1.58
754-2462	3214J-1-203E	1.58
754-2464	3214J-1-503E	1.58
754-2466	3214J-1-104E	1.58

Stock No.	Mfr.'s Type	EACH
754-2550	3214G-1-101E	1.58
754-2552	3214G-1-501E	1.58
754-2554	3214G-1-102E	1.58
754-2556	3214G-1-202E	1.58
754-2558	3214G-1-502E	1.58
754-2560	3214G-1-103E	1.58
754-2562	3214G-1-203E	1.58
754-2564	3214G-1-503E	1.58
754-2566	3214G-1-104E	1.58

Stock No.	Mfr.'s Type	EACH
754-2650	3214W-1-101E	1.58
754-2652	3214W-1-501E	1.58
754-2654	3214W-1-102E	1.58
754-2656	3214W-1-202E	1.58
754-2658	3214W-1-502E	1.58
754-2660	3214W-1-103E	1.58
754-2662	3214W-1-203E	1.58
754-2664	3214W-1-503E	1.58
754-2666	3214W-1-104E	1.58

Model 3314 — 4 mm Square Sealed Single-Turn Cermet SMD Trimmer

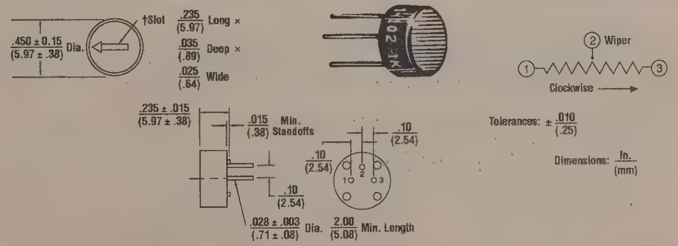


These 1/4 W (at 70°C) trimmers are compatible with most surface mount soldering processes and are compatible with pick-and-place equipment. **Tolerance:** ±20%. **Soldering Heat:** 260°C for 10 seconds or less. **Operating Range:** –55°C to +125°C. **Rotational Cycling:** 100 cycles. **Mechanical Angle Rotation:** 240°. **Weight:** 0.01 oz.

Stock No.	Mfr.'s Type	SMD Tabs	Qty. Per Reel	PER REEL
754-07XX	3314G-1-	Gull-Wing	500	585.00
754-08XX	3314J-1-	J-Hook	500	585.00

Ohms	XX	Ohms	XX	Ohms	XX
1K	20	10K	26	100K	32
2K	22	20K	28	—	—
5K	24	50K	30	—	—

Model 3345 Single-Turn



Single turn, wirewound, 1/2" dia. **Power Rating:** 1 W at +70°C. Compact .450" dia. × .235" H. Sealed for PC applications. **Standard Resistance Range:** 10 to 20 K ohms. **Resistance Tolerance:** ±5%. **Dielectric Strength:** 1500 VAC. 300 adjustment angle nominal. **Temperature Range:** –55°C to +150°C. **Load Life:** 1000 hrs. **Mechanical Life:** 200 cycles. Solder PC pin terminals.

Stock No.	Mfr.'s Type	Ohms	Resolution Percent	EACH				
				1-9	10-24	25-49	50-99	100-249
754-0525	3345P-1-501	500	0.38	5.33	5.00	4.71	4.44	4.21
754-0530	3345P-1-102	1K	0.30	5.33	5.00	4.71	4.44	4.21
754-0535	3345P-1-202	2K	0.24	5.33	5.00	4.71	4.44	4.21
754-0540	3345P-1-502	5K	0.18	5.33	5.00	4.71	4.44	4.21
754-0545	3345P-1-103	10K	0.14	5.33	5.00	4.71	4.44	4.21

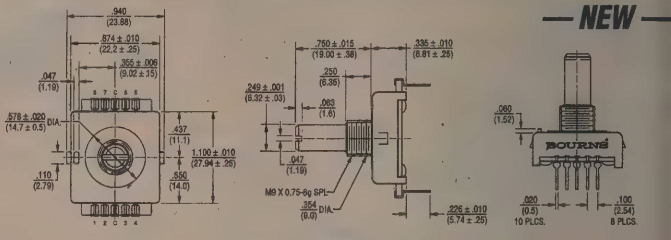
Absolute Contacting Encoder (ACE)

— NEW —

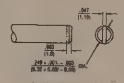
- Elimination of the A/D Converter That Is Required with a Potentiometer
- Compact, Robust Design in 22 mm Package
- Simplified Design — Single-Track Gray Code
- Detented Lower Resolutions Could Be Used As Function Control Switches
- Ability of the Component to Retain Position If a Power Failure Occurs

The new absolute contacting encoder is an absolute position input device. It is an absolute encoder implemented in a contacting technology. It offers 128 unique angular positions that are directly converted to an 8-bit binary output housed in a low cost, low profile package. The special feature is that they assign a unique, digitally encoded signal to each measured increment which prevents erroneous readings. For example, if a power failure or transient malfunction occurs, the position can be read when the power is restored without moving back to a reference position, as would be required with an incremental encoder. The absolute digital output simplifies the electronic circuit by allowing the microprocessor to be directly linked to the ACE encoder. Because the ACE encoder offers a unique absolute output from a single track, the resulting lower sample rate requires much less microprocessor time, resulting in lower overall power consumption. **Specifications. Output:** 8-bit gray code with 128 absolute states. **Closed Circuit Resistance:** 5 ohms max. **Open Circuit Resistance:** 100 K ohms minimum. **Electrical Travel:** Continuous. **Contact Bounce (60 RPM):** 2.7 milliseconds max. **RPM (Operating):** 120 max. **Rotational Life:** 25,000 shaft revolutions. **Mechanical Angle:** Continuous. **Weight:** Approx. 0.5 oz.

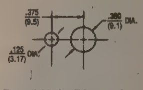
Stock No.	Mfr.'s Type	EACH				
		1-9	10-24	25-49	50-99	100-249
754-0140	EAW0J-B24-AE0128	8.44	7.84	7.10	6.51	5.62



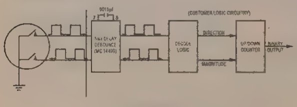
Bushing Mounted: Housing A



Shaft Style B

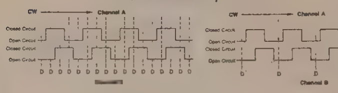


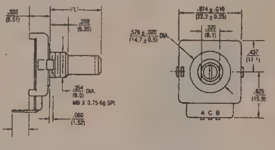
Panel Hole Dimensions
Bushing Mounted



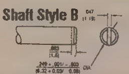
Recommended Incremental Control Diagram

Quadrature Output Table

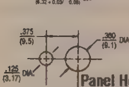




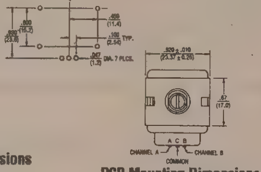
Shaft Lengths Dimension "L" for B and C:
24 = .750" (19 mm): 28 = .875" (22.2 mm)
Bushing Mounted — Housing A — Style W



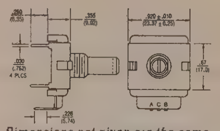
Shaft Style B



Panel Hole Dimensions
Bushing Mounted



PCB Mounting Dimensions



Dimensions not given are the same as Bushing Mounted
PCB Bracket Mounted — Housing B

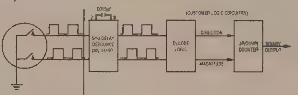
EC Encoders — Incremental Digital Contacting Encoder

The sturdy construction and exceptionally long life of the digital contacting encoder make it a good choice where reliability and dependability are required. The EC encoder produces a 2-channel, 2-bit gray code quadrature signal which is suitable for digital systems where both magnitude and direction of adjustment must be provided. Channel A leads Channel B by 90° (electrical) with clockwise rotation. The output of this device is a digital gray code signal, rather than a conventional potentiometric voltage ration output. The advantage of the digital contacting encoder is that it permits the direct entry of digitized analog data into a digital circuit without A/D conversion. The 2 channel gray coded signal of this incremental encoder allows the user's decode circuit to sense analog direction of rotation as well as up-down counter capabilities. This is done without the time and cost of A/D conversion. This approach can reduce memory overhead, wiring and wiring interconnects, and can provide greater MPU program speed. Electrical travel and mechanical angle are continuous. **Weight:** 0.75 oz. Additional configurations available as special order. Call for pricing, delivery and ordering conditions. Manufacturer literature available upon request.

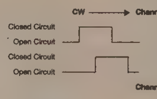
Stock No.	Mfr.'s Type	Shaft Style	Shaft Length	Shaft Dia.	Resolution (Cycles/Revolution)	Terminal Style	EACH	
							1-9	10-24
754-3964	ECW1J-B24-AB0012	Slotted	3/4"	1/4"	12	PC Pin/Bracket	4.85	4.51
754-3965	ECW1J-B28-AB0012	Slotted	7/8"	1/4"	12	PC Pin/Bracket	4.85	4.51
754-3968	ECW1J-B24-BB0012	Slotted	3/4"	1/4"	12	PC Pin	4.85	4.51
754-3969	ECW1J-B28-BB0012	Slotted	7/8"	1/4"	12	PC Pin	4.85	4.51
754-3976	ECW1J-B24-AC0024	Slotted	3/4"	1/4"	24	PC Pin/Bracket	4.85	4.51
754-3977	ECW1J-B28-AC0024	Slotted	7/8"	1/4"	24	PC Pin/Bracket	4.85	4.51
754-3980	ECW1J-B24-BC0024	Slotted	3/4"	1/4"	24	PC Pin	4.85	4.51
754-3981	ECW1J-B28-BC0024	Slotted	7/8"	1/4"	24	PC Pin	4.85	4.51

3315 Series Sealed Encoder

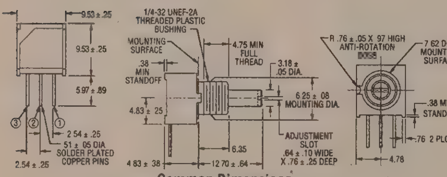
— NEW —



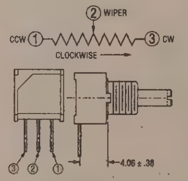
Recommended Incremental Control Diagram



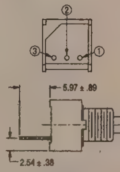
Full Cycle 6 PPR Standard
(Normally Open in Detent Shown)


9.53 ± .25
1/4-32 UNEF-2A THREADED PLASTIC BUSHING
MOUNTING SURFACE
.38 MIN STANDOFF
4.75 MIN FULL THREAD
3.18 ± .05 DIA.
R .76 ± .05 X .97 HIGH ANTI-ROTATION BOSS
7.62 DIA. MOUNTING SURFACE
6.25 ± .08 MOUNTING DIA.
ADJUSTMENT SLOT .64 ± .10 WIDE X .76 ± .25 DEEP
.38 MIN. STANDOFF
.76 2 PLCS.
2.54 ± .25
.51 ± .05 DIA SOLDER PLATED COPPER PINS
4.83 ± .38
12.70 ± .64
6.35
4.78

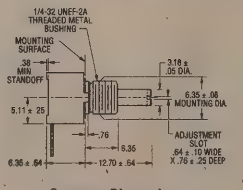
Common Dimensions
3315-001 Plastic Bushing



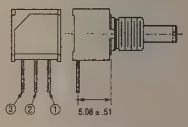
3315C-001



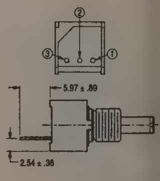
3315R-001



Common Dimensions
3315-002 Metal Bushing



3315C-002

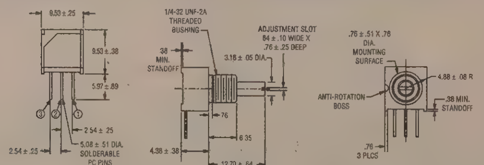


3315R-002

- Miniature Package for Design Flexibility
- Long Operating Life
- Conductive Plastic Element

The 9 mm square model 3315 is a sealed encoder with bushing or PC board mount. The -001 has a plastic bushing and the -002 has a metal bushing. **Electrical Output:** 2-bit gray code, channel A leading channel B turning clockwise at 6 PPR (pulses per revolution). The plastic shaft is 12.7 mm FMS. **Contact Bounce (15 RPM):** 5 ms max. **Closed Circuit Resistance:** 2 ohm max. **Open Circuit:** 100 K ohms min. Continuous electrical and mechanical travel. **Temperature Rating:** –55°C to +125°C.

Stock No.	Mfr.'s Type	EACH				
		1-9	10-24	25-49	50-99	100-249
754-0060	3315C-001-006	2.11	1.96	1.78	1.63	1.41
754-0070	3315R-001-006	2.11	1.96	1.78	1.63	1.41
754-0080	3315C-002-006	2.82	2.62	2.38	2.18	1.88
754-0090	3315R-002-006	2.82	2.62	2.38	2.18	1.88

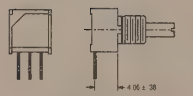


3310

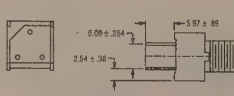
3310 Series — 9 mm Square Sealed Panel Controls

This single turn linear conductive plastic panel control uses compact size to save board and panel space. The control may be panel mounted with the threaded bushing or PC board mounted using the PC pins. Sealed to withstand typical industrial washing processes. 0.25-watt power at 70°C. **Tolerance:** ±20%. Request manufacturer's literature describing other options including mounting details and multiple functions such as switching.

Stock No.	Mfr.'s Type	Ohms	Adjustment	EACH				
				1-9	10-24	25-49	50-99	100-249
754-0150	3310C-1-102	1K	Horizontal	2.11	1.96	1.78	1.63	1.12
754-0151	3310C-1-202	2K	Horizontal	2.11	1.96	1.78	1.63	1.12
754-0152	3310C-1-502	5K	Horizontal	2.11	1.96	1.78	1.63	1.12
754-0153	3310C-1-103	10K	Horizontal	2.11	1.96	1.78	1.63	1.12
754-0154	3310C-1-203	20K	Horizontal	2.11	1.96	1.78	1.63	1.12
754-0155	3310Y-1-102	1K	Vertical	2.11	1.96	1.78	1.63	1.12
754-0156	3310Y-1-202	2K	Vertical	2.11	1.96	1.78	1.63	1.12
754-0157	3310Y-1-502	5K	Vertical	2.11	1.96	1.78	1.63	1.12
754-0158	3310Y-1-103	10K	Vertical	2.11	1.96	1.78	1.63	1.12
754-0159	3310Y-1-203	20K	Vertical	2.11	1.96	1.78	1.63	1.12



3310C-1



3301Y-1

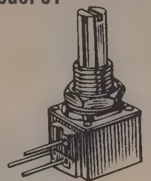
Modular Potentiometers

Model 81. Combines design versatility and advanced modular construction with factory assembled reliability and quality assurance. The net result is a consistently high quality ⅝" square panel control. **Temperature Range:** –55°C to 125°C. **Temperature Coefficient:** ±1000 ppm/°C. **Running Torque:** 0.2 to 1.5 oz.-in. 1000 VAC dielectric with standing voltage @ sea level. **Minimum Resistance:** 2 Ohms. **Infinite Resolution:** Single Turn.

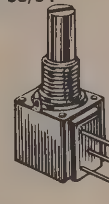
Model 83/84. The only 10 turn precision modular control in the industry. **Resistance Tolerance:** ±5%. 1000 VAC dielectric withstanding voltage @ sea level. **Temperature Range:** –55°C. to 125°C. **Temperature Coefficient:** ±50 ppm/°C. **Load Life:** 1000 hrs. Moisture resistant. Compatible with all Model 80 Series. Resistance value available only up to 10K.

Model 91. Construction features include a one-piece molded shaft and rotor. The one-piece rotor shaft provides virtually infinite electrical circuit isolation. **Temperature Range:** –55°C to +125°C. **Temperature Coefficient:** 1000 ppm/°C. **Load Life:** 1000 hrs. 1000 VAC dielectric withstanding voltage @ sea level.

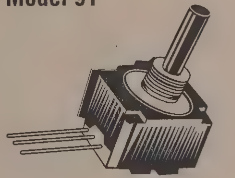
Model 81



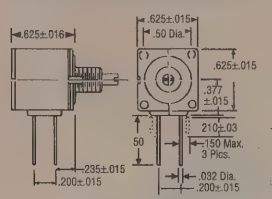
Model 83/84



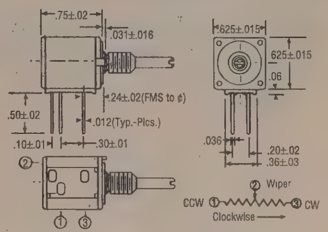
Model 91



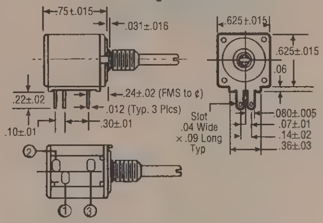
Model 81 Unit-PC Pins and J-Hook



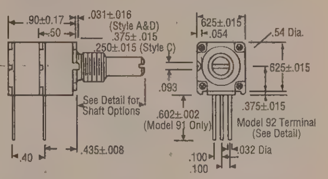
PC Pin Model 83



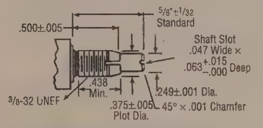
Solder Lug Model 84



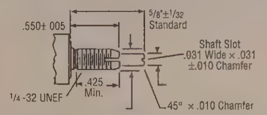
Model 91 PC Pin Terminals, In-Line



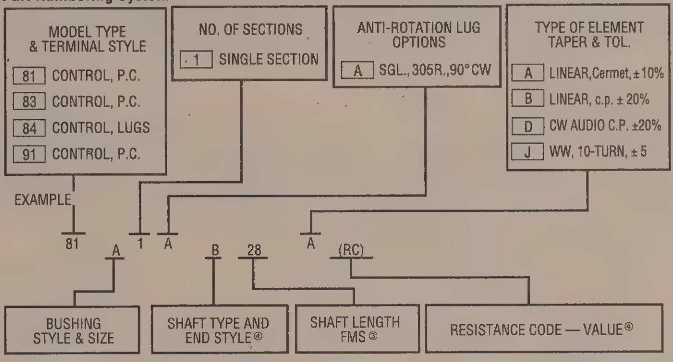
"B" Bushing ⅜" Dia. Locking — Single Shaft



"E" Bushing ¼" Dia. Locking — Single Shaft



Part Numbering System



A — Plain ⅜" D × ⅜" L
C — Plain ¼" D × ¼" L

B — Single Slotted ¼" D
E — Single Slotted ⅛" D

24 — ¾" L
28 — ⅞" L
24 — ¾" L
28 — ⅞" L

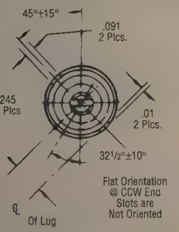
10 — 1K
13 — 5K
15 — 10K
18 — 50K
20 — 100K

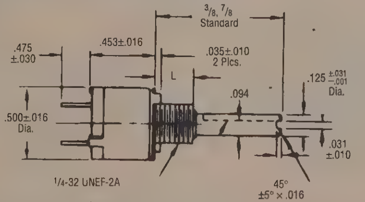
Stock No.*	Mfr.'s Type	EACH 1-9	10-24	25-49	50-99	100-249
754-87XX	81A1A-B28-A(RC)	**8.26**	**7.41**	**6.57**	**5.35**	**4.52**
754-88XX	81C1A-E28-A(RC)	**8.26**	**7.41**	**6.57**	**5.35**	**4.52**
754-89XX	81A1A-B28-B(RC)	**8.26**	**7.41**	**6.57**	**5.35**	**4.52**
754-90XX	81C1A-E28-B(RC)	**8.26**	**7.41**	**6.57**	**5.35**	**4.52**
754-91XX	83A1A-B28-J(RC)	**21.69**	**19.46**	**17.25**	**14.06**	**11.86**
754-92XX	84A1A-B28-J(RC)	**21.69**	**19.46**	**17.25**	**14.06**	**11.86**
754-94XX	91A1A-B24-B(RC)	**4.57**	**4.10**	**3.64**	**2.96**	**2.50**
754-95XX	91A1A-B28-B(RC)	**4.57**	**4.10**	**3.64**	**2.96**	**2.50**
754-97XX	91C1A-D24-B(RC)	**4.57**	**4.10**	**3.64**	**2.96**	**2.50**
754-98XX	91A1A-B24-D(RC)	**5.20**	**4.67**	**4.14**	**3.37**	**2.84**
754-99XX	91A1A-B28-D(RC)	**5.20**	**4.67**	**4.14**	**3.37**	**2.84**

*Using OHM chart below, replace "XX" in Stock No. with number that corresponds with desired OHM value.

Ohms	XX	Ohms	XX	Ohms	XX
1K	10	10K	15	100K	20
5K	13	50K	18	—	—

Model 3862
Panel Mount/Cermet Element Potentiometer





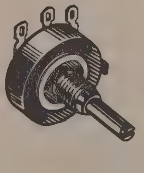
½" dia. body with power rating of 1 Watt @ +70°C. **Model 3862C-122-.** ⅜" shaft length; ¼" plain bushing with ⅛" shaft dia. **Model 3862C-282-.** ⅞" shaft length; ¼" plain bushing with ⅛" shaft dia. **Tolerance:** ±10%.

Stock No.*	Mfr.'s Type	EACH 1-9	10-24	25-49	50-99	100-249
754-58XX	3862C-122-	**13.14**	**11.79**	**10.45**	**8.52**	**7.19**
754-59XX	3862C-282-	**13.14**	**11.79**	**10.45**	**8.52**	**7.19**

*Using OHM Chart below, replace "XX" in Stock No. with number that corresponds with desired OHM value.

Ohms	XX	Ohms	XX	Ohms	XX
1K	01	10K	04	100K	07
5K	03	50K	06	—	—

Model 3852 Panel Mount/Cermet Element Potentiometers



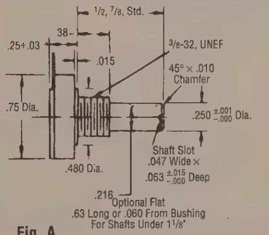


Fig. A

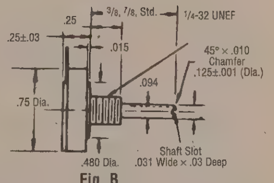


Fig. B

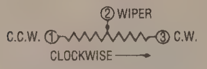
Power Rating: 2 Watts @ +70°C. **Resistance Tolerance:** ±10%. **Contact Resistance:** Variation ±3%. **Temperature Range:** –65°C to +150°C. All are supplied with hardware. **Temperature Coefficient:** ±150 ppm/°C. **Model 3852A-162-.** ½" shaft length; ⅜" dia. plain bushing with ¼" dia. shaft. **Model 3852A-282-.** ⅞" shaft length: ⅜" dia. plain bushing with ¼" dia. shaft. **Model 3852C-122-.** ⅜" shaft length; ¼" dia. plain bushing with ⅛" dia. shaft. **Model 3852C-282-.** ⅞" shaft length; ¼" dia. plain bushing with ⅛" dia. shaft.

Stock No.*	Mfr.'s Type	Fig.	EACH 1-9	10-24	25-49	50-99	100-249
754-52XX	3852A-162-	A	**8.20**	**7.36**	**6.52**	**5.31**	**4.48**
754-53XX	3852A-282-	A	**8.20**	**7.36**	**6.52**	**5.31**	**4.48**
754-56XX	3852C-162-	B	**8.20**	**7.36**	**6.52**	**5.31**	**4.48**
754-55XX	3852C-282-	B	**8.20**	**7.36**	**6.52**	**5.31**	**4.48**

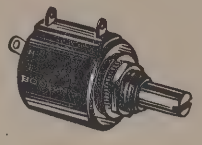
*Using OHM Chart below, replace "XX" in Stock No. with number that corresponds with desired OHM value.

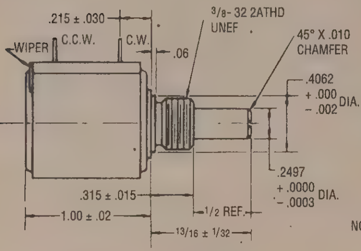
Ohms	XX	Ohms	XX	Ohms	XX
1K	01	10K	04	100K	07
5K	03	50K	06	—	—

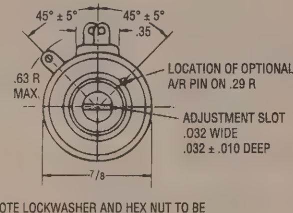
Models 3500 and 3501 Panel Mount/Wirewound and Hybritron Element Potentiometers



TOLERANCES EXCEPT AS NOTED:
DECIMALS: .XX ± .010, .XXX ± .005
FRACTIONS: ± 1/64






45° ± 5°
45° ± 5°
.35
.63 R MAX.
LOCATION OF OPTIONAL A/R PIN ON .29 R
ADJUSTMENT SLOT .032 WIDE .032 ± .010 DEEP
7/8

NOTE LOCKWASHER AND HEX NUT TO BE SUPPLIED WITH EACH UNIT

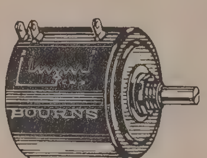
10 turn, 2 watt, 7/8" dia. Wirewound and Hybritron elements. Both models have power ratings of 2 watts @ +70°C. **Model 3500S.** Wirewound. **Temperature Range:** –65°C to +125°C. **Temperature Coefficient:** ±50 ppm/°C. **Resistance Tolerance:** ±3%. **Model 3501H.** Hybritron. **Temperature Coefficient:** ±100 ppm/°C. **Resistance Tolerance:** ±10%.

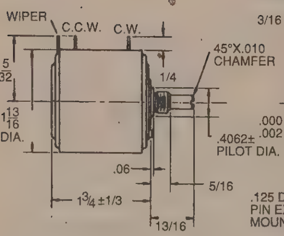
Stock No.*	Mfr.'s Type	Description	EACH				
			1-9	10-24	25-49	50-99	100-249
754-71XX	3500S-2-	Wirewound	**38.24**	**34.76**	**31.87**	**29.42**	**27.31**
754-72XX†	3501H-1-	Cond. Plastic	**54.96**	**49.96**	**45.80**	**42.28**	**39.26**

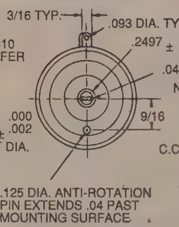
†1K, 5K and 10K only. *Using OHM Chart below, replace "XX" in Stock No. with number that corresponds with desired OHM value.

Ohms	XX	Ohms	XX	Ohms	XX	Ohms	XX
1K	50	5K	52	10K	53	100K	56

Model 3400

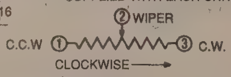





3/16 TYP.
.093 DIA. TYP.
9/16
.125 DIA. ANTI-ROTATION PIN EXTENDS .04 PAST MOUNTING SURFACE

.2497 ± .0000 .0003 SHAFT
.04 WIDE SLOT X .04 DEEP

NOTE : LOCKWASHER AND HEX NUT TO BE SUPPLIED WITH EACH UNIT



TOLERANCE EXCEPT AS NOTED:
DECIMAL: .XX±.010, XXX±.005
FRACTION:±1/64

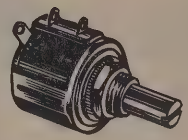
10 turn, 5 watt — 1 13/16" dia. **Operating Temperature:** –65°C to +125°C. **Power Rating:** 5 watts @ 40°C. **Resistance Tolerance:** ±3%. **End Voltage:** 15% max. sealable; ext. temp. range; high stop strength; excellent wiper stability; high power precision potentiometer.

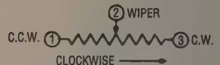
Stock No.*	Mfr.'s Type	EACH				
		1-9	10-24	25-49	50-99	100-249
754-84XX	3400S-1-	**71.42**	**64.93**	**59.52**	**55.80**	**53.30**

*Using OHM chart below, replace "XX" in Stock No. with number that corresponds with desired OHM value.

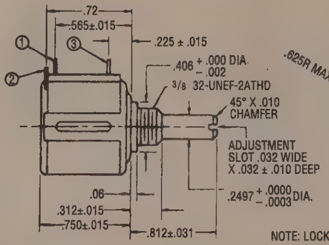
Ohms	XX	Ohms	XX	Ohms	XX
1K	04	5K	12	10K	06

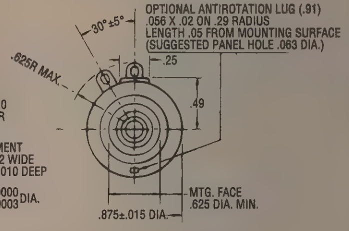
Models 3540 and 3541 Panel Mount/Wirewound and Hybritron Element Potentiometers





TOLERANCES EXCEPT AS NOTED:
DECIMALS: .XX ± .010, .XXX ± .015




30° ±5°
OPTIONAL ANTIROTATION LUG (.91) .056 X .02 ON .29 RADIUS LENGTH .05 FROM MOUNTING SURFACE (SUGGESTED PANEL HOLE .063 DIA.)
.25
.625R MAX.
.49
MTG. FACE .625 DIA. MIN.
.875±.015 DIA.

NOTE: LOCK WASHER AND MOUNTING NUT SUPPLIED

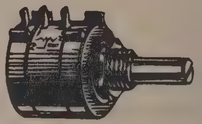
10 turn, 2 watt, 7/8" dia. Wirewound and Hybritron elements. Both models have power ratings of 2 watts @ +70°C. **Model 3540S.** Wirewound. **Temperature Range:** –55°C to +125°C **Temperature Coefficient:** ±50 ppm/°C. **Resistance Tolerance:** ±5%. **Model 3541H** Hybritron. **Temperature Coefficient:** ±100 ppm/°C. **Resistance Tolerance:** ±10%.

Stock No.*	Mfr.'s Type	Description	EACH				
			1-9	10-24	25-49	50-99	100-249
754-73XX	3540S-1-	Wirewound	**12.92**	**11.75**	**10.77**	**10.09**	**9.64**
754-74XX†	3541H-1-	Cond. Plastic	**12.92**	**11.75**	**10.77**	**10.09**	**9.64**

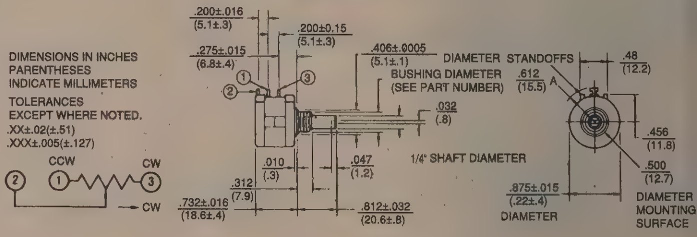
†1K, 5K and 10K only. *Using OHM Chart below, replace "XX" in Stock No. with numbe that corresponds with desired OHM value.

Ohms	XX	Ohms	XX	Ohms	XX
1K	53	10K	56	100K	58
5K	55	50K	59	—	—

Model 3590



DIMENSIONS IN INCHES PARENTHESES INDICATE MILLIMETERS
TOLERANCES EXCEPT WHERE NOTED.
.XX±.02(±.51)
.XXX±.005(±.127)



10 turn, 2 watt — 7/8" dia. Bushing mount, wirewound element. The -1 and -2 units are no sealed. **Operating Temperature:** –55°C to +125°C. **Resistance Tolerance:** ±5%. **Powe Rating:** 2 watts @ 40°C. 2000 VAC dielectric withstanding voltage @ sea level **Temperature Coefficient:** ±50 ppm/°C.

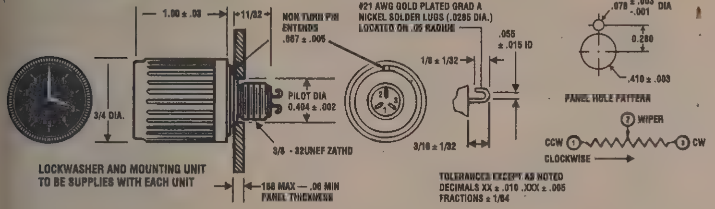
Stock No.*	Mfr.'s Type	Description	EACH				
			1-9	10-24	25-49	50-99	100-249
754-67XX†	3590S-1	Plastic Bushing/Shaft	**8.10**	**7.36**	**6.75**	**6.33**	**6.04**
754-68XX	3590S-2	Metal Bushing/Shaft	**10.02**	**9.11**	**8.35**	**7.83**	**7.48**

†20K not stocked. *Using OHM chart below, replace "XX" in Stock No. with number tha corresponds with desired OHM value. 50K and 100K pricing higher. PC pin terminals available. Call for pricing and minimums.

Ohms	XX	Ohms	XX	Ohms	XX
1K	01	10K	04	50K	06
5K	03	20K	05	100K	07

Model 3600S KNOBPOT®

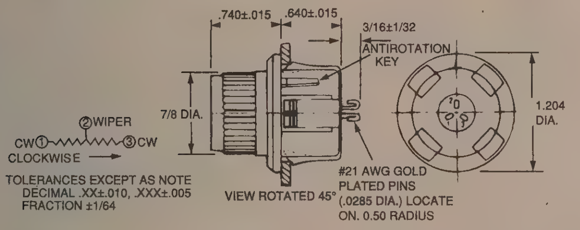
10 Turn; 3/4" dia. Highly readable integral clock face readout. Cost saving, pre-phased. Easy mounting; drill two holes, install and secure with lock washer and nut. **Power Rating:** 1.5 watts @ +25°C. **Tolerance:** ±5%. **Temperature Range:** –65°C to +85°C. **Temperature Coefficient:** ±50 ppm/°C.


1.00 ± .03
11/32
NON TURN PIN ENTENDS .067 ± .005
#21 AWG GOLD PLATED GRAD A NICKEL SOLDER LUGS (.0285 DIA.) LOCATED ON .05 RADIUS
.055 ± .015 ID
.078 +.003 -.001 DIA
0.280
1/8 ± 1/32
.410 ± .003
PANEL HOLE PATTERN
3/4 DIA.
PILOT DIA 0.404 ± .002
3/8 - 32UNEF ZATHD
3/16 ± 1/32
② WIPER
CCW ① CW ③
CLOCKWISE
LOCKWASHER AND MOUNTING UNIT TO BE SUPPLIES WITH EACH UNIT
.156 MAX — .06 MIN PANEL THICKNESS
TOLERANCES EXCEPT AS NOTED DECIMALS XX ± .010 .XXX ± .005 FRACTIONS ± 1/64

Stock No.	Mfr.'s Type	Ohms	EACH				
			1-9	10-24	25-49	50-99	100-249
754-7555	3600S-1-102	1K	55.38	51.28	46.15	43.27	40.72
754-7565	3600S-1-502	5K	55.38	51.28	46.15	43.27	40.72
754-7570	3600S-1-103	10K	55.38	51.28	46.15	43.27	40.72

Model 3610S KNOBPOT®

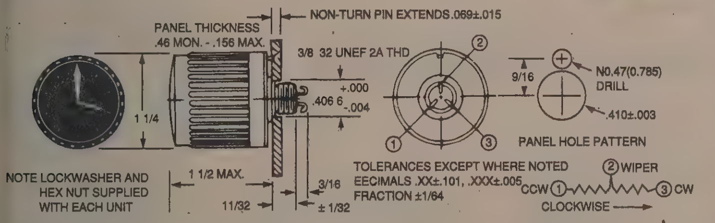
10 turn; 7/8" dia. Cost saving; space saving; easy one-hole, snap-in mounting with integral digital readout. **Temperature Range:** –25°C to +85°C. **Power Rating:** 1.5 watts @ +25°C. **Temperature Coefficient:** ±50 ppm/°C. **Tolerance:** ±5%. **Accuracy:** ±0.5%.


.740±.015
.640±.015
3/16±1/32
ANTIROTATION KEY
7/8 DIA.
1.204 DIA.
②WIPER
CW① ③CW
CLOCKWISE
TOLERANCES EXCEPT AS NOTE DECIMAL .XX±.010, .XXX±.005 FRACTION ±1/64
VIEW ROTATED 45°
#21 AWG GOLD PLATED PINS (.0285 DIA.) LOCATE ON. 0.50 RADIUS

Stock No.	Mfr.'s Type	Ohms	EACH				
			1-9	10-24	25-49	50-99	100-249
754-7655	3610S-1-102	1K	56.32	52.15	46.93	44.00	41.41
754-7665	3610S-1-502	5K	56.32	52.15	46.93	44.00	41.41
754-7670	3610S-1-103	10K	56.32	52.15	46.93	44.00	41.41

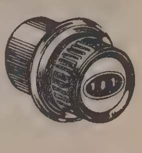
Model 3640S KNOBPOT®

10 turn; 1¼" dia. Integral clock face readout. Cost saving; pre-phased; Highly readable. Easy mounting; drill two holes, install and secure with lock washer and nut. **Temperature Range:** –65°C to +85°C. **Power Rating:** 2.5 watts @ +25°C. **Tolerance:** ±3%. **Temperature Coefficient:** ±50 ppm/°C.

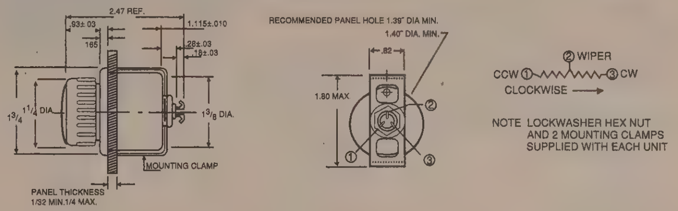

NON-TURN PIN EXTENDS.069±.015
PANEL THICKNESS .46 MON. - .156 MAX.
3/8 32 UNEF 2A THD
+.000 .406 6 -.004
1 1/4
9/16
N0.47(0.785) DRILL
.410±.003
PANEL HOLE PATTERN
NOTE LOCKWASHER AND HEX NUT SUPPLIED WITH EACH UNIT
1 1/2 MAX.
11/32
3/16 ± 1/32
TOLERANCES EXCEPT WHERE NOTED EECIMALS .XX±.101, .XXX±.005 FRACTION ±1/64
②WIPER
CCW① ③CW
CLOCKWISE

Stock No.	Mfr.'s Type	Ohms	EACH				
			1-9	10-24	25-49	50-99	100-249
754-7750	3640S-1-102	1K	113.90	105.46	94.92	88.98	83.75
754-7755	3640S-1-202	2K	113.90	105.46	94.92	88.98	83.75
754-7760	3640S-1-502	5K	113.90	105.46	94.92	88.98	83.75
754-7765	3640S-1-103	10K	113.90	105.46	94.92	88.98	83.75

Model 3650S KNOBPOT®



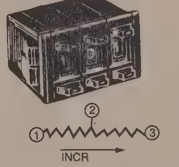
10 turn; 1¼" dia. Easy one-hole mounting with recessed cup furnished. Integral digital readout; cost saving; pre-phased; excellent readability. **Temperature Range:** –25°C to +85°C. **Temperature Coefficient:** ±50 ppm/°C. **Power Rating:** 2.5 watts @ +25°C. Output accuracy within 0.15% of total applied voltage. **Tolerance:** ±3%.

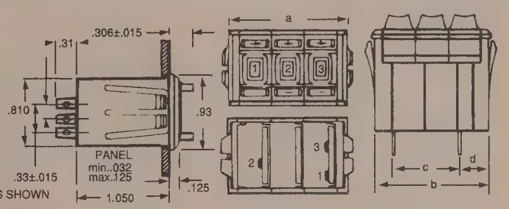

2.47 REF.
.93±.03
165
1.115±.010
.28±.03
.18±.03
1¾ 1¼ DIA.
1⅜ DIA.
MOUNTING CLAMP
PANEL THICKNESS 1/32 MIN.1/4 MAX.
RECOMMENDED PANEL HOLE 1.39" DIA MIN.
1.40" DIA. MIN.
.82
1.80 MAX
①
②
③
② WIPER
CCW① ③CW
CLOCKWISE
NOTE LOCKWASHER HEX NUT AND 2 MOUNTING CLAMPS SUPPLIED WITH EACH UNIT

Stock No.	Mfr.'s Type	Ohms	EACH				
			1-9	10-24	25-49	50-99	100-249
754-7850	3650S-1-102	1K	145.26	134.50	121.05	113.48	106.81
754-7860	3650S-1-502	5K	145.26	134.50	121.05	113.48	106.81
754-7865	3650S-1-103	10K	145.26	134.50	121.05	113.48	106.81

Models 3682 and 3683 KNOBPOTS®

Rear solder terminals fit standard interconnections. In-line digital readout. Convenient snap-in mounting with bezel. Rectangular to match other panel components. **Power Rating:** 2.0 watts @ +25°C. **Temperature Range:** –25°C to +85°C. **Temperature Coefficient:** ±100 ppm/°C. **Dielectric Strength:** 1000 VAC @ sea level. **Resistance Tolerance:** ±3%.





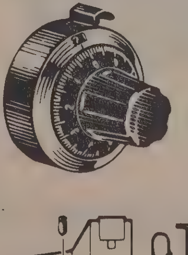
NOTE: TOLERANCES EXCEPT AS SHOWN
.XX±.015
.XX±.005

Two Decades

Stock No.	Mfr.'s Type	Ohms	EACH				
			1-9	10-24	25-49	50-99	100-249
754-7950	3682S-1-102	1K	25.28	23.41	21.07	19.75	18.59
754-7955	3682S-1-103	10K	25.28	23.41	21.07	19.75	18.59
754-7960	3682S-1-104	100K	25.28	23.41	21.07	19.75	18.59

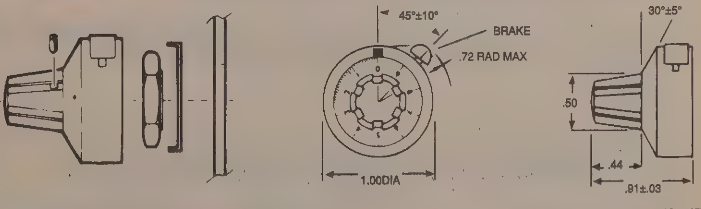
Three Decades

Stock No.	Mfr.'s Type	Ohms	1-9	10-24	25-49	50-99	100-249
754-7965	3683S-1-102	1K	37.42	34.65	31.18	29.23	27.51
754-7970	3683S-1-502	5K	37.42	34.65	31.18	29.23	27.51
754-7975	3683S-1-103	10K	37.42	34.65	31.18	29.23	27.51
754-7980	3683S-1-104	100K	37.42	34.65	31.18	29.23	27.51



H-490 Series Turns Counting Dials

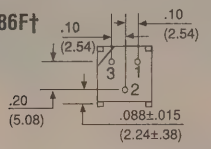
1" dia. turn counting dials for use with precision potentiometers or other rotating devices up to 30 turns. Simplified mounting, no special holes required, uses only 1" dia. panel space. No backlash, mounted directly to shaft. Excellent legibility. Available with or without brake. Two set screws standard on all models. **Temperature Range:** –15°C to +85°C.



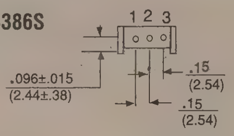
Stock No.	Mfr.'s Type	Finish	Shaft Dia.	Brake	EACH				
					1-24	10-24	25-49	50-99	100-249
754-8065	H-492-3	Clear	1/4"	Yes	26.29	23.00	20.44	18.40	16.73
754-8075	H-493-3	Black	1/4"	Yes	26.29	23.00	20.44	18.40	16.73

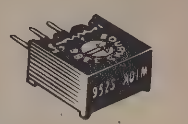
Model 3386 Single-Turn, Cermet

3386F†

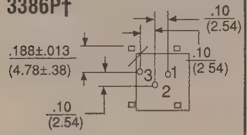


3386S

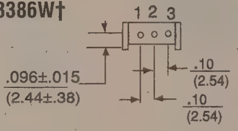


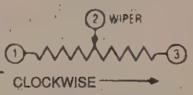


3386P†

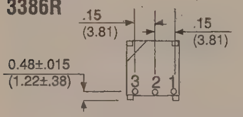


3386W†

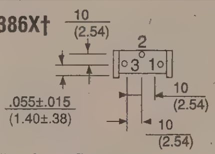




3386R



3386X†



TOLERANCES = .010 (.25)

DIMENSIONS IN (MIN)

†Preferred Pin Styles For New Designs

3/8" square units. Infinite resolution cermet element. **Power Rating:** .5 Watt at +85°C. **Resistance Tolerance:** ±10%. **Adjustability:** ±0.05% voltage ratio. **Temperature Range:** –55°C to 125°C. **Low Temperature Coefficient:** ±100 ppm/°C. Sealed to withstand wave soldering and immersion cleaning process. **Dielectric Strength:** 900 VAC at sea level. **Mechanical Life:** 200 cycles.

Top Adjust

Stock No.*	Mfr.'s Type	EACH 1-9	10-24	25-49	50-99	100-249
754-32XX	3386F-1-	1.04	.94	.89	.82	.78
754-33XX	3386P-1-	1.04	.94	.89	.82	.78
754-34XX	3386R-1-	1.16	1.04	.98	.91	.87

Side Adjust

Stock No.*	Mfr.'s Type	EACH 1-9	10-24	25-49	50-99	100-249
754-35XX	3386S-1-	1.16	1.04	.98	.91	.87
754-36XX	3386W-1-	1.04	.94	.89	.82	.78
754-37XX	3386X-1-	1.04	.94	.89	.82	.78

*Using OHM chart below, replace "XX" in Stock No. with numbers that correspond with desired OHM value.

Ohms	XX	Ohms	XX	Ohms	XX	Ohms	XX	Ohms	XX
50	03	500	06	5K	09	50K	12	500K	15
100	04	1K	07	10K	10	100K	13	1Meg	16
200	05	2K	08	20K	11	200K	14	—	—

Model 3059 Multi-Turn Cermet

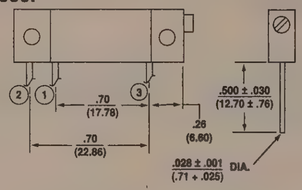
Listed on the DESC QPL for style RJ12 per MIL-R-22097. Infinite resolution cermet element. **Adjustability:** ±0.01% (V.R. Mode). **High Power Dissipation:** 1 Watt @ 70°C. **Resistance Tolerance:** ±10%. **Temperature Range:** –55°C to +150°C. **Low Temperature Coefficient:** ±100 ppm/°C.

Stock No.*	Mfr.'s Type	EACH 1-9	10-24	25-49	50-99	100-249
754-12XX†	3059P-1-	5.24	4.72	4.45	4.14	3.93
754-13XX	3059Y-1-	5.24	4.72	4.45	4.14	3.93

†1K, 2K, 10K only. *Using OHM chart below, replace "XX" in Stock No. with numbers that correspond with desired OHM value.

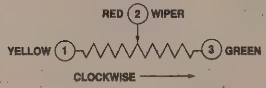
Ohms	XX	Ohms	XX	Ohms	XX	Ohms	XX	Ohms	XX
100	01	1K	04	5K	06	20K	08	100K	10
500	03	2K	05	10K	07	50K	09	—	—

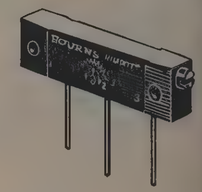
3059P



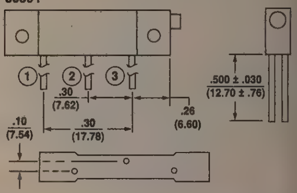
TOLERANCES: ± .010 (.25) EXCEPT WHERE NOTED

DIMENSIONS: IN. (MM)





3059Y



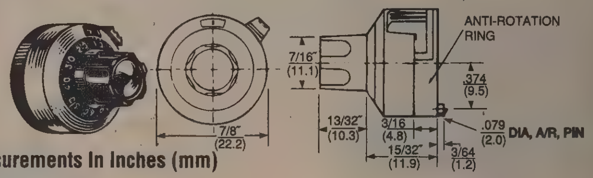
H-800 Trim Bin™ Kit

- Multi-Turn, Wirewound and Cermet
- Multi-Turn, Cermet, Square
- Single-Turn, Cermet and Wirewound
- Open Frames, Cermet

This kit contains over 125 parts representing 50 varieties of resistance and pin styles. You are able to select the size, shape, type of element and method of adjustment to suit your applications from these popular styles of trimming potentiometers. Also included in the package are adjustment tools and the latest product literature.

754-0001. Model H-800........................EACH 129.17

Model H-507-6, Turns Counting Dial



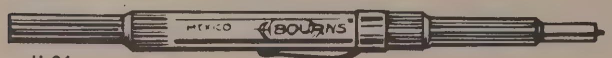
Measurements In Inches (mm)

Model H-507-6. Used with precision potentiometers or other rotating devices for up to 15 turns. 50 dial divisions per turn. 2 parts in 1000 readability. White on black marking; clear finish. 7/8" dia.; fits 1/4" shaft. **Fits Panel Thickness:** 3/32" (2.0 mm) min. 3/16" (5.0 mm) max. High quality rugged construction.

754-0004. 1-9........................EACH 12.90 10-24........................EACH 12.48
25-49........................EACH 11.91 50-99........................EACH 11.55
100-249........................EACH 11.06

Trimmer Adjustment Tools

H-90

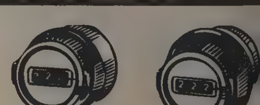


H-91

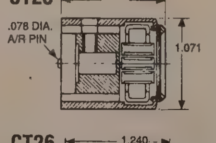
These glass-filled nylon body trim tools have corrosion resistant stainless steel blades which are extended as well as recessed for critical adjustments. Designed to adjust all sizes of trimmers. 5 inches long, .225 inches diameter.

754-0002. Model H-90........................EACH .73
754-0003. Model H-91........................EACH .73

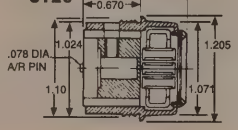
CT23/CT26, Turns Counting Dials



CT23



CT26

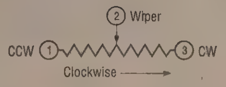


These highly accurate dials enhance the machine interface of any control panel. Excellent readability. White on black numerals. Accurate within 1/500 of a turn. White finish. Fits 1/4" shaft. **Model CT23:** Rear panel mount. **Model CT26:** Recessed mount. 0-10 turns.

Stock No.	Mfr.'s Type	EACH 1-9	10-24	25-49	50-99	100-249
754-0006	CT23	22.00	21.29	20.63	19.70	18.86
754-0007	CT26	17.57	17.00	16.47	15.73	15.06

Need Larger Quantity Prices? Call 1-800-433-5700 For Prompt Handling

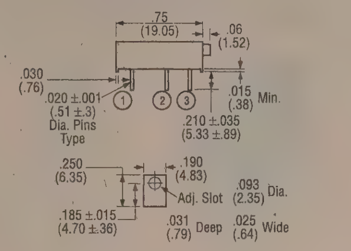
Model 3006 15-Turn/Cermet



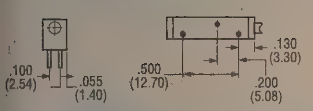
Tolerances $\pm^{.010}_{(.25)}$ Except Where Noted

Dimensions $\pm^{\text{In.}}_{\text{(mm)}}$

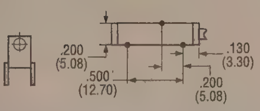
Common Dimensions



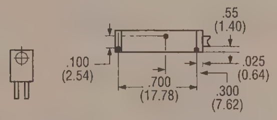
3006P



3006W



3006Y



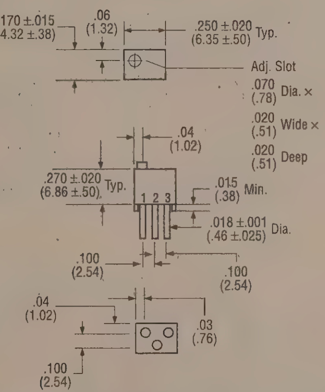
1/4" high, low cost cermet trimmer offers infinite resolution, low temperature coefficient ±100 PPM/°C –55°C to +125°C. Sealed to withstand wave soldering and immersion cleaning. **Load Life:** 1000 hours, 0.75 watt at 70°C. ±10% tolerance. 15 turn nominal travel. **Suffix:** P, W and Y styles. **Dimensions:** 3/4 × 0.19 × 0.25". See drawings below for pin configurations. **Weight:** .04 oz.

Stock No.	Mfr.'s Type	Ohms	EACH				
			1-9	10-24	25-49	50-99	100-249
754-1001	3006P	10	**1.37**	**1.26**	**1.15**	**1.10**	**1.05**
754-1011	3006P	20	**1.37**	**1.26**	**1.15**	**1.10**	**1.05**
754-1021	3006P	50	**1.37**	**1.26**	**1.15**	**1.10**	**1.05**
754-1023	3006Y	50	**1.48**	**1.36**	**1.24**	**1.18**	**1.13**
754-1031	3006P	100	**1.37**	**1.26**	**1.15**	**1.10**	**1.05**
754-1032	3006W	100	**1.48**	**1.36**	**1.24**	**1.18**	**1.13**
754-1033	3006Y	100	**1.48**	**1.36**	**1.24**	**1.18**	**1.13**
754-1041	3006P	200	**1.37**	**1.26**	**1.15**	**1.10**	**1.05**
754-1042	3006W	200	**1.48**	**1.36**	**1.24**	**1.18**	**1.13**
754-1043	3006Y	200	**1.48**	**1.36**	**1.24**	**1.18**	**1.13**
754-1051	3006P	500	**1.37**	**1.26**	**1.15**	**1.10**	**1.05**
754-1052	3006W	500	**1.48**	**1.36**	**1.24**	**1.18**	**1.13**
754-1053	3006Y	500	**1.48**	**1.36**	**1.24**	**1.18**	**1.13**
754-1061	3006P	1K	**1.37**	**1.26**	**1.15**	**1.10**	**1.05**
754-1062	3006W	1K	**1.48**	**1.36**	**1.24**	**1.18**	**1.13**
754-1063	3006Y	1K	**1.48**	**1.36**	**1.24**	**1.18**	**1.13**
754-1071	3006P	2K	**1.37**	**1.26**	**1.15**	**1.10**	**1.05**
754-1072	3006W	2K	**1.48**	**1.36**	**1.24**	**1.18**	**1.13**
754-1073	3006Y	2K	**1.48**	**1.36**	**1.24**	**1.18**	**1.13**

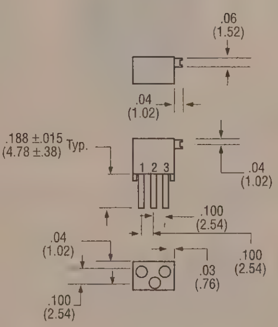
Stock No.	Mfr.'s Type	Ohms	EACH				
			1-9	10-24	25-49	50-99	100-249
754-1081	3006P	5K	**1.37**	**1.26**	**1.15**	**1.10**	**1.05**
754-1082	3006W	5K	**1.48**	**1.36**	**1.24**	**1.18**	**1.13**
754-1083	3006Y	5K	**1.48**	**1.36**	**1.24**	**1.18**	**1.13**
754-1091	3006P	10K	**1.37**	**1.26**	**1.15**	**1.10**	**1.05**
754-1092	3006W	10K	**1.48**	**1.36**	**1.24**	**1.18**	**1.13**
754-1093	3006Y	10K	**1.48**	**1.36**	**1.24**	**1.18**	**1.13**
754-1101	3006P	20K	**1.37**	**1.26**	**1.15**	**1.10**	**1.05**
754-1102	3006W	20K	**1.48**	**1.36**	**1.24**	**1.18**	**1.13**
754-1103	3006Y	20K	**1.48**	**1.36**	**1.24**	**1.18**	**1.13**
754-1111	3006P	50K	**1.37**	**1.26**	**1.15**	**1.10**	**1.05**
754-1112	3006W	50K	**1.48**	**1.36**	**1.24**	**1.18**	**1.13**
754-1113	3006Y	50K	**1.48**	**1.36**	**1.24**	**1.18**	**1.13**
754-1121	3006P	100K	**1.37**	**1.26**	**1.15**	**1.10**	**1.05**
754-1122	3006W	100K	**1.48**	**1.36**	**1.24**	**1.18**	**1.13**
754-1123	3006Y	100K	**1.48**	**1.36**	**1.24**	**1.18**	**1.13**
754-1131	3006P	200K	**1.37**	**1.26**	**1.15**	**1.10**	**1.05**
754-1132	3006W	200K	**1.48**	**1.36**	**1.24**	**1.18**	**1.13**
754-1141	3006P	1M	**1.37**	**1.26**	**1.15**	**1.10**	**1.05**
754-1151	3006P	1M	**1.37**	**1.26**	**1.15**	**1.10**	**1.05**

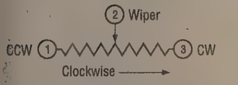
Model 3266 12-Turn/Cermet

3266W



3266X





Tolerances $\pm^{.010}_{(.25)}$ Except Where Noted

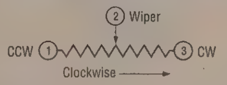
Dimensions $\pm^{\text{In.}}_{\text{(mm)}}$

Low cost 1/4 " square multi-turn trimmer. Sealed to withstand wave soldering and boardwash process. Infinite resolution. 1/4 watt power at 70°C. **Low Temperature Coefficient:** ±100 PPM/°C. **Temperature Range:** –55°C to +125°C. 12 turn nominal travel. **Suffix:** W=Vertical Mount; X=Offset Vertical Mount. **Dimensions:** 1/4" square × 0.170. **Weight:** 0.015 oz.

Stock No.	Mfr.'s Type	Ohms	EACH				
			1-9	10-24	25-49	50-99	100-249
754-2162	3266W	50	**2.83**	**2.60**	**2.36**	**2.26**	**2.17**
754-2172	3266W	50	**2.83**	**2.60**	**2.36**	**2.26**	**2.17**
754-2174	3266X	100	**2.83**	**2.60**	**2.36**	**2.26**	**2.17**
754-2182	3266W	200	**2.83**	**2.60**	**2.36**	**2.26**	**2.17**
754-2192	3266W	500	**2.83**	**2.60**	**2.36**	**2.26**	**2.17**
754-2194	3266X	500	**2.83**	**2.60**	**2.36**	**2.26**	**2.17**
754-2202	3266W	1K	**2.83**	**2.60**	**2.36**	**2.26**	**2.17**
754-2204	3266X	1K	**2.83**	**2.60**	**2.36**	**2.26**	**2.17**
754-2212	3266W	2K	**2.83**	**2.60**	**2.36**	**2.26**	**2.17**
754-2214	3266X	2K	**2.83**	**2.60**	**2.36**	**2.26**	**2.17**
754-2222	3266W	5K	**2.83**	**2.60**	**2.36**	**2.26**	**2.17**

Stock No.	Mfr.'s Type	Ohms	EACH				
			1-9	10-24	25-49	50-99	100-249
754-2224	3266X	5K	**2.83**	**2.60**	**2.36**	**2.26**	**2.17**
754-2232	3266W	10K	**2.83**	**2.60**	**2.36**	**2.26**	**2.17**
754-2234	3266X	10K	**2.83**	**2.60**	**2.36**	**2.26**	**2.17**
754-2242	3266W	20K	**2.83**	**2.60**	**2.36**	**2.26**	**2.17**
754-2244	3266X	20K	**2.83**	**2.60**	**2.36**	**2.26**	**2.17**
754-2252	3266W	50K	**2.83**	**2.60**	**2.36**	**2.26**	**2.17**
754-2254	3266X	50K	**2.83**	**2.60**	**2.36**	**2.26**	**2.17**
754-2262	3266W	100K	**2.83**	**2.60**	**2.36**	**2.26**	**2.17**
754-2264	3266X	100K	**2.83**	**2.60**	**2.36**	**2.26**	**2.17**
754-2272	3266W	1M	**2.83**	**2.60**	**2.36**	**2.26**	**2.17**
—	—	—	—	—	—	—	—

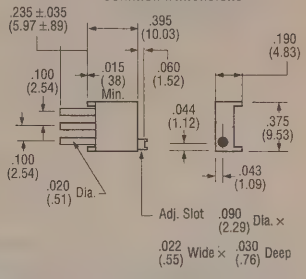
Model 3296 25-Turn/Cermet



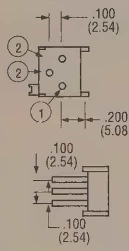
Tolerances $\pm^{.010}_{(.25)}$ Except Where Noted

Dimensions $\pm^{\text{In.}}_{\text{(mm)}}$

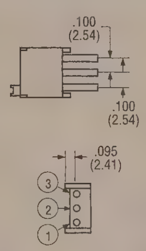
Common Dimensions



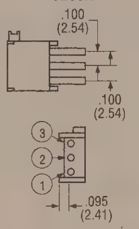
3296P



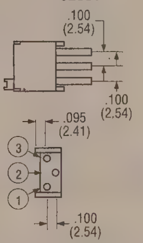
3296W



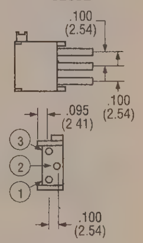
3296X



3296Y



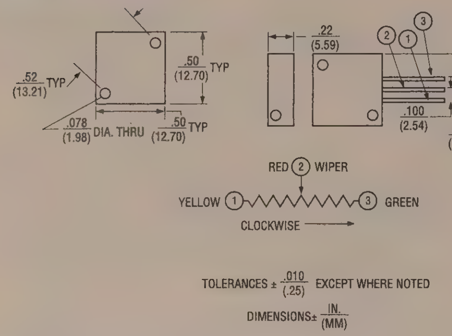
3296Z

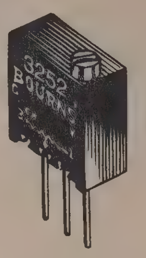


Listed on DESC QPL for style RJ24 per MIL-R-22097. Thin body profile, low cost square multi-turn trimmer with infinite resolution. Wiper idling mechanism clicks at end of rotation. Sealed to withstand wave soldering and boardwash process. 0.5 watt at 70°C. ±10% tolerance. **Temperature Range:** –55°C to +125°C. **Suffix:** P=Offset PC pins, W=Vertical Mount; X=Inline Vertical Mount; Y=Offset PC pins, Z=Offset PC pins. **Dimensions:** 3/8 square × 0.19" thick. **Weight:** .03 oz.

Stock No.	Mfr.'s Type	Ohms	EACH				
			1-9	10-24	25-49	50-99	100-249
754-3101	3296P	500	**2.13**	**1.96**	**1.78**	**1.70**	**1.63**
754-3102	3296W	500	**1.98**	**1.82**	**1.65**	**1.58**	**1.52**
754-3103	3296Y	500	**1.98**	**1.82**	**1.65**	**1.58**	**1.52**
754-3104	3296X	500	**1.98**	**1.82**	**1.65**	**1.58**	**1.52**
754-3105	3296Z	500	**2.13**	**1.96**	**1.78**	**1.70**	**1.63**
754-3111	3296P	1K	**2.13**	**1.96**	**1.78**	**1.70**	**1.63**
754-3112	3296W	1K	**1.98**	**1.82**	**1.65**	**1.58**	**1.52**
754-3113	3296Y	1K	**1.98**	**1.82**	**1.65**	**1.58**	**1.52**
754-3114	3296X	1K	**1.98**	**1.82**	**1.65**	**1.58**	**1.52**
754-3115	3296Z	1K	**2.13**	**1.96**	**1.78**	**1.70**	**1.63**
754-3121	3296P	2K	**2.13**	**1.96**	**1.78**	**1.70**	**1.63**
754-3122	3296W	2K	**1.98**	**1.82**	**1.65**	**1.58**	**1.52**
754-3123	3296Y	2K	**1.98**	**1.82**	**1.65**	**1.58**	**1.52**
754-3124	3296X	2K	**1.98**	**1.82**	**1.65**	**1.58**	**1.52**
754-3125	3296Z	2K	**2.13**	**1.96**	**1.78**	**1.70**	**1.63**
754-3131	3296P	5K	**2.13**	**1.96**	**1.78**	**1.70**	**1.63**
754-3132	3296W	5K	**1.98**	**1.82**	**1.65**	**1.58**	**1.52**
754-3133	3296Y	5K	**1.98**	**1.82**	**1.65**	**1.58**	**1.52**
754-3134	3296X	5K	**1.98**	**1.82**	**1.65**	**1.58**	**1.52**
754-3135	3296Z	5K	**2.13**	**1.96**	**1.78**	**1.70**	**1.63**
754-3141	3296P	10K	**2.13**	**1.96**	**1.78**	**1.70**	**1.63**
754-3142	3296W	10K	**1.98**	**1.82**	**1.65**	**1.58**	**1.52**
754-3143	3296Y	10K	**1.98**	**1.82**	**1.65**	**1.58**	**1.52**
754-3144	3296X	10K	**1.98**	**1.82**	**1.65**	**1.58**	**1.52**
754-3145	3296Z	10K	**2.13**	**1.96**	**1.78**	**1.70**	**1.63**
754-3151	3296P	20K	**2.13**	**1.96**	**1.78**	**1.70**	**1.63**
754-3152	3296W	20K	**1.98**	**1.82**	**1.65**	**1.58**	**1.52**
754-3153	3296Y	20K	**1.98**	**1.82**	**1.65**	**1.58**	**1.52**
754-3154	3296X	20K	**1.98**	**1.82**	**1.65**	**1.58**	**1.52**
754-3155	3296Z	20K	**2.13**	**1.96**	**1.78**	**1.70**	**1.63**
754-3161	3296P	50K	**2.13**	**1.96**	**1.78**	**1.70**	**1.63**
754-3162	3296W	50K	**1.98**	**1.82**	**1.65**	**1.58**	**1.52**
754-3163	3296Y	50K	**1.98**	**1.82**	**1.65**	**1.58**	**1.52**
754-3164	3296X	50K	**1.98**	**1.82**	**1.65**	**1.58**	**1.52**
754-3165	3296Z	50K	**2.13**	**1.96**	**1.78**	**1.70**	**1.63**
754-3171	3296P	100K	**2.13**	**1.96**	**1.78**	**1.70**	**1.63**
754-3172	3296W	100K	**1.98**	**1.82**	**1.65**	**1.58**	**1.52**
754-3173	3296Y	100K	**1.98**	**1.82**	**1.65**	**1.58**	**1.52**
754-3174	3296X	100K	**1.98**	**1.82**	**1.65**	**1.58**	**1.52**
754-3175	3296Z	100K	**2.13**	**1.96**	**1.78**	**1.70**	**1.63**

Models RJ22/3252 Multi-Turn, Cermet





Stable, infinite resolution cermet element. Listed on the DESC QPL for style RJ22 pe MIL-R-22097. Low temperature coefficient ±100 ppm/°C over entire temperature and resistance range. High temperature, all plastic case. Superior humidity-proof performance under the most severe conditions. **Temperature Range:** –65° to +150°C. **Power Rating:** .75 Watt at 85°C. **Resistance Tolerance:** ±10%.

Stock No.*	Mfr.'s Type	EACH				
		1-9	10-24	25-49	50-99	100-249
754-17XX	RJ22/3252W-1-	**6.11**	**5.62**	**5.11**	**4.89**	**4.68**

*Using OHM Chart below, replace "XX" in Stock No. with number that corresponds with desired OHM value.

Ohms	XX	Ohms	XX	Ohms	XX	Ohms	XX
1K	04	5K	06	20K	08	50K	10
2K	05	10K	07	25K	09	100K	11

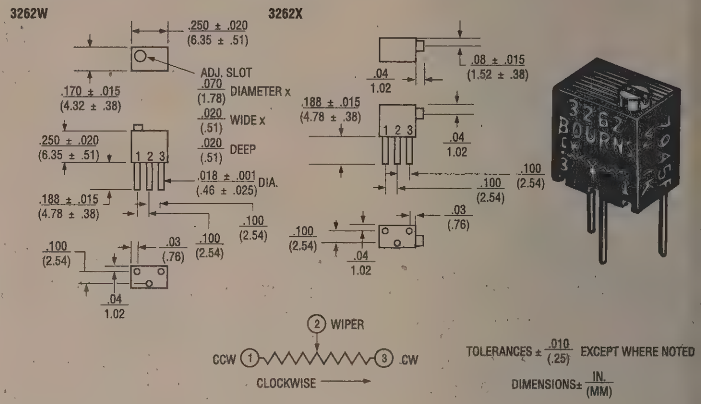
Model RJ26/3262 Multi-Turn Cermet

Listed on DESC QPL for RJ26 per MIL-R-22097 and RJR26 per High-Rel MIL-R-39035. 0.25 Watt @ +85°C. Low temperature coefficient ±100 ppm/°C. Outstanding humidity resistance and low contact resistance. **Temperature Range:** –65°C to +150°C. Stable, infinite resolution cermet element. **Resistance Tolerance:** ±10%.

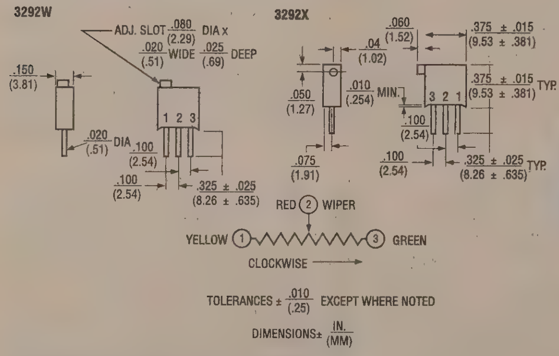
Stock No.*	Mfr.'s Type	EACH				
		1-9	10-24	25-49	50-99	100-249
754-18XX	RJ26/3262W-1-	**1.85**	**1.70**	**1.55**	**1.48**	**1.42**
754-19XX†	RJ26/3262X-1-	**1.85**	**1.70**	**1.55**	**1.48**	**1.42**

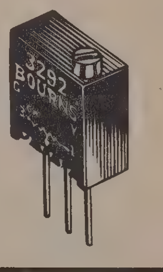
†10K, 20K, 100K only. *Using OHM Chart below, replace "XX" in Stock No. with number that corresponds with desired OHM value.

Ohms	XX	Ohms	XX	Ohms	XX	Ohms	XX
100	02	1K	05	10K	08	50K	11
200	03	2K	06	20K	09	100K	12
500	04	5K	07	25K	10	1Meg	13



Model 3292 Multi-Turn Cermet





Infinite resolution cermet element. Reliable wiper idling mechanism with audible 'Click' at end of rotation. Double chevron shaft seal; plasma etched body. **Temperature Range:** –65°C to +150°C. **Temperature Coefficient:** ±100 ppm/°C. **Power:** 0.5 Watts at +85°C. **Tolerance:** ±10%.

Stock No.*	Mfr.'s Type	EACH				
		1-9	10-24	25-49	50-99	100-249
754-24XX	3292W-1-	**12.26**	**11.28**	**10.25**	**9.81**	**9.40**
754-25XX†	3292X-1-	**12.26**	**11.28**	**10.25**	**9.81**	**9.40**

†2K, 10K, 20K only. *Using OHM Chart below, replace "XX" in Stock No. with number that corresponds with desired OHM value.

Ohms	XX	Ohms	XX	Ohms	XX	Ohms	XX
200	05	2K	08	10K	10	500K	14
1K	07	5K	09	20K	11	1Meg	15

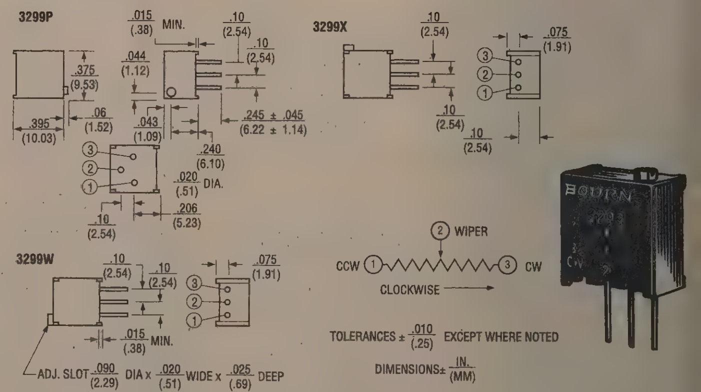
Model 3299 Multi-Turn Cermet

Low noise, high performance square trimmer. **Power Rating:** 0.5 Watt at +70°C. Infinite resolution cermet element. Low temperature coefficient ±100 ppm/°C over entire temperature and resistance range. Sealed to withstand wave soldering and cleaning processes. **Temperature Range:** –55°C to +125°C. **Resistance Tolerance:** ±10%.

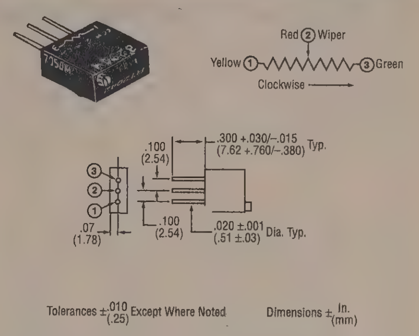
Stock No.*	Mfr.'s Type	EACH				
		1-9	10-24	25-49	50-99	100-249
754-26XX	3299P-1-	**2.48**	**2.28**	**2.07**	**1.98**	**1.90**
754-27XX	3299W-1-	**2.30**	**2.12**	**1.93**	**1.84**	**1.77**
754-28XX	3299X-1-	**2.30**	**2.12**	**1.93**	**1.84**	**1.77**

*Using OHM Chart below, replace "XX" in Stock No. with number that corresponds with desired OHM value.

Ohms	XX	Ohms	XX	Ohms	XX	Ohms	XX
10	01	500	06	20K	11	250K	16
20	02	1K	07	25K	12	500K	17
50	03	2K	08	50K	13	1Meg	18
100	04	5K	09	100K	14	2Meg	19
200	05	10K	10	200K	15	5Meg	20



Model RT24/3290 Multi-Turn Wirewound


Red ② Wiper
Yellow ① ③ Green
Clockwise
.300 +.030/−.015 (7.62 +.760/−.380) Typ.
.100 (2.54)
.07 (1.78)
.100 (2.54)
.020 ±.001 (.51 ±.03) Dia. Typ.
Tolerances ± .010 (.25) Except Where Noted
Dimensions ± In. (mm)

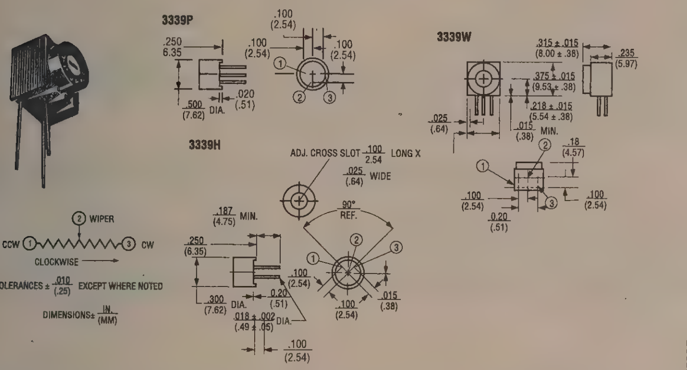
This 3/8" square wirewound potentiometer is listed on DESC QPL for style RT24 per MIL-R-27208 and RTR24 per High-Rel MIL-R-39015. **High Performance:** 1 watt @ +85°C. **Temperature Range:** −65°C +150°C. All plastic case provides sealing against liquids and potting compounds. **Resistance Tolerance:** ±5%. **Dielectric Strength:** 1000 VAC @ sea level. Moisture resistance. **Mechanical Life:** 200 cycles. Solder PC pin terminals. Commercial part numbers of the 3290 series available at higher pricing. Other resistance values available. Call for pricing.

Stock No.*	Mfr.'s Type	EACH				
		1-9	10-24	25-49	50-99	100-249
754-08XX	RT24/3290W-1-	5.44	4.90	4.62	4.30	4.08

*Using OHM chart below, replace "XX" in Stock No. with numbers that correspond with desired OHM value.

Ohms	XX	Resolution Percent	Ohms	XX	Resolution Percent
1K	05	0.33	20K	09	0.14
10K	08	0.26	—	—	—

Model 3339 Multi-Turn Cermet


3339P
3339H
3339W
② WIPER
CCW ① ③ CW
CLOCKWISE
TOLERANCES ± .010 (.25) EXCEPT WHERE NOTED
DIMENSIONS ± IN. (MM)
ADJ. CROSS SLOT .100 (2.54) LONG X .025 (.64) WIDE
90° REF.
.187 (4.75) MIN.

Unique planetary drive offers precise wiper setting in a single turn size package. Space-saving 0.30" dia. × 0.25" H. Rated 0.5 Watt @ 85°C. Sealed to withstand wave soldering and immersion cleaning process. **Temperature Range:** −55°C to +150°C. **Temperature Coefficient:** ±100 ppm/°C max. **Resistance Tolerance:** ±10%.

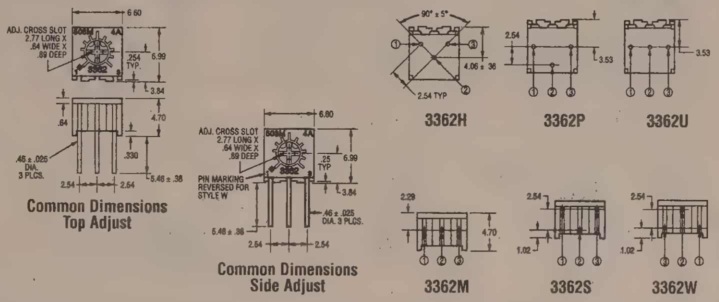
Stock No.*	Mfr.'s Type	EACH				
		1-9	10-24	25-49	50-99	100-249
754-72XX	3339H	4.27	3.84	3.62	3.37	3.20
754-73XX	3339P	4.27	3.84	3.62	3.37	3.20
754-74XX†	3339W	6.13	5.52	5.21	4.84	4.60

†100Ω to 200K only. *Using OHM chart below, replace "XX" in Stock No. with numbers that correspond with desired OHM value.

Ohms	XX	Ohms	XX	Ohms	XX	Ohms	XX
100	01	1K	04	10K	07	200K	11
200	02	2K	05	50K	09	1Meg	13
500	03	5K	06	100K	10	—	—

Model 3362 Single-Turn Cermet

— NEW —


ADJ. CROSS SLOT 2.77 LONG X .64 WIDE X .89 DEEP
Common Dimensions Top Adjust
PIN MARKING REVERSED FOR STYLE W
Common Dimensions Side Adjust
3362H
3362P
3362U
3362M
3362S
3362W

This 1/4" square trimming potentiometer is ideal for industrial applications. It is sealed to withstand harsh environments and immersion cleaning processes. The rotor is designed for automatic machine adjustment interface. The miniature package saves space on the circuit board. **Resistance Tolerance:** ±10%. **Rated:** 0.5 watt @ 70°C. **Temperature Range:** −55°C to +125°C. **Temperature Coefficient:** ±100 ppm/°C. **Mechanical Angle:** 270°. Terminals are solderable pins. **Rotational Life:** 200 cycles.

Top Adjust

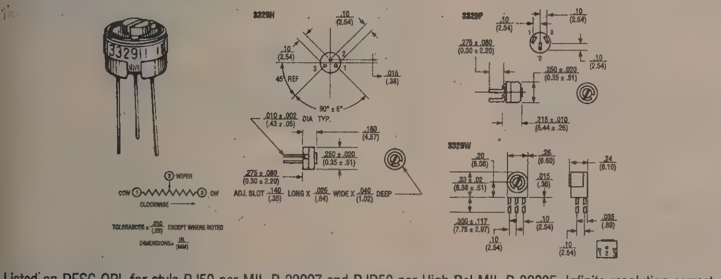
Stock No.	Mfr.'s Type	EACH				
		1-9	10-24	25-49	50-99	100-249
754-122X	3362H-1-	.91	.81	.75	.67	.60
754-123X	3362P-1-	.91	.81	.75	.67	.60
754-124X	3362U-1-	.91	.81	.75	.67	.60

Side Adjust

Stock No.	Mfr.'s Type	1-9	10-24	25-49	50-99	100-249
754-125X	3362M-1-	.91	.81	.75	.67	.60
754-126X	3362S-1-	.91	.81	.75	.67	.60
754-127X	3362W-1-	.91	.81	.75	.67	.60

Ohms	X	Ohms	X	Ohms	X	Ohms	X
100	0	2K	3	20K	6	100K	9
500	1	5K	4	25K	7	—	—
1K	2	10K	5	50K		—	—

Model 3329 Single-Turn Cermet


3329H
3329P
3329W
② WIPER
CCW ① ③ CW
CLOCKWISE
TOLERANCES ± .010 (.25) EXCEPT WHERE NOTED
DIMENSIONS ± IN. (MM)
ADJ. SLOT .140 (.35) LONG X .025 (.64) WIDE X .040 (1.02) DEEP

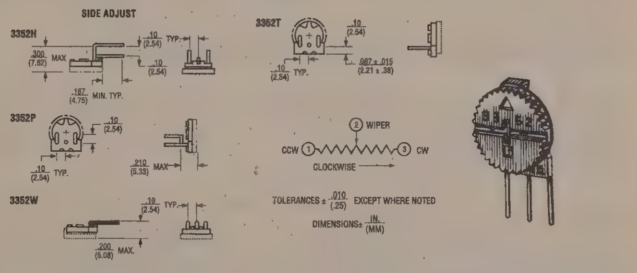
Listed on DESC QPL for style RJ50 per MIL-R-22097 and RJR50 per High-Rel MIL-R-39035. Infinite resolution cermet element. Space saving 0.25" dia. Low temperature coefficient ±100 ppm/°C max. **Power Rating:** 0.5 Watt @ 85°C. **Temperature Range:** −55°C to +150°C. **Resistance Tolerance:** ±10%.

Stock No.*	Mfr.'s Type	EACH				
		1-9	10-24	25-49	50-99	100-249
754-77XX	3329H-1-	6.13	5.52	5.21	4.84	4.60
754-78XX	3329P-1-	4.27	3.84	3.62	3.37	3.20
754-79XX	3329W-1-	4.27	3.84	3.62	3.37	3.20

*Using OHM chart below, replace "XX" in Stock No. with numbers that correspond with desired OHM value.

Ohms	XX	Ohms	XX	Ohms	XX	Ohms	XX	Ohms	XX
50	03	500	06	5K	09	50K	12	500K	15
100	04	1K	07	10K	10	100K	13	1Meg	16
200	05	2K	08	20K	11	200K	14	—	—

Model 3352 Single-Turn Cermet



Adjustability of ±0.05% voltage ratio. Low temperature coefficient of ±100 ppm/°C. **Power Ratio:** 0.50 Watt @ 85°C. **Temperature Range:** −55°C to +125°C. Stable cermet element offers infinite resolution. **Resistance Tolerance:** ±20%.

Side Adjust		Top Adjust		EACH				
Stock No.*	Mfr.'s Type	Stock No.*	Mfr.'s Type	1-9	10-24	25-49	50-99	100-249
754-80XX	3352W	754-81XX	3352T	.89	.80	.75	.70	.67
754-82XX	3352H	754-83XX	3352P	.89	.80	.75	.70	.67

*Using OHM chart below, replace "XX" in Stock No. with numbers that correspond with desired OHM value.

Ohms	XX	Ohms	XX	Ohms	XX	Ohms	XX
50	01	1K	05	20K	09	200K	13
100	02	2K	06	25K	10	500K	14
200	03	5K	07	50K	11	1Meg	15
500	04	10K	08	100K	12	2Meg	16

MIL JA1N/JA1L Carbon Potentiometers

— NEW —

Type J hot-molded carbon composition potentiometers are used in industrial and military applications for reliable, dependable and exceptional service requirements. Meet MIL-R-94. JA1N Series has 3/8" bushing length with 1/4" dia., 7/8" long slotted shaft. JA1L Series has 1/2" bushing with 1/4" dia., 5/8" long slotted shaft. They are dust, corrosion and splash resistant. Made of non-magnetic material. Coated terminals. **Tolerance:** 10%. Linear taper. 2.25 watts. 100,000 rotations cycle life. Supplied with locating pin and hardware.

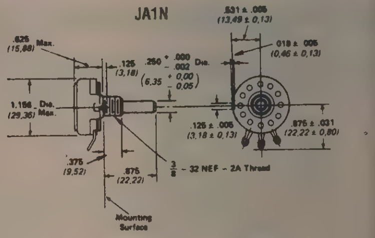
Ohms	JA1N Series		JA1L Series	
	Stock No.	Mfr.'s Type	Stock No.	Mfr.'s Type
100	**753-2200**	JA1N056S101UA	**753-2225**	JA1L040S101UC
250	**753-2201**	JA1N056S251UA	**753-2226**	JA1L040S251UC
500	**753-2202**	JA1N056S501UA	**753-2227**	JA1L040S501UC
1000	**753-2203**	JA1N056S102UA	**753-2228**	JA1L040S102UC
2000	**753-2204**	JA1N056S202UA	**753-2229**	JA1L040S202UC
2500	**753-2205**	JA1N056S252UA	**753-2230**	JA1L040S252UC
5000	**753-2206**	JA1N056S502UA	**753-2231**	JA1L040S502UC
10 K	**753-2207**	JA1N056S103UA	**753-2232**	JA1L040S103UC
20 K	**753-2208**	JA1N056S203UA	**753-2233**	JA1L040S203UC

Ohms	JA1N Series		JA1L Series	
	Stock No.	Mfr.'s Type	Stock No.	Mfr.'s Type
25 K	**753-2209**	JA1N056S253UA	**753-2234**	JA1L040S253UC
50 K	**753-2210**	JA1N056S503UA	**753-2235**	JA1L040S503UC
100 K	**753-2211**	JA1N056S104UA	**753-2236**	JA1L040S104UC
250 K	**753-2212**	JA1N056S254UA	**753-2237**	JA1L040S254UC
500 K	**753-2213**	JA1N056S504UA	**753-2238**	JA1L040S504UC
1 Meg	**753-2214**	JA1N056S105UA	**753-2239**	JA1L040S105UC
2.5 Meg	**753-2215**	JA1N056S255UA	**753-2240**	JA1L040S255UC
5 Meg	**753-2216**	JA1N056S505UA	**753-2241**	JA1L040S505UC
	—	—	—	—

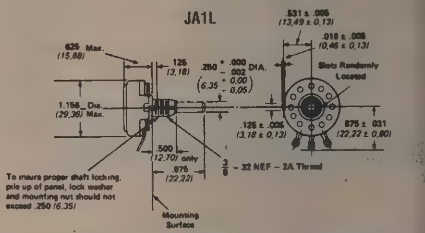
MIL Type	EACH			
	1-9	10-24	25-99	100-249
JA1N	**16.00**	**12.12**	**10.00**	**8.00**

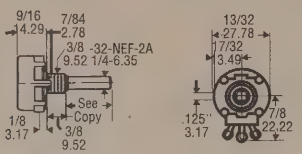
MIL Type	EACH			
	1-9	10-24	25-99	100-249
JA1L	**33.94**	**31.11**	**28.72**	**26.67**

JA1N

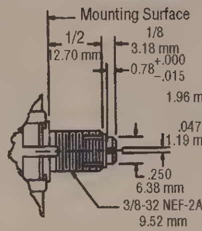


JA1L





RV4N



RV4L

MIL-R-94 RV4 2-Watt and Commercial 53C Series Conductive Plastic Potentiometers

Crafted of the finest materials available to insure long, reliable service. Provides extra long life with very low noise level. Rated 2 watts. Precision construction is completely enclosed. Conductive plastic element. RV4L and 53C2 designate 5/8" screwdriver slotted shaft FMS with 1/2" split locking bushing. RV4N and 53C3 designate 7/8" screwdriver slotted shaft FMS with 3/8" long bushing. 53C1 designates 2" long round shaft FMS with 3/8" long bushing. All have 1/4" diameter shaft. **Average Shipping Weight:** 4 oz.

Specifications. Resistance Tolerance: 100 to 1 Meg — ±10%; over 1 Meg — ±20%. **Rotation:** 312° ±3%. **End Resistance:** Per MIL-R-94. **Working Voltage:** 500 VDC across end terminals. Linear Taper. **Tolerance:** ±20%.

Ohms	Military		Commercial	
	Stock No.	Mfr.'s Type	Stock No.	Mfr.'s Type
100	**753-1301**	RV4NAYSD101A	**753-1230**	53C3-100
250	**753-1375**	RV4NAYSD251A	**753-1231**	53C3-250
500	**753-1340**	RV4NAYSD501A	**753-1235**	53C3-500
1000	**753-1305**	RV4NAYSD102A	**753-1233**	53C3-1000
1500	**753-1307**	RV4NAYSD152A	**753-1234**	53C3-1500
2000	**753-1355**	RV4NAYSD202A	**753-1236**	53C3-2000
2500	**753-1380**	RV4NAYSD252A	**753-1239**	53C3-2500
3500	**753-1345**	RV4NAYSD352A	**753-1238**	53C3-3500
5000	**753-1445**	RV4NAYSD502A	**753-1242**	53C3-5000
10 K	**753-1310**	RV4NAYSD103A	**753-1232**	53C3-10K
20 K	**753-1011**	RV4NAYSD203A	**753-1216**	53C3-20K
25 K	**753-1385**	RV4NAYSD253A	**753-1240**	53C3-25K
50 K	**753-1450**	RV4NAYSD503A	**753-1243**	53C3-50K
100 K	**753-1315**	RV4NAYSD104A	**753-1245**	53C3-100K
250 K	**753-1390**	RV4NAYSD254A	**753-1246**	53C3-250K
500 K	**753-1455**	RV4NAYSD504A	**753-1244**	53C3-500K
1 Meg	**753-1320**	RV4NAYSD105A	**753-1247**	53C3-1MEG
5 Meg	**753-1360**	RV4NAYSD505B	**753-1248**	53C3-5MEG

Type	EACH			
	1-9	10-24	25-49	50-99
RV4N	**8.74**	**7.60**	**7.15**	**6.65**
53C3	**8.74**	**7.60**	**7.15**	**6.65**

Ohms	Military		Commercial	
	Stock No.	Mfr.'s Type	Stock No.	Mfr.'s Type
100	**753-1001**	RV4LAYSA101A	**753-1201**	53C2-100
250	**753-1075**	RV4LAYSA250A	**753-1208**	53C2-250
500	**753-1140**	RV4LAYSA501A	**753-1212**	53C2-500
1000	**753-1005**	RV4LAYSA102A	**753-1202**	53C2-1000
2000	**753-1055**	RV4LAYSA202A	**753-1204**	53C2-2000
2500	**753-1080**	RV4LAYSA252A	**753-1209**	53C2-2500
5000	**753-1145**	RV4LAYSA502A	**753-1213**	53C2-5000
10 K	**753-1010**	RV4LAYSA103A	**753-1203**	53C2-10K
25 K	**753-1085**	RV4LAYSA253A	**753-1206**	53C2-25K
50 K	**753-1050**	RV4LAYSA503A	**753-1207**	53C2-50K
100 K	**753-1015**	RV4LAYSA104A	**753-1210**	53C2-100K
250 K	**753-1090**	RV4LAYSA254A	**753-1211**	53C2-250K
500 K	**753-1155**	RV4LAYSA504A	**753-1214**	53C2-500K
1 Meg	**753-1020**	RV4LAYSA105A	**753-1205**	53C2-1MEG
5 Meg	**753-1160**	RV4LAYSA505A	**753-1215**	53C2-5MEG

Type	EACH			
	1-9	10-24	25-49	50-99
RV4L	**9.66**	**8.40**	**7.90**	**7.34**
53C2	**9.66**	**8.40**	**7.90**	**7.34**

Ohms	Military		Commercial	
	Stock No.	Mfr.'s Type	Stock No.	Mfr.'s Type
100	—	—	**753-1270**	53C1-100
250	—	—	**753-1271**	53C1-250
500	—	—	**753-1272**	53C1-500
1000	—	—	**753-1273**	53C1-1000
2000	—	—	**753-1274**	53C1-2000
2500	—	—	**753-1275**	53C1-2500
5000	—	—	**753-1276**	53C1-5000
10 K	—	—	**753-1277**	53C1-10K
25 K	—	—	**753-1278**	53C1-25K
50 K	—	—	**753-1279**	53C1-50K
100 K	—	—	**753-1280**	53C1-100K
250 K	—	—	**753-1281**	53C1-250K
500 K	—	—	**753-1282**	53C1-500K
1 Meg	—	—	**753-1283**	53C1-1MEG
5 Meg	—	—	**753-1284**	53C1-5MEG

Type	EACH			
	1-9	10-24	25-49	50-99
53C1	**7.80**	**6.79**	**6.38**	**5.93**
—	—	—	—	—

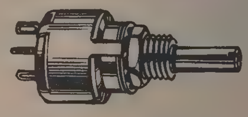
RV6/392M Series 1/2-Watt MIL Potentiometers

Military Potentiometer. 1/2-watt conductive plastic. Economical sealed potentiometers meet the flow solderability and washability test requirements, and MIL-R-94 apply where appropriate. QPL listed. Highly stable unit with high resolution for applications requiring miniaturization and reliability. 1/8" dia. metal shaft (7/8" long STD; 5/8" long on locking). 1/2" body diameter. **Dynamic Noise:** 1.5%. **Rotational Life:** 50,000 cycles. **Operating Temperature:** –40° to +120°C. Other shaft lengths and styles, tolerances and tapers, resistance values and bushings available as special order items.

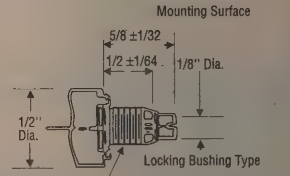
Specifications. Resistance Tolerance: ±10%. **Power Rating:** 0.5 watt @ 70°C. Derated to zero power @ 120°C. **Electrical and Mechanical Rotation:** 295° ±5°. **Effective Rotation:** 265° +0° –10°. **End Resistance:** 5 max. — up to 750; 10 max. — above 750. **Functional Output:** Linear. **Dielectric Strength:** 750 VAC for 60 seconds @ ATM; 350 VAC for 60 seconds. 3.44 in H.G. **Working Voltage:** 350 VDC maximum, but power not to exceed rating. Available with standard or locking type bushing. RV6L — locking bushing; RV6N — standard bushing.

RV6/392M Series

Ohms	RV6N Series		RV6L Series	
	Stock No.	Mfr.'s Type	Stock No.	Mfr.'s Type
100	**753-2101**	RV6NAYSD101A-P	**753-3101**	RV6LAYSA101A-P
250	**753-2251**	RV6NAYSD251A-P	**753-3251**	RV6LAYSA251A-P
500	**753-2501**	RV6NAYSD501A-P	**753-3501**	RV6LAYSA501A-P
1000	**753-2102**	RV6NAYSD102A-P	**753-3102**	RV6LAYSA102A-P
5000	**753-2502**	RV6NAYSD502A-P	**753-3502**	RV6LAYSA502A-P
10 K	**753-2103**	RV6NAYSD103A-P	**753-3103**	RV6LAYSA103A-P
25 K	**753-2253**	RV6NAYSD253A-P	**753-3253**	RV6LAYSA253A-P
50 K	**753-2503**	RV6NAYSD503A-P	**753-3503**	RV6LAYSA503A-P
100 K	**753-2104**	RV6NAYSD104A-P	**753-3104**	RV6LAYSA104A-P
500 K	**753-2504**	RV6NAYSD504A-P	**753-3504**	RV6LAYSA504A-P
1 Meg	**753-2105**	RV6NAYSD105A-P	**753-3105**	RV6LAYSA105A-P



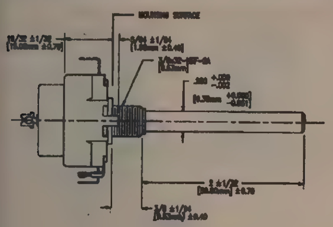
RV6N

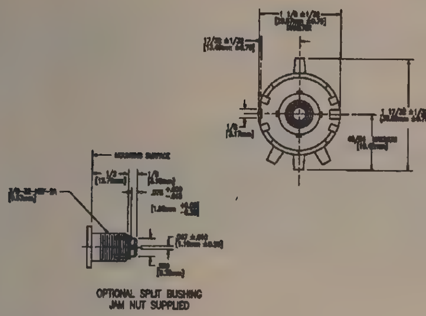


RV6L

Type	Bushing Length	Shaft Length
RV6N	1/4"	7/8"
RV6L	1/2"	5/8"

MIL Type	EACH			
	1-9	10-24	25-49	50-99
RV6N-P	**9.86**	**8.68**	**8.06**	**7.50**
RV6L-P	**10.48**	**9.11**	**8.56**	**7.97**





Series 43 2-Watt Wirewound Potentiometers

— NEW —

The Series 43 wirewound potentiometers are both economical and versatile. The 43C1 has a 1/4" diameter, 2" long FMS shaft in a 3/8" long bushing with 3/8-32-NEF-2A threads. The 43C2 has a 1/4" diameter, 5/8" long FMS screwdriver slotted shaft in a 1/2" long split locking bushing with 3/8-32-NEF-2A threads. **Specifications. Electrical and Mechanical Rotation:** 300°±5°. **Resistive Tolerance:** ±10%. **Operating Temperature Range:** –55°C to +105°C. Hardware not supplied.

Stock No.	Mfr.'s Type	Ohms	EACH		
			1-9	10-24	25-49
753-0160	43C1 10	10	30.47	28.12	26.11
753-0162	43C1 20	20	30.47	28.12	26.11
753-0164	43C1 25	25	30.47	28.12	26.11
753-0166	43C1 50	50	30.47	28.12	26.11
753-0168	43C1 100	100	30.47	28.12	26.11
753-0170	43C1 200	200	30.47	28.12	26.11
753-0172	43C1 250	250	30.47	28.12	26.11
753-0174	43C1 500	500	30.47	28.12	26.11
753-0176	43C1 1K	1K	30.47	28.12	26.11
753-0178	43C1 1.5K	1.5K	30.47	28.12	26.11
753-0180	43C1 2K	2K	30.47	28.12	26.11
753-0182	43C1 5K	5K	30.47	28.12	26.11
753-0184	43C1 10K	10K	30.47	28.12	26.11
753-0186	43C1 20K	20K	34.58	31.92	29.64
753-0188	43C1 25K	25K	34.58	31.92	29.64
753-0190	43C1 50K	50K	55.45	51.18	47.53

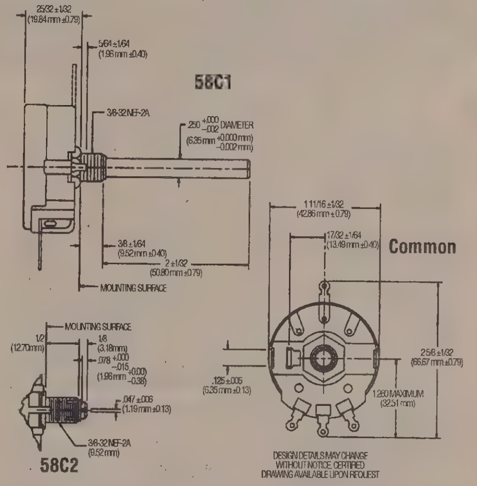
Stock No.	Mfr.'s Type	Ohms	EACH		
			1-9	10-24	25-49
753-0192	43C2 10	10	33.98	31.37	29.13
753-0194	43C2 25	25	33.98	31.37	29.13
753-0196	43C2 50	50	33.98	31.37	29.13
753-0198	43C2 100	100	33.98	31.37	29.13
753-0200	43C2 200	200	33.98	31.37	29.13
753-0202	43C2 250	250	33.98	31.37	29.13
753-0204	43C2 500	500	33.98	31.37	29.13
753-0206	43C2 1K	1K	33.98	31.37	29.13
753-0208	43C2 2K	2K	33.98	31.37	29.13
753-0210	43C2 2.5K	2.5K	33.98	31.37	29.13
753-0212	43C2 5K	5K	33.98	31.37	29.13
753-0214	43C2 10K	0K	33.98	31.37	29.13
753-0216	43C2 20K	20K	37.77	34.86	32.37
753-0218	43C2 25K	25K	37.77	34.86	32.37
753-0220	43C2 50K	50K	59.40	54.83	50.91
—	—	—	—	—	—

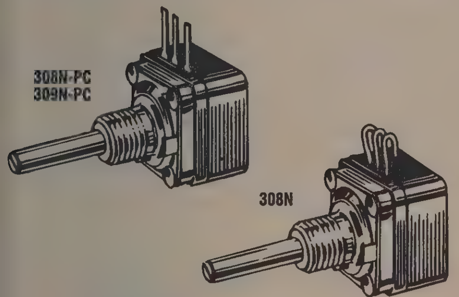
Series 58 4-Watt Wirewound Potentiometers

58C Series potentiometers are an industrial grade 4-watt potentiometer. 58C1 Series has 1/4" dia., 2" long round shaft FMS with 3/8" long bushing with 3/8-32 NEF-2A threads. 58C2 Series has 1/4" dia., 5/8" long screwdriver slotted shaft FMS with 1/2" long split locking bushing with 3/8-32 NEF-2A threads. **Specifications. Operating Temperature:** –55°C to +105°C. **Tolerance:** 5%. **Standard Effective Rotation:** 280°. **Electrical Rotation:** 300°. Hardware not supplied.

Stock No.	Mfr.'s Type	Ohms	EACH			
			1-9	10-24	25-49	50-99
753-0470	58C1-10	10	42.15	38.58	34.48	28.45
753-0472	58C1-25	25	42.15	38.58	34.48	28.45
753-0474	58C1-50	50	42.15	38.58	34.48	28.45
753-0476	58C1-100	100	42.15	38.58	34.48	28.45
753-0478	58C1-200	200	42.15	38.58	34.48	28.45
753-0480	58C1-500	500	42.15	38.58	34.48	28.45
753-0482	58C1-1K	1K	42.15	38.58	34.48	28.45
753-0484	58C1-2K	2K	42.15	38.58	34.48	28.45
753-0486	58C1-2.5K	2.5K	42.15	38.58	34.48	28.45
753-0488	58C1-5K	5K	42.15	38.58	34.48	28.45
753-0490	58C1-10K	10K	42.15	38.58	34.48	28.45
753-0492	58C1-20K	20K	47.87	43.81	39.17	32.31

Stock No.	Mfr.'s Type	Ohms	EACH			
			1-9	10-24	25-49	50-99
753-0494	58C1-25K	25K	47.87	43.81	39.17	32.31
753-0496	58C1-50K	50K	67.91	62.15	55.56	45.84
753-0510	58C2-50	50	45.56	41.69	37.27	30.75
753-0512	58C2-100	100	45.56	41.69	37.27	30.75
753-0514	58C2-500	500	45.56	41.69	37.27	30.75
753-0516	58C2-1K	1K	45.56	41.69	37.27	30.75
753-0518	58C2-2K	2K	45.56	41.69	37.27	30.75
753-0520	58C2-2.5K	2.5K	45.56	41.69	37.27	30.75
753-0522	58C2-5K	5K	45.56	41.69	37.27	30.75
753-0524	58C2-10K	10K	45.56	41.69	37.27	30.75
753-0526	58C2-25K	25K	52.17	47.75	42.68	35.21
753-0528	58C2-50K	50K	74.48	68.17	60.94	50.28

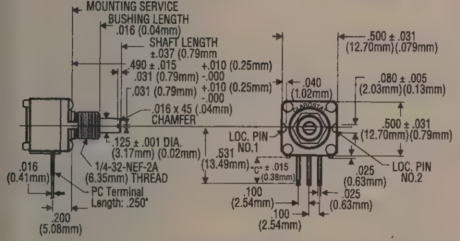

25/32 ±1/32 (19.84 mm ±0.79)
5/64 ±1/64 (1.96 mm ±0.40)
58C1
3/8-32 NEF-2A
.250 +.000 −.002 DIAMETER (6.35 mm +0.000 mm −0.002 mm)
3/8 ±1/64 (9.52 mm ±0.40)
2 ±1/32 (50.80 mm ±0.79)
MOUNTING SURFACE
1 11/16 ±1/32 (42.86 mm ±0.79)
17/32 ±1/64 (13.49 mm ±0.40)
Common
MOUNTING SURFACE
1/2 (12.70 mm)
1/8 (3.18 mm)
.078 +.000 −.015 (1.96 mm +0.00 −0.38)
.047 ±.006 (1.19 mm ±0.13)
3/8-32 NEF-2A (9.52 mm)
58C2
.125 ±.005 (6.35 mm ±0.13)
2 5/8 ±1/32 (66.67 mm ±0.79)
1.260 MAXIMUM (32.51 mm)
DESIGN DETAILS MAY CHANGE WITHOUT NOTICE. CERTIFIED DRAWING AVAILABLE UPON REQUEST



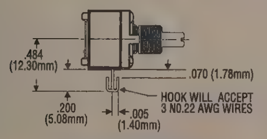
308/309/408/409 Series Potentiometers

The 308 and 309 series potentiometers are high performance, low cost potentiometers. The 408 and 409 series are high performance potentiometers designed for wave soldering applications for mounting to PC boards. The 308 and 408 are 0.5 watt with conductive plastic element and the 309 and 409 are 1.0 watt with thick film cermet element. All feature a compact 1/2" miniature, modular size. They are cost effective with design simplicity through fewer component parts. Horizontal or vertical mounting with support plates. Nickel-plated brass shaft and bushings in various diameters and lengths. Insert molded gold plated terminals for strength. The conductive element is precision made using screen printed conductive elements. The stability for the 308 and 408 series is –40° to +150°C. Both the 308 and 309 have solvent resistant housing, but are not immersion sealed. Both the 408 and 409 have O-ring shaft seal and the entire unit is sealed for wave solder and wash processing. 295° ±5° electrical rotation. 350 VDC across end terminals, but power not to exceed rating. N=non-locking 1/4" dia. × 1/4" long bushing with 1/8" dia. × 3/4" long (FMS) slotted shaft. L= locking 3/8" dia. × 1/4" long bushing with 1/8" dia. × 7/16" long (FMS) slotted shaft. NS = S.P.D.T. rotary switch. PPS = push-pull S.P.D.T. switch. 309 for 409 locking bushing available as special order. Also available as special order with S.P.S.T. or S.P.D.T. switches up to three multiple sections, log tapers and reverse log tapers.408 and 409 available with PC pins as special order. Call Allied for price and delivery info on custom parts. Manufacturers literature and catalog available on request.

Stock No.	Mfr.'s Type	Stocked Resistance Values	EACH			
			1-9	10-24	25-49	50-99
753-26XX	308N	100, 250, 500, 1K, 2.5K, 5K, 10K, 25K, 50K, 100K, 250K, 500K, 1Meg, 2.5Meg, 5Meg	9.57	8.38	7.44	6.32
753-27XX	308N-PC	100, 250, 500, 1K, 2.5K, 5K, 10K, 25K, 50K, 100K, 250K, 500K, 1Meg, 2.5Meg, 5Meg	9.57	8.38	7.44	6.32
753-28XX	308L	1K, 5K, 10K, 25K, 50K, 100K, 250K, 500K	9.76	8.80	7.85	6.56
753-29XX	309N-PC	100, 250, 500, 1K, 2.5K, 5K, 10K, 25K, 50K, 100K, 250K, 500K, 1Meg, 2.5Meg, 5Meg	10.03	9.29	7.94	6.93
753-07XX	408N	500, 1K, 2.5K, 5K, 10K	36.79	29.43	20.20	17.17
753-08XX	408NS	500, 1K, 2.5K, 5K, 10K	53.36	42.69	29.29	24.90
753-09XX	408NPPS	500, 1K, 2.5K, 5K, 10K	71.75	57.40	39.39	33.48
753-03XX	409N	500, 1K, 2.5K, 5K, 10K	39.54	31.63	21.71	18.45


MOUNTING SERVICE
BUSHING LENGTH .016 (0.04mm)
SHAFT LENGTH ±.037 (0.79mm
.490 ± .015
.031 (0.79mm)
+.010 (0.25mm) -.000
.031 (0.79mm)
+.010 (0.25mm) -.000
.016 x 45 (.04mm) CHAMFER
.125 ± .001 DIA. (3.17mm) (0.02mm)
1/4-32-NEF-2A (6.35mm) THREAD
.016 (0.41mm)
PC Terminal Length: .250"
.200 (5.08mm)
.500 ± .031 (12.70mm)(.079mm)
.040 (1.02mm)
.080 ± .005 (2.03mm)(0.13mm)
.500 ± .031 (12.70mm)(0.79mm)
LOC. PIN NO.1
.531 (13.49mm)
"C" ± .015 (0.38mm)
.025 (0.63mm)
LOC. PIN NO.2
.100 (2.54mm)
.025 (0.63mm)
.100 (2.54mm)

Series 308-309 PC



Series 308N/408/409N

Resistance Chart

Ohms	XX	Ohms	XX	Ohms	XX
100	10	5 K	35	250 K	60
250	15	10 K	40	500 K	65
500	20	25 K	45	1 M	70
1 K	25	50 K	50	2.5 M	75
2.5 K	30	100 K	55	5 M	80

10-Turn 1" Dia. Concentric Scale Dials

Calibrated dials designed for multi-turn potentiometers up to ten turns. Requires only one inch of panel space. Knob attaches directly to the shaft, and the body of the dials is mounted rigidly to the panel. **Mounting Requirements:** 1/4" shaft and 3/8" 32-NEF-2A bushing.

Stock No.	Mfr.'s Type	Description	EACH				
			1-9	10-24	25-49	50-99	100-249
753-0007	411	Black Anodize, No Lock	**22.47**	**21.36**	**16.91**	**11.45**	**18.61**
753-0008	412	Black Anodize, With Lock	**23.17**	**22.03**	**17.54**	**12.50**	**19.20**
753-0009	461	Clear Anodize, No Lock	**22.47**	**21.36**	**16.91**	**11.45**	**18.61**
753-0010	462	Clear Anodize, With Lock	**23.17**	**22.03**	**17.54**	**12.50**	**19.20**

Claroknobs

JD

DD

DDS

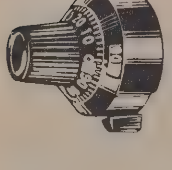
HD

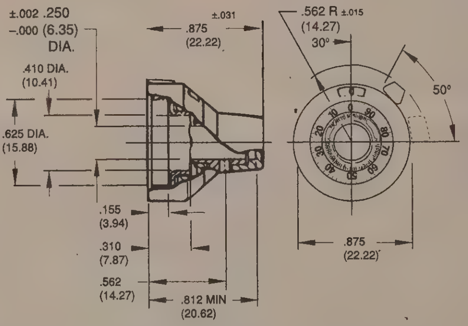
The Claroknob is a high quality knob fabricated from machined aluminum. Manufactured to enhance products, the Claroknob comes is a variety of styles for your requirements. HD series is a control knob with a sawcut indicator. JD series is a straight knurl with top and side indicator. DD series is a straight knurl with side indicator. The DDS series is a straight knurl with arrow on skirt. Stainless-steel setscrews are standard. One setscrew for HD series and two setscrews for JD, DD, DDS series. For use with 1/8" or 1/4" diameter shafts. Anodized in clear or black, gloss or matte finishes.

Stock No.*	Mfr.'s Type	Knob Dia.	Overall Height	EACH				
				1-9	10-24	25-49	50-99	100-249
753-06XY	HD-50	.500	1.000	**4.09**	**3.89**	**3.70**	**3.54**	**3.39**
753-07XY	HD-75	.750	1.000	**5.07**	**4.82**	**4.59**	**4.39**	**4.20**
753-08XY	HD-90	.925	1.000	**5.69**	**5.41**	**5.16**	**4.93**	**4.71**
753-09XY	JD-50	.500	.625	**3.47**	**3.30**	**3.14**	**3.00**	**2.87**
753-15XY	JD-75	.750	.625	**3.64**	**3.46**	**3.30**	**3.15**	**3.01**
753-16XY	JD-90	.925	.625	**4.26**	**4.05**	**3.86**	**3.69**	**3.53**
753-17XY	DD-50	.500	.625	**3.47**	**3.30**	**3.14**	**3.00**	**2.87**
753-18XY	DD-75	.750	.625	**3.64**	**3.46**	**3.30**	**3.15**	**3.01**
753-19XY	DD-90	.925	.625	**4.26**	**4.05**	**3.86**	**3.69**	**3.53**
753-20XY	DDS-50	.500	.625	**4.71**	**4.48**	**4.27**	**4.07**	**3.90**
753-23XY	DDS-75	.750	.625	**4.88**	**4.64**	**4.42**	**4.22**	**4.04**
753-24XY	DDS-90	.925	.625	**5.24**	**4.98**	**4.75**	**4.54**	**4.34**

*NOTE: To complete stock number replace the letter with the number of the option desired. For X: 5=1/4" shaft; 6=1/8" shaft. For Y: 1=Clear, 2=Black, 3=Matte Clear, 4=Matte Black.

Clarodials



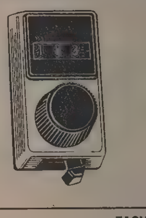


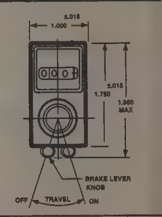
A high quality concentric scale dial designed to be used in conjunction with the **73JB** multiturn potentiometer, the series **316** is available in clear brushed metal design or black anodized metal with white numerals at slightly higher cost. Price inducements are available when the **73JB** and **316** dial are purchased together as a set.

Readout and Operation: Unit shall register a total count of 15 turns. The number in the window (0-14) indicates completed number of turns of the drive sleeve. Graduated circular dial indicates the percent of a partial turn of the drive sleeve. **Transfer Point:** The number in center of window shall change as graduated dial rotates between 94 and 0. **Rotation:** Readout shall increase with clockwise and decrease with counterclockwise rotation. **Brake Lever Operation:** 1st Position (15° movement of Brake Lever) operates a high torque system for fine adjustment; 2nd Position (15° additional movement of Brake Lever) actuates brake. **Accuracy:** Backlash shall be zero between graduated dial and drive sleeve. **Mounting:** Install mounting bracket between panel and panel nut. Clarodial shall mount directly to shaft with No. 2-56 spline socket set screw, located adjacent to No. 50 on graduated dial. **Numeral Size:** 0.075 high. **Graduation Size:** Numeral graduations .045 long (1,14) intermediate graduations .030 long (0.76). **Finish:** Exposed metal parts–Brushed metal finish; Turning knob and brake lever knob–Black plastic. **Numerals:** Graduated Dial–black; Turns Counter–white on black background. **Weight:** 0.7 oz. max. (19.84 gm).

Stock No.	Mfr.'s Type	Description	EACH				
			1-9	10.24	25-49	50-99	100-249
753-0300	316-11	Clear Anodized	**14.12**	**13.43**	**12.80**	**12.22**	**11.70**
753-0301	316-12	Black Anodized	**19.79**	**18.82**	**17.94**	**17.13**	**16.40**

Digital Readout Dials

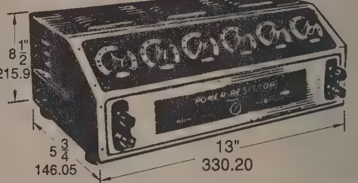




Digi-Dials are designed for multi-turn potentiometers. Removable knob exposes end of component shaft for precise phasing. Positive breaking action and large, highly readable numbers. **Mounting Requirements:** 1/4" shaft and 3/8" 32-NEF-2A bushing.

Stock No.	Mfr.'s Type	Description	EACH				
			1-9	10-24	25-49	50-99	100-249
753-0005	DR300	3 Digit Metallic Finish	**35.07**	**33.34**	**31.78**	**30.36**	**29.06**
753-0006	DR400	4 Digit Metallic Plastic	**47.16**	**44.84**	**42.73**	**40.82**	**39.07**

Resistor Decade Box



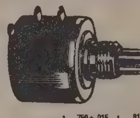
- ► **1 to 999,999 Ohms in One-Ohm Intervals**
- ► **Terminals Accept 3 Kinds of Connections**
- ► **Dissipates Up to 225 Watts**
- ► **Wirewound Resistors Used Throughout**

Model 240-C Bench Type
Allows selection of any value from 1 to 999,999 ohms in one-ohm increments. Six dials read Rx1, Rx10 Rx100, Rx1 K, Rx10 K and Rx100 K for quick setting and quick readout. Dissipates up to 225 W; max VDC 1000, or 660 VAC per decade, 2% tol. except Rx1 decade, 5%. Max. current rate range from 5 A fo Rx1 to .005 A for Rx100 K. Rugged, long-lasting wirewound power resistors used throughout. Two sets of terminals accept any of the following: banana plugs, spade lugs or plain wire connections. 8 1/2" × 13" × 5 3/4". **Shipping Weight:** 1 3/4 lbs.

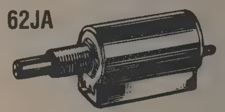
753-7840 ....**EACH 1225.0**

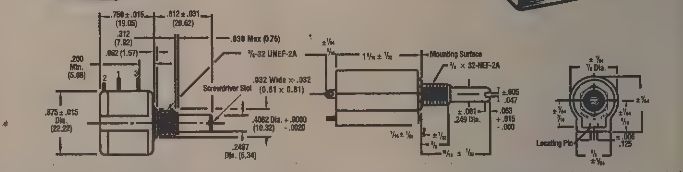
2 Watt Wirewound Precision 10-Turn Potentiometers

73JA/73JB



62JA





The 73 series is a 2-watt precision 10-turn potentiometer. The 73JB is the economical version of th 73JA, offering all the electrical features of the 73JA, but employing a long life nylon shaft constructio The 73JB has a metal bushing with glass filled black nylon shaft. The 73JA has a stainless steel sha and metal bushing. Both shafts are 1/4" dia, 13/16" long FMS and have 5/16" plain threaded bushing screwdriver slots, and 50,000 cycles rotational life. End resistance is 0.3% of total resistance or 1Ω whichever is greater. 5% tolerance. 500 WV max. **To complete stock number, see table B.**

Stock No.	Mfr.'s Type	Power Rating	Working Voltage	Stop Torque	Resistance Values (Ohms) See Table B	EACH			
						1-9	10-24	25-49	50-99
753-02XX	73JA	2 Watt @ 70°C	500V max	75 oz.-in.	100, 200, 1K, 2K, 5K 10K, 20K	**15.04**	**13.67**	**12.53**	**11.57**
					25K, 50K	**20.18**	**18.35**	**16.82**	**15.52**
					100K	**21.02**	**19.11**	**17.52**	**16.17**
753-03XX	73JB	—	—	—	100, 200, 1K, 2K, 5K, 10K, 20K	**11.94**	**10.85**	**9.95**	**9.18**
					25K, 50K	**12.16**	**11.05**	**10.13**	**9.35**
					100K	**17.30**	**15.73**	**14.42**	**13.31**

62JA 10 Turn Potentiometer Type 62JA. 3/8" plain busing. **Slotted shaft:** 15/16" FMS. 100,000 sha revolutions life. Sleeve bearings. **Functional Output:** Linear. **Absolute Linearity:** ±0.25%. **Powe Dissipation:** 2 watts at 25°C.

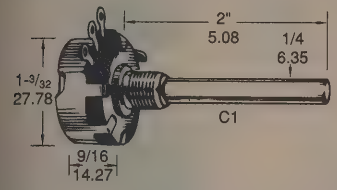
Stock No.	Mfr.'s Type	Resistance Values (Ohms) See Table B	Resis. Tol.	Stop Torque	Effective Rotation	EACH		
						1-9	10-24	25-49
753-01XX	62JA	100, 200, 250	± 5%	50 oz.-in.	3600°	**145.64**	**132.40**	**121.37**
		500, 1K, 2K, 2.5K, 5K, 10K, 20K, 25K				**137.72**	**125.20**	**114.77**
		30K, 50K				**144.72**	**131.56**	**120.60**
		100K				**162.84**	**148.04**	**135.70**

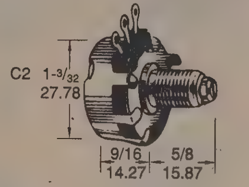
Table B – Important Ordering Information

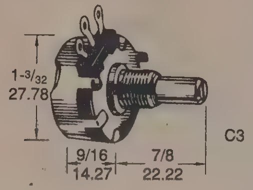
To Order: Complete the Stock Number shown by placing the designated Resistance code for Ohms Valu where XX appears in the Stock Number. Each particular listing shows what ohm values are available.

Value	XX	Value	XX	Value	XX	Value	XX	Value	XX
100	21	50K	26	2.5K	33	20K	44	50K	53
200	22	1K	29	5.0K	38	25K	45	100K	59
250	23	2K	32	10.0K	41	30K	46	—	—

2-Watt Series 380 Thick Film Conductive Plastic Called the "Quiet Ones"







These quiet, precision-made potentiometers are made by a controlled process that virtually insures a reliable, homogeneous and strain-free resistance element with 1% dynamic noise and 5% independent linearity. All have stainless steel shafts. **Type C1** has 2" round shaft FMS. 3/8" long bushing with 3/8" × 32. NEF-2A thread.

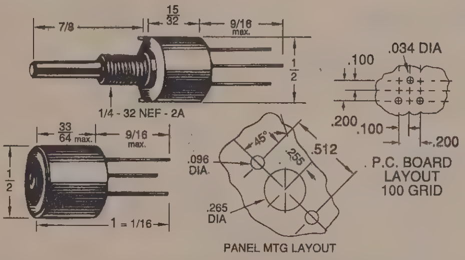
Type C2 has 5/8" screwdriver slotted shaft FMS with a 1/2" split locking bushing. **Type C3** has 7/8" screwdriver shaft FMS 3/8" long bushing with 3/8" × 32-NEF-2A thread. **Resistance Tolerance:** up to 1 megohm ±10%, above ±20%. **Dielectric Strength:** 1000 VAC. **Weight:** 1 oz.

Stock No.	Mfr.'s Type	Ohms	EACH		
			1-9	10-24	25-49
753-5023	380-C1-100-S	100	**16.23**	**14.42**	**12.98**
753-5029	380-C1-250-S	250	**16.23**	**14.42**	**12.98**
753-5035	380-C1-500-S	500	**16.23**	**14.42**	**12.98**
753-5047	380-C1-1000-S	1000	**16.23**	**14.42**	**12.98**
753-5053	380-C1-2500-S	2500	**16.23**	**14.42**	**12.98**
753-5059	380-C1-5000-S	5000	**16.23**	**14.42**	**12.98**
753-5061	380-C1-10K-S	10K	**16.23**	**14.42**	**12.98**
753-5067	380-C1-25K-S	25K	**16.23**	**14.42**	**12.98**
753-5073	380-C1-50K-S	50K	**16.23**	**14.42**	**12.98**
753-5075	380-C1-100K-S	100K	**16.23**	**14.42**	**12.98**
753-5083	380-C1-500K-S	500K	**16.23**	**14.42**	**12.98**
753-5087	380-C1-1 Meg-S	1Meg	**16.23**	**14.42**	**12.98**
753-5147	380-C2-1K	1000	**19.83**	**17.62**	**15.86**
753-5159	380-C2-5K	5000	**19.83**	**17.62**	**15.86**

Stock No.	Mfr.'s Type	Ohms	EACH		
			1-9	10-24	25-49
753-5161	380-C2-10K	10K	**19.83**	**17.62**	**15.86**
753-5173	380-C2-50K-S	50K	**19.83**	**17.62**	**15.86**
753-5175	380-C2-100K-S	100K	**19.83**	**17.62**	**15.86**
753-5223	380-C3-100-S	100	**15.98**	**14.20**	**12.78**
753-5235	380-C3-500-S	500	**15.98**	**14.20**	**12.78**
753-5247	380-C3-1000-S	1000	**15.98**	**14.20**	**12.78**
753-5253	380-C3-2500-S	2500	**15.98**	**14.20**	**12.78**
753-5259	380-C3-5000-S	5000	**15.98**	**14.20**	**12.78**
753-5261	380-C3-10K-S	10K	**15.98**	**14.20**	**12.78**
753-5267	380-C3-25K-S	25K	**15.98**	**14.20**	**12.78**
753-5273	380-C3-50K-S	50K	**15.98**	**14.20**	**12.78**
753-5275	380-C3-100K-S	100K	**15.98**	**14.20**	**12.78**
753-5283	380-C3-500K-S	500K	**15.98**	**14.20**	**12.78**
753-5287	380-C3-1 Meg-S	1Meg	**15.98**	**14.20**	**12.78**

Series 392 Immersible 0.5 Watt Potentiometers

Economical potentiometer designed to meet wave soldering applications for mounting to PC boards. Meets flow solderability and washability test requirements. MIL-R-94 standards apply where applicable. **Resistance Tolerance:** Linear, up to 1 Meg ohm ±10%, above 1 Meg to 5 Meg ±20%. Tapers, up to 250K ±10%, above 250K to 5 Meg ±20%. **Resistance Range:** 100 ohm to 5 Meg ohm, linear; 500 ohm to 2 Meg ohm, tapered. **Power Rating:** 0.5 watt maximum continuous power rating for linear taper, but voltage not to exceed rating. **Working Voltage:** 350 VDC across end terminals, but power not to exceed rating. **Linearity:** ±5% Independent. **Torque Range:** .20 to 2.0 oz. in. **Shafts, Standard:** .125 dia. **Solvent Resistance:** Housing resistant to trichlorethylene, chlorethene, NU Freon TMS, Freon TMC, carbon tetrachloride, toluene, MEK ethyleacetate and gasoline.



Stock No.	Mfr.'s Type	Resistance Values (Ohms)	Description	EACH		
				1-9	10-24	25-49
753-94XX	392JA	See Table A	7/8" long shaft FMS, screwdriver slotted metal bushing and shaft, P.C. terminals	**10.05**	**9.35**	**8.74**
753-95XX	392JB	See Table A	Same as 392JA but with plastic shaft and bushing	**7.60**	**7.07**	**6.61**
753-96XX	392-5	See Table A	Trimmer version, plastic shaft and faceplate	**7.08**	**6.58**	**6.15**

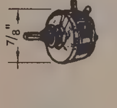
Table A Complete the Stock Number by placing the designated Resistance Code for Ohms value where XX appears in Stock Number.

Value	RC	Value	RC	Value	RC	Value	RC	Value	RC	Value	RC	Value	RC	Value	RC
100	21	500	26	2.5K	33	10K	41	50K	53	250K	63	1Meg	70	5Meg†	90
250	23	1K	29	5K	38	25K	45	100K	59	500K	67	—	—	—	—

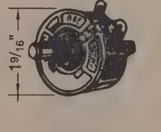
†Not available in 392JB series.

Series CR Rheostats

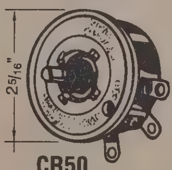
The CR series of rheostats is ideal for use over long periods of time. Features vitreous enamel to bond the core and base, wiper tracks are buffered to assure smooth rotation and uniform contact, three terminals for potentiometer applications, and minimum backlash. The series is made in accordance to MIL-R-22. The 25 and 50 watt models are UL approved. The 12.5 watt units are not UL approved. ±10% resistance tolerance. High strength ceramic hub insulates the shaft and bushing from all line parts.



CR12.5



CR25

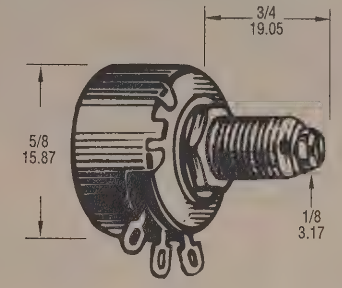


CR50

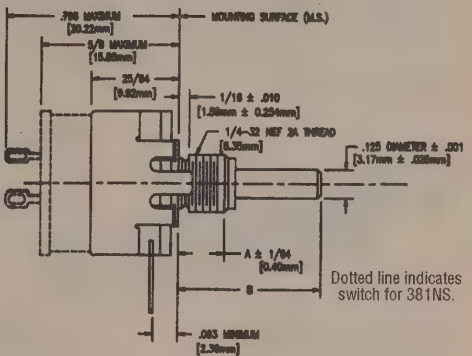
Stock No.	Mfr.'s Type	Watts	Ohms	EACH	
				1-9	10-24
753-0600	CR-12.5 25	12.5	25	**14.85**	**13.92**
753-0602	CR-12.5 50	12.5	50	**14.85**	**13.92**
753-0604	CR-12.5 75	12.5	75	**14.85**	**13.92**
753-0606	CR-12.5 100	12.5	100	**14.85**	**13.92**
753-0608	CR-12.5 250	12.5	250	**14.85**	**13.92**
753-0610	CR-12.5 1500	12.5	1500	**16.57**	**15.53**
753-0614	CR-25 10	25	10	**20.68**	**19.39**
753-0616	CR-25 25	25	25	**15.80**	**14.81**
753-0618	CR-25 50	25	50	**15.80**	**14.81**
753-0622	CR-25 100	25	100	**15.80**	**14.81**

Stock No.	Mfr.'s Type	Watts	Ohms	EACH	
				1-9	10-24
753-0624	CR-25 250	25	250	**15.80**	**14.81**
753-0626	CR-25 500	25	500	**15.80**	**14.81**
753-0628	CR-25 1000	25	1000	**15.80**	**14.81**
753-0632	CR-25 2500	25	2500	**17.60**	**16.50**
753-0634	CR-25 5000	25	5000	**17.60**	**16.50**
753-0636	CR-25 10K	25	10K	**17.93**	**16.81**
753-0640	CR-50 50	50	50	**19.75**	**18.52**
753-0646	CR-50 500	50	500	**19.75**	**18.52**
753-0648	CR-50 1000	50	1000	**20.08**	**18.83**
—	—	—	—	—	—

Series 381
1-Watt 5/8" Diameter Thick Film Conductive Plastic



381L



Dotted line indicates switch for 381NS.

381N, 381NS, 381NZ

- ► **Precision Machined from Corrosion Resistant and Non-Magnetic Materials**
- ► **Rotational Life 100,000 Cycles Under Load**
- ► **Homogeneous, Strain-Free Thick-Film Resistance Element with 1% Dynamic Noise, 5% Independent Linearity**
- ► **Meets Stringent MIL-R-94 Specifications**

381N has plain 1/4" long bushing with 1/4-32NEF-2A thread and 1/8" dia. 3/4" (FMS) long shaft. 381L is a locking bushing that has 3/8" long bushing with 1/4-32NEF-2A thread and long 1/8" dia. 7/16" (FMS) shaft. D381 is the same as the 381N but is dual ganged using the same resistance value for both sections. Dimensions are the same as 381N except total depth is 49/64" (±1/32). 381NS is the same as the 381N except it includes a factory attached SPST switch (1 A, 125 V AC/DC). 381N-Z is the same as the 381N except using a Z-taper. Dust and splash proof housing. Cover is sealed to base with epoxy seal. Terminals are molded into base and sealed for solderability per MIL-STD-202, Method 208B. **Resistance Tolerance:** ±10% through 500 K; ±20% above 500 K.

Stock No.	Mfr.'s Type	Std. Resis. Values Ohms (See Table A)	EACH		
			1-9	10-24	25-49
753-80XX	D381N	5K, 10K	**28.70**	**26.70**	**24.96**
753-81XX	381NS	1K, 5K, 10K, 50K, 100K, 1M	**20.98**	**19.51**	**18.24**
753-82XX	381N-Z	2.5K, 5K, 10K, 25K, 50K, 100K, 250K, 1M	**12.63**	**11.74**	**10.98**
753-83XX	381N	100, 250, 500, 1K, 2.5K, 5K, 10K, 25K, 50K, 100K, 250K, 500K, 1M, 2.5M, 5M	**11.20**	**10.42**	**9.74**
753-84XX	381L	100, 250, 500, 1K, 2.5K, 5K, 10K, 25K, 50K, 100K, 500K	**12.63**	**11.74**	**10.98**

Table B
Complete the Stock Number by placing the designated Resistance Code for Ohms value where XX appears in Stock Number. Check values available in the table below.

Ohms	XX	Ohms	XX	Ohms	XX	Ohms	XX
100	28	2.5K	53	50K	73	1M	87
250	29	5K	59	100K	75	2.5M	90
500	35	10K	61	250K	81	5M	95
1K	47	25K	67	500K	83	—	—

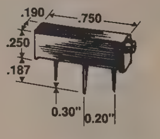
Clarotrim Trimmers

- **Superior Setability and Stability**
- **Temp. Coeff. of ±100% PPM/°C**
- **CRV of 3% or 3Ω**
- **Sealed for Cleaning in Common Solvents**

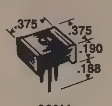
Specifications. Per MIL-R-22097 where (para.) is noted. **Series 335.** 0.5 Watt. Single turn. **Tolerance:** ±10%. **Effective Travel:** 230° nominal. **Weight:** .03 oz. **Series 343P.** Low profile, .5 Watt. Rectangular cermet. **Effective Travel:** 20 turns nominal. **Resistance Tolerance:** ±10%. **Power Rating:** 0.75 Watt at 70°C. **Stops:** Wiper idles against stops. **Weight:** 0.04 oz. (1.2 g) maximum. **Series 363.** 3/8", .5 Watt Cermet. **Effective Travel:** 270 nominal. **Resistance Tolerance:** 20% (±10% available). **Power Rating:** 0.5 Watt at 70°C. **Stops:** Solid. Weight: 0.03 oz. (0.85 g) maximum. **Series 364.** 3/8" square, .5 Watt. Multiturn cermet. **Effective Travel:** 25 turns nominal. **Resistance Tolerance:** 10%. **Power Rating:** 0.5 Watt at 85°C. **Stops:** Contact idles at stops. **Weight:** 0.04 oz. (1.13 g) maximum. **Series 370.** High stability, 1 Watt. Multiturn cermet. **Effective Travel:** 20 turns nominal (para. 3.8). **Resistance Tolerance:** 10% (para. 3.7.1.). **Power Rating:** 1.0 Watt at 85°C. **Stops:** Wiper idles against stops. **Weight:** 0.116 oz. (3.3 g) maximum. 363, 364 and 335 series have 0.10" line spacing.

Refer to table A to complete Stock No. for ordering.

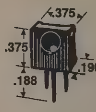
Stock No.	Mfr.'s Type	EACH				
		1-9	10-24	25-49	50-99	100-249
753-40XX	343P	2.02	1.69	1.58	1.48	1.33
753-41XX	363M	2.02	1.69	1.58	1.48	1.33
753-42XX	363P	2.02	1.69	1.58	1.48	1.33
753-43XX	363X	2.02	1.69	1.58	1.48	1.33
753-44XX	364P	3.02	2.53	2.36	2.21	1.99
753-45XX	364W	3.02	2.53	2.36	2.21	1.99
753-46XX	364X	3.02	2.53	2.36	2.21	1.99
753-47XX	364Y	3.02	2.53	2.36	2.21	1.99



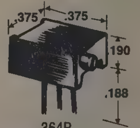
343P



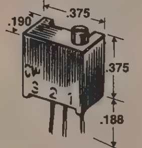
363M
363P



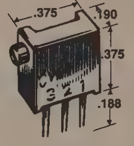
363X



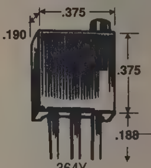
364P



364W



364X

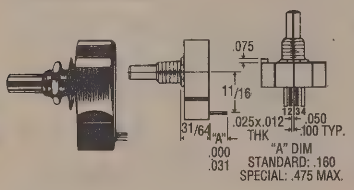


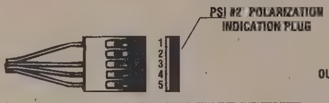
364Y

Table A: Select ohms desired, and replace XX in Stock No. with corresponding number from chart.

Ohms	XX	Ohms	XX	Ohms	XX
100	10	2K	30	50K	50
200	15	5K	35	100K	55
500	20	10K	40	200K	60
1K	25	20K	45	500K	65
—	—	—	—	1M	70

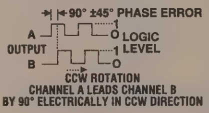
600 Encoders



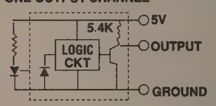


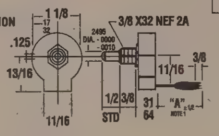
CABLE CODE		
COLOR	PIN NUMBER	FUNCTION
RED	1	5VDC ±5% @30ma MAX.
ORANGE	3	B CHANNEL
YELLOW	4	A CHANNEL
GREEN	5	GROUND

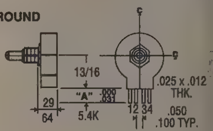
OUTPUT WAVEFORM


90° ±45° PHASE ERROR
A
OUTPUT
B
1
O LOGIC
1 LEVEL
O
CCW ROTATION
CHANNEL A LEADS CHANNEL B
BY 90° ELECTRICALLY IN CCW DIRECTION

BLOCK DIAGRAM
ONE OUTPUT CHANNEL







- **Optical Incremental Encoders**
- **Analog to Digital Converters**
- **TTL Compatible All Models**
- **Only 1.125" Diameter × .484" Deep**

Specifications. Input Power: 5 volts DC ±5% @ 30 MA max. plus external requirements. **Output Rate** 128 pulses/revolution per channel-standard; Other pulses/revolution between 60 and 128 are available. **Channels:** Two separate output channels in quadrature, 90° ±45°. **Output Voltage:** High level voltage — 2.4 volts min. with 10 KΩ load to ground; Low level voltage — .4 volt max. **Operating Temp:** –20°C to +65°. **Vibration:** 10 to 2000 Hz, 15 G peck; MIL-STD-202 method 204 test C. **Shock:** 100 G @ 6 ms MIL-STD-202 method 213 condition 1.

The series 600 controls are manually operated, rotary, optical encoders that output two square waves in quadrature at a rate of 128 pulses per channel per revolution as a standard with other resolutions down to 60 pulses available. The outputs are TTL compatible. The variation in this series is in the terminal configuration: either pin leads or cable leads.

Mechanical Characteristics. Shaft Rotation: Continuous in either direction. **Operating Speed:** 300 rpm max. **Rotational Life:** 10 million revolutions. **Rotational Torque:** 1.5 oz. in max. **Shaft:** 1/4 diameter standard, stainless steel. **Bushing:** 3/8 diameter standard, brass, nickel plated. **Terminals:** P/C Type — 0.25 by 0.12 thick brass, gold plated to facilitate soldering. Cable Type — Four lead ribbon cables, color-coded, with .050 spacing, 28 AWG stranded copper wire, 0.39 diameter. **Strength:** Terminals withstand 2 lb. push and pull and a 90° bend. **Mounting Hardware (not supplied):** For 3/8 bushing, use hex mounting nut 3/8 × 32 thread, 1/2 across flats, 3/32 thick; internal tooth lockwasher 11/16 O.D. by .022 thick. **Seals:** Mounting seal and shaft seal available. Controls are not sealed for board washing. **Weight:** P/C type or cable type. 1 in. FMS shaft and 3/8 bushing-.046 lb. (21 G). **Loc. Pin (Not Standard):** Single pin located 17/32 from center can be supplied.

No. 600-128-CBL. (Cable style) a four lead ribbon cable ± color coded with .050 spacing, 28 AWG stranded copper wire. .039 diameter. Length 7.5".
753-0060. 600-128-CBL. **1-9** .... **EACH 42.89**
10-24 .... **EACH 38.05** **25-49** .... **EACH 37.44**
50-99 .... **EACH 36.29** **100-249** .... **EACH 33.70**

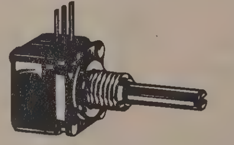
No. 600-128-CN. As above except wire leads have connector.
753-0059. 600-128-CN. **1-9** .... **EACH 54.31**
10-24 .... **EACH 48.18** **25-49** .... **EACH 47.41**
50-99 .... **EACH 45.95** **100-249** .... **EACH 42.67**

No. 600-128-B66. Employs PC mounting vertical plane. 160" long. Terminals are gold plated on .025 by .012 brass to facilitate soldering.
753-0061. 600-128-B66. **1-9** .... **EACH 41.20**
10-24 .... **EACH 36.55** **25-49** .... **EACH 35.97**
50-99 .... **EACH 34.86** **100-249** .... **EACH 32.37**

No. 600-128-C24. Employs PC mounting horizontal plane .160" long. Terminals are gold plated on .025 by .012 brass to facilitate soldering.
753-0062. 600-128-C24. **1-9** .... **EACH 40.64**
10-24 .... **EACH 36.05** **25-49** .... **EACH 35.48**
50-99 .... **EACH 34.38** **100-249** .... **EACH 31.93**

388E Mechanical Encoders

Only one half inch square, the Series 388E is a direct digital, contacting, mechanical encoder for low resolution limits in such applications as sensing, cursing, scanning or robotics. Meets those requirements for a digital output component for limited space applications. **Bushing:** 1/4 × 1/4 inches. **Shaft:** 1/8 dia. × 3/4 in. FMS lg., screwdriver slotted. **Terminals:** .875 in. lg., P.C. Pins. **Locating Pin:** 9 o'clock.

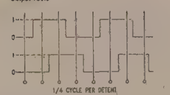


388-4. 4 pulse/rev./chan. 16 detent. 1/4 pulse/detent.
753-0070. 388-4. **1-9** .... **EACH 15.27**
10-24 .... **EACH 13.55** **25-49** .... **EACH 13.33**
50-99 .... **EACH 12.92** **100-249** .... **EACH 12.00**

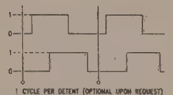
388-6. 6 pulse/rev./chan. 24 detent. 1/4 pulse/detent.
753-0075. 388-6. **1-9** .... **EACH 16.27**
10-24 .... **EACH 14.44** **25-49** .... **EACH 14.21**
50-99 .... **EACH 13.77** **100-249** .... **EACH 12.79**

500 Mechanical Rotary Encoder

Output Table

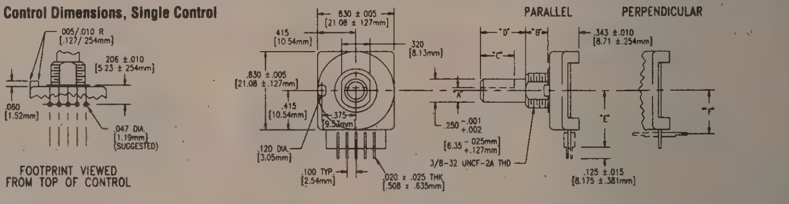


1/4 CYCLE PER DETENT
CW----



1 CYCLE PER DETENT (OPTIONAL UPON REQUEST)
CW----

Control Dimensions, Single Control



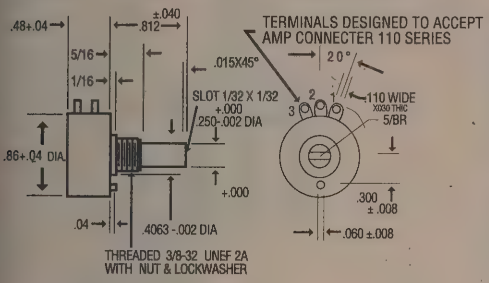
- **Cost Effective**
- **High Resolution**
- **Expandable**
- **Stability**
- **Variability**

The Series 500 Controls are manually-operated, rotary, mechanical encoders that provide a 2-bit grey code for relative reference applications and a 4-bit grey code for absolute electrical reference applications. In 2-bit grey code, the L channel leads the R channel by 90° electrically in CW position. Continuous electrical travel. It has a rotational life of more than 100,000 shaft revolutions, a positive detent feel and can be combined with a second modular section in a concentric-shafts construction. This series is small sized (.83" sq. × .343" thick) and commonly used in limited-space, panel-mounted applications where the need for costly front-panel displays can be completely eliminated. Direct digital output, which eliminates A/D converts. Up to 36 electrical and mechanical detented positions. –55°C to +105°C operating temperature. PC type terminals on .100" grid lines. Molded housing/bushing and shaft are polyester PBT, chosen for heat resistance and electrical characteristics. Program code board is glass epoxy, copper clad with nickel plating. Horizontal or vertical mountings relative to the PC board as well as metric shafts and bushings are available as special order. Also available as special order is dual constructions with concentric shafts. Hexadecimal, BCD, and counting codes and rotational position stops are available as special order.

Stock No.	Mfr.'s Type	No. of Bits	Mechanical Detents	Terminal Mounting	Extends	EACH				
						1-9	10-24	25-49	50-99	100-249
753-0081	500EN-204P-B1	2	4 cycles/rev., 16 detents/rev.	.615" from center	Down	5.18	4.60	4.52	4.38	4.07
753-0082	500EN-204P-C2	2	4 cycles/rev., 16 detents/rev.	.625" from center	Back	6.64	5.89	5.79	5.62	5.21
753-0083	500EN-206P-B1	2	6 cycles/rev., 24 detents/rev.	.615" from center	Down	5.18	4.60	4.52	4.38	4.07
753-0084	500EN-206P-C2	2	6 cycles/rev., 24 detents/rev.	.625" from center	Back	5.18	4.60	4.52	4.38	4.07
753-0085	500EN-412P-B1	4	12 elec. posit./rev., 12 detents/rev.	.615" from center	Down	5.64	5.00	4.92	4.77	4.43
753-0086	500EN-412P-C2	4	12 elec. posit./rev., 12 detents/rev.	.625" from center	Back	5.64	5.00	4.92	4.77	4.43
753-0087	500EN-209P-B1	2	9 cycles/rev, 36 detents	.615" from center	Down	6.64	5.89	5.79	5.62	5.21
753-0088	500EN-209P-C2	2	9 cycles/rev, 36 detents	.625" from center	Back	6.64	5.89	5.79	5.62	5.21
753-0089	500EN-416P-B1	4	16 elec. posit./rev., 16 detents	.615" from center	Down	5.64	5.00	4.92	4.77	4.43
753-0090	500EN-416P-C2	4	16 elec. posit./rev., 16 detents	.625" from center	Back	5.64	5.00	4.92	4.77	4.43

753-0091. 500BKT. Mounting bracket (optional). **1-9** .... **EACH .82**
10-24 .... **EACH .73** **25-49** .... **EACH .69**

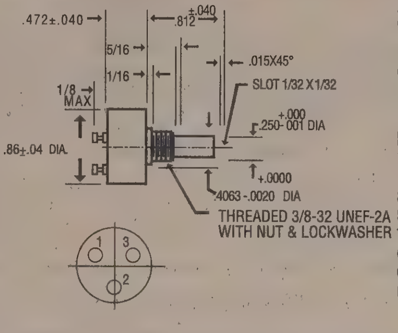
Single Turn 1-Watt Potentiometers



Model SP22E. This conductive plastic single turn features 10,000,000 turns life, ±1.0% linearity. High-quality molded plastic element gives superior performance over film-type elements. Also available with wirewound element (SW22E), featuring 500,000 turns life, ±0.5% linearity. Both are 7/8" dia., with 320 deg. electrical angle, 1/4" shaft. Other resistance values, multi-ganged continuous rotation available. Call for pricing and delivery info.

Stock No.	Mfr.'s Type	Standard Resistance Ohms (See Table A)	EACH		
			1-9	10-24	25-49
522-16XX	SP22E	1K, 2K, 5K, 10K	**17.18**	**15.86**	**14.73**
522-15XX	SW22E	100, 200, 500, 1K, 2K, 5K, 10K	**20.05**	**18.51**	**16.04**

Single Turn 1-Watt Rear Terminals



Model SP22D. Conductive plastic features 10,000,000 turns life, ±1.5% linearity, all metal housing and solder terminals. Also available in wirewound (SW22D series, 500,000 turns life, ±0.5% linearity, lug terminals). Both have 7/8" diameter, 320 deg. electrical angle, 1/4" shaft. Also available with continuous mechanical rotation, non-standard resistance values and multi-ganged.

Stock No.	Mfr.'s Type	Standard Resistance Ohms (See Table A)	EACH		
			1-9	10-24	25-49
522-26XX	SP22D	1K, 2K, 5K, 10K	**32.02**	**29.55**	**25.61**
522-25XX	SW22D	100, 200, 500, 1K, 2K, 5K, 10K	**32.02**	**29.55**	**25.61**

Mini-Linear Motion Potentiometer — Conductive Plastic

"Mini-Lini" LCP8-10. Smallest linear motion potentiometer in its class! Features .433" electrical stroke, with .472" mechanical stroke. Conductive plastic element provides 20,000,000 shaft reciprocating motions. **Resistance Tolerance:** ±15%. **Independent Linearity:** ±2%. 0.2 Watts power rating. **Operating Temperature Range:** –30°C to +105°C. **Housing Size:** only .287" high × .322" wide × 1.259" long. **Also Available:** threaded shaft, special shaft modifications.

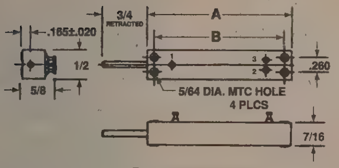
Stock No.*	Mfr.'s Type	Std. Resistance Ohms	EACH	
			1-9	10-24
522-40XX	LCP8S-10†	1K, 2K, 5K, 10K, 20K, 50K	**77.30**	**71.35**
522-27XX	LCP8P-10††	1K, 2K, 5K, 10K, 20K, 50K	**33.97**	**31.35**

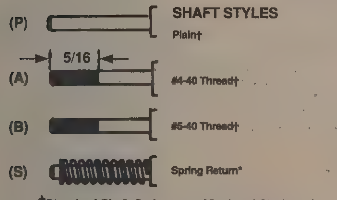
"Mini-Lini" LCP8-12. Conductive Plastic. 0.5" Mechanical, 0.5" Electrical Stroke. 20,000,000 shaft reciprocating motions. **Resistance Tolerance:** ±15%. **Independent Linearity:** ±2%. 0.2 Watts. **Operating Temperature Range:** –30°C to +105°C. Only .287" high × .322" wide × 1.259" long. Spring return and special shaft styles available.

522-30XX	LCP8P-12	1K, 2K, 5K, 10K, 20K, 50K	**109.27**	**100.86**

*See Table A below for ordering information.†Spring shaft. ††Plain shaft.

Linear Motion Potentiometer —1/2" to 4" Conductive Plastic and Wirewound





†Standard Shaft Styles *Optional Shaft Styles

The LCP12 series conductive plastic element and the LW12 series wirewound element both feature essentially infinite resolution, high precision, a contact resistance variation less than 2%, 500 VAC dielectric strength, and a choice of shaft styles. The LCP12 offers a long life of 20,000,000 strokes, output smoothness less than 0.1% input voltage, and 10% resistance tolerance. The LW12 offers excellent high speed tracking, 100 ohms max. noise, life of 100,000 strokes, and 5% resistance tolerance.

Mfr.'s Type	Standard Resistance Values	Resistance Tolerance Linearity (Ind.)	Power Rating	Stroke Mech. +.1-.0" Elect. ±.02"	Dimensions	
					"A" ±0.04"	"B" ±0.02"
LCP12-12	500, 1K, 2K, 5K, 10K	±20%, ±1.5%	0.20W	1/2"	1.50"	1.26"
LCP12-25	1K, 2K, 5K, 10K	±20%, ±1.0%	0.40W	1"	2.00"	1.77"
LCP12-50	1K, 2K, 5K, 10K	±20%, ±0.7%	0.70W	2"	3.00"	2.75"
LCP12-100	1K, 2K, 5K, 10K, 20K	±20%, ±0.5%	1.20W	4"	5.00"	4.76"
LW12-12	500, 1K, 2K, 5K, 10K	±20%, ±1.5%	0.25W	1/2"	1.50"	1.26"
LW12-25	1K, 2K, 5K, 10K	±20%, ±1.0%	0.50W	1"	2.00"	1.77"
LW12-50	1K, 2K, 5K, 10K	±20%, ±0.7%	1.00W	2"	3.00"	2.75"
LW12-100	1K, 2K, 5K, 10K, 20K	±20%, ±0.5%	2.00W	4"	5.00"	4.76"

Stock No.*	Mfr.'s Type	Stock No.*	Mfr.'s Type	Shaft Type	Stroke	EACH	
						1-9	10-24
522-01XX	LCP12P-12	**522-36XX**	LW12P-12	P	1/2"	**107.40**	**99.14**
522-02XX	LCP12A-12	**522-37XX**	LW12A-12	A	1/2"	**125.93**	**116.25**
522-03XX	LCP12B-12	**522-38XX**	LW12B-12	B	1/2"	**107.40**	**99.14**
522-05XX	LCP12S-12	**522-39XX**	LW12S-12	S	1/2"	**144.45**	**133.34**
522-31XX	LCP12P-25	**522-42XX**	LW12P-25	P	1"	**133.33**	**123.08**
522-32XX	LCP12A-25	**522-43XX**	LW12A-25	A	1"	**151.85**	**140.17**
522-33XX	LCP12B-25	**522-44XX**	LW12B-25	B	1"	**133.33**	**123.08**
522-35XX	LCP12S-25	**522-45XX**	LW12S-25	S	1"	**170.37**	**157.26**
522-61XX	LCP12P-50	**522-46XX**	LW12P-50	P	2"	**159.27**	**147.02**
522-62XX	LCP12A-50	**522-47XX**	LW12A-50	A	2"	**177.78**	**164.11**
522-63XX	LCP12B-50	**522-48XX**	LW12B-50	B	2"	**159.27**	**147.02**
522-65XX	LCP12S-50	**522-49XX**	LW12S-50	S	2"	**196.30**	**181.20**
522-91XX	LCP12P-100	**522-52XX**	LW12P-100	P	4"	**207.40**	**191.45**
522-92XX	LCP12A-100	**522-53XX**	LW12A-100	A	4"	**225.93**	**208.55**
522-93XX	LCP12B-100	**522-54XX**	LW12B-100	B	4"	**207.40**	**191.45**
522-95XX	LCP12S-100	**522-55XX**	LW12S-100	S	4"	**244.45**	**225.65**

*See Table A below for ordering information.

Table A — Important Ordering Information

To Order: Complete the Stock Number by placing the designated Resistance code for Ohms Value where XX appears in the Stock Number. Each particular listing shows ohm values available.

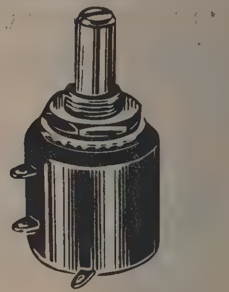
Value	XX	Value	XX	Value	XX	Value	XX	Values	XX
100*	21	500	23	2K	32	10K	41	50K	53
200*	22	1K	29	5K	38	20K	44	—	—

*NOTE: 100 and 200 ohms only available in SW22 series. Please contact Allied for available application assistance, custom and special designs.

10 Turn or 3 Turn Pots

Model MW22B-10. Wirewound element, ⅞" diameter × ¾" long, 10 or 3 turns. Ten turn unit features 1,000,000 turns life, 2 watt power rating and .25% linearity. Three turn unit features 300,000 turns life, 1 watt power rating and 0.5% linearity. Both units have extremely smooth rotation, brass bushing and gold plated terminals. **Operating Temperature Range:** –55°C to +105° C. Slotted shaft. **Also available:** 5 turn, multi-ganged and high-torque units. Also: see our page on turns counting dials.

Stock No.	Mfr.'s Type	No. of Turns	Standard Resistance Ohms (See Table Below)	EACH		
				1-9	10-24	25-49
522-20XX	MW22B-10	10	100, 200, 500, 1K, 2K, 5K, 10K, 20K	14.27	13.17	11.41
			50K, 100K	18.33	16.92	14.67
522-21XX	MW22B-3	3	100, 200, 500, 1K, 2K, 5K, 10K, 20K	18.33	16.92	14.67



MH22B-10 Hybrid Element 10-Turn Potentiometer

Model MH22B-10. Conductive plastic over a wirewound element for the stability of wirewound and the low inductance and essentially infinite resolution of conductive plastic. **Operating Temperature:** –55°C to +105°C. **Life Shaft Revolutions:** 10,000,000. **Linearity Tolerance:** ±.25%. **Also Available:** 3 or 5 turn units, high-torque units. Also: see our page on turns counting dials.

Stock No.	Mfr.'s Type	No. of Turns	Standard Resistance Ohms (See Table Below)	EACH		
				1-9	10-24	25-49
522-19XX	MH22B-10	10	1K, 2K, 5K, 10K, 20K	51.85	47.86	41.48
522-19XX	MH22B-10	10	50K, 100K	66.67	61.54	53.33

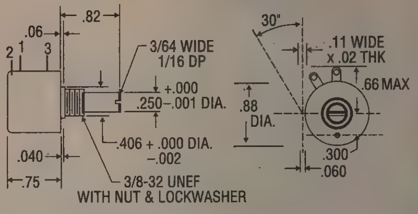
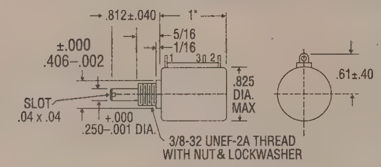


Table A — Important Ordering Information

To Order: Complete the Stock Number shown by placing the designated Resistance code for Ohms Value where XX appears in the Stock Number. Each particular listing shows what ohm values are available. Other values are also available — contact Allied. All multi-turn pots listed have ⅜"-32 threaded bushing mount with ¼" shaft.

Value	XX	Value	XX	Value	XX	Value	XX	Value	XX
100	21	500	26	2K	32	10K	41	50K	53
200	22	1K	29	5K	38	20K	44	100K	59



10 Turn Potentiometer (2 Watts) Hi-Rel

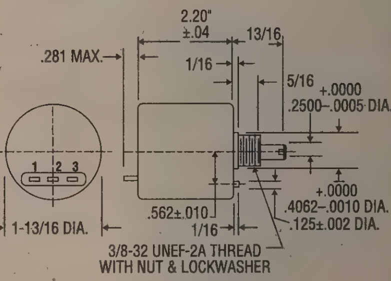
Model MW20B-10. Highest-quality ten-turn Potentiometer. **Power Rating:** 2 watts at 70°C ambient. High temperature plastic with stainless steel shaft. **Operating Temperature:** –55°C to +105°C. **Life Shaft Revolutions:** 2,000,000. **Independent Linearity:** ±.25%. **Dielectric Strength:** 1000 VAC. **Insulation Resistance:** 1000 megohms at 1000 VDC. **Running Torque:** 0.6 oz.-in. maximum. **Stop Strength:** 96 oz.-in. minimum. **Also Available:** Hybrid element (10,000,000 turns life), multi-ganged models, 3 and 5 turns, and high-torque units. Also see our page on turns counting dials.

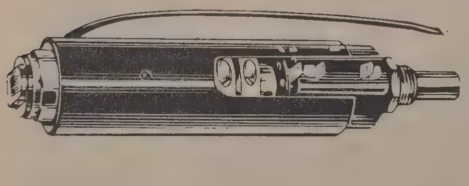
Stock No.	Mfr.'s Type	Ohms	Stock No.	Mfr.'s Type	Ohms	Stock No.	Mfr.'s Type	Ohms	EACH		
									1-9	10-24	25-49
—	—	—	522-5132	MW20B-10	2K	522-5144	MW20B-10	20K	35.55	32.82	28.44
522-5126	MW20B-10	500	522-5138	MW20B-10	5K	522-5153	MW20B-10	50K	35.55	32.82	28.44
522-5129	MW20B-10	1K	522-5141	MW20B-10	10K	522-5159	MW20B-10	100K	35.55	32.82	28.44

Precision Ten-Turn Potentiometers ±.1% Zero-Based Linearity (5 Watts)

Model MR46B-10. Features ±0.1% zero-based linearity. Ten-turn precision pot., long life, with all metal case. Rated 5 watts at 40°C. **Operating Temperature Range:** –55°C to +105°C. Aluminum housing, stainless steel shaft. **Life Shaft Revolutions:** 2,000,000. **Insulation Resistance:** 100 megohms minimum at 1000 VDC. **Dielectric strength:** 1000 VAC minimum. **Running Torque:** 2.8 oz.-in. maximum. **Stop Strength:** 125 oz.-in. minimum. **Also Available:** Up to 30 turns, oil-filled units (up to 20 turns), 5 AMP limit switches, rear shaft extensions. Also: see our page on turns counting dials.

Stock No.	Mfr.'s Type	Ohms	Stock No.	Mfr.'s Type	Ohms	EACH		
						1-9	10-24	25-49
522-8221	MR46B-10	100	522-8238	MR46B-10	5K	54.78	50.57	43.83
522-8222	MR46B-10	200	522-8241	MR46B-10	10K	54.78	50.57	43.83
522-8226	MR46B-10	500	522-8244	MR46B-10	20K	54.78	50.57	43.83
522-8229	MR46B-10	1K	522-8253	MR46B-10	50K	54.78	50.57	43.83
522-8232	MR46B-10	2K	522-8259	MR46B-10	100K	54.78	50.57	43.83





Motorized Potentiometers, 10-Turn, DC Motor

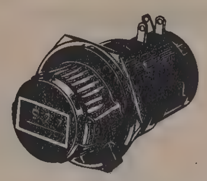
Other units available with:
- ► **High Torque Transmissions**
- ► **Limit Switches**
- ► **24 VAC Inputs**
- ► **Hybrid Elements**
- ► **Additional Ganging of Pots**
- ► **Circuitry for Positioning**

Contact your Allied office for more information.

Type MC20-1. Motor-Controlled 10-Turn Potentiometer gives the design engineer new latitudes in speed controls and temperature and valve positioning. This single-ganged, ten-turn pot operates from 6 or 12 VDC input, from an operational amplifier or external power supply. Slip clutch allows for manual adjustment of pot, plus prevents stop breakage. Panel mounts in a .407" diameter mounting hole. **Potentiometer RPM:** 1, 3, 10, and 18. **Potentiometer Power Rating:** 3 Watts at 70°C. **Resistance Tolerance:** ±3%. **Independent Linearity:** ±.25%. **Rotational Life:** 2,000,000 turns. **Modifications Available:** 3 and 5 turn pots; 24 VDC inputs; other RPMs; hybrid element for 10,000,000 turn life. Allow 2-8 weeks delivery. Call for pricing.

Stock No.	Mfr.'s Type	Resistance	Motor Volt	Output RPM	Stock No.	Mfr.'s Type	Resistance	Motor Volt	Output RPM	EACH		
										1-9	10-24	25-49
522-9507	MC20-1	1K	6 VDC	1 RPM	522-9515	MC20-1	1K	12 VDC	3 RPM	191.18	176.48	152.95
522-9509	MC20-1	5K	6 VDC	1 RPM	522-9520	MC20-1	5K	12 VDC	3 RPM	191.18	176.48	152.95
522-9510	MC20-1	10K	6 VDC	1 RPM	522-9530	MC20-1	10K	12 VDC	3 RPM	191.18	176.48	152.95
522-9500	MC20-1	1K	6 VDC	10 RPM	522-9527	MC20-1	1K	12 VDC	18 RPM	191.18	176.48	152.95
522-9505	MC20-1	5K	6 VDC	10 RPM	522-9525	MC20-1	5K	12 VDC	18 RPM	191.18	176.48	152.95
522-9506	MC20-1	10K	6 VDC	10 RPM	522-9535	MC20-1	10K	12 VDC	18 RPM	191.18	176.48	152.95

Combination 10-Turn Dial/Pot



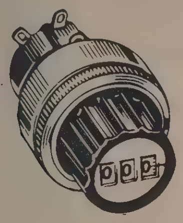
Model DC22. 10-Turn dial/pot combination mounts in 1¹/₈" dia. hole in panel up to ³/₁₆" thick. ±5% resistance tolerance, 2 watts. Gold plated terminals, over the center lock. Uses DC27 dial with MW22B-10MM pot.

Stock No.	Mfr.'s Type	Standard Resistance Ohms (See Table B)	EACH 1-9	EACH 10-24	EACH 25-49
522-29XX	DC22-10	100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K, 100K	50.32	46.45	40.25

Model DC27 1¹/₁₆" Turns Counting Dial

Model DC27. 1¹/₁₆" dia. concentric dial counts 1-10 turns. Over the center lock. Accepts ¹/₄" shaft dia. High temp. black plastic housing. Other shaft sizes available on special order.

522-0027. DC27. **1-9** ....**EACH 38.52**
10-24 ....**EACH 35.55**
25-49 ....**EACH 30.81**



Combo® 3— 10-Turn Dial/Pot Combination

Model DW22-10 (Combo® 3). Reduce assembly costs by eliminating the time-consuming mounting and calibrating of dial to pot. The COMBO 3 is a pre-mounted and pre-calibrated digital dial mounted to an ETI Systems Model MW22B-10MM precision 10 turn potentiometer. Gold plated terminal lugs. ±5% resistance tolerance. ±0.5% read-out accuracy. 1,000,000 turns life, 2 watts.

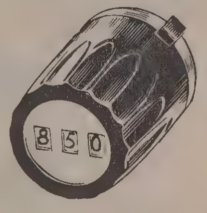
Stock No.	Mfr.'s Type	Standard Resistance Ohms (See Table B)	EACH 1-9	EACH 10-24	EACH 25-49
522-24XX	DW22-10	100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K, 100K	59.78	55.18	47.83

Table B — Important Ordering Information

To Order: Complete the Stock Number Shown by placing the designated Resistance code for Ohms Value where XX appears in the Stock Number. Each particular listing shows what ohm values are available.

Value	XX	Value	XX	Value	XX	Value	XX
100	21	1K	29	10K	41	100K	59
200	22	2K	32	20K	44	–	–
500	26	5K	38	50K	53	–	–

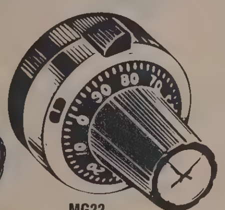
Digital Counting Dial 1" Dia.



Model DA10. An excellent choice in a precision-made digital counting dial. Gear driven numbers. Counting dial is equipped with a magnifying lens for easy readability, with lock. Black finish. Made for potentiometers with ¹/₄" or 6 mm shafts. Mounting hardware is supplied.

522-1011. 1-9 ....**EACH 33.33**
10-24 ....**EACH 30.77**
25-49 ....**EACH 26.67**

MGA22 (Black)

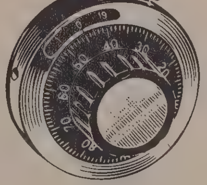


MG22 (Satin Black)

⁷/₈" Diameter Turns Counting Dial

Model MG22. Low cost, ⁷/₈" diameter. Counts 1 to 20 turns. Over the center lock. Anti-rotation pin for easy mounting. Fits ¹/₄" dia. shaft. (Avail. to fit ¹/₈" dia. shaft size.) Also available in grey.

Stock No.	Mfr.'s Type	Color	EACH 1-9	EACH 10-24	EACH 25-49
522-2853	MGA22	Black	20.37	18.80	16.29
522-2855	MG22	Satin/Black	20.37	18.80	16.29



MF46 Dial 1¹³/₁₆" Diameter Turns Counting Dial for 1-20 Turn Pots

Model MF46. 1¹³/₁₆" diameter black plastic knob, aluminum base. Large, easy to read numbers. Over the center lock for positive locking action. Fits ¹/₄" shafts. Counts up to 20 turns.

522-1370. 1-9 ....**EACH 28.15**
10-24.......................................**EACH 25.98**
25-49.......................................**EACH 22.52**

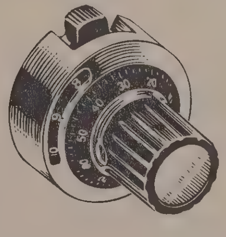
522-1371. MFA46. Black. **1-9** ....**EACH 28.15**
10-24 ....**EACH 25.98** **25-49** ....**EACH 22.52**

1³/₁₆" Diameter Turns Counting Dial

Model MD30. Counts 1-10 turns. Low cost, precision turns counting dial. Easy to read numbers which can be seen from longer distances. Numbered wheels progress smoothly without flip action, to avoid misreadings. Lock is easy to apply with red and white indicators of lock position. For shaft diameters of ¹/₄". Black finish.

522-1001. 1-9 ....**EACH 44.45**
10-24 ....**EACH 41.03**
25-49 ....**EACH 35.56**

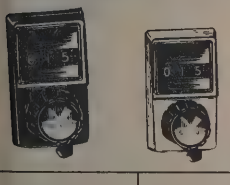
1" Diameter Turns Counting Dial



Model MB25. 1" diameter counts 1 to 10 turns. Satin finish aluminum body. Black plastic finger tip knob with white filled, easy-to-read numbers. Over the center lock for positive locking action. Fits ¹/₄" shaft.

522-1025. MB25. **1-9** ....**EACH 25.93**
10-24 ....**EACH 23.94**
25-49 ....**EACH 20.75**

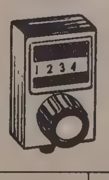
522-1026.MBA25. Black. **1-9**...**EACH 25.93**
10-24 ....**EACH 23.94** **25-49** ....**EACH 20.75**



Turns Counting Dials — 10-Turns

Model DB10. Heavy-duty construction. Clear dust-proof window over numbers protects internal mechanism. Precision, gear driven numbers. 1" × 1.75". Counts up to 10-turns. For ¹/₄" diameter shafts. Over the center lock.

Stock No.	Mfr.'s Type	Color	EACH 1-9	EACH 10-24	EACH 25-49
522-2850	DB10	Satin Finish	33.33	30.77	26.67
522-2851	DBA10	Black	33.33	30.77	26.67



Turns Counting Dial — 100 Turns Digital Readout

Model DB100. Heavy-duty construction. Counts up to 100 turns. Fits ¹/₄" diameter shafts. Clear dust-proof window over numbers protects internal mechanism. Precision, gear driven numbers. 1" × 1.75". Over the center lock.

Stock No.	Mfr.'s Type	Color	EACH 1-9	EACH 10-24	EACH 25-49
522-2858	DB100	Satin	122.22	112.82	97.77
522-2859	DBA100	Black	122.22	112.82	97.77

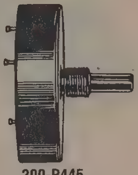
Series 200-P 2-Watt Solid Molded Element Conductive Plastic Potentiometers

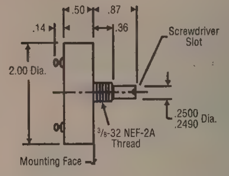
2-Watt Solid Molded Element Conductive Plastic Potentiometer

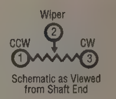
Single Turn 2-Watt Conductive Plastic, Bushing Mount Potentiometer
The raised resistance track is molded to the nonconductor base. Unique contact design minimizes track contact wear, resulting in rotational life far exceeding conventional film type potentiometers. Material selection insures trouble-free operation in applications where oil, dust, moisture and other contamination is present. Rated 2 watts at 40°C. **Resistance Tolerance:** ±20%. **Operating Temperature:** –55°C to 150°C. **Independent Linearity:** ±2%. Bronze bearings. **Life Expectancy:** 20,000,000 revolutions at 40 rpm. **Model 200-P445.**

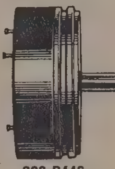
Single Turn 2-Watt Conductive Plastic Servo Mount Potentiometer
The molded raised track and special wiper material combine to create a quality potentiometer with a minimum life expectancy of 100,000,000 revolutions at 40 rpm. Rated 2 watts at 40°C. Provides trouble-free operation in applications where oil, dust, moisture and other contamination is present. **Resistance Tolerance:** ±10%. **Independent Linearity:** ±0.5%. **Operating Temperature:** –55° to 105°C. Stainless steel ball bearings. **Model 200-P446.**

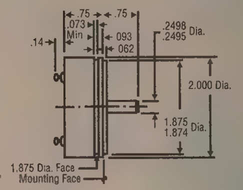
Stock No.	Mfr.'s Type	Ohms	EACH		
			1-4	5-9	10-24
606-0200	200-P445-102	1K	151.78	139.73	131.39
606-0202	200-P445-502	5K	151.78	139.73	131.39
606-0204	200-P445-103	10K	151.78	139.73	131.39
606-0206	200-P445-203	20K	151.78	139.73	131.39
606-0208	200-P446-102	1K	301.50	277.57	261.00
606-0210	200-P446-502	5K	301.50	277.57	261.00
606-0212	200-P446-103	10K	301.50	277.57	261.00
606-0214	200-P446-203	20K	301.50	277.57	261.00

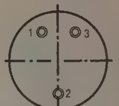

200-P445
Bushing Mount





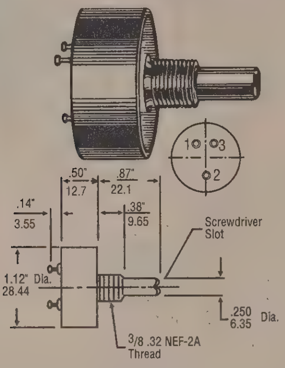

200-P446
Servo Mount





Other resistance values available on special order.

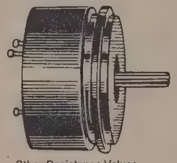
Series 112-P16 1-Watt Solid Molded Element, Single Turn, Conductive Plastic, Bushing Potentiometer

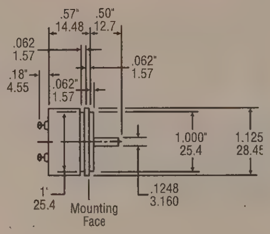


Unit has infinite resolution, with a mechanical life of 20,000,000 revolutions at 40 rpm. Economical. This size is the workhorse for a multitude of military and industrial applications where its relative small size and reliability have been proven. Gold plated terminals, beryllium copper wiper spring, stainless steel shaft, machined bushing. Rated 1 watt at 40°C. **Resistance Tolerance:** ±20%. **Operating Temperature Range:** –55°C to 105°C. **Independent Linearity:** ±2%.

Stock No.	Mfr.'s Type	Ohms	EACH		
			1-4	5-9	10-24
606-4005	112-P16-102	1K	96.38	88.73	83.43
606-4006	112-P16-502	5K	96.38	88.73	83.43
606-4015	112-P16-103	10K	96.38	88.73	83.43
606-4016	112-P16-203	20K	96.38	88.73	83.43

Series 112-P19 1-Watt Solid Molded Element, Single Turn, Conductive Plastic, Servo Potentiometer

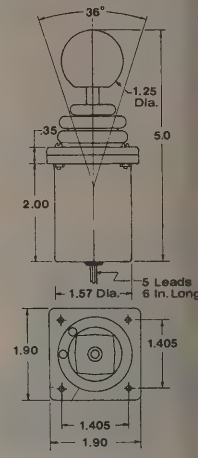

Other Resistance Values Available Upon Request

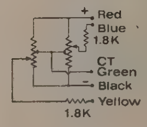


Series 112-P19 features infinite resolution and a minimum life expectancy of 100,000,000 revolutions at 40 rpm. The molded raised track and special wiper material form a unique quality that results in rotational life far exceeding that of conventional film type potentiometers. Gold plated terminals, beryllium copper wiper spring, stainless steel shaft. Impervious to moisture, gases and oils. **Operating Temperature Range:** –55°C to 150°C. **Total Resistance Tolerance:** ±10%. **Independent Linearity:** ±0.5%. **Starting Torque:** .3 oz.-in. Stainless steel ball bearings. **Weight:** 1 ounce.

Stock No.	Mfr.'s Type	Ohms	EACH		
			1-4	5-9	10-24
606-4001	112-P19-102	1K	174.90	161.02	151.40
606-4002	112-P19-502	5K	174.90	161.02	151.40
606-4003	112-P19-103	10K	174.90	161.02	151.40
606-4004	112-P19-203	20K	174.90	161.02	141.40

Induction-Type Joystick



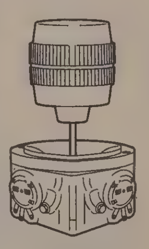


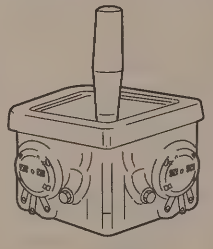
Equivalent Circuit

The JSE 2304 non-contacting inductive joystick control offers extremely long life, infinite resolution and zero noise. The unit is protected from moisture and dust by a shaft boot. Anodized aluminum case seals the electronic circuitry. **Specifications. Operating Voltage:** 4.5-15 VDC. **Current:** 15 ma at 10 VDC. **Output Impedance:** 1800 ohms (signals). **Center Tap Impedance:** 340 ohms. **Temperature Range:** –30° to +105°C. **Center Tap Voltage:** 50% of input voltage. **Resolution:** Infinite. **Life:** 20,000,000 cycles. **Leads:** 6" standard length, color coded. Knob has spring return to center.

Stock No.	Mfr.'s Type	EACH		
		1-4	5-9	10-24
606-0105	JSE2304	186.34	171.56	161.31

Precision Joystick Controls with Potentiometers


JSP3083

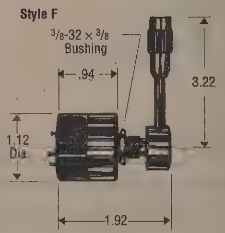

JSP3081

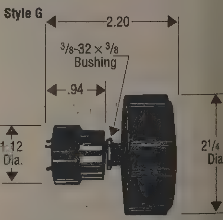
The JSP3000 series joystick controls have been proven in a wide variety of industrial applications. They are ideal for X-Y table controls and remote control equipment. These units provide proportional voltage output and feature essentially infinite resolution. This two-axis joystick is designed with long life conductive plastic potentiometers. The JSP3081 series incorporates a unique feature allowing for calibration of up to 180° by means of a simple thumb tab. It is readily mounted with the screws provided in panels of 0.05" to 0.1875" thick. It is supplied with a snap on bezel that conceals the mounting screws. A round rubber boot kit is available as a special order option. The JSP3082 series provides all the features of the JSP3081 with the addition of a 1/4 amp (115 VAC) momentary normally open push button switch on the top of the handle. It is supplied with a rubber boot seal and mounting ring. Handle height 2.75" above the mounting surface of the joystick. The JSP3803 is a three-axis unit with the handle height 2.35" above the mounting surface of the joystick. All are 5 K units with ±20% resistance tolerance. The potentiometer wipers are phased at the center of resistance. Life is 5,000,000 cycles minimum. The main ball pivot is stainless steel, the lever is 3/16" chrome plated brass, the housing is wellamid, and the springs are stainless steel. All are spring return to center. **Max Power:** 1 watt @ 25°C. **Temperature Range:** –20°C to +65°C.

Stock No.	Mfr.'s Type	Axis	Switch	EACH		
				1-4	5-9	10-24
606-0070	JSP3081	2	No	114.03	104.98	98.72
606-0075	JSP3082	2	Yes	139.52	128.44	120.78
606-0080	JSP3083	3	No	203.98	187.79	176.58

Single Axis Joystick Controls with Potentiometer

The type SAJ2515 single axis joystick control is the ideal choice for those industrial applications where a single direction of travel is to be controlled. Such devices are used to control the speed of a single motor or to determine the back and forth motion of a hydraulic or pneumatic cylinder. This unit is spring return to center of input voltage for reference. center tap is standard. The conductive plastic bushing type potentiometer facilitates installation.





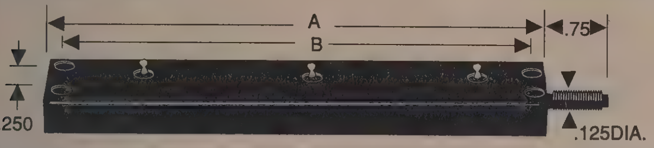
Stock No.	Mfr.'s Type	Standard Resistance	EACH		
			1-4	5-9	10-24
606-4700	SAJ2515-F-501	500	140.34	129.21	121.49
606-4701	SAJ2515-F-102	1K	140.34	129.21	121.49
606-4705	SAJ2515-F-502	5K	140.34	129.21	121.49
606-4710	SAJ2515-F-103	10K	140.34	129.21	121.49
606-4800	SAJ2515-G-501	500	138.55	127.56	119.94
606-4801	SAJ2515-G-102	1K	138.55	127.56	119.94
606-4805	SAJ2515-G-502	5K	138.55	127.56	119.94
606-4810	SAJ2515-G-103	10K	138.55	127.56	119.94

Linear Motion Potentiometers

MAUREY
INSTRUMENT CORP.

M1326 Wirewound

AMERICAN MADE



The M1326 linear motion wirewound potentiometer enjoys a unique position. It combines the best electrical characteristics in the smallest size at the lowest cost. A solid precious metal contact, engaging the precision wirewound mandrel, produces exceptional linear and resolution characteristics. For applications where forces are limited, such as in instrumentation, the M1326 is ideal because of its low shaft frictional force as well as small size and light weight Nylon bearings.

Model M1326-1—1 Watt Potentiometer With 1" Travel

Stock No.	Mfr.'s Type	Ohms 5%	Lin. %*	EACH		
				1-4	5-9	10-24
606-1030	M1326-1-102	1K	0.6	97.79	90.03	84.66
606-1035	M1326-1-202	2K	0.5	97.79	90.03	84.66
606-1040	M1326-1-502	5K	0.4	97.79	90.03	84.66
606-1045	M1326-1-103	10K	0.3	97.79	90.03	84.66

Model M1326-2—2 Watt Potentiometer With 2" Travel

606-1230	M1326-2-102	1K	0.3	113.74	104.71	98.46
606-1235	M1326-2-202	2K	0.3	113.74	104.71	98.46
606-1240	M1326-2-502	5K	0.2	113.74	104.71	98.46
606-1245	M1326-2-103	10K	0.2	113.74	104.71	98.46

Model M1326-4—4 Watt Potentiometer With 4" Travel

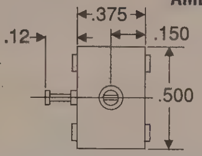
606-2025	M1326-4-102	1K	0.2	139.98	128.87	121.18
606-2027	M1326-4-202	2K	0.2	139.98	128.87	121.18
606-2030	M1326-4-502	5K	0.2	139.98	128.87	121.18
606-2040	M1326-4-103	10K	0.1	139.98	128.87	121.18
606-2045	M1326-4-203	20K	0.1	139.98	128.87	121.18

*Independent Linearity

Conductive Plastic P1613

AMERICAN MADE

Elec. Travel	1.000	2.000	4.000
A	2.000	3.000	5.000
B	1.800	2.800	4.800



The P1613 linear motion conducive plastic potentiometer is designed with simplicity in mind. It combines all the excellent features of the more expensive transducers yet is the smallest available in the market as well as the least costly. The molded raised track, combined with the special formulated contact, results in phenomenal life—the life expectancy at 60 inches/min. is 50,000,000 strokes. **Total resistance tolerance:** ±20%. **Operating Temperature Range:** –55° to 105°C. Nylon bearings.

Model P1613-1—.5 Watt Potentiometer With 1" Travel

Stock No.	Mfr.'s Type	Ohms 20%	Lin. %*	EACH		
				1-4	5-9	10-24
606-4007	P1613-1-102	1K	2.0	156.40	143.98	135.39
606-4000	P1613-1-202	2K	2.0	156.40	143.98	135.39
606-4008	P1613-1-502	5K	2.0	156.40	143.98	135.39
606-4009	P1613-1-103	10K	2.0	156.40	143.98	135.39

Model P1613-2—1 Watt Potentiometer With 2" Travel

606-4017	P1613-2-102	1K	1.0	174.45	160.60	151.01
606-4020	P1613-2-202	2K	1.0	174.45	160.60	151.01
606-4018	P1613-2-502	5K	1.0	174.45	160.60	151.01
606-4019	P1613-2-103	10K	1.0	174.45	160.60	151.01

Model P1613-4—2 Watt Potentiometer With 4" Travel

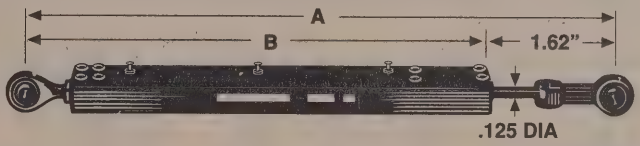
606-4013	P1613-4-202	2K	0.5	208.52	191.97	180.51
606-4010	P1613-4-502	5K	0.5	208.52	191.97	180.51
606-4011	P1613-4-103	10K	0.5	208.52	191.97	180.51
606-4012	P1613-4-203	20K	0.5	208.52	191.97	180.51

*Independent Linearity

Wirewound and Conductive Plastic Linear Motion Precision Potentiometers

AMERICAN MADE

Stroke (Inches)	M2078/P2080	
	A	B
1	5.12	3.00
2	6.12	4.00
3	7.12	5.00
4	8.12	6.00



M2078

Wirewound Type. These miniature precision transducers have the smallest size at the lowest cost. Created for use in laboratory test equipment, light industrial applications, and automation, these units offer high accuracy of electrical output. Features spherical ball ends for flexibility in mounting.

Model M2078-1—1 Watt Potentiometer With 1" Travel

Stock No.	Mfr.'s Type	Ohms 5%	Lin. %*	EACH		
				1-4	5-9	10-24
606-5100	M2078-1-102	1K	0.6	156.33	143.92	135.33
606-5103	M2078-1-202	2K	0.5	156.33	143.92	135.33
606-5105	M2078-1-502	5K	0.4	156.33	143.92	135.33
606-5110	M2078-1-103	10K	0.3	156.33	143.92	135.33

Model M2078-2—2 Watt Potentiometer With 2" Travel

606-5200	M2078-2-102	1K	0.3	171.29	157.70	148.28
606-5203	M2078-2-202	2K	0.3	171.29	157.70	148.28
606-5205	M2078-2-502	5K	0.2	171.29	157.70	148.28
606-5210	M2078-2-103	10K	0.2	171.29	157.70	148.28

Model M2078-4—4 Watt Potentiometer With 4" Travel

606-5400	M2078-4-102	1K	0.2	203.14	187.02	175.85
606-5403	M2078-4-202	2K	0.2	203.14	187.02	175.85
606-5405	M2078-4-502	5K	0.2	203.14	187.02	175.85
606-5410	M2078-4-103	10K	0.1	203.14	187.02	175.85
606-5415	M2078-4-203	20K	0.1	203.14	187.02	175.85

*Independent Linearity

P2080

AMERICAN MADE

Conductive Plastic Type. These precision transducers feature molded, raised tracks and graphite composition contacts for long life in a hostile environment. They are impervious to dust, water, and oil. High contact pressure offers resistance to severe vibration and shock effects. Trouble-free operation in factories and mills. **Operating temperature range:** –55° to 105°C.

Model P2080-1—.5 Watt Potentiometer With 1" Travel

Stock No.	Mfr.'s Type	Ohms 5%	Lin. %*	EACH		
				1-4	5-9	10-24
606-5150	P2080-1-102	1K	2.0	229.02	210.84	198.25
606-5153	P2080-1-202	2K	2.0	229.02	210.84	198.25
606-5155	P2080-1-502	5K	2.0	229.02	210.84	198.25
606-5160	P2080-1-103	10K	2.0	229.02	210.84	198.25

Model P2080-2—1 Watt Potentiometer With 2" Travel

606-5250	P2080-2-102	1K	1.0	252.24	232.22	218.36
606-5253	P2080-2-202	2K	1.0	252.24	232.22	218.36
606-5255	P2080-2-502	5K	1.0	252.24	232.22	218.36
606-5260	P2080-2-103	10K	1.0	252.24	232.22	218.36

Model P2080-4—2 Watt Potentiometer With 4" Travel

606-5450	P2080-4-202	2K	0.5	295.90	272.41	256.15
606-5453	P2080-4-502	5K	0.5	295.90	272.41	256.15
606-5455	P2080-4-103	10K	0.5	295.90	272.41	256.15
606-5460	P2080-4-203	20K	0.5	295.90	272.41	256.15

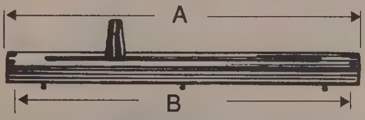
*Independent Linearity

Conductive Plastic Slide Potentiometer P2333

AMERICAN MADE

This slide action linear motion potentiometer was developed for applications requiring high reliability, infinite resolution and long life. The range of electrical strokes is 1 to 4 inches. Repeatability is 0.2%; taper is linear. The combination of a raised molded resistive track and a compatible formulated contact, make this unit practically impervious to dust, oil or moisture. It therefore is suitable for use in the hostile environment often found in a steel mill, tire factory or mining operation. In addition, this construction makes possible the exceptionally long life of 5,000,000 cycles. With the knob removed, the lever arm may be attached to machinery to monitor the position of any linear motion.

Dash No.	Elect. Travel ±.05	Mech. Travel ±.05	A	B
– 1	1.00	1.25	3.00	2.80
– 2	2.00	2.25	4.00	3.80
– 4	4.00	4.25	6.00	5.80



Model P2333-1—.5 Watt Potentiometer With 1" Travel

Stock No.	Mfr.'s Type	Ohms 5%	Lin. %*	EACH		
				1-4	5-9	10-24
606-0107	P2333-1-102	1K	2.0	92.55	85.21	80.12
606-0110	P2333-1-202	2K	2.0	92.55	85.21	80.12
606-0120	P2333-1-502	5K	2.0	92.55	85.21	80.12
606-0130	P2333-1-103	10K	2.0	92.55	85.21	80.12

Model P2333-2—1 Watt Potentiometer With 2" Travel

606-0140	P2333-2-102	1K	1.0	118.43	109.03	102.52
606-0150	P2333-2-202	2K	1.0	118.43	109.03	102.52
606-0160	P2333-2-502	5K	1.0	118.43	109.03	102.52
606-0170	P2333-2-103	10K	1.0	118.43	109.03	102.52

*Independent Linearity

Model P2333-4—2 Watt Potentiometer With 4" Travel

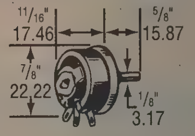
Stock No.	Mfr.'s Type	Ohms 5%	Lin. %*	EACH		
				1-4	5-9	10-24
606-0180	P2333-4-202	2K	0.5	148.12	136.37	128.22
606-0190	P2333-4-502	5K	0.5	148.12	136.37	128.22
606-0195	P2333-4-103	10K	0.5	148.12	136.37	128.22
606-0199	P2333-4-203	20K	0.5	148.12	136.37	128.22

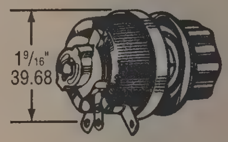
*Independent Linearity

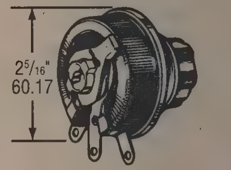
Vitreous-Enameled Rheostats

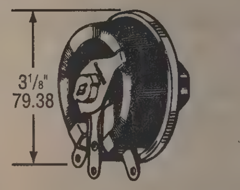
- Choose from 12½ to 300 Watts in a Wide Range of Resistances
- U. L. Approved
- Highly Reliable and Economical

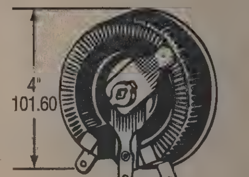
All porcelain vitreous-enameled, silicon-ceramic for smooth action and electrical control. Choose from 12½ to 300 watts in a wide range of resistances. Rheostats are highly reliable and economical; cannot smoke, char, shrink or shift . Metal-graphite contact brushes, varied to fit current and resistance. Ratings at full setting. U.L. approved 25 watts and up. Less knobs; see knobs, dial plates and handwheel below. Other resistances available as special order items.

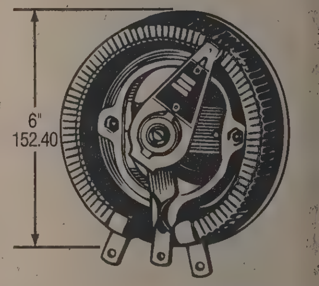

Type R12½


Type R25


Type R50


Type R100


Type R150


Type R300

12½ Watt — Type R12½

Rheostats have three terminals for use as a potentiometer. **Resistance Tolerance:** ±10%. **Running Torque:** 1 to 6 inch oz. **Rotation:** 300° ±5%. **Mounting for Panels:** up to 1/8". **Standard Resistance:** 1-5000 ohms. **Shipping Weight:** 2½ oz.

Stock No.	Ohms	EACH			Stock No.	Ohms	EACH		
		1-9	10-24	25-99			1-9	10-24	25-99
875-4001	1	17.28	16.04	14.97	875-4017	500	15.32	14.23	13.28
875-4003	3	17.28	16.04	14.97	875-4019	1000	15.98	14.84	13.85
875-4008	25	15.32	14.23	13.28	875-4020	1500	15.98	14.84	13.85
875-4010	50	15.32	14.23	13.28	875-4022	2500	15.98	14.84	13.85
875-4012	100	15.32	14.23	13.28	875-4023	5000	16.97	15.76	14.71

25 Watt — Type R25

Wiper tracks on this rheostat are buffed and polished to assure smooth rotation and uniform wiper contact. A high strength ceramic hub is used to insulate the shaft and bushing from live parts. The wiper design assures minimum backlash. A vitreous enamel bonds core and base together for uniform heat dissipation and structural integrity. Cores on the larger sizes are enameled prior to winding to increase core strength and improve bond between wire and core. UL approved. 1/4" dia. shaft. **Resistance Tolerance:** ±10%. **Running Torque:** .25 to .5 inch-pound. **Rotation:** 300° ±5%. **Mounting for Panels:** up to 1/4". **Standard Resistance:** 1-10 K ohms. **Shipping Weight:** 1/2 lb.

875-4025	1	16.89	15.69	14.64	875-4036	100	14.98	13.91	12.99
875-4027	3	16.89	15.69	14.64	875-4039	250	14.98	13.91	12.99
875-4029	5	16.89	15.69	14.64	875-4041	500	14.98	13.91	12.99
875-4026	8	16.89	15.69	14.64	875-4043	1000	15.69	14.57	13.60
875-4030	10	16.89	15.69	14.64	875-4044	1500	15.69	14.57	13.60
875-4031	15	14.98	13.91	12.99	875-4045	2500	15.69	14.57	13.60
875-4032	25	14.98	13.91	12.99	875-4047	5000	15.69	14.57	13.60
875-4034	50	14.98	13.91	12.99	875-4050	10K	16.95	15.74	14.69

50 Watt — Type R50

UL approved rheostats have vitreous enamel bonded core and base. Buffed and polished wiper tracks assure smooth rotation and uniform wiper contact. Rheostats have three terminals to allow use as potentiometers. 1/4" dia. shaft. **Resistance Tolerance:** ±10%. **Running Torque:** .25 to 2 inch-pound. **Rotation:** 300° ±5%. **Mounting for Panels:** up to 1/4". **Standard Resistance:** 1-10 K ohms. **Shipping Weight:** 3/4 lb.

875-4051	1	23.40	21.73	20.28	875-4061	250	18.54	17.21	16.07
875-4053	10	23.40	21.73	20.28	875-4063	300	18.54	17.21	16.07
875-4054	12	18.54	17.21	16.07	875-4064	500	18.54	17.21	16.07
875-4056	25	18.54	17.21	16.07	875-4066	1000	18.54	17.21	16.07
875-4058	50	18.54	17.21	16.07	875-4068	2500	18.54	17.21	16.07
875-4060	100	18.54	17.21	16.07	875-4070	5000	21.42	19.89	18.56
875-4062	225	18.54	17.21	16.07	875-4072	10K	21.42	19.89	18.56

100 Watt — Type R100

UL approved. Has 1/4" dia. shaft and 3⅛" dia. body. Furnished with three terminals for use as potentiometer. **Resistance Tolerance:** ±10%. **Running Torque:** .5 to 2 inch-pound. **Rotation:** 300° ±5%. **Mounting for Panels:** up to 1/4". **Standard Resistance:** 1-10 K ohms. **Shipping Weight:** 1 lb.

875-4074	1	31.94	29.66	27.68	875-4087	500	31.25	29.01	27.08
875-4079	10	31.94	29.66	27.68	875-4088	1000	31.25	29.01	27.08
875-4080	25	26.38	24.50	22.87	875-4090	2500	31.25	29.01	27.08
875-4082	50	26.38	24.50	22.87	875-4091	5000	33.40	31.01	28.95
875-4084	100	26.38	24.50	22.87	875-4093	10K	33.40	31.01	28.95
875-4085	250	31.25	29.01	27.08	—	—	—	—	—

150 Watt — Type R150

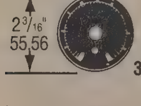
UL approved. Has 1/4" dia. shaft and 4" dia. body. Furnished with three terminals to allow use as potentiometer. **Resistance Tolerance:** ±10%. **Running Torque:** .5 to 3 inch-pound. **Rotation:** 300° ±5%. **Mounting for Panels:** up to 1/4". **Standard Resistance:** 1-10 K ohms. **Shipping Weight:** 1½ lbs.

875-4094	1	38.71	35.94	33.55	875-4104	150	35.74	33.19	30.97
875-4095	5	38.71	35.94	33.55	875-4106	250	35.74	33.19	30.97
875-4096	10	38.71	35.94	33.55	875-4107	500	35.74	33.19	30.97
875-4098	15	35.74	33.19	30.97	875-4108	1000	35.74	33.19	30.97
875-4099	25	35.74	33.19	30.97	875-4109	2500	37.72	35.03	32.69
875-4101	50	35.74	33.19	30.97	875-4110	5000	37.72	35.03	32.69
875-4103	100	35.74	33.19	30.97	875-4111	10K	40.00	37.14	34.67

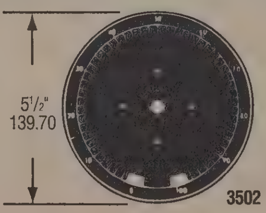
300 Watt — Type R300

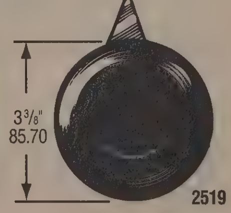
6" dia. 3/8" shaft dia. **Resistance Tolerance:** ±10%. 2.38" behind panel; 4⅜" long. **Torque:** 2.5 to 5.0 inch-pound. **Mounting for Panels:** up to 1¼" thick. **Rotation:** 320° ± 5%. **Shipping Weight:** 2½ lbs.

875-4112	1	63.74	59.19	55.24	875-4124	500	52.52	48.77	45.52
875-4117	10	63.74	59.19	55.24	875-4126	1000	52.52	48.77	45.52
875-4120	50	52.52	48.77	45.52	875-4128	1500	52.52	48.77	45.52
875-4122	100	52.52	48.77	45.52	875-4132	2500	52.52	48.77	45.52


3500

2514


3502

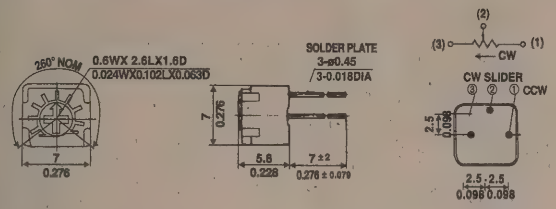

2519

Accessories

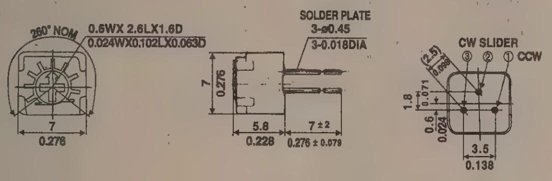
Stock No.	Mfr.'s Type	Catalog No.	Description	Hole Dia.	For Watts	EACH		
						1-9	10-24	25-99
875-8035	2491-020-001	—	1⅜" dia dial	—	12½	.77	.71	.66
875-8030	2491-020-002	3500	2 1/16" dia dial	—	25-300	.87	.80	.74
875-8031	2492-020-003	3502	5½" dia dial	—	300	3.70	3.42	3.17
875-8061	2491-010-005	2400	3/4" dia skirted knob	1/8"	12/1/02	.80	.74	.69
875-8068	2492-010-001	2512	2⅜" dia knob with pointer	1/4"	25-150	7.83	7.23	6.71
875-8060	2491-010-017	2514	1½" dia skirted knob	1/4"	25-150	.85	.78	.73
875-8050	2493-010-004	2519	3⅜" dia knob with pointer	3/8"	300	11.92	11.00	10.21

CT6 Single-Turn Cermet Trimmer

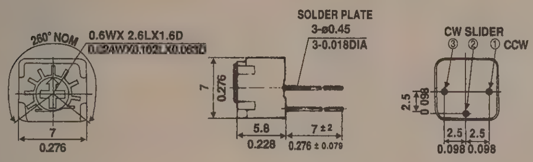
CT-6P
Top adjustment



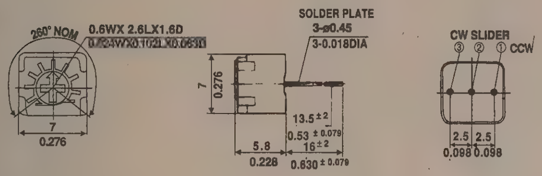
CT-6W
Top adjustment



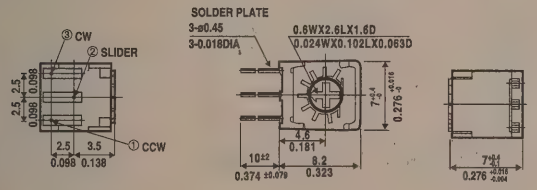
CT-6R
Top adjustment



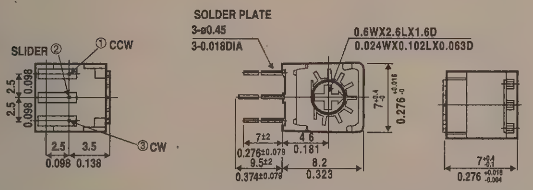
CT-6V
Top adjustment



CT-6X
Side adjustment



CT-6H
Side adjustment



Affordable ¼" square cermet trimmer. **Tolerance:** ±10%. **Power Rating:** 0.5 watt at 70°C. **Temperature Range:** -55°C to +125°C. **Temperature Coefficient:** ±100 ppm/°C max.

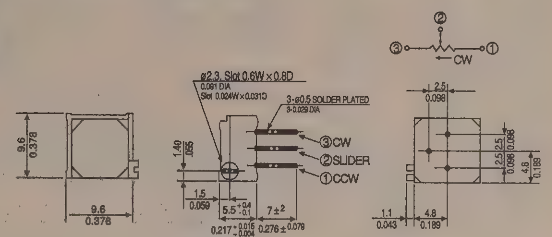
Stock No.*	Mfr.'s Type	EACH	
		1-99	100-249
751-10XX	CT6P	1.09	.70
751-11XX	CT6W	1.09	.70
751-12XX	CT6R	1.09	.70
751-13XX	CT6V	1.09	.70
751-15XX	CT6X	1.09	.70
751-16XX	CT6H	1.09	.70

*Using the table below, replace XX in stock number with code which corresponds to desired OHM values.

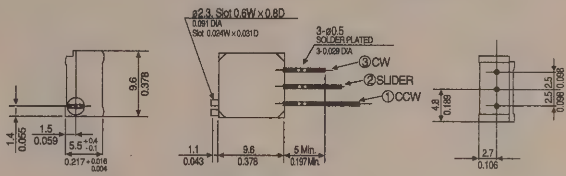
Ohms	XX	Ohms	XX	Ohms	XX	Ohms	XX
10	10	500	35	20K	60	250K	85
20	15	1K	40	25K	65	500K	90
50	20	2K	45	50K	70	1M	95
100	25	5K	50	100K	75	2M	99
200	30	10K	55	200K	80	—	—

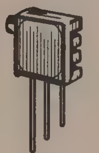
CT9 Multi-Turn Cermet Trimmer

CT-9P
Side adjustment

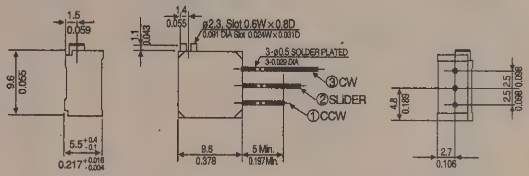


CT-9W
Top adjustment





CT-9X
Side adjustment



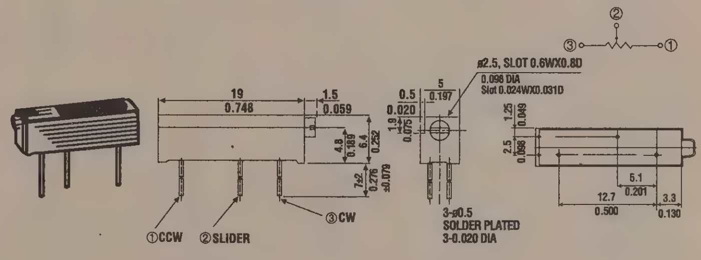
High quality, 18-turn sealed cermet trimmer. **Tolerance:** ±10%. **Power Rating:** 0.5 watt at 70°C. **Temperature Range:** -55°C to +125°C. **Temperature Coefficient:** ±100 ppm/°C max.

Stock No.*	Mfr.'s Type	EACH	
		1-99	100-249
751-17XX	CT9P	1.90	1.30
751-18XX	CT9W	1.90	1.30
751-19XX	CT9X	1.90	1.30

*Using the table below, replace XX in stock number with code which corresponds to desired OHM values.

Ohms	XX	Ohms	XX	Ohms	XX	Ohms	XX
10	10	500	35	20K	60	250K	85
20	15	1K	40	25K	65	500K	90
50	20	2K	45	50K	70	1M	95
100	25	5K	50	100K	75	2M	99
200	30	10K	55	200K	80	—	—

CT20 Multi-Turn Cermet Trimmer



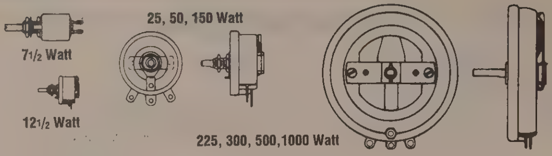
Low cost, 15-turn sealed cermet trimmer. **Tolerance:** ±10%. **Power Rating:** 0.75 watt at 70°C. **Temperature Range:** -55°C to +125°C. **Temperature Coefficient:** ±100 ppm/°C max.

Stock No.*	Mfr.'s Type	EACH	
		1-99	100-249
751-20XX	CT20P	1.22	1.05

*Using the table below, replace XX in stock number with code which corresponds to desired OHM values.

Ohms	XX	Ohms	XX	Ohms	XX	Ohms	XX
10	10	500	35	20K	60	250K	85
20	15	1K	40	25K	65	500K	90
50	20	2K	45	50K	70	1M	95
100	25	5K	50	100K	75	2M	99
200	30	10K	55	200K	80	—	—

Rheostats



These rheostats are designed and manufactured to operate smoothly and reliably over long periods of use. All models are constructed with metal and ceramic and are coated with protective vitreous enamel or Ohmicone silicone-ceramic. Used for motor speed controls, light dimmers and for equipment requiring convenient variable resistance settings. Windings are linear taper on stock models. Tapered windings available as custom order. Ceramic body, high grade resistance alloy windings, vitreous enamel coating (some models silicone-ceramic), metal spring contact arm, metal graphite composition and solder coated terminals. **Tolerance:** ±10%. Wattage based on 25°C.

7½ Watt. Core Diameter: .515". Shaft Diameter: ⅛".

Stock No.	Mfr.'s Type	Ohms	EACH	
			1-9	10-24
296-4146	RCS10R	10	41.20	39.24
296-4147	RCS25R	25	41.20	39.24
296-4143	RCS100	100	42.35	40.33
296-4148	RCS500	500	42.35	40.33
296-4141	RCS1K0	200	45.07	42.92
296-4142	RCS5K0	5K	53.68	51.13
296-4149	RCL10R*	10	43.32	41.25

*Locking Shaft.

12½ Watt. Core Diameter: .875". Shaft Diameter: ⅛".

Stock No.	Mfr.'s Type	Ohms	EACH 1-9	EACH 10-24
296-4155	RES1R0	1	16.55	15.76
296-4156	RES8R0	8	16.55	15.76
296-4157	RES10R	10	15.60	14.86
296-4158	RES15R	15	15.60	14.86
296-4160	RES25R	25	15.60	14.86
296-4165	RES50R	50	15.60	14.86
296-4170	RES75R	75	15.60	14.86
296-4175	RES100	100	15.60	14.86
296-4176	RES125	125	15.60	14.86
296-4177	RES175	175	15.60	14.86
296-4180	RES250	250	15.60	14.86
296-4181	RES350	350	15.60	14.86
296-4182	RES500	500	16.17	15.40
296-4183	RES1K0	1K	16.17	15.40
296-4185	RES1K5	1.5K	16.17	15.40
296-4186	RES2K5	2.5K	16.73	15.94
296-4187	RES5K0	5K	16.73	15.94
296-4190	RES10K	10K	17.77	16.92

25 Watt. Core Diameter: 1 9/16". Shaft Diameter: ¼".

Stock No.	Mfr.'s Type	Ohms	EACH 1-9	EACH 10-24
296-4203	RHS1R0	1	18.98	18.08
296-4204	RHS2R0	2	18.98	18.08
296-4205	RHS3R0	3	18.98	18.08
296-4210	RHS6R0	6	18.98	18.08
296-4212	RHS8R0	8	18.98	18.08
296-4215	RHS10R	10	18.30	17.43
296-4220	RHS15R	15	18.30	17.43
296-4225	RHS25R	25	18.30	17.43
296-4230	RHS50R	50	18.30	17.43
296-4235	RHS75R	75	18.30	17.43
296-4240	RHS100	100	18.30	17.43
296-4245	RHS125	125	18.30	17.43
296-4250	RHS175	175	18.30	17.43
296-4255	RHS250	250	18.30	17.43
296-4257	RHS350	350	18.30	17.43
296-4260	RHS500	500	18.30	17.43
296-4265	RHS750	750	18.30	17.43
296-4270	RHS1K0	1K	18.93	18.03
296-4275	RHS1K5	1.5K	18.93	18.03
296-4280	RHS2K5	2.5K	18.93	18.03
296-4285	RHS3K5	3.5K	18.93	18.03
296-4290	RHS5K0	5K	18.93	18.03
296-4295	RHS10K	10K	20.60	19.62

50 Watt. Core Diameter: 2 5/16". Shaft Diameter: ¼".

Stock No.	Mfr.'s Type	Ohms	EACH 1-9	EACH 10-24
296-4300	RJSR50	.5	26.48	25.22
296-4305	RJS1R0	1	26.48	25.22
296-4306	RJS6R0	6	26.48	25.22
296-4308	RJS35R	35	22.05	21.00
296-4310	RJS50R	50	22.05	21.00
296-4315	RJS125	125	22.05	21.00
296-4317	RJS150	150	22.05	21.00
296-4320	RJS225	225	22.05	21.00
296-4325	RJS500	500	22.05	21.00
296-4330	RJS1K0	1K	22.92	21.83

50 Watt — Continued. Core Diameter: 2 5/16". Shaft Diameter: ¼".

Stock No.	Mfr.'s Type	Ohms	EACH	
			1-9	10-24
296-4331	RJS2K5	2.5K	22.90	21.80
296-4332	RJS5K0	5K	22.90	21.80
296-4335	RJS10K	10K	24.20	23.10

100 Watt. Core Diameter: 3⅛". Shaft Diameter: ¼"

Stock No.	Mfr.'s Type	Ohms	EACH 1-9	EACH 10-24
296-4338	RKS2R0	2	34.90	33.20
296-4340	RKS5R0	5	34.90	33.20
296-4345	RKS7R5	7.5	34.90	33.20
296-4336	RKS10R	10	32.00	30.40
296-4337	RKS50R	50	32.00	30.40
296-4350	RKS100	100	32.00	30.40
296-4352	RKS500	500	32.02	30.49
296-4353	RKS1K0	1K	33.70	32.10
296-4354	RKS5K0	5K	33.70	32.10

150 Watt. Core Diameter: 4". Shaft Diameter: ¼".

Stock No.	Mfr.'s Type	Ohms	EACH 1-9	EACH 10-24
296-4600	RLSR50	.5	40.57	38.63
296-4605	RLS1R0	1	40.57	38.63
296-4610	RLS7R5	7.5	40.57	38.63
296-4615	RLS10R	10	36.30	34.57
296-4355	RLS15R	15	36.30	34.57
296-4625	RLS25R	25	36.30	34.57
296-4630	RLS50R	50	36.30	34.57
296-4635	RLS150	150	36.30	34.57
296-4640	RLS250	250	36.30	34.57
296-4645	RLS500	500	36.30	34.57
296-4650	RLS4K5	4.5K	40.68	38.75
296-4655	RLS10K	10K	40.68	38.75

225 Watt. Core Diameter: 5". Shaft Diameter: ⅜".

Stock No.	Mfr.'s Type	Ohms	EACH 1-9	EACH 10-24
296-4430	RPS1R0	1	60.40	57.52
296-4435	RPS2R0	2	60.40	57.52
296-4440	RPS10R	10	54.43	51.84
296-4445	RPS15R	15	54.43	51.84
296-4450	RPS25R	25	54.43	51.84
296-4453	RPS100	100	53.35	50.81
296-4455	RPS200	200	53.35	50.81
296-4460	RPS300	300	53.35	50.81

300 Watt. Core Diameter: 6". Shaft Diameter: ⅜".

Stock No.	Mfr.'s Type	Ohms	EACH 1-9	EACH 10-24
296-4360	RNS1R0	1	73.67	70.16
296-4365	RNS2R0	2	73.67	70.16
296-4375	RNS5R0	5	73.67	70.16
296-4385	RNS10R	10	61.80	58.86
296-4390	RNS15R	15	61.80	58.86
296-4395	RNS25R	25	61.80	58.86
296-4400	RNS50R	50	61.80	58.86
296-4403	RNS75R	75	95.08	90.56
296-4405	RNS100	100	61.80	58.86
296-4410	RNS200	200	61.80	58.86
296-4415	RNS300	300	61.80	58.86
296-4420	RNS400	400	61.80	58.86
296-4423	RNS1K2	1.2K	64.18	61.13
296-4425	RNS1K5	1.5K	64.18	61.13
296-4428	RNS2K5	2.5K	64.18	61.13

500 Watt. Core Diameter: 8". Shaft Diameter: ⅜".

Stock No.	Mfr.'s Type	Ohms	EACH 1-9	EACH 10-24
296-4465	RRS1R0	1	116.47	110.92
296-4470	RRS3R0	3	116.47	110.92
296-4475	RRS5R0	5	116.47	110.92
296-4480	RRS8R0	8	116.47	110.92
296-4485	RRS12R5	12.5	104.30	99.33
296-4490	RRS25R	25	104.30	99.33
296-4495	RRS50R	50	104.30	99.33
296-4500	RRS125	125	104.30	99.33
296-4505	RRS250	250	104.30	99.33
296-4510	RRS500	500	104.30	99.33
296-4507	RRS1K0	1K	112.87	107.49
296-4508	RRS2K5	2.5K	112.87	107.49

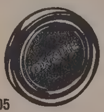
1000 Watt. Core Diameter: 12". Shaft Diameter: ⅜".

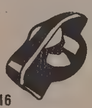
Stock No.	Mfr.'s Type	Ohms	EACH 1-9	EACH 10-24
296-4515	RUS1R0	1	185.60	176.76
296-4520	RUS5R0	5	185.60	176.76
296-4525	RUS10R	10	179.87	171.30
296-4530	RUS25R	25	179.87	171.30
296-4535	RUS50R	50	179.87	171.30
296-4540	RUS500	500	184.72	175.92

Knobs

Any knob can be used with any rheostat model which has the corresponding shaft diameter. Knobs are fastened to shafts with slotted set screws.

5109


5105


5116

Stock No.	Mfr.'s Type	Description	Knob Dia.	Hole Dia.	Set Screw	EACH	
						1-9	10-24
296-1215	5103	Bar knob 1¼" long	—	¼"	Slot	3.35	2.35
296-1217	5104	Handwheel with pointer	3¼"	⅜"	Slot	13.37	9.36
296-1218	5104A	Handwheel with pointer	3¼"	⅜"	Hex	13.86	9.70
296-1220	5105	Handwheel without pointer	3¼"	⅜"	Slot	11.53	8.07
296-1225	5109	Fingergrip with pointer	1⅝"	¼"	Slot	12.78	8.95
296-1227	5111	Fingergrip with pointer	2⅜"	¼"	Slot	14.96	10.47
296-1230	5111A	Fingergrip with pointer	2⅜"	¼'	Hex	13.02	9.11
296-1232	5116	Bar knob 1½" long	—	¼"	Slot	5.44	3.81
296-1235	5150	Fingergrip	1½"	¼"	Slot	4.86	3.40
296-1240	5151	Fingergrip	¾"	⅛"	Slot	3.54	2.48

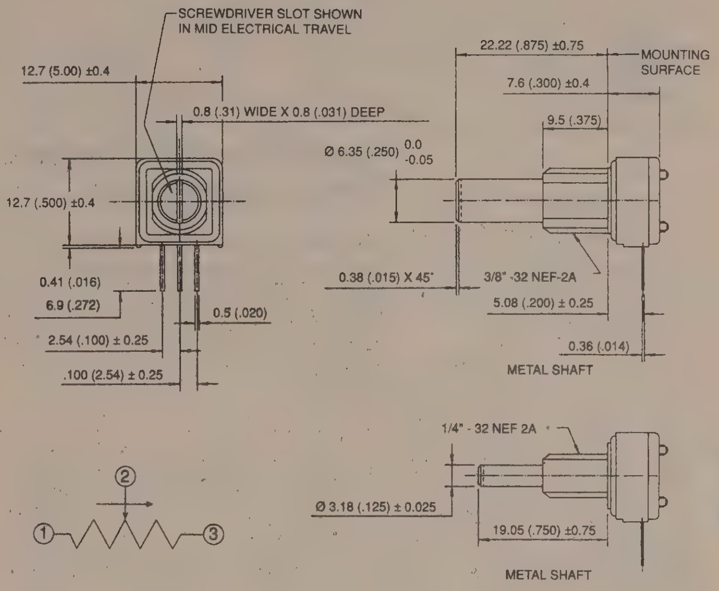
Dials

Handsomely finished dials for rheostats. Figures and lines are etched on a black background for contrast and ease of readability. Divisions, which indicate approximate percentage of rheostat resistance in circuit, are marked from 0 to 100.

Stock No.	Mfr.'s Type	Dial Dia.	Rheostat Recommended		EACH	
			Watts	Knob	1-9	10-24
296-1208	5007	1¼"	7.5, 12.5	5151	1.05	.74
296-1210	5000	2 3/16"	25, 50, 100, 150	5150, 5116, 5103	1.05	.74
296-1212	5001	5½"	225, 300, 500, 1000	5104	6.63	6.04

Models 248 and 249 Panel Control Potentiometers

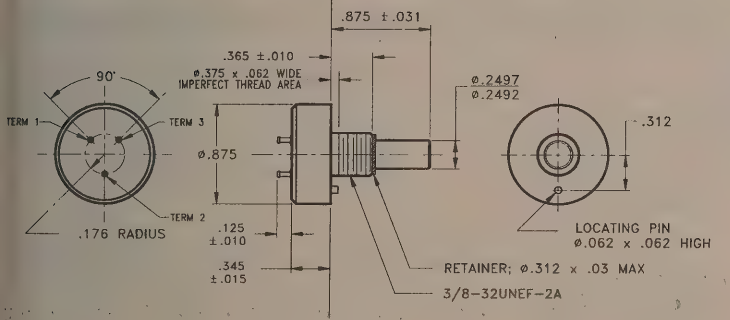
The model 248/249 is a value priced panel control and has proven high performance characteristics in a cost effective package. They are designed to become the choice when seeking high quality, inexpensive panel or PCB mounting potentiometers. The model 248 is conductive plastic with ±20% resistance tolerance and the 249 is cermet with ±10% tolerance. The 248 is 0.5 watts at 70°C with a temperature coefficient of 1000 ppm/°C. The 249 is 1.0 watts at 70°C with a temperature coefficient of 100 ppm/°C. Both have 295° (±5°) mechanical rotation with 265° (±5°) electrical rotation. **Rotational Life:** 50,000 cycles. **Shaft:** Plated brass. The housing and rear lid are flame retardant plastic. **Terminals:** Phosphor bronze with solder plated. **Operating Temperature:** –55°C to +125°C. **Load Life:** 1000 hours at 70°C. Additional configurations such as rear standoffs, solder hook terminals, rear locating lugs, audio taper and various shaft lengths in plastic or metal are available as special order items. Manufacturer's literature available upon request.



Stock No.	Mfr.'s Type	Ohms	Shaft Dia. (In.)	Shaft Length (In.)	EACH 1-9	10-24	25-49	50-99	100-249	250-Up
970-2100	248-8-08-102	1 K	1/8	3/4	**4.44**	**4.19**	**3.89**	**3.52**	**3.17**	**2.96**
970-2102	248-8-08-252	2.5 K	1/8	3/4	**4.44**	**4.19**	**3.89**	**3.52**	**3.17**	**2.96**
970-2104	248-8-08-502	5 K	1/8	3/4	**4.44**	**4.19**	**3.89**	**3.52**	**3.17**	**2.96**
970-2106	248-8-08-103	10 K	1/8	3/4	**4.44**	**4.19**	**3.89**	**3.52**	**3.17**	**2.96**
970-2108	248-8-08-253	25 K	1/8	3/4	**4.44**	**4.19**	**3.89**	**3.52**	**3.17**	**2.96**
970-2110	248-8-08-503	50 K	1/8	3/4	**4.44**	**4.19**	**3.89**	**3.52**	**3.17**	**2.96**
970-2112	248-8-08-104	100 K	1/8	3/4	**4.44**	**4.19**	**3.89**	**3.52**	**3.17**	**2.96**
970-2114	248-9-10-102	1 K	1/4	7/8	**4.44**	**4.19**	**3.89**	**3.52**	**3.17**	**2.96**
970-2116	248-9-10-252	2.5 K	1/4	7/8	**4.44**	**4.19**	**3.89**	**3.52**	**3.17**	**2.96**
970-2118	248-9-10-502	5 K	1/4	7/8	**4.44**	**4.19**	**3.89**	**3.52**	**3.17**	**2.96**
970-2120	248-9-10-103	10 K	1/4	7/8	**4.44**	**4.19**	**3.89**	**3.52**	**3.17**	**2.96**
970-2122	248-9-10-253	25 K	1/4	7/8	**4.44**	**4.19**	**3.89**	**3.52**	**3.17**	**2.96**
970-2124	248-9-10-503	50 K	1/4	7/8	**4.44**	**4.19**	**3.89**	**3.52**	**3.17**	**2.96**
970-2126	248-9-10-104	100 K	1/4	7/8	**4.44**	**4.19**	**3.89**	**3.52**	**3.17**	**2.96**
970-2128	249-8-08-102	1 K	1/8	3/4	**4.44**	**4.19**	**3.89**	**3.52**	**3.17**	**2.96**
970-2130	249-8-08-252	2.5 K	1/8	3/4	**4.44**	**4.19**	**3.89**	**3.52**	**3.17**	**2.96**
970-2132	249-8-08-502	5 K	1/8	3/4	**4.44**	**4.19**	**3.89**	**3.52**	**3.17**	**2.96**
970-2134	249-8-08-103	10 K	1/8	3/4	**4.44**	**4.19**	**3.89**	**3.52**	**3.17**	**2.96**
970-2136	249-8-08-253	25 K	1/8	3/4	**4.44**	**4.19**	**3.89**	**3.52**	**3.17**	**2.96**
970-2138	249-8-08-503	50 K	1/8	3/4	**4.44**	**4.19**	**3.89**	**3.52**	**3.17**	**2.96**
970-2140	249-8-08-104	100 K	1/8	3/4	**4.44**	**4.19**	**3.89**	**3.52**	**3.17**	**2.96**
970-2142	249-9-10-102	1 K	1/4	7/8	**4.44**	**4.19**	**3.89**	**3.52**	**3.17**	**2.96**
970-2144	249-9-10-252	2.5 K	1/4	7/8	**4.44**	**4.19**	**3.89**	**3.52**	**3.17**	**2.96**
970-2146	249-9-10-502	5 K	1/4	7/8	**4.44**	**4.19**	**3.89**	**3.52**	**3.17**	**2.96**
970-2148	249-9-10-103	10 K	1/4	7/8	**4.44**	**4.19**	**3.89**	**3.52**	**3.17**	**2.96**
970-2150	249-9-10-253	25 K	1/4	7/8	**4.44**	**4.19**	**3.89**	**3.52**	**3.17**	**2.96**
970-2152	249-9-10-503	50 K	1/4	7/8	**4.44**	**4.19**	**3.89**	**3.52**	**3.17**	**2.96**
970-2154	249-9-10-104	100 K	1/4	7/8	**4.44**	**4.19**	**3.89**	**3.52**	**3.17**	**2.96**

Model 157 Precision Industrial Potentiometer

The model 157 features a rugged moisture resistant one piece aluminum anodized metal housing with a rear lid, stainless steel shaft, long 2,000,000 turns rotational life, wide operating range and solderable terminals. These 1.0 watt at 40°C are derated to 0 watts at 125°C. **Load Life:** 900 hours. **Electrical Travel:** 340° (±4°). **Mechanical Travel:** 360° continuous. The bushing uses a sleeve bearing. **Resistance Tolerance:** ±20% with 600 ppm/°C temperature coefficient. **Operating Temperature:** –55°C to +125°C. Optional features that are available as special order items include mechanical stops at 340°, internal shaft seal, high torque, 1/8" diameter shaft, shaft slot, special shaft lengths, no locating pin and special electrical angles. Manufacturer's literature available upon request.

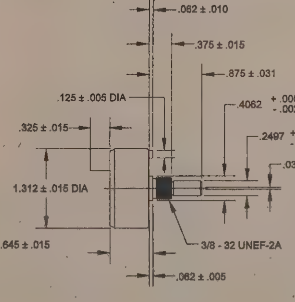


Stock No.	Mfr.'s Type	Ohms	EACH 1-9	10-24	25-49	50-99	100-249	250-Up
970-2050	157-1-1-102	1 K	**19.81**	**13.45**	**12.51**	**11.32**	**10.58**	**9.03**
970-2052	157-1-1-202	2 K	**19.81**	**13.45**	**12.51**	**11.32**	**10.58**	**9.03**
970-2054	157-1-1-502	5 K	**19.81**	**13.45**	**12.51**	**11.32**	**10.58**	**9.03**
970-2056	157-1-1-103	10 K	**19.81**	**13.45**	**12.51**	**11.32**	**10.58**	**9.03**
970-2058	157-1-1-203	20 K	**19.81**	**13.45**	**12.51**	**11.32**	**10.58**	**9.03**
970-2060	157-1-1-503	50 K	**19.81**	**13.45**	**12.51**	**11.32**	**10.58**	**9.03**
970-2062	157-1-1-104	100 K	**19.81**	**13.45**	**12.51**	**11.32**	**10.58**	**9.03**

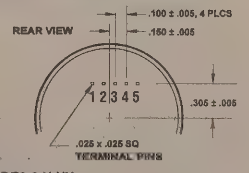
Model DE2 Incremental Encoder

This incremental encoder uses a patented silver-in-glass switching technology. It features a two channel quadrature output. The 32 pulses per revolution can be resolved to 128 increments per revolution. Internal active CMOS de-bounce circuitry provides clean, high level outputs. **Rotational Speed:** 200 RPM continuous and 400 RPM periodic. **Housing:** Molded glass filled thermoplastic. **Shaft:** Stainless steel in a nickel plated brass bushing. **Terminal Pins:** Phosphor bronze and are solderable. **Weight:** 1 ounce maximum. Channel Z is an optional index output available as special order item. Optional 64 pulses per revolution which can be resolved to 256 increments per revolution is also available as special order item.

Stock No.	Mfr.'s Type	EACH 1-9	10-24	25-49	50-99	100-249	250-Up
970-0002	DE2-0-1-32	**27.31**	**25.36**	**23.15**	**21.30**	**19.02**	**14.20**

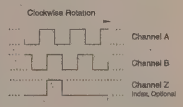


Terminal Configuration



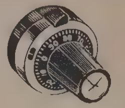
DE2-0-X-XX

Terminal	Function
1	Channel B Out
2	Channel A Out
3	Common
4	Input (Vs)



Precision Multi-Turn Counting Dials

Concentric and digital turn-counting dials for use on multi-turn potentiometers and other rotating devices. Shaft bore is 1/4" dia.

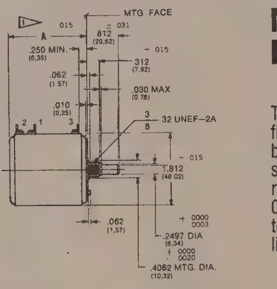

11

15

16/17

21

Stock No.	Mfr.'s Type	No. Turns	Minor Div.	Scale	Finish Chrome	Size	EACH					
							1-9	10-24	25-49	50-99	100-249	250-Up
970-1030	11-1-11	11	1/50	Vernier	Satin	1.000 D × 0.826 H	18.87	17.69	17.15	16.41	16.17	15.09
970-1035	15-1-11	10	1/500	Digital	Satin	1.000 W × 1.750 H	17.75	16.64	16.14	15.43	15.21	14.20
970-1040	16-1-11	15	1/50	Vernier	Clear	0.875 D × 0.875 H	10.08	9.45	9.17	8.77	8.64	8.07
970-1043	17-1-11	15	1/50	Vernier	Clear	0.880 D × 0.791 H	6.08	5.70	5.53	5.29	5.21	4.87
970-1045	21-1-11	15	1/50	Vernier	Satin	1.812 D × 1.000 H	19.70	18.47	17.91	17.13	16.89	15.76

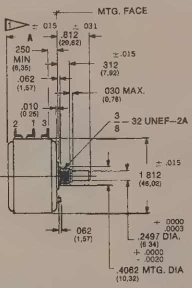


Model 860 Ten-Turn Wirewound Precision Potentiometer

Ten-Turn wirewound precision potentiometer. Glass filled thermoset plastic housing with anodized aluminum bushing mount. Stainless steel terminals. 1/4" dia. stainless steel shaft. Moisture resistant. 8-watt power rating at 40°C. 3% tolerance (5% below 200 ohms). 0.25% linearity tolerance. –55°C to +125°C operating temperature. 1.812"D × 2.000"L. 500,000 turn rotational life. 4.5 oz.

Stock No.	Mfr.'s Type	Ohm Value	EACH					
			1-9	10-24	25-49	50-99	100-249	250-Up
970-1977	860-1-1-101	100	44.58	41.80	40.53	38.77	38.21	35.67
970-1979	860-1-1-501	500	44.58	41.80	40.53	38.77	38.21	35.67
970-1980	860-1-1-102	1000	44.58	41.80	40.53	38.77	38.21	35.67
970-1985	860-1-1-202	2000	44.58	41.80	40.53	38.77	38.21	35.67
970-1990	860-1-1-502	5000	44.58	41.80	40.53	38.77	38.21	35.67
970-1995	860-1-1-103	10K	44.58	41.80	40.53	38.77	38.21	35.67
970-2000	860-1-1-503	50K	44.58	41.80	40.53	38.77	38.21	35.67

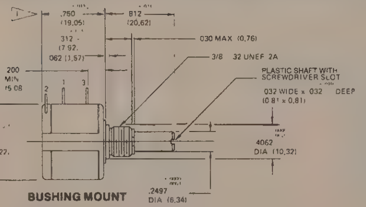
Model 830 Three Turn Wirewound Potentiometer



Three-Turn wirewound precision potentiometer. Glass filled thermoset plastic housing with anodized aluminum bushing mount. Stainless steel 1/4" dia. shaft. Solderable brass plated terminals. Moisture resistant. 3-watt power rating at 40°C. 3% tolerance (5% below 200 ohms). 0.25% linearity tolerance. –55°C to +125°C operating temperature. 1.812"D × 1.218"L. 500,000 turn rotational life. 3.0 oz.

Stock No.	Mfr.'s Type	Ohm Value	EACH					
			1-9	10-24	25-49	50-99	100-249	250-Up
970-1957	830-1-1-101	100	42.30	39.66	38.45	36.78	36.26	33.84
970-1959	830-1-1-501	500	42.30	39.66	38.45	36.78	36.26	33.84
970-1960	830-1-1-102	1000	42.30	39.66	38.45	36.78	36.26	33.84
970-1965	830-1-1-202	2000	42.30	39.66	38.45	36.78	36.26	33.84
970-1970	830-1-1-502	5000	42.30	39.66	38.45	36.78	36.26	33.84
970-1975	830-1-1-103	10K	42.30	39.66	38.45	36.78	36.26	33.84

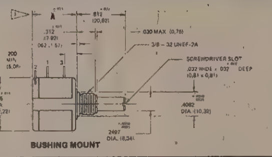
Model 536 Ten-Turn Wirewound Precision Potentiometer



Ten-Turn wirewound precision potentiometer. Glass filled thermoset plastic housing with nickel plated brass bushing mount. Thermoset plastic 1/4" dia. shaft. Moisture resistant. 3-watt power rating at 40°C. 5% resistance tolerance. 0.25% linearity tolerance. –55°C to +125°C operating temperature. 0.875"D × 0.750"L. 1,000,000 turns rotational life. 0.75 oz.

Stock No.	Mfr.'s Type	Ohm Value	EACH					
			1-9	10-24	25-49	50-99	100-249	250-Up
970-1910	536-1-1-101	100	9.00	8.44	8.18	7.83	7.71	7.20
970-1915	536-1-1-201	200	9.00	8.44	8.18	7.83	7.71	7.20
970-1920	536-1-1-501	500	9.00	8.44	8.18	7.83	7.71	7.20
970-1925	536-1-1-102	1000	9.00	8.44	8.18	7.83	7.71	7.20
970-1930	536-1-1-202	2000	9.00	8.44	8.18	7.83	7.71	7.20
970-1935	536-1-1-502	5000	9.00	8.44	8.18	7.83	7.71	7.20
970-1940	536-1-1-103	10K	9.00	8.44	8.18	7.83	7.71	7.20
970-1945	536-1-1-203	20K	9.00	8.44	8.18	7.83	7.71	7.20
970-1950	536-1-1-503	50K	11.35	10.64	10.32	9.87	9.73	9.08
970-1955	536-1-1-104	100K	11.35	10.64	10.32	9.87	9.73	9.08

Model 535 Five-Turn Wirewound Precision Potentiometer

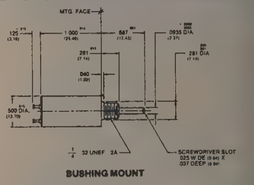


Five-Turn wirewound precision potentiometer. Glass fille thermoset plastic housing with nickel plated bras bushing mount. Stainless steel 1/4" dia. shaft. Solderab brass plated terminals. Moisture resistant. 2.32-wa power rating at 40°C. 5% tolerance. 0.25% linearit tolerance. -55°C to +125°C operating temperatur 0.875"D × 0.750"L. 500,000 turns rotational life. 0.75 oz.

Stock No.	Mfr.'s Type	Ohm Value	EACH					
			1-9	10-24	25-49	50-99	100-249	250-Up
970-1890	535-1-1-102	1000	12.62	11.83	11.47	10.97	10.81	10.09
970-1895	535-1-1-502	5000	12.62	11.83	11.47	10.97	10.81	10.09
970-1900	535-1-1-103	10K	12.62	11.83	11.47	10.97	10.81	10.09
970-1905	535-1-1-203	20K	12.62	11.83	11.47	10.97	10.81	10.09

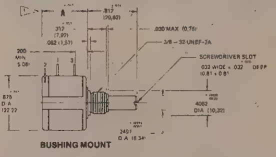
Model 162 Ten-Turn Wirewound Precision Potentiometer

Ten-Turn wirewound precision potentiometer. Glass filled thermoset plastic housing with nickel plated brass bushing mount. Stainless steel 0.0935" dia. shaft. Solderable brass plated terminals. Moisture resistant. 2-watt power rating at 40°C. 5% tolerance. 0.3% linearity tolerance. –55°C to +125°C operating temperature. 0.500"D × 1.000"L. 500,000 turns rotational life. 0.3 oz.



Stock No.	Mfr.'s Type	Ohm Value	EACH					
			1-9	10-24	25-49	50-99	100-249	250-Up
970-1810	162-1-1-102	1000	63.02	59.08	57.29	54.80	54.01	50.41
970-1815	162-1-1-502	5000	63.02	59.08	57.29	54.80	54.01	50.41
970-1820	162-1-1-103	10K	63.02	59.08	57.29	54.80	54.01	50.41

Model 534 Ten-Turn Wirewound Precision Potentiometer

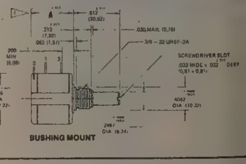


Ten-Turn wirewound precision potentiometer. Glass fill thermoset plastic housing with nickel plated bras bushing mount. Stainless steel 1/4" dia. shaft. Solderab brass plated terminals. Moisture resistant. 3-watt pow rating at 40°C. 5% tolerance. 0.25% linearity toleranc –55°C to +125°C operating temperature. 0.875"D 0.750"L. 1,000,000 turn rotational life. 0.75 oz.

Stock No.	Mfr.'s Type	Ohm Value	EACH					
			1-9	10-24	25-49	50-99	100-249	250-Up
970-1840	534-1-1-101	100	9.03	8.47	8.21	7.86	7.74	7.23
970-1845	534-1-1-201	200	9.03	8.47	8.21	7.86	7.74	7.23
970-1850	534-1-1-501	500	9.03	8.47	8.21	7.86	7.74	7.23
970-1855	534-1-1-102	1000	9.03	8.47	8.21	7.86	7.74	7.23
970-1860	534-1-1-202	2000	9.03	8.47	8.21	7.86	7.74	7.23
970-1865	534-1-1-502	5000	9.03	8.47	8.21	7.86	7.74	7.23
970-1870	534-1-1-103	10K	9.03	8.47	8.21	7.86	7.74	7.23
970-1875	534-1-1-203	20K	9.03	8.47	8.21	7.86	7.74	7.23
970-1880	534-1-1-503	50K	12.45	11.67	11.32	10.83	10.67	9.96
970-1885	534-1-1-104	100K	12.45	11.67	11.32	10.83	10.67	9.96

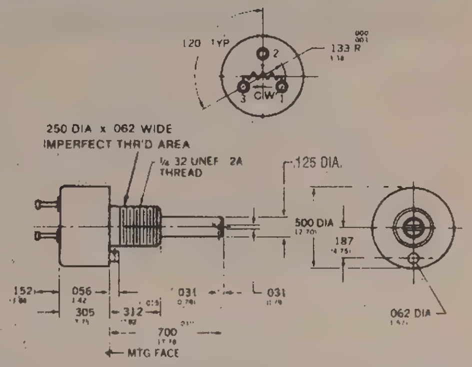
Model 533 Three-Turn Wirewound Precision Potentiomete

Three-Turn wirewound precision potentiometer. Glass filled thermoset plastic housing with nickel plated brass bushing mount. Stainless steel 1/4" dia. shaft. Solderable brass plated terminals. Moisture resistant. 1.55-watt power rating at 40°C. 5% tolerance. 0.25% linearity tolerance. –55°C to +125°C operating temperature. 0.875"D × 0.750"L. 300,000 turns rotational life. 0.75 oz.



Stock No.	Mfr.'s Type	Ohm Value	EACH					
			1-9	10-24	25-49	50-99	100-249	250-Up
970-1825	533-1-1-102	1000	12.67	11.88	11.52	11.01	10.86	10.13
970-1835	533-1-1-502	5000	12.67	11.88	11.52	11.01	10.86	10.13
970-1830	533-1-1-103	10K	12.67	11.88	11.52	11.01	10.86	10.13

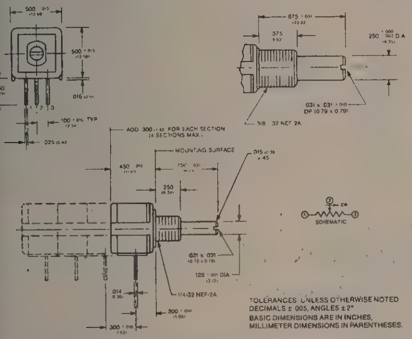
Model 140 Wirewound Single Turn Potentiometer



Anodized aluminum housing with stainless steel ⅛" dia. shaft and gold plated brass terminals. Moisture resistant. **Power Rating at 40°C:** 2-watt. **Resistance Tolerance:** 5%. **Linearity Tolerance:** 1%. **Operating Temperature:** –55°C to +125°C. 0.500"D × 0.305"L. **Rotational Life:** 500,000 turns. **Weight:** 0.1 oz.

Stock No.	Mfr.'s Type	Ohm Value	EACH					
			1-9	10-24	25-49	50-99	100-249	250-Up
970-1700	140-0-0-102	1000	21.27	19.94	19.33	18.49	18.23	17.01
970-1705	140-0-0-502	5000	21.27	19.94	19.33	18.49	18.23	17.01
970-1710	140-0-0-103	10 K	21.27	19.94	19.33	18.49	18.23	17.01

Model 148 Conductive Plastic Single Turn Panel Control Potentiometer

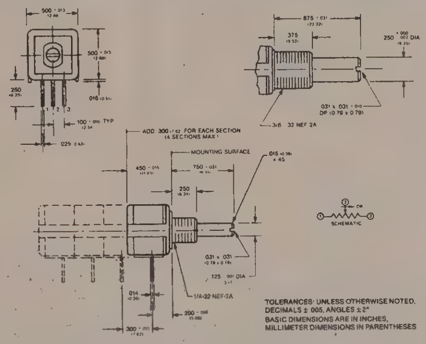

500
875
375
250 DIA
250
016
100 TYP
225
ADD 300 FOR EACH SECTION (4 SECTIONS MAX.)
MOUNTING SURFACE
450
750
250
015
CW
SCHEMATIC
031 x 031 DP
125 DIA
014
1/4-32 NEF-2A
300
TOLERANCES: UNLESS OTHERWISE NOTED, DECIMALS ± 005, ANGLES ± 2°
BASIC DIMENSIONS ARE IN INCHES, MILLIMETER DIMENSIONS IN PARENTHESES.

Plastic housing with zinc plated Zemack bushing and nickel plated brass shaft. Conductive plastic element. Plated PC pin terminals for solderability. Moisture resistant. **Power Rating at 70°C:** 0.7-watt. **Resistance Tolerance:** 20%. **Linearity Tolerance:** 5%. **Operating Temperature:** –20°C to +125°C. ½" sq. body. **Rotational Life:** 100,000 turns. **Weight:** 0.2 oz.

Stock No.	Mfr.'s Type	Ohm Value	Shaft Dia. (In.)	EACH					
				1-9	10-24	25-49	50-99	100-249	250-Up
970-1021	148-08-08-102	1000	⅛	5.25	4.92	4.77	4.57	4.50	4.20
970-1026	148-08-08-502	5000	⅛	5.25	4.92	4.77	4.57	4.50	4.20
970-1031	148-08-08-103	10 K	⅛	5.25	4.92	4.77	4.57	4.50	4.20
970-1036	148-08-08-104	100 K	⅛	5.25	4.92	4.77	4.57	4.50	4.20
970-1041	148-09-10-502	5000	¼	5.25	4.92	4.77	4.57	4.50	4.20
970-1046	148-09-10-103	10 K	¼	5.25	4.92	4.77	4.57	4.50	4.20
970-1051	148-09-10-104	100 K	¼	5.25	4.92	4.77	4.57	4.50	4.20

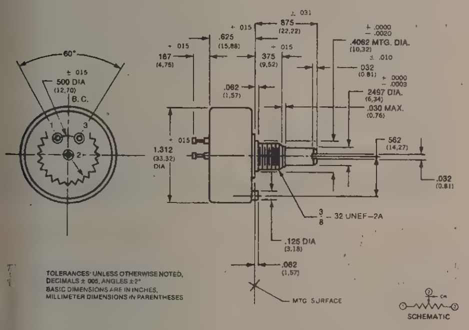
Model 149 Cermet Single Turn Panel Control Potentiometer

Plastic housing with zinc plated Zemack bushing and nickel plated brass shaft. Cermet element. Plated PC pin terminals for solderability. Moisture resistant. **Power Rating at 85°C:** 1-watt. **Resistance Tolerance:** 10%. **Linearity Tolerance:** 5%. **Operating Temperature:** –20°C to +150°C. ½" sq. body. **Rotational Life:** 50,000 turns. **Weight:** 0.2 oz.


500
875
375
250 DIA
250
016
100 TYP
225
ADD 300 FOR EACH SECTION (4 SECTIONS MAX.)
MOUNTING SURFACE
450
750
250
015
CW
SCHEMATIC
031 x 031 DP
125 DIA
014
1/4-32 NEF-2A
300
TOLERANCES: UNLESS OTHERWISE NOTED, DECIMALS ± 005, ANGLES ± 2°
BASIC DIMENSIONS ARE IN INCHES, MILLIMETER DIMENSIONS IN PARENTHESES

Stock No.	Mfr.'s Type	Ohm Value	Shaft Dia. (In.)	EACH					
				1-9	10-24	25-49	50-99	100-249	250-Up
970-1756	149-08-08-102	1000	⅛	5.25	4.92	4.77	4.57	4.50	4.20
970-1761	149-08-08-502	5000	⅛	5.25	4.92	4.77	4.57	4.50	4.20
970-1766	149-08-08-103	10 K	⅛	5.25	4.92	4.77	4.57	4.50	4.20
970-1771	149-08-08-503	50 K	⅛	5.25	4.92	4.77	4.57	4.50	4.20
970-1776	149-09-10-102	1000	¼	5.25	4.92	4.77	4.57	4.50	4.20
970-1781	149-09-10-502	5000	¼	5.25	4.92	4.77	4.57	4.50	4.20
970-1786	149-09-10-103	10 K	¼	5.25	4.92	4.77	4.57	4.50	4.20
970-1791	149-09-10-104	100 K	¼	5.25	4.92	4.77	4.57	4.50	4.20

Model 132 Wirewound Single Turn Potentiometer

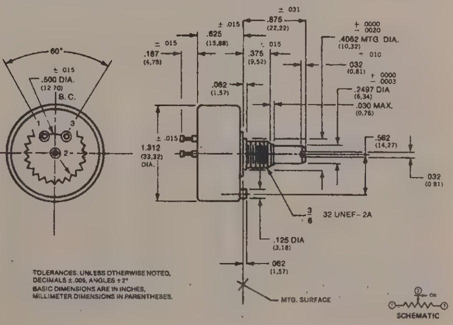


Thermo plastic housing with nickel plated brass bushing and ¼" dia. stainless steel shaft. Solderable brass terminals. Wirewound element. Moisture resistant. **Power Rating at 40°C:** 2.75-watt. **Resistance Tolerance:** 3%. **Linearity Tolerance:** 0.5%. **Operating Temperature:** –55°C to +125°C. 1.312"D × 0.625"L. **Rotational Life:** 2,000,000 turns. **Weight:** 1.0 oz.

Stock No.	Mfr.'s Type	Ohm Value	Rotation	EACH					
				1-9	10-24	25-49	50-99	100-249	250-Up
971-1665	132-0-0-102	1000	Continuous	21.27	19.94	19.33	18.49	18.23	17.01
971-1670	132-0-0-202	2000	Continuous	21.27	19.94	19.33	18.49	18.23	17.01
971-1675	132-0-0-502	5000	Continuous	21.27	19.94	19.33	18.49	18.23	17.01
971-1680	132-0-0-103	10 K	Continuous	21.27	19.94	19.33	18.49	18.23	17.01
971-1685	132-2-0-102	1000	2 stops	21.62	20.27	19.65	18.80	18.53	17.29
971-1690	132-2-0-502	5000	2 stops	21.62	20.27	19.65	18.80	18.53	17.29
970-1693	132-2-0-103	10 K	2 stops	21.62	20.27	19.65	18.80	18.53	17.29

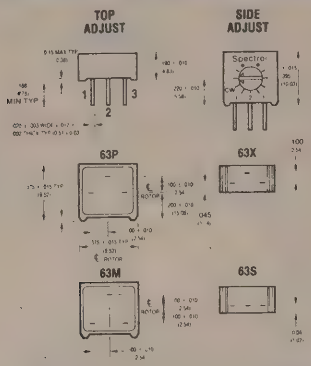
Model 138 Conductive Plastic Single Turn Potentiometer

Thermo plastic housing with nickel plated brass bushing and ¼" dia. stainless steel shaft. Solderable brass terminals. Conductive plastic element. Moisture resistant. **Power Rating at 40°C:** 2-watt. **Resistance Tolerance:** 10%. **Linearity Tolerance:** 0.5%. **Operating Temperature:** –55°C to +125°C. 1.312"D × 0.625"L. **Rotational Life:** 2,000,000 turns. **Weight:** 1.0 oz.



Stock No.	Mfr.'s Type	Ohm Value	Rotation	EACH					
				1-9	10-24	25-49	50-99	100-249	250-Up
970-1695	138-0-0-102	1000	Continuous	17.68	16.58	16.08	15.38	15.16	14.15
970-1694	138-0-0-502	5000	Continuous	17.68	16.58	16.08	15.38	15.16	14.15
970-1696	138-0-0-103	10 K	Continuous	17.68	16.58	16.08	15.38	15.16	14.15
970-1697	138-2-0-102	1000	2 stops	17.68	16.58	16.08	15.38	15.16	14.15
970-1698	138-2-0-502	5000	2 stops	17.68	16.58	16.08	15.38	15.16	14.15
970-1699	138-2-0-103	10 K	2 stops	17.68	16.58	16.08	15.38	15.16	14.15

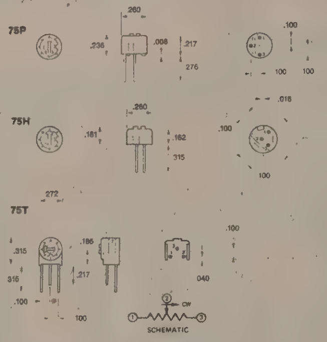
3/8" Sq. Single-Turn Cermet Model 63



.375" square × .190"H single turn cermet trimmer. 10% resistance tolerance. 0.5 watt at 70°C. 270° electrical travel. –55°C to +125°C operating temperature. **Styles:** 63M — Inline pins (0.100" spacing); 63P — Staggered pins from base; 63S — Inline pins (0.100" spacing) from side; 63X — Staggered pins (0.100" spacing) from side.

Stock No.	Mfr.'s Type	Ohm Value	EACH			
			1-49	50-99	100-249	250-499
970-1120	63M 102	1000	1.07	1.03	.84	.81
970-1125	63M 502	5000	1.07	1.03	.84	.81
970-1130	63M 103	10K	1.07	1.03	.84	.81
970-1135	63M 503	50K	1.07	1.03	.84	.81
970-1140	63P 101	100	1.02	.99	.81	.77
970-1145	63P 201	200	1.02	.99	.81	.77
970-1150	63P 501	500	1.02	.99	.81	.77
970-1155	63P 102	1000	1.02	.99	.81	.77
970-1160	63P 202	2000	1.02	.99	.81	.77
970-1165	63P 502	5000	1.02	.99	.81	.77
970-1170	63P 103	10K	1.02	.99	.81	.77
970-1175	63P 203	20K	1.02	.99	.81	.77
970-1180	63P 253	25K	1.02	.99	.81	.77
970-1185	63P 503	50K	1.02	.99	.81	.77
970-1190	63P 104	100K	1.02	.99	.81	.77
970-1195	63P 204	200K	1.02	.99	.81	.77
970-1200	63P 254	250K	1.02	.99	.81	.77
970-1205	63P 504	500K	1.02	.99	.81	.77
970-1210	63P 105	1M	1.02	.99	.81	.77
970-1215	63S 102	1000	1.07	1.03	.84	.81
970-1220	63S 502	5000	1.07	1.03	.84	.81
970-1225	63S 103	10K	1.07	1.03	.84	.81
970-1230	63S 503	50K	1.07	1.03	.84	.81
970-1235	63S 501	500	1.02	.99	.81	.77
970-1240	63X 102	1000	1.02	.99	.81	.77
970-1245	63X 202	2000	1.02	.99	.81	.77
970-1250	63X 502	5000	1.02	.99	.81	.77
970-1255	63X 103	10K	1.02	.99	.81	.77
970-1260	63X 203	20K	1.02	.99	.81	.77
970-1265	63X 503	50K	1.02	.99	.81	.77
970-1270	63X 104	100K	1.02	.99	.81	.77

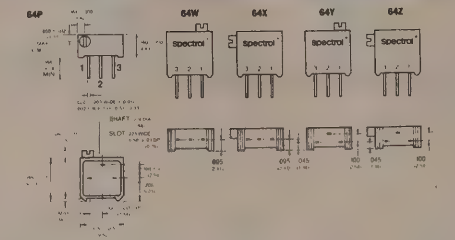
1/4" Dia. Single-Turn Cermet Model 75



1/4" round single turn cermet trimmer. 10% resistance tolerance. 0.5 watt at 70°C. 230° electrical travel. **Operating Temperature:** –55°C to +125°C .

Stock No.	Mfr.'s Type	Ohm Value	EACH			
			1-49	50-99	100-249	250-499
970-1580	75H 102	1000	1.93	1.54	1.40	1.28
970-1585	75H 202	2000	1.93	1.54	1.40	1.28
970-1590	75H 502	5000	1.93	1.54	1.40	1.28
970-1595	75H 103	10K	1.93	1.54	1.40	1.28
970-1600	75H 203	20K	1.93	1.54	1.40	1.28
970-1605	75H 503	50K	1.93	1.54	1.40	1.28
970-1610	75H 104	100K	1.93	1.54	1.40	1.28
970-1615	75P 102	1000	1.93	1.54	1.40	1.28
970-1620	75P 502	5000	1.93	1.54	1.40	1.28
970-1625	75P 103	10K	1.93	1.54	1.40	1.28
970-1630	75P 503	50K	1.93	1.54	1.40	1.28
970-1635	75P 104	100K	1.93	1.54	1.40	1.28
970-1640	75T 102	1000	2.00	1.60	1.45	1.33
970-1645	75T 502	5000	2.00	1.60	1.45	1.33
970-1650	75T 103	10K	2.00	1.60	1.45	1.33
970-1655	75T 203	20K	2.00	1.60	1.45	1.33
970-1660	75T 104	100K	2.00	1.60	1.45	1.33

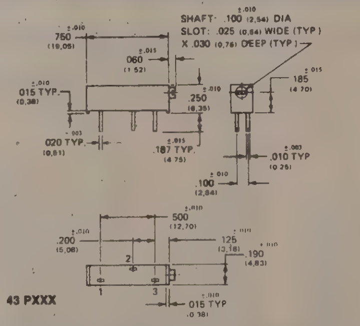
3/8" Sq. Multi-Turn Cermet Model 64



3/8" square multi-turn cermet trimmer. 10% resistance tolerance. 0.5 watt at 85°C. 25-turn nominal. **Mechanical Life:** 200 cycles. **Operating Temperature:** –55°C to +125°C. 0.375" × 0.395" × 0.190" **Styles:** 64P — Staggered pins; 64W — Inline pins (0.100" spacing); 64X — Inline pins (0.100" spacing); 64Y — Staggered pins; 64Z — Staggered pins.

Stock No.	Mfr.'s Type	Ohm Value	EACH			
			1-49	50-99	100-249	250-499
970-1275	64P 102	1000	2.00	1.88	1.54	1.46
970-1280	64P 502	5000	2.00	1.88	1.54	1.46
970-1285	64P 103	10K	2.00	1.88	1.54	1.46
970-1290	64P 203	20K	2.00	1.88	1.54	1.46
970-1295	64W 101	100	2.00	1.88	1.54	1.46
970-1300	64W 201	200	2.00	1.88	1.54	1.46
970-1305	64W 501	500	2.00	1.88	1.54	1.46
970-1310	64W 102	1000	2.00	1.88	1.54	1.46
970-1315	64W 202	2000	2.00	1.88	1.54	1.46
970-1320	64W 502	5000	2.00	1.88	1.54	1.46
970-1325	64W 103	10K	2.00	1.88	1.54	1.46
970-1330	64W 203	20K	2.00	1.88	1.54	1.46
970-1335	64W 503	50K	2.00	1.88	1.54	1.46
970-1340	64W 104	100K	2.00	1.88	1.54	1.46
970-1345	64W 204	200K	2.00	1.88	1.54	1.46
970-1350	64W 105	1M	2.00	1.88	1.54	1.46
970-1355	64X 101	100	2.00	1.88	1.54	1.46
970-1360	64X 501	500	2.00	1.88	1.54	1.46
970-1365	64X 102	1000	2.00	1.88	1.54	1.46
970-1370	64X 202	2000	2.00	1.88	1.54	1.46
970-1375	64X 502	5000	2.00	1.88	1.54	1.46
970-1380	64X 103	10K	2.00	1.88	1.54	1.46
970-1385	64X 203	20K	2.00	1.88	1.54	1.46
970-1390	64X 104	100K	2.00	1.88	1.54	1.46
970-1395	64Y 101	100	2.00	1.88	1.54	1.46
970-1400	64Y 501	500	2.00	1.88	1.54	1.46
970-1405	64Y 102	1000	2.00	1.88	1.54	1.46
970-1410	64Y 202	2000	2.00	1.88	1.54	1.46
970-1415	64Y 502	5000	2.00	1.88	1.54	1.46
970-1420	64Y 103	10K	2.00	1.88	1.54	1.46
970-1425	64Y 503	50K	2.00	1.88	1.54	1.46
970-1430	64Y 104	100K	2.00	1.88	1.54	1.46
970-1435	64Z 102	1000	2.00	1.88	1.54	1.46
970-1440	64Z 502	5000	2.00	1.88	1.54	1.46
970-1445	64Z 103	10K	2.00	1.88	1.54	1.46
970-1450	64Z 203	20K	2.00	1.88	1.54	1.46
970-1455	64Z 104	100K	2.00	1.88	1.54	1.46

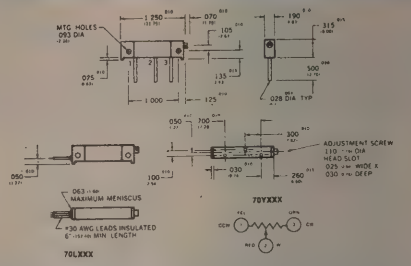
3/4" Rect. Multi-Turn Cermet Model 43



3/4" rectangular multi-turn cermet trimmer. 10% resistance tolerance. 20-turn nominal. 0.75 watt at 70°C. **Mechanical Life:** 200 cycles. **Operating Temperature:** –55°C to +125°C .

Stock No.	Mfr.'s Type	Ohm Value	EACH			
			1-49	50-99	100-249	250-499
970-1050	43P 500	50	1.38	1.20	1.07	1.00
970-1055	43P 101	100	1.38	1.20	1.07	1.00
970-1060	43P 201	200	1.38	1.20	1.07	1.00
970-1065	43P 501	500	1.38	1.20	1.07	1.00
970-1070	43P 102	1000	1.38	1.20	1.07	1.00
970-1075	43P 202	2000	1.38	1.20	1.07	1.00
970-1080	43P 502	5000	1.38	1.20	1.07	1.00
970-1085	43P 103	10K	1.38	1.20	1.07	1.00
970-1090	43P 203	20K	1.38	1.20	1.07	1.00
970-1095	43P 253	25K	1.38	1.20	1.07	1.00
970-1100	43P 503	50K	1.38	1.20	1.07	1.00
970-1105	43P 104	100K	1.38	1.20	1.07	1.00
970-1110	43P 204	200K	1.38	1.20	1.07	1.00
970-1115	43P 254	250K	1.38	1.20	1.07	1.00

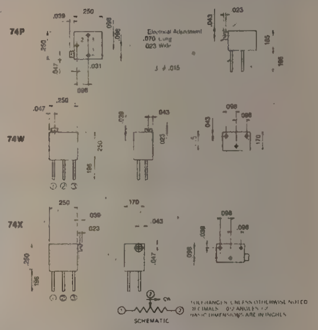
1 1/4" Rect. Multi-Turn Cermet Model 70



1 1/4" rectangular multi-turn cermet trimmer. 10% resistance tolerance. 20-turn nominal. 1-watt at 85°C. **Mechanical Life:** 200 cycles. **Operating Temperature:** –55°C to +150°C .

Stock No.	Mfr.'s Type	Ohm Value	EACH			
			1-49	50-99	100-249	250-499
970-1460	70L 502	5000	8.05	6.42	5.84	5.35
970-1465	70L 103	10K	8.05	6.42	5.84	5.35
970-1470	70L 104	100K	8.05	6.42	5.84	5.35
970-1475	70Y 202	2000	5.25	5.00	3.93	3.80
970-1480	70Y 502	5000	5.25	5.00	3.93	3.80
970-1485	70Y 103	10K	5.25	5.00	3.93	3.80
970-1490	70Y 203	20K	5.25	5.00	3.93	3.80

1/4" Sq. Multi-Turn Cermet Model 74


74P
74W
74X
SCHEMATIC
CW
Electrical Adjustment .070 Long .023 Wide
TOLERANCES UNLESS OTHERWISE NOTED
BASIC DIMENSIONS ARE IN INCHES

1/4" square multi-turn cermet trimmer. 10% resistance tolerance. 12-turns nominal. 0.25 watt at 85°C. **Operating Temperature:** –55°C to +125°C. **Mechanical Life:** 200 cycles .

Stock No.	Mfr.'s Type	Ohm Value	EACH			
			1-49	50-99	100-249	250-499
970-1495	74P 102	1000	2.84	2.39	2.17	2.08
970-1500	74P 502	5000	2.84	2.39	2.17	2.08
970-1505	74P 103	10K	2.84	2.39	2.17	2.08
970-1510	74P 503	50K	2.84	2.39	2.17	2.08
970-1515	74P 104	100K	2.84	2.39	2.17	2.08
970-1520	74P 105	1M	2.84	2.39	2.17	2.08
970-1525	74P 205	2M	2.84	2.39	2.17	2.08
970-1530	74W 501	500	2.84	2.39	2.17	2.08
970-1535	74W 102	1000	2.84	2.39	2.17	2.08
970-1540	74W 103	10K	2.84	2.39	2.17	2.08
970-1545	74W 503	50K	2.84	2.39	2.17	2.08
970-1550	74W 104	100K	2.84	2.39	2.17	2.08
970-1555	74X 102	1000	2.84	2.39	2.17	2.08
970-1560	74X 502	5000	2.84	2.39	2.17	2.08
970-1565	74X 103	10K	2.84	2.39	2.17	2.08
970-1570	74X 503	50K	2.84	2.39	2.17	2.08
970-1575	74X 104	100K	2.84	2.39	2.17	2.08

Trimmer Hardware and Adjustment Tool

Spectrol's standard 3/4" and 1 1/4" rectangular trimming potentiometers (models 43 and 70), may be easily panel mounted through the use of the Model 6 Panel Mount Adapters. These standard trimmer models can be quickly, easily, conveniently and economically converted into panel mount trimmers. Assembly is accomplished with the trimmer by snap-in, providing for minimal installation time. Adjustment tool is used to adjust trimmers. Can be used without magnetic or capacitance influence on the circuit.

Snap-On Adapters

Stock No.	Mfr.'s Type	Description	EACH			
			1-49	50-99	100-249	250-Up
970-1000	6 – 1 – 0	For model 43 trimmers	1.78	1.51	1.40	1.35
970-1005	6 – 2 – 0	For models 40 and 70	1.78	1.51	1.40	1.35

Shaft Extenders

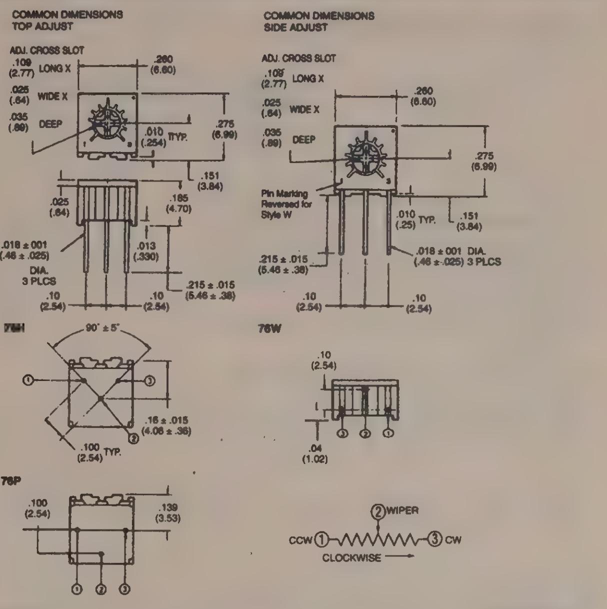
970-1010	6 – 0 – 1	Flush with bushing	.82	.69	.64	.60
970-1015	6 – 0 – 2	0.575" FMS Extension	.82	.69	.64	.60
970-1020	6 – 0 – 3	0.875" FMS Extension	.82	.69	.64	.60

Adjustment Tool

970-1025	8	Adjustment Tool	1.00	.85	.79	.73

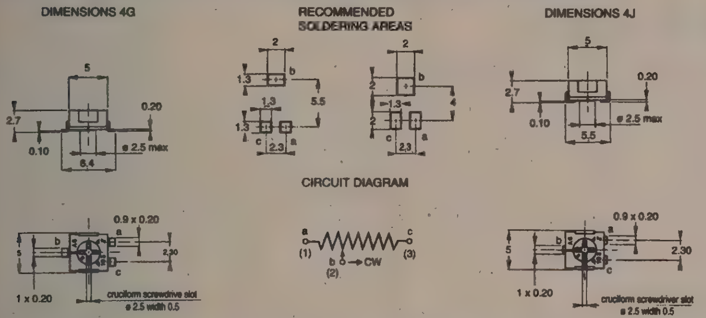
Model 76 1/4" Sq. Single Turn Cermet Trimmer

Model 76 single turn cermet trimming potentiometers are 1/4" square with standard features which include the ability to withstand immersion cleaning processes, a multi-finger wiper to minimize CRV and a rotor designed for automatic adjustment. They are rated at 1/2 watt at 70°C derated to 0 watts at 125°C. **Resistance Tolerance:** ±10% with a temperature coefficient of ±100 ppm/°C. **Angle Of Rotation:** 270° nominal. **Rotational Life:** 200 cycles. Terminal Pins are solderable. **Load Life:** 1000 hours at 0.5 watt at 70°C. **Temperature Range:** –55°C to +125°C. **Weight:** 0.02 oz. Manufacturer's literature available upon request.



Stock No.	Mfr.'s Type	Ohms	EACH					
			1-24	25-49	50-99	100-249	250-499	500-999
970-0700	76W102	1 K	1.93	1.71	1.54	1.40	1.33	1.23
970-0702	76W202	2 K	1.93	1.71	1.54	1.40	1.33	1.23
970-0704	76W502	5 K	1.93	1.71	1.54	1.40	1.33	1.23
970-0706	76W103	10 K	1.93	1.71	1.54	1.40	1.33	1.23
970-0708	76W203	20 K	1.93	1.71	1.54	1.40	1.33	1.23
970-0730	76P102	1 K	1.93	1.71	1.54	1.40	1.33	1.23
970-0732	76P202	2 K	1.93	1.71	1.54	1.40	1.33	1.23
970-0734	76P502	5 K	1.93	1.71	1.54	1.40	1.33	1.23
970-0736	76P103	10 K	1.93	1.71	1.54	1.40	1.33	1.23
970-0738	76P203	20 K	1.93	1.71	1.54	1.40	1.33	1.23
970-0760	76H102	1 K	1.93	1.71	1.54	1.40	1.33	1.23
970-0762	76H202	2 K	1.93	1.71	1.54	1.40	1.33	1.23
970-0764	76H502	5 K	1.93	1.71	1.54	1.40	1.33	1.23
970-0766	76H103	10 K	1.93	1.71	1.54	1.40	1.33	1.23
970-0768	76H203	20 K	1.93	1.71	1.54	1.40	1.33	1.23

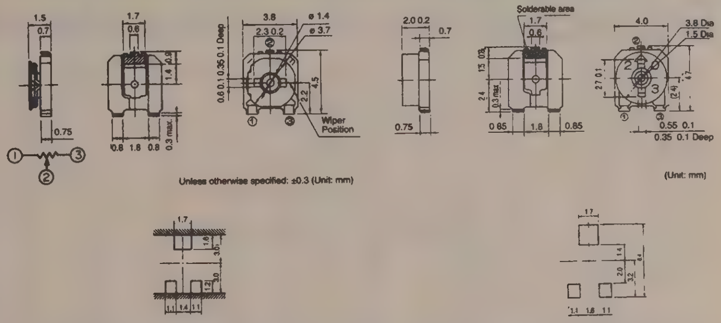
Model 4G/4J 4 mm Surface Mount Cermet Trimmers



The models 4G and 4J are single turn 5 mm cermet trimming potentiometers that have been designed for high performance and stability with optimum packaging density. Both the J-lead (4J) and the gull wing (4G) are fully sealed for wave, vapor phase, reflow soldering and immersion cleaning processes. Designed for both manual or automatic operation, and fitted with mechanical stops, both models are available as standard on tape and reel or in bulk (as special order item). **Electrical Travel:** 220°C ±15°. **Mechanical Travel:** 270°C ±10°. **Linear Power Rating:** 0.2 watts at 85°C. Logarithmic taper not available. **Resistance Tolerance:** ±20%. **Temperature Range:** –55°C to +125°C. **Load Life:** 1000 hours at 0.2 watt at 85°C. **Rotational Life:** 100 cycles. **Max. Unit Weight:** 0.15 grams. Manufacturer's literature available upon request.

Stock No.	Mfr.'s Type	Ohms	EACH					
			1-24	25-49	50-99	100-249	250-499	500-999
970-0800	4G101	100	1.80	1.72	1.64	1.56	1.33	1.23
970-0802	4G201	200	1.80	1.72	1.64	1.56	1.33	1.23
970-0804	4G501	500	1.80	1.72	1.64	1.56	1.33	1.23
970-0806	4G102	1 K	1.80	1.72	1.64	1.56	1.33	1.23
970-0808	4G202	2 K	1.80	1.72	1.64	1.56	1.33	1.23
970-0810	4G502	5 K	1.80	1.72	1.64	1.56	1.33	1.23
970-0812	4G103	10 K	1.80	1.72	1.64	1.56	1.33	1.23
970-0814	4G203	20 K	1.80	1.72	1.64	1.56	1.33	1.23
970-0816	4G503	50 K	1.80	1.72	1.64	1.56	1.33	1.23
970-0818	4G104	100 K	1.80	1.72	1.64	1.56	1.33	1.23
970-0820	4G204	200 K	1.80	1.72	1.64	1.56	1.33	1.23
970-0822	4G504	500 K	1.80	1.72	1.64	1.56	1.33	1.23
970-0824	4G105	1 M	1.80	1.72	1.64	1.56	1.33	1.23
970-0826	4G205	2 M	1.80	1.72	1.64	1.56	1.33	1.23
970-0850	4J101	100	1.80	1.72	1.64	1.56	1.33	1.23
970-0852	4J201	200	1.80	1.72	1.64	1.56	1.33	1.23
970-0854	4J501	500	1.80	1.72	1.64	1.56	1.33	1.23
970-0856	4J102	1 K	1.80	1.72	1.64	1.56	1.33	1.23
970-0858	4J202	2 K	1.80	1.72	1.64	1.56	1.33	1.23
970-0860	4J502	5 K	1.80	1.72	1.64	1.56	1.33	1.23
970-0862	4J103	10 K	1.80	1.72	1.64	1.56	1.33	1.23
970-0864	4J203	20 K	1.80	1.72	1.64	1.56	1.33	1.23
970-0866	4J503	50 K	1.80	1.72	1.64	1.56	1.33	1.23
970-0868	4J104	100 K	1.80	1.72	1.64	1.56	1.33	1.23
970-0870	4J204	200 K	1.80	1.72	1.64	1.56	1.33	1.23
970-0872	4J504	500 K	1.80	1.72	1.64	1.56	1.33	1.23
970-0874	4J105	1 M	1.80	1.72	1.64	1.56	1.33	1.23
970-0876	4J205	2 M	1.80	1.72	1.64	1.56	1.33	1.23

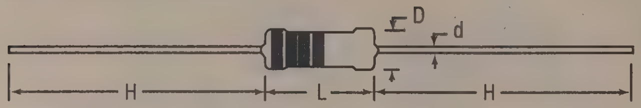
Model 4H/4M 4 mm Surface Mount Cermet Trimmers



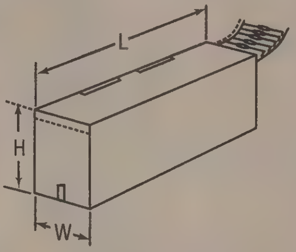
The model 4H is an open frame 4 mm single turn cermet trimming potentiometer that has excellent solder wetability and excellent solder heat resistance as well as high solder leaching resistance with the nickel barrier layer construction. The model 4M is a single turn, miniature, superthin (4.7 × 4.0 × 2.0 mm), highly reliable sealed cermet trimming potentiometer. It is suitable for flow and reflow soldering and is sealed to withstand immersion cleaning process. No cleaning process is necessary after soldering. **Max. Working Voltage:** 50 VDC. **Resistance Tolerance:** ±25%. **Power:** 0.1 watt at 70°C. **Effective Rotational Angle:** 4H — 270° ± 10°; 4J — 240° ±10°. **Temperature Range:** –55°C to +125°C. **Rotational Life:** 20 cycles. Manufacturer's literature available upon request.

Stock No.	Mfr.'s Type	Ohms	EACH					
			1-24	25-49	50-99	100-249	250-499	500-999
970-0900	4H101	100	.70	.65	.62	.58	.54	.50
970-0902	4H201	200	.70	.65	.62	.58	.54	.50
970-0904	4H501	500	.70	.65	.62	.58	.54	.50
970-0906	4H102	1 K	.70	.65	.62	.58	.54	.50
970-0908	4H202	2 K	.70	.65	.62	.58	.54	.50
970-0910	4H502	5 K	.70	.65	.62	.58	.54	.50
970-0912	4H103	10 K	.70	.65	.62	.58	.54	.50
970-0914	4H203	20 K	.70	.65	.62	.58	.54	.50
970-0916	4H503	50 K	.70	.65	.62	.58	.54	.50
970-0918	4H104	100 K	.70	.65	.62	.58	.54	.50
970-0920	4H204	200 K	.70	.65	.62	.58	.54	.50
970-0922	4H504	500 K	.70	.65	.62	.58	.54	.50
970-0924	4H105	1 M	.70	.65	.62	.58	.54	.50
970-0926	4H205	2 M	.70	.65	.62	.58	.54	.50
970-0950	4M101	100	1.40	1.23	1.18	1.08	.99	.89
970-0952	4M201	200	1.40	1.23	1.18	1.08	.99	.89
970-0954	4M501	500	1.40	1.23	1.18	1.08	.99	.89
970-0956	4M102	1 K	1.40	1.23	1.18	1.08	.99	.89
970-0958	4M202	2 K	1.40	1.23	1.18	1.08	.99	.89
970-0960	4M502	5 K	1.40	1.23	1.18	1.08	.99	.89
970-0962	4M103	10 K	1.40	1.23	1.18	1.08	.99	.89
970-0964	4M203	20 K	1.40	1.23	1.18	1.08	.99	.89
970-0966	4M503	50 K	1.40	1.23	1.18	1.08	.99	.89
970-0968	4M104	100 K	1.40	1.23	1.18	1.08	.99	.89
970-0970	4M204	200 K	1.40	1.23	1.18	1.08	.99	.89
970-0972	4M504	500 K	1.40	1.23	1.18	1.08	.99	.89
970-0974	4M105	1 M	1.40	1.23	1.18	1.08	.99	.89
970-0976	4M205	2 M	1.40	1.23	1.18	1.08	.99	.89

Carbon Film Resistors



- ► Tolerance: 5%
- ► Manufacturing and Quality Control to International Standards
- ► Meeting or Exceeding the Applicable Requirements of EIA-RS-196-A, JIS-C-6402, and IEC-115
- ► Product Recognition Throughout the World
- ► Prompt Delivery from Local Stock
- ► Feeds to All Automatic Machines the Same as Tape/Reel
- ► Saves Shelf Space Compared to Tape/Reel
- ► More Cost Effective than Tape/Reel
- ► Box Dimensions: Width (W) — 85 mm; Height (H) — 118 mm; Length (L) — 260 mm

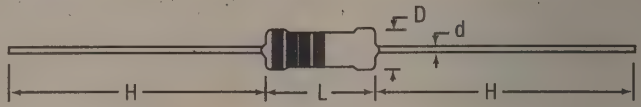


Ammopack Box

Stock No.	Mfr.'s Type	Watts @ 70°C	Values*	Body Color	Body Dim. (mm)		Leadwire Dim. (mm)		PER BOX/5000†
					L ±0.3	D ±0.2	H Min.	d	
697-1XXX	CF25	1/4	1 ohm-10 M	Tan	6	2.3	28	0.6	**40.00**
697-2XXX	CS50	1/2	1 ohm-2.2 M	Gray	6	2.3	28	0.6	**69.00**

*See standard resistance values below. †Please call for large volume pricing.

Mini Series Metal Oxide Film Resistors



- ► Tolerance: 5%
- ► Small Size and High Performance
- ► Uniform Quality, and High Reliability
- ► Flame Proof
- ► Long Term Stability
- ► Low Noise
- ► Max. Working Voltage: RSS-1 — 300 V; RSS-2 — 350 V; RSS-5 — 500 V
- ► Max. Overload: RSS-1 — 600 V; RSS-2 — 700 V; RSS-5 — 800 V
- ► Dielectric Withstand: 500 V
- ► 1 W and 2 W Supplied in Tape and Box: 1000 Pcs./Box
- ► 5 W Supplied in Tape and Box: 500 Pcs./Box

Metal Oxide Film Resistors have been developed for application in circuits where stability under high temperature conditions is required.

Stock No.	Mfr.'s Type	Watts @ 70°C	Values*	Body Dim. (mm)		Leadwire Dim. (mm)		Box Qty.	PER BOX†
				L ±1.0	D ±0.6	H ±3.0	d ±0.05		
697-4XXX	RSS-1	1 W	.51 ohm-51 K	9.0	4.0	30	0.65	1000	**65.00**
697-5XXX	RSS-2	2 W	.51 ohm-51 K	11.0	4.5	30	0.80	1000	**85.00**
697-6XXX	RSS-5	5 W	.51 ohm-100 K	17.5	6.5	38	0.80	500	**175.00**

*See standard resistance values below. †Please call for large volume pricing.

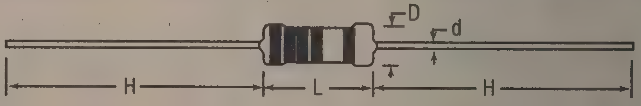
Standard Resistance Values for Carbon Film and Metal Oxide Film Resistors

To complete Allied stock number, insert three digit number shown in XXX column after value desired, in place of XXX in stock number.

Ohms	XXX	Ohms	XXX	Ohms	XXX	Ohms	XXX	Ohms	XXX	Ohms	XXX	Ohms	XXX	Ohms	XXX	Ohms	XXX	Ohms	XXX
0.51	010	2.7	041	13	063	68	178	360	278	1.8K	393	9.1K	511	47K	650	330K	796	3.0M	911
0.56	011	3.0	042	15	064	75	185	390	288	2.0K	400	10K	522	51K	657	390K	811	3.3M	912
0.62	012	3.3	043	16	065	82	190	430	296	2.2K	405	11K	528	56K	666	470K	825	3.6M	913
0.68	013	3.6	044	18	066	91	191	470	302	2.4K	412	12K	533	62K	677	510K	830	3.9M	914
0.75	014	3.9	046	20	098	100	202	510	308	2.7K	421	13K	543	68K	685	560K	836	4.3M	915
0.82	016	4.3	047	22	102	110	206	560	315	3.0K	427	15K	550	75K	698	680K	850	4.7M	916
0.91	017	4.7	049	24	114	120	212	620	324	3.3K	433	16K	563	82K	703	910K	871	5.1M	917
1.0	020	5.1	051	27	117	130	218	680	330	3.6K	441	18K	565	91K	712	1.0M	877	5.6M	918
1.1	021	5.6	053	30	123	150	226	750	338	3.9K	446	20K	575	100K	717	1.1M	881	6.2M	919
1.2	022	6.2	054	33	130	160	230	820	343	4.3K	453	22K	585	110K	718	1.2M	886	6.8M	920
1.3	023	6.8	055	36	135	180	237	910	351	4.7K	461	24K	592	120K	727	1.3M	890	7.5M	921
1.5	024	7.5	056	39	140	200	243	1.0K	356	5.1K	467	27K	603	150K	740	1.5M	900	8.2M	922
1.6	025	8.2	057	43	143	220	248	1.1K	361	5.6K	473	30K	611	180K	751	1.8M	903	9.1M	923
1.8	026	9.1	058	47	153	240	255	1.2K	366	6.2K	482	33K	617	200K	759	2.0M	905	10M	924
2.0	028	10	060	51	160	270	263	1.3K	373	6.8K	489	36K	621	220K	765	2.2M	907	—	—
2.2	032	11	061	56	166	300	270	1.5K	380	7.5K	498	39K	636	270K	783	2.4M	908	—	—
2.4	035	12	062	62	172	330	276	1.6K	383	8.2K	504	43K	643	300K	790	2.7M	909	—	—

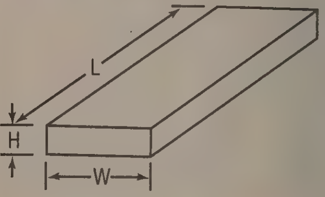
Metal Film Resistors

- ► Tolerance: 1%
- ► Max. Working Voltage: 250 V
- ► Operating Temperature Range: –55° to +150°C
- ► Temperature Coefficient: 100 ppm/°C
- ► Box Dimensions: Width (W) — 90 mm; Height (H) — 30 mm; Length (L) — 270 mm



Stock No.	Mfr.'s Type	Watts @ 70°C	Values*	Body Dim. (mm)		Leadwire Dim. (mm)		PER BOX/1000†
				L ±0.3	D ±0.2	H Min.	d	
697-3XXX	MF-25	1/4	10 ohm-1 M	6.5	2.3	28	0.6	**15.00**

*See standard resistance values below. †Please call for large volume pricing.



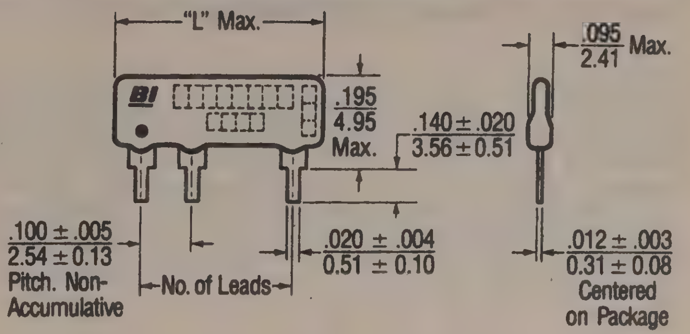
Standard Resistance Values

To complete Allied stock number, insert three digit number shown in XXX column after value desired, in place of XXX in stock number.

Ohms	XXX	Ohms	XXX	Ohms	XXX	Ohms	XXX	Ohms	XXX	Ohms	XXX	Ohms	XXX	Ohms	XXX	Ohms	XXX	Ohms	XXX
10	100	49.9	157	249	257	1K	356	3.48K	437	7.5K	498	15.8K	552	46.4K	649	100K	717	499K	828
12.1	107	51.1	161	301	271	1.21K	367	3.57K	440	8.25K	505	17.4K	561	47.5K	651	121K	728	511K	831
15	113	56.2	167	348	280	1.5K	380	3.83K	445	9.09K	513	18.2K	566	49.9K	655	150K	740	619K	841
20	121	75	185	402	292	2K	400	4.02K	450	9.53K	518	20K	575	51.1K	658	200K	759	681K	853
22.1	125	90.9	196	475	303	2.15K	403	4.75K	462	10K	522	22.1K	586	61.9K	675	221K	766	750K	862
24.9	128	100	202	499	306	2.21K	406	4.87K	463	11K	528	24.9K	594	68.1K	686	249K	777	825K	875
30.1	135	121	213	604	322	2.49K	415	4.99K	465	12.1K	535	27.4K	604	75K	694	301K	781	909K	881
34.8	140	150	226	750	338	2.74K	422	5.11K	468	12.4K	536	30.1K	612	82.5K	705	402K	788	953K	885
40.2	146	200	243	825	345	3.01K	428	6.19K	481	13K	538	33.2K	618	84.5K	706	464K	791	1M	891
47.5	152	221	250	909	350	3.32K	435	6.81K	490	15K	550	40.2K	638	90.9K	711	475K	796	—	—

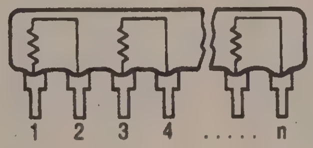
Model L-Series Networks

These single in-line thick film resistor networks are conformal coated and low profile. The power dissipation at 70°C per package is 0.6 watts for L06; 0.8 watts for L08; 1.0 watts for L10. They are derated from 100% at 70°C to 0 watts at 125°C. **Standard Tolerance:** 2% at 25°C. **Temperature Coefficient:** ±100 ppm/°C (<100 ohms = ±250 ppm/°C). **Operating Temperature Range:** –55°C to +125°C. **Substrate Material:** Alumina. **Resistor Material:** Cermet. **Body Material:** Conformal epoxy resin. The leads are steel alloy for most economy (lowest resistances are copper alloy) and have a lead finish of 90/10 tin-lead. Package has UL-94V-0 flammability rating.

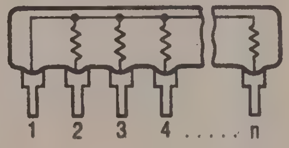


# of Leads		6	8	10
"L" Max.	in.	.60	.80	1.00
	mm	15.24	20.32	25.40

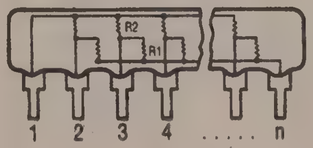
-3 Circuit, Isolated Resistors



-1 Circuit, Bussed Resistors



-5 Circuit, Dual Terminator



L06 Series

Stock No.	Mfr.'s Type	Ohms	Termination	EACH 1-99	100-499	500-999	1000-4999
525-5100	L061C330	33	Bussed	.19	.17	.14	.12
525-5102	L061C121	120	Bussed	.19	.17	.14	.12
525-5104	L061C151	150	Bussed	.19	.17	.14	.12
525-5106	L061C271	270	Bussed	.19	.17	.14	.12
525-5108	L061C331	330	Bussed	.19	.17	.14	.12
525-5110	L061C471	470	Bussed	.19	.17	.14	.12
525-5112	L061C102	1K	Bussed	.19	.17	.14	.12
525-5114	L061C222	2.2K	Bussed	.19	.17	.14	.12
525-5116	L061C332	3.3K	Bussed	.19	.17	.14	.12
525-5118	L061C472	4.7K	Bussed	.19	.17	.14	.12
525-5120	L061C103	10K	Bussed	.19	.17	.14	.12
525-5122	L061C223	22K	Bussed	.19	.17	.14	.12
525-5124	L061C473	47K	Bussed	.19	.17	.14	.12
525-5126	L061C104	100K	Bussed	.19	.17	.14	.12
525-5128	L061C124	120K	Bussed	.19	.17	.14	.12
525-5130	L063C220	22	Isolated	.19	.17	.14	.12
525-5133	L063C470	470	Isolated	.19	.17	.14	.12
525-5136	L060C510	51	Isolated	.19	.17	.14	.12
525-5139	L063C101	100	Isolated	.19	.17	.14	.12
525-5142	L063C102	1K	Isolated	.19	.17	.14	.12
525-5145	L063C222	2.2K	Isolated	.19	.17	.14	.12
525-5148	L063C103	10K	Isolated	.19	.17	.14	.12
525-5151	L063C153	15K	Isolated	.19	.17	.14	.12
525-5154	L063C473	47K	Isolated	.19	.17	.14	.12
525-5157	L063C104	100K	Isolated	.19	.17	.14	.12
525-5160	L063C105	1M	Isolated	.19	.17	.14	.12
525-5170	L065C221/331	220/330	Dual	.38	.34	.28	.21

L08 Series Isolated

Stock No.	Mfr.'s Type	Ohms	Termination	EACH 1-99	100-499	500-999	1000-4999
525-5200	L081C151	150	Bussed	.25	.23	.19	.15
525-5202	L081C271	270	Bussed	.25	.23	.19	.15
525-5204	L081C331	330	Bussed	.25	.23	.19	.15
525-5206	L081C391	390	Bussed	.25	.23	.19	.15
525-5208	L081C471	470	Bussed	.25	.23	.19	.15
525-5210	L081C102	1K	Bussed	.25	.23	.19	.15
525-5212	L081C152	1.5K	Bussed	.25	.23	.19	.15
525-5214	L081C202	2K	Bussed	.25	.23	.19	.15
525-5216	L081C222	2.2K	Bussed	.25	.23	.19	.15
525-5218	L081C332	3.3K	Bussed	.25	.23	.19	.15
525-5220	L081C472	4.7K	Bussed	.25	.23	.19	.15
525-5222	L081C103	10K	Bussed	.25	.23	.19	.15
525-5224	L081C473	47K	Bussed	.25	.23	.19	.15
525-5226	L081C104	100K	Bussed	.25	.23	.19	.15
525-5228	L081C105	1M	Bussed	.25	.23	.19	.15
525-5250	L083C220	22	Isolated	.25	.23	.19	.15
525-5252	L083C330	33	Isolated	.25	.23	.19	.15
525-5254	L083C470	47	Isolated	.25	.23	.19	.15
525-5256	L083C510	51	Isolated	.25	.23	.19	.15
525-5258	L083C560	56	Isolated	.25	.23	.19	.15
525-5260	L083C680	68	Isolated	.25	.23	.19	.15
525-5262	L083C101	100	Isolated	.25	.23	.19	.15
525-5264	L083C151	150	Isolated	.25	.23	.19	.15
525-5266	L083C201	200	Isolated	.25	.23	.19	.15
525-5268	L083C221	220	Isolated	.25	.23	.19	.15
525-5270	L083C271	270	Isolated	.25	.23	.19	.15
525-5272	L083C331	330	Isolated	.25	.23	.19	.15
525-5274	L083C471	470	Isolated	.25	.23	.19	.15
525-5276	L083C511	510	Isolated	.25	.23	.19	.15
525-5278	L083C681	680	Isolated	.25	.23	.19	.15
525-5280	L083C102	1K	Isolated	.25	.23	.19	.15
525-5282	L083C152	1.5K	Isolated	.25	.23	.19	.15
525-5284	L083C202	2K	Isolated	.25	.23	.19	.15
525-5286	L083C222	2.2K	Isolated	.25	.23	.19	.15
525-5288	L083C332	3.3K	Isolated	.25	.23	.19	.15
525-5290	L083C472	4.7K	Isolated	.25	.23	.19	.15
525-5292	L083C682	6.8K	Isolated	.25	.23	.19	.15
525-5294	L083C103	10K	Isolated	.25	.23	.19	.15
525-5296	L083C183	18K	Isolated	.25	.23	.19	.15
525-5298	L083C203	20K	Isolated	.25	.23	.19	.15
525-5300	L083C223	22K	Isolated	.25	.23	.19	.15
525-5302	L083C473	47K	Isolated	.25	.23	.19	.15
525-5304	L083C104	100K	Isolated	.25	.23	.19	.15
525-5306	L083C105	1M	Isolated	.25	.23	.19	.15
525-5320	L805C221/331	220/330	Dual	.44	.40	.33	.27

L10 Series

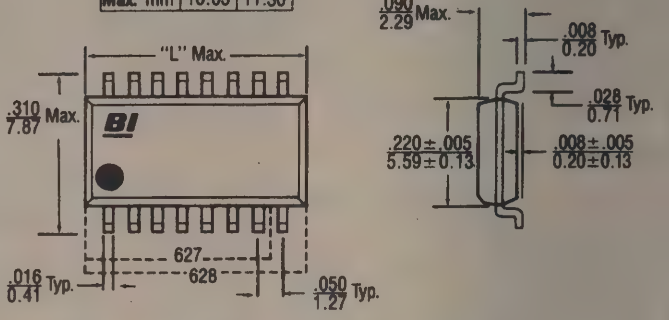
Stock No.	Mfr.'s Type	Ohms	Termination	EACH 1-99	100-499	500-999	1000-4999
525-5330	L101C101	100	Bussed	.32	.29	.23	.19
525-5332	L101C151	150	Bussed	.32	.29	.23	.19
525-5334	L101C181	180	Bussed	.32	.29	.23	.19
525-5336	L101C221	220	Bussed	.32	.29	.23	.19
525-5338	L101C331	330	Bussed	.32	.29	.23	.19
525-5340	L101C471	470	Bussed	.32	.29	.23	.19
525-5342	L101C102	1K	Bussed	.32	.29	.23	.19
525-5344	L101C152	1.5K	Bussed	.32	.29	.23	.19
525-5346	L101C222	2.2K	Bussed	.32	.29	.23	.19
525-5348	L101C272	2.7K	Bussed	.32	.29	.23	.19
525-5350	L101C332	3.3K	Bussed	.32	.29	.23	.19
525-5352	L101C472	4.7K	Bussed	.32	.29	.23	.19
525-5354	L101C562	5.6K	Bussed	.32	.29	.23	.19
525-5356	L101C682	6.8K	Bussed	.32	.29	.23	.19
525-5358	L101C822	8.2K	Bussed	.32	.29	.23	.19
525-5360	L101C103	10K	Isolated	.32	.29	.23	.19
525-5362	L101C153	15K	Isolated	.32	.29	.23	.19
525-5364	L101C203	20K	Isolated	.32	.29	.23	.19
525-5366	L101C223	22K	Isolated	.32	.29	.23	.19
525-5368	L101C333	33K	Isolated	.32	.29	.23	.19
525-5370	L101C473	47K	Isolated	.32	.29	.23	.19
525-5372	L101C563	56K	Isolated	.32	.29	.23	.19
525-5374	L101C104	100K	Isolated	.32	.29	.23	.19
525-5376	L101C224	220K	Isolated	.32	.29	.23	.19
525-5400	L101C105	1M	Isolated	.32	.29	.23	.19
525-5403	L103C220	22	Isolated	.32	.29	.23	.19
525-5406	L103C330	33	Isolated	.32	.29	.23	.19
525-5409	L103C470	47	Isolated	.32	.29	.23	.19
525-5412	L103C680	68	Isolated	.32	.29	.23	.19
525-5415	L103C101	100	Isolated	.32	.29	.23	.19
525-5418	L103C102	1K	Isolated	.32	.29	.23	.19
525-5421	L103C472	4.7K	Isolated	.32	.29	.23	.19
525-5424	L103C103	10K	Isolated	.32	.29	.23	.19
525-5427	L103C473	47K	Isolated	.32	.29	.23	.19
525-5430	L103C104	100K	Isolated	.32	.29	.23	.19
525-5433	L105C221/331	220/330	Isolated	.51	.46	.37	.31
525-5436	L105C331/471	330/470	Isolated	.51	.46	.37	.31

Model 627, 628 Series SMD DIP Networks

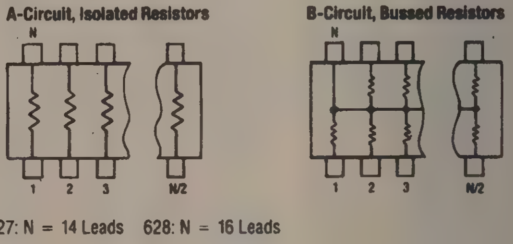
These dual-in-line (DIP) thick film resistor networks are small outline surface mount devices (SMD). The A configuration is isolated resistors and the B configuration is bussed resistors. They are 1.28-watts per package at 70°C derated to 0 at 150°C. **Resistance Tolerance:** at 25°C is 2% (<33 ohm = ±1 ohm). **Resistance Temperature Coefficient:** ±100 ppm/°C (<100 ohms = 250 ppm/°C). **Resistance to Solder Heat:** 280°C for 10 seconds. **Operating Temperature Range:** –55°C to +125°C. **Lead Material:** Copper alloy dipped in 60/40 tin-lead solder. Leads are in a gull-wing configuration. An alumina substrate material is used with cermet resistor material enclosed in epoxy body material. Additional tolerances and packaging available as special order items. Manufacturer's literature available upon request.

Package Length ("L")

Model		627	628
"L" Max.	Inch	.395	.445
	mm	10.03	11.30

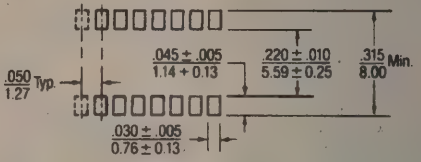


Note: Maximum allowable mold excursion = 0.006"



627: N = 14 Leads 628: N = 16 Leads

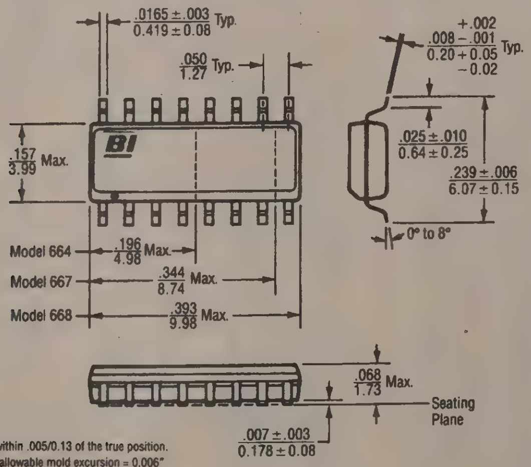
Solder Pad Layout



Stock No.	Mfr.'s Type	Ohms	Tolerance	EACH				
				1-99	100-249	250-499	500-999	1000-9999
525-5500	627A220	22	2.0	1.50	.75	.45	.34	.28
525-5502	627A101	100	2.0	1.50	.75	.45	.34	.28
525-5504	627A201	200	2.0	1.50	.75	.45	.34	.28
525-5506	627A221	220	2.0	1.50	.75	.45	.34	.28
525-5508	627A102	1K	2.0	1.50	.75	.45	.34	.28
525-5510	627A202	2K	2.0	1.50	.75	.45	.34	.28
525-5512	627A222	2.2K	2.0	1.50	.75	.45	.34	.28
525-5514	627A103	10K	2.0	1.50	.75	.45	.34	.28
525-5516	627A203	20K	2.0	1.50	.75	.45	.34	.28
525-5518	627A104	100K	2.0	1.50	.75	.45	.34	.28
525-5520	627A204	200K	2.0	1.50	.75	.45	.34	.28
525-5540	628B220	22	2.0	1.50	.75	.45	.34	.28
525-5542	628B330	33	2.0	1.50	.75	.45	.34	.28
525-5544	628B470	47	2.0	1.50	.75	.45	.34	.28
525-5546	628B101	100	2.0	1.50	.75	.45	.34	.28
525-5548	628B201	200	2.0	1.50	.75	.45	.34	.28
525-5550	628B221	220	2.0	1.50	.75	.45	.34	.28
525-5552	628B331	330	2.0	1.50	.75	.45	.34	.28
525-5554	628B471	470	2.0	1.50	.75	.45	.34	.28
525-5556	628B102	1K	2.0	1.50	.75	.45	.34	.28
525-5558	628B202	2K	2.0	1.50	.75	.45	.34	.28
525-5560	628B222	2.2K	2.0	1.50	.75	.45	.34	.28
525-5562	628B332	3.3K	2.0	1.50	.75	.45	.34	.28
525-5564	628B472	4.7K	2.0	1.50	.75	.45	.34	.28
525-5566	628B103	10K	2.0	1.50	.75	.45	.34	.28
525-5568	628B203	20K	2.0	1.50	.75	.45	.34	.28
525-5570	628B223	22K	2.0	1.50	.75	.45	.34	.28
525-5572	628B333	33K	2.0	1.50	.75	.45	.34	.28
525-5574	628B473	47K	2.0	1.50	.75	.45	.34	.28
525-5576	628B104	100K	2.0	1.50	.75	.45	.34	.28
525-5578	628B204	200K	2.0	1.50	.75	.45	.34	.28
525-5580	628B224	220K	2.0	1.50	.75	.45	.34	.28
525-5582	628B270	270K	2.0	1.50	.75	.45	.34	.28
525-5584	628B474	470K	2.0	1.50	.75	.45	.34	.28
525-5586	628B105	1M	2.0	1.50	.75	.45	.34	.28

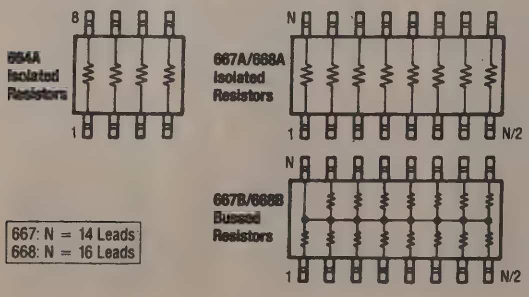
Model 664, 668 Series SMD DIP Networks

These dual-in-line (DIP) thin film precision resistor networks are small outline surface mount devices (SMD). The A configuration is for isolated resistors. The 664 is .4-watts per package and the 668 is .5-watts per package at 70°C derated to 0 at 125°C. **Resistance Tolerance (and ration):** at 25°C is A = 0.1%/0.05%; B = 0.1/0.1%; D = 0.5/0.1%; F = 1.0%/0.5%. **Resistance Temperature Coefficient:** ±25 ppm/°C. **Resistance to Solder Heat:** 280°C for 10 seconds. **Operating Temperature Range:** –55°C to +125°C. **Lead Material:** Copper alloy dipped in 85/15 tin-lead solder. Leads are in a gull-wing configuration. An alumina substrate material is used with nichrome resistor material enclosed in a molded epoxy body material. Manufacturer's literature available upon request.



.0165±.003 / 0.419±0.08 Typ.
.050 / 1.27 Typ.
+.002 / .008 –.001 / 0.20+0.05 / –0.02 Typ.
BI
.157 / 3.99 Max.
.025±.010 / 0.64±0.25
.239±.006 / 6.07±0.15
0° to 8°
Model 664 .196 / 4.98 Max.
Model 667 .344 / 8.74 Max.
Model 668 .393 / 9.98 Max.
.068 / 1.73 Max.
Seating Plane
.007±.003 / 0.178±0.08

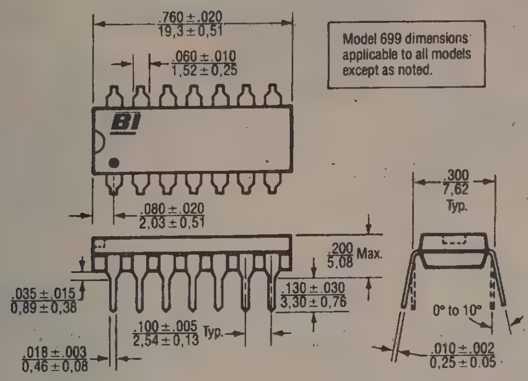
Notes:
1. Leads are within .005/0.13 of the true position.
2. Maximum allowable mold excursion = 0.006"



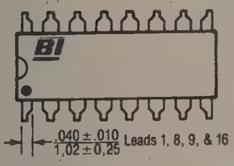
667: N = 14 Leads
668: N = 16 Leads

Stock No.	Mfr.'s Type	Ohms	Tolerance	EACH				
				1-99	100-249	250-499	500-999	1000-9999
525-5590	664A1002A	10K	0.05	3.50	2.65	2.50	2.35	2.25
525-5595	664A1002D	10K	0.5	2.75	2.05	1.90	1.75	1.65
525-5600	668A1001D	1K	0.5	3.35	2.50	2.35	2.20	2.10
525-5602	668A1001F	1K	1.0	3.10	2.30	2.15	2.00	1.90
525-5604	668A2001B	2K	0.1	3.80	3.05	2.90	2.75	2.65
525-5606	668A2001D	2K	0.5	3.35	2.50	2.35	2.20	2.10
525-5608	668A2001F	2K	1.0	3.10	2.30	2.15	2.00	1.90
525-5610	668A5001B	5K	0.1	3.80	3.05	2.90	2.75	2.65
525-5612	668A5001D	5K	0.5	3.35	2.50	2.35	2.20	2.10
525-5614	668A5001F	5K	1.0	3.10	2.30	2.15	2.00	1.90
525-5616	668A1002B	10K	0.1	3.80	3.05	2.90	2.75	2.65
525-5618	668A1002D	10K	0.5	3.35	2.50	2.35	2.20	2.10
525-5620	668A1002F	10K	1.0	3.10	2.30	2.15	2.00	1.90
525-5622	668A2002B	20K	0.1	3.80	3.05	2.90	2.75	2.65
525-5624	668A2002D	20K	0.5	3.35	2.50	2.35	2.20	2.10
525-5626	668A2002F	20K	1.0	3.10	2.30	2.15	2.00	1.90
525-5628	668A5002B	50K	0.1	3.80	3.05	2.90	2.75	2.65
525-5630	668A5002D	50K	0.5	3.35	2.50	2.35	2.20	2.10
525-5632	668A5002F	50K	1.0	3.10	2.30	2.15	2.00	1.90
525-5634	668A1003B	100K	0.1	3.80	3.05	2.90	2.75	2.65
525-5636	668A1003D	100K	0.5	3.35	2.50	2.35	2.20	2.10
525-5638	668A1003F	100K	1.0	3.10	2.30	2.15	2.00	1.90

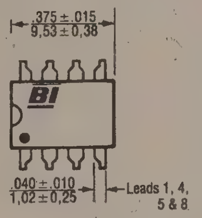
Model 699



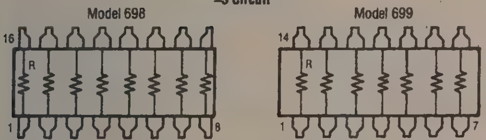
Model 698



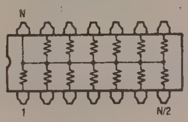
Model 694



Isolated Resistors
-3 Circuit



Bussed Resistors
-1 Circuit



Model 694, 698, 699 Series DIP Networks

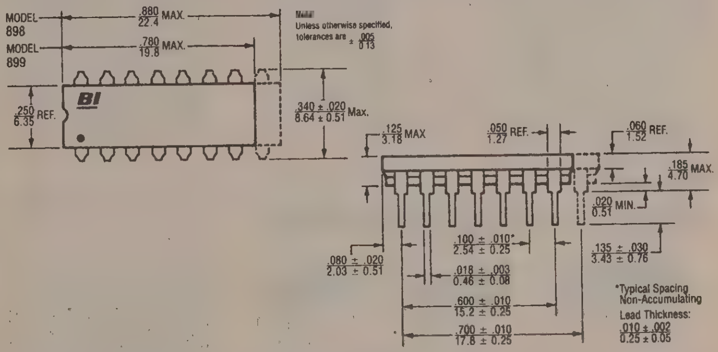
These dual-in-line (DIP) thin film precision resistor networks are thru-hole devices. The 694 is .4-watts per package, the 698 and 699 are .6-watts per package at 70°C derated to 0 at 150°C. **Resistance Tolerance (and Ration):** at 25°C is A = 0.1%/0.05%; B = 0.1/0.1%; D = 0.5/0.1%; F = 1.0%/0.5%. **Resistance Temperature Coefficient:** ±50 ppm/°C. **Resistance to Solder Heat:** 280°C for 10 seconds. **Operating Temperature Range:** –55°C to +125°C. **Lead Material:** Copper alloy dipped in 60/40 tin-lead solder. Leads are in PC-pin configuration. An alumina substrate material is used with nichrome resistor material enclosed in a molded epoxy body material. Manufacturer's literature available upon request.

Stock No.	Mfr.'s Type	Ohms	Tolerance	Termination	EACH				
					1-99	100-249	250-499	500-999	1000-9999
525-5650	6943R1KA	1K	0.05	Isolated	3.25	2.45	2.30	2.15	2.05
525-5652	6943R1KD	1K	0.5	Isolated	2.80	1.85	1.70	1.55	1.45
525-5654	6943R5KB	5K	0.1	Isolated	2.95	2.05	1.90	1.75	1.65
525-5656	6943R5KF	5K	1.0	Isolated	2.65	1.65	1.50	1.35	1.25
525-5658	6943R10KA	10K	0.05	Isolated	3.25	2.45	2.30	2.15	2.05
525-5660	6943R10KB	10K	0.1	Isolated	2.95	2.05	1.90	1.75	1.65
525-5662	6943R10KD	10K	0.5	Isolated	2.80	1.85	1.70	1.55	1.45
525-5664	6943R10KF	10K	1.0	Isolated	2.65	1.65	1.50	1.35	1.25
525-5666	6943R20KA	20K	0.05	Isolated	3.25	2.45	2.30	2.15	2.05
525-5668	6943R20KB	20K	0.1	Isolated	2.95	2.05	1.90	1.75	1.65
525-5670	6943R20KD	20K	0.5	Isolated	2.80	1.85	1.70	1.55	1.45
525-5672	6943R50KA	50K	0.05	Isolated	3.25	2.45	2.30	2.15	2.05
525-5674	6943R50KB	50K	0.1	Isolated	2.95	2.05	1.90	1.75	1.65
525-5676	6943R50KD	50K	0.5	Isolated	2.80	1.85	1.70	1.55	1.45
525-5678	6943R100KA	100K	0.05	Isolated	3.25	2.45	2.30	2.15	2.05
525-5680	6943R100KB	100K	0.1	Isolated	2.95	2.05	1.90	1.75	1.65
525-5682	6943R100KD	100K	0.5	Isolated	2.80	1.85	1.70	1.55	1.45
525-5684	6943R100KF	100K	1.0	Isolated	2.65	1.65	1.50	1.35	1.25
525-5700	6981R1KB	1K	0.1	Bussed	4.25	3.25	3.10	2.95	2.85
525-5702	6981R1KD	1K	0.5	Bussed	3.85	2.70	2.55	2.40	2.30
525-5704	6981R1KF	1K	1.0	Bussed	3.30	2.00	1.85	1.70	1.60
525-5706	6981R2KD	2K	0.5	Bussed	3.85	2.70	2.55	2.40	2.30
525-5708	6981R2KF	2K	1.0	Bussed	3.30	2.00	1.85	1.70	1.60
525-5710	6981R10KB	10K	0.1	Bussed	4.25	3.25	3.10	2.95	2.85
525-5712	6981R10KD	10K	0.5	Bussed	3.85	2.70	2.55	2.40	2.30
525-5714	6981R20KB	20K	0.1	Bussed	4.25	3.25	3.10	2.95	2.85
525-5716	6981R20KD	20K	0.5	Bussed	3.85	2.70	2.55	2.40	2.30
525-5718	6981R20KF	20K	1.0	Bussed	3.30	2.00	1.85	1.70	1.60
525-5720	6981R100KD	100K	0.5	Bussed	3.85	2.70	2.55	2.40	2.30
525-5722	6981R100KF	100K	1.0	Bussed	3.30	2.00	1.85	1.70	1.60
525-5750	6991R1KD	1K	0.5	Bussed	3.35	2.50	2.35	2.20	2.10
525-5752	6991R1KF	1K	1.0	Bussed	2.60	1.90	1.75	1.60	1.50
525-5754	6991R5KD	5K	0.5	Bussed	3.35	2.50	2.35	2.20	2.10
525-5756	6991R5KF	5K	1.0	Bussed	2.60	1.90	1.75	1.60	1.50
525-5758	6991R10KD	10K	0.5	Bussed	3.35	2.50	2.35	2.20	2.10
525-5760	6991R10KF	10K	1.0	Bussed	2.60	1.90	1.75	1.60	1.50
525-5762	6991R100KD	100K	0.5	Bussed	3.35	2.50	2.35	2.20	2.10
525-5764	6991R100KF	100K	1.0	Bussed	2.60	1.90	1.75	1.60	1.50

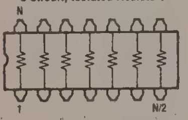
Model 898, 899 Series DIP Networks

These dual-in-line (DIP) thick film precision resistor networks are thru-hole devices. The 898 is 2-watts per package and the 899 is 1.28-watts per package at 70°C derated to 0 at 125°C. **Resistance Tolerance:** at 25°C is 2% (<100 ohm = ±2 ohm). **Resistance Temperature Coefficient:** ±100 ppm/°C (<100 ohms = ±250 ppm/°C). **Resistance to Solder Heat:** per MIL-STD-202, method 210, cond. B. **Operating Temperature Range:** –55°C to +125°C. **Lead Material:** Copper alloy dipped in 60/40 tin-lead solder. Leads are in PC-pin configuration. An alumina substrate material is used with cermet resistor material enclosed in a molded epoxy body material. Custom circuit configurations are available as special order items. Manufacturer's literature available upon request.

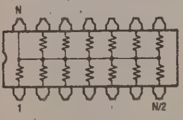
Stock No.	Mfr.'s Type	Ohms	Tolerance	Termination	EACH				
					1-99	100-249	250-499	500-999	1000-9999
525-5780	8981R1K	1K	2.0	Bussed	.56	.48	.43	.38	.34
525-5782	8981R2.2K	2.2K	2.0	Bussed	.56	.48	.43	.38	.34
525-5784	8981R4.7K	4.7K	2.0	Bussed	.56	.48	.43	.38	.34
525-5786	8981R10K	10K	2.0	Bussed	.56	.48	.43	.38	.34
525-5788	8981R22K	22K	2.0	Bussed	.56	.48	.43	.38	.34
525-5790	8981R47K	47K	2.0	Bussed	.56	.48	.43	.38	.34
525-5800	8983R22	22	2.0	Isolated	.56	.48	.43	.38	.34
525-5802	8983R27	27	2.0	Isolated	.56	.48	.43	.38	.34
525-5804	8983R33	33	2.0	Isolated	.56	.48	.43	.38	.34
525-5806	8983R39	39	2.0	Isolated	.56	.48	.43	.38	.34
525-5808	8983R47	47	2.0	Isolated	.56	.48	.43	.38	.34
525-5810	8983R51	51	2.0	Isolated	.56	.48	.43	.38	.34
525-5812	8983R56	56	2.0	Isolated	.56	.48	.43	.38	.34
525-5814	8983R68	68	2.0	Isolated	.56	.48	.43	.38	.34
525-5816	8983R82	82	2.0	Isolated	.56	.48	.43	.38	.34
525-5818	8983R100	100	2.0	Isolated	.56	.48	.43	.38	.34
525-5820	8983R120	120	2.0	Isolated	.56	.48	.43	.38	.34
525-5822	8983R150	150	2.0	Isolated	.56	.48	.43	.38	.34
525-5824	8983R220	220	2.0	Isolated	.56	.48	.43	.38	.34
525-5826	8983R270	270	2.0	Isolated	.56	.48	.43	.38	.34
525-5828	8983R330	330	2.0	Isolated	.56	.48	.43	.38	.34
525-5830	8983R390	390	2.0	Isolated	.56	.48	.43	.38	.34
525-5832	8983R470	470	2.0	Isolated	.56	.48	.43	.38	.34
525-5834	8983R1K	1K	2.0	Isolated	.56	.48	.43	.38	.34
525-5836	8983R2.2K	2.2K	2.0	Isolated	.56	.48	.43	.38	.34
525-5838	8983R3.3K	3.3K	2.0	Isolated	.56	.48	.43	.38	.34
525-5840	8983R4.7K	4.7K	2.0	Isolated	.56	.48	.43	.38	.34
525-5842	8983R10K	10K	2.0	Isolated	.56	.48	.43	.38	.34
525-5844	8983R22K	22K	2.0	Isolated	.56	.48	.43	.38	.34
525-5846	8983R33K	33K	2.0	Isolated	.56	.48	.43	.38	.34
525-5848	8983R47K	47K	2.0	Isolated	.56	.48	.43	.38	.34
525-5850	8983R100K	100K	2.0	Isolated	.56	.48	.43	.38	.34
525-5880	8985R220/330	220/330	2.0	Dual	.87	.68	.64	.59	.54
525-5885	8985R330/470	330/470	2.0	Dual	.87	.68	.64	.59	.54
525-5900	8991R1K	1K	2.0	Bussed	.56	.48	.43	.38	.34
525-5905	8991R4.7K	4.7K	2.0	Bussed	.56	.48	.43	.38	.34
525-5910	8991R10K	10K	2.0	Bussed	.56	.48	.43	.38	.34



-3 Circuit, Isolated Resistors

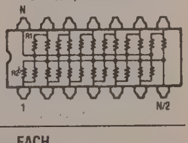


-1 Circuit, Bussed Resistors



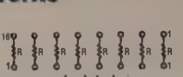
899: N=14 Leads
898: N=16 Leads

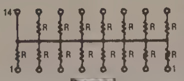
-5 Circuit, Dual Terminator

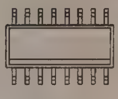


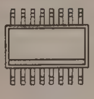
Stock No.	Mfr.'s Type	Ohms	Tolerance	Termination	EACH				
					1-99	100-249	250-499	500-999	1000-9999
525-5950	8993R33	33	2.0	Isolated	.56	.48	.43	.38	.34
525-5952	8993R100	100	2.0	Isolated	.56	.48	.43	.38	.34
525-5954	8993R150	150	2.0	Isolated	.56	.48	.43	.38	.34
525-5956	8993R220	220	2.0	Isolated	.56	.48	.43	.38	.34
525-5958	8993R470	470	2.0	Isolated	.56	.48	.43	.38	.34
525-5960	8993R1K	1K	2.0	Isolated	.56	.48	.43	.38	.34
525-5962	8993R4.7K	4.7K	2.0	Isolated	.56	.48	.43	.38	.34
525-5964	8993R10K	10K	2.0	Isolated	.56	.48	.43	.38	.34
525-5966	8993R33K	33K	2.0	Isolated	.56	.48	.43	.38	.34
525-5968	8993R47K	47K	2.0	Isolated	.56	.48	.43	.38	.34
525-5970	8993R82K	82K	2.0	Isolated	.56	.48	.43	.38	.34
525-5972	8993R100K	100K	2.0	Isolated	.56	.48	.43	.38	.34
525-5974	8993R220K	220K	2.0	Isolated	.56	.48	.43	.38	.34
525-5990	8995R220/330	220/330	2.0	Dual	.87	.68	.64	.59	.54

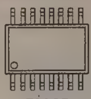
MiniNet Resistor Networks


Isolated


Bussed


Narrow SOIC


QSOP

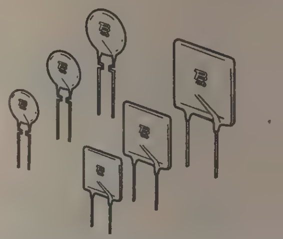

TSSOP

This new series of miniature MiniNet Resistor Networks is based on a Tantalum Nitride (TN) thin film deposited on a silicon substrate to create the smallest resistor networks available. One of the key factors to consider when selecting these networks is the long-term stability of thin film metalization and lower noise levels compared to thick film ink systems. They offer excellent matching, are the most precise, lowest noise, excellent TTRC and the best TCR available. They are made using IC processing techniques, resulting in networks that are even smaller than an equal number of chips resistors. Package dimensions are based on JEDEC standards. Packages include QSOP (Quarter Sized Outline Package), TSSOP (Thin Shrink Small Outline Package) and Narrow SOIC (Narrow Small Outline Integrated Circuit). With 25 mil. lead spacing for the QSOP, they can be put very close to IC outputs minimizing transmission line mismatching problems. The TSSOP has 25.6 mil. lead spacing and Narrow SOIC has 50 mil. lead spacing. These networks are ideal for applications where space is at a premium. Applications include computers (portable, handheld, notebooks, workstations), telecom (DBS receivers, networks, routers), wireless (pagers, radio, PCN handheld, cellular, LAN), instrumentation (test equipment, controls, sensors), medical (implants, mobile, portable). Manufacturer's literature available upon request.

Stock No.	Mfr.'s Type	Ohms	Pin Count	Tol. %	EACH			
					1-9	10-24	25-49	50-99
755-1000†	2NBS08-TJ2-102	1K	8	5	.94	.87	.78	.73
755-1002†	2NBS08-TJ2-202	2K	8	5	.94	.87	.78	.73
755-1004†	2NBS08-TJ2-103	10K	8	5	.94	.87	.78	.73
755-1006*	2NBS16-TF1-203	20K	16	1	1.28	1.19	1.07	1.00
755-1008†	2NBS16-TF2-102	1K	16	1	1.28	1.19	1.07	1.00
755-1010†	2NBS16-TF2-103	10K	16	1	1.28	1.19	1.07	1.00
755-1012*	2NBS16-TG1-221	220	16	2	1.16	1.07	.97	.91
755-1014†	2NBS16-TG2-101	100	16	2	1.16	1.07	.97	.91
755-1016†	2NBS16-TG2-103	10K	16	2	1.16	1.07	.97	.91
755-1018*	2NBS16-TJ1-100	10	16	5	1.06	.98	.88	.83
755-1020*	2NBS16-TJ1-220	22	16	5	1.06	.98	.88	.83
755-1022*	2NBS16-TJ1-330	33	16	5	1.06	.98	.88	.83
755-1024*	2NBS16-TJ1-470	47	16	5	1.06	.98	.88	.83
755-1026*	2NBS16-TJ1-221	220	16	5	1.06	.98	.88	.83
755-1028*	2NBS16-TJ1-331	330	16	5	1.06	.98	.88	.83
755-1030*	2NBS16-TJ1-471	470	16	5	1.06	.98	.88	.83
755-1032*	2NBS16-TJ1-102	1K	16	5	1.06	.98	.88	.83
755-1034*	2NBS16-TJ1-222	2.2K	16	5	1.06	.98	.88	.83
755-1036*	2NBS16-TJ1-472	4.7K	16	5	1.06	.98	.88	.83
755-1038*	2NBS16-TJ1-103	10K	16	5	1.06	.98	.88	.83
755-1040†	2NBS16-TJ2-101	100	16	5	1.06	.98	.88	.83
755-1042†	2NBS16-TJ2-221	220	16	5	1.06	.98	.88	.83
755-1044†	2NBS16-TJ2-271	270	16	5	1.06	.98	.88	.83
755-1046†	2NBS16-TJ2-331	330	16	5	1.06	.98	.88	.83
755-1048†	2NBS16-TJ2-471	470	16	5	1.06	.98	.88	.83
755-1050†	2NBS16-TJ2-681	680	16	5	1.06	.98	.88	.83
755-1052†	2NBS16-TJ2-102	1K	16	5	1.06	.98	.88	.83
755-1054†	2NBS16-TJ2-202	2K	16	5	1.06	.98	.88	.83
755-1056†	2NBS16-TJ2-222	2.2K	16	5	1.06	.98	.88	.83
755-1058†	2NBS16-TJ2-472	4.7K	16	5	1.06	.98	.88	.83
755-1060†	2NBS16-TJ2-103	10K	16	5	1.06	.98	.88	.83
755-1062*	2QSP16-TG1-330	33	16	2	1.16	1.07	.97	.91
755-1064*	2QSP16-TG1-102	1K	16	2	1.16	1.07	.97	.91
755-1066*	2QSP16-TG1-471	470	16	2	1.16	1.07	.97	.91
755-1068†	2QSP16-TG2-221	220	16	2	1.16	1.07	.97	.91
755-1070†	2QSP16-TG2-331	330	16	2	1.16	1.07	.97	.91
755-1072†	2QSP16-TG2-102	1K	16	2	1.16	1.07	.97	.91
755-1074†	2QSP16-TG2-222	2.2K	16	2	1.16	1.07	.97	.91
755-1076†	2QSP16-TG2-472	4.7K	16	2	1.16	1.07	.97	.91
755-1078†	2QSP16-TG2-103	10K	16	2	1.16	1.07	.97	.91
755-1080*	2QSP16-TJ1-220	22	16	5	1.06	.98	.88	.83
755-1082*	2QSP16-TJ1-330	33	16	5	1.06	.98	.88	.83
755-1084*	2QSP16-TJ1-510	51	16	5	1.06	.98	.88	.83
755-1086*	2QSP16-TJ1-680	68	16	5	1.06	.98	.88	.83
755-1088*	2QSP16-TJ1-331	330	16	5	1.06	.98	.88	.83
755-1092*	2QSP16-TJ1-681	680	16	5	1.06	.98	.88	.83
755-1090*	2QSP16-TJ1-511	510	16	5	1.06	.98	.88	.83
755-1094*	2QSP16-TJ1-102	1K	16	5	1.06	.98	.88	.83
755-1096*	2QSP16-TJ1-222	2.2K	16	5	1.06	.98	.88	.83
755-1098*	2QSP16-TJ1-103	10K	16	5	1.06	.98	.88	.83
755-1100*	2QSP16-TJ1-203	20K	16	5	1.06	.98	.88	.83
755-1102*	2QSP16-TJ1-503	50K	16	5	1.06	.98	.88	.83
755-1104†	2QSP16-TJ2-101	100	16	5	1.06	.98	.88	.83
755-1104†	2QSP16-TJ2-101	100	16	5	1.06	.98	.88	.83
755-1106†	2QSP16-TJ2-221	220	16	5	1.06	.98	.88	.83
755-1108†	2QSP16-TJ2-271	270	16	5	1.06	.98	.88	.83
755-1110†	2QSP16-TJ2-331	330	16	5	1.06	.98	.88	.83
755-1112†	2QSP16-TJ2-471	470	16	5	1.06	.98	.88	.83
755-1114†	2QSP16-TJ2-681	680	16	5	1.06	.98	.88	.83
755-1116†	2QSP16-TJ2-102	1K	16	5	1.06	.98	.88	.83
755-1118†	2QSP16-TJ2-222	2.2K	16	5	1.06	.98	.88	.83
755-1120†	2QSP16-TJ2-472	4.7K	16	5	1.06	.98	.88	.83
755-1122†	2QSP16-TJ2-103	10K	16	5	1.06	.98	.88	.83
755-1124†	2QSP20-TJ2-472	4.7K	20	5	1.10	1.02	.92	.86
755-1126*	2QSP20-TJ1-220	22	20	5	1.10	1.02	.92	.86
755-1128*	2QSP20-TJ1-330	33	20	5	1.10	1.02	.92	.86
755-1130*	2QSP20-TJ1-390	39	20	5	1.10	1.02	.92	.86
755-1132†	2QSP20-TJ2-101	100	20	5	1.10	1.02	.92	.86
755-1134†	2QSP20-TJ2-472	4.7K	20	5	1.10	1.02	.92	.86
755-1136†	2QSP20-TJ2-103	10K	20	5	1.10	1.02	.92	.86
755-1138*	2QSP24-TJ1-100	10	24	5	1.16	1.07	.97	.91
755-1140*	2QSP24-TJ1-220	22	24	5	1.16	1.07	.97	.91
755-1142*	2QSP24-TJ1-330	33	24	5	1.16	1.07	.97	.91
755-1144*	2QSP24-TJ1-390	39	24	5	1.16	1.07	.97	.91
755-1146*	2QSP24-TJ1-331	330	24	5	1.16	1.07	.97	.91
755-1148*	2QSP24-TJ1-471	470	24	5	1.16	1.07	.97	.91
755-1150*	2QSP24-TJ1-102	1K	24	5	1.16	1.07	.97	.91
755-1152*	2QSP24-TJ1-103	10K	24	5	1.16	1.07	.97	.91
755-1154†	2QSP24-TJ2-101	100	24	5	1.16	1.07	.97	.91
755-1156†	2QSP24-TJ2-221	220	24	5	1.16	1.07	.97	.91
755-1158†	2QSP24-TJ2-331	330	24	5	1.16	1.07	.97	.91
755-1160†	2QSP24-TJ2-471	470	24	5	1.16	1.07	.97	.91
755-1162†	2QSP24-TJ2-681	680	24	5	1.16	1.07	.97	.91
755-1164†	2QSP24-TJ2-102	1K	24	5	1.16	1.07	.97	.91
755-1166†	2QSP24-TJ2-152	1.5K	24	5	1.16	1.07	.97	.91
755-1168†	2QSP24-TJ2-202	2K	24	5	1.16	1.07	.97	.91
755-1170†	2QSP24-TJ2-222	2.2K	24	5	1.16	1.07	.97	.91
755-1172†	2QSP24-TJ2-472	4.7K	24	5	1.16	1.07	.97	.91
755-1174†	2QSP24-TJ2-103	10K	24	5	1.16	1.07	.97	.91
755-1176*	2QSP28-TJ1-471	470	28	5	1.20	1.11	1.00	.94

†Bussed. *Isolated.

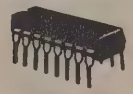
Multifuse PTC Resettable Overcurrent Protectors

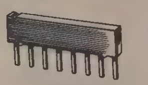


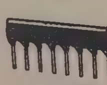
Multifuse products are made from a conductive plastic formed into thin sheets with electrodes attached to either side. The conductive plastic is manufactured from a non-conductive crystalline polymer and a highly conductive carbon black. The electrodes ensure even distribution of power through the device and provide a surface for leads to be attached. The conductive carbon black filler material is dispersed in the polymer. When the polymer is at room temperature, there are numerous carbon chains forming conductive paths through the material. Under a fault condition, I^2R heating causes the plastic material's temperature to rise, resulting in a phase transformation of the polymer matrix to an amorphous stricture. This is accompanied with a small expansion. As the conductive particles move apart, most of them no longer conduct current and the resistance of the device increases sharply. The device will remain in this condition until the fault is cleared, allowing the carbon chains to reform as the polymer re-crystallizes. The resistance quickly returns to its original value. While fuses work well only once, replacement is not an option in many applications due to inconvenience, warranty cost or damaged reputations. Applications for resettable devices include computers and PDAs, motors, audio equipment, test and measurement equipment, security and fire alarms, medical, POS equipment, industrial controls, automotive and marine electronics, and battery-operated toys. **Maximum Voltage:** 30 volts. **Maximum Current:** 40 amps. Manufacturer's literature available upon request.

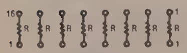
Stock No.	Mfr.'s Type	Initial Resistance @ 23°C		Hold and Trip Current Limits @ 23°C		EACH	
		Min.	Max.	Hold	Trip	1-9	10-24
754-1350	MF-R010	2.500	4.10	0.10	0.15	.96	.86
754-1352	MF-R020	1.830	2.67	0.20	0.30	1.02	.92
754-1354	MF-R025	1.250	1.83	0.25	0.38	1.05	.95
754-1356	MF-R030	0.870	1.27	0.30	0.45	1.05	.95
754-1358	MF-R040	0.550	0.81	0.40	0.60	1.05	.95
754-1360	MF-R050	0.490	0.75	0.50	0.75	1.08	.97
754-1362	MF-R065	0.300	0.46	0.65	0.98	1.14	1.03
754-1364	MF-R075	0.250	0.39	0.75	1.13	1.14	1.03
754-1366	MF-R090	0.190	0.34	0.90	1.35	1.14	1.03
754-1368	MF-R110	0.050	0.10	1.10	2.20	1.14	1.03
754-1370	MF-R135	0.040	0.08	1.35	2.70	1.14	1.03
754-1372	MF-R160	0.030	0.07	1.60	3.20	1.20	1.08
754-1374	MF-R185	0.030	0.06	1.85	3.70	1.23	1.11
754-1376	MF-R250	0.020	0.04	2.50	5.00	1.32	1.19
754-1378	MF-R300	0.020	0.05	3.00	6.00	1.41	1.27
754-1380	MF-R400	0.010	0.03	4.00	8.00	1.50	1.35
754-1382	MF-R500	0.010	0.03	5.00	10.0	1.59	1.43
754-1384	MF-R600	0.005	0.02	6.00	12.0	1.65	1.49
754-1386	MF-R700	0.005	0.02	7.00	14.0	1.74	1.57
754-1388	MF-R800	0.005	0.02	8.00	16.0	1.83	1.65

Single and Dual In-Line Resistor Networks

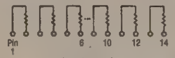

Model 4100


Model 4300

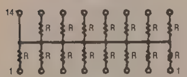

Model 4600



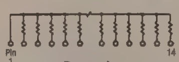
Isolated



Isolated



Bussed



Bussed

The model 4600 is a conformal coated and the model 4300 is a molded single in-line package resistor networks. Their low profile is compatible with DIPs. They are recommended for rosin flux and solvent clean or no clean flux processes. The 4100 series is a molded dual in-line network. Gold Epoxy provides excellent marking contrast for permanent laser marking on all three series. All are compatible with automatic insertion equipment. All are also available in additional values, dual terminators, additional pin count and additional profiles. Call for quote. Manufacturer's literature available upon request.

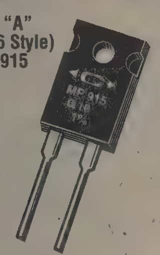
Stock No.	Mfr.'s Type	Ohms	Pin Count	Tol. %	EACH			
					1-9	10-24	25-49	50-99
755-4011†	4606X-101-151	150	6	2	.14	.13	.12	.11
755-4015†	4606X-101-331	330	6	2	.14	.13	.12	.11
755-4017†	4606X-101-471	470	6	2	.14	.13	.12	.11
755-4021†	4606X-101-102	1K	6	2	.14	.13	.12	.11
755-4026†	4606X-101-222	2.2K	6	2	.14	.13	.12	.11
755-4030†	4606X-101-472	4.7K	6	2	.14	.13	.12	.11
755-4034†	4606X-101-103	10K	6	2	.14	.13	.12	.11
755-4043†	4606X-101-473	47K	6	2	.14	.13	.12	.11
755-4047†	4606X-101-104	100K	6	2	.14	.13	.12	.11
755-4113†	4608X-101-221	220	8	2	.18	.17	.15	.14
755-4115†	4608X-101-331	330	8	2	.18	.17	.15	.14
755-4121†	4608X-101-102	1K	8	2	.18	.17	.15	.14
755-4126†	4608X-101-222	2.2K	8	2	.18	.17	.15	.14
755-4128†	4608X-101-332	3.3K	8	2	.18	.17	.15	.14
755-4130†	4608X-101-472	4.7K	8	2	.18	.17	.15	.14
755-4134†	4608X-101-103	10K	8	2	.18	.17	.15	.14
755-4143†	4608X-101-473	47K	8	2	.18	.17	.15	.14
755-4147†	4608X-101-104	100K	8	2	.18	.17	.15	.14
755-4209†	4610X-101-101	100	10	2	.22	.20	.18	.17
755-4213†	4610X-101-221	220	10	2	.22	.20	.18	.17
755-4214†	4610X-101-271	270	10	2	.22	.20	.18	.17
755-4215†	4610X-101-331	330	10	2	.22	.20	.18	.17
755-4217†	4610X-101-471	470	10	2	.22	.20	.18	.17
755-4221†	4610X-101-102	1K	10	2	.22	.20	.18	.17
755-4226†	4610X-101-222	2.2K	10	2	.22	.20	.18	.17
755-4227†	4610X-101-272	2.7K	10	2	.22	.20	.18	.17
755-4228†	4610X-101-332	3.3K	10	2	.22	.20	.18	.17
755-4230†	4610X-101-472	4.7K	10	2	.22	.20	.18	.17
755-4234†	4610X-101-103	10K	10	2	.22	.20	.18	.17
755-4238†	4610X-101-203	20K	10	2	.22	.20	.18	.17
755-4243†	4610X-101-473	47K	10	2	.22	.20	.18	.17
755-4247†	4610X-101-104	100K	10	2	.22	.20	.18	.17
755-4251†	4610X-101-224	220K	10	2	.22	.20	.18	.17
755-4321*	4606X-102-102	1K	6	2	.14	.13	.12	.11
755-4334*	4606X-102-103	10K	6	2	.14	.13	.12	.11
755-4403*	4608X-102-330	33	8	2	.18	.17	.15	.14
755-4409*	4608X-102-101	100	8	2	.18	.17	.15	.14
755-4414*	4608X-102-271	270	8	2	.18	.17	.15	.14
755-4421*	4608X-102-102	1K	8	2	.18	.17	.15	.14
755-4425*	4608X-102-202	2K	8	2	.18	.17	.15	.14
755-4426*	4608X-102-222	2.2K	8	2	.18	.17	.15	.14
755-4430*	4608X-102-472	4.7K	8	2	.18	.17	.15	.14
755-4434*	4608X-102-103	10K	8	2	.18	.17	.15	.14
755-4439*	4608X-102-223	22K	8	2	.18	.17	.15	.14
755-4447*	4608X-102-104	100K	8	2	.18	.17	.15	.14
755-4459*	4608X-102-105	1M	8	2	.18	.17	.15	.14
755-4503*	4610X-102-330	33	10	2	.22	.20	.18	.17
755-4521*	4610X-102-102	1K	10	2	.22	.20	.18	.17
755-4530*	4610X-102-472	4.7K	10	2	.22	.20	.18	.17
755-4534*	4610X-102-103	10K	10	2	.22	.20	.18	.17
755-4547*	4610X-102-104	100K	10	2	.22	.20	.18	.17
755-4713*	4114R-1-221	220	14	2	.33	.31	.28	.26
755-4715*	4114R-1-331	330	14	2	.33	.31	.28	.26
755-4721*	4114R-1-102	1K	14	2	.33	.31	.28	.26
755-4734*	4114R-1-103	10K	14	2	.33	.31	.28	.26
755-4802*	4116R-1-270	27	16	2	.34	.31	.28	.27
755-4803*	4116R-1-330	33	16	2	.34	.31	.28	.27
755-4809*	4116R-1-101	100	16	2	.34	.31	.28	.27
755-4811*	4116R-1-151	150	16	2	.34	.31	.28	.27
755-4813*	4116R-1-221	220	16	2	.34	.31	.28	.27
755-4815*	4116R-1-331	330	16	2	.34	.31	.28	.27
755-4817*	4116R-1-471	470	16	2	.34	.31	.28	.27
755-4821*	4116R-1-102	1K	16	2	.34	.31	.28	.27
755-4822*	4116R-1-122	1.2K	16	2	.34	.31	.28	.27
755-4826*	4116R-1-222	2.2K	16	2	.34	.31	.28	.27
755-4828*	4116R-1-332	3.3K	16	2	.34	.31	.28	.27
755-4830*	4116R-1-472	4.7K	16	2	.34	.31	.28	.27
755-4834*	4116R-1-103	10K	16	2	.34	.31	.28	.27
755-4847*	4116R-1-104	100K	16	2	.34	.31	.28	.27
755-4934†	4114R-2-103	10K	16	2	.33	.31	.28	.26
755-5021†	4116R-2-102	1K	16	2	.33	.31	.28	.26
755-5030†	4116R-2-472	4.7K	16	2	.33	.31	.28	.26
755-5034†	4116R-2-103	10K	16	2	.33	.31	.28	.26
755-6030†	4306R-101-472	4.7K	6	2	.27	.25	.23	.21
755-6034†	4306R-101-103	10K	6	2	2.27	2.10	1.89	1.77
755-6121†	4308R-101-102	1K	8	2	.31	.29	.26	.24
755-6130†	4308R-101-472	4.7K	8	2	.31	.29	.26	.24
755-6134†	4308R-101-103	10K	8	2	.31	.29	.26	.24
755-6221†	4310R-101-102	1K	10	2	.37	.34	.31	.29
755-6226†	4310R-101-222	2.2K	10	2	.37	.34	.31	.29
755-6228†	4310R-101-332	3.3K	10	2	.37	.34	.31	.29
755-6230†	4310R-101-472	4.7K	10	2	.37	.34	.31	.29
755-6234†	4310R-101-103	10K	10	2	.37	.34	.31	.29
755-6234†	4310R-101-103	10K	10	2	.37	.34	.31	.29
755-6247†	4310R-101-104	100K	10	2	.37	.34	.31	.29
755-6434*	4308R-102-103	10K	8	2	.31	.29	.26	.24

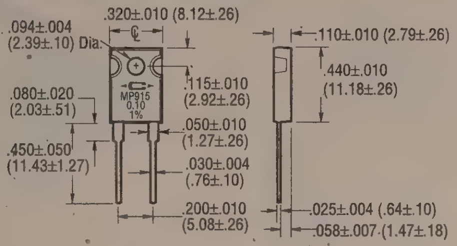
†Bussed. *Isolated.

See Our Manufacturer Index Located In Section 1

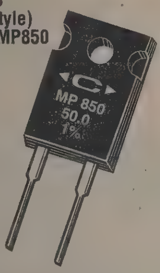
MP Series Heat Sink Mountable Resistors in the TO-126 and TO-220 Style Power Packages

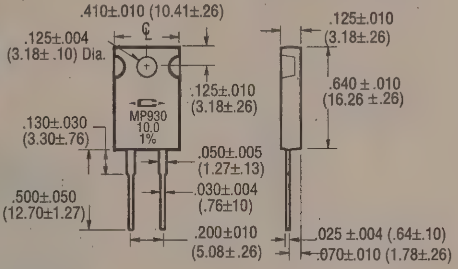
Case "A"
(TO-126 Style)
MP915





Case "B"
(TO-220 Style)
MP930 and MP850





All dimensions in inches and (millimeters)

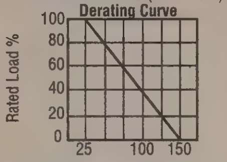
Standard Tolerance: 1%. **Temperature Coefficient.** TC taken at 25°C and 150°C. **MP850:** 5 ohms and above, 0 to +50 ppm/°C; below 5 ohms down to 0.5 ohm, 0 to +100 ppm/°C; below 0.5 ohm down to 0.2 ohm, 0 to +200 ppm/°C. **MP915/MP930:** 0.50 ohm and above, 0 to +100 ppm/°C; 0.05 ohm to 0.49 ohm, 0 to +200 ppm/°C. **Dielectric Strength:** 1500 Vrms AC. **Measurement Note:** Below 1 ohm the resistance measurement shall be made at a point 0.2 inch (5.08 mm) from the resistor body. **The MP915 and MP930 feature an exposed ceramic heat dissipating mounting surface. The MP850 has a copper heat sink integral in the molded package.**

Stock No.	Mfr.'s Type	Case Type	Power Rating	Max. Voltage	Ohms/ Range	EACH 1-24	EACH 25-49	EACH 50-99
524-6XXX	MP915	A	15 Watts*	200	0.05 0.1 - 5 10 - 1K	**4.52** **3.16** **2.68**	**4.11** **2.87** **2.44**	**3.77** **2.63** **2.23**
524-7XXX†	MP930	B	30 Watts*	250	0.05 0.1 - 5 10 - 10K	**5.74** **4.02** **3.42**	**5.22** **3.65** **3.11**	**4.78** **3.35** **2.85**
524-4XXX	MP850	B	50 Watts*	300	1 - 5 10 - 10K	**8.50** **7.72**	**7.73** **7.02**	**7.08** **6.43**

†5K and 10K will be supplied as MP925.

Ohms	XX	Ohms	XX	Ohms	XX	Ohms	XX	Ohms	XX
.05	005	1	020	20	098	100	202	2K	400
0.1	010	2	028	25	115	200	243	5K	465
0.2	012	5	050	50	158	500	306	10K	522
0.5	015	10	060	75	185	1K	356	—	—

Derating (Thermal Resistance):
MP915: 0.12W/°C (8.33 °C/W)
MP930: 0.24W/°C (4.17 °C/W)
MP850: 0.40W/°C (2.50 °C/W)

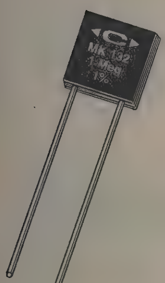


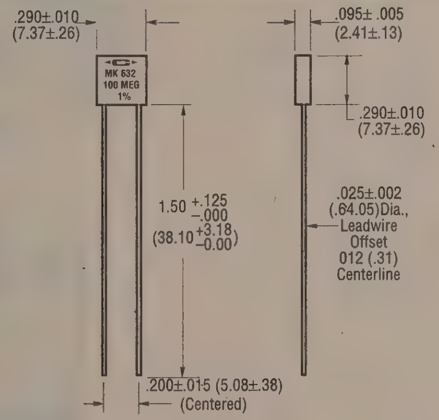
***Power Rating:** The case temperature is to be used for purposes of establishing the maximum applied power. See Derating Curve. The case temperature measurement is made with the thermocouple contacting the bottom insulated mounting surface of the package (center of bottom surface), the device mounted on a heat sink, thermal grease applied at a mounting torque of 8 in-lbs (0.90 N-m) maximum. **Without a heat sink, when in free air at 25°C, the MP930 and MP850 are rated for 2.25 watts, the MP915 is rated for 1.25 watts.**

8

Mounting Note: The MP915/MP930 and MP850 must be mounted using a screw and compression washer mounting technique. This will provide sufficient pressure on the package over time and through large temperature variations to maintain the maximum power dissipation capability. Maximum torque to be applied to mounting screw is 8 in-lbs (0.90 N-m) maximum. **See Power Rating Note** for instructions on determining maximum power dissipation on your heat sink.

Type MK Radial Lead Precision Power Resistor, CK06 Size, 1 Ohm to 100 Meg, 0.75 Watt Rating





Standard Tolerance: 1%. **Temperature Coefficient:** 5 ohm to 5 Meg, ±50 ppm/°C; <5 ohm ±200 ppm/°C; >5 Meg, ±80 ppm/°C; TC referenced to +25°C, ΔR taken at –15°C and +105°C. **Operating Temperature:** –55°C to 175°C, 100% rated power at 125°C derated linearly to zero at 175°C. **Leadwire:** Tinned Copper.

Ohms	XX	Ohms	XX	Ohms	XX	Ohms	XX	Ohms	XX	Ohms	XX	Ohms	XX
1	020	20	098	500	306	10K	522	200K	759	5M	906	100M	975
2	028	50	158	1K	356	20K	575	500K	627	10M	924	—	—
5	050	100	202	2K	400	50K	655	1M	877	20M	935	—	—
10	060	200	243	5K	465	100K	717	.2M	905	50M	950	—	—

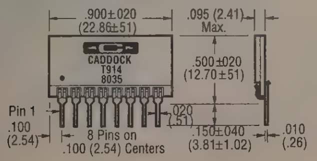
Stock No.	Mfr.'s Type	Wattage 125°C	Max. Voltage	Ohms/ Range	EACH 1-24	EACH 25-49	EACH 50-99
524-5XXX	MK 132	.75	400	1 - 20 50 - 50K 100K - 500K 1 M - 5 M	**5.00** **2.60** **3.14** **4.06**	**4.55** **2.36** **2.85** **3.69**	**4.17** **2.17** **2.62** **3.38**
524-5XXX	MK 632	.75	400	10 M 20 M 50 M - 100 M	**4.32** **5.18** **6.20**	**3.93** **4.71** **5.64**	**3.60** **4.32** **5.17**

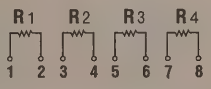
Comparison of Type MK and "RN" Ratings and Dimensions

Resistor Type	Power Rating	Maximum Resistance	Mounting Hole Spacing	
MK 132 or MK 632	.75W	100 Megohms	.200 (5.08)	MK 632 100 MEG 1%
RN50	.05W	1 Megohm	.400 (10.15)	RN50
RN55	.10W	5 Megohms	.500 (12.70)	RN55
RN60	.125W	10 Megohms	.625 (15.90)	RN60
RN65	.25W	20 Megohms	.875 (22.20)	RN65
RN70	.50W	40 Megohms	1.000 (25.40)	RN70

Type T914 Resistor Quads with 0.1% Ratio Tolerance and 10 ppm/°C Ratio TC

Ratio Tolerance: 0.1% at 25°C. **Ratio TC:** 10 ppm/°C 0°C to 70°C. **Absolute Tolerance:** 0.1% at 25°C. **Absolute TC:** 25ppm/°C 0°C to 70°C. **Voltage Rating:** 30 volts per resistor at 70°C max. **Power Rating:** 0.100 watt per resistor at 70°C max. (not to exceed rated voltage). **Storage Temperature:** –55°C to +105°C.





All dimensions in inches and (millimeters)

Stock No.	Mfr.'s Type	Resistance R1 thru R4	EACH 1-24	EACH 25-49	EACH 50-99
524-6103	T914-10K-100-10	10 K	**7.66**	**6.96**	**6.38**
524-6203	T914-20K-100-10	20 K	**7.66**	**6.96**	**6.38**
524-6403	T914-40K-100-10	40 K	**7.66**	**6.96**	**6.38**
524-6104	T914-100K-100-10	100 K	**7.66**	**6.96**	**6.38**

Century Resistor Kits

CEC kits contain the most popular component selections (types and values) and ship fully assembled with labels, clearly showing product type, wattage/voltage, component value and other specification information. No assembly required.

Carbon Film Resistor Kit

Resistor have conformal multi-coating, EIA std. color coding and exceed MIL-R-11F performance characteristics. **Tolerance:** ±5%.

Stock No.	Mfr.'s Type	Watts	No. of Values	Case	Resistance Range	Kit Qty.	Qty. Per Value	EACH
777-0018	GL-18	1/8	42	A	0.5 Ω-4.7 M	1050	25	**54.40**
777-1815	1815	1/8	60	B	2.2 Ω-2.2 M	1050	25	**157.50**
777-0025	GL-25	1/4	42	A	0.5 Ω-4.7 M	1050	25	**47.60**
777-2515	2515	1/4	60	B	2.2 Ω-2.2 M	1500	25	**115.45**
777-2530	2530	1/4	60	B	2.2 Ω-2.2 M	3000	50	**153.25**
777-0050	GL-50	1/2	42	A	0.5 Ω-4.7 M	1050	25	**57.80**
777-5015	5015	1/2	60	B	2.2 Ω-2.2 M	1500	25	**131.20**
777-4501	CEC-450-1W	1	45	B	4.7 Ω-1.0 M	450	10	**139.60**
777-4502	CEC-450-2W	2	45	B	4.7 Ω-1.0 M	450	10	**143.80**
777-0512	GL-84R512	*	42	A	1.0 Ω-1.0 M	1050	25	**87.00**

Thick Film Resistor Chips

High quality thick film surface mount 1206, 0805 and 0603 type chip resistors. High reliability and wave flow solderability. **Tolerance:** ±5%.

777-1205	RC-1206A	1/8	18	E	2.7 Ω-2.2 M	180	10	**38.00**
777-1206	RC-1206	1/8	60	C	2.7 Ω-2.2 M	1200	20	**188.00**
777-0805	RC-0805	1/10	60	B	2.7 Ω-2.2 M	3000	50	**188.00**
777-0603	RC-0603	1/16	60	C	2.7 Ω-2.2 M	3000	50	**188.00**

Metal Film Resistor Kits

Quality metal film assortments containing the most popular values, color coded with excellent high frequency characteristics. **Tolerance:** 1%.

777-0055	EMF-55	1/4	111	B	10.0 Ω-1.0 M	1110	10	**184.75**
777-0014	K-GL14L	1/4	42	A	10.0 Ω-909 Ω	420	10	**56.00**
777-0015	K-GL14H	1/4	42	A	1.0 K-1.0 M	420	10	**56.00**

*1/8, 1/4, 1/2, 1 and 2 watts.

Century Diode Kits

Rectifier/Fast Recovery and Zener Diode Kits

Stock No.	Mfr.'s Type	Type*	No. of Values	Case	Diode Value Range	Kit Qty.	Qty. Per Value	EACH
777-0136	CECRD136	1	6	B	400-1000PIV	60	10	**188.00**
		2	6		400-1000PIV	60	10	
777-0118	CEC-118	2	12	D	100-1000PIV	120	10	**62.25**
777-0119	CEC-119	1	12	D	100-1000PIV	120	10	**52.70**
777-6400	CECZD640	3	15	B	4.7 V-30 V	150	10	**100.00**
		4	15		3.9 V- 30 V	150	10	
777-0115	CEC-115	4	12	D	3.9 V-30 V	120	10	**42.50**
777-0016	CEC-116	3	12	D	4.7 V-30 V	120	10	**36.95**

***Type:** 1 — 1, 3, 6 amp std./rectifiers; 2 — 1, 3, 6 amp fast recovery diodes; 3 — .5 watt zener diode; 4 — 1 watt zener diode.

Century Capacitor Kits and Inductor Kit

General Purpose Capacitor Kits

If a quantity in the qty. per value column is not shown, the quantities vary from 3 to 30 pieces per value depending on case size.

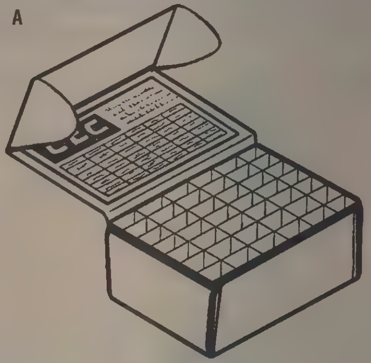
Stock No.	Mfr.'s Type	Type*	V	No. of Values	Case	Value Range	Kit Qty.	Qty. Per Value	EACH
777-0400	NAC-400	1	16-50	17	B	1-4700 mfd	71		**169.95**
		2	16-50	16		1-3300 mfd	75		
		3	50	10		220 pF-.1 mfd	100	10	
		4	250/630	7		.01-.47 mfd	50		
		5	100	9		.001-.47 mfd	80		
777-0051	CEC-51	1	16-50	12	D	1-4700 mfd	51		**46.75**
777-0059	CEC-59	2	25-50	12	D	1-3300 mfd	59		**39.10**
777-0120	CEC-120	3	50	1	D	220 pF-.1 mfd	120	10	**38.00**
777-0121	CEC-121	3	500	12	D	10-10000 pF	120	10	**34.00**
777-0100	CEC-100	4	250-630	12	D	.022-.47 mfd	85		**51.85**
777-0105	CEC-105	5	100	12	D	.001-.47 mfd	105		**43.35**
777-0410	CEC-410	7	10-50	27	B	.1-100 mfd	270	10	**145.95**
		8	16-50	8		2.2-4.7 mfd	80	10	
777-0122	CEC-122	7	10-50	12	D	.1-100 mfd	120	10	**45.90**
777-0150	TSD-150	6	10-35	27	B	.1-47 mfd	135	5	**192.95**
777-0300	TSD-300	6	10-35	27	B	.1-47 mfd	270	10	**259.95**
777-0060	CEC-60	6	16-35	12	D	.1-47 mfd	60	5	**64.60**

Surface Mount Capacitor Kits and Inductor Kit

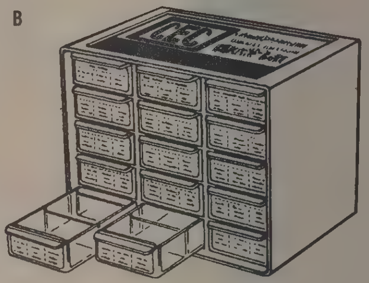
777-1500	TC-150	9	4-35	27	C	.1-68 mfd	135	5	**189.95**
777-0062	CEC-62	9	4-35	12	D	.047-68 mfd	60	5	**67.92**
777-5408	CC54008	10	50	30	C	10 pF-.1 mfd	300	10	**184.45**
777-0182	CEC-182	10	50	18	E	10 pF-.1 mfd	90	5	**44.20**
777-5412	CC54012	10	50	30	C	10 pF-.1 mfd	300	10	**184.45**
777-0181	CEC-181	10	50	18	E	10 pF-.1 mfd	90	5	**44.20**
777-0360	CEC-360	12	4-50	18	E	.1-220 mfd	90	5	**182.95**
777-0123	CEC-123	12	4-50	12	D	.1-220 mfd	120	10	**73.10**
777-0112	CEC-112	13		16	C	1.0-820 µh	112	7	**138.55**

***Type:** 1 — Lytic, axial, ±20%; 2 — Lytic, radial, ±20%; 3 — Ceramic disc; 4 — Metallized film, ±10%; 5 — Polyester film, ±10%; 6 — Tantalum, radial; 7 — Lytic, low leakage; 8 — Lytic, subminiature; 9 — Tantalum chip (SMD); 10 — Multi-layered ceramic chip (0805); 11 — Multi-layered ceramic chip (1206); 12 — Electrolytic, surface mount type; 13 — Wound chip inductor.

A

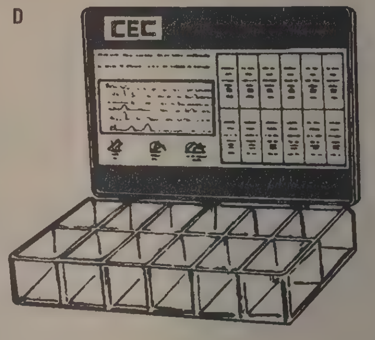


B

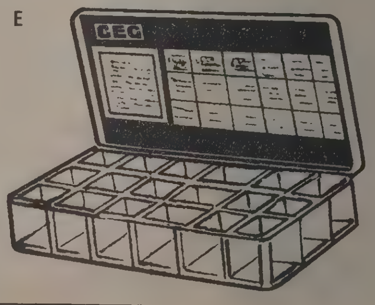


C

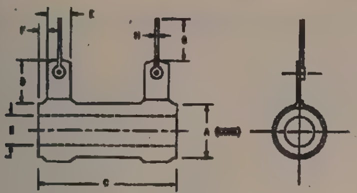
D



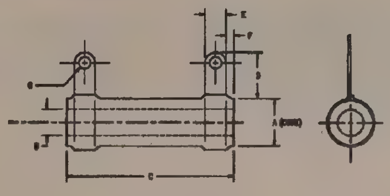
E



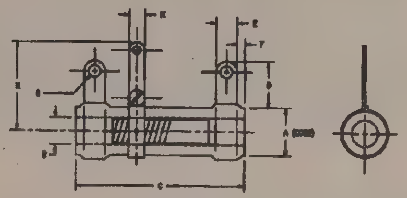
Bracket-Mounted Wirewound Vitreous Enamel Resistors



Series VPR



Series VP and VK



Series VPA and VKA

Dimensions (Inches)

Mfr.'s Type	Watts	A	B	C	D	E	F	G	H	J	K	Weight (Oz.)
VPR-5F	8	.313	.200	1.00	.438	.188	.094	1.750	.036	—	—	.192
VPR-10F	12	.313	.200	1.75	.438	.188	.094	1.750	.036	—	—	.304
VPR-20H	20	.438	.250	2.00	.438	.188	.094	1.750	.036	—	—	.528
VP-25K	25	.563	.313	2.00	.563	.250	.094	.104	—	—	—	.816
VP-50K	50	.563	.313	4.00	.563	.250	.094	.144	—	—	—	1.312
VK-100N	100	.750	.500	6.50	.563	.250	.094	.144	—	—	—	3.200
VK-200W	225	1.125	.750	10.50	.625	.313	.094	.177	—	—	—	11.840
VP-10FA	12	.313	.200	1.75	.438	.188	.094	.104	.906	.125	.188	.320
VP-25KA	25	.563	.313	2.00	.563	.250	.094	.144	1.000	.173	.188	.800
VP-50KA	50	.563	.313	4.00	.563	.250	.094	.144	1.050	.173	.188	1.440

Fixed Types

These precision wirewound resistors are especially designed to meet a wide variety of military, industrial and general consumer applications. They offer long life and extremely reliable service. For use as voltage droppers, bias resistors and bleeders in applications where resistance need not be varied. Feature fine alloy wire, wirewound on quality ceramic cores and covered with vitreous enamel coatings — the best conductor of heat for a material which must also be a good electrical conductor. Resistance Tolerance: ±5% for values 1 ohm or higher. Wattage ratings are for use in free air. See Table B (Below) Before Ordering. Mounting brackets and extra slider bands sold separately.

VPR-5F — 8 Watts

Stock No.	Resistance (Ohms) See Table B	EACH 1-9	EACH 10-24	EACH 25-49
880-69XX	1, 2, 3, 4, 5, 7.5	**3.08**	**2.85**	**2.64**
880-69XX	10, 15, 20, 25, 50, 75, 100, 150, 200, 500, 1K	**2.92**	**2.69**	**2.50**
880-69XX	1.5K, 2K, 3K, 4K, 5K	**3.00**	**2.77**	**2.57**
880-69XX	10K	**3.18**	**2.94**	**2.73**

880-1075. F-100. Mounting Bracket (2 required) .... **EACH .32**

VPR-10F — 12 Watts

880-70XX	1, 2, 3, 4, 5	**3.08**	**2.85**	**2.64**
880-70XX	10, 15, 20, 25, 50, 75, 100, 150, 200, 500, 1K	**2.92**	**2.69**	**2.50**
880-70XX	1.5K, 2K, 2.5K, 3K, 4K, 5K	**3.18**	**2.94**	**2.73**
880-70XX	10K	**3.43**	**3.17**	**2.94**
880-70XX	25K	**3.52**	**3.25**	**3.01**
880-70XX	50K	**4.30**	**3.97**	**3.69**

880-1075. F-100. Mounting Bracket (2 required) .... **EACH .32**

VPR-20H — 20 Watts

880-71XX	5	**3.87**	**3.57**	**3.31**
880-71XX	10, 25, 50, 75, 100, 200, 250, 500, 750, 1K	**3.18**	**2.94**	**2.73**
880-71XX	1.5K, 2K, 2.5K, 3K, 5K	**3.52**	**3.25**	**3.01**
880-71XX	10K	**3.95**	**3.65**	**3.39**
880-71XX	25K, 50K	**3.95**	**3.65**	**3.39**
880-71XX	100K	**4.92**	**4.54**	**4.21**

880-1075. F-100. Mounting Bracket (2 required) .... **EACH .32**

VP-25K — 25 Watts

880-21XX	1, 2, 3, 4	**3.35**	**3.09**	**2.87**
880-21XX	5, 10, 15, 25, 50, 75, 100, 200, 250, 500, 750, 1K	**3.18**	**2.94**	**2.73**
880-21XX	2K, 2.5K, 5K	**3.18**	**2.94**	**2.73**
880-21XX	7.5K, 10K	**3.60**	**3.32**	**3.09**
880-21XX	25K	**4.20**	**3.88**	**3.60**
880-21XX	50K	**4.72**	**4.35**	**4.04**
880-21XX	100K	**4.80**	**4.43**	**4.11**

880-1182. K-100. Mounting Bracket (2 required) .... **EACH .42**

VP-50K — 50 Watts

880-22XX	1, 2, 3, 4	**4.98**	**4.60**	**4.27**
880-22XX	5, 10, 25, 50, 75, 100, 200, 250, 500, 1K, 2K, 2.5K, 5K	**4.55**	**4.20**	**3.90**
880-22XX	10K	**4.72**	**4.35**	**4.04**
880-22XX	50K	**5.83**	**5.38**	**5.00**
880-22XX	75K	**6.27**	**5.78**	**5.37**
880-22XX	100K	**6.95**	**6.42**	**5.96**

880-1182. K-100. Mounting Bracket (2 required) .... **EACH .42**

Fixed Types (Continued)

VK-100N — 100 Watts

Stock No.	Resistance (Ohms) See Table B	EACH 1-9	EACH 10-24	EACH 25-49
880-23XX	1, 2	**9.27**	**8.55**	**7.94**
880-23XX	3, 5, 10	**8.83**	**8.15**	**7.57**
880-23XX	25, 50, 75, 100, 200, 250, 1K, 2K, 2.5K, 5K, 7.5K, 10K	**8.15**	**7.52**	**6.99**
880-23XX	50K, 75K, 100K	**9.70**	**8.95**	**8.31**

880-1455. N-100. Mounting Bracket (2 required) .... **EACH .42**

VK-200W — 225 Watts

880-25XX	1, 2,	**21.20**	**19.57**	**18.17**
880-25XX	3, 5, 10	**16.22**	**14.97**	**13.90**
880-25XX	25, 50, 75, 100, 200, 250, 500, 750, 1K, 2K, 5K, 10K	**13.90**	**12.83**	**11.91**
880-25XX	25K, 50K	**14.60**	**13.48**	**12.51**
880-25XX	100K	**17.52**	**16.17**	**15.01**

880-2535. W-100. Mounting Bracket (2 required) .... **EACH .52**

Adjustable Types

For voltage dividing networks, power supplies, transmitters–anywhere adjustable resistance is required. These resistors feature fine alloy wire, precision wound on high quality ceramic cores and insulated by vitreous enamel coatings. Slider lug included with each resistor. Resistance tolerance is ±10% of the total resistance value. Wattage rating applied only when the entire resistance is in the circuit; with adjustable lug at intermediate point, rating is reduced in the same proportion. Wattage ratings are for free air mounting. Important — See Table B (below) Before Ordering. Mounting brackets and extra slider bands sold separately.

VP-10FA — 12 Watts

880-10XX	1, 2, 3, 5	**5.07**	**4.68**	**4.34**
880-10XX	10, 25, 50, 100, 200, 250, 500, 750	**4.63**	**4.28**	**3.97**
880-10XX	1K, 2.5K, 5K	**4.80**	**4.43**	**4.11**
880-10XX	10K	**4.98**	**4.60**	**4.27**

880-1075. F-100. Mounting Bracket (2 required) .... **EACH .32**
880-1080. 01965703. Extra Slider Band .... **EACH 1.10**

VP-25KA — 25 Watts

880-11XX	1, 2, 3, 5, 7.5	**5.40**	**4.98**	**4.63**
880-11XX	10, 15, 25, 50, 100, 250, 500, 1K, 1.5K, 2K, 2.5K, 5K	**5.58**	**5.15**	**4.79**
880-11XX	7.5K, 10K	**5.75**	**5.31**	**4.93**
880-11XX	25K	**6.43**	**5.94**	**5.51**

880-1182. K-100. Mounting Bracket (2 required) .... **EACH .42**
880-1185. 01965903. Extra Slider Band .... **EACH 1.10**

VP-50KA — 50 Watts

880-12XX	1, 2, 3	**7.55**	**6.97**	**6.47**
880-12XX	5, 10, 25, 50, 100, 150, 250, 500, 750	**6.62**	**6.11**	**5.67**
880-12XX	1K, 1.5K, 2K, 2.5K	**6.78**	**6.26**	**5.81**
880-12XX	5K	**6.95**	**6.42**	**5.96**
880-12XX	10K, 25K	**7.30**	**6.74**	**6.26**
880-12XX	50K, 100K	**8.07**	**7.45**	**6.91**

880-1182. K-100. Mounting Bracket (2 required) .... **EACH .42**
880-1185. 01965903. Extra Slider Band .... **EACH 1.10**

Table B — Ordering Information

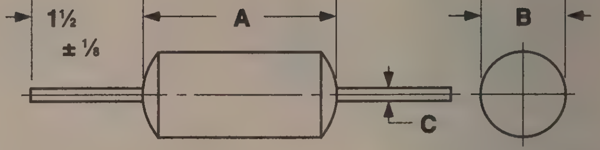
To complete Allied Stock No. replace XX with appropriate code from chart below.

Ohms	XX	Ohms	XX	Ohms	XX	Ohms	XX	Ohms	XX	Ohms	XX	Ohms	XX
1	01	7.5	07	50	18	250	34	1.5K	53	4K	65	50K	84
2	03	10	08	75	22	300	36	2K	54	5K	67	75K	87
3	04	15	09	100	24	500	40	2.5K	57	7.5K	70	100K	92
4	05	20	10	150	29	750	44	3K	58	10K	73	—	—
5	06	25	12	200	32	1K	48	3.5K	60	25K	80	—	—

Silicone Coated—SC Series

The Clarostat SC Series of precision silicone coated power resistors is manufactured in complete accordance with all applicable portions of MIL-R-26. These precision resistors provide an outstanding degree of reliability and stability in ratings of 1, 3, and 5 watts. All standard precision resistors are offered with a 1% tolerance and in standard MIL Styles RW70U, RW79U, and RW74U. **SC1A Terminal Strength:** Pull Test 7 Lb. Max., Approx. Weight .33 Grams. **SC3D Terminal Strength:** Pull Test 15 Lb. Max. Approx. Weight 1.3 Grams. **SC5E Terminal Strength:** Pull Test 15 Lb. Max. Approx. Weight 4 Grams. All resistors have Copperweld, Tinned leads and solderability conforms to MIL-R-26E.

Note: Not all values available in all wattages or types.



Mechanical Specifications

Series	A	B	C
SC1A	.406 ± .063	.094 ± .031	.020 ± .0015
SC3D	.560 ± .062	.187 ± .031	.032 ± .0020
SC5E	.875 ± .062	.312 ± .031	.040 ± .0020

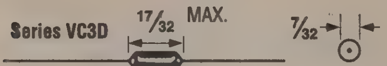
Table of Resistance Value Codes

Ohms	XX	Ohms	XX	Ohms	XX	Ohms	XX	Ohms	XX
.1	01	30	12	180	23	680	35	4K	63
.2	02	35	13	200	24	750	40	5K	65
.3	03	40	14	220	25	820	42	5.6K	70
.5	04	50	15	250	26	1K	45	6.8K	73
1	05	56	16	270	27	1.5K	48	7.5K	75
3	06	68	17	300	28	1.8K	50	8.2K	82
5	07	75	18	330	29	2K	52	10K	90
10	08	82	19	400	30	2.5K	54	15K	92
15	09	100	20	470	31	2.7K	56	20K	95
20	10	120	21	500	32	3K	58	25K	99
25.	11	150	22	560	33	3.5K	60	—	—

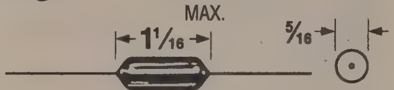
Stock No.	Mfr.'s Type	Wattage	Tolerance %	Ohm/ Range	EACH 1-9	EACH 10-24	EACH 25-49
880-01XX	SC1A RW70U	1	1	.1 - .5 1 - 1K 1.5K - 3K	**1.69** **1.60** **1.78**	**1.61** **1.52** **1.69**	**1.53** **1.45** **1.61**
880-02XX	SC3D RW79U	3	1	.1 - .5 1 - 1K 1.5K -25K	**1.33** **.98** **1.16**	**1.26** **.93** **1.10**	**1.20** **.89** **1.05**
880-03XX	SC5E RW74U	5	1	.1 - .5 1 - 1K 1.5K - 10K 15K -25K	**1.41** **1.41** **1.24** **1.33**	**1.34** **1.34** **1.18** **1.26**	**1.28** **1.28** **1.13** **1.20**

Axial-Lead Vitreous Enamel Resistors

Series VC3D



Series VC5E



Series VC10F

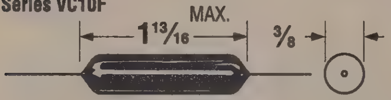


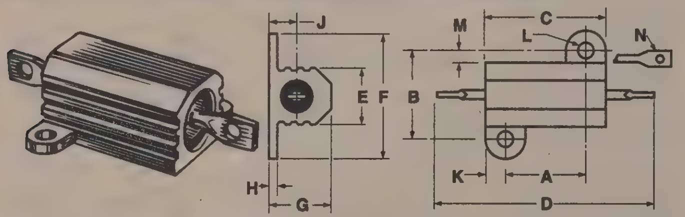
Table of Resistance Value Codes

Ohms	XX	Ohms	XX	Ohms	XX	Ohms	XX	Ohms	XX	Ohms	XX	Ohms	XX
1	01	7.5	07	25	12	120	25	470	38	2K	54	10K	73
2	03	10	08	50	18	150	29	500	40	2.2K	55	15K	75
3	04	15	09	75	22	200	32	1K	48	2.5K	57	20K	78
5	06	20	10	100	24	250	34	1.5K	53	5K	67	25K	80

3, 5 and 10 watt wirewound resistors adapted to printed circuit, terminal board and point-to-point wiring applications. Through elimination of mounting brackets and terminal lugs there are considerable space-saving aspects. **Standard Resistance Tolerance:** ± 5%. **Lead Length:** 1½". **Lead Diameter:** .032" for Type VC3D; Types VC5E and VC10F are .036" Diameter. See table below before ordering. Replace XX (last two numbers of stock number) with ohms value. **Example:** Mfr.'s Type VC3D, 7.5 ohms is stock number 880-4007. **Note:** Not all values available in all wattages or types.

Stock No.	Mfr.'s Type	Watts	Ohm/ Range	EACH 1-9	EACH 10-24	EACH 25-49
880-40XX	VC3D	3.25 3.25 3.25 3.25 3.25	1 - 7.5 10 - 470 500 1K - 2.5K 5K - 10K	**1.33** **1.24** **1.24** **1.52** **1.78**	**1.26** **1.18** **1.18** **1.44** **1.69**	**1.20** **1.13** **1.13** **1.38** **1.61**
880-50XX	VC5E	6.50 6.50 6.50 6.50 6.50	1 - 7.5 10 - 470 1K - 2.5K 5K - 15K 20K - 25K	**1.69** **1.69** **1.86** **2.67** **2.84**	**1.61** **1.61** **1.77** **2.54** **2.70**	**1.53** **1.53** **1.69** **2.42** **2.58**
880-60XX	VC10F	11.00 11.00 11.00 11.00 11.00 11.00 11.00	1 - 7.5 10 - 470 500 1K - 2.5K 5K - 10K 20K 25K	**1.95** **1.78** **1.78** **2.14** **2.48** **2.76** **2.84**	**1.85** **1.69** **1.69** **2.03** **2.36** **2.62** **2.70**	**1.77** **1.61** **1.61** **1.94** **2.25** **2.50** **2.58**

CMC Series Chassis Mounted Power Resistors



Standard Specifications. Power Rating: 5-50 watts depending upon style. 275° C maximum hot-spot at 25°C ambient. Conforms to MIL-R-18546. 1% maximum Δ R in 1000 hour load life. Proper heat sinks as follows: CMC-5 and CMC-10—4 x 6 x 2 x 0.040 aluminum chassis; CMC-25 and CMC-50—5 x 7 x 2 x 0.040 aluminum chassis. **Temperature Range:** –55°C to +275°C. **Standard Temperature Coefficient of Resistance:** <1 ohm = ± 90 ppm; > 1 ohm to <10 ohms = ± 50 ppm. 10 ohms = ± 20 ppm. **Construction:** Windings are wound on ground ceramic cores. Terminals are electronically welded to end caps for maximum strength. A high temperature silicone encapsulant is used to mold the wound assembly. **Standard Terminal Material:** Copperweld, tinned (Material Code 9) 5-50 watt sizes. **Standard Resistance Tolerance:** ± 1.0% order code F. **Dielectric Withstanding Voltage:** 1000 volts for CMC-5 and CMC-10; 2500 volts for CMC-25 and CMC-50. **Note:** Not all resistance values available in all wattages.

Ohms	XX	Ohms	XX	Ohms	XX	Ohms	XX	Ohms	XX	Ohms	XX	Ohms	XX	Ohms	XX
.1	01	1	05	15	09	40	14	150	22	400	30	1.5K	48	3.5K	60
.2	02	3	06	20	10	50	15	200	24	500	32	2.0K	52	4.0K	63
.3	03	5	07	25	11	75	18	250	26	750	40	2.5K	54	5.0K	65
.5	04	10	08	30	12	100	20	300	28	1K	45	3.0K	58	10.0K	90

Stock No.	Mfr.'s Type	Watts Mil	Watts Comm	Ohm/ Range	EACH 1-9	EACH 10-24	EACH 25-49
880-04XX	CMC-5 MIL RE60G	5	5	.1 – .5 1 – 5 10 – 500	**8.17** **6.66** **7.02**	**7.77** **6.33** **6.67**	**7.41** **6.03** **6.36**
880-05XX	CMC-10 MIL RE65G	10	10	.5 1 – 5 10 – 750 1K – 5K	**8.17** **6.66** **7.02** **7.55**	**7.77** **6.33** **6.67** **7.18**	**7.41** **6.03** **6.36** **6.84**
880-06XX	CMC-25 MIL RE70G	20	25	.1 – .5 1 – 750 1K – 10K	**9.50** **6.40** **6.22**	**9.03** **6.08** **5.92**	**8.61** **5.80** **5.64**
880-07XX	CMC-50 RE75G	30	50	1 – 500 1K – 5K 10K	**7.19** **8.34** **9.59**	**6.84** **7.93** **9.11**	**6.52** **7.56** **8.69**

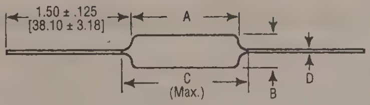
Dimensions

Style	A	B	C	D	E	F	G	H	J	K	L	M	N
CMC-5	.444 (11.28)	.490 (12.45)	.600 (15.24)	1.125 (28.58)	.334 (8.48)	.646 (16.41)	.320 (8.13)	.065 (1.65)	.140 (3.56)	.078 (1.98)	.093 (2.36)	.078 (1.98)	.050 (1.27)
CMC-10	.562 (14.27)	.625 (15.88)	.750 (19.10)	1.375 (34.93)	.430 (10.92)	.800 (20.30)	.400 (10.20)	.075 (1.91)	.190 (4.83)	.093 (2.40)	.093 (2.40)	.102 (2.59)	.086 (2.18)
CMC-25	.719 (18.26)	.781 (19.84)	1.062 (26.97)	1.938 (49.23)	.530 (13.46)	1.080 (27.43)	.560 (14.22)	.085 (2.16)	.260 (6.60)	.172 (4.37)	.125 (3.18)	.115 (2.92)	.086 (2.18)
CMC-50	1.563 (39.70)	.844 (21.44)	1.968 (49.99)	2.781 (70.64)	.615 (15.62)	1.140 (28.96)	.615 (15.62)	.085 (2.16)	.300 (7.62)	.196 (4.97)	.125 (3.18)	.107 (2.71)	.086 (2.18)

Film and Chip Resistors

Model RN Metal Film Resistors

Small size, flame retardant epoxy conformal coating with excellent high frequency characteristics. Low noise, low voltage coefficient and controlled temperature coefficient. 1% tolerance. Fire-cleaned high purity ceramic core with vacuum-deposited nickel-chrome alloy element. Standard lead material is solder-coated copper. Leads are solderable and weldable. Resistance shifts due to storage at room temperature are negligible. Additional values, tolerances, temperature coefficients, terminal material, special pre-conditioning, fusible and flameproof versions available as custom orders. Call for price and delivery quotes. Manufacturer literature available upon request.



Dimensions

Mfr.'s Type	A In. [mm]	B In. [mm]	C (Max.) In. [mm]	D In. [mm]
RN-55	.150 ± .020 [3.81 ± .508]	.065 ± .015 [1.65 ± .381]	.244 [6.20]	.016 ± .002 [.406 ± .051]
RN-55	.240 ± .020 [6.10 ± .508]	.090 ± .008 [2.29 ± .203]	.278 [7.06]	.025 ± .002 [.635 ± .051]
RN-60	.344 ± .031 [8.74 ± .787]	.145 ± .015 [3.68 ± .381]	.425 [10.80]	.025 ± .002 [.635 ± .051]
RN-65	.562 ± .031 [14.27 ± .787]	.180 ± .015 [4.57 ± .381]	.687 [17.45]	.025 ± .002 [.635 ± .051]

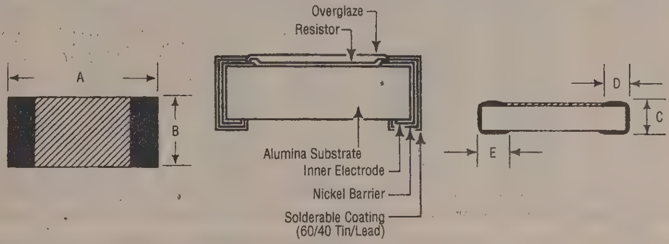
Stock No.	Mil. No.	Dale Type	Value Range	Tol.	Watts	PPM	PER PK./100	
							1-9	10-49
895-68XX	RN50C	CMF-50	10-100K	1%	1/20	50	**24.00**	**16.00**
895-69XX	RN55C	CMF-55	10-1M	1%	1/8	50	**13.00**	**9.00**
895-50XX	RN55D	CMF-55	10-301K	1%	1/8	100	**6.00**	**5.25**
895-70XX	RN60C	CMF-60	10-1M	1%	1/4	50	**13.00**	**9.00**
895-51XX	RN60D	CMF-60	10-1M	1%	1/4	100	**6.50**	**5.95**
895-71XX	RN65C	CMF-65	10-1M	1%	1/2	50	**30.00**	**20.00**
895-52XX	RN65D	CMF-65	10-1M	1%	1/2	100	**14.75**	**13.50**

Model CRCW Thick Film Chip Resistors

Dimensions

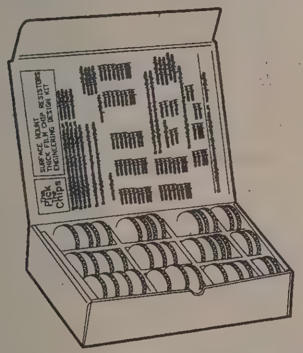
[Numbers in brackets indicate millimeters]

Mfr.'s Type	A	B	C	D	E
CRCW0603	.063 ±.006 [1.60 ± .10]	.031 + .006 [.80 + .15]	.020 ± .004 [.50 ± .10]	.012 ± .008 [.30 ± .20]	.012 ± .008 [.30 ± .20]
CRCW0805	.079 ± .008 [2.0 ± .20]	.049 ± .008 [1.25 ± .20]	.020 ± .008 [.50 ± .20]	.016 ± .008 [.40 ± .25]	.016 ± .008 [.40 ± .25]
CRCW1206	.126 ± .006 [3.20 ± .15]	.063 ± .006 [1.60 ± .15]	.022 ± .006 [.56 ± .15]	.020 ± .010 [.50 ± .25]	.020 ± .010 [.50 ± .25]



Internationally standardized size assures automatic placement compatibility. Flow solderable. Thick film element. Wraparound termination. Inner electrode protection. Operating temperature is −55°C to +150°C. Supplied on 7" reels.

Stock No.	Mfr.'s Type	Value Range	Tol.	Watts	PPM	PER REEL/5000	
						1-4	5-9
895-66XX	CRCW0603	10-1M	1%	1/16	100	**90.00**	**75.00**
895-67XX	CRCW0603	10-1M	5%	1/16	200	**55.00**	**46.25**
895-56XX	CRCW0805	10-1M	1%	1/10	100	**60.00**	**50.00**
895-57XX	CRCW0805	10-1M	5%	1/10	200	**35.00**	**27.50**
895-58XX	CRCW1206	10-1M	1%	1/8	100	**60.00**	**50.00**
895-59XX	CRCW1206	10-1M	5%	1/8	200	**35.00**	**27.50**


SURFACE MOUNT THICK FILM CHIP RESISTORS ENGINEERING DESIGN KIT
Chips

CRCW Chip Resistor Kits

Stock No.	Mfr.'s Type	Value Range	Values Per Kit	Pieces Per Value	Tol.	Watts	PPM	EACH	
								1-4	5-9
895-0001	CRCW1206-101	51.1-200K	74	500	1%	1/8	100	**1530.00**	**1500.00**
895-0002	CRCW1206-102A	51.1-150K	30	100	1%	1/8	100	**200.00**	**180.00**
895-0003	CRCW0805-102A	51.1-150K	30	100	1%	1/10	100	**200.00**	**180.00**
895-0004	CRCW1206-102B	60.4-200K	30	100	1%	1/8	100	**200.00**	**180.00**
895-0005	CRCW0805-102B	60.4-200K	30	100	1%	1/10	100	**200.00**	**180.00**
895-0006	CRCW1206-103	80.6-88.7K	15	100	1%	1/8	100	**110.00**	**95.00**
895-0007	CRCW0805-103	80.6-88.7K	15	100	1%	1/10	100	**110.00**	**95.00**
895-0008	CRCW1206-104	10-1M	30	100	5%	1/8	200	**200.00**	**180.00**
895-0009	CRCW0805-104	10-1M	30	100	5%	1/10	200	**200.00**	**180.00**
895-0012	CRCW0603-104	10-1M	30	100	5%	1/16	50	**200.00**	**170.00**
895-0010	CRCW1206-105	33-100K	15	100	5%	1/8	200	**110.00**	**95.00**
895-0011	CRCW0805-105	33-100K	15	100	5%	1/10	200	**110.00**	**95.00**
895-0013	CRCW0603-105	33-100K	15	100	5%	1/16	50	**108.00**	**93.00**
895-0014	CRCW0603-106	49.9-1M	12	100	1%	1/16	50	**108.00**	**93.00**

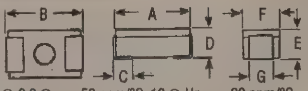
5% Resistance Value Chart

Ohms	XX	Ohms	XX	Ohms	XX	Ohms	XX	Ohms	XX	Ohms	XX	Ohms	XX	Ohms	XX	Ohms	XX	Ohms	XX
10	01	43	11	150	21	470	31	1.8K	41	5.1K	51	20K	61	56K	71	240K	81	620K	91
15	02	47	12	180	22	510	32	2K	42	5.6K	52	24K	62	62K	72	270K	82	680K	92
18	03	51	13	200	23	560	33	2.4K	43	6.2K	53	27K	63	68K	73	300K	83	750K	93
20	04	56	14	240	24	620	34	2.7K	44	6.8K	54	30K	64	75K	74	330K	84	820K	94
24	05	62	15	270	25	680	35	3K	45	7.5K	55	33K	65	82K	75	360K	85	910K	95
27	06	68	16	300	26	750	36	3.3K	46	8.2K	56	36K	66	91K	76	390K	86	1M	96
30	07	75	17	330	27	820	37	3.6K	47	9.1K	57	39K	67	100K	77	430K	87	—	—
33	08	82	18	360	28	910	38	3.9K	48	10K	58	43K	68	150K	78	470K	88	—	—
36	09	91	19	390	29	1K	39	4.3K	49	15K	59	47K	69	180K	79	510K	89	—	—
39	10	100	20	430	30	1.5K	40	4.7K	50	18K	60	51K	70	200K	80	560K	90	—	—

1% Resistance Value Chart

Ohms	XX	Ohms	XX	Ohms	XX	Ohms	XX	Ohms	XX	Ohms	XX	Ohms	XX	Ohms	XX	Ohms	XX	Ohms	XX
10	10	43.2	19	121	28	475	37	1.5K	46	4.99K	55	20K	64	56.2K	73	249K	82	750K	91
12.1	11	47.5	20	150	29	499	38	2K	47	5.11K	56	22.1K	65	75K	74	301K	83	806K	92
15	12	49.9	21	200	30	511	39	2.21K	48	5.62K	57	24.9K	66	80.6K	75	348K	84	909K	93
20	13	51.1	22	221	31	562	40	2.49K	49	7.5K	58	30.1K	67	90.9K	76	402K	85	1M	94
22.1	14	56.2	23	249	32	750	41	3.01K	50	8.06K	59	34.8K	68	100K	77	432K	86	—	—
24.9	15	75	24	301	33	806	42	3.48K	51	9.09K	60	40.2K	69	121K	78	475K	87	—	—
30.1	16	80.6	25	348	34	909	43	4.02K	52	10K	61	47.5K	70	150K	79	499K	88	—	—
34.8	17	90.9	26	402	35	1K	44	4.32K	53	12.1K	62	49.9K	71	200K	80	511K	89	—	—
40.2	18	100	27	432	36	1.21K	45	4.75K	54	15K	63	51.1K	72	221K	81	562K	90	—	—

WSC Wire Wound Surface Mount Resistors



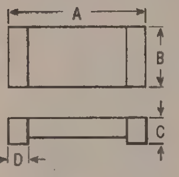
These precision power surface mount wirewound resistors have molded epoxy encapsulation, copper-nickel alloy or nickel-chrome alloy element (depending on resistance value) with nickel-silver alloy end caps and tinned copper alloy standard terminals. **Resistance Tolerance:** ±1%. **Temperature Range:** –65°C to +170°C. **Temperature Coefficient:** 0.1 Ω-0.99 Ω — ±90 ppm/°C; 1.0 Ω-9.9 Ω — ±50 ppm/°C; 10 Ω-Up — ±20 ppm/°C.

Dimensions

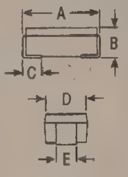
Mfr.'s Type	Dimensions — In. (mm)						
	A	B	C	D	E	F	G
WSC-1/2	0.188 ± 0.005	0.200 ± 0.020	0.040 ± 0.015	0.096 ± .015	0.090 ± 0.005	0.125 ± 0.005	0.050 ± 0.010
WSC-1	0.238 ± 0.005	0.250 ± 0.020	0.045 ± 0.010	0.110 ± .015	0.104 ± 0.005	0.150 ± 0.005	0.098 ± 0.005
WSC-2	0.433 ± 0.005	0.445 ± 0.032	0.100 ± 0.010	0.162 ± .015	0.156 ± 0.005	0.275 ± 0.005	0.215 ± 0.005

Ohms	Watts	PER REEL/100			PER BAG/50		
		Stock No.	Mfr.'s Type	PER REEL	Stock No.	Mfr.'s Type	PER BAG
0.10	1/2	**692-1000**	WSC1/2R100FRE4	**132.00**	**692-2000**	WSC1/2R100FB25	**80.00**
0.25	1/2	**692-1002**	WSC1/2R250FRE4	**132.00**	**692-2002**	WSC1/2R250FB25	**80.00**
0.10	1	**692-1010**	WSC1R100FRE4	**132.00**	**692-2010**	WSC1R100FB25	**80.00**
0.20	1	**692-1012**	WSC1R200FRE4	**132.00**	**692-2012**	WSC1R200FB25	**80.00**
0.25	1	**692-1014**	WSC1R250FRE4	**132.00**	**692-2014**	WSC1R250FB25	**80.00**
0.33	1	**692-1016**	WSC1R330FRE4	**132.00**	**692-2016**	WSC1R330FB25	**80.00**
0.50	1	**692-1018**	WSC1R500FRE4	**132.00**	**692-2018**	WSC1R500FB25	**80.00**
1.00	1	**692-1020**	WSC11R00FRE4	**132.00**	**692-2020**	WSC11R00FB25	**80.00**
10	1	**692-1022**	WSC110R0FRE4	**132.00**	**692-2022**	WSC110R0FB25	**80.00**
100	1	**692-1024**	WSC11000FRE4	**132.00**	**692-2024**	WSC11000FB25	**80.00**
0.1	2	**692-1030**	WSC2R100FRE4	**150.00**	**692-2030**	WSC2R100FB25	**92.00**
1.0	2	**692-1032**	WSC21R00FRE4	**150.00**	**692-2032**	WSC21R00FB25	**92.00**

WSL and WSR Low Ohm Resistors



WSL



WSR

These extremely low resistance value power metal strip resistors have properties better than wirewound resistors. Providing ultra-precise and ultra-stable chips that are insensitive to the effects of temperature. They are ideal for current sensing, voltage division and pulse applications including switching and linear power supplies, instruments, power amplifiers and low voltage lighting. They also have very low inductance (.5 nH to 5 nH), excellent frequency response and low thermal EMF. **Resistance Tolerance:** ±1%. **Temperature Range:** WSL — –65°C to +170°C. WSR — –65°C to +275°C. **Temperature Coefficient:** ±75 ppm/°C.

Dimensions

Mfr.'s Type	Dimensions — In. (mm)				
	A	B	C	D	E
WSL1206	0.126 ± 0.010	0.063 ± 0.010	0.025 ± 0.010	0.020 ± 0.010	—
WSL2010	0.200 ± 0.010	0.100 ± 0.010	0.025 ± 0.010	0.020 ± 0.010	—
WSL2512	0.250 ± 0.010	0.125 ± 0.010	0.025 ± 0.010	0.020 ± 0.010	—
WSR2	0.455 ± 0.032	0.095 ± 0.005	0.100 ± 0.010	0.275 ± 0.005	0.215 ± 0.005

WSL

1206 Size 1/4-Watt

Ohms	PER REEL/100			PER BAG/50		
	Stock No.	Mfr.'s Type	PER REEL	Stock No.	Mfr.'s Type	PER BAG
0.010	**692-1100**	WSL1206R010FRE4	**634.00**	**692-2100**	WSL1206R010FB25	**154.00**
0.020	**692-1102**	WSL1206R020FRE4	**634.00**	**692-2102**	WSL1206R020FB25	**154.00**
0.025	**692-1104**	WSL1206R025FRE4	**634.00**	**692-2104**	WSL1206R025FB25	**154.00**
0.050	**692-1106**	WSL1206R050FRE4	**634.00**	**692-2106**	WSL1206R050FB25	**154.00**
0.100	**692-1108**	WSL1206R100FRE4	**634.00**	**692-2108**	WSL1206R100FB25	**154.00**
0.200	**692-1110**	WSL1206R200FRE4	**634.00**	**692-2110**	WSL1206R200FB25	**154.00**

2010 Size 1/2-Watt

0.010	**692-1150**	WSL2010R010FRE4	**270.00**	**692-2150**	WSL2010R010FB25	**132.00**
0.020	**692-1152**	WSL2010R020FRE4	**270.00**	**692-2152**	WSL2010R020FB25	**132.00**
0.025	**692-1154**	WSL2010R025FRE4	**270.00**	**692-2154**	WSL2010R025FB25	**132.00**
0.050	**692-1156**	WSL2010R050FRE4	**270.00**	**692-2156**	WSL2010R050FB25	**132.00**
0.100	**692-1158**	WSL2010R100FRE4	**270.00**	**692-2158**	WSL2010R100FB25	**132.00**
0.200	**692-1160**	WSL2010R200FRE4	**270.00**	**692-2160**	WSL2010R200FB25	**132.00**
0.500	**692-1162**	WSL2010R500FRE4	**270.00**	**692-2162**	WSL2010R500FB25	**132.00**

2512 Size 1-Watt

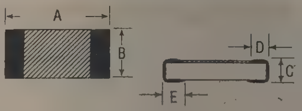
0.010	**692-1200**	WSL2512R010FRE4	**270.00**	**692-2200**	WSL2512R010FB25	**132.00**
0.015	**692-1202**	WSL2512R015FRE4	**270.00**	**692-2202**	WSL2512R015FB25	**132.00**
0.020	**692-1204**	WSL2512R020FRE4	**270.00**	**692-2204**	WSL2512R020FB25	**132.00**
0.025	**692-1206**	WSL2512R025FRE4	**270.00**	**692-2206**	WSL2512R025FB25	**132.00**
0.033	**692-1208**	WSL2512R033FRE4	**270.00**	**692-2208**	WSL2512R033FB25	**132.00**
0.040	**692-1210**	WSL2512R040FRE4	**270.00**	**692-2210**	WSL2512R040FB25	**132.00**
0.050	**692-1212**	WSL2512R050FRE4	**270.00**	**692-2212**	WSL2512R050FB25	**132.00**
0.100	**692-1214**	WSL2512R100FRE4	**270.00**	**692-2214**	WSL2512R100FB25	**132.00**
0.200	**692-1216**	WSL2512R200FRE4	**270.00**	**692-2216**	WSL2512R200FB25	**132.00**
0.500	**692-1218**	WSL2512R500FRE4	**270.00**	**692-2218**	WSL2512R500FB25	**132.00**

WSR

2 Watt

0.005	**692-1050**	WSR2R005FRE4	**124.00**	**692-2050**	WSR2R005FB25	**76.00**
0.010	**692-1052**	WSR2R010FRE4	**124.00**	**692-2052**	WSR2R010FB25	**76.00**
0.020	**692-1054**	WSR2R020FRE4	**124.00**	**692-2054**	WSR2R020FB25	**76.00**
0.050	**692-1056**	WSR2R050FRE4	**124.00**	**692-2056**	WSR2R050FB25	**76.00**
0.100	**692-1058**	WSR2R100FRE4	**124.00**	**692-2058**	WSR2R100FB25	**76.00**
0.200	**692-1060**	WSR2R200FRE4	**124.00**	**692-2060**	WSR2R200FB25	**76.00**
0.500	**692-1062**	WSR2R500FRE4	**124.00**	**692-2062**	WSR2R500FB25	**76.00**

CRCW Thick Film Chip Resistors



Internationally standardized size assures automatic placement compatibility. Flow solderable. Thick film element. Wraparound termination. Inner electrode protection. **Operating Temperature:** –55°C to +150°C. Supplied on 7" reels.

Dimensions

Mfr.'s Type	Dimensions — In.				
	A	B	C	D	E
CRCW1206	0.126 ± 0.006	0.063 ± 0.006	0.022 ± 0.006	0.020 ± 0.010	0.020 ± 0.010

1206 Size 1/4-Watt 1%

Ohms	PER REEL/100			PER BAG/50		
	Stock No.	Mfr.'s Type	PER REEL	Stock No.	Mfr.'s Type	PER BAG
10	**692-1300**	CRCW120610R0FRE4	**24.00**	**692-2300**	CRCW120610R0FB25	**7.00**
15	**692-1302**	CRCW120615R0FRE4	**24.00**	**692-2302**	CRCW120615R0FB25	**7.00**
22.1	**692-1304**	CRCW120622R1FRE4	**24.00**	**692-2304**	CRCW120622R1FB25	**7.00**
56.2	**692-1306**	CRCW120656R2FRE4	**24.00**	**692-2306**	CRCW120656R2FB25	**7.00**
68.1	**692-1308**	CRCW120668R1FRE4	**24.00**	**692-2308**	CRCW120668R1FB25	**7.00**
75	**692-1310**	CRCW120675R0FRE4	**24.00**	**692-2310**	CRCW120675R0FB25	**7.00**
82.5	**692-1312**	CRCW120682R5FRE4	**24.00**	**692-2312**	CRCW120682R5FB25	**7.00**
100	**692-1314**	CRCW12061000FRE4	**24.00**	**692-2314**	CRCW12061000FB25	**7.00**
150	**692-1316**	CRCW12061500FRE4	**24.00**	**692-2316**	CRCW12061500FB25	**7.00**
200	**692-1318**	CRCW12062000FRE4	**24.00**	**692-2318**	CRCW12062000FB25	**7.00**
221	**692-1320**	CRCW12062210FRE4	**24.00**	**692-2320**	CRCW12062210FB25	**7.00**
301	**692-1322**	CRCW12063010FRE4	**24.00**	**692-2322**	CRCW12063010FB25	**7.00**
475	**692-1324**	CRCW12064750FRE4	**24.00**	**692-2324**	CRCW12064750FB25	**7.00**
562	**692-1326**	CRCW12065620FRE4	**24.00**	**692-2326**	CRCW12065620FB25	**7.00**
681	**692-1328**	CRCW12066810FRE4	**24.00**	**692-2328**	CRCW12066810FB25	**7.00**
750	**692-1330**	CRCW12067500FRE4	**24.00**	**692-2330**	CRCW12067500FB25	**7.00**
825	**692-1332**	CRCW12068250FRE4	**24.00**	**692-2332**	CRCW12068520FB25	**7.00**
1K	**692-1334**	CRCW12061001FRE4	**24.00**	**692-2334**	CRCW12061001FB25	**7.00**
1.5K	**692-1336**	CRCW12061501FRE4	**24.00**	**692-2336**	CRCW12061501FB25	**7.00**
2K	**692-1338**	CRCW12062001FRE4	**24.00**	**692-2338**	CRCW12062001FB25	**7.00**
3.32K	**692-1340**	CRCW12063321FRE4	**24.00**	**692-2340**	CRCW12063321FB25	**7.00**
4.75K	**692-1342**	CRCW12064751FRE4	**24.00**	**692-2342**	CRCW12064751FB25	**7.00**
5.62K	**692-1344**	CRCW12066521FRE4	**24.00**	**692-2344**	CRCW12065621FB25	**7.00**
6.81K	**692-1346**	CRCW12066811FRE4	**24.00**	**692-2346**	CRCW12066811FB25	**7.00**
7.5K	**692-1348**	CRCW12067501FRE4	**24.00**	**692-2348**	CRCW12067501FB25	**7.00**
8.25K	**692-1350**	CRCW12068251FRE4	**24.00**	**692-2350**	CRCW12068251FB25	**7.00**
10K	**692-1352**	CRCW12061002FRE4	**24.00**	**692-2352**	CRCW12061002FB25	**7.00**
15K	**692-1354**	CRCW12061502FRE4	**24.00**	**692-2354**	CRCW12061502FB25	**7.00**
18.2K	**692-1356**	CRCW12061822FRE4	**24.00**	**692-2356**	CRCW12061822FB25	**7.00**
20K	**692-1358**	CRCW12062002FRE4	**24.00**	**692-2358**	CRCW12062002FB25	**7.00**
22.1K	**692-1360**	CRCW12062212FRE4	**24.00**	**692-2360**	CRCW12062212FB25	**7.00**
39.2K	**692-1362**	CRCW12063922FRE4	**24.00**	**692-2362**	CRCW12063922FB25	**7.00**
47.5K	**692-1364**	CRCW12064752FRE4	**24.00**	**692-2364**	CRCW12064752FB25	**7.00**
51.1K	**692-1366**	CRCW12065112FRE4	**24.00**	**692-2366**	CRCW12065112FB25	**7.00**
56.2K	**692-1368**	CRCW12065622FRE4	**24.00**	**692-2368**	CRCW12065622FB25	**7.00**
75K	**692-1370**	CRCW12067502FRE4	**24.00**	**692-2370**	CRCW12067502FB25	**7.00**
100K	**692-1372**	CRCW12061003FRE4	**24.00**	**692-2372**	CRCW12061003FB25	**7.00**
221K	**692-1374**	CRCW12062213FRE4	**24.00**	**692-2374**	CRCW12062213FB25	**7.00**
475K	**692-1376**	CRCW12064753FRE4	**24.00**	**692-2376**	CRCW12064753FB25	**7.00**
681K	**692-1378**	CRCW12066813FRE4	**24.00**	**692-2378**	CRCW12066813FB25	**7.00**
750K	**692-1380**	CRCW12067503FRE4	**24.00**	**692-2380**	CRCW12067503FB25	**7.00**
1M	**692-1382**	CRCW12061004FRE4	**24.00**	**692-2382**	CRCW12061004FB25	**7.00**

Kits

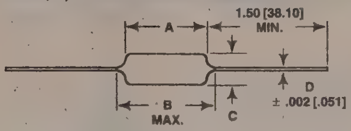
Stock No.	Mfr.'s Type	Values in Kit	Values Per Kit	Qty. Per Value	EACH
692-1500	WSL Kit 617990 Tape and Reel	1206 Size — .01, .02, .05, .10, .20 2010 Size — .01, .02, .025, .05, .10, .20, .50 2512 Size — .01, .015, .02, .025, .05, .10, .20, .50	6,500	500 250 250	**7500.00**
692-1501	WSL Kit 417990 Bulk Bags	1206 Size — .01, .02, .05, .10, .20 2010 Size — .01, .02, .025, .05, .10, .20, .50 2512 Size — .01, .015, .02, .025, .05, .10, .20, .50	2,100	100 100 100	**2900.00**
692-1502	WSC/WSR Kit 630990 Tape and Reel	WSC1/2 — .10, .25 WSC1 — .10, .20, .25, .50, 1.0, 10, 100 WSC2 — .10, 1.0 WSR2 — .005, .01, .02, .05, .10, .20, .50	1,900	100 100 100 100	**2200.00**
692-1503	WSC/WSR Kit 430990 Bulk Bags	WSC1/2 — .10, .25 WSC1 — .10, .20, .25, .50, 1.0, 10, 100 WSC2 — .10, 1.0 WSR2 — .005, .01, .02, .05, .10, .20, .50	950	50 50 50 50	**1350.00**
692-1504	CRCW1206 1% Kit 626991 Tape and Reel	10, 11, 12.1, 13, 15, 18.2, 20, 22.1, 27.4, 30.1, 33.2, 39.2, 47.5, 49.9, 51.1, 56.2, 61.9, 68.1, 75, 82.5, 100, 121, 150, 162, 182, 200, 221, 274, 301, 332, 392, 422, 475, 499, 511, 562, 604, 619, 681, 750, 825, 909, 1K, 1.1K, 1.21K, 1.3K, 1.5K, 1.82K, 2K, 2.21K, 2.74K, 3.01K, 5.11K, 5.62K, 6.19K, 6.81K, 7.5K, 8.25K, 10K, 12.1K, 15K, 16.2K, 18.2K, 20K, 22.1K, 27.4K, 30.1K, 33.2K, 39.2K, 49.9K, 51.1K, 56.2K, 61.9K, 68.1K, 75K, 82.5K, 90.9K, 100K, 121K, 150K, 162K, 182K, 200K, 221K, 274K, 301K, 332K, 392K, 499K, 511K, 562K, 619K, 681K, 750K, 825K, 1M	100,000	1000	**2400.00**
692-1505	CRCW1206 1% Kit 426991 Bulk Bags	10, 11, 12.1, 13, 15, 18.2, 20, 22.1, 27.4, 30.1, 33.2, 39.2, 47.5, 49.9, 51.1, 56.2, 61.9, 68.1, 75, 82.5, 100, 121, 150, 162, 182, 200, 221, 274, 301, 332, 392, 422, 475, 499, 511, 562, 604, 619, 681, 750, 825, 909, 1K, 1.1K, 1.21K, 1.3K, 1.5K, 1.82K, 2K, 2.21K, 2.74K, 3.01K, 5.11K, 5.62K, 6.19K, 6.81K, 7.5K, 8.25K, 10K, 12.1K, 15K, 16.2K, 18.2K, 20K, 22.1K, 27.4K, 30.1K, 33.2K, 39.2K, 49.9K, 51.1K, 56.2K, 61.9K, 68.1K, 75K, 82.5K, 90.9K, 100K, 121K, 150K, 162K, 182K, 200K, 221K, 274K, 301K, 332K, 392K, 499K, 511K, 562K, 619K, 681K, 750K, 825K, 1M	25,000	250	**700.00**

Silicone Coated Wirewound Resistors

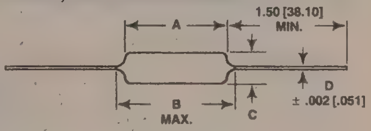
High-temperature silicone coating and welded construction. High power/size ratio. RS series has ceramic, steatite or alumina core (depending on size) and stainless steel end caps. CW series has a heat conductive ceramic core and weldable metal alloy end caps. Both have copper-nickel or nickel-chrome alloy element (depending on resistance value) and tinned Copperweld® terminals. Additional values, tolerances, wattages and other specifications available as custom orders. Call for price and delivery quotes. Manufacturer literature available upon request.

Stock No.	Mfr.'s Type	Comm. Range	Mil. No.	Mil. Range	Watts	Tol.	EACH			
							1-24	25-49	50-99	100-249
895-40XX	RS-1/2	10-1K	—	—	½	1%	**1.56**	**1.20**	**.98**	**.70**
895-40XX	RS-1/2	1.5K-2.5K	—	—	½	1%	**1.63**	**1.26**	**1.02**	**.73**
895-41XX	RS-1A	10-1K	RW70	10-1K	1	1%	**1.48**	**1.14**	**.93**	**.67**
895-41XX	RS-1A	1.5K-2.5K	RW70	1.5K-2.5K	1	1%	**1.56**	**1.20**	**.98**	**.70**
895-42XX	RS-2B	10-1K	RW79	10-1K	3	1%	**1.15**	**.89**	**.72**	**.52**
895-42XX	RS-2B	1.5K-5K	RW79	1.5K-5K	3	1%	**1.37**	**1.06**	**.86**	**.62**
895-43XX	RS-5	10-1K	RW74	10-1K	5	1%	**2.00**	**1.54**	**1.26**	**.90**
895-43XX	RS-5	1.5K-10K	RW74	1.5K-10K	5	1%	**1.56**	**1.20**	**.98**	**.70**
895-43XX	RS-5	15K-20K	RW74	15K-20K	5	1%	**2.30**	**1.77**	**1.44**	**1.03**
895-44XX	CW-2B	10-1K	—	—	3	5%	**.67**	**.50**	**.40**	**.33**
895-44XX	CW-2B	1.5K-3K	—	—	3	5%	**.73**	**.55**	**.44**	**.37**
895-44XX	CW-2B	3.3K-10K	—	—	3	5%	**.87**	**.65**	**.52**	**.43**
895-44XX	CW-2B	15K	—	—	3	5%	**.93**	**.70**	**.56**	**.47**
895-45XX	CW-5	10-1K	—	—	5	5%	**.77**	**.58**	**.46**	**.38**
895-45XX	CW-5	1.5K-10K	—	—	5	5%	**.87**	**.65**	**.52**	**.43**
895-45XX	CW-5	15K-20K	—	—	5	5%	**1.17**	**.88**	**.70**	**.58**
895-45XX	CW-5	24K-56K	—	—	5	5%	**1.37**	**1.03**	**.82**	**.68**

RS-1/2, RS-1A Coated Model



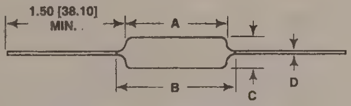
RS-2B, RS-5 Coated Model



Dimensions (Numbers in brackets indicate millimeters)

Mfr.'s Type	A	B (Max.)	C	D
RS-1/2	.312 ± .015 (7.92 ± .381)	— —	.078 ± .015 (1.98 ± .381)	.020 (.508)
RS-1A	.422 ± .015 (10.72 ± .381)	— —	.110 ± .015 (2.79 ± .381)	.020 (.508)
RS-2B	.560 ± .062 (14.22 ± 1.57)	.6.22 (15.80)	.187 ± .031 (4.75 ± .787)	.032 (.813)
RS-5	.875 ± .062 (22.23 ± 1.57)	1.0 (25.40)	.312 ± .031 (7.92 ± .787)	.040 (1.02)

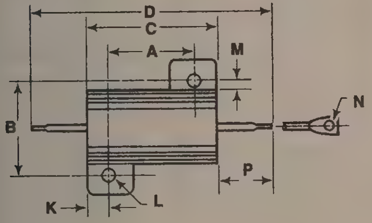
CW Model

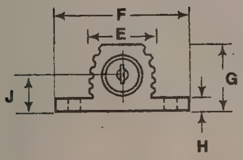


Dimensions (Numbers in brackets indicate millimeters)

Mfr.'s Type	A	B (Max.)	C	D
CW-2B	.562 (15.87)	.622 (19.43)	.188 (6.35)	.032 (8.13)
CW-5	.875 (22.22)	1.0 (25.40)	.312 (7.92)	.040 (1.02)

Aluminum Housed Wirewound Resistors





Complete welded and molded construction for total environmental protection in aluminum housed wirewound chassis mount resistor. Mounts on chassis to utilized heat-sink effect. High stability at conventional power ratings. Flat marking surface for easy identification. Series has ceramic, steatite or alumina core (depending on size). Copper-nickel, manganese copper or nickel-chrome alloy element (depending on resistance value) with stainless steel end caps and tinned Copperweld® terminals. –55°C to +275°C operating temperature range. Additional values, tolerances, wattages and other specifications available as custom orders. Call for price and delivery quotes. Manufacturer literature available upon request.

Dimensions

Mfr.'s Type	A	B	C	D	E	F	G	H	J	K	L	M	N	P
RH-5	.444	.490	.600	1.125	.334	.646	.320	.065	.133	.078	.093	.078	.050	.266
RH-10	.562	.625	.750	1.375	.420	.800	.390	.075	.165	.093	.094	.102	.085	.438
RH-25	.719	.781	1.062	1.938	.550	1.080	.546	.075	.231	.172	.125	.115	.085	.438
RH-50	1.562	.844	1.968	2.781	.630	1.140	.610	.088	.260	.196	.125	.107	.085	.438

Stock No.	Mfr.'s Type	Comm. Range	Mil. No.	Mil. Range	Watts	Tol.	EACH			
							1-24	25-49	50-99	100-249
895-01XX	RH-5	10-1K	RE60G	10-1K	5	1%	**3.10**	**2.33**	**1.86**	**1.55**
895-01XX	RH-5	1.5K-5K	RE60G	1.5K-5K	5	1%	**3.17**	**2.38**	**1.90**	**1.58**
895-01XX	RH-5	10K	—	—	5	1%	**3.17**	**2.38**	**1.90**	**1.58**
895-02XX	RH-10	10-1K	RE65G	10-1K	10	1%	**2.70**	**2.03**	**1.62**	**1.35**
895-02XX	RH-10	1.5K-5K	RE65G	1.5K-5K	10	1%	**2.83**	**2.13**	**1.70**	**1.42**
895-02XX	RH-10	10K-25K	—	—	10	1%	**4.27**	**3.20**	**2.56**	**2.13**
895-03XX	RH-25	10-1K	RE70G	10-1K	25	1%	**3.70**	**2.78**	**2.22**	**1.85**
895-03XX	RH-25	1.5K-5K	RE70G	1.5K-5K	25	1%	**3.53**	**2.65**	**2.12**	**1.77**
895-03XX	RH-25	10K-25K	RE70G	10K	25	1%	**5.00**	**3.75**	**3.00**	**2.50**
895-04XX	RH-50	10-1K	RE75G	10-1K	50	1%	**4.80**	**3.60**	**2.88**	**2.40**
895-04XX	RH-50	1.5K-10K	RE75G	1.5K-10K	50	1%	**5.23**	**3.93**	**3.14**	**2.62**
895-04XX	RH-50	15K-100K	RE75G	15K-25K	50	1%	**5.70**	**4.56**	**3.80**	**3.26**

1% Resistance Chart for RS and RH Series

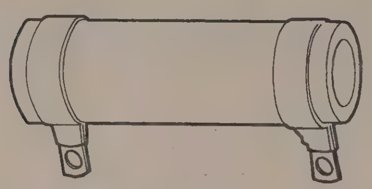
Ohms	XX	Ohms	XX	Ohms	XX	Ohms	XX	Ohms	XX	Ohms	XX	Ohms	XX	Ohms	XX	Ohms	XX
10	10	33	20	60	30	250	40	400	50	909*	60	3.0K	70	7.0K*	80	30.0K*	90
15	12	35	22	75	32	270	42	470	52	1.0K	62	3.3K*	72	10.0K	82	40.0K	92
20	14	40	24	100	34	300	44	510*	54	1.5K	64	3.5K	74	15.0K	84	50.0K	94
25	16	47	26	150	36	330	46	560	56	2.0K	66	4.0K	76	20.0K	86	75.0K*	96
30	18	50	28	200	38	350*	48	750	58	2.5K	68	5.0K	78	25.0K	88	100.0K†	98

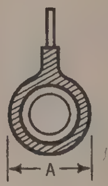
*Not available in RH series . †Available in RH-50 only.

5% Resistance Chart for CW Series

Ohms	XX	Ohms	XX	Ohms	XX	Ohms	XX	Ohms	XX	Ohms	XX	Ohms	XX	Ohms	XX	Ohms	XX
10	10	36	18	75	26	270	34	560	42	1.8K	50	4.03K	58	9.1K	66	33K	74
15	11	39	19	82	27	300	35	620	43	2.0K	51	4.70K	59	10K	67	36K	75
18	12	43	20	91	28	330	36	680	44	2.4K	52	5.10K	60	15K	68	39K	76
20	13	47	21	100	29	360	37	750	45	2.7K	53	5.60K	61	18K	69	43K	77
24	14	51	22	150	30	390	38	820	46	3.0K	54	6.20K	62	20K	70	47K	78
27	15	56	23	180	31	430	39	910	47	3.30K	55	6.80K	63	24K	71	51K	79
30	16	62	24	200	32	470	40	1.0K	48	3.60K	56	7.50K	64	27K	72	56K	80
33	17	68	25	240	33	510	41	1.5K	49	3.90K	57	8.20K	65	30K	73	—	—

HL Series Silicone Fixed Power Resistors





Core Dimensions

Mfr.'s Type	A Max.	Length ±1/16 (1.59)	O.D.	I.D. ±1/32 (.794)	Terminal Setback ±1/32 (.794)	Standard Terminal Designation	Optional Mounting Hardware
HL-12	13/32	1 3/4	5/16	3/16	3/32 (2.38)	05	101, 204
HL-25	11/16	2	9/16	5/16	3/32 (2.38)	06	101, 203
HL-50	11/16	4	9/16	5/16	3/32 (2.38)	06	101, 203
HL-100	29/32	6 1/2	3/4	1/2	1/8 (3.18)	06	102, 206
HL-225	1 5/16	10 1/2	1 1/8	3/4	7/32 (5.56)	07	103, 205

HL series resistors for inexpensively dissipating larger amounts of power in DC or low frequency AC circuits. Special applications include grid resistors, voltage dropping resistors, high voltage bleeder resistors in power supplies, bias supply resistors, voltage divider networks, filament dropping resistors, load resistors, and shunt resistors. Steatite core is chemically inert and will withstand severe thermal shock and is impervious moisture. Element is highest quality copper-nickel alloy or nickel-chrome alloy, depending on ohm value. Special high temperature silicone coating, cured at much lower temperatures than vitreous enamels. Tinned leads. 5% resistance tolerance. Adjustable types, styles, tapped, non-inductive, additional ohm values, wattages, tolerances and lead styles available as custom order. Contact Allied for price and delivery info and manufacturer's literature.

12 Watt

Stock No.	Mfr.'s Type	Ohm Value	EACH			
			1-9	10-24	25-49	50-99
895-1000	HL-12-05Z	1	1.76	1.60	1.47	1.35
895-1003	HL-12-05Z	2	1.76	1.60	1.47	1.35
895-1006	HL-12-05Z	3	1.76	1.60	1.47	1.35
895-1009	HL-12-05Z	5	1.76	1.60	1.47	1.35
895-1012	HL-12-05Z	7.5	1.76	1.60	1.47	1.35
895-1015	HL-12-05Z	10	1.76	1.60	1.47	1.35
895-1018	HL-12-05Z	15	1.76	1.60	1.47	1.35
895-1021	HL-12-05Z	20	1.76	1.60	1.47	1.35
895-1024	HL-12-05Z	25	1.76	1.60	1.47	1.35
895-1027	HL-12-05Z	30	1.76	1.60	1.47	1.35
895-1030	HL-12-05Z	50	1.76	1.60	1.47	1.35
895-1033	HL-12-05Z	75	1.76	1.60	1.47	1.35
895-1036	HL-12-05Z	100	1.76	1.60	1.47	1.35
895-1039	HL-12-05Z	150	1.76	1.60	1.47	1.35
895-1042	HL-12-05Z	200	1.76	1.60	1.47	1.35
895-1045	HL-12-05Z	220	1.76	1.60	1.47	1.35
895-1048	HL-12-05Z	250	1.76	1.60	1.47	1.35
895-1051	HL-12-05Z	300	1.76	1.60	1.47	1.35
895-1054	HL-12-05Z	400	1.76	1.60	1.47	1.35
895-1057	HL-12-05Z	500	1.76	1.60	1.47	1.35
895-1060	HL-12-05Z	750	1.76	1.60	1.47	1.35
895-1063	HL-12-05Z	1K	1.76	1.60	1.47	1.35
895-1066	HL-12-05Z	2K	1.76	1.60	1.47	1.35
895-1069	HL-12-05Z	3K	1.76	1.60	1.47	1.35
895-1072	HL-12-05Z	5K	1.76	1.60	1.47	1.35
895-1075	HL-12-05Z	10K	2.04	1.85	1.70	1.57
895-1078	HL-12-05Z	20K	2.28	2.07	1.90	1.75
895-1081	HL-12-05Z	25K	2.28	2.07	1.90	1.75
895-1084	HL-12-05Z	50K	2.28	2.07	1.90	1.75

25 Watt

Stock No.	Mfr.'s Type	Ohm Value	1-9	10-24	25-49	50-99
895-1100	HL-25-06Z	1	2.18	1.98	1.82	1.68
895-1103	HL-25-06Z	2	2.18	1.98	1.82	1.68
895-1106	HL-25-06Z	3	2.18	1.98	1.82	1.68
895-1109	HL-25-06Z	5	2.18	1.98	1.82	1.68
895-1112	HL-25-06Z	7.5	2.18	1.98	1.82	1.68
895-1115	HL-25-06Z	10	2.18	1.98	1.82	1.68
895-1118	HL-25-06Z	15	2.18	1.98	1.82	1.68
895-1121	HL-25-06Z	20	2.18	1.98	1.82	1.68
895-1124	HL-25-06Z	25	2.18	1.98	1.82	1.68
895-1127	HL-25-06Z	30	2.18	1.98	1.82	1.68
895-1130	HL-25-06Z	50	2.18	1.98	1.82	1.68
895-1133	HL-25-06Z	75	2.18	1.98	1.82	1.68
895-1136	HL-25-06Z	100	2.18	1.98	1.82	1.68
895-1139	HL-25-06Z	150	2.18	1.98	1.82	1.68
895-1142	HL-25-06Z	200	2.18	1.98	1.82	1.68
895-1145	HL-25-06Z	220	2.18	1.98	1.82	1.68
895-1148	HL-25-06Z	250	2.18	1.98	1.82	1.68
895-1151	HL-25-06Z	300	2.18	1.98	1.82	1.68
895-1154	HL-25-06Z	400	2.18	1.98	1.82	1.68
895-1157	HL-25-06Z	500	2.18	1.98	1.82	1.68
895-1160	HL-25-06Z	750	2.18	1.98	1.82	1.68
895-1163	HL-25-06Z	1K	2.18	1.98	1.82	1.68
895-1166	HL-25-06Z	2K	2.18	1.98	1.82	1.68
895-1169	HL-25-06Z	3K	2.18	1.98	1.82	1.68
895-1172	HL-25-06Z	5K	2.18	1.98	1.82	1.68
895-1175	HL-25-06Z	10K	2.50	2.27	2.08	1.92
895-1178	HL-25-06Z	20K	2.72	2.47	2.27	2.09
895-1181	HL-25-06Z	25K	2.72	2.47	2.27	2.09
895-1184	HL-25-06Z	50K	5.88	5.35	4.90	4.52
895-1187	HL-25-06Z	100K	5.88	5.35	4.90	4.52
895-1190	HL-25-06Z	150K	5.88	5.35	4.90	4.52

50 Watt

Stock No.	Mfr.'s Type	Ohm Value	EACH			
			1-9	10-24	25-49	50-99
895-1200	HL-50-06Z	1	3.38	3.07	2.82	2.60
895-1203	HL-50-06Z	2	3.38	3.07	2.82	2.60
895-1206	HL-50-06Z	3	3.38	3.07	2.82	2.60
895-1209	HL-50-06Z	5	3.38	3.07	2.82	2.60
895-1212	HL-50-06Z	7.5	3.38	3.07	2.82	2.60
895-1215	HL-50-06Z	10	3.38	3.07	2.82	2.60
895-1218	HL-50-06Z	15	3.38	3.07	2.82	2.60
895-1221	HL-50-06Z	20	3.38	3.07	2.82	2.60
895-1224	HL-50-06Z	25	3.38	3.07	2.82	2.60
895-1227	HL-50-06Z	30	3.38	3.07	2.82	2.60
895-1230	HL-50-06Z	50	3.38	3.07	2.82	2.60
895-1233	HL-50-06Z	75	3.38	3.07	2.82	2.60
895-1236	HL-50-06Z	100	3.38	3.07	2.82	2.60
895-1239	HL-50-06Z	150	3.38	3.07	2.82	2.60
895-1242	HL-50-06Z	200	3.38	3.07	2.82	2.60
895-1245	HL-50-06Z	220	3.38	3.07	2.82	2.60
895-1248	HL-50-06Z	250	3.38	3.07	2.82	2.60
895-1251	HL-50-06Z	300	3.38	3.07	2.82	2.60
895-1254	HL-50-06Z	400	3.38	3.07	2.82	2.60
895-1257	HL-50-06Z	500	3.38	3.07	2.82	2.60
895-1260	HL-50-06Z	750	3.38	3.07	2.82	2.60
895-1263	HL-50-06Z	1K	3.38	3.07	2.82	2.60
895-1266	HL-50-06Z	2K	3.38	3.07	2.82	2.60
895-1269	HL-50-06Z	3K	3.38	3.07	2.82	2.60
895-1272	HL-50-06Z	5K	3.38	3.07	2.82	2.60
895-1275	HL-50-06Z	10K	3.44	3.13	2.87	2.65
895-1278	HL-50-06Z	20K	3.70	3.36	3.08	2.85
895-1281	HL-50-06Z	25K	3.70	3.36	3.08	2.85
895-1284	HL-50-06Z	50K	4.44	4.04	3.70	3.42
895-1287	HL-50-06Z	100K	4.44	4.04	3.70	3.42

100 Watt

Stock No.	Mfr.'s Type	Ohm Value	1-9	10-24	25-49	50-99
895-1300	HL-100-06Z	1	6.64	6.04	5.53	5.11
895-1303	HL-100-06Z	2	6.64	6.04	5.53	5.11
895-1306	HL-100-06Z	3	6.64	6.04	5.53	5.11
895-1309	HL-100-06Z	5	6.64	6.04	5.53	5.11
895-1312	HL-100-06Z	7.5	6.64	6.04	5.53	5.11
895-1315	HL-100-06Z	10	6.64	6.04	5.53	5.11
895-1318	HL-100-06Z	15	6.64	6.04	5.53	5.11
895-1321	HL-100-06Z	20	6.64	6.04	5.53	5.11
895-1324	HL-100-06Z	25	6.64	6.04	5.53	5.11
895-1327	HL-100-06Z	30	6.64	6.04	5.53	5.11
895-1330	HL-100-06Z	50	6.64	6.04	5.53	5.11
895-1333	HL-100-06Z	75	6.64	6.04	5.53	5.11
895-1336	HL-100-06Z	100	6.64	6.04	5.53	5.11
895-1339	HL-100-06Z	150	6.64	6.04	5.53	5.11
895-1342	HL-100-06Z	200	6.64	6.04	5.53	5.11
895-1345	HL-100-06Z	220	6.64	6.04	5.53	5.11
895-1348	HL-100-06Z	250	6.64	6.04	5.53	5.11
895-1351	HL-100-06Z	300	6.64	6.04	5.53	5.11
895-1354	HL-100-06Z	400	6.64	6.04	5.53	5.11
895-1357	HL-100-06Z	500	6.64	6.04	5.53	5.11
895-1360	HL-100-06Z	750	6.64	6.04	5.53	5.11
895-1363	HL-100-06Z	1K	6.64	6.04	5.53	5.11
895-1366	HL-100-06Z	2K	6.94	6.31	5.78	5.34
895-1369	HL-100-06Z	3K	6.94	6.31	5.78	5.34
895-1372	HL-100-06Z	5K	6.94	6.31	5.78	5.34
895-1375	HL-100-06Z	10K	6.94	6.31	5.78	5.34
895-1378	HL-100-06Z	20K	6.94	6.31	5.78	5.34
895-1381	HL-100-06Z	25K	6.94	6.31	5.78	5.34
895-1384	HL-100-06Z	50K	7.60	6.91	6.33	5.85
895-1387	HL-100-06Z	100K	8.94	8.13	7.45	6.88
895-1390	HL-100-06Z	150K	8.94	8.13	7.45	6.88

225 Watt

Stock No.	Mfr.'s Type	Ohm Value	1-9	10-24	25-49	50-99
895-1400	HL-225-07Z	1	11.16	10.15	9.30	8.58
895-1403	HL-225-07Z	2	11.16	10.15	9.30	8.58
895-1406	HL-225-07Z	3	11.16	10.15	9.30	8.58
895-1409	HL-225-07Z	5	11.16	10.15	9.30	8.58
895-1412	HL-225-07Z	7.5	11.16	10.15	9.30	8.58
895-1415	HL-225-07Z	10	11.16	10.15	9.30	8.58
895-1418	HL-225-07Z	15	11.16	10.15	9.30	8.58
895-1421	HL-225-07Z	20	11.16	10.15	9.30	8.58
895-1424	HL-225-07Z	25	11.16	10.15	9.30	8.58
895-1427	HL-225-07Z	30	11.16	10.15	9.30	8.58
895-1430	HL-225-07Z	50	11.16	10.15	9.30	8.58
895-1433	HL-225-07Z	75	11.16	10.15	9.30	8.58
895-1436	HL-225-07Z	100	11.16	10.15	9.30	8.58
895-1439	HL-225-07Z	150	11.16	10.15	9.30	8.58
895-1442	HL-225-07Z	200	11.16	10.15	9.30	8.58
895-1445	HL-225-07Z	220	11.16	10.15	9.30	8.58
895-1448	HL-225-07Z	250	11.16	10.15	9.30	8.58
895-1451	HL-225-07Z	300	11.16	10.15	9.30	8.58
895-1454	HL-225-07Z	400	11.16	10.15	9.30	8.58
895-1457	HL-225-07Z	500	11.16	10.15	9.30	8.58
895-1460	HL-225-07Z	750	11.16	10.15	9.30	8.58
895-1463	HL-225-07Z	1K	11.16	10.15	9.30	8.58
895-1466	HL-225-07Z	2K	11.16	10.15	9.30	8.58
895-1469	HL-225-07Z	3K	11.16	10.15	9.30	8.58
895-1472	HL-225-07Z	5K	11.16	10.15	9.30	8.58
895-1475	HL-225-07Z	10K	11.16	10.15	9.30	8.58
895-1478	HL-225-07Z	20K	11.16	10.15	9.30	8.58
895-1481	HL-225-07Z	25K	11.16	10.15	9.30	8.58
895-1484	HL-225-07Z	50K	11.16	10.15	9.30	8.58
895-1487	HL-225-07Z	100K	16.96	15.42	14.13	13.05

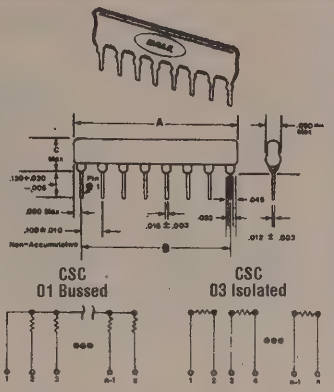
Mounting Hardware

895-1089.	101. 12 watt horizontal thru-bolt	EACH .77
895-1090.	101. 25 watt horizontal thru-bolt	EACH .77
895-1091.	101. 50 watt horizontal thru-bolt	EACH 1.30
895-1092.	102. 100 watt horizontal thru-bolt	EACH 1.30
895-1093.	103. 225 watt horizontal thru-bolt	EACH 2.35
895-1094.	203. 25/50 watt push-in	EACH .23
895-1095.	204. 12 watt push-in	EACH .32
895-1096.	205. 100 watt push-in	EACH .32
895-1097.	206. 225 watt push-in	EACH .35

Single-Inline and Dual-Inline Thick Film Resistor Networks

CSC Thick Film Resistor Network Series

Resistor elements protected by tough epoxy conformal coating. Highly stable thick film resistor element. Reduces total assembly costs. Tin-lead plated copper alloy leads. 0.100" lead spacing. 0.195" maximum seated height. Bussed style typically used for pull-up/pull-down applications. Isolated style typically used for pull-up/pull-down, LED current limiting, line termination, and long-line impedance balancing. ±100PPM. 2% tolerance. **Power Rating:** For bussed style, .20-watt; for isolated style, .30-watt. **Operating Temperature:** –55°C to +125°C. **Dimensions. A:** 6-Pin — .59; 8-Pin — .79; 10-Pin — .99. **B:** 6-Pin — .60; 8-Pin — .80; 10-Pin — .90.



Stock No.	Mfr.'s Type	# of Pins	Circuit Schematic	EACH			
				1-99	100-499	500-999	1000-Up
895-28XX	CSC06A-01	6	Bussed-01	**0.18**	**0.15**	**0.14**	**0.12**
895-29XX	CSC06A-03	6	Isolated-03	**0.18**	**0.15**	**0.14**	**0.12**
895-30XX	CSC08A-01	8	Bussed-01	**0.23**	**0.18**	**0.15**	**0.13**
895-31XX	CSC08A-03	8	Isolated-03	**0.23**	**0.18**	**0.15**	**0.13**
895-32XX	CSC10A-01	10	Bussed-01	**0.28**	**0.22**	**0.19**	**0.17**
895-33XX	CSC10A-03	10	Isolated-03	**0.28**	**0.22**	**0.19**	**0.17**

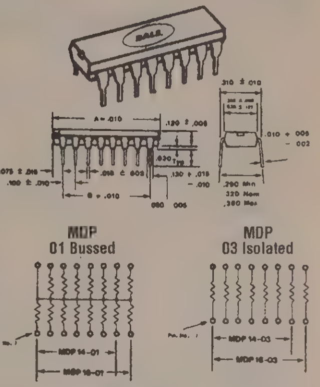
Standard Resistance Value Chart

Ohms	XX	Ohms	XX	Ohms	XX	Ohms	XX
22*	01	330	16	2.2K	27	22K	40
33*	03	390*	17	2.7K	28	27K	41
56	06	470	18	3.3K	29	33K*	42
68*	07	560	19	4.7K	31	47K	44
100	09	680	20	5.6K*	32	68K*	46
120	10	820	21	6.8K	33	100K	48
150	11	1.0K	22	10K	35	220K	52
180	12	1.2K*	23	12K	36	1M	55
220	14	1.5K	24	15K	37	—	—
270*	15	2.0K	26	18K	38	—	—

* Not stocked in CSCxxA-03 series..

MDP Thick Film Resistor Network Series

Rugged, molded epoxy case construction is compatible with automatic surface mounting equipment. Uniform performance characteristics. Highly stable thick film element. Leads are tin-lead plated copper alloy. 0.100" lead spacing. 0.160" maximum seated height. Reduces total assembly costs. Bussed style typically used in pull-up/pull-down applications and digital pulse squaring. Isolated style typically used in pull-up/pull-down circuits, line termination and impedance balancing. ±100PPM. 2% tolerance. **Power Rating:** For bussed style, .125-watt; for isolated style, .250-watt. **Operating Temperature:** -55°C to +125°C. **Dimensions. A:** 14-Pin — .75; 16-Pin — .85. **B:** 14-Pin — .60; 16-Pin — .70.



Stock No.	Mfr.'s Type	# of Pins	Circuit Schematic	EACH			
				1-99	100-499	500-999	1000-up
895-20XX	MDP-14-01	14	Bussed-01	**0.57**	**0.46**	**0.37**	**0.30**
895-21XX	MDP-14-03	14	Isolated-03	**0.57**	**0.46**	**0.37**	**0.30**
895-22XX	MDP-16-01	16	Bussed-01	**0.58**	**0.48**	**0.39**	**0.31**
895-23XX	MDP-16-03	16	Isolated-03	**0.58**	**0.48**	**0.39**	**0.31**

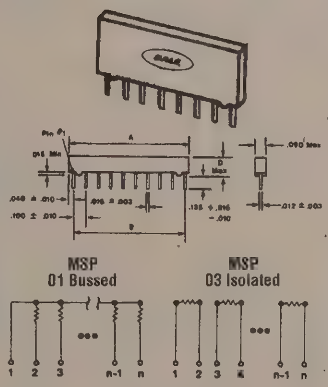
Standard Resistance Value Chart

Ohms	XX	Ohms	XX	Ohms	XX	Ohms	XX
22	01	270	15	3.3K	29	39K	43
27*	02	330	16	3.9K	30	47K	44
33	03	390	17	4.7K	31	56K	45
39	04	470	18	5.6K*	32	68K	46
47	05	560	19	6.8K	33	82K	47
56	06	680	20	8.2K	34	100K	48
68	07	820	21	10K	35	120K	49
82	08	1.0K	22	12K	36	150K	50
100	09	1.2K	23	15K	37	180K	51
120	10	1.5K	24	18K	38	220K	52
150	11	1.8K	25	20K	39	330K	53
180	12	2.0K	26	22K	40	470K	54
200*	13	2.2K	27	27K	41	1M	55
220	14	2.7K	28	33K	42	—	—

* 14 Pin series only.

MSP Thick Film Molded Resistor Network Series

Resistor elements protected by tough epoxy molded coating. Highly stable thick film resistor element. Reduces total assembly costs. Compatible with automatic insertion equipment. Tin-lead plated copper alloy leads. 0.100" lead spacing. 0.195" maximum seated height. Bussed style typically used for pull-up/pull-down applications. Isolated style typically used for pull-up/pull-down, LED current limiting, line termination, and long-line impedance balancing. ±100PPM. 2% tolerance. **Power Rating:** For bussed style, .20-watt; for isolated style, .30-watt. **Operating Temperature:** -55°C to +125°C. **Dimensions. A:** 6-Pin — .59; 8-Pin — .79; 10-Pin — .99. **B:** 6-Pin — .50; 8-Pin — .70; 10-Pin — .90.

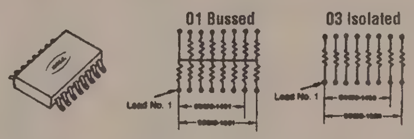


Stock No.	Mfr.'s Type	# of Pins	Circuit Schematic	EACH			
				1-99	100-499	500-999	1000-Up
895-34XX	MSP06A-01	6	Bussed-01	**0.34**	**0.29**	**0.24**	**0.20**
895-35XX	MSP06A-03	6	Isolated-03	**0.34**	**0.29**	**0.24**	**0.20**
895-36XX	MSP08A-01	8	Bussed-01	**0.41**	**0.36**	**0.30**	**0.25**
895-37XX	MSP08A-03	8	Isolated-03	**0.41**	**0.36**	**0.30**	**0.25**
895-38XX	MSP10A-01	10	Bussed-01	**0.49**	**0.43**	**0.35**	**0.30**
895-39XX	MSP10A-03	10	Isolated-03	**0.49**	**0.43**	**0.35**	**0.30**

Standard Resistance Value Chart

Ohms	XX	Ohms	XX	Ohms	XX	Ohms	XX
22	01	390	16	3.9K	30	47K	44
33	03	470	17	4.7K	31	56K	45
39	04	510	18	5.6K	32	68K	46
47	05	560	19	6.8K	33	82K	47
56	06	680	20	8.2K	34	100K	48
68	07	820	21	10K	35	120K	49
82	08	1.0K	22	12K	36	150K	50
100	09	1.2K	23	15K	37	180K	51
120	10	1.5K	24	18K	38	220K	52
150	11	1.8K	25	20K	39	330K	53
180	12	2.0K	26	22K	40	470K	54
220	13	2.2K	27	27K	41	1M	55
270	14	2.7K	28	33K	42	—	—
330	15	3.3K	29	39K	43	—	—

SOMC Thick Film Resistor Network Series



Rugged, molded epoxy case construction is compatible with automatic surface mounting equipment. Uniform performance characteristics. Highly stable thick film element. Leads are tin-lead plated copper alloy. 0.050" lead spacing. 0.090" maximum seated height. Reduces total assembly costs. Bussed style typically used in pull-up/pull-down applications and digital pulse squaring. Isolated style typically used in pull-up/pull-down circuits, line termination and impedance balancing. ±100PPM. 2% tolerance. **Power Rating:** For bussed style, 0.08-watt; for isolated style, 0.16-watt. **Operating Temperature:** -55°C to +125°C.

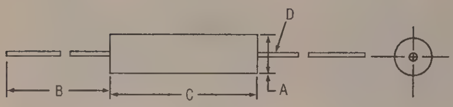
Stock No.	Mfr.'s Type	# of Pins	Circuit Schematic	EACH			
				1-99	100-499	500-999	1000-Up
895-24XX	SOMC-14-01	14	Bussed-01	**0.91**	**0.74**	**0.60**	**0.46**
895-25XX	SOMC-14-03	14	Isolated-03	**0.91**	**0.74**	**0.60**	**0.46**
895-26XX	SOMC-16-01	16	Bussed-01	**0.91**	**0.74**	**0.60**	**0.46**
895-27XX	SOMC-16-03	16	Isolated-03	**0.91**	**0.74**	**0.60**	**0.46**
895-46XX	SOMC-20-01	20	Bussed-01	**0.91**	**0.74**	**0.60**	**0.46**
895-47XX	SOMC-20-03	20	Isolated-03	**0.91**	**0.74**	**0.60**	**0.46**

Standard Resistance Value Chart

Ohms	XX	Ohms	XX	Ohms	XX	Ohms	XX
22	01	270	15	3.3K	29	39K	43
27*	02	330	16	3.9K	30	47K	44
33	03	390	17	4.7K	31	56K	45
39	04	470	18	5.6K*	32	68K	46
47	05	560	19	6.8K	33	82K	47
56	06	680	20	8.2K	34	100K	48
68	07	820	21	10K	35	120K	49
82	08	1.0K	22	12K	36	150K	50
100	09	1.2K	23	15K	37	180K	51
120	10	1.5K	24	18K	38	220K	52
150	11	1.8K	25	20K	39	330K	53
180	12	2.0K	26	22K	40	470K	54
200*	13	2.2K	27	27K	41	1M	55
220	14	2.7K	28	33K	42	—	—

* 14 Pin series.only.

Axial-Lead Vitreous Enamel Resistors



- Low Cost Wirewound Resistor with Vitreous Enamel Coating
- Popular Small Size for Circuit Board, Point-to-Point, or Terminal Board Applications
- Welded Terminations and Lead/End Cap Assembly Assure Maximum Reliability
- Low Temperature Coefficient

Uniform winding and coating assure uniform heat dissipation and excellent appearance. Balanced thermal expansion between core, wire and high temperature vitreous enamel assures reliable performance. Uniformly tinned leads assure reliable electrical and mechanical connections. **Resistance Tolerance:** 5%. **Temperature Coefficient:** ±150 PPM. Available in non-inductive winding, lower TC, closer tolerance and additional resistance values as special order items. Call for pricing and delivery information. Manufacturer literature available.

Dimensions

Mfr.'s Type	A	B	C	D
VL3	7/32	1½	17/32	.032
VL5	5/16	1½	1 1/16	.036
VL10	3/8	1½	1 13/16	.036

3 Watts

Stock No.	Mfr.'s Type	Ohms	EACH 1-24	EACH 25-99
875-1000	VL3-1	1	0.96	0.80
875-1002	VL3-3	3	0.96	0.80
875-1004	VL3-5	5	0.96	0.80
875-1006	VL3-10	10	0.82	0.69
875-1008	VL3-25	25	0.82	0.69
875-1010	VL3-50	50	0.82	0.69
875-1012	VL3-68	68	0.82	0.69
875-1014	VL3-75	75	0.82	0.69
875-1016	VL3-100	100	0.82	0.69
875-1018	VL3-150	150	0.82	0.69
875-1020	VL3-180	180	0.82	0.69
875-1022	VL3-220	220	0.82	0.69
875-1024	VL3-250	250	0.82	0.69
875-1026	VL3-470	470	0.82	0.69
875-1028	VL3-500	500	0.94	0.78
875-1030	VL3-1000	1000	1.10	0.92
875-1032	VL3-1500	1500	1.10	0.92
875-1034	VL3-2000	2000	1.10	0.92
875-1036	VL3-5000	5000	1.31	1.18
875-1038	VL3-10K	10K	1.42	1.18

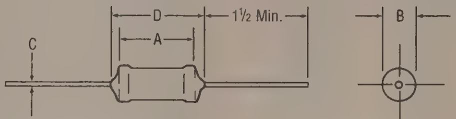
5 Watts

Stock No.	Mfr.'s Type	Ohms	EACH 1-24	EACH 25-99
875-1048	VL5-1	1	1.14	0.98
875-1050	VL5-2	2	1.14	0.98
875-1052	VL5-5	5	1.14	0.98
875-1054	VL5-10	10	1.14	0.96
875-1056	VL5-50	50	1.14	0.96
875-1058	VL5-82	82	1.14	0.96
875-1060	VL5-100	100	1.14	0.96
875-1062	VL5-150	150	1.14	0.96
875-1064	VL5-200	200	1.14	0.96
875-1066	VL5-300	300	1.14	0.96
875-1068	VL5-500	500	1.21	1.02
875-1070	VL5-1000	1000	1.31	1.10
875-1072	VL5-2500	2500	1.31	1.10
875-1074	VL5-5000	5000	1.76	1.48
875-1076	VL5-6800	6800	1.76	1.48
875-1078	VL5-8200	8200	1.76	1.48
875-1080	VL5-10K	10K	1.76	1.48
875-1082	VL5-15K	15K	1.76	1.48
875-1084	VL5-25K	25K	1.81	1.52

10 Watts

Stock No.	Mfr.'s Type	Ohms	EACH 1-24	EACH 25-99
875-1094	VL10-5	5	1.42	1.20
875-1096	VL10-7.5	7.5	1.42	1.20
875-1098	VL10-10	10	1.30	1.10
875-1100	VL10-20	20	1.30	1.10
875-1102	VL10-50	50	1.30	1.10
875-1104	VL10-100	100	1.30	1.10
875-1106	VL10-120	120	1.30	1.10
875-1108	VL10-500	500	1.30	1.10
875-1110	VL10-1000	1000	1.60	1.33
875-1112	VL10-1200	1200	1.60	1.33
875-1114	VL10-5000	5000	2.10	1.74
875-1116	VL10-10K	10K	2.10	1.75
875-1118	VL10-20K	20K	2.25	1.91

Silicone Coated Power Resistors



- Complete Welded Construction
- High Temperature Silicone Coating and Molding
- Meets Applicable Requirements of MIL-R-26
- 1% Tolerance

SL-1 (MIL-RW70U); SL-3 (RW79U); SL-5 (MIL-RW74U). Made with ceramic, steatite or alumina core, depending on size. Copper-nickel alloy or nickel-chrome alloy, depending on resistance value. Stainless steel end caps. Standard terminals are tinned copperweld. Also available in non-inductive styles with Aryton-Perry winding, various elements available for special TC, special configurations, closer tolerances, special matching TC and tolerance. Call for pricing and delivery information. Manufacturer literature available.

Dimensions

Mfr.'s Type	Watts	A	B	C	Max. Dim.
SL-0001	1	.363/.383	.100/.115	.020	.450
SL-0003	3	.457/.477	.205/.190	.032	.500
SL-0005	5	.895/.915	.305/.290	.040	.950

1 Watt

Stock No.	Mfr.'s Type	Ohms	EACH 1-24	EACH 25-99
875-1598	SL1-.1	.1	1.94	1.70
875-1600	SL1-.13	.13	1.94	1.70
875-1602	SL1-.15	.15	1.94	1.70
875-1604	SL1-.2	.2	1.94	1.70
875-1606	SL1-.25	.25	1.94	1.70
875-1608	SL1-.33	.33	1.94	1.70
875-1610	SL1-.5	.5	1.94	1.70
875-1612	SL1-1	1	1.86	1.63
875-1614	SL1-1.5	1.5	1.86	1.63
875-1616	SL1-2	2	1.86	1.63
875-1618	SL1-3	3	1.86	1.63
875-1620	SL1-5	5	1.86	1.63
875-1622	SL1-10	10	1.86	1.63
875-1624	SL1-100	100	1.86	1.63
875-1626	SL1-250	250	1.86	1.63
875-1628	SL1-500	500	1.86	1.63
875-1630	SL1-820	820	1.86	1.63
875-1632	SL1-1000	1000	1.86	1.63
875-1634	SL1-1500	1500	2.03	1.78
875-1636	SL1-1800	1800	2.03	1.78

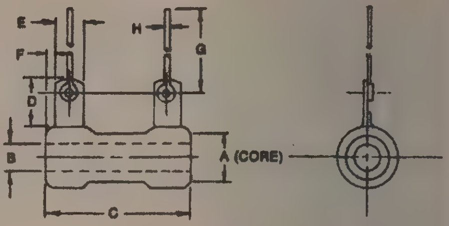
3 Watts

Stock No.	Mfr.'s Type	Ohms	EACH 1-24	EACH 25-99
875-1646	SL3-.1	.1	1.81	1.60
875-1648	SL3-.15	.15	1.81	1.60
875-1650	SL3-.2	.2	1.81	1.60
875-1652	SL3-.25	.25	1.81	1.60
875-1654	SL3-.33	.33	1.81	1.60
875-1656	SL3-.5	.5	1.81	1.60
875-1658	SL3-1	1	1.06	0.84
875-1660	SL3-3	3	1.06	0.84
875-1662	SL3-5	5	1.06	0.84
875-1664	SL3-7.5	7.5	1.06	0.84
875-1666	SL3-10	10	1.06	0.84
875-1668	SL3-50	50	1.06	0.84
875-1670	SL3-100	100	1.06	0.84
875-1672	SL3-250	250	1.06	0.84
875-1674	SL3-500	500	1.06	0.84
875-1676	SL3-1000	1000	1.06	0.84
875-1678	SL3-5000	5000	1.25	1.00

5 Watts

Stock No.	Mfr.'s Type	Ohms	EACH 1-24	EACH 25-99
875-1688	SL5-.1	.1	1.88	1.67
875-1690	SL5-.5	.5	1.88	1.67
875-1692	SL5-1	1	1.16	0.96
875-1694	SL5-10	10	1.16	0.96
875-1696	SL5-1000	1000	1.16	0.96

Tubular Vitreous Lug/Leaded Resistors



- Tubular Construction Provides Excellent Heat Dissipation
- Welded Terminals and Termination Guarantees Positive Electrical Connections
- Tinned Terminals

Balanced thermal expansion between core, wire and high temperature vitreous enamel assures reliable performance. Long term stability results from firing at temperatures exceeding 1000°F. Uniform winding and coating assure uniform heat dissipation and excellent appearance. Supplied with 1½" solder leads. **Resistance Tolerance:** ±5%. **Temperature Coefficient:** ±100 PPM. Available in non-inductive winding, lower TC, closer tolerance and additional resistance values as special order items. Call for pricing and delivery information. Manufacturer literature available.

Dimensions

Mfr.'s Type	A	B	C	D	E	F	G	H
FRL5-8W	5/16	.200	1	7/16	3/16	3/32	1¾	.036
FRL10-12W	5/16	.200	1¾	7/16	3/16	3/32	1¾	.036
FRL20W	7/16	¼	2	7/16	3/16	3/32	1¾	.036

8 Watts

Dimensions: 5/16" Dia. × 1" Length.

Stock No.	Mfr.'s Type	Ohms	EACH 1-24	EACH 25-99
875-1128	FRL5-1	1	2.00	1.77
875-1130	FRL5-3	3	2.00	1.77
875-1132	FRL5-5	5	2.00	1.77
875-1134	FRL5-7.5	7.5	2.00	1.77
875-1136	FRL5-125	125	1.52	1.39
875-1138	FRL5-1000	1000	1.52	1.39
875-1140	FRL5-5000	5000	1.80	1.45
875-1142	FRL5-10K	10K	1.75	1.49
875-1144	FRL5-25K	25K	2.27	1.90

12 Watts

Dimensions: 5/16" Dia. × 1¾" Length.

Stock No.	Mfr.'s Type	Ohms	EACH 1-24	EACH 25-99
875-1154	FRL10-2	2	2.35	1.98
875-1156	FRL10-3	3	2.35	1.98
875-1158	FRL10-5	5	2.35	1.98
875-1160	FRL10-7.5	7.5	2.35	1.98
875-1162	FRL10-10	10	2.02	1.71
875-1164	FRL10-20	20	2.02	1.71
875-1166	FRL10-25	25	2.02	1.71
875-1168	FRL10-50	50	2.02	1.71
875-1170	FRL10-100	100	2.02	1.71
875-1172	FRL10-150	150	2.02	1.71
875-1174	FRL10-200	200	2.02	1.71
875-1176	FRL10-250	250	2.02	1.71
875-1178	FRL10-300	300	2.02	1.71
875-1180	FRL10-500	500	2.02	1.71
875-1182	FRL10-750	750	2.02	1.71
875-1184	FRL10-1000	1000	2.02	1.71
875-1186	FRL10-2000	2000	2.22	1.88
875-1188	FRL10-2500	2500	2.22	1.88
875-1190	FRL10-5000	5000	2.22	1.88
875-1192	FRL10-10K	10K	2.51	2.12
875-1194	FRL10-25K	25K	2.75	2.32
875-1196	FRL10-50K	50K	3.16	2.68

20 Watts

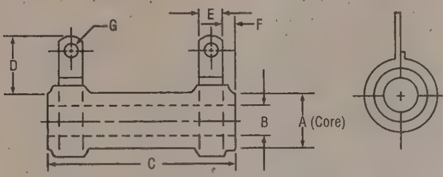
Dimensions: 7/16" Dia. × 2" Length.

Stock No.	Mfr.'s Type	Ohms	EACH 1-24	EACH 25-99
875-1206	FRL20-5	5	3.16	2.68
875-1208	FRL20-10	10	2.30	2.09
875-1210	FRL20-25	25	2.30	2.09
875-1212	FRL20-50	50	2.30	2.09
875-1214	FRL20-100	100	2.30	2.09
875-1216	FRL20-500	500	2.03	2.09
875-1218	FRL20-2000	2000	2.59	2.27
875-1220	FRL20-15K	15K	3.12	2.70

Fixed and Adjustable Wirewound Power Resistors

MEMCOR-TRUOHM INC.

Fixed Resistors



► **Long Term Stability** ► **Tubular Construction** ► **Excellent Heat Dissipation**

Used for voltage dropping or dividing, bias, bleeders, power supplies and other military, industrial, commercial and general consumer applications. Uniform winding and coating provides uniform heat dissipation and excellent appearance. Tinned terminals provide reliable solder or mechanical connections. Balanced thermal expansion between core, wire and high temperature vitreous enamel assures reliable performance. Tubular construction provides excellent heat dissipation. Welded terminals and termination guarantees positive electrical connections. Long term stability results from firing at temperatures exceeding 1000°F. **Resistance Tolerance:** ±5%. **Temperature Coefficient:** ±100 PPM. On adjustable resistors, the wattage rating applies when the entire resistance is in the circuit. With the adjustment lug at an intermediate point, the wattage is reduce in the same proportion. Wattage ratings are for free air mounting. Quick disconnect terminals, other/additional mounting hardware, closer tolerances, lower TC, and other resistance values available as special order. Manufacturer literature available. Units are not supplied with mounting hardware; see mounting hardware listed below each wattage listing. Two (each) are required to mount each resistor.

25 Watts

Stock No.	Mfr.'s Type	Ohms	EACH 1-24	EACH 25-99
875-1230	FR25-1	1	**3.08**	**2.57**
875-1232	FR25-2	2	**3.08**	**2.57**
875-1234	FR25-3	3	**3.08**	**2.57**
875-1236	FR25-4	4	**3.08**	**2.57**
875-1238	FR25-5	5	**2.82**	**2.35**
875-1240	FR25-10	10	**2.82**	**2.35**
875-1242	FR25-15	15	**2.82**	**2.35**
875-1244	FR25-25	25	**2.82**	**2.35**
875-1246	FR25-50	50	**2.82**	**2.35**
875-1248	FR25-100	100	**2.82**	**2.35**
875-1250	FR25-150	150	**2.82**	**2.35**
875-1252	FR25-200	200	**2.82**	**2.35**
875-1254	FR25-250	250	**2.82**	**2.35**
875-1256	FR25-500	500	**2.82**	**2.35**
875-1258	FR25-1000	1000	**2.82**	**2.35**
875-1260	FR25-1500	1500	**2.92**	**2.43**
875-1262	FR25-2500	2500	**2.92**	**2.43**
875-1264	FR25-5000	5000	**2.92**	**2.43**
875-1266	FR25-7500	7500	**3.28**	**2.73**
875-1268	FR25-10K	10K	**3.28**	**2.73**
875-1270	FR25-15K	15K	**3.50**	**2.92**
875-1272	FR25-25K	25K	**3.78**	**3.15**
875-1274	FR25-50K	50K	**4.12**	**3.43**
875-1276	FR25-100K	100K	**4.42**	**3.68**

875-1229. 1441-005-001. Mounting Bracket (2 required) .... **EACH .19**

50 Watts

875-1286	FR50-1	1	**4.56**	**3.80**
875-1288	FR50-2	2	**4.56**	**3.80**
875-1290	FR50-3	3	**4.56**	**3.80**
875-1292	FR50-4	4	**4.56**	**3.80**

50 Watts (Continued)

Stock No.	Mfr.'s Type	Ohms	EACH 1-24	EACH 25-99
875-1294	FR50-5	5	**4.28**	**3.57**
875-1296	FR50-10	10	**4.28**	**3.57**
875-1298	FR50-25	25	**4.28**	**3.57**
875-1300	FR50-50	50	**4.28**	**3.57**
875-1302	FR50-100	100	**4.28**	**3.57**
875-1304	FR50-150	150	**4.28**	**3.57**
875-1306	FR50-200	200	**4.28**	**3.57**
875-1308	FR50-500	500	**4.28**	**3.57**
875-1310	FR50-750	750	**4.28**	**3.57**
875-1312	FR50-800	800	**4.28**	**3.57**
875-1314	FR50-1000	1000	**4.28**	**3.57**
875-1316	FR50-5000	5000	**4.28**	**3.57**
875-1318	FR50-10K	10K	**4.64**	**3.87**
875-1320	FR50-100K	100K	**6.10**	**5.08**

875-1229. 1441-005-001. Mounting Bracket (2 required) .... **EACH .19**

100 Watts

875-1330	FR100-1	1	**9.02**	**7.52**
875-1332	FR100-2	2	**9.02**	**7.52**
875-1334	FR100-3	3	**8.54**	**7.12**
875-1336	FR100-5	5	**8.54**	**7.12**
875-1338	FR100-10	10	**8.54**	**7.12**
875-1340	FR100-25	25	**7.82**	**6.52**
875-1342	FR100-50	50	**7.82**	**6.52**
875-1344	FR100-75	75	**7.82**	**6.52**
875-1346	FR100-100	100	**7.82**	**6.52**
875-1348	FR100-150	150	**7.82**	**6.52**
875-1350	FR100-250	250	**7.82**	**6.52**
875-1352	FR100-500	500	**7.82**	**6.52**
875-1354	FR100-750	750	**7.82**	**6.52**
875-1356	FR100-1000	1000	**7.82**	**6.52**

Dimensions

Mfr.'s Type	A	B	C	D	E	F	G
FR25	⁹⁄₁₆	⁵⁄₁₆	2	⁹⁄₁₆	¼	³⁄₃₂	.104
FR50	⁹⁄₁₆	⁵⁄₁₆	4	⁹⁄₁₆	¼	³⁄₃₂	.144
FR100	¾	½	6½	⁹⁄₁₆	¼	³⁄₃₂	.144
FR160	1⅛	¾	8½	⅝	⁵⁄₁₆	³⁄₃₂	.177
FR200	1⅛	¾	10½	⅝	⁵⁄₁₆	³⁄₃₂	.177

100 Watts (Continued)

Stock No.	Mfr.'s Type	Ohms	EACH 1-24	EACH 25-99
875-1358	FR100-3000	3000	**7.82**	**6.52**
875-1360	FR100-5000	5000	**7.82**	**6.52**
875-1362	FR100-10K	10K	**7.82**	**6.52**
875-1364	FR100-20K	20K	**8.70**	**7.25**
875-1366	FR100-50K	50K	**9.10**	**7.58**
875-1368	FR100-100K	100K	**9.58**	**7.98**

875-1329. 1441-006-001. Mounting Bracket (2 required) .... **EACH .19**

175 Watts

875-1378	FR160-2	2	**16.38**	**13.65**
875-1380	FR160-4	4	**14.92**	**12.43**
875-1382	FR160-10	10	**14.92**	**12.43**
875-1384	FR160-25	25	**7.82**	**6.52**
875-1386	FR160-50	50	**7.82**	**6.52**

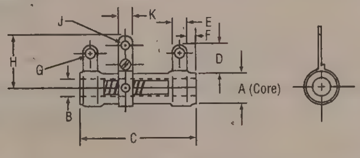
875-1377. 1441-007-001. Mounting Bracket (2 required) .... **EACH .20**

225 Watts

875-1396	FR200-1	1	**20.18**	**16.82**
875-1398	FR200-3	3	**16.08**	**13.40**
875-1400	FR200-4	4	**16.08**	**13.40**
875-1402	FR200-5	5	**16.08**	**13.40**
875-1404	FR200-10	10	**16.08**	**13.40**
875-1406	FR200-25	25	**13.38**	**11.15**
875-1408	FR200-50	50	**13.38**	**11.15**
875-1410	FR200-75	75	**13.38**	**11.15**
875-1412	FR200-100	100	**13.38**	**11.15**
875-1414	FR200-150	150	**13.38**	**11.15**
875-1416	FR200-250	250	**13.38**	**11.15**
875-1418	FR200-500	500	**13.38**	**11.15**
875-1420	FR200-750	750	**13.38**	**11.15**
875-1422	FR200-1000	1000	**13.38**	**11.15**
875-1424	FR200-1500	1500	**13.38**	**11.15**
875-1426	FR200-5000	5000	**13.38**	**11.15**
875-1428	FR200-7500	7500	**13.38**	**11.15**
875-1430	FR200-15K	15K	**13.38**	**11.15**
875-1432	FR200-50K	50K	**14.60**	**12.17**

875-1377. 1441-007-001. Mounting Bracket (2 required) .... **EACH .20**

Adjustable Resistors



► **Long Term Stability** ► **Tubular Construction** ► **Excellent Heat Dissipation**

Used for voltage dropping or dividing, bias, bleeders, power supplies and other military, industrial, commercial and general consumer applications. Uniform winding and coating provides uniform heat dissipation and excellent appearance. Tinned terminals provide reliable solder or mechanical connections. Balanced thermal expansion between core, wire and high temperature vitreous enamel assures reliable performance. Tubular construction provides excellent heat dissipation. Welded terminals and termination guarantees positive electrical connections. Long term stability results from firing at temperatures exceeding 1000°F. **Resistance Tolerance:** ±5%. **Temperature Coefficient:** ±100 PPM. On adjustable resistors, the wattage rating applies when the entire resistance is in the circuit. With the adjustment lug at an intermediate point, the wattage is reduce in the same proportion. Wattage ratings are for free air mounting. Quick disconnect terminals, other/additional mounting hardware, closer tolerances, lower TC, and other resistance values available as special order. Manufacturer literature available. Units are not supplied with mounting hardware; see mounting hardware listed below each wattage listing. Two (each) are required to mount each resistor.

Dimensions

Mfr.'s Type	A	B	C	D	E	F	G	H	J	K
AR10	⁵⁄₁₆	.200	1¾	⁷⁄₁₆	³⁄₁₆	³⁄₃₂	.104	²⁹⁄₃₂	⅛	³⁄₁₆
AR25	⁹⁄₁₆	⁵⁄₁₆	2	⁹⁄₁₆	¼	³⁄₃₂	.144	1³⁄₆₄	.173	³⁄₁₆
AR50	⁹⁄₁₆	⁵⁄₁₆	4	⁹⁄₁₆	¼	³⁄₃₂	.144	1³⁄₆₄	.173	³⁄₁₆
AR100	¾	½	6½	⁹⁄₁₆	¼	³⁄₃₂	.144	1¼	.141	³⁄₁₆
AR200	1⅛	¾	10½	⅝	⁵⁄₁₆	³⁄₃₂	.177	1²⁹⁄₆₄	.170	³⁄₁₆

12 Watts

Stock No.	Mfr.'s Type	Ohms	EACH 1-24	EACH 25-99
875-1442	AR10-3	3	**4.24**	**3.53**
875-1444	AR10-5	5	**4.24**	**3.53**
875-1446	AR10-10	10	**4.08**	**3.40**
875-1448	AR10-25	25	**4.08**	**3.40**
875-1450	AR10-100	100	**4.08**	**3.40**
875-1452	AR10-500	500	**4.08**	**3.40**
875-1454	AR10-1000	1000	**4.26**	**3.55**

875-1441. 1441-003-001. Mounting Bracket (2 required) .... **EACH .17**

25 Watts

875-1464	AR25-1	1	**4.82**	**4.02**
875-1466	AR25-2	2	**4.82**	**4.02**
875-1468	AR25-3	3	**4.82**	**4.02**
875-1470	AR25-5	5	**4.82**	**4.02**
875-1472	AR25-10	10	**4.82**	**4.02**
875-1476	AR25-15	15	**4.82**	**4.02**
875-1478	AR25-50	50	**4.82**	**4.02**
875-1480	AR25-100	100	**4.82**	**4.02**
875-1482	AR25-150	150	**4.82**	**4.02**
875-1484	AR25-250	250	**4.82**	**4.02**
875-1486	AR25-400	400	**4.82**	**4.02**
875-1488	AR25-500	500	**4.82**	**4.02**
875-1490	AR25-2000	2000	**4.64**	**3.87**
875-1492	AR25-10K	10K	**4.86**	**4.05**

25 Watts (Continued)

Stock No.	Mfr.'s Type	Ohms	EACH 1-24	EACH 25-99
875-1494	AR25-20K	20K	**5.34**	**4.45**
875-1496	AR25-25K	25K	**5.34**	**4.45**

875-1229. 1441-005-001. Mounting Bracket (2 required) .... **EACH .19**

50 Watts

875-1506	AR50-1	1	**6.82**	**5.68**
875-1508	AR50-2	2	**6.82**	**5.68**
875-1510	AR50-3	3	**6.82**	**5.68**
875-1512	AR50-5	5	**6.16**	**5.13**
875-1514	AR50-10	10	**6.16**	**5.13**
875-1516	AR50-25	25	**6.16**	**5.13**
875-1518	AR50-50	50	**6.16**	**5.13**
875-1520	AR50-100	100	**6.16**	**5.13**
875-1522	AR50-150	150	**6.16**	**5.13**
875-1524	AR50-200	200	**6.16**	**5.13**
875-1526	AR50-500	500	**6.16**	**5.13**
875-1528	AR50-1000	1000	**6.16**	**5.13**
875-1530	AR50-1500	1500	**6.40**	**5.33**

875-1229. 1441-005-001. Mounting Bracket (2 required) .... **EACH .19**

100 Watts

875-1540	AR100-1	1	**12.84**	**10.70**

100 Watts (Continued)

Stock No.	Mfr.'s Type	Ohms	EACH 1-24	EACH 25-99
875-1542	AR100-2	2	**12.84**	**10.70**
875-1544	AR100-5	5	**12.84**	**10.70**
875-1546	AR100-10	10	**9.40**	**7.83**
875-1548	AR100-25	25	**9.40**	**7.83**
875-1550	AR100-50	50	**9.40**	**7.83**
875-1552	AR100-100	100	**9.40**	**7.83**
875-1554	AR100-250	250	**9.40**	**7.83**
875-1556	AR100-500	500	**9.40**	**7.83**
875-1558	AR100-1000	1000	**9.40**	**7.83**

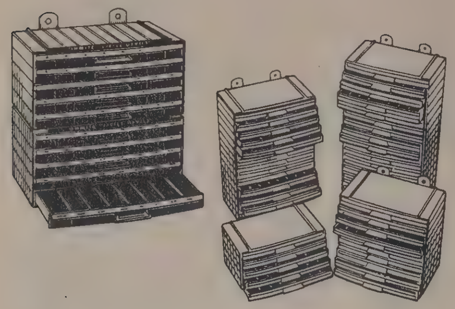
875-1329. 1441-006-001. Mounting Bracket (2 required) .... **EACH .19**

225 Watts

875-1568	AR200-1	1	**22.10**	**18.42**
875-1570	AR200-2	2	**22.10**	**18.42**
875-1572	AR200-3	3	**22.10**	**18.42**
875-1574	AR200-5	5	**22.10**	**18.42**
875-1576	AR200-10	10	**17.02**	**14.18**
875-1578	AR200-25	25	**17.02**	**14.18**
875-1580	AR200-50	50	**17.02**	**14.18**
875-1582	AR200-100	100	**17.02**	**14.18**
875-1584	AR200-250	250	**17.02**	**14.18**
875-1586	AR200-500	500	**17.02**	**14.18**
875-1588	AR200-1000	1000	**17.02**	**14.18**

875-1377. 1441-007-001. Mounting Bracket (2 required) .... **EACH .20**

Resistor Assortment

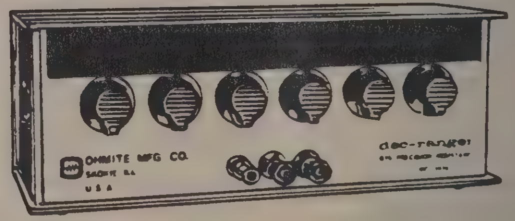


Each cabinet contain the most popular resistance values, including "Mil" specified resistors. Each cabinet is an organized system designed for research and development, prototype laboratory work, education instruction, maintenance and replacement. All cabinets are labeled to identify the resistor series contained and all the drawer compartments identify the resistance values. The cabinets have interlocking bases and tops which permits stacking and helps conserve space. Cabinet models composed of two or more cabinets are stacked and reinforced with metal braces which allow mounting onto walls or pegboards. Each individual cabinet is 9" wide × 4¾" high × 5¼" deep.

Stock No.	Mfr.'s Type	Type	Watts	Tol. %	Qty.	No. of Values	Ohm Range	EACH
296-1730	CAB-34F	Carbon Film	1/8	5	1000	104	10-.22M	**275.00**
296-1690	CAB-6F	Carbon Film	1/4	5	150	36	1-1M	**72.50**
296-1705	CAB-23F	Carbon Film	1/4	5	1000	75	1-1M	**181.25**
296-1735	CAB-43F	Carbon Film	1/4	5	1500	137	1-1M	**310.00**
296-1710	CAB-24F	Carbon Film	1/2	5	1000	75	1-1M	**202.50**
296-1740	CAB-44F	Carbon Film	1/2	5	1500	137	1-1M	**340.00**
296Q1745	CAB-45	Carbon Composition	1/8	5	1000	160	2.7-22M	**1690.00**
296-1775	CAB-54	Carbon Composition	1/4	5	124	40	10-10M	**166.25**
296-1785	CAB-525	Carbon Composition	1/4	5	800	80	2.7-22M	**686.25**
296-1780	CAB-510	Carbon Composition	1/2	5	120	40	10-10M	**178.75**
296-1790	CAB-526	Carbon Composition	1/2	5	800	80	2.7-22M	**705.00**
296Q1750	CAB-47	Carbon Composition	1/2	5	1500	160	2.7-22M	**1331.25**
296-1765	CAB-52	Carbon Composition	1	5	100	40	10-10M	**283.75**
296Q1795	CAB-527	Carbon Composition	1	5	480	80	2.7-22M	**956.25**
296Q1760	CAB-48	Carbon Composition	1	5	900	160	2.7-22M	**1831.25**
296-1770	CAB-53	Carbon Composition	2	5	100	40	10-10M	**376.25**
296-1695	CAB-8M	Metal Film	1/4	1	250	40	10-301K	**128.75**
296-1715	CAB-28M	Metal Film	1/4	1	500	80	10-301K	**257.50**
296-1725	CAB-31M	Metal Film	1/4	1	1000	120	10-301K	**382.50**
296-1700	CAB-9M	Metal Film	1/2	1	250	40	10-1M	**155.00**
296-1720	CAB-29M	Metal Film	1/2	1	500	80	10-1M	**325.00**
296-1725	CAB-32M	Metal Film	1/2	1	1000	120	10-1M	**382.50**
296-1686	CAB-6SR	SMT Chip	1/10	1 and 5	1000	63	0-2M	**370.00**
296-1687	CAB-8SR	SMT Chip	1/8	1 and 5	1000	63	0-2M	**325.00**
296-1688	CAB-12SR	SMT Chip	1/4	1 and 5	1000	63	0-2M	**325.00**
296-1691	CAB-PSR1	SMT Wirewound and Metal Film	0.8-3.5	5	445	64	1-5M	**625.00**

Decade-Ranger Model No. 3416

A precision, ±1% accuracy, 6 decade resistance box. This unit eliminates the guesswork and aids in the determination of appropriate resistance values. The substitution box is an easy-to-use, dedicated unit which facilitates circuit design, breadboarding, and resolving circuitry problems. The unit has sturdy metal housing, universal binding posts and a grounded metal post for effective shielding. Rotary tap switches operate in either direction. Direct digital readout. 1/4" watt per resistor. **Range:** 1 ohm thru 1,111,110 ohm in 1 ohm increments. **Switch Life:** In excess of 50,000 operations. **Dimensions:** 10.5"W × 3.75"H × 4.675"D. **Weight:** 3 lbs. 10 oz.



296-1195. Model 3416..**EACH 378.93**

Ohm-Ranger Model No. 3420

An economical, portable 7-decade resistance selector with a range of over 11 Meg ohms in 1 ohm increments. This unit eliminates the guesswork and aids in the determination of appropriate resistance values. The substitution box is an easy-to-use, dedicated unit which facilitates circuit design, breadboarding, and resolving circuitry problems. Has three binding posts, one to ground the case. The handy slimline size is housed using rugged metal construction. Slide switches are used to change the resistance values. **Power:** 1/2 watt (not to exceed 250 V). **Accuracy:** ±1% over 10 ohms, ±5% under 10 ohms. **Size:** 4" × 6" × 1". **Weight:** 13 oz.

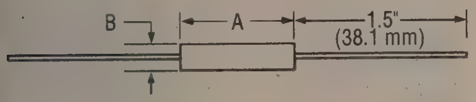
296-1200. Model 3420..**EACH 161.25**

Cap-Ranger Model No. 3430

An economical, portable capacitance selector with 3 binding posts, one to ground the rugged metal case. This unit eliminates the guesswork and aids in the determination of appropriate resistance values. The substitution box is an easy-to-use, dedicated unit which facilitates circuit design, breadboarding, and resolving circuitry problems. Slide switches provide range of 100 picofarads to 11.111 microfarads in 100 picofarads. **Accuracy:** ±2%. 200 VDC maximum. **Residual Capacitance:** 60 pf (typical). **Size:** 4" × 6" × 1". **Weight:** 13 oz.

296-1205. Model 3430..**EACH 186.00**

Vitreous Enamel Conformal Wirewound Resistors



Dimensions

Power Rating	Max. Length-A		Max. Dia.-B		Leads Ga.	Weight (g)
	In.	mm	In.	mm		
1 W	.406	10.3	.156	4.0	24	.50
2 W	.406	10.3	.219	5.6	20	.75
3 W	.500	14.3	.220	6.4	20	1.00
5 W	.906	25.4	.276	6.4	20	1.75
10 W	1.844	45.6	.394	8.7	20	5.60

Features

- **Rugged Vitreous Enamel Coating Withstands High Humidity And Temperature Cycling**
- **Durable Construction, Recommended For Industrial Applications Where Reliability Is Paramount**
- **All-Welded Construction**
- **Flame Resistant Vitreous Enamel Coating**
- **5% Tolerance**

Rugged and flame resistant vitreous enamel coating withstands high humidity and temperature cycling. Durable all welded construction ideal for industrial applications where reliability is paramount. These resistors offer the durability of a silicone-free conformal coated resistor and ideal for computer, communications and industrial applications in which cost, quality and reliability are key considerations. Ceramic core with solder coated axial leads. **Tolerance:** ±5%.

1 Watt

Stock No.	Mfr.'s Type	Ohms	EACH 1-24	EACH 25-49	EACH 50-99
296-0120	21J1R0	1	2.17	2.06	1.94
296-0125	21J2R0	2	2.17	2.06	1.94
296-0127	21J2R2	2.2	2.17	2.06	1.94
296-0128	21J3R0	3	2.17	2.06	1.94
296-0130	21J7R5	7.5	2.17	2.06	1.94
296-0131	21J10R	10	2.07	1.97	1.85
296-0132	21J15R	15	2.07	1.97	1.85
296-0133	21J22R	22	2.07	1.97	1.85
296-0140	21J30R	30	2.07	1.97	1.85
296-0145	21J47R	47	2.07	1.97	1.85
296-0146	21J50R	50	2.07	1.97	1.85
296-0150	21J100	100	2.52	2.40	2.25
296-0151	21J120	120	2.52	2.40	2.25
296-0152	21J180	180	2.52	2.40	2.25
296-0155	21J200	200	2.52	2.40	2.25
296-0160	21J220	220	2.52	2.40	2.25
296-0162	21J250	250	2.52	2.40	2.25
296-0170	21J270	270	2.52	2.40	2.25
296-0175	21J330	30	2.52	2.40	2.25
296-0180	21J470	470	2.52	2.40	2.25
296-0182	21J500	500	2.52	2.40	2.25
296-0185	21J1K0	1K	2.63	2.51	2.36
296-0190	21J1K5	1.5K	2.63	2.51	2.36
296-0200	21J2K5	2.5K	2.85	2.71	2.55

2 Watts

Stock No.	Mfr.'s Type	Ohms	EACH 1-24	EACH 25-49	EACH 50-99
296-0205	22J1R0	1	1.30	1.24	1.16
296-0206	22J2R0	2	1.30	1.24	1.16
296-0207	22J3R0	3	1.30	1.24	1.16
296-0208	22J10R	10	1.13	1.08	1.01
296-0209	22J20R	20	1.13	1.08	1.01
296-0211	22J39R	39	1.13	1.08	1.01
296-0212	22J50R	50	1.13	1.08	1.01
296-0213	22J56R	56	1.13	1.08	1.01
296-0214	22J75R	75	1.13	1.08	1.01
296-0216	22J150	150	1.03	.98	.93
296-0217	22J220	220	1.03	.98	.93
296-0218	22J560	560	1.22	1.16	1.09
296-0219	22J750	750	1.22	1.16	1.09
296-0221	22J820	820	1.22	1.16	1.09
296-0210	22J1K0	1K	1.43	1.37	1.28
296-0222	22J1K2	1.2K	1.43	1.37	1.28
296-0223	22J1K5	1.5K	1.43	1.37	1.28
296-0224	22J2K0	2K	1.43	1.37	1.28
296-0226	22J3K0	3K	1.72	1.63	1.54

3 Watts

296-0215	23J1R0	1	1.03	.98	.93
296-0227	23J1R5	1.5	1.03	.98	.93
296-0228	23J2R0	2	1.03	.98	.93
296-0229	23J2R2	2.2	1.03	.98	.93
296-0231	23J3R0	3	1.03	.98	.93
296-0232	23J4R0	4	1.03	.98	.93
296-0233	23J5R0	5	1.03	.98	.93
296-0234	23J7R5	7.5	1.03	.98	.93
296-0236	23J10R	10	.92	.87	.82
296-0237	23J15R	15	.92	.87	.82
296-0238	23J20R	20	.92	.87	.82
296-0239	23J25R	25	.92	.87	.82
296-0241	23J30R	30	.92	.87	.82
296-0242	23J33R	33	.92	.87	.82
296-0243	23J39R	39	.92	.87	.82
296-0244	23J56R	56	.92	.87	.82
296-0246	23J68R	68	.92	.87	.82
296-0220	23J100	100	.87	.83	.78
296-0225	23J120	120	.87	.83	.78
296-0247	23J125	125	.87	.83	.78
296-0230	23J150	150	.87	.83	.78
296-0248	23J200	200	.87	.83	.78
296-0249	23J220	220	.87	.83	.78
296-0251	23J250	250	.87	.83	.78
296-0252	23J330	330	.87	.83	.78
296-0253	23J400	400	.87	.83	.78
296-0254	23J470	470	.87	.83	.78
296-0235	23J500	500	.87	.83	.78
296-0256	23J560	560	.87	.83	.78
296-0240	23J600	600	.87	.83	.78
296-0257	23J820	820	.87	.83	.78
296-0245	23J1K0	1K	1.20	1.14	1.07
296-0250	23J1K2	1.2K	1.20	1.14	1.07
296-0255	23J1K5	1.5K	1.20	1.14	1.07
296-0260	23J2K0	2K	1.20	1.14	1.07
296-0265	23J3K0	3K	1.20	1.14	1.07
296-0270	23J4K0	4K	1.20	1.14	1.07
296-0272	23J5K0	5K	1.47	1.40	1.31
296-0273	23J6K0	6K	1.47	1.40	1.31
296-0274	23J7K5	7.5K	1.63	1.56	1.46
296-0275	23J10K	10K	1.63	1.56	1.46

5 Watts

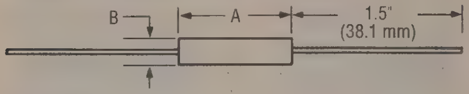
Stock No.	Mfr.'s Type	Ohms	EACH 1-24	EACH 25-49	EACH 50-99
296-0280	25J1R0	1	1.30	1.24	1.16
296-0281	25J1R5	1.5	1.30	1.24	1.16
296-0285	25J2R0	2	1.30	1.24	1.16
296-0286	25J2R2	2.2	1.30	1.24	1.16
296-0287	25J3R0	3	1.30	1.24	1.16
296-0288	25J4R0	4	1.30	1.24	1.16
296-0290	25J5R0	5	1.30	1.24	1.16
296-0291	25J7R5	7.5	1.30	1.24	1.16
296-0292	25J10R	10	1.25	1.19	1.12
296-0293	25J20R	20	1.25	1.19	1.12
296-0294	25J25R	25	1.25	1.19	1.12
296-0296	25J30R	30	1.25	1.19	1.12
296-0297	25J33R	33	1.25	1.19	1.12
296-0298	25J40R	40	1.25	1.19	1.12
296-0295	25J50R	50	1.25	1.19	1.12
296-0299	25J56R	56	1.25	1.19	1.12
296-0301	25J75R	75	1.25	1.19	1.12
296-0300	25J100	100	1.03	.98	.93
296-0305	25J150	150	1.03	.98	.93
296-0306	25J220	220	1.03	.98	.93
296-0307	25J250	250	1.03	.98	.93
296-0308	25J300	300	1.03	.98	.93
296-0309	25J350	350	1.03	.98	.93
296-0311	25J400	400	1.03	.98	.93
296-0312	25J500	500	1.20	1.14	1.07
296-0313	25J560	560	1.20	1.14	1.07
296-0310	25J1K0	1K	1.30	1.24	1.16
296-0314	25J1K5	1.5K	1.30	1.24	1.16
296-0316	25J2K2	2.2K	1.30	1.24	1.16
296-0315	25J2K5	2.5K	1.30	1.24	1.16
296-0317	25J3K0	3K	1.30	1.24	1.16
296-0318	25J3K9	3.9K	1.30	1.24	1.16
296-0319	25J4K7	4.7K	1.30	1.24	1.16
296-0320	25J5K0	5K	1.57	1.49	1.40
296-0321	25J6K0	6K	1.57	1.49	1.40
296-0322	25J6K8	6.8K	1.57	1.49	1.40
296-0323	25J8K0	8K	1.57	1.49	1.40
296-0325	25J10K	10K	1.68	1.60	1.51
296-0326	25J12K	12K	1.68	1.60	1.51
296-0330	25J15K	15K	1.68	1.60	1.51
296-0335	25J20K	20K	1.90	1.81	1.70
296-0340	25J22K	22K	1.90	1.81	1.70

8

10 Watts

296-0076	20J1R0	1	1.63	1.56	1.46
296-0077	20J1R5	1.5	1.63	1.56	1.46
296-0078	20J2R0	2	1.63	1.56	1.46
296-0075	20J5R0	5	1.63	1.56	1.46
296-0082	20J10R	10	1.52	1.44	1.36
296-0080	20J15R	15	1.52	1.44	1.36
296-0086	20J20R	20	1.52	1.44	1.36
296-0087	20J22R	22	1.52	1.44	1.36
296-0088	20J25R	25	1.52	1.44	1.36
296-0089	20J33R	33	1.52	1.44	1.36
296-0091	20J40R	40	1.52	1.44	1.36
296-0092	20J50R	50	1.52	1.44	1.36
296-0085	20J62R	62	1.52	1.44	1.36
296-0093	20J100	100	1.30	1.24	1.16
296-0090	20J180	180	1.30	1.24	1.16
296-0094	20J250	250	1.30	1.24	1.16
296-0096	20J300	300	1.30	1.24	1.16
296-0097	20J500	500	1.30	1.24	1.16
296-0095	20J1K0	1K	1.57	1.49	1.40
296-0100	20J2K5	2.5K	1.57	1.49	1.40
296-0101	20J3K0	3K	1.78	1.70	1.60
296-0102	20J5K0	5K	2.07	1.97	1.85
296-0103	20J7K5	7.5K	2.07	1.97	1.85
296-0104	20J10K	10K	2.38	2.27	2.13
296-0105	20J15K	15K	2.38	2.27	2.13
296-0106	20J20K	20K	2.38	2.27	2.13
296-0110	20J30K	30K	2.65	2.52	2.37
296-0111	20J40K	40K	2.65	2.52	2.37
296-0115	20J50K	50K	2.65	2.52	2.37

Vitreous Enamel Molded Wirewound Resistors



Dimensions

Power Rating	Max. Length-A		Max. Dia.-B		Leads Ga.	Weight (g)
	In.	mm	In.	mm		
1½ W	.437	11.1	.140	3.6	24	.50
2¼ W	.390	9.9	.219	5.6	20	.80
3¼ W	.562	14.3	.234	5.9	20	1.20
5 W	.953	24.2	.234	5.9	20	1.80
11 W	1.796	45.6	.343	8.7	20	6.40

Features

- ▶ Molded Construction Provides Consistent Shape And Size (Permits Mounting In Clips Which Extends Power Rating)
- ▶ Meets Mil-R-26 Requirements For Insulated Resistors
- ▶ All-Welded Construction
- ▶ Flame Resistant Vitreous Enamel Coating
- ▶ 5% Tolerance

Molded construction provides consistent shape and size which permits mounting in clips to extend power rating. Mechanical integrity is enhanced by the all-welded construction and the vitreous enamel coating is flame resistant. The durable vitreous enamel coating, which is silicone-free, permits the resistors to maintain a hard coating while operating at high temperatures. Ceramic core with solder coated axial leads.

1½ Watts

Stock No.	Mfr.'s Type	Ohms	EACH			
			1-9	10-24	25-49	50-99
296-0655	91J1R0	1	4.15	3.95	3.77	3.61
296-0656	91J1R5	1.5	4.15	3.95	3.77	3.61
296-0657	91J2R0	2	4.15	3.95	3.77	3.61
296-0660	91J2R4	2.4	4.15	3.95	3.77	3.61
296-0658	91J2R7	2.7	4.15	3.95	3.77	3.61
296-0659	91J3R3	3.3	4.15	3.95	3.77	3.61
296-0661	91J10R	10	3.27	3.11	2.97	2.84
296-0662	91J15R	15	3.27	3.11	2.97	2.84
296-0664	91J22R	22	3.27	3.11	2.97	2.84
296-0666	91J33R	33	3.27	3.11	2.97	2.84
296-0667	91J36R	36	3.27	3.11	2.97	2.84
296-0668	91J47R	47	3.27	3.11	2.97	2.84
296-0669	91J50R	50	3.27	3.11	2.97	2.84
296-0671	91J75R	75	3.27	3.11	2.97	2.84
296-0672	91J91R	91	3.27	3.11	2.97	2.84
296-0665	91J100	100	3.27	3.11	2.97	2.84
296-0673	91J120	120	3.60	3.43	3.27	3.13
296-0674	91J180	180	3.60	3.43	3.27	3.13
296-0676	91J220	220	3.60	3.43	3.27	3.13
296-0677	91J270	270	3.60	3.43	3.27	3.13
296-0678	91J330	330	3.60	3.43	3.27	3.13
296-0679	91J470	470	3.60	3.43	3.27	3.13
296-0681	91J620	620	3.60	3.43	3.27	3.13
296-0682	91J820	820	3.60	3.43	3.27	3.13
296-0670	91J1K0	1K	3.68	3.51	3.35	3.20
296-0683	91J1K2	1.2K	3.68	3.51	3.35	3.20
296-0684	91J1K5	1.5K	3.68	3.51	3.35	3.20
296-0686	91J2K0	2K	3.68	3.51	3.35	3.20
296-0687	91J2K2	2.2K	3.68	3.51	3.35	3.20

2¼ Watts

Stock No.	Mfr.'s Type	Ohms	EACH			
			1-9	10-24	25-49	50-99
296-0688	92J1R0	1	2.02	1.92	1.83	1.75
296-0689	92J1R5	1.5	2.02	1.92	1.83	1.75
296-0691	92J2R0	2	2.02	1.92	1.83	1.75
296-0692	92J2R2	2.2	2.02	1.92	1.83	1.75
296-0693	92J3R0	3	2.02	1.92	1.83	1.75
296-0694	92J3R3	3.3	2.02	1.92	1.83	1.75
296-0696	92J4R0	4	2.02	1.92	1.83	1.75
296-0697	92J4R7	4.7	2.02	1.92	1.83	1.75
296-0698	92J7R5	7.5	2.02	1.92	1.83	1.75
296-0699	92J10R	10	1.70	1.62	1.55	1.48
296-0701	92J15R	15	1.70	1.62	1.55	1.48
296-0702	92J22R	22	1.70	1.62	1.55	1.48
296-0703	92J47R	47	1.70	1.62	1.55	1.48
296-0704	92J62R	62	1.70	1.62	1.55	1.48
296-0706	92J100	100	1.70	1.62	1.55	1.48
296-0707	92J120	120	1.70	1.62	1.55	1.48
296-0708	92J180	180	1.70	1.62	1.55	1.48
296-0709	92J220	220	1.70	1.62	1.55	1.48
296-0711	92J270	270	1.70	1.62	1.55	1.48
296-0712	92J330	330	1.70	1.62	1.55	1.48
296-0713	92J390	390	1.70	1.62	1.55	1.48
296-0675	92J470	470	1.70	1.62	1.55	1.48
296-0714	92J510	510	2.15	2.05	1.95	1.87
296-0716	92J680	680	2.15	2.05	1.95	1.87
296-0717	92J820	820	2.15	2.05	1.95	1.87
296-0718	92J1K0	1K	2.47	2.35	2.24	2.14
296-0680	92J1K2	1.2K	2.47	2.35	2.24	2.14
296-0685	92J1K8	1.8K	2.47	2.35	2.24	2.14

3¼ Watts

296-0690	93J1R0	1	1.68	1.60	1.53	1.46
296-0695	93J2R0	2	1.68	1.60	1.53	1.46
296-0722	93J3R0	3	1.68	1.60	1.53	1.46
296-0700	93J4R7	4.7	1.68	1.60	1.53	1.46
296-0723	93J5R0	5	1.68	1.60	1.53	1.46
296-0724	93J10R	10	1.42	1.35	1.29	1.23
296-0726	93J15R	15	1.42	1.35	1.29	1.23
296-0727	93J16R	16	1.42	1.35	1.29	1.23
296-0728	93J22R	22	1.42	1.35	1.29	1.23
296-0729	93J33R	33	1.42	1.35	1.29	1.23
296-0731	93J39R	39	1.42	1.35	1.29	1.23
296-0732	93J47R	47	1.42	1.35	1.29	1.23
296-0705	93J50R	50	1.42	1.35	1.29	1.23
296-0733	93J68R	68	1.42	1.35	1.29	1.23
296-0734	93J82R	82	1.42	1.35	1.29	1.23
296-0710	93J100	100	1.42	1.35	1.29	1.23
296-0736	93J120	120	1.42	1.35	1.29	1.23
296-0737	93J130	130	1.42	1.35	1.29	1.23
296-0738	93J150	150	1.42	1.35	1.29	1.23
296-0739	93J180	180	1.42	1.35	1.29	1.23
296-0715	93J220	220	1.42	1.35	1.29	1.23
296-0741	93J270	270	1.42	1.35	1.29	1.23
296-0742	93J330	330	1.42	1.35	1.29	1.23
296-0743	93J390	390	1.42	1.35	1.29	1.23
296-0744	93J470	470	1.42	1.35	1.29	1.23
296-0746	93J510	510	1.82	1.73	1.65	1.58
296-0747	93J680	680	1.82	1.73	1.65	1.58
296-0748	93J820	820	1.82	1.73	1.65	1.58
296-0720	93J1K0	1K	2.05	1.95	1.86	1.78
296-0749	93J1K8	1.8K	2.05	1.95	1.86	1.78
296-0751	93J2K0	2K	2.05	1.95	1.86	1.78
296-0725	93J2K4	2.4K	2.05	1.95	1.86	1.78
296-0752	93J3K3	3.3K	2.52	2.40	2.29	2.19
296-0753	93J4K0	4K	2.52	2.40	2.29	2.19
296-0754	93J4K7	4.7K	2.52	2.40	2.29	2.19
296-0756	93J5K0	5K	2.90	2.76	2.64	2.52
296-0730	93J5K6	5.6K	2.90	2.76	2.64	2.52
296-0735	93J6K8	6.8K	2.90	2.76	2.64	2.52
296-0740	93J10K	10K	2.90	2.76	2.64	2.52

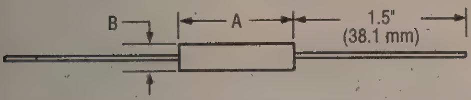
5 Watts

Stock No.	Mfr.'s Type	Ohms	EACH			
			1-9	10-24	25-49	50-99
296-0745	95J1R0	1	2.00	1.90	1.82	1.74
296-0757	95J1R2	1.2	2.00	1.90	1.82	1.74
296-0758	95J2R0	2	2.00	1.90	1.82	1.74
296-0759	95J2R4	2.4	2.00	1.90	1.82	1.74
296-0761	95J3R0	3	2.00	1.90	1.82	1.74
296-0762	95J3R3	3.3	2.00	1.90	1.82	1.74
296-0763	95J4R0	4	2.00	1.90	1.82	1.74
296-0750	95J5R0	5	2.00	1.90	1.82	1.74
296-0755	95J6R8	6.8	2.00	1.90	1.82	1.74
296-0760	95J10R	10	1.77	1.68	1.61	1.54
296-0764	95J15R	15	1.77	1.68	1.61	1.54
296-0766	95J18R	18	1.77	1.68	1.61	1.54
296-0767	95J22R	22	1.77	1.68	1.61	1.54
296-0768	95J25R	25	1.77	1.68	1.61	1.54
296-0769	95J30R	30	1.77	1.68	1.61	1.54
296-0765	95J33R	33	1.77	1.68	1.61	1.54
296-0771	95J39R	39	1.77	1.68	1.61	1.54
296-0772	95J40R	40	1.77	1.68	1.61	1.54
296-0770	95J50R	50	1.77	1.68	1.61	1.54
296-0773	95J62R	62	1.77	1.68	1.61	1.54
296-0774	95J75R	75	1.77	1.68	1.61	1.54
296-0776	95J82R	82	1.77	1.68	1.61	1.54
296-0775	95J100	100	1.77	1.68	1.61	1.54
296-0777	95J120	120	1.77	1.68	1.61	1.54
296-0778	95J150	150	1.77	1.68	1.61	1.54
296-0779	95J180	180	1.77	1.68	1.61	1.54
296-0781	95J200	200	1.77	1.68	1.61	1.54
296-0782	95J220	220	1.77	1.68	1.61	1.54
296-0783	95J250	250	1.77	1.68	1.61	1.54
296-0784	95J270	270	1.77	1.68	1.61	1.54
296-0786	95J330	330	1.77	1.68	1.61	1.54
296-0787	95J400	400	1.77	1.68	1.61	1.54
296-0788	95J470	470	1.77	1.68	1.61	1.54
296-0780	95J1K0	1K	2.50	2.38	2.27	2.17
296-0789	95J1K2	1.2K	2.50	2.38	2.27	2.17
296-0791	95J1K5	1.5K	2.50	2.38	2.27	2.17
296-0792	95J2K0	2K	2.50	2.38	2.27	2.17
296-0785	95J2K5	2.5K	2.92	2.78	2.65	2.54
296-0793	95J3K0	3K	2.92	2.78	2.65	2.54
296-0794	95J3K3	3.3K	2.92	2.78	2.65	2.54
296-0796	95J4K7	4.7K	2.92	2.78	2.65	2.54
296-0790	95J5K0	5K	3.55	3.38	3.23	3.09
296-0795	95J5K6	5.6K	3.55	3.38	3.23	3.09
296-0797	95J6K0	6K	3.55	3.38	3.23	3.09
296-0800	95J10K	10K	3.55	3.38	3.23	3.09
296-0805	95J12K	12K	3.55	3.38	3.23	3.09
296-0801	95J15K	15K	3.55	3.38	3.23	3.09
296-0810	95J16K	16K	3.55	3.38	3.23	3.09
296-0803	95J18K	18K	3.55	3.38	3.23	3.09
296-0815	95J20K	20K	4.23	4.03	3.85	3.68
296-0806	95J25K	25K	4.23	4.03	3.85	3.68

11 Watts

296-0605	90J5R0	5	2.70	2.57	2.45	2.35
296-0597	90J10R	10	2.70	2.57	2.45	2.35
296-0598	90J11R	11	2.70	2.57	2.45	2.35
296-0599	90J15R	15	2.70	2.57	2.45	2.35
296-0609	90J20R	20	2.70	2.57	2.45	2.35
296-0611	90J22R	22	2.70	2.57	2.45	2.35
296-0612	90J25R	25	2.70	2.57	2.45	2.35
296-0613	90J30R	30	2.70	2.57	2.45	2.35
296-0610	90J33R	33	2.70	2.57	2.45	2.35
296-0614	90J47R	47	2.70	2.57	2.45	2.35
296-0616	90J50R	50	2.70	2.57	2.45	2.35
296-0615	90J62R	62	2.70	2.57	2.45	2.35
296-0617	90J75R	75	2.70	2.57	2.45	2.35
296-0618	90J82R	82	2.70	2.57	2.45	2.35
296-0620	90J100	100	2.67	2.54	2.42	2.32
296-0621	90J120	120	2.67	2.54	2.42	2.32
296-0622	90J150	150	2.67	2.54	2.42	2.32
296-0633	90J220	220	2.67	2.54	2.42	2.32
296-0634	90J270	270	2.67	2.54	2.42	2.32
296-0625	90J330	330	2.67	2.54	2.42	2.32
296-0636	90J600	600	3.05	2.90	2.77	2.65
296-0637	90J1K0	1K	3.40	3.24	3.09	2.96
296-0638	90J1K2	1.2K	3.40	3.24	3.09	2.96
296-0639	90J1K3	1.3K	3.40	3.24	3.09	2.96
296-0641	90J1K5	1.5K	3.40	3.24	3.09	2.96
296-0642	90J2K0	2K	3.40	3.24	3.09	2.96
296-0630	90J2K5	2.5K	3.83	3.65	3.48	3.33
296-0631	90J5K0	5K	4.50	4.29	4.09	3.91
296-0632	90J7K5	7.5K	4.50	4.29	4.09	3.91
296-0635	90J10K	10K	4.50	4.29	4.09	3.91
296-0644	90J12K	12K	4.50	4.29	4.09	3.91
296-0640	90J15K	15K	4.50	4.29	4.09	3.91
296-0646	90J18K	18K	4.50	4.29	4.09	3.91
296-0649	90J20K	20K	5.20	4.95	4.73	4.52
296-0643	90J25K	25K	5.20	4.95	4.73	4.52
296-0645	90J27K	27K	5.20	4.95	4.73	4.52
296-0647	90J30K	30K	5.20	4.95	4.73	4.52
296-0648	90J33K	33K	5.20	4.95	4.73	4.52
296-0650	90J50K	50K	5.20	4.95	4.73	4.52

Silicone-Ceramic Conformal Wirewound Resistors



Dimensions

Power Rating	Max. Length-A		Max. Dia.-B		Leads Ga.	Weight (g)
	In.	mm	In.	mm		
1 W	.437	11.1	.125	3.2	24	.25
2 W	.406	10.3	.219	5.6	20	.50
3 W	.593	14.3	.218	6.4	20	1.00
5 W	.937	23.8	.343	8.7	18	3.00
10 W	1.842	46.8	.406	10.3	18	7.30

- ► **Economical**
- ► **Applications Include Commercial, Industrial and Communications Equipment**
- ► **Stability Under High Temperature Conditions**
- ► **All-Welded Construction**

Economical conformal silicone-ceramic coated resistors. These all-welded resistors are characterized by low temperature coefficients and resistance to thermal shock, ideal for communications and a wide range of electrical and electronic applications. Ceramic core and solder coated axial leads.

1 Watt 1% Tolerance

Stock No.	Mfr.'s Type	Ohms	EACH			
			1-24	25-49	50-99	100-249
296-0366	41F1R0	1	2.00	1.90	1.79	1.71
296-0359	41F3R0	3	2.00	1.90	1.79	1.71
296-0357	41F100	100	1.82	1.73	1.63	1.56
296-0365	41F470	470	1.82	1.73	1.63	1.56
296-0354	41F1K0	1K	2.38	2.27	2.13	2.04

1 Watt 5% Tolerance

296-0370	41JR40	0.4	1.95	1.86	1.75	1.67
296-0374	41JR50	0.5	1.95	1.86	1.75	1.67
296-0375	41JR75	0.75	1.95	1.86	1.75	1.67
296-0376	41J1R0	1	1.73	1.65	1.55	1.49
296-0378	41J2R0	2	1.73	1.65	1.55	1.49
296-0379	41J50R	50	1.68	1.60	1.51	1.44
296-0381	41J82R	82	1.68	1.60	1.51	1.44
296-0382	41J100	100	1.55	1.48	1.39	1.33
296-0383	41J390	390	1.55	1.48	1.39	1.33
296-0380	41J560	560	1.78	1.70	1.60	1.53
296-0385	41J1K0	1K	2.22	2.11	1.99	1.90

2 Watt 5% Tolerance

Stock No.	Mfr.'s Type	Ohms	EACH			
			1-24	25-49	50-99	100-249
296-0390	42JR10	0.1	1.85	1.76	1.66	1.59
296-0395	42JR20	0.2	1.85	1.76	1.66	1.59
296-0396	42J33R	33	.82	.78	.73	.70
296-0397	42J56R	56	.82	.78	.73	.70
296-0398	42J62R	62	.82	.78	.73	.70
296-0399	42J270	270	.87	.83	.78	.74
296-0401	42J300	300	.87	.83	.78	.74

3 Watt 1% Tolerance

296-0400	43FR10	0.1	1.73	1.65	1.55	1.49
296-0405	43FR20	0.2	1.73	1.65	1.55	1.49
296-0406	43FR30	0.3	1.73	1.65	1.55	1.49
296-0410	43FR50	0.5	1.73	1.65	1.55	1.49
296-0411	43F1R0	1	1.35	1.29	1.21	1.16
296-0412	43F10R	10	1.08	1.03	.97	.93
296-0413	43F15R	15	1.08	1.03	.97	.93
296-0414	43F47R	47	1.08	1.03	.97	.93
296-0416	43F68R	68	1.08	1.03	.97	.93
296-0415	43F82R	82	1.08	1.03	.97	.93
296-0417	43F100	100	.92	.87	.82	.79
296-0418	43F220	220	.92	.87	.82	.79
296-0419	43F1K0	1K	1.13	1.08	1.01	.97
296-0421	43F10K	10K	1.95	1.86	1.75	1.67

3 Watt 5% Tolerance

296-0420	43JR10	0.1	1.52	1.44	1.36	1.30
296-0422	43JR15	0.15	1.52	1.44	1.36	1.30
296-0423	43JR20	0.2	1.52	1.44	1.36	1.30
296-0425	43JR30	0.3	1.52	1.44	1.36	1.30
296-0430	43JR50	0.5	1.52	1.44	1.36	1.30
296-0435	43J1R0	1	.92	.87	.82	.79
296-0436	41J2R0	2	.92	.87	.82	.79
296-0437	43J5R0	5	.92	.87	.82	.79
296-0438	43J10R	10	.87	.83	.78	.74
296-0439	43J15R	15	.87	.83	.78	.74
296-0441	43J33R	33	.87	.83	.78	.74
296-0442	43J47R	47	.87	.83	.78	.74
296-0443	43J50R	50	.87	.83	.78	.74
296-0440	43J68R	68	.87	.83	.78	.74
296-0444	43J100	100	.82	.78	.73	.70
296-0445	43J125	125	.82	.78	.73	.70
296-0446	43J150	150	.82	.78	.73	.70
296-0447	43J180	180	.82	.78	.73	.70
296-0448	43J220	220	.82	.78	.73	.70
296-0449	43J500	500	.82	.78	.73	.70
296-0451	43J680	680	.82	.78	.73	.70
296-0452	43J820	820	.82	.78	.73	.70
296-0453	43J1K0	1K	.98	.94	.88	.84
296-0454	43J2K0	2K	1.13	1.08	1.01	.97
296-0456	43J2K2	2.2K	1.13	1.08	1.01	.97
296-0457	43J3K0	3K	1.35	1.29	1.21	1.16
296-0458	43J10K	10K	1.63	1.56	1.46	1.40

5 Watt 1% Tolerance

296-0450	45FR10	0.1	1.95	1.86	1.75	1.67
296-0455	45FR15	0.15	1.95	1.86	1.75	1.67
296-0460	45FR20	0.2	1.95	1.86	1.75	1.67

5 Watt 1% Tolerance (continued)

Stock No.	Mfr.'s Type	Ohms	EACH			
			1-24	25-49	50-99	100-249
296-0465	45FR50	0.5	1.95	1.86	1.75	1.67
296-0466	45FR75	0.75	1.95	1.86	1.75	1.67
296-0467	45F1R0	1	1.35	1.29	1.21	1.16
296-0468	45F2R0	2	1.35	1.29	1.21	1.16
296-0470	45F15R	15	1.20	1.14	1.07	1.03
296-0471	45F150	150	1.08	1.03	.97	.93
296-0472	45F200	200	1.08	1.03	.97	.93
296-0473	45F470	470	1.08	1.03	.97	.93
296-0474	45F750	750	1.08	1.03	.97	.93
296-0476	45F20K	20K	2.17	2.06	1.94	1.86
296-0475	45F30K	30K	2.17	2.06	1.94	1.86

5 Watt 5% Tolerance

296-0480	45JR10	0.1	1.68	1.60	1.51	1.44
296-0481	45JR15	0.15	1.68	1.60	1.51	1.44
296-0482	45JR20	0.2	1.68	1.60	1.51	1.44
296-0483	45JR40	0.4	1.68	1.60	1.51	1.44
296-0484	45JR75	0.75	1.68	1.60	1.51	1.44
296-0486	45J1R0	1	1.08	1.03	.97	.93
296-0485	45J5R0	5	1.08	1.03	.97	.93
296-0490	45J10R	10	.92	.87	.82	.79
296-0491	45J15R	15	.92	.87	.82	.79
296-0492	45J22R	22	.92	.87	.82	.79
296-0493	45J25R	25	.92	.87	.82	.79
296-0494	45J30R	30	.92	.87	.82	.79
296-0495	45J50R	50	.92	.87	.82	.79
296-0496	45J100	100	.92	.87	.82	.79
296-0500	45J150	150	.92	.87	.82	.79
296-0503	45J220	220	.92	.87	.82	.79
296-0506	45J1K0	1K	1.08	1.03	.97	.93
296-0507	45J7K5	7.5K	1.50	1.43	1.34	1.29
296-0508	45J10K	10K	1.50	1.43	1.34	1.29

10 Watt 1% Tolerance

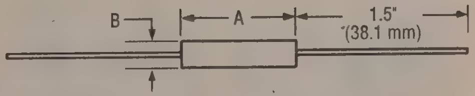
296-0345	40FR10	0.1	2.32	2.21	2.07	1.99
296-0346	40F4R0	4	1.70	1.62	1.52	1.46
296-0347	40F5R0	5	1.70	1.62	1.52	1.46
296-0348	40F68R	68	1.57	1.49	1.40	1.34
296-0349	40F300	300	1.35	1.29	1.21	1.16
296-0351	40F600	600	1.35	1.29	1.21	1.16

10 Watt 5% Tolerance

296-0350	40JR10	0.1	2.12	2.02	1.90	1.81
296-0352	40J3R0	3	1.47	1.40	1.31	1.26
296-0355	40J10R	10	1.20	1.14	1.07	1.03
296-0360	40J15R	15	1.20	1.14	1.07	1.03
296-0361	40J18R	18	1.20	1.14	1.07	1.03
296-0362	40J22R	22	1.20	1.14	1.07	1.03
296-0363	40J25R	25	1.20	1.14	1.07	1.03
296-0364	40J50R	50	1.20	1.14	1.07	1.03
296-0356	40J100	100	1.20	1.14	1.07	1.03
296-0367	40J200	200	1.20	1.14	1.07	1.03
296-0368	40J600	600	1.20	1.14	1.07	1.03
296-0369	40J2K0	2K	1.35	1.29	1.21	1.16
296-0371	40J2K5	2.5K	1.35	1.29	1.21	1.16

80 Series
1% Tolerance

- ► **High Stability ±1%△ R**
- ► **Designed for Precision Power Applications**
- ► **In Accordance With Mil-R-26 Specification**
- ► **Resistors Marked With "Mil" Designation and Ohmite Stock Part Number**
- ► **All Welded Construction**



Silicone-Ceramic Conformal Wirewound Resistors
High quality conformal silicone-ceramic coated resistors for applications requiring high precision, power and stability. These resistors have a low temperature coefficient and maintain a high degree of stability under demanding conditions. They feature all-welded construction and have the ability to maintain accurate resistance values due to being stabilized. Meet or exceed MIL-R-26 specifications. Ceramic core with solder coated axial leads. Parts are marked with both Mil designation and Ohmite stock part number.

Stock No.	Mfr.'s Type	Ohms	Watts	EACH			
				1-24	25-49	50-99	100-249
296-0520	83FR10	0.1	3	2.07	1.97	1.85	1.77
296-0521	83FR15	0.15	3	2.07	1.97	1.85	1.77
296-0525	83FR20	0.2	3	2.07	1.97	1.85	1.77
296-0530	83FR499	0.499	3	2.07	1.97	1.85	1.77
296-0531	83F1R0	1	3	1.57	1.49	1.40	1.34
296-0546	83F10R	10	3	1.42	1.35	1.27	1.21
296-0551	83F100	100	3	1.20	1.14	1.07	1.03
296-0555	85FR10	0.1	6.5	2.28	2.17	2.04	1.96
296-0560	85FR15	0.15	6.5	2.28	2.17	2.04	1.96
296-0565	85FR20	0.2	6.5	2.28	2.17	2.04	1.96
296-0579	85F10R	10	6.5	1.57	1.49	1.40	1.34

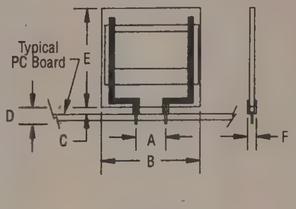
Stock No.	Mfr.'s Type	Ohms	Watts	EACH			
				1-24	25-49	50-99	100-249
296-0581	85F15R	15	6.5	1.57	1.49	1.40	1.34
296-0582	85F20R	20	6.5	1.57	1.49	1.40	1.34
296-0583	85F49R9	49.9	6.5	1.57	1.49	1.40	1.34
296-0586	85F100	100	6.5	1.42	1.35	1.27	1.21
296-0601	80FR10	0.1	11	2.72	2.59	2.43	2.33
296-0602	80FR15	0.15	11	2.72	2.59	2.43	2.33
296-0603	80FR20	0.2	11	2.72	2.59	2.43	2.33
296-0604	80F1R5	1.5	11	1.90	1.81	1.70	1.63
296-0606	80F20R	20	11	1.78	1.70	1.60	1.53
296-0607	80F100K	100K	11	6.67	6.35	5.97	5.71
—	—	—	—	—	—	—	—

Dimensions

Power Rating	Max. Length-A		Max. Dia.-B		Leads Ga.	Weight (g)
	In.	mm	In.	mm		
3 W	.563	14.3	.250	6.4	20	1.0
6.5 W	.937	23.8	.343	8.7	18	3.0
11 W	1.842	46.8	.406	10.3	18	7.3

TA Series Power Chip Resistors

The Ohmite Power Chip Resistor is a thick film resistive ink resistor. These resistors are lightweight, economical, non-inductive, have high power density and require minimal board space. It is constructed on an alumina substrate with copper plated silver conductors, ruthenium oxide resistance material, and a glass passivation layer. The resistors have very low inductance of 50 nH measured at 1 MHz. The thin profile and low inductance are specifically designed for switch mode power supplies. Repetitive transient withstand capability is 5 times peak as long as the one second average dissipation remains equal to or less than rating. Terminals are solder plated brass. Not all values are available in all wattages.



0.2" × 0.15" Pins

Dimensions

Mfr.'s Type	Dimensions (In.)						Power Rating (Watts)
	A	B	C	D	E	F	
TA203PA	.200	.50	.07	.17	.60	.10	3.0
TA205PA	.300	.50	.07	.17	1.00	.10	5.0
TA207PA	.300	.75	.07	.17	1.00	.10	7.5
TA310PA	.300	1.00	.07	.17	1.00	.10	10.0

Stock No.	Mfr.'s Type	Watts	Tol. %	Stocked Values	EACH 1-9	10-24	25-49	50-99
292-44XX	TA203PA	3.0	5	1-9	**1.00**	**.91**	**.83**	**.71**
292-44XX	TA203PA	3.0	5	10-10K	**.92**	**.84**	**.77**	**.66**
292-44XX	TA203PA	3.0	5	11K-100K	**1.02**	**.93**	**.85**	**.73**
292-45XX	TA205PA	5.0	5	1-9	**1.04**	**.95**	**.87**	**.74**
292-45XX	TA205PA	5.0	5	10-10K	**.96**	**.87**	**.80**	**.69**
292-45XX	TA205PA	5.0	5	11K-100K	**1.08**	**.98**	**.90**	**.77**
292-46XX	TA207PA	7.5	5	1-9	**1.30**	**1.18**	**1.08**	**.93**
292-46XX	TA207PA	7.5	5	10-10K	**1.22**	**1.11**	**1.02**	**.87**
292-46XX	TA207PA	7.5	5	11K-100K	**1.36**	**1.24**	**1.13**	**.97**
292-47XX	TA310PA	10.0	5	1-9	**1.54**	**1.40**	**1.28**	**1.10**
292-47XX	TA310PA	10.0	5	10-10K	**1.46**	**1.33**	**1.22**	**1.04**
292-47XX	TA310PA	10.0	5	11K-100K	**1.60**	**1.45**	**1.33**	**1.14**

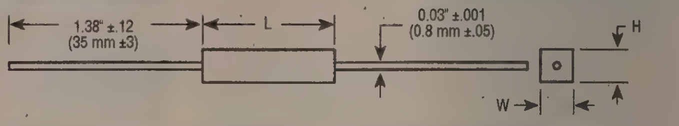
Standard Resistance Values

To complete Allied Stock No., insert 2-digit number shown in XX column after value desired in place of XX in Stock No.

Ohms	XX	Ohms	XX	Ohms	XX	Ohms	XX	Ohms	XX	Ohms	XX
1	1	7.5	22	47	41	300	60	3K	82	30K	95
1.5	4	10	25	68	45	470	65	4.7K	84	47K	97
2	7	12	27	100	48	680	69	6.8K	87	100K	99
3	12	15	29	120	50	1K	72	10K	89	—	—
4.7	17	20	32	150	53	1.5K	76	15K	91	—	—
5.1	18	27	35	200	56	2K	79	20K	93	—	—

TUW/TUM Ceramic Housed Axial Lead Power Resistors

— NEW —



- **Economical Commercial Grade for General Purpose Use**
- **Square Shape Instead of Round**
- **Wirewound or Metal Oxide Construction**
- **Flameproof**

Ceramic housing for fiberglass or metal oxide core with cement based filling. **Tolerance:** 5%. Short time overload (10x rated wattage for 5 sec.; metal oxide 5x rated wattage for 5 sec.) results in ±2%. Derate linearly from 100% @ 70°C to 0% @ 275°C. Incombustibility at 16x rated wattage for 5 min. is not flamed. Not all values are available in all wattages.

Dimensions

Mfr.'s Type	L		W		H		Power Rating (Watts)
	In. ±0.06	mm ±1.5	In. ±0.04	mm ±1	In. ±0.04	mm ±1	
TUW3J/TUM3J	0.87	22	0.31	8.0	0.31	8.0	3
TUW5J/TUM5J	0.87	22	0.39	10.0	0.35	9.0	5
TUW7J/TUM7J	1.48	35	0.39	10.0	0.35	9.0	7
TUW10J/TUM10J	1.89	48	0.39	10.0	0.35	9.0	10
TUW15J/TUM15J	1.89	48	0.49	12.5	0.45	11.5	15

Stock No.	Mfr.'s Type	Watts	Tol. %	Stocked Values	EACH 1-9	10-24	25-49	50-99
292-54XX	TUW3J/TUM3J	3	5	0.1-10K	**.36**	**.33**	**.30**	**.26**
292-55XX	TUW5J/TUM5J	5	5	0.1-10K	**.36**	**.33**	**.30**	**.26**
292-56XX	TUW7J/TUM7J	7	5	0.1-10K	**.52**	**.47**	**.43**	**.37**
292-57XX	TUW10J/TUM10J	10	5	0.1-10K	**.62**	**.56**	**.52**	**.44**
292-58XX	TUW15J/TUM15J	15	5	0.1-10K	**.68**	**.62**	**.57**	**.49**

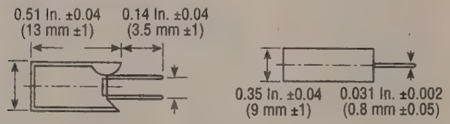
Standard Resistance Values

To complete Allied Stock No., insert 2-digit number shown in XX column after value desired in place of XX in Stock No.

Ohms	XX	Ohms	XX	Ohms	XX	Ohms	XX	Ohms	XX
0.1	2	2	12	15	22	150	32	2K	44
0.2	4	3	14	20	24	200	34	3K	46
0.33	6	4.7*	16	30	26	470†	36	4.7K	48
0.47	8	7.5	18	47	28	750‡	40	7.5K	50
1	10	10	20	100	30	1K	42	10K	52

*Not available in 5 watt. †Not available in 3 watt. ‡Not available in 5 or 10 watt.

TWW/TWM Ceramic Housed Power Resistors



5W, 7W, 20 In. ±0.08 (5 mm ±0.08)
10W 0.30 ±0.08

- **Economical Commercial Grade for General Purpose Use**
- **Wirewound and Metal Oxide Construction**
- **Flameproof**

Ceramic housing for fiberglass or metal oxide core with cement based filling. **Tolerance:** 5%. Short time overload is wirewound 10x rated wattage for 5 sec.; metal oxide 5x rated wattage for 5 sec. results in ±2%. Derate from 100% at 70°C to 0% at 275°C. Incombustibility at 16x rated wattage for 5 min. is not flamed. Moisture proof load life at 40°C 95% RH on-off cycle 1000 hours yields ±5%. Not all values are available in all wattages.

Dimensions

Mfr.'s Type	H		Power Rating (Watts)
	In. ±0.06	mm ±1.5	
TWW5J/TWM5J	0.98	25	5.0
TWW7J/TWM7J	1.54	39	7.0
TWW10J/TWM10J	2.01	51	10.0

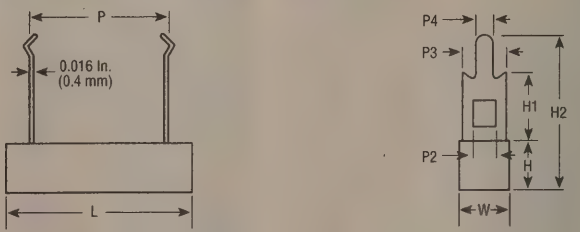
Stock No.	Mfr.'s Type	Watts	Tol. %	Stocked Values	EACH 1-9	10-24	25-49
292-15XX	TWW5J/TWM5J	5	5	0.1-10K	**.52**	**.47**	**.43**
292-16XX	TWW7J/TWM7J	7	5	0.1-10K	**.62**	**.56**	**.52**
292-17XX	TWW10J/TWM10J	10	5	0.1-10K	**.94**	**.85**	**.78**

Standard Resistance Values

To complete Allied Stock No., insert 2-digit number shown in XX column after value desired in place of XX in Stock No.

Ohms	XX	Ohms	XX	Ohms	XX	Ohms	XX	Ohms	XX	Ohms	XX
0.1	11	1	23	15	32	75	40	300	48	4.7K	58
0.2	13	3	25	20	34	100	42	470	50	6.8K	60
0.3	15	4.7	27	47	36	150	44	1K	54	10K	62
0.47	19	10	31	56	38	200	46	2K	56	—	—

TVW/TVM Ceramic Housed Power Resistors



- **Economical Commercial Grade for General Purpose Use**
- **Wirewound and Metal Oxide Construction**
- **Flameproof**

Ceramic housing for fiberglass or metal oxide core with cement based filling. **Tolerance:** 5%. Short time overload is wirewound 10x rated wattage for 5 sec.; metal oxide 5x rated wattage for 5 sec. results in ±2%. Derate from 100% at 70°C to 0% at 275°C. Incombustibility at 16x rated wattage for 5 min. is not flamed. Moisture proof load life at 40°C 95% RH on-off cycle 1000 hours yields ±5%. Not all values are available in all wattages.

Dimensions

Mfr.'s Type	L		W		H		P		P1		P2		P3		P4		H1		H2		Power Rating (Watts)
	In. ±0.06	mm ±1.5	In. ±0.04	mm ±1	In. ±0.04	mm ±1	In. ±0.06	mm ±1.5	In.	mm	In.	mm	In.	mm	In.	mm	In. ±0.04	mm ±1	In. ±0.04	mm ±1	
TVW5J/TVM5J	1.42	36	0.39	10.0	0.39	10	0.79	20	0.17	4.2	0.08	2	0.20	5	0.06	1.5	0.98	25	0.41	10.5	5.0
TVW7J/TVM7J	1.89	48	0.39	10.0	0.39	10	1.26	32	0.17	4.2	0.08	2	0.20	5	0.06	1.5	0.98	25	0.41	10.5	7.0
TVW10J/TVM10J	1.89	48	0.49	12.5	0.47	12	1.26	32	0.17	4.2	0.08	2	0.20	5	0.06	1.5	1.02	26	0.41	10.5	10.0
TVW25J/TVM25J	2.56	50	0.59	15.0	0.51	13	1.65	42	0.28	7.0	0.24	6	0.39	10	0.11	2.7	1.42	36	0.59	15.0	25.0

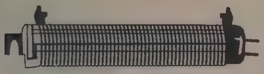
Stock No.	Mfr.'s Type	Watts	Tol. %	Stocked Values	EACH 1-9	10-24	25-49	50-99
292-25XX	TVW5J/TVM5J	5	5	0.1-10 K	**.62**	**.56**	**.52**	**.44**
292-26XX	TVW7J/TVM7J	7	5	0.1-10 K	**.68**	**.62**	**.57**	**.49**
292-27XX	TVW10J/TVM10J	10	5	0.1-10 K	**.80**	**.73**	**.67**	**.57**
292-28XX	TVW25J/TVM25J	25	5	0.1-10 K	**1.20**	**1.09**	**1.00**	**.86**

Standard Resistance Values

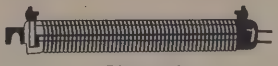
To complete Allied Stock No., insert 2-digit number shown in XX column after value desired in place of XX in Stock No.

Ohms	XX	Ohms	XX	Ohms	XX	Ohms	XX	Ohms	XX	Ohms	XX	Ohms	XX	Ohms	XX	Ohms	XX
0.10	10	0.47	18	3	24	10	30	47	36	100	42	300	48	1.0K	56	10K	62
0.20	12	0.68	20	4.7	26	15	32	56	38	150	44	470	50	2.0K	58	—	—
0.30	14	1	22	6.8	28	20	34	75	40	200	46	680	54	6.8K	60	—	—

Edgewound/Round Wire Power Resistors



Roundwire



Edgewound

Powr-Ribs™ are designed to handle 700-1000 watts of power. Their construction consists of thick, heavy resistance alloy wound around porcelain ceramic core insulators supported by a metal mounting bar. The bar is slotted on each end to facilitate installation. Edgewound Powr-Ribs™ provide low resistance at high current ratings, while Round Wire Powr-Ribs™ provide higher resistance at lower current ratings. Clamp-type terminals on the Edgewound units permit a reliable connection which can be moved along the resistive element to obtain intermediate values. **Tolerance:** ±10%. **Average Weight:** 3 lbs. 16.25" long between mounting centers..

Edgewound

Stock No.	Mfr.'s Type	Ohms	Max. Amps	Dia. (In.)	Overall Height	EACH 1-9	EACH 10-24	EACH 25-49
296-4015	PFE5KR100	0.10	100.0	2.125	3.313	156.43	144.40	134.09
296-4017	PFE5KR250	0.25	63.0	1.875	3.125	118.35	109.25	101.44
296-4020	PFE5KR370	0.37	50.0	1.875	3.125	96.20	88.80	82.46

Edgewound (continued)

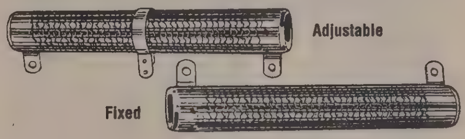
Stock No.	Mfr.'s Type	Ohms	Max. Amps	Dia. (In.)	Overall Height	EACH 1-9	EACH 10-24	EACH 25-49
296-4025	PFE5KR500	0.50	47.0	1.875	3.125	118.28	109.18	101.39
296-4030	PFE5KR750	0.75	39.0	1.875	3.125	81.92	75.62	70.21
296-4035	PFE5K1R00	1.00	33.0	1.875	3.125	78.08	72.08	66.93
296-4040	PFE5K1R30	1.30	29.0	1.875	2.563	67.83	62.62	58.14
296-4045	PFE5K1R60	1.60	26.0	1.875	2.563	65.42	60.38	56.07
296-4050	PFE5K2R20	2.20	18.4	1.750	2.500	59.00	54.46	50.57
296-4055	PFE5K2R80	2.80	16.3	1.750	2.500	56.28	51.95	48.24
296-4060	PFE5K3R50	3.50	14.6	1.625	2.438	51.33	47.38	44.00
296-4065	PFE5K4R50	4.50	12.7	1.750	2.500	88.10	81.32	75.51
296-4070	PFE5K5R40	5.40	11.8	1.750	2.500	82.72	76.35	70.90
296-4075	PFE5K6R80	6.80	10.3	1.625	2.438	80.33	74.15	68.86
296-4080	PFE5K8R50	8.50	9.4	1.625	2.438	75.32	69.52	64.56

Roundwire

Stock No.	Mfr.'s Type	Ohms	Max. Amps	Dia. (In.)	Overall Height	EACH 1-9	EACH 10-24	EACH 25-49
296-4085	PFR5K11R0	11.00	8.3	2.063	2.625	94.13	86.89	80.69
296-4086	PFR5K13R0	13.00	7.6	2.063	2.625	90.98	83.98	77.99
296-4087	PFR5K17R0	17.00	6.6	2.063	2.625	89.30	82.43	76.54
296-4088	PFR5K20R0	20.00	5.9	2.063	2.625	88.87	82.03	76.17
296-4089	PFR5K25R0	25.00	5.1	2.063	2.625	86.63	79.97	74.26

Fixed/Adjustable Vitreous Enamel High Power Corrib Resistors

Corrib resistors are ideal for applications involving high currents at very low resistance values – as low as 0.1 ohm at 300 watts. These large, heavy-duty resistors are designed to withstand frequent start-stop cycles characteristic of motor starting, dynamic breaking, and other similar applications. They are manufactured with corrugated resistive wire. Ribbed construction aids in rapid cooling. To accelerate cooling, the wire is securely fused to the ceramic core by a protective vitreous enamel coating to improve durability. Corrib resistors are hollow-core units which can be securely fastened to chassis surfaces with the same thru bolts and brackets used with the 210/270 series resistors. **Tolerance:** ±10%. **Core Diameter:** 8.5" long × 1.125". **Overall Height:** 1.895".



Fixed 300 Watts

Stock No.	Mfr.'s Type	Ohms	Max. Amps	EACH 1-9	EACH 10-24	EACH 25-49
296-1955	C300KR10	0.10	54.7	30.02	27.71	25.73
296-1960	C300KR12	0.12	50.0	27.87	25.72	23.89
296-1965	C300KR31	0.31	31.1	27.87	25.72	23.89
296-1970	C300KR50	0.50	24.5	22.80	21.05	19.54
296-1973	C300K1R0	1.00	17.3	22.80	21.05	19.54
296-1975	C300K1R2	1.20	15.8	22.80	21.05	19.54
296-1980	C300K1R6	1.60	13.7	22.80	21.05	19.54
296-1985	C300K2R0	2.00	12.2	20.53	18.95	17.60
296-1990	C300K3R1	3.10	9.8	20.53	18.95	17.60
296-1995	C300K4R0	4.00	8.6	18.90	17.45	16.20
296-1997	C300K5R0	5.00	7.7	18.90	17.45	16.20
296-2000	C300K6R3	6.30	6.9	18.90	17.45	16.20
296-2005	C300K8R0	8.00	6.1	18.90	17.45	16.20
296-2010	C300K10R	10.00	5.5	18.90	17.45	16.20
296-2015	C300K12R	12.00	5.0	18.90	17.45	16.20
296-2020	C300K16R	16.00	4.3	18.90	17.45	16.20
296-2025	C300K20R	20.00	3.8	18.90	17.45	16.20
—	—	—	—	—	—	—
—	—	—	—	—	—	—

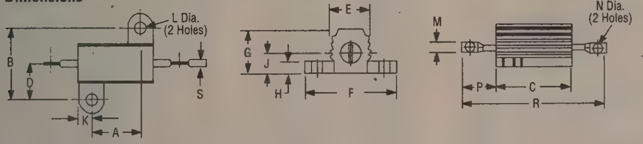
Adjustable 300 Watts

Stock No.	Mfr.'s Type	Ohms	Max. Amps	EACH 1-9	EACH 10-24	EACH 25-49
296-2445	E300KR10	0.10	54.7	32.65	30.14	27.99
296-2447	E300KR12	0.12	50.0	30.55	28.20	26.19
296-2450	E300KR16	0.16	43.3	30.55	28.20	26.19
296-2455	E300KR20	0.20	38.7	30.55	28.20	26.19
296-2460	E300KR25	0.25	34.6	30.55	28.20	26.19
296-2465	E300KR31	0.31	31.1	30.55	28.20	26.19
296-2470	E300KR50	0.50	24.5	26.12	24.11	22.39
296-2475	E300K1R0	1.00	17.3	26.12	24.11	22.39
296-2477	E300K1R6	1.60	13.7	26.12	24.11	22.39
296-2478	E300K2R0	2.00	12.2	26.12	24.11	22.39
296-2480	E300K3R1	3.10	9.8	26.12	24.11	22.39
296-2485	E300K4R0	4.00	8.6	23.42	21.62	20.07
296-2490	E300K5R0	5.00	7.7	23.42	21.62	20.07
296-2495	E300K6R3	6.30	6.9	23.42	21.62	20.07
296-2500	E300K8R0	8.00	6.1	23.42	21.62	20.07
296-2505	E300K10R	10.00	5.5	23.42	21.62	20.07
296-2510	E300K12R	12.00	5.0	23.42	21.62	20.07
296-2515	E300K16R	16.00	4.3	23.42	21.62	20.07
296-2520	E300K20R	20.00	3.8	23.42	21.62	20.07

Metal-Mite Aluminum Housed Axial Lead Wirewound Resistors

These molded-construction metal housed axial-lead performance resistors are available in higher power ratings than standard axial-lead resistors and are better suited to withstand shock, vibration and harsh environmental conditions. Metal-Mite resistors are aluminum housed to maintain high stability during operation and to permit secure mounting to chassis surfaces. The metal housing also provides heat-sinking capabilities, allowing the units to exceed the power ratings set by Mil specifications. Meets or exceeds MIL-R-18546 specifications. Solder coated axial lead terminals. **Tolerance:** ±1%. Power rating based on chassis mounting area and temperature stability. Proper heat sink for wattage is: 4" × 6" × 2" × .040" aluminum chassis for 5 and 10 watt units; 5" × 7" × 2" × .040 aluminum chassis for 25 watt units; 12" × 12" × .059" aluminum panel for 50 watt units.

Dimensions



Stock No.	Mfr.'s Type	Watts	Ohms	EACH 1-9	EACH 10-24	EACH 25-49
296-1020	805F1R0	5	1	2.83	2.62	2.43
296-1023	805F5R0	5	5	2.83	2.62	2.43
296-1024	805F10R	5	10	2.83	2.62	2.43
296-1025	805F15R	5	15	2.83	2.62	2.43
296-1026	805F25R	5	25	2.83	2.62	2.43
296-1027	805F50R	5	50	3.38	3.12	2.90
296-1028	805F100	5	100	3.38	3.12	2.90
296-1029	805F250	5	250	3.38	3.12	2.90
296-1030	805F300	5	300	3.38	3.12	2.90
296-1031	805F500	5	500	3.38	3.12	2.90
296-1032	805F1K5	5	1.5K	3.88	3.58	3.33
296-1033	805F2K0	5	2.0K	3.88	3.58	3.33
296-1034	805F5K0	5	5.0K	3.88	3.58	3.33
296-1036	805F10K	5	10K	4.38	4.05	3.76
296-1035	805F15K	5	15K	4.38	4.05	3.76
296-1038	805F25K	5	25K	4.88	4.51	4.19
296-1040	810F1R0	10	1	3.05	2.82	2.61
296-1045	810F5R0	10	5	3.05	2.82	2.61
296-1050	810F10R	10	10	3.05	2.82	2.61
296-1055	810F20R	10	20	3.05	2.82	2.61

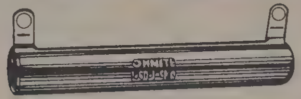
Stock No.	Mfr.'s Type	Watts	Ohms	EACH 1-9	EACH 10-24	EACH 25-49
296-1056	810F50R	10	50	3.05	2.82	2.61
296-1057	810F100	10	100	3.05	2.82	2.61
296-1058	810F250	10	250	3.32	3.06	2.84
296-1061	810F1K0	10	1.0K	3.32	3.06	2.84
296-1062	810F2K0	10	2.0K	3.67	3,38	3.14
296-1060	810F3K0	10	3.0K	3.67	3.38	3.14
296-1066	810F5K0	10	5.0K	3.67	3.38	3.14
296-1065	825FR10	25	0.1	4.67	4.31	4.00
296-1070	825F1R0	25	1	3.60	3.32	3.09
296-1075	825F2R0	25	2	3.60	3.32	3.09
296-1080	825F3R0	25	3	3.60	3.32	3.09
296-1085	825F5R0	25	5	3.60	3.32	3.09
296-1090	825F10R	25	10	3.45	3.18	2.96
296-1095	825F15R	25	15	3.45	3.18	2.96
296-1096	825F25R	25	25	3.45	3.18	2.96
296-1097	825F50R	25	50	3.45	3.18	2.96
296-1099	825F100	25	100	3.45	3.18	2.96
296-1100	825F150	25	150	3.45	3.18	2.96
296-1105	825F250	25	250	3.45	3.18	2.96
296-1107	825F500	25	500	3.45	3.18	2.96

Stock No.	Mfr.'s Type	Watts	Ohms	EACH 1-9	EACH 10-24	EACH 25-49
296-1110	825F750	25	750	3.45	3.18	2.96
296-1115	825F1K0	25	1.0K	3.55	3.28	3.04
296-1117	825F5K0	25	5.0K	3.55	3.28	3.04
296-1120	825F10K	25	10K	4.38	4.05	3.76
296-1124	850FR10	50	0.1	5.35	4.94	4.59
296-1125	850F1R0	50	1	4.20	3.88	3.60
296-1130	850F2R0	50	2	4.20	3.88	3.60
296-1135	850F3R0	50	3	4.20	3.88	3.60
296-1140	850F10R	50	10	4.20	3.88	3.60
296-1145	850F15R	50	15	4.20	3.88	3.60
296-1150	850F25R	50	25	4.20	3.88	3.60
296-1155	850F50R	50	50	4.20	3.88	3.60
296-1160	850F75R	50	75	4.20	3.88	3.60
296-1165	850F100	50	100	4.20	3.88	3.60
296-1170	850F150	50	150	4.20	3.88	3.60
296-1175	850F500	50	500	4.20	3.88	3.60
296-1176	850F1K0	50	1.0K	4.60	4.25	3.94
296-1177	850F1K5	50	1.5K	4.60	4.25	3.94
296-1178	850F5K0	50	5K	4.60	4.25	3.94
296-1179	850F10K	50	10K	4.98	4.60	4.27

Dimensions (Inches)

Power Rating Watts	A ±.005	B ±.005	C ±.031	D ±.0025	E ±.015	F ±.015	G ±.015	H ±.010	J ±.015	K ±.010	L ±.005	M Min.	N ±.005	P ±.062	R ±.062	S Min. AWG
5	.444	.490	.600	.245	.334	.646	.320	.060	.126	.078	.093	.085	.050	.266	1.125	16
10	.562	.625	.750	.312	.420	.800	.390	.075	.183	.093	.093	.140	.086	.312	1.375	12
25	.719	.781	1.062	.391	.550	1.080	.546	.088	.231	.172	.125	.140	.086	.438	1.938	12
50	1.563	.844	1.968	.422	.630	1.140	.610	.088	.260	.196	.125	.140	.086	.438	2.781	12

Type 270 Fixed Vitreous Enamel Power Resistors



Suitable for applications requiring higher wattage ratings from 12½ to 225 watts. The rugged vitreous enamel coating provides electrical insulation, excellent heat conduction, and is flame resistant. These wirewound resistors are wound on a high quality ceramic core with lug terminals suitable for soldering or sturdy bolt connection. For sturdy mounting, the hollow core permits fastening with spring-type brackets, thru bolts or thru bolts with slotted-steel brackets. **Tolerance:** ±5%. Power rating based on 25°C free air rating. Mounting brackets, thru bolts and hardware sold separately on page 444.

12 Watt

Stock No.	Mfr.'s Type	Ohms	EACH			
			1-9	10-24	25-49	50-99
296-2796	L12J1R0	1	3.25	3.10	2.91	2.79
296-2797	L12J3R3	3.3	3.25	3.10	2.91	2.79
296-2798	L12J10R	10	2.93	2.79	2.63	2.51
296-2800	L12J15R	15	2.93	2.79	2.63	2.51
296-2799	L12J27R	27	2.93	2.79	2.63	2.51
296-2801	L12J100	100	3.03	2.89	2.72	2.60
296-2802	L12J150	150	3.03	2.89	2.72	2.60
296-2803	L12J1K0	1000	3.33	3.17	2.99	2.86
296-2804	L12J2K2	2200	3.33	3.17	2.99	2.86

25 Watt

296-2730	L25J1R0	1	3.45	3.29	3.09	2.96
296-2735	L25J2R0	2	3.45	3.29	3.09	2.96
296-2740	L25J3R0	3	3.45	3.29	3.09	2.96
296-2745	L25J5R0	5	3.45	3.29	3.09	2.96
296-2750	L25J10R	10	3.38	3.22	3.03	2.90
296-2755	L25J15R	15	3.38	3.22	3.03	2.90
296-2760	L25J25R	25	3.38	3.22	3.03	2.90

25 Watt (continued)

Stock No.	Mfr.'s Type	Ohms	EACH			
			1-9	10-24	25-49	50-99
296-2765	L25J50R	50	3.38	3.22	3.03	2.90
296-2770	L25J75R	75	3.38	3.22	3.03	2.90
296-2775	L25J100	100	3.38	3.22	3.03	2.90
296-2776	L25J150	150	3.38	3.22	3.03	2.90
296-2777	L25J250	250	3.38	3.22	3.03	2.90
296-2778	L25J500	500	3.38	3.22	3.03	2.90
296-2779	L25J750	750	3.38	3.22	3.03	2.90
296-2780	L25J1K0	1000	3.60	3.43	3.22	3.09
296-2783	L25J1K5	1500	3.60	3.43	3.22	3.09
296-2785	L25J2K0	2000	3.60	3.43	3.22	3.09
296-2786	L25J2K5	2500	3.60	3.43	3.22	3.09
296-2787	L25J3K0	3000	3.60	3.43	3.22	3.09
296-2790	L25J3K5	3500	3.60	3.43	3.22	3.09
296-2793	L25J4K0	4000	4.00	3.81	3.58	3.43
296-2795	L25J5K0	5000	4.00	3.81	3.58	3.43
296-2794	L25J7K5	7500	4.00	3.81	3.58	3.43
296-2806	L25J10K	10K	4.78	4.56	4.28	4.10
296-2807	L25J15K	15K	4.78	4.56	4.28	4.10
296-2808	L25J20K	20K	4.78	4.56	4.28	4.10
296-2809	L25J50K	50K	4.93	4.70	4.42	4.23
296-2811	L25J100K	100K	5.53	5.27	4.96	4.74

50 Watt

296-2812	L50J1R0	1	5.33	5.08	4.78	4.57
296-2805	L50J5R0	5	5.33	5.08	4.78	4.57
296-2810	L50J10R	10	4.88	4.65	4.37	4.19
296-2815	L50J25R	25	4.88	4.65	4.37	4.19
296-2820	L50J50R	50	4.88	4.65	4.37	4.19
296-2825	L50J75R	75	4.88	4.65	4.37	4.19
296-2830	L50J100	100	4.88	4.65	4.37	4.19
296-2831	L50J150	150	4.88	4.65	4.37	4.19
296-2832	L50J200	200	4.88	4.65	4.37	4.19
296-2835	L50J250	250	4.88	4.65	4.37	4.19
296-2840	L50J500	500	4.88	4.65	4.37	4.19
296-2845	L50J1K0	1000	5.65	5.38	5.06	4.84
296-2846	L50J2K0	2000	5.65	5.38	5.06	4.84
296-2847	L50J5K0	5000	5.65	5.38	5.06	4.84
296-2848	L50J10K	10K	6.62	6.30	5.93	5.67
296-2849	L50J25K	25K	7.50	7.14	6.72	6.43
296-2851	L50J50K	50K	7.50	7.14	6.72	6.43
296-2852	L50J75K	75K	7.50	7.14	6.72	6.43
296-2850	L50J100K	100K	8.68	8.27	7.78	7.44

100 Watt

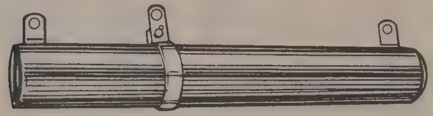
Stock No.	Mfr.'s Type	Ohms	EACH			
			1-9	10-24	25-49	50-99
296-2855	L100J1R0	1	8.97	8.54	8.03	7.69
296-2860	L100J2R0	2	8.97	8.54	8.03	7.69
296-2865	L100J5R0	5	8.97	8.54	8.03	7.69
296-2870	L100J10R	10	8.28	7.89	7.42	7.10
296-2875	L100J25R	25	8.28	7.89	7.42	7.10
296-2880	L100J50R	50	8.28	7.89	7.42	7.10
296-2883	L100J75R	75	8.28	7.89	7.42	7.10
296-2885	L100J100	100	8.28	7.89	7.42	7.10
296-2890	L100J150	150	8.28	7.89	7.42	7.10
296-2895	L100J250	250	8.28	7.89	7.42	7.10
296-2900	L100J500	500	8.28	7.89	7.42	7.10
296-2905	L100J1K0	1000	7.63	7.27	6.84	6.54
296-2910	L100J1K5	1500	7.63	7.27	6.84	6.54
296-2906	L100J2K0	2000	7.63	7.27	6.84	6.54
296-2907	L100J2K5	2500	7.63	7.27	6.84	6.54
296-2908	L100J5K0	5000	7.63	7.27	6.84	6.54
296-2909	L100J10K	10K	8.13	7.75	7.28	6.97
296-2911	L100J20K	20K	8.13	7.75	7.28	6.97
296-2915	L100J50K	50K	8.90	8.48	7.97	7.63
296-2920	L100J100K	100K	10.45	9.95	9.36	8.96

225 Watt

296-2925	L225J1R0	1	23.42	22.30	20.97	20.07
296-2930	L225J5R0	5	16.40	15.62	14.69	14.06
296-2935	L225J10R	10	12.95	12.33	11.60	11.10
296-2940	L225J25R	25	12.95	12.33	11.60	11.10
296-2945	L225J50R	50	12.95	12.33	11.60	11.10
296-2950	L225J100	100	12.95	12.33	11.60	11.10
296-2955	L225J150	150	12.95	12.33	11.60	11.10
296-2960	L225J250	250	12.95	12.33	11.60	11.10
296-2965	L225J500	500	12.95	12.33	11.60	11.10
296-2970	L225J750	750	12.95	12.33	11.60	11.10
296-2975	L225J1K0	1000	11.12	10.59	9.96	9.53
296-2980	L225J2K0	2000	11.12	10.59	9.96	9.53
296-2983	L225J5K0	5000	11.12	10.59	9.96	9.53
296-2984	L225J10K	10K	13.38	12.75	11.99	11.47
296-2985	L225J20K	20K	13.38	12.75	11.99	11.47
296-2990	L225J50K*	50K	14.10	13.43	12.63	12.09
296-3105	L225J100K*	100K	15.07	14.35	13.49	12.91

*Silicone ceramic coated.

Type 210 Adjustable Vitreous Enamel Power Resistors



Type 210 adjustable resistors are used for applications requiring settings at different resistance values. These wirewound resistors are equipped with a screwdriver adjustable lug, making them ideal for adjusting circuits, obtaining odd resistance values and setting equipment to meet various line voltages. These resistors have a vitreous enamel coating with a strip of uncovered wire that makes contact with the adjustment lug. One screwdriver adjustment lug is provided with each resistor. The hollow core permits secure fastening with spring-type clips, thru bolts or thru bolts with washers. They also offer the durability and flame resistance of vitreous enamel coating and all-welded construction. **Tolerance:** ±10%. **Note:** The stated wattage rating applies only when the entire resistance is in the circuit. Setting the lug at an intermediate point reduces the wattage by the approximate same proportion. Mounting brackets, thru bolts and hardware sold separately on page 444.

12 Watt

Stock No.	Mfr.'s Type	Ohms	EACH			
			1-9	10-24	25-49	50-99
296-2030	D12K1R0	1	6.12	5.83	5.48	5.24
296-2033	D12K5R0	5	6.12	5.83	5.48	5.24
296-2035	D12K10R	10	6.02	5.73	5.39	5.16
296-2037	D12K20R	20	6.02	5.73	5.39	5.16
296-2040	D12K25R	25	6.02	5.73	5.39	5.16
296-2045	D12K50R	50	6.02	5.73	5.39	5.16
296-2050	D12K100	100	6.02	5.73	5.39	5.16
296-2055	D12K150	150	6.02	5.73	5.39	5.16
296-2060	D12K250	250	6.02	5.73	5.39	5.16
296-2061	D12K500	500	6.55	6.24	5.87	5.61
296-2062	D12K1K0	1000	6.62	6.30	5.93	5.67
296-2063	D12K2K0	2000	6.62	6.30	5.93	5.67
296-2065	D12K3K0	3000	6.62	6.30	5.93	5.67
296-2070	D12K5K0	5000	6.73	6.41	6.03	5.77
296-2073	D12K10K	10K	6.73	6.41	6.03	5.77

25 Watt

296-2075	D25K1R0	1	7.15	6.81	6.40	6.13
296-2080	D25K2R0	2	7.15	6.81	6.40	6.13

25 Watt (continued)

Stock No.	Mfr.'s Type	Ohms	EACH			
			1-9	10-24	25-49	50-99
296-2085	D25K3R0	3	6.37	6.06	5.70	5.46
296-2090	D25K5R0	5	6.37	6.06	5.70	5.46
296-2095	D25K7R5	7.5	6.37	6.06	5.70	5.46
296-2100	D25K10R	10	5.97	5.68	5.34	5.11
296-2105	D25K15R	15	5.97	5.68	5.34	5.11
296-2110	D25K20R	20	5.97	5.68	5.34	5.11
296-2115	D25K25R	25	5.97	5.68	5.34	5.11
296-2120	D25K50R	50	5.97	5.68	5.34	5.11
296-2125	D25K100	100	5.97	5.68	5.34	5.11
296-2130	D25K200	200	5.97	5.68	5.34	5.11
296-2135	D25K250	250	5.97	5.68	5.34	5.11
296-2137	D25K500	500	5.97	5.68	5.34	5.11
296-2140	D25K1K0	1000	6.28	5.98	5.63	5.39
296-2145	D25K1K5	1500	6.28	5.98	5.63	5.39
296-2146	D25K2K0	2000	6.28	5.98	5.63	5.39
296-2147	D25K2K5	2500	6.28	5.98	5.63	5.39
296-2148	D25K5K0	5000	6.77	6.44	6.06	5.80
296-2150	D25K7K0	7000	6.77	6.44	6.06	5.80
296-2151	D25K10K	10K	7.10	6.76	6.36	6.09
296-2152	D25K20K	20K	7.10	6.76	6.36	6.09
296-2153	D25K25K	25K	7.10	6.76	6.36	6.09

50 Watt

296-2155	D50K1R0	1	10.13	9.65	9.07	8.69
296-2160	D50K2R0	2	10.13	9.65	9.07	8.69
296-2165	D50K5R0	5	8.78	8.37	7.87	7.53
296-2170	D50K10R	10	8.78	8.37	7.87	7.53
296-2175	D50K25R	25	8.78	8.37	7.87	7.53
296-2180	D50K50R	50	8.78	8.37	7.87	7.53
296-2185	D50K100	100	8.67	8.25	7.76	7.43
296-2190	D50K150	150	8.67	8.25	7.76	7.43
296-2193	D50K250	250	8.67	8.25	7.76	7.43
296-2195	D50K300	300				
296-2200	D50K500	500	8.67	8.25	7.76	7.43
296-2205	D50K750	750	8.67	8.25	7.76	7.43
296-2210	D50K1K0	1000	9.27	8.83	8.30	7.94
296-2212	D50K2K0	2000	9.27	8.83	8.30	7.94
296-2213	D50K3K0	3000	9.27	8.83	8.30	7.94
296-2215	D50K5K0	5000	9.53	9.08	8.54	8.17
296-2214	D50K10K	10K	9.70	9.24	8.69	8.31
296-2216	D50K20K	20K	9.70	9.24	8.69	8.31
296-2217	D50K25K	25K	9.70	9.24	8.69	8.31
296-2218	D50K50K	50K	9.70	9.24	8.69	8.31
296-2219	D50K100K	100K	9.87	9.40	8.84	8.46

75 Watt

296-2220	D75K15R	15	13.27	12.63	11.88	11.37
296-2225	D75K25R	25	13.27	12.63	11.88	11.37
296-2230	D75K100	100	12.90	12.29	11.55	11.06
296-2235	D75K300	300	12.90	12.29	11.55	11.06
296-2240	D75K750	750	12.90	12.29	11.55	11.06
296-2242	D75K1K0	1000	12.68	12.08	11.36	10.87

75 Watt (continued)

Stock No.	Mfr.'s Type	Ohms	EACH			
			1-9	10-24	25-49	50-99
296-2243	D75K10K	10K	13.38	12.75	11.99	11.47
296-2245	D75K20K	20K	13.38	12.75	11.99	11.47

100 Watt

296-2250	D100K1R0	1	12.90	12.29	11.55	11.06
296-2255	D100K2R0	2	12.90	12.29	11.55	11.06
296-2260	D100K3R0	3	12.90	12.29	11.55	11.06
296-2265	D100K4R0	4	12.90	12.29	11.55	11.06
296-2270	D100K5R0	5	12.90	12.29	11.55	11.06
296-2275	D100K10R	10	10.85	10.33	9.72	9.30
296-2280	D100K25R	25	10.85	10.33	9.72	9.30
296-2285	D100K50R	50	10.85	10.33	9.72	9.30
296-2290	D100K100	100	10.85	10.33	9.72	9.30
296-2295	D100K250	250	10.85	10.33	9.72	9.30
296-2300	D100K500	500	10.85	10.33	9.72	9.30
296-2305	D100K1K0	1000	10.50	10.00	9.40	9.00
296-2306	D100K2K5	2500	10.50	10.00	9.40	9.00
296-2310	D100K5K0	5000	10.50	10.00	9.40	9.00
296-2311	D100K10K	10K	10.88	10.37	9.75	9.33
296-2312	D100K50K	50K	11.43	10.89	10.24	9.80
296-2314	D100K100K	100K	12.23	11.65	10.96	10.49

175 Watt

296-2315	D175K1R0	1	22.50	21.43	20.15	19.29
296-2320	D175K5R0	5	19.98	19.03	17.90	17.13
296-2325	D175K10R	10	15.32	14.59	13.72	13.13
296-2330	D175K25R	25	15.32	14.59	13.72	13.13
296-2335	D175K50R	50	15.32	14.59	13.72	13.13
296-2340	D175K100	100	15.32	14.59	13.72	13.13
296-2345	D175K250	250	15.32	14.59	13.72	13.13

225 Watt

296-2350	D225K1R0	1	26.35	25.10	23.60	22.59
296-2355	D225K2R0	2	24.02	22.87	21.51	20.59
296-2360	D225K3R0	3	23.63	22.51	21.16	20.26
296-2365	D225K4R0	4	21.00	20.00	18.81	18.00
296-2370	D225K5R0	5	21.00	20.00	18.81	18.00
296-2375	D225K10R	10	17.47	16.63	15.64	14.97
296-2380	D225K25R	25	17.47	16.63	15.64	14.97
296-2385	D225K50R	50	17.47	16.63	15.64	14.97
296-2390	D225K100	100	17.47	16.63	15.64	14.97
296-2395	D225K250	250	17.47	16.63	15.64	14.97
296-2400	D225K500	500	17.47	16.63	15.64	14.97
296-2405	D225K1K0	1000	16.02	15.25	14.34	13.73
296-2410	D225K2K5	2500	16.02	15.25	14.34	13.73
296-2411	D225K5K0	5000	16.02	15.25	14.34	13.73
296-2412	D225K10K	10K	16.02	15.25	14.34	13.73

Stackohm Power Resistors

— NEW —

- ► Small Size to Power Ratio
- ► Low Profile and Stackable to Conserve Space
- ► All Welded Construction
- ► Integral Mounting Bracket Conducts Heat to Mounting Surface

These oval shaped ceramic core resistors feature vitreous enamel coating and low profile to permit installation in spaces with minimal height. They are also equipped with integral mounting brackets so they can be fastened to a chassis and stacked in locations with limited surface area. When properly fastened, the mounting brackets add a heat sinking benefit resulting in smaller size per watt. The terminals are tinned lug with a hole. **Tolerance:** 5%.

Miniature Thin Resistor with Stacking-Type Box Bracket

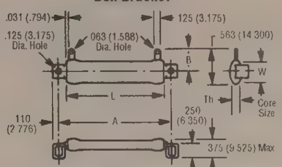


Fig. 1

Standard Resistor with Stacking-Type Box Bracket

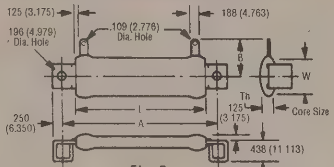


Fig. 2

Note: Inch (mm)

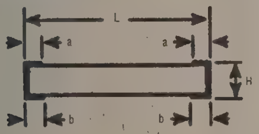
Power Rating Watts	Fig.	Core Dimensions						A		B	
		Length (L)		Width (W)		Thk. (Th)					
		In.	mm	In.	mm	In.	mm	In.	mm	In.	mm
10	1	.750	19.050	.375	9.525	.125	3.175	1.000	25.400	.375	9.525
20	1	2.000	50.800	.375	9.525	.125	3.175	2.313	58.750	.375	9.525
30	2	1.250	31.750	1.000	25.400	.250	6.350	2.000	50.800	.938	23.813
40	2	2.000	50.800	1.000	25.400	.250	6.350	2.750	69.850	.938	23.813
55	2	3.500	88.900	1.000	25.400	.250	6.350	4.250	107.950	.938	23.813

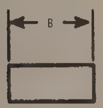
Stock No.	Mfr.'s Type	Fig.	PER PK./10			
			1-9	10-24	25-49	50-99
290-2528	F10J1R0	1	4.75	4.35	4.02	3.73
290-2529	F10J5R0	1	4.75	4.35	4.02	3.73
290-2530	F10J10R	1	4.58	4.20	3.88	3.60
290-2531	F10J20R	1	4.58	4.20	3.88	3.60
290-2532	F10J25R	1	4.58	4.20	3.88	3.60
290-2533	F10J30R	1	4.58	4.20	3.88	3.60
290-2534	F10J50R	1	4.58	4.20	3.88	3.60
290-2535	F10J100	1	4.75	4.35	4.02	3.73
290-2538	F10J200	1	4.75	4.35	4.02	3.73
290-2540	F10J400	1	4.75	4.35	4.02	3.73
290-2542	F10J1K0	1	5.00	4.58	4.23	3.93
290-2543	F10J2K5	1	5.00	4.58	4.23	3.93
290-2545	F10J3K0	1	5.15	4.72	4.35	4.04
290-2556	F20J1R0	1	6.31	5.78	5.34	4.96
290-2557	F20J2R0	1	6.31	5.78	5.34	4.96
290-2558	F20J5R0	1	6.31	5.78	5.34	4.96
290-2559	F20J10R	1	5.42	4.97	4.58	4.26
290-2560	F20J15R	1	5.42	4.97	4.58	4.26
290-2561	F20J20R	1	5.42	4.97	4.58	4.26
290-2562	F20J100	1	5.20	4.77	4.40	4.09
290-2563	F20J300	1	5.20	4.77	4.40	4.09
290-2564	F20J1K0	1	5.55	5.08	4.69	4.36
290-2565	F20J2K0	1	5.55	5.08	4.69	4.36
290-2566	F20J3K0	1	5.55	5.08	4.69	4.36
290-2567	F20J5K0	1	5.55	5.08	4.69	4.36
290-2568	F20J25K	1	5.84	5.35	4.94	4.59
290-2569	F20J50K	1	8.71	7.98	7.37	6.84
290-2579	F30J1R0	2	7.62	6.98	6.45	5.99
290-2580	F30J2R0	2	7.62	6.98	6.45	5.99
290-2581	F30J3R0	2	7.62	6.98	6.45	5.99
290-2582	F30J5R0	2	7.62	6.98	6.45	5.99
290-2583	F30J15R	2	7.49	6.87	6.34	5.89
290-2584	F30J25R	2	7.49	6.87	6.34	5.89
290-2585	F30J50R	2	7.49	6.87	6.34	5.89
290-2590	F30J75R	2	7.49	6.87	6.34	5.89

Stock No.	Mfr.'s Type	Fig.	PER PK./10			
			1-9	10-24	25-49	50-99
290-2591	F30J100	2	7.49	6.87	6.34	5.89
290-2592	F30J2K0	2	7.49	6.87	6.34	5.89
290-2593	F30J3K0	2	7.49	6.87	6.34	5.89
290-2600	F40J1R0	2	7.91	7.25	6.69	6.21
290-2612	F40J2R0	2	7.91	7.25	6.69	6.21
290-2624	F40J5R0	2	7.91	7.25	6.69	6.21
290-2636	F40J10R	2	7.80	7.15	6.60	6.13
290-2648	F40J25R	2	7.80	7.15	6.60	6.13
290-2660	F40J50R	2	7.80	7.15	6.60	6.13
290-2672	F40J100	2	7.80	7.15	6.60	6.13
290-2684	F40J200	2	7.80	7.15	6.60	6.13
290-2696	F40J500	2	7.80	7.15	6.60	6.13
291-2608	F40J1K0	2	7.65	7.02	6.48	6.01
291-2620	F40J5K0	2	8.24	7.55	6.97	6.47
291-2632	F40J15K	2	8.24	7.55	6.97	6.47
291-2644	F40J25K	2	8.24	7.55	6.97	6.47
290-2650	F55J1R0	2	9.84	9.02	8.32	7.73
290-2655	F55J1R5	2	9.84	9.02	8.32	7.73
290-2660	F55J2R0	2	9.84	9.02	8.32	7.73
290-2665	F55J5R0	2	9.58	8.78	8.11	7.53
290-2670	F55J10R	2	9.25	8.48	7.83	7.27
290-2675	F55J25R	2	9.25	8.48	7.83	7.27
290-2680	F55J50R	2	9.25	8.48	7.83	7.27
290-2685	F55J75R	2	9.25	8.48	7.83	7.27
290-2686	F55J100	2	9.11	8.35	7.71	7.16
290-2688	F55J200	2	9.11	8.35	7.71	7.16
290-2690	F55J250	2	9.11	8.35	7.71	7.16
290-2691	F55J400	2	9.11	8.35	7.71	7.16
290-2692	F55J1K0	2	9.36	8.58	7.92	7.36
290-2693	F55J2K0	2	9.36	8.58	7.92	7.36
290-2694	F55J2K5	2	9.36	8.58	7.92	7.36
290-2695	F55J4K0	2	9.36	8.58	7.92	7.36
290-2696	F55J15K	2	10.00	9.17	8.46	7.86
290-2697	F55J20K	2	10.00	9.17	8.46	7.86
—	—	—	—	—	—	—

Surface Mount Thick Film Chip Resistors 1% Tolerance

- ► 1/10, 1/8, and 1/4, Watt Sizes
- ► Available in 100 and 1000 Piece Packs or on Tape and Reel; Cabinet Assortments Available
- ► 1% Tolerance Standard
- ► 200 ppm/°C Temperature Coefficient





Specifications. Load Life (1000 Hrs.): ±1% R. **Terminal Strength:** DIN 45921 T 1015 board bend test. **Solderability:** DIN 45921 T 1015 solder bath test (95% coverage). **Temperature Range:** –55°C-125°C. **Resistance to Soldering Heat (260°C for 10 Sec.):** ±1%.

Type	L In. mm	B In. mm	H In. mm	a In. mm	b In. mm
S10	0.061 +0.006/–0.002 1.55 +0.15/–0.05	0.031 +0.006/–0.002 0.8 +0.15/–0.05	0.018 ±0.004 0.45 ±0.1	0.010 +0.010/–0.006 0.25 +0.25/–0.15	0.010 +0.010/–0.006 0.25 +0.25/–0.15
S12	0.079 ±0.008 2.0 ±0.2	0.049 ±0.008 1.25 ±0.2	0.018 ±0.004 0.45 ±0.1	0.016 ±0.008 0.40 ±0.2	0.016 ±0.008 0.40 ±0.2
S25	0.126 +0.004/–0.005 3.2 +0.1/–0.12	0.063 ±0.006 1.60 ±0.15	0.023 ±0.002 0.58 ±0.05	0.016 ±0.008 0.40 ±0.2	0.016 ±0.008 0.40 ±0.2

1/10 Watt, 0603 Package

Stock No.	Mfr.'s Type	Ohms	PER PK./100			
			1-4	5-9	10-24	25-49
292-1500	S10F10R0	10	4.76	4.37	4.13	3.97
292-1502	S10F22R1	22.1	4.76	4.37	4.13	3.97
292-1504	S10F47R5	47.5	4.76	4.37	4.13	3.97
292-1506	S10F100R	100	4.76	4.37	4.13	3.97
292-1508	S10F221R	221	4.76	4.37	4.13	3.97
292-1510	S10F475R	475	4.76	4.37	4.13	3.97
292-1512	S10F1K00	1000	4.76	4.37	4.13	3.97
292-1514	S10F2K21	2210	4.76	4.37	4.13	3.97
292-1516	S10F4K75	4750	4.76	4.37	4.13	3.97
292-1518	S10F10K0	10000	4.76	4.37	4.13	3.97
292-1520	S10F22K1	22100	4.76	4.37	4.13	3.97
292-1522	S10F47K5	47500	4.76	4.37	4.13	3.97
292-1524	S10F100K	100000	4.76	4.37	4.13	3.97
292-1526	S10F221K	221000	4.76	4.37	4.13	3.97
292-1528	S10F475K	475000	4.76	4.37	4.13	3.97
292-1530	S10F1M00	1000000	4.76	4.37	4.13	3.97

1/8 Watt, 0805 Package

Stock No.	Mfr.'s Type	Ohms	PER PK./100			
			1-4	5-9	10-24	25-49
292-1600	S12F10R0	10	6.40	5.87	5.55	5.33
292-1602	S12F22R1	22.1	6.40	5.87	5.55	5.33
292-1604	S12F47R5	47.5	6.40	5.87	5.55	5.33
292-1606	S12F100R	100	6.40	5.87	5.55	5.33
292-1608	S12F221R	221	6.40	5.87	5.55	5.33
292-1610	S12F475R	475	6.40	5.87	5.55	5.33
292-1612	S12F1K00	1000	6.40	5.87	5.55	5.33
292-1614	S12F2K21	2210	6.40	5.87	5.55	5.33
292-1616	S12F4K75	4750	6.40	5.87	5.55	5.33
292-1618	S12F10K0	10000	6.40	5.87	5.55	5.33
292-1620	S12F22K1	22100	6.40	5.87	5.55	5.33
292-1622	S12F47K5	47500	6.40	5.87	5.55	5.33
292-1624	S12F100K	100000	6.40	5.87	5.55	5.33
292-1626	S12F221K	221000	6.40	5.87	5.55	5.33
292-1628	S12F475K	475000	6.40	5.87	5.55	5.33
292-1630	S12F1M00	1000000	6.40	5.87	5.55	5.33

1/4 Watt, 1206 Package

Stock No.	Mfr.'s Type	Ohms	PER PK./100			
			1-4	5-9	10-24	25-49
292-1700	S25F10R0	10	6.40	5.87	5.55	5.33
292-1702	S25F22R1	22.1	6.40	5.87	5.55	5.33
292-1704	S25F47R5	47.5	6.40	5.87	5.55	5.33
292-1706	S25F100R	100	6.40	5.87	5.55	5.33
292-1708	S25F221R	221	6.40	5.87	5.55	5.33
292-1710	S25F475R	475	6.40	5.87	5.55	5.33
292-1712	S25F1K00	1000	6.40	5.87	5.55	5.33
292-1714	S25F2K21	2210	6.40	5.87	5.55	5.33
292-1716	S25F4K75	4750	6.40	5.87	5.55	5.33
292-1718	S25F10K0	10000	6.40	5.87	5.55	5.33
292-1720	S25F22K1	22100	6.40	5.87	5.55	5.33
292-1722	S25F47K5	47500	6.40	5.87	5.55	5.33
292-1724	S25F100K	100000	6.40	5.87	5.55	5.33
292-1726	S25F221K	221000	6.40	5.87	5.55	5.33
292-1728	S25F475K	475000	6.40	5.87	5.55	5.33
292-1730	S25F1M00	1000000	6.40	5.87	5.55	5.33

200 Series Vitreous Enamel Wirewound Power Resistor

These resistors have a rugged, fire resistant vitreous enamel coating to ensure successful performance under high temperatures. Small, exceptionally durable power resistors use all-welded construction and have a self supporting lead mounting option. **Tolerance:** ±5%. Power rating based on 25°C free air. Can be mounted using mounting hardware for 210/270 series resistors or by using attached leads.

5¹/₄ Watt

Length: .625. **OD:** .250. **ID:** .135.

Stock No.	Mfr.'s Type	Ohms	EACH 1-9	10-24	25-49	50-99
296-1366	B5J1R0	1	2.08	1.98	1.89	1.79
296-1367	B5J2R0	2	2.08	1.98	1.89	1.79
296-1368	B5J5R1	5.1	2.08	1.98	1.89	1.79
296-1369	B5J8R2	8.2	2.08	1.98	1.89	1.79
296-1370	B5J10R	10	2.05	1.95	1.86	1.76
296-1371	B5J15R	15	2.05	1.95	1.86	1.76
296-1372	B5J20R	20	2.05	1.95	1.86	1.76
296-1373	B5J47R	47	2.05	1.95	1.86	1.76
296-1374	B5J56R	56	2.05	1.95	1.86	1.76
296-1376	B5J100	100	2.05	1.95	1.86	1.76
296-1377	B5J120	120	2.05	1.95	1.86	1.76
296-1378	B5J150	150	2.05	1.95	1.86	1.76
296-1379	B5J200	200	2.05	1.95	1.86	1.76
296-1381	B5J330	330	2.05	1.95	1.86	1.76
296-1382	B5J390	390	2.05	1.95	1.86	1.76
296-1383	B5J510	510	2.08	1.98	1.89	1.79
296-1384	B5J680	680	2.08	1.98	1.89	1.79
296-1386	B5J1K0	1K	2.30	2.19	2.09	1.97
296-1387	B5J1K5	1.5K	2.30	2.19	2.09	1.97
296-1388	B5J2K0	2K	2.30	2.19	2.09	1.97
296-1389	B5J4K7	4.7K	2.30	2.19	2.09	1.97
296-1391	B5J5K1	5.1K	2.40	2.29	2.18	2.06
296-1392	B5J6K2	6.2K	2.40	2.29	2.18	2.06

5 Watt (Continued)

Stock No.	Mfr.'s Type	Ohms	EACH 1-9	10-24	25-49	50-99
296-1393	B5J8K2	8.2K	2.40	2.29	2.18	2.06
296-1394	B5J10K	10K	2.62	2.49	2.38	2.24
296-1396	B5J15K	15K	2.62	2.49	2.38	2.24
296-1397	B5J20K	20K	2.62	2.49	2.38	2.24

8 Watt

Length: 1.000. **OD:** .313. **ID:** .188.

Stock No.	Mfr.'s Type	Ohms	EACH 1-9	10-24	25-49	50-99
296-1380	B8J1R0	1	2.28	2.17	2.08	1.96
296-1385	B8J1R5	1.5	2.28	2.17	2.08	1.96
296-1390	B8J2R0	2	2.28	2.17	2.08	1.96
296-1395	B8J3R0	3	2.28	2.17	2.08	1.96
296-1400	B8J5R0	5	2.28	2.17	2.08	1.96
296-1405	B8J10R	10	2.03	1.94	1.85	1.74
296-1410	B8J25R	25	2.03	1.94	1.85	1.74
296-1412	B8J50R	50	2.03	1.94	1.85	1.74
296-1414	B8J75R	75				
296-1415	B8J100	100	2.03	1.94	1.85	1.74
296-1417	B8J200	200	2.03	1.94	1.85	1.74
296-1420	B8J250	250	2.03	1.94	1.85	1.74
296-1425	B8J300	300	2.03	1.94	1.85	1.74
296-1426	B8J350	350	2.03	1.94	1.85	1.74
296-1428	B8J400	400	2.03	1.94	1.85	1.74
296-1430	B8J500	500	2.03	1.94	1.85	1.74
296-1433	B8J800	800	2.08	1.98	1.89	1.79
296-1435	B8J1K0	1K	2.08	1.98	1.89	1.79
296-1437	B8J2K0	2K	2.15	2.05	1.95	1.84
296-1440	B8J2K5	2.5K	2.15	2.05	1.95	1.84
296-1445	B8J3K0	3K	2.15	2.05	1.95	1.84
296-1447	B8J4K0	4K	2.15	2.05	1.95	1.84
296-1450	B8J5K0	5K	2.33	2.22	2.12	2.00
296-1453	B8J6K0	6K	2.33	2.22	2.12	2.00
296-1455	B8J7K0	7K	2.33	2.22	2.12	2.00
296-1460	B8J8K0	8K	2.33	2.22	2.12	2.00
296-1465	B8J10K	10K	2.33	2.22	2.12	2.00
296-1470	B8J15K	15K	2.33	2.22	2.12	2.00
296-1475	B8J20K	20K	2.82	2.68	2.56	2.41

12 Watt

Length: 1.750. **OD:** .313. **ID:** .188.

Stock No.	Mfr.'s Type	Ohms	EACH 1-9	10-24	25-49	50-99
296-1480	B12KR50	0.5	2.70	2.57	2.45	2.31
296-1485	B12J1R0	1	2.65	2.52	2.41	2.27

12 Watt (Continued)

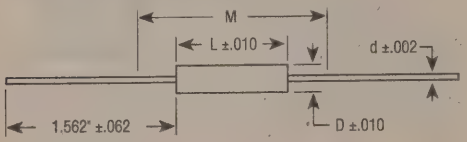
Stock No.	Mfr.'s Type	Ohms	EACH 1-9	10-24	25-49	50-99
296-1490	B12J3R0	3	2.65	2.52	2.41	2.27
296-1495	B12J5R0	5	2.65	2.52	2.41	2.27
296-1500	B12J10R	10	2.33	2.22	2.12	2.00
296-1505	B12J12R	12	2.33	2.22	2.12	2.00
296-1510	B12J20R	20	2.33	2.22	2.12	2.00
296-1515	B12J25R	25	2.33	2.22	2.12	2.00
296-1520	B12J50R	50	2.33	2.22	2.12	2.00
296-1525	B12J100	100	2.33	2.22	2.12	2.00
296-1530	B12J500	500	2.48	2.37	2.26	2.13
296-1535	B12J1K0	1K	2.48	2.37	2.26	2.13
296-1540	B12J1K2	1.2K	2.48	2.37	2.26	2.13
296-1545	B12J2K0	2K	2.58	2.46	2.35	2.21
296-1550	B12J2K5	2.5K	2.58	2.46	2.35	2.21
296-1555	B12J3K0	3K	2.58	2.46	2.35	2.21
296-1560	B12J4K0	4K	2.58	2.46	2.35	2.21
296-1563	B12J4K5	4.5K				
296-1565	B12J5K0	5K	2.58	2.46	2.35	2.21
296-1570	B12J10K	10K	2.77	2.63	2.52	2.37
296-1575	B12J15K	15K	2.77	2.63	2.52	2.37
296-1580	B12J20K	20K	2.77	2.63	2.52	2.37
296-1585	B12J50K	50K	3.67	3.49	3.33	3.14

20 Watt

Length: 2.000. **OD:** .438. **ID:** .250.

Stock No.	Mfr.'s Type	Ohms	EACH 1-9	10-24	25-49	50-99
296-1590	B20KR50	0.5	3.55	3.38	3.23	3.04
296-1595	B20J1R0	1	3.03	2.89	2.76	2.60
296-1600	B20J2R0	2	3.03	2.89	2.76	2.60
296-1605	B20J3R0	3	3.03	2.89	2.76	2.60
296-1610	B20J5R0	5	3.03	2.89	2.76	2.60
296-1615	B20J10R	10	2.77	2.63	2.52	2.37
296-1620	B20J25R	25	2.77	2.63	2.52	2.37
296-1625	B20J50R	50	2.77	2.63	2.52	2.37
296-1630	B20J100	100	2.77	2.63	2.52	2.37
296-1635	B20J250	250	2.77	2.63	2.52	2.37
296-1640	B20J500	500	2.77	2.63	2.52	2.37
296-1650	B20J1K0	1K	2.98	2.84	2.71	2.56
296-1655	B20J1K5	1.5K	2.98	2.84	2.71	2.56
296-1660	B20J2K0	2K	2.98	2.84	2.71	2.56
296-1665	B20J2K5	2.5K	2.98	2.84	2.71	2.56
296-1670	B20J3K5	3.5K	2.98	2.84	2.71	2.56
296-1675	B20J5K0	5K	3.25	3.10	2.95	2.79
296-1680	B20J10K	10K	3.25	3.10	2.95	2.79
296-1685	B20J100K	100K	4.82	4.59	4.38	4.13

10 Series Molded Silicone Axial Lead Wire Element Resistors



These molded silicone resistors are ideal for current sensing applications. They have low inductance (non-inductive below 0.25 µ). Terminals are constructed of solder-plated copper leads or copper clad steel depending of ohm value with silicone molding encapsulation compound. **Tolerance:** 1%. Power rating based on 25°C free air. **Temperature Range:** 55°C to +275°C.

Dimensions

Power Rating	Dimensions D ±.010	L ±.010	d ±.002	M
2 W	.094	.406	.032	1.156
3 W	.205	.560	.032	1.310
5 W	.330	.925	.040	1.675

2 Watt

Stock No.	Mfr.'s Type	Ohms	EACH 1-9	10-24	10-24	10-24
296-5100	12FR005	0.005	1.53	1.40	1.29	1.20
296-5102	12FR010	0.010	1.44	1.32	1.22	1.13
296-5104	12FR015	0.015	1.44	1.32	1.22	1.13
296-5106	12FR020	0.020	1.38	1.27	1.17	1.09
296-5108	12FR025	0.025	1.38	1.27	1.17	1.09
296-5110	12FR030	0.030	1.38	1.27	1.17	1.09
296-5112	12FR040	0.040	1.35	1.23	1.14	1.06
296-5114	12FR050	0.050	1.35	1.23	1.14	1.06
296-5116	12FR060	0.060	1.35	1.23	1.14	1.06
296-5118	12FR070	0.070	1.51	1.38	1.28	1.19
296-5120	12FR080	0.080	1.51	1.38	1.28	1.19
296-5122	12FR090	0.090	1.51	1.38	1.28	1.19
296-5124	12FR100	0.100	1.51	1.38	1.28	1.19

3 Watt

Stock No.	Mfr.'s Type	Ohms	EACH 1-9	10-24	10-24	10-24
296-5126	13FR005	0.005	1.56	1.43	1.32	1.23
296-5128	13FR010	0.010	1.49	1.37	1.26	1.17
296-5130	13FR015	0.015	1.49	1.37	1.26	1.17
296-5132	13FR020	0.020	1.42	1.30	1.20	1.11
296-5134	13FR025	0.025	1.42	1.30	1.20	1.11
296-5136	13FR030	0.030	1.42	1.30	1.20	1.11
296-5138	13FR040	0.040	1.40	1.28	1.18	1.10
296-5140	13FR050	0.050	1.40	1.28	1.18	1.10
296-5142	13FR060	0.060	1.40	1.28	1.18	1.10
296-5144	13FR070	0.070	1.56	1.43	1.32	1.23

3 Watt (Continued)

Stock No.	Mfr.'s Type	Ohms	EACH 1-9	10-24	10-24	10-24
296-5146	13FR080	0.080	1.56	1.43	1.32	1.23
296-5148	13FR090	0.090	1.56	1.43	1.32	1.23
296-5150	13FR100	0.100	1.56	1.43	1.32	1.23
296-5152	13FR150	0.150	1.56	1.43	1.32	1.23
296-5154	13FR200	0.200	1.56	1.43	1.32	1.23

5 Watt

Stock No.	Mfr.'s Type	Ohms	EACH 1-9	10-24	10-24	10-24
296-5156	15FR005	0.005	1.87	1.72	1.58	1.47
296-5158	15FR010	0.010	1.82	1.67	1.54	1.43
296-5160	15FR015	0.015	1.82	1.67	1.54	1.43
296-5162	15FR020	0.020	1.82	1.67	1.54	1.43
296-5164	15FR025	0.025	1.82	1.67	1.54	1.43
296-5166	15FR030	0.030	1.82	1.67	1.54	1.43
296-5168	15FR040	0.040	1.76	1.62	1.49	1.39
296-5170	15FR050	0.050	1.76	1.62	1.49	1.39
296-5172	15FR060	0.060	1.76	1.62	1.49	1.39
296-5174	15FR070	0.070	1.75	1.60	1.48	1.37
296-5176	15FR080	0.080	1.75	1.60	1.48	1.37
296-5178	15FR090	0.090	1.75	1.60	1.48	1.37
296-5180	15FR100	0.100	1.75	1.60	1.48	1.37
296-5182	15FR150	0.150	1.75	1.60	1.48	1.37
296-5184	15FR200	0.200	1.75	1.60	1.48	1.37
296-5186	15FR250	0.250	1.75	1.60	1.48	1.37
296-5188	15FR300	0.300	1.75	1.60	1.48	1.37

Hardware for Power Resistors

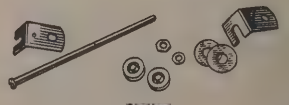
Brackets fit inside cores of 210 Type and 270 Type resistors and remain in place by spring tension. Standard brackets are plated steel. Thru bolt kits along with plated steel brackets, centering washers and insulating washers (included) allow for secure perpendicular mounting of these resistors to panels up to ¹/₄" thick.

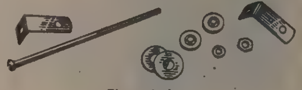
Stock No.	Mfr.'s Type	Description	Res. Watts	EACH 1-9	10-24
296-0005	5	Standard Bracket	12	.24	.22
296-0010	5S	Spring Steel Bracket	12	.50	.46
296-0015	9	Standard Bracket	25, 50, 75	.21	.19
296-0020	9S	Spring Steel Bracket	25, 50, 75	.69	.63
296-0025	12	Standard Bracket	100	.46	.42
296-0030	12S	Spring Steel Bracket	100	.81	.75
296-0035	18	Standard Bracket	175, 225	.48	.44
296-0040	18S	Spring Steel Bracket	175, 225	.93	.86
296-1180	2121	Extra Adjustable Lug	25, 50, 75	1.43	1.14
296-1185	2125	Extra Adjustable Lug	100	1.40	1.12
296-1187	2133	Extra Adjustable Lug	175, 225	1.45	1.16
296-0045	7PA10	2.5" Thru-Bolt	12	3.25	2.60
296-0050	7PA25	2.75" Thru-Bolt	25	3.50	2.80
296-0055	7PA50	4.75" Thru-Bolt	50	3.88	3.10

Stock No.	Mfr.'s Type	Description	Res. Watts	EACH 1-9	10-24
296-0060	7PA100	7.31" Thru-Bolt	100	4.75	3.80
296-0065	7PA160	9.5" Thru-Bolt	175	7.98	6.38
296-0070	7PA200	11.5" Thru-Bolt	225	8.23	6.58
296-1260	6000	Metal Center Washer	25, 50, 75	.16	.15
296-1265	6001	Metal Center Washer	100	.20	.18
296-1270	6003	Metal Center Washer	175, 225	.25	.23
296-1275	6011	Mica Insulated Washer	25, 50, 75	.13	.12
296-1276	6013	Mica Insulated Washer	100	.18	.17
296-1278	6017	Mica Insulated Washer	175, 225	.24	.22
296-1280	6110-8¹/₂	Slot Mtg. Bracket Kit	One 175W	5.53	5.07
296-1285	6126-P-8¹/₂	Elongated Bracket Kit	One 175W	6.62	6.07
296-1290	6127-P-8¹/₂	Elongated Bracket Kit	Two 175W	9.02	8.27
296-1295	6128-P-8¹/₂	Elongated Bracket Kit	Three 175W	11.67	10.70
296-1300	6129-P-8¹/₂	Elongated Bracket Kit	Four 175W	15.36	14.08

Standard

Spring Steel


Slotted


Elongated

CR-Series Carbon Film Resistors

CR-Series resistors are high-performance, high-reliability low cost carbon film resistors. They are particularly well suited to those applications that require significantly better performance than can be obtained with carbon composition resistors. These resistors feature very low noise, excellent stability, and wide operating frequency range, in minimum size for their power ratings. These resistors have high temperature and time stability approaching those of industrial metal film resistors. This series features durable design rugged epoxy coating, are well suited to automatic assembly, wave soldering, conveyorized handling and easily withstand industrial solvents used in cleaning circuit boards. Marked using 4 color bands. Tape and Reel product available in multiples of 5000 pc/reel as custom order. Call for price and delivery.

Stock No.	Mfr.'s Type	Philips No.	Tol. %	Wattage @70°C	Value Range	Chart (Values)	Dimensions (Inches)				PER PK./100	
							Body Len.	Body Dia.	Lead Len.	Lead Dia.	1-9	10-49
297-1XXX	CR25	5043CX-J	5	1/4	2.7Ω-10M	A	.268	.098	1.1	.024	**2.20**	**1.87**

Type SFR-Series Metal Film Resistors

Designed for high value manufacturing and automatic insertion, this series provides an economic way to upgrade circuits with stability, low noise, low reactance, and temperature coefficient. Color band marking for ease of identification after mounting. The SFR25 series is designed to replace carbon composition (RCR 07 and 20), carbon film, and older design metal film resistors (RL 07 and 20). The SFR25H series is a replacement for RC20, RN60 and RL20 in Mil styles in applications not requiring qualification. Tape and reel product available in multiples of 5000 pc/reel as custom order. Call for price and delivery.

Stock No.	Mfr.'s Type	Philips No.	Body Color	Tol. %	Wattage @70°C	Temp. Coeff	Value Range	Value Chart	Dimensions (Inches)				PER PK./100	
									Body Len.	Body Dia.	Lead Len.	Lead Dia.	1-9	10-49
297-4XXX	SFR55	5043ED-F	Green	1	1/4	100ppm	10Ω-1M	B	.260	.098	1.1	.024	**5.00**	**3.75**
297-5XXX	SFR25	5043EM-J	Green	5	1/4	100ppm	10Ω-1M	A	.260	.098	1.1	.024	**5.00**	**3.75**
297-6XXX	SFR25H	5053HD-F	Brown	1	1/2	100ppm	10Ω-1M	B	.260	.098	1.1	.024	**7.50**	**6.25**
297-7XXX	SFR25H	5053HM-J	Brown	5	1/2	100ppm	10Ω-1M	A	.260	.098	1.1	.024	**7.00**	**5.75**

Chart A 5% Values

To complete Allied Stock No., Insert 3 Digit No. Shown in XXX Column After Value Desired, In Place of XXX in Stock No.

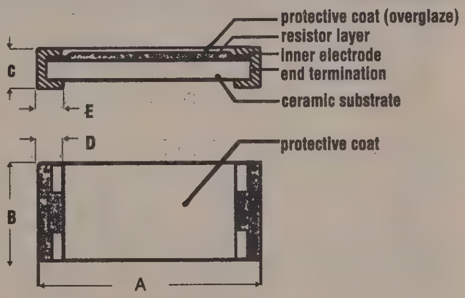
Ohms	XXX	Ohms	XXX	Ohms	XXX	Ohms	XXX	Ohms	XXX	Ohms	XXX	Ohms	XXX	Megs	XXX	Megs	XXX
2.7	041	30	123	160	230	750	338	3600	441	22K	585	150K	740	1.2M	886	5.6M	918
3	042	33	130	180	237	820	343	3900	446	24K	592	180K	751	1.3M	890	6.2M	919
3.3	043	39	140	200	243	910	351	4700	461	27K	603	200K	759	1.5M	900	6.8M	920
3.9	046	47	153	220	248	1000	356	5100	467	30K	611	220K	765	1.8M	903	7.5M	921
4.7	049	51	160	240	255	1100	361	5600	473	33K	617	270K	783	2.0M	905	8.2M	922
5.1	051	56	168	270	263	1200	366	6200	482	39K	636	300K	790	2.2M	907	9.1M	923
5.6	053	68	178	300	270	1500	380	6800	489	47K	650	330K	796	2.4M	908	10M	924
6.8	055	75	185	330	276	1600	383	7500	498	51K	657	390K	811	2.7M	909	—	—
8.2	057	82	190	390	288	1800	393	8200	504	56K	666	470K	825	3.0M	911	—	—
9.1	058	100	202	430	296	2000	400	10K	522	62K	677	510K	830	3.3M	912	—	—
10	060	110	206	470	302	2200	405	11K	528	68K	685	560K	836	3.6M	913	—	—
15	081	120	212	510	308	2400	412	12K	533	82K	703	680K	850	3.9M	914	—	—
20	098	130	218	560	315	2700	421	15K	550	91K	712	910K	871	4.3M	915	—	—
22	102	150	226	620	324	3000	427	18K	565	100K	717	1M	877	4.7M	916	—	—
27	117	160	230	680	330	3300	433	20K	575	120K	727	1.1M	881	5.1M	917	—	—

Chart B 1% Values

Ohms	XXX	Ohms	XXX	Ohms	XXX	Ohms	XXX	Ohms	XXX	Ohms	XXX	Ohms	XXX	Ohms	XXX	Ohms	XXX
10	100	51.1	161	348	280	2.00K	400	4.75K	462	11K	528	27.4K	604	82.5K	705	464K	791
12.1	107	56.2	167	402	292	2.15K	403	4.87K	463	12.10K	535	30.1K	612	84.5K	706	475K	796
15	113	75	185	475	303	2.21K	406	4.99K	465	12.40K	536	33.2K	618	90.9K	711	499K	828
20	121	90.9	196	499	306	2.49K	415	5.11K	468	13K	538	40.2K	638	100K	717	511K	831
22.1	125	100	202	604	322	2.74K	422	6.19K	481	15K	550	46.4K	649	121K	728	619K	841
24.9	128	121	213	750	338	3.01K	428	6.81K	490	15.8K	552	47.5K	651	150K	740	681K	853
30.1	135	150	226	825	345	3.32K	435	7.5K	498	17.4K	561	49.9K	655	200K	759	750K	862
34.8	140	200	243	909	350	3.48K	437	8.25K	505	18.2K	566	51.1K	658	221K	766	825K	875
40.2	146	221	250	1K	356	3.57K	440	9.09K	513	20K	575	61.9K	675	249K	777	909K	881
47.5	152	249	257	1.21K	367	3.83K	445	9.53K	518	22.1K	586	68.1K	686	301K	781	953K	885
49.9	157	301	271	1.5K	380	4.02K	450	10K	522	24.9K	594	75K	694	402K	788	1Meg	891

Series 9C Commercial SMD Chip Resistors

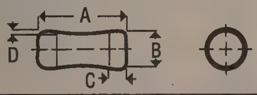
The surface mounted chip resistor consists of a glass passivated thick film resistive paste screened onto a high purity alumina ceramic substrate. The nominal resistance value is achieved by varying the composition of the paste prior to the screening process and by laser trimming the film after it has been screened on. To insure mechanical and environmental integrity, the chip is covered with a silicon based "procoat." The conductive layer consists of a precious metal and a wrap around termination is deposited at each end to allow mechanical and electrical attachment. These chip resistors and adaptable to high speed automated mechanization assembly. They allow excellent printed circuit board density as well as utilization of both board sides. Zero ohm jumper available as custom order in full reels only.



Stock No.	Mfr.'s Type	Tol. %	Philips No.	Wattage @70°C	Value Range	Value Chart	Dimensions (Inches)					PER PK./100	
							A	B	C	D	E	1-5	6-25
297-91XX	9C1206	1	9C12063A-FK	1/4	10Ω-1M	D	.126	.063	.023	.016	.020	**3.55**	**3.00**
297-93XX	9C1206	5	9C12063A-JL	1/4	10Ω-1M	C	.126	.063	.023	.016	.020	**2.50**	**2.18**
297-95XX	9C0805	5	9C08052A-JL	1/10	10Ω-1M	C	.079	.049	.024	.016	.016	**3.00**	**2.50**
297-96XX	9C0805	1	9C08052A-FK	1/10	10Ω-1M	D	.079	.049	.024	.016	.016	**3.89**	**3.26**
297-97XX	9C0603	1	9C06031A-FK	1/16	10Ω-1M	D	.062	.031	.018	.012	.012	**4.20**	**3.50**
297-98XX	9C0603	5	9C06031A-JL	1/16	10Ω-1M	C	.062	.031	.018	.012	.012	**3.00**	**2.50**

Chart C 5% Values

Ohms	XXX	Ohms	XXX	Ohms	XXX	Ohms	XXX	Ohms	XXX	Ohms	XXX	Ohms	XXX	Ohms	XXX	Ohms	XXX
10	10	39	18	200	26	470	34	2700	42	5600	50	30K	58	100K	66	390K	74
20	12	47	20	270	28	560	36	3000	44	10K	52	39K	60	200K	68	470K	76
27	14	56	22	300	30	1000	38	3900	46	20K	54	47K	62	270K	70	560K	78
30	16	100	24	390	32	2000	40	4700	48	27K	56	56K	64	300K	72	1Meg	80



Series 9B Precision MELF Surface Mount Resistors

The MELF resistor consists of a high alumina core on which metal film is deposited. A cap is applied at each end and the resistor is spiralled to value. The resistor is then coated, color coded, and end caps treated to facilitate soldering. Zero ohm jumper available as custom order in full reels only.

Stock No.	Mfr.'s Type	Philips No.	Tol. %	Wattage @70°C	Value Range	Value Chart	Dimensions (Inches)				PER PK./1000	
							A	B	C	D	1-9	10-49
297-85XX	9B0805	9B08052A-FC	.1	1/8	10Ω-1M	D	.087	.043	.018 Max.	.002	**130.00**	**120.00**
297-81XX	9B1406	9B14064A-FC	1	1/4	10Ω-1M	D	.142	.055	.085 Max.	.006	**65.00**	**55.00**

Chart D 1% Values

Ohms	XXX	Ohms	XXX	Ohms	XXX	Ohms	XXX	Ohms	XXX	Ohms	XXX	Ohms	XXX	Ohms	XXX
10	03	49.9	15	200	27	1K	39	4.99K	51	20K	63	100K	75	499K	87
15	06	75	18	301	30	1.5K	42	7.5K	54	30.1K	66	150K	78	750K	90
20	09	100	21	499	33	2K	45	10K	57	49.9K	69	200K	81	1Meg	93
30.1	12	150	24	750	36	3.01K	48	15K	60	75K	72	301K	84	—	—

Silicone Coated Series 100 Wirewound Resistors

The RCD 100 Series of precision silicone coated power wirewound resistors is manufactured to provide highly reliable continuous operation under MIL-R-26 and MIL-R-39007. Load life stability after 1000 hrs. is typically below ± 0.25% ΔR at full rated power. Improved performance results from single layer, tension free windings of premium grade resistance wire. Special ceramic cores feature optimum thermal conductivity, resulting in a reduced temperature rise over conventional wirewounds. The coating is resistant to most solvents but should not be brushed while wet. **125 Terminal Strength:** Pull test 7 lb. max., approx. weight: .33 Grams. **135 Terminal Strength:** Pull test is 15 lb. max., approx. weight: 1.3 grams. **160 Terminal Strength:** Pull Test 15 lb. max., approx. weight 4 grams. All resistors have tinned leads and solderability conforms to MIL-R-26E. Non-inductive, extended resistance range, and radial leads available on special order. Call for price quote and availability.

5% Tolerance

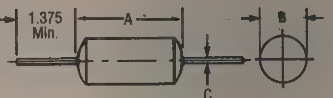
Stock No.	Mfr.'s Type	MIL Type	Watts	Ohms/Range	EACH 1-9	10-24	25-49	50-99	100-249
840-37XX	125	RW70	1.5	1.0-1.0K	.56	.50	.45	.42	.38
840-38XX	135	RW69	3.0	1.0-1.0K	.56	.50	.45	.42	.38
				1.1K-5K	.56	.50	.45	.42	.38
				6.8K-10K	.71	.64	.58	.53	.49
840-39XX	160	RW74	5.0	1.0-1.0K	.62	.56	.51	.47	.43
				1.1K-5K	.62	.56	.51	.47	.43
				6.8K-10K	.73	.66	.60	.55	.51

1% Tolerance

Stock No.	Mfr.'s Type	MIL Type	Watts	Ohms/Range	EACH 1-9	10-24	25-49	50-99	100-249
840-77XX	125	RW70	1.5	10,50,100,500,1K	.73	.66	.60	.55	.51
840-78XX	135	RW69	3.0	10,50,100,500,1K	.87	.78	.71	.65	.60
				5K	.93	.84	.76	.70	.65
				10K	.71	.64	.58	.53	.49
840-79XX	160	RW74	5.0	10,50,100,500,1K	.91	.82	.75	.68	.63
				5K	.98	.88	.80	.73	.68
				10K	1.07	.96	.87	.80	.74

Performance max Δ R

Load Life	± .5% + .05 ohm
Short Time Overload	± .2% + .05 ohm
Thermal Shock	± .2% + .05 ohm
Moisture Resistance	± .2% + .05 ohm
Shock and Vibration	± .1% + .05 ohm



Rated up to 350°C
MIL-Grade Performance

Mechanical Specifications

Series	A	B	C
125	.406 ± .062	.093 ± .032	.020 ± .0015
135	.500 ± .062	.188 ± .032	.032 ± .0020
160	.875 ± .062	.312 ± .032	.040 ± .0020

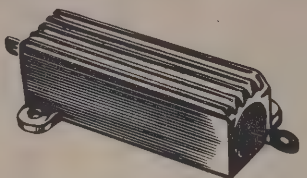
Table of Resistance Value Codes

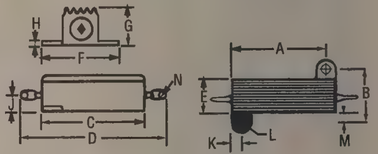
Ohms	XX	Ohms	XX	Ohms	XX	Ohms	XX	Ohms	XX
1.0	01	10	17	68	30	500.0*	45	4.7K	61
1.5	03	15	19	100	33	680.0	47	5.0K*	62
2.2	06	22	22	150	35	1.0K	50	6.8K	64
3.3	09	33	25	220	38	1.5K	52	10.0K	67
4.7	11	47	27	330	42	2.2K	55		—
6.8	14	50*	28	470	44	3.3K	59		—

*1% only

Series 600 High Power Resistors – Highest Quality

RCD Series 600. Compact power wirewound resistors offer continuous high-power dissipation. These devices are molded in high density aluminum heat sink for a maximum heat dissipation. Maximum environmental protection provided by a hard anodized housing (per MIL-A-8625 Type 2). Inside the rugged housing, accurate concentricity of the resistive element allows a high level of voltage protection. Other features include complete welded construction (terminal to terminal), oxide-free premium grade resistance wire windings, low noise and thermal EMF. Meets or exceeds MIL-R-18546 requirements. Non-inductive, extended resistance range, tighter tolerances and temperature coefficients, and other modifications available as special order items.





Dimensions

Mfr.'s Type	A ± .005	B ± .005	C ± .062	D ± .062	E ± .015	F ± .015	G ± .030	H ± .010	J ± .031	K ± .031	L ± .005	M ± .015	N ± .005
605	.444" (11.3mm)	.490" (12.5mm)	.600" (15.2mm)	1.125" (28.6mm)	.334" (8.5mm)	.646" (16.4mm)	.320" (8.2mm)	.065" (1.6mm)	.140" (3.6mm)	.078" (2.0mm)	.093" (2.4mm)	.078" (2.0mm)	.050" (1.3mm)
610	.562" (14.3mm)	.625" (15.9mm)	.750" (19.0mm)	1.375" (35.0mm)	.420" (10.8mm)	.800" (20.3mm)	.405" (10.3mm)	.075" (1.9mm)	.164" (4.2mm)	.094" (2.4mm)	.093" (2.4mm)	.102" (2.6mm)	.086" (2.2mm)
615	.719" (18.3mm)	.781" (19.8mm)	1.062" (27.0mm)	1.938" (49.3mm)	.531" (13.5mm)	1.080" (27.4mm)	.546" (13.9mm)	.088" (2.2mm)	.235" (7.0mm)	.172" (4.4mm)	.125" (3.2mm)	.125" (3.2mm)	.086" (2.2mm)
620	1.563" (39.7mm)	.844" (21.5mm)	1.968" (50.0mm)	2.781" (70.6mm)	.609" (15.6mm)	1.140" (28.8mm)	.610" (15.5mm)	.088" (2.2mm)	.265" (7.2mm)	.188" (4.8mm)	.125" (3.2mm)	.117" (3.0mm)	.086" (2.2mm)

Ohms Resistance Value Chart

Important Ordering Information: Complete the Stock No. shown by placing the designated Resistance code for Ohms Value where XXX appears in the Stock No. Each particular listing shows what ohm values are available for that type.

Other values available as special order items.

Ohms	XXX	Ohms	XXX	Ohms	XXX	Ohms	XXX	Ohms	XXX	Ohms	XXX	Ohms	XXX	Ohms	XXX	Ohms	XXX	Ohms	XXX	Ohms	XXX	Ohms	XXX
10	450	75	465	470	480	1.0K	505	2.7K	525	4.7K	540	7.5K	570	12K	605	27K	635	47K	660	75K	690	120K	725
27	455	100	470	510	485	1.8K	515	3.3K	530	5.1K	545	8.2K	580	18K	615	33K	645	56K	670	82K	700	180K	740
47	460	270	475	750	490	2.2K	520	3.9K	535	6.8K	560	10.0K	590	22K	625	39K	650	68K	680	100K	715	200K	760

Electrical Specifications And Pricing

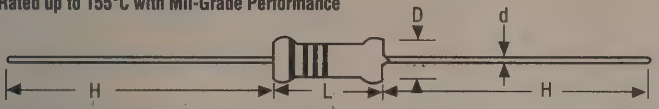
Tolerance: ±5%. *Chassis mounted. †Refer to Ohms Resistance Value Chart to complete Stock No.

Stock No.†	Mfr.'s Type	MIL Type	Dielectric Strength	Watt Rating* STD	MIL	Max. Resis.	Max. Volt STD	B	Ohm Value	EACH 1-9	10-24	25-49	50-99	100-249
840-0XXX	605	RE60	1000V	7	5	20K	160	220	10 to 1K	**1.93**	**1.74**	**1.58**	**1.45**	**1.34**
									1.8K to 4.7K	**2.07**	**1.86**	**1.69**	**1.55**	**1.43**
									5.1K to 10K	**2.13**	**1.92**	**1.75**	**1.60**	**1.48**
									12K	**2.80**	**2.52**	**2.29**	**2.10**	**1.94**
									18K to 22K	**3.13**	**2.82**	**2.56**	**2.35**	**2.17**
840-3XXX	610	RE65	1000V	12	10	45K	265	340	10 to 1K	**1.93**	**1.74**	**1.58**	**1.45**	**1.34**
									1.8K to 4.7K	**2.07**	**1.86**	**1.69**	**1.55**	**1.43**
									5.1K to 10K	**2.13**	**1.92**	**1.75**	**1.60**	**1.48**
									12K	**2.80**	**2.52**	**2.29**	**2.10**	**1.94**
									18K to 22K	**3.13**	**2.82**	**2.56**	**2.35**	**2.17**
840-6XXX	615	RE70	2000V	25	20	90K	550	650	10 to 1K	**2.24**	**2.02**	**1.84**	**1.68**	**1.55**
									1.8K to 4.7K	**2.33**	**2.10**	**1.91**	**1.75**	**1.62**
									5.1K to 10K	**2.33**	**2.10**	**1.91**	**1.75**	**1.62**
									12K	**2.73**	**2.46**	**2.24**	**2.05**	**1.89**
									18K, 22K	**2.73**	**2.46**	**2.24**	**2.05**	**1.89**
									27K to 47K	**3.24**	**2.92**	**2.65**	**2.43**	**2.25**
									56K	**4.31**	**3.88**	**3.53**	**3.23**	**2.98**
									75K	**4.56**	**4.10**	**3.73**	**3.42**	**3.15**
									82K	**4.56**	**4.10**	**3.73**	**3.42**	**3.15**
840-9XXX	620	RE75	2000V	50	30	200K	1250	1400	10 to 1K	**2.98**	**2.68**	**2.44**	**2.23**	**2.06**
									1.8K to 4.7K	**3.47**	**3.12**	**2.84**	**2.60**	**2.40**
									5.1K to 10K	**3.47**	**3.12**	**2.84**	**2.60**	**2.40**
									12K	**3.60**	**3.24**	**2.95**	**2.70**	**2.49**
									18K, 22K	**3.60**	**3.24**	**2.95**	**2.70**	**2.49**
									27K to 47K	**4.24**	**3.82**	**3.47**	**3.18**	**2.94**
									56K to 75K	**4.73**	**4.26**	**3.87**	**3.55**	**3.28**
									82K, 100K	**4.98**	**4.48**	**4.07**	**3.73**	**3.45**
									120K	**5.40**	**4.86**	**4.42**	**4.05**	**3.74**
									180K, 200K	**5.67**	**5.10**	**4.64**	**4.25**	**3.92**

Power Oxide and Bulk/Tape and Reel Carbon Film Resistors

Carbon Film Resistors — Industry's Finest!

► **Rated up to 155°C with Mil-Grade Performance**



Mfr.'s Type	"L"	"D"	"d"	"H"
	±.032" (.8mm)	±.020" (.5mm)	±.003" (.05mm)	Min.
CF25	.250" (6.4)	.090" (2.3)	.024" (.60)	1.0" (25)
CF50S	.354" (9.0)	.125" (3.2)	.025" (.63)	1.0" (25)
CF200S	.630" ± .08	.21" ± 0.5	.031" (.80)	1.06" (27)

► **Outperforms Carbon Comp MIL-R-11** ► **Flame Retardant Coating And Color-Banding**

Series CF resistors provide improved performance over industry standards without increasing costs. Load life stability at a typical 1000 hrs. is less than 0.5%ΔR. These quality standards are achieved through strict process controls and highest grade materials. Cores are high thermally conductive ceramic, creating superior heat dissipation and overload capability which allows reduced sizes unavailable until now. Specially electroplated leads for faultless soldering, even after lengthy storage times. Industrial solvent-resistant multilayer epoxy coating and color-banding. **Note:** 1/8, 1 and 3 Watt sizes available from factory in 1000 pc. multiples as custom order.

Stock No.	Mfr.'s Type	Watts	Tolerance	Maximum Working Voltage	Maximum Overload Voltage	Values (See Table Below)	PER PACK/1000†		
							1-9	10-24	25-49
840-1XXX	CF25	1/4	±5%	250	500	1 Ohm-10M	**8.50**	**7.95**	**7.00**
840-2XXX	CF50S	1/2	±5%	350	700	1 Ohm-10M	**13.25**	**12.00**	**10.00**
840-8XXX	CF200S	2	±5%	600	1100	1 Ohm-10M	**14.75**	**13.50**	**12.00**

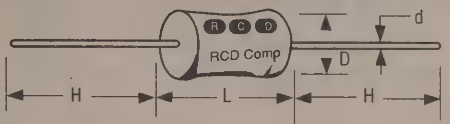
* Large Production Quantity Pricing Available. †CF200S sold in packs of 200.

Tape and Reel Resistors

Stock No.	Mfr.'s Type	Watts *	Tol. %	Max. Volts	Max. Overload	Stocked Values*	Reel Size	PER REEL	
								1-9	10-49
849-1XXX	CF25	1/4	5	250	500	10, 22, 47, 100, 150, 220, 330 470, 1K, 2K, 3.3K, 4.7K, 10K, 22K, 33K, 47K, 100K, 220K, 470K, 1M, 10M	5000	**45.00**	**37.00**
849-2XXX	CF50S	1/2	5	350	700		4000	**46.00**	**38.00**

* Other wattages and values available from factory as custom order in full reels only.

Series RSF Flameproof Power Oxide Resistors



Mfr.'s Type	Dimensions – Inches (mm)			
	L ± .032" (.8mm)	D ± .025" (.6mm)	d ± .004" (.1mm)	H (Min.)
RSF1A	.375" (9.5)	.135" (3.4)	.025" (.65)	1.02" (26)
RSF2B	.590" (15.0)	.212" (5.4)	.031" (.8)	1.06" (34)

- ► **Equivalent to MIL Wirewound Sizes**
- ► **Exceptional Stability and Overload Dissipation**
- ► **Negligible Noise and Inductance**
- ► **Extremely Durable and Insensitive to Temperature Extremes**
- ► **Flameproof Coating Resists All Industrial Solvents (Should Not Be Brushed When Wet)**
- ► **Price Savings Over Conventional Resistors**
- ► **Excellent Replacement for Carbon Composition, Commercial Wirewound, Carbon Film, Metal Oxide and Metal Film Resistors**

Special construction of the Series RSF resistors allows performance characteristics previously unavailable in film resistors and reduced sizes which are interchangeable with wirewound resistors. Designed specifically for increased power and surge dissipation. Proprietary film is a thick complex-oxide material deposited on high grade ceramic for optimum heat dissipation, negligible inductance, low temperature coefficient and long-term stability. Exceptional insensitivity to high temperature and thermal shock. Terminations are welded for increased durability and negligible noise levels. Marking is stamped or color-banded. Detailed performance report available. **Note:** 5, 7 and 9 watt available with 200 piece minimum as custom order. Call for price and delivery info.

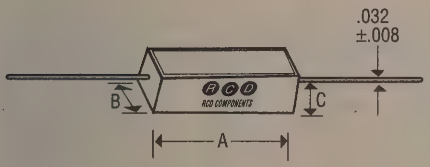
Stock No.	Mfr.'s Type	Watts @ 25°C	Tolerance	Maximum Working Voltage	Dielectric Withstand Voltage	Values (See Tables Below)	PER PACK/100		
							1-9	10-24	25-49
840-6XXX	RSF1A	1	5%	300	700	0.1-0.47 Ohm	**10.50**	**9.25**	**8.00**
840-4XXX	RSF1A	1	5%	300	700	0.51-1M Ohm	**6.50**	**5.25**	**4.50**
840-5XXX	RSF2B	3	5%	350	700	0.51-1M Ohm	**9.00**	**7.75**	**6.90**

Standard Resistance Values

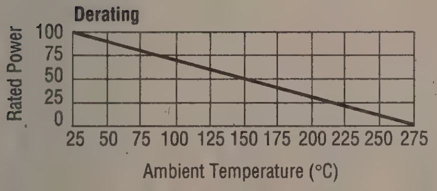
To Complete Allied Stock Number, Insert 3-Digit Number Shown in XXX Column After Value Desired In Place Of XXX In Stock Number.

Ohms	XXX	Ohms	XXX	Ohms	XXX	Ohms	XXX	Ohms	XXX	Ohms	XXX	Ohms	XXX	Ohms	XXX	Ohms	XXX	Ohms	XXX	Ohms	XXX
.10	995	.68	013	3.6	044	18	066	91	191	470	302	2.4K	412	12K	533	62K	677	510K	830	3.9M	914
.12	996	.75	014	3.9	046	20	098	100	202	510	308	2.7K	421	13K	543	68K	685	560K	836	4.3M	915
.15	997	.82	016	4.3	047	22	102	110	206	560	315	3.0K	427	15K	550	75K	698	680K	850	4.7M	916
.18	998	.91	017	4.7	049	24	114	120	212	620	324	3.3K	433	16K	563	82K	703	910K	871	5.1M	917
.20	999	1.0	020	5.1	051	27	117	130	218	680	330	3.6K	441	18K	565	91K	712	1.0M	877	5.6M	918
.22	001	1.1	021	5.6	053	30	123	150	226	750	338	3.9K	446	20K	575	100K	717	1.1M	881	6.2M	919
.24	002	1.2	022	6.2	054	33	130	160	230	820	343	4.3K	453	22K	585	110K	718	1.2M	886	6.8M	920
.27	003	1.3	023	6.8	055	36	135	180	237	910	351	4.7K	461	24K	592	120K	727	1.3M	890	7.5M	921
.30	004	1.5	024	7.5	056	39	140	200	243	1.0K	356	5.1K	467	27K	603	150K	740	1.5M	900	8.2M	922
.33	005	1.6	025	8.2	057	43	143	220	248	1.1K	361	5.6K	473	30K	611	180K	751	1.8M	903	9.1M	923
.36	006	1.8	026	9.1	058	47	153	240	255	1.2K	366	6.2K	482	33K	617	200K	759	2.0M	905	10M	924
.39	007	2.0	028	10	060	51	160	270	263	1.3K	373	6.8K	489	36K	621	220K	765	2.2M	907	—	—
.43	008	2.2	032	11	061	56	166	300	270	1.5K	380	7.5K	498	39K	636	270K	783	2.4M	908	—	—
.47	009	2.4	035	12	062	62	172	330	276	1.6K	383	8.2K	504	43K	643	300K	790	2.7M	909	—	—
.51	010	2.7	041	13	063	68	178	360	278	1.8K	393	9.1K	511	47K	650	330K	796	3.0M	911	—	—
.56	011	3.0	042	15	064	75	185	390	288	2.0K	400	10K	522	51K	657	390K	811	3.3M	912	—	—
.62	012	3.3	043	16	065	82	190	430	296	2.2K	405	11K	528	56K	666	470K	825	3.6M	913	—	—

Types PW5/5-Watt and PW10/10-Watt Resistors



Axial lead resistors. Welded cap to lead for improved noise levels and long term stability. Precisely wound element with glass fiber core and sealed in rectangular ceramic case. **Tolerance:** ±5%. **Wide resistance range:** .1Ω to 5K. **Improved TCR:** ±200 PPM Typ. (Values above 1Ω). **Power rating:** 25°C ambient. **Maximum operating temperature:** 275°C. Other values available in 100-piece multiples as custom order. 2; 3, 7, 15, 20, 22, and 25 watt sizes available in 100 piece multiples as custom order. PW series utilizes either wirewound or film elements. Specific type may be requested at time of order as special order item with 1000 piece multiples. If not specified, either may be shipped.



Mfr.'s Type	Dimensions–Inches (mm)		
	A±.04" (.1.0 mm)	B±.032" (.81 mm)	C±.05" (1.3 mm)
PW5	0.88" (22.4)	.38" (9.7)	.35" (8.9)
PW10	1.88" (47.8)	.38" (9.7)	.38" (9.7)

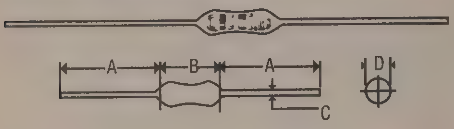
Type PW5 – 5 Watt

Stock No.	Mfr.'s Type	Ohms	PER PK./10			
			1-9	10-24	25-49	50-99
840-0356	PW5	.10	**3.40**	**2.50**	**2.00**	**1.70**
840-0021	PW5	.50	**3.40**	**2.50**	**2.00**	**1.70**
840-0025	PW5	.68	**3.40**	**2.50**	**2.00**	**1.70**
840-0029	PW5	1	**3.00**	**2.30**	**1.70**	**1.40**
840-0038	PW5	2	**3.00**	**2.30**	**1.70**	**1.40**
840-0042	PW5	3	**3.00**	**2.30**	**1.70**	**1.40**
840-0047	PW5	4	**3.00**	**2.30**	**1.70**	**1.40**
840-0050	PW5	5	**3.00**	**2.30**	**1.70**	**1.40**
840-0056	PW5	7.5	**3.00**	**2.30**	**1.70**	**1.40**
840-0060	PW5	10	**3.00**	**2.30**	**1.70**	**1.40**
840-0081	PW5	15	**3.00**	**2.30**	**1.70**	**1.40**
840-0112	PW5	25	**3.00**	**2.30**	**1.70**	**1.40**
840-0158	PW5	50	**3.00**	**2.30**	**1.70**	**1.40**
840-0202	PW5	100	**3.00**	**2.30**	**1.70**	**1.40**
840-0226	PW5	150	**3.00**	**2.30**	**1.70**	**1.40**
840-0243	PW5	200	**3.00**	**2.30**	**1.70**	**1.40**
840-0258	PW5	250	**3.00**	**2.30**	**1.70**	**1.40**
840-0307	PW5	500	**3.00**	**2.30**	**1.70**	**1.40**
840-0026	PW5	1K	**3.00**	**2.30**	**1.70**	**1.40**

Type PW10 – 10 Watt

Stock No.	Mfr.'s Type	Ohms	PER PK./10			
			1-9	10-24	25-49	50-99
840-7021	PW10	.10	**3.40**	**2.70**	**2.40**	**1.80**
840-7025	PW10	.50	**3.40**	**2.70**	**2.40**	**1.80**
840-7026	PW10	.68	**3.40**	**2.70**	**2.40**	**1.80**
840-7029	PW10	1	**3.20**	**2.50**	**2.20**	**1.60**
840-7038	PW10	2	**3.20**	**2.50**	**2.20**	**1.60**
840-7050	PW10	5	**3.20**	**2.50**	**2.20**	**1.60**
840-7056	PW10	7.5	**3.20**	**2.50**	**2.20**	**1.60**
840-7060	PW10	10	**3.20**	**2.50**	**2.20**	**1.60**
840-7081	PW10	15	**3.20**	**2.50**	**2.20**	**1.60**
840-7098	PW10	20	**3.20**	**2.50**	**2.20**	**1.60**
840-7112	PW10	25	**3.20**	**2.50**	**2.20**	**1.60**
840-7158	PW10	50	**3.20**	**2.50**	**2.20**	**1.60**
840-7185	PW10	75	**3.20**	**2.50**	**2.20**	**1.60**
840-7202	PW10	100	**3.20**	**2.50**	**2.20**	**1.60**
840-7226	PW10	150	**3.20**	**2.50**	**2.20**	**1.60**
840-7243	PW10	200	**3.20**	**2.50**	**2.20**	**1.60**
840-7270	PW10	300	**3.20**	**2.50**	**2.20**	**1.60**
840-7307	PW10	500	**3.20**	**2.50**	**2.20**	**1.60**
840-7356	PW10	1K	**3.40**	**2.70**	**2.40**	**1.80**
840-7400	PW10	2K	**3.40**	**2.70**	**2.40**	**1.80**
840-7427	PW10	3K	**3.40**	**2.70**	**2.40**	**1.80**
840-7428	PW10	5K	**3.40**	**2.70**	**2.40**	**1.80**

Carbon Film Resistors



Mfr.'s Type	Dimensions — Inches			
	A	B	C	D
CF1/8	1.00 min.	.13 + .01	.018 ± .001	.07 ± .01
CF1/4	1.00 min.	.24 ± .01	.022 ± .001	.09 ± .01
CF1/2	1.00 min.	.33 ± .02	.026 ± .002	.12 ± .01

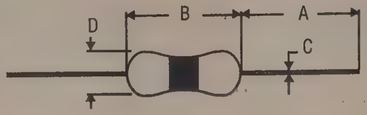
Extremely low noise. Epoxy coating with color code marking.

Stock No.	Mfr.'s Type	Watts	Stocked Values See Table Below	PER PKG./200		
				1-5	6-10	11-20
526-0XXX	CF1/8	1/8	4.7 - 680K	10.40	8.84	7.96
526-1XXX	CF1/4	1/4	4.7 - 10M	4.40	3.74	3.36
526-2XXX	CF1/2	1/2	4.7 - 10M	5.90	5.02	4.52

Note: Tape and reel and large quantity pricing available.

Zero-Ohm Resistors

SEI Type CD

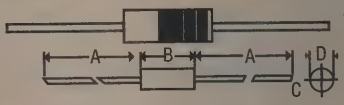


- ► "Crossover"or "Jumper" Applications

Mfr.'s Type	Dimensions — Inches			
	A	B	C	D
CD1/8W	1.00 min.	.13 + .01	.018 ± .001	.07 ± .01
CD1/4W	1.00 min.	.24 ± .01	.022 ± .001	.09 ± .01

Stock No.	Mfr.'s Type	Amps	PER REEL/5000		
			1-5	6-9	10-20
526-0001	CD1/8W	2	62.50	55.50	50.00
526-0002	CD1/4W	3	45.00	40.00	36.00

Carbon Composition Resistors



These 1/4 and 1/2 watt composition resistors meet or exceed all requirements specified by MIL-R-11 and RS-172. Operation at full wattage rating at 70°C without derating. ±5% tolerance.

Mfr.'s Type	Dimensions — Inches			
	A	B	C	D
RC1/4W	1.102 ± .032	.248 ± .028	.0240 ± .002	.094 ± .004
RC1/2W	1.024 ± .032	.374 + .032/ –.028	.0275 ± .002	.142 ± .008

Stock No.	Mfr.'s Type	Watts	Stocked Values See Table Below	Pkg. Qty.	PER PKG.		
					1-24	25-49	50-99
823-2XXX	RC07	1/4	2.7 - 5.6M	200	16.00	14.25	12.50
823-4XXX*	RC20	1/2	2.7 - 20M	100	10.00	8.75	7.70

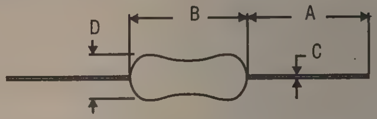
*910K and larger are a higher price. **Note:** Tape and reel and large quantity pricing available.

Metal Oxide Mini Series Resistors

SEI Type RSM

- ► Ideal Substitute Where Size Restraints Apply
- ► Low Cost Alternative for Power Carbon Composition and Wirewounds
- ► Flameproof — Meets Overload Test of UL #1412
- ► Meets Solvent Test of Method 215 of MIL-STD 202
- ► Temperature Coefficient of ±200 ppm/°C
- ► Performance Tested Per MIL-R-22684 Rev. C
- ► Available on 2500 Piece Tape and Reel as Special Order Item
- ► Available From .1 Ohm to 9.1 Ohm as Special Order Item

Stock No.	Mfr.'s Type	Watts @ 70°C	Tolerance	Values	PER PKG./1000		
					1-5	6-9	10-20
894-1XXX	RSM-1	1	5%	10 Ohm-75K	55.50	49.35	44.50
894-2XXX	RSM-2	2	5%	10 Ohm-100K	75.00	60.00	54.55



Feature	RSM 1	RSM 2
A - Lead Length (typ.)	1.10 ± .08 (28.0 ± 2.0)	1.10 ± .08 (28.0 ± 2.0)
B - Body Length	.35 ± .04 (9.0 ± 1.0)	.43 ± .04 (11.0 ± 1.0)
C - Lead Diameter	.028 ± .002 (0.7 ± 0.05)	.031 ± .002 (0.8 ± 0.05)
D - Body Diameter	.11 ± .02 (2.6 ± 0.5)	.16 ± .02 (4.0 ± 0.5)

Dimensions: Inches (mm).

Standard 5% Resistance Values

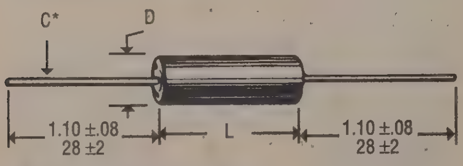
To complete Allied stock number, insert three digit number shown in XXX column after value desired, in place of XXX in stock number.

Ohms	XXX	Ohms	XXX	Ohms	XXX	Ohms	XXX	Ohms	XXX	Ohms	XXX	Ohms	XXX	Megs	XXX	Megs	XXX
2.7	041	30	123	160	230	750	338	3600	441	22K	585	150K	740	1M	877	4.7M	916
3	042	33	130	180	237	820	343	3900	446	24K	592	180K	751	1.1M	881	5.1M	917
3.3	043	36*	135	200	243	910	351	4700	461	27K	603	200K	759	1.2M	886	5.6M	918
3.9	046	39	140	220	248	1000	356	5100	467	30K	611	220K	765	1.3M	890	6.2M	919
4.7	049	47	153	240	255	1100	361	5600	473	33K	617	270K	783	1.5M	900	6.8M	920
5.1	051	51	160	270	263	1200	366	6200	482	39K	636	300K	790	1.8M	903	7.5M	921
5.6	053	56	166	300	270	1500	380	6800	489	47K	650	330K	796	2.0M	905	8.2M	922
6.8	055	68	178	330	276	1600	383	7500	498	51K	657	390K	811	2.2M	907	9.1M	923
8.2	057	75	185	390	288	1800	393	8200	504	56K	666	470K	825	2.4M	908	10M	924
9.1	058	82	190	430	296	2000	400	10K	522	62K	677	510K	830	2.7M	909	12M	927
10	060	100	202	470	302	2200	405	11K	528	68K	685	560K	836	3.0M	911	15M	929
15	081	110	206	510	308	2400	412	12K	533	82K	703	680K	850	3.3M	912	18M	933
20	098	120	212	560	315	2700	421	15K	550	91K	712	910K	871	3.6M	913	20M	935
22	102	130*	218	620	324	3000	427	18K	565	100K	717	—	—	3.9M	914	—	—
27	117	150	226	680	330	3300	433	20K	575	120K	727	—	—	4.3M	915	—	—

*Available in 526-1XXX (1/4-Watt) only.

Metal Film 1% Tolerance Resistors For Commercial Applications

- ► Voltage Coefficient, 1/10-Full, 0.5 ppm
- ► For Precision Instrumentation
- ► Color Band Marking
- ► Low Noise Levels: –20 Db on Standard Values, 0.1 μ Per Volt; –30 Db on Low-Med Values, 0.5 μV Per Volt
- ► Offer Low Electrical Noise
- ► High Stability Under Load
- ► Other Values Available in Packages of 1000 Pieces Only



Stock No.	Mfr.'s Type	Stocked Range	Coeff. PPM	Watts at 70°C	Max. Size Inches*		PER PKG./100		
					L	D	1-10	11-50	51-99
832-7XXX	RN1/4T1	10-1M	100	1/4	.25	.10	3.60	2.70	1.80
832-6XXX	RN1/4T2	10-1M	50	1/4	.25	.10	5.00	3.88	3.25
832-3XXX	RN1/2T1	10-1M	100	1/2	.36	.12	6.20	4.50	3.10
832-2XXX	RN1/2T2	10-1M	50	1/2	.36	.12	7.00	5.00	4.00

*C=RN1/4 — .022 ± .001 (0.60 ± 0.03); RN1/2 — .026 ± .002 (0.70 ± 0.05). **Note:** Tape and reel and large quantity pricing available.

Standard 1% Resistance Values

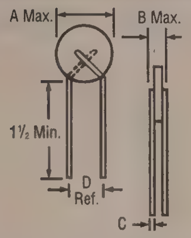
To complete Allied stock number, insert three digit number shown in XXX column after value desired, in place of XXX in stock number.

Ohms	XXX	Ohms	XXX	Ohms	XXX	Ohms	XXX	Ohms	XXX	Ohms	XXX	Ohms	XXX	Ohms	XXX	Ohms	XXX
10	100	51.1	161	348	280	2K	400	4.75K	462	11K	528	27.4K	604	82.5K	705	464K	791
12.1	107	56.2	167	402	292	2.15K	403	4.87K	463	12.10K	535	30.1K	612	84.5K	706	475K	796
15	113	75	185	475	303	2.21K	406	4.99K	465	12.40K	536	33.2K	618	90.9K	711	499K	828
20	121	90.9	196	499	306	2.49K	415	5.11K	468	13K	538	40.2K	638	100K	717	511K	831
22.1	125	100	202	604	322	2.74K	422	6.19K	481	15K	550	46.4K	649	121K	728	619K	841
24.9	128	121	213	750	338	3.01K	428	6.81K	490	15.8K	552	47.5K	651	150K	740	681K	853
30.1	135	150	226	825	345	3.32K	435	7.5K	498	17.4K	561	49.9K	655	200K	759	750K	862
34.8	140	200	243	909	350	3.48K	437	8.25K	505	18.2K	566	51.1K	658	221K	766	825K	875
40.2	146	221	250	1K	356	3.57K	440	9.09K	513	20K	575	61.9K	675	249K	777	909K	881
47.5	152	249	257	1.21K	367	3.83K	445	9.53K	518	22.1K	586	68.1K	686	301K	781	953K	885
49.9	157	301	271	1.5K	380	4.02K	450	10K	522	24.9K	594	75K	694	402K	788	1M	891

NTC, PTC Thermistors and Inrush Current Limiters

Precision Thermistors ±0.2°C from 0°C to 75°C

Keystone precision units are the designers' choice for low cost, close-tolerance temperature measurement. These ultrastable thermistors are accurate to ±0.2°C from 0°C to 75°C. They are widely used in OEM applications because they offer close-tolerance temperature measurement without requiring individual calibration. A protective coating is standard for all precision thermistors listed in the table below.



Stock No.	Mfr.'s Type	Ro @ 25°C Ω	α @ 25°C (%/°C)	Material	A		B		C	D		ϑ (mW/°C)	τ (sec.)	EACH	
					In.	mm	In.	mm	AWG	In.	mm			1-99	100-249
837-5110	RL1003-1746-97-SP	3 K	–4.4	P97	0.160	4.06	0.160	4.06	26	0.100	2.54	1.0	10	**8.75**	**7.00**
837-5115	RL1005-2910-97-SP	5 K	–4.4	P97	0.160	4.06	0.180	4.57	26	0.100	2.54	1.0	10	**8.75**	**7.00**
837-5126	RL1008-5820-97-SP	10 K	–4.4	P97	0.160	4.06	0.200	5.08	26	0.100	2.54	1.0	10	**8.75**	**7.00**

NTC Thermistors

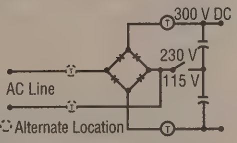
Negative temperature coefficient thermistors decrease in resistance as temperature increases. Temp. coefficients range from –2%/°C to –5%/°C @ 25°C. **Max. Operating Temperature:** 150°C+. **Max. Temperature:** 125°C.

Stock No.	Mfr.'s Type	Ro @ 25°C (Ω)	Tol. (±%)	Resist. Ratio*	Max. Dia. In.	EACH	
						1-99	100-249
837-1000	RL1004-65.6-59-D1	100	20	5.6	0.11	**2.08**	**1.67**
837-1005	RL1003-312-73-D1	500	10	6.9	0.11	**2.06**	**1.65**
837-1010	RL1007-624-73-D1	1000	10	6.9	0.11	**2.06**	**1.65**
837-1046	RL1003-1157-95-D1	2000	10	9.2	0.11	**2.06**	**1.65**
837-1015	RL1003-1746-97-D1	3000	10	9.1	0.11	**2.06**	**1.65**
837-1020	RL1004-2910-97-D1	5000	10	9.1	0.11	**2.06**	**1.65**
837-1025	RL1009-5820-97-D1	10 K	10	9.1	0.11	**2.06**	**1.65**
837-1047	RL1005-5744-103-D1	10 K	10	9.6	0.11	**2.06**	**1.65**
837-1030	RL1007-13.8K-120-D1	25 K	10	11.4	0.11	**2.15**	**1.72**
837-1045	RL1003-26.7K-140-D1	50 K	10	12.9	0.11	**2.15**	**1.72**
837-1035	RL1006-53.4K-140-D1	100 K	10	12.9	0.11	**2.15**	**1.72**
837-1040	RL1004-104.7K-155-D1	200 K	10	13.8	0.11	**2.15**	**1.72**
837-1048	RL1006-135.2K-138-D1	250 K	10	12.1	0.11	**2.15**	**1.72**
837-2000	RL2004-16.4-59-D1	25	20	5.6	0.22	**1.79**	**1.43**
837-2045	RL2007-32.8-59-D1	50	20	5.6	0.22	**1.79**	**1.43**
837-2005	RL2003-62.4-73-D1	100	10	6.9	0.22	**1.77**	**1.42**
837-2010	RL2006-125-73-D1	200	10	6.9	0.22	**1.77**	**1.42**
837-2015	RL2008-187-73-D1	300	10	6.9	0.22	**1.77**	**1.42**
837-2020	RL2003-289-95-D1	500	10	9.2	0.22	**1.77**	**1.42**
837-2050	RL2004-582-97-D1	1 K	10	9.2	0.22	**1.77**	**1.42**
837-2055	RL2007-1164-97-D1	2 K	10	9.1	0.22	**1.77**	**1.42**
837-2011	RL2006-1600-103-D1	2786	10	9.6	0.22	**1.77**	**1.42**
837-2012	RL2005-2203-120-D1	4 K	10	11.4	0.22	**1.88**	**1.50**
837-2065	RL2006-2753-120-D1	5 K	10	11.4	0.22	**1.88**	**1.50**
837-2035	RL2012-5506-120-D1	10 K	10	11.4	0.22	**1.92**	**1.54**
837-2070	RL2006-13.3K-140-D1	25 K	10	12.9	0.22	**1.88**	**1.50**
837-2013	RL2005-27K-138-D1	50 K	10	12.1	0.22	**1.88**	**1.50**
837-2040	RL2008-52.3K-155-D1	100 K	10	13.8	0.22	**1.88**	**1.50**
837-3060	RL3004-6.56-59-D1	10	20	5.6	0.32	**1.82**	**1.45**
837-3065	RL3504-31.2-73-D1	50	10	6.9	0.37	**1.80**	**1.44**
837-3051	RL3006-59.4-85-D1	100	10	8.4	0.32	**1.80**	**1.44**
837-3046	RL3004-144-95-D1	250	10	9.2	0.32	**1.80**	**1.44**
837-3078	RL3004-291-97-D1	500	10	9.1	0.32	**1.80**	**1.44**
837-3006	RL3005-574-103-D1	1000	10	9.6	0.32	**1.80**	**1.44**

*Resistance Ratio — ratio of zero power resistance @ 0°C to zero power resistance @ 50°C.

Inrush Current Limiters

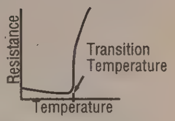
- ► **Protect Against High Peak Inrush Current, Especially in AC/DC Switching Power Supplies**
- ► **All Resistances ±25% @ 25°C**
- ► **All Parts Are Insulated with a Protective Coating**



Stock No.	Mfr.'s Type	Ro @ 25°C ±25% (Ohms)	Max. Steady State Current (Amps)	Approx. Resist. @ I Max. (Ω)	Max. Dia. In.	EACH	
						1-99	100-249
837-0010	CL-10	0.7	12.0	0.030	0.770	**1.97**	**1.58**
837-0011	CL-11*	0.7	12.0	0.030	0.770	**1.97**	**1.58**
837-0020	CL-20	1.3	8.0	0.040	0.550	**1.97**	**1.58**
837-0021	CL-21*	1.3	8.0	0.045	0.550	**1.97**	**1.58**
837-0030	CL-30	2.5	8.0	0.060	0.770	**1.97**	**1.58**
837-0040	CL-40	5.0	6.0	0.110	0.770	**1.97**	**1.58**
837-0050	CL-50	7.0	5.0	0.160	0.770	**1.97**	**1.58**
837-0060	CL-60	10.0	5.0	0.180	0.770	**1.97**	**1.58**
837-0070	CL-70	16.0	4.0	0.270	0.770	**1.97**	**1.58**
837-0080	CL-80	47.0	3.0	0.490	0.770	**1.97**	**1.58**
837-0090	CL-90	120.0	2.0	1.180	0.930	**2.14**	**1.71**
837-0100	CL-100	0.5	16.0	0.020	0.930	**2.14**	**1.71**
837-0101	CL-101*	0.5	16.0	0.020	0.930	**2.14**	**1.71**
837-0105	CL-110	10.0	3.2	0.180	0.400	**1.85**	**1.48**
837-0120	CL-120	10.0	1.7	0.340	0.400	**1.85**	**1.48**
837-0125	CL-130	50.0	1.6	0.760	0.450	**1.85**	**1.48**
837-0140	CL-140	50.0	1.1	0.890	0.450	**1.85**	**1.48**
837-0145	CL-150	5.0	4.7	0.110	0.550	**1.87**	**1.50**
837-0160	CL-160	5.0	2.8	0.200	0.550	**1.87**	**1.50**
837-0165	CL-170	16.0	2.7	0.330	0.550	**1.87**	**1.50**
837-0180	CL-180	16.0	1.7	0.490	0.550	**1.87**	**1.50**
837-0185	CL-190	25.0	2.4	0.410	0.550	**1.87**	**1.50**
837-0200	CL-200	25.0	1.7	0.490	0.550	**1.87**	**1.50**
837-0710	CL-210	30.0	1.5	0.600	0.400	**1.85**	**1.48**

*CL-11, CL-21 and CL-101 are approx. 1/3 the capacitance value of CL-10, CL-20 and CL-100.

PTC Thermistors



Positive temperature coefficient thermistors are characterized by an extremely large resistance change in a small temperature span. Temperature at which resistance begins to increase rapidly is referred to as the transition temperature (°C).

Stock No.	Mfr.'s Type	Oper. Volt V_{OP}	Ro @ 25°C ±30% (Ω)	Transition Temp. T_{TR} (°C)	Max. Dia. In.	EACH	
						1-99	100-249
837-4015	RL5305-1-120-12-PTO	12	1	120	0.60	**2.30**	**1.84**
837-4016	RL5305-2-120-12-PTO	12	2	120	0.60	**2.30**	**1.84**
837-2074	RL3005-10-110-12-PTO	12	10	110	0.35	**2.07**	**1.66**
837-2075	RL3005-25-110-12-PTO	12	25	110	0.35	**2.07**	**1.66**
837-3000	RL3006-50-30-25-PTO	25	50	30	0.35	**2.07**	**1.66**
837-3005	RL3006-50-40-25-PTO	25	50	40	0.35	**2.07**	**1.66**
837-3010	RL3006-50-50-25-PTO	25	50	50	0.35	**2.07**	**1.66**
837-3015	RL3006-50-60-25-PTO	25	50	60	0.35	**2.07**	**1.66**
837-3020	RL3006-50-70-25-PTO	25	50	70	0.35	**2.07**	**1.66**
837-3025	RL3006-50-80-25-PTO	25	50	80	0.35	**2.07**	**1.66**
837-3030	RL3006-50-90-25-PTO	25	50	90	0.35	**2.07**	**1.66**
837-3035	RL3006-50-100-25-PTO	25	50	100	0.35	**2.07**	**1.66**
837-3040	RL3006-50-110-25-PTO	25	50	110	0.35	**2.07**	**1.66**
837-3050	RL3006-50-120-25-PTO	25	50	120	0.35	**2.07**	**1.66**
837-3052	RL5506-5-65-50-PTO	50	5	65	0.60	**2.30**	**1.84**
837-3054	RL4006-10-110-50-PTO	50	10	110	0.45	**2.44**	**1.95**
837-4001	RL4010-50-110-50-PTO	50	50	110	0.45	**2.30**	**1.84**
837-4005	RL3312-200-110-50-PTO	50	200	110	0.40	**2.44**	**1.95**
837-6500	RL7510-10-120-120-PTO	120	10	120	0.80	**2.72**	**2.18**
837-6510	RL5510-25-60-120-PTO	120	25	60	0.60	**2.33**	**1.87**
837-4002	RL4510-50-120-120-PTO	120	50	120	0.50	**2.30**	**1.84**
837-4006	RL6315-40-110-240-PTO	240	40	110	0.65	**2.44**	**1.95**
837-5021	RL5515-50-65-240-PTO	240	50	65	0.60	**2.44**	**1.95**
837-5024	RL6315-50-110-240-PTO	240	50	110	0.65	**2.44**	**1.95**
837-5026	RL6015-100-120-240-PTO	240	100	120	0.65	**2.44**	**1.95**
837-2078	RL3020-1500-100-240-PTO	240	1500	100	0.35	**2.44**	**1.95**
837-2082	RL7020-1K-100-480-PTO	480	1000	100	0.75	**2.72**	**2.18**
837-2084	RL5020-2K-100-480-PTO	480	2000	100	0.55	**2.30**	**1.84**
837-2086	RL3020-5K-100-480-PTO	480	5000	100	0.35	**2.44**	**1.95**

PTC Resettable Fuses

Minimum Limit Current: The minimum amount of current required by the PTC to guarantee switching at the minimum ambient temperature. **Maximum Limit Current:** The maximum amount of current the PTC must be able to pass without switching at the maximum ambient temperature.

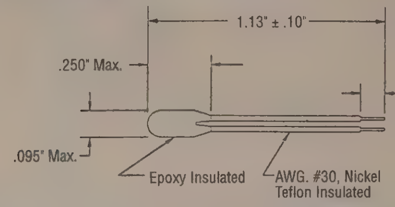
Stock No.	Mfr.'s Type	Oper. Volt VOP	No Load Resist. @ 25°C (±20%) (Ω)	Min. Limit Current (Amps)		Max. Limit Current (Amps)		Max. Dia. In.	EACH	
				0°C	20°C	30°C	55°C		1-99	100-249
837-4025	RL5305-1.0-110-12-PTF	12	1.0	1.45	1.32	0.84	0.64	0.60	**2.34**	**1.87**
837-4030	RL5305-2.5-110-12-PTF	12	2.5	0.92	0.84	0.53	0.40	0.60	**2.34**	**1.87**
837-4003	RL4005-5.0-110-12-PTF	12	5.0	0.55	0.50	0.32	0.24	0.45	**2.44**	**1.95**
837-2079	RL3005-10-110-12-PTF	12	10.0	0.32	0.30	0.19	0.14	0.35	**2.11**	**1.69**
837-2085	RL3005-25-110-12-PTF	12	25.0	0.20	0.19	0.12	0.09	0.35	**2.11**	**1.69**
837-2090	RL7008-1.5-110-25-PTF	25	1.5	1.34	1.22	0.77	0.59	0.75	**2.73**	**2.18**
837-2095	RL5008-3.0-110-25-PTF	25	3.0	0.84	0.76	0.48	0.37	0.55	**2.40**	**1.92**
837-5001	RL5506-5.0-110-50-PTF	50	5.0	0.65	0.59	0.37	0.29	0.60	**2.34**	**1.87**
837-4004	RL4006-10-110-50-PTF	50	10.0	0.39	0.35	0.22	0.17	0.45	**2.21**	**1.77**
837-4007	RL4508-25-110-50-PTF	50	25.0	0.27	0.24	0.15	0.12	0.50	**2.40**	**1.92**
837-4008	RL4010-50-110-50-PTF	50	50.0	0.19	0.17	0.11	0.08	0.45	**2.21**	**1.77**
837-4010	RL3810-100-110-50-PTF	50	100.0	0.13	0.12	0.08	0.06	0.42	**2.29**	**1.83**
837-6001	RL7510-10-110-120-PTF	120	10.0	0.55	0.50	0.32	0.24	0.80	**2.73**	**2.18**
837-6005	RL6010-20-110-120-PTF	120	20.0	0.37	0.34	0.21	0.16	0.65	**2.34**	**1.87**
837-4020	RL4510-50-110-120-PTF	120	50.0	0.19	0.17	0.11	0.08	0.50	**2.40**	**1.92**
837-3067	RL3510-100-110-120-PTF	120	100.0	0.13	0.12	0.07	0.06	0.40	**2.29**	**1.83**
837-3070	RL6315-50-110-240-PTF	240	50.0	0.23	0.21	0.13	0.10	0.65	**2.73**	**2.18**
837-3072	RL6315-100-110-240-PTF	240	100.0	0.16	0.15	0.09	0.07	0.65	**2.73**	**2.18**
837-3074	RL6315-250-110-240-PTF	240	250.0	0.10	0.09	0.06	0.05	0.65	**2.73**	**2.18**

Kits

Type A-681 Inrush Limiter Kit. Contains one each of 20 different types of current inrush limiters.
837-0681. A-681 ....**EACH 42.00**

Type A-973. Contains two each of 12 different types of surface mount glass encapsulated thermistors. Surface Mount Encapsulated NTC Kit
837-9901. A-973 ....**EACH 45.75**

Miniature Sensors 1°C Accuracy



- ▶ **Temperature Accuracy: ±1°C @ 25°C**
- ▶ **Dissipation Constant: 1.4 mW/°C**
- ▶ **Time Constant: 15 Seconds**
- ▶ **Operating Range: –50°C to +150°C**

Stock No.	Mfr.'s Type	R_0 @ 25°C	Temp. Coef. %/°C @ 25°C	Material	EACH
837-7006	RL0503-5820-97-MS	10 K	–4.40	MS97	**2.06**
837-7008	RL0503-27.53K-120-MS	50 K	–4.84	MS120	**2.06**
837-7010	RL0503-55.36K-122-MS	100 K	–4.78	MS122	**2.06**

Cryogenic Thermistors

Keystone cryogenic thermistors are extremely useful for liquid level detection in various cryogenic liquids. In this application, the thermistor is slightly self-heated by passing a small current through the unit. The heat generated in the unit is more easily dissipated when the thermistor is immersed in cryogenic fluid than when the fluid level falls below the thermistor. The resulting change in thermistor temperature is easily detected by the change in resistance.

Dissipation Constant in mW/°K

Electrical Input (mW)	O_2	N_2
1.0	2-4	2-7
10.0	5-15	4-14

Stock No.	Mfr.'s Type	For Operation in Liquid	Nominal Resistance (Ω)	Approximate Temperature Coefficient (%/°K)	EACH	
					1-99	100
837-5150	RL1004-10K-0-S1	Oxygen (90°K) Nitrogen (77°K)	10.0 K 31.5 K	–8.4 –10.4	**42.25**	**33.80**
837-5155	RL060628-31.7K-0-S1	Oxygen (90°K) Nitrogen (77°K)	31.7 K 100.0 K	–8.4 –10.4	**42.25**	**33.80**

Glass Encapsulated Thermistors

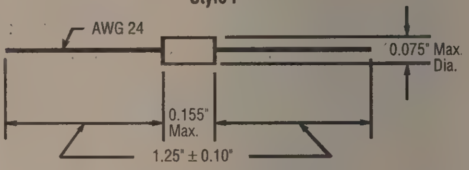
- ▶ **Temperature Range: –50°C to +204°C**
- ▶ **Time Constant: 3 Seconds**
- ▶ **Dissipation Constant: 2.0 mW/°C**
- ▶ **Tolerance: ±10% @ 25°C**

Keystone glass encapsulated NTC thermistors are tiny pellets of thermistor material hermetically sealed in glass bodies. The hermetic seal makes these parts extremely stable in applications up to 204°C (400°F).

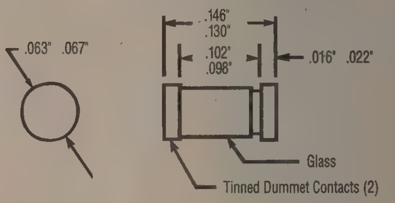
Stock No.	Mfr.'s Type	Resistance (Ω)								Temp. Coef. @ 25°C (%°C)	EACH	
		–25°C	0°C	25°C	50°C	75°C	100°C	150°C	204°C		1-99	100-249
837-5170	AL03006-165.9-55-G1*	1829.00	619.80	250	115.40	59.48	33.40	13.00	—	–3.34	**2.03**	**1.63**
837-5175	AL03006-331.8-55-G1*	3658.00	1239.00	500	230.80	119.00	66.80	26.01	—	–3.34	**2.03**	**1.63**
837-5185	AL03006-624-73-G1	10.11 K	2888.00	1 K	403.90	185.60	94.40	31.00	12.10	–3.83	**2.03**	**1.63**
837-5190	AL03006-1248-73-G1	20.22 K	5776.00	2 K	807.80	371.20	188.80	62.00	24.20	–3.83	**2.03**	**1.63**
837-5180	AL03006-1576-101-G1	46.75 K	10.17 K	2786	959.80	385.00	176.90	49.32	15.67	–4.68	**2.03**	**1.63**
837-5191	AL03006-1847-76-G1	30.54 K	8697.00	3 K	1201.00	543.30	272.00	86.25	32.46	–3.85	**2.03**	**1.63**
837-5192	AL03006-2463-76-G1	40.72 K	11.60 K	4 K	1602.00	724.40	362.70	115.00	43.30	–3.85	**2.03**	**1.63**
837-5193	AL03006-3079-76-G1	50.90 K	14.50 K	5 K	2002.00	905.50	453.40	143.80	54.10	–3.85	**2.03**	**1.63**
837-5195	AL03006-5818-97-G1	133.30 K	32.96 K	10 K	3577.00	1469.00	671.20	182.00	59.90	–4.41	**2.03**	**1.63**
837-5200	AL03006-11.7K-98-G1	253.00 K	64.16 K	20 K	7234.00	2966.00	1356.00	361.20	115.90	–4.34	**2.03**	**1.63**
837-5202	AL03006-17.53K-98-G1	379.50 K	96.20 K	30 K	10.80 K	4449.00	2034.00	541.80	173.80	–4.34	**2.03**	**1.63**
837-5205	AL03006-29.1K-97-G1	625.00 K	160.00 K	50 K	18.20 K	7510.00	3431.00	918.50	293.20	–4.32	**2.03**	**1.63**
837-5210	AL03006-58.2K-97-G1	1.25 M	319.90 K	100 K	36.40 K	15.02 K	6862.00	1837.00	586.40	–4.32	**2.03**	**1.63**
837-5215	AL03006-111.3K-123-G1	3.32 M	694.60 K	200 K	65.32 K	24.58 K	10.42 K	2492.00	725.20	–4.71	**2.03**	**1.63**
837-5220	AL03006-269.8K-138-G1	8.91 M	1.92 M	500 K	155.70 K	55.85 K	22.64 K	4943.00	1329.00	–4.99	**2.03**	**1.63**
837-5225	AL03006-535K-145-G1	18.72 M	3.90 M	1 Meg	305.30 K	106.90	42.47 K	8946.00	2329.00	–5.07	**2.03**	**1.63**

Note: For KCC type for Style II Delete AL prefix and add G100 suffix. Not stocked at Allied. *Max. Application Temp. is 150°C.

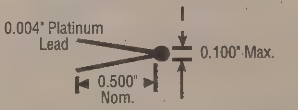
Style I



Style II (Surface Mount)



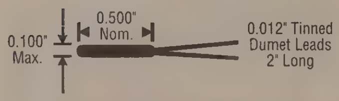
Glass Bead — Model G1



Time Constant
16 Sec.

Dissipation Constant
0.75 mW/°C

Glass Probe — Model G15



Maximum Operating Temperature = 260°C

Time Constant
17 Sec.

Dissipation Constant
1.20 mW/°C

Glass Beads and Glass Probes

Glass bead thermistors are exceptionally stable because the glass seal protects the thermistor from hostile environments.

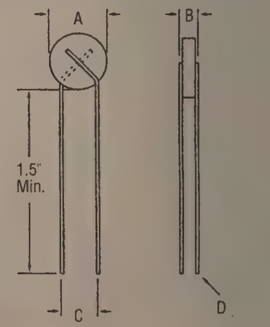
Stock No.	Mfr.'s Type	Resistance (Ω)								Temp. Coef. @ 25°C (%°C)	EACH	
		–25°C	0°C	25°C	50°C	75°C	100°C	150°C	204°C		1-99	100-249
837-5325	RL0504-8783-95-G1	189.30 K	48.48 K	15 K	5484.000	1049.00	290.30	104.0	38.6	–4.33	**7.88**	**6.30**
837-5330	RL0504-11.64K-97-G1	268.60 K	65.76 K	20 K	7206.000	1364.00	370.40	130.3	47.4	–4.39	**7.88**	**6.30**
837-5335	RL0504-16.92K-112-G1	462.60 K	105.30 K	30 K	10.180 K	1735.00	427.20	115.9	26.9	–4.64	**7.88**	**6.30**
837-5340	RL0504-27.76K-120-G1	803.50 K	182.20 K	50 K	16.500 K	2658.00	642.50	204.7	67.2	–4.77	**7.88**	**6.30**
837-5345	RL0504-55.53K-120-G1	1.61 M	364.50 K	100 K	33.000 K	5317.00	1285.00	409.4	134.4	–4.77	**7.88**	**6.30**
837-5350	RL0504-111.3K-125-G1	3.38 M	743.40 K	200 K	65.800 K	10.22 K	2416.00	762.2	249.2	–4.82	**7.88**	**6.30**
837-5355	RL0504-272.6K-148-G1	9.31 M	1.97 M	500 K	158.600 K	22.20 K	4700.00	1345.0	389.0	–5.00	**5.39**	**4.62**
837-5360	RL0504-530.5K-148-G1	18.99 M	3.94 M	5 Meg	301.700 K	41.74 K	8780.00	2494.0	729.0	–5.11	**7.88**	**6.30**
837-5370	RL0504-2.588M-176-G1	106.10 M	20.68 M	5 Meg	1.434 M	173.60 K	31.92 K	7910.0	1965.0	–5.31	**7.88**	**6.30**
837-5375	RL0504-11.64K-97-G15	268.60 K	65.76 K	20 K	7206.000	1364.00	370.40	130.3	47.4	–4.39	**11.63**	**9.30**
837-5380	RL0504-16.92K-112-G15	462.60 K	105.30 K	30 K	10.180 K	1735.00	427.20	115.9	26.9	–4.64	**11.63**	**9.30**
837-5385	RL0504-27.76K-120-G15	803.50 K	182.20 K	50 K	16.500 K	2658.00	642.50	204.7	67.2	–4.77	**11.63**	**9.30**
837-5390	RL0504-55.53K-120-G15	1.61 M	364.50 K	100 K	33.000 K	5317.00	1285.00	409.4	134.4	–4.77	**11.63**	**9.30**
837-5395	RL0504-111.3K-125-G15	3.38 M	743.40 K	200 K	65.800 K	10.22 K	2416.00	762.2	249.2	–4.82	**11.63**	**9.30**
837-5400	RL0504-272.6K-142-G15	9.31 M	1.97 M	500 K	158.600 K	22.20 K	4700.00	1345.0	389.0	–5.00	**11.63**	**9.30**
837-5405	RL0504-530.5K-148-G15	18.99	3.94 M	1 Meg	301.700 K	41.74 K	8780.00	2494.0	729.0	–5.11	**11.63**	**9.30**
837-5415	RL0504-2.588M-176-G15	106.10 M	20.68 M	5 Meg	1.434 M	173.60 K	31.92 K	7910.0	1965.0	–5.31	**11.63**	**9.30**

Tolerance on resistance values ±20% @ 25°C. Closer tolerances available. Beads have a maximum operating temperature of 260°C.

Standard Thermistors for Temperature Measurement

- ▶ **Operating Range: –50°C to +150°C**
- ▶ **D.C.: Dissipation Constant (mW/°C)**
- ▶ **T.C.: Time Constant (Seconds)**

Accuracy: ±1°C (0°C - 120°C)*.

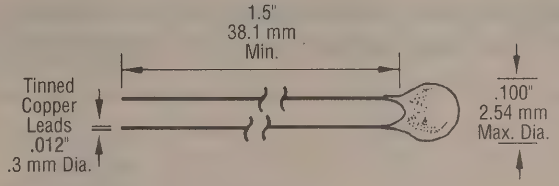


Stock No.	Mfr.'s Type	$R_{25°C}$	A Max. (In.)	B Max. (In.)	C Ref. (In.)	D AWG. (Dia.)	D.C. mW/°C	T.C. Sec.	EACH
837-7020	RL3005-574.0-103-SA	1000	0.32	0.14	0.25	24 (.020)	3.5	30	**1.89**
837-7022	RL2005-1148-103-SA	2000	0.22	0.14	0.15	24 (.020)	2.5	20	**1.85**
837-7024	RL2006-1600-103-SA	2786	0.22	0.15	0.15	24 (.020)	2.5	20	**1.85**
837-7026	RL2007-1723-103-SA	3000	0.22	0.16	0.15	24 (.020)	2.5	20	**1.85**
837-7028	RL1003-2871-103-SA	5000	0.11	0.11	0.10	26 (.016)	1.0	10	**2.15**
837-7030	RL1005-5744-103-SA	10000	0.11	0.13	0.10	26 (.016)	1.0	10	**2.15**

*Optional temperature accuracies are available upon request.

NTC Type C100 Thermistors

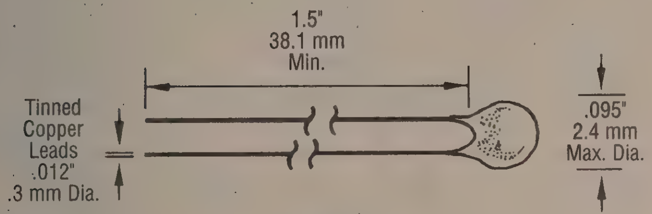
Well suited for temperature measurement, control and compensation applications, low cost makes them ideal for high volume applications such as energy management systems, small appliance controls, automotive and industrial equipment controls. These units exhibit faster still air response times than comparable glass probe devices while maintaining a relatively high dissipation constant and are manufactured to closer resistance tolerances. **Maximum Power Level:** 0.075 watt at 25°C (derating to zero watt at 100°C). **Dissipation Constant In Still Air:** 1 mW/°C. **Thermal Time Constant In Still Air:** 10 sec. Although suitable for applications in the temperature range of –80°C to +150°C, best stability is achieved at temperatures not exceeding 105°C.



C100

Stock No.	Mfr.'s Type	Res. @ 25°C	Tol. %	Curve	EACH	
					1-99	100-249
239-9100	C100F103G	10 K	2	F	3.26	2.99
239-9102	C100F103J	10 K	5	F	2.32	2.13
239-9104	C100Y103J	10 K	5	Y	2.32	2.13

NTC Type DC95 Thermistors



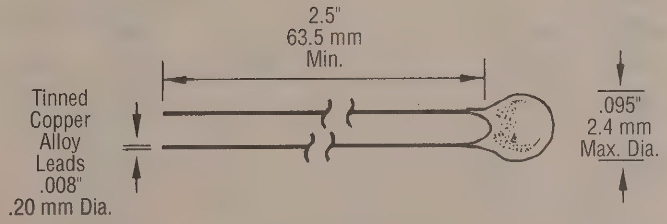
DC95

The DC95 NTC thermistors are manufactured using proven materials and techniques, making it possible to obtain close tolerances and resistance-temperature curve tracking at a low cost. The result is a rugged, stable, easy to handle device. All DC95 thermistors are epoxy coated for stability and have a maximum diameter of 0.095". Standard leads are 1.5" long. Each unit tracks a specified curve to within ±0.1°C or ±0.2°C over the temperature range of 0°C to 70°C. The DC95 thermistors have higher dissipation constants than glass-coated beads or probe-style thermistors and therefore can be used in circuits of moderate power levels. The thermal time constant of chip-style thermistors is comparable to that of large glass probes. This series chip thermistor is especially suitable for disposable and permanent medical product usage, as well as energy management systems, appliances, industrial equipment and automotive applications. **Maximum Power Level:** 0.075 watt at 25°C (derating to zero watt at 100°C). **Dissipation Constant In Still Air:** 1 mW/°C. **Thermal Time Constant In Still Air:** 10 sec. Although suitable for applications in the temperature range of –80°C to +150°C, best stability is achieved at temperatures not exceeding 105°C. Additional temperature ranges are available as special order items. Narrower temperature ranges may be specified for effective cost savings or to accomplish even tighter curve tracking tolerances as special order items. They are available in a large variety of sensor configurations, housings, enclosures and mountings as special order items.

Stock No.	Mfr.'s Type	Res. @ 25°C	Tol.	Temperature Range	Curve	EACH	
						1-99	100-249
239-9106	DC95F103V	10 K	±0.1°C	0°-70°C	F	10.03	9.20
239-9108	DC95F103W	10 K	±0.2°C	0°-70°C	F	3.62	3.32
239-9110	DC95F202W	2 K	±0.2°C	0°-70°C	F	3.62	3.32
239-9112	DC95F232W	2.3 K	±0.2°C	0°-70°C	F	3.62	3.32
239-9114	DC95F302V	3 K	±0.1°C	0°-70°C	F	10.03	9.20
239-9116	DC95F502W	5 K	±0.2°C	0°-70°C	F	3.62	3.32
239-9118	DC95G104W	100 K	±0.2°C	0°-70°C	G	3.62	3.32
239-9120	DC95G503W	50 K	±0.2°C	0°-70°C	G	3.62	3.32

NTC Type EC95 Thermistors

The EC95 NTC thermistors are manufactured using proven materials and techniques, making it possible to obtain close tolerances and resistance-temperature curve tracking at a low cost. The result is a rugged, stable, easy to handle device. All EC95 thermistors are epoxy coated for stability and have a maximum diameter of 0.095". Standard leads are 2.5" long. Each unit tracks a specified curve to within ±0.2°C over the temperature range of 0°C to 70°C or –20°C to 50°C. The EC95 thermistors have higher dissipation constants than glass coated beads or probe-style thermistors and therefore can be used in circuits of moderate power levels. The thermal time constant of chip-style thermistors is comparable to that of large glass probes. This series chip thermistor is especially suitable for disposable and permanent medical product usage, as well as energy management systems, appliances, industrial equipment and automotive applications. **Maximum Power Level:** 0.075 watt at 25°C (derating to zero watt at 100°C). **Dissipation Constant In Still Air:** 1 mW/°C. **Thermal Time Constant In Still Air:** 10 sec. Although suitable for applications in the temperature range of –80°C to +150°C, best stability is achieved at temperatures not exceeding 105°C. Additional temperature ranges are available as special order items. Narrower temperature ranges may be specified for effective cost savings or to accomplish even tighter curve tracking tolerances as special order items. They are available in a large variety of sensor configurations, housings, enclosures and mountings as special order items.



EC95

Stock No.	Mfr.'s Type	Res. @ 25°C	Tol.	Temperature Range	Curve	EACH	
						1-99	100-249
239-9122	EC95F103V	10 K	±0.1°C	0°-70°C	F	10.03	9.20
239-9124	EC95F103W	10 K	±0.2°C	0°-70°C	F	3.62	3.32
239-9126	EC95F202W	2 K	±0.2°C	0°-70°C	F	3.62	3.32
239-9128	EC95F302W	3 K	±0.2°C	0°-70°C	F	3.62	3.32
239-9130	EC95G104V	100 K	±0.1°C	0°-70°C	G	10.03	9.20
239-9132	EC95G104W	100 K	±0.2°C	0°-70°C	G	3.62	3.32
239-9134	EC95G503W	50 K	±0.2°C	0°-70°C	G	3.62	3.32
239-9136	EC95H303W	30 K	±0.2°C	0°-70°C	H	3.62	3.32

Internal and External Power Supplies, DC/DC Converters, Line Conditioners, UPS, SPS and Battery Systems, AC Receptacles, Outlet Strips, Surge and Noise Protection, Electrical Cord Ducting, Cords, Fused Power Outlets, Electrical Connectors, Line Filters

Manufacturer	Page
Acme Electric	453-455
Alpha	456
Ault	457-458
Belden	459, 460
BK Precision	461
Condor	462-468
Cosel U.S.A. Inc.	469-473
Elpac	474-476
LZR Electronics	477
Minute-Man	478
Oryx Power Products	479
Power-One	480-484
PPC/A Division of Qualtek	485-487
Schurter	488-490
Semiconductor Circuits, Inc.	491
SL Waber	492-495
Sola/Hevi-Duty (Sola, Best Power)	496-502
Staco Energy	503
Superior (Warner Electric)	504
Tripp Lite	505-507
Wiremold (Sentrex, Shape, Perma Power)	508-513

Product	Page
AC Receptacles	
PPC/A Division of Qualtek	486, 487
Schurter	488, 489
AC/AC Transformers, External	
Ault	457
Battery Chargers, AC/DC Wall Mount	
Ault	457
Conditioners, Power	
SL Waber	492
Sola	501, 502
Tripp Lite	505
WireMold	508
Connectors, AC Power Line	
PPC/A Division of Qualtek	487
Schurter	489
Converters, DC-DC	
Cosel U.S.A. Inc.	471, 473
Power-One	484
Semiconductor Circuits, Inc.	491
Cords	
Alpha	456
Belden	459, 460
PPC/A Division of Qualtek	485
DC/AC Inverters	
Tripp Lite	505
DC-DC Converters	
Cosel U.S.A. Inc.	471, 473
Power-One	484
Semiconductor Circuits, Inc	491
Encapsulated, On Board Switcher	
Cosel, U.S.A. Inc	471
Extension Cords/Cordsets	
Alpha	456
Belden	459, 460
PPC/A Division of Qualtek	485
Filters, Line	
Schurter	490
Fused Power Outlets	
Schurter	488
Inlets/Outlets-Connectors	
PPC/A Division of Qualtek	486, 487
Schurter	488, 489
International Power Cords	
Belden	460
Inverters	
DC/AC	
Tripp Lite	505
Line Conditioners	
SL Waber	492
Sola	501, 502
Tripp Lite	505
Wiremold	508, 509
Line Filters	
Schurter	490
Medical	
External Power Supplies	
Ault	457
Elpac	475
LZR	477
Internal Linears and Switchers	
Condor	463, 464
Oryx	479
Outlet Strips	
SL Waber	493
Wiremold	511, 513
Power Cords	
Belden	460
PPC/A Division of Qualtek	485
Surge Suppression	
SL Waber	493
Modules, Power Entry, FilterFit	
Schurter	490
Outlet Strips	
20 Amp	
SL Waber	493, 494
Wiremold	511
90°	
SL Waber	493, 494
Wiremold	513
250 VAC, 15 Amp, 10 Amp	
SL Waber	493
Cabinet	
Wiremold	511
Compact	
Wiremold	512
Deluxe Control	
SL Waber	494
Wiremold	511
Industrial	
SL Waber	493
Wiremold	512
Medical	
SL Waber	493
Wiremold	511
Mounting Ears	
Wiremold	512
Permanent Installation	
SL Waber	493
Rackmount	
SL Waber	493
Wiremold	513
Residential	
SL Waber	493
Trim-Line (2', 4', 6')	
SL Waber	493
Wiremold	512
Power Conditioners, Portable and Hard Wired	
SL Waber	492
Sola	501, 502
Power Line Conditioners (See Line Conditioners)	
Power Outlets, Fused	
PPC/A Division of Qualtek	486, 487
Schurter	488
Power Supply and Extension Cords	
Alpha	456
Belden	459, 460
PPC/A Division of Qualtek	485
Power Supplies	
Base Station	
Tripp Lite	505
Bench, Test	
BK Precision	461
Constant Voltage, Regulated	
Sola	498
High Power Adjustable	
Sola	498
European, Tabletop and Wallmount	
Elpac	476
Medical, External	
Ault	457
Elpac	475
Portable, 120 VAC to 13.8 VDC	
Tripp Lite	505
Solid, PC Mount, Chassis	
Sola	497
Universal Desktop, World-Wide Agency Approvals	
LZR	477
Unregulated, Wallmount, North American	
Elpac	476
Power Supplies, Linear, External	
Ault	458
Elpac	474, 475, 476
LZR	477
Power Supplies, Linear, Internal	
Commercial	
Acme Electric	453, 454
Condor	462
Power-One	481
Sola	497, 498, 499
Encapsulated, Linear, Chassis and PC	
Sola	497
High Power, Adjustable	
Sola	498
Medical	
Condor	463, 464
Power Supplies, Switching, External	
Ault	458
Elpac	474
LZR Electronics	477
Power Supplies, Switching, Internal	
Commercial	
Acme Electric	454, 455
Condor	464, 465, 466, 467, 468, 471
Cosel U.S.A. Inc.	469, 470, 471, 472
Oryx	479
Power-One	480, 483, 482
Sola	499, 500
Encapsulated, On Board	
Cosel U.S.A. Inc.	471
Enclosed	
Condor	468
Medical	
Condor	463, 464
Oryx	479
On Board	
Cosel U.S.A. Inc.	471
Wide Range	
Condor	465
Receptacles, AC	
PPC/A Division of Qualtek	486, 487
Regulators, Voltage	
Staco	503
Wiremold	509
Retractile Cords	
Belden	460
Surge and Noise Protection Strips, All Applications	
SL Waber	492, 495
Superior (Warner Electric)	504
Tripp Lite	506
Wiremold	510, 513
Strips (See Outlet Strips)	
Transformers (Also See Extensive Listing in Section 16)	
AC/AC, Wall Mount	
Ault	457
Variable, Enclosed	
Staco	503
Portable Isolation	
Tripp Lite	505
Transient Voltage Suppression	
Superior (Warner Electric)	504
Uninterruptible Power Systems	
Minute-Man	478
SL Waber	492
Sola/Hevi-Duty (Best Power)	496, 497
Staco	503
Superior (Warner Electric)	504
Tripp Lite	507
Wiremold	509
Voltage Regulators	
Staco	503
Wiremold	509

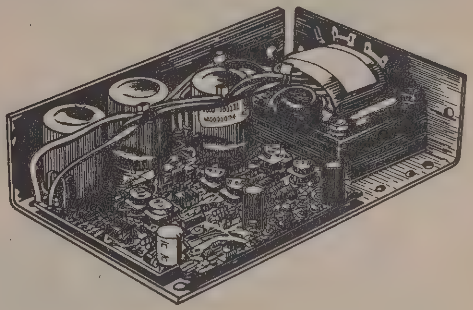
How to Select a Power Supply

There are times when you need a power supply but you don't have a part number to reference. You know the end application but you have many power supplies to choose from. How do you determine what type of supply to purchase. Here are some hints to make your search/selection easier.

Linear???	Or	Switcher???
8-750 Watts	**Power Level**	30-400 Watts
Larger	**Size**	Smaller
Heavier	**Weight**	Lighter
<5 mV	**Output Ripple**	<50 mV
Runs Warm	**Temperature**	Runs Cool
115/230 VAC	**AC Input**	85-264 VAC
40% Typical	**Efficiency**	75% Typical

SPW Series Regulated Linear Power Supplies

- **World-Wide AC Input Range**
- **World-Wide Safety Standards**
- **UL, CSA, and TUV Approved**
- **Industry Standard Package**
- **Built-In OVP on 5 V Output**
- **Optional OVP for Other Outputs**
- **Overload Protection with Automatic Recovery**
- **100% Burn-In**



Specifications
AC Input Voltage. Input Voltage: 100/120/220/230/240 selectable. **Frequency Range:** 47-63 Hz typical, 60 Hz; 10% derated output current for 50 Hz. **Transient Response:** 50 msec at 50% load changes. **DC Output. DC Output Adjustment Range:** ±5%, min. **Line Regulation:** ±0.05% for 10% line change. **Load Regulation:** ±0.05% for 50% load change. **Ripple:** 3.0 mV P-P, max. **Overvoltage Protection:** standard on all 5 V output; factory set at 6.2 V ±0.4 V; other outputs use optional OVP. **Remote Sensing:** provided on main outputs; refer to output rating chart. **General. Stability:** ±0.05% for 24 hours after warm-up. **Operating Temperature:** 0° to 50°C derate to 40% at +70°C. **Temperature Coefficient:** ±0.01%/°C, typical. **EMI/RFI:** inherently low conducted and radiated noise levels; meet requirements of FCC CLass B and VDE 0871 Class B. **Overload Protection:** automatic current limit/foldback. **Safety Specification:** recognized to UL, CSA and TUV.

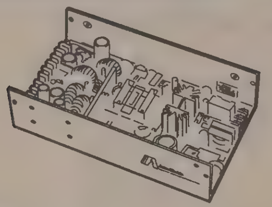
Dimensions

Case	Inches L × W × H	MM L × W × H	Weight Lbs.	Case	Inches L × W × H	MM L × W × H	Weight Lbs.
A	3.99 × 4.84 × 2.37	101.35 × 122.94 × 60.20	2.43	G	11.00 × 4.87 × 3.46	279.40 × 123.70 × 87.89	8.82
B	5.62 × 4.87 × 3.33	142.75 × 123.70 × 84.59	4.00	G1	11.00 × 4.87 × 3.71	279.40 × 123.70 × 94.24	8.82
C	7.00 × 4.87 × 3.81	177.80 × 123.70 × 96.78	7.28	H	6.50 × 4.00 × 2.07	165.10 × 101.60 × 52.58	2.20
D	7.00 × 4.87 × 3.13	177.80 × 123.70 × 79.51	4.41	I	9.00 × 4.87 × 3.72	228.60 × 123.70 × 94.49	7.50
F	10.25 × 4.00 × 3.09	260.35 × 101.60 × 78.49	5.07	J	14.00 × 4.87 × 3.53	355.60 × 123.70 × 89.67	10.00

Stock No.	Mfr.'s Type	Watts	Output 1		Output 2		Output 3		Case	EACH	
			VDC	Amps	VDC	Amps	VDC	Amps		1-9	10-24
923-9640	SPWS-53-OV	15	5	3.0*					A	**43.50**	**42.50**
923-9641	SPWS-56-OV	30	5	6.0*					B	**64.70**	**63.12**
923-9642	SPWS-59-OV	45	5	9.0*					C	**102.00**	**92.97**
923-9643	SPWS-512-OV	60	5	12.0*					I	**118.00**	**108.30**
923-9644	SPWD-30	30	+5	3.0*†	+12	1.5†			C	**77.40**	**72.82**
923-9645	SPWD-80	80	+5	6.0*†	+12	3.4*†			I	**109.00**	**102.69**
923-9646	SPWT-20	20	+5	2.0*†	+12 +15	0.4† Or 0.4†	−12 −15	0.4† Or 0.4†	H	**64.70**	**60.17**
923-9647	SPWT-40	40	+5	3.0*†	+12 +15	1.0 Or 0.8	−12 −15	1.0 Or 0.8	F	**85.90**	**81.97**
923-9648	SPWT-60	60	+5	6.0*	+12 +15	1.0* Or 0.8*	−12 −15	1.0* Or 0.8*	I	**109.00**	**103.55**
923-9649	SPWT-75	75	+5	6.0*†	+12 +15	1.8 Or 1.5	−12 −15	1.8 Or 1.5	G	**118.00**	**112.24**
923-9650	SPWT-80	80	+5	9.0*†	+12 +15	1.8 Or 1.5	−12 −15	1.8 Or 1.5	G1	**135.00**	**124.42**
923-9651	SPWT-90	90	+5	3.0*	−5	0.5	+24	3.0†	G	**147.00**	**138.43**
923-9652	SPWS-1217	20	12 15	1.7* Or 1.5*					A	**43.50**	**41.66**
923-9653	SPWS-1234	40	12	3.4*					B	**60.40**	**57.54**
923-9654	SPWS-1251	60	12	5.1*					C	**89.00**	**84.82**
923-9655	SPWS-1268	80	12	6.8*					I	**130.00**	**123.77**
923-9656	SPWD-1210	24	+12 +15	1.0* Or 0.8*	−12 −15	1.0 Or 0.8			H	**53.00**	**44.05**
923-9657	SPWD-1218	43	+12 +15	1.8* Or 1.5*	−12 −15	1.8 Or 1.5			D	**73.10**	**69.08**
923-9658	SPWD-1234	91	+12	3.4*†	−12	3.4*†			I	**102.00**	**95.55**
923-9659	SPWS-1530	45	15	3.0*					B	**60.40**	**55.94**
923-9660	SPWS-1545	67	15	4.5*					C	**89.00**	**84.82**
923-9661	SPWS-1560	90	15	6.0*					I	**126.00**	**116.11**
923-9662	SPWD-1530	90	+15	3.0*	−15	3.0*			I	**102.00**	**57.54**
923-9663	SPWS-2412	28	24	1.2*					A	**43.50**	**41.66**
923-9664	SPWS-2424	57	24	2.4*					B	**60.40**	**57.54**
923-9665	SPWS-2436	86	24	3.6*					C	**89.00**	**84.82**
923-9666	SPWS-2448	115	24	4.8*					I	**130.00**	**123.77**
923-9667	SPWS-2472	172	24	7.2*					J	**162.00**	**153.36**
923-9668	OVP-21	OVP Module for all SPW Series Power Supply								**10.00**	**9.20**

*With Remote Sense. †Isolated Output.

LSW200 Series 200 Watt Output Switchmode Power Supplies



Input Specifications
- Input Voltage: 90-30 or 180-260 VAC (Autoranging)
- Input Frequency: 47-440 Hz
- Input Current: 4.5 A (rms) for 115 VAC; 2.6 A (rms) for 230 VAC

Output Specifications
- Total Output Power: 25-200 Watts

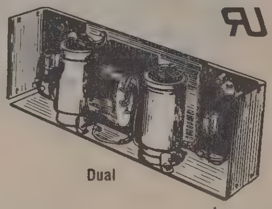
Standard Features
- Autoranging Universal Input
- Built-In EMI Filter
- Short Circuit Protection with Auto Recovery
- Power Failure Detection
- 100% Burn-In at Full Rated Load
- Quantity Pricing Always Available

The LSW200 series is comprised of single and multiple output models for 200 watts of continuous output power. The autoranging input allows the units to operate from any line voltage throughout the world without a selector strap. All auxiliary outputs are equipped with magnetic amplifiers or linear regulators for maintaining regulation. The units are constructed on a printed circuit board with a U-bracket for mechanical support and heat sinking.

Stock No.	Mfr.'s Type	Output 1				Output 2 (1)				Output 3				Output 4				EACH
		Vnom	Imin.	Imax.	Tol.	Vnom	Imin.	Imax.	Tol.	Vnom	Imin.	Imax.	Tol.	Vnom	Imin.	Imax.	Tol.	1-4
923-9865	LSWS20010	5 V	3.0 A	40.0 A	2%	—	—	—	—	—	—	—	—	—	—	—	—	255.00
923-9870	LSWS20012	12 V	1.2 A	16.7 A	2%	—	—	—	—	—	—	—	—	—	—	—	—	255.00
923-9875	LSWS20013	15 V	1.0 A	13.4 A	2%	—	—	—	—	—	—	—	—	—	—	—	—	255.00
923-9880	LSWS20016	24 V	0.6 A	8.4 A	2%	—	—	—	—	—	—	—	—	—	—	—	—	255.00
923-9885	LSWQ20040	±5 V	3.0 A	30.0 A	2%	±12 V	0 A	8 A	4%	–12 V	0 A	4 A	4%	5 V	0 A	6 A	4%	271.00
923-9890	LSWQ20041	±5 V	3.0 A	30.0 A	2%	±15 V	0 A	6 A	4%	–15 V	0 A	4 A	4%	24 V	0 A	4 A	4%	271.00
923-9895	LSWQ20042	±5 V	3.0 A	30.0 A	2%	±12 V	0 A	8 A	4%	–12 V	0 A	4 A	4%	12 V	0 A	4 A	4%	271.00
923-9900	LSWQ20044	±5 V	3.0 A	30.0 A	2%	±12 V	0 A	8 A	4%	–15 V	0 A	4 A	4%	15 V	0 A	4 A	4%	271.00
923-9905	LSWQ20045	±5 V	3.0 A	30.0 A	2%	±12 V	0 A	8 A	4%	–12 V	0 A	4 A	4%	24 V	0 A	4 A	4%	271.00

Notes: 1) Peak current is 12 A on +12, 9 A on +15, and 6 A on +24. 2) Output 1 — single output; Output 4 — floating, they can be connected externally for a positive or negative output. 3) 200 watt requires 350 LFM of moving air, 150 watts for convection (maximum current of Output 1 and 2 to 70%).

SPS "Blue-Line" Series 15 to 350 Watts of DC Power



Dual

Standard Features
- Adjustable Output Voltage
- Selectable Input 115/230 VAC, 47-440 Hz
- Temperature Compensated Circuitry
- Floating Outputs on Most Models
- UL Recognized
- Remote Sense on High-Output Current Units
- Safety Shielding for Logic Level (5 VDC) Single Output Power Supplies
- Computer-Grade Capacitors
- 24 Month Warranty
- Quantity Pricing Always Available

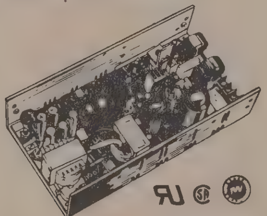
Optional Features
- Overvoltage Protection Available

The SPS "Blue-Line" Series offers a total of 17 models to choose from. Single, dual, and triple outputs satisfy virtually any voltage current requirement for your system application. AC input voltage capabilities are 115/230 VAC at 47-440 Hz. (Fan cooled units operate 47-63 Hz only.) The SPS Series is a time proven, durably designed open-frame power supply with industry standard voltages and currents.

Single Output

Stock No.	Mfr.'s Type	Output		EACH
		VDC	Amp	1-4
923-5005	SPS 155	5	1.5	57.20
923-5010	SPS 305	5	3.0	64.70
923-5075	SPS 1512	12	0.8	57.20
923-5080	SPS 3012	12	1.8	64.70
923-6015	SPS 3015	15	1.6	64.70
923-6055	SPS 302428	24/28	1.2	64.70
923-6065	SPS 602428	24/28	2.5	131.00
923-6070	SPS 1202428	24/28	6.0	195.00

High Reliability 250 Watt Switcher

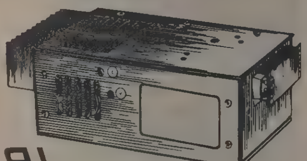


- MTBF 200,000 Hrs. Calculated Per MIL-217E
- Meets FCC and VDE Levels A Emission Standards
- Meets UL 1459 and 1950, CSA 22.2-220, IEC 950, EN60950 Licensed
- Automatic Input Voltage Range Selection (90-132/180-264)
- Power Fail/Remote Inhibit
- All Outputs Floating
- High Temperature Burn-In
- 20 Millisecond Minimum Hold-Up Time at Low Line, Full-Load
- In-rush Current Limiting
- Remote Sense and Built-In OVP on Main 5 V Output
- Covers Optional
- Chassis Dimensions: Multiple Output — 2.5" × 5.0" × 10.5", 3 Lb., 12 Oz.; Single Output — 2.5" × 5.0" × 9.5", 3 Lb., 1 Oz.
- Quantity Pricing Always Available

Stock No.	Mfr.'s Type	Output 1 (VDC/Amp)	Output 2 (VDC/Amp)	Output 3 (VDC/Amp)	Output 4 (VDC/Amp)	EACH
						1-4
923-1910	25A1-9100002	5 V @ 50 A	—	—	—	340.00
923-1920	25A1-9200002	12 V @ 21 A	—	—	—	340.00
923-1940	25A1-9400002	24 V @ 11 A	—	—	—	340.00
923-1950	25A1-9500002	48 V @ 6 A	—	—	—	340.00
923-3912	25A3-9122002	5 V @ 35 A	12 V @ 5 A[3]	12 V @ 5 A[3]	12 V @ 1.5 A[2]	423.00
923-4914	25A4-9122402	5 V @ 35 A	12 V @ 5 A[3]	12 V @ 5 A[3]	24 V @ 2.0 A[1]	471.00

[1] Quasi-regulated. [2] Fixed output (±4%). [3] 8 APK for 50 ms. [4] OUP on all outputs.

CPS "Blue-Line" Series Enclosed 30 to 500 Watts of DC Power



Electrical Specifications

AC Input
- Input Voltage: 115/230 VAC ±10%
- Frequency: 47-440 Hz (CPS 500 Series: 47-63 Hz Only)

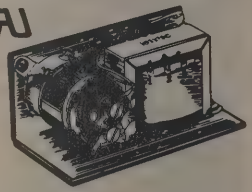
DC Output
- Output Voltage/Current: See Selection Chart
- Voltage Adjustment Range: ±10% Nominal
- Floating Outputs: All Models Have Floating, Independent Outputs
- Regulation (Line): ±0.1% Over Line
- Regulation (Load): ±0.1% No Load to Full Load
- Ripple and Noise: 0.1% Pk-Pk (20 MHz Bandwidth)
- Transient Response: Recovers in 50 Microseconds for 50% Load Change
- Short-Circuit Protection: Fold-Back Type Current Limiting, Factory Set for 120% Rated Load Maximum
- Remote Sense Connections Used in Both Local and Remote Mode Assure All Specifications
- Quantity Pricing Always Available

The CPS "Blue-Line" Series offers a total of 6 models in an enclosed design for maximum personal safety AC input voltage capabilities are 115/230 VAC at 47-440 Hz. (Fan cooled units operate 47-63 Hz only).

Stock No.	Mfr.'s Type	Output		EACH
		VDC	Amp	1-4
923-8110	CPS 30-12	12	1.8	107.00
923-8120	CPS 30-24/28[1]	24/28	1.2	107.00
923-8125	CPS 60-24/28[1]	24/28	2.5	218.00
923-8130	CPS 120-24/28[1]	24/28	6.0	269.00
923-8135	CPS 220-24/28[2]	24/28	12.0	349.00
923-9950	CPS 500-24/28[2]	24/28	20.0	642.00

[1] PDT adjustable 24-28 VDC (shipped with 24 V output). [2] Transformer tapped for 24 and 28 VDC operation (shipped with 24 V output).

"Black-Line" Series Bulk Power DC Supplies



High Reliability — Efficient Bulk Power

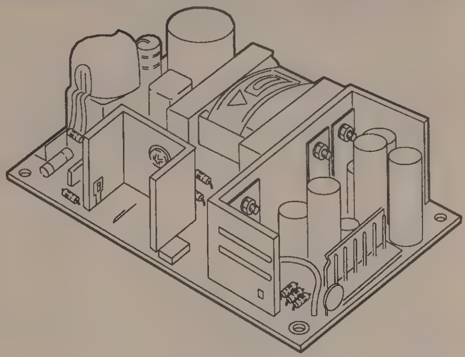
- High Surge-Current Capabilities
- MTBF to 500,000 Hrs. Per MIL 271E
- Maximum Efficiency to 90%
- UL Recognized to UL 478
- FCC Level B EMI
- Floating Output
- Quantity Pricing Always Available

The "Black-Line" series is a low-cost alternative for many DC power applications where regulation is not needed . . . "raw power" without the bells and whistles but retaining high-quality components assures reliable performance in unregulated applications such as powering solenoids, DC motors, relays, lamps, and signal systems.

Stock No.	Mfr.'s Type	Full Load (VDC)	Full Load (Amps)	EACH
				1-4
923-7691	30B7H	7.5	3.0	60.40
923-0910	60B7H	7.5	6.0	60.40
923-6000	100B7H	8.5	10.0	102.00
923-0930	30B12H	12.0	2.4	60.40
923-0935	60B12H	12.0	4.8	88.00
923-0940	100B12H*	12.5	7.0	103.00
923-0945	200B12H	12.5	15.0	121.00
923-0975	100B20H*	19.4	5.0	103.00
923-0980	200B20H	20.0	10.0	121.00
923-0990	30B24H	26.5	1.2	60.40
923-0995	60B24H	26.5	2.4	88.00
923-1000	100B24H	25.5	3.5	103.00
923-1005	200B24H	27.5	7.5	121.00
923-9924	750B24H	26.7	30.0	342.00
923-1075	500B24H*	24.6	20.0	186.00
923-9000	200B48H	47.0	4.0	121.00
923-1100	500B48H	48.4	10.0	184.00
923-9925	750B48H	53.0	15.9	342.00

*CSA certified.

LSW Series — Low Profile Switchers



- ► Compact Size
- ► Universal Input Range: 85 to 264 VAC
- ► High Efficiency
- ► Up to Four Outputs
- ► Input RFI Filter to VDE Standards
- ► Current Mode, MOSFET Topology
- ► Overcurrent and Overvoltage Protection Main Output
- ► 100% Burn-In
- ► Open PCB Construction
- ► UL Listed, CSA Certified, TUV Approved

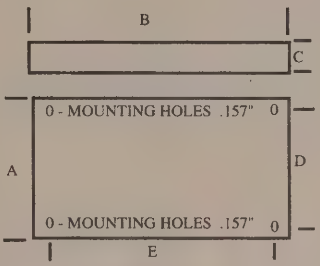
Specifications

AC Input. Input Voltage: 85-264 VAC. **Frequency:** 47-440 Hz. **Current:** LSW30 — 0.8 A at 115 VAC, 0.5 A at 230 VAC; LSW40 — 1.2 A at 115 VAC, 0.7 A at 230 VAC; LSW65 — 1.6 A at 115 VAC, 1.0 A at 230 VAC; LSW110 — 3 A at 115 VAC, 1.8 A at 230 VAC. **Inrush Current:** LSW30, LSW40, LSW110 — 15 A at 115 VAC - cold start, 30 A at 230 VAC - cold start; LSW65 — 30 A at 115 VAC - cold start, 60 A at 230 VAC - cold start. **Leakage Current:** to EN60950. **DC Output. Output Range:** ±5% on main output. **Line Regulation:** ±0.5%. **Load Regulation:** 1% single output, 3% main output (50 to 100% load change). **Cross Regulation:** 5% typical. **Ripple and Noise:** 1% peak to peak typical. **Overload Protection:** overload and short circuit protected. **Overvoltage Protection:** 5.6-6.6 V on +5 V. **Minimum Load:** approximately 10% on main output. **Power Failure:** on LSW110 series only. **Efficiency:** 65% min. at full load. **Holdup Time:** LSW30, LSW110 — 12 msec; LSW40, LSW65 — 10 msec. **General. Operating Temperature:** 0° to 50°C. MTBF: 100,000 hours minimum. **RFI Performance:** VDE 0871A A (some units to "B"). **Cooling:** some units require forced air for maximum output power.

Input Connection Details

Mfr.'s Type	Connector Type
LSWX-30XX	Molex 0950-3031
LSWX-40XX	Molex 0950-3031

Mfr.'s Type	Connector Type
LSWX-65XX	Molex 0950-3031
LSWX-110XX	Molex 0950-3051



Output Connection Details

LSWS-301X	Molex 0950-3061, 08-50-0106 Crimps
LSWT-303X	Molex 0950-3061, 08-50-0106 Crimps
LSWS-401X	Molex 0950-3061, 08-50-0106 Crimps
LSWT-403X	Molex 0950-3061, 08-50-0106 Crimps
LSWS-651X	Molex 0950-3081, 08-50-0106 Crimps

LSWT-653X	Molex 0950-3081, 08-50-0106 Crimps
LSWQ-654X	Molex 0950-3081, 08-50-0106 Crimps
LSWS-1101X	Molex 0950-3139, 08-50-0106 Crimps
LSWQ-1104X	Molex 0950-3139, 08-50-0106 Crimps
—	—

Dimensions

Tolerance of Size Measurement: .02".

Mfr.'s Type	Dimensions — Inches					Weight oz.
	A	B	C	D	E	
LSWX-30XX	2.76	5.12	1.20	2.36	4.72	9.9
LSWX-40XX	3.00	5.00	1.20	2.55	4.55	10.6

Mfr.'s Type	Dimensions — Inches					Weight oz.
	A	B	C	D	E	
LSWX-65XX	3.50	6.00	1.77	3.15	4.80	13.4
LSWX-110XX	4.25	7.00	1.85	3.75	6.50	21.2

Stock No.	Mfr.'s Type	Watts	Output 1		Output 2		Output 3		Output 4		EACH	
			VDC	Amps	VDC	Amps	VDC	Amps	VDC	Amps	1-9	10-24
923-9600	LSWS-3010	25	5	5.0							**48.80**	**46.01**
923-9601	LSWS-3012	30	12	2.5							**48.80**	**46.01**
923-9602	LSWS-3013	30	15	2.0							**48.80**	**46.01**
923-9603	LSWS-3014	30	24	1.3							**48.80**	**46.01**
923-9604	LSWT-3030	30	5	3.0	12	1.5	−5	0.2			**48.80**	**46.01**
923-9605	LSWT-3031	30	5	3.0	12	1.5	−12	0.2			**48.80**	**46.01**
923-9606	LSWT-3032	30	5	3.0	15	1.5	−15	0.2			**48.80**	**46.01**
923-9607	LSWT-3033	30	5	3.0	15	1.5	−12	0.2			**48.80**	**46.01**
923-9608	LSWS-4010	40	5	8.0							**58.30**	**56.05**
923-9609	LSWS-4012	40	12	3.5							**58.30**	**56.05**
923-9610	LSWS-4013	40	15	3.0							**58.30**	**56.05**
923-9611	LSWS-4014	40	24	2.0							**58.30**	**56.05**
923-9612	LSWT-4030	40	5	3.0	12	2.0	−5	0.3			**58.30**	**56.05**
923-9613	LSWT-4031	40	5	3.0	12	2.0	−12	0.3			**58.30**	**56.05**
923-9614	LSWT-4032	40	5	3.0	15	2.0	−15	0.3			**58.30**	**56.05**
923-9615	LSWT-4033	40	5	3.0	15	2.0	−12	0.3			**58.30**	**56.05**
923-9616	LSWT-4039	40	5	3.0	24	1.0	−12	0.3			**58.30**	**56.05**
923-9617	LSWS-6510	50	5	10.0							**68.90**	**66.23**
923-9618	LSWS-6512	65	12	5.5							**68.90**	**66.23**
923-9319	LSWS-6513	65	15	4.5							**68.90**	**66.23**
923-9620	LSWS-6514	65	24	3.0							**68.90**	**66.23**
923-9621	LSWT-6530	65	5	6.0	12	3.0	−5	0.5			**68.90**	**66.23**
923-9622	LSWT-6531	65	5	6.0	12	3.0	−12	0.5			**68.90**	**66.23**
923-9623	LSWT-6532	65	5	6.0	15	3.0	−15	0.5			**68.90**	**66.23**
923-9624	LSWT-6533.	65	5	6.0	15	3.0	−12	0.5			**68.90**	**66.23**
923-9625	LSWT-6539	65	5	6.0	24	2.0	−12	0.5			**68.90**	**66.23**
923-9626	LSWQ-6540	65	5	6.0	12	3.0	−12	0.5	−5	0.5	**68.90**	**66.23**
923-9627	LSWS-11010*	110	5	22.0							**139.00**	**128.65**
923-9628	LSWS-11012*	110	12	9.0							**139.00**	**128.65**
923-9629	LSWS-11013*	110	15	7.5							**139.00**	**128.65**
923-9630	LSWS-11014*	110	24	4.5							**139.00**	**128.65**
923-9631	LSWQ-11040*	110	5	10.0	12	5.0	−12	1.0	−5	1.0	**139.00**	**128.65**
923-9632	LSWQ-11042*	110	5	10.0	12	5.0	−12	1.0	12	1.0	**139.00**	**128.65**
923-9633	LSWQ-11045*	110	5	10.0	12	5.0	−12	1.0	24	1.0	**139.00**	**128.65**
923-9634	LSWQ-11046*	110	5	10.0	15	4.0	−15	1.0	−5	1.0	**139.00**	**128.65**

*Needs 25 CFM Air Flow. 80 W if Convection Cooled.

Class and Type Designations

Cords on this page are UL listed. The type designations of the National Electrical Code are as follows: **SJ** — junior hard-service cord. Rubber insulation, ethylene propylene rubber or other rubber jacket. 300 V. **SJO** — junior hard-service oil-resistant cord. Rubber insulation, PVC jacket or neoprene jacket. 300 V. **SJT** — junior hard-service cord. Polyvinyl chloride insulation and jacket. 300 V. **SPT-1** — all plastic parallel cord. 30 mils polyvinyl chloride insulation/jacket. 300 V. **SV** — rubber insulation, rubber jacket, 300 V. **SVT** — all plastic cord. Polyvinyl chloride insulation/jacket. 300 V.

3 Conductor Electronic Line Cords, Unshielded

Stock No.	Mfr.'s Type	Color	AWG	UL Type	Length	Rating @ 125V		Fig.	EACH	
						Watts	Amps		1-24	25-Up*
663-7087	523	Black	18	SVT	7' 6"	1250	10	A	**3.11**	**2.83**

*Contact the closest sales office for quantity pricing.

3 Conductor Extension Cords

Type SJ cord is rubber. Adapter is rated for 15 amps. 125 V service and is UL listed.

Stock No.	Mfr.'s Type	Color	AWG	UL Type	Length	Rating @ 125V		Fig.	EACH	
						Watts	Amps		1-24	25-Up*
663-7046	633	Black	16	SJ	10'	1625	13	B	**7.59**	**6.90**

*Contact the closest sales office for quantity pricing.

3 Conductor Power Supply Cords

Type SJT Vinyl, SJ Rubber and SJO Neoprene. Hard service cord sets with molded vinyl plug rated for 15 amps, 125 volt service. UL listed, CSA certified.

Stock No.	Mfr.'s Type	Color	AWG	UL Type	Length	Rating @ 125V		Fig.	EACH	
						Watts	Amps		1-24	25-Up*
663-7020	615	Black	18	SJ	6'	1250	10	C	**4.56**	**4.06**
663-7023	780	Gray	18	SJT	6'	1250	10	C	**1.87**	**1.67**
663-7021	778	Black	18	SJ	8'	1250	10	C	**5.12**	**4.65**
663-7083	779	Gray	18	SJT	8'	1250	10	C	**3.35**	**2.99**
663-7026	781	Black	18	SJO	8'	1250	10	C	**6.11**	**5.56**
663-7022	782	Black	18	SJ	12'	1250	10	C	**6.71**	**6.10**
663-7029	783	Black	16	SJ	9'	1625	13	C	**5.69**	**5.17**
663-7030	784	Black	16	SJ	12'	1625	13	C	**7.46**	**6.78**

Type SV Rubber and SVT Vinyl. Flexible, medium service, 3-wire cord sets. Vinyl plug rated for 15 amps. 125 V. UL listed, CSA certified.

Stock No.	Mfr.'s Type	Color	AWG	UL Type	Length	Watts	Amps	Fig.	1-24	25-Up*
663-7016	775	Black	18	SV	6'	1250	10	C	**4.37**	**3.90**
663-7017	776	Black	18	SV	8'	1250	10	C	**4.43**	**3.94**
663-7018	777	Gray	18	SVT	6'	1250	10	C	**4.37**	**3.86**
663-7019	787	Gray	18	SVT	8'	1250	10	C	**1.96**	**1.74**

Type SJ Rubber. UL listed, CSA certified.

Stock No.	Mfr.'s Type	Color	AWG	UL Type	Length	Watts	Amps	Fig.	1-24	25-Up*
663-7086	788	Black	14	SJ	9'	1875	15	C	**7.61**	**6.92**

*Contact the closest sales office for quantity pricing.

3 Conductor Detachable Power Supply Cords

Plug and connector rated 15 amps, 125 V.

Stock No.	Mfr.'s Type	Color	AWG	UL Type	Length	Rating @ 125V		Fig.	EACH	
						Watts	Amps		1-24	25-Up*
663-7047	547F†	Black	18	SVT†	6' 7"	1250	10	D	**5.92**	**5.38**
663-7048	548F†	Black	18	SVT†	9' 10"	1250	10	D	**7.15**	**6.51**
663-7053	531	Black	18	SJT	6' 7"	1250	10	D	**2.93**	**2.61**
663-7088	535	Black	18	SVT	7' 7"	1250	10	D	**2.63**	**2.34**
663-7060	545	Black	18	SVT	7' 6"	1250	10	D	**5.92**	**5.33**
663-7089	546	Black	16	SJT	7' 6"	1625	13	D	**5.04**	**4.58**
663-7037	537	Black	18	SJT	6' 7"	1250	10	E	**4.37**	**3.89**
663-7038	538	Black	18	SJT	9' 10"	1250	10	E	**5.39**	**4.90**
663-7040	540	Black	16	SJT	9'.10"	1625	13	E	**8.06**	**7.33**

Type SVT Vinyl

Stock No.	Mfr.'s Type	Color	AWG	UL Type	Length	Watts	Amps	Fig.	1-24	25-Up*
663-7082	543	Gray	18	SVT	7' 6"	875	7	F	**4.28**	**3.82**

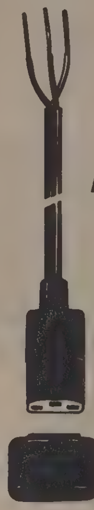
*Contact the closest sales office for quantity pricing. †Shielded.

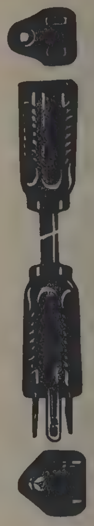
3 Conductor Electronic Jumper Cords

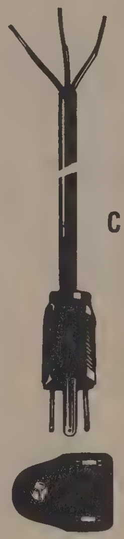
Plug and connector rated 15 amps, 125 V. UL listed, CSA certified. Plug mates with Switchcraft receptacles EAC-305 and -306 or equivalent. Connector mates with Switchcraft receptacles EAC-301, -302 and -303 or equivalent.

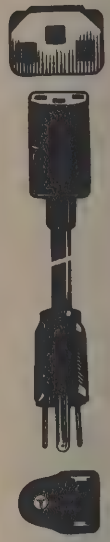
Stock No.	Mfr.'s Type	Color	AWG	UL Type	Length	Rating @ 125V		Fig.	EACH	
						Watts	Amps		1-24	25-Up*
663-7051	551	Black	18	SJT	3' 3"	1250	10	G	**4.69**	**4.18**
663-7052	552	Black	16	SJT	3' 3"	1625	13	G	**5.05**	**4.49**

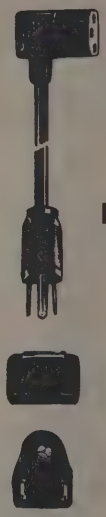
*Contact the closest sales office for quantity pricing.

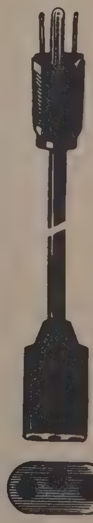

A

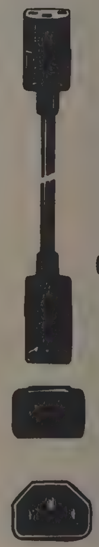

B


C


D


E


F


G

DC Medical, Battery Chargers and Transformers

AULT
INNOVATIVE POWER
SOLUTIONS FOR A
CHANGING WORLD

External Medical Power Supplies

- ▶ 5C Models Have Input of 120 VAC
- ▶ SW Models Have Input of 90-264 VAC
- ▶ Internally Fused
- ▶ 4-36 Watts Regulated Output
- ▶ Less Than 100 µA Leakage Current
- ▶ Meets VDE and FCC Class B Emissions
- ▶ UL, CSA or TUV/IEC Medical Approvals
- ▶ No Minimum Load Required
- ▶ 3 Year Warranty

Stock No.	Mfr.'s Type	Case Size	Output VDC	Output Amp	Max. Power	Output Conn.	Med. Approvals UL/CSA/TUV	CE Mark	EACH 1-9	10-24	25-49
298-6020	5C0-3000-A08-A12	PS5	+ 3	1.50	4.5 W	12	Y/Y/N	N	76.50	70.62	65.57
298-6025	5C0-5000-A08-A12	PS5	+ 5	1.00	5.0 W	12	Y/Y/N	N	76.50	70.62	65.57
298-6030	SW170MA0003F01	LP7	+ 5	5.00	25.0 W	3	Y/Y/Y	Y	90.17	83.23	77.29
298-6040	5C0-9000-A08-A12	PS5	+ 9	1.00	9.0 W	12	Y/Y/N	N	76.50	70.62	65.57
298-6035	SW171MA0003F01	LP7	+ 9	3.30	30.0 W	3	Y/Y/Y	Y	90.17	83.23	77.29
298-6045	5C1-2000-A08-A12	PS5	+12	0.80	9.6 W	12	Y/Y/N	N	76.50	70.62	65.57
298-6050	SW172MA0003F01	LP7	+12	2.75	33.0 W	3	Y/Y/Y	Y	90.17	83.23	77.29
298-6055	5C1-5000-A08-A12	PS5	+15	0.70	10.5 W	12	Y/Y/N	N	76.50	70.62	65.57
298-6060	SW173MA0003F01	LP7	+15	2.20	33.0 W	3	Y/Y/Y	Y	90.17	83.23	77.29
298-6065	SW174MA0003F01	LP7	+16	2.06	33.0 W	3	Y/Y/Y	Y	90.17	83.23	77.29
298-6070	5C1-8000-A08-A12	PS5	+18	0.60	10.8 W	12	Y/Y/N	N	76.50	70.62	65.57
298-6075	SW178MA0003F01	LP7	+18	1.83	33.0 W	3	Y/Y/Y	Y	90.17	83.23	77.29
298-6080	5C2-4000-A08-A12	PS5	+24	0.45	12.0 W	12	Y/Y/N	N	76.50	70.62	65.57
298-6085	SW175MA0003F01	LP7	+24	1.50	36.0 W	3	Y/Y/Y	Y	90.17	83.23	77.29

External Lead Acid Battery Chargers

- ▶ 5VF Models Have Input of 120 VAC
- ▶ BVW Models Have Input of 90-264 VAC
- ▶ For Mobile Telecom Devices
- ▶ NiCd and NiMH Chargers Also Available
- ▶ Automatic Dual Voltage Charging
- ▶ For Portable Computing Devices
- ▶ Thermal Overload Protected
- ▶ Three Year Warranty
- ▶ For Individual Applications

Stock No.	Mfr.'s Type	Case Size	Bat. Volt	Output I At 2 V/Cell	Output Voltage Fast	End	Output Config.	Agency UL/CSA/TUV	CE Mark	EACH 1-9	10-24	25-49
298-8015	5VF-0606000	PS5	6	.600	—	6.9	Screw term.	Y/Y/N	N	69.14	59.49	55.50
298-8010	5VA-0606007	PS5	6	.600	7.45	6.9	Screw term.	Y/Y/N	N	36.94	34.10	31.66
298-6005	BVW-063800003A	LP7	6	3.800	7.35	6.9	3	Y/Y/Y	Y	164.73	152.06	141.20
298-8035	5VF-1205000	PS5	12	.500	—	13.8	Screw term.	Y/Y/N	N	29.43	27.16	25.59
298-8030	5VA-1205007	PS5	12	.500	14.90	13.8	Screw term.	Y/Y/N	N	45.42	39.14	36.35
298-6010	BVW-122000003A	LP7	12	2.000	14.70	13.8	3	Y/Y/Y	Y	164.73	152.06	141.20
298-6015	BVW-241000003A	LP7	24	1.250	29.40	27.6	3	Y/Y/Y	Y	164.73	152.06	141.20

External AC/AC Transformers

- ▶ 318 and 316 Models Have 120 VAC Inputs
- ▶ 3CR and 3CE Models Have 230 VAC Inputs
- ▶ 3CR and 3CE Models Have IEC320 Receptacle
- ▶ 120 VAC Models Have Center Tap
- ▶ Rated for Continuous Duty
- ▶ Nonvented Case Construction
- ▶ Safety Agency Approved
- ▶ 3 Year Warranty
- ▶ Many Other Models Available

Stock No.	Mfr.'s Type	Input Voltage	Output Volts AC	VA	Output Config.	Case Size*	Agency UL/CSA/TUV	CE Mark	EACH 1-9	10-24	25-49
298-9855	318-2012-T00A	120	12	20	Screw term.	3	Y/Y/N	N	16.18	15.29	13.59
298-9860	318-2014-T00A	120	14	20	Screw term.	3	Y/Y/N	N	20.63	19.49	17.32
298-9865	318-2016-T00A	120	16	20	Screw term.	3	Y/Y/N	N	20.63	19.49	17.32
298-9870	318-2018-T00A	120	18	20	Screw term.	3	Y/Y/N	N	20.63	19.49	17.32
298-9875	318-2024-T00A	120	24	20	Screw term.	3	Y/Y/N	N	20.63	19.49	17.32
298-7000	3CR-2012-T00A20	230	12	20	20	6	N/N/Y	Y	47.18	43.25	39.92
298-7005	3CR-2014-T00A20	230	14	20	20	6	N/N/Y	Y	47.18	43.25	39.92
298-7010	3CR-2016-T00A20	230	16	20	20	6	N/N/Y	Y	47.18	43.25	39.92
298-7015	3CR-2018-T00A20	230	18	20	20	6	N/N/Y	Y	47.18	43.25	39.92
298-7020	3CR-2024-T00A20	230	24	20	20	6	N/N/Y	Y	47.18	43.25	39.92
298-9880	316-4012-T00B	120	12	40	Screw term.	TR5	Y/Y/N	N	24.67	22.57	20.66
298-9885	316-4014-T00B	120	14	40	Screw term.	TR5	Y/Y/N	N	24.67	22.57	20.66
298-9890	316-4016-T00B	120	16	40	Screw term.	TR5	Y/Y/N	N	24.67	22.57	20.66
298-9895	316-4018-T00B	120	18	40	Screw term.	TR5	Y/Y/N	N	24.67	22.57	20.66
298-9900	316-4024-T00B	120	24	40	Screw term.	TR5	Y/Y/N	N	24.67	22.57	20.66
298-7030	3CE-4012-T00A20	230	12	40	20	8	N/N/Y	Y	60.74	55.78	51.39
298-7035	3CE-4014-T00A20	230	14	40	20	8	N/N/Y	Y	60.74	55.78	51.39
298-7040	3CE-4016-T00A20	230	16	40	20	8	N/N/Y	Y	60.74	55.78	51.39
298-7045	3CE-4018-T00A20	230	18	40	20	8	N/N/Y	Y	60.74	55.78	51.39
298-6000	3CE-4024-T00A20	230	24	40	20	8	N/N/Y	Y	60.74	55.78	51.39

*Note: See page 458 for case size and connector information.

External AC/DC Switching Power Supplies

- 90-264 VAC Input
- Efficiency Typically 72-82%
- Internal EMI Filter to Meet VDC and FCC Class B Emissions Range
- CE Certified
- UL, CSA, TUV/IEC Approved
- IEC 320 Inlet Connector Mates with Interchangeable Cords for Worldwide Use
- 25-84 Watts Regulated Output
- 3 Year Warranty
- Output Loading May be Removed and Reapplied Without Cycling the Input Power

Stock No.	Mfr.'s Type	Case Size	Output VDC	Output Amps	Max. Power	Output Conn.	Agency UL/CSA/TUV	CE Mark	EACH 1-9	EACH 10-24	EACH 25-49
298-7050	SW108MA0003F01	LP7	+5	5.00	25 W	3	Y/Y/Y	Y	69.94	64.56	59.95
298-6100	PW100MA0512F02	LP10	+5	10.00	50 W	12	Y/Y/Y	Y	242.18	223.55	207.58
298-7055	SW109MA0003F01	LP7	+9	2.78	25 W	3	Y/Y/Y	Y	69.94	64.56	59.95
298-6105	PW100MA0912F02	LP10	+9	7.00	63 W	12	Y/Y/Y	Y	242.18	223.55	207.58
298-7060	SW110MA0003F01	LP7	+12	2.08	25 W	3	Y/Y/Y	Y	69.94	64.54	59.95
298-9550	SW101MA0021F01	LP8	+12	3.50	42 W	21	Y/Y/Y	Y	82.14	75.83	70.41
298-6110	PW100MA1212F02	LP10	+12	5.80	70 W	12	Y/Y/Y	Y	242.18	223.55	207.58
298-7065	SW111MA0003F01	LP7	+15	1.67	25 W	3	Y/Y/Y	Y	69.94	64.54	59.95
298-7070	SW112MA0003F01	LP7	+16	1.56	25 W	3	Y/Y/Y	Y	69.94	64.54	59.95
298-9555	SW103MA0021F01	LP8	+16	2.81	45 W	21	Y/Y/Y	N	82.14	75.83	70.41
298-6115	PW100MA1612F02	LP10	+16	4.70	75 W	12	Y/Y/Y	Y	242.17	223.55	207.58
298-6120	SW116MA0003F01	LP7	+18	1.38	25 W	3	Y/Y/Y	Y	70.47	65.04	60.40
298-6125	PW100MA1812F02	LP10	+18	4.50	81 W	12	Y/Y/Y	Y	242.17	223.54	207.57
298-7095	SW113MA0003F01	LP7	+24	1.05	25 W	3	Y/Y/Y	Y	69.94	64.56	59.95
298-9560	SW105MA0021F01	LP8	+24	2.00	48 W	21	Y/Y/Y	N	82.14	75.83	70.41
298-6130	PW100MA2412F02	LP10	+24	3.50	84 W	12	Y/Y/Y	Y	242.17	223.54	207.57
298-7080	SW201MA0012F01	LP7	+5, +12	4.00, 1.0	22 W	12	Y/Y/Y	Y	74.22	69.20	63.62
298-7085	SW301MA0012F01	LP7	+5, +12, –12	4.00, 1.0, 0.6	22 W	12	Y/Y/Y	Y	76.96	71.04	65.96

External Regulated Linear Power Supplies

- Modems
- Telecommunications Products
- Computer Peripherals
- Data Communications Products
- Notebook Palmtop Computers
- Microprocessor Controlled Systems
- Test Equipment
- Multiplexers

Regulated models single or multiple outputs for up to 15 watts.

Stock No.	Mfr.'s Type	Case Size	Output VDC	Amps	Output Conn.	Agency UL/CSA	EACH 1-9	EACH 10-24	EACH 25-49
298-9800	3305-000-401	3	+5	.30	Screw Terminal	Y/Y	34.54	31.36	28.70
298-9805	5305-000-401	PS5	+5	.50	Screw Terminal	Y/N	37.27	33.83	31.42
298-9810	7305-000-401A	7	+5	1.25	Screw Terminal	Y/N	63.45	57.57	53.48
298-9815	3312-000-401	3	+12	.12	Screw Terminal	Y/N	34.63	31.43	29.19
298-9820	5312-000-401	PS5	+12	.40	Screw Terminal	Y/N	39.35	34.77	32.29
298-9520	7312-000-401A	7	+12	.80	Screw Terminal	Y/N	55.08	50.00	47.10
298-0225	5324-000-401A	PS5	+24	.25	Screw Terminal	Y/Y	38.80	35.21	32.70
298-9825	7324-000-401A	7	+24	.50	Screw Terminal	Y/N	53.32	48.40	44.94
298-9830	7000-348-401B	7	+48	.25	Screw Terminal	Y/N	60.55	55.15	50.50
298-9835	5712-305-401A	PS5	+5, +12, -12	.50, .13, .13	Screw Terminal	Y/Y	47.22	42.86	39.79
298-9840	5712-305-403A12	PS5	+5, +12, -12	.50, .13, .13	#12	Y/Y	52.02	47.22	43.23
298-9845	7612-305-401F	7	+5, +12, -12	1.00, 25, 25	Screw Terminal	Y/Y	79.70	72.34	67.17
298-9850	7612-305-403F12	7	+5, +12, -12,	1.00, 25. 25	#12	Y/Y	85.85	77.93	72.36

Note: 300 additional standard product solutions available with cord/connection combinations. Specific minimum quantity orders and additional lead times may apply. Input 120 VAC/60 Hz.

External Unregulated AC/DC Linear Power Supplies

Ault's line of unregulated DC offer the best combination of cost, power density and reliability. Filtered –20% Ripple typical. Input 120 VAC/60 Hz. With ground.

Stock No.	Mfr.'s Type	Case Size	Output VDC	Amps	Output Conn.	Agency UL/CSA	EACH 1-9	EACH 10-24	EACH 25-49
298-9905	3312-000-001	3	+12	.35	Screw term.	Y/Y	27.42	25.31	23.17
298-9910	5312-000-001	PS5	+12	1.30	Screw term.	Y/N	25.04	21.18	19.39
298-9915	5316-000-001	PS5	+16	.80	Screw term.	Y/N	30.75	27.46	25.14
298-9921	7323-000-001	7	+23	1.00	Screw term.	Y/N	44.05	37.27	34.12

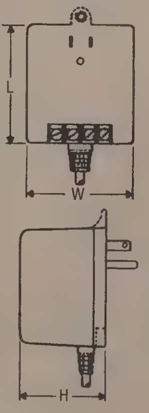
Note: 1. Over 50 additional standard product solutions available with cord and connector combinations from factory on special order. Specific minimum quantity orders and additional lead time may apply. Consult Allied for details.

Cases and Connectors

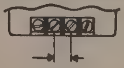
Case Size (Inches)

Case	L	W	H
3	1.88	2.20	1.96
PS5	2.95	2.72	2.24
7	4.72	2.67	2.22
LP7	5.08	3.05	1.59
LP8	5.87	3.40	2.00
LP10	6.58	4.00	1.98
TR5	2.95	2.72	1.93
TR6	3.85	2.75	2.20
8	4.72	2.95	2.59

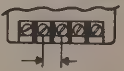
Note: Many other cases and connectors available.

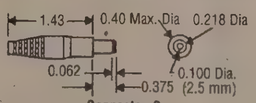


Typ. Size 3 and 5 Cases

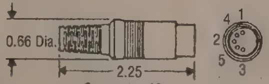


Typ. Size 7 Cases

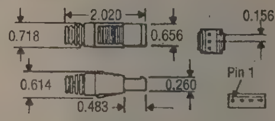




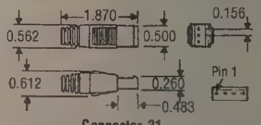
Connector 3
Center Contact: Positive



Connector 12
Pinout Code: (1)Com, (2)Gnd, (3)–5V, (4)–12V, (5)–12V

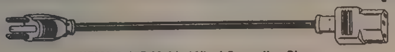


Connector 20
Pinout Code: Transformer — (1)Gnd, (2)AC, (3)AC, (4)CT
Power Supply — (1)DC, (2)Com, (3)DC, (4)Gnd

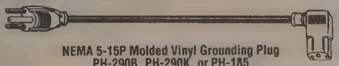


Connector 21
Pinout Code: Transformer — (1)AC, (2)Gnd, (3)AC
Power Supply — (1)DC, (2)Com, (3)Gnd

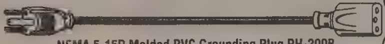
3-Conductor Detachable Power Supply Cords



NEMA 5-15P Molded Vinyl Grounding Plug PH290B, PH-185, or PH-173

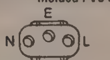


NEMA 5-15P Molded Vinyl Grounding Plug PH-290B, PH-290K, or PH-185

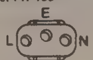


NEMA 5-15P Molded PVC Grounding Plug PH-290B
Molded PVC 3-Contact Connector PH-163

- Rated 60°C; 125V
- UL Listed, CSA Certified
- European Color Coded



17280



17952

Beldfoil® Shielded, PVC Jacketed

- NEMA 5-15P Molded Vinyl Grounding Plug PH-290B, PH-185, or PH-173

Stock No.	Mfr.'s Type	AWG (Stranding)	Length	Rating	Plug	Conn.	Cord	EACH
214-3501	17600	18 (42 x 34)	6' 7"	1250W/10A	185	386A	SJT	7.96
214-3504	17601	18 (42 x 34)	9' 10"	1250W/10A	185	386A	SJT	10.59
214-3506	17602	16 (65 x 34)	6' 7"	1625W/13A	185	386E	SJT	9.55
214-3508	17603	16 (65 x 34)	9' 10"	1625W/13A	185	386E	SJT	11.61
214-3509	17604	14 (41 x 30)	6' 7"	1875W/15A	173	386E	SJT	10.57
214-3511	17605	14 (41 x 30)	9' 10"	1875W/15A	173	386E	SJT	13.53
214-3513	17725	18 (42 x 34)	6' 7"	1250W/10A	290B	386A	SVT	7.85
214-3515	17742	18 (42 x 34)	6' 7"	1250W/10A	290B	386A	SVT	6.67
214-3517	17743	18 (42 x 34)	9' 10"	1250W/10A	290B	386A	SVT	9.18

Beldfoil® and Braid Shielded, PVC Jacketed

Stock No.	Mfr.'s Type	AWG (Stranding)	Length	Rating	Plug	Conn.	Cord	EACH
214-3519	17660	18 (41 x 34)	6' 7"	1250W/10A	290B	386A	SVT	12.48
214-3521	17661	18 (41 x 34)	9' 10"	1250W/10A	290B	386A	SVT	17.75

Right Angle, Beldfoil® Shielded, PVC Jacketed

- NEMA 5-15P Molded Vinyl Grounding Plug PH-290B, PH-290K, or PH-185

Stock No.	Mfr.'s Type	AWG (Stranding)	Length	Rating	Plug	Conn.	Cord	EACH
214-3548	17606	18 (42 x 34)	6' 7"	1250W/10A	185	390A	SJT	8.63
214-3551	17607	18 (42 x 34)	9' 10"	1250W/10A	185	390A	SJT	10.57
214-3553	17608	16 (65 x 34)	6' 7"	1625W/13A	185	390B	SJT	9.87
214-3555	17609	16 (65 x 34)	9' 10"	1625W/13A	185	390B	SJT	11.95
214-3557	17745	18 (42 x 34)	6' 7"	1250W/10A	290B	390A	SVT	9.24
214-3559	17746	18 (42 x 34)	9' 10"	1250W/10A	290B	390A	SVT	9.71

SVT Cord Unshielded, Gray PVC Jacketed

- NEMA 5-15P Molded PVC Grounding Plug PH-290B
- Molded PVC 3-Contact Connector PH-163
- 179528 North American Color Coding

Stock No.	Mfr.'s Type	AWG (Stranding)	Nom. O.D.	Length	Rating	EACH
214-3569	17952	18 (42 x 34)	.246"	8'	875W/7A	5.55
214-3577	17280	18 (42 x 34)	.246"	7½'	875W/7A	5.51

Add-A-Line — SJT Cord Unshielded, Black PVC Jacketed

- Add-A-Line Outlet in NEMA 5-15P Plug PH-745
- NEMA 5-15R Molded PVC Grounding Connector PH-108
- North American Color Coding

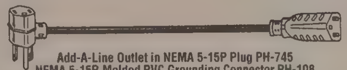
Stock No.	Mfr.'s Type	AWG (Stranding)	Nom. O.D.	Length	Rating	EACH
214-3573	17462	16 (26 x 30)	.340"	8'	1625W/13A	8.63
214-3575	17463	16 (26 x 30)	.340"	15'	1625W/13A	11.95

Add-A-Line — Beldfoil® Shielded, PVC Jacketed

- PVC Add-A-Line Plug PH-745
- Molded PVC Grounding Connector PH-386A

Stock No.	Mfr.'s Type	AWG (Stranding)	Nom. O.D.	Length	Rating	EACH
214-5515	17666	18 (42 x 34)	.270"	6' 7"	1250W/10A	12.24
214-5516	17667	18 (42 x 34)	.270"	9' 10"	1250W/10A	13.06
214-5517	17669	18 (42 x 34)	.340"	9' 10"	1250W/10A	13.87

NEMA 5-15P Ground PH-185
NEMA 5-15R Molded PVC Grounding Connector PH-108



Add-A-Line Outlet in NEMA 5-15P Plug PH-745
NEMA 5-15R Molded PVC Grounding Connector PH-108

Molded PVC Grounding Plug PH-388, IEC-320-C-14
Molded PVC Grounding Connector PH-386, IEC-320-C-13

Unshielded, PVC Jacketed

- Molded PVC Grounding Connector PH-386, IEC 320-C-13

North American Color Coding Rated 105°C; Passes VW-1 Vertical Wire Flame Test.

Stock No.	Mfr.'s Type	AWG (Stranding)	Length	Rating	Plug	Conn.	Cord	EACH
214-3523	17250	18 (42 x 34)	7' 6"	1250W/10A	290B	386	SVT	4.12
214-3525	17251	18 (42 x 34)	7' 6"	1250W/10A	290B	386	SVT	4.85
214-3528	17500	18 (42 x 34)	6' 7"	1250W/10A	290B	386A	SJT	4.45
214-3530	17501	18 (42 x 34)	9' 10"	1250W/10A	290B	386A	SJT	5.36
214-5520	17000A	18 (42 x 34)	3'	1250W/10A	290B	386	SVT	3.36
214-5521	17002A	18 (42 x 34)	1' 6"	1250W/10A	290B	386	SVT	3.07
214-5522	17001A	16 (65 x 34)	6' 7"	1625W/13A	185	386E	SJT	4.41
214-3531	17502	16 (65 x 34)	6' 7"	1625W/13A	185	386E	SJT	5.73
214-3533	17255	16 (65 x 34)	7' 6"	1625W/13A	185	386E	SJT	5.73
214-3535	17503	16 (65 x 34)	9' 10"	1625W/13A	185	386E	SJT	6.67
214-3537	17504	14 (42 x 30)	6' 7"	1875W/15A	173	386E	SJT	5.69
214-3541	17505	14 (42 x 30)	9' 10"	1875W/15A	173	386E	SJT	8.22
214-3543	17757	18 (42 x 34)	7' 6"	1250W/10A	290B	386	SVT	4.91
214-3545	17758	18 (42 x 34)	6' 7"	1250W/10A	290B	386A	SJT	5.34

Right Angle, Unshielded, PVC Jacketed

- Molded PVC Right Angle Grounding Connector PH-390 IEC 320-C-13

Stock No.	Mfr.'s Type	AWG (Stranding)	Length	Rating	Plug	Conn.	Cord	EACH
214-3561	17506	18 (42 x 34)	6' 7"	1250W/10A	290K	390A	SJT	4.93
214-3563	17507	18 (42 x 34)	9' 10"	1250W/10A	290K	390A	SJT	5,94
214-3565	17508	16 (65 x 34)	6' 7"	1625W/13A	290K	390A	SJT	5.71
214-3567	17509	16 (65 x 34)	9' 10"	1625W/13A	290K	390A	SJT	7.06

SJ Cord Unshielded, Black PVC Jacketed

- NEMA 5-15P Ground PH-185
- NEMA 5-15R Molded PVC Grounding Connector PH-108
- North American Color Coding

Stock No.	Mfr.'s Type	AWG (Stranding)	Nom. O.D.	Length	Rating	EACH
214-3571	17461	16 (26 x 30)	.340"	10'	1250W/10A	11.62

Jumper Cords, Beldfoil® Shielded-Rated 60°C, 125V*

- Molded PVC Grounding Plug PH-388, IEC-320-C-14
- Molded PVC Grounding Connector PH-386, IEC-320-C-13

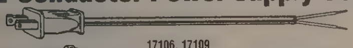
Stock No.	Mfr.'s Type	AWG (Stranding)	Length	Rating	Plug	Conn.	Cord	EACH
214-3579	17625	18 (65 x 34)	3' 3"	1625W13A	388B	386E	SJT	7.47
214-3581	17753	18 (42 x 34)	3' 3"	1250W/10A	388A	386A	SVT	6.49

Jumper Cords, Unshielded-Rated 60°C, 125V*

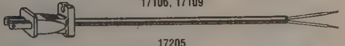
Stock No.	Mfr.'s Type	AWG (Stranding)	Length	Rating	Plug	Conn.	Cord	EACH
214-3583	17524	18 (42 x 34)	3' 3"	1250W/10A	388A	386A	SJT	4.31
214-3585	17525	16 (65 x 34)	3' 3"	1625W/13A	388B	386E	SJT	4.91

*Dual-rated at 10A-250V.

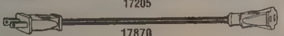
2-Conductor Power Supply Cords



17106, 17109



17205



17870

- Rated 60°C; 125V
- UL Listed, CSA Certified

Type SPT-1 Parallel Cords, Molded PVC Polarized Plug PH-S-289-S, NEMA 1-15P
Conductors split 1", stripped and twisted ⅝".

Stock No.	Mfr.'s Type	O.D.	Length	Jacket Color	EACH
214-3697	17106*	.110" x .207"	6'	Gray	1.68
214-3699	17109*	.110" x .207"	9'	Brown	2.49

Type SVT Cord, Molded PVC Cord-Holder Plug PH-289-SN-N, NEMA 1-15P
Outer jacket stripped 1½", conductors stripped and twisted ⅝".

Stock No.	Mfr.'s Type	O.D.	Length	Jacket Color	EACH
214-3700	17205*	.232"	6'	Black	2.32

Type HPN Heater Cord, Molded PVC Polarized Plug PH-S-289-S

Stock No.	Mfr.'s Type	O.D.	Length	Jacket Color	EACH
214-5510	17870†	.164" x .312"	8'	Black	4.33

*AWG (Stranding) — 18 (42 x 34), Rating — 1250W/10A.
†AWG (Stranding) — 16 (64 x 34), Rating — 1875W/15A.

Bright Orange 3-Conductor Extension Cords

Bright orange vinyl reduces risk of accidentally cutting cord. Type 15197 designed for tool benches and other tight areas. Longer lengths recommended for industrial equipment, electric lawnmowers, snowblowers and other outdoor applications with three-conductor power supply cords. All cords UL listed.

Stock No.	Mfr.'s Type	AWG (Stranding)	Nom. O.D.	Length	Rating	EACH
214-3549	15132	16 (10 x 26)	.340"	100'	1250W/10A	31.40
214-3587	15197	16 (10 x 26)	.340"	10'	1625W/13A	14.75
214-3589	15157	16 (10 x 26)	.340"	25'	1625W/13A	15.44
214-3592	15158	16 (10 x 26)	.340'	50'	1625W/13A	18.03
214-3594	15172	14 (16 x 26)	.380"	25'	1875W/15A	15.61
214-3596	15173	14 (16 x 26)	.380"	50'	1875W/15A	23.42
214-3598	15175	12 (26 x 26)	.445"	25'	1875W/15A	22.89
214-3599	15176	12 (26 x 26)	.445"	50'	1875W/15A	40.41

3-Conductor Extension Cords With Duplex Connector

Duplex connector can add two lines at the end of one cord. For use with power tools and other appliances requiring grounding. Type 17475 is SJO neoprene. Types 17675 and 17676 are SJT vinyl. All cords UL listed; rated 60°C, 125V.

Stock No.	Mfr.'s Type	AWG (Stranding)	Nom. O.D.	Length	Rating	EACH
214-3602	17475	16 (26 x 30)	.340"	25'	1625W/13A	23.24
214-3604	17675	14 (41 x 30)	.380"	25'	1875W/15A	39.88
214-3606	17676	14 (41 x 30)	.380"	50'	1875W/15A	71.95

3-Conductor Power Supply Cords

Right Angle, Unshielded, PVC Jacketed Beldfoil Shielded

- Molded PVC Grounding Connector PH-390 IEC 320-C13
- Outer Jacket Stripped 2'
- Conductors Stripped and Twisted 5/8'
- 22 AWG Drain Wire

Stock No.	Mfr.'s Type	AWG (Stranding)	O.D.	Length	Rating	Cord	EACH
214-5530	17751	18 (42 x 34)	.270"	6' 7"	1250W/10A	SVT	**7.28**
214-5531	17752	18 (42 x 34)	.270"	9' 10"	1250W/10A	SVT	**8.61**
214-5532	17636	18 (42 x 34)	.340"	6' 7"	1250W/10A	SJT	**7.85**
214-5533	17637	18 (42 x 34)	.340"	9' 10"	1250W/10A	SJT	**10.40**

Right Angle, Unshielded, PVC Jacketed

- Rated 60°C; 125V — Dual-Rated at 10A-250V
- European Color Coding

Stock No.	Mfr.'s Type	AWG (Stranding)	O.D.	Length	Rating	Recep.	Cord	EACH
214-3695	17536	18 (42 x 34)	.315"	6' 7"	1250W/10A	390A	SJT	**4.33**
214-3691	17537	18 (42 x 34)	.315"	9' 10"	1250W/10A	390A	SJT	**5.34**
214-3693	17539	16 (65 x 34)	.340"	9' 10"	1625W/13A	390A	SJT	**6.12**

Beldfoil® Shielded, PVC Jacketed

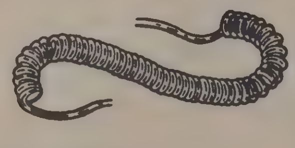
- Molded Vinyl Grounding Connector PH-386, or PH-390A, IEC-320-C-13
- European Color Coding

Stock No.	Mfr.'s Type	AWG (Stranding)	O.D.	Length	Rating	Recep.	Cord	EACH
214-5525	17749	18 (42 x 34)	.270"	6' 7"	1250W/10A	386A	SVT	**6.69**
214-5526	17750	18 (42 x 34)	.270"	9' 10"	1250W/10A	386A	SVT	**8.24**
214-3652	17618	18 (42 x 34)	.340"	6' 7"	1250W/10A	386A	SJT	**7.29**
214-5527	17619	18 (42 x 34)	.340"	9' 10"	1250W/10A	386A	SJT	**9.89**
214-3654	17620	18 (42 x 34)	.365"	6' 7"	1625W/13A	386E	SJT	**8.22**
214-3656	17621	16 (65 x 34)	.365"	9' 10"	1625W/13A	386E	SJT	**11.10**

Unshielded, PVC Jacketed

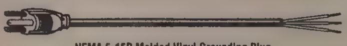
Stock No.	Mfr.'s Type	AWG (Stranding)	O.D.	Length	Rating	Recep.	Cord	EACH
214-3658	17518	18 (42 x 34)	.315"	6' 7"	1250W/10A	386A	SJT	**4.14**
214-3660	17519	16 (65 x 34)	.315"	9' 10"	1250W/10A	386A	SJT	**5.13**
214-3662	17520	16 (65 x 34)	.340"	6' 7"	1625W/10A	386E	SJT	**4.52**
214-3664	17521	16 (65 x 34)	.340"	9' 10"	1625W/10A	386E	SJT	**5.73**
214-3666	17254	18 (42 x 34)	.246"	7' 6"	1250W/10A	386	SVT	**4.06**

Retractile Test Prod Wire

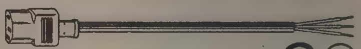


- Tinned Copper Conductors, Rubber Insulated.
- Working Voltage: 5000VAC/RMS.
- For Intermittent Duty Only.

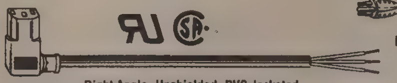
Stock No.	Mfr.'s Type	AWG (Stranding)	No. Of Conductors	Retracted Length	Extended Length	Nominal O.D.	EACH
214-5506	8879	20 (42 x 36)	2 Unshielded	8"	5'	0.173"	12.85



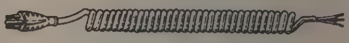
NEMA 5-15P Molded Vinyl Grounding Plug PH-290B, PH-185 or PH-173



Molded Vinyl Grounding Connector PH-386, or PH-390A, IEC-320-C-13



Right Angle, Unshielded, PVC Jacketed



Retractile, Rubber Insulated, Neoprene Jacketed

Beldfoil® Shielded, PVC Jacketed

- NEMA 5-15P Molded Vinyl Grounding Plug PH-290B, PH-185, or PH-173
- European Color Coding

Stock No.	Mfr.'s Type	AWG (Stranding)	O.D.	Length	Rating	Plug	Cord	EACH
214-3608	17612	18 (42 x 34)	.340"	6' 7"	1250W/10A	185	SJT	**6.12**
214-3610	17613	18 (42 x 34)	.340"	9' 10"	1250W/10A	185	SJT	**8.22**
214-3612	17614	16 (65 x 34)	.365"	6' 7"	1625W/13A	185	SJT	**7.46**
214-3614	17615	16 (65 x 34)	.365"	9' 10"	1625W/13A	185	SJT	**9.89**
214-3616	17616	14 (41 x 30)	.402"	6' 7"	1875W/15A	173	SJT	**8.22**
214-3618	17617	14 (41 x 30)	.402"	9' 10"	1875W/15A	173	SJT	**11.62**
214-3620	17720*	18 (42 x 34)	.270"	6' 7"	1250W/10A	290B	SVT	**5.71**
214-3622	17740	18 (42 x 34)	.270"	6' 7"	1250W/10A	290B	SVT	**5.55**
214-3624	17741	18 (42 x 34)	.270"	9' 10"	1250W/10A	290B	SVT	**7.06**

Duofoil® and Braid Shielded, PVC Jacketed

Stock No.	Mfr.'s Type	AWG (Stranding)	O.D.	Length	Rating	Plug	Cord	EACH
214-3626	17650	18 (41 x 34)	.307"	6' 7"	1250W/10A	290B	SVT	**10.40**

Unshielded, PVC Jacketed

Stock No.	Mfr.'s Type	AWG (Stranding)	O.D.	Length	Rating	Plug	Cord	EACH
214-3628	17512	18 (42 x 34)	.315"	6' 7"	1250W/10A	290B	SJT	**3.50**
214-3630	17513	18 (42 x 34)	.315"	9' 10"	1250W/10A	290B	SJT	**4.14**
214-3632	17514	16 (65 x 34)	.340"	6' 7"	1625W/13A	185	SJT	**4.14**
214-3634	17515	16 (65 x 34)	.340"	9' 10"	1625W/13A	185	SJT	**5.14**
214-3636	17516	14 (41 x 30)	.380"	6' 7"	1875W/15A	173	SJT	**5.14**
214-3638	17517	14 (41 x 30)	.380"	9' 10"	1875W/15A	173	SJT	**6.87**
214-3640	17534	18 (42 x 34)	.246"	6' 7"	1250W/10A	290B	SVT	**2.98**
214-3642	17535	18 (42 x 34)	.246"	9' 10"	1250W/10A	290B	SVT	**3.63**
214-3644	17747*	18 (42 x 34)	.246"	6' 7"	1250W/10A	290B	SVT	**3.18**

* Rated 105°C; Passes VW-1 Vertical Wire Flame Test.

Retractile, Rubber Insulated, Neoprene Jacketed

- Allows Free Movement; Helps Prevent Accidents
- North American Color Coding

Stock No.	Mfr.'s Type	AWG (Stranding)	O.D.	Length	Rating	Plug	Cord	EACH
214-3646	17447	18 (42 x 34)	.360"	1 to 6'	1250W/10A	185	SJO	**9.53**
214-3648	17448	16 (65 x 34)	.370"	1 to 6'	1250W/10A	173	SJO	**10.24**
214-3650	17449	16 (65 x 34)	.370"	2 to 12'	1250W/10A	173	SJO	**13.87**

Unshielded, Gray PVC Jacketed

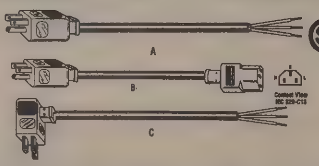
- NEMA 5-15P Molded PVC Grounding Plug PH-290B, PH-185, or PH-173
- North American Color Coding

Stock No.	Mfr.'s Type	AWG (Stranding)	O.D.	Length	Rating	Plug	Cord	EACH
214-3668	17237	18 (42 x 34)	.246"	6'	1250/10	290B	SVT	**2.86**
214-3670	17239	18 (42 x 34)	.246"	8'	1250/10	290B	SVT	**3.29**
214-3672	17405	18 (16 x 30)	.315"	6'	1250/10	290B	SJT	**3.07**
214-3674	17407	18 (16 x 30)	.315"	8'	1250/10	290B	SJT	**3.56**
214-3676	17276	16 (26 x 30)	.340"	20'	1625/13	185	SJT	**9.71**

Unshielded, Black Rubber or Neoprene* Jacketed

Stock No.	Mfr.'s Type	AWG (Stranding)	O.D.	Length	Rating	Plug	Cord	EACH
214-3678	17236	18 (42 x 34)	.246"	6'	1250/10	290B	SV	**4.31**
214-3680	17238	18 (42 x 34)	.246"	8'	1250/10	290B	SV	**5.11**
214-3682	17406	18 (16 x 30)	.315"	6'	1250/10	185	SJ	**4.77**
214-3684	17408	18 (16 x 30)	.315"	8'	1250/10	185	SJ	**5.34**
214-3686	17409	18 (16 x 30)	.315"	8'	1250/10	185	SJO	**5.55**
214-3688	17412	18 (16 x 30)	.315"	12'	1250/10	185	SJ	**9.20**
214-3690	17419	16 (26 x 30)	.340"	9'	1625/13	185	SJ	**7.08**
214-3692	17422	16 (26 x 30)	.340"	12'	1625/13	185	SJ	**9.02**
214-3694	17425	16 (26 x 30)	.340"	15'	1625/13	185	SJ	**12.48**
214-3696	17629	14 (41 x 30)	.380"	9'	1875/15	173	SJ	**12.14**
214-3698	17635	14 (41 x 30)	.380"	15'	1875/15	173	SJ	**20.11**

Hospital Grade Power Supply Cords



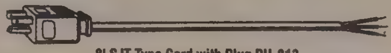
The Belden® Medicord™ Hospital Grade Power Supply Cord product line has been expanded to include these longer length, aesthetically appealing cords which meet the rigorous performance demands of hospital use and critical medical applications. **Length:** 10 ft. (3.05 m) 60°C.

Stock No.	Mfr.'s Type	Plug	Conn.	Fig.	AWG Stranding [Dia. — mm]	Nom. O.D.		Rating	Type of Cordage	Jacket Color	EACH	
						In.	mm				1-4	5-10
214-5102	17022A*	813	—	A	18 (42 × 34) (1.19)	.315	8.00	1250 Watts 10 A-125 V	SJT†	Matte Gray (Clear Plug)	**11.61**	**10.55**
214-5104	17023A*	813	—	A	18 (42 × 34) (1.19)	.315	8.00	1250 Watts 10 A-125 V	SJT†	Matte Gray (Gray Plug)	**11.61**	**10.55**
214-5106	17020A*	813	386A	B	18 (42 × 34) (1.19)	.315	8.00	1250 Watts 10 A-125 V	SJT†	Matte Gray (Clear Plug)	**13.18**	**11.98**
214-5108	17021A*	813	386A	B	18 (42 × 34) (1.19)	.315	8.00	1250 Watts 10 A-125 V	SJT†	Matte Gray (Gray Plug)	**13.18**	**11.98**
214-5110	17024A	814	—	C	18 (65 × 34) (1.47)	.475	12.06	1625 Watts 13 A-125 V	SJT‡, Low Leakage	Gray (Clear Plug)	**24.97**	**22.70**

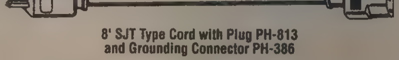
*CSA Certified. †Regular SJT cords are UL listed and CSA certified. CSA does not recognize SJT low leakage cords. ‡Belden SJT Type low-leakage 60 Hz power cord reduces the hazards of shock due to current leakage between the two conductors and from the conductors out through the jacket. Maximum leakage at 120 VAC is 7 microamps from each circuit conductor to the grounding conductor, and 15 microamps from each circuit conductor through the cord jacket. Designed for the hospital use and critical medical applications. Helps equipment meet the requirements of UL 554.

Medicord™ Hospital Grade (Green Dot) Power Supply Cords

- Rated 60°C; 125V
- North American Color Coding
- UL Listed
- NEMA 5-15P Molded PVC Clear Hospital Grade Plugs



8' SJT Type Cord with Plug PH-813



8' SJT Type Cord with Plug PH-813 and Grounding Connector PH-386

8' SJT Type Cord With Plug PH-813

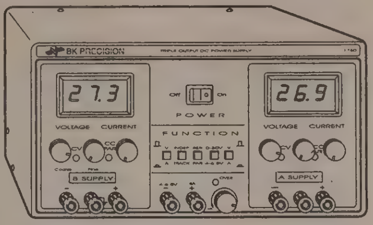
Stock No.	Mfr.'s Type	AWG (Stranding)	Nom. O.D.	Rating	EACH
214-3710	17010	18 (42 x 34)	.430"	1250W/10A	**17.69**
214-3712	17011	16 (65 x 34)	.475"	1625W/13A	**18.73**
214-3714	17030	18 (42 x 34)	.315"	1250W/10A	**11.10**

8' SJT Type Cord With Plug PH-813 and Grounding Connector PH-386

Stock No.	Mfr.'s Type	AWG (Stranding)	Nom. O.D.	Rating	EACH
214-3716	17015	18 (42 x 34)	.430"	1250W/10A	**19.60**
214-3718	17016	16 (65 x 34)	.475"	1625W/13A	**24.07**
214-3720	17031	18 (42 x 34)	.315"	1250W/10A	**12.67**

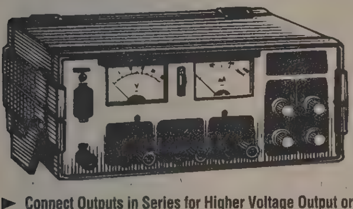
Model 1760 Triple Output DC Power Supply

MADE IN U. S. A.



- Two 0-30 VDC, 2 A Section Capable of Independent, Series or Parallel Operation
- One 4-6.5 VDC, 5 A Section
- Switchable Series/Parallel Operation — 30 V Sections
- Adjustable Current Limit Controls — 30 V Sections
- Unique Variable Tracking, B Track A at 5% to 100%
- Two 3-Digit LED Displays — One Reads Volts or Amps of "B" Supply — One Reads Volts or Amps of "A" Supply or 4 V-6.5 V Supply
- Two Year Warranty

731-1760. Model 1760 .... **EACH 649.00**



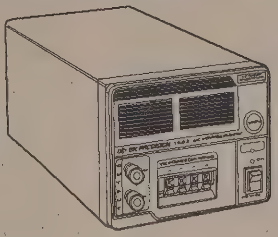
Model 1651 Compact Triple Output DC Power Supply

- Two 0 to 24 VDC Outputs (0.5 A)
- One Fixed 5 V Output (4 A)
- Independent or Tracking Operation
- Adjustable Current Limiting
- Designed to Operate Continuously at Rated Output
- Short Circuit Protection, Overload Protection, Reverse Polarity Protection
- Connect Outputs in Series for Higher Voltage Output or In Parallel for Higher Current Output (Switch Selectable)

731-1651. Model 1651 .... **EACH 429.00**

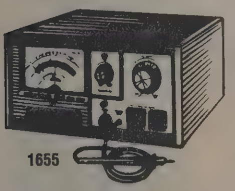
Model 1670 Triple Output DC Power Supply

— NEW —



- One Variable 0-30 VDC, 0-2.5 A Section, Constant Voltage/Constant Current
- One Fixed 12 VDC, 0.5 A Section
- One Fixed 5 VDC, 0.5 A Section
- Three Digit LCD Display
- Ideal for General Electronic Servicing, School Electronics Labs, and Powering Up Electronic Project
- One Year Warranty

731-1670. Model 1670 .... **EACH 199.00**



1655

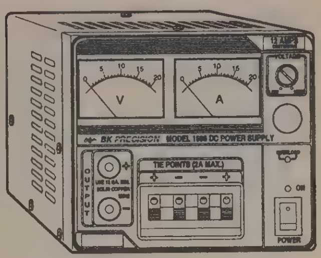
Isolated — Variable AC Power Supplies

MADE IN U. S. A.

- Output: 0-150 VAC
- 3 A Continuous (Model 1655)
- 2 A Continuous (Model 1653)
- Power Line Leakage Tester
- Solid State Soldering Iron Temperature Control (Model 1655)

731-1655. Model 1655 .... **EACH 540.00**
731-1653. Model 1653 .... **EACH 319.00**

Models 1686/1688 High Current DC Power Supplies

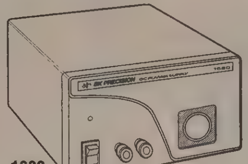


- 3 to 14 Volts DC Output
- 25 Amps Typical at 13.8 V, Model 1688
- 12 Amps Typical at 13.8 V, Model 1686
- Current Limiting Overload Protection
- Over Voltage Protection
- Short Circuit Protection
- Reverse Polarity Protection
- Thermostatically Controlled Cooling Fan
- Thermal Protection (Model 1688)
- Operates Continuously at Full Load Without Overheating
- Connect Two in Parallel for More Current
- Connect Two in Series for Higher Voltage

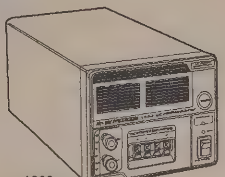
731-1688. Model 1688 .... **EACH 299.00**
731-1686. Model 1686 .... **EACH 199.00**

Model 1680 and Model 1682 High Current Fixed DC Power Supplies

— NEW —



1680



1682

- 13.8 VDC Output (Fixed)
- 6 A DC Peak, 4 A DC Continuous (Model 1680)
- 15 A DC Peak, 12 A DC Continuous (Model 1682)
- Current Foldback, Overload Protection
- Short Circuit, Reverse Polarity Protection
- Thermostatically Controlled Cooling Fan (Model 1682)
- Convenient Cigarette Lighter Plug (Model 1680)
- Input: 110-132 VAC, 60 Hz

731-1680. Model 1680 .... **EACH 50.00**
731-1682. Model 1682 .... **EACH 99.00**

Isolation Transformers

MADE IN U. S. A.

Model TR-110

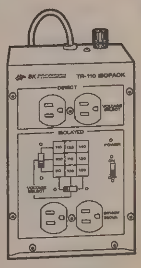
- Direct and Isolated Outputs
- UL Listed Standard 1012; May, 1977
- Input: 105-130 VAC, 60 Hz
- Output: Direct — 500 VA; Isolated — 350 VA Continuous, 500 VA Intermittent
- Nine Voltage Combinations 90 to 140 V

731-0110. Model TR-110 .... **EACH 219.00**

Model 1604A

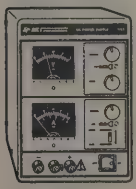
- Isolation Transformer: Leakage Less Than 0.1 mA
- Input: 120 AC, 60 Hz, 175 W
- Output: 1.25 A Continuous, 2 A Intermittent

731-1604. Model 1604A .... **EACH 114.00**

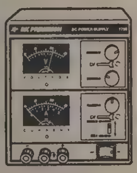


TR-100

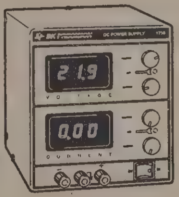
DC Power Supplies



1711

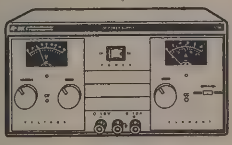


1730



1735

MADE IN U. S. A.



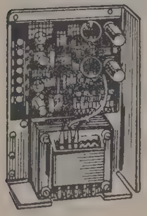
1746

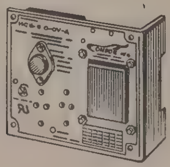
- Fully Overload Protected
- New Compact Style
- Coarse and Fine Voltage Controls
- Reliable, Durable
- Excellent Regulation
- Very Low Ripple
- 2 Year Warranty
- Operate Continuously at Full Load without Overheating
- Constant Voltage or Constant Current Operation
- Continuously Monitor Voltage and Current Output on Two Meters
- Biggest Selection of Voltage and Current Ratings Ever Offered
- Connect Two Supplies in Parallel to Double the Current Output
- Connect Two Supplies in Series to Double the Voltage Output
- Overload Protection: Current, Limiting, Reverse Polarity, Overvoltage, Short Circuit
- Power Requirements: 120 VAC ±10%, 60 Hz Only (120/220/230/240 VAC ±10%, 50/60 Hz Version Available
- Operating Temperature: 0° to 40°C, <75% R.H.
- Storage Temperature: –15° to +70°C, <85% R.H.

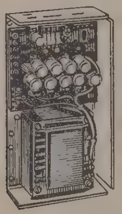
Model	1705	1710	1711	1715	1730	1735	1740	1743	1746
Output Voltage Output Current	0-30 V 0-1 A	0-30 V 0-1 A	0-60 V 0-2 A	0-60 V 0-2 A	0-30 V 0-3 A	0-30 V 0-3 A	0-60 V 0-4 A	0-35 V 0-6 A	0-16 V 0-10 A
Constant Voltage Operation									
Voltage Regulation									
Line (±10%)	≤0.01% +3 mV						≤0.2% +2 mV		
Load (no load-full load)	≥0.01% +3 mV						≤0.04% +2 mV		
Recovery Time	≤100 µs						≤100 µs		
Ripple and Noise	≤3 mV rms						≤1 mV rms		
Temperature Coefficient	≤300 ppm/°C						≤300 ppm/°C		
Constant Current Operation									
Adjustable Current Range	5% to 100%						5% to 100%		
Current Regulation									
Line (±10%)	≤0.2% +3 mA						≤0.4% +5 mA		
Load	≤0.2% +3 mA						≤0.4% +5 mA		
Current Ripple	≤3 mA						≤3 mA		
Metering									
Type	3-digit LED	Analog	Analog	3-digit LED	Analog	3-digit LED	Analog	3-digit LED	Analog
Voltmeter Range	0-99.9 V (green)	0-32 V	0-54 V	0-99.9 V (green)	0-32 V	0-99.9 V (green)	0-64 V	0-99.9 V (green)	0-18 V
Voltmeter Accuracy	±(0.5% rdg + 2 digits)	±2.5%	±2.5%	±(0.5% rdg + 2 digits)	±2.5%	±(0.5% rdg + 2 digits)	±2.5%	±(0.5% rdg +2 digits)	±2.5%
Ammeter Range									
High Range	0-99.9 A (red)	0-1.04 A	0-2.20 A	0-9.99 A (red)	0-3.20 A	0-9.99 A (red)	0-4.40 A	0-9.99 A (red)	0-11.0 A
Low Range		0-0.28 A	0-0.55 A		0-0.53 A		0-1.10 A		0-2.20 A
Ammeter Accuracy	±(0.5% rdg + 2 digits)	±2.5%	±2.5%	±(0.5% rdg + 2 digits)	±2.5%	±(0.5% rdg + 2 digits)	±2.5%	±(0.5% rdg +2 digits)	±2.5%
Power Consumption	70 W	70 W	210 W	210 W	180 W	180 W	450 W	420 W	380 W
Dimensions (H × W × D)	8.2" × 5.5" × 12.5" (158 × 140 × 318 mm)						5.7" × 10.5" × 15 " (145 × 267 × 381 mm)		
Weight	8 lbs. 3.8 kg	8 lbs. 3.8 kg	12 lbs. 5.4 kg	12 lbs. 5.4 kg	10.5 lbs. 4.7 kg	10.5 lbs. 4.7 kg	23 lbs. 10.4 kg	24 lbs. 10.8 kg	20 lbs. 9 kg

731-1705. Model 1705 .... **EACH 299.00**
731-1710. Model 1710 .... **EACH 229.00**
731-1711. Model 1711 .... **EACH 309.00**
731-1715. Model 1715 .... **EACH 379.00**
731-1730. Model 1730 .... **EACH 315.00**
731-1735. Model 1735 .... **EACH 380.00**
731-1740. Model 1740 .... **EACH 499.00**
731-1743. Model 1743 .... **EACH 499.00**
731-1746. Model 1746 .... **EACH 499.00**

International II Linears







- ► UL1950 Approved without D3 Deviation
- ► World-Wide AC Input Ranges
- ► World-Wide Safety Standards
- ► Industry Standard Packages
- ► VDE/IEC Transformer Construction
- ► TUV Approved, IEC 950
- ► CSA Approved, 22.2,234
- ► 2-Hour Burn-In with Cycling
- ► 3 Year Warranty
- ► Capacitors Have Highest C/V and Ripple Current Ratings in Industry
- ► Anti-Latchup Circuit on Duals and Triples
- ► MTBF of Over 200,000 Hours per MIL Handbook 217D on Most Units

Specifications. AC Input: 100/120/220/240 VAC +10%, –13%. 47-63 Hz. Tolerance for 230 VAC operation is +15%, –10%. Derate output current 10% for 50 Hz operation. **DC Output:** See charts. **Adjustment Range:** ±5% minimum. **Line Regulation:** ±.05% for a 10% change. **Load Regulation:** ±.05% for a 50% load change. **Output Ripple:** 2 to 15 V unit — 5.0 mV PK-PK maximum; 20 to 200 V unit — .02% PK-PK maximum. **Transient Response:** 50 microseconds for 50% load change. **Short Circuit and Overload Protection:** Automatic current limit/foldback. **Overvoltage Protection:** Built-in on 5 V models, set at 6.2 V ± .4 V. Other models use optional overvoltage protection. **Remote Sensing:** On all models 3 Amps and above; open sense lead protection built-in. **Stability:** ±.05% for 24 hours after warm up. **Temperature Rating:** 0°C to 50°C, full rated, derated linearly to 40% at 70° C. **Temperature Coefficient:** ±.01%/C maximum. **Efficiency:** 5 V units — 45%; 12 V and 15 V units — 55%; 20 V and 24 V units — 60%. **Vibration:** Per MIL-STD-810B, Method 514, Procedure 1, curve AB (to 50 Hz). **Shock:** Per MIL-STD-810B, Method 516, Procedure V.

OverVoltage Protection Modules

Optional OVP modules are available to protect your load from an overvoltage condition. These modules are adjustable from 6.2V to 34 VDC and mount directly on your power supply chassis. The OVP-12 is available for outputs which will not exceed 12 Amps and for loads up to 30 Amps. One OVP-12 protects both outputs on the dual output ±12 VDC and the ±15 VDC power supplies. Note that models with factory built OVP are indicated in the table above.

744-0511. OVP-12 .... **EACH 8.50**
744-0524. OVP-24 .... **EACH 16.00**

Single Output

Stock No.	Mfr.'s Type	5 V	12 V	15 V	24 V	28 V	48 V	Dimensions H"	W"	D"	Weight (Lbs.)	EACH 1-9	10-24
744-5001	HA5-1.5/OVP-A+	1.5A	—	—	—	—	—	4.88	4.00	1.63	2.0	**33.07**	**30.20**
744-5003	HA15-0.9-A+(12V)	—	0.9A	—	—	—	—	4.88	4.00	1.63	2.0	**31.07**	**30.20**
744-5005	HA15-0.9-A+	—	—	0.9A	—	—	—	4.88	4.00	1.63	2.0	**31.07**	**30.20**
744-5007	HA24-0.5-A+	—	—	—	0.5A	—	—	4.88	4.00	1.63	2.0	**33.07**	**30.20**
744-5009	HA24-0.5-A+(28V)	—	—	—	—	0.5A	—	4.88	4.00	1.63	2.0	**33.07**	**30.20**
744-5011	HB5-3/OVP-A+	3.0A	—	—	—	—	—	4.88	4.00	1.63	2.0	**35.27**	**34.24**
744-5012	HB12-1.7-A+	—	1.7A	—	—	—	—	4.88	4.00	1.63	2.0	**34.27**	**33.24**
744-5013	HB15-1.5-A+	—	—	1.5A	—	—	—	4.88	4.00	1.63	2.0	**35.27**	**34.24**
744-5014	HB24-1.2-A+	—	—	—	1.2A	—	—	4.88	4.00	1.63	2.0	**37.27**	**36.24**
744-5015	HB28-1-A+	—	—	—	—	1.0A	—	4.88	4.00	1.63	2.0	**35.27**	**34.24**
744-5016	HC5-6/OVP-A+	6.0A	—	—	—	—	—	5.63	4.88	2.50	4.0	**57.11**	**55.43**
744-5017	HC12-3.4-A+	—	3.4A	—	—	—	—	5.63	4.88	2.50	4.0	**51.91**	**50.36**
744-5018	HC15-3-A+	—	—	3.0A	—	—	—	5.63	4.88	2.50	4.0	**51.91**	**50.38**
744-5019	HC24-2.4-A+	—	—	—	2.4A	—	—	5.63	4.88	2.50	4.0	**51.91**	**50.38**
744-5020	HC28-2-A+	—	—	—	—	2.0A	—	5.63	4.88	2.50	4.0	**52.20**	**50.19**
744-5021	HN5-9/OVP-A+	9.0A	—	—	—	—	—	4.88	7.00	2.75	7.0	**77.91**	**75.60**
744-5022	HN12-5.1-A+	—	5.1A	—	—	—	—	4.88	7.00	2.75	7.0	**72.71**	**70.56**
744-5023	HN15-4.5-A+	—	—	4.5A	—	—	—	4.88	7.00	2.75	7.0	**72.71**	**70.56**
744-5024	HN24-3.6-A+	—	—	—	3.6A	—	—	4.88	7.00	2.75	7.0	**72.71**	**70.56**
744-5025	HN28-3-A+	—	—	—	—	3.0A	—	4.88	7.00	2.75	7.0	**72.71**	**70.56**
744-5026	HD5-12/OVP-A+	12.0A	—	—	—	—	—	4.88	9.00	2.75	7.5	**88.31**	**85.69**
744-5027	HD12-6.8-A+	—	6.8A	—	—	—	—	4.88	9.00	2.75	7.5	**83.11**	**80.65**
744-5028	HD15-6-A+	—	—	6.0A	—	—	—	4.88	9.00	2.75	7.5	**83.11**	**80.65**
744-5029	HD24-4.8-A+	—	—	—	4.8A	—	—	4.88	9.00	2.75	7.5	**83.11**	**80.65**
744-5030	HD28-4-A+	—	—	—	—	4.0A	—	4.88	9.00	2.75	7.5	**83.11**	**80.65**
744-5031‡	HE5-18/OVP-A+	18.0A	—	—	—	—	—	4.88	14.00	2.75	10.0	**129.19**	**125.49**
744-5032‡	HE12-10.2-A+	—	10.2A	—	—	—	—	4.88	14.00	2.75	10.0	**113.79**	**110.41**
744-5033‡	HE15-9-A+	—	—	9.0A	—	—	—	4.88	14.00	2.75	10.0	**113.79**	**110.41**
744-5034‡	HE24-7.2-A+	—	—	—	7.2A	—	—	4.88	14.00	2.75	10.0	**113.79**	**110.41**
744-5035‡	HE28-6-A+	—	—	—	—	6.0A	—	4.88	14.00	2.75	10.0	**113.79**	**110.41**
744-9960‡	F5-25-OV-A+	25.0A	—	—	—	—	—	4.88	16.75	3.50	14.00	**179.59**	**174.80**
744-9965	G5-35-OV-A	35.0A	—	—	—	—	—	4.88	16.75	3.50	19.00	**226.39**	**220.20**
744-9970‡	CP197-A+	50.0A	—	—	—	—	—	4.88	16.75	3.50	19.00	**258.11**	**250.97**
744-9996	F15-15-A+	—	16.0A*	15.0A*	—	—	—	4.88	16.75	3.50	18.00	**176.15**	**171.32**
744-2412	F24-12-A+	—	—	—	12.0A**	10.0A**	—	4.88	16.75	3.50	18.00	**176.15**	**171.32**
744-9950	HB48-0.5-A+	—	—	—	—	—	.50A	4.88	4.00	1.63	2.00	**40.35**	**28.40**
744-5801	HC48-1-A+	—	—	—	—	—	1.00A	5.63	4.88	2.50	4.00	**57.11**	**55.43**
744-5803‡	HD48-3-A+	—	—	—	—	—	3.00A	4.88	9.00	2.75	7.50	**88.31**	**85.69**
744-5804‡	HE48-4-A+	—	—	—	—	—	4.00A	4.88	14.00	2.75	10.00	**124.19**	**120.49**
744-9955‡	F48-6-A+	—	—	—	—	—	6.00A	4.88	16.75	3.50	18.00	**190.54**	**184.85**

*Capable of either 12 VDC or 15 VDC operation with adjustment of potentiometer. ** Capable of 28 V @ 10 A operation with adjustment of potentiometer.
‡Requires fan cooling. Please consult factory.

Dual Output

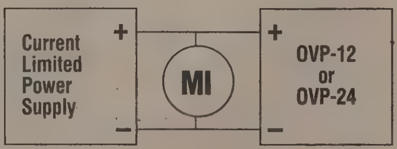
Stock No.	Mfr.'s Type	Output 1	Output 2	Dimensions H"	W"	D"	Weight (Lbs.)	EACH 1-9	10-24
744-5039	HAA5-1.5/OVP-A+	5V @ 1.5 A	5V @ 1.5A	6.50	4.00	1.42	2.0	**52.20**	**49.38**
744-5040	HBB5-3/OVP-A+	5V @ 3A	5V @ 3A	7.00	4.88	2.50	4.0	**71.51**	**69.51**
744-5051	HCC5-6/OVP-A+	5V @ 6A	5V @ 6A	4.88	9.38	2.75	7.0	**100.79**	**97.80**
744-5041	HAA512-A+	5V @ 2A	9-15V @ 0.5A	6.50	4.00	1.62	2.0	**51.91**	**50.38**
744-5042	HBB512-A+	5V @ 3A	9-15V @ 1.25A	7.00	4.88	2.50	4.0	**62.35**	**60.48**
744-5043‡	HCC512-A+	5V @ 6A	9-15V @ 2.50A	4.88	9.38	2.75	7.0	**98.71**	**95.78**
744-9850	HAA524-A+	5V @ 2A	18-24V @ 0.3A	6.50	4.00	1.62	2.0	**51.91**	**50.38**
744-9851	HBB524-A+	5V @ 3A	+18 to 24 V @ 0.8A	7.00	4.88	2.50	4.0	**63.30**	**61.45**
744-9852	HCC524-A+	5V @ 6A	+18 to 24 V @ 2A	9.38	4.88	2.75	7.0	**99.70**	**96.70**
744-9555	HAD12-0.4-A+	+12V @ 0.4A	–12V @ 0.4A	4.88	4.00	1.63	2.0	**38.60**	**37.70**
744-9560	HAD15-0.4-A+	+15V @ 0.4A	–15V @ 0.4A	4.88	4.00	1.63	2.0	**38.60**	**37.70**
744-5036	HAA15-0.8-A	+12V to 15V @ 1A/0.8A	–12V to –15V @ 1.0A/0.8A	6.50	4.00	1.62	2.0	**44.67**	**43.33**
744-5037	HBB15-1.5-A+	+12V to 15V @ 1.7A/1.5A	–12V to –15V @ 1.7A/1.5A	7.00	4.88	2.50	4.0	**57.40**	**56.20**
744-5038	HCC15-3-A+	+12V to 15V @ 3.4A/3A	–12V to –15V @ 3.4A/3A	4.88	9.38	2.75	7.0	**91.43**	**88.70**
744-9565‡	HDD15-5-A+	+12V to 15V @ 5A	–12V to –15V @ 5A	4.88	14.00	2.75	10.0	**134.59**	**130.58**

‡Requires fan cooling. Please consult factory.

Triple Output

Stock No.	Mfr.'s Type	Output 1	Output 2	Output 3	Dimensions H"	W"	D"	Weight (Lbs.)	EACH 1-9	10-24
744-5044	HTAA-16W-A+	5V @ 2A	+12 to 15V @ 0.4/0.4A	–12 to 15V @ 0.4/0.4A†	6.50	4.00	1.62	2.0	**57.11**	**55.43**
744-5045	HBAA-40W-A+	5V @ 3A	+12 to 15V @ 1/0.8A	–12 to 15V @ 1/0.8A†	4.00	10.20	2.50	5.0	**78.95**	**76.61**
744-9860‡	HCBB-105W-A+	5V @ 3A	+12 to 15V @ 3.4/3.0A	–12 to 15V @ 3.4/3.0A†	4.88	11.00	2.75	8.0	**105.91**	**101.82**
744-5046	HCAA60W-A+	5V @ 6A	+12 to 15V @ 1/0.8A	–12 to 15V @ 1/0.8A†	4.88	9.00	2.75	7.5	**93.50**	**90.80**
744-5047	HCBB-75W-A+	5V @ 6A	+12 to 15V @ 1.7/1.5A	–12 to 15V @ 1.71/1.5A†	4.88	11.00	2.75	8.0	**107.92**	**104.82**
744-5048	CP131-A+	5V @ 9A	+12 to 15V @ 1.7/1.5A	–12 to 15V @ 1.7/1.5A†	4.88	11.00	2.75	9.0	**124.71**	**121.00**
744-5049‡	HDBB-105W-A+	5V @ 12A	+12 to 15V @ 1.7/1.5A	–12 to 15V @ 1.7/1.5A†	4.88	14.25	2.75	11.0	**140.30**	**136.10**
744-5050‡	HDCC-150W-A+	5V @ 12A	+12 to 15V @ 3.4/3A	–12 to 15V @ 3.4/3A†	4.88	15.00	3.75	12.0	**161.90**	**156.40**

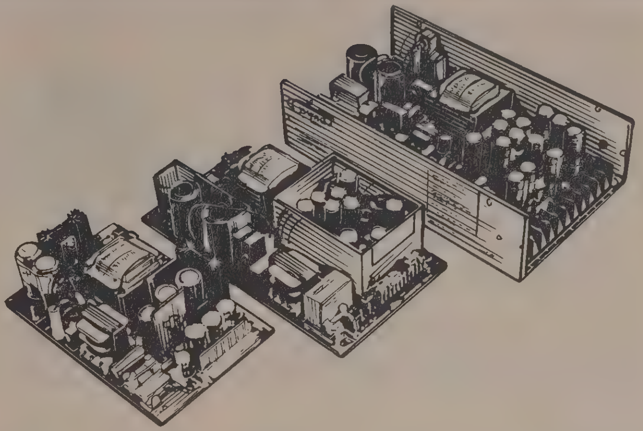
† No. 3 Output Usable at –5V, Rate at 1/2 15V Current Rating. Requires jumper on PCB for –5V. ‡Requires fan cooling. Please consult factory.



Power Supply Output Voltage	Suggested OVP Trigger Voltage
5 VDC	6.2 ±.4V
6 VDC	7V
12 VDC	14V
15 VDC	17V
18 VDC	21V
20 VDC	23V
24 VDC	27V
Dual ±12 VDC	27V
Dual ±15 VDC	33V

World Class Medical Switchers

CONDOR'S international medical multi-output switchers – approved to UL 544/IEC 601/CSA 22.2, 234. CONDOR'S medical switchers are designed to meet full international specifications, as well as European EMI specifications.



Features

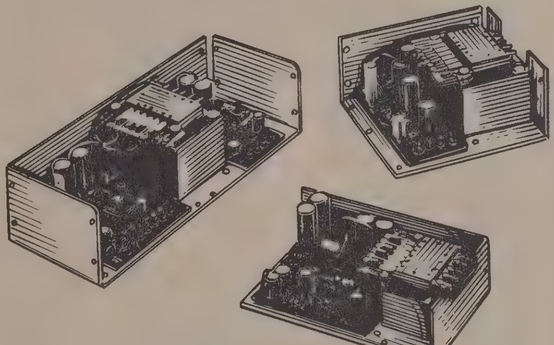
- ► 17 Models, 5 Power Levels, 30 to 110 Watts
- ► Multi-Output (Up to 5 Outputs)
- ► AC Input: 90-132 VAC/180-264 VAC, 47-63 Hz
- ► Designed to Meet the Toughest Domestic and International Medical Safety Specifications
- ► Proprietary Low Leakage – High Attenuation EMI Filter (Patent Pending)
- ► Less Than 30µA Leakage Current
- ► Meets Stringent FCC and VDE 0871 Class B EMI Specs
- ► Power Fail Available on 110-Watt Units
- ► Versatile Output Configurations for Wide Variety of Applications
- ► Industry Standard Packages
- ► 24-Hour Full Load Burn-In and 2-Year Warranty
- ► Covers Available for All Units

Stock No.	Mfr.'s Type	Output 1	Output 2	Output 3	Output 4	Output 5	Total Power, Watts	Size (Inches)	EACH	
									1-9	10-24
744-3000	MS 30A	+5V@3A	+12V@0.5A	–12V@0.5A	—	—	30	5.00 × 3.00 × 1.35	88.40	83.98
744-3005	MS 30B	+5V@3A	+15V@0.5A	–15V@0.5A	—	—	30	5.00 × 3.00 × 1.35	88.40	83.98
744-3010	MS 45A	+5V@4A	+12V@3A (3.5A PK)	–12V@0.8A	–5V@0.2A	—	45	6.30 × 3.90 × 1.65	98.80	93.86
744-3015	MS 45B	+5V@4A	+15V@2A (2.5A PK)	–15V@0.7A	–5V@0.15A	—	45	6.30 × 3.90 × 1.65	98.80	93.86
744-3020	MS 65A	+5V@6A	+15V@2A (3.5A PK)	–15V@0.7A	–5V@0.5A	—	65	7.75 × 4.25 × 1.90	119.60	113.62
744-3025	MS 65B	+5V@6A	+15V@2A (3.5A PK)	–15V@0.7A	+24V@1.2A (2A PK)	—	65	7.75 × 4.25 × 1.90	119.60	113.62
744-3030	MS 65C	+5V@6A	+12V@2.5A (4A PK)	–12V@1A	–5V@0.5A	—	65	7.75 × 4.25 × 1.90	119.60	113.62
744-3035	MS 65D	+5V@6A	+12V@2.5A (4A PK)	–12V@1A	+12V@0.7A	—	65	7.75 × 4.25 × 1.90	119.60	113.62
744-3040	MS 65E	+5V@6A	+12V@2A (3.5A PK)	–12V@0.7A	+24V@1.2A (2A PK)	—	65	7.75 × 4.25 × 1.90	119.60	113.62
744-3045	MS 80A	+5V@9A	+12V@3A (5A PK)	–12V@2A	–5V@0.6A	—	80	7.75 × 4.25 × 1.90	135.20	128.44
744-3050	MS 80B	+5V@9A	+12V@3A (5A PK)	–12V@1A	–5V@0.6A	—	80	7.75 × 4.25 × 1.90	135.20	128.44
744-3055	MS 80C	+5V@9A	+15V@1A	–15V@1A	–5V@0.6A	—	80	7.75 × 4.25 × 1.90	135.20	128.44
744-3060	MS 110A	+5V@12A	+12V@3A (5A PK)	+12V@3A (5A PK)*	–12V@3A	–5V@0.6A	110	8.80 × 4.95 × 2.45	171.60	163.02
744-3065	MS 110B	+5V@12A	+12V@3A (5A PK)	+12V@3A (5A PK)*	–12V@1A	–5V@0.6A	110	8.80 × 4.95 × 2.45	171.60	163.02
744-3070	MS 110C	+5V@12A	+12V@3A (5A PK)	+15V@1A*	–15V@1A	–5V@0.6A	110	8.80 × 4.95 × 2.45	171.60	163.02
744-3075	MS 110D	+5V@12A	+12V@3A (5A PK)	+24V@1.5A (3A PK)*	–12V@3A	–5V@0.6A	110	8.80 × 4.95 × 2.45	171.60	163.02
744-3080	MS 110H	+5V@12A	+15V@1A	–15V@1A*	+24V@2A (3A PK)	–5V@0.6A	110	8.80 × 4.95 × 2.45	171.60	163.02

*Isolated outputs.

World Class Medical Linears

CONDOR'S international medical linears, approved to meet UL 544/IEC 601/CSA 22.2, 234. CONDOR'S medical linear power supplies offer innovative yet cost-effective design solutions for both high- and low volume users.



Features

- ► 34 Models (Single, Dual and Triple Output)
- ► 3 Power Levels (5 to 92Watts)
- ► AC Input: 110/120/220/240 VAC, 47-63 Hz
- ► OVP On All 5V Outputs
- ► Meets EMI Per FCC/VDE B
- ► Hermetically Sealed Power Transistors and ICs
- ► MTFB 200,000+ Hours Per Mil Handbook 217D
- ► 8-Hour Burn-in With Cycling
- ► Full 3-Year Warranty

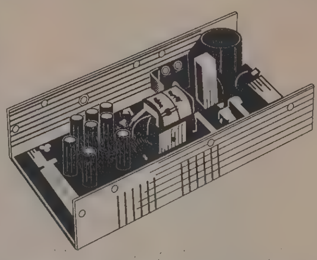
Single Output

Stock No.	Mfr.'s Type	Output	Size (Inches)	EACH	
				1-9	10-24
744-3085	ML5-1/OVP-A	5V@1.0A	4.25 × 3.25 × 1.80	40.56	39.34
744-3090	MB5-3/OVP-A	5V@3.0A	4.88 × 4.00 × 2.25	48.88	47.41
744-3095	MC5-6/OVP-A	5V@6.0A	5.63 × 4.86 × 2.95	62.40	60.53
744-3100	MD5-12/OVP-A	5V@12.0A	9.00 × 4.86 × 3.30	96.72	93.82
744-3105	ML12-0.5-A	12V@0.5A	4.25 × 3.25 × 1.80	40.56	39.34
744-3110	MB12-1.7-A	12V@1.7A	4.88 × 4.00 × 2.25	48.88	47.41
744-3115	MC12-3.4-A	12V@3.4A	5.63 × 4.86 × 2.95	62.40	60.53
744-3120	MD12-6.8-A	12V@6.8A	9.00 × 4.86 × 3.30	96.72	93.82
744-3125	ML15-0.4-A	15V@0.4A	4.25 × 3.25 × 1.80	40.56	39.34
744-3130	MB15-1.5A	15V@1.0A	4.86 × 4.00 × 2.25	48.88	47.41
744-3230	MC15-3-A	15V@3.0A	5.63 × 4.86 × 2.95	62.40	60.53
744-3235	MD15-6-A	15V@6.0A	9.00 × 4.86 × 3.30	96.72	93.82
744-3245	MB24-1.2-A	24V@1.2A	4.86 × 4.00 × 4.25	48.88	47.41
744-3250	MC24-2.4-A	24V@2.4A	5.63 × 4.86 × 2.95	62.40	60.53
744-3255	MD24-4.8-A	24V@4.8A	9.00 × 4.86 × 3.30	96.72	93.82
744-3260	MB28-1-A	28V@1.0A	4.86 × 4.00 × 2.25	48.88	47.41
744-3265	MC28-2-A	28V@2.0A	5.63 × 4.86 × 2.95	62.40	60.53
744-3270	MD28-4-A	28V@4.0A	9.00 × 4.86 × 3.30	96.72	93.82

Multiple Output

Stock No.	Mfr.'s Type	Output 1	Output 2	Output 3	Type	Case	Size (Inches)	EACH	
								1-9	10-24
744-3135	MLL12-0.25-A	+12V@0.25A	–12V@0.25A	—	Dual Output	L	4.25 × 3.25 × 1.80	47.84	46.40
744-3140	MLL15-0.2-A	+15V@0.20A	–15V@0.20A	—	Dual Output	L	4.25 × 3.25 × 1.80	47.84	46.40
744-3145	MAA15-0.8-A	+12/15V@1.0/0.8A	–12/15V@1.0/0.8A	—	Dual Output	AA	6.50 × 4.00 × 2.25	55.12	53.47
744-3150	MBB15-1.5-A	+12/15V@1.7/1.5A	–12/15V@1.7/1.5A	—	Dual Output	BB	7.00 × 4.88 × 2.95	70.72	68.60
744-3155	MCC15-3-A	+12/15V@3.4/3.0A	–12/15V@3.4/3.0A	—	Dual Output	CC	9.38 × 4.88 × 3.30	106.08	102.90
744-3160	MAA512-A	5V@2.0A	9/15V@0.5A	—	Dual Output	AA	6.50 × 4.00 × 2.25	63.44	61.54
744-3165	MBB512-A	5V@3.0A	9/15V@1.25A	—	Dual Output	BB	7.00 × 4.88 × 2.95	76.96	74.65
744-3170	MCC512-A	5V@6.0A	9/15V@2.5A	—	Dual Output	CC	9.38 × 4.88 × 3.30	114.40	110.97
744-3175	MAA524-A	5V@2.0A	18/24V@0.3A	—	Dual Output	AA	6.50 × 4.00 × 2.25	63.44	61.54
744-3180	MBB524-A	5V@3.0A	18/24V@0.8A	—	Dual Output	BB	7.00 × 4.88 × 2.95	76.96	74.65
744-3185	MCC524-A	5V@6.0A	18/24V@2.0A	—	Dual Output	CC	9.38 × 4.88 × 3.30	114.40	110.97
744-3200	MTLL-5W-A	+5V@0.5A	+12/15V@0.1A	–12/15V@0.1A	Triple Output	L	4.25 × 3.25 × 1.80	55.12	53.47
744-3205	MTAA-16W-A	5V@2.0A	+12/15V@0.4A	–12/15V@0.4A	Triple Output	AA	6.50 × 4.00 × 2.25	68.64	66.58
744-3210	MBAA-40W-A	5V@3.0A	+12/15V@1.0/0.8A	–12/15V@1.0/0.8A	Triple Output	BAA	10.25 × 4.00 × 2.95	91.52	88.77
744-3215	MCAA-60W-A	5V@6.0A	+12/15V@1.0/0.8A	–12/15V@1.0/0.8A	Triple Output	D	9.00 × 4.88 × 3.30	111.28	107.94
744-3220	MCBB-75W-A	5V@6.0A	+12/15V@1.7/1.5A	–12/15V@1.7/1.5A	Triple Output	CBB	11.00 × 4.88 × 3.30	122.72	119.04

Switching Power Supplies



Global Performance switching power supplies with the agency approvals you need. **Features:** Wide range input (85-264V) and are approved to UL1950, IEC950, VDE0805, CSA, FCC and VDE Class B for EMI. All models also are available in medical configurations, approved to UL 544 and IEC 601. **Input Protection:** Internal A.C. fuse provided on all units. This fuse only blows if a catastrophic failure occurs in the unit — it does not blow on overload or short circuit. A.C. input protected against line transients by metal oxide varistors on all medical units. **Output Noise and Ripple:** 0.5% RMS, 1% PK-PK maximum on all outputs. **Overload Protection:** Fully protected against short circuit and output overload on all outputs. Short circuit protection is cycling type on most outputs; foldback on outputs with 3 terminals regulator post regulation. Overload protection recovery after removal of fault is automatic. **Temperature Coefficient:** 0.03% per degree C typical for all outputs. All medical models are built-to-order, non-cancelable, non-returnable.

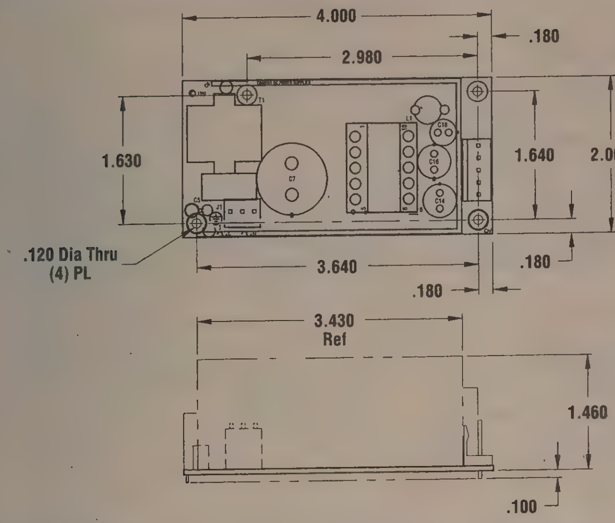
GP Models

AC Input: 85-264 VAC, 47-63 Hz single phase. **DC Outputs:** See output rating chart. **Hold-up Time:** 20 mS minimum at full load and nominal line (115 VAC). **Overload Protection:** Fully protected against short circuit and output overload on all outputs. Short circuit protection is cycling type on most outputs; foldback on outputs with 3-terminal regulator post regulation. Overload protection recovery after removal of fault is automatic. **Minimum Load:** Turn-On/Standby. No minimum load required for proper operation. **Normal Operation:** Output #1 and/or #2 combined load current must meet the minimums listed below for proper regulation as other outputs are loaded (GPX55 1.0A GP × 130 2.0A/GPX80 1.0A Single output — Not Required). **Transient Response:** +5V main output — 500 mS typical response time for a 50 to 100% or 100 to 50% load change; maximum voltage deviation — 3.5%. **Voltage Adjustment:** Built-in potentiometer adjusts voltage from 4.5V to OVP trip point (6.2V nominal) on the +5V output. A separate potentiometer adjusts output #2 ±5% minimum. **Reverse Voltage Protection:** All outputs protected against inadvertent application of reverse voltage up to 1 times the rated current of the reversed output. **Temperature Rating:** 0 to 50°C at full rated output power with natural convection cooling in a non-restricted environment. For operation in a confined space, moving air may be required. For operation above 50°C, it is important that the cooling vs. load profile is such that the heatsinks do not operate above 90°C for extended periods. **EMI Specifications:** All models include built-in EMI filters to meet or exceed the conducted emissions requirements of FCC 20870 Class B and VDE 0871 Class B. **Safety Specifications:** All commercial models are designed to meet UL 1950, CSA 1402C Level 3, IEC 950, VDE EN60950 and VDE 0750. All medical models are approved to UL 544 and IEC 601-1. **All commercial models are approved to UL 1950 without D3 deviation, CSA 22.2.234, IEC 950, VDE EN60950 and VDE0750.**

Global Performance Series Output Ratings (744-7_ _ _ — Commercial; 744-8_ _ _ — Medical)*

Stock No.*	Mfr.'s Type	Output 1	Output 2	Output 3	Output 4	Output 5	Total Power Watts	Size (Inches)	EACH			
									Commercial		Medical	
									1-9	10-24	1-9	10-24
744-X000	GPX40A	+5V @ 4.0A	+12V @ 2.0A (3PK)	−12V @ 0.4A	N/A	N/A	40	3.00 × 5.00 × 1.28	**62.40**	**59.28**	**74.88**	**71.14**
744-X005	GPX40B	+5V @ 4.0A	+15V @ 2.0A (3PK)	−15V @ 0.4A	N/A	N/A	40	3.00 × 5.00 × 1.28	**62.40**	**59.28**	**74.88**	**71.14**
744-X200	GPX40D	+5V @ 4.0A	+24V @ 1.0A (1.5APK)	−12V @ 0.4	N/A	N/A	40	3.00 × 5.00 × 1.28	**62.40**	**59.28**	**74.88**	**71.14**
744-X101	GPX40-3.3	3.3V @ 8.0A (10PK)	N/A	N/A	N/A	N/A	40	3.00 × 5.00 × 1.28	**62.40**	**59.28**	**74.88**	**71.14**
744-X205	GPX40-5	5V @ 8.0A	N/A	N/A	N/A	N/A	40	3.00 × 5.00 × 1.28	**62.40**	**59.28**	**74.88**	**71.14**
744-X206	GPX40-9	9V @ 4.5A (6PK)	N/A	N/A	N/A	N/A	40	3.00 × 5.00 × 1.28	**62.40**	**59.28**	**74.88**	**71.14**
744-X210	GPX40-12	12V @ 3.3A	N/A	N/A	N/A	N/A	40	3.00 × 5.00 × 1.28	**62.40**	**59.28**	**74.88**	**71.14**
744-X215	GPX40-15	15V @ 2.7A	N/A	N/A	N/A	N/A	40	3.00 × 5.00 × 1.28	**62.40**	**59.28**	**74.88**	**71.14**
744-X220	GPX40-24	24V @ 1.7A (2.1PK)	N/A	N/A	N/A	N/A	40	3.00 × 5.00 × 1.28	**62.40**	**59.28**	**74.88**	**71.14**
744-X102	GPX40-28	28V @ 1.4A (1.8PK)	N/A	N/A	N/A	N/A	40	3.00 × 5.00 × 1.28	**62.40**	**59.28**	**74.88**	**71.14**
744-7700‡	GPC50A	+5V @ 5.0A (7PK)	+12V @ 2.0A (3PK)	−12V @ 0.5A (1PK)	N/A	N/A	50	6.30 × 3.92 × 1.57	**64.48**	**61.26**	**N/A**	**N/A**
744-7710	GPC50F	+5V @ 5.0A (7PK)	+12V @ 1.2A (1.5PK)	−12V @ 0.5A (1PK)	N/A	N/A	50	6.30 × 3.92 × 1.57	**64.48**	**61.26**	**N/A**	**N/A**
744-X010	GPX55A	+5V @ 6.0A	+12V @ 3.0A (5PK)	+12V @ 1.0A	−12V @ 1.0A	N/A	55	6.30 × 3.94 × 1.68	**83.20**	**79.04**	**99.84**	**94.85**
744-X015	GPX55B	+5V @ 6.0A	+12V @ 3.0A (5PK)	−12V @ 1.0A	−5V @ 1.0A	N/A	55	6.30 × 3.94 × 1.68	**83.20**	**79.04**	**99.84**	**94.85**
744-X225	GPX55C	+5V @ 6.0A	+15V @ 3.0A (5Apk)	−15V @ 1.0A	−5V @ 1.0A	N/A	55	6.30 × 3.94 × 1.68	**83.20**	**79.04**	**99.84**	**94.85**
744-X020	GPX55D	+5V @ 6.0A	+24V @ 1.5A (2PK)	+12V @ 1.0A	−12V @ 1.0A	N/A	55	6.30 × 3.94 × 1.68	**83.20**	**79.04**	**99.84**	**94.85**
744-X025	GPX55E	+5V @ 6.0A	+24V @ 1.5A (2PK)	+15V @ 1.0A	−15V @ 1.0A	N/A	55	6.30 × 3.94 × 1.68	**83.20**	**79.04**	**99.84**	**94.85**
744-X026	GPX55F	+5V @ 6.0A	+12V @ 3.0A (5PK)	+15V @ 1.0A	−15V @ 1.0A	N/A	55	6.30 × 3.94 × 1.68	**83.20**	**79.04**	**99.84**	**94.85**
744-X030	GPX55-5	5V @ 11.0A	N/A	N/A	N/A	N/A	55	6.30 × 3.94 × 1.68	**83.20**	**79.04**	**99.84**	**94.85**
744-X035	GPX55-12	12V @ 4.7A	N/A	N/A	N/A	N/A	55	6.30 × 3.94 × 1.68	**83.20**	**79.04**	**99.84**	**94.85**
744-X040	GPX55-15	15V @ 3.7A	N/A	N/A	N/A	N/A	55	6.30 × 3.94 × 1.68	**83.20**	**79.04**	**99.84**	**94.85**
744-X045	GPX55-24	24V @ 2.3A	N/A	N/A	N/A	N/A	55	6.30 × 3.94 × 1.68	**83.20**	**79.04**	**99.84**	**94.85**
744-X091	GPX55-28	28V @ 2.3A	N/A	N/A	N/A	N/A	55	6.30 × 3.94 × 1.68	**83.20**	**79.04**	**99.84**	**94.85**
744-7705‡	GPC55-48	48V @ 1.5A	N/A	N/A	N/A	N/A	55	6.30 × 3.94 × 1.68	**83.20**	**79.04**	**N/A**	**N/A**
744-X050	GPX80A	+5V @ 12.0A	+12V @ 3.0A (5PK)	−12V @ 1.0A	+12V @ 1.0A	N/A	80	7.00 × 4.25 × 1.86	**114.40**	**108.68**	**137.28**	**130.42**
744-X055	GPX80B	+5V @ 12.0A	+12V @ 3.0A (5PK)	−12V @ 1.0A	−5V @ 1.0A	N/A	80	7.00 × 4.25 × 1.86	**114.40**	**108.68**	**137.28**	**130.42**
744-X060	GPX80C	+5V @ 12.0A	+12V @ 3.0A (5PK)	−15V @ 1.0A	+15V @ 1.0A	N/A	80	7.00 × 4.25 × 1.86	**114.40**	**108.68**	**137.28**	**130.42**
744-X065	GPX80D	+5V @ 12.0A	+24V @ 2.0A (4PK)	−12V @ 1.0A	+12V @ 1.0A	N/A	80	7.00 × 4.25 × 1.86	**114.40**	**108.68**	**137.28**	**130.42**
744-X070	GPX80E	+5V @ 12.0A	+24V @ 2.0A (4PK)	−15V @ 1.0A	+15V @ 1.0A	N/A	80	7.00 × 4.25 × 1.86	**114.40**	**108.68**	**137.28**	**130.42**
744-X230	GPX80P	+5V @ 12.0A	+24V @ 3.5A (4.5APK)	−12V @ 1.0A	+12V @ 2.0A	N/A	80	7.00 × 4.25 × 1.86	**114.40**	**108.68**	**137.28**	**130.42**
744-X075	GPX80-5	5V @ 16.0A	N/A	N/A	N/A	N/A	80	7.00 × 4.25 × 1.86	**114.40**	**108.68**	**137.28**	**130.42**
744-X080	GPX80-12	12V @ 6.7A	N/A	N/A	N/A	N/A	80	7.00 × 4.25 × 1.86	**114.40**	**108.68**	**137.28**	**130.42**
744-X085	GPX80-15	15V @ 5.3A	N/A	N/A	N/A	N/A	80	7.00 × 4.25 × 1.86	**114.40**	**108.68**	**137.28**	**130.42**
744-X090	GPX80-24	24V @ 3.4A	N/A	N/A	N/A	N/A	80	7.00 × 4.25 × 1.86	**114.40**	**108.68**	**137.28**	**130.42**
744-X046	GPX80-28	28V @ 3.4A	N/A	N/A	N/A	N/A	80	7.00 × 4.25 × 1.86	**114.40**	**108.68**	**137.28**	**130.42**
744-X096	GPC80-48	48V @ 2.3A	N/A	N/A	N/A	N/A	80	7.00 × 4.25 × 1.86	**114.40**	**108.68**	**N/A**	**N/A**
744-X095	GPX130A	+5V @ 16.0A	+12V @ 5.0A (8PK)	−12V @ 1.2A	+12V @ 1.2A	N/A	130	8.50 × 4.50 × 2.00	**166.40**	**158.08**	**199.68**	**189.70**
744-X100	GPX130B	+5V @ 16.0A	+12V @ 5.0A (8PK)	−5V @ 1.2A	−12V @ 1.2A	N/A	130	8.50 × 4.50 × 2.00	**166.40**	**158.08**	**199.68**	**189.70**
744-X235	GPX130C	+5V @ 16.0A	+12V @ 5.0A (8APK)	−15V @ 1.2A	+15V @ 1.2A	N/A	130	8.50 × 4.50 × 2.00	**166.40**	**158.08**	**199.68**	**189.70**
744-X105	GPX130D	+5V @ 16.0A	+24V @ 3.5A (5PK)	−12V @ 1.2A	+12V @ 1.2A	N/A	130	8.50 × 4.50 × 2.00	**166.40**	**158.08**	**199.68**	**189.70**
744-X110	GPX130E	+5V @ 16.0A	+24V @ 3.5A (5PK)	−15V @ 1.2A	+15V @ 1.2A	N/A	130	8.50 × 4.50 × 2.00	**166.40**	**158.08**	**199.68**	**189.70**
744-X115	GPX140-5	5V @ 26.0A	N/A	N/A	N/A	N/A	140	8.50 × 4.50 × 2.12	**158.08**	**150.18**	**182.00**	**172.90**
744-X120	GPX140-12	12V @ 11.7A	N/A	N/A	N/A	N/A	140	8.50 × 4.50 × 2.12	**158.08**	**150.18**	**182.00**	**172.90**
744-X125	GPX140-15	15V @ 9.3A	N/A	N/A	N/A	N/A	140	8.50 × 4.50 × 2.12	**158.08**	**150.18**	**182.00**	**172.90**
744-X130	GPX140-24	24V @ 6.0A	N/A	N/A	N/A	N/A	140	8.50 × 4.50 × 2.12	**158.08**	**150.18**	**182.00**	**172.90**
744-X103	GPX140-28	28V @ 5.7A	N/A	N/A	N/A	N/A	140	8.50 × 4.50 × 2.12	**158.08**	**150.18**	**182.00**	**172.90**
744-X135	GPX200A**	+5V @ 26.0A (32PK)	+12V @ 8.0A (12PK)	−12V @ 1.2A (1.5PK)	12V @ 4.0A (4.5PK)	†	200	9.00 × 5.00 × 2.50	**239.20**	**227.24**	**287.04**	**272.69**
744-X138	GPX200B**	+5V @ 26.0A (32PK)	+12V @ 8.0A (12PK)	−5V @ 1.2A (1.5PK)	12V @ 4.0A (4.5PK)	†	200	9.00 × 5.00 × 2.50	**239.20**	**227.24**	**287.04**	**272.69**
744-X145	GPX200D**	+5V @ 26.0A (32PK)	+24V @ 5.0A (6.5PK)	−12V @ 1.2A (1.5PK)	12V @ 4.0A (4.5PK)	†	200	9.00 × 5.00 × 2.50	**239.20**	**227.24**	**287.04**	**272.69**
744-X150	GPX200E**	+24V @ 5.0A (6 PK)	−15V @ 1.2A (1.5PK)	15V @ 4.0A (4.5PK)	N/A	†	200	9.00 × 5.00 × 2.50	**239.20**	**227.24**	**287.04**	**272.69**
744-X155	GPX200F**	+5V @ 26.0A (32 PK)	+12V @ 8 0A (12 PK)	−12V @ 1.2A (1.5PK)	5V @ 4.0A (4.5PK)	†	200	9.00 × 5.00 × 2.50	**239.20**	**227.24**	**287.04**	**272.69**
744-X240	GPX225-5**	5V @ 40.0A (45PK)	N/A	N/A	N/A	N/A	225	9.00 × 5.00 × 2.50	**226.72**	**215.38**	**276.00**	**262.08**
744-X245	GPX225-12**	12V @ 19.0A (20PK)	N/A	N/A	N/A	N/A	225	9.00 × 5.00 × 2.50	**226.72**	**215.38**	**276.00**	**262.08**
744-X250	GPX225-15**	15V @ 15.0A (16PK)	N/A	N/A	N/A	N/A	225	9.00 × 5.00 × 2.50	**226.72**	**215.38**	**276.00**	**262.08**
744-X255	GPX225-24**	24V @ 9.0A (10PK)	N/A	N/A	N/A	N/A	225	9.00 × 5.00 × 2.50	**226.72**	**215.38**	**276.00**	**262.08**
744-X260	GPX225-28**	28V @ 8.0A (8.4PK)	N/A	N/A	N/A	N/A	225	9.00 × 5.00 × 2.50	**226.72**	**215.38**	**276.00**	**262.08**

*Replace X in Stock No. as follows: 7 = Commercial version for data processing, control, etc., applications; 8 = Medical version. †Optional 5th output up to 2 amps @ ±5, 12 or 15V; consult factory. ‡Not available in Medical. For optional enclosure information, consult factory. **26 CFM forced air cooling required.



2" × 4", 40 W, Single Output

General Specifications. AC Input: 85-264 VAC, 47-63 Hz single phase. **Input Current:** Maximum input current at minimum 120 VAC, 60 Hz with full rated output load not to exceed 1.3 A. **Output Noise:** 0.5% RMS, 1.5% PK-PK, 20 MHz bandwidth, differential mode. Measured with noise probe directly across output terminals of the power supply. **Reverse Voltage Protection:** All outputs protected against inadvertent application of reverse voltage up to 1 times rated current of the reversed output. **Overload Protection:** Factory set to power limiting at 55 W ±6 W. **Efficiency:** 70% minimum at full rated load, nominal input voltage. **Input Protection:** Fuse to be provided by customer. **Inrush Current:** Inrush is limited by internal thermistors. The inrush at 240 VAC, averaged over the first AC half-cycle under cold start conditions, will not exceed 37 A. **Overvoltage Protection:** A latching overvoltage protection provided.

Stock No.*	Mfr.'s Type*	Vout (VDC)	Iout (Amps)	Line Regulation (%)	Load Regulation (%)	EACH	
						1-9	
						Commercial	Medical
744-002X	GPX41-5	5 V	6.0 A	2%	2%	**39.00**	**51.00**
744-003X	GPX41-12	12 V	3.3 A	2%	2%	**39.00**	**51.00**
744-004X	GPX41-15	15 V	2.7 A	2%	2%	**39.00**	**51.00**
744-005X	GPX41-24	24 V	1.7 A	2%	2%	**39.00**	**51.00**
744-006X	GPX41-28	28 V	1.4 A	2%	2%	**39.00**	**51.00**

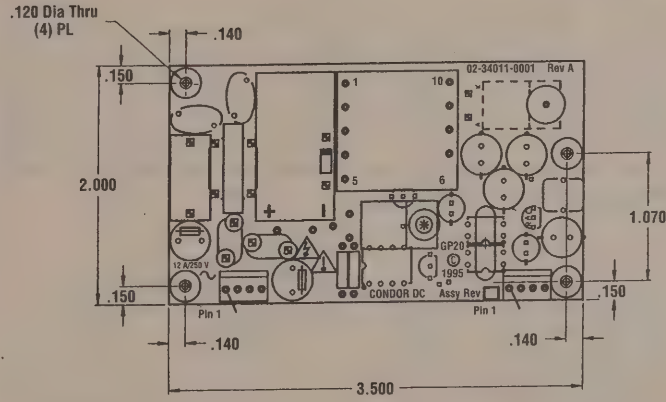
*GPM = Medical. GPC = Commercial. Replace X in Stock No. with 1 for medical, 2 for commercial.

20 W, Wide Range

General Specifications. AC Input: 90-264 VAC, 47-63 Hz single phase. **Input Current:** Maximum input current at minimum 120 VAC, 60 Hz with full rated output load is .65 A. **DC Outputs. Hold-Up Time:** 15 mSec minimum from loss of AC input at full load, nominal line (115 VAC). **Output Power:** Normal continuous output power is 20 W, 24 W peak for 60 seconds max. duration. Factory set to begin limiting at 28 W. **Output Regulation:** Regulation measured by ±40% load change from 60% rated load with all other outputs at 60% full rated load and a line voltage change from low line to high line. Initial set tolerance is measured with all outputs at 60% of full rated load. **Overload Protection:** Fully protected against short circuit and output overload. Short circuit protection is cycling type power limit. **No Load Turn-On/Standby:** No degradation of reliability will occur however regulation could be affected. **Output Noise:** 0.5% RMS, 1% PK-PK, 20 MHz bandwidth, differential mode. Measured using a 12" twisted pair harness with 47 µF capacitance at terminating end. Fundamental switching frequency ripple and noise may be substantially improved by placing a 100 µF low ESR capacitor at load. **Transient Response:** 750 µSec. typical response time for return to within 0.5% of final value for a 50% load step change, Di/Dt< 0.2 A/µSec. Maximum voltage deviation is 3.5%. **Overvoltage Protection:** Built in with firing point set per table below. OVP firing reduces output voltage to less than 75% of nominal voltage in 50 msec.

Output V	Trip Point
5 V	6.2 V ±0.6
12 V	14.0 V ±1.0
15 V	19.0 V ±1.5
24 V	28.0 V ±2.0
28 V	34.0 V ±2.8

Voltage Adjustment: Factory set with fixed resistors to maximize reliability. **Efficiency:** 72% minimum for 5 V model and improves as output voltage increases. **Overshoot:** Less than 3% overshoot at turn-on under nominal conditions, inversely proportional to input voltage and temperature. Less than 2% overshoot at turn-off under all conditions. **Turn-On Time:** Less than 1 second at 110 VAC, 25°C (inversely proportionate to input voltage and thermistor temperature). **Input Protection:** 2 internal AC fuses provided on all Medical units. 1 internal AC fuse provided on all Commercial units. Designed to blow only if a catastrophic failure occurs in the unit — Fuses do not blow on overload or short circuit. **Inrush Current:** Inrush is limited by internal thermistors. The inrush at 240 VAC, averaged over the first AC half-cycle under cold start conditions will not exceed 25 A. **Temperature Coefficient:** 0.03%/C° typical on all outputs. **Temperature Range:** 0 to 50°C at full rated output power. See Operating Temperature Table for additional details on each model. For operation in a confined space, moving air may be required. Under all conditions, the cooling vs. load profile should be such that heatsinks and/or chassis temperatures do not exceed 95°C for extended periods. **Storage:** –40 to –85°C. Units should be allowed to warm-up under non-condensing conditions before application of power. **Altitude:** –500 to 10000'. **EMI Compliance:** All models include built-in EMI filtering to meet or exceed the emissions requirements of FCC Class B, CISPR 11-Class B, CISPR 11-Class B, and VDE 0871 Class B to 150 kHz. Typical margins >3 dB at all frequencies and line/load conditions. **Safety:** All GSC models are approved to UL 1950 (with no D3 deviations), CSA22.2 No. 234 Level 3, IEC950, EN60950 and VDE 0805 (contact factory for approval status). Leakage current not to exceed 300 µA. **Packaging:** Units are shipped in 50 piece multiples, a 50 piece minimum order is required. **Shock and Vibration:** All models are designed to meet MIL-STD 810E, Method 514.4 Category I. This test consists of random vibration at 0.015 g^2/Hz from 5 to 50 Hz, declining linearly to 0.0015 g^2/Hz at 500 Hz in each axis for 1 Hr. All models designed to meet MIL-STD 810E, Method 516.4. Unpackaged units shall meet the bench handling requirements of Procedure VI for 4 drops per face. Packaged units shall meet the requirements of Procedure IV for transit/shipping drops comprised of 4 drops on each face of the standard container from 30" onto a plywood base.



INPUT 4 PiN .1 centers Molex 22-035045	Pin 1 AC Line
	Pin 4 AC Neu
OUTPUT 4 PIN .1 centers Molex 22-035045	Pin 1,2 OUT
	Pin 3,4 RTN

Connector Mates Molex TYPE 50-375043

Unless otherwise noted, all parameters are measured at 115 VAC @ 25°C and represent the nominal values. For limits at unusual operating conditions, consult factory.

Stock No.*	Mfr.'s Type	Output	Output (V)	Current (I)	Set Tolerance	Line/Load Regulation	Ripple and Noise	EACH
								1-9
744-0072	GSC20-5	1	5.1 V	3.80 A	2.5%	1%	1%	**48.00**
744-0082	GSC20-12	1	12.0 V	1.70 A	2.5%	1%	1%	**48.00**
744-0092	GSC20-15	1	15.0 V	1.40 A	2.5%	1%	1%	**48.00**
744-0102	GSC20-24	1	24.0 V	0.85 A	2.5%	1%	1%	**48.00**
744-0112	GSC20-28	1	28.0 V	0.70 A	2.5%	1%	1%	**48.00**

350 W Switching Power Supplies — Rainbow Series

- ► Automatic Line Range Selection
- ► Fully Regulated and Floating Outputs
- ► 5.00" × 9.50" × 2.50"
- ► Modular Output Configurations
- ► 2 Year Warranty
- ► FCC/VDE Level B
- ► Commercial and Medical Safety Approvals
- ► AC Power Fail Signal
- ► Remote Inhibit
- ► Optional Fan/Cover Package
- ► "SMART LOAD" Eliminates Minimum Load Requirements

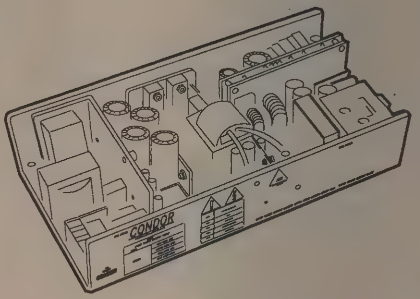
Electrical Specifications — Input
- ► RSx = 90-135 and 180-264 VAC
- ► AC Frequency Range: 47-63 Hz
- ► Conducted Emissions: FCC/VDE Class B
- ► Input Current: 9/4.5 A
- ► Inrush Current: 40 A Max.

Electrical Specifications — Safety Agencies
- ► Commercial Units: UL 1950 (No D3 Deviations), IEC950, CSA 22.2 No. 234, EN60950
- ► Medical Units: UL 2601, IEC601-1, CSA 22.2 No. 601.1 for Patient Vicinity (Non-Invasive) Applications, Consult Allied for Approval Status

Output Configurations
- ► "A" Auxiliary Output Adjusts From 4.7 to 5.3 VDC
- ► "B" Auxiliary Output Adjusts From 11.5 to 15.5 VDC
- ► "C" Same as "B"; Factory Set at 15 VDC
- ► "D" Auxiliary Output Adjusts From 23 to 29 VDC
- ► Specifications Subject to Change

Electrical Specifications — Output
- ► Adjustment Range: ±5%
- ► Power: 350 W with 12 CFM (390 W peak)
- ► Minimum Load: "SMART LOAD" Eliminates Minimum Load Requirement
- ► Output Noise: 0.5% RMS, 1% pk-pk
- ► Line Regulation: ±0.2% All Outputs
- ► Total Regulation: Main — ±1%; Aux. — ±2%
- ► Remote Sense: Standard on Main Output
- ► Hold-Up Time: 20 mSec
- ► Overcurrent Protection: Automatic Recovery, Set at 415 W
- ► Efficiency: 74% Minimum at Full Load
- ► Overvoltage Protection: Included on All Outputs

Electrical Specifications — Environmental
- ► Operating Temperature: 0-50°C
- ► Storage Temperature: –40-85°C
- ► Thermal Shutdown: Automatic



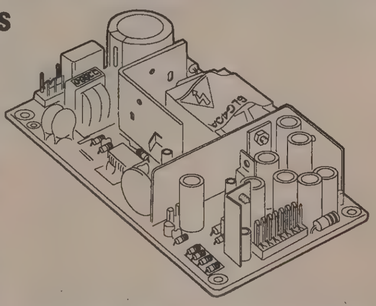
Commercial Models

Stock No.	Mfr.'s Type	Output DC				EACH
		Main	AUX 1	AUX 2	AUX 3	1-9
744-9100	RSC350BBB	5 V @ 40 A	12 V @ 12 A	12 V @ 4 A	12 V @ 4 A	489.00
744-9101	RSC350DBB	5 V @ 40 A	24 V @ 6 A	12 V @ 4 A	12 V @ 4 A	489.00
744-9102	RSC350DAC	5 V @ 40 A	24 V @ 6 A	5 V @ 4 A	15 V @ 4 A	489.00
744-9103	RSC350BAB	5 V @ 40 A	12 V @ 12 A	5 V @ 4 A	12 V @ 4 A	489.00

Medical Models

Stock No.	Mfr.'s Type	Output DC				EACH
		Main	AUX 1	AUX 2	AUX 3	1-9
744-9104	RSM350BBB	5 V @ 40 A	12 V @ 12 A	12 V @ 4 A	12 V @ 4 A	536.00
744-9105	RSM350DBB	5 V @ 40 A	24 V @ 6 A	12 V @ 4 A	12 V @ 4 A	536.00
744-9106	RSM350DAC	5 V @ 40 A	24 V @ 6 A	5 V @ 4 A	15 V @ 4 A	536.00
744-9107	RSM350BAB	5 V @ 40 A	12 V @ 12 A	5 V @ 4 A	12 V @ 4 A	536.00

40 W Wide-Input, GLC Series



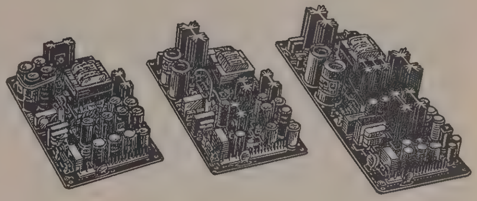
- ► AC Input: 90-264 VAC, 47-63 Hz Single Phase
- ► Input Current: Maximum Input Current at Minimum 120 VAC, 60 Hz with Full Rated Output Load Is 1.3 A
- ► Hold-Up Time: 20 mSec Minimum from Loss of AC Input At Full Load, Nominal Line (115 VAC)
- ► Output Power: 40 W
- ► Output Regulation: Regulation Measured by ±40% Load Change from 60% Rated Load with All Other Outputs at 60% Full Rated Load and a Line Voltage Change from Low Line to High Line. Initial Set Tolerance Is Measured with All Outputs at 60% of Full Rated Load
- ► Overload Protection: Fully Protected Against Short Circuit and Output Overload; Short Circuit Protection Is Cycling Type Power Limit on Output #1 and #2; Foldback Type on Output #3; Factory Set to Begin Power Limiting at 55 W
- ► Output Noise: 0.5% RMS, 1% Pk-Pk, 20 MHz Bandwidth, Differential Mode; Measured with Scope Probe Directly Across Output Terminals of the Power Supply with Load Terminated with 0.1 µF Capacitor
- ► Overvoltage Protection: Built In On +5 V Output with Firing Point Set at 6.2 V ±0.6 V; OVP Firing Reduces +5 V and Output #2 to Less Than 50% of Nominal Voltage in 50 mSec
- ► Voltage Adjustment: Factory Set on Standard Unit; However, Optional Potentiometer Adjusts Voltage from 4.7 V to OVP Point (6.2 V Nominal) on the +5 V Output; Note: Output #1 Must Not Be More Than 1% Below Nominal to Achieve Full Output Voltage Range on Output #2; Output Regulation Limits in Some Models May Be Exceeded When the Main Output Is Adjusted Beyond ±1% of Nominal Voltage; High Voltage Settings May Degrade the Reliability of the Unit Due to Excessive Power Dissipation in Some Outputs, Consult Factory for Application Assistance
- ► Efficiency: 65% Minimum at Full Rated Load, Nominal Input Voltage, Depending on Model and Load Distribution
- ► Input Protection: Internal AC Fuse Provided on All Units; Designed to Blow Only if a Catastrophic Failure Occurs in the Unit; Fuse Does Not Blow on Overload or Short Circuit
- ► Temperature Range: 0 to 50°C at Full Rated Output Power for 40; For Operation in a Confined Space, Moving Air May Be Required; Under All Conditions, the Cooling Vs. Load Profile Should Be Such that Heatsinks and/or Chassis Temperatures Do Not Exceed 90°C for Extended Periods
- ► EMI Compliance: All Models Include Built-In EMI Filtering to Meet or Exceed the Emissions Requirements of FCC Class B, CISPR 11-Class A and VDE 0871 Class A to 10 kHz; Typical Margins >3 dB at all Frequencies and Line/Load Conditions
- ► Safety: All GLC Models Are Approved to UL 1950 (With No D3 Deviations), CSA 22.2 No. 234 Level 3, IEC950, EN60950 and VDE 0805 (Consult Allied for Approval Status)

Stock No.	Mfr.'s Type	Output (V)	Current (I)	Line/Load Regulation	Ripple and Noise	EACH	
						1-9	10-24
744-9108	GLC40A	+ 5.0 V +12.0 V –12.0 V	3.00 A 2.00 A 0.35 A	2% 6% 5%	1% 1% 1%	36.00	33.50
744-9109	GLC40B	+ 5.0 V +15.0 V –15.0 V	3.00 A 1.50 A 0.35 A	2% 6% 5%	1% 1% 1%	36.00	33.50
744-9110	GLC40D	+ 5.0 V +24.0 V –12.0 V	3.00 A 1.00 A 0.40 A	2% 6% 5%	1% 1% 1%	36.00	33.50
Single Output							
744-0005	GLC40-5	5.1 V	7.80 A	2%	1%	36.10	33.50
744-0006	GLC40-12	12.0 V	3.30 A	2%	1%	36.10	33.50
744-0007	GLC40-15	15.0 V	2.70 A	2%	1%	36.10	33.50
744-0008	GLC40-24	24.0 V	1.70 A	2%	1%	36.10	33.50
744-0009	GLC40-28	28.0 V	1.04 A	2%	1%	36.10	33.50

Value Line Switching Power Supplies

These VDE, IEC, UL and CSA approved switching power supplies feature full load burn-in and a 2-year warranty. V-Series types have high peak current disk drive outputs, as well as 3 terminal type closely regulated outputs. An internal AC fuse is provided on all units for input protection. All outputs are protected against the Class A conducted EMI filtering.

SPECIFICATIONS. AC Input: 90-132/180-264VAC user selectable, 47-63 Hz single phase. **Overload Protection:** Fully protected against output overload and short circuit. Automatic recovery after removal of fault. **Reverse Voltage Protection:** All outputs protected against inadvertent application of reverse voltage. **Input Protection:** Internal AC fuse provided on all units. **Current Limit Adjustment:** Built in potentiometer factory set to begin current limiting at the following peak power output minimum under nominal line conditions. **Efficiency:** 70% ±5% depending on model and load distribution. Measured at 100% of rated power. **Over voltage Protection:** Built in on+5V outputs with firing point set at 6.2V ±0.6V. **Output Noise and Ripple:** 0.5% rms, 1.5% p-p maximum on all outputs.



Type	Dimensions—Inches			Weight
	L	H	W	
VBA	5.00	1.30	3.00	12 oz.
VCA	6.30	1.65	3.90	14 oz.
VEA	7.75	1.90	4.25	1.5 lbs.
VFA	7.75	1.90	4.25	1.5 lbs.
VHA	8.40	2.20	4.60	1.6 lbs.
VKA	10.40	2.20	4.60	1.9 lbs.

Stock No.	Mfr.'s Type	Watts	Output	Voltage	Current	Notes	EACH	
							1-9	10-24
744-6000	VBA326	30W (35 PK)	1 2 3	+ 5V + 12V − 12V	3.0A 0.5A 0.5A	A C C	**78.00**	**74.10**
744-6010	VBA323		1 2 3	+ 5V + 15V − 15V	3.0A 0.5A 0.5A	A C C	**78.00**	**74.10**
744-0480	VCA326	45W (55 PK)	1 2 3	+ 5V + 12V − 12V	4.00A 3.00A (3.5 PK) 0.80A	E E C	**78.00**	**74.10**
744-0485	VCA426		1 2 3 4	+ 5V + 12V − 12V − 5V	4.00A 3.00A (3.5 PK) 0.80A* 0.20A*	E E C C	**64.48**	**61.26**
744-0490	VCA423		1 2 3 4	+ 5V + 15V − 15V − 5V	4.00A 2.00A (2.5 PK) 0.70A* 0.15A*	E E C C	**64.48**	**61.26**
744-0495	VCA420		1 2 3 4	+ 5V + 12V − 12V − 5V	4.00A 3.00A (3.5 PK) 1.80A 0.25A	E E B C	**64.48**	**61.26**
744-6020	VEA405	65W (80 PK)	1 2 3 4	+ 5V + 15V − 15V − 5V	6.0A 2.0A (3.5A PK) 0.7A 0.5A	E E C C	**83.20**	**79.04**
744-6025	VEA424		1 2 3 4	+ 5V + 15V − 15V + 24V	6.0A 2.0A (3.5A PK) 0.7A 1.2A (2.0A PK)	E E C B	**83.20**	**79.04**
744-6030	VEA417		1 2 3 4	+ 5V + 12V − 12V − 5V	6.0A 2.5A (4.0A PK) 1.0A 0.5A	E E B C	**83.20**	**79.04**
744-6040	VEA436		1 2 3 4	+ 5V + 12V − 12V + 24V	6.0A 2.0A (3.5A PK) 0.7A 1.2A (2.0A PK)	E E C B	**83.20**	**79.04**
744-0405	VFA420	85W (130 PK)	1 2 3 4	+ 5V + 12V 12V Isolated − 12V	8.0A 2.5A (4.5A PK) 2.5A (4.5A PK) 2.5A	A B B,D B	**98.80**	**93.86**
744-0410	VFA421		1 2 3 4	+ 5V + 12V 12V Isolated − 5V	8.0A 2.5A (4.5A PK) 2.5A (4.5A PK) 2.5A	A B B,D B	**98.80**	**93.86**
744-0415	VFA423		1 2 3 4	+ 5V + 15V 15V Isolated − 5V	6.0A 2.5A (3.5A PK) 2.5A (3.5A PK) 2.5A	A B B,D B	**98.80**	**93.86**
744-0420	VFA430		1 2 3 4	+ 5V + 12V 24V Isolated − 12V	8.0A 2.5A (4.5) 2.0A (4.0) 2.5A	A B B,D B	**98.80**	**93.86**
744-0425	VHA420		1 2 3 4 5	+ 5V + 12V 12V Isolated − 12V − 5V	10.0A 3.04 (4.5A PK) 3.0A (4.5A PK) 2.0A 0.5A	A B B,D B C	**119.60**	**113.62**
744-0430	VHA426	100W (140 PK)	1 2 3 4 5	+ 5V + 12V 12V Isolated − 12V − 5V	10.0A 3.0A (4.5A PK) 1.0A 1.0A 0.2A	A B C,D C C	**119.60**	**113.62**
744-0435	VHA427		1 2 3 4 5	+ 5V + 12V 15V Isolated − 15V − 5V	10.0A 3.0A (4.5A PK) 1.0A 1.0A 0.2A	A B C,D C C	**119.60**	**113.62**
744-0440	VHA423		1 2 4 5	+ 5V + 15V − 15V − 5V	7.0A 2.5A (4.0A PK) 2.5A (4.0A PK) 0.2A	A B B C	**119.60**	**113.62**
744-0445	VHA428		1 3 4 5	+ 5V 12V Isolated − 12V − 5V	13.0A 3.0A (4.5A PK) 3.0A (4.5A PK) 0.5A	A B,D B C	**119.60**	**113.62**
744-0450	VHA430		1 2 3 4 5	+ 5V + 12V 24V Isolated − 12V 5V	10.0A 3.0A (4.5) 2.5A (4.0) 2.0A 0.5A	A B B,D B C	**119.60**	**113.62**
744-0455	VKA420	125W (155 PK)	1 2 3 4 5	+ 5V + 12V 12V Isolated − 12V − 5V	15.0A 4.0A (6.0A PK) 3.0A 3.0A 0.5A	A B B,D B C	**130.00**	**123.50**
744-0465	VKA427		1 2 3 4 5	+ 5V + 12V 15V Isolated − 15V − 5V	15.0A 4.0A (6.0A PK) 1.0A 1.0A 0.2A	A B C,D C C	**130.00**	**123.50**
744-0470	VKA423		1 2 4 5	+ 5V + 15V − 15V − 5V	10.0A 3.0A (4.0A PK) 3.0A (4.0A PK) 0.4A	A B B C	**130.00**	**123.50**
744-0475	VKA430		1 2 3 4 5	+ 5V + 12V 24V Isolated − 12V − 5V	15.0A 4.0A (6.0A) 3.0A (4.5) 3.0A 0.5A	A B B,D B C	**130.00**	**123.50**

*Ratings of these negative outputs assume that other negative output is at no load. Total combined loading cannot exceed 100%; that is, if one negative output was running at 70% of rated load, then the other negative output cannot exceed 30% of rated load.

Notes:
A: Full regulated output. Voltage adjustable from 4.5V to OVP trip point. Initial setting of +5.0V is ±1.0%.
B: Quasi-Regulated output requires 20% minimum load to meet regulation specs. An additional cross-regulation factor of ±3% must be added in those applications where the main +5V output varies ±25%.
C: Fully regulated output utilizing fixed, 3-terminal regulator.
D: Fully isolated output. May be connected in series with any output, and may be connected for (–) or (+) output. May be paralleled when same output voltage and reg. type. (Quasi-Reg. and 3-pin outputs will not share loads if connected together.)
E: Dual-sensed, regulated output. +5V and +12V outputs are sensed in combination to provide tighter regulation of the +12V output. An additional cross-regulation factor of ±2.0% must be added in those applications where the +5V output varies ±25%. Initial setting of +5V output is ±1.0%.

ENCLOSURES
744-9800. Type 08-30466-1030. VBA Series .... **EACH 10.40**
744-9805. Type 08-30466-1045. VCA Series .... **EACH 12.48**
744-9810. Type 08-30466-1080. VEA Series .... **EACH 14.56**

MATING CONNECTOR WITH PINS
For Value Line Switching power supplies, Series VFA, VHA, VKA only.

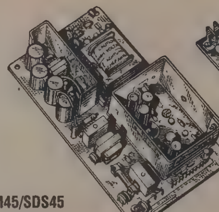
744-0001. Type 18-30234-2020........ **EACH 8.32**

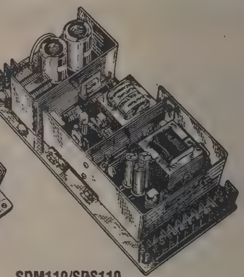
SDM/SDS International Specifications

SAFETY SPECIFICATIONS: SDM and SDS Series Safety Design Parameters. **Safety Spacings:** Primary to secondary circuitry 8.0 MM; primary to ground circuitry 4.0MM; Secondary to ground circuitry 4.0MM. **Leakage Current:** input to ground 0.5 MA RMS.**Dielectric Withstanding Voltage:** Input to output 4000VAC RMS; output to ground 500VAC RMS. These safety design parameters meet or exceed the requirements of the following international safety specifications: IEC 435, Class 1 and 2; VDE 0730 Part 2P, Class 1 and 2; VDE 0806, Class 1 and 2; UL 478; UL 1012; BPO STD #26; CEE-10 Part 2, Class 1 and 2;CSA 22.2, No's 143 and 154; ECMA-57, Class 1 and 2; and IEC 380, Class 1 and 2.

EMI Specifications: SMD and SDS Series EMI Design Parameters. All Condor International Series Switching Supplies are designed with built-in EMI filters on the output line to reduce conducted emissions to the following maximum levels: 150 KHz to 450 KHz, 54 DB V; 450 KHz to 30 MHz, 48 DB V. These EMI design parameters meet or exceed the requirements of the following EMI specifications down to 150 KHz, FCC 20870. Class A and B (V Series Class A only); VDE 0871, Class A and B. The level B specifications are the most stringent in the industry.

A-suffix models with quasi-regulated secondary outputs for high peak current capability are ideal for powering multiple floppy disk and Winchester systems. B-suffix units have tightly regulated secondary outputs–perfect for applications such as video display units and other linear applications. Versatility is unsurpassed on several models, since their isolated +12V can be stacked with their existing +12V to provide 24V. For very high +12V peak loading applications, the floating 12V can be paralleled with the dedicated +12V on several models.


SDM45/SDS45
SDM80/SDS80


SDM110/SDS110

SDM Output Rating Chart

48 Watts (58W PK)

Stock No.	Mfr.'s Type	Out-put	Volt	Current	Notes	EACH 1-9	EACH 10-24
744-5405	SDM45A	1 2 3	+ 5V + 12V − 12V	5.0A 2.0A (4A PK) 1.0A	B B C	98.80	93.86
744-5410	SDM45B	1 2 3	+ 5V + 12V − 12V	5.0A 1.0A 1.0A	A C C	98.80	93.86

80Watts (100W PK)

Stock No.	Mfr.'s Type	Out-put	Volt	Current	Notes	EACH 1-9	EACH 10-24
744-5415	SDM80A	1 2 3 4	+ 5V + 12V − 12V − 5V	9.0A 3.0A (5A PK) 2.0A 0.6A	A D D C	109.20	103.74
744-5420	SDM80B	1 2 3 4	+ 5V + 12V − 12V − 5V	9.0A 3.0A (5A PK) 1.0A 0.6A	B,F B,F C C	109.20	103.74

110Watts (138W PK)

Stock No.	Mfr.'s Type	Out-put	Volt	Current	Notes	EACH 1-9	EACH 10-24
744-5425	SDM110A	1 2 3 4 5	+ 5V + 12V + 12V* − 12V − 5V	12.0A 3.0A (5A PK) 3.0A (5A PK) 3.0A 0.6A	A D D,E D C	130.65	121.70
744-5430	SDM110B	1 2 3 4 5	+ 5V + 12V + 12V* − 12V − 5V	12.0A 3.0A (5A PK) 3.0A (5A PK) 1.0A 0.6A	B,G B,G D,E C C	135.20	128.44
744-5435	SDM110G	1 2 3 4 5	+ 5V + 12V + 24V* − 12V − 5V	12.0A 3.0A (5A PK) 1.5A (3A PK) 3.0A 0.6A	A D D,E D C	135.20	128.44

140 Watts (175W PK)

Stock No.	Mfr.'s Type	Out-put	Volt	Current	Notes	EACH 1-9	EACH 10-24
744-5440	SDM140A	1 2 3 4 5	+ 5V + 12V + 12V* − 12V − 5V	15.0A 3.0A (5A PK) 3.0A (5A PK) 3.0A 0.6A	A D D,E D C	176.80	167.96
744-5445	SDM140B	1 2 3 4 5	+ 5V + 12V + 12V* − 12V − 5V	15.0A 3.0A (5A PK) 3.0A (5A PK) 1.0A 0.6A	B,H B,H D,E C C	170.85	154.90
744-5450	SDM140G	1 2 3 4 5	+ 5V + 12V + 24V* − 12V − 5V	15.0A 3.0A (5A PK) 2.5A (4A PK) 3.0A 0.6A	A D D,E D C	166.00	159.00

200Watts (250W PK)

Stock No.	Mfr.'s Type	Out-put	Volt	Current	Notes	EACH 1-9	EACH 10-24
744-5455	SDM200A	1 2 3 4 5	+ 5V + 12V + 12V* − 12V − 5V	20.0A 5.0A (8A PK) 5.0A (8A PK) 3.0A 0.6A	A D D,E D C	208.00	197.60
744-5460	SDM200B	1 2 3 4 5	+ 5V + 12V + 12V* − 12V − 5V	20.0A 5.0A (8A PK) 5.0A (5A PK) 1.2A 0.6A	B,J B,J D,E C C	208.00	197.60
744-5465	SDM200G	1 2 3 4 5	+ 5V + 12V + 24V* − 12V − 5V	20.0A 5.0A (8A PK) 4.0A (6A PK) 5.0A 0.6A	A D D,E D C	208.00	197.60

*Isolated

Notes

A. Full regulated output. Voltage adjustable from 4.5V to OVP trip point. Initial setting of +5.0V is + 1.0%.

B. Dual sensed reg. output. +5V and +12V outputs (*) are sensed in combination to provide tighter reg. of +12V output. Additional cross reg. factor +2.0% must be added in applications where the main +5V output varies +25%. Initial setting of +5V output is +1.0%.

C. Fully regulated output utilizing fixed 3-terminal regulator.

D. Quasi-regulated output requires 20% min. load to meet regulation specs. Additional cross regulation factor of +3% must be added in applications where the main+5V output varies 25%.

E. Fully isolated output. May be connected in series with any output, and may be connected for ± output. May be paralleled with the same output voltage and reg type. (Quasi-Reg and 3-pin outputs will not share loads if connected together).

F. The total current for +5V* and +12V* outputs must not exceed 10A (14A PK).

G. The total current for +5V* and +12V* outputs must not exceed 13A (17A PK).

H. The total current for +5V* and +12V* outputs must not exceed 15A (20A PK).

J. The total current for +5V* and +12V* outputs must not exceed 20A (28A PK).

SDS Output Rating Chart

Stock No.	Mfr.'s Type	Volt	Nominal/Peak * Current	Watts	EACH 1-9	EACH 10-24
744-5205 744-5210 744-5215	SDS45-5 SDS45-12 SDS45-24	5V 12V 24V	9.0A/11.3A 3.8A/4.8A 1.9A/2.4A	45 W 58W (PK)	88.00 88.00 88.00	84.25 84.25 84.25
744-5220 744-5225 744-5230	SDS80-5 SDS80-12 SDS80-24	5V 12V 24V	16.0A/20.0A 6.7A/8.4A 5.3A/6.6A	80 W 100W (PK)	98.00 98.00 98.00	94.00 94.00 94.00
744-5235 744-5240 744-5245	SDS110-5 SDS110-12 SDS110-24	5V 12V 24V	22.0A/27.5A 9.2A/11.5A 4.6A/5.8A	110 W 138W (PK)	122.00 122.00 122.00	117.00 117.00 117.00
744-5250 744-5255 744-7500 744-7505	SDS140-5 SDS140-12 SDS140-15 SDS140-24	5V 12V 15V 24V	28.0A/35.0A 11.7A/14.6A 9.4A/11.8A 5.9A/7.4A	140 W 175W (PK)	152.00 152.00 152.00 152.00	145.00 145.00 145.00 145.00
744-5260 744-7510 744-2015 744-5265	SDS200-5 SDS200-12 SDS200-15 SDS200-24	5V 12V 15V 24V	40.0A/50.0A 16.7A/20.9A 13.4A/16.8A 8.4A/10.5A	200 W 250W (PK)	176.00 176.00 176.00 176.00	169.00 169.00 169.00 169.00

Connector Kit for SDS45/SDM45 and SDS80/SDM80 Units Only

744-2019. Type 18-30234-2019 (Amp connector and pins)....................**EACH 8.32**

PAC Series: Encloses Switching Power Supplies

- **FCC Class B and VDE 0871 Class B Conducted and Radiated EMI Filtering**
- **VDE, IEC, U.L. and CSA Approved**
- **Worldwide AC Input Ranges 90-132/180-264VAC with Auto-Switchover - No taps or Switches**

These fully enclosed switching power supplies have a safe, ultra-compact design. Their extremely versatile output configurations are made for your tough and varied applications. The IEC AC output connector and VDE approved On/Off switch mean that no additional AC system wiring is required. Other features include an internal fan for full system cooling, high peak current disk drive outputs (as well as 3 terminal type closely regulated outputs), full load burn-in and a 2-year warranty. Plus, with the PAC Series, agency approvals are very easy since all critical parameters are controlled within the supply. There is an additional remote turn-on for add-on applications such as hard disk sub-systems. AC powerfail signal is provided on 150 and 185 watt units. **Dimensions. 85/105 Models:** 5.75 × 3.70 × 4.20"; 2.1 lbs. **Specifications. AC Input:** 90-132/180-264VAC with fully automated switch-over (no switches or taps required), 47-63 Hz, single phase. Input connections are made through standard IEC320/CEE-22 international type input connector. **AC Switch:** The input AC is controlled by a standard VDE approved DPST rocker switch. In addition, a remote turn-on option is available which allows the unit to be switched on by the application of a +5V logic signal. It is particularly useful for add-on systems (hard disks, etc.) where the remote turn-on line is simply connected to the + 5V of the main computer.

PAC 85/105

Stock No.	Mfr.'s Type	Watts	Out-put	Volt-age	Current	Notes	EACH 1-9	EACH 10-24
744-0200	PAC 85-01	85 (130W PK)	1 2 3 4	+ 5V + 12V − 5V − 12V	7.0A 4.0A (7.0A PK) 0.5A 1.5A	A B C B	182.00	172.90
744-0205	PAC 85-03	85 (130W PK)	1 2 3 4	+ 5V + 15V − 5V − 15V	6.0A 3.5A (6.0A PK) 0.5A 1.5A	A B C B	182.00	172.90
744-0210	PAC 85-05	85 (130W PK)	1 2 3 4	+ 5V + 24V − 5V − 12V	7.0A 2.5A (4.0A PK) 0.5A 1.5A	A B C B	173.00	168.00
744-0215	PAC 105-01	105 (140W PK)	1 2 3 4	+ 5V + 12V − 5V − 12V	10.0A 5.0A (8.0A PK) 0.6A 2.0A	A B C B	197.60	187.72
744-0220	PAC 105-03	105 (140W PK)	1 2 3 4	+ 5V + 15V − 5V − 15V	8.0A 5.0A (7.0A PK) 0.6A 2.0A	A B C B	197.60	187.72
744-0225	PAC 105-05	105 (140W PK)	1 2 3 4	+ 5V + 24V − 5V − 12V	10.0A 3.0A (4.5A PK) 0.6A 2.0A	A B C B	194.03	184.33

Notes:

A: Full regulated output. Voltage adjustable from 4.5V to OVP trip point. Initial setting of +5.0V is ± 1.0%.

B. Quasi-Regulated output requires 20% minimum load to regulation specs. An additional cross regulation factor of ±3.0% must be added in those applications where the main + 5V output varies ±25%.

C: Fully regulated output utilizing fixed, 3 terminal regulator.

D: Fully isolated output. May be connected in series with other outputs for higher voltage applications. May be connected in parallel with another output if both outputs are the same voltage and quasi-regulated.

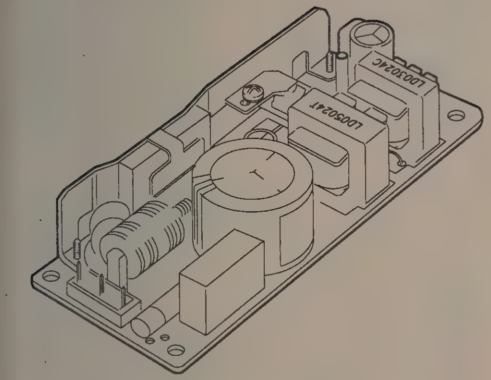
Options:

1. Mating AMP output connectors with pins are available.
Model 18-30234-0013. For PAC 85 and PAC 105.
744-0002 ....**EACH 7.28**

2. A mating IEC 320/CEE-22 type AC input plug and cord set is available. This 6 ft. cord set comes with a standard 3-prong ground plug.
744-0004. Model 20-30793-0001....................**EACH 6.24**

3. Remote turn-on: This remote turn-on option allows the unit to be switched on by the application of a + 5VDC logic signal. 'ON' = 2.4 to 5.5VDC @ 25mA (5V). 'OFF' = 0 to 0.8VDC. This feature is particularly useful in add-on disk systems where the remote turn-on line is simply connected to the + 5V of the main computer. Add suffix 'R' to the mfr.'s part number for this non-stock option.

LDA Series: World-Wide Input, Single Output

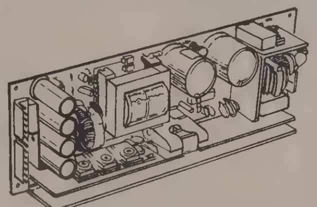


- Low Cost, Small, Lightweight Open Frame PC Board Type
- Available With Adjustable Output Potentiometer (Y) Option
- Available With Chassis and Cover (SN)
- Universal Input (85~264 VAC) Inrush Current, and Overvoltage Protection Circuits
- Noise Regulation: Complies with FCC-B, VCCI-2, and VFG 243/91
- Harness Assembly Available, See Page 472
- UL Approved, CSA, TÜV
- 2 Year Warranty
- Quantity Pricing Always Available

Stock No.	Mfr.'s Type	DC Output Voltage				Size (In.) W × H × D	Weight Lbs.	EACH
		5	12	15	24			1-9
800-9200	LDA10F-5	2.0 A	—	—	—	1.96 × 0.82 × 4.90	0.17	**35.55**
800-0300	LDA10F-5-SN	2.0 A	—	—	—	2.25 × 1.26 × 4.92	0.19	**38.99**
800-9205	LDA10F-12	—	0.9 A	—	—	1.96 × 0.82 × 4.90	0.17	**35.55**
800-0305	LDA10F-12-SN	—	0.9 A	—	—	2.25 × 1.26 × 4.92	0.19	**38.99**
800-9210	LDA10F-15	—	—	0.7 A	—	1.96 × 0.82 × 4.90	0.17	**35.55**
800-0310	LDA10F-15-SN	—	—	0.7 A	—	2.25 × 1.26 × 4.92	0.19	**38.99**
800-9215	LDA10F-24	—	—	—	0.5 A	1.96 × 0.82 × 4.90	0.17	**35.55**
800-0315	LDA10F-24-SN	—	—	—	0.5 A	2.25 × 1.26 × 4.92	0.19	**38.99**
800-9220	LDA15F-5	3.0 A	—	—	—	1.96 × 0.82 × 4.90	0.21	**47.09**
800-0320	LDA15F-5-SN	3.0 A	—	—	—	2.25 × 1.26 × 5.71	0.23	**51.00**
800-9225	LDA15F-12	—	1.3 A	—	—	1.96 × 0.82 × 4.90	0.21	**47.09**
800-0325	LDA15F-12-SN	—	1.3 A	—	—	2.25 × 1.26 × 5.71	0.23	**51.00**
800-9230	LDA15F-15	—	—	1.0 A	—	1.96 × 0.82 × 4.90	0.21	**47.09**
800-0330	LDA15F-15-SN	—	—	1.0 A	—	2.25 × 1.26 × 5.71	0.23	**51.00**
800-9235	LDA15F-24	—	—	—	0.7 A	1.96 × 0.82 × 4.90	0.21	**47.09**
800-0335	LDA15F-24-SN	—	—	—	0.7 A	2.25 × 1.26 × 5.71	0.23	**51.00**
800-9240	LDA30F-5	6.0 A	—	—	—	2.12 × 1.00 × 5.12	0.44	**58.86**
800-0340	LDA30F-5-SN	6.0 A	—	—	—	2.56 × 1.42 × 6.42	0.46	**66.45**
800-9245	LDA30F-12	—	2.5 A	—	—	2.12 × 1.00 × 5.12	0.44	**58.86**
800-0345	LDA30F-12-SN	—	2.5 A	—	—	2.56 × 1.42 × 6.42	0.46	**66.45**
800-9250	LDA30F-15	—	—	2.0 A	—	2.12 × 1.00 × 5.12	0.44	**58.86**
800-0350	LDA30F-15-SN	—	—	2.0 A	—	2.56 × 1.42 × 6.42	0.46	**66.45**
800-9255	LDA30F-24	—	—	—	1.3 A	2.12 × 1.00 × 5.12	0.44	**58.86**
800-0355	LDA30F-24-SN	—	—	—	1.3 A	2.56 × 1.42 × 6.42	0.46	**66.45**
800-9260	LDA50F-5	10.0 A	—	—	—	2.20 × 1.04 × 7.80	0.55	**74.55**
800-0360	LDA50F-5-SN	10.0 A	—	—	—	2.56 × 1.42 × 8.86	0.57	**79.50**
800-9265	LDA50F-12	—	4.3 A	—	—	2.20 × 1.04 × 7.80	0.55	**74.55**
800-0365	LDA50F-12-SN	—	4.3 A	—	—	2.56 × 1.42 × 8.86	0.57	**79.50**
800-9270	LDA50F-15	—	—	3.5 A	—	2.20 × 1.04 × 7.80	0.55	**74.55**
800-0370	LDA50F-15-SN	—	—	3.5 A	—	2.56 × 1.42 × 8.86	0.57	**79.50**
800-9275	LDA50F-24	—	—	—	2.1 A	2.20 × 1.04 × 7.80	0.55	**74.55**
800-0375	LDA50F-24-SN	—	—	—	2.1 A	2.56 × 1.42 × 8.86	0.57	**79.50**
800-0025	LDA75F-5	15.0 A	—	—	—	1.65 × 2.56 × 9.92	0.71	**92.70**
800-4200	LDA75F-5-SN	15.0 A	—	—	—	2.56 × 1.65 × 9.93	0.71	**100.00**
800-0003	LDA75F-12	—	6.3 A	—	—	1.65 × 2.56 × 9.92	0.71	**92.70**
800-4205	LDA75F-12-SN	—	6.3 A	—	—	2.56 × 1.65 × 9.93	0.71	**100.00**
800-0035	LDA75F-15	—	—	5.0 A	—	1.65 × 2.56 × 9.92	0.71	**92.70**
800-4210	LDA75F-15-SN	—	—	5.0 A	—	2.56 × 1.65 × 9.93	0.71	**100.00**
800-0040	LDA75F-24	—	—	—	3.2 A	1.65 × 2.56 × 9.92	0.71	**92.70**
800-4215	LDA75F-24-SN	—	—	—	3.2 A	2.56 × 1.65 × 9.93	0.71	**100.00**
800-0100	LDA100W-5	20.0 A	—	—	—	1.65 × 2.83 × 9.92	0.80	**120.17**
800-4220	LDA100W-5-SN	20.0 A	—	—	—	2.84 × 1.77 × 9.93	0.80	**126.20**
800-0110	LDA100W-12	—	8.5 A	—	—	1.65 × 2.85 × 9.92	0.80	**120.17**
800-4230	LDA100W-12-SN	—	8.5 A	—	—	2.84 × 1.77 × 9.93	0.80	**126.20**
800-0120	LDA100W-15	—	—	6.7 A	—	1.65 × 2.85 × 9.92	0.80	**120.17**
800-4235	LDA100W-15-SN	—	—	6.7 A	—	2.84 × 1.77 × 9.93	0.80	**126.20**
800-0130	LDA100W-24	—	—	—	4.3 A	1.65 × 2.85 × 9.92	0.80	**120.17**
800-4240	LDA100W-24-SN	—	—	—	4.3 A	2.84 × 1.77 × 9.93	0.80	**126.20**
800-0140	LDA150W-5	30.0 A	—	—	—	1.85 × 3.35 × 9.92	1.13	**156.71**
800-4245	LDA150W-5-SN	30.0 A	—	—	—	3.35 × 1.85 × 9.93	1.13	**164.50**
800-0150	LDA150W-12	—	12.5 A	—	—	1.85 × 3.35 × 9.92	1.13	**156.71**
800-4250	LDA150W-12-SN	—	12.5 A	—	—	3.35 × 1.85 × 9.93	1.13	**164.50**
800-0160	LDA150W-15	—	—	10.0 A	—	1.85 × 3.35 × 9.92	1.13	**156.71**
800-4255	LDA150W-15-SN	—	—	10.0 A	—	3.35 × 1.85 × 9.93	1.13	**164.50**
800-0170	LDA150W-24	—	—	—	6.3 A	1.85 × 3.35 × 9.92	1.13	**156.71**
800-4260	LDA150W-24-SN	—	—	—	6.3 A	3.35 × 1.85 × 9.93	1.13	**164.50**

LCA Series: Designed for Low Cost, Small Size and High Reliability

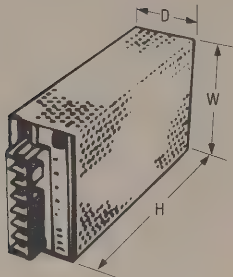
- Input AC 85-132 V
- Overcurrent, Overvoltage Protection
- PC Board Open Frame Construction
- Noise Regulation: Complies with FCC-B, VCC1-2
- Harness Assembly Available, See Page 472
- Two Year Warranty
- Quantity Pricing Always Available
- UL Recognized, CSA Certified
- Quantity Pricing Always Available



Single Output

Stock No.	Mfr.'s Type	Wattage	DC Output Volts	Output Amps	Size (In.) W × H × D	EACH
						1-9
800-9756	LCA10S-5	10	5.0	2.0	1.93 × 0.67 × 3.70	**25.25**
800-9757	LCA10S-12	10	12.0	0.9	1.93 × 0.67 × 3.70	**25.25**
800-9758	LCA10S-15	10	15.0	0.7	1.93 × 0.67 × 3.70	**25.25**
800-9760	LCA10S-24	10	24.0	0.5	1.93 × 0.67 × 3.70	**25.25**
800-9761	LCA15S-5	15	5.0	3.0	1.97 × 0.67 × 4.53	**31.31**
800-9762	LCA15S-12	15	12.0	1.3	1.97 × 0.67 × 4.53	**31.31**
800-9763	LCA150S-15	15	15.0	1.0	1.97 × 0.67 × 4.53	**31.31**
800-9764	LCA15S-24	15	24.0	0.7	1.97 × 0.67 × 4.53	**31.31**
800-9765	LCA30S-5	30	5.0	6.0	1.97 × 0.98 × 5.22	**40.89**
800-9766	LCA30S-12	30	12.0	2.5	1.97 × 0.98 × 5.22	**40.89**
800-9767	LCA30S-15	30	15.0	2.0	1.97 × 0.98 × 5.22	**40.89**
800-9768	LCA30S-24	30	24.0	1.3	1.97 × 0.98 × 5.22	**40.89**
800-9769	LCA50S-5	50	5.0	10.0	1.97 × 0.98 × 5.22	**50.49**
800-9770	LCA50S-12	50	12.0	4.3	1.97 × 0.98 × 7.68	**50.49**
800-9771	LCA50S-15	50	15.0	3.5	1.97 × 0.98 × 7.68	**50.49**
800-9772	LCA50S-24	50	24.0	2.5	1.97 × 0.98 × 7.68	**50.49**
800-0005	LCA75S-5	75	5.0	15.0	2.00 × 1.50 × 8.66	**66.90**
800-0010	LCA75S-12	75	12.0	6.3	2.00 × 1.50 × 8.66	**66.90**
800-0015	LCA75S-15	75	15.0	5.0	2.00 × 1.50 × 8.66	**66.90**
800-0020	LCA75S-24	75	24.0	3.2	2.00 × 1.50 × 8.66	**66.90**
800-9773	LCA100S-5	100	5.0	20.0	2.44 × 1.26 × 8.74	**84.91**
800-9774	LCA100S-12	100	12.0	8.5	2.44 × 1.26 × 8.74	**84.91**
800-9775	LCA100S-15	100	15.0	7.0	2.44 × 1.26 × 8.74	**84.91**
800-9776	LCA100S-24	100	24.0	4.3	2.44 × 1.26 × 8.74	**84.91**
800-9777	LCA150S-5	150	5.0	30.0	2.95 × 1.42 × 8.74	**122.43**
800-9778	LCA150S-12	150	12.0	12.5	2.95 × 1.42 × 8.74	**122.43**
800-9779	LCA150S-15	150	15.0	10.0	2.95 × 1.42 × 8.74	**122.43**
800-9780	LCA150S-24	150	24.0	6.3	2.95 × 1.42 × 8.74	**122.43**

Single Output Switchers: 10 to 150 Watts



- Two and Three Year Warranty
- Protective Cover
- UL and TUV Approved, CSA Certified
- Small Size
- Adjustable Output Voltage Range: ±10%

Size Chart

	W	H	D
A	2.91	2.68	1.06
B	3.82	3.91	1.38
C	3.82	•4.90	1.38
D	3.82	6.30	1.46
E	3.66	6.63	1.97
F	3.66	7.05	2.56
G	3.66	7.44	1.97
H	3.66	7.83	2.56
I	2.71	3.30	1.18
J	2.71	4.09	1.22
K	3.35	4.68	1.30
L	1.74	3.60	6.80
M	1.52	3.66	7.00

Input Range AC 85-132VDC 110-170V

Stock No.*	Mfr.'s Type	Watts	Output Voltage				Size	EACH
			+5V	+12V	+15V	+24V		1-4
800-5000	K10AU-5-N	10.0	2.0A	—	—	—	A	42.66
800-5005	K10AU-12-N	10.8	—	0.9A	—	—	A	42.66
800-5010	K10AU-15-N	10.5	—	—	0.7A	—	A	42.66
800-5015	K10AU-24-N	12.0	—	—	—	0.5A	A	42.66
800-5020	K15AU-5-N	15.0	3.0A	—	—	—	B	53.53
800-5025	K15AU-12-N	15.6	—	1.3A	—	—	B	53.53
800-5030	K15AU-15-N	15.0	—	—	1.0A	—	B	53.53
800-5035	K15AU-24-N	16.8	—	—	—	0.7A	B	53.53
800-8000	R15U-5-N	15.0	3.0A	—	—	—	I	42.66
800-8005	R15U-12-N	15.6	—	1.3A	—	—	I	42.66
800-8010	R15U-15-N	15.0	—	—	1.0A	—	I	42.66
800-8015	R15U-24-N	16.8	—	—	—	0.7A	I	42.66
800-5040	K25AU-5-N	25.0	5.0A	—	—	—	C	65.13
800-5045	K25AU-12-N	25.2	—	2.1A	—	—	C	65.13
800-5050	K25AU-15-N	25.5	—	—	1.7A	—	C	65.13
800-5055	K25AU-24-N	26.4	—	—	—	1.1A	C	65.13
800-8020	R25U-5-N	25.0	5.0A	—	—	—	J	50.74
800-8025	R25U-12-N	25.2	—	2.1A	—	—	J	50.74
800-8030	R25U-15-N	25.5	—	—	1.7A	—	J	50.74
800-8035	R25U-24-N	26.4	—	—	—	1.1A	J	50.74
800-5060	K50AU-5-N	50.0	10.0A	—	—	—	D	90.62
800-5065	K50AU-12-N	50.4	—	4.2A	—	—	D	90.62
800-5070	K50AU-15-N	51.0	—	—	3.4A	—	D	90.62
800-5075	K50AU-24-N	50.4	—	—	—	2.1A	D	90.62
800-8040	R50U-5-N	50.0	10.0A	—	—	—	K	75.48
800-8045	R50U-12-N	50.4	—	4.2A	—	—	K	75.48
800-8050	R50U-15-N	51.0	—	—	3.4A	—	K	75.48
800-8055	R50U-24-N	52.8	—	—	—	2.2A	K	75.48
800-7000	R100U-5-N	100.0	20.0A	—	—	—	M	123.70
800-7005	R100U-12-N	100.0	—	8.5A	—	—	M	123.70
800-7010	R100U-15-N	100.0	—	—	7.0A	—	M	123.70
800-7015	R100U-24-N	100.0	—	—	—	4.5A	M	123.70
800-7020	R150U-5-N	150.0	30.0A	—	—	—	L	173.69
800-7025	R150U-12-N	150.0	—	13.0A	—	—	L	173.69
800-7030	R150U-15-N	150.0	—	—	10.0A	—	L	173.69
800-7035	R150U-24-N	150.0	—	—	—	6.5A	L	173.69
800-5080	K100AU-5-N	100.0	20.0A	—	—	—	E	135.57
800-5085	K100AU-12-N	102.0	—	8.5A	—	—	E	135.57
800-5090	K100AU-15-N	105.0	—	—	7.0A	—	E	135.57
800-5095	K100AU-24-N	108.0	—	—	—	4.5A	E	135.57
800-5100	K150AU-5-N	150.0	30.0A	—	—	—	F	193.38
800-5105	K150AU-12-N	156.0	—	13.0A	—	—	F	193.38
800-5110	K150AU-15-N	150.0	—	—	10.0A	—	F	193.38
800-5115	K150AU-24-N	156.0		—	—	6.5A	F	193.38

*Also available without cover.

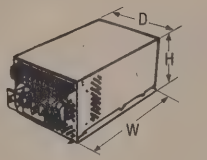
Wide input Range: 15-30 Watt —AC 85-264V. DC 110-340V; 100-150 Watt—AC 85-132V.

Stock No.*	Mfr.'s Type	Watts	Output Voltage				Size	EACH
			+5V	+12V	+15V	+24V		1-4
800-1000	P15E-5-N	15.0	3.0A	—	—	—	B	61.85
800-1010	P15E-12-N	15.6	—	1.3A	—	—	B	61.85
800-1020	P15E-15-N	15.0	—	—	1.0A	—	B	61.85
800-1030	P15E-24-N	16.8	—	—	—	0.7A	B	61.85
800-1040	P30E-5-N	30.0	6.0A	—	—	—	C	77.51
800-1050	P30E-12-N	30.0	—	2.5A	—	—	C	77.51
800-1060	P30E-15-N	30.0	—	—	2.0A	—	C	77.51
800-1070	P30E-24-N	31.2	—	—	—	1.3A	C	77.51
800-1080	P50E-5-N	50.0	10.0A	—	—	—	D	94.67
800-1090	P50E-12-N	50.4	—	4.2A	—	—	D	94.67
800-1100	P50E-15-N	51.0	—	—	3.4A	—	D	94.67
800-1110	P50E-24-N	50.4	—	—	—	2.1A	D	94.67
800-1120	P100E-5-N	100.0	20.0A	—	—	—	G	160.30
800-1130	P100E-12-N	102.0	—	8.5A	—	—	G	160.30
800-1140	P100E-15-N	105.0	—	—	7.0A	—	G	160.30
800-1150	P100E-24-N	108.0	—	—	—	4.5A	G	160.30
800-2000	P150E-5-N	150.0	30.0A	—	—	—	H	219.37
800-2010	P150E-12-N	156.0	—	13.0A	—	—	H	219.37
800-2020	P150E-15-N	150.0	—	—	10.0A	—	H	219.37
800-2030	P150E-24-N	156.0	—	—	—	6.5A	H	219.37

*Also available without cover.

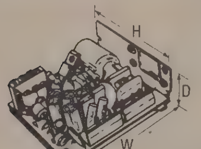
Single Output Switchers: 300-1500 Watts

- Dual Autoranging Input: 300-600 Watt—AC 85-264V
- 1500 Watt—AC 85-132V/AV 170-264V
- 1500W—Load Variable Fan
- Adjustable Output Voltage Range: ±10%
- UL1459, TUV Approved, CSA Certified
- Master/Slave Parallel Operation
- Remote On/Off-TTL Compatible
- Three Year Warranty



Stock No.	Mfr.'s Type	Wattage	Output Voltage-Amps (A)				Dimensions-Inches			EACH
			5V	12V	15V	24V	D	H	W	1-4
800-6000	P300E-5	300W	60.0A	—	—	—	4.72	3.66	7.48	497.34
800-6010	P300E-12	324W	—	27.0A	—	—	4.72	3.66	7.48	497.34
800-6020	P300E-15	330W	—	—	22.0A	—	4.72	3.66	7.48	497.34
800-6030	P300E-24	336W	—	—	—	14.0A	4.72	3.66	7.48	497.34
800-6040	P600E-5	600W	120.0A	—	—	—	7.48	3.66	7.87	767.95
800-6050	P600E-12	636W	—	53.0A	—	—	7.48	3.66	7.87	767.95
800-6060	P600E-15	645W	—	—	43.0A	—	7.48	3.66	7.87	767.95
800-6070	P600E-24	648W	—	—	—	27.0A	7.48	3.66	7.87	767.95
800Q6080	P1500E-5	1500W	300.0A	—	—	—	7.87	3.82	11.81	1824.71
800Q6090	P1500E-12	1500W	—	125.0A	—	—	7.87	3.82	11.81	1824.71
800Q6100	P1500E-15	1500W	—	—	100.0A	—	7.87	3.82	11.81	1824.71
800Q6110	P1500E-24	1560W	—	—	—	65.0A	7.87	3.82	11.81	1824.71

Multiple Output Switchers: 8-100 Watts



- Input Range: AC 85-132V, DC 110-170V
- Adjustable Output Voltage Range: ±10% on VI
- Output #1 is Isolated From Output #2 and #3
- UL Approved, CSA Certified
- Protective Cover
- Two Year Warranty

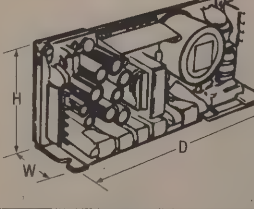
Size Chart

	W	H	D
A	2.91	2.68	1.06
B	4.74	3.62	1.32
C	6.36	3.82	1.59
D	6.10	3.66	1.92
E	6.89	3.66	1.65
F	7.48	3.66	1.97
G	3.93	3.14	1.10
H	5.31	3.14	1.22
I	6.10	3.66	1.37
—	—	—	—

Stock No.*	Mfr.'s Type	Watts	Output (V)/Current (A)			Size	EACH
			V1	V2	V3		1-4
800-1800	MMC8U-1-N	8	+5V/1.2A	+12V/0.1A	−12V/0.1A	A	45.44
800-1805	MMC8U-2-N	8	+5V/1.1A	+15V/0.1A	−15V/0.1A	A	45.44
800-1810	MMC8U-3-N	8	+5V/1.2A	+12V/0.1A	−5V/0.1A	A	45.44
800-8060	RMC15U-1-N	15	+5V/2.0A	+12V/0.3A	−12V/0.2A	G	56.29
800-8065	RMC15U-2-N	15	+5V/2.0A	+15V/0.2A	−15V/0.2A	G	56.29
800-8070	RMC30U-1-N	30	+5V/3.0A	+12V/1.2A	−12V/0.3A	H	75.48
800-8075	RMC30U-2-N	30	+5V/3.0A	+15V/0.5A	−15V/0.5A	H	75.48
800-1835	MMC50U-1-N	50	+5V/5.0A	+12V/1.5A	−12V/0.5A	D	109.82
800-1840	MMC50U-2-N	50	+5V/5.0A	+15V/1.2A	−15V/0.5A	D	109.82
800-1845	MMC50U-3-N	50	+5V/5.0A	+12V/1.5A	−5V/0.5A	D	109.82
800-1850	MMC50U-4-N	50	+5V/7.0A	+12V/1.0A	−12V/0.3A	D	109.82
800-0002	RMC50U-1-N	50	+5V/5.0A	+12V/1.5A	−12V/0.5A	I	100.20
800-1265	RMC50U-2-N	50	+5V/5.0A	+15V/1.2A	−15V/.55A	I	100.20
800-1855	MMC75U-1-N	75	+5V/8.0A	+12V2.5A	−5V/0.5A	E	159.29
800-1860	MMC75U-2-N	75	+5V/8.0A	+15V/1.8A	−15V/0.5A	E	159.29
800-1865	MMC75U-3-N	75	+5V/8.0A	+12V/2.5A	−5V/0.5A	E	159.29
800-1870	MMC75U-4-N	75	+5V/6.0A	+12V/3.2A	−12V/0.5A	E	159.29
800-1875	MMC100U-1-N	100	+5V/13.0A	+12V/2.0A	−12V/1.0A	F	184.04
800-1880	MMC100U-2-N	100	+5V/13.0A	+15V/1.5A	−15V/1.0A	F	184.04
800-1885	MMC100U-3-N	100	+5V/13.0A	+12V/2.0A	−5V/1.0A	F	184.04
800-1890	MMC100U-4-N	100	+5V/8.0A	+12V/4.0A	−12V/1.0A	F	184.04

Multiple Output Switchers: 15-100 Watts

- Protective Cover on 50-100 Watts
- UL1459 and TUV Approved, CSA Certified
- EMI: FCC-B
- Three Year Warranty
- Adjustable Output Voltage Range: ±10% on V1
- Output #1 is Isolated From Output #2 and #3
- Wide Input Range: 15-30 Watts—AC 85-264V, DC 110-340V; 50-100 Watts—AC 85-132V, AC 170-264V



Size Chart

	W	H	D
A	1.46	2.36	4.33
B	1.52	2.36	5.71
C	1.18	3.66	7.28
D	1.49	3.66	8.07
E	1.89	3.66	8.66
—	—	—	—

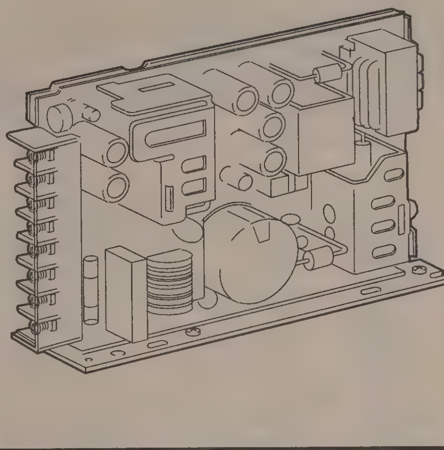
Stock No.*	Mfr.'s Type	Watts	Output (V)/Current (A)			Size	EACH
			V1	V2	V3		1-4
800-1160	PMC15E-1	15	5V/2.0A	12V/0.3A	−12V/0.2A	A	68.67
800-1170	PMC15E-2	15	5V/2.0A	15V/0.3A	−15V/0.2A	A	68.67
800-1180	PMC15E-3	15	5V/2.0A	12V/0.3A	−5V/0.2A	A	68.67
800-1190	PMC30E-1	30	5V/3.0A	12V/1.2A	−12V/0.3A	B	92.15
800-1200	PMC30E-2	30	5V/3.0A	15V/0.7A	−15V/0.5A	B	92.15
800-1210	PMC50E-1-XULA-N	50	5V/5.0A	12V/1.5A	−12V/0.5A	C	127.70
800-1220	PMC50E-2-XULA-N	50	5V/5.0A	15V/1.2A	−15V/0.5A	C	127.70
800-1230	PMC50E-4-XULA-N	50	5V/7.0A	12V/1.0A	−12V/0.3A	C	127.70
800-1240	PMC75E-1-N	75	5V/8.0A	12V/2.5A	−12V/0.5A	D	178.03
800-1250	PMC75E-2-N	75	5V/8.0A	15V/1.8A	−15V/0.5A	D	178.03
800-1260	PMC75E-4-N	75	5V/6.0A	12V/3.2A	−12V/0.5A	D	178.03
800-1270	PMC100E-1-N	100	5V/13.0A	12V/2.0A	−12V/1.0A	E	211.05
800-1280	PMC100E-2-N	100	5V/13.0A	15V/1.5A	−15V/1.0A	E	211.05
800-1290	PMC100E-4-N	100	5V/8.0A	12V/4.0A	−12V/1.0A	E	211.05

*Also available without covers.

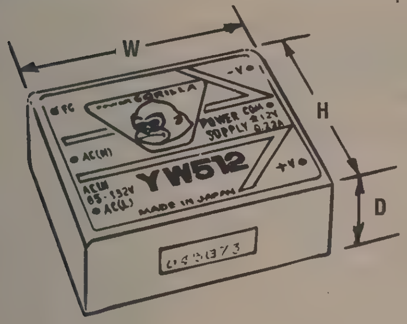
Dual Output Switchers

- Inrush Current and Overcurrent Protection Circuits
- UL Recognized, CSA Certified
- MMB Series: Two Year Warranty
- RMB Series: Three Year Warranty
- Covered Models Available
- Quantity Pricing Always Available

Stock No.	Mfr.'s Type	Input Voltage	Output Volts/Amps V1	Output Volts/Amps V2	Size W × H × D (In.)	Weight (Lbs.)	EACH 1-9
800-0045	MMB50U-1	AC 85-132 V DC 110-170 V	5 V/3 A	12 V/3 A (3.6)	1.41 × 3.66 × 6.10	0.88	**107.82**
800-0050	MMB50U-2		5 V/5 A	12 V/2.1 A	1.41 × 3.66 × 6.10	0.88	**107.82**
800-0055	MMB50U-3		5 V/3 A	24 V/1.5 A (1.8)	1.41 × 3.66 × 6.10	0.88	**107.82**
800-0060	MMB50U-4		12 V/2.1A	12 V/2.1 A	1.41 × 3.66 × 6.10	0.88	**107.82**
800-0065	MMB50U-5		12 V/3 A	12 V/1.5 A	1.41 × 3.66 × 6.10	0.88	**107.82**
800-0070	MMB50U-6		15 V/1.7 A	15 V/1.7 A	1.41 × 3.66 × 6.10	0.88	**107.82**
800-0080	MMB75U-1		5 V/5 A	12 V/4 A	1.65 × 3.66 × 6.88	1.10	**144.15**
800-0085	MMB75U-2		5 V/6 A	24 V/2 A	1.65 × 3.66 × 6.88	1.10	**144.15**
800-0090	RMB15U-1	AC 85-132 V DC 110-170 V	5 V/0.8 A	12 V/1 A (1.3)	1.26 × 3.15 × 3.94	0.55	**51.67**
800-0095	RMB15U-2		5 V/0.8 A	24 V/0.5 A (0.65)	1.26 × 3.15 × 3.94	0.55	**51.67**
800-1015	RMB30U-1		5 V/1.5 A	12 V/2 A (2.8)	1.38 × 3.15 × 5.31	0.77	**61.85**
800-1025	RMB30U-2		5 V/1.5 A	24 V/1 A (1.4)	1.38 × 3.15 × 5.31	0.77	**61.85**
800-1035	RMB50U-1		5 V/1.5 A	12 V/3.6 A (4.0)	1.38 × 3.66 × 6.10	0.77	**83.80**
800-1045	RMB50U-2		5 V/1.5 A	24 V/1.8 A (2.0)	1.38 × 3.66 × 6.10	0.77	**83.80**



AC/DC Encapsulated On Board Switchers



- PC Board Mount AC/DC Converter
- Small, Compact Footprint
- Inrush Current and Overcurrent Protection
- UL and TÜV Approved, CSA Certified
- Two Year Warranty
- Quantity Pricing Always Available

On Board Type Switchers — Single Output

Stock No.	Mfr.'s Type	Watts	Input Voltage	Output Volts/Amps	Size W × H × D (In.)	EACH
800-1300	YS505	5	AC 85-132 V DC 110-170 V	5 V/1.0 A	1.97 × 1.69 × 0.73	**41.38**
800-1310	YS512	5		12 V/0.45 A	1.97 × 1.69 × 0.73	**41.38**
800-1330	YS1005	10		5 V/2.0 A	2.28 × 1.77 × 0.73	**49.22**
800-1340	YS1012	10		12 V/0.9 A	2.28 × 1.77 × 0.73	**49.22**
800-1350	YS1505	15		5 V/3.0 A	2.56 × 1.77 × 0.81	**61.23**
800-1360	YS1512	15		12 V/1.3 A	2.56 × 1.77 × 0.81	**61.23**
800-1895	YAS505	5	Wide Input AC 85-264 V DC 110-340 V	5 V/1.0 A	2.28 × 1.77 × 0.73	**53.63**
800-1900	YAS512	5		12 V/0.45 A	2.28 × 1.77 × 0.73	**53.63**
800-1905	YAS1005	10		5 V/2.0 A	2.56 × 1.77 × 0.81	**62.70**
800-1910	YAS1012	10		12 V/0.9 A	2.56 × 1.77 × 0.81	**62.70**

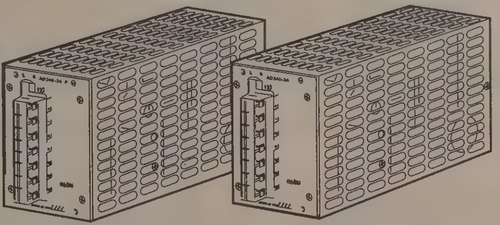
On Board Type Switchers — Dual Output

Stock No.	Mfr.'s Type	Watts	Input Voltage	Output Volts/Amps	Size W × H × D (In.)	EACH
800-1370	YW512	5	AC 85-132 V DC 110-170 V	±12 (24) V/0.22 A	1.97 × 1.69 × 0.73	**41.51**
800-1380	YW515	5		±15 (30) V/0.17 A	1.97 × 1.69 × 0.73	**44.08**
800-1390	YW1012	10		±12 (24) V/0.45 A	2.28 × 1.77 × 0.73	**49.22**
800-1400	YW1015	10		±15 (30) V/0.35 A	2.28 × 1.77 × 0.73	**49.22**
800-1410	YW1512	15		±12 (24) V/0.65 A	2.56 × 1.77 × 0.81	**61.85**
800-1420	YW1515	15		±15 (30) V/0.50 A	2.56 × 1.77 × 0.81	**61.85**
800-1915	YAW512	5	Wide Input AC 85-264 V DC 110-340 V	±12 (24) V/0.22 A	2.28 × 1.77 × 0.73	**56.32**
800-1920	YAW515	5		±15 (30) V/0.17 A	2.28 × 1.77 × 0.73	**56.32**
800-1925	YAW1012	10		±12 (24) V/0.45 A	2.56 × 1.77 × 0.81	**65.13**
800-1930	YAW1015	10		±15 (30) V/0.35 A	2.56 × 1.77 × 0.81	**65.13**

AD Series: AC-DC Switching Power Supply

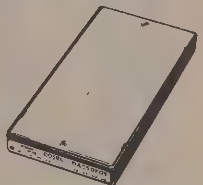
— NEW —

- Small and Lightweight
- Low Cost Performance
- Input Voltage Range: AD240-24 and AD480-24 — 85-132 VAC, 170-264 VDC; AD960-24 — 170-264 VAC
- 1 Year Warranty
- AD960 Is UL, CSA



Stock No.	Mfr.'s Type	Output Watts	DC Output Volts	Size (In.) W × H × D	Weight Lbs.	EACH 1-4	EACH 5-9
800-4065	AD240-24	240	24	2.93 × 3.87 × 7.83	3.96	**247.00**	**228.37**
800-4070	AD480-24	480	24	4.31 × 5.48 × 7.82	5.72	**435.30**	**401.89**
800-4075	AD960-24	960	24	3.50 × 5.57 × 9.05	6.60	**639.87**	**590.65**

DA Series DC-DC Converter

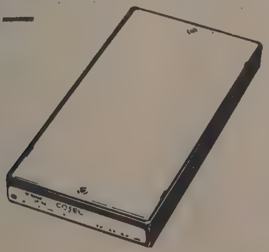


- Wide Input Voltage Range (DC 88-370 V)
- Thin and Small SMT Construction
- Can Be Connected In Parallel
- Built-In Overcurrent, Overvoltage Protection Circuits
- UL and TÜV Approved, CSA Certified

Single Output

Stock No.	Mfr.'s Type	Watts	Input Voltage	Output Volts/Amps	Size W × H × D (In.)	EACH
800-9781	DAS50F05	50	DC 88-370 V	5 V/10 A	2.28 × 0.5 × 4.53	**112.18**
800-9782	DAS50F12	50	DC 88-370 V	12 V/4.2 A	2.28 × 0.5 × 4.53	**112.18**
800-9783	DAS50F24	50	DC 88-370 V	24 V/2.1 A	2.28 × 0.5 × 4.53	**112.18**
800-9784	DAS100F05	100	DC 88-370 V	5 V/20 A	2.28 × 0.5 × 5.12	**138.47**
800-9785	DAS100F12	100	DC 88-370 V	12 V/8.5 A	2.28 × 0.5 × 5.12	**138.47**
800-9786	DAS100F24	100	DC 88-370 V	24 V/4.2 A	2.28 × 0.5 × 5.12	**138.47**

— NEW —



DPA Series: AC-DC Front End

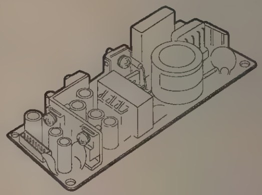
- High Power Factor 0.98 (IEC100-3-2)
- High Efficiency: 90% — 100 VAC; 95% — 200 VAC
- Wide Input Voltage Range: 85-264 VAC (Free Voltage)
- Safety Standard: UL, CSA, TUV
- Overcurrent Protection (No External Resistor Required)
- Parallel Operation, Built-In Protection Circuits (Overvoltage/Over Heat)
- Inverter Action Monitoring, Power-Ready Signal
- Auxiliary Power Supply for External Signal
- Power Factor Correction

AC Input: 85-264 and 170-264. **Output Watts:** 500. **Output Volts:** 300-360 DC. **Size:** 2.28"W × 0.50"H × 5.12"D. **Weight:** 0.33 lbs.

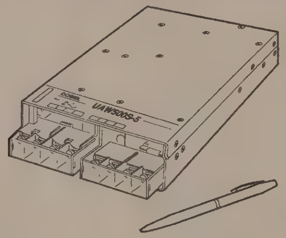
800-4060. Model DPA500F. **1-4**..........................**EACH 160.68** **5-9**..**EACH 148.32**

LDC Series: World-Wide Input, Triple Output

- Low Cost
- Small, Lightweight Open Frame PC Board Type
- Universal Input (85-264 VAC)
- UL, CSA, TUV
- Inrush Current, Overcurrent, and Overvoltage Protection Circuits
- V1 Isolated From V2, V3
- 2 Year Warranty
- Available with Chassis and Cover Option (SN)
- Available with Adjustable Output "Y" Option Potentiometer
- Quantity Pricing Always Available



Stock No.	Mfr.'s Type	DC Output (V)/Current (A)			Size (In.) W × H × D	Weight (Lbs.)	EACH	
		V1	V2	V3			1-4	5-9
800-9280	LDC15F-1	+5 V/2.0 A (Pk 3.0)	+12 V/0.3 A (Pk 0.6)	−12 V/0.2 A (Pk 0.30)	1.96 × 1.00 × 4.95	0.33	48.02	44.32
800-0380	LDC15F-1-SN	+5 V/2.0 A (Pk 3.0)	+12 V/0.3 A (Pk 0.6)	−15 V/0.2 A (Pk 0.30)	2.25 × 1.50 × 5.32	0.35	57.14	55.30
800-9285	LDC15F-2	+5 V/2.0 A (Pk 3.0)	+15 V/0.3 A (Pk 0.6)	−15 V/0.2 A (Pk 0.30)	1.96 × 1.00 × 4.95	0.33	48.02	44.32
800-0385	LDC15F-2-SN	+5 V/2.0 A (Pk 3.0)	+15 V/0.3 A (Pk 0.6)	−15 V/0.2 A (Pk 0.30)	2.25 × 1.50 × 5.32	0.35	57.14	55.30
800-9290	LDC30F-1	+5 V/3.0 A (Pk 4.5)	+12 V/1.2 A (Pk 2.0)	−12 V/0.3 A (Pk 0.45)	2.53 × 1.01 × 5.46	0.48	68.40	63.14
800-0390	LDC30F-1-SN	+5 V/3.0 A (Pk 4.5)	+12 V/1.2 A (Pk 2.0)	−12 V/0.3 A (Pk 0.45)	2.84 × 1.50 × 5.91	0.50	75.71	73.27
800-9295	LDC30F-2	+5 V/3.0 A (Pk 4.5)	+15 V/1.0 A (Pk 2.0)	−15 V/0.3 A (Pk 0.45)	2.53 × 1.01 × 5.46	0.48	68.40	63.14
800-0395	LDC30F-2-SN	+5 V/3.0 A (Pk 4.5)	+15 V/1.0 A (Pk 2.0)	−15 V/0.3 A (Pk 0.45)	2.84 × 1.50 × 5.91	0.50	75.71	73.27
800-4020	LDC60F-1	+5 V/5.0 A (Pk 7.0)	+12 V/2.5 A (Pk 3.5)	−12 V/0.5 A (Pk 0.70)	0.91 × 3.27 × 7.28	0.67	95.77	88.40
800-0400	LDC60-1-SN	+5 V/5.0 A (Pk 7.0)	+12 V/2.5 A (Pk 3.5)	−12 V/0.5 A (Pk 0.70)	3.62 × 1.50 × 8.27	0.69	114.29	110.60
800-4025	LDC60F-2	+5 V/5.0 A (Pk 7.0)	+15 V/2.5 A (Pk 3.5)	−15 V/0.5 A (Pk 0.70)	0.91 × 3.27 × 7.28	0.67	95.77	88.40
800-0405	LDC60F-2-SN	+5 V/5.0 A (Pk 7.0)	+15 V/2.0 A (Pk 3.5)	−15 V/0.5 A (Pk 0.70)	3.62 × 1.50 × 8.27	0.69	114.29	110.60



UAW and UAF Series Power Supply

- Output Wattage 125, 250, and 500 (UAF 500 with Power Factor Correction)
- UltraThin Profile (1.77") 500 Watt Unit
- Automatic AC Input Switch (85-132/130-264 VAC) UAF Universal
- Inrush Current, Overcurrent, and Over Voltage Protection
- Remote Sensing
- UL and TUV Approved, CSA Certified (UAF Series UL, CSA, TUV)
- Three Year Warranty

Stock No.	Mfr.'s Type	Watts	DC Output Voltage					Size (In.) W × H × D	Weight (Lbs.)	EACH	
			3	5	12	24	48			1-4	5-9
800-9800	UAW125S-3	125	25 A	—	—	—	—	1 × 3.7 × 7.8	1.21	194.17	179.40
800-9805	UAW125S-5	125	—	25 A	—	—	—	1 × 3.7 × 7.8	1.21	194.17	179.40
800-9810	UAW125S-12	125	—	—	10.5 A	—	—	1 × 3.7 × 7.8	1.21	194.17	179.40
800-9815	UAW125S-24	125	—	—	—	5.2 A	—	1 × 3.7 × 7.8	1.21	194.17	179.40
800-4000	UAW250S-3	250	50 A	—	—	—	—	3.74 × 1.40 × 10.94	2.42	300.48	277.37
800-4005	UAW250S-5	250	—	50 A	—	—	—	3.74 × 1.40 × 10.94	2.42	300.48	277.37
800-4010	UAW250S-12	250	—	—	21.5 A	—	—	3.74 × 1.40 × 10.94	2.42	300.48	277.37
800-4015	UAW250S-24	250	—	—	—	11.0 A	—	3.74 × 1.40 × 10.94	2.42	300.48	277.37
800-9700	UAW500S-3	500	100A	—	—	—	—	5.6 × 1.8 × 11	5.28	539.80	498.28
800-9702	UAW500S-5	500	—	100A	—	—	—	5.6 × 1.8 × 11	5.28	539.80	498.28
800-9704	UAW500S-12	500	—	—	43.0 A	—	—	5.6 × 1.8 × 11	5.28	539.80	498.28
800-9706	UAW500S-24	500	—	—	—	22.0 A	—	5.6 × 1.8 × 11	5.28	539.80	498.28
800-4030	UAF500S-3*	500	100 A	—	—	—	—	5.6 × 1.8 × 11	5.28	609.67	562.77
800-4035	UAF500S-5*	500	—	100A	—	—	—	5.6 × 1.8 × 11	5.28	609.67	562.77
800-4040	UAF500S-12*	500	—	—	43.0 A	—	—	5.6 × 1.8 × 11	5.28	609.67	562.77
800-4045	UAF500S-24*	500	—	—	—	22.0 A	—	5.6 × 1.8 × 11	5.28	609.67	562.77
800-4050	UAF500S-48*	500	—	—	—	—	11.0 A	5.6 × 1.8 × 11	5.28	609.67	562.77

*UAF: Power Factor Correction.

Wiring Harnesses

Wiring Harnesses for Various Units Using the Molex or JST Connection

*Requires both H-OU-11 and H-OU-12.

Mfr.'s Type	Harness Input	Harness Output
LCA10S	H-IN-4	H-OU-7
LCA15S	H-IN-4	H-OU-8
LCA30S	H-IN-5	H-OU-9
LCA50S	H-IN-5	H-OU-9
LCA75S	H-IN-5	H-OU-18
LCA100S	H-IN-5	H-OU-10
LCA150S*	H-IN-5	H-OU-11 H-OU-12
LDA10F	H-IN-5	H-OU-8
LDA15F	H-IN-5	H-OU-8
LDA30F	H-IN-5	H-OU-9
LDA50F	H-IN-5	H-OU-9
LDA75F	H-IN-5	H-OU-18
LDA100W	H-IN-5	H-OU-10
LDA150W*	H-IN-5	H-OU-11 H-OU-12
LDC15F	H-IN-5	H-OU-13
LDC30F	H-IN-5	H-OU-14

Mfr.'s Type	Harness Input	Harness Output
LDC60F	H-IN-5	H-OU-19
MMC8	H-IN-2	H-OU-2
MMC50	H-IN-1	H-OU-4
MMC75	H-IN-1	H-OU-4
MMC100	H-IN-1	H-OU-4
PMC15	H-IN-1	H-OU-1
PMC30	H-IN-2	H-OU-1
PMC50	H-IN-2	H-OU-4
PMC75	H-IN-2	H-OU-4
PMC100	H-IN-1	H-OU-4
R15	H-IN-5	H-OU-9
R25	H-IN-5	H-OU-9
R50	H-IN-5	H-OU-9
RMB15	H-IN-5	H-OU-16
RMB30	H-IN-5	H-OU-16
RMB50	H-IN-5	H-OU-16
RMC15	H-IN-5	H-OU-15
RMC30	H-IN-5	H-OU-15

Input Harnesses

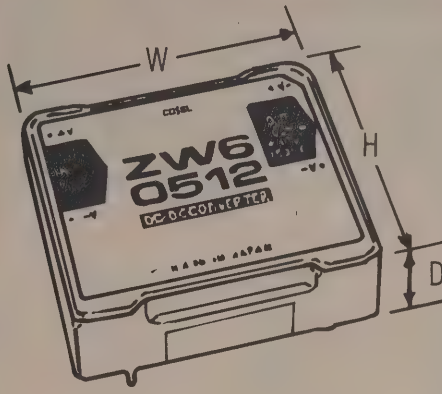
Stock No.	Mfr.'s Type	EACH		
		1-4	5-9	10-24
800-9900	H-IN-1	2.02	1.88	1.75
800-7101	H-IN-2	2.02	1.88	1.75
800-7105	H-IN-4	2.02	1.88	1.75
800-7106	H-IN-5	2.02	1.88	1.75

Output Harnesses

Stock No.	Mfr.'s Type	1-4	5-9	10-24
800-9901	H-OU-1	2.92	2.71	2.53
800-7103	H-OU-2	2.92	2.71	2.53
800-7104	H-OU-4	4.25	3.95	3.69
800-7107	H-OU-7	2.02	1.88	1.75
800-7110	H-OU-8	2.02	1.88	1.75
800-7111	H-OU-9	2.02	1.88	1.75
800-7112	H-OU-10	4.35	4.04	3.77
800-7113	H-OU-11	3.97	3.69	3.44
800-7114	H-OU-12	4.25	3.95	3.69
800-2530	H-OU-15	4.25	3.95	3.69
800-2535	H-OU-16	3.14	2.91	2.72
800-2536	H-OU-18	5.38	5.00	4.66

DC-DC Converters: Designed for Small Size and High Reliability

- ► Isolated Output
- ► Overcurrent Protection
- ► Small, Compact Footprint
- ► Two Year Warranty
- ► Quantity Pricing Always Available



Single Output

Stock No.	Mfr.'s Type	Wattage	Input Voltage	Output Volts/Amps	Size (Inches) W × H × D	EACH
800-1700	ZS1R50505	1.5	5 (4.5-6.0)	5/0.25	1.30 × 0.83 × 0.39	**24.57**
800-1705	ZS1R50512	1.5	5 (4.5-6.0)	12/0.12	1.30 × 0.83 × 0.39	**24.57**
800-1710	ZS1R50515	1.5	5 (4.5-6.0)	15/0.10	1.30 × 0.83 × 0.39	**24.57**
800-1715	ZS1R51205	1.5	12 (10-15)	5/0.25	1.30 × 0.83 × 0.39	**24.57**
800-1720	ZS1R51212	1.5	12 (10-15)	12/0.12	1.30 × 0.83 × 0.39	**24.57**
800-1725	ZS1R51215	1.5	12 (10-15)	15/0.10	1.30 × 0.83 × 0.39	**24.57**
800-1730	ZS1R52405	1.5	24 (20-30)	5/0.25	1.30 × 0.83 × 0.39	**24.57**
800-1735	ZS1R52412	1.5	24 (20-30)	12/0.12	1.30 × 0.83 × 0.39	**24.57**
800-1740	ZS1R52415	1.5	24 (20-30)	15/0.10	1.30 × 0.83 × 0.39	**24.57**
800-1980	ZS1R54805	1.5	48 (35-63)	5/0.25	1.30 × 0.83 × 0.39	**24.57**
800-1985	ZS1R54812	1.5	48 (35-63)	12/0.12	1.30 × 0.83 × 0.39	**24.57**
800-1990	ZS1R54815	1.5	48 (35-63)	15/0.10	1.30 × 0.83 × 0.39	**24.57**
800-1995	ZS30505	3.0	5 (4.5-6.0)	5/0.50	1.85 × 1.18 × 0.39	**30.11**
800-2031	ZS30512	3.0	5 (4.5-6.0)	12/0.25	1.85 × 1.18 × 0.39	**30.11**
800-2032	ZS30515	3.0	5 (4.5-6.0)	15/0.20	1.85 × 1.18 × 0.39	**30.11**
800-2033	ZS31205	3.0	12 (10-15)	5/0.50	1.85 × 1.18 × 0.39	**30.11**
800-2035	ZS31212	3.0	12 (10-15)	12/0.25	1.85 × 1.18 × 0.39	**30.11**
800-2036	ZS31215	3.0	12 (10-15)	15/0.20	1.85 × 1.18 × 0.39	**30.11**
800-2037	ZS32405	3.0	24 (20-30)	5/0.50	1.85 × 1.18 × 0.39	**30.11**
800-2038	ZS32412	3.0	24 (20-30)	12/0.25	1.85 × 1.18 × 0.39	**30.11**
800-2039	ZS32415	3.0	24 (20-30)	15/0.20	1.85 × 1.18 × 0.39	**30.11**
800-2040	ZS34805	3.0	48 (35-63)	5/0.50	1.85 × 1.18 × 0.39	**30.11**
800-2050	ZS34812	3.0	48 (35-63)	12/0.25	1.85 × 1.18 × 0.39	**30.11**
800-2055	ZS34815	3.0	48 (35-63)	15/0.20	1.85 × 1.18 × 0.39	**30.11**
800-1745	ZS60505	6.0	5 (4.5-6.0)	5/1	1.65 × 1.85 × 0.55	**43.05**
800-1750	ZS60512	6.0	5 (4.5-6.0)	12/0.5	1.65 × 1.85 × 0.55	**43.05**
800-1755	ZS60515	6.0	5 (4.5-6.0)	15/0.4	1.65 × 1.85 × 0.55	**43.05**
800-1760	ZS61205	6.0	12 (10-15)	5/1	1.65 × 1.85 × 0.55	**43.05**
800-1765	ZS61212	6.0	12 (10-15)	12/0.5	1.65 × 1.85 × 0.55	**43.05**
800-1770	ZS61215	6.0	12 (10-15)	15/0.4	1.65 × 1.85 × 0.55	**43.05**
800-1775	ZS62405	6.0	24 (20-30)	5/1	1.65 × 1.85 × 0.55	**43.05**
800-1780	ZS62412	6.0	24 (20-30)	12/0.5	1.65 × 1.85 × 0.55	**43.05**
800-1785	ZS62415	6.0	24 (20-30)	15/0.4	1.65 × 1.85 × 0.55	**43.05**
800-2060	ZS64805	6.0	48 (35-63)	5/1	1.65 × 1.85 × 0.55	**43.05**
800-2065	ZS64812	6.0	48 (35-63)	12/0.5	1.65 × 1.85 × 0.55	**43.05**
800-2070	ZS64815	6.0	48 (35-63	15/0.4	1.65 × 1.85 × 0.55	**43.05**
800-2075	ZS100505	10.0	5 (4.5-6.0)	5/1.60	1.65 × 1.85 × 0.55	**63.12**
800-2080	ZS100512	10.0	5 (4.5-6.0)	12/0.70	1.65 × 1.85 × 0.55	**63.12**
800-2085	ZS100515	10.0	5 (4.5-6.0)	15/0.60	1.65 × 1.85 × 0.55	**63.12**
800-2090	ZS101205	10.0	12 (10-15)	5/2.00	1.65 × 1.85 × 0.55	**63.12**
800-2095	ZS101212	10.0	12 (10-15)	12/0.90	1.65 × 1.85 × 0.55	**63.12**
800-2100	ZS101215	10.0	12 (10-15)	15/0.70	1.65 × 1.85 × 0.55	**63.12**
800-2105	ZS102405	10.0	24 (20-30)	5/2.00	1.65 × 1.85 × 0.55	**63.12**
800-2110	ZS102412	10.0	24 (20-30)	12/0.90	1.65 × 1.85 × 0.55	**63.12**
800-2115	ZS102415	10.0	24 (20-30)	15/0.70	1.65 × 1.85 × 0.55	**63.12**
800-2120	ZS104805	10.0	48 (35-63)	5/2.00	1.65 × 1.85 × 0.55	**63.12**
800-2125	ZS104812	10.0	48 (35-63)	12/0.90	1.65 × 1.85 × 0.55	**63.12**
800-2130	ZS104815	10.0	48 (35-63)	15/0.70	1.65 × 1.85 × 0.55	**63.12**

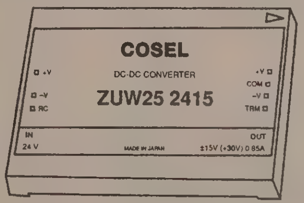
Multiple Output

Stock No.	Mfr.'s Type	Wattage	Input Voltage	Output Volts/Amps	Size W × H × D	EACH
800-1500	ZW1R50512	1.5	5 (4.5-6.0)	± 12*/.06	1.30 × 0.83 × 0.39	**27.21**
800-1505	ZW1R50515	1.5	5 (4.5-6.0)	± 15/.05	1.30 × 0.83 × 0.39	**27.21**
800-1510	ZW1R51212	1.5	12 (10-15)	± 12*/.06	1.30 × 0.83 × 0.39	**27.21**
800-1515	ZW1R51215	1.5	12 (10-15)	± 15/.05	1.30 × 0.83 × 0.39	**27.21**
800-1520	ZW1R52412	1.5	24 (20-30)	± 12*/.06	1.30 × 0.83 × 0.39	**27.21**
800-1525	ZW1R52415	1.5	24 (20-30)	± 15/.05	1.30 × 0.83 × 0.39	**27.21**
800-2135	ZW1R54812	1.5	48 (35-63)	± 12*/.06	1.30 × 0.83 × 0.39	**27.21**
800-2140	ZW1R54815	1.5	48 (35-63)	± 15/.05	1.30 × 0.83 × 0.39	**27.21**
800-1530	ZW30512	3.0	5 (4.5-6.0)	± 12*/.12	1.85 × 1.18 × 0.39	**31.69**
800-1535	ZW30515	3.0	5 (4.5-6.0)	± 15/.10	1.85 × 1.18 × 0.39	**31.69**
800-1540	ZW31212	3.0	12 (10-15)	± 12*/.12	1.85 × 1.18 × 0.39	**31.69**
800-1545	ZW31215	3.0	12 (10-15)	± 15/.10	1.85 × 1.18 × 0.39	**31.69**
800-1550	ZW32412	3.0	24 (20-30)	± 12*/.12	1.85 × 1.18 × 0.39	**31.69**
800-1555	ZW32415	3.0	24 (20-30)	± 15/.10	1.85 × 1.18 × 0.39	**31.69**
800-2145	ZW34812	3.0	48 (35-63)	± 12*/.12	1.85 × 1.18 × 0.39	**31.69**
800-2150	ZW34815	3.0	48 (35-63)	± 15/.10	1.85 × 1.18 × 0.39	**31.69**
800-1560	ZW60512	6.0	5 (4.5-6.0)	± 12*/.25	1.65 × 1.85 × 0.55	**47.53**
800-1565	ZW60515	6.0	5 (4.5-6.0)	± 15/.20	1.65 × 1.85 × 0.55	**47.53**
800-1566	ZW61212	6.0	12 (10-15)	± 12*/.25	1.65 × 1.85 × 0.55	**47.53**
800-1570	ZW61215	6.0	12 (10-15)	± 15/.20	1.65 × 1.85 × 0.55	**47.53**
800-1575	ZW62412	6.0	24 (20-30)	± 12*/.25	1.65 × 1.85 × 0.55	**47.53**
800-1580	ZW62415	6.0	24 (20-30)	± 15/.20	1.65 × 1.85 × 0.55	**47.53**
800-2155	ZW64812	6.0	48 (35-63)	± 12*/.25	1.65 × 1.85 × 0.55	**47.53**
800-2160	ZW64815	6.0	48 (35-63)	± 15/.20	1.65 × 1.85 × 0.55	**47.53**
800-1585	ZW100512	10.0	5 (4.5-6.0)	± 12*/.35	1.65 × 1.85 × 0.55	**64.70**
800-1590	ZW100515	10.0	5 (4.5-6.0)	± 15/.30	1.65 × 1.85 × 0.55	**64.70**
800-1595	ZW101212	10.0	12 (10-15)	± 12*/.45	1.65 × 1.85 × 0.55	**64.70**
800-1600	ZW101215	10.0	12 (10-15)	± 15/.35	1.65 × 1.85 × 0.55	**64.70**
800-1605	ZW102412	10.0	24 (20-30)	± 12*/.45	1.65 × 1.85 × 0.55	**64.70**
800-1610	ZW102415	10.0	24 (20-30)	± 15/.35	1.65 × 1.85 × 0.55	**64.70**
800-2165	ZW104812	10.0	48 (35-63)	± 12*/.45	1.65 × 1.85 × 0.55	**64.70**
800-2170	ZW104815	10.0	48 (35-63)	± 15/.35	1.65 × 1.85 × 0.55	**64.70**

*Output pins can be connected in series to make a 24 V output or 30 V output.

DC-DC Converters: Designed for Small Size and High Reliability

- ► Overcurrent, Overvoltage Protection
- ► Aluminum Die-Cast Housing Allows for Low EMI Noise
- ► Power Inhibit Control
- ► Output Voltage can be Controlled by Additional External Circuits
- ► With Dual Outputs, Connected in Series, Single 24 V and 30 V Are Possible



Single Output

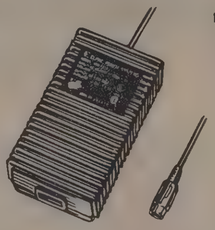
Stock No.	Mfr.'s Type	Wattage	DC Input Voltage	DC Output Volts/Amps	Size W × H × D	EACH
800-9708	ZUS151205	15	12 (9-18)	5/2.4	1.78 × 0.34 × 1.97	**70.48**
800-9710	ZUS151212	15	12 (9-18)	12/1.3	1.78 × 0.34 × 1.97	**70.48**
800-9712	ZUS152405	15	24 (18-36)	5/2.4	1.78 × 0.34 × 1.97	**70.48**
800-9714	ZUS152412	15	24 (18-36)	12/1.3	1.78 × 0.34 × 1.97	**70.48**
800-9716	ZUS154805	15	48 (36-72)	5/2.4	1.78 × 0.34 × 1.97	**70.48**
800-9718	ZUS154812	15	48 (36-72)	12/1.3	1.78 × 0.34 × 1.97	**70.48**
800-9720	ZUS251205	25	12 (9-18)	5/4.0	2.56 × 0.33 × 1.97	**82.56**
800-9722	ZUS251212	25	12 (9-18)	12/2.1	2.56 × 0.33 × 1.97	**82.56**
800-9724	ZUS252405	25	24 (18-36)	5/4.0	2.56 × 0.33 × 1.97	**82.56**
800-9726	ZUS252412	25	24 (18-36)	12/2.1	2.56 × 0.33 × 1.97	**82.56**
800-9728	ZUS254805	25	48 (36-72)	5/4.0	2.56 × 0.33 × 1.97	**82.56**
800-9730	ZUS254812	25	48 (36-72)	12/2.1	2.56 × 0.33 × 1.97	**82.56**

Multiple Output

Stock No.	Mfr.'s Type	Wattage	DC Input Voltage	DC Output Volts/Amps	Size W × H × D	EACH
800-9732	ZUW151212	15	12 (9-18)	±12/0.65	2.56 × 0.33 × 1.97	**71.76**
800-9734	ZUW151215	15	12 (9-18)	±15/0.5	2.56 × 0.33 × 1.97	**71.76**
800-9736	ZUW152412	15	24 (18-36)	±12/0.65	2.56 × 0.33 × 1.97	**71.76**
800-9738	ZUW152415	15	24 (18-36)	±15/0.5	2.56 × 0.33 × 1.97	**71.76**
800-9740	ZUW154812	15	48 (36-72)	±12/0.65	2.56 × 0.33 × 1.97	**71.76**
800-9742	ZUW154815	15	48 (36-72)	±15/0.5	2.56 × 0.33 × 1.97	**71.76**
800-9744	ZUW251212	25	12 (9-18)	±12/1.05	2.56 × 0.33 × 1.97	**87.10**
800-9746	ZUW251215	25	12 (9-18)	±15/0.85	2.56 × 0.33 × 1.97	**87.10**
800-9748	ZUW252412	25	24 (18-36)	±12/1.05	2.56 × 0.33 × 1.97	**87.10**
800-9750	ZUW252415	25	24 (18-36)	±15/0.85	2.56 × 0.33 × 1.97	**87.10**
800-9752	ZUW254812	25	48 (36-72)	±12/1.05	2.56 × 0.33 × 1.97	**87.10**
800-9754	ZUW254815	25	48 (36-72)	±15/0.85	2.56 × 0.33 × 1.97	**87.10**

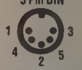
WRI Series Wide Range Input Series — Regulated

General Specifications. Storage Temperature: –55°C to +85°C. **Operating Temperature:** 0-40°C. **Size:** 6.3" × 3.82" × 2.66". **Weight:** 13 oz. **Input Cable:** 6' standard domestic 3 prong. **Output Cable:** 6' shielded with barrel connector. **Output Specifications. Line Regulation:** ±.2% over 90-132 or 180-250. **Maximum Load Regulation:** ±5% for 40% load variation (60% nominal). **Set Point:** ±3% at 60% load. **Ripple and Noise:** ±1% Pk-PK maximum. **Overload Protection:** Automatic recovery. **Overvoltage Protection:** 115-140%. **Overshoot:** None above normal regulation. **Transient Response:** Recovery to within 1% of nominal output within 1 ms for a 50% to 100% load step. Maximum excursion is 6% from initial voltage set point. **Input Specifications:** 90-250 VAC, 47-440 Hz, or 10-350 VDC. **Inrush Current:** 35 A PK at 230 VAC. **Input Protection:** Internal input line fuse.

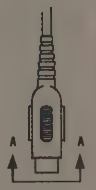


IEC950 FCC

Output Pin Outs
View A-A
5 Pin DIN



Outside ring on all units is an EMI earth ground (not to be used as a safety ground.)



Single Output

Stock No.	Mfr.'s Type	Output 1		Max. Power	Min. Load	EACH			
		Volts	Amps			1-4	5-9	10-24	25
879-7502	WRI 2011-D5	5	4.00	20 W	0 W	**106.00**	**96.00**	**88.00**	**82.81**
879-0005	WRI 3012-D5	12	2.50	30 W	0 W	**110.00**	**100.00**	**92.00**	**85.74**
879-0010	WRI 3014-D5	24	1.25	30 W	0 W	**114.00**	**104.00**	**95.00**	**89.00**
879-0015	WRI 4212-D5	12	3.50	42 W	0 W	**112.00**	**102.00**	**93.00**	**87.50**
879-0020	WRI 4214-D5	24	1.75	42 W	0 W	**112.00**	**102.00**	**93.00**	**87.50**
879-0030	WRI 5215-D5	30	1.75	52 W	8 W	**136.00**	**124.00**	**113.00**	**106.00**

Dual Output

Stock No.	Mfr.'s Type	Output 1		Output 2		Max. Power	Min. Load	EACH			
		Volts	Amps	Volts	Amps			1-4	5-9	10-24	25
879-0035	WRI 2721-D5	5	4.0	12	1.5	27 W	2 W	**120.00**	**109.00**	**100.00**	**94.00**
879-0040	WRI 3021-D5	5	2.0	12	1.5/2.5	30 W	0 W	**118.00**	**107.00**	**98.00**	**92.00**
879-0045	WRI 3025-D5	5	3.0	5	3.0	30 W	0 W	**120.00**	**109.00**	**100.00**	**93.00**
879-0050	WRI 4221-D5	5	3.0	12	2.5/4.0	42 W	0 W	**118.00**	**107.00**	**98.00**	**87.00**

Triple Output

Stock No.	Mfr.'s Type	Output 1		Output 2		Output 3		Max. Power	Min. Load	EACH			
		Volts	Amps	Volts	Amps	Volts	Amps			1-4	5-9	10-24	25
879-0055	WRI 2731-D5	5	3.0	12	1.5	–12	0.5	27 W	2 W	**124.00**	**113.00**	**103.00**	**93.00**
879-0060	WRI 3031-D5	5	2.0	12	1.5/2.5	–12	0.5	30 W	0 W	**120.00**	**109.00**	**100.00**	**94.00**
879-0065	WRI 4231-D5	5	3.0	12	2.5/4.0	–12	0.5	42 W	0 W	**120.00**	**109.00**	**100.00**	**94.00**
879-0070	WRI 4232-D5	5	4.8	12	1.5/2.5	–12	0.5	42 W	0 W	**124.00**	**113.00**	**103.00**	**96.00**

MIADA I/IV Single Output, Wide Range Switchers

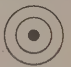
Low Profile External Power Supply

Features
- **95-250 VAC, 47/63 Hz Via Input Connector**
- **FCC B/VDE Class B**
- **IEC 320 Series Input Connector**
- **26 Models**
- **Single Output**
- **International Approvals**
- **One Year Warranty**
- **3" × 5" × 1.31", 13 Oz.**

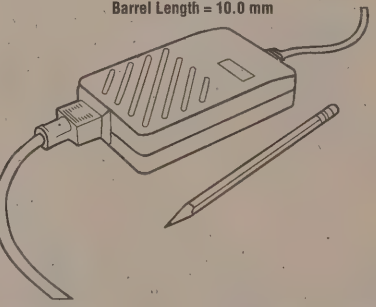
Application
- **Notebook Computers and Small Systems**

Optional Output Cable/Connectors available on special order. 760 Switchcraft is standard.

Output Connector Female

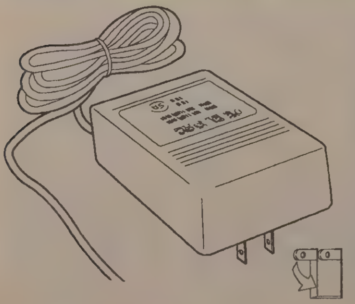


ID = 2.5 mm
OD = 5.5 mm
Barrel Length = 10.0 mm



Stock No.	Mfr.'s Type	Volts	Amps Max.	Power	EACH	
					1-4	5-9
879-9620	MI 2005-760	5 V	3.00 A	15 W	**90.00**	**82.00**
879-9625	MI 2006-760	6 V	3.00 A	18 W	**90.00**	**82.00**
879-9630	MI 2007-760	7 V	2.90 A	20 W	**90.00**	**82.00**
879-9635	MI 2008-760	8 V	2.70 A	22 W	**90.00**	**82.00**
879-9640	MI-2009-760	9 V	2.40 A	22 W	**90.00**	**82.00**
879-9645	MI 2010-760	10 V	2.40 A	24 W	**90.00**	**82.00**
879-9600	MI 2612-760	12 V	2.17 A	26 W	**90.00**	**82.00**
879-9650	MI 2613-760	13 V	2.00 A	26 W	**90.00**	**82.00**
879-9655	MI 2614-760	14 V	1.86 A	26 W	**90.00**	**82.00**
879-9605	MI 2815-760	15 V	1.90 A	28 W	**90.00**	**82.00**
879-9660	MI 2816-760	16 V	1.78 A	28 W	**90.00**	**82.00**
879-9665	MI 2817-760	17 V	1.67 A	28 W	**90.00**	**82.00**
879-9610	MI 2818-760	18 V	1.56 A	28 W	**90.00**	**82.00**
879-9670	MI 2819-760	19 V	1.47 A	28 W	**90.00**	**82.00**
879-9675	MI 2820-760	20 V	1.40 A	28 W	**90.00**	**82.00**
879-9690	MI 2823-760	23 V	1.22 A	28 W	**90.00**	**82.00**
879-9615	MI 2824-760	24 V	1.17 A	28 W	**90.00**	**82.00**
879-7000	M42008-760	8 V	2.50 A	20 W	**74.00**	**67.00**
879-7005	M42012-760	12 V	1.70 A	20 W	**74.00**	**67.00**
879-7010	M42015-760	15 V	1.30 A	20 W	**74.00**	**67.00**
879-7015	M42018-760	18 V	1.10 A	20 W	**74.00**	**67.00**

MIADA II/III Wallmount Switchers



Input Specifications. AC Input: 108-132 VAC 60 Hz. **Efficiency:** Typical 82% at nominal line. **Input Protection:** Internal input line fuse. **General Specifications. Operating Temperature:** 0 to 40°C. **Storage Temperature:** –55 to 85°C. **Size:** 2.3" × 3.6" × 1.3". **Weight:** 5.7 oz. **Agency Approvals:** UL1310 listed, CSA Certified to 223. **EMI:** Meets FCC Class B. **Input:** M2 fold-down 2 prong, M3 standard 3 prong. **Output Cable:** 6' with barrel connector; ID=2.5 mm; OD=5.5 mm; Barrel Length 10.0 mm, inside positive.

Fixed, Standard Three Prong Plug, 120 V Input

Stock No.	Mfr.'s Type	Output Volts	Output Amps	EACH	
				1-4	5-9
879-9880	M33012-760	12 VDC	2.50 A	**72.00**	**65.00**
879-9885	M33215-760	15 VDC	2.13 A	**72.00**	**65.00**
879-9890	M33318-760	18 VDC	1.83 A	**72.00**	**65.00**
879-9895	M33424-760	24 VDC	1.42 A	**72.00**	**65.00**

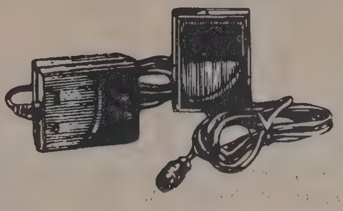
Fold-Up Plug Models, 120 V Input

Stock No.	Mfr.'s Type	Output Volts	Output Amps	EACH 1-4	EACH 5-9
879-9860	M23012-760	12 VDC	2.50 A	**65.00**	**63.00**
879-9865	M23215-760	15 VDC	2.13 A	**65.00**	**63.00**
879-9870	M23318-760	18 VDC	1.83 A	**65.00**	**63.00**
879-9875	M23424-760	24 VDC	1.42 A	**65.00**	**63.00**

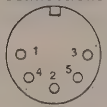
Regulated Wallmounts and Tabletops

Features
- ► Single and Multiple Output
- ► 2½ Watt to 23 Watt
- ► UL Listed — CSA Certified
- ► One Year Warranty

Specifications. Input Voltage: 120 VAC, 60 Hz. **Output Ripple:** 20 millivolts (p-p). **Operating Temperature:** 0°C to 40°C. **Combined Regulation:** ±5%. **Fusing:** Internal, non-replaceable. **Thermal Current Limited. Dielectric Withstand Voltage:** 1500 VAC, RMS. **Options. Connectors. Shielded Output Cable — S Option:** Shielded cable with EMI ground tied to outer ring of DIN connector (not to be used as safety ground).

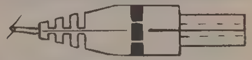


DC Output Connections



D5
5 Pin DIN

Output Connector — Female



ID = 2.5 mm
OD = 5.5 mm
Barrel Length = 10.0 mm
0.216 × 0.1 × 0.394 Inches

Inside V+
Outside V–

Regulated Wallmounts — Single and Multiple Output

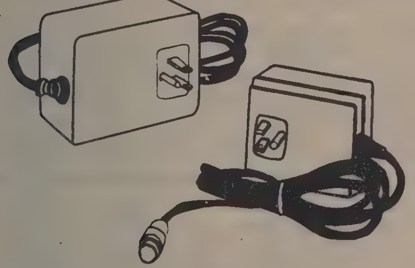
Stock No.	Mfr.'s Type	Output 1		Output 2		Output 3		Standard Connector	Size H × W × L (In.)	EACH			
		Volts	Amps	Volts	Amps	Volts	Amps			1-4	5-9	10-24	25
879-1063	WM063-1950-D5	+5	0.60	+12	0.16	–12	0.16	5 Pin DIN	4.33 × 2.44 × 2.00	**46.00**	**41.00**	**37.00**	**34.00**
879-1070	WM070-1950-D5	+5	0.60	+12	0.33	—	—	5 Pin DIN	3.21 × 2.18 × 1.57	**40.00**	**36.00**	**33.00**	**30.00**
879-1090	WM090-1950-D5	+5	0.70	–5	0.70	—	—	5 Pin DIN	3.21 × 2.18 × 1.57	**47.00**	**42.00**	**38.00**	**35.00**
879-2050	WM050-1950-760	+5	1.00	—	—	—	—	760 Type	3.21 × 2.18 × 1.89	**26.00**	**23.00**	**21.00**	**19.00**
879-2075	WM075-1950-760*	+5	1.50	—	—	—	—	760 Type	4.33 × 2.44 × 2.00	**42.00**	**38.00**	**35.00**	**32.00**
879-2101	WM101-1950-760	+5	2.00	—	—	—	—	760 Type	5.00 × 3.07 × 2.24	**42.00**	**38.00**	**35.00**	**32.00**
879-1072	WM072-1950-D5	+12	0.30	+12	0.30	—	—	5 Pin DIN	5.00 × 3.07 × 2.24	**43.00**	**39.00**	**35.00**	**33.00**
879-1060	WM060-1950-760	+12	0.50	—	—	—	—	760 Type	3.21 × 2.18 × 1.57	**33.00**	**30.00**	**27.00**	**25.00**
879-2144	WM144-1950-760*	+12	1.20	—	—	—	—	760 Type	3.35 × 2.68 × 2.18	**44.00**	**40.00**	**36.00**	**33.00**
879-1071	WM071-1950-D5	+15	0.24	–15	0.24	—	—	5 Pin DIN	3.21 × 2.18 × 1.57	**42.00**	**38.00**	**35.00**	**32.00**
879-1061	WM061-1950-760	+15	0.40	—	—	—	—	760 Type	3.21 × 2.18 × 1.57	**33.00**	**30.00**	**27.00**	**25.00**
879-1080	WM080-1950-760	+24	0.33	—	—	—	—	760 Type	3.21 × 2.18 × 1.57	**31.00**	**28.00**	**25.00**	**23.00**
879-0075	WM025	+5	500.00 mA	—	—	—	—	760 Type†	2.20 × 2.75 × 3.50	**33.00**	**30.00**	**27.00**	**25.00**
879-0080	WM053	+5	380.00 mA	–5	180.00 mA	+12	180.00 mA	DIN†	2.20 × 2.75 × 3.50	**48.00**	**43.00**	**39.00**	**36.00**
879-0085	WM063	+5	380.00 mA	–12	180.00 mA	+12	180.00 mA	DIN†	2.20 × 2.75 × 3.50	**46.00**	**41.00**	**37.00**	**34.00**
879-0090	WM075	+5	1.50	—	—	—	—	DIN†	2.28 × 3.10 × 4.36	**49.00**	**44.00**	**40.00**	**37.00**
879-0095	WM093	+5	860.00 mA	–5	300.00 mA	+12	300.00 mA	DIN†	2.28 × 3.10 × 4.36	**60.00**	**54.00**	**49.00**	**45.00**
879-0100	WM112	+5	800.00 mA	—	—	+12	600.00 mA	DIN†	2.28 × 3.10 × 4.36	**60.00**	**54.00**	**49.00**	**45.00**
879-0105	WM113	+5	860.00 mA	–12	300.00 mA	+12	300.00 mA	DIN†	2.28 × 3.10 × 4.36	**46.00**	**41.00**	**37.00**	**34.00**
879-9999	WM113-S	+5	860.00 mA	–12	300.00 mA	+12	300.00 mA	DIN†	2.28 × 3.10 × 4.36	**60.00**	**54.00**	**50.00**	**49.00**
879-0110	WM144-S	+12	1.20	—	—	—	—	DIN†	2.28 × 3.10 × 4.36	**60.00**	**54.00**	**49.00**	**45.00**

Tabletops — Single and Multiple Output

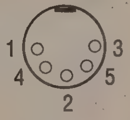
Stock No.	Mfr.'s Type	Output 1 Volts	Output 1 Amps	Output 2 Volts	Output 2 Amps	Output 3 Volts	Output 3 Amps	Standard Connector	Size H × W × L (In.)	1-4	5-9	10-24	25
879-0115	WM100-S	+5	1.00	–5	1.00	—	—	DIN†	2.28 × 3.10 × 4.36	**58.00**	**52.00**	**47.00**	**43.00**
879-0125	WM113TT	+5	860.00 mA	–12	300.00 mA	+12	300.00 mA	DIN†	2.28 × 3.10 × 4.36	**58.00**	**52.00**	**47.00**	**43.00**
879-0135	WM220-1	+5	2.00	+12	500.00 mA	–12	500.00 mA	DIN†	2.66 × 3.82 × 6.30	**96.00**	**86.00**	**78.00**	**72.00**
879-0140	WM230-S	+5	1.00	–12	1/52/5	—	—	DIN†	2.66 × 3.82 × 6.30	**96.00**	**86.00**	**78.00**	**72.00**
879-1220	WM220-1950-D5	+5	2.00	+12	500.00 mA	–12	500.00 mA	DIN†	2.66 × 3.82 × 6.30	**107.00**	**96.00**	**87.00**	**80.00**

*UL only. †Mating connectors available on special order..

MED Series — Regulated Medical Instrumentation Power Supply



5 Pin Din



5 Pin DIN Standard
Optional Output
Connectors
Available

General Specifications
- ► **A/C Input: 120 VAC, ±10%, 60 Hz (All Models Except MED 220)**
- ► **AC Input MED 220: 115 VAC, ±10%, 60 Hz**
- ► **AC Input Cable 6 Foot Hospital Grade Cord (Tabletops)**
- ► **DC Output Cable 6 Foot**
- ► **Load Regulation: ±5%**
- ► **Line Regulation: ±0.5%**
- ► **Ripple and Noise: 20 Millivolts P-P**
- ► **Minimum Load: 0 Watts**
- ► **No Overshoot on Turn-On/Turn-Off**
- ► **Short Circuit Protected**
- ► **Thermally Fused Primary**
- ► **Standard 5 Pin DIN Connector**
- ► **Operating Temperature: 0-40°C**
- ► **Storage Temperature: –25°C to +85°C**
- ► **Size: Models MED 075, 112, 113, 113TT, 144 — 2.3 × 3.1 × 4.4 Inches; Model MED 220 — 2.7 × 3.8 × 6.3 Inches**

DIN Pinout Matrix

P/N	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5
MED 075	COM	N/C	+5 V	COM	+5 V
MED 112	COM	N/C	+5 V	COM	+12 V
MED 113	COM	N/C	+5 V	–12 V	+12 V
MED 113TT	COM	N/C	+5 V	–12 V	+12 V
MED 144	COM	N/C	+12 V	COM	+12 V
MED 220	COM	N/C	+5 V	–12 V	+12 V

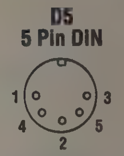
Approvals
- ► **UL Approved to Medical Standard UL544**
- ► **FCC Class B and VDE Class B Emissions**
- ► **CSA Approved to Standard C22.2 No. 220, CSA Evaluated to C22.2 No. 125 (Medical Applications)**

Features
- ► **Medical Agency Approved**
- ► **Tabletops and Wallmounts**
- ► **All Outputs Fully Regulated**
- ► **Output Connector Options**
- ► **Off-the-Shelf Availability**

Stock No.	Mfr.'s Type	Input AC	Output VDC/Amps			EACH			
			1	2	3	1-4	5-9	10-24	25
879-9100	MED 075*	120 V, 60 Hz	5 V @ 1.25 A	—	—	**116.00**	**100.00**	**96.00**	**90.00**
879-9005	MED 112	120 V, 60 Hz	5 V @ .75 A	12 V @ .65 A	—	**116.00**	**100.00**	**96.00**	**90.00**
879-9010	MED 113	120 V, 60 Hz	5 V @ .86 A	12 V @ .30 A	–12 V @ .3 A	**116.00**	**100.00**	**96.00**	**90.00**
879-9015	MED 113TT*	120 V, 60 Hz	5 V @ .86 A	12 V @ .30 A	–12 V @ .3 A	**116.00**	**100.00**	**96.00**	**90.00**
879-9020	MED 144	120 V, 60 Hz	12 V @ 1.20 A	—	—	**116.00**	**100.00**	**96.00**	**90.00**
879-9025	MED 220*	115 V, 60 Hz	5 V @ 2.00 A	12 V @ 700 mA	–12 V, 300 mA	**136.00**	**110.00**	**105.00**	**99.00**

*Table top model.

Regulated Tabletops — European Models



DC Output Connections

Features
- ► TUV Approved to IEC 950
- ► VDE Class B Emission
- ► CMIs Have IEC Approved Input Connector
- ► WMs Have 2 Prong Euro Plug
- ► CE Marked
- ► All Outputs Fully Regulated
- ► Output Connector Options
- ► Off-the-Shelf Availability

Specifications. Input: CMI 200-250 VAC 50 Hz, WMI 212-240 VAC 50 Hz. **Ripple:** 1% Pk-Pk for all outputs. **Combined Regulation:** ±5% max. **Minimum Load:** 0 Watts. No Overshoot to turn-on or turn-off. Current limited: Internally Fused. **Operating Temperature:** 0-45°C. **Size:** 6.3 × 3.82 × 2.66 inches.

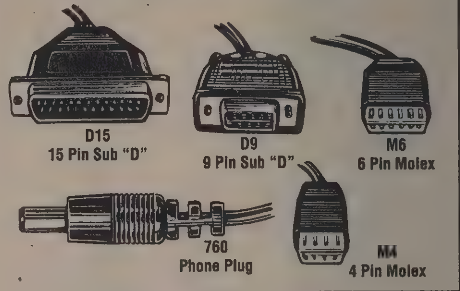
DIN Pinout Matrix

P/N	PIN1	PIN2	PIN3	PIN4	PIN5
CMI 1231	COM	N/C	+5v	–12v	+12v
CMI 0531	COM	N/C	+5v	–12v	+12v
CMI 0811	COM	N/C	+5v	COM	+5v
CMI 1511	COM	N/C	+5v	COM	+5v
CMI 1411	COM	N/C	+12v	COM	+12v
WM217-EURO	COM	N/C	+5v	COM	+12v
WM220-1 EURO	COM	N/C	+5v	–12v	+12v

Stock No.	Mfr.'s Type	Outputs			Connector Type*	EACH			
		1	2	3		1-4	5-9	10-24	25
879-0150	CMI 0531-D5	5v, 380mA	+12v, 180mA	–12v, 180mA	DIN	93.00	84.00	76.00	70.00
879-0155	CMI 0811-D5	5v, 1.5A	—	—	DIN	87.00	78.00	71.00	65.00
879-0160	CMI 1231-D5	5v, 1A	+12v, 300mA	–12v, 300mA	DIN	93.00	84.00	76.00	70.00
879-0165	CMI 1411-D5	12v, 1.2A	—	—	DIN	100.00	90.00	82.00	75.00
879-0175	CMI 2411-D5	24v, 1A	—	—	DIN	93.00	84.00	76.00	70.00
879-0180	WM 217-EURO	5v, 2A	+12v, 900mA	—	DIN	107.00	96.00	87.00	80.00
879-0185	WM 220-1 EURO	5v, 2A	+12v, 500mA	–12v, 500mA	DIN	189.00	98.00	89.00	82.00

*Mating connectors available on special order.

Alternative Output Connectors and Other Output Connectors Available on Special Order.



Regulated Wallmounts — European Models

Features
- ► TUV Approved to IEC 950, Class II
- ► VDE Class B Emission
- ► BS Models Have 3 Prong UK Plug
- ► GR Models Have 2 Prong Euro Plug
- ► CE Marked
- ► All Outputs Fully Regulated
- ► Output Connector Options
- ► Off-the-Shelf Availability

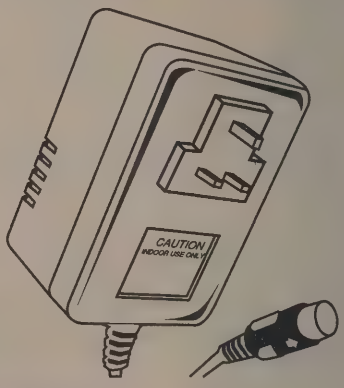
Specifications. Input: BS240 VAC 50Hz. GR220 VAC 50Hz. **Ripple:** 1% Pk-Pk for all outputs. **Combined Regulations:** ±5% max. **Minimum Load:** 0 Watts. No Overshoot to turn-on/turn-off. Current limited. Internally Fused. **Operating Temperature:** 0-40°C. **Size:** 3.07 × .33 × 2.16 inches.

DIN Pinout Matrix

P/N	PIN1	PIN2	PIN3	PIN4	PIN5
GR 063	COM	N/C	+5v	–12v	+12v
GR 075	COM	N/C	+5v	—	—
GR 114	COM	N/C	+5v	–12v	+12v
BS 063	COM	N/C	+5v	–12v	+12v
BS 075	COM	N/C	+5v	—	—
BS 114	COM	N/C	+5v	–12v	+12v

BS Series Regulated Wallmounts (240 VAC Input - UK Plug)

Stock No.	Mfr.'s Type	Outputs			Connector Type	EACH
		1	2	3		
879-9505	BS 075	+5v, 1.5A	—	—	DIN	54.00
879-9510	BS 114	+5v, 1A	12v, 250mA	–12v, 250mA	DIN	58.00

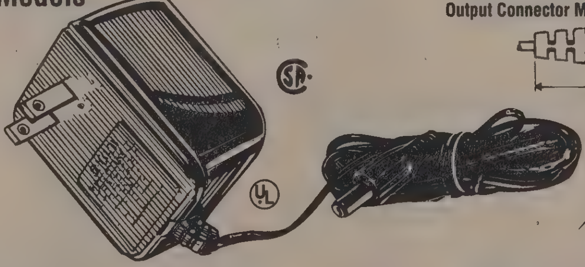


GR Series Regulated Wallmounts (220 VAC - Euro Plug)

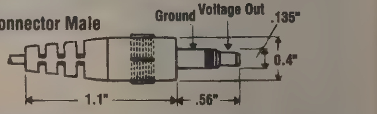
Stock No.	Mfr.'s Type	Outputs			Connector Type	EACH
		1	2	3		
879-9515	GR 063	5v, 380mA	12v, 180mA	–12v, 180mA	DIN	49.00
879-9520	GR 075	5v, 1.5A	—	—	DIN	56.00
879-9525	GR 114	5v, 1A	12v, 250mA	–12v, 250mA	DIN	58.00

Unregulated Wallmounts — North American Models

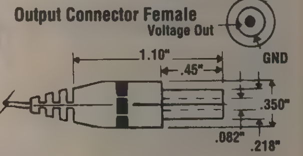
Features
- ► Single Output
- ► 1.5 Watts to 8 Watts
- ► UL 1310 Listed
- ► One Year Warranty



Output Connector Male



Output Connector Female



Specifications. Input Voltage: 120 VAC, 60 Hz. **Output Connector:** Output jack on a 6 ft. two-conductor cable. **Operating Temperature:** 0-30°C Thermal currently limited. **Input to Output Isolation:** 1250 volts.

PS Series Unregulated Single Output Wallmounts

Stock No.	Mfr.'s Type	Output Volts/Amps	Connector Type	Maximum No Load Voltage	Minimum Full Load Voltage	Size L x W x H	EACH			
							1-4	5-9	10-24	25
879-0190	PS025	7.5V/0.3A	Male	12.0	7.5±5%	1.65 × 2.00 × 2.44	13.00	10.00	9.00	8.00
879-0195*	PS027	9.0V/0.3A	Female	14.0	9.0±5%	1.40 × 1.72 × 2.24	13.00	10.00	9.00	8.00
879-0200*	PS045	9.0V/0.5A	Male	14.0	9.0±5%	1.65 × 2.00 × 2.44	15.00	12.00	11.00	10.00
879-0205*	PS033	12.0V/0.5A	Female	16.0	12.0±5%	1.65 × 2.00 × 2.44	13.00	10.00	9.00	8.00
879-0210*	PS072	12.0V/0.5A	Male	16.0	12.0±5%	1.98 × 2.43 × 2.57	15.00	12.00	11.00	10.00
879-0215	PS096	12.0V/0.8A	Female	19.0	12.0±10%	1.90 × 2.40 × 3.00	19.00	15.00	14.00	13.00

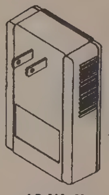
*UL and CSA Approved.

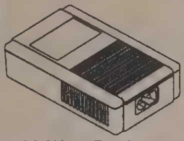
Wallmount and Desktop Switching and External Power Supplies

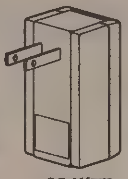
LZRelectronics,inc.

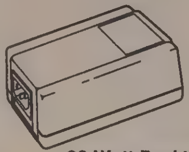
Vulcan 10 and 20 Watt Switching Power Supplies — NEW —

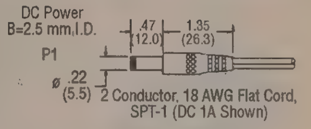
General Specifications. Input Voltage: 90 VAC to 132 VAC for North American units, 90 VAC to 264 VAC for Universal units. **Input Frequency:** 47 Hz to 63 Hz for all units. **Input Current:** Less than 0.5 amps for all units. **Output Current:** No load to full load (no minimum load required). **Output Regulation (Line/Load):** For single output units — ±5%; for multiple output units — ±5% for main output, ±5% for second output, and ±10% for third output (measured at the end of the output connector).


10 Watt Wall Plug-In

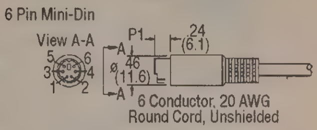

10 Watt Desktop


20 Watt Wall Plug-In


20 Watt Desktop



For Single Outputs



For Dual and Triple Outputs

10 Watt Units

North American Wall Plug-Ins. Dimensions: 2.40 (61.0) × 4.05 (102.8) × 1.11 (28.2).

Stock No.	Mfr.'s Type	No. of Outputs	Output Voltage	Output Current	Output Power (Rated)	EACH 1-9	EACH 10-24	EACH 25-Up
588-0100	LZASN01001	Single	+5 V	0-2.20 A	11.0 W	**70.00**	**65.00**	**60.00**
588-0102	LZASN01002	Single	+9 V	0-1.20 A	10.8 W	**70.00**	**65.00**	**60.00**
588-0104	LZASN01003	Single	+12 V	0-0.94 A	11.3 W	**70.00**	**65.00**	**60.00**
588-0106	LZASN01004	Single	+15 V	0-0.80 A	12.0 W	**70.00**	**65.00**	**60.00**
588-0108	LZASN01005	Single	+18 V	0-0.65 A	12.0 W	**70.00**	**65.00**	**60.00**
588-0110	LZASN01006	Single	+24 V	0-0.50 A	12.0 W	**70.00**	**65.00**	**60.00**
588-0112	LZASN01021	Dual	+5 V +12 V	0-1.40 A 0-0.40 A	11.0 W	**80.00**	**75.00**	**70.00**
588-0114	LZASN01031	Triple	+5 V +12 V −12 V	0-1.40 A 0-0.40 A 0-0.15 A	11.0 W	**80.00**	**75.00**	**70.00**

Universal Desktops. Dimensions: 2.40 (61.0) × 4.05 (102.8) × 1.11 (28.2).

Stock No.	Mfr.'s Type	No. of Outputs	Output Voltage	Output Current	Output Power (Rated)	EACH 1-9	EACH 10-24	EACH 25-Up
588-1100	LZUSW01001	Single	+5 V	0-2.00 A	10.0 W	**70.00**	**65.00**	**60. 00**
588-1102	LZUSW01002	Single	+9 V	0-1.10 A	9.9 W	**70.00**	**65.00**	**60. 00**
588-1104	LZUSW01003	Single	+12 V	0-0.85 A	10.2 W	**70.00**	**65.00**	**60. 00**
588-1106	LZUSW01004	Single	+15 V	0-0.70 A	10.5 W	**70.00**	**65.00**	**60. 00**
588-1108	LZUSW01005	Single	+18 V	0-0.60 A	10.8 W	**70.00**	**65.00**	**60. 00**
588-1110	LZUSW01006	Single	+24 V	0-0.45 A	10.8 W	**70.00**	**65.00**	**60. 00**
588-1112	LZUSW01021	Dual	+5 V +12 V	0-1.40 A 0-0.40 A	10.0 W	**80.00**	**75.00**	**70. 00**
588-1114	LZUSW01031	Triple	+5 V +12 V −12 V	0-1.40 A 0-0.40 A 0-0.15 A	10.0 W	**80.00**	**75.00**	**70. 00**

20 Watt Units

North American Wall Plug-Ins. Dimensions: 2.58 (65.5) × 3.92 (99.6) × 1.51 (38.5).

Stock No.	Mfr.'s Type	No. of Outputs	Output Voltage	Output Current	Output Power (Rated)	EACH 1-9	EACH 10-24	EACH 25-Up
588-0200	LZASN02000	Single	+3.3 V	0-4.20 A	13.8 W	**75.00**	**65.00**	**60.00**
588-0202	LZASN02001	Single	+5 V	0-3.80 A	19.0 W	**75.00**	**65.00**	**60.00**
588-0204	LZASN02002	Single	+9 V	0-2.20 A	19.8 W	**75.00**	**65.00**	**60.00**
588-0206	LZASN02003	Single	+12 V	0-1.70 A	20.4 W	**75.00**	**65.00**	**60.00**
588-0208	LZASN02004	Single	+15 V	0-1.35 A	20.0 W	**75.00**	**65.00**	**60.00**
588-0210	LZASN02005	Single	+18 V	0-1.20 A	21.6 W	**75.00**	**65.00**	**60.00**
588-0212	LZASN02006	Single	+24 V	0-0.90 A	21.6 W	**75.00**	**65.00**	**60.00**
588-0214	LZASN02021	Dual	+5 V +12 V	0-2.50 A 0-0.90 A	19.5 W	**85.00**	**75.00**	**70.00**
588-0216	LZASN02031	Triple	+5 V +12 V −12 V	0-2.50 A 0-0.90 A 0-0.30 A	19.5 W	**85.00**	**75.00**	**70.00**

Universal Desktops. Dimensions: 2.58 (65.5) × 3.92 (99.6) × 1.51 (38.5).

Stock No.	Mfr.'s Type	No. of Outputs	Output Voltage	Output Current	Output Power (Rated)	EACH 1-9	EACH 10-24	EACH 25-Up
588-1200	LZUSD02000	Single	+3.3 V	0-3.80 A	12.5 W	**75.00**	**70.00**	**65.00**
588-1202	LZUSD02001	Single	+5 V	0-3.30 A	16.5 W	**75.00**	**70.00**	**65.00**
588-1204	LZUSD02002	Single	+9 V	0-1.90 A	17.1 W	**75.00**	**70.00**	**65.00**
588-1206	LZUSD02003	Single	+12 V	0-1.50 A	18.0 W	**75.00**	**70.00**	**65.00**
588-1208	LZUSD02004	Single	+15 V	0-1.20 A	18.0 W	**75.00**	**70.00**	**65.00**
588-1210	LZUSD02005	Single	+18 V	0-1.00 A	18.0 W	**75.00**	**70.00**	**65.00**
588-1212	LZUSD02006	Single	+24 V	0-0.75 A	18.0 W	**75.00**	**70.00**	**65.00**
588-1214	LZUSD02021	Dual	+5 V +12 V	0-2.50 A 0-0.90 A	17.2 W	**85.00**	**80.00**	**75.00**
588-1216	LZUSD02031	Triple	+5 V +12 V −12 V	0-2.50 A 0-0.90 A 0-0.30 A	17.2 W	**85.00**	**80.00**	**75.00**

External Power Supplies

— NEW —

General Specifications. Input Voltage: 120 VAC/60 Hz for North American models; 230 VAC/50 Hz for European models. **Output Tolerance:** ±5% at full load. **Operating Temperature:** 0-40°C. **Storage Temperature:** −20-70°C. **Dielectric Strength:** 1500 VAC and 4000 VAC (European) for 1 minute. **Voltage Regulation for Regulated Models:** Over all ±5%. Open frames and PC mount are available as special orders.

North American Unregulated Wall Plug-Ins

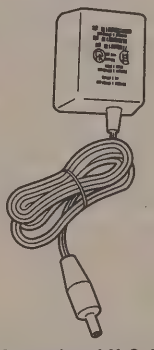
Stock No.	Mfr.'s Type	Output	EACH 1-9	EACH 10-24	EACH 25-Up
588-5002	AD0910	9 VDC @ 100 mA	**12.00**	**10.00**	**8.00**
588-5004	AD0930	9 VDC @ 300 mA	**13.80**	**11.50**	**9.20**
588-5006	AD0950	9 VDC @ 500 mA	**14.10**	**11.75**	**9.40**
588-5008	AD091A	9 VDC @ 1000 mA	**16.50**	**13.75**	**11.00**
588-5010	AD1230	12 VDC @ 300 mA	**9.60**	**8.00**	**6.40**
588-5012	AD1250	12 VDC @ 500 mA	**12.00**	**10.00**	**8.00**
588-5014	AD1280	12 VDC @ 800 mA	**18.00**	**15.00**	**12.00**
588-5016	AD121A	12 VDC @ 1000 mA	**14.70**	**12.25**	**9.80**
588-5018	AD1215A	12 VDC @ 1500 mA	**33.00**	**27.50**	**11.00**
588-5020	AD1540	15 VDC @ 400 mA	**13.80**	**11.50**	**9.20**
588-5022	AD1560	15 VDC @ 600 mA	**16.20**	**13.50**	**10.80**
588-5024	AD1590	15 VDC @ 900 mA	**15.60**	**13.00**	**10.40**
588-5026	AD1850	18 VDC @ 500 mA	**12.60**	**10.50**	**8.40**
588-5028	AD1880	18 VDC @ 800 mA	**19.50**	**16.25**	**13.00**
588-5030	AD2460	24 VDC @ 500 mA	**19.20**	**16.00**	**12.80**

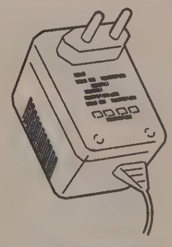
European Unregulated Wall Plug-Ins

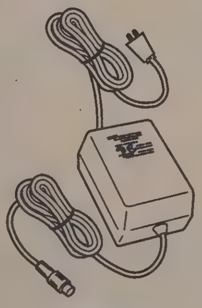
Stock No.	Mfr.'s Type	Output	EACH 1-9	EACH 10-24	EACH 25-Up
588-5042	E0950B	9 VDC @ 500 mA	**15.30**	**12.75**	**10.20**
588-5044	E091AB	9 VDC @ 1000 mA	**24.60**	**20.50**	**16.40**
588-5048	E1250B	12 VDC @ 500 mA	**18.90**	**15.75**	**12.60**
588-5050	E1280B	12 VDC @ 800 mA	**24.80**	**20.50**	**16.40**
588-5052	E121AB	12 VDC @ 1000 mA	**27.60**	**23.00**	**18.40**
588-5054	E1560B	15 VDC @ 600 mA	**25.80**	**21.50**	**17.20**

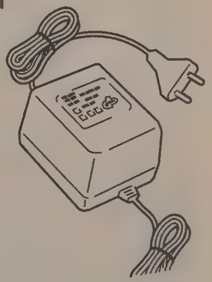
North American Regulated Desktops

Stock No.	Mfr.'s Type	Output	Size (In.) L × W × H	EACH 1-9	EACH 10-24	EACH 25-Up
588-5032	AD0540R	5 VDC @ 400 mA	3.0 × 1.9 × 1.8	**17.40**	**14.50**	**11.60**
588-5034	AD051AR	5 VDC @ 1000 mA	3.2 × 2.2 × 1.9	**30.60**	**25.50**	**20.40**
588-5036	AD0960R	9 VDC @ 600 mA	3.3 × 2.2 × 1.9	**27.60**	**23.00**	**18.40**
588-5038	AD1250R	12 VDC @ 500 mA	3.3 × 2.2 × 1.9	**27.80**	**23.00**	**18.40**
588-5040	AD1212ARD	12 VDC @ 1200 mA	4.7 × 3 × 2.2	**53.40**	**44.50**	**17.80**


Unregulated U.S.A. Wall Plug-In

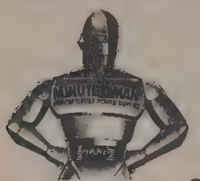

European Wall Plug-in


Regulated U.S.A Desktop

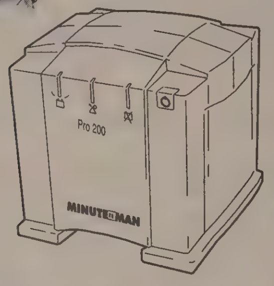

European Desktop

European Regulated Desktop

Stock No.	Mfr.'s Type	Output	Size (In.) L × W × H	EACH 1-9	EACH 10-24	EACH 25-Up
588-5056	AD051ARB	5 VDC @ 1000 mA	3.4 × 2.7 × 2	**39.00**	**32.50**	**26.00**
588-5058	E0515RD	5 VDC @ 1500 mA	4.1 × 2.6 × 2.1	**43.50**	**38.25**	**29.00**
588-5060	AD1250RBD	12 VDC @ 500 mA	3.3 × 2.2 × 2	**36.60**	**32.50**	**24.40**
588-5062	AD1212RBD	12 VDC @ 1200 mA	4.7 × 3 × 2.2	**63.00**	**52.50**	**42.00**



$25,000
MINUTEMAN PLATINUM PROTECTION PLAN
MINUTEMAN will repair or replace equipment, up to $25,000 in value, damaged by AC surges while properly connected to this MINUTEMAN UPS



Pro Series

— NEW —

- **Intelligent, Line-Interactive Technology**
- **Modem/Fax/Network Surge Protection**
- **Hot Swappable Batteries**
- **Advanced Battery Management**
- **Compatibility with Power Management Software**
- **An Unprecedented 3-Year Warranty**

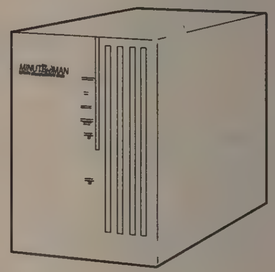
Minuteman's new Pro series sets a new standard for UPSs. With a unique, ergonomic design, the series ranges from 200 to 1400 VA and brings several high-level features down to the low-end of the market.

Stock No.	Mfr.'s Type	Applications	VA/Watts	Dimensions L × W × H (In.)	Ship Weight (Lbs.)	Comm Port	EACH
775-0005	Pro 200	Desktop PC, LAN Node	200/130	6.8 × 6.8 × 6.6	12	—	**99.00**
775-0010	Pro 280	Desktop PC, LAN Node	280/175	9.0 × 9.0 × 8.8	13	DB9	**139.00**
775-0015	Pro 420	Desktop PC, LAN Server	420/260	9.0 × 9.0 × 8.8	16	DB9	**189.00**
775-0020	Pro 650	2-3 PCs, Servers, Workstations	650/410	9.0 × 9.0 × 8.8	21	DB9	**349.00**
775Q0025	Pro 1000	2-3 PCs, Servers, Workstations	1000/670	12.5 × 12.5 × 11.7	44	DB9	**529.00**
775Q0030	Pro 1400	3-4 PCs, Servers, Workstations	1400/950	12.5 × 12.5 × 11.7	48	DB9	**669.00**

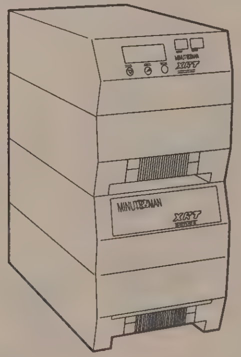
PowerMind Series

- **Automatic Frequency Selection (50 or 60 Hz)**
- **Automatic Power Boost During Brownouts without Using Battery**
- **True Sine-Wave Output**
- **$25,000 Connected Equipment Coverage and 2 Year Warranty**
- **Self-Diagnostic Test on Turn On**
- **Site Wiring Fault Indicators**

The PowerMind (PML) Series from Minuteman are microprocessor-based intelligent UPSs that provide a true sinewave output. Designed for desktop PCs, telephone systems, critical file servers and LAN workgroups, the PMLs also incorporate extensive status indicators and audible alarms. The unique line-interactive technology built into the PMLs provides protection from brownout conditions without using the batteries. In addition, the PML Series provides complete protection from surges, spikes and blackout conditions.



Stock No.	Mfr.'s Type	Applications	VA/Watts	Dimensions L × W × H (In.)	Ship Weight (Lbs.)	Comm Port	EACH
775Q0800	PML600	Desktop PCs, Servers	600/400	13.75 × 4.75 × 8.0	30.0	DB9	**499.00**
775-0900	PML900	2-3 Desktop PCs, Servers	900/630	18.00 × 6.50 × 9.5	53.0	DB9	**699.00**
775Q0950	PML1250	4-6 PCs, Multiple File Servers	1250/900	18.00 × 6.50 × 9.5	53.0	DB9	**879.00**
775Q0960	PML2000	6-10 PCs, Multiple File Servers	2000/1600	19.10 × 7.50 × 14.5	122.0	DB9	**1499.00**



XRT Series

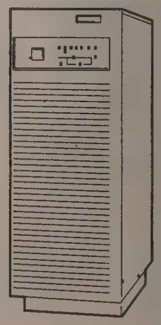
- **Regulates Voltage from 88 to 140 V without Battery Use**
- **Isolation Transformer Provides Superior Noise/Surge Filtering**
- **Extended Back-up Times with Stackable External Battery Packs**
- **True Sinewave Output**
- **$25,000 Connected Equipment Coverage and 2 Year Warranty**

Minuteman XRT Series provides the best surge, spike and EMI/RFI filtering available. The series also incorporates a true automatic voltage regulator, a programmable LCD display (available on XRT1000 and above), and a built-in microprocessor that performs advanced battery management utilities. Minuteman's optional LanMaster monitoring and shutdown software is used for power and event management. **NOTE:** XRT600 includes batteries, all other units require external battery packs. Any number of additional battery packs can be added for increased run time. Each added pack will provide 20 to 30 minutes additional time. Perfect for critical servers and telecommunication equipment.

Stock No.	Mfr.'s Type	Applications	VA/Watts	Dimensions L × W × H (In.)	Ship Weight (Lbs.)	Comm Port	EACH
775Q0970	XRT600	Desktop PCs, Critical Servers	600/400	19.25 × 8.75 × 10	57	DB9	**999.00**
775Q0980	XRT1000	Multiple Servers, Phone Systems	1000/700	19.25 × 8.75 × 10	59	DB9	**1159.00**
775Q0990	XRT1500	Multiple Servers, Phone Systems	1500/1050	19.25 × 8.75 × 10	72	DB9	**1499.00**
775Q0995	XRT2000	Multiple Servers, Phone Systems	2000/1400	19.25 × 8.75 × 10	83	DB9	**1799.00**
775-1000	XRTBP1	External Battery Pack	—	19.25 × 8.75 × 10	62	—	**429.00**

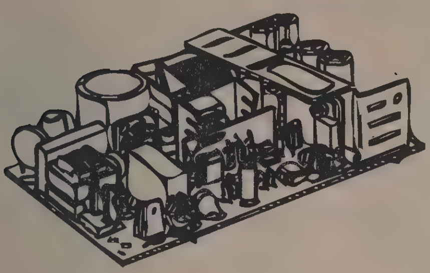
CP Series

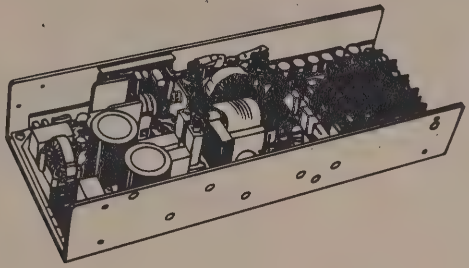
Minuteman's Continuous Power Series features true on-line double-conversion UPS technology that provide unsurpassed power protection for mission-critical applications. With extensive status indicators, synchronized sinewave output and a two-stage alarm, the CP Series represents the finest power protection money can buy. 208 and 240 volt units are available.



Stock No.	Mfr.'s Type	Applications	VA/Watts	Dimensions L × W × H (In.)	Ship Weight (Lbs.)	Comm Port	EACH
775-1005	CP500	Desktop PCs, Voice Mail, Phone Systems	500/350	17.5 × 3.6 × 7.5	28	DB9	**799.00**
775Q1010	CP1K	Servers, AS-400, Work Stations, Voice Mail, Phone Systems	1000/700	17.7 × 7.5 × 10.4	56	DB9	**1399.00**
775Q1020	CP3K	8-10 PCs, Multiple File Servers, AS-400, Minicomputers, PBX	3000/2100	20.7 × 7.5 × 19.8	124	DB9	**3699.00**

30-400 Watt AC/DC Switching Power Supplies





- ▶ Universal Input/User-Selectable
- ▶ Over 1,000,000 User-Adjustable Voltage Settings (ZPS-150A-400A Series)
- ▶ Fully Featured
- ▶ 90-265 VAC (All Models)
- ▶ 120-364 VDC (30-45 Watt Series)
- ▶ Compact Design
- ▶ Quad Outputs (150-400 Watt Series)
- ▶ Single and Triple Outputs (30-60 Watt Series)
- ▶ Complete Unit Protection
- ▶ U-Channel Aluminum Construction
- ▶ Open Frame or Enclosed
- ▶ 100% Cycled Burn-In
- ▶ 100,000-500,000 Hours MTBF
- ▶ 1-2 Year Warranty
- ▶ Standard, Off-the-Shelf Delivery
- ▶ Enclosed Units End In "C"

Approvals/Compliance To

- ▶ UL 1950
- ▶ CSA 22.2
- ▶ IEC 950
- ▶ VDE 0806, VDE EN 60950
- ▶ VDE 0871/B, VFG 243/B
- ▶ FCC Part 15J, Class B
- ▶ BABT 340
- ▶ BS6301

Low Power Series

Stock No.	Mfr.'s Type	Max. Output Power (Watts)	Main Output		2nd Output		3rd Output		4th Output		Size (Inches) L × W × H	EACH
			Volts DC Nominal	Amps Min./Max.	Volts DC Nominal	Amps Min./Max.	Volts DC Nominal	Amps Min./Max.	Volts DC Nominal	Amps Min./Max.		1-4
941-8020	ZPS-30-12	30	12	0.2/2.5 PK 3	—	—	—	—	—	—	5 × 3 × 1.35	**46.00**
941-5030	ZPS-30-12C	30	12	0.2/2.5 PK 3	—	—	—	—	—	—	5.4 × 3.4 × 1.85	**51.00**
941-5040	ZPS-30-15-1	30	15	0.2/2	—	—	—	—	—	—	5 × 3 × 1.35	**43.00**
941-5050	ZPS-30-15-1C	30	15	0.2/2	—	—	—	—	—	—	5.4 × 3.4 × 1.85	**51.00**
941-1000	ZPS-30	30	5	0.1/3 PK 4	+12	0.1/2 PK 3	–12	0/0 PK .7	—	—	5 × 3 × 1.35	**53.00**
941-1010	ZPS-30C	30	5	0.1/3 PK 4	+12	0.1/2 PK 3	–12	0/0 PK .7	—	—	5.4 × 3.4 × 1.85	**58.00**
941-5140	ZPS-30-1	30	5	0.1/3 PK 4	+12	0.1/2 PK 3	– 5	0/.1 PK .2	—	—	5 × 3 × 1.35	**44.00**
941-5150	ZPS-30-1C	30	5	0.1/3 PK 4	+12	0.1/2 PK 3	– 5	0/.1 PK .2	—	—	5.4 × 3.4 × 1.85	**54.00**
941-3000	ZPS-30-15	30	5	0.1/3 PK 4	+15	0.1/1.5 PK 2	–15	0/0 PK .7	—	—	5 × 3 × 1.35	**39.00**
941-3010	ZPS-30-15C	30	5	0.1/3 PK 4	+15	0.1/1.5 PK 2	–15	0/0 PK .7	—	—	5.4 × 3.4 × 1.85	**57.00**
941-5060	ZPS-45-5	45	5	0.5/9	—	—	—	—	—	—	5 × 3 × 1.35	**48.00**
941-5070	ZPS-45-5C	45	5	0.5/9	—	—	—	—	—	—	5.4 × 3.4 × 1.85	**55.00**
941-5080	ZPS-45-12	45	12	0.2/4 PK 5	—	—	—	—	—	—	5 × 3 × 1.35	**48.00**
941-5090	ZPS-45-12C	45	12	0.2/4 PK 5	—	—	—	—	—	—	5.4 × 3.4 × 1.85	**55.00**
941-5100	ZPS-45-15-1	45	15	0.2/3	—	—	—	—	—	—	5 × 3 × 1.35	**48.00**
941-5110	ZPS-45-15-1C	45	15	0.2/3	—	—	—	—	—	—	5.4 × 3.4 × 1.85	**55.00**
941-0045	ZPS-45*	45	5	0.1/5 PK 7	+12	0.1/2 PK 3	–12	0/0 PK .7	—	—	5 × 3 × 1.35	**59.00**
941-1040	ZPS-45C	45	5	0.1/5 PK 7	+12	0.1/2 PK 3	–12	0/0 PK .7	—	—	5.4 × 3.4 × 1.85	**61.00**
941-5120	ZPS-45-1	45	5	0.1/5 PK 7	+12	0.1/2 PK 3	– 5	0/.1 PK .2	—	—	5 × 3 × 1.35	**49.00**
941-5130	ZPS-45-1C	45	5	0.1/5 PK 7	+12	0.1/2 PK 3	– 5	0/.1 PK .2	—	—	5.4 × 3.4 × 1.85	**57.00**
941-1030	ZPS-45-15	45	5	0.1/5 PK 7	+15	0.1/1.5 PK2	–15	0/0 PK .7	—	—	5 × 3 × 1.35	**57.00**
941-1035	ZPS-45-15C	45	5	0.1/5 PK 7	+15	0.1/1.5 PK 2	–15	0/0 PK .7	—	—	5.4 × 3.4 × 1.85	**61.00**
941-5160	ZPS-60**	60	5	1/6 PK 10	+12	0.3/2.2 PK 6	–12	0/.3 PK 1.5	—	—	5 × 3 × 1.58	**65.00**

*BS6301. **Available in open frame only. Other models available upon request. Please call for details. **Note:** Model numbers ending with a "C" are enclosed units. All others are open frame units.

Adjustable Series

941-5000	ZPS-150A*	150	4.75/5.25	2.0/20.0	11.5-25.2	0.3/3.0 PK 4.5	9.5-15.8	0.3/4.0 PK 5.0	4.75/12.6	0.2/2.0	11 × 5.0 × 2.5	**227.00**
941-5010	ZPS-175A*	175	4.75/5.25	2.5/25.0	11.5-25.2	0.35/3.5 PK 5.25	9.5-15.8	0.35/4.5 PK 5.5	4.75/12.6	0.2/2.0	11 × 5.0 × 2.5	**236.00**
941-5020	ZPS-200A*	200	4.75/5.25	3.0/30.0	11.5-25.2	0.4/4.0 PK 6.0	9.5-15.8	0.4/5.0 PK 6.0	4.75/12.6	0.2/2.0	11 × 5.0 × 2.5	**235.00**
941-0251	ZPS-250A*	250	4.75/5.25	3.5/35.0	11.5-26.0	0.4/4.0 PK 6.0	4.75-16.0	0.4/4.0 PK 6.0	4.75/16.0	0.3/3.0 PK 4.5	13 × 5.0 × 2.5	**331.00**
941-0301	ZPS-300A*	300	4.75/5.25	4.5/45.0	11.5-26.0	0.6/6.0 PK 9.0	4.75-16.0	0.8/8.0 PK 12	4.75/16.0	0.4/4.0 PK 6.0	13 × 5.0 × 2.5	**418.00**
941-0401	ZPS-400A*	400	4.75/5.25	5.5/55.0	11.5-26.0	0.7/7.0 PK 10.5	4.75-16.0	1.0/10.0 PK 15	4.75/16.0	0.6/6.0 PK 9.0	13 × 6.0 × 2.5	**435.00**

*BS6301. **Note:** Above models can be ordered with covers at additional charge of $13.25 per unit.

Medical Series (UL 544 & IEC 601)

941-6000	ZPS-30M†	30	5	0.1/3 PK 4	+12	0.1/2 PK 3	–12	0/0 PK .7	—	—	5 × 3 × 1.35	**46.00**
941-6005	ZPS-30-15M†	30	5	0.1/3 PK 4	+15	0.1/1.5 PK 2	–15	0/0 PK .7	—	—	5 × 3 × 1.35	**46.00**
941-6010	ZPS-45M†	45	5	0.1/5 PK 7	+12	0.1/2 PK 3	–12	0/0 PK .7	—	—	5 × 3 × 1.35	**54.00**
941-9015	ZPS-45-15M†	45	5	0.1/5 PK 7	+15	0.1/1.5 PK 2	–15	0/0 PK .7	—	—	5 × 3 × 1.35	**54.00**
941-2000	ZPS-150AM‡	150	4.75/5.25	2.0/20.0	11.5-25.2	0.3/3.0 PK 4.5	9.5-15.8	0.3/4.0 PK 5.0	4.75-12.6	0.2/2.0	11 × 5.0 × 2.5	**252.00**
941-2010	ZPS-175AM‡	175	4.75/5.25	2.5/25.0	11.5-25.2	0.35/3.5 PK 5.25	9.5-15.8	0.35/4.5 PK 5.5	4.75-12.6	0.2/2.0	11 × 5.0 × 2.5	**244.00**
941-2020	ZPS-200AM‡	200	4.75/5.25	3.0/30.0	11.5-25.2	0.4/4.0 PK 6.0	9.5-15.8	0.4/5.0 PK 6.0	4.75-12.6	0.2/2.0	11 × 5.0 × 2.5	**294.00**
941-2030	ZPS-250AM‡	250	4.75/5.25	3.5/35.0	11.5-26.0	0.4/4.0 PK 6.0	4.75-16.0	0.4/4.0 PK 6.0	4.75/16.0	0.3/3.0 PK 4.5	13 × 5.0 × 2.5	**350.00**
941-2040	ZPS-300AM‡	300	4.75/5.25	4.5/45.0	11.5-26.0	0.6/6.0 PK 9.0	4.75-16.0	0.8/8.0 PK 12	4.75/16.0	0.4/4.0 PK 6.0	13 × 5.0 × 2.5	**389.00**
941-2050	ZPS-400AM‡	400	4.75/5.25	5.5/55.0	11.5-26.0	0.7/7.0 PK 10.5	4.75-16.0	1.0/10.0 PK 15	4.75/16.0	0.6/6.0 PK 9.0	13 × 6.0 × 2.5	**415.00**

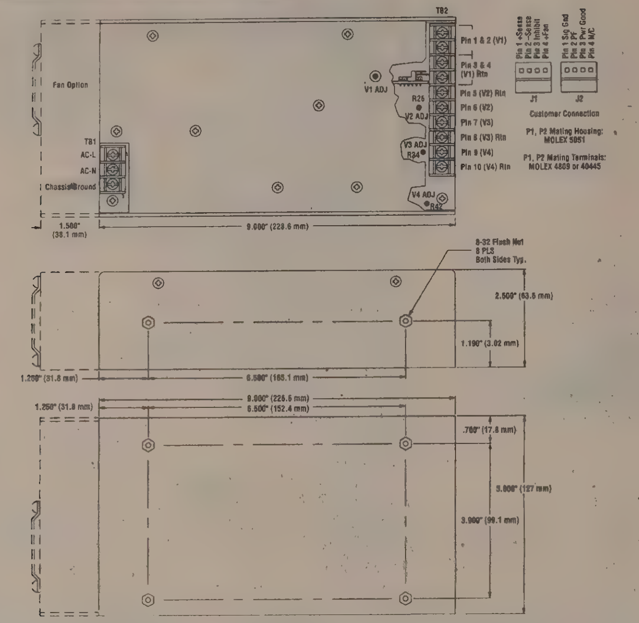
†UL544. ‡UL544, IEC601. Complete specifications available upon request. **Notes:** Models ZPS-30M through ZPS-45-15M can be ordered as enclosed units for an additional charge of $5.00 per unit. Models ZPS-150AM through ZPS-400AM can be ordered with covers at an additional charge of $13.25 per unit.

Power Factor Correction Series (PFC of >0.98)

941-6020	ZPS-250AP	250	4.75/5.25	3.5/35.0	11.5-26.0	0.4/4.0 PK 6.0	4.75-16.0	0.4/4.0 PK 6.0	4.75/16.0	0.3/3.0 PK 4.5	13 × 5.0 × 2.5	**345.00**
941-6025	ZPS-300AP	300	4.75/5.25	4.5/45.0	11.5-26.0	0.6/6.0 PK 9.0	4.75-16.0	0.8/8.0 PK 12	4.75/16.0	0.4/4.0 PK 6.0	13 × 5.0 × 2.5	**398.00**
941-6030	ZPS-400AP	400	4.75/5.25	5.5/55.0	11.5-26.0	0.7/7.0 PK 10.5	4.75-16.0	1.0/10.0 PK 15	4.75/16.0	0.6/6.0 PK 9.0	13 × 6.0 × 2.5	**415.00**

Note: Above models can be ordered with covers at additional charge of $13.25 per unit.

NRG275 and NRG350 Series



General Specifications. AC Input: Automatic selecting dual range 85-132 VAC or 170-264 VAC. 47-63 Hz single phase. NOTE: AC input range selection is fully automatic. No manual switchover is required. **DC Outputs:** See voltage/current rating chart. **Output Power:** See voltage/current rating chart. **Brown-Out Protection:** Regulation is maintained down to 85/170 VAC, at full rated load, with no compromise in performance. **Hold-Up Time:** 20 msec minimum at full rated load and nominal AC input voltage. **Power-Fail Warning Signal:** TTL compatible signal goes low 4 msec before the main output drops to 95% of its steady state value at full rated load. **Efficiency:** Measured at full rated load and nominal AC input voltage. 75% ±5% depending on how the load is distributed among the outputs. **Regulation Characteristics:** See voltage/current rating charts for individual module ratings; Line — Measured over an 85-132 VAC or 170-264 VAC line change; Load — Measured over a min. to max. load change; Multiple output model regulation is subject to the minimum load requirements mentioned below. **Initial Setting Tolerance:** Measured at 50% of full rated load on all outputs. **Minimum Loads:** 10% minimum load on the main output is required to maintain regulation. **Remote Sensing:** Provided on the main output. **Transient Response:** All output — Less than 1 msec typical for a 50-100% load change and recovery to within 1% of initial voltage set point; Maximum excursion — 3% from initial voltage set point. **Overload Protection:** Entire unit hiccups if V1-V3 is overloaded; V4 is self limiting. **Overvoltage Protection:** Provided on the main output; Hiccups over AC operating range. **Output Noise and Ripple:** 1% PK-PK maximum on any output (20 MHz BW). **Overtemperature Protection:** Initiates shutdown in the event of an overtemperature condition; Automatic reset. **Power-Up Initialization Period:** 2.0 sec. maximum turn-on delay assures orderly ramp-up and stabilization of all output voltages during power-up. **Input Protection:** AC input line fuse provided; Internally located. **Inrush Current:** Internally limited at 80 A PK, cold start. **Temperature Rating:** Operating — 0°C to 50°C at full rated output power; Consult factory for operating information between 50°C to 70° C; Storage — –55°C to +85°C. **External Cooling:** External cooling air velocity measured 1/4" above and at the middle of chassis, input to output — NRG275, NRG350 — 300 LFM. **EMI:** VDE and FCC level B EMI. **Vibration. Operating:** 5-32 Hz and 32-5 Hz, Sinusoidal, 0.02 in (DA); 32-2000 Hz and 2000-32 Hz, Sinusoidal, 1 g (PK). **Non-Operating:** 10-350 Hz, 0.04 g^2/Hz; 350-2000 Hz, 0.007 g^2/Hz, 6.15 g (RMS) overall. **Shock:** Operating — 10 ±3 msec, 3 axes, Half Sine, 20 g (PK); Non-Operating — 10 ±3 msec, 3 axes, Half Sine, 40 g (PK). **Dielectric Withstand Voltage (min):** Input to Ground — 1500 VAC; Input to Outputs — 1500 VAC; Outputs to Ground — 500 VAC. **Leakage Current:** Line to ground (max.) — 3 mA. **Altitude:** Operating — 10,000'; Non-operating — 40,000'. **Relative Humidity:** Non-condensing, 95% Maximum. **Dimensions:** 9.0" × 5.0" × 2.5". **Weight:** 3 lbs., 9 oz.

- **Automatic Selecting AC Input: 85-132/170-264 VAC, 47-63 Hz**
- **Terminal Block Connectors**
- **All Outputs Fully Regulated**
- **MOSFET Switching Technology**
- **Rugged Wrap-Around Chassis With Standard Cover**
- **75% Typical Efficiency**
- **High Power Density, Up to 3.1 Watts/Cubic Inch**
- **Optional Fan**
- **Extra Output Voltage to Power External Fan**
- **Thermal Shutdown**
- **UL Recognized, CSA Certified**
- **TÜV Certified to: EN 60950**
- **Meets Domestic and International Safety: 3750 VAC Isolation; VDE Safety Spacings**
- **Meets Domestic and International EMI: FCC 47CFR, Part 15, Level B; VFG 243 Level B**
- **Internal Input Line Filter**
- **Power-Fail Warning Signal**
- **Output Good Signal**
- **Full Load Burn-In and Thermal Cycling**
- **2 Year Warranty**

Outputs #1 and #2 are positive polarity. Outputs #3 and #4 are floating and can be referenced as either + or –.

Stock No.	Mfr.'s Type	Forced Air Power (Watts)	Voltage	Current	Line Regulation	Load Regulation	Adjustment Range	EACH
								1-9
218-0100	NRG275-3000	275	+5 V +12 V 12 V	3.5-25 A 10 A/16 A PK 6 A	0.5% 0.5% 0.5%	±1% ±1% ±1%	4.75-5.3 V 11.4-12.6 V 11.4-12.6 V	**285.50**
218-6000	NRG275-4000	275	+5 V +12 V 12 V 5 V	3.5-25 A 10 A/16 A PK 6 A 2 A	0.5% 0.5% 0.5% 0.5%	±1% ±1% ±1% ±1%	4.75-5.3 V 11.4-12.6 V 11.4-12.6 V 5-6 V	**285.50**
218-6010	NRG275-4001	275	+5 V +12 V 12 V 12 V	3.5-25 A 10 A/16 A PK 6 A 2 A	0.5% 0.5% 0.5% 0.5%	±1% ±1% ±1% ±1%	4.75-5.3 V 11.4-12.6 V 11.4-12.6 V 11.8-15.5 V	**285.50**
218-6020	NRG275-4002	275	+5 V +12 V 12 V 24 V	3.5-25 A 10 A/16 A PK 6 A 2 A	0.5% 0.5% 0.5% 0.5%	±1% ±1% ±1% ±1%	4.75-5.3 V 11.4-12.6 V 11.4-12.6 V 19-25 V	**285.50**
218-0110	NRG275-4003	275	+5 V +12 V 12 V 48 V	3.5-25 A 10 A/16 A PK 6 A 1 A	0.5% 0.5% 0.5% 5.0%	±1% ±1% ±1% ±10%	4.75-5.3 V 11.4-12.6 V 11.4-12.6 V 47-49 V	**285.50**
218-0120	NRG350-3000	350	+5 V +12 V 12 V	3.5-35 A 10 A/16 A PK 6 A	0.5% 0.5% 0.5%	±1% ±1% ±1%	4.75-5.3 V 11.4-12.6 V 11.4-12.6 V	**339.15**
218-6050	NRG350-4000	350	+5 V +12 V 12 V 5 V	3.5-35 A 10 A/16 A PK 6 A 3 A	0.5% 0.5% 0.5% 0.5%	±1% ±1% ±1% ±1%	4.75-5.3 V 11.4-12.6 V 11.4-12.6 V 5-6 V	**339.15**
218-6040	NRG350-4001	350	+5 V +12 V 12 V 12 V	3.5-35 A 10 A/16 A PK 6 A 3 A	0.5% 0.5% 0.5% 0.5%	±1% ±1% ±1% ±1%	4.75-5.3 V 11.4-12.6 V 11.4-12.6 V 11.8-15.5 V	**339.15**
218-6030	NRG350-4002	350	+5 V +12 V 12 V 24 V	3.5-35 A 10 A/16 A PK 6 A 3 A	0.5% 0.5% 0.5% 0.5%	±1% ±1% ±1% ±1%	4.75-5.3 V 11-13 V 11-13 V 19-25 V	**339.15**
218-0130	NRG350-4003	350	+5 V +12 V 12 V 48 V	3.5-35 A 10 A/16 A PK 6 A 1 A	0.5% 0.5% 0.5% 5.0%	±1% ±1% ±1% ±10%	4.75-5.3 V 11.4-12.6 V 11.4-12.6 V 47-49 V	**339.15**
218-0140	NRG350-4201	350	+24 V +5 V 15 V 15 V	1-10 A 10 A/16 A PK 4 A 4 A	0.5% 0.5% 0.5% 0.5%	±1% ±1% ±1% ±1%	22.8-25.2 V 4.75-5.3 V 14.25-15.75 V 14.25-15.75 V	**339.15**

PerFormanCe Series, Mid-Range Power with PFC

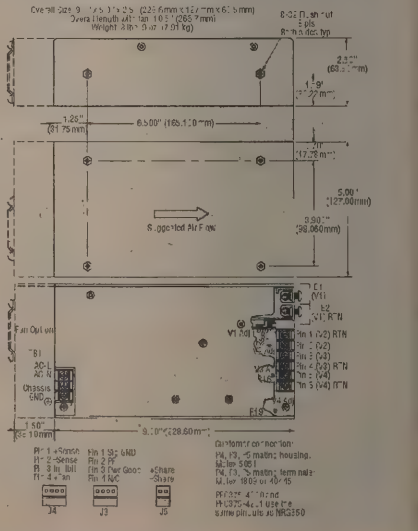
- **Wide Range Input**
- **Single, Triple, and Quad Output Models**
- **Power Factor Correction Meets EN60555-2**
- **CISPR 22 Level B, FCC Level B**
- **Fan Option — Add "F" Suffix**
- **Main Output Remote Sense**
- **Fully Regulated Outputs**
- **>.98 Power Factor Correction**
- **UL 1950 and EN60950 Approved**

POWER-ONE ISO 9000™ CERTIFIED

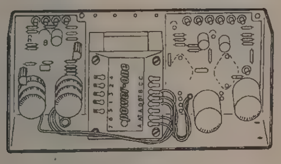
PerFormanCe Power

Stock No.	Mfr.'s Type	Output 1	Output 2	Output 3	Output 4	EACH
						1-9
218-7070	PFC375-1005	5 V @ 40 A	—	—	—	**400.00**
218-7075	PFC375-1012	12 V @ 30 A	—	—	—	**400.00**
218-7080	PFC375-1015	5 V @ 24 A	—	—	—	**400.00**
218-7085	PFC375-1024	24 V @ 15 A	—	—	—	**400.00**
218-7115	PFC375-4000	+5 V @ 3.5-40 A	+12 V @ 10 A/16 A PK	12 V @ 6 A	5 V @ 3 A	**450.00**
218-7120	PFC375-4001	+5 V @ 3.5-40 A	+12 V @ 10 A/16 A PK	12 V @ 6 A	12 V @ 3 A	**450.00**
218-7125	PFC375-4002	+5 V @ 3.5-40 A	+12 V @ 10 A/16 A PK	12 V @ 6 A	24 V @ 3 A	**450.00**
218-7130	PFC375-4003	+5 V @ 3.5-40 A	+12 V @ 10 A/16 A PK	12 V @ 6 A	48 V @ 1 A	**450.00**
218-7135	PFC375-4004	+5 V @ 3.5-40 A	+12 V @ 10 A/16 A PK	15 V @ 4 A	15 V @ 4 A	**450.00**
218-7140	PFC375-4005	+5 V @ 3.5-40 A	+12 V @ 10 A/16 A PK	24 V @ 4 A	24 V @ 2 A	**450.00**
218-7145	PFC375-4200	+24 V @ 1-10 A	+5 V @ 10 A/16 A PK	12 V @ 4 A	12 V @ 4 A	**450.00**
218-7150	PFC375-4201	+24 V @ 1-10 A	+5 V @ 10 A/16 A PK	15 V @ 4 A	15 V @ 4 A	**450.00**

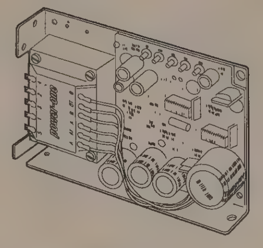
Notes: 300 LFM forced air required unless fan option is selected. Overall size without fan option is 9.00 × 5.00 × 2.50 inches. Overall size with fan option is 10.50 × 5.00 × 2.50 inches.



International Series Linears



HBAA-40W-A



HTAA-16W-A

- Worldwide AC Input Capabilities: 100/120/220/230/240 VAC
- ±0.05% Regulation
- Low Output Ripple
- UL Recognized: 1950 with D3
- CSA Certified: 1402
- TÜV Certified: EN 60950
- Industry Standard Packages
- 77 Models: 6 to 280 Watts
- Up To 4 Regulated Outputs
- VDE Construction
- 2 Hour Burn-in
- 2 Year Warranty
- Made In U.S.A.

General Specifications. AC Input: 100/120/220/240 VAC +10%, –13%. 47-63Hz. Tolerance for 230 VAC operation is +15%, –10%. Derate output current 10% for 50 Hz operation. Factory wired for 120V operation. **DC Output:** Adjustment range ±5% minimum. Voltage nonadjustable on "3 terminal regulator" outputs of models HAD12, HAD15. **Line Regulation:** ±.05% for a 10% line change. Exceptions — ±.01% for F, G case models and CP197-A; ±1% for HAD12 and HAD15; ±0.5% for all other outputs using "3 terminal regulators." **Load Regulation:** ±.05% for 50% load change. Exceptions — ±.02% for F, G case models and CP197-A; ±1% For HAD12 and HAD15; ±0.5% for all other outputs using "3 terminal regulators." **Output Ripple:** 5V through 15V models — 5.0 mV PK-PK maximum (3.0 mV PK-PK maximum for F, G case models and CP197-A); 24V through 250V models — 3.0 mV PK-PK plus .02% of output voltage, maximum; All "3 terminal regulator" outputs — 0.2% PK-PK maximum. **Transient Response:** Less than 50 µsec for a 50% load change. **Short Circuit and Overload Protection:** Automatic current limit/foldback. **Overvoltage Protection:** Provided on 5V outputs where indicated. Set at 6.2V ±0.4V. Other outputs use optional overvoltage protectors OVP12 and OVP14. **Remote Sensing:** See Voltage/Current Rating Charts. Provided on output where indicated. **Stability:** ±0.3% for 24 hours after warm-up. **Operating Temperature Ratings:** 0°C to 50°C full rated, derated linearly to 40% at 70°C (CP197-A requires 50 CFM forced air over heatsink area for full 50A output). **Storage Temperature Ratings:** –40°C to 85°C. **Temperature Coefficient:** .01%/°C typical, .03%/°C maximum. **Efficiency (Typical):** 5V outputs — 45%; 12V and 15V outputs — 55%; 24V through 250V outputs — 60%. **Master/Slave Operation:** Provided on F, G and CP197-A models only. For parallel operation of up to 6 units. **Vibration:** Random vibration from 10 Hz to 2 KHz, 6.15 grms (3 axis). **Shock:** Operating 20G peak acceleration. **EMI/RFI:** These linear power supplies have inherently low conducted and radiated noise levels. For most system application they will meet the requirements of FCC Docket 20780 for Class B equipment and VDE 0871 for Class B. **Safety Specifications.** All models exceed the following safety standards. **Leakage Current:** Line to Ground (Max.) — 0.05 mA. **Creepage Distance:** Live Parts to Dead Metal (Min.) — .345" (9.0mm). **Dielectric Withstand Voltage (Min.):** Input to Ground — 3750 Vrms; Input to Outputs — 3750 Vrms; Outputs to Ground — 500 VDC. **UL Recognized:** UL File Number E55974/E131905. **CSA Certified:** CSA File Number LR38879. **TÜV Licensed:** TÜV to VDE 0806 and EN 60950. Consult Allied for current TÜV license numbers. **Corcom VS&F (Voltage Selecting and Fuse Connector) Compatibility.** All International Series models interface directly with Corcom's VS&F power entry module. The VS&F is an Internationally approved AC line connector, a fuseholder, and a means of externally changing AC line voltages with a unique voltage selector card. With the VS&F, your equipment can be operated anywhere in the world, without modification at time of installation. Developed for the manufacturer who markets his products worldwide, the VS&F eliminates the need for internal transformer wiring changes and for stocking different line cords. The VS&F is also available with a built-in RFI filter for protection of your equipment. Contact Allied for further details.

Single Output Models

Stock No.	Mfr.'s Type	Voltage/ Current	Case Size	Overall Size (Inches)	EACH
					1-9
218-1001	HA5-1.5/OVP-A*	5V @ 1.5A	B	4.87 × 4.00 × 2.10	**34.66**
218-1002	HB5-3/OVP-A*	5V @ 3A†	B	4.87 × 4.00 × 2.10	**36.56**
218-1003	HC5-6/OVP-A*	5V @ 6A†	C	5.62 × 4.87 × 2.95	**57.42**
218-1004	HN5-9/OVP-A*	5V @ 9A‡	N	7.00 × 4.87 × 3.20	**78.32**
218-1005	HD5-12/OVP-A*	5V @ 12A†	D	9.00 × 4.87 × 3.28	**88.77**
218-1006	HE5-18/OVP-A*	5V @ 18A†	E	14.00 × 4.87 × 3.53	**131.00**
218-1007	F5-25/OVP-A*	5V @ 25A†	F	16.75 × 4.88 × 5.00	**184.51**
218-1008	G5-35/OVP-A*	5V @ 35A†	F	16.75 × 4.88 × 5.00	**215.49**
218-1009	CP197-A*	5V @ 50A†	F	16.75 × 4.88 × 5.00	**250.71**
218-1017	HA15-0.9-A (Adj)**	12V @ 0.9A	B	4.87 × 4.00 × 2.10	**32.13**
218-1011	HB12-1.7-A	12V @ 1.7A†	B	4.87 × 4.00 × 2.10	**34.43**
218-1012	HC12-3.4-A	12V @ 3.4A†	C	5.62 × 4.87 × 2.95	**52.20**
218-1013	HN12-5.1-A	12V @ 5.1A†	N	7.00 × 4.87 × 3.20	**73.10**
218-1014	HD12-6.8-A	12V @ 6.8A†	D	9.00 × 4.87 × 3.20	**83.55**
218-1015	HE12-10.2-A	12V @ 10.2A†	E	14.00 × 4.87 × 3.53	**114.90**
218-1023	F15-15-A (Adj)**	12V @ 16A†	F	16.75 × 4.88 × 5.00	**184.51**
218-1017	HA15-0.9-A**	15V @ 0.9A	B	4.87 × 4.00 × 2.10	**32.13**
218-1018	HB15-1.5-A	15V @ 1.5A†	B	4.87 × 4.00 × 2.10	**35.64**
218-1019	HC15-3-A	15V @ 3A†	C	5.62 × 4.87 × 2.95	**52.20**
218-1020	HN15-4.5-A	15V @ 4.5A†	N	7.00 × 4.87 × 3.20	**73.10**
218-1021	HD15-6-A	15V @ 6A†	D	9.00 × 4.87 × 3.28	**83.55**
218-1022	HE15-9-A	15V @ 9A†	E	14.00 × 4.87 × 3.53	**114.90**
218-1023	F15-15-A**	15V @ 15A†	F	16.75 × 4.88 × 5.00	**184.51**
218-1024	HA24-0.5-A**	24V @ 0.5A	B	4.87 × 4.00 × 2.10	**34.66**
218-1025	HB24-1.2-A	24V @ 1.2A†	B	4.87 × 4.00 × 2.10	**36.35**
218-1026	HC24-2.4-A	24V @ 2.4A†	C	5.62 × 4.87 × 2.95	**52.20**
218-1027	HN24-3.6-A	24V @ 3.6A†	N	7.00 × 4.87 × 3.20	**73.10**
218-1028	HD24-4.8-A	24V @ 4.8A†	D	9.00 × 4.87 × 3.28	**83.55**
218-1029	HE24-7.2-A	24V @ 7.2A†	E	14.00 × 4.87 × 3.53	**114.90**
218-1030	F24-12-A**	24V @ 12A†	F	16.75 × 4.88 × 5.00	**184.51**
218-1024	HA24-0.5-A (Adj)**	28V @ 0.5A	B	4.87 × 4.00 × 2.10	**34.66**
218-1032	HB28-1-A	28V @ 1A†	B	4.87 × 4.00 × 2.10	**36.35**
218-1033	HC28-2-A	28V @ 2A†	C	5.62 × 4.87 × 2.95	**52.20**
218-1034	HN28-3-A	28V @ 3A†	N	7.00 × 4.87 × 3.20	**73.10**
218-1035	HD28-4-A	28V @ 4A†	D	9.00 × 4.87 × 3.28	**83.55**
218-1036	HE28-6-A	28V @ 6A†	E	14.00 × 4.87 × 3.53	**114.90**
218-1030	F24-12-A (Adj)**	28V @ 10A†	F	16.75 × 4.88 × 5.00	**184.51**
218-1038	HB48-0.5-A	48V @ 0.5A	B	4.87 × 4.00 × 2.10	**41.63**
218-1039	HC48-1-A	48V @ 1A	C	5.62 × 4.87 × 2.95	**57.42**
218-1040	HD48-3-A	48V @ 3A†	D	9.00 × 4.87 × 3.28	**88.77**
218-1041	HE48-4-A	48V @ 4A†	E	14.00 × 4.87 × 3.53	**125.35**
218-1042	HB120-0.2-A	120V @ 0.2A	B	4.87 × 4.00 × 2.10	**46.97**
218-1043	HB200-0.12-A	175-210V @ 0.12A	B	4.87 × 4.00 × 2.10	**46.97**
218-1044	HB250-0.1-A	250V @ 0.1A	B	4.87 × 4.00 × 2.10	**45.93**

Dual Output Models

Stock No.	Mfr.'s Type	Output #1	Output #2	Case Size	Overall Size (Inches)	EACH
						1-9
218-3000	HAA5-1.5/OVP-A	+ 5V @ 1.5A*	– 5V @ 1.5A*	AA	6.50 × 4.00 × 2.10	**52.20**
218-3001	HBB5-3/OVP-A	+ 5V @ 3A*	– 5V @ 3A*	BB	7.00 × 4.88 × 2.95	**76.23**
218-3002	HCC5-6/OVP-A	+ 5V @ 6A*†	– 5V @ 6A*†	CC	9.38 × 4.87 × 3.28	**101.31**
218-3003	HAD12-0.4-A	+12V @ 0.4A§	–12V @ 0.4A§	B	4.87 × 4.00 × 2.10	**38.61**
218-3004	HAD15-0.4-A	+15V @ 0.4A§	–15V @ 0.4A§	B	4.87 × 4.00 × 2.10	**38.61**
218-3005	HAA15-0.8-A	+12V @ 1A or +15V @ 0.8A†	–12V @ 1A or –15V @ 0.8A or – 5V @ 0.4A†	AA	6.50 × 4.00 × 2.10	**44.88**
218-3006	HBB15-1.5-A	+12V @ 1.7A or +15V @ 1.5A†	–12V @ 1.7A or –15V @ 1.5A or – 5V @ 0.7A†	BB	7.00 × 4.88 × 2.95	**57.42**
—	—	—	—	—	—	—
218-3007	HCC15-3-A	+12V @ 3.4A or +15V @ 3A†	–12V @ 3.4A or –15V @ 3A†	CC	9.38 × 4.87 × 3.28	**91.91**
218-3008	HDD15-5-A	+12V or 15V at 5A†	(–)12V or 15V @ 5A†	E	14.00 × 4.87 × 3.53	**135.80**
218-3009	HAA24-0.6A	+18-20V @ 0.4A or +24V @ 0.6A	(–)18-20V @ 0.4A or –24V @ 0.6A	AA	6.50 × 4.00 × 2.10	**44.88**
218-3010	HBB24-1.2-A	+18-20V @ 0.9A or +24V @ 1.2A	(–)18-20V @ 0.9A or –24V @ 1.2A	BB	7.00 × 4.88 × 2.95	**57.42**
218-3012	HCC24-2.4-A	+18-20V @ 1.8A or +24V @ 2.4A†	(–)18-20V @ 1.8A or –24V @ 2.4A†	CC	9.38 × 4.87 × 3.28	**91.91**
218-3011	HAA512-A	5V @ 2A*‡	12-15V @ 0.5A	AA	6.50 × 4.00 × 2.10	**52.20**
218-3013	HBB512-A	5V @ 3A*†‡	12-15V @ 1.25A†	BB	7.00 × 4.88 × 2.95	**62.65**
218-3014	HCC512-A	5V @ 6A*†‡	12-15V @ 2.5A†	CC	9.38 × 4.87 × 3.28	**99.22**

Triple Output Models

Stock No.	Mfr.'s Type	Output #1	Output #2	Output #3	Output #4	Case Size	Overall Size (Inches)	EACH
								1-9
218-3015	HTAA-16W-A	5V @ 2A*‡	+12 to 15V @ 0.4A	(–)12 to 15V @ 0.4A or –5V @ 0.4A	—	AA	6.50 × 4.00 × 2.10	**57.42**
218-3016	HBAA-40W-A	5V @ 3A*†‡	+12V @ 1A or +15V @ 0.8A†	–12V @ 1A or –15V @ 0.8A or –5V @ 0.4A†	—	BAA	10.25 × 4.00 × 2.95	**79.37**
218-3017	HCAA-60W-A	5V @ 6A*†	+12 to 15V @ 1A	(–12) to 15V @ 1A or –5V @ 0.4A	—	D	9.00 × 4.87 × 3.28	**94.00**
218-3018	HCBB-75W-A	5V @ 6A*†‡	+12V @ 1.7A or +15V @ 1.5A†	–12V @ 1.7A or –15V @ 1.5A or –5V @ 0.7A†	—	CBB	11.00 × 4.87 × 3.28	**104.45**
218-3019	CP131-A	5V @ 8A*†‡	+12V @ 1.7A or +15V @ 1.5A†	–12V @ 1.7A or –15V @ 1.5A or –5V @ 0.7A†	—	131	11.00 × 4.87 × 3.20	**125.35**
218-3020	HDBB-105W-A	5V @ 12A*†‡	+12V @ 1.7A or +15V @ 1.5A†	–12V @ 1.7A or –15V @ 1.5A or –5V @ 0.7A†	—	DBB	14.25 × 4.87 × 3.38	**141.02**
218-3021	HDCC-150W-A	5V @ 12A*†‡	+12V @ 3.4A or +15V @ 3A†	–12V @ 3.4A or –15V @ 3A†	—	DCC	15.00 × 4.88 × 4.55	**161.92**

*Overvoltage protection provided. Set at 6.2V ±0.4V.
****Adjustable Outputs:** F15-15-A — 12-15V; F24-12-A — 24-28V; HA15-0.9-A — 12-15V; HA24-0.5-A — 24-28V.
†Remote sense provided.
‡Isolated output, can be referenced as + or –.
§Nonadjustable 3 terminal regulator.
£Adjustable 3 terminal regulator.
•Can be made into an isolated output by removing jumper W1.

Overvoltage Protection Options

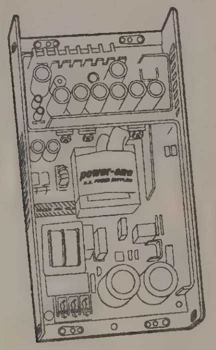
These optional overvoltage protection modules are offered for use with Power-One's International Series Linear power supplies. Each is user adjustable from 6.4V to 34V. NOTE: Outputs with factory built-in OVP are indicated in the Voltage/Current Rating Chart for each model. OVP is not available for 48V through 250V models.

OVP Selection Guide

Model	Case Size	OVP Modules Required
Single Output	B	1 — OVP-12
Single Output	C	1 — OVP-12
Single Output	N	1 — OVP-12
Single Output	D	1 — OVP-12
Single Output	E	1 — OVP-24
Single Output	F	1 — OVP-24
Dual Output	AA	1 — OVP-12 protects both outputs
Dual Output	B	1 — OVP-12 protects both outputs
Dual Output	BB	1 — OVP-12 protects both outputs
Dual Output	CC	1 — OVP-12 protects both outputs
Dual Output	E	1 — OVP-24 protects both outputs
Triple Output	AA, BAA, BAA, D, CBB, 131, DBB, DCC	1 — OVP-12 protects both 12V through 15V outputs
High Peak Current	N, BAA, CBB, 131, CP340-A, CP510-A	1 — OVP-12 protects any output not provided with built-in OVP

218-3028. OVP-12 .... **EACH 8.31**
218-3029. OVP-24 .... **EACH 15.62**

MAP Series — 30 to 150 Watts



- Automatic AC Input Selection
- UL, CSA, TUV Approvals
- Full Load Burn-In and Thermal Cycling
- 2 Year Warranty

MAP Series	Max. Outputs	Max. Power	Regulation	EMI/ RFI	Interface Signals	Mechanical
MAP30/42	1	30/40 Watts Convection Cooled	Fully Regulated	All Models VDE and FCC B	MAP42 has Remote Sense	Board-Only
MAP40	3	40 Watts Convection Cooled	Output #2 Quasi Regulated[3]	MAP40-3100 and MAP 40-3500 VDE and FCC B[4]	—	Board-Only
MAP55/ MAP40-1005	4	55 Watts[1] Convection Cooled	All Outputs Fully Regulated	All Models VDE and FCC B	—	U-Channel Chassis Optional Cover
MAP80	4	80 Watts Convection Cooled	All Outputs Fully Regulated	All Models VDE and FCC B	Power Fail	U-Channel Chassis Optional Cover
MAP110	4	110 Watts Forced Air Cooled	All Outputs Fully Regulated Except V4 of MAP110-4010	All Models VDE and FCC B	Remote Sense[5], Optional Power Fail	Board-Only, Optional L-Bracket, Optional Cover
MAP130	4	130 Watts Convection Cooled	All Outputs Fully Regulated	All Models VDE and FCC B	Power Fail Remote Sense[5]	U-Channel Chassis Optional Cover
MAP140	3	150 Watts[2] Forced Air Cooled	All Outputs Fully Regulated	All Models VDE and FCC B	Remote Sense[5] Optional Power Fail	Board-Only, Optional L-Bracket, Optional Cover

[1] MAP40-1005 provides a maximum of 40 watts output power. [2] MAP 140 — Single Outputs - 150 watts; Multiple Outputs - 140 watts. [3] All other outputs fully regulated. [4] All other MAP40 models FCC B. [5] MAP110, MAP130 and MAP140 have remote sense on the main output of multiple and single output models.

Single Output Models (Ratings Are with 200 LFM of Forced Air)

Stock No.	Mfr.'s Type	Power (Watts)		Nominal Voltage	Current (Amps)		Overall Size (Inches)	EACH
		Continuous	Peak		Continuous	Peak		1-9
218-7000	MAP30-1005*	30	60	5 V	6.00	12.00	5.00 × 3.00 × 1.16	**58.00**
218-1060*	MAP40-1005	40	55	5 V	8.00	11.00	6.00 × 3.27 × 1.60	**99.28**
218-7005	MAP42-1005*	40	60	5 V	8.00	12.00	5.00 × 3.00 × 1.20	**60.00**
218-7020	MAP42-1024†*	40	60	23 V/29 V	1.74/1.38	1.38	5.00 × 3.00 × 1.20	**60.00**
218-1061*	MAP55-1012	60	70	12 V/15 V	5.00/4.00	5.80/4.70	6.00 × 3.27 × 1.60	**99.28**
218-1062*	MAP55-1024	60	70	24 V/28 V	2.50/2.20	3.00/2.50	6.00 × 3.27 × 1.60	**99.28**
218-2000*	MAP80-1005	80	100	5 V	16.00	18.00	7.20 × 4.20 × 1.80	**125.40**
218-2020*	MAP80-1012	90	110	12 V/15 V	7.50/6.10	9.20/7.30	7.20 × 4.20 × 1.80	**125.40**
218-2030*	MAP80-1024	90	110	24 V/28 V	3.80/3.20	4.60/3.90	7.20 × 4.20 × 1.80	**204.75**
218-8030	MAP110-1005	110	110	5 V	22.00	22.00	7.00 × 4.25 × 1.80	**141.60**
218-2025*	MAP130-1012	150	165	12 V/15 V	12.00/10.00	13.80/11.00	8.50 × 4.50 × 2.00	**204.75**
218-2005	MAP130-1005	130	150	5 V	26.00	30.00	8.50 × 4.50 × 2.00	**171.60**
218-2035*	MAP130-1024	150	165	24 V/28 V	6.20/5.40	6.80/5.90	8.50 × 4.50 × 2.00	**177.65**
218-8040	MAP140-1012*	140	300‡	12 V/15 V	12.50/10.00	25.00/20.00	7.00 × 4.25 × 1.80	**155.00**
218-8035	MAP140-1024*	140	300‡	24 V/28 V	6.30/5.40	12.50/10.70	7.00 × 4.25 × 1.80	**155.00**

***Configuration:** U-Channel Chassis. †12 V adjustable models have currents expressed as 12/15 V operation. 24 adjustable models have currents expressed as 24 V/28 V operation. ‡Peak output power not to exceed 1 ms.

Multiple Output Models (110 Watts with 200 LFM Airflow, 80 Watts Convection Cooled)

Stock No.	Mfr.'s Type	Power (Watts)		Output 1	Output 2	Output 3	Output 4	Overall Size (Inches)	EACH
		Continuous	Peak						1-9
218-1063*	MAP40-3000**	40	50	+ 5 V @ 3.0 A/5.0 A PK	+12 V @ 2.0 A/3.5 A PK	–12 V @ 0.3 A/0.5 A PK	—	5.00 × 3.00 × 1.16	**69.95**
218-1075*	MAP40-3100**	40	50	+ 5 V @ 3.0 A/5.0 A PK	+12 V @ 2.0 A/3.5 A PK	–12 V @ 0.3 A/0.5 A PK	—	5.00 × 3.00 × 1.45	**71.94**
218-1064*	MAP40-3003	40	50	5 V @ 3.0 A/5.0 A PK	+15 V @ 1.5 A/3.0 A PK	–15 V @ 0.2 A	—	5.00 × 3.00 × 1.16	**65.95**
218-8000	MAP40-3500	40	50	+ 5 V @ 5.0 A	+12 V @ 1.0 A	–12 V @ 0.5 A	—	5.00 × 3.00 × 1.16	**60.00**
218-8005	MAP40-3105	40	50	+ 5 V @ 3.0 A	+12 V @ 2.0 A	– 5 V @ 0.5 A	—	5.00 × 3.00 × 1.45	**56.70**
218-8010	MAP40-3101	40	50	+ 5 V @ 3.0 A	+12 V @ 1.0 A	+12 V @ 0.3 A	—	5.00 × 3.00 × 1.45	**56.70**
218-1065†	MAP55-4000	55	65	+ 5 V @ 6.0 A	+12 V @ 3.0 A/4.0 A PK	– 5 V @ 0.5 A, Note A	–12 V @ 0.5 A, Note A	6.00 × 3.27 × 1.60	**109.72**
218-1066†	MAP55-4001	55	65	+ 5 V @ 6.0 A	+24 V @ 1.5 A/2.5 A PK	–12 V @ 0.5 A, Note A	+12 V @ 0.5 A, Note A	6.00 × 3.27 × 1.60	**109.72**
218-1067†	MAP55-4002	55	65	+ 5 V @ 6.0 A	+12 V @ 3.0 A/4.0 A PK	–12 V @ 0.5 A, Note A	+12 V @ 0.5 A, Note A	6.00 × 3.27 × 1.60	**109.72**
218-1068†	MAP55-4003	55	65	+ 5 V @ 6.0 A	+15 V @ 2.5 A/3.5 A PK	– 5 V @ 0.5 A, Note A	–15 V @ 0.5 A, Note A	6.00 × 3.27 × 1.60	**114.17**
218-1069†	MAP80-4000	80	90	+ 5 V @ 14.0 A	+12 V @ 4.0 A/7.0 A PK	– 5 V @ 1.0 A	–12 V @ 1.0 A	7.20 × 4.20 × 1.80	**130.62**
218-1070†	MAP80-4001	80	90	+ 5 V @ 14.0 A	+24 V @ 2.0 A/3.5 A	–12 V @ 1.0 A	+12 V @ 1.0 A	7.20 × 4.20 × 1.80	**130.62**
218-1071†	MAP80-4002	80	90	+ 5 V @ 14.0 A	+12 V @ 4.0 A/7.0 A PK	–12 V @ 1.0 A	+12 V @ 1.0 A	7.20 × 4.20 × 1.80	**130.62**
218-1072†	MAP80-4003	80	90	+ 5 V @ 14.0 A	+15 V @ 3.5 A/6.0 A PK	– 5 V @ 1.0 A	–15 V @ 1.0 A	7.20 × 4.20 × 1.80	**134.70**
218-1073†	MAP80-4010	80	90	+ 5 V @ 14.0 A	+12 V @ 4.0 A/7.0 A PK	– 5 V @ 1.0 A	–12 V @ 3.0 A	7.20 × 4.20 × 1.80	**141.81**
218-7030	MAP110-4000	80	110	+ 5 V @ 12.0 A	+12 V @ 5.0 A	–12 V @ 1.0 A	– 5 V @ 1.0 A	7.00 × 4.25 × 1.80	**130.00**
218-7035	MAP110-4001	80	110	+ 5 V @ 12.0 A	+24 V @ 3.0 A	–12 V @ 1.0 A	+12 V @ 1.0 A	7.00 × 4.25 × 1.80	**130.00**
218-7040	MAP110-4002	80	110	+ 5 V @ 12.0 A	+12 V @ 5.0 A	–12 V @ 1.0 A	+12 V @ 1.0 A	7.00 × 4.25 × 1.80	**130.00**
218-7045	MAP110-4003	80	110	+ 5 V @ 12.0 A	+15 V @ 5.0 A	–15 V @ 1.0 A	– 5 V @ 1.0 A	7.00 × 4.25 × 1.80	**130.00**
218-7050	MAP110-4004	80	110	+ 5 V @ 12.0 A	+24 V @ 3.0 A	–15 V @ 1.0 A	+15 V @ 1.0 A	7.00 × 4.25 × 1.80	**130.00**
218-7055	MAP110-4010	80	110	+ 5 V @ 12.0 A	+12 V @ 5.0 A	– 5 V @ 1.0 A	–12 V @ 3.0 A	7.00 × 4.25 × 1.80	**135.00**
218-8015	MAP110-4011	80	110	+ 5 V @ 12.0 A	+12 V @ 5.0 A	–12 V @ 1.0 A	+24 V @ 1.0 A	7.00 × 4.25 × 1.80	**141.60**
218-8020	MAP110-4015	80	110	+ 5 V @ 12.0 A	+12 V @ 5.0 A	–15 V @ 1.0 A	+15 V @ 1.0 A	7.00 × 4.25 × 1.80	**141.60**
218-7060	MAP110-4200	80	110	+12 V @ 5.0 A	+24 V @ 4.0 A	–12 V @ 1.0 A	+ 5 V @ 1.0 A	7.00 × 4.25 × 1.80	**135.00**
218-7065	MAP110-4300	80	110	+ 3.3 V @ 15.0 A	+ 5 V @ 8.0 A	–12 V @ 1.0 A	+12 V @ 1.0 A	7.00 × 4.25 × 1.80	**135.00**
218-1050†	MAP130-4000	130	165	+ 5 V @ 20.0 A	+12 V @ 5.0 A/10.0 A PK	– 5 V @ 1.0 A	–12 V @ 1.0 A	8.50 × 4.50 × 2.00	**212.59**
218-1051†	MAP130-4001	130	165	+ 5 V @ 20.0 A	+24 V @ 3.5 A/5.0 A PK	–12 V @ 1.0 A	+12 V @ 1.0 A	8.50 × 4.50 × 2.00	**212.59**
218-1052†	MAP130-4002	130	165	+ 5 V @ 20.0 A	+12 V @ 5.0 A/10.0 A PK	–12 V @ 1.0 A	+12 V @ 1.0 A	8.50 × 4.50 × 2.00	**212.59**
218-1053†	MAP130-4003	130	165	+ 5 V @ 20.0 A	+15 V @ 4.0 A/8.0 A PK	– 5 V @ 1.0 A	–15 V @ 1.0 A	8.50 × 4.50 × 2.00	**216.33**
218-1054†	MAP130-4010	130	165	+ 5 V @ 20.0 A	+12 V @ 5.0 A/10.0 A PK	– 5 V @ 1.0 A	–12 V @ 3.0 A	8.50 × 4.50 × 2.00	**218.03**
218-8025	MAP140-3000P‡	110	140	+ 5 V @ 22.0 A	+12 V @ 5.0 A	–12 V @ 1.0 A	—	7.00 × 4.25 × 1.80	**170.00**

Note: Size of board only — 4.25 × 7.00 × 1.80; with optional L-bracket and cover — 4.50 × 7.19 × 2.40. ***Configuration:** Board Only. **MAP40-3100 meets VDE level B. MAP40-3000 meets VDE level A. †**Configuration:** U-Channel Chassis. ‡P denotes power-fail. **NOTE A:** Maximum load on V3 or V4 can be 1 amp if either V3 or V4 is unloaded.

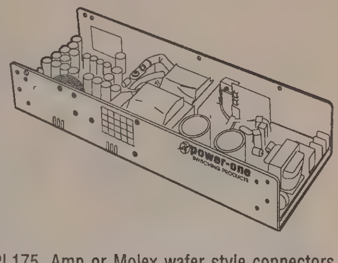
Covers

Optional covers are available for MAP Products. Covers are not available for board-only configured products. MAP products can be ordered with the cover installed by adding a "C" to the end of the part number, i.e., MAP55-4000C.

Products Not Cataloged Are Available — Call 1-800-433-5700 For Price And Delivery

SPL Series

AC Input: Standard dual range — 90-132 VAC or 180-264 VAC, user selectable; 47-63 Hz, single phase. Consult Allied for 400 Hz operation. **Brown-Out Protection:** Regulation is maintained down to 90/180 VAC, at full load, with no compromise in performance. **Hold-Up Time:** 20 msec minimum at full rated load and nominal AC input voltage. Hold-up time increases to 40 msec at 50% load. **Power-Fail Warning Signal:** Single Output Models — Provided on SPL250 models only. TTL compatible signal goes low 10 msec minimum before the output voltage drops 5%, at a 100% load condition. Multiple Output Models — Provided on models with a "P" suffix. Signal goes low 5 msec minimum before +5V main output drops 5%, at a 100% load condition. Warning time increases at reduced load levels. **Efficiency:** Measured at full rated output power and nominal AC input voltage. 70% ±5% depending on how the load is distributed among the outputs. **Regulation Characteristics:** Line — Measured over a 90-132 VAC or 180-264 VAC line change; Load — Measured by varying the load current from 60% to either 20% or 100% of full rated. **Cross Regulation:** Multiple Output Models — Where indicated, cross regulation specifies the maximum voltage change on an auxiliary output when the +5V main output load current is varied from 75% of full rated to either 50% or 100% of full rated. **NOTE:** The effect of load and cross regulation are generally not cumulative, and may actually act to cancel each other in an operating system environment. **Minimum Load:** Single Output Models — 5% of full rated output current; Multiple Output Models — Minimum load required on the +5V main output for full load capability on auxiliary outputs: SPL40, SPL50 - 1A, SPL53 - 2A, SPL175 - 3A, SPL200 - 6A, SPL130 - 5A. **Remote Sensing:** Single Output Models — Provided on SPL53, SPL130, and SPL250 series models; Multiple Output Models — Provided on the +5V main output of SPL130, SPL200, and SPL400 series models. **Output Noise and Ripple:** 0.3% RMS, 1: PK-PK maximum. **Output Overshoot:** No overshoot on turn-on or turn-off. **Transient Response:** Recovery Time — 500 msec typical for a 50-100% load change and recovery to within 1% of initial voltage set point; Maximum Excursion — 3% from initial voltage set point; Multiple Output Models — Above applies to +5V main output only. **Output Overload Protection:** Fully protected against output overload and short circuit. Automatic recovery upon removal of overload condition. **Overvoltage Protection:** Set at 6.2V ±0.6V; Single Output Models — Provided on all 5V models; Multiple Output Models — Provided on +5V main output. **Reverse Voltage Protection:** Inherently protected from damage due to application of reverse polarity voltage across DC output terminals. **Input Protection:** AC input line fuse provided. Internally located. **Inrush Current:** Internally limited by thermistor. Cold start, peak current at 230 VAC input. SPL40 through SPL53 — 9A maximum; SPL130 through SPL250 — 17A maximum; **Operating Temperature Rating:** 0°C to +50°C at full rated output power. Consult Allied for operating information between +50°C to +70°C. **Storage Temperature Rating:** –55°C to +85°C. **Temperature Coefficient:** ±0.03%/°C typical, ±0.05%/°C maximum over entire operating temperature range of 0°C to +70°C. **Cooling:** Convection cooling is adequate where non-restricted air flow is available. When operating in a confined area, forced air cooling is recommended. **Vibration:** Per MIL-STD-810D, Method 514.3, Category 1, Procedure I. **Shock:** Per MIL-STD-810D, Method 516.3, Procedure III. **Options. Overvoltage Protection:** Available on all single output models. **Input/Output Connectors:** Quick-disconnect terminals are available for all models except SPL50 and SPL175. Amp or Molex wafer style connectors (.312 centers) are available for SPL40 and SPL53 series models. **Safety Covers:** Available for SPL130, SPL200, and SPL250.



Safety Specifications. All models exceed the following safety standards. **Leakage Current:** Line to Ground (max.) — 0.75 mA. **Safety Spacings:** 8.0 mm minimum between primary and secondary circuitry; 4.0 mm minimum between primary and grounded circuitry. **Dielectric Withstand Voltage (min.):** Input to Ground — 3750 VRMS; Input to Outputs — 3750 VRMS; Outputs to Ground — 700 VDC. **UL Recognized:** UL File Number E55974. **CSA Certified:** CSA File Number LR38879. **TÜV License Numbers:** Tested and certified by TÜV to VDE 0806 and IEC 380. SPL40 — R30059; SPL53 — R30060; SPL175 — R50177; SPL250 — R50174; SPL50 — R50006; SPL130 — R30062; SPL200 — R30063. **EMI Specifications.** All International Series models are equipped with internal line filtering which allows compliance to the conducted emission limits of FCC Docket 20780 Part 15 Class A, and VDE 0871/6.78 Class A. **Agency Limits — Class A. Frequency Range 150 KHz - 450 KHz:** VDE 0871 Level A — 66 dBµV; FCC 20780 Part 15 — Not specified by FCC; SP Series Design Standards: <63 dBµV. **Frequency Range 450 KHz - 30 MHz:** 60 dBµV; FCC 20780 Part 15 — Consult Allied; SPL Series Design Standards — <57 dBµV. Models may be brought into compliance with Class B limits by the addition of an optional single stage line filter. Please consult Power-One for more information.

Single Output Models

Stock No.	Mfr.'s Type	Power (Watts)‡		Voltage*	Current	Line Regulation	Load Regulation	Configuration	EACH
		Continuous	Peak						1-9
218-1081	SPL53-1005†	80	N/A	5V	16.0A	±0.3%	±1%	Board Only; 8.25" × 4.25" × 2.10" (209.55mm) × (107.95mm) × (53.34mm)	**149.92**
218-1082	SPL130-1005	140	N/A	5V	26.0A	±0.3%	±1%	U-Channel Chassis; 8.90" × 5.00" × 2.45" (226.06mm) × (127mm) × (62.23mm)	**272.61**
218-1083	SPL250-1005	250	N/A	5V	50.0A	±0.3%	±1%	U-Channel Chassis; 12.00" × 4.94" × 2.45" (304.8mm) × (125.476mm) × (62.23mm)	**362.43**
218-1085	SPL53-1012†	80	N/A	12-15V Adjustable	6.7A/5.3A	±0.3%	±1%	Board Only; 8.25" × 4.25" × 2.10" (209.55mm) × (107.95mm) × (53.34mm)	**149.92**
218-1086	SPL130-1012	130	N/A	12-15V Adjustable	11.0A/9.0A	±0.3%	±1%	U-Channel Chassis; 8.90" × 5.00" × 2.45" (226.06mm) × (127mm) × (62.23mm)	**272.61**
218-1087	SPL250-1012	250	N/A	12-15V Adjustable	21.0A/17.0A	±0.3%	±1%	U-Channel Chassis; 12.00" × 4.94" × 2.45" (304.8mm) × (125.476mm) × (62.23mm)	**362.43**
218-1089	SPL53-1024†	80	N/A	24-28V Adjustable	3.3A/2.8A	±0.3%	±1%	Board Only; 8.25" × 4.25" × 2.10" (209.55mm) × (107.95mm) × (53.34mm)	**149.92**
218-1090	SPL130-1024	140	N/A	24-28V Adjustable	5.5A/4.5A	±0.3%	±1%	U-Channel Chassis; 8.90" × 5.00" × 2.45" (226.06mm) × (127mm) × (62.23mm)	**301.61**
218-2010	SPL250-1024	250	N/A	24-28V Adjustable	10.0A/7.0A	±0.3%	±1%	U-Channel Chassis; 12.00" × 4.94" × 2.45" (304.8mm) × 125.476mm) × (62.23mm)	**362.43**

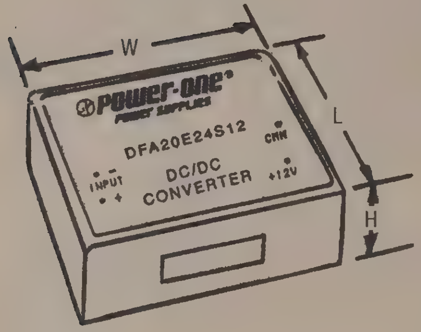
*|Models with adjustable voltages have current ratings expressed as current at lowest voltage/current at highest voltage. †The SPL53 may require a rubber snubber mounted under it in some applications to prevent board deflection. Consult factory. ‡Convection Cooled Power.

Multiple Output Models

Stock No.	Mfr.'s Type	Wattage/30 CFM‡		Voltage*	Current	Initial Setting Tolerance	Line Regulation	Load Regulation	Cross Regulation	Configuration	EACH
		Continuous	Peak								1-9
218-1091	SPL40-4000	40	N/A	+ 5V +12V –12V – 5V	5.0A 0.5A 0.5A 0.5A	Adjustable, Note A ±4%, Note B ±4%, Note B ±4%, Note B	±0.3% ±0.1% ±0.1% ±0.1%	±1% ±1% ±1% ±1%	N/A N/A N/A N/A	Board Only 6.30" × 3.92" × 2.00" (160.02mm) × (99.568mm) × (50.8mm)	**133.65**
218-1093	SPL53-4000	80	N/A	+ 5V, Note G +12V, Note G –12V – 5V	8.0A 2.5A/5.0A PK 0.6A 0.6A	Adjustable, Note A Adjustable, Note D ±4%, Note B ±4%, Note B	±0.3% ±0.1% ±0.1% ±0.1%	±1% ±1% ±1% ±1%	N/A N/A N/A N/A	Board Only 8.25" × 4.25" × 2.10" (209.55mm) × (107.95mm) × (1290.32mm)	**153.73**
218-1094	SPL53-4101	80	N/A	+ 5V +12V –12V +24V	8.0A 1.2A 0.6A 1.5A/3.0A PK	Adjustable, Note A ±4%, Note B ±4%, Note B ±5%, Note C	±0.3% ±0.1% ±0.1% ±0.5%	±1% ±1% ±1% ±5%	N/A N/A N/A ±5%	Board Only 8.25" × 4.25" × 2.10" (209.55mm) × (107.95mm) × (1290.32mm)	**158.73**
218-1096	SPL130-4000	120	135	+ 5V +12V –12V – 5V	22.0A 3.0A 1.5A 1.5A	Adjustable, Note A Adjustable, Note D ±4%, Note B ±4%, Note B	±0.3% ±0.1% ±0.1% ±0.1%	±1% ±1% ±1% ±1%	N/A N/A N/A N/A	U-Channel Chassis 10.50" × 5.00" × 2.45" (266.7mm) × (127mm) × (62.23mm)	**320.99**
218-1098	SPL130-4100P	130	150	+ 5V +12V, AUX 1 +12V –12V	20.0A, Note E 4.0A/6.0A PK 1.5A 1.5A	Adjustable, Note A ±5%, Note C ±4%, Note B ±4%, Note B	±0.3% ±0.5% ±0.1% ±0.1%	±1% ±5% ±1% ±1%	N/A ±5% N/A N/A	U-Channel Chassis 10.50" × 5.00" × 2.45" (266.7mm) × (127mm) × (62.23mm)	**320.99**
218-1099	SPL130-4101P	130	150	+ 5V +12V –12V +24V, AUX 1	20.0A, Note E 1.5A 1.5A 2.0A/4.0A PK	Adjustable, Note A ±4%, Note B ±4%, Note B ±5%, Note C	±0.3% ±0.1% ±0.1% ±0.5%	±1% ±1% ±1% ±5%	N/A N/A N/A ±5%	U-Channel Chassis 10.50" × 5.00" × 2.45" (266.7mm) × (127mm) × (62.23mm)	**320.99**
218-1106	SPL200-4100P	200	250	+ 5V +12V, AUX 1 –12V – 5V	35.0A, Note F 4.0A/7.0A PK 1.5A 1.5A	Adjustable, Note A ±5%, Note C ±4%, Note B ±4%, Note B	±0.3% ±0.5% ±0.1% ±0.1%	±1% ±3% ±1% ±1%	N/A ±3% N/A N/A	U-Channel Chassis 13.00" × 5.00" × 2.45" (330.2mm) × (127mm) × (62.23mm)	**381.75**
218-1107	SPL200-5100P	200	250	+ 5V +12V, AUX 1 +12V –12V – 5V	35.0A, Note F 4.0A/8.0A PK 1.5A 1.5A 1.5A	Adjustable, Note A ±5%, Note C ±4%, Note B ±4%, Note B ±4%, Note B	±0.3% ±0.5% ±0.1% ±0.1% ±0.1%	±1% ±5% ±1% ±1% ±1%	N/A ±3% N/A N/A N/A	U-Channel Chassis 13.00" × 5.00" × 2.45" (330.2mm) × (127mm) × (62.23mm)	**381.75**

Notes:
A = Voltage level adjustable from 4.75V to 0VP trip point. Factory set to ±1% of nominal.
B = Fully regulated output, voltage fixed (3 terminal regulator).
C = Quasi-regulated output.
D = Fully regulated output, voltage adjustable, ±5% minimum. Factory set to ±1% of nominal.
E = The sum of the main +5V and AUX 1 load currents must not exceed 30A.
F = The sum of the main +5V and AUX 1 load currents must not exceed the main +5V current rating.
G = Maximum load is 10A or 120W.
‡Convection Cooled Wattage/30 CFM.

DC/DC Converters



- 100% Dynamic Load Burn-In
- CE Marking Pending
- ISO 9000 Approved Quality
- Stocked By Your Distributor
- Industry Standard Footprints and Pinouts
- Over 100 Models

9

Single Output Specifications

DC/DC Series	Output Noise*	Load Reg. (%)	Line Reg. (%)	Cross Reg. (%)
DSP1	70 mV	+8.00, –5.00	±1.20	—
DFA6	50 mV	±0.40	±0.80	—
DFC6	75 mV	±0.70	±0.20	—
DFC10	60 mV	±0.40	±1.00	—
DGP12	50 mV	±0.70	±0.20	—
DFC15	75 mV	±0.75	±0.20	—
DSN17	60 mV	±2.50	±1.00	—
DFA20	75 mV	±0.60	±1.00	—
DGP30	75 mV	±1.00	±1.00	—

Dual Output Specifications

DSP1	70 mV	±5.00	±1.00	±6.00
DFC10	100 mV	±1.00	±0.75	±3.00
DGP12	120 mV	±0.70	±0.20	±2.50
DFC15	70 mV	±0.40	±0.20	±3.00
DFA20	50 mV	±0.70	±0.80	±2.50

Triple Output Specifications

DGP20	50 mV	±2.00	±1.50	±5.00

Single Output Specifications (Continued)

DC/DC Series	% Max. Efficiency	Isolation Voltage	Temperature Range (Case)
DSP1	75	700 V	–25°C to +85°C
DFA6	83	700 V	–40°C to +85°C
DFC6	77	700 V	–40°C to +85°C
DFC10	83	700 V/1544 V†	–40°C to +85°C
DGP12	82	700 V	–40°C to +85°C
DFC15	83	700 V	–40°C to +85°C
DSN17	88	—	–40°C to +85°C
DFA20	83	700 V/1544 V†	–40°C to +85°C
DGP30	86	1544 V	–40°C to +90°C

Dual Output Specifications (Continued)

DSP1	70	700 V	–25°C to +85°C
DFC10	79	700 V	–40°C to +85°C
DGP12	78	700 V	–40°C to +85°C
DFC15	82	1544 V	–40°C to +100°C
DFA20	85	700 V/1544 V†	–40°C to +85°C

Triple Output Specifications (Continued)

DGP20	84	700 V/1544 V†	–40°C to +90°C

*Measured 1" from converter across a 1 μF tantalum capacitor and bandwidth limited to 20 MHz. †1544 V isolation for DC/DC converters with 48 V inputs.

Single Output

Stock No.	Mfr.'s Type	V out	I out (A)	V in Range	Watts	Case Size W × L × H		Features*	EACH
						In.	mm		
218-0315	DFC10E48S3.3	3.3	2.000	36.0-72.0	6.60	1.02 × 2.02 × 0.41	25.9 × 51.3 × 10.7	B	**62.90**
218-0660	DSN17N5S3.3	3.3	3.500	4.5-6.0	11.50	2.00 × 0.75 × 0.50	50.8 × 19.1 × 12.7	B, C	**61.20**
218-0465	DFA20E12S3.3	3.3	4.000	9.0-18.0	13.20	2.02 × 2.02 × 0.45	51.3 × 51.3 × 11.4	B, C, D	**85.85**
218-0470	DFA20E24S3.3	3.3	4.000	18.0-36.0	13.20	2.02 × 2.02 × 0.45	51.3 × 51.3 × 11.4	B, C, D	**85.85**
218-0460	DFA20E48S3.3	3.3	4.000	36.0-72.0	13.20	2.02 × 2.02 × 0.45	51.3 × 51.3 × 11.4	B, C, D	**85.85**
218-0715	DSP1N5S5	5.0	0.150	4.5-5.5	0.75	0.77 × 0.40 × 0.27	19.6 × 10.2 × 6.9	A	**8.50**
218-0220	DFA6U12S5	5.0	1.000	9.0-27.0	5.00	1.08 × 2.12 × 0.48	27.4 × 53.9 × 12.2	A	**51.85**
218-0235	DFA6U48S5	5.0	1.000	20.0-60.0	5.00	1.08 × 2.12 × 0.48	27.4 × 53.9 × 12.2	A	**51.85**
218-0200	DFC6U5S5	5.0	1.200	3.5-16.0	6.00	1.00 × 2.00 × 0.45	25.4 × 50.8 × 12.2	A	**51.85**
218-0485	DGP12U5S5	5.0	2.000	3.5-16.0	10.00	2.02 × 2.02 × 0.45	51.3 × 51.3 × 11.4	A, C, D	**69.19**
218-0265	DFC10E12S5	5.0	2.000	9.0-18.0	10.00	1.02 × 2.02 × 0.41	25.9 × 51.3 × 10.7	B	**62.90**
218-0280	DFC10E24S5	5.0	2.000	18.0-36.0	10.00	1.02 × 2.02 × 0.41	25.9 × 51.3 × 10.7	B	**62.90**
218-0275	DFC10E48S5	5.0	2.000	36.0-72.0	10.00	1.02 × 2.02 × 0.41	25.9 × 51.3 × 10.7	B	**62.90**
218-0345	DFC15U48S5	5.0	3.000	20.0-60.0	15.00	1.62 × 2.02 × 0.55	41.5 × 51.3 × 14.0	B, C, D	**80.75**
218-0655	DSN17N12S5	5.0	3.500	6.5-15.5	17.50	2.00 × 0.75 × 0.50	50.8 × 19.1 × 12.7	B, C	**61.20**
218-0405	DFA20E12S5	5.0	4.000	9.0-18.0	20.00	2.02 × 2.02 × 0.45	51.3 × 51.3 × 11.4	B, C, D, E	**85.85**
218-0375	DFA20E24S5	5.0	4.000	18.0-36.0	20.00	2.02 × 2.02 × 0.45	51.3 × 51.3 × 11.4	B, C, D, E	**85.85**
218-0370	DFA20E48S5	5.0	4.000	36.0-72.0	20.00	2.02 × 2.02 × 0.45	51.3 × 51.3 × 11.4	B, C, D, E	**85.85**
218-0545	DGP30E48S5	5.0	5.000	36.0-72.0	25.00	1.62 × 2.02 × 0.55	41.2 × 51.3 × 14.0	B, C, D, E	**100.30**
218-0205	DFC6U5S5.2	5.2	1.200	3.5-16.0	6.20	1.00 × 2.00 × 0.45	25.4 × 50.8 × 11.4	A	**51.85**
218-0702	DSP1N5S7	7.0	0.140	4.5-5.5	1.00	0.77 × 0.40 × 0.27	19.6 × 10.2 × 6.9	A	**8.50**
218-0695	DSP1N5S12	12.0	0.080	4.5-5.5	1.00	0.77 × 0.40 × 0.27	19.6 × 10.2 × 6.9	A	**8.50**
218-0210	DFC6U5S12	12.0	0.500	3.5-16.0	6.00	1.00 × 2.00 × 0.45	25.4 × 50.8 × 11.4	A	**51.85**
218-0225	DFA6U12S12	12.0	0.500	9.0-27.0	6.00	1.08 × 2.12 × 0.48	27.4 × 53.9 × 12.2	A	**51.85**
218-0240	DFA6U48S12	12.0	0.500	20.0-60.0	6.00	1.08 × 2.12 × 0.48	27.4 × 53.9 × 12.2	A	**51.85**
218-0285	DFC10E12S12	12.0	0.900	9.0-18.0	10.80	1.02 × 2.02 × 0.41	25.9 × 51.3 × 10.7	B	**62.90**
218-0295	DFC10E24S12	12.0	0.900	18.0-36.0	10.80	1.02 × 2.02 × 0.41	25.9 × 51.3 × 10.7	B	**62.90**
218-0305	DFC10E48S12	12.0	0.900	36.0-72.0	10.80	1.02 × 2.02 × 0.41	25.9 × 51.3 × 10.7	B	**62.90**
218-0490	DGP12U5S12	12.0	1.000	3.5-16.0	12.00	2.02 × 2.02 × 0.45	51.3 × 51.3 × 11.4	A, C, D	**69.19**
218-0355	DFC15U48S12	12.0	1.250	20.0-60.0	15.00	1.62 × 2.02 × 0.55	41.5 × 51.3 × 14.0	B, C, D	**80.75**
218-0395	DFA20E12S12	12.0	1.700	9.0-18.0	20.40	2.02 × 2.02 × 0.45	51.3 × 51.3 × 11.4	B, C, D, E	**85.85**
218-0425	DFA20E24S12	12.0	1.700	18.0-36.0	20.40	2.02 × 2.02 × 0.45	51.3 × 51.3 × 11.4	B, C, D, E	**85.85**
218-0450	DFA20E48S12	12.0	1.700	36.0-72.0	20.40	2.02 × 2.02 × 0.45	51.3 × 51.3 × 11.4	B, C, D, E	**85.85**
218-0535	DGP30E48S12	12.0	2.500	36.0-72.0	30.00	1.62 × 2.02 × 0.55	41.2 × 51.3 × 14.0	B, C, D, E	**100.30**
218-0700	DSP1N5S14	14.0	0.070	4.5-5.5	1.00	0.77 × 0.40 × 0.27	19.6 × 10.2 × 6.9	A	**8.50**
218-0705	DSP1N5S15	15.0	0.065	4.5-5.5	1.00	0.77 × 0.40 × 0.27	19.6 × 10.2 × 6.9	A	**8.50**
218-0215	DFC6U5S15	15.0	0.400	3.5-16.0	6.00	1.00 × 2.00 × 0.45	25.4 × 50.8 × 11.4	A	**51.85**
218-0230	DFA6U12S15	15.0	0.400	9.0-27.0	6.00	1.08 × 2.12 × 0.48	27.4 × 53.9 × 12.2	B	**51.85**
218-0245	DFA6U48S15	15.0	0.400	20.0-60.0	6.00	1.08 × 2.12 × 0.48	27.4 × 53.9 × 12.2	B	**51.85**
218-0290	DFC10E12S15	15.0	0.700	9.0-18.0	10.50	1.02 × 2.02 × 0.41	25.9 × 51.3 × 10.7	B	**62.90**
218-0300	DFC10E24S15	15.0	0.700	18.0-36.0	10.50	1.02 × 2.02 × 0.41	25.9 × 51.3 × 10.7	B	**62.90**
218-0310	DFC10E48S15	15.0	0.700	36.0-72.0	10.50	1.02 × 2.02 × 0.41	25.9 × 51.3 × 10.7	B	**62.90**
218-0495	DGP12U5S15	15.0	0.800	3.5-16.0	12.00	2.02 × 2.02 × 0.45	51.3 × 51.3 × 11.4	A, C, D	**69.19**
218-0360	DFC15U48S15	15.0	1.000	20.0-60.0	15.00	1.62 × 2.02 × 0.55	41.5 × 51.3 × 14.0	B, C, D	**80.75**
218-0400	DFA20E12S15	15.0	1.400	9.0-18.0	21.00	2.02 × 2.02 × 0.45	51.3 × 51.3 × 11.4	B, C, D, E	**85.85**
218-0430	DFA20E24S15	15.0	1.400	18.0-36.0	21.00	2.02 × 2.02 × 0.45	51.3 × 51.3 × 11.4	B, C, D, E	**85.85**
218-0455	DFA20E48S15	15.0	1.400	36.0-72.0	21.00	2.02 × 2.02 × 0.45	51.3 × 51.3 × 11.4	B, C, D, E	**85.85**
218-0540	DGP30E48S15	15.0	2.000	36.0-72.0	30.00	1.62 × 2.02 × 0.55	41.2 × 51.3 × 14.0	B, C, D, E	**100.30**
218-0710	DSP1N5S17	17.0	0.060	4.5-5.5	1.00	0.77 × 0.40 × 0.27	19.6 × 10.2 × 6.9	A	**8.50**

Dual Output

218-0685	DSP1N5D5	±5.0	±0.075	4.5-5.5	0.75	0.77 × 0.40 × 0.27	19.6 × 10.2 × 6.9	A	**13.60**
218-0340	DFC10U48D5	±5.0	±0.800	18.0-72.0	8.00	1.02 × 2.02 × 0.42	25.9 × 51.3 × 10.7	A	**62.90**
218-0330	DFC10U24D5	±5.0	±0.850	9.0-36.0	8.50	1.02 × 2.02 × 0.42	25.9 × 51.3 × 10.7	A	**62.90**
218-0485	DGP12U5D5	±5.0	±1.000	3.5-16.0	10.00	2.02 × 2.02 × 0.45	51.3 × 51.3 × 11.4	A, C, D	**69.19**
218-0390	DFA20E12D5	±5.0	±1.700	9.0-18.0	17.00	2.02 × 2.02 × 0.45	51.3 × 51.3 × 11.4	B, C, D, E	**85.85**
218-0420	DFA20E24D5	±5.0	±1.700	18.0-36.0	17.00	2.02 × 2.02 × 0.45	51.3 × 51.3 × 11.4	B, C, D, E	**85.85**
218-0445	DFA20E48D5	±5.0	±1.700	36.0-72.0	17.00	2.02 × 2.02 × 0.45	51.3 × 51.3 × 11.4	B, C, D, E	**85.85**
218-0690	DSP1N5D7	±7.0	±0.070	4.5-5.5	1.00	0.77 × 0.40 × 0.27	19.6 × 10.2 × 6.9	A	**13.60**
218-0665	DSP1N5D12	±12.0	±0.040	4.5-5.5	1.00	0.77 × 0.40 × 0.27	19.6 × 10.2 × 6.9	A	**13.60**
218-0320	DFC10U24D12	±12.0	±0.400	9.0-36.0	9.60	1.02 × 2.02 × 0.42	25.9 × 51.3 × 10.7	A	**62.90**
218-0270	DFC10U48D12	±12.0	±0.415	18.0-72.0	10.00	1.02 × 2.02 × 0.42	25.9 × 51.3 × 10.7	A	**62.90**
218-0475	DGP12U5D12	±12.0	±0.500	3.5-16.0	12.00	2.02 × 2.02 × 0.45	51.3 × 51.3 × 11.4	A, C, D	**69.19**
218-0350	DFC15U48D12	±12.0	±0.625	20.0-72.0	15.00	1.62 × 2.02 × 0.55	41.2 × 51.3 × 11.4	B, C, D, E	**80.75**
218-0380	DFA20E12D12	±12.0	±0.850	9.0-18.0	20.40	2.02 × 2.02 × 0.45	51.3 × 51.3 × 11.4	B, C, D, E	**85.85**
218-0410	DFA20E24D12	±12.0	±0.850	18.0-36.0	20.40	2.02 × 2.02 × 0.45	51.3 × 51.3 × 11.4	B, C, D, E	**85.85**
218-0435	DFA20E48D12	±12.0	±0.850	36.0-72.0	20.40	2.02 × 2.02 × 0.45	51.3 × 51.3 × 11.4	B, C, D, E	**85.85**
218-0670	DSP1N5D14	±14.0	±0.035	4.5-5.5	1.00	0.77 × 0.40 × 0.27	19.6 × 10.2 × 6.9	A	**13.60**
218-0675	DSP1N5D15	±15.0	±0.033	4.5-5.5	1.00	0.77 × 0.40 × 0.27	19.6 × 10.2 × 6.9	A	**13.60**
218-0325	DFC10U24D15	±15.0	±0.320	9.0-36.0	9.60	1.02 × 2.02 × 0.42	25.9 × 51.3 × 10.7	A	**62.90**
218-0335	DFC10U48D15	±15.0	±0.330	18.0-72.0	9.90	1.02 × 2.02 × 0.42	25.9 × 51.3 × 10.7	A	**62.90**
218-0480	DGP12U5D15	±15.0	±0.400	3.5-16.0	12.00	2.02 × 2.02 × 0.45	51.3 × 51.3 × 11.4	A, C, D	**69.19**
218-0365	DFC15U48D15	±15.0	±0.500	20.0-72.0	15.00	1.62 × 2.02 × 0.55	41.2 × 51.3 × 14.0	B, C, D, E	**80.75**
218-0385	DFA20E12D15	±15.0	±0.700	9.0-18.0	21.00	2.02 × 2.02 × 0.45	51.3 × 51.3 × 11.4	B, C, D, E	**85.85**
218-0415	DFA20E24D15	±15.0	±0.700	18.0-36.0	21.00	2.02 × 2.02 × 0.45	51.3 × 51.3 × 11.4	B, C, D, E	**85.85**
218-0440	DFA20E48D15	±15.0	±0.700	36.0-72.0	21.00	2.02 × 2.02 × 0.45	51.3 × 51.3 × 11.4	B, C, D, E	**85.85**
218-0680	DSP1N5D17	±17.0	±0.030	4.5-5.5	1.00	0.77 × 0.40 × 0.27	19.6 × 10.2 × 6.9	A	**13.60**

Triple Output

218-0505	DGP20E12T5/12	5 ±12	2.500, ±0.310	9.0-18.0	20.00	2.02 × 2.02 × 0.45	51.3 × 51.3 × 11.4	B, C	**88.40**
218-0515	DGP20E24T5/12	5 ±12	2.500, ±0.310	18.0-36.0	20.00	2.02 × 2.02 × 0.45	51.3 × 51.3 × 11.4	B, C	**88.40**
218-0525	DGP20E48T5/12	5 ±12	2.500, ±0.310	36.0-72.0	20.00	2.02 × 2.02 × 0.45	51.3 × 51.3 × 11.4	B, C	**88.40**
218-0510	DGP20E12T5/15	5 ±15	2.500, ±0.250	9.0-18.0	20.00	2.02 × 2.02 × 0.45	51.3 × 51.3 × 11.4	B, C	**88.40**
218-0520	DGP20E24T5/15	5 ±15	2.500, ±0.250	18.0-36.0	20.00	2.02 × 2.02 × 0.45	51.3 × 51.3 × 11.4	B, C	**88.40**
218-0530	DGP20E48T5/15	5 ±15	2.500, ±0.250	36.0-72.0	20.00	2.02 × 2.02 × 0.45	51.3 × 51.3 × 11.4	B, C	**88.40**

***Features:** A) Short term current limit (<30 seconds); B) Continuous current limit; C) Remote ON/OFF; D) Output trim function ±10%; E) Thermal shutdown.

North American and International Power Cords

North American

2 Conductor Power Cords

Stock No.	Mfr.'s Type[1]	Fig.	Length Inches	Cordage	# Cond. AWG[2]	Amps 125V	Plug No.	Conn. No.	EACH 1-24	EACH 25-99
689-2000	221001-01	A	6'0"	SPT-1	2×18	10	002	—	.97	.82
689-2021	221002-01	A	9'0"	SPT-1	2×18	10	002	—	1.30	1.05

3 Conductor Power Cords — Unshielded

Stock No.	Mfr.'s Type[1]	Fig.	Length Inches	Cordage	# Cond. AWG[2]	Amps 125V	Plug No.	Conn. No.	EACH 1-24	EACH 25-99
689-2116	211012-06	B	8'0"	SVT†	3×18	10	004	—	3.17	2.55
689-2136	211018-06	B	8'0"	SJT†	3×18	10	004	—	3.16	2.55
689-2161	311010-01	B	9'10"	SVT	3×18	10	004	—	3.28	2.64
689-2181	311016-01	B	9'10"	SJT	3×18	10	004	—	3.54	2.86
689-2221	311027-01	B	9'10"	SJT	3×14	15	004	—	5.63	4.85
689-2251	212004-01	C	7'6"	SVT†	3×18	10	004	005	3.67	2.96
689-2261	212013-01	C	7'6"	SJT†	3×16	13	004	005	4.30	3.63
689-2271	312003-01	C	7'6"	SVT	3×18	10	004	005	3.67	2.96
689-2283	312008-01	C	7'6"	SJT	3×18	10	004	005	4.69	3.97
689-2291	312010-01	C	9'10"	SJT	3×18	10	004	005	4.51	3.82
689-2311	312014-01	C	9'10"	SJT	3×16	13	004	005	6.00	5.00
689-2331	312019-01	C	9'10"	SJT	3×14	15	004	005	6.12	5.28
689-2341	312021-01	C	7'6"	SVT‡	3×18	10	004	005	3.76	3.03
689-2353	313001-01	D	7'6"	SVT	3×18	10	004	006	4.27	3.62
689-2355	313011-01	D	7'6"	SJT	3×16	13	004	006	5.09	4.30
689-2358	318002-01	E	3'3"	SVT	3×18	10	009	005	3.91	3.15
689-2371	318005-01	E	3'3"	SJT	3×18	10	009	005	3.47	2.80
689-2381	318007-01	E	3'3"	SJT	3×16	13	009	005	3.42	2.76
689-2411	315008-01	F	9'10"	SJT	3×18	10	—	005	4.37	3.78

Hospital Grade — Unshielded with North American Color Code

Stock No.	Mfr.'s Type[1]	Fig.	Length Inches	Cordage	# Cond. AWG[2]	Amps 125V	Plug No.	Conn. No.	EACH 1-24	EACH 25-99
689-2506	232002-06	G	8'0"	SJT†	3×18	10*	019	—	6.29	5.42
689-2516	232003-06	G	10'0"	SJT†	3×18	10*	019	—	7.25	6.25
689-2520	232010-06	G	8'0"	SJT†	3×18	10**	019	—	6.29	5.42
689-2526	232011-06	G	10'0"	SJT†	3×18	10**	019	—	7.25	6.25
689-2546	233002-06	H	8'0"	SJT†	3×18	10*	019	005	7.34	6.33
689-2556	233003-06	H	10'0"	SJT†	3×18	10*	019	005	7.80	6.72
689-2566	233008-06	H	8'0"	SJT†	3×18	10**	019	005	7.34	6.33
689-2576	233009-06	H	10'0"	SJT†	3×18	10**	019	005	7.80	6.72

Foot Notes

[1] Black color is designated by suffix (-01). Other colors available with suffix: -03 Brown, -06 Gray, -08 White, -12 Ivory.

[2] Stranding: SPT-1 18/2 (41×34), SVT 18/3 (41×34), SJT 18/3 (16×30), SJT 16/3 (26×30), SJT 14/3 (41×30).

† CEE Color Code except North American Color Code as marked.

‡ Temperature rating is 60°C except 105°C VW-1 as marked.

* Hospital Grade Clear Plug.

** Hospital Grade Gray Plug.

International

Continental Europe

Stock No.	Mfr.'s Type[1]	Fig.	Length Meters	Cordage	# Cond. (MM)	Amps 250V	Plug No.	Conn. No.	EACH 1-24	EACH 25-99
689-5012	361020-D01	I	2.5M	H03VV-F	2×0.75	2.5	1427	—	3.62	2.91
689-5022	362001-E01	J	2.5M	H03VVH2-F	2×0.75	6	1264	—	2.54	2.04
689-5032	363012-D01	K	2.5M	H05VV-F	3×1.00	10	13641	—	3.16	2.56
689-5042	364002-D01	L	2.5M	H05VV-F	3×1.00	10	13641	2348	4.48	3.79
689-5052	366042-D01	M	2.5M	H05VV-F	3×1.00	10	1410	—	3.88	3.12
689-5062	367003-D01	N	2.5M	H05VV-F	3×1.00	10	1410	2348	4.48	3.79
689-5072	319004-T01	O	2.5M	H05VV-F	3×1.00	10	1591	2348	3.79	3.38

United Kingdom

Stock No.	Mfr.'s Type[1]	Fig.	Length Meters	Cordage	# Cond. (MM)	Amps 250V	Plug No.	Conn. No.	EACH 1-24	EACH 25-99
689-5102	369003-E01	P	2.5M	H05VV-F	3×1.00	10	1620	—	8.74	7.54
689-5111	370001-E01	Q	2.5M	H05VV-F	3×1.00	10	1620	2348	10.51	9.06

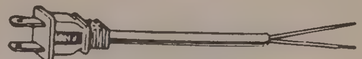
Australian

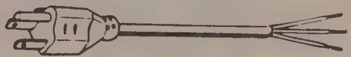
Stock No.	Mfr.'s Type[1]	Fig.	Length Meters	Cordage	# Cond. (MM)	Amps 250V	Plug No.	Conn. No.	EACH 1-24	EACH 25-99
689-5115	373003-A01	R	2.5M	H05VV-F	3×1.00	10	003	—	3.44	3.07
689-5120	374003-A01	S	2.5M	H05VV-F	3×1.00	10	003	005	4.13	3.69

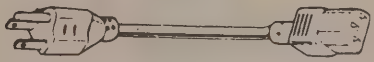
Foot Notes

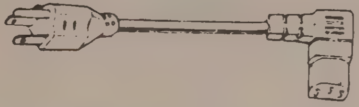
[1] Black color is designated by suffix (-01). Other colors available with suffix: -03 Brown, -06 Gray, -08 White, -12 Ivory.

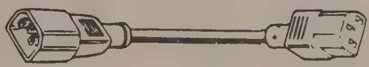
North American

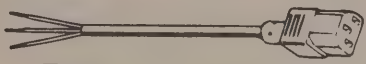
A


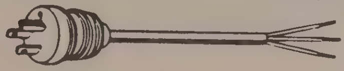
B


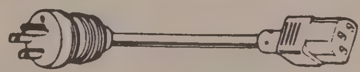
C


D


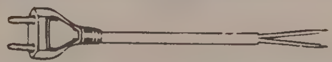
E


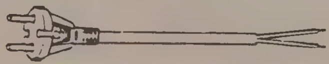
F


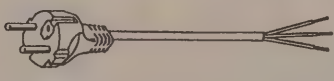
G


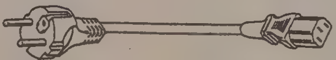
H


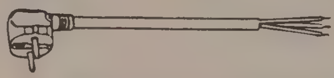
Continental Europe

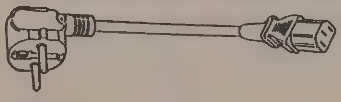
I


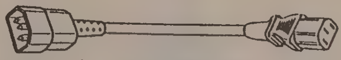
J


K


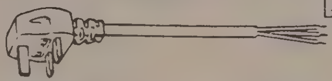
L


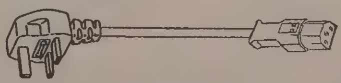
M


N


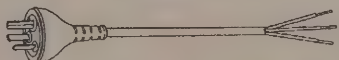
O


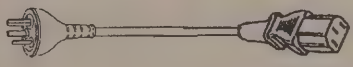
United Kingdom

P


Q


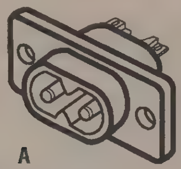
Australian

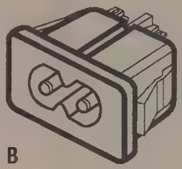
R


S


Low Current Inlet IEC 320

— NEW —


A


B

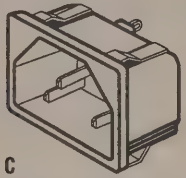
► **Max. Rating: 2.5 A/250 VAC**

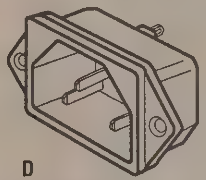
Low Current Inlet. Male low current inlet with snap-in and screw mount version. Available with solder tab or PCB mount.

Stock No.	Mfr.'s Type	Fig.	Description	Terminals	EACH 1-24	EACH 25-99
689-3630	770W-00/01	A	Screw Mount	Solder Tab	**.96**	**.84**
689-3632	770W-00/02	A	Screw Mount	PCB Mount	**.96**	**.84**
689-3634	771W-X2/01*	B	Snap-In Mount	Solder Tab	**.96**	**.84**
689-3636	771W-X2/02*	B	Snap-In Mount	PCB Mount	**.96**	**.84**

*Universal snap-in feature to fit 0.8 mm-1.3 mm panel thickness.

AC Power Inlets IEC 320


C


D

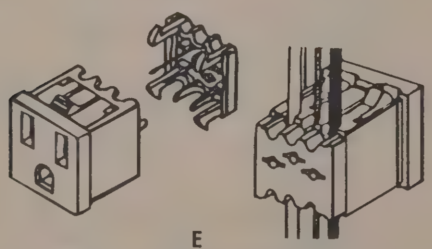
► **Max. Rating: UL and CSA 15 A/250 VAC — VDE 10 A/250 VAC**

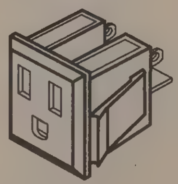
AC Power Inlets. Male power inlets includes snap-in and screw mount types with solder tab, .187 Q.D. and .250 Q.D.

Stock No.	Mfr.'s Type	Fig.	Description	Terminals	EACH 1-24	EACH 25-99
689-3480	701W-X2/02*	C	Snap-In Mount	Solder Tab	**.79**	**.68**
689-3485	701W-X2/03*	C	Snap-In Mount	.187 Q.D./Solder	**.79**	**.68**
689-3490	701W-X2/04*	C	Snap-In Mount	.250 Q.D.	**.85**	**.73**
689-3495	703W-00/02	D	Screw Mount	Solder Tab	**.79**	**.68**
689-3500	703W-00/03	D	Screw Mount	.187 Q.D./Solder	**.79**	**.68**
689-3505	703W-00/04	D	Screw Mount	.250 Q.D.	**.85**	**.73**

*Universal snap-in feature to fit 0.8 mm-2.0 mm panel thickness.

NEMA 5-15R Power Outlet


E

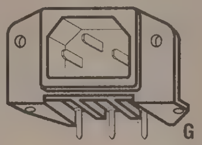

F

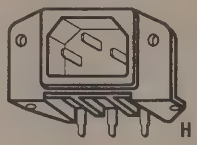
► **Max. Rating: UL and CSA 15 A/250 VAC**

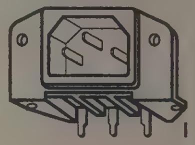
NEMA 5-15R Power Outlet. Snap-in outlets with quick disconnect and IDC terminals.

Stock No.	Mfr.'s Type	Fig.	Description	Terminals	EACH 1-24	EACH 25-99
689-3343	738W-X2/03	E	Snap-In Mount	Q.D./Solder Terminals	**.83**	**.64**
689-3347	739W-X2/03	F	Snap-In Mount	IDC Terminals for Solid Wire	**.83**	**.64**

Angled Inlet PCB Mount IEC 320


G


H


I

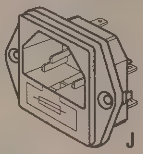
► **Max. Rating: UL and CSA 15 A/250 VAC — VDE 10 A/250 VAC**

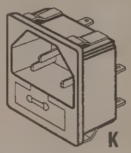
Angled Inlet PCB Mount. Male right angled PCB mount power inlet offered with 7 mm or 9 mm terminal centers.

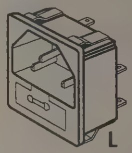
Stock No.	Mfr.'s Type	Fig.	Description	Terminals Pitch	EACH 1-24	EACH 25-99
689-3450	703W-00/52*	G	PCB Mount	7 mm	**1.12**	**.86**
689-3455	703W-00/53**	H	PCB Mount	7 mm	**1.14**	**.88**
689-3460	703W-00/54**	I	PCB Mount	9 mm	**1.14**	**.88**

*Round PCB pins. **Flat PCB pins.

Power Inlet with Fuseholder IEC 320


J


K


L

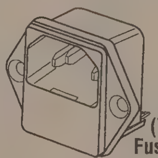
► **Max. Rating: UL and CSA 10 A/250 VAC — VDE 10 A/250 VAC**

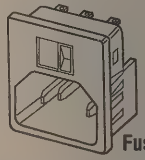
Power Inlets with Fuseholder. Male power inlets with a fuseholder for single fuse.

Stock No.	Mfr.'s Type	Fig.	Description	Terminals	EACH 1-24	EACH 25-99
689-3520	719W-00/02*	J	Screw Mount	Solder Tab	**2.21**	**1.74**
689-3522	719W-00/03*	J	Screw Mount	.187 Q.D. Solder Tab	**2.21**	**1.74**
689-3524	719W-00/04*	J	Screw Mount	.250 Q.D.	**2.21**	**1.74**
689-4091	723-15/28**	K	Snap-In Mount	Solder Tab	**2.62**	**2.05**
689-3510	723-15/48**	K	Snap-In Mount	.187 Q.D. Solder Tab	**2.54**	**2.03**
689-4101	723-15/63**	K	Snap-In Mount	.250 Q.D.	**2.62**	**2.05**
689-3514	723W-X2/02*	L	Snap-In Mount	Solder Tab	**2.21**	**1.74**
689-3516	723W-X2/03*	L	Snap-In Mount	.187 Q.D. Solder Tab	**2.21**	**1.74**
689-3518	723W-X2/04*	L	Snap-In Mount	.250 Q.D.	**2.21**	**1.74**

*Universal snap-in feature to fit 0.8 mm-2.0 mm panel thickness. **Panel Thickness = 1.5 mm — (1.0, 2.0, and 3.0 available).

IEC Inlet with Voltage Selector or Voltage Selector and Fuseholder IEC


M (Without Fuseholder)


N (With Fuseholder)

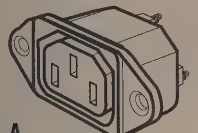
► **Max. Rating: UL and CSA 10 A/250 VAC — VDE 10 A/250 VAC**

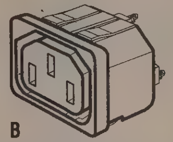
IEC Connectors. Male power inlet with optional fuseholder and voltage selector switch with snap-in and screw mount types available.

Stock No.	Mfr.'s Type	Fig.	Description	Terminals	EACH 1-24	EACH 25-99
689-3350	755-00/28*	M	Screw Mount	Solder Tab	**3.20**	**2.73**
689-3348	756-10/28†	N	Snap-In Mount‡	Solder Tab	**2.88**	**2.46**

*Voltage selector switch adapts to 110 V or 240 V. †Voltage selector switch adapts to 115 V or 230 V. ‡Panel thickness = 1.0 mm.

AC Power Outlet IEC 320


A


B

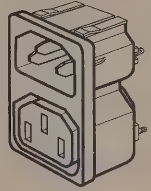
► **Max. Rating: UL and CSA 15 A/250 VAC — VDE 10 A/250 VAC**

AC Power Outlets. Female power outlets available in screw or snap-in mounting and varies terminals.

Stock No.	Mfr.'s Type	Fig.	Description	Terminals	EACH 1-24	EACH 25-99
689-3430	710W-00/01	A	Screw Mount	Solder Tab	.85	.73
689-3435	710W-00/02	A	Screw Mount	.187 Q.D./Solder Tab	.85	.73
689-3440	710W-00/03	A	Screw Mount	.250 Q.D.	.85	.73
689-3415	716W-X2/01*	B	Universal Snap-In	Solder Tab	.83	.72
689-3420	716W-X2/02*	B	Universal Snap-In	.187 Q.D./Solder Tab	.83	.72
689-3425	716W-X2/03*	B	Universal Snap-In	.250 Q.D.	.85	.73

*Universal snap-in feature to fit 0.8 mm-2.0 mm panel thickness.

Multi-Function Module Inlet/Outlet IEC 320 — *NEW* —



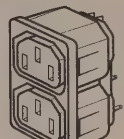
► **Max. Rating: UL and CSA 10 A/ 250 VAC — Others 10 A/250 VAC**

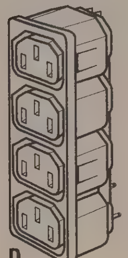
Multi-Function Module. Male/female module with solder tabs.

Stock No.	Mfr.'s Type	Description	Terminals	EACH 1-24	EACH 25-99
698-3600	773W-X2/01*	Universal/Snap-In	Solder Tab	2.15	1.87

*Universal snap-in feature to fit 0.8 mm-2.0 mm panel thickness.

Multiple Outlet Module IEC 320 — *NEW* —


C


D

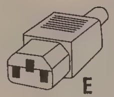
► **Max. Rating: 10 A/250 VAC**

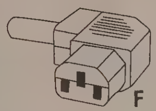
Multiple Output Module. Two and four position snap-in type multiple outlets with solder tabs.

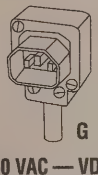
Stock No.	Mfr.'s Type	Fig.	Description	Terminals	EACH 1-24	EACH 25-99
689-3620	742W-15/03*	C	2 Position Outlet	Solder Tab	4.25	3.69
689-3622	742W-15/19*	D	4 Position Outlet	Solder Tab	6.77	5.89

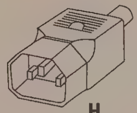
*3, 5 and 6 position available. Panel thickness = 1.5 mm — (1.0, 2.0, and 3.0 mm available).

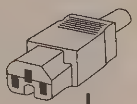
AC Power Plug Assemblies


E


F


G


H

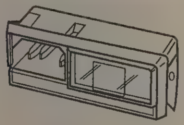

I

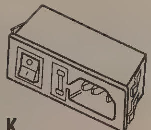
► **Max. Rating: UL and CSA 10 A/250 VAC — VDE 10 A/250 VAC**

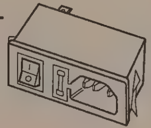
AC Power Cord Plug Assemblies. Male and female rewirable plug connectors with straight and 90° angle cable entry. Easily converts a power cord into a detachable power cordset.

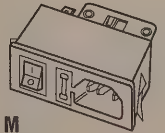
Stock No.	Mfr.'s Type	Fig.	Description	Terminals	EACH 1-24	EACH 25-99
689-3121	704-00/00	E	Straight Entry	Screw	2.73	2.41
689-3131	705-00/00	F	Angled Entry	Screw	3.53	3.12
689-3141	711-00/00	G	Angled Entry	Screw	4.48	3.96
689-3151	712-00/00	H	Straight Entry	Screw	4.04	3.58
689-3161	709-00/00	I	Straight Entry	Screw	3.58	3.01

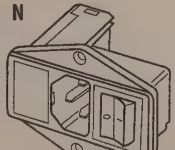
Multi-Function Modules

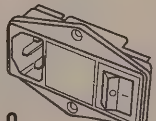

J

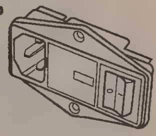

K


L


M


N


O


P

► **Max. Rating: UL and CSA 6 A/250 VAC — VDE 10 A/250 VAC**

Multi-Function Modules. Both snap-in and screw mount incorporates an IEC male power inlet, fuseholder and optional voltage selector and power switch.

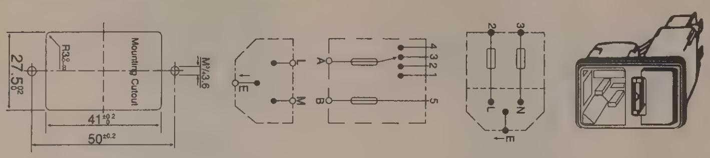
Stock No.	Mfr.'s Type	Fig.	Description	Housing Type	Terminals	Fuseholder Type	Power Switch	Voltage Selector	EACH 1-24	EACH 25-99
689-3352	760-16/001*	J	Snap-In Mount	Plastic	Solder Tab	Single	—	Front	8.18	7.12
689-4214	761-18/003**	K	Snap-In Mount	Plastic	Solder Tab	Single	SPST	—	6.48	5.63
689-4215	761-18/004**	K	Snap-In Mount	Plastic	Solder Tab	Single	DPST	—	9.02	7.84
689-4217	762-18/002**	L	Snap-In Mount	Metal	.250 Q.D.	Single	SPST	—	8.68	7.54
689-4218	762-18/003**	L	Snap-In Mount	Metal	.250 Q.D.	Single	DPST	—	13.64	11.86
689-4219	762-18/004**	M	Snap-In Mount	Metal	.250 Q.D.	Single	SPST	Rear	13.52	11.76
689-4220	762-18/005**	M	Snap-In Mount	Metal	.250 Q.D.	Single	DPST	Rear	17.12	14.89
689-3354	763-00/001	N	Screw Mount	Plastic	Solder Tab	Double†	DPST	Front	8.18	7.12
689-4223	764-00/002	O	Screw Mount	Plastic	Solder Tab	Double	DPST	Front	8.11	7.05
689-4224	764-00/003	P	Screw Mount	Plastic	Solder Tab	Double	DPST	Front	8.82	8.53

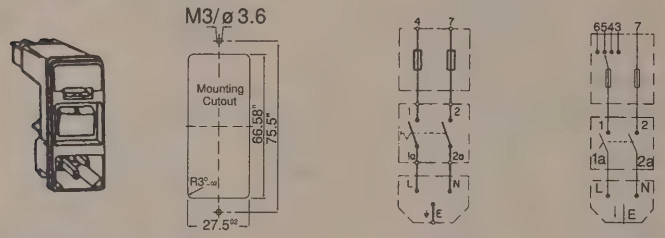
*Panel thickness = 1.0-1.6 mm. **Panel thickness = 1.0-1.8 mm. †Fuseholder for 5 × 20 mm or 6.3 × 32 mm (north american type).

Power Entry Modules

The Schurter IEC 320 power entry modules come in many variations combining AC connector,on/off switch, 1- or 2-pole fuseholder and voltage selector. These units are approved at 250 V by a multitude of international agencies including: UL, CSA, VDE, SEMKO and SEV. Fuses sold separately.

AC Inlet and 2-Pole Fuseholder/Switch





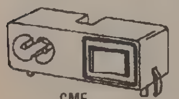
DPST, 35 A switch in-rush current. Terminals are 4.8 mm × 0.8 mm quick connect. Series KEC 4303/KD also available with series voltage selection, call for part numbers. Order fingergrip fuse drawers separately below.

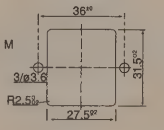
Stock No.	Mfr.'s Type	Mounting	D × H × W (mm)	EACH	
				1-24	25-Up
509-3140	4303.0001	Flange	55 × 58 × 30	4.58	3.34
509-3145	4303.0002	Snap-In 1.5 mm	55 × 43.5 × 30	4.58	3.34
509-3101	KD14.1101.151	Flange	55 × 83.5 × 30	15.31	13.78
509-3106	KD14.1101.105	Snap-In 1.5 mm	55 × 69 × 30	15.31	13.78

Fuse Drawers (must be ordered separately)

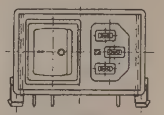
Stock No.	Mfr.'s Type	Voltage Selector	Color	Fuses	EACH	
					1-24	25-Up
509-3011	4303.2401	None	Black	2-Pole, 5 × 20 mm	2.66	1.94
509-3012	4303.2902	None	Grey	2-Pole, 1/4" × 1 1/4"	2.66	1.94
509-3013	4303.2411	None	Black	1-Pole, 5 × 20 mm	5.63	4.72
509-3014	4303.2912	None	Grey	1-Pole, 1/4" × 1 1/4"	6.16	5.27

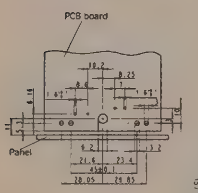
AC Inlet with On/Off Switch, 1- and 2-Pole

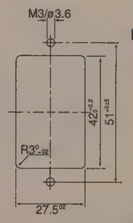

CMF

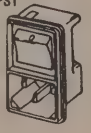


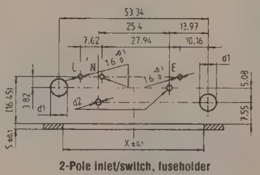
KEB SPST


KP DPST





KEB DPST


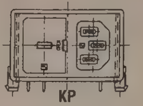


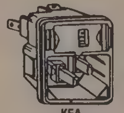
2-Pole inlet/switch, fuseholder
d1 = 6 ± 0,05 for snap-in mounting

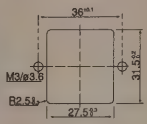
Series CMF for PCB mounting has switch in-rush rating of 40 amps. Series KP for PCB mounting and KEB for panel mounting have switch in-rush ratings of 60 A for SPST and 35 A for DPST.

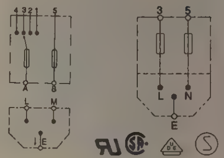
Stock No.	Mfr.'s Type	Mounting	D × H × W (mm)	EACH	
				1-24	25-Up
509-4126	CMF2.1111.12	SPST, PCB Mnt. Polarized	21 × 22 × 57.9	4.28	3.89
509-4128	CMF1.1111.12	SPST, PCB Mnt., C8	21 × 22 × 57.9	4.28	3.89
509-4130	KP01.1212.11	SPST, PCB Mnt. 1.6 mm, 1.5 mm Pnl.	31.2 × 36 × 56.1	6.96	6.27
509-4132	KP01.1252.11	SPST, PCB Mnt. Screws, 1.5 mm Pnl.	31.2 × 36 × 56.1	7.28	6.56
509-4134	KP01.1112.11	DPST, PCB Mnt. 1.6 mm, 1.5 mm Pnl.	31.2 × 36 × 56.1	7.16	6.45
509-4136	KP01.1152.11	DPST, PCB Mnt Screws, 1.5 mm Pnl.	31.2 × 36 × 56.1	7.75	6.98
509-3110	4302.0001	SPST, Screw-On, Front or Rear	35.5 × 34 × 30	7.66	5.58
509-3115	4302.0002	SPST, Snap-In, 1.5 mm Panel Thick	35.5 × 34 × 44	7.66	5.58
509-3120	4302.2001	DPST, Screw-On, Front or Rear	31.7 × 44.5 × 30	7.51	6.85
509-3125	4302.2002	DPST, Snap-In, 1.5 mm Panel Thick	31.7 × 59 × 30	7.51	6.85

KP/KEA Series
AC Inlet with 1- and 2-pole Fuseholder and Optional Voltage Selector


KP


KEA





Series **KEA 4301.2041 and .2042** include voltage selector for series connection. See KP inlet/switch mounting cutout. Order fusedrawers separately below.

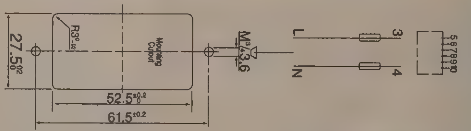
Stock No.	Mfr.'s Type	Mounting	D × H × W (mm)	EACH	
				1-24	25-Up
509-4098	KP01.1412.01	1-Pole, PCB Mnt. 1.6 mm, 1.5 mm Pnl.	31.2 × 36 × 56.1	4.88	4.43
509-4100	KP01.1452.01	1-Pole, PCB Mnt. Screws, 1.5 mm Pnl.	31.2 × 36 × 56.1	4.24	3.82
509-4102	KP01.1312.01	2-Pole, PCB Mnt. 1.6 mm., 1.5 mm Pnl.	31.2 × 36 × 56.1	6.08	5.48
509-4103	KP01.1352.01	2-Pole, PCB Mnt. Screws, 1.5 mm Pnl.	31.2 × 36 × 56.1	6.27	5.65

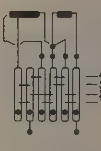
Stock No.	Mfr.'s Type	Voltage Selector	Mounting	D × H × W (mm)	Terminals	EACH	
						1-24	25-Up
509-3160	4301.0501	None	Flange	40.5 × 34 × 44	4.8 × 0.8	3.59	3.08
509-3165	4301.0502	None	Snap-In 1.5 mm	40.5 × 34 × 30	4.8 × 0.8	3.59	3.08
509-3170	4301.2041	Yes	Flange	41.4 × 34 × 44	4.8 × 0.8	4.53	3.84
509-3175	4301.2042	Yes	Snap-In 1.5 mm	41.4 × 34 × 30	4.8 × 0.8	4.53	3.84

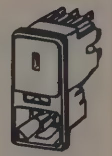
KEA Fuse Drawers (must be ordered separately)

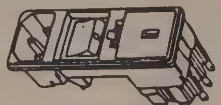
Stock No.	Mfr.'s Type	Voltage Selector	Color	Fuses	EACH	
					1-24	25-Up
509-3019	4301.1401	None	Black	2-Pole, 5 × 20 mm	2.65	1.94
509-3020	4301.1413	None	Black	1-Pole, 5 × 20 mm	3.50	2.94
509-3021	4301.1014.08	100, 120, 220, 240	Black	2-Pole, 5 × 20 mm	3.50	2.94
509-3022	4301.3536.08	100, 120, 220, 240	Black	1-Pole, 5 × 20 mm	5.79	4.85

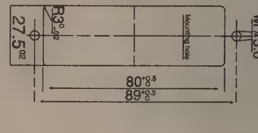
KE/KG Series AC Inlet and 2-pole Fuseholder/Switch

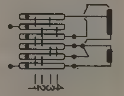


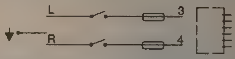












Series **KE/KG with series-parallel voltage selection**. DPST, 35 A switch in-rush current. Terminals are 4.8 mm × 0.8 quick-connect. Order voltage selector and fusedrawers separately below.

Stock No.	Mfr.'s Type	Mounting	D × H × W (mm)	EACH	
				1-24	25-Up
509-3180	KE10.6100.151	Flange	55 × 69.5 × 30	11.23	10.11
509-3185	KE10.6100.105	Snap-In 1.5 mm	55 × 55 × 30	11.23	10.11
509-3130	KG10.6101.151	Flange	55 × 97 × 30	13.39	12.22
509-3135	KG10.6101.105	Snap-In 1.5 mm	55 × 82.5 × 30	13.39	12.22

Voltage Selector (must be ordered separately)

Stock No.	Mfr.'s Type	Markings	EACH	
			1-24	25-Up
509-3027	4305.0048.01	100, 120, 220, 240	4.30	3.40

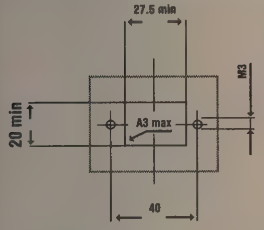
Fuse Drawers (must be ordered separately)

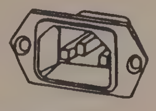
Stock No.	Mfr.'s Type	Color	Fuses	EACH	
				1-24	25-Up
509-3023	4305.0001	Black	2-Pole, 5 × 20 mm	3.79	3.46
509-3024	4305.0012	Grey	2-Pole, 1/4" × 1 1/4"	3.79	3.46
509-3025	4305.0021	Black	1-Pole, 5 × 20 mm	4.87	4.44
509-3026	4305.0027	Grey	1-Pole, 1/4" × 1 1/4"	4.87	4.44

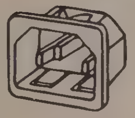
AC Power Line Connectors – Inlets/Outlets

The Schurter IEC 320 AC appliance connectors include the most common inlets and outlets for class I equipment. These units are approved by a multitude of international agencies including: UL, CSA, VDE, SEMKO and SEV.

AC Power Line Connectors/Inlets 65°C,10/15A, 250V



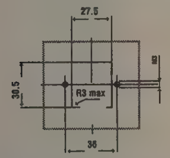

1

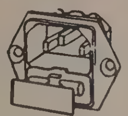

2

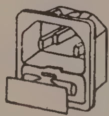
Stock No.	Mfr.'s Type	Fig. No.	Mounting	Terminals (mm)	EACH	
					1-24	25-Up
509-1000	6100.3100	1	Flange +	3.5x0.8	**1.25**	**.97**
509-1005	6100.3200	1	Flange ++	4.8x0.8	**1.25**	**.97**
509-1010	6100.3300	1	Flange ++	6.3x0.8	**1.25**	**.97**
509-1015	6100.4115	2	Snap-In 1.5 mm +	3.5x0.8	**1.25**	**.97**
509-1020	6100.4215	2	Snap-In 1.5 mm ++	4.8x0.8	**1.25**	**.97**
509-1025	6100.4315	2	Snap-In 1.5 mm ++	6.3x0.8	**1.25**	**.97**

+ Solder. ++ Quick disconnect.

AC Power Line Connectors with Fuseholders 65°C,10/15A, 250V



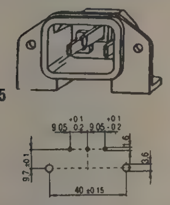

3

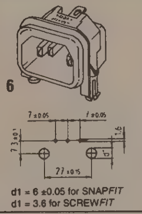

4

509-1100	6200.2100	3	Flange +	3.5x0.8	**2.69**	**2.08**
509-1105	6200.2200	3	Flange ++	4.8x0.8	**2.69**	**2.08**
509-1110	6200.2300	3	Flange ++	6.3x0.8	**2.69**	**2.08**
509-1115	6200.4115	4	Snap-In 1.5 mm +	3.5x0.8	**2.69**	**2.08**
509-1120	6200.4215	4	Snap-In 1.5 mm ++	4.8x0.8	**2.69**	**2.08**
509-1125	6200.4315	4	Snap-In 1.5 mm ++	6.3x0.8	**2.69**	**2.08**

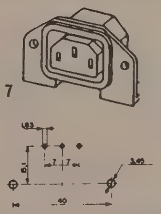
+ Solder. ++ Quick disconnect.

AC Power Line Connectors/Right Angle PC Board Mounting 65°C


5

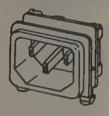

6

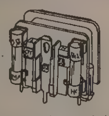
d1 = 6 ±0.05 for SNAPFIT
d1 = 3.6 for SCREWFIT

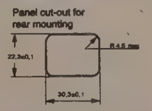

7

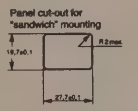
Stock No.	Mfr.'s Type	Fig. No.	Mounting	Pin Spacing	EACH	
					1-24	25-Up
509-1269	GSP1.3101.1	5	Flange	9.05/9.7	**1.65**	**1.49**
509-1273	GSP1.4113.1	5	Flange	7/7.3	**2.82**	**2.54**
509-4112	GSP2.3101.13	6	PCB/Screw Posts (screws included)	9.05/9.7	**2.49**	**2.25**
509-4114	GSP2.4113.13	6	PCB/Screw Posts (screws included)	7/7.3	**3.08**	**2.78**
509-4116	GSP2.3201.13	6	PCB/Snap Posts, 1.6 mm	9.05/9.7	**2.10**	**1.89**
509-4118	GSP2.4213.13	6	PCB/Snap Posts, 1.6 mm	7/7.3	**2.69**	**2.42**
509-1271	4300.0251	7	Flange	9.05/9.7	**2.14**	**1.98**

AC Appliance Inlet for PCB with Piggyback Fuse Clips





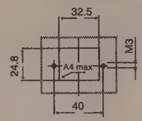


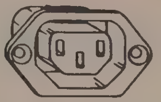


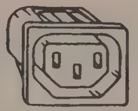
GSF series appliance inlets have right-angle inlets, plus solder/quick connect ground terminals. GSF1.1 has 1-pole fusing. GSF1.2 has 2-pole fusing.

Stock No.	Mfr.'s Type	Mounting	EACH	
			1-24	25-Up
509-4120	GSF1.1212.31	PCB/Snap Posts, 1.6 mm	**3.64**	**3.28**
509-4122	GSF1.2212.31	PCB/Snap Posts, 1.6 mm	**4.06**	**3.66**

AC Power Line Connectors/Outlets 65°C,10/15A, 250V



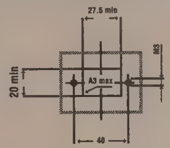

8

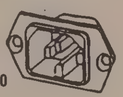

9

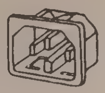
Stock No.	Mfr.'s Type	Fig. No.	Mounting	Terminals (mm)	EACH	
					1-24	25-Up
509-6001	6600.3100	8	Flange +	2.8x0.8	**1.55**	**1.34**
509-6002	6600.3300	8	Flange ++	6.3x0.8	**1.55**	**1.34**
509-6003	6600.4115	9	Snap-In 1.5 mm +	2.8x0.8	**1.55**	**1.34**
509-6004	6600.4315	9	Snap-In 1.5 mm ++	6.3x0.8	**1.55**	**1.34**

+ Solder. ++ Quick connect.

AC Power Line Connectors/Inlets 120°C,10/15A, 250V



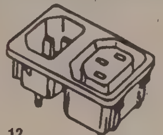

10

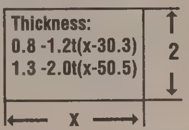

11

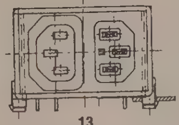
509-1040	6110.3100	10	Flange +	3.5x0.8	**1.65**	**1.49**
509-1045	6110.3200	10	Flange ++	4.8x0.8	**1.65**	**1.49**
509-1050	6110.3300	10	Flange ++	6.3x0.8	**1.65**	**1.49**
509-1055	6110.4115	11	Snap-In 1.5 mm +	3.5x0.8	**1.65**	**1.49**
509-1060	6110.4215	11	Snap-In 1.5 mm ++	4.8x0.8	**1.65**	**1.49**
509-1065	6110.4315	11	Snap-In 1.5 mm ++	6.3x0.8	**1.65**	**1.49**

+ Solder. ++ Quick disconnect.

Combination Inlets/Outlets 65°C,10A, 250V


12

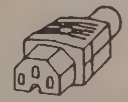


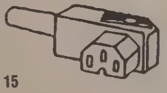

13

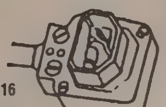
509-1070	4300.0301	12	Snap-In 0.8-2.0 mm +	4.8x0.8	**3.85**	**3.46**
509-4124	4300.0303	12	Snap-In 0.8-2.0 mm +	4.8x0.8	**4.14**	**3.73**
509-4086	KP01.1012.01	13	PCB/1.6 mm, 1.5 Panel ++	4.8x0.8	**4.20**	**3.78**
509-4088	KP01.1052.01	13	PCB/Screws, 1.5 mm Panel ++	4.8x0.8	**4.47**	**4.03**

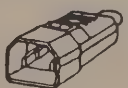
+ Solder. ++ Quick connect.

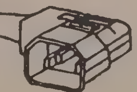
AC Plug Connector Mates, 10/15 A, 250 V

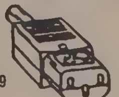

14


15


16

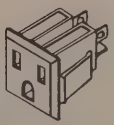

17

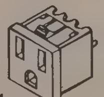

18

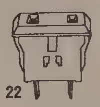

19

509-1215	4300.0603	14	Straight Entry	Screws	**6.73**	**6.06**
509-1225	4300.0607	15	Angled Entry	Screws	**7.08**	**6.44**
509-1200	4300.0401	16	Angled Entry	Screws	**7.44**	**6.36**
509-1205	4300.0407	17	Straight Entry	Screws	**8.19**	**7.37**
509-1210	4300.0411	18	Angled Entry	Screws	**8.19**	**7.37**
509-1230	4300.0602	19	Straight Entry	Screws	**4.89**	**4.02**

AC Nema 5-15R Connectors, 15A, 125V


20


21

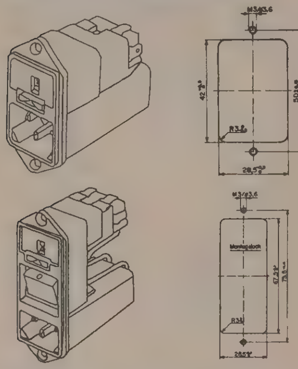

22

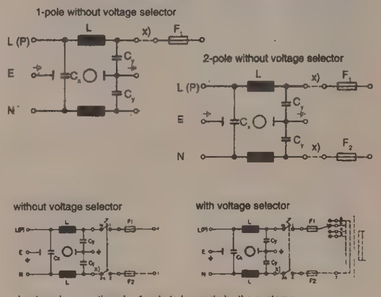
509-3000	4300.0701	20	Snap-In 0.8-1.6 mm	4.8x0.8	**.91**	**.66**
509-3001	4300.0702	21	Snap-In 0.8-1.6 mm	V Slotted	**.95**	**.73**
509-3003	4300.0705	22	Snap-In 0.8-1.5 mm	4.8x0.8	**.71**	**.64**

Power Entry Modules With Filters

The Schurter power entry modules with filters come in many variations: connector, on/off switch, 1- or 2-pole fuseholder, voltage selector, standard or medical RFI filter. These units are approved at 250 V by a multitude of international agencies including UL, CSA, VDE, SEMKO and SEV.

AC Inlet with Line Filter, 2-Pole Fuseholder, Switch and Interchangeable Fusedrawers for 1/4" × 1 1/4" or 5 × 20 mm Fuses





x) external connections for 1-pole to be made by the customer

Series 4303 and CD with single or double pole shocksafe fuseholder. Inlets available with or without series voltage selection. Series CD with DPST integral switch. Terminals are 4.8 mm × .8 mm quick-connect. Order fusedrawers separately below.

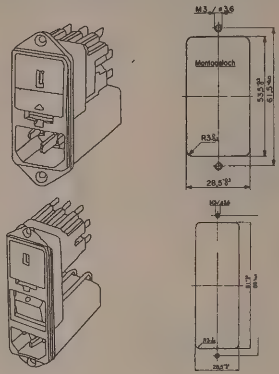
Stock No.	Mfr.'s Type	Filter (Amps)	Leakage Current	D × H × W (mm)	EACH 1-24	EACH 25-Up
509-4000	4303.5021	1 A, Standard	<0.5 mA	69.5 × 58 × 30	19.71	17.74
509-4002	4303.5022	2 A, Standard	<0.5 mA	69.5 × 58 × 30	19.71	17.74
509-4004	4303.5023	4 A, Standard	<0.5 mA	69.5 × 58 × 30	19.71	17.74
509-4006	4303.5024	6 A, Standard	<0.5 mA	69.5 × 58 × 30	19.71	17.74
509-4008	4303.5225	4 A, Medical	<5.0 µA	69.5 × 58 × 30	25.82	23.24
509-4010	4303.5227	6 A, Medical	<5.0 µA	69.5 × 58 × 30	25.82	23.24
509-4012	CD14.4101.151	1 A, Standard	<0.5 mA	69.5 × 83.5 × 30	28.56	25.71
509-4014	CD24.4101.151	2 A, Standard	<0.5 mA	69.5 × 83.5 × 30	28.56	25.71
509-4016	CDG4.4101.151	1 A, Medical	<0.5 mA	69.5 × 83.5 × 30	37.40	33.66
509-4018	CDA4.4101.151	2 A, Medical	<0.5 mA	69.5 × 83.5 × 30	37.40	33.66

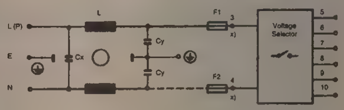
Fusedrawers

Stock No.	Mfr.'s Type	Voltage Selector	Color	Fuses	EACH 1-24	EACH 25-Up
509-3011	4303.2401	None	Black	2-Pole, 5 × 20 mm	3.21	2.89
509-3012	4303.2902	None	Grey	2-Pole, 1/4 × 1 1/4"	3.21	2.89
509-4022	4303.2406	None	Black	1-Pole, 5 × 20 mm	1.83	1.65
509-3014	4303.2912	None	Grey	1-Pole, 1/4 × 1 1/4"	7.39	6.66
509-3015	4303.2014.01	100, 120, 220, 240	Black	2-Pole, 5 × 20 mm	5.67	5.11
509-3016	4303.2714.01	100, 120, 220, 240	Grey	2-Pole, 1/4 × 1 1/4"	5.67	5.11
509-4030	4303.2114.01	100, 120, 220, 240	Black	1-Pole, 5 × 20 mm	3.97	3.58
509-3018	4303.2736.01	100, 120, 220, 240	Grey	1-Pole, 1/4 × 1 1/4"	8.24	7.42
509-4034	4303.2403*	None	Black	2-Pole, 5 × 20 mm	5.10	4.59
509-4036	4303.2904*	None	Grey	2-Pole, 1/4 × 1 1/4"	5.10	4.59
509-4038	4303.2024.01*	100, 120, 220, 240	Black	2-Pole, 5 × 20 mm	6.30	5.67
509-4040	4303.2724.01*	100, 120, 220, 240	Grey	2-Pole, 1/4 × 1 1/4"	6.30	5.67

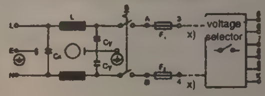
*Tool accessible only. **Note:** Fusedrawers Must Be Ordered Separately.

Line Filter with AC Connector, Series Parallel Voltage Selection and Interchangeable FuseDrawers for 1/4" × 1 1/4" or 5 × 20 mm Fuses





2-pole switch
with or without bowden cable



Series CE/CG with single or double pole shocksafe fuseholder and series parallel voltage selection. Terminals are 4.8 × 8 mm quick connect. Series CG with DPST integral switch, 35 A in-rush current.

Stock No.	Mfr.'s Type	Filter (Amps)	Leakage Current	D × H × W (mm)	EACH 1-24	EACH 25-Up
509-4042	CE10.6100.151	1 A, Standard	<0.5 mA	69 × 69.5 × 30	26.56	23.91
509-4044	CE20.6100.151	2 A, Standard	<0.5 mA	69 × 69.5 × 30	26.56	23.91
509-4046	CE30.6100.151	4 A, Standard	<0.5 mA	69 × 69.5 × 30	26.56	23.91
509-4048	CE40.6100.151	6 A, Standard	<0.5 mA	69 × 69.5 × 30	26.56	23.91
509-4050	CEG0.6100.151	1 A, Medical	<5.0 µA	69 × 69.5 × 30	34.79	31.31
509-4052	CEA0.6100.151	2 A, Medical	<5.0 µA	69 × 69.5 × 30	34.79	31.31
509-4054	CEC0.6100.151	4 A, Medical	<5.0 µA	69 × 69.5 × 30	34.79	31.31
509-4056	CEE0.6100.151	6 A, Medical	<5.0 µA	69 × 69.5 × 30	34.79	31.31
509-4058	CG10.6101.151	1 A, Standard	<0.5 mA	69 × 97 × 30	37.71	33.94
509-4060	CG20.6101.151	2 A, Standard	<0.5 mA	69 × 97 × 30	37.71	33.94
509-4062	CG30.6101.151	4 A, Standard	<0.5 mA	69 × 97 × 30	37.71	33.94
509-4064	CG40.6101.151	6 A, Standard	<0.5 mA	69 × 97 × 30	37.71	33.94
509-4068	CGG0.6101.151	1 A, Medical	<5.0 µA	69 × 97 × 30	49.39	44.36
509-4070	CGA0.6101.151	2 A, Medical	<5.0 µA	69 × 97 × 30	49.39	44.36
509-9993	CGC0.6101.151	4 A, Medical	<5.0 µA	69 × 97 × 30	49.39	44.36
509-4074	CGE0.6101.151	6 A, Medical	<5.0 µA	69 × 97 × 30	49.39	44.36

Voltage Selector

Stock No.	Mfr.'s Type	Markings	EACH 1-24	EACH 25-Up
509-3027	4305.0048.01	100, 120, 220, 240	4.30	3.40

Note: Voltage Selector Must Be Ordered Separately.

Fusedrawers

Stock No.	Mfr.'s Type	Mounting	Color	EACH 1-24	EACH 25-Up
509-3023	4305.0001	2-Pole, 5 × 20 mm	Black	3.79	3.46
509-3024	4305.0012	2-Pole, 1/4 × 1 1/4"	Grey	3.79	3.46
509-3025	4305.0021	1-Pole, 5 × 20 mm	Black	4.87	4.44
509-3026	4305.0027	1-Pole, 1/4 × 1 1/4"	Grey	4.87	4.44

Note: Fusedrawers Must Be Ordered Separately.

FilterFit Module

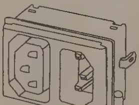
Series KP for PCB mounting for 1.5 mm panel (rear or "sandwich" mounting) available in inlet/switch, inlet/outlet and inlet/fuseholder configurations. **Dimensions (D × H × W):** 31.2 × 36 × 56.1 mm.

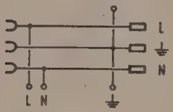
Stock No.	Mfr.'s Type	Mounting	Fig.	EACH 1-24	EACH 25-Up
509-4086	KP01.1012.01	PCB mnt. 1.6 mm	1	4.20	3.78
509-4088	KP01.1052.01	PCB mnt. screws	1	4.47	4.03
509-4130	KP01.1212.11	SPST, PCB mnt. 1.6 mm	2	6.96	6.27
509-4132	KP01.1252.11	SPST, PCB mnt. screws	2	7.28	6.56
509-4134	KP01.1112.11	DPST, PCB mnt. 1.6 mm	2	7.16	6.45
509-4136	KP01.1152.11	DPST, PCB mnt. screws	2	7.75	6.98
509-4098	KP01.1412.01	1-Pole, PCB mnt. 1.6 mm	3	4.88	4.43
509-4100	KP01.1452.01	1-Pole, PCB mnt. screws	3	5.29	4.81
509-4102	KP01.1312.01	2-Pole, PCB mnt. 1.6 mm	3	6.08	5.48
509-4103	KP01.1352.01	2-Pole, PCB mnt. screws	3	6.27	5.65

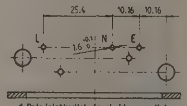
Line Filter

Stock No.	Mfr.'s Type	I (A) T 48°C	U(V)	Max Leakage Curr. (mA) 250 V/50 Hz	C (nF)	C (nF)	C (mH)	Test Voltage L,N E	Test Voltage LN	EACH 1-24	EACH 25-Up
509-4104	KPF1.1	1	Up to	<0.5	100	2.2	10	2700 V	1075	18.05	16.25
509-4106	KPF2.1	2	250 V	<0.5	100	2.2	4	DC 2	V DC	18.05	16.25
509-4108	KPF4.1	4	max.	<0.5	100	2.2	2	sec.	2	18.05	16.25
509-4110	KPF6.1	6	50/60 Hz	<0.5	100	2.2	1		sec.	18.05	16.25

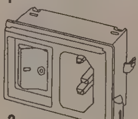
Note: "Backpack" Line Filter Must Be Ordered Separately.

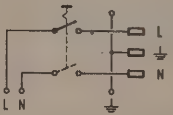

1

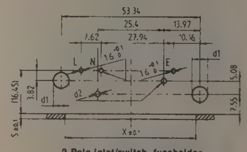




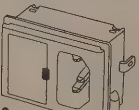
1-Pole inlet/switch, fuseholder or outlet

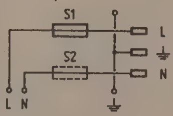

2

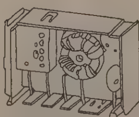


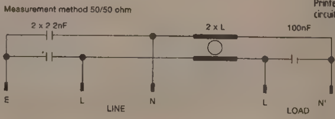


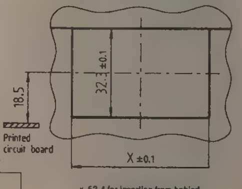
2-Pole inlet/switch, fuseholder
d1 = 6 ± 0,06 for snap-in mounting


3




Line Filter





x=52.4 for insertion from behind
x=48.4 for "sandwich" mounting

1 to 50 Watts

ISO9001 Registered Firm

Semiconductor Circuits DC to DC converters are well suited for a variety of Telecom, Industrial and Computer Equipment applications. They feature six sided shielding, high isolation, excellent regulation and a 5 year warranty. Please call Allied for other input or output configurations not listed below. Quantity pricing always available.

QA Series — 4.5 Watts

- Case Size: 1 × 2 × 0.4
- Single and Dual Outputs
- Available 4:1 Input Range
- UL 1950 Recognized
- Six Sided Shielded Metal Case
- 500 VDC I/O Isolation

Stock No.	Mfr.'s Type	Input Range (VDC)	Output Voltage (V)	Output Current (A)	EACH
					1-9
939-1000	QA22-037-05	4.50-5.25	±12	±0.185	64.00
939-1005	QA23-030-05	4.50-5.25	±15	±0.150	64.00
939-1010	QA11-075-18	9.00-36.00	5	0.750	64.00
939-1015	QA12-037-18	9.00-36.00	12	0.416	64.00
939-1020	QA13-030-18	9.00-36.00	15	0.300	64.00
939-1025	QA22-037-18	9.00-36.00	±12	±0.185	64.00
939-1030	QA23-030-18	9.00-36.00	±15	±0.150	64.00
939-1035	QA11-075-48	20.00-72.00	5	0.750	64.00

A Series — 10 Watts

- Case Size: 1 × 2 × 0.4
- Single and Dual Outputs
- -48 Models Designed to Meet ETS300-132-2
- UL 1950, CSA22.2-950, EN60950 Recognition Pending
- 5 Year Warranty
- Six Sided Shielded Metal Case
- 1500 VDC I/O Isolation

939-1040	A11-200-18	9.00-36.00	5	2.000	73.00
939-1045	A21-150-18	9.00-36.00	±5	±0.750	73.00
939-1050	A22-075-18	9.00-36.00	±12	±0.375	73.00
939-1055	A23-060-18	9.00-36.00	±15	±0.300	73.00
939-1060	A11-200-48	36.00-75.00	5	2.000	73.00
939-1065	A22-075-48	36.00-75.00	±12	±0.375	73.00
939-1070	A23-060-48	36.00-75.00	±15	±0.300	73.00

QC Series — 10 Watts

- Case Size: 1 × 2 × 0.4
- Single and Dual Outputs
- 4:1 Input Range
- UL 1950, CSA22.2-950, EN60950 Recognition Pending
- Regulated Outputs
- Unencapsulated Design
- 1500 VDC I/O Isolation

939-1075	QC11-200-18	9.00-36.00	5	2.000	63.00
939-1080	QC21-150-18	9.00-36.00	±5	±0.750	63.00
939-1085	QC22-075-18	9.00-36.00	±12	±0.375	63.00
939-1090	QC23-060-18	9.00-36.00	±15	±0.300	63.00
939-1095	QC11-200-48	18.00-75.00	5	2.000	63.00
939-1100	QC22-075-48	18.00-75.00	±12	±0.375	63.00
939-1105	QC23-060-48	18.00-75.00	±15	±0.300	63.00

GA Series — 15 Watts

- Case Size: 1.6 × 2 × 0.4
- Single and Dual Outputs
- 4:1 Input Range
- UL 1950 Recognized
- Adjustable Output
- Six Sided Shielded Metal Case
- 500 VDC I/O Isolation

939-1110	GA11-300-48	20.00-72.00	5	3.000	76.00
939-1115	GA12-125-48	20.00-72.00	12	1.250	76.00
939-1120	GA13-100-48	20.00-72.00	15	1.000	76.00
939-1125	GA22-125-48	20.00-72.00	±12	±0.625	76.00
939-1130	GA23-100-48	20.00-72.00	±15	±0.500	76.00

JP Series — 15 Watts

- Case Size: 2 × 2 × 0.4
- Triple Outputs
- 4:1 Input Range
- UL 1950 Recognized
- Adjustable Output
- Six Sided Shielded Metal Case
- 500 VDC I/O Isolation

939-1135	JP34-210-18	9.00-36.00	5/±12	1.500/±0.310	88.00
939-1140	JP35-200-18	9.00-36.00	5/±15	1.500/±0.250	88.00
939-1145	JP34-210-48	20.00-72.00	5/±12	1.500/±0.310	88.00
939-1150	JP35-200-48	20.00-72.00	5/±15	1.500/±0.250	88.00

GC Series — 20 Watts

- Case Size: 1.6 × 2 × 0.4
- Single and Dual Outputs
- 4:1 Input Range
- UL 1950, CSA22.2-950, EN60950 Recognition Pending
- High Efficiency
- Six Sided Shielded Metal Case
- 1500 VDC I/O Isolation
- -48 Models Meet ETS300-132-2

939-1155	GC11-400-18	9.00-36.00	5	4.000	68.00
939-1160	GC22-168-18	9.00-36.00	±12	±0.840	68.00
939-1165	GC23-133-18	9.00-36.00	±15	±0.667	68.00
939-1170	GC11-400-46	18.00-72.00	5	4.000	68.00
939-1175	GC22-168-46	18.00-72.00	±12	±0.840	68.00
939-1180	GC23-133-46	18.00-72.00	±15	±0.667	68.00

NL Series — 13 and 25 Watts

- 13 Watt with Case Size of 1 × 2 × 0.4
- 25 Watt with Case Size of 2 × 2 × 0.4
- 3.3 V Output
- Non-Isolated Design
- Adjustable Output
- 5 Year Warranty

939-1185	NL17-400-05C	4.50-5.25	3.3	4.000	49.00
939-1190	NL17-800-05B	4.50-5.25	3.3	8.000	49.00

TA Series — 25 Watts

- Case Size: 3 × 2.5 × 0.83
- Single/Triple Outputs
- 4:1 Input Range
- Adjustable Outputs
- Remote On/Off Control
- Six Sided Shielded Metal Case
- 500 VDC I/O Isolation

939-1195	TA11-500-18	9.00-36.00	5	5.000	120.00
939-1200	TA12-200-18	9.00-36.00	12	2.000	120.00
939-1205	TA11-500-48	20.00-72.00	5	5.000	120.00
939-1210	TA12-200-48	20.00-72.00	12	2.000	120.00
939-1215	TA34-500-48	20.00-72.00	5/±12	3.500/±0.750	120.00
939-1220	TA35-450-48	20.00-72.00	5/±12	3.500/±0.750	120.00

FM Series — 50 Watts

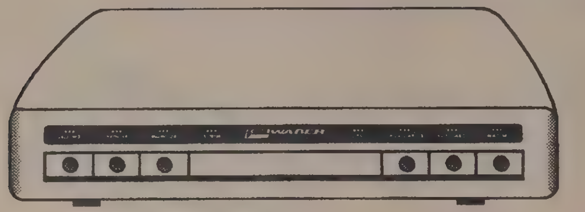
- Case Size: 2.6 × 4 × 0.5
- Single and Triple Outputs
- 4:1 Input Range
- Adjustable Outputs
- Remote On/Off Control
- Six Sided Shielded Metal Case
- 1500 VDC I/O Isolation
- Parallelable (Singles Only)
- UL 1950 Pending

939-1225	FM11-1000-48	20.00-72.00	5	10.000	120.00
939-1230	FM12-420-48	20.00-72.00	12	4.200	120.00
939-1235	FM34-750-48	20.00-72.00	5/±12	6.000/±0.750	120.00
939-1240	FM35-730-48	20.00-72.00	5/±15	6.000/±0.650	120.00

SL WABER
THE LEADER IN POWER TECHNOLOGY

Industrial Line/UPS Products/Surge Suppressors/Power Conditioners

UPSTART™ 5-in-1 Uninterruptible UPS System — NEW —

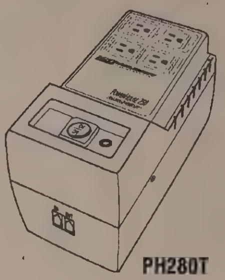


- **Maintains Computer Operations During Power Outages**
- **Electronic Bookmark™ Saves and Restores Your Data**
- **Dedicated Modem Protection**
- **Safeguards Your System From Power Surges**
- **Controls Your System More Conveniently**

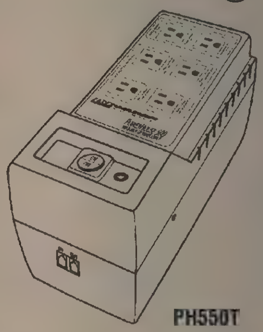
UPSTART™ has dual 250 VA uninterruptible power outputs which support most MAC and PC systems. Reacts to power failures in less than 4 milliseconds; 5-minute back-up power keeps your computer running during power outages or voltage fluctuations, and is powerful enough to support a 166 MHz Pentium with a 17" monitor. Has status LED and audible alarm to signal power interruption. Electronic Bookmark™ software, effective with up to 32 MB of RAM, saves your files during a power interruption, and on power-up automatically reboots and restores your data. Power Sleep™ allows three simple keystrokes to initiate quickly the UPSTART™ Save and Restore feature manually. Gives your computer a true sleep function. (Electronic Bookmark™ and Power Sleep™ not available for Macintosh or DOS-only PCs). DataGard™ protection system has 1-billionth-of-a-second response time to stop surges, even when the master switch is off. Protects against EMI/RFI. Electrostatic discharge plate for quick and safe transfer of charge to ground. LEDs indicate surge protection and grounding status. Solid-state modem protection. Master ON/OFF switch. **Specifications. Input Voltage:** 120 V. **Input Current:** 12 amps. **Output Voltage:** 120 V. **Computer and Monitor Output Backup Power:** 250 VA/170 W. **CPU, Monitor, Printer, Aux. 1 and Aux. 2 Output Current:** 12 amps. **Cord Length:** 6'. **Max. Detection and Transfer Time:** ≤4 msec. **Low Voltage Detection Level:** 95 V (±2%). **Transfer Back to AC Level:** 105 V (±2%). **High Voltage Detection Level:** 137 V (±2%). **Transfer Back to AC Level:** 130 V (±2%). **Battery Type:** Sealed Lead Acid Battery. **Typical Life Expectancy:** 3-6 years. **Battery Rating:** 6 V, 4 Ah. **Recharge Time:** Less than 2 hours. **Number of Batteries Required For Operation:** 2.

893-0050. UPSTART™. **1-2**..**EACH 199.00**

Powerhouse UPS Systems



PH280T



PH550T

- **Automatic Self-Testing Of Internal Circuitry and Load**
- **Backup Time: 5 Minutes At Full Load, 14 Minutes At Half Load**
- **True Step-Sine Wave Output**
- **Visual/Audible Indicators**
- **Weight: PH250/280T — 7 Lbs.; PH500/550T — 12 Lbs.**
- **Full Recharge Time of 2 Hours**
- **Field-Replaceable Recyclable Batteries**

The most advanced technology currently available in power backups. On-board computers constantly monitor the amount of power going to your computer, and warn you if you draw too much power during a brownout or a blackout. Field replaceable and recyclable batteries make it easy for you to keep your system safe at all times. MAC and PC compatible. Two year warranty and $25,000 Connected Equipment Guarantee. UL Listed, CSA Certified. **Telephone Line Protection (Models PH280T, PH550T). Phone Connection:** Type RJ11. **Lines Protected:** Pins 2 and 3 (tip to ground, ring to ground). **Lines Connected:** 4 (lines 1, 2, 3, 4). **Phone Cord Length:** 6'.

Stock No.	Mfr.'s Type	Output Rating (VA)	EACH
893-5400	PH250	250	**109.00**
893-5410	PH500	500	**219.00**
893-5415	PH280T*	280	**129.00**
893-5425	PH550T*	550	**249.00**

*Advanced solid state protection for modem lines (RJ11).

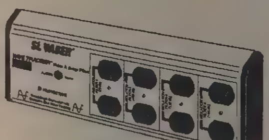
Wavetracker™ Surge and Noise Suppressors

Wavetracker Series features 3 stage surge protection (gas tube, avalanche diode, MOV) which provides a superior technology over surge protectors utilizing only MOVs. Units also feature sine wave tracking which exhibits a clamping envelope that molds to the shape of the sine wave and greatly reduces the magnitude of the spike. Models have achieved 1449 best rating of 330 V, and carries a Lifetime/Connected Equipment Guarantee. Applications include CAD stations, telecommunications equipment and multi-media systems.

WT2P

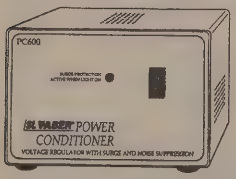
Stock No.	Mfr.'s Type	No. of Outlets	Noise Attention (dB)	Max. Surge Current	Surge Indication	EACH
						1-5
893-9995	WT2P	2	75	92,025 A	Aud./Vis.	**59.95**
893-9700	WT4	4	100	104,025 A	Aud./Vis.	**94.95**
893-9710	WT4M*	4	100	104,025 A	Aud./Vis.	**114.95**
893-9715	WT6	6	110	116,025 A	Aud./Vis.	**69.96**
893-9725	WT8	8	125	128,025 A	Aud./Vis.	**129.95**

*Offers telecommunication line protection (RJ11). All Wavetrackers come with 6' cord (except WT2P which is a direct plug in).



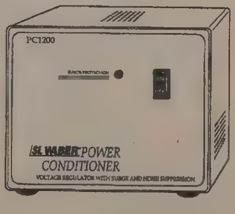
WT8

Power Conditioners



PC600
SL WABER POWER CONDITIONER
VOLTAGE REGULATOR WITH SURGE AND NOISE SUPPRESSION

PC600



PC1200
SL WABER POWER CONDITIONER
VOLTAGE REGULATOR WITH SURGE AND NOISE SUPPRESSION

PC1200

- **Visual Surge Indication**
- **120 VAC, 50/60 Hz**
- **Output Regulation: +5%, –8%**

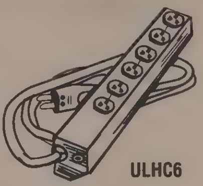
Power Conditioner Series offers 5 models to choose from depending upon your system requirements. They feature both under voltage and over-voltage regulation and range from 300 VA to 2400 VA. Each model filters out unwanted noise and utilizes our patented 3-stage surge suppression design consisting of gas tube, avalanche diode, and MOVs, all providing protection against surges. Applications include computers, instrumentation, medical/laboratory, and industrial equipment.

Stock No.	Mfr.'s Type	No. of Outlets	Input Voltage	Output Rating (VA)	Power Cord	Max. Surge Current	EACH
							1-2
893-9740	PC300	2	95-138	300	6' - 18/3	98,525 A	**119.00**
893-9745	PC600	4	95-138	600	6' - 16/3	98,525 A	**159.00**
893-9960	PC1200	4	95-138	1200	6' - 14/3	98,525 A	**173.79**
893-9965	PC1800	6	95-138	1800	6' - 14/3	98,525 A	**339.00**
893-9845	PC2400	6	95-138	2400	6' - 12/3	98,525 A	**339.00**

If you cannot find a product that fits your needs, SL Waber can custom design one for you. Call Allied for a custom quote.

Medgard® Hospital Grade Outlet Strips

- ► Hospital-Grade Plug, Cord and Outlets
- ► 10 Microamps Maximum Leakage
- ► Lifetime Warranty


ULHC6

Manufactured exclusively for use in hospitals, nursing homes, cleanrooms, and labs. Steel case, white. 15 A/125 V, 60 Hz, 1875 watts continuous duty. 14/3 SJT Cord. UL Listed, CSA Certified. Keyhole slot mounting.

Stock No.	Mfr.'s Type	No. of Outlets	Cord Length	EACH
				1-9
893-1080	ULHC4-6	4	6'	47.95
893-1085	ULHC4-15	4	15'	52.95
893-1090	ULHC6-6	6	6'	58.95
893-1095	ULHC6-15	6	15'	63.95

Trim-Line Power Outlet Strips

These rugged, versatile, multi-length strips provide a real convenience wherever multiple outlet strips are required. Widely used in racks, and on workbenches, production lines and lab tables. 15 A/125 VAC, 60 Hz, 1875 watts continuous duty. All models feature master switch, pilot light and circuit breaker. Outlets "U" ground. UL Listed. Keyhole slot mounting.

Stock No.	Mfr.'s Type	Case Length	Outlet Centers	No. of Outlets	Cord Length	EACH
						1-9
893-1040	UL7408-6*	4'	5.750"	8	6'	50.90
893-1045	UL7408-15*	4'	5.750"	8	15'	43.68
893-1055	UL7415-15	4'	2.875"	15	15'	64.03
893-1060	UL7610-6	6'	7.000"	10	6'	60.85
893-5120	UL7610-15	6'	7.000"	10	15'	65.10
893-5130	UL7619-6	6'	3.500"	19	6'	70.95
893-1075	UL7619-15	6'	3.500"	19	15'	75.15

*CSA Certified.

Permanent Installation Series

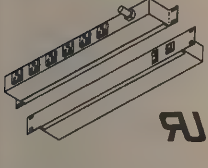
Type 4413

These permanently mounted models install quickly with a minimum of effort. Ample room is provided inside the unit for greater ease in wiring and installation. Additional insulated wires can easily be run through the case. Time, labor, and total installation costs are significantly reduced. Outlets are pre-wired with leads included for quick wire nutting to your entry cable. Knockouts for a 1/2" connector are provided on both ends. 15 A/125 VAC, 60 Hz, 1875 watts continuous duty. **Outlets:** "U" ground. **Beige Internal Wiring:** 14 AWG insulated, beige steel case.

Stock No.	Mfr.'s Type	Centers	Case Length	No. of Outlets	EACH
					1-9
893-5210	4309	3.5" (88.90)	3'	9	34.40
893-5230	4413	3.5" (88.90)	4'	13	43.00
893-5240	4515	3.5" (88.90)	5'	15	47.00
893-5250	4610	7.0" (177.80)	6'	10	45.22
893-9705	4619	3.5" (88.90)	6'	19	56.32

— NEW —

Rack Mount Outlet Strip with Right Angle Receptacles



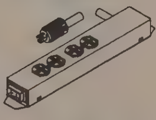
The greatest convenience item and time saver ever conceived for racks, enclosures, desks, cabinets, oversized and right angle plugs such as transformers and chargers. Type 911CBRA offers instant power distribution from back of unit. Fits standard 19" rack enclosures. 15 A/125 VAC, 60 Hz, 1875 watts continuous duty. **Outlets:** 6 "U" ground. Steel case with master switch/pilot on front panel. Circuit breaker protection. Cord 14/3. **Front:** 19"L × $1^{23}/_{32}$"W. **Back:** 17"L, $1^{11}/_{16}$"W × $2^{3}/_{8}$"D. **Mounting:** $18^{1}/_{4}$" × $1^{1}/_{4}$".

Stock No.	Mfr.'s Type	No. of Outlets	Cord Length	EACH
				1-9
893-0014	911CBRA-15	6 Back	15'	59.95

15 Amp/250 VAC Outlet Strip

— NEW —

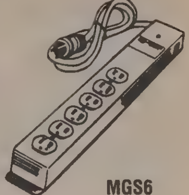
- ► 15 A/250 VAC
- ► 6' 14/3 SJT Cord with NEMA L6-15P Twist Lock Plug
- ► 4 Outlets
- ► UL Listed/CSA Certified
- ► Mounting Centers: 10.312"
- ► Keyhole Slot Mounting



Stock No.	Mfr.'s Type	No. of Outlets	Cord Length	EACH
				1-5
893-0016	4250-6	4	6'	96.80

Medgard® Hospital Grade Surge Suppressors

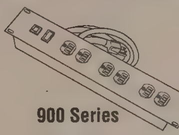
- ► "Green-Dot" Medical-Grade Components
- ► 3 Stage Surge Filter
- ► Visual Surge Indication
- ► 30 Microamps Maximum Leakage
- ► Lifetime Warranty


MGS6

UL listed plug, cord and receptacles. White steel case. 15 A/125 VAC, 60 Hz. **Maximum Surge Current:** 38,525 A. **Surge Voltage:** 6,000 V, UL2449 rating of 400 V. <1 PSEC response. Keyhole slot mounting.

Stock No.	Mfr.'s Type	No. of Outlets	Cord Length	EACH
				1-9
893-9935	MGS4-6	4	6'	70.40
893-9940	MGS4-15	4	15'	63.72
893-9945	MGS6-6	6	6'	68.49
893-9950	MGS6-15	6	15'	71.87

Rack Mount Series


900 Series

The greatest convenience item and time saver ever conceived for racks, enclosures, desks and cabinets. Waber rack mounts offer instant power distribution from front, back or a combination of both. Units fit standard 19" rack enclosures. 15 A/125 VAC, 60 Hz, 1875 watts continuous duty. **Outlets:** 6 "U" Ground. Steel case with master switch/pilot on front panel. Circuit breaker protection. Cord 14/3. **Types 900, 904. Front:** 19"L × $3^{11}/_{32}$"W. **Back:** 17"L × $3^{11}/_{32}$"W × $2^{3}/_{8}$"D. **Mounting Centers:** $18^{1}/_{4}$" × 3". **Types 903, 911. Front:** 19"L × $1^{23}/_{32}$"W. **Back:** 17"L × $1^{11}/_{16}$"W × $2^{3}/_{8}$"D. **Mounting:** $18^{1}/_{4}$" × $1^{1}/_{4}$".

Stock No.	Mfr.'s Type	No. of Outlets	Cord Length	EACH
				1-9
893-3170	900CB	6 Front	6'	40.44
893-5185	904CB	2 Fr. 4 Back	6'	47.88
893-3180	903CB	6 Front	6'	43.65
893-3185	903CB-15	6 Front	15'	47.88
893-3200	911CB	6 Back	6'	46.08
893-3205	911CB-15	6 Back	15'	50.33

Trim-Line Surge Suppressors

— NEW —

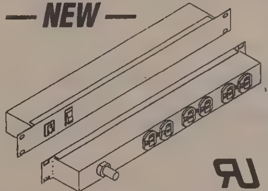
SS7408

These rugged, versatile, multi-length surge suppressors are widely used in racks, workbenches, production lines, lab tables, and any place where sensitive electronics need to be protected. 15 A/125 VAC, 60 Hz, 1875 watts continuous duty. All models feature master switch/pilot light and circuit breaker. **Outlets:** "U" ground. Keyhole slot mounting.

Stock No.	Mfr.'s Type	Joule Rating	Max Surge Current	Case Length	No. of Outlets	Cord Length	EACH
							1-5
893-0011	SS7408-6	450 J	36,000 A	4'	8	6'	65.38
893-0012	SS7415-15	450 J	36,000 A	4'	15	15'	81.29
893-0013	SS7619-6	450 J	36,000 A	6'	19	6'	85.75

— NEW —

20 Amp Rack Mount Outlet Strip



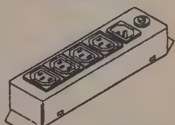
Fits standard 19" rack enclosures. 20 A/125 VAC, 60 Hz, 2500 watts continuous duty. **Outlets:** 6 "U" ground. Steel case with master switch/pilot light on front panel and outlets on back. Circuit breaker protection. Cord 12/3.

Stock No.	Mfr.'s Type	No. of Outlets	Cord Length	EACH
				1-5
893-0015	X911CB-186	6 Back	15'	79.00

10 Amp/250 VAC Outlet Strip with IEC Outlets

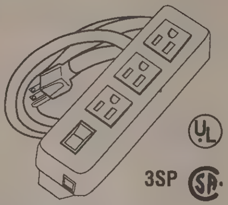
— NEW —

- ► 10 A/250 VAC
- ► 4 IEC 320 Outlets, 1 IEC Male Inlet
- ► No Cord
- ► 10 Amp Circuit Breaker
- ► UL Listed/CSA Certified
- ► Keyhole Slot Mounting



Stock No.	Mfr.'s Type	No. of Outlets	EACH
			1-5
893-0017	X999-646	4 Female; 1 Male IEC	34.00

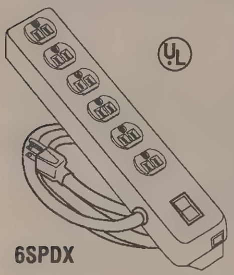
Power Master® Industrial Outlet Strips


3SP

Now convert one outlet into 3-to-8 safely! Perfect solution for the home, office, or workshop. Heavy-duty, metal housing units with circuit breaker protection. **Maximum Rating:** 15 A/125 VAC, 60 Hz, 1875 watts continuous duty. "U" ground outlets. Keyhole slot flush mounting on back. 14/3 SJT 6' cord/molded plug. UL Listed, CSA Certified.

Stock No.	Mfr.'s Type	No. of Outlets	Master Switch	Pilot Light	EACH
					1-9
893-5000	3SP	3	Yes	Yes	16.60
893-5030	6SP	6	Yes	Yes	19.95
893-5050	8	8	No	No	19.95

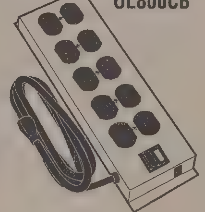
Power Master® Residential Outlet Strips


6SPDX

Feature circuit breaker protection, steel housing, duplex outlets, heavy duty cord/plug. **Maximum Rating:** 15 A/125 VAC, 60 Hz, 1875 watts continuous duty. All have master switch/pilot lights. UL Listed. Keyhole slot flush mounting on back.

Stock No.	Mfr.'s Type	No. of Outlets	Cord Length	EACH
				1-9
893-9890	4SPDX	4	6'	13.95
893-9850	6SPDX	6	6'	15.95
893-5100	6SPDX-15	6	15'	19.95

Deluxe Heavy Duty Outlet Strips


UL800CB

Provides a number of grounded outlets in a small area. Applications include workstations, labs or production workbenches. **Maximum Rating:** 15 A/125 VAC, 60 Hz, 1875 watts continuous duty. UL Listed. Keyhole slot flush mounting on back.

Stock No.	Mfr.'s Type	No. of Outlets	Cord Length	EACH
				1-9
893-1005	UL25PCB-6*	7	6'	70.75
893-1010	UL25PCB-15*	7	15'	59.42
893-1015	UL800CB-6	10	6'	43.80
893-1020	UL800CB-15	10	15'	48.05

*CSA Certified.

Mid-Length Heavy Duty Outlet Strips

UL15CB

Mid-length models have provided industry, offices, schools and labs with a standard of excellence. **Maximum Rating:** 15 A/125 VAC, 60 Hz, 1875 watts continuous duty. Circuit breaker protection. 14/3 SJT power cord/molded plug. "U" ground outlets. Standard units have keyhole slot flush mounting on back with 12.75" centers. **Dimensions:** 13.25" × 2.375" × 1.5".

Stock No.	Mfr.'s Type	No. of Outlets	Master Switch	Cord Length	EACH
					1-9
893-3080	UL15CB-6*	7	Yes	6'	32.02
893-3085	UL15CB-15*	7	Yes	15'	36.27
893-3090	UL17CB-6*	9	No	6'	30.20
893-3115	24CB-15	6	Yes	15'	26.18
893-3120	UL24CB-6*	6	Yes	6'	28.57

*Denotes UL Listed, CSA Certified models with keyhole slot flush mounting on back of 10.313" centers.

Compact Heavy-Duty Outlet Strips

UL602CB

Designed for applications where size is a consideration. **Maximum Rating:** 15 A/125 VAC, 60 Hz, 1875 watts continuous duty. **Dimensions:** 8.75" × 2.375" × 1.5". "U" ground outlets. Seamless steel case, baked on finish. 14/3 SJT power cord/molded plug. Standard units have permanent mounting holes of 8.25" centers.

Without Circuit Breaker

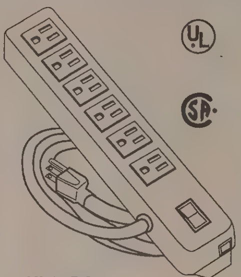
Stock No.	Mfr.'s Type	No. of Outlets	Master Switch	Cord Length	EACH
					1-9
893-3005	602	5	NO	6'	14.46
893-3010	602-15	5	NO	15'	18.70

With Circuit Breaker

Stock No.	Mfr.'s Type	No. of Outlets	Master Switch	Cord Length	EACH 1-9
893-3015	UL602CB-6*	5	NO	6'	21.82
893-3035	UL603CB-6*	4	NO	6'	20.66
893-3040	UL603CB-15*	4	NO	15'	20.25

*Denotes UL Listed, CSA Certified models with keyhole slot flush mounting on back with 5.813" centers.

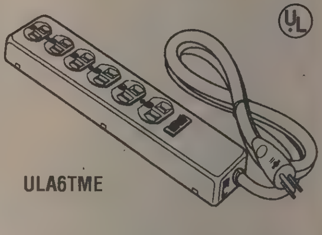
90° Design Mid-Length Outlet Strips


UL24RA

Ideal for oversized and right angle plugs such as transformers, converters, and chargers. 15 A/125 VAC, 60 Hz, 1875 watts continuous duty. "U" ground outlets. Circuit breaker, master switch/pilot light. 14/3 SJT cord/molded plug. Steel case. Keyhole slot flush mounting on back with 10.313" centers. **Dimensions:** 13.25" × 2.375" × 1.5". UL Listed, CSA Certified.

Stock No.	Mfr.'s Type	No. of Outlets	Cord Length	EACH
				1-9
893-5150	UL24RA-6	6	6'	29.74
893-5160	UL24RA-15	6	15'	33.99

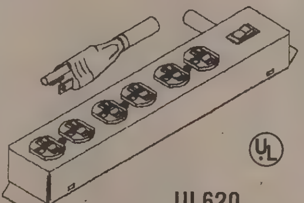
Premier Series Outlet Strips


ULA6TME

The designer premier series feature lower profile contoured shape. Color coordinated components are perfect fore areas where aesthetics are most important. Applications include offices, workstations, laboratories, computer equipment store displays and more. Particularly useful in contract applications. steel housing with circuit breaker protection. **Maximum Rating:** 15 A/125 VAC, 60 Hz, 1875 watts continuous duty. Keyhole slot flush mounting on back.

Stock No.	Mfr.'s Type	No. of Outlets	Master Switch with Pilot Light	Cord Length	EACH
					1-9
893-2010	ULA4TME-6	4	Yes	6'	15.43
893-2015	ULA4TME-15	4	Yes	15'	22.95
893-2030	ULA6TME-6	6	Yes	6'	24.95
893-2035	ULA6TME-15	6	Yes	15'	28.95

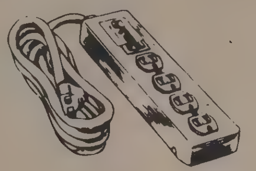
20 Amp Multiple Outlet Strips


UL620

Designed for applications where more than 15 amps are required. (Will accept 15 or 20 amps plug). **Maximum Rating:** 20 A/125 VAC, 60 Hz, 2500 watts continuous duty. 12/3 SJT power cord/molded plug. Circuit breaker protection, steel housing. Keyhole slot flush mounting on back. 10.313" centers. UL Listed.

Stock No.	Mfr.'s Type	No. of Outlets	Master Switch	Cord Length	EACH
					1-9
893-2040	UL620-6	6	Yes	6'	73.49
893-2045	UL620-15	6	Yes	15'	62.22

Datagard® Economical Series



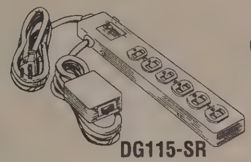
DG204

Provides economical surge protection for general office equipment such as typewriters, word processors and calculators. Both models meet UL Standard 1449 with 330 volt rating. Units have visual surge indication and resettable circuit breaker. 15 A/125 V, 60 Hz, 1875 watts continuous duty. Cool grey in color and a 10 Yr./$2,500 Connected Equipment Guarantee.

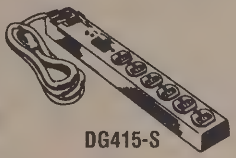
Stock No.	Mfr.'s Type	Joule Rating	Max. Surge Current	No. of Outlets	Cord Length	EACH
						1-9
893-9860	DG204	450 J	36,000 A	4	6'	**24.95**
893-9865	DG206	450 J	36,000 A	6	6'	**29.95**

Datagard® Office Grade Series

DG115-SI



DG115-SR



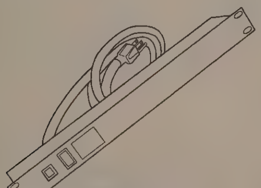
DG415-S

Specifically designed to protect computers, P.O.S. terminals, sensitive instrumentation and other electronic equipment containing sensitive micro-processors. All three models meet UL Standard 1449 with 330 volt rating. Units have visual surge indication (except DG115-SR-Audible) and resettable circuit breaker. 15 A/125 V, 60 Hz, 1875 watts continuous duty. Cool grey color and a Lifetime/$10,000 Connected Equipment Guarantee.

Stock No.	Mfr.'s Type	Joule Rating	Max. Surge Current	Noise Attenuation	No. of Outlets	Cord Length	EACH
							1-9
893-9880	DG115-SI	450 J	36,000 A	up to 55 dB	6	6'	**49.95**
893-9976	DG115-SR*	450 J	36,000 A	up to 55 dB	6	6'	**69.95**
893-9870	DG415-S**	450 J	36,000 A	up to 55 dB	6	6'	**43.00**

*Remote Switch Cord is 4/12'. **Comes with 2 RJ11 Phone Jacks.

Datagard® Industrial Series



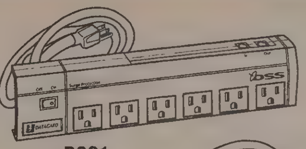
DG315-R

Designed for large office and industrial applications specifically where noise is a critical factor. Both models meet UL Standard 1449 with 330 volt rating. Units have both audible and visual indication with resettable circuit breaker. 15 A/125 V, 60 Hz, 1875 watts continuous duty. Cool grey in color (except DG315-R which is black) and a Lifetime/$10,000 Connected Equipment Guarantee.

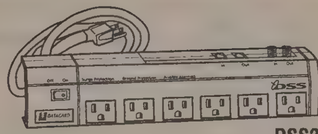
Stock No.	Mfr.'s Type	Joule Rating	Max. Surge Current	Noise Attenuation	No. of Outlets	Cord Length	EACH
							1-9
893-9885	DG315-SA	450 J	36,000 A	up to 65 dB	6	6'	**46.00**
893-9875	DG315-R*	450 J	36,000 A	up to 65 dB	6	6'	**71.00**

***Dimensions for 19" Rack Mount:** Front Plate — 19"L × 1 23/32"W; Back Cover — 17" L × 1 11/16"W × 2 3/8"D.

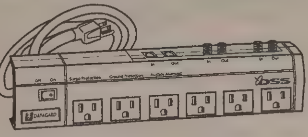
Datagard® Audio/Video Series



DSS1



DSS2

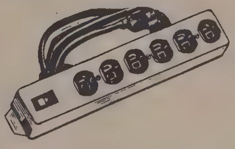


DSS3

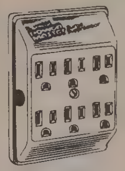
Provides sophisticated surge protection for audio/video equipment, TVs, VCRs, modems, fax home theatre installations and computer systems. All models meet UL Standard 1449 with 330 volt rating (except DSS1 which is 400 V). Models have both audible and visual surge indication (except DSS1 which is visual only) and resettable circuit breaker. 15 A/125 V, 60 Hz, 1875 watts continuous duty. All models come with 6 outlets, 6' cord, black color and a Lifetime/$25,000 Connected Equipment Guarantee (except DSS1 which has a 5 Yr./$5,000 Connected Equipment Guarantee.

Stock No.	Mfr.'s Type	Voice Fax	Coax Line	Ground Indicator	Max. Surge Current	EACH
						1-9
893-0005	DSS1	1 set	—	—	32,500 A	**29.95**
893-0006	DSS2	1 set	1 set	LED	49,000 A	**59.95**
893-0007	DSS3	1 set	2 sets	LED	49,000 A	**69.95**

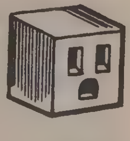
Power Master® Surge and Noise Suppressors



PM6-NS



PM6-NP



PM1-N

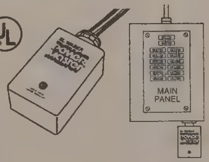
Provides protection against voltage surges and electromagnetic interference. Ideal for less sophisticated electronic equipment. All models meet UL standard UL 1449 with 400 volt rating (except PM6SE and PM6NS which are 500 V). Models have visual surge indication. 15 A/125 V, 60 Hz, 1875 watts continuous duty. N = Noise Protection.

Stock No.	Mfr.'s Type	Max. Surge Current	No. of Outlets	Description	EACH
					1-9
893-9910	PM6-NS	13,000 A	6	Strip with 6' Cord	**23.95**
893-9920	PM6-NP	4,500 A	6	Wall Mount	**14.50**
893-9905	PM6-S*	13,000 A	6	Strip with 6' Cord	**19.95**
893-9930	PM1-N	4,500 A	1	Wall Mount	**14.95**
893-9925	PM1*	4,500 A	1	Wall Mount	**7.60**

*Surge Suppression Only.

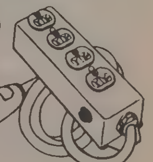
Power Master® Whole House Surge Arrestor

Protects household electrical and electronic equipment from transient voltage surges entering via the main power supply line. The Whole House Surge Arrestor is designed to be hardwired into house circuitry and mounts easily on the circuit breaker panel box. Engineered to absorb maximum surge current of 32,000 amps. Clamping response time of less than 1 nsec, is UL Listed and carries a 3 Year Limited Warranty.



Stock No.	Mfr.'s Type	Joule Rating	Max. Surge Current	Oper. Line Voltage	EACH
					1-9
893-9955	WH1	490 J	32,000 A	120 V/240 V	**69.95**

Datagard® 20 Amp Surge Suppressor



Protect 20 amp heavy duty office equipment and industrial machinery. Lifetime Connected Equipment Guarantee. UL 1449, 400 V rating, 3 lines protected, 6' double insulated 12/3 SJT cord with molded 3 prong, 20 amp NEMA 5-20P insulated grounding plug.

893-9520. DG420-A..**EACH 79.16**

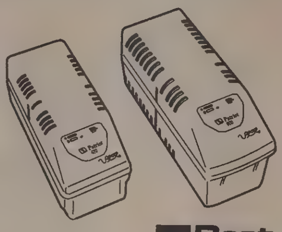
— NEW —

BEST On-Line Uninterruptible Power Systems

Patriot® Standby Power Systems

- Advanced Microprocessor Control for Faster Response and Better Battery Management
- Protection Against Both Low- and High-Voltage Conditions
- Fewer Parts for Greater Reliability
- 97% Efficiency On-Line
- Patriot Models Available Up to 920 VA*
- Nominal Input Voltage: 120 VAC (230 VAC)
- Output Voltage: 120 VAC ±5% (230 VAC ±5%)
- Output Waveform: On Inverter 34 Regulated Step-Wave, Optimized for Switch-Mode Power Supplies; On-Line 3/4 Sine-Wave (Matches Input Waveform)
- Safety: UL Listed, cUL Listed to Canadian Standards (TUV)
- Efficiency: SMT, >95% On-Line
- Battery Charger: SMT Typical Recharge Time to 90% Is Less Than 6 Hours

*Call Allied for details.



Patriot low-cost standby power systems feature advanced microprocessor control for fast response time. Microprocessor control also delivers better battery management to ensure optimum runtime when power fails — and the battery quickly recharges when power returns. In addition, the SMT 420 VA, 650 VA, and 920 VA Patriot models have a communications port that enables networking and communications capabilities. All Patriot models are compatible with BEST CheckUPS® and CheckUPS II power management, monitoring and shutdown products.

Stock No.	Mfr.'s Type	Volts In/Out	Capacity (VA/W)	Typical Runtime Min.	Dimensions H × W × D	Receptacle Quantity and Type	EACH
							1-2
938-0010	SMT280B	120	280/175	10	5 × 5 × 11.5"	(2) 5-15R	129.00
938-0220	SMT280T	230	280/175	10	5 × 5 × 11.5"	(2) IEC-320 (10 A)	135.00
938-0015	SMT420B	120	420/260	5	5 × 5 × 11.5"	(2) 5-15R	152.00
938-0225	SMT420T	230	420/260	5	5 × 5 × 11.5"	(2) IEC-320 (10 A)	175.00
938-0400	SMT650U	120	650/400	5	9 × 6 × 13.5"	(6) 5-15R	306.48
938-0450	SMT650E	230	650/400	5	9 × 6 × 13.5"	(6) 5-15R	337.23
938-0460	SMT920U	120	920/560	5	9 × 6 × 13.5"	(6) 5-15R	599.00
938-0470	SMT920E	230	920/560	5	9 × 6 × 13.5"	(6) IEC-320	599.00

Fortress® Uninterruptible Power Systems (UPS)

- True On-Line UPS Protection from 360 VA to 3 KVA
- Prevent Any Break in Computer-Grade Power to Your Equipment
- Boost Voltage During Line-Power Sags without Drawing on Battery Power
- Intelligent and Convenient User Interface Keeps You Informed — Protects Against Exceeding UPS Capacity
- Automatic Battery Replacement Warning for Added Reliability
- Nominal Input Voltage: 120 VAC (230 VAC)
- Output Voltage: 120 VAC (230 VAC)
- Output Waveform: Pure Sine-Wave, Less than 5% THD on Inverter, Same as Input on AC Line
- Safety: UL Listed, cUL Listed, TUV Approved
- Efficiency: 95% (On-Line)
- Communications Port: Contact Closures (Inverter or Alarm) or RS232 Bidirectional Communication (User Selectable)
- Battery: Sealed, Maintenance-Free, UL 924-Recognized
- Battery Charger: Temperature-Compensated Charger; Typical Recharge Time to 85% Is 3-12 Hours (Depending on Model)

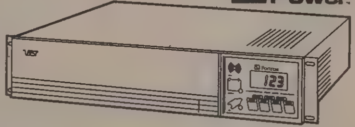
Adaptive power tracking continuously scans incoming power to protect LAN servers and critical network nodes, internetworking and telecommunications equipment, as well as midrange computers. A recent field study of users conducted by an independent agency reported Fortress as having a mean time between failure (MTBF) rate of over 300,000 hours. Intelligent, easy user-interface allows programming of various operating parameters to customize the system to individual requirements without additional software. All Fortress models are fully compatible with CheckUPS®, CheckUPS II and SNMP power management, monitoring, remote interface and control products.

Stock No.	Mfr.'s Type	Capacity (VA/W)	Runtime Min.		Dimensions H × W × D	Weight (Lbs.)	Receptacle Quantity and Type	EACH
			Full Load	Half Load				1-2
938-0035	LI660B	660/400	6.5	18	6.50 × 5.25 × 15.50"	28	(4) 5-15R	487.00
938-0040	LI1020B	1020/675	7.0	19	10.75 × 5.25 × 17.25"	45	(4) 5-15R	710.00
938-0045	LI1420B	1420/960	7.0	19	10.25 × 8.00 × 17.25"	65	(6) 5-15R	887.00
938Q0235	LI1.7KF[2]	1700/1275	13.0	40	17.25 × 8.00 × 20.00"	113[5]	(4) 5-15R (2) 5-20R	1379.00
938Q0240	LI1.7KFX[1, 2]	1700/1275	13.0	40	17.25 × 8.00 × 20.00"	122[6]	(4) 5-15R (2) 5-20R	1466.00
938Q0500	LI1.7KG[2]	1700/1275	13.0	40	17.25 × 8.00 × 20.00"	113[5]	(4) 5-15R (2) 5-20R	1420.00
938Q0550	LI1.7KGX[1, 2]	1700/1275	13.0	40	17.25 × 8.00 × 20.00"	122[6]	(4) 5-15R (2) 5-20R	1466.00
938Q0245	LI2KF[3]	2000/1500	10.0	30	17.25 × 8.00 × 20.00"	113[5]	(4) 5-15R (2) 5-20R	1380.00
938Q0560	LI2KG[3]	2000/1500	10.0	30	17.25 × 8.00 × 20.00"	113[5]	(4) 5-15R (2) 5-20R	1380.00
938Q0250	LI2KH[3]	2000/1500	10.0	30	17.25 × 8.00 × 20.00"	113[5]	(4) 5-15R (1) L5-30R	1380.00
938Q0255	LI2.5KP[3]	2500/1870	15.0	39	17.25 × 8.00 × 23.25"	155	(2) 5-15R (1) L5-30R	2155.00
938Q0260	LI2.5KPX[1, 3]	2500/1870	27.5	62	17.25 × 8.00 × 23.25"	185	(2) 5-15R (1) L5-30R	2413.00
938Q0265	LI3KL[4]	3000/2250	12.0	33	17.25 × 8.00 × 23.25"	155	(4) 5-15R (2) 5-20R	2155.00
938Q0270	LI3KLX[1, 4]	3000/2250	22.0	50	17.25 × 8.00 × 23.25"	185	(4) 5-15R (2) 5-20R	2378.00
938Q0565	LI3KQ[4]	3000/2250	12.0	33	17.25 × 8.00 × 23.25"	155	(4) 5-15R (2) 5-20R	2155.00
938Q0570	LI3KQX[1, 4]	3000/2250	22.0	50	17.25 × 8.00 × 23.25"	185	(4) 5-15R (2) 5-20R	2379.00
938Q0575	LI3KR	3000/2250	12.0	33	17.25 × 8.00 × 23.25"	155	Hardwired input and output	2162.00

[1] Extended runtime option. [2] Requires a 5-20R input receptacle. [3] Requires L5-30R input receptacle. [4] Requires 5-50R input receptacle. [5] Unit = 56 lbs.; batteries = 57 lbs. Shipped in two packages. [6] Extended runtime base unit. Unit = 63 lbs.; batteries = 59 lbs. Shipped in two packages.

Fortress® Rackmount UPS

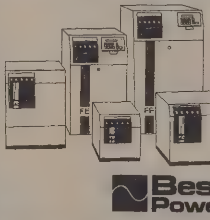
Rackmount Fortress UPS models are ideally suited for the expanding number of users of servers, hubs, routers and other rackmounted equipment. Only 3.5 inches high, these compact units use less rack space, while offering the same outstanding features as the standard Fortress line. Rackmount units can be installed in relay-style or enclosed racks, and feature user-replaceable batteries with convenient front access. They are also equipped with a communications port, allowing for interactive local and remote power management and automatic shutdown.



Stock No.	Mfr.'s Type	Capacity (VA/W)	Runtime Min.		Dimensions H × W × D	Receptacle Quantity and Type	EACH
			Full Load	Half Load			
938-5000	LI720BR	720/470	5	13	3.5 × 19 × 16"	(6) NEMA 5-15R	799.00
938-5010	LI1020BR	1020/700	7	18	3.5 × 19 × 16"	(6) NEMA 5-15R	949.00
938-5015	LI1420BR	1420/975	6	15	3.5 × 19 × 16"	(6) NEMA 5-15R	1149.00
938-5020	LI720DR	720/470	5	13	3.5 × 19 × 16"	(4) IEC-320 (10 A)	899.00
938-5025	LI1020DR	1020/700	7	18	3.5 × 19 × 16"	(4) IEC-320 (10 A)	1039.00
938-5030	LI1420DR	1420/975	6	15	3.5 × 19 × 16"	(4) IEC-320 (10 A)	1249.00

FERRUPS® Uninterruptible Power Systems

- Allows Orderly Shutdown of Systems During Power Failure
- Operating Times Can Be Extended with Optional Batteries; Call Allied for Details
- Filters Dirty Power
- CheckUPS® Software Included
- Patented Ferroresonant Design
- Fully Compatible with Power-Factor Corrected Loads
- Enhanced Communication Capabilities
- Comprehensive Self-Diagnostics
- Capacities from 500 VA to 18 KVA
- AC Input/Output Voltages: 120/208/240 (60 Hz) — Depending on Model
- Efficiency % (On-Line): 85-92%
- Battery Charger: Typical Recharge <18 Hours
- Regulation: ±3% for Input Voltages from +15% to –20% of Nominal; Under Any Line, Load or Battery Conditions — Exceeds Recommended CBEMA and ANSI Voltage Regulation Standards for Computing Equipment
- Sine-Wave Power: Sine-Wave, Computer-Grade Power with 5% or Less Total Harmonic Distortion (THD) at Rated KW Load; Meets or Exceeds CSA C22.2 No. 107.1 for Harmonic Distortion
- Overload Capability: 150% Surge and 125% for 10 Minutes On-Line; 150% Surge and 110% for 10 Minutes on Inverter
- Frequency: 60 Hz Nominal; On-Line 3/4 Output Frequency Tracks Input within Adjustable Limits (±0.01 Hz to ±3 Hz); On Inverter 3/4 ±0.005 Hz.; (50 Hz Systems Available, Call Allied for Details)



The FERRUPS ferroresonant UPS provides power protection for such demanding applications a central data processing, telecommunications/PBX, network hubs, manufacturing process control and 911 equipment. FERRUPS protects against sags, brownouts, surges, spikes and lightning strikes. Extended brownout range conserves battery voltage by correcting sags as low as 38% below normal voltage without drawing on the battery. Intelligent features Include automatic battery and inverter checks, and "runtime remaining" monitoring during power outages (all visually accessible with standard remote control panel on 4.3KVA versions and larger). Active voltage regulation feature enables power from almost any AC source to be converted into computer-grade power.

Stock No.	Mfr.'s Type	Wattage	Input Connection*	Output Connection	Runtime Min.		Dimensions H × W × D	Weight (Lbs.)	EACH
					Full Load	Half Load			
938-0050	FE500VA	350 W	6 ft. cord with NEMA 5-15P	(4) NEMA 5-15R	9	25	12.0 × 10.00 × 21.20"	58	949.00
938Q0055	FE700VA	500 W	6 ft. cord with NEMA 5-15P	(4) NEMA 5-15R	14	35	12.0 × 10.00 × 21.25"	76	1049.00
938Q0060	FE850VA	600 W	6 ft. cord with NEMA 5-15P	(4) NEMA 5-15R	11	28	12.0 × 10.00 × 21.25"	82	1229.00
938Q0065	FE1.15KVA	800 W	6 ft. cord with NEMA 5-15P	(6) NEMA 5-15R	12	29	15.1 × 15.20 × 20.20"	126	1789.00
938Q0070	FE1.4KVA	1 KW	6 ft. cord with NEMA 5-15P	(6) NEMA 5-15R	14	37	15.1 × 15.20 × 20.20"	148	1999.00
938Q0075	FE1.8KVA	1.25 KW	6 ft. cord with NEMA 5-20P	(6) NEMA 5-20R	11	30	21.2 × 15.25 × 22.90"	176	2649.00
938Q0080	FE2.1KVA	1.5 KW	6 ft. cord with NEMA 5-20P	(6) NEMA 5-20R	9	25	21.2 × 15.25 × 22.90"	188	2939.00
938Q0085	FE3.1KVA	2.2 KW	NEMA L5-30P	(6) NEMA 5-20R	14	35	21.2 × 15.25 × 22.90"	248	3499.00
938Q0090	FE4.3KVA**	3 KW	Hardwire standard‡ (6' line cord and receptacle optional; see optional accessories)	Hardwire standard‡ (Output receptacles optional; see optional accessories)	10	24	29.5 × 15.50 × 25.00"	348	4599.00
938Q0093	FE4.3KVA†	3 KW			10	24	29.5 × 15.50 × 25.00"	348	4948.00
938Q0095	FE5.3KVA**	3.7 KW			20	50	29.5 × 15.50 × 25.00"	484	5299.00
938Q0097	FE5.3KVA†	3.7 KW			20	50	29.5 × 15.50 × 25.00"	484	5549.00
938Q0100	FE7KVA**	5 KW			12	33	36.5 × 19.00 × 32.00"	578	6759.00
938Q0103	FE7KVA†	5 KW			12	33	36.5 × 19.00 × 32.00"	578	7009.00
938Q0105	FE10KVA	7.5 KW	Hardwire Standard‡	Hardwire standard‡	11	26	36.5 × 19.00 × 32.00"•	837	9995.00
938Q0110	FE12.5KVA	10 KW			11	27	36.5 × 19.00 × 32.00"•	1040	11395.00
938Q0115	FE18KVA	15 KW			10	26	36.5 × 19.00 × 32.00"•	1300	13995.00

*Circuit breaker required. **(208/208). †(120/120). ‡Bypass switch recommended for all hardwired units, see optional accessories. •Batteries in second cabinet.

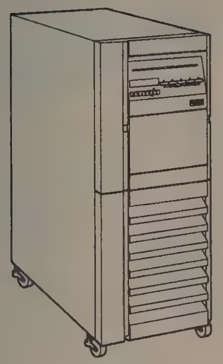
Optional Accessories

Stock No.	Mfr.'s Type	Description	Comment	Weight (Lbs.)	EACH
938-5040	RCP-B	5-20R duplex 120 V, 20 A	Order 2 for 4 receptacles; order 4 for 8 receptacles	1	235.20
938-5050	LC6	6' cord, L6-30P and R	For 4.3KVA and 5.3KVA units	5	123.00
938-5060	LC5	6' cord, 6-50P and R	For 7KVA and 5.3KVA units	5	102.50
938-5070	BPE-01	40 A external maintenance bypass switch*	For 120 V input voltage FE4.3	10	506.35
938-5080	BPE-02	50 A external maintenance bypass switch*	For 208 V input voltage FE4.3, FE5.3, FE7	23	329.00

Other plug "n" play options available; call Allied for details. *Bypass switch recommended for all hardwired units.

Free CheckUPS II Suite monitoring and shutdown software package standard with every BEST Power single-phase UPS! When you purchase a BEST Power UPS, you buy a complete power protection solution. There's no extra expense or confusion over selecting the right software and cable, because they're included with every single-phase UPS. Not just a few stripped-down packages, but a complete suite of our latest, most advanced monitoring and shutdown software. Inside every Fortress, FERRUPS, and Unity/I single-phase UPS product box, you'll find an interface cable and CD-ROM with on-line documentation and support for the following operating systems — Novell, Windows 95, OS/2, Windows NT, Windows 3.1, DOS and UNIX.

BEST Power Patriot UPS models with communications port (all except SMT 280) include a mail-in coupon for the same package.



UNITY/I™ Single-Phase Uninterruptible Power Systems — NEW —

- ► Redundant Circuitry for High Fault Tolerance, Maximum Uptime
- ► Intelligent Charging Protects Batteries, Extends Their Life
- ► Worldwide Voltage and Frequency Compatibility
- ► Quiet and Compact — Ideal for Offices
- ► Exclusive PhonTek™ Feature for Remote Diagnostics by Factory
- ► Plug "N" Play Models Available

Specifications

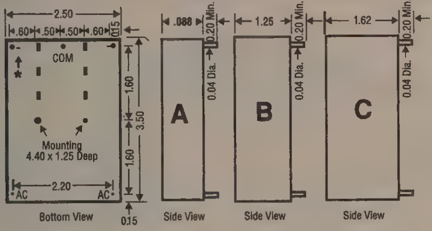
- ► Nominal Input Voltages: 200/208/220/230/240
- ► Nominal Output Voltages: 100/110/115/120/127/200/208/220/230/240
- ► Output Connection: Hardwired Output Is Standard (Contact Allied for Receptacle Options)
- ► Safety: UL 1778, UL 1449, CSA (cUL), GS (TUV), CE
- ► Efficiency: 95% for UT3K; 96% for 4K, 5K and UT8K (On Line)
- ► Battery Charger: Typical Recharge <4-6 Hours

Advanced microprocessor offers improved response and reliability. A 96% efficiency rating minimizes system temperatures, stress on components, and daily cost-to-operate. Redundant safeguards against failure include a dual power track configuration — if one power path develops a fault, the second takes over to keep UPS loads protected. For power-factor corrected (PFC) applications, UNITY/I can be a cost-effective solution. As a full KW-rated system, UNITY/I can protect PFC, KW-rated equipment without oversizing, which means you pay only for the capacity that you need. Ideal for KW-rated computers such as Compaq System Pro, Sun 3/470, IBM AS/400, DEC 4000 AXP, and Hewlett Packard's F-, G-, H- and I-class servers.

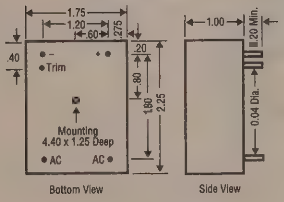
Stock No.	Mfr.'s Type	AC Input Voltage Range	Runtime Typical Load (75%)	Dimensions H × W × D (In.)	Weight (Lbs.)	EACH
938Q0200	UT3K	147-276 V for nominal	7	29 × 10.5 × 25.75	215	3699.00
938Q0205	UT4K	200/208/220/230 V	14	29 × 10.5 × 25.75	280	3949.00
938Q0210	UT5K	output); 153-276 V	9	29 × 10.5 × 25.75	295	4599.00
938Q0215	UT8K	(for nominal 240 V)	17	32 × 13 × 33	490	7099.00

Solid Power Supplies

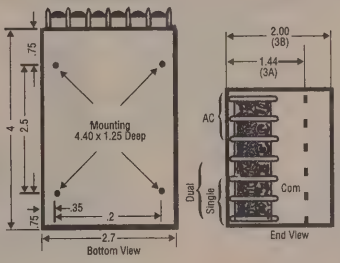
Case Size 1

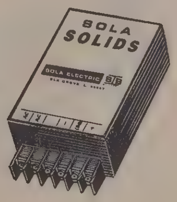


Case Size 2



Case Size 3





Printed Circuit Mounting

Series Regulated Solid Power Supplies are designed for printed wiring board mounting and point of use regulation. Single, dual or triple tracking outputs are available. Solid power supplies feature automatic overload protection. Operation at rated load from –25°C to 50°C ambient. Fully tested and 'burned-in' three times. **Specifications. Source (Input) Voltage:** 115 VAC ±10 VAC (50 to 400 Hz). **Output Voltage Accuracy:** ±1%. **Operating Ambient Temp.:** –25°C to 70°C. **Temp. Effect Coefficient:** 0.02% per °C. **Storage Temp.:** –25°C to 85°C. **Source (Input) Isolation:** 50 megohms. **Source (Line Regulation):** ± .05% or 2.5 mV. U.L. Recognized. CSA certified.

Single Output

Stock No.	Mfr.'s Type	Output	PARD	Case Size	EACH 1-4	EACH 5-9
921-9005	84-05-150	+ 5 V @ 500 mA	1.0 mV rms	1A	111.00	95.00
921-9012	84-12-110	+ 12 V @ 100 mA	0.5 mV rms	2	70.00	61.00
921-9024	84-24-050	+ 24 V @ 50 mA	1.0 mV rms	2	70.00	61.00
921-9010	84-05-210	+ 5 V @ 1000 mA	1.0 mV rms	1B	130.00	126.50
921-9020	84-05-220	+ 5 V @ 2000 mA	1.0 mV rms	1C	170.00	160.00
921-9015	84-10-112	+ 10 V @ 120 mA	1.0 mV rms	2	66.00	61.20
921-9025	84-15-110	+ 15 V @ 100 mA	1.0 mV rms	2	70.00	61.00

Dual Output

Stock No.	Mfr.'s Type	Output	PARD	Case Size	EACH 1-4	EACH 5-9
921-9212	84-12-2112	± 12 V @ 120 mA	0.5 mV rms	1A	98.00	91.50
921-9213	84-12-2124	± 12 V @ 240 mA	0.5 mV rms	1B	126.50	123.50
921-9215	84-15-2110	± 15 V @ 100 mA	0.5 mV rms	1A	111.00	97.60
921-9216	84-15-2120	± 15 V @ 200 mA	0.5 mV rms	1B	154.00	135.50
921-9217	84-15-2135	± 15 V @ 350 mA	0.5 mV rms	1C	222.00	204.00

Triple Output

Stock No.	Mfr.'s Type	Output	PARD	Case Size	EACH 1-4	EACH 5-9
921-9305	84-15-13115	5 V @ 1000 mA ± 15 V @ 150 mA	1.0 mV rms	1C	205.50	197.00
921-9310	84-15-53110	5 V @ 500 mA ± 15 V @ 100 mA	1.0 mV rms	1B	142.80	139.50

Linear Encapsulated Power Modules — Chassis Mount

The 85-Series Direct Chassis Mount Modular Power Supplies are designed for applications where printed circuit mounting is impractical or undesirable. Total epoxy encapsulation is an advantage where high vibration or adverse atmospheric conditions exist. The convenience of threaded insert mounting and terminal strip connections allows easy prototyping and efficient one-shot design work. Single, dual or triple outputs are available. 5 V outputs come with overvoltage protection, set to trip at 6.2 V nominal. Specifications for chassis mount models are the same as those for printed circuit mount models. Quantity pricing always available.

Single Output

Stock No.	Mfr.'s Type	Output	PARD	Case Size	EACH 1-4	EACH 5-9
921-9505	85-05-210	5 V @ 1000 mA	2.0 mV	3A	177.00	150.00
921-9506	85-05-220	5 V @ 2000 mA	2.0 mV	3B	210.00	195.00
921-9500	85-05-150	5 V @ 500 mA	1.0 mV rms	3A	136.50	127.00

Dual Output

Stock No.	Mfr.'s Type	Output	PARD	Case Size	EACH 1-4	EACH 5-9
921-9512	85-12-2140	± 12 V @ 400 mA	1.0 mV	3B	231.00	214.00
921-9515	85-15-2120	± 15 V @ 200 mA	1.0 mV	3A	168.00	145.00
921-9516	85-15-2135	± 15 V @ 350 mA	1.0 mV	3B	201.00	195.00
921-9517	85-15-2150	± 15 V @ 500 mA	1.0 mV	3B	262.00	243.40
921-9514	85-12-2124	± 12 V @ 240 mA	1.0 mV rms	3A	168.00	156.00
921-9525	85-15-2110	± 15 V @ 100 mA	1.0 mV rms	3A	144.00	127.00

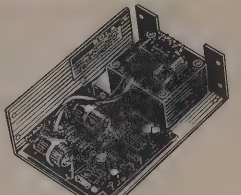
Triple Output

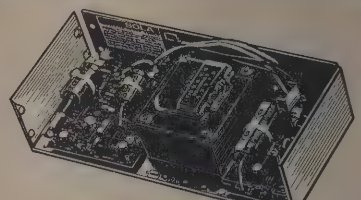
Stock No.	Mfr.'s Type	Output	PARD	Case Size	EACH 1-4	EACH 5-9
921-9530	85-15-33115	5 V @ 300 mA ± 15 V @ 150 mA	1.0 mV rms	3A	214.00	200.00
921-9535	85-15-13115	5 V @ 1000 mA ± 15 V @ 150 mA	1.0 mV rms	3B	265.20	258.40

SOLA Silver Line Linears

Features
- ► Tight Regulation, 0.10% Line and Load Combined
- ► Full Output Ratings to 50C
- ► Built-In OVP on 5V Models (Optional on 12 V, 15 V, 24 V)
- ► Foldback Current Limiting
- ► 100% Four-Hours Burn-In
- ► Warranted for 2 Full Years
- ► UL Recognized, CSA and TÜV Certified
- ► These Models Are Form, Fit and Function Replacement for Most Major Manufacturers

Specification Summary
- ► Input AC Voltage Selectable 100/120/220/230/240
- ► Input Frequency: 47 to 63 Hz
- ► Ripple: 3.0 MV Maximum p-p
- ► D.C. Output Adjustment: ±5% Minimum
- ► Transient Response Time: 50 µSec. for 50% Load Changes
- ► Remote Sensing
- ► Operating Temperature: 0 to +50°C
- ► EM/RFI Meets FCC Class B and VDE 0871 for Class B
- ► Shock/Vibration Per Mil-STD-810C





Stock No.	Mfr.'s Type	Output	Dimensions (In.)	EACH
				1-4
921-9300	SLS-05-030-1	5 V @ 3 A	4.84 × 3.99 × 2.07	42.00
921-9455	SLS-05-060-1	5 V @ 6 A	5.62 × 4.87 × 2.95	64.00
921-9460	SLS-05-090-1	5 V @ 9 A	7.00 × 4.87 × 3.30	91.00
921-9315	SLS-05-120-1	5 V @ 12 A	9.00 × 4.87 × 3.30	106.00
921-9320	SLS-12-017*	12 V @ 1.7 A	4.84 × 3.99 × 2.07	42.00
921-9325	SLS-12-034	12 V @ 3.4	5.62 × 4.87 × 2.95	60.00
921-9330	SLS-12-051	12 V @ 5.1 A	7.00 × 4.87 × 3.30	84.50
921-9335	SLS-12-068	12 V @ 6.8 A	9.00 × 4.87 × 3.30	95.00
921-9345	SLS-15-045	15 V @ 4.5 A	7.00 × 4.87 × 3.30	81.00
921-9350	SLS-15-060	15 V @ 6 A	9.00 × 4.87 × 3.30	90.00
921-9355	SLS-24-012	24 V @ 1.2 A	4.84 × 3.99 × 2.07	42.00
921-9360	SLS-24-024	24 V @ 2.4 A	5.62 × 4.87 × 2.95	60.00
921-9365	SLS-24-036	24 V @ 3.6 A	7.00 × 4.87 × 3.30	88.00
921-9961	SLS-24-048	24 V @ 4.8 A	9.00 × 4.87 × 3.30	118.00

*Adjustable to 15 volts.

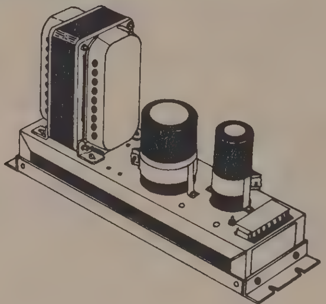
Stock No.	Mfr.'s Type	Output 1	Output 2	Output 3	Dimensions (In.)	EACH
						1-4
921-9670	SLD-12-1010-12*	12 V @ 1 A*	–12 V @ 1 A*		6.50 × 4.00 × 2.07	52.00
921-3575	SLD-12-1818-12*	12 V @ 1.8 A*	–12 V @ 1.8 A*		7.00 × 4.87 × 2.95	69.50
921-9380	SLD-12-3434-12	12 V @ 3.4 A	–12 V @ 3.4 A		9.00 × 4.87 × 3.30	92.50
921-9395	SLD-15-3030-15	15 V @ 3 A	–15 V @ 3 A		9.00 × 4.87 × 3.30	101.00
921-9400	SLD-12-6034-05	5 V @ 6 A	12 V @ 3.4 A		9.00 × 4.87 × 3.30	103.50
921-9405	SLD-12-3015-05	5 V @ 3 A	12 V @ 1.5 A		7.00 × 4.87 × 2.95	68.00
921-9410	SLT-12-20404-12	5 V @ 2 A	12 V @ .4 A*	–12 V @ .4 A*	6.50 × 4.00 × 2.07	59.00
921-9415	SLT-12-31010-12	5 V @ 3 A	12 V @ 1 A*	–12 V @ 1 A*	10.25 × 4.00 × 2.95	79.50
921-9420	SLT-12-61010-12	5 V @ 6 A	12 V @ 1 A*	–12 V @ 1 A*	9.00 × 4.87 × 3.30	99.50
921-9425	SLT-12-61818-12	5 V @ 6 A	12 V @ 1.8 A*	–12 V @ 1.8 A*	11.00 × 4.87 × 3.30	116.00
921-9430	SLT-24-30530-05	5 V @ 3 A	–5 V @ .5 A	–24 V @ 3 A	11.00 × 4.87 × 3.30	118.50

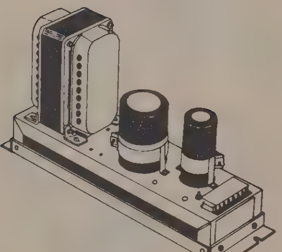
Overvoltage Protectors (OVP)

Stock No.	Mfr.'s Type	Output 1	Output 2	Output 3	Dimensions (In.)	EACH
921-9435	SLO-12-000-1†	6.2 V to 34 V†			1.50 × 1.55 × 0.56	10.00

†Adjustable @ 15 A.

CVDC Series Regulated Constant Voltage Supplies





Features
- ► Isolated Output
- ► Short Circuit Protected
- ► Operating Temperature at 50°C
- ► MTBF Greater Than 300,000 Hours
- ► High Efficiency
- ► Warranted for One Full Year
- ► UL Recognized, CSA Certified

Applications
- ► Process Controls
- ► Drives
- ► Telecommunications

Rugged, simple and dependable power supplies in rack-mount styles. Units contain a constant voltage transformer, rectifier and filter circuit, and provide tight regulation, quick response isolation and current limiting.

Specifications

Input
Input Voltage: 100 to 130 VAC or 100 to 130/200 to 260 VAC 60 Hz.

Output
Source Frequency Effect: Actual variation is approximately 1.4 percent voltage change for a 1 percent frequency increase or decrease. **Line Regulation:** ±1%. **Load Regulation:** ±5% (1/2 FL to FL). **Periodic Deviations (Ripple):** 1% RMS of output. **Ripple — Telecommunications Models:** 35 dbrn C (15 mv RMS). **Response Time:** 25 msec.

General
Efficiency @ Full Load: 80% to 90%. **Operating Ambient Temp.:** 0°C to 50°C. **Current Limit:** 250% rated current.

100-130 VA 60 Hz Input Source

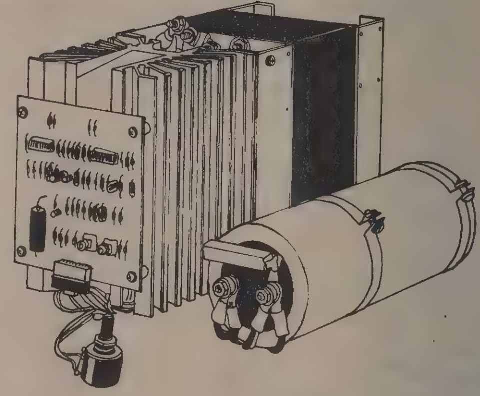
Stock No.	Mfr.'s Type	DC Output			% Load Regulation		Panel Size (In.)		Mtg. Ctrs. (In.)	Approx. Shp. Wt. (Lbs.)	EACH
		V	A	VA	20% f.l.	50% f.l.	Height	Depth			1-2
921-9953	28-1024-1	24	6	144	6	4.0	5¼	9¾	2¼	30	429.00
921-9954	28-2126-1	24	10	240	6	4.0	5¼	8¾	2¼	48	487.00
921-9955	28-1203-2	24	15	360	7	5.0	7	8	4	64	575.00
921Q9956	28-2127-1	24	25	600	7	5.0	8¾	9¾	5¾	72	678.00

CVDC For Telecommunications Applications

Low Output Noise Level (Ripple): 35 dBmC (15 mV rms). **Input Source:** 100-130/200-260 VAC 60 Hz.

Stock No.	Mfr.'s Type	V	A	VA	20% f.l.	50% f.l.	Height	Depth	Mtg. Ctrs. (In.)	Approx. Shp. Wt. (Lbs.)	EACH
921-2142	28-2233	48	10	480	5	3.0	5¼	9¾	2¼	53	516.00
921Q2143	28-2234	48	20	960	5	3.5	8¾	9¾	5¾	100	731.00

Copper-Line High Power Adjustable DC Power Supply



Features
- ► Universal 120/240 VAC, 50/60 Hz Input
- ► Single Supply for Multiple Applications
- ► Parallel Operation for Increased Power Output
- ► UL Recognized, CSA Certified
- ► Reliable SCR Design
- ► Warranted for One Full Year
- ► Adjustable Voltage From 2 to 50 Volts
- ► Can Be Paralleled for More Power
- ► Adjustable Constant Current From 0 to 100%

Applications
- ► Engineering Bench Supply
- ► Slot Power Supply
- ► Telecommunications
- ► Manufacturing Test Applicators
- ► Automotive Product Testing
- ► DC Motor Drives
- ► Relay and Solenoid Drives

Copperline supplies can be used in either a constant voltage or constant current mode. The Copperline offers such features as a single supply to be used in applications where separate supplies are required for each output voltage. Three phase operation for high current, low ripple operation may be achieved by connecting three Copperline power supplies to three different phases and connecting the power supply outputs in parallels. Large filter capacitors provide low noise operation over a wide line range. Panel mounted voltage control provided AC.

Specifications

Input
Input Voltage: 105-130/210-260 VAC (user selectable). **Input Frequency:** 47-63 Hz. **Input Protection:** Ext. slow-blow fuse required.

Output
Line Regulation: 0.1% or 50 mV. **Load Regulation:** 0.1% or 50 mV. **Output Ripple @ Full Rated Load:** 1.0% or 50 mV RMS max.

Controls
Current Limit Adjust: 0-100%. **Output Volt Adjust:** 10-100% coarse adjust (may be mounted remotely). Fine adjust fine tunes output for no load and full load conditions.

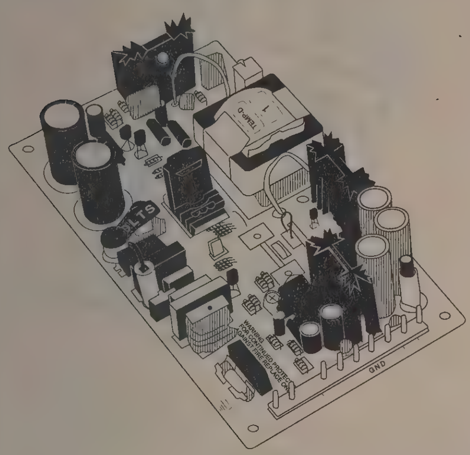
General
Operating Temp. @ Full Rated Load: 0 to 50°C. **Storage Temp.:** –20 to 70°C. **Efficiency @ Full Rated Load:** 75%. **Vibration:** Designed to meet MIL-STD-810D, Method 514.3, Category 1, Procedure 1. **Shock:** Designed to meet MIL-STD-810D, Method 516.3, Procedure III.

Stock No.	Mfr.'s Type	Power (Watts)	DC Output		Dimensions (In.)				EACH
			Volts	Amps	Length	Width*	Height	Wt	
921-9407	39-407	300	5-50/2-25	6/12	11.00	6.75	7.66	23	522.00
921-9408	39-408	600	5-50/2-25	12/24	12.00	6.75	7.66	30	699.00
921Q9409	39-409	1200	5-50/2-25	24/48	14.00	10.00	11.12	73	1177.00

*Includes capacitor.

Sola DC Power Supplies

Low Wattage Multi Output Switchers



- ► High Efficiency
- ► Built in EMI Filter
- ► UL Recognized
- ► CSA Certified
- ► Industry Standard Packages

Applications

- ► CRT Monitors
- ► Disk Drives
- ► Terminals
- ► Peripheral Equipment
- ► Testing Equipment
- ► Microprocessor Based Systems

- ► Meets FCC and VDC Class A Emissions
- ► 100% Burn In
- ► Dual Input Voltage 115/230 VAC
- ► Over Voltage Protection
- ► Short Circuit Protection

Specifications Summary

- ► All Units Voltage Selectable 90-130 VAC/180-260 VAC
- ► AC Input Frequency 47-63 Hz
- ► 65% Efficiency Typical
- ► Overcurrent Protection on all Outputs
- ► 20 MS Hold Uptime @ Full Load
- ► MTBF Greater Than 50 k Hrs. @ Full Load
- ► In Rush Current: 60 Amps @ 115 VAC; 8 Amps @ 230 VAC Typical

Designed to provide the industry with a quality power supply at competitive prices.

50 Watt Models

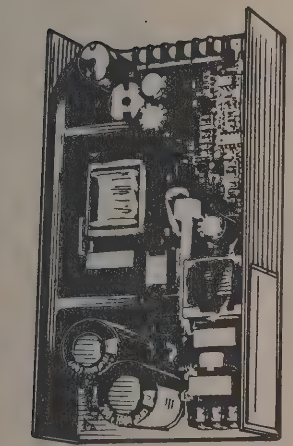
Stock No.	Mfr.'s Type	Output 1	Output 2	Output 3	Output 4	Dimensions (In.) Max.	EACH	
							1-4	5-9
921-9145	86-30050-62	5 V @ 6.0 A	12 V @ 1.0 A	–5 V @ .5 A	—	7.75L × 4.25W × 2.40H	**71.40**	**66.50**
921-9155	86-40050-54*	5 V @ 5 0 A	–5 V @ .25 A	15 V @ 1 A	–15 V @ 1 A	5.93L × 3.83W × 2.40H	**80.00**	**74.30**

80 Watt Model

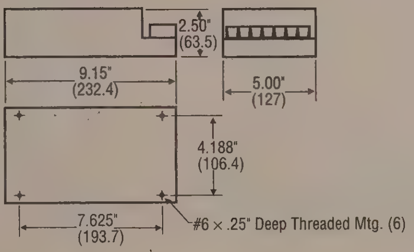
Stock No.	Mfr.'s Type	Output 1	Output 2	Output 3	Output 4	Dimensions (In.) Max.	1-4	5-9
921-9175	86-40080-81	5 V @ 8.0 A	12 V @ 1.2 A	12 V @ 2.5 A†	–12 V @ 6 A	8.25L × 4.25W × 2.10 H	**103.40**	**96.50**

*VDE Certified. †5.0 PK.

Single Output Switchers



Open Frame Shown



- ► Overvoltage Protection
- ► Automatic Overload Protection
- ► 10 mS Holdup Time Minimum at 100 VAC Input
- ► UL Recognized, CSA Certified
- ► 240 Watt Model Is VDE Certified
- ► Remote Sense
- ► Soft Start
- ► Warranted for One Full Year

Input

Input Voltage: Limit — 90-132 VAC, 180-264 VAC, User Selectable. **Input Frequency:** Limit — 47-400 Hz, Single Phase. **Input Protection:** External Fuse Required. **Inrush Current:** Condition — 115 VAC; Limit — 16 Amperes Peak.

Output

Regulation Line and Load: Limit — .25%. **Holdup Time:** Condition — 100 VAC/Full Load; Limit — 10 mS Minimum. **Output Overshoot:** Condition — Turn On/Off; Limit — 2%. **Overvoltage Protection:** All models. **Output Ripple:** Condition — Full Rated Load; Limit — 0.3% RMS Total.

General

Operating Temp.: Condition — Full Rated Load; Limit — 0 to 40°C. **Storage Temp.:** –40 to 85°C. **Efficiency:** Condition — Full Rated Load; Limit — 65% Minimum. **MTBF:** Condition — Per MIL HDBK 217D; Limit — 50,000 Hours. **Vibration.** Condition — Designed to Meet MIL-STD-810D, Method 514.3, Category 1, Procedure I. **Shock:** Designed to Meet MIL-STD-810D, Method 516.3, Procedure II.

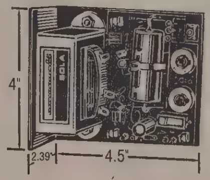
Enclosed Frame

Stock No.	Mfr.'s Type	Output	EACH	
			1-4	5-9
921-9802	86-05-325	5 V @ 25 A	**181.00**	**176.20**
921-9803	86-12-312	12 V @ 12.5 A	**196.20**	**182.10**
921-9806	86-24-262	24 V @ 6.25 A	**171.00**	**156.50**

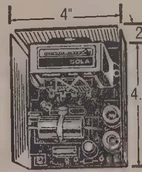
Open Frame

Stock No.	Mfr.'s Type	Output	EACH	
			1-2	3-4
921-9807	86-24-310	24 V @ 10 A	**259.00**	**237.00**

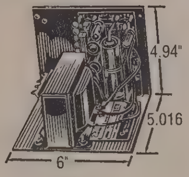
Regulated Linear Single Output



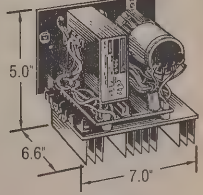
Style 1



Style 3



Style 2



Style 4

- ► Convection Cooled
- ► Complete Serviceability
- ► Constant Voltage
- ► Overvoltage Protection Available

Low cost DC power supplies give you a precise integrated circuit regulator with superior drift characteristics. Features short circuit protection, automatic foldback current limiting, automatic reset, and isolated, floating output. Low noise and ripple (pard). Designed for both bench and rack use.

Input

Input Voltage: Limit — 104-127 VAC, 208-254 VAC. **Input Frequency:** Limit — 50-60 Hz.

Output

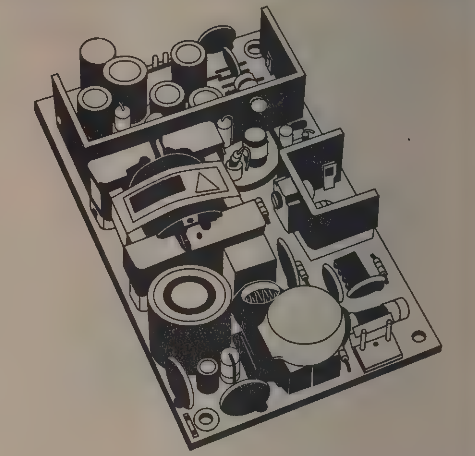
Source and Load Effect Combined: Condition — Regulation Line and Load; Limit — ±0.1%. **Pard (Ripple and Noise):** Limit — 0.1% pk/pk. **Periodic Deviations (ripple):** Limit — 10 mv RMS. **Output Voltage Adjustment:** Limit — ±5% Minimum. **Overvoltage Protection:** Limit — Available for all models as an option. Provides both transient and power supply malfunction protection. **Transient Recovery Time:** Condition — (1/2 L to FL.); Limit — Less than 20 μ Sec.

General

Storage Ambient Temp.: Limit — –40°C to +85°C. **Operating Ambient Temp.:** Limit —0°C to +55°C. **Temp. Effect Coefficient:** Limit — 0.03%°C. **Polarity:** Limit — May be used positive or negative. **Short Circuit Protection:** Limit — Protected with automatic recovery. **Max. Allowable Lead Drop For Remote Sensing:** Limit — 5%. **Max. Output Current:** Limit — 120% rated current. **Max. Short Circuit Current:** Limit — 30% rated current. **Input/Output Isolation:** Limit — 1000 Megohms D.C., 2500 VAC. Specifications are typical, contact factory for more information.

Stock No.	Mfr.'s Type	DC Output		Chassis Style	EACH	
		Volts	Amps		1-4	5-9
921-6400	81-05-230-2	5	3.0	1	**57.00**	**53.10**
921-9910	81-12-215-2	12-15	1.5-1.2	1	**57.00**	**53.10**
921-9421	81-24-180-2	24	0.8	1	**54.00**	**50.30**
921-9930	83-05-230-3	5	3.0	3	**64.00**	**59.00**
921-6445	83-12-218-3	12	1.8	3	**64.00**	**59.00**
921-6450	83-15-216-3	15	1.6	3	**64.00**	**59.00**
921-6465	83-24-212-3	24	1.2	3	**60.00**	**54.50**
921-4851	83-05-260-3	5	6.0	2	**125.30**	**117.00**
921-6511	83-12-250-3	12	5.0	2	**125.30**	**117.00**
921-8004	83-15-240-3	15	4.0	2	**125.00**	**115.40**
921-4853	83-24-225-3	24	2.5	2	**122.00**	**111.80**
921-8002	83-05-312-3	5	12.0	4	**177.50**	**168.30**
921-8006	83-12-310-3	12	10.0	4	**194.00**	**177.50**
921-8011	83-15-280-3	15	8.0	4	**185.10**	**169.00**
921-8021	83-24-260-3	24	6.0	4	**187.00**	**166.30**

GL Series — Single and Multi Output Switchers



Features and Benefits
- ► Universal Input
- ► Compact Size
- ► On Board Input Fuse
- ► Automatic Overload Protection
- ► OVP on Output #1
- ► UL Recognized, CSA Certified
- ► IEC 950
- ► 100% Burn-In
- ► One Year Warranty
- ► Power Fail Signal on 110 and 200 Watt Models

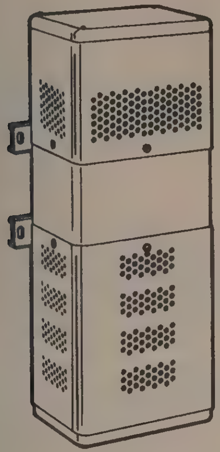
Applications
- ► Personal Computers
- ► Control Circuits
- ► Instrumentation
- ► Drive Circuits
- ► CNC Machinery

Parameter	Input				Output								General					
	Input Voltage	Frequency	Protection	Inrush Current	Line Regulation	Load Regulation	Cross Regulation	Min. Loading	Temp. Coefficient	Hold Up Time	Overvoltage Protection	Output Ripple	Operating Temp.	Storage Temp.	Efficiency	MTBF	EMI	Safety
Limit	85-264 VAC	47-440 Hz	Line Fuse on Board	15-60 Amps Max.	±0.5%	+1% Single Output ±2% Main Output	5% Typical	10% Main Output Only	±0.04%/°C	10 mS Min.	112-132% of Nominal	2% Peak to Peak Max.	0-50°C	–20-+85°C	65% Min.	100,000 Hours	FCC20780 Level B and VDE 0871 Level A	UL, CSA, IEC/EN

Stock No.	Mfr.'s Type	Max. Output	Output 1	Output 2	Output 3	Output 4	Max. Dimensions L × W × H In.	EACH 1-4	EACH 5-9
921-0100	GLS-01-040	30 W	5 V, 6 A				5.00 × 3.00 × 1.36	63.00	59.00
921-0105	GLS-02-040	40 W	12 V, 3.5 A				5.00 × 3.00 × 1.36	63.00	59.00
921-0110	GLS-03-040	40 W	15 V, 3 A				5.00 × 3.00 × 1.36	63.00	59.00
921-0115	GLS-04-040	40 W	24 V, 2 A				5.00 × 3.00 × 1.36	63.00	59.00
921-0120	GLD-01-040	40 W	5 V, 3 A	12 V, 2 A			5.00 × 3.00 × 1.36	65.00	61.20
921-0125	GLD-02-040	40 W	5 V, 3 A	15 V, 2 A			5.00 × 3.00 × 1.36	65.00	61.20
921-0130	GLD-03-040	40 W	5 V, 3 A	24 V, 1 A			5.00 × 3.00 × 1.36	65.00	61.20
921-0135	GLT-01-040	40 W	5 V, 3 A	12 V, 2 A	–5 V, 0.3 A		5.00 × 3.00 × 1.36	68.00	64.30
921-0140	GLT-02-040	40 W	5 V, 3 A	12 V, 2 A	–12 V, 0.3 A		5.00 × 3.00 × 1.36	68.00	64.30
921-0145	GLT-03-040	40 W	5 V, 3 A	15 V, 2 A	–15 V, 0.3 A		5.00 × 3.00 × 1.36	68.00	64.30
921-0150	GLT-04-040	40 W	5 V, 3 A	15 V, 2 A	–12 V, 0.3 A		5.00 × 3.00 × 1.36	68.00	64.30
921-0155	GLT-05-040	40 W	5 V, 3 A	24 V, 1 A	–12 V, 0.3 A		5.00 × 3.00 × 1.36	68.00	64.30
921-0160	GLS-01-065	50 W	5 V, 10 A				6.00 × 3.50 × 1.87	80.00	75.30
921-0165	GLS-02-065	65 W	12 V, 5.5 A				6.00 × 3.50 × 1.87	80.00	75.30
921-0170	GLS-03-065	65 W	15 V, 4.5 A				6.00 × 3.50 × 1.87	80.00	75.30
921-0175	GLS-04-065	65 W	24 V, 3 A				6.00 × 3.50 × 1.87	80.00	75.30
921-0180	GLD-01-065	65 W	5 V, 6 A	12 V, 3 A			6.00 × 3.50 × 1.87	84.00	78.50
921-0185	GLD-02-065	65 W	5 V, 6 A	15 V, 3 A			6.00 × 3.50 × 1.87	84.00	78.50
921-0190	GLD-03-065	65 W	5 V, 6 A	24 V, 2 A			6.00 × 3.50 × 1.87	84.00	78.50
921-0195	GLT-01-065	65 W	5 V, 6 A	12 V, 3 A	–5 V, 0.5 A		6.00 × 3.50 × 1.87	86.00	81.60
921-0200	GLT-02-065	65 W	5 V, 6 A	12 V, 3 A	–12 V, 0.5 A		6.00 × 3.50 × 1.87	86.00	81.60
921-0205	GLT-03-065	65 W	5 V, 6 A	15 V, 3 A	–15 V, 0.5 A		6.00 × 3.50 × 1.87	86.00	81.60
921-0210	GLT-04-065	65 W	5 V, 6 A	15 V, 3 A	–12 V, 0.5 A		6.00 × 3.50 × 1.87	86.00	81.60
921-0215	GLT-05-065	65 W	5 V, 6 A	24 V, 2 A	–12 V, 0.5 A		6.00 × 3.50 × 1.87	86.00	81.60
921-0220	GLQ-01-065	65 W	5 V, 6 A	12 V, 3 A	–12 V, 0.5 A	–5 V, 0.5 A	6.00 × 3.50 × 1.87	89.00	83.20
921-0225	GLS-01-110	110 W*	5 V, 22 A				7.00 × 4.25 × 1.95	140.00	131.00
921-0230	GLS-02-110	110 W*	12 V, 9 A				7.00 × 4.25 × 1.95	140.00	131.00
921-0235	GLS-03-110	110 W*	15 V, 7.5 A				7.00 × 4.25 × 1.95	140.00	131.00
921-0240	GLS-04-110	110 W*	24 V, 4.5 A				7.00 × 4.25 × 1.95	140.00	131.00
921-0245	GLD-01-110	110 W*	5 V, 10 A	12 V, 5 A			7.00 × 4.25 × 1.95	142.00	133.40
921-0250	GLT-01-110	110 W*	5 V, 10 A	12 V, 3 A	–12 V, 1 A		7.00 × 4.25 × 1.95	143.00	134.80
921-0255	GLT-02-110	110 W*	5 V, 10 A	15 V, 4 A	–15 V, 1 A		7.00 × 4.25 × 1.95	143.00	134.80
921-0260	GLQ-01-110	110 W*	5 V, 10 A	12 V, 5 A	–12 V, 1 A	–5 V, 1 A	7.00 × 4.25 × 1.95	146.00	138.00
921-0265	GLQ-02-110	110 W*	5 V, 10 A	12 V, 5 A	–12 V, 1 A	12 V, 1 A	7.00 × 4.25 × 1.95	146.00	138.00
921-0270	GLQ-03-110	110 W*	5 V, 10 A	12 V, 5 A	–12 V, 1 A	24 V, 1 A	7.00 × 4.25 × 1.95	146.00	138.00
921-0275	GLQ-04-110	110 W*	5 V, 10 A	15 V, 4 A	–15 V, 1 A	–5 V, 1 A	7.00 × 4.25 × 1.95	146.00	138.00
921-0280	GLS-01-200	200 W	5 V, 40 A				9.00 × 5.00 × 2.65	228.00	214.90
921-0285	GLS-02-200	200 W	12 V, 16.7 A				9.00 × 5.00 × 2.65	228.00	214.90
921-0290	GLS-03-200	200 W	15 V, 13.4 A				9.00 × 5.00 × 2.65	228.00	214.90
921-0295	GLS-04-200	200 W	24 V, 8.4 A				9.00 × 5.00 × 2.65	228.00	214.90
921-0300	GLD-01-200	200 W	5 V, 30 A	12 V, 8 A			9.00 × 5.00 × 2.65	240.00	225.90
921-0305	GLD-02-200	200 W	5 V, 30 A	15 V, 6 A			9.00 × 5.00 × 2.65	240.00	225.90
921-0310	GLD-03-200	200 W	5 V, 30 A	24 V, 4 A			9.00 × 5.00 × 2.65	240.00	225.90
921-0315	GLT-01-200	200 W	5 V, 30 A	12 V, 8 A	–5 V, 6 A		9.00 × 5.00 × 2.65	270.00	254.20
921-0320	GLT-02-200	200 W	5 V, 30 A	12 V, 8 A	–12 V, 4 A		9.00 × 5.00 × 2.65	270.00	254.20
921-0325	GLT-03-200	200 W	5 V, 30 A	15 V, 6 A	–15 V, 4 A		9.00 × 5.00 × 2.65	270.00	254.20
921-0330	GLT-04-200	200 W	5 V, 30 A	15 V, 6 A	–12 V, 4 A		9.00 × 5.00 × 2.65	270.00	254.20
921-0335	GLQ-01-200	200 W	5 V, 30 A	12 V, 8 A	–12 V, 4 A	5 V, 6 A	9.00 × 5.00 × 2.65	299.00	282.00
921-0340	GLQ-02-200	200 W	5 V, 30 A	15 V, 6 A	–15 V, 4 A	24 V, 4 A	9.00 × 5.00 × 2.65	299.00	282.00
921-0345	GLQ-03-200	200 W	5 V, 30 A	12 V, 8 A	–12 V, 4 A	12 V, 4 A	9.00 × 5.00 × 2.65	299.00	282.00
921-0350	GLQ-04-200	200 W	5 V, 30 A	12 V, 8 A	–15 V, 4 A	15 V, 4 A	9.00 × 5.00 × 2.65	299.00	282.00
921-0355	GLQ-05-200	200 W	5 V, 30 A	12 V, 8 A	–12 V, 4 A	24 V, 4 A	9.00 × 5.00 × 2.65	299.00	282.00

*With 25 CFM air flow, 80 W with convection cooling.

Sola Hardwired CVS 30 VA to 7.5 kVA



Applications

- ▶ Marine Navigation Equipment
- ▶ Analytical Laboratory Equipment
- ▶ Photographic Enlargers
- ▶ Photo Processing Equipment
- ▶ Closed Circuit TV Transmission
- ▶ Sound/Recording Systems

Features and Benefits

- ▶ Applications Requiring Precise Voltage Regulation Can Expect to Receive ±1% Output Regulation for Input Variation of +10 to –20%
- ▶ Protects Premise Wiring Since Non-Linear Loads are Reflected Back to the Utility as Near Sinusoidal
- ▶ Safety Agency Approved: All CVSs are UL Listed and CSA Certified
- ▶ Dual Function, Can Act as a Stepup or Stepdown Transformer in Addition to Providing Regulation
- ▶ Sinewave Output Even With a Distorted Source; Input Harmonics Are Eliminated
- ▶ Half Load Input Voltage Range of +15 to –50% Input for +5, –10% Regulation

Precise Voltage Regulation for Industrial Applications

The Sola CVS Series voltage regulators provide highly regulated sinewave voltage output with less than 3% harmonic distortion. CVS transformers are commonly used in industrial applications where voltage regulation is of primary importance. This unit is only available in the hardwired form and is recommended for installation at the distribution panel.

Specifications

Input

VA Ratings: 30 to 7,500 VA. **Input Voltage Range:** +10/–20% of nominal.

Output

Voltage Regulation: ±1% for an input line variation of +10/–20%. No loss of output for line loss of 3 mSec. **Overload:** Output collapses with overload; limits output current to a maximum of 2x rated current. **Output Harmonic Distortion:** 3% total RMS content at full load. **Harmonic Rejection:** Rejects severe waveform harmonics. **Noise Isolation:** 40 dB common and normal mode. **Surge Suppression:** UP to 6,000 Volt surges are suppressed to safe levels per ANSI/IEEE C62.41-1980 Class A and B waveforms. **Efficiency:** Up to 92% at full load.

Environmental

Operating Temperature: –20°C to +50°C. **Audible Noise:** 34 dB to 65 dB.

Approvals

Listed to UL 1012; Certified to CSA C22.2, No. 66.

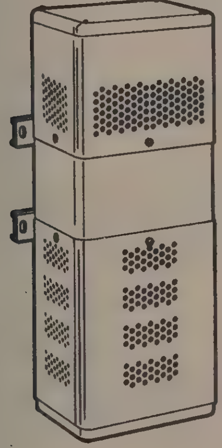
Warranty

10 year limited warranty.

60 Hz

Stock No.	Mfr.'s Type	Output Capacity (VA)	Voltage		Dimensions H × W × D (Inches)	Shipping Weight (Lbs.)	EACH
			Output	Input			1-3
921-3150	23-13-030-2	30	120	120	6.03 × 3.31 × 5.18	7	175.00
921-3200	23-13-060-2	60	120	120	6.88 × 3.31 × 5.18	9	204.00
921-3300	23-22-112-2	120	120	120, 240	7.94 × 3.31 × 5.18	13	270.00
921-3350	23-23-125-8	250	120	120, 240, 480	9.88 × 4.50 × 7.44	29	375.00
921-3400	23-23-150-8	500	120, 240	120, 208, 240, 480	12.69 × 7.78 × 6.44	42	572.00
921Q3850	23-23-210-8	1000	120, 240	120, 208, 240, 480	16.75 × 7.78 × 6.78	65	851.00
921Q3950	23-23-220-8	2000	120, 240	120, 208, 240, 480	17.31 × 10.56 × 9.34	111	1483.00
921Q4000	23-23-230-8	3000	120, 240	120, 208, 240, 480	18.69 × 10.56 × 9.34	142	2049.00
921Q9965	23-23-250-8	5000	120, 240	120, 208, 240, 480	28.19 × 10.59 × 9.28	222	3197.00
921Q2130	23-28-275-6	7500	120, 240	240, 480	29.06 × 24.82 × 8.97	365	3749.00

Sola Hardwired MCR 120 VA to 15 kVA



Applications

- ▶ Programmable Logic Controllers (PLCs)
- ▶ Machine Tools
- ▶ Computer Loads
- ▶ Robotics
- ▶ Industrial Panels
- ▶ Electronic Equipment

Features and Benefits

- ▶ Protects Facility Wiring From Odd-Order Harmonics (Excessive Currents in Building Wiring) Caused by Switchmode Power Supplies (Computer Loads); Non-Linear Load Currents Are Reflected Back to the Utility as Near Sinewave
- ▶ Regulates Voltage, Provides Surge Suppression, Isolation and Harmonic Filtering
- ▶ Acts as a Stepup or Stepdown Transformer
- ▶ Rugged Design Handles Hostile Industrial Environments
- ▶ Smooth ±3% Voltage Regulation for Input Variation of +10 to –20%
- ▶ 10-Year Warranty; 25-Year Typical Life

Permanent Protection Against Surges, Sags, Spikes, Brownouts, Harmonics and EMI/RFI Noise

The Sola Hardwired MCR Series protects equipment from nearly all power problems short of a total power failure. Hardwired MCR models are designed to be permanently wired into the user's system and are available in sizes from 120 VA to 15 kVA.

Specifications

Input

VA Ratings: 120 to 15,000 VA. **Input Voltage Range:** +10/–20% of nominal.

Output

Voltage Regulation: ±3% for an input line variation of +10/–20% (50 Hz units ±5%). No loss of output for complete line loss of 3 mSec. **Overload:** Output collapses with overload; limits output current to a maximum of 2x rated current. **Output Harmonic Distortion:** 3% total RMS content at full load. **Harmonic Rejection:** Rejects severe waveform harmonics. **Noise Isolation:** 120 dB common mode; 60 dB normal mode. **Surge Suppression:** UP to 6,000 Volt surges are suppressed to safe levels per ANSI/IEEE C62.41-1980 Class A and B waveforms. **Efficiency:** Up to 92% at full load.

Environmental

Operating Temperature: –20°C to +50°C. **Audible Noise:** 35 dB to 65 dB.

Approvals

60 Hz: Listed to UL 1012; Certified to CSA C22.2, No. 66. **50 Hz:** Models comply to VDE 0805, 0806, and 0550.

Warranty

10 year limited warranty.

60 Hz

Stock No.	Mfr.'s Type	Output Capacity (VA)	Voltage		Dimensions H × W × D (Inches)	Shipping Weight (Lbs.)	EACH
			Output	Input			1-4
921-5091	63-23-112-4	120	120	120, 208, 240, 480	8.62 × 3.31 × 5.18	15	270.00
921-5092	63-23-125-4	250	120	120, 208, 240, 480	9.88 × 4.50 × 7.44	27	334.00
921-5093	63-23-150-8	500	120, 208, 240	120, 208, 240, 480	12.69 × 7.78 × 6.44	37	509.00
921-5094	63-23-175-8	750	120, 208, 240	120, 208, 240, 480	13.69 × 7.78 × 6.44	52	646.00
921-5095	63-23-210-8	1000	120, 208, 240	120, 208, 240, 480	16.75 × 7.78 × 6.44	62	772.00
921-5096	63-23-215-8	1500	120, 208, 240	120, 208, 240, 480	16.44 × 10.56 × 9.03	95	1037.00
921Q5097	63-23-220-8	2000	120, 208, 240	120, 208, 240, 480	17.31 × 10.56 × 9.03	109	1312.00
921Q5103	63-23-230-8	3000	120, 208, 240	120, 208, 240, 480	18.69 × 10.56 × 9.03	142	1821.00
921Q5105	63-23-250-8	5000	120, 208, 240	120, 208, 240, 480	28.19 × 10.59 × 8.97	222	2856.00
921Q5106	63-28-275-8	7500	120, 208, 240	208, 240, 480	26.56 × 24.82 × 8.97	362	3512.00
921Q5107	63-28-310-8	10000	120, 208, 240	208, 240, 480	28.19 × 24.82 × 8.97	446	5716.00
921Q5108	63-28-315-8	15000	120, 208, 240	208, 240, 480	28.19 × 37.23 × 9.34	710	6936.00

Also Available; 60 V input models and 50 Hz models.

Sola Portable MCR — 70 VA to 3 kVA

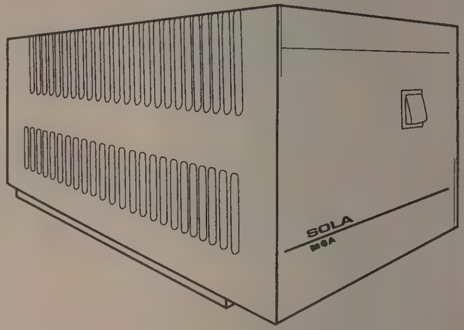
Applications

- PC-Type Computers
- POS Terminals
- Telephone Systems
- Facsimile Machines
- Small Printers
- Lab Equipment
- Security Systems
- PCs, LAN, WAN

Features and Benefits

- Portable, Quiet and Easy to Use, The MCR Is Ideal for Office and Home Use
- Sinewave Output Even With a Distorted Source; Input Harmonics Are Eliminated
- Smooth ±3% Voltage Regulation for Input Variation of +10 to –20%
- Lower Output Impedance Easily Powers Computers
- Reduces Wear on Components for Longer MTBF on Your Electronic Equipment
- 10-Year Warranty; 25-Year Typical Life

Cost-Effective Power Protection for the Office or Home
The Sola MCR Portable Series power conditioners provide excellent protection from surges, sags, spikes, brownouts, harmonics and EMI/RFI noise. Data-sensitive and microprocessor-based systems are susceptible to errors, damaged components and lost operating time caused by these voltage disturbances. These power-related problems vanish and your system's performance improves when it receives clean, regulated noise-free power from the Sola MCR.



Specifications

Input
VA Ratings: 70 to 3,000 VA. **Input Voltage Range:** +10/–20% of nominal.

Output
Voltage Regulation: ±3% for an input line variation of +10/–20% (50 Hz units ±5%). No loss of output for complete line loss of 3 mSec. **Overload:** Output collapses with overload; limits output current to a maximum of 2x rated current. **Output Harmonic Distortion:** 3% total RMS content at full load. **Harmonic Rejection:** Rejects severe waveform harmonics. **Noise Isolation:** 120 dB common mode; 60 dB normal mode. **Surge Suppression:** UP to 6,000 Volt surges are suppressed to safe levels per ANSI/IEEE C62.41-1980 Class A and B waveforms. **Efficiency:** Up to 90% at full load.

Environmental
Operating Temperature: –20°C to +40°C. **Audible Noise:** 34 dB to 49 dB.

Approvals
Listed to UL 1012 and designed to meet UL 478. Certified to CSA C22.2, No. 66 (all models except 3000 VA).

Warranty
10 year limited warranty.

Stock No.	Mfr.'s Type	VA Rating	Input/ Output Voltage	NEMA		Dimensions H × W × D (Inches)	Shipping Weight (Lbs.)	EACH
				Plug	Receptacle			1-2
921-4950	63-13-070-6	70	120	5-15 P	(4) 5-15 R	6.2 × 6.7 × 9.2	18	**159.00**
921-4960	63-13-115-6	150	120	5-15 P	(4) 5-15 R	6.2 × 6.7 × 9.2	21	**249.00**
921-4980	63-13-125-6	250	120	5-15 P	(4) 5-15 R	6.2 × 6.7 × 9.2	26	**348.00**
921-5000	63-13-150-6	500	120	5-15 P	(4) 5-15 R	8.5 × 8.5 × 16.0	32	**483.00**
921-5010	63-13-175-6	750	120	5-15 P	(4) 5-15 R	8.5 × 8.5 × 16.0	64	**651.00**
921-5020	63-13-210-6	1000	120	5-15 P	(4) 5-15 R	8.5 × 8.5 × 16.0	69	**730.00**
921Q5040	63-13-220-6	2000	120	L5-30 P	(4) 5-15 R, (1) L5-30 R	10.6 × 11.3 × 16.8	115	**1203.00**
921Q5050	63-13-230-6	3000	120	5-50 P	(4) 5-15 R, (1) L5-30 R	10.6 × 11.3 × 16.8	143	**1920.00**

Sola Portable MPC — 70 VA to 1 kVA

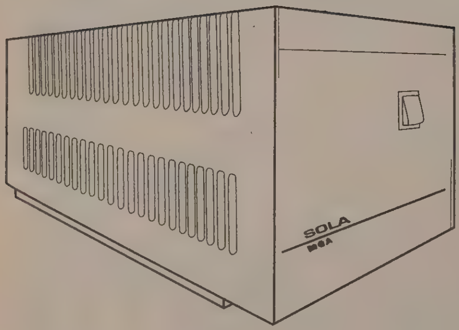
Applications

- Monitors
- Diagnostic Equipment
- Imaging Systems
- Any Data Sensitive Patient Care Equipment
- Medical Carts

Features and Benefits

- Exceptionally Low Leakage Current Exceeds the Requirement of UL 544
- Safe to Use; Units are UL Listed to 1012 and 544, Also Certified to CSA 22.2 and 100.66
- Orange Output Receptacles With Green Triangles Indicate the MPC has Isolated Ground Outputs and Is Safe for Hospital Grade Use
- Quiet, Portable and Easy-To-Use; Just Plug It In

Reliable Power Protection for Critical Medical Applications
The Sola MPC Series medical power conditioner is your prescription for effective protection from surges, sags, spikes, brownouts and noise. Imaging systems, monitors, diagnostic and patient-care equipment are prone to loss of data integrity, poor performance and increased downtime caused by electrical disturbances. Safely protect your vital equipment from power-related problems and increase performance with regulated, noise-free power from the MPC.



Specifications

Input
VA Ratings: 250, 500, 1,000 VA. **Input Voltage Range:** +10/–20% of nominal.

Output
Voltage Regulation: ±3% for an input line variation of +10/–20%. No loss of output for complete line loss of 3 mSec. **Overload:** Output collapses with overload; limits output current to a maximum of 2x rated current. **Output Harmonic Distortion:** 3% total RMS content at full load. **Harmonic Rejection:** Rejects severe waveform harmonics. **Noise Isolation:** 120 dB common mode; 60 dB normal mode. **Surge Suppression:** UP to 6,000 Volt surges are suppressed to safe levels per ANSI/IEEE C62.41-1980 Class A and B waveforms. **Efficiency:** Up to 87% at full load.

Environmental
Operating Temperature: –20°C to +40°C. **Audible Noise:** 43 dB.

Approvals
Listed to UL 1012 and UL 544. Less than 50 µA leakage current for indirect patient care products per UL 544. Designed to meet UL 478. Certified to CSA C22.2, No. 66.

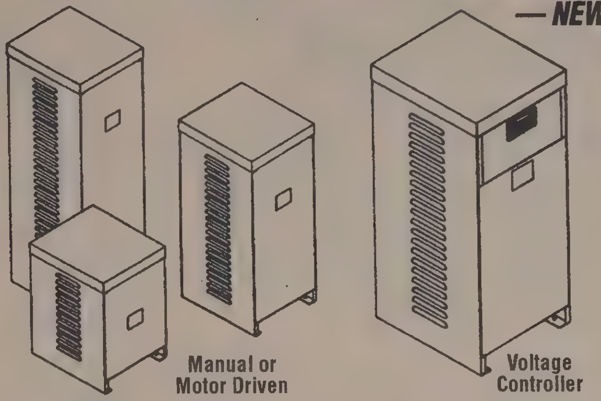
Warranty
10 year limited warranty.

Stock No.	Mfr.'s Type	VA Rating	Input/ Output Voltage	NEMA		Dimensions H × W × D (Inches)	Shipping Weight (Lbs.)	EACH
				Plug	Receptacle			1-2
921-2131	63-13-125-7	250	120	5-15 P	(4) 5-15 R	6.25 × 6.75 × 9.25	26	**378.00**
921-2132	63-13-150-7	500	120	5-15 P	(4) 5-15 R	8.50 × 8.50 × 16.0	32	**522.00**
921-2133	63-13-210-7	1000	120	5-15 P	(4) 5-15 R	8.50 × 8.50 × 16.0	69	**779.00**

E Series Enclosed Variable Transformers

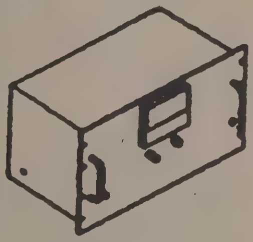
— NEW —

New enclosed, NEMA 1 drip-proof, with 100% front accessibility. Factory wired and assembled manual, motor driven, or motorized with a microprocessor controller. The "MP", voltage controller, provides for remote input and output sensing, rate of change ramping, RS-232 communications, and 1/2 volt setpoint output regulation.



Stock No.	Mfr.'s Type	Style	Output			Wt. (Lbs.)	EACH
			Volts	Amps	kVA		
927Q0001	5021E-3Y	Manual	0-480/560	28	23.3/27.2	332	**3286.00**
927Q0002	6020E-3Y	Manual	0-480/560	35	29.1/33.9	340	**4282.00**
927Q0003	5021E-6Y	Manual	0-480/560	56	46.6/54.3	533	**6812.00**
927Q0004	6020E-6Y	Manual	0-480/560	70	58.1/67.8	539	**8120.00**
927Q0005	60M5021E-3Y	Motor Driven	0-480/560	28	23.3/27.2	353	**4123.00**
927Q0007	60M6020E-3Y	Motor Driven	0-480/560	35	29.1/33.9	361	**4812.00**
927Q0008	60M5021E-6Y	Motor Driven	0-480/560	56	46.6/54.3	554	**7240.00**
927Q0009	60M6020E-6Y	Motor Driven	0-480/560	70	58.1/67.8	560	**8623.00**
927Q0010	MV-60M5021E-3Y	Voltage Controller	0-480/560	28	23.3/27.2	378	**6809.00**
927Q0011	MV-60M6020E-3Y	Voltage Controller	0-480/560	35	29.1/33.9	386	**7498.00**
927Q0012	MV-60M5021E-6Y	Voltage Controller	0-480/560	56	46.6/54.3	579	**9926.00**
927Q0013	MV-60M6020E-6Y	Voltage Controller	0-480/560	70	58.1/67.8	585	**11309.00**

— NEW —



Rack Mounted SVR Voltage Regulators

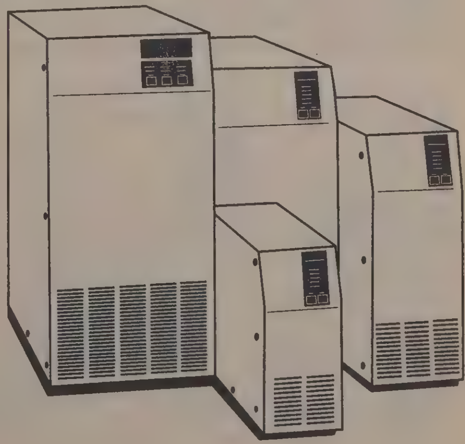
The new compact "SVR" is available in ratings from 2.5 kVA to 15 kVA as either a 19 inch rack unit or as floor mounted unit in a drip-proof, NEMA 1, enclosure. The "SVR" stepper driven variable transformer unit is microprocessor controlled and has been designed to provide from ±0.25% to ±1% output regulation with a full input range correction rate of less than one second. Custom designs that will provide less than ±0.25% output regulation are available for production testing and quality control applications.

Stock No.	Mfr.'s Type	Input		Output		Wt. (Lbs.)	EACH
		Voltage	Range	Amps	kVA		
645Q9500	SVR-12WBSN002R	120	96-132	20.8	2.5	90	**2340.00**
645Q9501	SVR-12WBSN005R	120	96-132	41.7	5.0	100	**2675.00**
645Q9502	SVR-12WBSN007R	120	96-132	62.5	7.5	110	**2920.00**
645Q9503	SVR-12PBSN010R	120	100-128	83.3	10.0	112	**3180.00**
645Q9504	SVR-12NBSN015R	120	107-128	125.0	15.0	115	**3570.00**
645Q9505	SVR-24WBSN002R	240	192-264	10.4	2.5	90	**2670.00**
645Q9600	SVR-24WBSN005R	240	192-264	20.8	5.0	100	**2920.00**
645Q9601	SVR-24PBSN007R	240	199-257	31.3	7.5	110	**3170.00**
645Q9602	SVR-24NBSN010R	240	214-257	41.7	10.0	112	**3530.00**
645Q9603	SVR-24HBSN015R	240	216-254	62.5	15.0	115	**4100.00**

For price availability of floor mounted units and other voltage regulator/power conditioner ratings through 500 kVA, contact your nearest Allied branch.

Staco True ON-LINE Uninterruptible Power Supplies

- ► **On-Line Protection from Sags, Surges, Spikes, Brownouts and Blackouts**
- ► **PMW Sinewave**
- ► **Dual Voltage Output (5 kVA and 10 kVA Only)**
- ► **Static Transfer Switch**
- ► **Fully Isolated**
- ► **No Switching Time**
- ► **Network Communication**
- ► **IBM AS400 Interface**



"U" Series are True On-Line, double conversion, regenerated, regulated uninterruptible power supplies. Additional external batteries can be added for extended run times and a remote status panel is available. Standard run time batteries included in all models. Rack mount available for 1 kVA. Manual bypass switch is optional.

Stock No.	Mfr.'s Type	kVA	Wt. (Lbs.)	EACH
927Q9100	U1001	1	120	**1810.00**
927Q300X	U300X*	3	300	**3561.50**
927Q900X	U500X*	5	525	**5828.00**
927Q905X	U1000X*	10	925	**11302.17**

*X = Input voltages (2=208, 3=220, 4=230), output voltages (120/208/240).

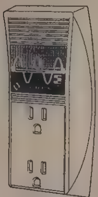
PQI Series STABILINE® Power Quality Interfaces (Transient Voltage Suppressors/RFI Filters)

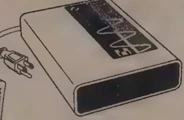
- ► **Attractive, Office/Home, Lightweight ABS Plastic Housings**
- ► **Choose from 29 Models**
- ► **Wall Mount, Desktop, 19-Inch Rack Mount, NEMA 12 and Industrial Hardwired Models Available**

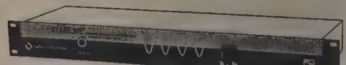
PQI Series units are transient voltage suppressors/RFI filters that divert and attenuate all modes of power disturbances before they reach the circuitry of sensitive electronic equipment. All North American types are UL 1449 listed (clamping level 330 V) and CSA certified. All types are covered by a 10-year warranty.

The unique, performance-proven, multi-stage suppression and filtration design is state-of-the-art and utilizes MOVs, gas tubes, filter capacitors, inductors and silicon avalanche diodes depending upon the model selected. Users have a choice of "good" Series 1000, "better" Series 2000 and "superior" Series 3000 performance levels. Types with "D" suffixes have two RJ11 modular jacks with telephone line transient suppression for use with fax/modems.

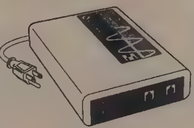
PQI-1115D

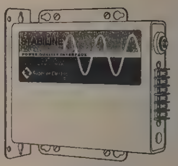

PQI-1115W

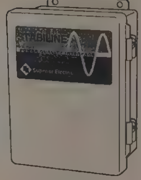

PQI-2115


PQI-2115BR

PQI-1115WD


PQI-3115D


PQI-3120H


PQI-3120N12

Series 1000 — Good Performance

Stock No.	Mfr.'s Type	UL and CSA	Style	Power System Config. Below	Nominal Voltage	Max. Amps	Input Plug Style	AC Output Receptacles		Data Line		Circuit Breaker	On/Off Light	Approx. Weight Lbs. (kg)		EACH
								Qty.	Style	Qty.	Style			Net	Shipping	
645-9800	PQI-1115	Yes	Desktop	1	120	15	5-15P	4	5-15R	—	—	Yes	No	1.50 (0.7)	1.90 (0.9)	**55.00**
645-9802	PQI-1115D	Yes	Desktop	1	120	15	5-15P	2	5-15R	2	RJ11	No	No	1.50 (0.7)	1.90 (0.9)	**59.00**
645-9804	PQI-1115P6	Yes	Desktop	1	120	15	5-15P	6	5-15R	—	—	Yes	No	1.50 (0.7)	1.90 (0.9)	**59.00**
645-9806	PQI-1115W	Yes	Wall Mount	1	120	15	5-15P	2	5-15R	—	—	No	No	1.50 (0.7)	1.90 (0.9)	**35.00**
645-9808	PQI-1115WD	Yes	Wall Mount	1	120	15	5-15P	2	5-15R	2	RJ11	No	No	1.50 (0.7)	1.90 (0.9)	**39.00**

Series 2000 — Better Performance

Stock No.	Mfr.'s Type	UL and CSA	Style	Power System Config. Below	Nominal Voltage	Max. Amps	Input Plug Style	AC Output Receptacles Qty.	AC Output Receptacles Style	Data Line Qty.	Data Line Style	Circuit Breaker	On/Off Light	Approx. Weight Net	Approx. Weight Shipping	EACH
645-9810	PQI-2115	Yes	Desktop	1	120	12	5-15P	4	5-15R	—	—	Yes	Yes	3.00 (1.4)	3.60 (1.6)	**99.00**
645-9812	PQI-2115D	Yes	Desktop	1	120	15	5-15P	2	5-15R	2	RJ11	No	Yes	3.00 (1.4)	3.60 (1.6)	**119.00**
645-9814	PQI-2310	No	Desktop	3	230	10	IEC320	3	IEC320	—	—	Yes	Yes	3.00 (1.4)	3.60 (1.6)	**179.00**
645-9816	PQI-2115BR	Yes	Rack Mount	1	120	15	5-15P	6	5-15R	—	—	Yes	Yes	2.75 (1.2)	3.35 (1.5)	**209.00**
645-9818	PQI-2310R	No	Rack Mount	3	230	10	IEC320	6	IEC320	2	RJ11	Yes	Yes	2.75 (1.2)	3.35 (1.5)	**289.00**

Series 3000 — Superior Performance

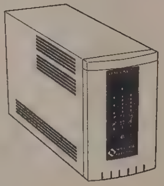
Stock No.	Mfr.'s Type	UL and CSA	Style	Power System Config. Below	Nominal Voltage	Max. Amps	Input Plug Style	AC Output Receptacles Qty.	AC Output Receptacles Style	Data Line Qty.	Data Line Style	Circuit Breaker	On/Off Light	Approx. Weight Net	Approx. Weight Shipping	EACH
645-9820	PQI-3115	Yes	Desktop	1	120	12	5-15P	4	5-15R	—	—	Yes	Yes	3.00 (1.4)	3.60 (1.6)	**139.00**
645-9822	PQI-3115D	Yes	Desktop	1	120	15	5-15P	2	5-15R	2	RJ11	No	Yes	3.00 (1.4)	3.60 (1.6)	**149.00**
645-9824	PQI-3120	Yes	Desktop	1	120	20	5-20P	1	5-20R	—	—	No	Yes	3.40 (1.5)	4.00 (1.8)	**169.00**
645-9826	PQI-3120L	Yes	Desktop	1	120	20	L5-20P	1	L5-20R	—	—	No	Yes	3.40 (1.5)	4.00 (1.8)	**219.00**
645-9828	PQI-3220	Yes	Desktop	2	240	20	6-20P	1	6-20R	—	—	No	Yes	3.40 (1.5)	4.00 (1.8)	**199.00**
645-9830	PQI-3220L	Yes	Desktop	2	240	20	L6-20P	1	L6-20R	—	—	No	Yes	3.40 (1.5)	4.00 (1.8)	**259.00**
645-9832	PQI-3120H	Yes	Hardwired	1	120	20	Screw Terminal	Yes	Screw Terminal	No	—	Yes	Yes	3.40 (1.5)	4.00 (1.8)	**179.00**
645-9834	PQI-3120N12	Yes	NEMA 12	1	120	20	Screw Terminal	Yes	Screw Terminal	No	—	No	No	6.50 (3.0)	7.50 (3.4)	**229.00**
645-9836	PQI-3220N12	Yes	NEMA 12	2	240	20	Screw Terminal	Yes	Screw Terminal	No	—	No	No	6.50 (3.0)	7.50 (3.4)	**259.00**
645-9838	PQI-3310N12	No	NEMA 12	3	230	10	Screw Terminal	Yes	Screw Terminal	No	—	No	No	6.50 (3.0)	7.50 (3.4)	**259.00**

Power System Configurations:
1 — Designed for 120 V Line to Neutral connection. It is intended for use on power systems with 0 V Neutral to Ground and 120 V Line to Ground.
2 — Designed for 208-240 V Line to Line connection. It is intended for use on power systems with 120-140 V from each Line to Ground.
3 — Designed for 220-240 V Line to Neutral connection. It is intended for use on power systems with 0 V Neutral to Ground and 220-240 V Line to Ground.

SL Series STABILINE® Uninterruptible Power Supplies

- ► **Serial Communication Capabilities with Extensive (Optional) Power Monitoring Software**
- ► **UL 1778 Listed and CSA Certified**
- ► **95% On-Line Efficiency**
- ► **Unique "Battery Sleep" Feature for Prolonged Battery Life**

SL Series units are feature-rich, advanced solutions for today's demanding power quality requirements and provide ideal protection for every lind of mission-critical electronic load. They are offered in seven models with power ratings between 400 to 3000 VA for user selectable 110, 120 or 127 VAC, 60 Hz operation.

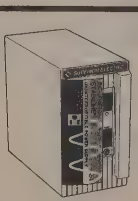


SL Series units are compact and manageable, easy to transport, install and operate. There are no complex instructions and few simple operations to perform. A "boost/buck" tap system is used for tight output regulation control over chronic low or high input voltage conditions. Bidirectional surge diverting/filtering circuitry is used for protection of electrical noise generated from either the AC input or the protected load. Advanced battery management technology is utilized to prolong battery life, speed recharge times and provide advance notice of impending battery service. The ergonomically designed front panel features a self-diagnostic routine of start-up and indicators for site wiring fault, battery service, communication operation, input line condition, battery and percent load levels. Models for 50 Hz operation are also available on request.

Input Voltage Range: ±20% of nominal with a user-selectable extended range of ±25% available. **Nominal Operation:** User selectable, 110, 120 or 127 VAC, via dip-switch selection. No power is drawn from the internal batteries as long as the utility is within the voltage range. **Output Voltage Range:** Utility operation — –10%, +6% of nominal; Battery operation — ±5%. In the extended operating input voltage range mode (±25%), the output voltage under utility operation is –15%, +10%.

Stock No.	Mfr.'s Type	AC Input (Single Phase)			Output 120 VAC Operation					Battery Backup†		Approx. Weight Lbs. (kg)		EACH
		AC Voltage	Max. Amps	Hz	Utility Operation	Battery Operation	Max. Amps @ 0.87 P.F.	Max. VA	Max. Watts	Full Load	Half Load	Net	Shipping	
645-9844	SL 400	96-144	3.7	57-63	108-127	111-123	3.3	400	267	10	30	25 (11.3)	28 (12.7)	**395.00**
645-9846	SL 600	96-144	5.5	57-63	108-127	111-123	5.0	600	400	5	20	25 (11.3)	28 (12.7)	**495.00**
645-9848	SL 1000B	96-144	8.5	57-63	108-127	111-123	8.3	1000	667	6	16	54 (24.5)	59 (26.7)	**695.00**
645-9850	SL 1500	96-144	12.0	57-63	108-127	111-123	12.0	1440	960	5	20	54 (24.5)	59 (26.7)	**875.00**
645-9852	SL 2000*	96-144	16.0	57-63	108-127	111-123	16.0	1920	1281	10	30	28 (12.7)	33 (15.0)	**1495.00**
645-9854	SL 2200*	96-144	19.0	57-63	108-127	111-123	18.3	2200	1467	5	20	28 (12.7)	33 (15.0)	**1595.00**
645-1105	SL 3000B	96-144	25.3	57-63	108-127	111-123	25.0	3000	2000	7	20	38 (17.2)	42 (19.0)	**2595.00**

*The SL BAT48B External Battery Pack is required and included with SL 2000, SL 2200 and SL 3000B models. Shipped separately. Approximate Weight Lbs. (kg): Net — 65 (29.5); Shipping — 70 (31.8). †Internal Battery Backup (Min.).



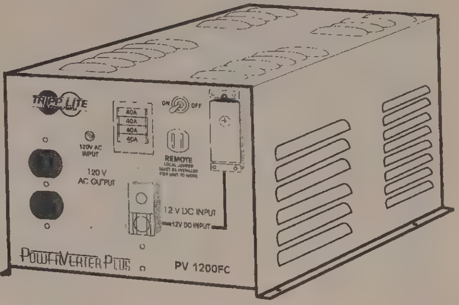
SP Series STABILINE® Standby Power Supplies

SP Series STABILINE® Standby Power Supplies provide the most cost-effective, compact and efficient power quality solution for PCs, workstations, POS systems, cash registers and any other electronic device by instantly switching to battery power when an AC power outage occurs. North American types are UL 1778 listed and CSA certified. SP Series types utilize economical synthesized sine wave (step wave) output technology and come complete with audible and visual alarms and optional (420 VA model and above) computer interface software for Novell, UNIX and other platforms. Like the STABILINE® SL Series, all SP Series units incorporate advanced battery management features to ensure prolonged battery life, speedy recharge time and advance notification of impending battery service requirements. Models for 50 Hz operation are also available on request. Models are UL 1778 and UL 1449 Listed and CSA Certified. **Transfer Time to Inverter:** 2 mS typical, 4 mS max. **Transfer (Low Line) Voltage to Battery:** User selectable for 88, 93, 98 and 103 VAC operation. Units shipped for 103 VAC operation.

†Internal Battery Backup (Min.).

Stock No.	Mfr.'s Type	AC Input (Single Phase)			Output 120 VAC Operation					Battery Backup†		Approx. Weight Lbs. (kg)		EACH
		AC Voltage	Max. Amps	Hz	Battery Operation Voltage	Battery Operation Hz	Max. Amps	Max. VA	Max. Watts	Full Load	Half Load	Net	Shipping	1-2
645-1100	SP 220	103-145	2.5	57-63	120 ±5%	60 ±3	1.8	220	140	5	15	14 (6.4)	17 (7.1)	**120.00**
645-1101	SP 300	103-145	3.5	57-63	120 ±5%	60 ±3	2.5	300	180	9	25	14 (6.4)	17 (7.1)	**140.00**
645Q1102	SP 420	103-145	4.8	57-63	120 ±5%	60 ±3	3.5	420	260	5	15	17 (7.7)	20 (9.1)	**210.00**
645Q1103	SP 500	103-145	5.7	57-63	120 ±5%	60 ±3	4.2	500	320	6	19	17 (7.7)	20 (9.1)	**260.00**
645Q1104	SP 650	103-145	7.4	57-63	120 ±5%	60 ±3	5.4	650	400	4	12	20 (9.1)	23 (10.4)	**350.00**

PowerVerter Series DC to AC Inverters



Solid state power inverters convert 12 V battery DC into 120 VAC (60 Hz). Simply plug your household appliances into your inverter for convenient power anywhere. **PowerVerter** models operate most household appliances and are an economical solution to your mobile power needs. **PowerVerter Plus** models are frequency-controlled to power sensitive equipment such as tape recorders, test equipment or computer systems. They also provide 200% of rated output for heavy start up loads.

Stock No.	Mfr.'s Type	Input Max. Volts (DC)	Max. Output Watts (STD/Peak)	Size H × W × D (In.)	Weight (Lbs.)	EACH
575-9925	PV 125	12	125/175	3¼ × 3½ × 5½	3	80.00
575-1020	PV 200	12	200/300	5½ × 4¼ × 7¼	6	99.00
575-1045	PV 400	12	400/600	5½ × 4¼ × 7¼	10	149.00
575-1070	PV 550	12	550/800	5 × 9½ × 9	19	219.00

PowerVerter Plus Frequency-Controlled DC to AC Inverters

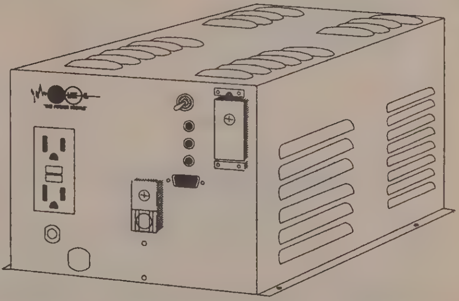
Stock No.	Mfr.'s Type	Input Max. Volts (DC)	Max. Output Watts (STD/Peak)	Size H × W × D (In.)	Weight (Lbs.)	EACH
575-7905	PV 400FC	12	400/800	7 × 7 × 10	14	230.00
575-9721	PV 750FC	12	750/1500	7 × 7 × 10	17	359.00
575-1080	PV 1200FC	12	1200/2400	6½ × 8½ × 12	38	549.00

Precision Regulated DC Power Supplies

These high quality power supplies efficiently convert 120 VAC to 13.8 VDC. Features include solid state circuitry, high quality filtering and electronic foldback for automatic over-current protection. Perfect for CBs and ham radios. Output voltage maintained up to 95% of no load value. Heavy-duty transformer for complete isolation. Crowbar protection prevents overvoltage damage to connected equipment (available on 15 amp units and larger). Lighted on/off switch, 3-conducted grounded cord also present.

Stock No.	Mfr.'s Type	ICS (Amps)	Continuous Duty (Amps)	Fusing	Size H × W × D (In.)	Weight (Lbs.)	EACH
575-5003	PR 3	3.0	2.0	Internal	3 × 4½ × 7½	4	33.50
575-5002	PR 3UL	4.5	3.0	Internal	4¼ × 2 × 7½	4	46.00
575-5004	PR 4.5	4.5	3.0	Internal	3 × 4 × 8¼	5	39.00
575-5007	PR 7	7.0	5.0	Chas. Mt.	3¾ × 6½ × 7½	7	55.00
575-5010	PR 10	10.0	7.5	Chas. Mt.	4½ × 6 × 7	10	79.00
575-8900	PR 12	12.0	9.0	Chas. Mt.	4½ × 6¾ × 7¾	11	82.50
575-5015	PR 15	15.0	12.0	Chas. Mt.	4½ × 6 × 10	13	108.00
575-8905	PR 20	20.0	16.0	Chas. Mt.	4½ × 6 × 10	15	120.00
575-5025	PR 25	25.0	20.0	Chas. Mt.	6¾ × 6¼ × 10¼	19	165.00
575-0260	PR 35	35.0	25.0	Chas. Mt.	6¾ × 6¼ × 10¼	23	172.00
575-5040	PR 40	40.0	32.0	Chas. Mt.	6¾ × 10½ × 11½	27	201.00
575-8915	PR 50	50.0	37.0	Chas. Mt.	6¾ × 10½ × 11½	30	253.00
575-5060	PR 60	60.0	48.0	Chas. Mt.	6¾ × 10½ × 11½	33	299.00

APS Series Systems For Extended Backup Times



APS units automatically sense and switch AC output between outside AC power and DC battery power. Perfect for phone systems, security systems or anywhere extended backup times are needed. A fully regulated battery charger maintains batteries while outside AC power is available. Add additional batteries for virtually unlimited run times. APS models feature a rugged metal case for use as a mobile battery power source. All models are peak power rated and frequency controlled. 2-year product warranty.

Stock No.	Mfr.'s Type	Input Volts (DC)	Max. Output Watts (STD/Peak)	Size H × W × D (In.)	Weight (Lbs.)	EACH
575-9724	APS400	12	400/800	7 × 7 × 10	16	279.00
575-7790	APS750	12	750/1500	7 × 7 × 10	20	458.00
575-7702	APS1250	12	1250/2500	6½ × 8½ × 12	39	727.50

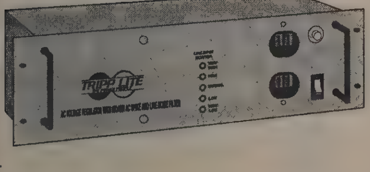
Batteries and Accessories for Extended Run UPS Systems

Stock No.	Mfr.'s Type	Description	EACH
575-9875	98-121	55 A.H. Battery. Sealed and maintenance free.	148.00
575-9260	BP260	Battery case. Holds two 33 A.H. batteries.	104.00
575-9723	BP24V33	24 V battery pack. Includes two 33 A.H. batteries with cables.	338.00

*INT models available with 230 V, 50 Hz output.

Line Conditioners

ULTIMATE $25,000 LIFETIME INSURANCE



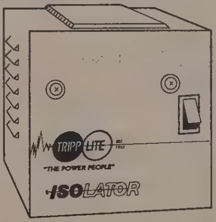
- ► **Regulates Incoming Voltages From 87 to 140 VAC Back to 120 VAC**
- ► **Provides Complete Surge/Noise Suppression**
- ► **Rackmount Units Available**

Brownout correction and surge and line noise suppression in one low cost unit. Automatically adjusts the widest range of incoming voltage (from 87 to 140 V) back to 120 VAC nominal output within ANSI C84.1 specifications. LC 1200, 1800 and 2400 feature built-in Isobar surge suppression. Up to $25,000 Ultimate Lifetime Insurance coverage for connected equipment; 2-year product warranty.

Stock No.	Mfr.'s Type	Load Max. (Watts)	Isolation	Outlets	Size H × W × D (In.)	Weight (Lbs.)	EACH
575-0300	LS 600	600	No	2	3½ × 6½ × 7	5	92.75
575-0303	LS 604	600	No	4	3½ × 6½ × 7	6	139.00
575-0305	LC 1200	1200	Yes	4	5 × 5 × 7¼	10	229.00
575-0310	LC 1800	1800	Yes	6	5¼ × 7¾ × 7	12	319.00
575-0314	LC 2400	2400	Yes	6	5¼ × 7¾ × 7	13	369.00
575-3400	LCR 2400*	2400	Yes	14	5¼ × 19 × 5	13	409.00

*19" Rackmount version.

Isolation Transformers



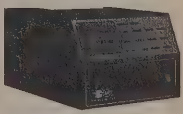
The Isolator provides true line isolation to protect sensitive electronics. Clean, portable ground eliminates the need for dedicated lines. Efficient operation generates less heat than ferroresonant devices. Features exceptional, low frequency line noise rejection and external resettable circuit breaker. Comes with 6' cord. **Output Voltage:** 120 VAC.

Stock No.	Mfr.'s Type	Load Current (Amps)	Output (Watts)	Shipping Weight (Lbs.)	Load Regulation	Surge Current (Amps)	Size H × W × D (In.)	EACH
575-9200	IS 200	1.7	200	13	RMS +4%	13	4¾ × 4½ × 6¾	103.00
575-9400	IS 400	3.4	400	21	RMS +4%	28	5½ × 6¼ × 8½	169.00
575-9800	IS 800	6.8	800	25	RMS +3%	50	5½ × 6¼ × 8½	219.00

TL Series Base Station Power Supplies

— NEW —

- ► **Regulated, Reliable DC Power for Base Station Radios**
- ► **Low-Profile Design and Footprint Fits Most Popular Models**
- ► **Works with Motorola Radius, GE, EF Johnson and Many Other Radios!**



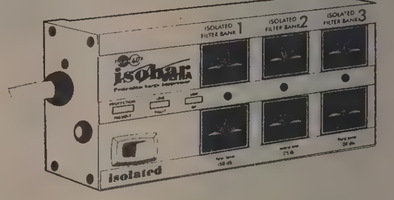
Designed to fit the most popular radios on the market, these precision regulated DC power supplies attractively power your home radio station

Stock No.	Mfr.'s Type	ICS (Amps)	Fusing	Size H × W × D	EACH
575-0270	TL11	11	Chas. Mt.	3¼ × 7¾ × 9	85.00
575-0275	TLC11	11	Chas. Mt.	6¼ × 7¾ × 9 (Overall) 2⅛ × 7⅝ × 9 (Enclosure)	97.00

ISOBAR® Surge/Noise Suppressors

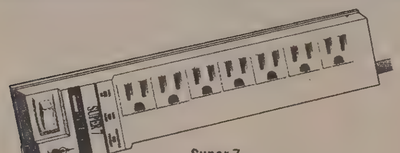
- **All Metal Case Won't Break, Won't Burn and Won't Melt**
- **Exclusive Isolated Filter Banks Eliminate Interface**
- **Logical Outlet Configuration Lets You Use Every Outlet — Even with Bulky Transformers**
- **Advanced Diagnostic LEDs Alert You to Improperly Wired Outlets and Damage to Protection Circuitry**
- **Instantaneous (0 Nanosecond) Surge Response**
- **$25,000 Ultimate Lifetime Insurance**

The world's best known, best-selling surge suppressors. Isobar is the only surge suppressor with isolated filter banks to eliminate interference between connected equipment. "Cascade" circuitry offers increasing levels of protection for more sensitive equipment and instantaneous surge response suppression surges of up to 120,000 amp spikes. Up to $25,000 ultimate lifetime insurance covers Isobar and connected equipment for life!



ULTIMATE
LIFETIME
INSURANCE

Stock No.	Mfr.'s Type	Outlets	Filter Banks	Cord Length (ft.)	Ultimate Lifetime Insurance	Joule Ratings	Circuit Breaker	Special Features	EACH
575-0020	ISOBLOK 2-0	2	1	—	$10,000	600	—	Direct plug in	**33.00**
575-0200	ISOBAR 2-6	2	1	6	$10,000	600	15 A	Metal case	**51.95**
575-0205	ISOBAR 4	4	2	6	$10,000	1050	15 A	Isolated filter banks, metal case	**79.95**
575-0215	ISOBAR 6	6	3	6	$10,000	1200	15 A	Isolated filter banks, metal case	**79.00**
575-9900	ISOBAR 4 Ultra	4	2	6	$25,000	1050	15 A	Isolated filter banks, diagnostics, metal case	**79.95**
575-9913	ISOBAR 6 Ultra	6	3	6	$25,000	1200	15 A	Isolated filter banks, diagnostic, metal case	**84.95**
575-9909	ISOBAR 8 Ultra	8	4	12	$25,000	1200	15 A	Isolated filter banks, diagnostic, metal case	**99.95**
575-0222	ISOBAR 8RM	8	4	12	$10,000	1200	15 A	Remote on/off switch, metal case	**85.00**
575-9915	CCC4	4	1	8	$5,000	900	15 A	Compact console, diagnostics	**53.00**
575-0220	CCI6	6	1	9	$10,000	1050	15 A	Console, metal case	**94.95**
575-0320	CCI6PLUS	6	1	9	$10,000	1200	15 A	Console, with modem/fax prot., metal case	**87.00**
575-9973	MT6	6	1	10	$25,000	1200	15 A	TouchMaster console, dia. LEDs	**97.00**
575-9974	MT6PLUS	6	1	10	$25,000	1500	15 A	TouchMaster console with modem/fax prot., LEDs	**120.00**
575-9600	CCI 6/230	6	1	9	—	600	15 A	Console 220/240 volt, metal case	**112.00**
575-0226	ISOBAR 4/220	4	2	6	—	600	9 A	220 volt, metal case	**74.00**
575-2400	IBR-12	12	2	12	$10,000	750	15 A	19" rack mount, metal case	**139.00**
575-9610	ISOMASTER	4	2	6	$10,000	600	15 A	Time delay, load sending, metal case	**102.00**
575-9605	UltraBlok 428	2	1	—	$10,000	600	15 A	LEDs, for phone systems	**45.00**
575-9615	UltraCopy	2	1	—	$10,000	600	20 A	LEDs, 20 amp for copiers	**57.00**



Super 7

ULTIMATE
LIFETIME
INSURANCE

Super Surge Economy Surge Suppressors

- **Reliable, Economical Surge and Line Noise Suppression**
- **Surge Suppression to 72,000 Amps**
- **Diagnostic LEDs Alert You to Improperly Wired Outlets and Damage Protection Circuitry**
- **TR-6 Recently Rated #1 In Protection By the Leading Consumer Publication**
- **Up to $15,000 Ultimate Lifetime Insurance**

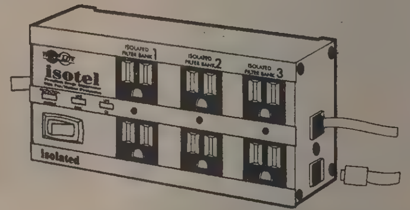
Designed to provide economical protection for valuable electronic equipment. Up to 72,000 amps of surge protection is available. Models with diagnostic LEDs alert user to ground faults or damage to protection circuitry. All units are UL listed and provide basic noise suppression.

Stock No.	Mfr.'s Type	Outlets	Cord Length (ft.)	Surge Suppression (Joules)	Ultimate Warranty Coverage	On/Off Switch	Circuit Breaker	Special Features	EACH
575-0080	Super 6	6	4	360	—	Yes	Yes	All purpose surge suppressor	**13.95**
575-0225	Spike Blok	6	—	360	—	No	No	Direct plug in model	**24.95**
575-9560	Stik	6	6	360	—	Yes	Yes	RFI/EMI filtering, general purpose	**24.95**
575-9920	Super 7	7	7	450	$5,000	Yes, lighted	Yes	Diag. LEDs, lifetime warranty	**29.90**
575-9975	Super 8	8	8	600	$10,000	Yes, lighted	Yes	Diag. LEDs, lifetime warranty	**26.50**
575-0060	TR6	6	6	900	$15,000	Yes, lighted	Yes	LEDs, lifetime product warranty	**40.95**

Fax/Modem Surge and Noise Suppressors

- **Complete Surge Protection for Telephone Lines**
- **Diagnostic LEDs Alert You to Improperly Wired Outlets and Damage to Protection Circuitry**
- **Dual RJ11 Jacks Provide Easy Connection for Modems and Fax Machines**
- **Up to $25,000 Ultimate Lifetime Insurance Connected Equipment Coverage**

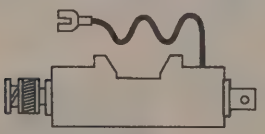
Protect your modem, fax machine or telephone system from spikes, surges and line noise carried along standard telephone lines. ISOTEL models include isolated filter banks and "cascade circuitry" for advance noise reduction.



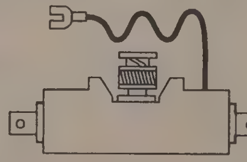
Isotel 6 Ultra

ULTIMATE
LIFETIME
INSURANCE

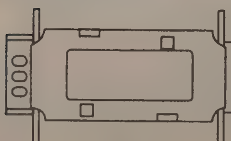
Stock No.	Mfr.'s Type	Outlets	Cord Length (ft.)	Surge Suppression (Joules)	Ultimate Warranty Coverage	Dataline Jacks	Circuit Breaker	Special Features	EACH
575-3100	MP	—	—	90	—	RJ11	No	Protects modem/fax, 2-year warranty	**15.95**
575-3200	SMP	1	—	360	—	RJ11	No	Protects 1 AC and 1 dataline	**29.95**
575-3250	SMP GS	1	—	360	$500	RJ11	No	Protects 1 AC and 1 dataline	**33.95**
575-3000	TSB	—	—	490	—	RJ11	No	3-stage modem/phone line protection	**49.95**
575-9630	IsoFax	2	—	600	$10,000	RJ45	No	Isobar protection	**48.95**
575-9820	UltraFax	2	—	600	$10,000	RJ11	No	Isobar protection	**59.95**
575-0250	Super 6 + TEL	6	4	360	—	RJ11	Yes	Basic AC and telephone surge suppressor	**25.50**
575-9976	Super 7 + TEL	6	7	450	$5,000	RJ11	Yes	Mid-level protection with dia. LEDs	**30.50**
575-0252	Super 8 + TEL	8	8	900	$10,000	RJ11	Yes	Excellent protection with dia. LEDs	**54.95**
575-9935	TR6 FM	6	6	1200	$15,000	RJ11	Yes	Rated #1 by the leading consumer publication	**64.95**
575-0024	Isotel	4	6	1350	$10,000	RJ11	Yes	Isobar protection	**89.95**
575-9821	Isotel 6 Ultra	6	6	1500	$25,000	RJ11	Yes	Isobar protection	**109.95**
575-9625	Isotel 8 Multimedia	8	12	1500	$25,000	RJ11	Yes	Isobar protection	**96.00**



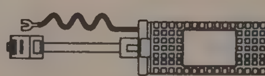
D10B2



D10B2-T



DB9



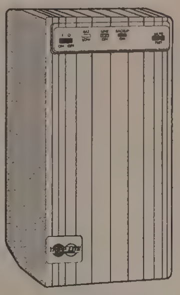
DTEL2

DataShield™ Data Communications Line Surge Suppressors

As transmission rates continue to rise and vital processing power is decentralized, network file servers, hubs, routers, print servers and workstations are increasingly susceptible to power problems from dataline transient. Tripp Lite's DataShield™ dataline surge suppressors safely divert damaging dataline surges before they reach critical network equipment.

Stock No.	Mfr.'s Type	Interface	Clamping	Lines Protected	EACH
575-9977	D10BT	RJ45	7.5 V	1, 2, 3, 6	**35.00**
575-9978	D10B2	BNC	7.5 V	Center, shield and chassis	**35.00**
575-9979	D10B2-T	BNC "T"	7.5 V	Center, shield and chassis	**39.00**
575-9980	DTKNRNG	RJ45	7.5 V	3, 4, 5, 6	**35.00**
575-9981	DB9	DB9	18.0 V	1-9, Chassis	**28.00**
575-9982	DB25-ALL	DB25	18.0 V	1-25, Chassis	**42.00**
575-9983	DTEL2	RJ11/45	260.0 V	2 lines (center 4 wires)	**30.00**
575-9984	DRS232	RJ45	18.0 V	1-8	**49.00**

BC Personal 280



BC Pro 450

ULTIMATE $25,000 LIFETIME INSURANCE

BC Series Battery Backup Systems

- ► Complete Blackout, Brownout and Surge Protection
- ► Phase Synchronized 2 ms Switchover to and from Battery
- ► $25,000 Ultimate Lifetime Insurance Connected Equipment Coverage
- ► Full 2-Year Product Warranty

BC Personal Series Standby UPS Systems

BC Personal models are perfect for home or stand-alone use. These units protect your computer from data loss and equipment damage with long lasting battery backup. Up-front LEDs provide information on line status, battery use and (on BC 420 and BC 500) alert you to low battery charge or replacement.

Stock No.	Mfr.'s Type	Output Capacity VA/Watts	Backup Time Half/Full (mins.)	Size H × W × D (In.)	Weight Lbs.	EACH
575-0100	BC PERS 200	200/140	14/5	7½ × 4 × 5½	11.0	**109.00**
575-0101	BC PERS 280	280/175	15/6	7½ × 4 × 5½	12.0	**127.00**
575-0102	BC PERS 420	420/295	21/8	9½ × 5 × 6½	14.5	**179.00**
575-0103	BC PERS 500	500/350	23/9	9½ × 5 × 6½	19.0	**224.00**

BC Pro Series Standby UPS Series

BC Pro models feature a Db9 LAN port and support the unattended shutdown of virtually any network operating system with PowerAlert software. Larger VA ratings allow protection of multiple fileservers. These units also feature up-front, diagnostic LEDs, automatic inverter shutdown and SNMP compatibility.

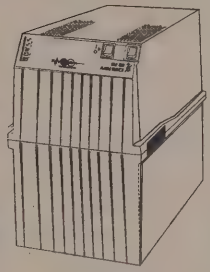
Stock No.	Mfr.'s Type	Output Capacity VA/Watts	Backup Time Half/Full (mins.)	Size H × W × D (In.)	Weight Lbs.	EACH
575-0104	BC PRO 450	450/325	22/8	9½ × 5 × 6½	15.5	**199.00**
575-0105	BC PRO 550	550/375	22/7	9½ × 5 × 6½	18.0	**250.00**
575-0106	BC PRO 675	675/425	24/9	9½ × 5 × 6½	20.0	**319.00**
575-0107	BC PRO 850	850/570	27/10	11 × 7 × 9	27.0	**366.80**
575-0108	BC PRO 1050	1050/735	33/15	10 × 6 × 13¾	35.0	**469.00**
575-0109	BC PRO 1400	1400/980	36/17	10 × 6 × 13¾	41.5	**629.00**

OmniSmart® PNP LINE INTERACTIVE UPS Systems — *NEW* —

$50,000 ULTIMATE LIFETIME INSURANCE

Includes FREE Software

- ► Single Purchase Solution Includes Data Protection Software for Every Major OS — Including Windows 95
- ► Corrects Brownouts without Using Battery Power
- ► Total Blackout, Brownout, Surge and Line Noise Protection
- ► $50,000 Ultimate Lifetime Insurance Connected Equipment Coverage
- ► Full 2-Year Product Warranty



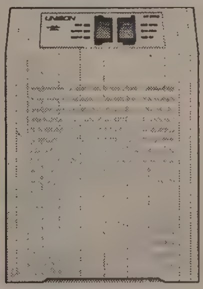
Smart 1050

Automatic voltage regulation (AVR) automatically adjusts incoming voltage from 92 to 150 volts back to 120 VAC. Each unit features advanced microprocessor controlled functions including a UPS self-test and up front LED displays for voltage correction, UPS load, battery charge and condition.

Stock No.	Mfr.'s Type	Output Capacity VA/Watts	Backup Time Half/Full (mins.)	Size H × W × D (In.)	Weight Lbs.	EACH
575-0040	OmniSmart280PNP	280/175	17/5	9⅕ × 5 × 6½	13	**190.00**
575-0041	OmniSmart450PNP	450/280	17/5	9⅕ × 5 × 6½	15½	**299.00**
575-0042	OmniSmart675PNP	675/425	17/5	9⅕ × 5 × 6½	20	**369.00**
575-0043	OmniSmart850PNP	850/570	21/6	11 × 7 × 9	27	**519.00**
575-0044	OmniSmart1050PNP	1050/705	23/7	10 × 6 × 13¾	32	**559.00**
575-0045	OmniSmart1400PNP	1400/940	24/6	10 × 6 × 13¾	39	**659.00**

Unison® On-line, Sine Wave UPS Systems

$100,000 ULTIMATE LIFETIME INSURANCE

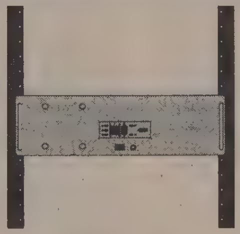


- ► Single Purchase Solution Includes Power Monitoring and Data Protection Software for Every Major OS on a Single CD-ROM
- ► On-Line, True Sine Wave Protection
- ► Zero Transfer Time
- ► Up to $100,000 Ultimate Lifetime Insurance
- ► Full 2-Year Product Warranty; SNMP Compatible

The ultimate in UPS protection SmartPro Unison systems are the on-line, pure sine-wave solution to sensitive systems. Unison on-line, sine-wave UPS systems produce a voltage regulated, frequency controlled sine-wave output to ensure perfect power regardless of line conditions.

Stock No.	Mfr.'s Type	Output Capacity VA/Watts	Backup Time Half/Full (mins.)	Size H × W × D (In.)	Weight Lbs.	EACH
575-0001	PS450	450/300	17/5	10 × 6½ × 14	34.0	**559.00**
575-0002	PS700	750/500	21/6	10 × 6½ × 14	32.5	**703.00**
575-0003	PS1000	1050/700	17/5	10 × 6½ × 14	45.0	**875.00**
575-0004	MPS1400	1400/980	17/5	12¼ × 8 × 22	63.5	**1399.00**
575Q0005	MPS2000	2000/1400	17/5	12¼ × 8 × 22	70.5	**1999.00**

SmartPro Net Intelligent Network UPS Systems — *NEW* —



Smart 700 RM

$50,000 ULTIMATE LIFETIME INSURANCE

Includes FREE Software

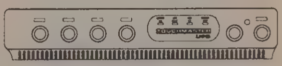
- ► Single Purchase Solution Includes Power Monitoring and Data Protection Software for Every Major OS on a Single CD-ROM
- ► Intelligent Microprocessor Control of All UPS Functions
- ► Automatic Voltage Regulation (AVR) Adjusts Incoming Voltages from 87 to 140 VAC Back to 120 VAC Nominal
- ► Rackmount and Expandable Run-Time Models Available
- ► $50,000 Ultimate Lifetime Insurance Connected Equipment Coverage
- ► Full 2-Year Product Warranty; SNMP Compatible

SmartPro Net units feature a line-interactive design to provide clean, 120 volt power during brownout or overvoltage conditions without using battery power. All units provide complete protection against blackouts, brownouts, surges and line noise and feature advanced LEDs to alert you to battery status and operating conditions. Smart datacenters include all of the above plus 14 receptacles to accommodate all of your connected equipment, Insured up to $75,000.

Stock No.	Mfr.'s Type	Output Capacity VA/Watts	Backup Time Half/Full (mins.)	Size H × W × D (In.)	Weight Lbs.	EACH
575-0025	Smart280Net	280/175	17/5	11 × 7 × 9	16.0	**299.00**
575-0026	Smart450Net	450/280	17/5	11 × 7 × 9	19.0	**379.00**
575-0028	Smart700Net	700/450	21/6	11 × 7 × 9	37.0	**493.00**
575-0029	Smart700RM*	850/570	23/7	5¼ × 19 × 10¾	41.0	**599.00**
575-0030	Smart1050Net	1050/705	23/7	5¼ × 19 × 10¾	37.5	**659.00**
575Q0032	Smart1250XLNet†	Unlimited	Var.	14½ × 8 × 13½	81.0	**1299.00**
575Q0033	Smart1400Net	1400/940	21/6	10 × 6 × 13¾	48.0	**799.00**
575Q0034	Smart2200Net	2000/1600	37/11	14½ × 8 × 13½	95.0	**1299.00**
575Q0035	Smart2200RM*	2000/1600	37/11	8¾ × 19 × 13½	91.0	**1549.00**
575Q0036	Smart2200XLNet†	Unlimited	Var.	15 × 8½ × 13½	81.0	**1529.00**
575Q0037	Smart2200XLRM	Unlimited	Var.	8¾ × 19 × 13½	101.0	**1725.00**
575Q0125	Smart3000Net	3000/2400	23/7	16 × 9 × 14	109.0	**2149.00**
575Q0140	SmartDataCenter3000XL	3000/2100	Unlimited	23 × 8 × 22	171.0	**2799.00**
575Q0126	SmartDataCenter5000XL	5000/3500	Unlimited	31 × 8 × 22	279.0	**3670.00**

*RM models are rackmountable. †XL models feature expandable run times with external batteries.

TM 420 Under Monitor UPS — *NEW* —



- ► 420 VA UPS System for Long Backup Times
- ► 6 Isobar Surge Protected Outlets; 2 with Battery Backup
- ► 1 Master and 4 Auxiliary Switches for Fingertip Control
- ► Internet-Ready with 2 Surge Protected RJ11 Phone Jacks
- ► Diagnostic LEDs Indicate Power/UPS Status and Detect Line Faults
- ► Provides Complete Surge Protection for Laser Printers

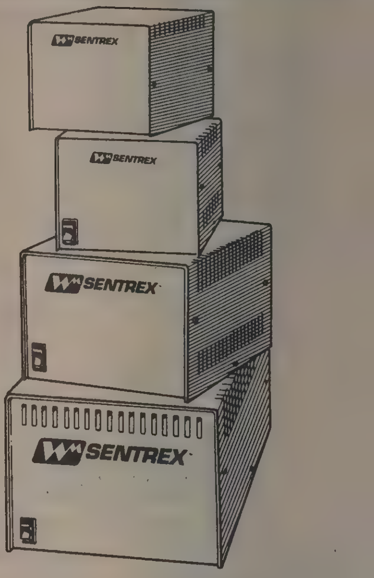
Take control of your computer system with TouchMaster's individual switches and work right through power problems with long-lasting battery backup power. TouchMaster UPSs feature complete protection against surges, spikes and line noise.

Stock No.	Mfr.'s Type	Output Capacity VA/Watts	Backup Time Half/Full (mins.)	Size H × W × D (In.)	Weight Lbs.	EACH
						1-2
575-0046	TM420	420/295	17/6	2 × 13½ × 12½	17	**249.00**

WIREMOLD™
Shape Electronics Division

Sentrex™ Personal Computer Line Conditioners (PCLC)

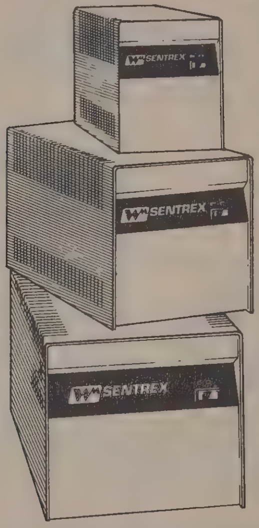
Sentrex™ ferroresonant PCLC, CLC and CLT Line Conditioners provide completely regulated, computer compatible sinewave power to sensitive electronic equipment. They protect against brownouts, spikes, surges, harmonic distortion, noise...everything short of a complete blackout.



- Workstations
- Remote Computer Peripherals
- Micro Computers
- LANs
- FAX Machines
- Input Voltage: 96-132 VAC
- Output Voltage: 120 VAC, ±5%
- 6 Foot Line Cord
- Output Waveform: Sinewave, Approx. 5% THD
- Response Time: Instantaneous (No Measurable Delay)
- Safety: UL Listed and CSA Certified
- Three Year Warranty
- 50 Hz Units also Available
- Protection Against all Powerline Problems Short of a Blackout, Including: Brownouts, Harmonic Distortion, Noise, Voltage Spikes and Transients
- Protects against Power Interruptions up to 3 Milliseconds

Stock No.	Mfr.'s Type	VA Rating*	Plug Type	Output Receptacles	Shipping Wt. (Lbs.)	EACH
533-8110	PCLC-110	110	5-15P	(2) 5-15R	12	**156.00**
533-8115	PCLC-210	210	5-15P	(4) 5-15R	17	**208.00**
533-8120	PCLC-420	420	5-15P	(4) 5-15R	23	**242.00**
533-8125	PCLC-650	650	5-15P	(6) 5-15R	28	**365.00**
533-8130	PCLC-850	850	5-15P	(6) 5-15R	31	**381.00**
533-8135	PCLC-1100	1100	5-15P	(6) 5-15R	47	**524.00**
533-8140	PCLC-1400	1400	5-15P	(6) 5-15R	52	**583.00**
533-8145	PCLC-1800	1800	5-20P	(6) 5-15R	64	**680.00**

On-off switch standard, except PCLC-110. *Based on load power factor of 0.7 leading.



Sentrex™ Computer Line Conditioners (CLC)

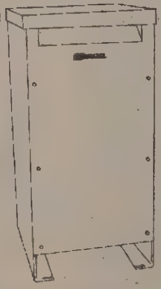
- Medical Equipment
- Factory Automation Equipment
- Mini-computers
- Large LANs
- Process Control
- Input Voltage: 90-132 VAC
- Response Time: Instantaneous (No Measurable Delay)
- Safety: UL Listed
- Output Waveform: Sinewave, Approx. 3% THD
- Output Voltage: 120 VAC, ±3%
- 6 Foot Line Cord
- Super Isolation and Tight Regulation for Sensitive Microprocessors
- Multi-Stage MOV Surge Suppression
- 50 Hz Units also Available
- Five Year Warranty

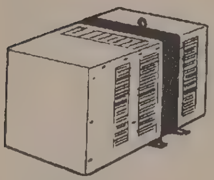
Stock No.	Mfr.'s Type	VA Rating*	Plug Type	Output Receptacles	Shipping Wt. (lbs.)	EACH 1-2
533-8150	CLC-0100-AAA	100	5-15P	(2) 5-15R	15	**197.00**
533-8155	CLC-0200-AAA	200	5-15P	(2) 5-15R	18	**251.00**
533-8160	CLC-0350-AAA	350	5-15P	(2) 5-15R	26	**325.00**
533-8165	CLC-0500-AAA	500	5-15P	(4) 5-15R	36	**439.00**
533-8170	CLC-0750-AAA	750	5-15P	(4) 5-15R	42	**552.00**
533-8175	CLC-1050-AAA	1050	5-15P	(4) 5-15R	50	**638.00**
533-8180	CLC-1500-AAA	1500	5-15P	(4) 5-15R	62	**816.00**
533Q8185	CLC-2100-AAA	2100	L5-30P	(4) 5-15R, (1) L5-30R	88	**1081.00**
533Q8190	CLC-3100-AAA	3100	L5-30P	(4) 5-15R, (1) L5-30R	114	**1553.00**

*Based on load power factor of 0.7 leading.

Sentrex™ Computer Line Conditioners (CLT), Hardwired

GTO, RTO Case





GTB, GTW, RTW Case

- Telephone and Security Systems
- Medical Equipment
- Mini-/Mainframe Computers
- Typesetters
- Process Control
- Multiple Voltages in One Unit: 90-132 VAC
- Input Voltage: 120/208/240/480 (140 VA through 5 kVA) 280/240/480 (7.5 kVA through 15 kVA)
- Output Voltage: 120/208/240, ±3%
- Response Time: Instantaneous (No Measurable Delay)
- 50 Hz Units Also Available
- Safety: UL Listed
- Warranty: 5 Years

How To Determine The Size You Need: 1. List all equipment to be protected, including terminals, printer and other peripherals. 2. Determine the VA (Volt Amp) required for each device by multiplying the amperes drawn (the number is usually found on the nameplate and/or in the owner's manual) by 120 volts, i.e. 120 V × 2.0 amps = 240 VA. 3. Consider an allowance for future system expansion. 4. Choose the appropriate Sentrex™ for the VA required. For further assistance, contact the factory directly at 1-800-367-5811.

60 HZ Hardwired Wall Mount

Stock No.	Mfr.'s Type	VA Rating*	Approx. Dim. (inches)	Shipping Wt. (lbs.)	EACH 1-2
533-8195	CLT-0140-GTB	140	6 × 4.4 × 8.5	15	**228.00**
533Q8200	CLT-0250-GTB	250	6 × 4.4 × 9.6	23	**299.00**
533Q8205	CLT-0500-GTB	500	6.2 × 6.5 × 12.2	30	**411.00**
533Q8210	CLT-0750-GTB	750	6.2 × 6.5 × 13.2	41	**522.00**
533Q8215	CLT-1000-GTB	1,000	6.2 × 6.5 × 14.2	47	**669.00**
533Q8220	CLT-1500-GTB	1,500	9.3 × 9.9 × 17.1	79	**900.00**
533Q8225	CLT-2000-GTB	2,000	9.3 × 9.9 × 18.2	96	**1139.00**
533Q8230	CLT-3000-GTB	3,000	9.3 × 9.9 × 19.9	132	**1632.00**
533Q8235	CLT-5000-GTW	5,000	14 × 14.5 × 27	254	**2512.00**
533Q8240	CLT-7500-RTW	7,500	14 × 14.5 × 28.2	318	**3090.00**
533Q8245	CLT-1001-RTW	10,000	14 × 14.5 × 29.2	391	**4890.00**
533Q8250	CLT-1501-RTW	15,000	15 × 32.5 × 28.2	648	**5766.00**

60 HZ Hardwired CLT, Floor Mount

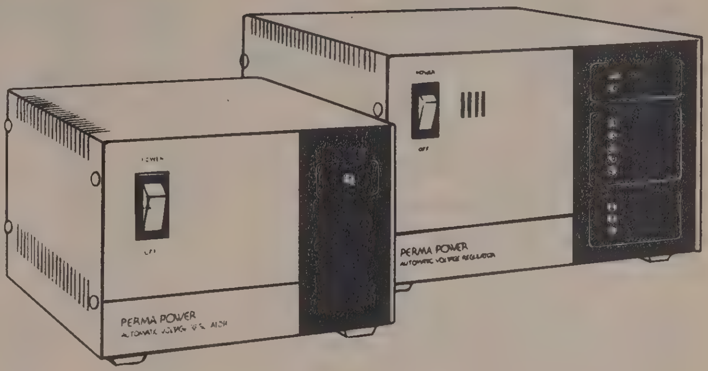
Stock No.	Mfr.'s Type	VA Rating*	Approx. Dim. (inches)	Shipping Wt. (lbs.)	EACH 1-2
533Q8255	CLT-5000-GTO	5,000	40 × 19 × 27.7	353	**2851.00**
533Q8260	CLT-7500-RTO	7,500	40 × 19 × 21.7	422	**3040.00**
533Q8265	CLT-1001-RTO	10,000	40 × 19 × 21.7	496	**4885.00**
533Q8270	CLT-1501-RTO	15,000	40 × 19 × 21.7	635	**5977.00**

*VA ratings are available up to 75 KVA single and three phase.

WIREMOLD™
Shape Electronics Division

Automatic Voltage Regulators

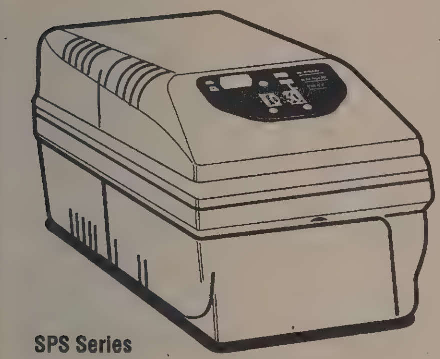
- **Covers 95.3% of Power Problems**
- **Conditions Hi/Low Voltage, in 2 Cycles, RFI/EMI Noise, Surges**
- **Rack Mount with Accessory Bracket**
- **Two Year Warranty**



Perma Power Automatic Voltage Regulators protect your system from 95.3% of the problems that power lines encounter . . . transient surges, overvoltages, undervoltages and RFI/EMI noise. The Perma Power AVR responds instantly to voltage changes in the power line . . . whether created in the utility or in your facility. It supplies constant, safe 117 VAC (ANSI C84.1) power to your computer, even if the incoming voltage sags as low as 85 V or rises as high as 150 V. **Maintenance Free:** With its tap changer design, it costs less than other types and operates more quietly and efficiently. **Indicator Lights:** Model AVR-600 has surge suppressor failure light. Models AVR-1200 and AVR-1800 have LED indicator for AC voltage, reverse polarity, improper grounding and surge suppression status, and a warning buzzer sound for extremely high or low voltage or surge suppressor failure. **Appearance:** Heavy duty 18 gauge beige enclosure, 6' line cord from back panel; molded-on plug (NEMA 5-15P). **Response Time:** Approx. 2 cycles. **Noise Reduction:** Normal mode 15 dB, common mode 12 dB. **Short Circuit Protection:** Circuit breaker, manually reset. **Warranty:** 2 years.

Stock No.	Mfr.'s Type	Capacity (VA)	Circuit Breaker	Weight (Lbs.)	Output Recept.	EACH
533-9620	AVR600	600	5 Amps	7	4	**122.50**
533-9621	AVR1200	1200	10 Amps	12	6	**188.00**
533-9623	AVR1800	1800	15 Amps	13	6	**271.00**

Stand-By Power Systems



SPS Series

Features

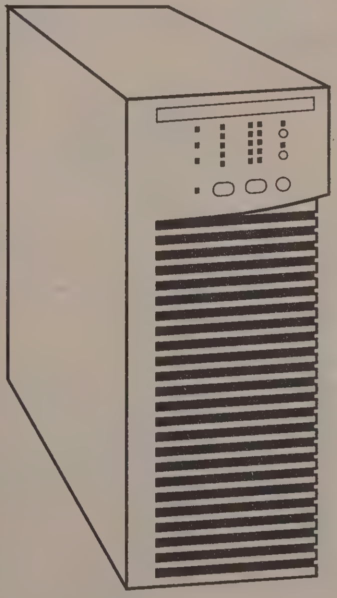
- **Back-Up Power When the Utility Power Fails; Gives You Time to Save Valuable Data Before Your Computer Shuts Down**
- **Ultra Fast Assured Transfer Time**
- **Output Voltage 120 VAC ±5% (On Battery)**
- **Receptacles on Rear**
- **Input Voltage Range 97-187 VAC**
- **Surge Suppression to Protect Equipment from Damaging Spikes on the Power Line and Reduces Data Errors**
- **Audible Alarms and LED Indicators**
- **UL Listed**
- **Two Year Warranty**

Standby Power Systems provide Blackout protection for many applications such as personal computers, terminals, work stations, small phone systems and point of sale terminals. These SPS systems offer the maximum performance at the lowest possible cost with many standard features.

Stock No.	Mfr.'s Type	Capacity (VA/Watts)	Run Time Full/Half Load	Dimensions W × H × D (In.)	Weight (Lbs.)	Output Recept.		EACH
						Qty.	Type	
533-9960	SPS280-A	280/175	9/27 Min.	4.7 × 4.7 × 11.4	13	2	5-15R	**145.00**
533-9940	SPS420-A	420/260	5/15 Min.	4.7 × 4.7 × 11.4	13	2	5-15R	**223.00**
533-9950	SPS600-A	600/400	5/17 Min.	6.5 × 5.0 × 12.5	22	4	5-15R	**387.00**

Sentrex® 2.1-10 KVA Uninterruptible Power Systems

- **Advanced Battery Management for Prolonged Battery Life**
- **Dual Conversion On-Line Technology, Quiet Operation (8 and 10 KVA Are Parallel On-Line)**
- **Advanced Power Insolation**
- **Power Management Software Capability**
- **Microprocessor Controlled Interface**
- **UL and CSA Listed**
- **Plug In and Hard Wired Units Available (Consult Factory For Distribution Options)**
- **2.1-6 KVA Come Standard with Four 5-15R Receptacles (10 On Plug In Units)**
- **Automatic By-Pass Transfer for Added Reliability**
- **Remote Power Off (REPO) Standard (2.1-6 KVA), Optional (8-10 KVA)**
- **50/60 Hz Auto-Sensing (2.1-6 KVA)**
- **Output Voltage Regulation: ±2%**
- **Extended Battery Time Available**
- **One Year Warranty**

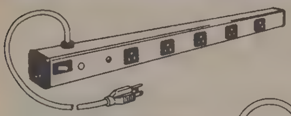


Sentrex Uninterruptible Power Systems offer outstanding **No-Break Power** protection with plenty of power in a small package. Units are packed with features and deliver clean, computer-grade, uninterruptible power using advanced Parallel on-line technology. A variety of options are available offering flexibility to meet your specific application. **Applications Include:** IBM AS/400™, DEC VAX 3000, 11/750, MicroVAX II, HP 3000 and 9000 series, telecommunications and more.

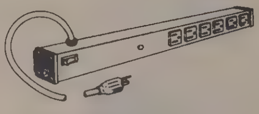
Stock No.	Mfr.'s Type	KVA	Voltage		Run Time Full Load	Dimensions W × H × D (In.)	Weight (Lbs.)	EACH
			In	Out				
533Q7800	WUPS2100T	2.1	120	120	10 Min.	16 × 7 × 23	125	**3434.00**
533Q7805	WUPS2100P*	2.1	120	120	10 Min.	16 × 7 × 23	135	**3604.00**
533Q7810	WUPS3100T	3.1	120	120	10 Min.	16 × 7 × 23	125	**3938.00**
533Q7815	WUPS3100P†	3.1	120	120	10 Min.	16 × 7 × 23	135	**4107.00**
533Q7820	WUPS3102T	3.1	‡	‡	10 Min.	16 × 7 × 23	125	**3937.00**
533Q7825	WUPS5002T	5.0	‡	‡	10 Min.	24 × 7 × 23	180	**5841.00**
533Q7830	WUPS6002T	6.0	‡	‡	10 Min.	24 × 7 × 23	180	**6657.00**
533Q6045	WUPS8KT-2	8.0	120/208	120/208	10 Min.	31 × 12 × 34	570	**8755.00**
533Q6050	WUPS8KT-3	8.0	120/240	120/240	10 Min.	31 × 12 × 34	570	**8755.00**
533Q6055	WUPS8KT-4	8.0	120/208	120/120	10 Min.	31 × 12 × 34	570	**8755.00**
533Q6060	WUPS10KT-2	10.0	120/208	120/208	7 Min.	31 × 12 × 34	595	**11037.00**
533Q6065	WUPS10KT-3	10.0	120/240	120/240	7 Min.	31 × 12 × 34	595	**11037.00**
533Q6070	WUPS10KT-4	10.0	120/208	120/120	7 Min.	31 × 12 × 34	595	**11037.00**

*Equipped with input 5-20P plug and 10 NEMA 5-15R outlets. †Equipped with input 5-30P plug and 10 NEMA 5-15R outlets. ‡Input and output voltage of 120/208 or 120/240 VAC.

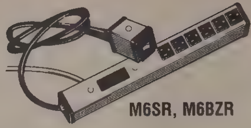
Surge and Noise Protectors



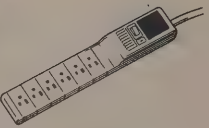
M5S, M5BZ



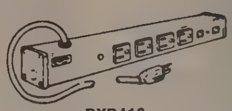
M6S, M6BZ, RS610, RT610



M6SR, M6BZR



SR10



RXD410

PR610

- ► Quantity Pricing Always Available

Sentrex® High Performance Series
Plug in surge suppressors for maximum protection of critical computer network and electronic equipment. High performance units provide four stages of protection and clamp at 260 V with a 330 V UL 1449 rating and surge indicator light. Capable of up to 33,000 A maximum surge current. Rated at 15 A/120 V with circuit breaker. Units available with Fail-Safe™ shut down feature to cut off all power to equipment if surge protection fails. LIFETIME product and $30,000 connected equipment warranty

Perma Power® Computer Grade Series
Plug in surge suppressors offer substantial performance to protect stand alone PCs and electronic equipment in the office environment. Computer Grade units provide one stage of protection and clamp at 340 V with a 400 V UL 1449 rating and surge indicator light (SR10 and SRD10 include audible alarm). Capable of up to 13,000 A maximum surge current. Rated at 15 A/120 V with circuit breaker. Units available with Fail-Safe™ shut down feature to cut off all power to equipment if surge protection fails. Five year product and $10,000 connected equipment warranty.

Perma Power® Electronic Grade Series
Plug in surge suppressors offer economical surge protection for home and office equipment that is not mission critical. Electronic Grade units provide one stage of protection and clamp at 350 V with a 400 V UL 1449 rating (500 V for PR609) and surge indicator light. Capable of up to 4,500 A maximum surge current. Rated at 15 A/120 V with circuit breaker (PR609 has no circuit breaker). Two year product warranty.

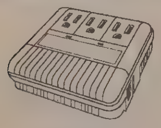
Stock No.	Mfr.'s Type	Outlets	Size L × W × D (In.)	Cord Length (Ft.)	Fail-Safe™	EACH
						1-9
High Performance						
533-1005	M4S	4	14 × 2 × 2	6	—	71.00
533-7850	M5S*	5	16 × 2 × 2	6	—	75.00
533-1015	M6S	6	16 × 2 × 2	6	—	77.00
533-1020	M6S-15	6	16 × 2 × 2	15	—	80.00
533-7855	M6SR**	6	16 × 2 × 2	6	—	94.00
533-9608	RS410	4	13 × 2 × 2	6	Yes	65.00
533-7860	RS412	4	13 × 2 × 2	15	Yes	67.00
533-9628	RS610	6	15 × 2 × 2	6	Yes	71.00
533-7865	RS612	6	15 × 2 × 2	15	Yes	73.00
Computer Grade						
533-9750	M4BZ	4	11 × 2 × 2	6	—	35.00
533-1001	M5BZ*	5	13 × 2 × 2	6	—	41.00
533-9752	M6BZ	6	13 × 2 × 2	6	—	42.00
533-9753	M6BZ-15	6	13 × 2 × 2	15	—	45.00
533-9754	M6BZR**	6	13 × 2 × 2	6	—	53.00
533-7895	SR10†	6	13 × 3 × 2	6	—	22.00
533-7900	SRD10†‡	6	13 × 3 × 2	6	—	36.00
533-9617	RXD410‡	4	14 × 2 × 2	6	Yes	54.00
533-9606	RT410	4	13 × 2 × 2	6	Yes	37.00
533-7905	RT412	4	13 × 2 × 2	15	Yes	40.00
533-9607	RT610	6	15 × 2 × 2	6	Yes	39.00
533-7910	RT612	6	15 × 2 × 2	15	Yes	42.00
Electronic Grade						
533-7925	PR609†	6	5 × 4 × 2	Wall Plug	—	16.00
533-7930	PR610†	6	14 × 3 × 2	6	—	16.00

*Outlets rotated 90° to accommodate small power supplies. **Includes remote switch with 44" switch cord. †Plastic case. ‡SRD10 and RXD410 include phone line protection to protect fax machines and modems from surges on the phone line.

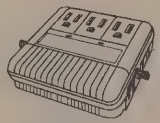
Surge Suppressors for Power, Phone and TV Coax

— NEW —

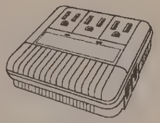
These new Perma Power Computer Grade surge suppressors are engineered using the latest surge protection technology and provide power protection, phone line protection and coax protection for TV and residential satellite applications. The new slim line plastic design is an attractive fit into any office or home decor. Rated for 120 VAC, 15 amps and 60 Hz. The units are UL listed with 330 V (PX series — 400 V) clamping protection on the power outlets and come with a 10 year (PX series — 5 year) product and $10,000 protected equipment warranty against power related surge damage.



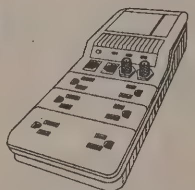
PXD309



PXDC309



PXD329



LS610DC

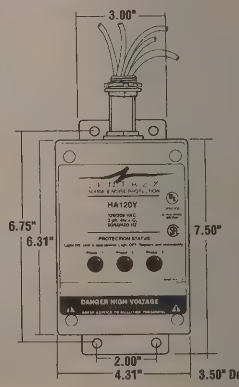
- ► Power Protection
- ► Phone Line Protection
- ► TV Coax Protection

Stock No.	Mfr.'s Type	Style	AC Outlets	Phone Protect	Coax Protect	EACH
						1-4
533-0500	PXD309	Wall Plug	3	1	0	14.00
533-0505	PXD329	Wall Plug	3	2	0	18.00
533-0510	PXDC309	Wall Plug	3	1	1	17.00
533-0515	LS810	6' Cord	8	0	0	25.00
533-0520	LS610C	6' Cord	6	0	1	28.00
533-0525	LS610D	6' Cord	6	1	0	28.00
533-0530	LS610DC	6' Cord	6	1	1	32.00

Industrial Surge®

Residential and Commercial Panel Protection

Panel Protection for home and commercial applications to be mounted at the breaker panel to provide surge suppression for all equipment fed from panel. Or mount at larger permanently wired equipment to provide suppression as close to these systems as possible. Single Phase protect a home or small office, and Three Phase units guard against surges generated by Three Phase manufacturing equipment. UL 1449 and CSA certified. **Clamping Voltage:** 480 V peak. EFI/RFI noise filtering. **Max. Surge Current:** 60,000 A per phase. Suppressor indicator light per phase. **Operating Temperature:** –40°C to +55°C. Compact NEMA 12 enclosure. 3/4" Conduit connection and 36" 14 AWG wire leads. Wall mounting bracket standard. Five year warranty.



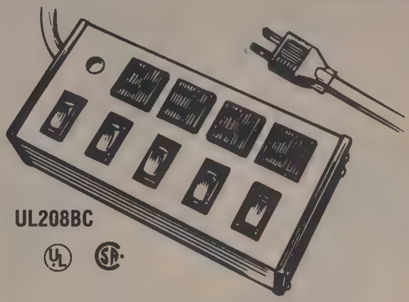
Stock No.	Mfr.'s Type	Voltage	Size L × W × D (In.)	Shipping Weight (Lbs.)	EACH
					1-2
533-7500	HA120T	120/240 (1 PH)	6.5 × 4.5 × 3.5	4	192.00
533-7505	HA120Y	120/208 (3 PH)	6.5 × 4.5 × 3.5	4	209.00
533-7510	HA240DCT	120/240/120 (3 PH High Leg Delta)	6.5 × 4.5 × 3.5	4	235.00

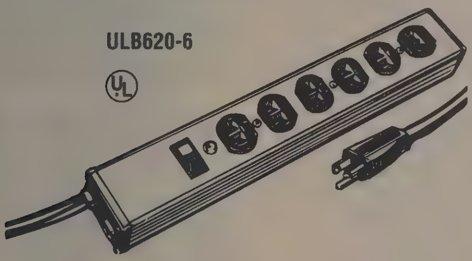
BROOKS **WIREMOLD** Shape Electronics Division

Deluxe Control Outlet Strips

Each receptacle features an independent on/off switch plus a master on/off switch that controls the power to all receptacles. Also features a circuit breaker, keyhole mounting, aluminum housing and has a maximum rating of 15 Amps-125 Volts.

Stock No.	Mfr.'s Type	No. of Outlets	Individual Switch/Pilot Light	Dimensions L × W × H	Cord Length	Ship Wt. (Lbs.)	EACH
							1-9
533-7194	UL208BC	4	4	$7^{1}/_{2} \times 3^{1}/_{2} \times 2$"	6'	$1^{3}/_{4}$	**48.47**
533-7195	UL208BD	4	4	$7^{1}/_{2} \times 3^{1}/_{2} \times 2$"	15'	$2^{3}/_{4}$	**49.71**
533-7196	UL209BC	8	8	$7^{3}/_{4} \times 3^{1}/_{2} \times 2$"	6'	$2^{1}/_{4}$	**68.60**
533-7197	UL209BD	8	8	$7^{3}/_{4} \times 3^{1}/_{2} \times 2$"	15'	$3^{1}/_{4}$	**73.50**





Heavy Duty 20 Amp Outlet Strip

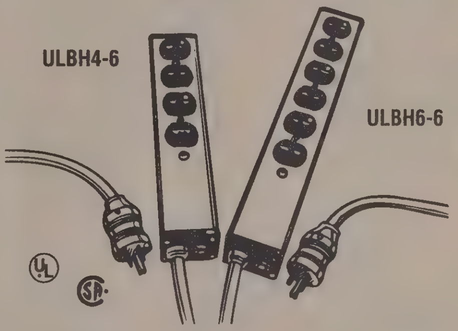
Provides power where industrial equipment may draw heavy amperage. Units feature a 20 Amp rated, master on/off switch, a circuit breaker, beige aluminum housing, snap-on mounting clips and a 20 Amp-125 VAC, 60 Hz, 2500 continuous rating.

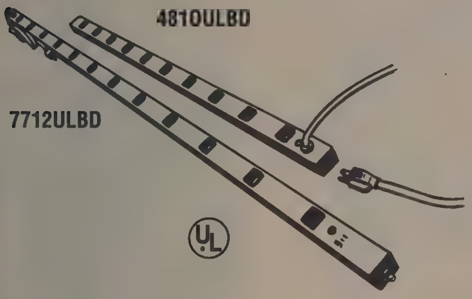
Stock No.	Mfr.'s Type	No. of Outlets	Master On/Off Switch/Pilot Light	Dimensions L × W × H	Cord Length	Ship Wt. (Lbs.)	EACH
							1-9
533-7200	ULB420-6	4	Yes	$9^{3}/_{16} \times 2 \times 1^{3}/_{4}$"	6'	2	**67.95**
533-7209	ULB420-15	4	Yes	$9^{3}/_{16} \times 2 \times 1^{3}/_{4}$"	15'	3	**73.50**
533-7201	ULB620-6	6	Yes	$12^{3}/_{16} \times 2 \times 1^{3}/_{4}$"	6'	$2^{1}/_{4}$	**75.30**
533-7210	ULB620-15	6	Yes	$12^{3}/_{16} \times 2 \times 1^{3}/_{4}$"	15'	$3^{1}/_{2}$	**81.20**

Medical Group

Outlets are designated by a green dot. Features a circuit breaker, white aluminum housing, snap-on clips, impact resistant end caps and a maximum rating of 15 Amps-125 Volts. Note: When used in hospital environments, grounding can only be achieved when plugged into a "Hospital Grade" or a "Hospital Only" receptacle.

Stock No.	Mfr.'s Type	No. of Outlets	Master On/Off Switch/Pilot Light	Dimensions L × W × H	Cord Length	Ship Wt. (Lbs.)	EACH
							1-9
533-7202	ULBH4-6	4	No	$9^{7}/_{8} \times 2 \times 1^{3}/_{4}$"	6'	5	**48.00**
533-9865	ULBH4-15	4	No	$9^{7}/_{8} \times 2 \times 1^{3}/_{4}$"	15'	6	**53.00**
533-7203	ULBH6-6	6	No	$12^{7}/_{8} \times 2 \times 1^{3}/_{4}$"	6'	$3^{1}/_{4}$	**58.00**
533-8615	ULBH6-15	6	No	$12^{7}/_{8} \times 2 \times 1^{3}/_{4}$"	15'	$4^{1}/_{4}$	**60.00**





CabinetMate®

These units mount to the crossplaces on cabinet frames. Heavy-duty, ready to use, just screw the mounting clips to the rail support and snap the unit into place. Features silver gray aluminum housing, with a 15 Amp, 130 Volt maximum rating.

Stock No.	Mfr.'s Type	No. of Outlets	Master On/Off Switch/Pilot Light	Dimensions L × W × H	Cord Length	Ship Wt. (Lbs.)	EACH
							1-9
533-0022	4810ULBC	10	No	$48 \times 1^{1}/_{2} \times 1^{3}/_{16}$"	6'	2.3	**51.00**
533-9901	4810ULBD	10	No	$48 \times 1^{1}/_{2} \times 1^{3}/_{16}$"	15'	3.0	**56.00**
533-0023	7011ULBC	11	No	$70 \times 1^{1}/_{2} \times 1^{3}/_{16}$"	6'	3.0	**59.00**
533-9905	7011ULBD	11	No	$70 \times 1^{1}/_{2} \times 1^{3}/_{16}$"	15'	3.3	**64.00**
533-0024	7712ULBC	12	No	$77 \times 1^{1}/_{2} \times 1^{3}/_{16}$"	6'	3.5	**63.00**
533-9910	7712ULBD	12	No	$77 \times 1^{1}/_{2} \times 1^{3}/_{16}$"	15'	4.2	**66.00**

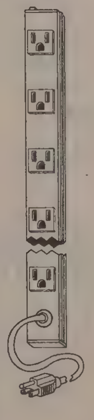
CabinetMate® Power Strips with 20 Amp Current Carrying Capabilities

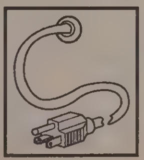
— NEW —

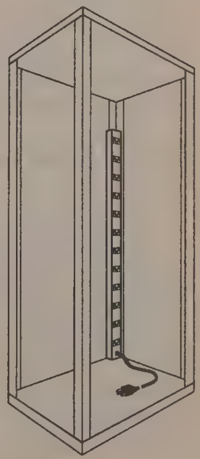
- **Unit Rating: 120 VAC with 20 A Resettable Circuit Breaker**
- **20 amp 12/3 SJT Power Cord with 20 Amp Plug**
- **12 Gauge Internal Wiring**
- **Outlet Rating: 15 Amp**
- **Aluminum Housing with Grey Finish**
- **UL Listed, CSA Certified, Meets UL1363**
- **2 Year Warranty**

Many applications are now packing more equipment into smaller spaces requiring up to 20 amps of total power (although each component is rated for 15 amps each or less). These new CabinetMate power strips are designed for use in relay racks, electronic cabinets, file server systems and are capable of powering up to 20 amps of total power.

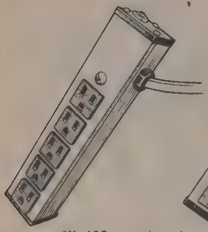
Stock No.	Mfr.'s Type	No. of Outlets	Center to Center	Cord Length	Dimensions L × W × D In.	EACH
						1-4
533-0535	4810ULBC.20	10	4"	6'	$48 \times 1^{1}/_{2} \times 1^{3}/_{16}$	**63.00**
533-0540	4810ULBD.20	10	4"	15'	$48 \times 1^{1}/_{2} \times 1^{3}/_{16}$	**67.00**
533-0545	7011ULBC.20	11	6"	6'	$70 \times 1^{1}/_{2} \times 1^{3}/_{16}$	**75.50**
533-0550	7011ULBD.20	11	6"	15'	$70 \times 1^{1}/_{2} \times 1^{3}/_{16}$	**77.00**
533-0555	7712ULBC.20	12	6"	6'	$77 \times 1^{1}/_{2} \times 1^{3}/_{16}$	**80.00**
533-0560	7712ULBD.20	12	6"	15'	$77 \times 1^{1}/_{2} \times 1^{3}/_{16}$	**86.00**

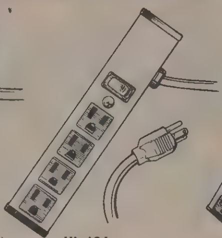


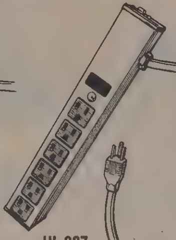


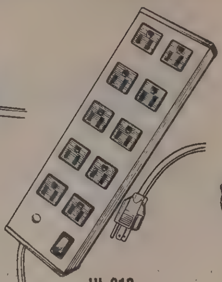


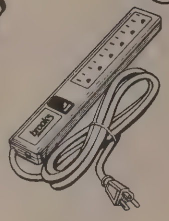
Brooks Ready-To-Use Prewired Outlet Strips

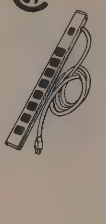

UL 100


UL 104

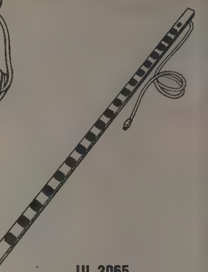

UL 207


UL 210


P6


UL 300

UL 401


UL 2065

- ▶ Snap-On Adjustable Mounting Clips
- ▶ Built-In Circuit Breakers
- ▶ Grounded Outlets
- ▶ Maximum Rating of 15 Amps-125 Volts
- ▶ Grounded Electrically and Mechanically

Compact Models
Designed to provide power where space is limited. Aluminum housing in beige and gray, except for P6 which is plastic.

Industrial Models: 2 ft., 4 ft., and 6 ft.
Ideal for situations where many receptacles are needed. **Suggested applications include:** workbenches, electronic cabinets, computer rooms, **POP displays, and exhibits:** Silver gray aluminum housing. Outlet strips with "mounting ears" use "UL listed" or "UL recognized" components. Models are available with or without a circuit breaker, and has a maximum rating of 15 Amps-125 Volts. Features silver gray aluminum housing.

Compact Models BC=6ft.cord, BD=15 ft.

Stock No.	Mfr.'s Type	No. of Outlets	Master Switch/ Pilot Light	Dimensions L × W × H	Cord Length	Ship Wt.(Lbs.)	EACH 1-9	EACH 10-49
533-1106	UL100BC	5	No	9 3/16" × 1 3/4" × 1 5/8"	6'	1 1/2	**20.60**	**17.40**
533-1107	UL100BD	5	No	9 3/16" × 1 3/4" × 1 5/8"	15'	2 1/2	**25.50**	**21.60**
533-1146	UL104BC	4	Yes	9 3/16" × 1 3/4" × 1 5/8"	6'	1 1/2	**23.70**	**20.00**
533-1147	UL104BD	4	Yes	9 3/16" × 1 3/4" × 1 5/8"	15'	2 1/2	**28.60**	**24.20**
533-1246	UL204BC	7	Yes	12 1/4" × 1 3/4" × 1 5/8"	6'	1 3/4	**30.80**	**26.00**
533-1247	UL204BD	7	Yes	12 1/4" × 1 3/4" × 1 5/8"	15'	2 3/4	**33.30**	**29.40**
533-1254	UL205BC	8	No	12 1/4" × 1 3/4" × 1 5/8"	6'	1 3/4	**28.90**	**24.30**
533-1255	UL205BD	8	No	12 1/4" × 1 3/4" × 1 5/8"	15'	2 3/4	**33.90**	**28.60**
533-1256	UL207BC	6	Yes	12 1/4" × 1 3/4" × 1 5/8"	6'	1 3/4	**29.00**	**24.40**
533-1257	UL207BD	6	Yes	12 1/4" × 1 3/4" × 1 5/8"	15'	2 3/4	**32.90**	**28.60**
533-9210	UL218BC	8	Yes	15" × 1 3/4" × 1 5/8"	6'	2	**32.50**	**29.90**
533-9215	UL218BD	8	Yes	15" × 1 3/4" × 1 5/8"	15'	3	**34.90**	**29.50**
533-9515	P6**	6	Yes	12 1/4" × 2 1/4" × 1 5/8"	15'	2	**12.10**	**10.20**
533-7940	P6-15	6	Yes	12 1/4" × 2 1/4" × 1 5/8"	15'	3	**18.00**	**15.40**
533-7198	UL210BC*	10	Yes	12 1/4" × 3 1/2" × 2"	6'	2 1/4	**38.90**	**33.20**
533-9992	UL210BD*	10	Yes	12" × 3 1/2" × 2"	15'	3 1/4	**44.30**	**37.30**
533-9850	IEC5***	5	No	11" × 2" × 1 3/4"	***	1 1/4	**42.50**	**35.80**

Industrial Models: 2 ft., 4 ft., and 6 ft.

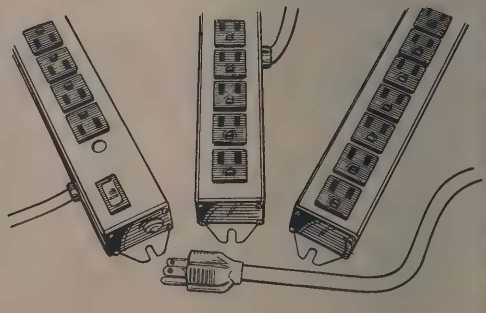
Stock No.	Mfr.'s Type	No. of Outlets	Master Switch/ Pilot Light	Dimensions L × W × H	Cord Length	Ship Wt.(Lbs.)	EACH 1-9	EACH 10-49
533-0300	UL300BC	8	Yes	24" × 1 3/4" × 1 5/8"	6'	2 1/2	**45.10**	**38.10**
533-0301	UL300BD	8	Yes	24" × 1 3/4" × 1 5/8"	15'	3 1/4	**48.00**	**41.50**
533-2400	UL401BC	8	Yes	48" × 1 3/4" × 1 5/8"	6'	3 3/4	**48.00**	**41.30**
533-2401	UL401BD	8	Yes	48" × 1 3/4" × 1 5/8"	15'	4 1/2	**52.00**	**44.70**
533-9835	UL402BC	16	Yes	48" × 1 3/4" × 1 5/8"	6'	4	**59.20**	**49.90**
533-9840	UL402BD	16	Yes	48" × 1 3/4" × 1 5/8"	15'	4 3/4	**62.00**	**53.30**
533-0403	UL403BC	8	No	48" × 1 3/4" × 1 5/8"	6'	3 3/4	**43.00**	**37.20**
533-5500	UL403BD	8	Yes	48" × 1 3/4" × 1 5/8"	15'	4	**47.00**	**42.00**
533-9845	UL404BC	15	No	48" × 1 3/4" × 1 5/8"	6'	4	**59.20**	**49.90**
533-9550	UL404BD	15	No	48" × 1 3/4" × 1 5/8"	15'	4 3/4	**61.00**	**53.30**
533-9855	UL2063BC	20	No	72" × 1 3/4" × 1 5/8"	6'	5 3/4	**59.50**	**55.20**
533-9860	UL2063BD	20	No	72" × 1 3/4" × 1 5/8"	15'	6 1/2	**63.00**	**58.40**
533-2064	UL2064BC	12	Yes	72" × 1 3/4" × 1 5/8"	6'	5 1/2	**47.10**	**42.60**
533-2065	UL2064BD	12	Yes	72" × 1 3/4" × 1 5/8"	15'	6 1/4	**52.00**	**46.00**
533-2066	UL2065BC	24	Yes	72" × 1 3/4" × 1 5/8"	6'	5 3/4	**68.70**	**60.00**
533-2067	UL2065BD	24	Yes	72" × 1 3/4" × 1 5/8"	15'	6 1/2	**72.50**	**63.50**

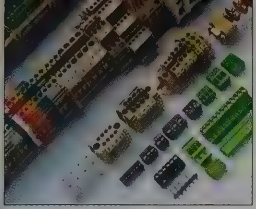
*Model UL210BC, BD Beige, features keyhole mounting (mounting center-9 7/16). **Model P6 has plastic housing, features keyhole mounting (mounting center-9 11/16"). ***IEC5 is equipped with IEC 320 plug and receptacles. User must provide appropriate international adapter power cord equipped with IEC 320 connector. See page 485.

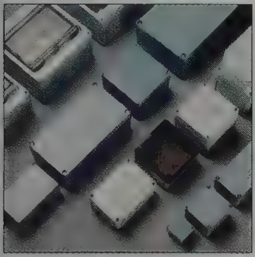
Mounting Ear Models

Available with or without circuit breakers. Each unit is 100% quality inspected to meet electrical codes, OSHA and industrial standards. **Maximum Rating:** 15 Amps, 125V. Aluminum silver gray housing.

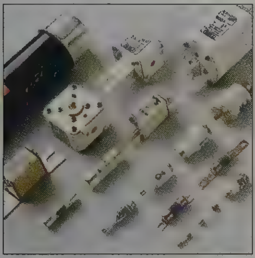
Stock No.	Mfr.'s Type	No. of Outlets	Master On/Off Switch/Pilot Light	Circuit Breaker	Dimensions L × W × H	Cord Length	Ship Wt.(Lbs.)	EACH 1-9	EACH 10-49
533-9800	L10316	4	No	No	8 5/8" × 2" × 1 3/4"	6'	1 1/2	**18.00**	**16.40**
533-7935	L10317	4	No	No	8 5/8" × 2" × 1 3/4"	15'	2	**23.00**	**19.90**
533-7070	L10318	7	Yes	Yes	13 1/8" × 2" × 1 3/4"	6'	2	**27.00**	**24.40**
533-9810	L10319	7	Yes	Yes	13 1/8" × 2" × 1 3/4"	15'	2 1/2	**31.00**	**26.60**
533-7110	L10309	6	Yes	Yes	13 1/8" × 2" × 1 3/4"	6'	2	**25.00**	**23.20**
533-7115	L10323	6	Yes	Yes	13 1/8 × 2" × 1 3/4"	15'	2 1/2	**29.00**	**27.00**
533-9815	C10221	12	Yes	Yes	48" × 1 1/2" × 1 3/16"	6'	5 1/2	**45.00**	**42.20**
533-9820	C10222	12	Yes	Yes	48" × 1 1/2" × 1 3/16"	15'	6	**47.00**	**45.40**

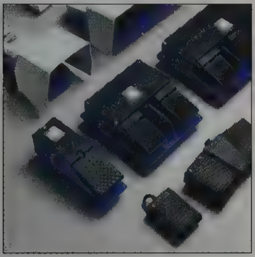


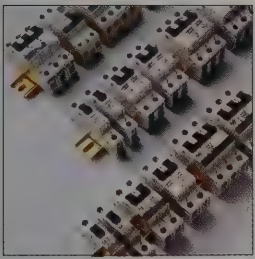

Terminal Blocks


Industrial Enclosures

Liquid Tight Strain Reliefs


European Fuses


Foot Switches


Circuit Breakers

DIN Enclosures

Package electrical, electronic and electromechanical devices including relays, sensing and monitoring devices, printed circuit boards and more in these enclosures that snap onto DIN rail and come complete with terminals.

Electronic Enclosures

Nonmetallic and aluminum enclosures offer practical solutions for a wide range of applications. Shown are Top Cover, Slanted, Readout, Front Panel, Carry-On, Mini Pocket, Keyboard, Aluminum and EMI/RFI enclosures as well as Potting and Storage Boxes.

Altech Corp.

See Manufacturer's Index for more product information or call Allied: 1-800-433-5700.
Look for other Altech products on the pages indicated.

• Terminal Blocks, Interfaces	160-170	• Liquid Tight Strain Reliefs	47	• Disconnect Switches	789
• Industrial Enclosures	42-46	• European Fuses	28	• Circuit Breakers	22-25

alpha

XTRA•GUARD®

FAMILY OF CABLES

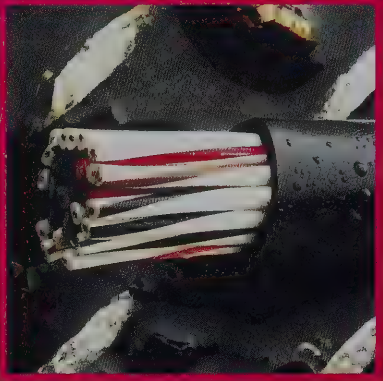
The ***XTRA•GUARD®*** *family of cables have been designed for continuous operation while exposed to hazardous conditions that normally result in cable failures.* ***XTRA•GUARD®*** *cables are "hazard-matched" to survive the most demanding environments.*

Powerful Solutions to Critical Problems!

XTRA•GUARD® 2

INDUSTRIAL STRENGTH PROTECTION.

Specify **XTRA•GUARD®** 2...
A heavy-duty cable with PVC-insulated conductors and polyurethane jacketing that resists most oils, chemicals, fuels and solvents, as well as mechanical abuse and abrasion. Select from nine jacket colors for easy cable identification: orange, blue, green, yellow, grey, red, beige, white or black.



Multi-Pairs	Multi-Conductors	Jacket Material	Conductor Insulations	Voltage Rating
1-102	2-100	Heavy-duty Polyurethane 80ºC UL Style 20233, 20235, 20236 80ºC UL Style 20234 CSA AWM FT1	PVC 80ºC CSA SR-PVC PVC 80ºC CSA TR-64 PVC 105ºC CSA TEW PVC 80ºC UL Style 1007, 1061 PVC 105ºC UL Style 1015	300V 600V

Allied Part No.	Alpha Part No.	Cond.	AWG/ Strand	Shielding	Jacket Thickness Inches	Jacket Thickness mm	Cable O.D. Inches	Cable O.D. mm	Price for 500 Ft.
708-0310	25170	10	18 - 16/30	SUPRASHIELD™	0.032	0,81	0.41	10,5	3523.08
708-0311	25168	8	18 - 16/30	SUPRASHIELD™	0.032	0,81	0.38	9,7	3614.26
708-0312	25106	6	22 - 7/30	SUPRASHIELD™	0.032	0,81	0.25	6,4	1305.60
708-0313	25383/1	3	18 - 16/30	Foil Shield	0.032	0,81	0.24	6,1	989.40
708-0314	25464	4	20 - 7/28	Foil Shield	0.032	0,81	0.24	6,1	1054.68
708-0315	25196	6	22 - 7/30	Foil Shield	0.032	0,81	0.23	5,9	1110.78
708-0316	25098	8	24 - 7/32	Foil Shield	0.032	0,81	0.22	5,6	1166.88
708-0317	25093	3	24 - 7/32	Foil Shield	0.032	0,81	0.17	4,3	740.52

XTRA•GUARD® 4

TEMPERATURE RESISTANCE TO THE EXTREME.

Specify **XTRA•GUARD®** 4...
A general purpose outdoor cable with TPE (Thermoplastic Elastomer) insulation and jacketing to ensure flexibility at -60°C and performance at temperatures up to 125°C. **XTRA•GUARD®** 4 has a UV-stabilized jacket that resists most oils, chemicals, fuels and solvents, as well as mechanical abuse and abrasion.

Multi-Pairs	Multi-Conductors	Jacket Material	Conductor Insulations	Voltage Rating
1-102	2-100	TPE: –60°C to +125°C UL 20237, 20238, 20239, 20240 UL Type PLTC Standard 13 UL Type TC Standard 1277	TPE: –60° to +125°C UL Style 1722, 1888	300V 600V

Allied Part No.	Alpha Part No.	Cond.	AWG/ Strand	Shielding	Jacket Thickness Inches	Jacket Thickness mm	Cable O.D. Inches	Cable O.D. mm	Price for 500 Ft.
708-0320	45104	4	22 - 7/30	SUPRASHIELD™	0.032	0,81	0.26	6,5	1279.08
708-0321	45125	5P	22 - 7/30	SUPRASHIELD™	0.032	0,81	0.37	9,5	2300.10
708-0322	45121	1P	22 - 7/30	SUPRASHIELD™	0.032	0,81	0.22	5,6	1054.68
708-0323	45113	3	24 - 7/32	SUPRASHIELD™	0.032	0,81	0.22	5,6	989.40
708-0324	45272	2P	24 - 7/32	SUPRASHIELD™	0.032	0,81	0.26	6,6	1267.86
708-0325	45372	2P	18 - 16/30	Foil Shield	0.032	0,81	0.30	7,7	1377.00
708-0326	45462	2	20 - 7/8	Foil Shield	0.032	0,81	0.20	5,2	830.28
708-0327	45464	4	20 - 7/8	Foil Shield	0.032	0,81	0.25	6,3	1099.56

See Alpha Wire Corporation's XTRA•GUARD® 1 line of general purpose electronic cable for premium protection in the Alpha wire and cable pages of Section 17 in this Allied Catalog.

alpha

CALL ALLIED TODAY!
1-800-433-5700

ALLIED ELECTRONICS, INC
AN AVNET COMPANY

FIT®

HEAT SHRINKABLE TUBING

ALLIED ELECTRONICS Offers The Widest Variety Of The Electronic Industry's #1 Brand Call-Out.

Alpha's broad range of **FIT**® tubing offers you the precise product or your specific and unique applications. Insulate, seal and protect the component and connection.

Whether it's polyolefin, high temperature teflon, dual wall or specialty compound tubing, you can count on consistent product uniformity and integrity. You are assured reliable results with Alpha's precision processing techniques guaranteeing precise memory, uniformed wall thickness and premeasured encapsulant/adhesives or optimal field application performance. Most of Alpha's **FIT**® line meets the conformance/performance requirements of MIL-123053 and are both UL Recognized and CSA Certified.

You'll find these useful **FIT**® product options available in the Alpha Fit Heat Shrinkable Tubing pages of Section 17 in this Allied Catalog.

- Variety of shrink ratios (2:1 to 6:1)
- Assorted precut lengths (4 ft. to 1/2 inches)
- Assorted spool lengths (1000 ft. to 16 ft.)
- Multiple colors
- Surface marking options
- Preformed shapes
- Specialized kits designed for lab, R & D, MRO, marine, automotive and industrial environments

ALLIED ELECTRONICS, INC.
AN AVNET COMPANY

CALL ALLIED TODAY!
1-800-433-5700

alpha

---

alpha
Hook-Up Wire Dispenser Kit
A Unique Wire Dispensing System for Engineers, Technicians and Designers.
alpha
Hook-Up Wire Dispenser Kit

HOOK-UP WIRE DISPENSER KIT

A Unique Wire-Dispensing System

Alpha's Hook-Up Wire Kits contain an assortment of 100 ft. (30.5 m) spools of hook-up wire suitable for military or UL/CSA applications. These kits have been designed for use by technicians, engineers and designers in the R & D lab or maintenance shop.

Each kit contains five spools of hook-up wire in a unique, rack-mounted, transparent dispensing tube. The tube and rack system keeps hook-up wire neat, clean and conveniently at hand.

Allied Part # 708-9891 / Alpha Part # HU-KIT-10
Wire dispensing kit containing assorted colors of 22 AWG stranded Mil. Spec hook-up wire for use in the R & D Lab or Maintenance Shop.

Reorder Part No.: 1551
Contains: (5) Spools of Wire (100 Ft.) MIL-W-76B TYPE MW in the following colors, White, Black, Red, Green, Blue, plus (1) Cut and Strip Tool. **Each: 58.14**

Allied Part # 708-9892 / Alpha Part # HU-KIT-20
Wire dispensing kit containing assorted colors of 22 AWG stranded UL/CSA hook-up wire for use in the R & D Lab or Maintenance Shop.

Reorder Part No.: 3051
Contains: (5) Spools of Wire (100 Ft.) UL 1007, CSA TR64 in the following colors, White, Black, Red, Green, Blue, plus (1) Cut and Strip Tool. **Each: 58.14**

See Alpha Wire Corporation's complete line of wire, cable and heat shrinkable tubing products available in Section 17 of this Allied Catalog.

- Convenient Wire-Dispensing System
- Five assorted Hook-Up Wire Colors
- Includes cut & strip tool
- Uses standard Alpha Hook-Up Wire Spools when refills are required

ALLIED ELECTRONICS, INC.
AN AVNET COMPANY

CALL ALLIED TODAY!
1-800-433-5700

alpha

BERG®
ELECTRONICS

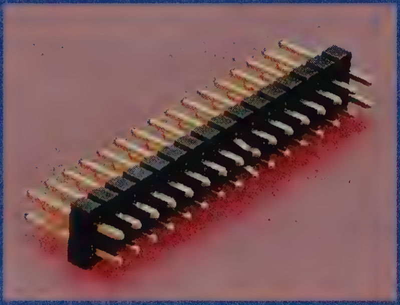
Serving Your Connector Needs.

Metral™ Connector System
For Futurebus+ users... the selected high density, modular, 4-row, 2 mm system. Meets global metric standards. A complete system available in Press-Fit or S-T-B with coax, power and cabling options. Staged mating is standard.

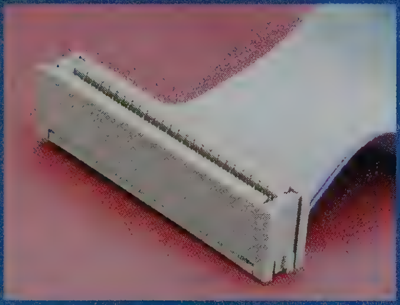
Call

ALLIED
ELECTRONICS

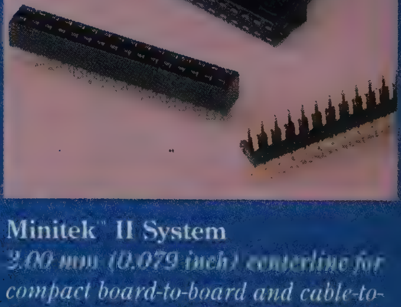
1-800-433-5700



Berg Stik® Headers
2.54 mm (0.100 inch) centerline. Can be manually broken to desired length. Retention tails hold header firmly in place prior to soldering. High temperature plastic body.



Quickie® III IDC Receptacles and Headers
2.54 X 2.54 mm (0.100 X 0.100 inch) grid, IDC system. 4-walled shielding protects pins, keying prevents misalignment. Available in 6 to 64 positions. Latching system saves valuable board space. MIL-C-83503-7A compatible. UL recognized and CSA approved.



Minitek™ II System
2.00 mm (0.079 inch) centerline for compact board-to-board and cable-to-board connection. Available from 4 to 50 positions.

Our newest power supply is really a handful!

Introducing the world's smallest 20-watt D.C. switcher!

Good things come in small packages, and our new GSC20 proves it. With a footprint no bigger than a business card and output of 4 watts/cu. in., the GSC20 is ideal for overhead projectors, datacommunications devices and many other applications requiring compact, portable, reliable power sources.

The GSC20 has all the features you're looking for, including:

- Industry's smallest 20-watt switcher (2.00" x 3.50" x 0.68")
- 90-264VAC input
- EMI FCC Class B, CISPR22B
- Standard overvoltage protection
- Fixed-frequency operation
- Approved to UL1950, IEC950, CSA 22.2 No. 234 Level 3 and EN60950
- Medical configurations available (contact Condor for details)
- Full burn-in; 2-year warranty

The GSC20 is available in five models, with power levels from 5 to 28 volts. Why not call us today and put the world's smallest 20-watt switcher to work in your power-dense applications?

Send for our new catalog, or see us in EEM!

An ISO 9000 Certified Company

CONDOR

CONDOR D.C. POWER SUPPLIES, INC.
A subsidiary of SL Industries, Inc.

CALL ALLIED AT 1-800-433-5700

Rugged.

Reliable.

100 MHz scope.

But one new feature really stands out.

(Here's a hint.)

The new ScopeMeter® 99B test tool, now with a 10X brighter screen.

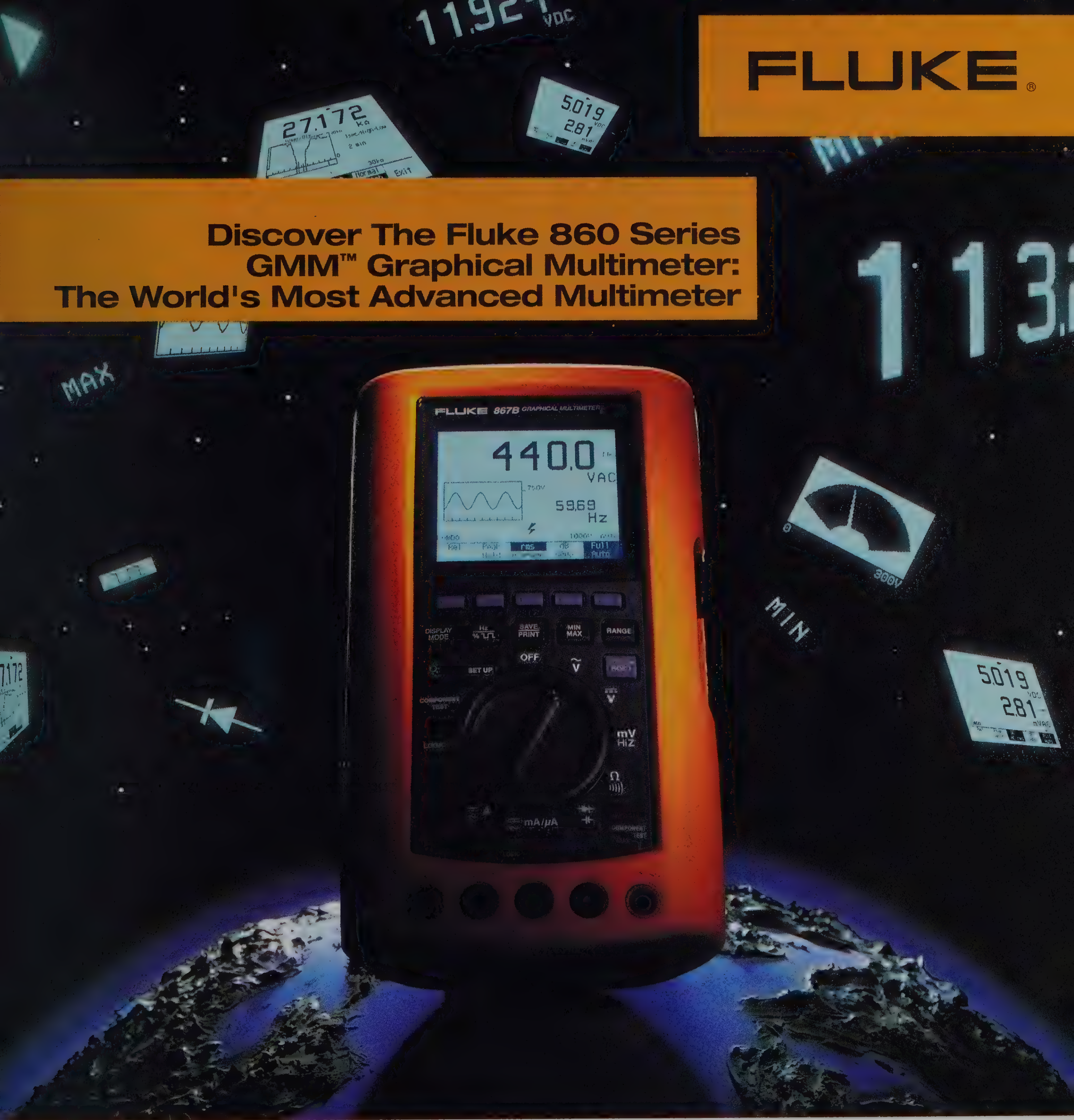
Daylight or darkness. Indoors or out. No matter where you're troubleshooting, it's easier with our new ScopeMeter 99B. It's the same rugged, dependable, hand-held scope you know, only it's much easier to read – thanks to a new cold cathode fluorescent screen that's literally 10 times brighter.

It's also much more accurate, with its 100 MHz bandwidth and 5 Gigasamples/second repetitive sampling rate. There's even 30k of deep memory, a new time and date clock feature, plus longer lasting performance with up to 4 hours of battery life.

It's time you saw the light yourself. To get your hands on the powerful new ScopeMeter 99B, contact your Fluke representative today. Or visit our web site at www.fluke.com.

CALL ALLIED AT 1-800-433-5700

© 1996 Fluke Corporation. All rights reserved.



FLUKE®

Discover The Fluke 860 Series GMM™ Graphical Multimeter: The World's Most Advanced Multimeter

The Fluke 860 Series Graphical Multimeter gives you the big picture.

The Fluke 860 Series is the ultimate, handheld tool for any application that demands real precision. Its 0.025% basic accuracy makes the 860 GMM tool an excellent choice for critical measurements. The 860 Series delivers the ultimate combination of functions and accuracy available in one handheld tool.

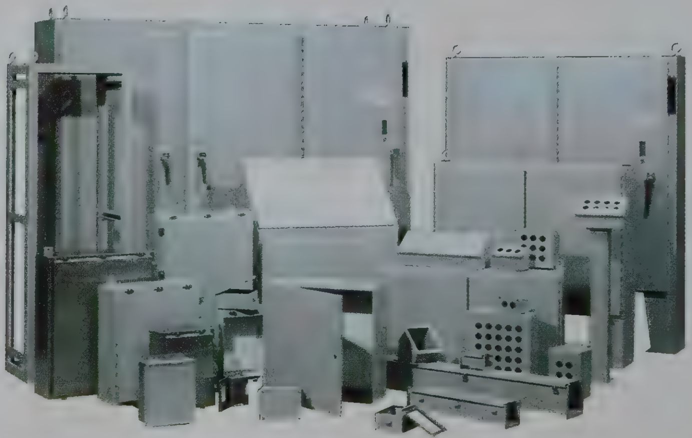
- The updated 867B features a bright, high-contrast screen for easier viewing from all angles. And both models feature a familiar, intuitive DMM interface that makes it easy to control multimeter and graphical functions.
- A display that is twice the size of most DMMs so you can view numeric displays and graphical waveforms simultaneously.
- Designed and certified for 1000V, Cat III (industrial, fixed installations) use per IEC 1010-1. UL listed to UL 3111; Licensed by TUV to EN61010-1; Approved by CSA to CAN/CSA C22.2 No.1010-1.

CALL ALLIED AT 1-800-433-5700

The Hammond Alternative For Small Cases, Rack Packaging and Transformers

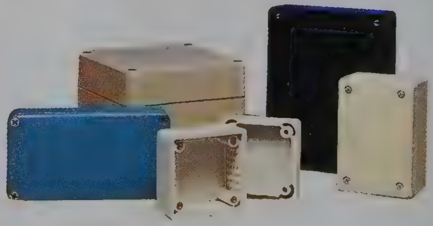
Contempra II Electronic Rack Systems
- Quick access side panels
- Standard leveling feet
- Heavy duty construction
- Adjustable bottom panels
- Built-in castor mount
- Attractive ID trim
- Plexiglass door

Economy Racks
- 19"or 24"rack mount panel widths
- Accessories include a variety of front and rear doors and a wide range of universal accessories
- Knockdown design for easy field assembly
- Standard leveling feet
- Two adjustable combination rails



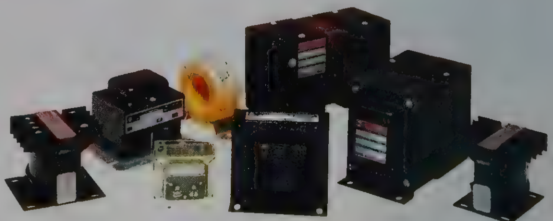
Electrical Enclosures
- Full range of Nema 1, 4, 4X and 12 enclosures
- Protect equipment from dust, oil and water
- Constructed in fiberglass, steel and stainless steel
- UL and CSA listed

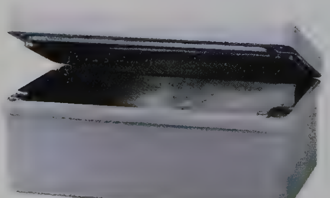
Plastic and Aluminum Diecast Boxes
- Over 50 models to choose from
- ABS plastic cases
- Aluminum diecast cases
- ABS Plastic consoles
- EMI/RFI shielded plastic or metal cases
- Water tight metal cases
- Available in a wide variety of colors and finishes
- Custom punching and screening



Hand Held Cases
- 'T' Case for Large Displays
- Standard sizes in various colours and materials

Control Transformers
- Broadest line in the industry
- Open Style with terminal blocks
- Primary and Secondary fusibility
- UL and CSA Listed





Rolec
- High quality ABS and diecasts
- Features patented RFI shielded Diecast Series

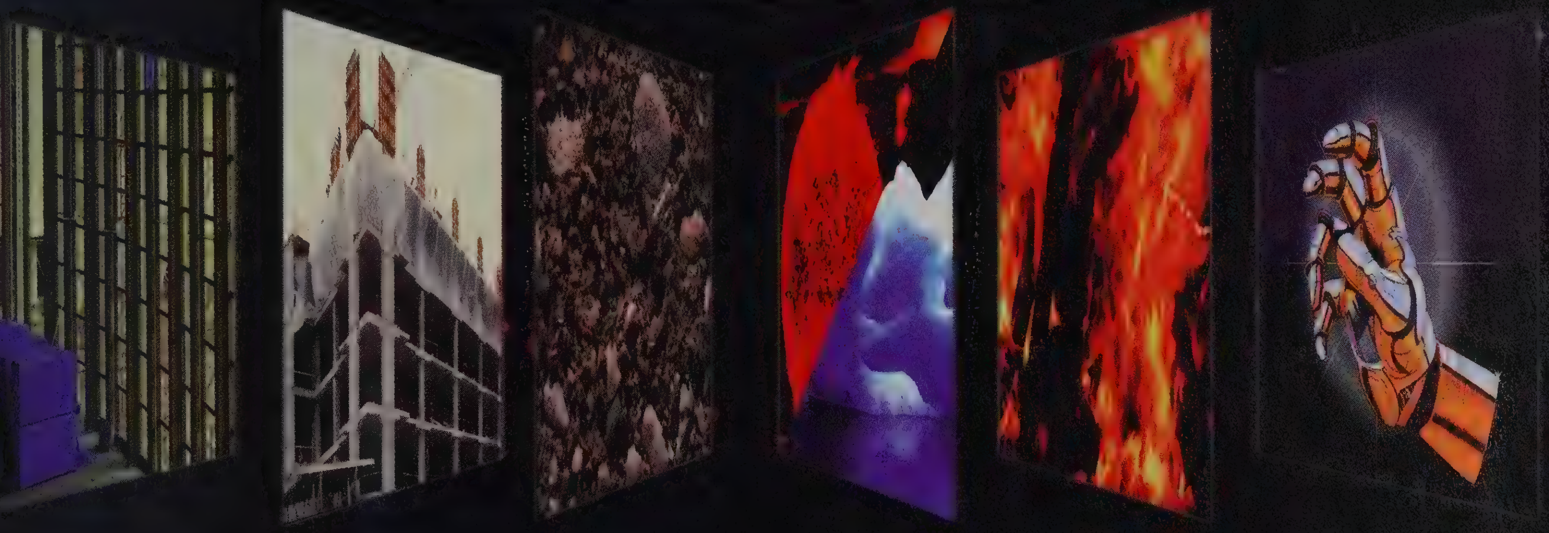
HAMMOND MANUFACTURING™

1-800-433-5700

Olympic

WIRE & CABLE CORP.

ENDURO SERIES



Olympic WIRE & CABLE CORP.

Olympic's new ENDURO series is designed to meet the increasing demands of special applications in the wire and cable industry.

Olympic's ENDURO series offers a cost-effective alternative to what is currently available as a standard product.

ENDURO series' special applications include:

- General Purpose/Indoor
- Outdoor
- Direct Burial
- High/Low Temperature
- High Temperature/Chemical Resistance
- Robotics

Olympic will also manufacture to your requirement where a standard product does not satisfy your needs.

Olympic

1 Madison Road, Fairfield, NJ 07004-9990

For Olympic Products
Call Allied Electronics
1-800-433-5700

NEWPORT®

Handheld Infrared Thermometers

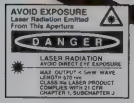
- Non-Contact Measurement from -18-400°C (0-750°F)
- Emissivity Adjustable from 0.1 to 1.00 in 0.01 steps
- Backlit LCD Display
- Dual Digital Display Indicates Current with Min/Max, Average or Difference Temperatures
- Accuracy ±2% of reading or 3°F, Whichever is Greater
- C/F Selectable
- Audible and Visible Alarm
- Two Laser Modules to Choose From

STOCK #	TYPE	DESCRIPTION	PRICE EACH
544-0158	OS520/N	10:1 distance to spot size ratio.	$345
544-0159	LS-120/N	Single Dot Laser Sight Module	200
544-0160	LS-720/N	Laser Circle Sight Module	350

NEW™

OS520 Series
$345
Basic Unit

Shown with optional Laser Sight

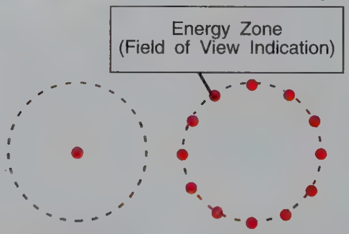


AVOID EXPOSURE
Laser Radiation Emitted
From This Aperture

DANGER

LASER RADIATION
AVOID DIRECT EYE EXPOSURE
MAX OUTPUT < 5mW WAVE LENGTH 670 nm
CLASS IIIa LASER PRODUCT
COMPLIES WITH 21 CFR CHAPTER 1, SUBCHAPTER J

Two laser sight modules are available as options. Select either sight module and slide it on!



Laser Dot
LS-120/N

Laser Circle
LS-720/N

Panel Meters

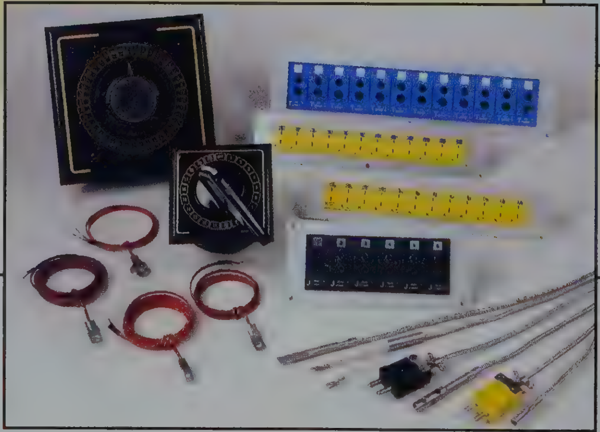
3½-DIGIT PANEL MINI-METERS

Indicators have 0.56" (14.22) red LED display, 115 Vac. Panel space 37.5% of standard 1/8 DIN meter. Process meters provide zero and span adjustments for readout in engineering units. Thermocouple meters include cold junction compensation, linearization, jumper selection of C or F, thermocouple break detection and analog output (1mV/count). RTD meters include sensor excitation linearization, jumper selection for C or F, sensor break detection and analog output. Connection to sensor can be 2, 3, or 4 wire.

STOCK #	TYPE	SIGNAL INPUT	DISPLAY SPAN	PRICE EACH
544-0300	205-PA1-R-CO	4-20 mA	±1,999	$145
544-0301	205-PV3-R-CO	1-5 V	±1,999	145
544-0302	205-PV4-R-CO	1-10 V	±1,999	145
544-0303	205-JF1-R-CO	"J"T/C	-346° to +1400°F	195
544-0304	205-JC1-R-CO	"J"T/C	-210° to +760°C	195
544-0305	205-KF1-R-CO	"K"T/C	-157° to +1999°F	195
544-0306	205-KC1-R-CO	"K"T/C	-105° to +1372°C	195
544-0307	205-TF1-R-CO	"T"T/C	-157° to 1832°F	195
544-0308	205-TC1-R-CO	"T"T/C	-105° to +400°C	195
544-0309	205-MF1-R-CO	100 Ohm RTD	-328° to +1508°F	195
544-0310	205-MC1-R-CO	100 Ohm RTD	-200° to +820°C	195

Allied Electronics offers a complete line of NEWPORT® Thermocouples, RTDs and Thermistors.

Consult your local sales representative for additional information.



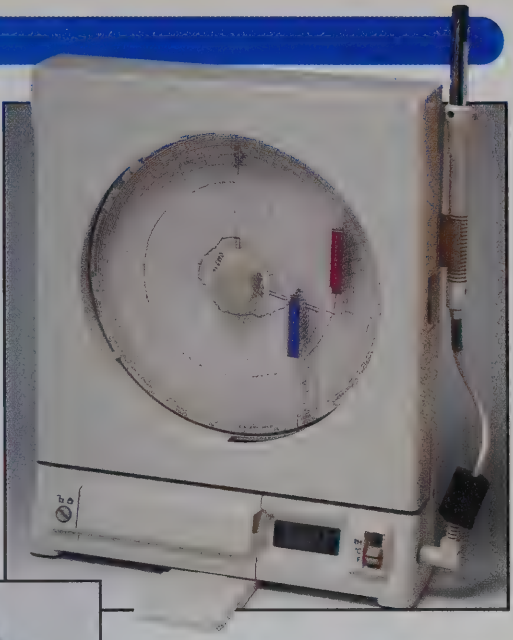
MADE IN THE U.S.A.

Temperature/Humidity Chart Recorder

- ☑ 200 mm (8") Chart for 1, 7 or 32-Day Recording
- ☑ Versatile Remote Mounting Sensor
- ☑ Convenient Front Panel Programming
- ☑ Fully Electronic Microprocessor Control
- ☑ Alarms and Relay Contact Standard
- ☑ Includes 120 Assorted Charts

CT485B
$650
Basic Unit

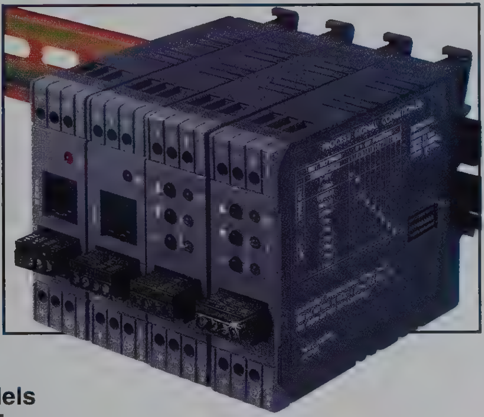
MADE IN THE U.S.A.



STOCK #	TYPE	DESCRIPTION	PRICE EACH
544-0138	CT485B-110V-W-AL	White recorder, 110 Vac	$650
544-0139	CT485B-RP-W/N	Replacement probe	80
544-0140	CT485B-CAL-KIT/N	RH Calibration kit, 75% and 33% RH	75

NEMA 4 Splash-Proof Lens Cover for Panel Meters

STOCK #	TYPE	CASE SIZE	PRICE EACH
544-0163	SPC364	3/64 DIN	$30
544-0164	SPC116-R	1/16 DIN rectangular	30
544-0165	SPC116-S	1/16 DIN square	30
544-0166	SPC14	1/4 DIN	30
544-0167	SPC4	1/8 DIN	30
544-0168	SPC18	1/8 DIN	30



DRN Series DIN Rail Mount Signal Conditioners

- ☑ Computer Configurable Models
- ☑ Models Available For Thermocouple, RTD, Process, Strain, Frequency/Pulse, AC Voltage and Current
- ☑ 0-10 V, 4-20 mA Or 0-20 mA Analog Output
- ☑ Features 3-Way Isolation

STOCK #	TYPE	DESCRIPTION	PRICE EACH
544-0017	DRN-TC-C/N	Computer-configurable, J, K, T, E, R, S, B, J DIN input	$325
544-0020	DRN-RTD-C/N	Computer-configurable, RTD input	355
544-0022	DRN-PR-C/N	Computer-configurable, process input	325
544-0024	DRN-ST-C/N	Computer-configurable, strain gauge/load cell input	345
544-0026	DRN-FP-C/N	Computer-configurable, frequency/pulse input	295
544-0028	DRN-ACV-C/N	Computer-configurable, AC voltage input	295
544-0030	DRN-ACC-C/N	Computer-configurable, AC current input	295

Accessories

STOCK #	TYPE	DESCRIPTION	PRICE EACH
544-0012	DRN-PS-300/N	90-250 Vac input, 24 Vdc at 300 mA output power supply output power supply	$110
544-0013	DRN-PS-410/N	115/230 Vac input, 24 Vdc at 410 mA output power supply	120
544-0014	DRN-PS-750/N	115/230 Vac input, 24 Vdc at 750 mA output power supply	130
544-0015	DRN-CONFIG-9/N	Configuration Software, includes 9-pin serial cable	100
544-0016	DRN-CONFIG-25/N	Configuration Software, includes 25-pin serial cable	100
544-0137	RAIL-35-2/N	35 mm DIN rail, 2 m length	15

For Additional NEWPORT Products
See Section 14

ICN77000 Micro-Infinity® Series 1/16 DIN Autotune Temperature/Process Controllers

- ☑ Companion Design Compliments INFINITY® Series Indicators
- ☑ Extremely High Accuracy, ±0.5°C; 0.03% Rdg. For Process Inputs
- ☑ Dual 4-Digit LED Display With Indicators For Output and Alarm Status
- ☑ Relay, SSR. DC Pulse, 0-10 V and 0-20 mA Output Types
- ☑ Ramp To Setpoint Feature Standard
- ☑ Thermocouple, RTD Or Process Voltage/Current Input

2 Versions Available

- ☑ 1/16 DIN Cutout With 2.1" Square Bezel, NEMA 4 Protection
- ☑ 1/16 DIN Bezel and Cutout, NEMA 12 Protection

STOCK #	TYPE	DESCRIPTION	PRICE EACH
544-0001	ICN77340	Single DC pulse output, 1 alarm standard, NEMA-12	$219
544-0002	ICN77350	Single 0-20 mA, 0-10 V output, 1 alarm standard, NEMA-12	219
544-0003	ICN77333	Dual relay output, 1 alarm standard, NEMA-12	229
544-0004	ICN77343	Dual output, DC pulse and relay, 1 alarm standard, NEMA-12	229
544-0005	ICN77353	Dual output, analog and relay, 1 alarm standard, NEMA-12	229
544-0006	ICN77530	Single relay output, 1 alarm standard, NEMA-4	229
544-0007	ICN77540	Single DC pulse output, 1 alarm standard, NEMA-4	229
544-0008	ICN77550	Single 0-20 mA, 0-10 V output, 1 alarm standard, NEMA-4	229
544-0009	ICN77533	Dual relay output, 1 alarm standard, NEMA-4	239
544-0010	ICN77543	Dual output, DC pulse and relay, 1 alarm standard, NEMA-4	239
544-0011	ICN77553	Dual output, analog and relay, 1 alarm standard, NEMA-4	239

**Additional models available–consult Sales.*

Additional Options Available for Controller (Not field installable. Must be specified at time of order.)

ORDER SUFFIX	ALARM AND COMMUNICATIONS OPTIONS	PRICE EACH
-A2	2nd Alarm	$ 6
-C2	Isolated RS-232 Communications	50
-C4	Isolated RS-485 Communications	50
-PV	Isolated Analog Output	65

Note: Options are mutually exclusive. Only one option may be specified with a unit.

ORDER SUFFIX	POWER OPTIONS	PRICE EACH
-DC	10-34 Vac/Vdc power	$20

SIEMENS

Relays & breakers from Potter & Brumfield Products Division deliver the performance your toughest applications demand

Whatever your application requires, there is probably a Potter & Brumfield Products Division component that can meet your needs. The entire P&B line of quality switching components is designed to provide the kind of rugged dependability your toughest applications demand. Specify Potter & Brumfield Products Division relays and circuit breakers with confidence in appliances, HVAC systems, automobiles, industrial controls and more.

Stock relays offer ratings from dry circuit up through 125A, while stock circuit breakers are available in current ratings from 250mA to 50A. A broad range of termination and mounting options expand design-in flexibility for both relays and circuit breakers.

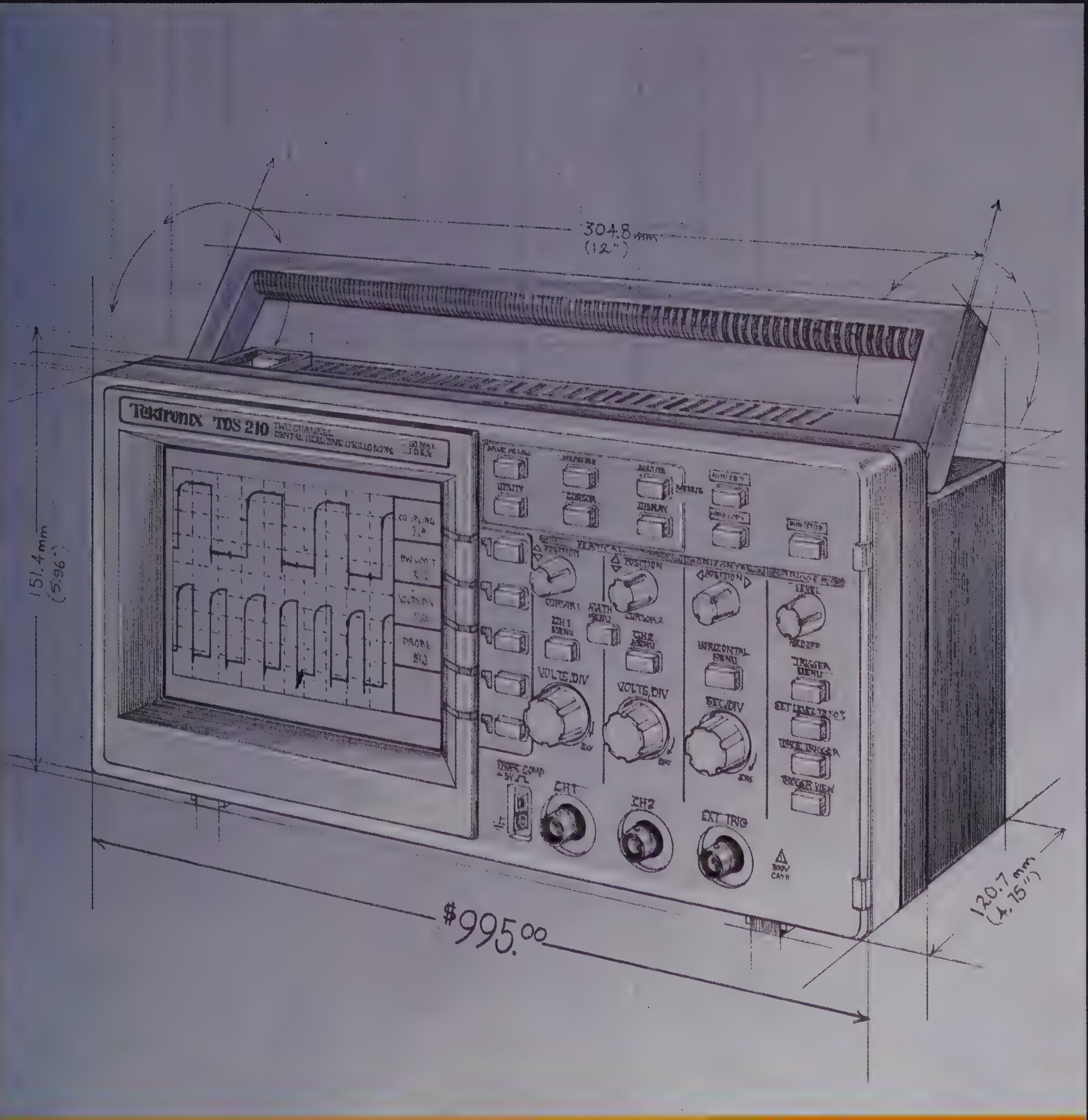
Allied Electronics carries an extensive inventory of relays, circuit breakers, time delays and other components from Potter & Brumfield Products Division. So, there is an excellent chance that the products you need are as near as the well-stocked shelves of Allied Electronics. Call today to place your order or request a quote.

- **Printed Circuit Board Relays**
- **General Purpose Relays**
- **Power Relays**
- **Latching & Impulse Relays**
- **Automotive Relays**
- **Solid State Relays**
- **Thermal Circuit Breakers**
- **Magnetic Circuit Breakers**
- **Time Delay Relays**
- **Input/Output Modules**
- **Definite Purpose Contactors**
- **Sockets & Accessories**

See our product line on pages 566-574.

Call Allied Electronics
1-800-433-5700

Potter & Brumfield Products Division
Siemens Electromechanical Components, Inc.



This digital scope is a major breakthrough no matter how you measure it.

It's never been easier to pick up a Tektronix digital scope. Just $995 will get you the 60 MHz TDS 210, while $1695 will get you its 100 MHz big brother, the TDS 220. Both come loaded with dozens of great features like triggering and automatic setup. They'll even store or recall your measurements at the push of a button. Yet despite all that, the actual scopes are as diminutive as their price tags. Making them easy to pick up in more ways than one. For more information, call Allied Electronics at 1-800-433-5700.

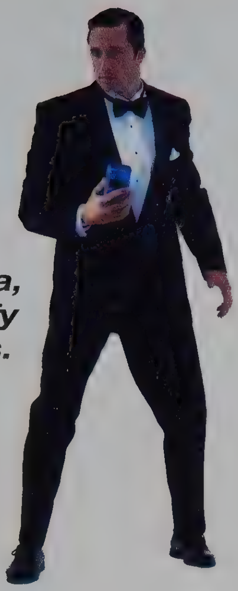
Tektronix

©1996 Tektronix Inc.

When you're on the run, you'll find the TDS200s' light-weight design a real life saver.

THE RIGHT SOLUTION – No matte

Tek's handheld oscilloscopes are quick on the draw for deadly accurate measurements.



From Monaco to the Siberian tundra, Tek's digital thermometers reliably identify out-of-tolerance conditions.

what you get yourself into.

TDS220

Page 884

TFS3031

Page 882

TDS640A

Page 884

THS720A

Page 886

TDS380

Page 884

TOP200

Page 882

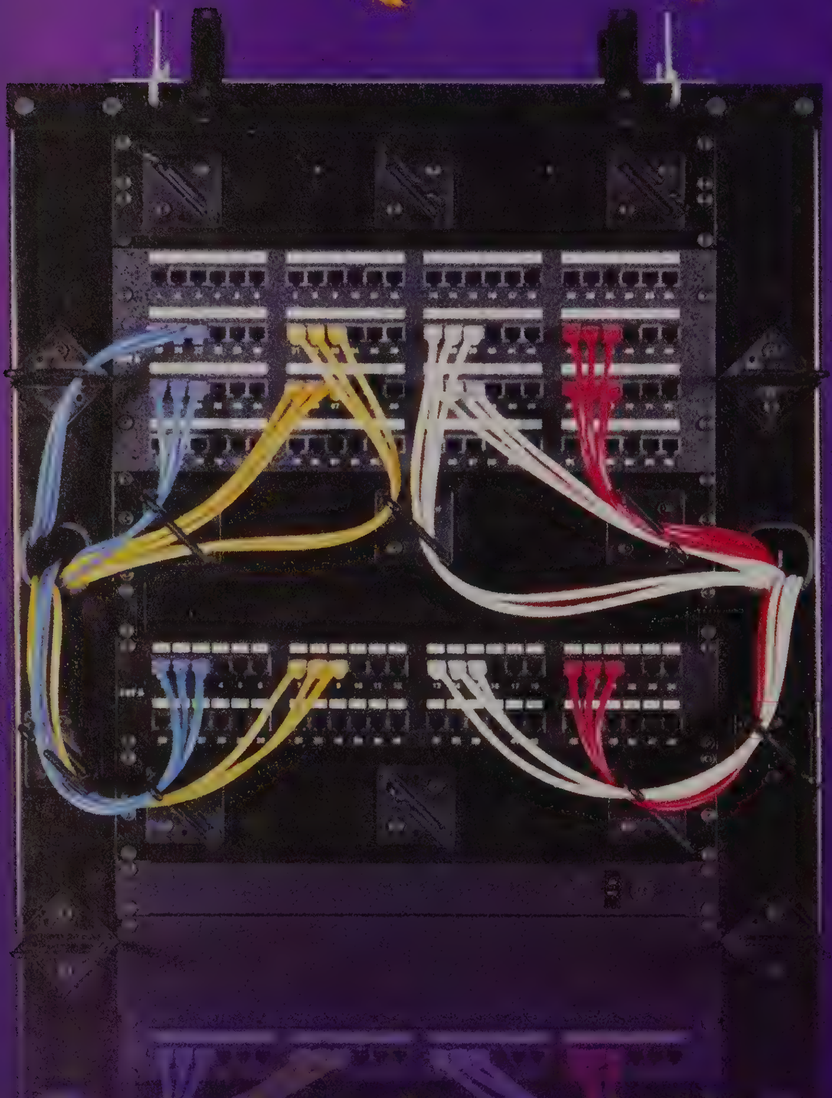
TDS460A

Page 883

DTM920

Tektronix®

© 1996 Tektronix, Inc. All rights reserved. MU1580



Now With 3 Manufacturing Facilities

West Coast • Mid-West • East Coast

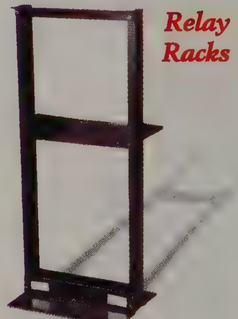
A New Addition To The Family...

Now as a member of ZERO Corporation the advantage is in your court. Easy accessibility with 3 manufacturing facilities, lower shipping costs direct from our nationwide factories, and even more competitive pricing are only a few of the advantages we now offer. Give us a call today and we'll pass the advantage to you.

Express Racks

Cable Management Racks

Relay Racks



Fans

Drawers With Writing Shelf

Mod-u-line Chassis

ZERO

PFT

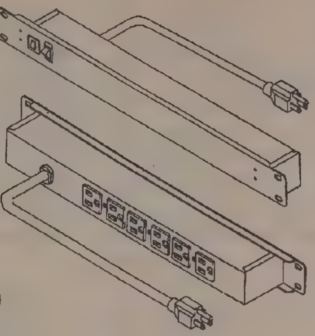
A ZERO Corporation Company

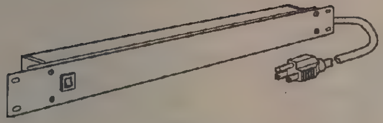
Available Through Allied Electronics

Website: http://www.allied.avnet.com

1-800-433-5700

19" Rack Mounted Surge Suppressors — NEW —


R5S
R5BZ
JS06 Series
JT06 Series


R5SX
JT06B0BX

- ► Designed to Fit All Standard 19" Cabinets, Carts and Racks
- ► Matte Black Steel Housing
- ► Black 14/3 SJT Cord
- ► UL Recognized, CSA Certified
- ► 6 Outlets on Rear of Unit
- ► 120 V, 15 A, 60 Hz with 15 Amp Resettable Circuit Breaker
- ► With or Without Power Switch
- ► 1.5" Receptacle Center to Center
- ► Dimensions: 19" W × 1.75"H × 2.75"D (1.25" Mounting Centers)
- ► Fail Safe Auto Shutdown Will Shut Your System Down If the Surge Suppression Circuit Fails to Protect Your Equipment from Surge Damage

High Performance Surge Suppressors
- ► Lifetime Product Warranty
- ► 330 V Surge Clamping Voltage
- ► 33,000 A Maximum Surge Current

Computer Grade Surge Suppressors
- ► 5 Year Product Warranty
- ► 400 V Surge Clamping Voltage
- ► 13,000 A Maximum Surge Current

High Performance — Rack Mount

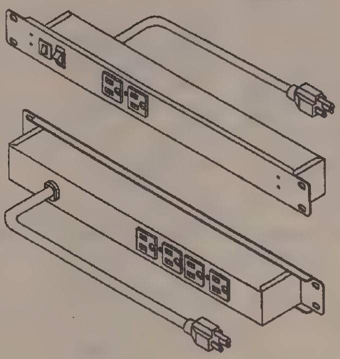
Stock No.	Mfr.'s Type	Switch	Cord Length	Fail-Safe™	EACH
					1-2
533-7875	R5S	Yes	6	—	89.00
533-7880	R5S-15	Yes	15	—	102.00
533-7885	JS06B0B	Yes	6	Yes	85.00
533-7890	JS06B2B	Yes	15	Yes	89.00
533-0565	R5SX	No	6	—	89.00
533-0570	R5SX-15	No	15	—	98.00

Computer Grade — Rack Mount

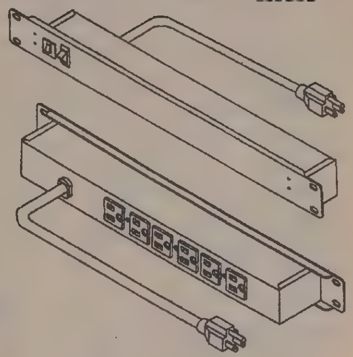
Stock No.	Mfr.'s Type	Switch	Cord Length	Fail-Safe™	EACH 1-2
533-7249	R5BZ	Yes	6	—	67.00
533-7250	R5BZ-15	Yes	15	—	80.00
533-7915	JT06B0B	Yes	6	Yes	62.00
533-7920	JT06B2B	Yes	15	Yes	64.00
533-0575	JT06B0BX	No	6	Yes	51.00
533-0580	JT06B2BX	No	15	Yes	53.00

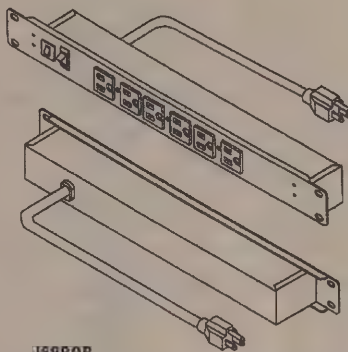
Standard 19" Rackmounted Power Strips

J24B08



J06B0B

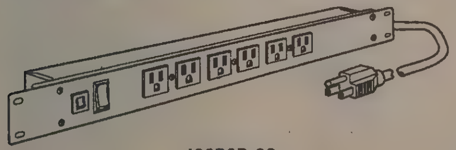


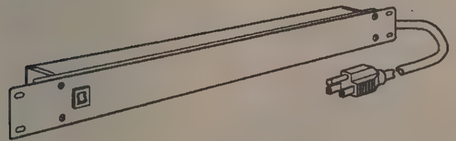

J60B0B

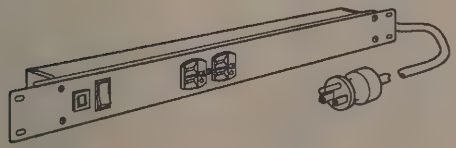
Designed for all types of electronic enclosures. Power is available from front or back, or a combination of both. Features a combination ON/OFF switch pilot light, 15 amp, 125 volt, and black steel construction. Also available with surge and noise suppression. **Dimensions:** 19" × 1¾" × 2⅜"; Back cover — 17 × 1¾".

Stock No.	Mfr.'s Type	No. of Outlets†	Master On/Off Switch/Pilot Light	Cord Length	Ship Wt. (Lbs.)	EACH
						1-9
533-7245	J60B0B	6/0	Yes	6'	3	48.00
533-7246	J60B2B	6/0	Yes	15'	3¾	53.00
533-7247	J06B0B	0/6	Yes	6'	3	48.00
533-7248	J06B2B	0/6	Yes	15'	3¾	53.00
533-7244	J24B0B	2/4	Yes	6'	3	48.00
533-7243	J24B2B	2/4	Yes	15'	3¾	53.00

†Front/Back.


J60B0B-90


J06B0BX


J24B0BH

Special Application 19" Rack Mounted Power Strips — NEW —

- ► Designed to Fit All Standard 19" Cabinets, Carts and Racks
- ► Matte Black Steel Housing
- ► Black 14/3 SJT Cord
- ► UL Recognized, CSA Certified
- ► 120 V, 15 A, 60 Hz with 15 Amp Resettable Circuit Breaker
- ► 1.5" Receptacle Center to Center
- ► Dimensions: 19" W × 1.75"H × 2.75"D (1.25" Mounting Centers)

90° Rotated Outlet Units
- ► Outlets Are Rotated for Applications Using Plug In Power Supplies (Adjacent Outlets Are Not Covered Up)

No Switch Units
- ► No Power Switch Protects for Accidental Shut-Down of System

Medical Grade Units
- ► Hospital Grade Outlets
- ► 14/3 SJT Black Cord with Hospital Grade Plug

Stock No.	Mfr.'s Type	Description	Outlets Front/Rear	On/Off Switch	Cord Length	EACH
						1-4
533-0585	J60B0B-90	90° Outlets	6/0	Yes	6'	45.00
533-0590	J60B2B-90	90° Outlets	6/0	Yes	15'	49.00
533-0595	J06B0BX	No Switch	0/6	No	6'	43.00
533-0600	J06B2BX	No Switch	0/6	No	15'	47.00
533-0605	J60B0BH	Medical Grade	6/0	Yes	6'	77.00
533-0610	J60B2BH	Medical Grade	6/0	Yes	15'	83.00
533-0615	J06B0BH	Medical Grade	0/6	Yes	6'	76.00
533-0620	J06B2BH	Medical Grade	0/6	Yes	15'	84.00
533-0625	J24B0BH	Medical Grade	2/4	Yes	6'	76.00
533-0630	J24B2BH	Medical Grade	2/4	Yes	15'	84.00

Relays, Timers, Controls and Sensors

Page

- **Altech Corp.** ... 580, 581, 582
- **American Zettler, Inc.** ... 515, 516
- **Amperite** ... 517, 518
- **Artisan** ... 519, 520, 583
- **Carlo Gavazzi, Inc.** ... 521, 584
- **CII Midtex** ... 522
- **CP Clare** ... 523, 524, 525
- **Crouzet** ... 526, 527, 528
- **Crydom Company** ... 529-538
- **Dow Key Microwave** ... 539

Page

- **ENM** ... 585
- **Gentron Corp.** ... 540
- **Grasslin** ... 586
- **Grayhill** ... 541
- **Guardian Electric** ... 542
- **IDEC** ... 543, 544
- **Industrial Timer (ITC)** ... 587
- **Macromatic** ... 545, 546, 547
- **Magnecraft** ... 548, 549, 550
- **MSD, Inc.** ... 551

Page

- **NTE Electronics** ... 552, 553, 554
- **Omron** ... 555, 556, 557, 588, 589, 590
- **Opto 22** ... 558, 559, 560, 561
- **Redington Counters** ... 591, 592
- **Schrack Components** ... 562, 563, 564
- **Siemens/Potter & Brumfield Division** ... 565-574
- **Stancor** ... 575
- **Syrelec** ... 576, 577
- **Teledyne Relays** ... 578, 579
- **Veeder-Root/Dynapar** ... 593, 594

Page

- **Brain Boards**
  - **Opto 22** ... 559, 561
- **Contactors**
  - **Carlo Gavazzi** ... 521
  - **Stancor** ... 575
- **Controllers**
  - **Artisan** ... 583
  - **Crouzet** ... 528
  - **Crydom** ... 536
  - **Opto 22** ... 558, 561
  - **Veeder-Root/Dynapar** ... 594
- **Counters**
  - **ENM** ... 585
  - **Omron** ... 588
  - **Redington Counters** ... 591
  - **Syrelec** ... 576, 577
  - **Veeder-Root/Dynapar** ... 593, 594
- **Diode Modules**
  - **Crydom** ... 537, 538
- **Filters**
  - Solid State Relays
    - **Crydom** ... 529
- **Flashers**
  - **Amperite** ... 518
  - **Artisan** ... 520
- **Float Switchers**
  - **Crydom** ... 536
- **Hand/Desk Tally**
  - **ENM** ... 585
  - **Redington Counters** ... 591
- **Handbook, Solid State Relays**
  - **Crydom** ... 536
- **Heatsinks**
  - **Crydom** ... 533
- **Hourmeters**
  - **ENM** ... 585
  - **Redington Counters** ... 592
  - **Veeder-Root/Dynapar** ... 593
- **In-Wall Timer**
  - **Grasslin** ... 586
- **Modules**
  - I/O
    - **Crouzet** ... 526, 527
    - **Crydom** ... 529, 535
    - **Grayhill** ... 541
    - **Opto 22** ... 559, 560
    - **Siemens/Potter & Brumfield Division** ... 572
    - **Teledyne** ... 578
  - Mounting Racks
    - **Grayhill** ... 541
    - **Opto 22** ... 559, 560
  - Multimode
    - **Schrack** ... 563
    - **Syrelec** ... 576
- **Photoelectric Sensors**
  - **Carlo Gavazzi** ... 584
  - **Omron** ... 589
  - **Veeder-Root/Dynapar** ... 594
- **Photomicrosensors**
  - **Omron** ... 590
- **Plug-In Wall Timer**
  - **Grasslin** ... 586
- **Proximity Sensors**
  - **Altech** ... 580, 581, 582
  - **Carlo Gavazzi** ... 584
  - **Omron** ... 589
- **Relays**
  - Alternating
    - **Macromatic** ... 547
  - Armature
    - **Teledyne** ... 578
  - Automotive
    - **NTE** ... 554
    - **Siemens/Potter & Brumfield Division** ... 565, 567

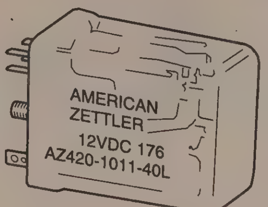
Page

  - Coaxial
    - **Dow Key** ... 539
  - DIP/SIP
    - **American Zettler** ... 516
    - **CP Clare** ... 523
    - **Magnecraft** ... 548
    - **Siemens/Potter & Brumfield Division** ... 570
    - **Teledyne** ... 579
  - Dry Reed
    - **CP Clare** ... 523
  - General Purpose
    - **American Zettler** ... 515
    - **CII Midtex** ... 522
    - **IDEC** ... 543
    - **Magnecraft** ... 548, 459
    - **MSD** ... 551
    - **NTE** ... 552, 553, 554
    - **Omron** ... 555, 556
    - **Schrack** ... 562, 563
    - **Siemens/Potter & Brumfield Division** ... 565, 566
  - Heavy Duty
    - **IDEC** ... 543
    - **Magnecraft** ... 549
    - **NTE** ... 552
    - **Schrack** ... 563
    - **Siemens/Potter & Brumfield Division** ... 567
  - Impulse
    - **Siemens/Potter & Brumfield Division** ... 571
  - Industrial
    - **NTE** ... 553
    - **Siemens/Potter & Brumfield Division** ... 565
  - Interfaces/Accessories
    - **Opto 22** ... 561
  - Latching
    - **MSD** ... 551
    - **Omron** ... 555
    - **Siemens/Potter & Brumfield Division** ... 571
    - **Teledyne** ... 578
  - Mercury Displacement
    - **Magnecraft** ... 550
  - Miniature
    - **American Zettler** ... 515
    - **IDEC** ... 543
    - **Magnecraft** ... 548
    - **NTE** ... 553
    - **Schrack** ... 562, 564
    - **Siemens/Potter & Brumfield Division** ... 567, 568, 569
  - Monitoring
    - **Macromatic** ... 547
  - Multimode
    - **Schrack** ... 563
  - PC Board
    - **American Zettler** ... 515, 516
    - **Magnecraft** ... 548
    - **Grayhill** ... 541
    - **Omron** ... 557
    - **Schrack** ... 562, 563
    - **Siemens/Potter & Brumfield Division** ... 568, 569, 570
  - Power
    - **American Zettler** ... 516
    - **IDEC** ... 543
    - **Magnecraft** ... 550
    - **MSD** ... 551
    - **NTE** ... 553
    - **Omron** ... 556
    - **Schrack** ... 564
    - **Siemens/Potter & Brumfield Division** ... 567
    - **Stancor** ... 575
  - Reed
    - **CP Clare** ... 523, 524
    - **Magnecraft** ... 548
    - **NTE** ... 554
    - **Siemens/Potter & Brumfield Division** ... 570
    - **Teledyne** ... 579

Page

  - Reversing Control
    - **MSD** ... 551
  - SCRs
    - **Crydom** ... 532, 533, 534, 537, 538
    - **Gentron** ... 540
    - **IDEC** ... 543
    - **Magnecraft** ... 550
    - **Siemens/Potter & Brumfield Division** ... 572
  - Sequencing
    - **MSD** ... 551
  - Sockets and Accessories
    - **American Zettler** ... 515
    - **CII Midtex** ... 522
    - **IDEC** ... 543, 544
    - **Macromatic** ... 545
    - **Magnecraft** ... 549
    - **MSD** ... 551
    - **NTE** ... 552
    - **Omron** ... 555, 556
    - **Siemens/Potter & Brumfield Division** ... 574
  - Software
    - **Opto 22** ... 558
  - Solenoids
    - **Guardian Electric** ... 542
  - Solid State
    - **Carlo Gavazzi** ... 521
    - **CP Clare** ... 524, 525
    - **Crouzet** ... 527, 528
    - **Crydom** ... 529, 530, 531, 532, 5333, 534, 535, 536
    - **Gentron** ... 540
    - **Grayhill** ... 541
    - **IDEC** ... 543
    - **Magnecraft** ... 548, 550
    - **NTE** ... 554
    - **Opto 22** ... 558
    - **Siemens/Potter & Brumfield Division** ... 572
    - **Teledyne** ... 579
  - Surge Arrestors
    - **CP Clare** ... 525
  - Switching
    - **Carlo Gavazzi** ... 521
    - **Dow Key** ... 539
  - Time Delay
    - **Amperite** ... 517, 518
    - **Artisan** ... 519, 520
    - **IDEC** ... 544
    - **Macromatic** ... 545, 546, 547
    - **Magnecraft** ... 550
    - **Siemens/Potter & Brumfield Division** ... 570, 571, 573
    - **Syrelec** ... 576, 577
  - TRIACs
    - **Carlo Gavazzi** ... 521
- **Sensors**
  - **Altech Corp.** ... 580, 581, 582
  - **Carlo Gavazzi** ... 584
  - **Omron** ... 589, 590
  - **Veeder-Root/Dynapar** ... 594
- **Tachometers**
  - **Omron** ... 588
  - **Redington Counters** ... 591
  - **Veeder-Root/Dynapar** ... 594
- **Time Controlled Outlet Strip**
  - **Grasslin** ... 586
- **Timers and Time Switches**
  - **Artisan** ... 583
  - **Grasslin** ... 586
  - **Industrial Timer** ... 587
  - **Omron** ... 588
  - **Veeder-Root/Dynapar** ... 593
- **Totalizers**
  - **Redington Counters** ... 591
  - **Veeder-Root/Dynapar** ... 594

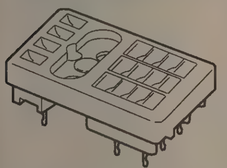
AZ420 Miniature General Purpose Relay



- Rugged Construction for High Reliability
- Life Expectancy Greater Than 100 Million Operations
- DC Coils to 115 V
- High Sensitivity at 25 mW Per Pole Available
- Current Sensitive and Voltage Sensitive Coils Available
- Round Core and Larger Coil Volume Provide Greater Pull Force
- Hydrogen Annealed Iron Magnetic Circuit
- Form A, B, C, and D Contacts Available
- Up to 6 Poles in Less Than One Cubic Inch
- Dry Circuit, 2 Amp, 3 Amp, or 7.5 Amp Contacts
- Printed Circuit or Solder/Plug-in Terminals
- Balanced Spring-Held Armature Allows Dependable Operation in Any Position
- Sealed Version Available (2 and 4 Pole)
- UL and CUR File E43203; VDE 0110 Gr. A

Polycarbonate enclosed general purpose relays. Plug-in terminals are gold plated copper alloy. PC terminals are tin plated copper alloy. **Contacts:** 4OLUS and 1OLUS, bifurcated crossbar in fine silver/gold plated. 4WLUS amd 1WLUS are single crossbar fine silver/gold plated. 4WHUS and 1WHUS are single crossbar, moveable, silver cadmium oxide/gold plated. Available in standard DC voltage, sensitive DC voltage (V), and sensitive DC current (C). Sealed version — AZ2428 and AZ2429 Series.

Stock No.	Mfr.'s Type	Voltage	Poles	Amps	Terminals	EACH 1-24	25-49	50-99
686-0018	AZ420-70-4WHUS	24 DC	DPDT	7.5	Plug-in/Solder	**15.38**	**10.25**	**8.20**
686-0019	AZ420-70-4WLUS	24 DC	DPDT	3.0	Plug-in/Solder	**14.63**	**9.75**	**7.80**
686-0020	AZ420-70-4OLUS	24 DC	DPDT	2.0	Plug-in/Solder	**13.50**	**11.25**	**9.00**
686-0021	AZ420-1011-4WHUS	12 DC	DPDT	7.5	Plug-in/Solder	**15.38**	**10.25**	**8.20**
686-0022	AZ420-1011-4WLUS	12 DC	DPDT	3.0	Plug-in/Solder	**14.63**	**9.75**	**7.80**
686-0023	AZ420-1011-4OLUS	12 DC	DPDT	2.0	Plug-in/Solder	**13.50**	**11.25**	**9.00**
686-0024	AZ420-C07-4WHUS	12 DC	DPDT	3.0	Plug-in/Solder	**17.81**	**11.88**	**9.50**
686-0025	AZ420-C07-4WLUS	12 DC	DPDT	7.5	Plug-in/Solder	**17.25**	**11.50**	**9.20**
686-0026	AZ420-C07-4OLUS	12 DC	DPDT	2.0	Plug-in/Solder	**15.60**	**13.00**	**10.40**
686-0027	AZ420-C56-4WLUS	18 DC	DPDT	7.5	Plug-in/Solder	**17.25**	**11.50**	**9.20**
686-0028	AZ420-V50-4WHUS	24 DC	DPDT	3.0	Plug-in/Solder	**17.81**	**11.88**	**9.50**
686-0029	AZ420-V70-4WHUS	12 DC	DPDT	3.0	Plug-in/Solder	**17.81**	**11.88**	**9.50**
686-0030	AZ420-V70-4WLUS	24 DC	DPDT	3.0	Plug-in/Solder	**16.88**	**11.25**	**9.00**
686-0031	AZ420-V70-4OLUS	24 DC	DPDT	2.0	Plug-in/Solder	**15.60**	**13.00**	**10.40**
686-0032	AZ421-70-1WHUS	24 DC	4PDT	7.5	Plug-in/Solder	**20.25**	**13.50**	**10.80**
686-0033	AZ421-70-1WLUS	24 DC	4PDT	3.0	Plug-in/Solder	**18.38**	**12.25**	**9.80**
686-0034	AZ421-70-1OLUS	24 DC	4PDT	2.0	Plug-in/Solder	**23.25**	**15.50**	**12.40**
686-0035	AZ421-1011-1WHUS	12 DC	4PDT	7.5	Plug-in/Solder	**20.25**	**13.50**	**10.80**
686-0036	AZ421-1011-1WLUS	12 DC	4PDT	3.0	Plug-in/Solder	**18.38**	**12.25**	**9.80**
686-0037	AZ421-1011-1OLUS	12 DC	4PDT	2.0	Plug-in/Solder	**23.25**	**15.50**	**12.40**
686-0038	AZ421-C56-1OLUS	30 DC	4PDT	2.0	Plug-in/Solder	**26.06**	**17.38**	**13.90**
686-0039	AZ421-V80-1OLUS	12 DC	4PDT	2.0	Plug-in/Solder	**26.06**	**17.38**	**13.90**
686-0040	AZ428-70-4WHUS	24 DC	DPDT	7.5	PC Terminals	**15.38**	**10.25**	**8.20**
686-0041	AZ428-1011-4WHUS	12 DC	DPDT	7.5	PC Terminals	**15.38**	**10.25**	**8.20**
686-0042	AZ428-1011-4OLUS	12 DC	DPDT	2.0	PC Terminals	**13.50**	**11.25**	**9.00**
686-0043	AZ428-C07-4WHUS	12 DC	DPDT	7.5	PC Terminals	**17.81**	**11.88**	**9.50**
686-0044	AZ428-C07-4WLUS	12 DC	DPDT	3.0	PC Terminals	**17.25**	**11.50**	**9.20**
686-0045	AZ428-V50-4WHUS	24 DC	DPDT	7.5	PC Terminals	**17.81**	**11.88**	**9.50**
686-0046	AZ428-V50-4WLUS	24 DC	DPDT	3.0	PC Terminals	**16.88**	**11.25**	**9.00**
686-0047	AZ428-V50-4OLUS	24 DC	DPDT	2.0	PC Terminals	**15.60**	**13.00**	**10.40**
686-0048	AZ428-V70-4WHUS	12 DC	DPDT	7.5	PC Terminals	**17.81**	**11.88**	**9.50**
686-0049	AZ428-V70-4WLUS	12 DC	DPDT	3.0	PC Terminals	**16.88**	**11.25**	**9.00**
686-0050	AZ428-V70-4OLUS	12 DC	DPDT	2.0	PC Terminals	**15.60**	**13.00**	**10.40**
686-0051	AZ429-70-1WHUS	24 DC	4PDT	7.5	PC Terminals	**20.25**	**13.50**	**10.80**
686-0052	AZ429-70-1OLUS	24 DC	4PDT	2.0	PC Terminals	**23.25**	**15.50**	**12.40**
686-0053	AZ429-1011-1WHUS	12 DC	4PDT	7.5	PC Terminals	**20.25**	**13.50**	**10.80**
686-0054	AZ429-1011-1WLUS	12 DC	4PDT	3.0	PC Terminals	**18.38**	**12.25**	**9.80**
686-0055	AZ429-1011-1OLUS	12 DC	4PDT	2.0	PC Terminals	**23.25**	**15.50**	**12.40**
686-0056	AZ429-V05-1WHUS	24 DC	4PDT	7.5	PC Terminals	**23.25**	**15.50**	**12.40**
686-0057	AZ429-V05-1WLUS	24 DC	4PDT	3.0	PC Terminals	**21.56**	**14.38**	**11.50**
686-0058	AZ429-V05-1OLUS	24 DC	4PDT	2.0	PC Terminals	**26.06**	**17.38**	**13.90**
686-0059	AZ2428-56-4WHUS	48 DC	2PDT	7.5	PC Terminals	**20.25**	**13.50**	**10.80**
686-0060	AZ2428-56-4WLUS	48 DC	2PDT	3.0	PC Terminals	**19.12**	**12.75**	**10.20**
686-0061	AZ2428-56-4OLUS	48 DC	2PDT	2.0	PC Terminals	**20.62**	**13.75**	**11.00**
686-0062	AZ2428-70-4WHUS	24 DC	DPDT	7.5	PC Terminals	**20.25**	**13.50**	**10.80**
686-0063	AZ2428-70-4WLUS	24 DC	DPDT	3.0	PC Terminals	**19.12**	**12.75**	**10.20**
686-0064	AZ2428-70-4OLUS	24 DC	DPDT	2.0	PC Terminals	**20.62**	**13.75**	**11.00**
686-0065	AZ2428-1011-4WHUS	12 DC	DPDT	7.5	PC Terminals	**20.25**	**13.50**	**10.80**
686-0066	AZ2428-1011-4WLUS	12 DC	DPDT	3.0	PC Terminals	**19.12**	**12.75**	**10.20**
686-0067	AZ2428-C07-4WHUS	12 DC	DPDT	7.5	PC Terminals	**22.68**	**15.13**	**12.10**
686-0068	AZ2428-V10-4WLUS	6 DC	DPDT	3.0	PC Terminals	**21.75**	**14.50**	**11.60**
686-0069	AZ2428-V50-4WHUS	24 DC	DPDT	7.5	PC Terminals	**22.50**	**15.00**	**12.00**
686-0070	AZ2428-V50-4WLUS	24 DC	DPDT	3.0	PC Terminals	**21.75**	**14.50**	**11.60**
686-0071	AZ2428-V70-4WHUS	12 DC	DPDT	7.5	PC Terminals	**22.50**	**15.00**	**12.00**
686-0072	AZ2428-V70-4WLUS	12 DC	DPDT	3.0	PC Terminals	**21.75**	**14.50**	**11.60**
686-0073	AZ2429-56-1WHUS	48 DC	4PDT	7.5	PC Terminals	**24.75**	**16.50**	**13.20**
686-0074	AZ2429-70-1WHUS	24 DC	4PDT	7.5	PC Terminals	**24.75**	**16.50**	**13.20**
686-0075	AZ2429-70-1WLUS	24 DC	4PDT	3.0	PC Terminals	**23.25**	**15.50**	**12.40**
686-0076	AZ2429-70-1OLUS	24 DC	4PDT	2.0	PC Terminals	**26.43**	**17.63**	**14.10**
686-0077	AZ2429-V05-1WHUS	24 DC	4PDT	7.5	PC Terminals	**28.31**	**18.88**	**15.10**
686-0078	AZ2429-V05-1OLUS	24 DC	4PDT	2.0	PC Terminals	**30.18**	**20.13**	**16.10**

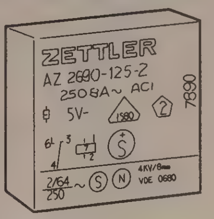


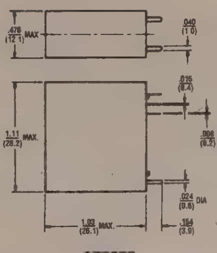
Sockets and Hardware

- International Standard Spacing — Accommodates Most Cradle-Type Relays
- Unique Knife-Edge Connector Assures Positive Contact
- Unbreakable Fiberglass Filled Polyester Base Material
- Spacing Riser Prevents Flux Contamination
- Low Profile Mounting With Right Angle Sockets
- PC Terminal Spacing for 0.1 or 0.2 Inch Grids
- UL File E 43203; CSA File LR36664; VDE 0110 Gr. A

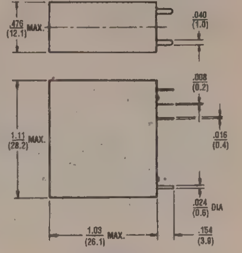
Stock No.	Mfr.'s Type	Description	EACH 1-49	50-99	100-499
686-0079	ST140-A1	2 Pole Socket	**2.25**	**2.12**	**1.97**
686-0080	ST140-1	Retaining Clip for ST140	**.38**	**.36**	**.34**
686-0081	ST141-A1	4 Pole Socket	**2.83**	**2.59**	**2.41**
686-0082	ST141-1	Retaining Clip for ST141	**.39**	**.37**	**.35**

AZ2690 Series





AZ2693



AZ2692

- Isolation Spacing Greater Than 8 mm
- Dielectric Strength 4000 Vrms Coil to Contact
- Approvals/Standards Include UL, CSA, VDE, IEC, CEE, and SEMKO
- THINPAK™ Version Less Than .500" Height
- SLIMPAK™ Version Saves Board Space
- 10 Amp Switching
- Life Expectancy to 30 Million Operations
- Epoxy Sealed Version for Automatic Wave Soldering and Cleaning
- UL File E44211; CSA File LR 85091; VDE 4120-4940-4002/A1

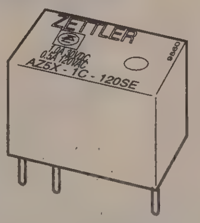
Miniature Power Relay in P.B.T. polyester enclosure. **Contacts:** SPDT, silver cadmium oxide, 10 amps. **Terminals:** PC, tinned copper alloy. Sensitive relay coil.

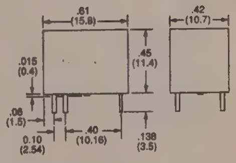
Stock No.	Mfr.'s Type	Voltage	Pin Spacing	EACH 1-49	50-99	100-249
686-0083	AZ2692-052-52	24 DC	.138	**8.10**	**5.40**	**3.78**
686-0084	AZ2692-071-52	12 DC	.138	**8.10**	**5.40**	**3.78**
686-0085	AZ2693-052-52	24 DC	.100	**8.10**	**5.40**	**3.78**
686-0086	AZ2693-071-52	12 DC	.100	**8.10**	**5.40**	**3.78**

Sockets and Clip for AZ2690 Series

Stock No.	Mfr.'s Type	Description	EACH 1-49	50-99	100-249
686-0087	ST482-2	Retaining Clip	**.60**	**.40**	**.28**
686-0088	ST482-U1	Socket for AZ2692	**2.85**	**1.90**	**1.33**
686-0089	ST483-U1	Socket for AZ2693	**2.85**	**1.90**	**1.33**

AZ5 Subminiature PC Board Relay



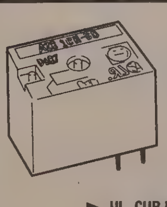


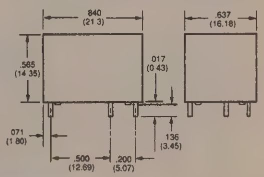
- Subminiature Size for High Density Packaging
- Coil Sensitivity to 100 mW
- Extremely Low Cost
- Coil to 24 VDC
- Epoxy Sealed for Automatic Wave Soldering
- 1 Amp Contacts
- Life Expectancy to 10 Million Operations
- Meets FCC Part 68.302 1500 V Lightning Surge
- Meets FCC Part 68.304 1000 V Dielectric
- UL File E43203; CSA File 74120

Light Duty PC Board Relay in P.B.T. polyester enclosure. **Contacts:** SPDT (1 Form C) welded crossbar construction); silver alloy gold clad. **Terminals:** Tinned copper alloy. **Weight:** 3.5 grams.

Stock No.	Mfr.'s Type	Voltage	EACH 1-49	50-99	100-499
686-0001	AZ5X-1C-5DE	5 VDC	**5.10**	**4.60**	**3.75**
686-0002	AZ5X-1C-12DE	12 VDC	**5.10**	**4.60**	**3.75**
686-0003	AZ5X-1C-24DE	24 VDC	**5.10**	**4.60**	**3.75**
686-0004	AZ5Y-1C-5DE	5 VDC	**4.95**	**4.10**	**3.86**
686-0005	AZ5Y-1C-12DE	12 VDC	**4.95**	**4.10**	**3.86**
686-0006	AZ5Y-1C-24DE	24 VDC	**5.10**	**4.60**	**3.75**

AZ8 Miniature PC Board Relay



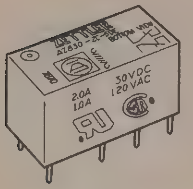


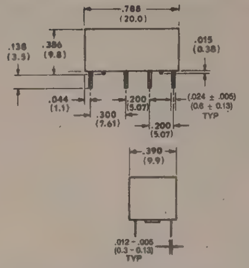
- Subminiature Size
- High Sensitivity, 110 mW Pick Up
- Epoxy Sealed for Automatic Wave Soldering
- Life Expectancy to 20 Million Operations
- Extremely Low Cost
- Class B Insulation (130°C) Standard
- Class F Insulation (155°) Version Available
- UL, CUR File E44211
- VDE Approved Versions Available

Miniature PC Board Relay available in unsealed or epoxy sealed (E) version. **Contacts:** SPDT (1 form C) in 3 amp (silver) or 6 Amp (silver nickel). **Termination:** Tinned copper alloy, PC terminals. **Enclosure:** P.E.T. polyester. Available in sensitive coil (DSE).

Stock No.	Mfr.'s Type	Voltage	Amps	EACH 1-49	50-99	100-499
686-0007	AZ8-1C-5DE	5 VDC	3	**4.94**	**4.11**	**3.87**
686-0008	AZ8-1C-12DE	12 VDC	3	**4.94**	**4.11**	**3.87**
686-0009	AZ8-1C-24DE	24 VDC	3	**4.95**	**4.10**	**3.86**
686-0010	AZ8-1C-5DSE	5 VDC	3	**5.10**	**4.60**	**3.75**
686-0011	AZ8-1C-12DSE	12 VDC	3	**5.10**	**4.60**	**3.75**
686-0012	AZ8-1CH-5DE	5 VDC	6	**5.10**	**4.60**	**3.75**
686-0013	AZ8-1CH-12DE	12 VDC	6	**5.10**	**4.60**	**3.75**
686-0014	AZ8-1CH-24DE	24 VDC	6	**5.25**	**4.45**	**3.90**
686-0015	AZ8-1CH-5DSE	5 VDC	6	**5.40**	**4.59**	**4.03**
686-0016	AZ8-1CH-12DSE	12 VDC	6	**5.40**	**4.59**	**4.03**
686-0017	AZ8-1CH-24DSE	24 VDC	6	**5.55**	**4.74**	**4.15**

AZ830 Series



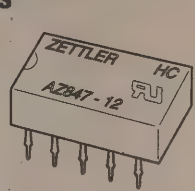


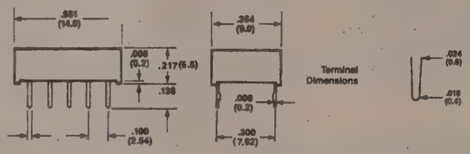
- Low Profile for Compact Board Spacing
- DC Coils to 48 VDC
- High Sensitivity, 100 mW Pick Up
- High Switching Capacity, 60 W, 125 VA
- Life Expectancy to 100 Million Operations
- Fits Standard 16 Pin IC Socket
- Epoxy Sealed for Automatic Wave Soldering and Cleaning
- Meets FCC Part 68.302 1500 V Lightning Surge
- Meets FCC Part 68.304 1000 V Dielectric
- UL File E43203; CSA File LR 36664

Polarized Dip Relay, single side stable. **Contacts:** DPDT (2 Form C) bifurcated cross bar contacts in silver alloy, gold clad, 2 amps. P.B.T. enclosure. Tinned copper alloy, PC terminals. Available in standard coil and sensitive coil (DSE) relays.

Stock No.	Mfr.'s Type	Voltage	EACH		
			1-49	50-99	100-249
686-0106	AZ830-2C-5DE	5 DC	7.95	5.30	3.71
686-0107	AZ830-2C-12DE	12 DC	7.95	5.30	3.71
686-0108	AZ830-2C-24DE	24 DC	8.40	5.60	3.92
686-0109	AZ830-2C-5DSE	5 DC	8.25	5.50	3.85
686-0110	AZ830-2C-6DSE	6 DC	8.25	5.50	3.85
686-0111	AZ830-2C-12DSE	12 DC	8.25	5.50	3.85
686-0112	AZ830-2C-24DSE	24 DC	8.70	5.80	4.06
686-0113	AZ830-2C-48DSE	48 DC	10.65	7.10	4.97

AZ847 Series



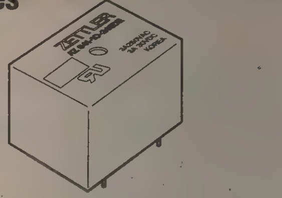


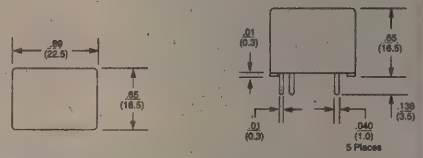
- Micro Miniature Size: Height: — 0.217" (5.5 mm); Length — .551" (14 mm); Width — 0.354" (9 mm)
- High Sensitivity, 79 mW Pick Up
- Meets FCC Part 68.302 1500 V Lightning Surge
- DIP Terminal Layout, Fits 10 Pin IC Socket
- Epoxy Sealed for Automatic Wave Soldering and Cleaning
- UL File E43203; CSA 73363

Micro Miniature Polarized Relay, single side stable. **Contacts:** DPDT (2 Form C), bifurcated crossbar contacts in silver palladium/gold clad. LCP enclosure. Tinned copper alloy PC terminals.

Stock No.	Mfr.'s Type	Voltage	EACH		
			1-49	50-99	100-249
686-0119	AZ847-5	5 DC	9.30	6.20	4.34
686-0120	AZ847-12	12 DC	9.30	6.20	4.34
686-0121	AZ847-24	24 DC	10.50	7.00	4.90

AZ941 Series



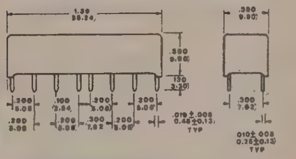


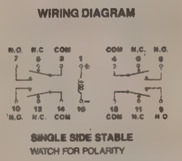
- Contacts Rated at 5 or 10 Amps
- Life Expectancy to 10 Million Operations
- Extremely Low Cost
- Epoxy Sealed for Automatic Wave Soldering
- UL, CUR File E43203

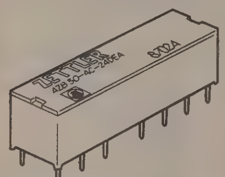
Miniature PC Board Relay in SPDT (1 Form C) contact arrangement. Silver alloy contact material. Tinned copper alloy PC terminals. P.B.T. polyester enclosure.

Stock No.	Mfr.'s Type	Voltage	Amps	EACH		
				1-49	50-99	100-249
686-0122	AZ941-1CH-5DE	5 DC	5 Amps	3.75	2.50	1.75
686-0123	AZ941-1CH-12DE	12 DC	5 Amps	3.75	2.50	1.75
686-0124	AZ941-1CH-24DE	24 DC	5 Amps	3.90	2.60	1.82
686-0125	AZ941-1CT-5DE	5 DC	10 Amps	3.90	2.60	1.82
686-0126	AZ941-1CT-12DE	12 DC	10 Amps	3.90	2.60	1.82
686-0127	AZ941-1CT-24DE	24 DC	10 Amps	4.05	2.70	1.89

AZ830 4 Pole Series





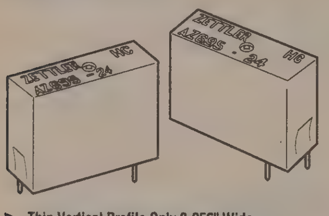


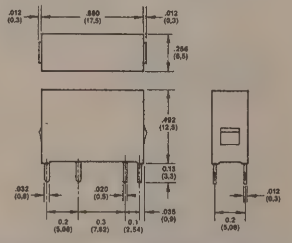
- Single Side Stable
- High Sensitivity, 90 mW Pick Up
- Low Profile DIP Package
- Life Expectancy to 10 Million Operations
- Meets FCC Part 68.302 1500 V Lightning Surge
- Meets FCC Part 68.304 1000 V Dielectric
- Epoxy Sealed for Automatic Wave Soldering and Cleaning
- UL File E43203; CSA Approved

4 Pole Polarized Miniature Dip Relay in 4PDT (4 Form C) contact arrangement. Bifurcated crossbar contacts; silver palladium, gold clad. **Enclosure:** P.B.T. polyester. Tinned copper alloy PC terminals. Available in standard coil and sensitive (SEA) relay version.

Stock No.	Mfr.'s Type	Voltage	EACH		
			1-49	50-99	100-249
686-0114	AZ830-4C-12DEA	12 DC	16.95	11.30	7.91
686-0115	AZ830-4C-24DEA	24 DC	16.95	11.30	7.91
686-0116	AZ830-4C-5DSEA	5 DC	18.15	12.10	8.47
686-0117	AZ830-4C-12DSEA	12 DC	18.15	12.10	8.47
686-0118	AZ830-4C-24DSEA	24 DC	18.15	12.10	8.47

AZ695 Series





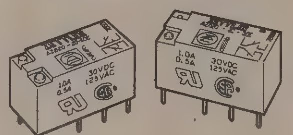
- Thin Vertical Profile Only 0.256" Wide
- 1 Form A Contact with Up to 5 Amp Switching Capability
- High Sensitivity, 100 mW Pick Up
- Dielectric Strength 3000 Vrms Contact to Coil
- Coils to 24 VDC
- Epoxy Sealed for Automatic Wave Soldering and Cleaning
- Extremely Small Footprint Utilizing Only 0.18 Square Inch of PCB Area
- UL File E44211; CSA Approved

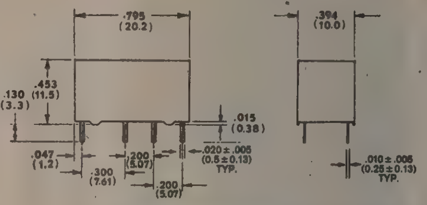
Sensitive Subminiature Relay in SPST (1 form A) contact arrangement. **Enclosure:** P.B.T. polyester. **Terminals:** Tinned copper alloy, PC.

Stock No.	Mfr.'s Type	Voltage	Contact Material	EACH		
				1-49	50-99	100-249
686-0090	AZ695-5	5 DC	Silver Cadmium Oxide	7.20	4.80	3.36
686-0091	AZ695-12	12 DC	Silver Cadmium Oxide	7.20	4.80	3.36
686-0092	AZ695-24	24 DC	Silver Cadmium Oxide	7.95	5.30	3.71
686-0093	AZ695-5G	5 DC	Silver Cadmium Oxide with Gold Plating	7.65	5.10	3.57
686-0094	AZ695-12G	12 DC	Silver Cadmium Oxide with Gold Plating	7.65	5.10	3.57
686-0095	AZ695-24G	24 DC	Silver Cadmium Oxide with Gold Plating	8.25	5.50	3.85

686-0096. ST695. Socket for AZ695 Relays. 1-49 .... EACH 1.73
50-99 .... EACH 1.04 100-249 .... EACH .92

AZ820 Series



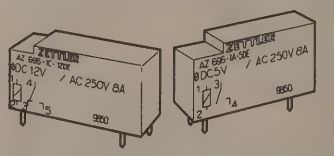


- Low Profile for Compact Board Spacing
- DC Coils to 48 VDC
- Life Expectancy to 10 Million Operations
- Standard PC 0.1" Grid Terminal Spacing
- Fits Standard 16 Pin IC Socket
- Epoxy Sealed for Automatic Wave Soldering and Cleaning
- Meets FCC Part 68.302 1500 V Lightning Surge
- Meets FCC Part 68.304 1000 V Dielectric
- UL File E43203; CSA File LR 36664

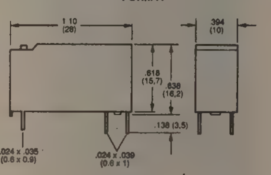
Subminiature Dip Relay with DPDT (2 Form C) bifurcated Crossbar Contacts. **Contact Material:** Silver palladium, gold clad. **Enclosure:** P.B.T. polyester. **Terminals:** PC, tinned copper alloy.

Stock No.	Mfr.'s Type	Voltage	EACH		
			1-49	50-99	100-249
686-0102	AZ820-2C-5DE	5 DC	6.45	4.30	3.01
686-0103	AZ820-2C-12DE	12 DC	6.45	4.30	3.01
686-0104	AZ820-2C-24DE	24 DC	6.75	4.50	3.15
686-0105	AZ820-2C-48DE	48 DC	7.65	5.10	3.57

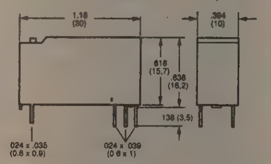
AZ696 Series



FORM A



FORM C

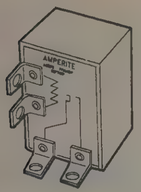


- Miniature Size: Form A Version — 0.63" (16 mm) Height, 1.10" (30 mm) Length, 0.39" (10 mm) Width
- High Sensitivity, 100 mW Pick Up
- Dielectric Strength 4000 Vrms
- Isolation Spacing Greater Than 8 mm
- Single Pole — Forms A and C Available
- 10 Amp Switching Capability
- Epoxy Sealed for Automatic Wave Soldering and Cleaning
- Approvals/Standards Include UL, CSA, VDE, IEC, SEMKO and CEE
- UL File E44211; CSA File LR 85091

10 Amp Sub-Miniature Power Relay. Silver cadmium oxide contacts. Tinned copper alloy, PC terminals. P.B.T. polyester enclosure.

Stock No.	Mfr.'s Type	Voltage	Contact Arrangement	EACH		
				1-49	50-99	100-249
686-0097	AZ696-1A-12DE	12 DC	SPST-NO	4.94	4.00	3.27
686-0098	AZ696-1A-24DE	24 DC	SPST-NO	4.94	4.00	3.27
686-0099	AZ696-1C-5DE	5 DC	SPDT	5.00	4.07	3.33
686-0100	AZ696-1C-12DE	12 DC	SPDT	5.00	4.07	3.33
686-0101	AZ696-1C-24DE	24 DC	SPDT	5.00	4.07	3.33

Delay on Operate



C Series

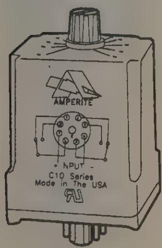
The C Series has solid state analog circuitry with SPST or SPDT relay output. Delay on operate timing mode. Compact Size. **Timing Selection:** Knob adjustable potentiometer or fixed. UL File #E96739(M). CSA File #LR62586. **Contact Rating:** 1/2 Amp @ 110-120V AC, 1 amp @ 32V DC. **Oper. Temp. Range:** -25°C to +60°C. **Mounting:** Single screw or optional 2-screw panel mount.

Ordering Information:

115	A	NO	.1	-60	S	C
A	B	C	D	E	F	G

A: Denotes nominal input voltage. Voltages available: 12, 24 and 115V AC; 12, 24, 48 and 110V DC. Custom voltages are available.
B: Denotes type of current required for operation: A = AC — Alternating Current. D = DC — Direct Current.
C: Denotes contact form: NO = SPST — 1 form A, C = SPST — 1 form B, SPDT = 1 form C.
D and E: Denotes range of knob adjustability for timing (in seconds) where: D = Minimum time delay. E = Maximum time delay for adjustable TDR's. **Note:** 1.) Ranges available: 0.1 - 60, 60 - 120, 120 - 180, 180 - 240 and 240-300 secs. Custom Timing is available. 2.) Both values (D and E) can be replaced by single value for a factory preset time delay in seconds from 0.1 through 300 secs.
G: Denotes form of termination - Blank = .110 male electro-plate solder terminals, X = .250 male quick connect terminals, S = screw terminals.
H: Denotes use of solid state analog circuitry of C Series.

Stock No.	Mfr.'s Type	Delay Time	Input Voltage	Mode of (1) Operation	EACH
					1-9
892-0001	110DC.1-60C	.1-60	110V DC	N.C.	**26.12**
892-0002	110DNO.1-60C	.1-60	110V DC	N.O.	**26.12**
892-0003	110DSPDT.1-60C	.1-60	110V DC	SPDT	**29.45**
892-0004	115AC60-120C	60-120	115V AC	N.C.	**26.12**
892-0005	115AC.1-60C	.1-60	115V AC	N.C.	**26.12**
892-0006	115ANO60-120C	60-120	115V AC	N.O.	**26.12**
892-0007	115ANO.1-60C	.1-60	115V AC	N.O.	**26.12**
892-0008	115ASPDT60-120C	60-120	115V AC	SPDT	**29.45**
892-0009	115ASPDT.1-60C	.1-60	115V AC	SPDT	**29.45**
892-0010	12AC.1-60C	.1-60	12V AC	N.C.	**26.12**
892-0011	12ANO.1-60C	.1-60	12V AC	N.O.	**26.12**
892-0012	12ASPDT.1-60C	.1-60	12V AC	SPDT	**29.45**
892-0013	12DC.1-60C	.1-60	12V AC	N.C.	**26.12**
892-0014	12DNO.1-60C	.1-60	12V DC	N.O.	**26.12**
892-0015	12DSPDT.1-60C	.1-60	12V DC	SPDT	**29.45**
892-0016	24AC.1-60C	.1-60	24V AC	N.C.	**26.12**
892-0017	24ANO.1-60C	.1-60	24V AC	N.O.	**26.12**
892-0018	24ASPDT.1-60C	.1-60	24V AC	SPDT	**34.07**
892-0019	24DC.1-60C	.1-60	24V DC	N.C.	**26.12**
892-0020	24DNO.1-60C	.1-60	24V DC	N.O.	**26.12**
892-0021	24DSPDT.1-60C	.1-60	24V DC	SPDT	**34.07**



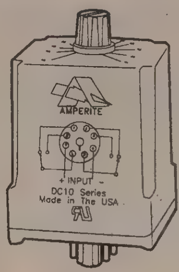
C10 Series (Low Cost 10 Amp TDR)

The C10 Series has solid state analog circuitry with DPDT relay output. Delay on operate timing mode. **Timing Selection:** Knob adjustable potentiometer or fixed. UL File #E96739(M). CSA File #LR62586-3. **Contact Rating:** 10 Amps @240V AC res. **Oper. Temp. Range:** -45° to +70°C. **Mounting:** 8-pin octal style plug.

Ordering Information:

120	A	P	.1	-60	C
A	B	C	D	E	F

A: Denotes nominal input voltage. Voltages available: 12, 24 and 120V AC; 12, 24, 48 and 110V DC. Custom voltages are available.
B: Denotes type of current required for operation: A = AC — Alternating Current. D = DC — Direct Current.
C: Denotes contact form: P = DPDT — 2 form C, S = SPDT — 1 form C.
D and E: Denotes range of knob adjustability for timing (in seconds) where: D = Minimum time delay. E = Maximum time delay for adjustable TDRs. **Note:** 1.) Ranges available: 0.1 - 60, 60 - 120, 120 - 180, 180 - 240, 240 -300 and 300 - 480 secs. Custom timing is available. 2.) Both values (D and E) can be replaced by a single value for a factory preset time delay in seconds from 0.1 through 480 secs.
F: Denotes use of solid state analog circuitry of C10 Series.



DC10 Series

The DC10 Series has CMOS digital circuitry with DPDT relay output. Delay on operate timing mode. **Timing Selection:** Knob adjustable potentiometer or fixed. UL File #E96739(M). CSA File #LR62586. **Contact Rating:** 10 Amps @ 240V AC res. **Oper. Temp. Range:** -45°C to +70°C. **Mounting:** 8-pin octal style plug.

Ordering Information:

120	A	P	1	-60	S	DC
A	B	C	D	E	F	G

A: Denotes nominal input voltage. Voltages available: 12, 24 and 120V AC; 12, 24, 48 and 110V DC. Custom voltages are available.
B: Denotes type of current required for operation: A = AC — Alternating Current. D = DC — Direct Current.
C: Denotes contact form: P = DPDT - 2 form C
D and E: Denotes range of knob adjustability for timing (in seconds, minutes or hours) where: D = Minimum time delay. E = Maximum time delay for adjustable TDR's. **Note:** 1.) Standard ranges are as follows: .1 - 6 seconds, .1 - 10 seconds, 1 - 60 seconds, 1.8 - 180 seconds, 5 - 300 seconds, 1 - 60 minutes, and 1 - 60 hours. Custom timing is available. 2.) Both values (D and E) can be replaced by a single value for a factory preset time delay in seconds, minutes or hours from 0.1 secs. through 1000 hours.
F: Denotes use of seconds, minutes or hours in timing value(s), S = seconds, M = minutes, H = hours.
G: Denotes use of solid state digital circuitry of DC10 Series.

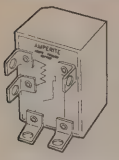
Stock No.	Mfr.'s Type	Delay Time	Input Voltage	Mode of (1) Operation	EACH
					1-9
892-0025	110DPI-60MDC	1-60 MIN.	110V DC	P	**43.31**
892-0026	110DPI-60SDC	1-60 SEC	110V DC	P	**43.31**
892-0027	110DP.1-10SDC	.1-10 SEC	110V DC	P	**43.31**
892-0028	120AP1-60MDC	1-60 MIN.	120V AC	P	**43.31**
892-0029	120AP1-60SDC	1-60 SEC	120V AC	P	**43.31**
892-0030	120AP.1-10SDC	.1-10 SEC	120V AC	P	**43.31**
892-0031	12AP1-60MDC	1-60 MIN.	12V AC	P	**43.31**
892-0032	12AP1-60SDC	1-60 SEC	12V AC	P	**43.31**
892-0033	12AP.1-10SDC	.1-10 SEC	12V AC	P	**43.31**
892-0034	12DP1-60MDC	1-60 MIN.	12V DC	P	**43.31**
892-0035	12DP1-60SDC	1-60 SEC	12V DC	P	**43.31**
892-0036	12DP.1-10SDC	.1-10 SEC	12V DC	P	**43.31**
892-0037	24AP1-60MDC	1-60 MIN.	24V AC	P	**43.31**
892-0038	24AP1-60SDC	1-60 SEC	24V AC	P	**43.31**
892-0039	24AP.1-10SDC	.1-10 SEC	24V AC	P	**43.31**
892-0040	24DP1-60MDC	1-60 MIN.	24V DC	P	**43.31**
892-0041	24DP1-60SDC	1-60 SEC	24V DC	P	**43.31**
892-0042	24DP.1-10SDC	.1-10 SEC	24V DC	P	**43.31**

Stock No.	Mfr.'s Type	Delay in Seconds	Input Voltage	Mode of (1) Operation	EACH
					1-9
892-0046	110DP60-120C	60-120	110V DC	P	**35.46**
892-0047	110DP.1-60C	.1-60	110V DC	P	**35.46**
892-0048	120AP60-120C	60-120	120V AC	P	**35.46**
892-0049	120AP.1-60C	.1-60	120V AC	P	**35.46**
892-0050	12AP60-120C	60-120	12V AC	P	**35.46**
892-0051	12AP.1.60C	.1-60	12V AC	P	**35.46**
892-0052	12DP60-120C	60-120	12V DC	P	**35.46**
892-0053	12DP.1-60C	.1-60	12V DC	P	**35.46**
892-0054	24AP60-120C	60-120	24V AC	P	**35.46**
892-0055	24AP.1-60C	.1-60	24V AC	P	**35.46**
892-0056	24DP60-120C	60-120	24V DC	P	**35.46**
892-0057	24DP.1-60C	.1-60	24V DC	P	**35.46**

1) N.C. = Normally closed contacts
N.O. = Normally open contacts
SPDT = Single pole double throw contacts
P = Double pole double throw contacts
ON/Off = 2 - SPST normally open contacts

Note: New Amperite products are continuously available. Call Allied for availability and for information on custom termination, voltages and timing, as well as accessories.

Delay on Release



CR Series

The CR Series has solid state analog circuitry with SPDT relay output. Triggered delay on release timing mode. Compact size. **Timing Selection:** Knob adjustable potentiometer or fixed. UL file #E96739(M). CSA File #LR62586. **Contact Rating:** ½ amp @ 110-120 VAC, 1 amp @ 32 VDC. **Oper. Temp. Range:** –25°C to +60°C. **Mounting:** Single screw or optional 2-screw panel mount.

Ordering Information:

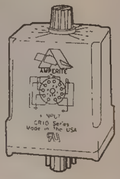
115	A	NO	R	1	-120	X	C
A	B	C	D	E	F	G	H

A: Denotes nominal input voltage. Voltages available: 12, 24 and 115 VAC; 12, 24, 48 and 110 VDC. Custom voltages are available.
B: Denotes type of current required for operation: A = AC — Alternating Current. D = DC — Direct Current.
C: Denotes contact form: NO = SPST — 1 form A, C = SPST — 1 form B, SPDT = 1 form C.
D: Denotes trigger reset function of CR series TDR.
E and F: Denotes range of knob adjustability for timing (in seconds) where: E = Minimum time delay. F = Maximum time delay for adjustable TDRs. **Note:** 1.) Ranges available: 1 - 120, 120 - 240, 240 - 480 and 480 - 600 secs. Custom timing is available. 2.) Both values (E and F) can be replaced by single value for a factory preset time delay in seconds from 1 through 600 secs.
G: Denotes form of termination - Blank = .110 male electro-plate solder terminals, X = .250 male quick connect terminals, S = screw terminals.
H: Denotes use of solid state analog circuitry of CR Series.

Stock No.	Mfr.'s Type	Delay in Seconds	Input Voltage	Mode of Operation*	EACH
					1-9
892-0062	115ANOR1-120C	1-120	115V AC	N.O.	**26.12**
892-0063	115ASPDTR1-120C	1-120	115V AC	SPDT	**29.45**
892-0064	12ANOR1-120C	1-120	12V AC	N.O.	**26.12**
892-0066	12DNOR1-120C	1-120	12V DC	N.O.	**26.12**
892-0067	12DSPDTR1-120C	1-120	12V DC	SPDT	**29.45**
892-0068	24ANOR1-120C	1-120	24V AC	N.O.	**26.12**
892-0069	24ASPDTR1-120C	1-120	24V AC	SPDT	**29.45**
892-0070	24DNOR1-120C	1-120	24V DC	N.O.	**26.12**
892-0071	24DSPDTR1-120C	1-120	24V DC	SPDT	**29.45**

CR10 Series (Low Cost 10 Amp TDR)

The CR10 Series has solid state analog circuitry with DPDT relay output. Triggered delay on release timing mode. **Timing Selection:** Knob adjustable potentiometer or fixed. UL file #E96739(M). CSA File #LR62586-3. **Contact Rating:** 10 amps @ 240 VAC res. **Oper. Temp. Range:** –45°C to +70°C. **Mounting:** 11-pin octal style plug.



Ordering Information:

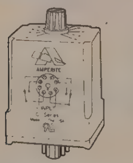
120	A	P	R	1	-120	C
A	B	C	D	E	F	G

A: Denotes nominal input voltage. Voltages available: 12, 24 and 120 VAC; 12, 24, 48 and 110 VDC. Custom voltages are available.
B: Denotes type of current required for operation: A = AC — Alternating Current. D = DC — Direct Current.
C: Denotes contact form: P = DPDT — 2 form C.
D: Denotes trigger reset function of CR10 series TDR.
E and F: Denotes range of knob adjustability for timing (in seconds) where: E = Minimum time delay. F = Maximum time delay for adjustable TDRs. **Note:** 1.) Ranges available: 1 - 120, 120 - 240, 240 - 480 and 480 - 600 secs. Custom timing is available. 2.) Both values (E and F) can be replaced by single value for a factory preset time delay in seconds from 1 through 600 secs.
G: Denotes use of solid state analog circuitry of CR10 Series.

892-0076	120APR120-240C	120-240	120V AC	P	**37.64**
892-0077	120APRI-120C	1-120	120V AC	P	**37.64**
892-0080	12DPR120-240C	120-240	12V DC	P	**37.64**
892-0081	12DPR1-120C	1-120	12V DC	P	**37.64**
892-0082	24APR120-240C	120-240	24V AC	P	**37.64**
892-0084	24DPR120-240C	120-240	24V DC	P	**37.64**
892-0085	24DPR1-120C	1-120	24V DC	P	**37.64**
892-0087	48DPR1-120C	1-120	48V DC	P	**37.64**

*N.C. = Normally closed contacts, N.O. = Normally open contacts, SPDT = Single pole double throw contacts, P = Double pole double throw contacts, ON/Off = 2 - SPST normally open contacts. **Note:** New Amperite products are continuously available. Call Allied for availability and for information on custom termination, voltages and timing, as well as accessories.

Interval — On



CI Series (Low Cost 10 Amp TDR)

The CI Series has solid state analog circuitry with DPDT relay output. One-shot, interval-on timing mode. **Timing Selection:** Knob adjustable potentiometer or fixed. UL file #E96739(M). CSA File #LR62586. **Contact Rating:** 10 amps @ 240 VAC res. **Oper. Temp. Range:** –45°C to +70°C. **Mounting:** 8-pin octal style plug.

Ordering Information:

120	A	P	.1	–60	CI
A	B	C	D	E	F

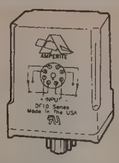
A: Denotes nominal input voltage. Voltages available: 12, 24 and 120 VAC; 12, 24, 48 and 110 VDC. Custom voltages are available.
B: Denotes type of current required for operation: A = AC — Alternating Current. D = DC — Direct Current.
C: Denotes contact form: P = DPDT — 2 form C.
D and E: Denotes range of knob adjustability for timing (in seconds) where: D = Minimum time delay. E = Maximum time delay for adjustable TDRs. **Note:** 1.) Ranges available: 1 - 60, 60 - 120, 120 - 180, 180 - 240, 240 - 300 and 300 - 480 secs. Custom timing is available. 2.) Both values (D and E) can be replaced by single value for a factory preset time delay in seconds from 0.1 through 4800 secs.
F. Denotes use of solid state analog circuitry of CI Series.

Stock No.	Mfr.'s Type	Delay in Seconds	Input Voltage	Mode of Operation*	EACH
					1-9
892-0090	120AP60-120CI	60-120	120V AC	P	**39.25**
892-0091	120AP.1-60CI	.1-60	120V AC	P	**39.25**
892-0093	12AP.1-60CI	.1-60	12V AC	P	**39.25**
892-0095	12DP.1-60CI	.1-60	12V DC	P	**39.25**
892-0096	24AP60-120CI	60-120	24V AC	P	**39.25**
892-0097	24AP.1-60CI	.1-60	24V AC	P	**39.25**
892-0099	24DP.1-60CI	.1-60	24V DC	P	**39.25**

*N.C. = Normally closed contacts, N.O. = Normally open contacts, SPDT = Single pole double throw contacts, P = Double pole double throw contacts, ON/Off = 2 - SPST normally open contacts. **Note:** New Amperite products are continuously available. Call Allied for availability and for information on custom termination, voltages and timing, as well as accessories.

Flashers (Low Cost 10 Amp Flasher)

DF10 Series



The DF10 Series has solid state analog circuitry with DPDT relay output. Recycle timer/flasher timing mode. **Timing Selection:** fixed flash rates. **Duty Cycle:** 50% UL File #E96739(M).CSA File #LR62586. **Contact Rating:** 10 amps @ 240 VAC res. **Oper. Temp. Range:** –45°C to +70°C. **Mounting:** 8-pin octal style plug.

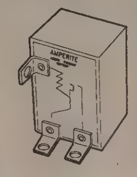
Ordering Information:

120	A	F	60	DF10
A	B	C	D	E

A: Denotes nominal input voltage. Voltages available: 12, 24 and 120 VAC; 12, 24, 48 and 110 VDC. Custom voltages are available.
B: Denotes type of current required for operation: A = AC — Alternating Current. D = DC — Direct Current.
C: Denotes flasher configuration.
D: Denotes flash rate. Standard rates are 30, 45, 60, 75, 90 and 120 FPM.
E: Denotes 10A DPDT 2 form C flasher — DF10 Series.

Stock No.	Mfr.'s Type	Flash Rate F.P.M.	Input Voltage	Mode of Operation	EACH
					1-9
892-0116	120AF120DF10	120	120V AC	Flasher	**37.64**
892-0117	120AF60DF10	60	120V AC	Flasher	**37.64**
892-0118	120AF90DF10	90	120V AC	Flasher	**37.64**
892-0119	12AF60DF10	60	12V AC	Flasher	**37.64**
892-0121	12DF60DF10	60	12V DC	Flasher	**37.64**
892-0123	24AF60DF10	60	24V AC	Flasher	**37.64**
892-0124	24AF90DF10	90	24V AC	Flasher	**37.64**
892-0125	24DF60DF10	60	24V DC	Flasher	**37.64**

D Series



The D Series are solid state analog flashing devices. No moving parts to wear out. 2 amp rating. **Output:** AC units — Triac; DC units — transistor. Low cost-compact size. 3 terminal configuration. No current leakage to load. Fixed flash rates. **Duty Cycle:** 50%. UL File #E96739(M). CSA File #LR62586. **Oper. Temp. Range:** –23°C to +60°C. **Mounting:** Single screw or optional 2 screw panel mount.

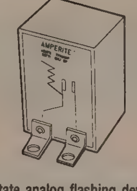
Ordering Information:

115	A	F	60	X	D
A	B	C	D	E	F

A: Denotes nominal input voltage. Voltages available: 6, 12, 24, 48 and 115 VAC; 6, 12, 24, 48 and 110 VDC. Custom voltages are available.
B: Denotes type of current required for operation: A = AC — Alternating Current. D = DC — Direct Current.
C: Denotes flasher configuration.
D: Denotes flash rate. Standard rates are 30, 45, 60, 75, 90, and 120 FPM. Custom rates are also available from 2 - 1000 F.P.M.
E: Denotes form of termination — blank = .110 male electro-plate solder terminals. X = .250 male quick connect terminals. S = screw terminals.
F: Denotes use of solid state analog circuitry of D Series.

892-0133	115AF60D	60	115V AC	Flasher	**16.98**
892-0134	115AF90D	90	115V AC	Flasher	**16.98**
892-0136	12AF90D	90	12V AC	Flasher	**16.98**
892-0137	12DF30D	30	12V DC	Flasher	**16.98**
892-0138	12DF60D	60	12V DC	Flasher	**16.98**
892-0140	24AF60D	60	24V AC	Flasher	**16.98**
892-0142	24DF60D	60	24V DC	Flasher	**16.98**

DF Series



The DF Series are totally encapsulated solid state analog flashing devices. **Universal Input:** 24 V to 120 VAC or DC operation in one device. No moving parts to wear out. 2 amp rating. Low cost — compact size. 2 terminal configuration — easy connection to load. Fixed flash rates. **Duty Cycle:** 50% UL File #D96739(M). CSA File #LR62586. **Oper. Temp. Range:** –23°C to +60°C. **Mounting:** Single screw or optional 2 screw panel mount.

Ordering Information:

24-120	F	60	DF
A	B	C	D

A: Denotes input voltage. Universal input voltage: 24-120 VAC or DC. Custom voltages are available.
B: Denotes flasher configuration.
C: Denotes flash rate. Standard rates are 30, 45, 60, 75, 90 and 120 FPM. Custom rates are also available from 2-1000 F.P.M.
D: Denotes solid state 2-terminal DF flasher.

892-0144	24-120F30DF	30	24-120V AC/DC	Flasher	**18.52**
892-0145	24-120F45DF	45	24-120V AC/DC	Flasher	**18.52**
892-0146	24-120F60DF	60	24-120V AC/DC	Flasher	**18.52**
892-0147	24-120F90DF	90	24-120V AC/DC	Flasher	**18.52**
892-0148	24-120F120DF	120	24-120V AC/DC	Flasher	**18.52**

Freedom 10 Time Delay Relay

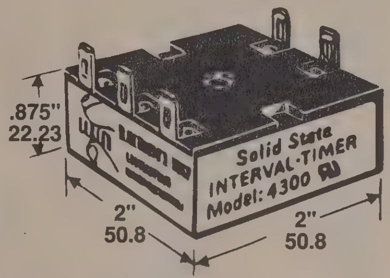
- ► Voltage and Polarity Friendly From 24V to 240; AC or DC; and 50/60 Hertz
- ► 2 Calibrated Controls: 1-100 Seconds and 0-15 Minutes
- ► DPDT Relay, Rating 5 Amps, Resistive 1/10 HP @ 120/240VAC
- ► 1% Repeatability
- ► Time Delay Range of 1 Second to 15 Minutes
- ► CMOS IC Control Circuitry
- ► – 20°C to + 55° C Ambient
- ► Octal or Spade Termination
- ► UL Listed

The Freedom 10 Time Delay Relay operates from any supply voltage from 24 to 240 volts AC/DC, 50/60 Hz. DPDT output contacts rated 5 amps resistive or 1/10 HP motor load at 120/240AC. Timing is adjustable from 1 second to 15 minutes by using the two calibrated controls together in any combination desired. The Freedom 10 is available with either octal or spade termination.

Stock No.	Mfr.'s Type	EACH		
		1-9	10-24	25-49
519-5200	Freedom 10/Octal	62.88	60.41	60.12
519-5205	Freedom 10/Spade	62.88	60.41	60.12

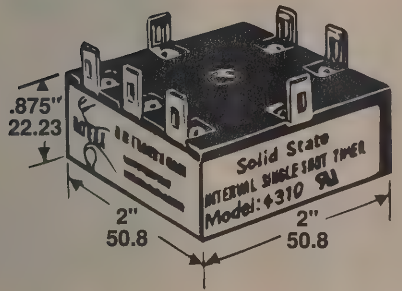
4300 Interval Timer

Model 4300 is an interval timer that permits operating voltage to be applied to a load circuit for a preset timing period. The load will operate only once for each application of power for the preset time and then turn off. Should the power be removed during the timing period the load would turn off, and the timing period reset to the start of another cycle. In order for the load circuit to see the full interval of operating voltage, the input voltage must be present for a duration that exceeds the preset timing interval. U.L./CSA listed. Other voltages and times available from factory.



Stock No.	Mfr.'s Type	Voltage	Adjustable Timing Interval	EACH			
				1-9	10-24	25-49	50-99
519-4301	4300A-3-1	24VDC	0.1-30 sec.	24.34	22.65	21.14	19.81
519-4302	4300A-3-2	24VDC	1-300 sec.	24.34	22.65	21.14	19.81
519-4311	4300A-8-1	120VAC	0.1-30 sec.	24.34	22.65	21.14	19.81
519-4312	4300A-8-2	120VAC	1-300 sec.	24.34	22.65	21.14	19.81
519-4313	4300A-8-3	120VAC	2-1000 sec.	24.34	22.65	21.14	19.81

Interval/Single-Shot Timer

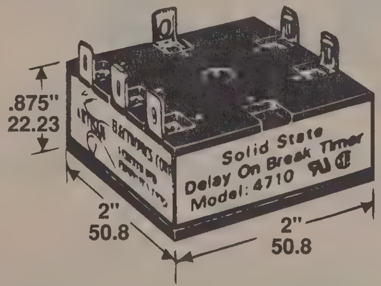


Model 4310 can perform as an interval timer, or as a single-shot timer. The difference between interval and single-shot operation is the operation of the initiate switch. If the load is to operate from a continuous closure from the initiate switch, wire the timer with no jumper between terminals 6 and 7. In this mode the Model 4310 will function as an interval timer. If the load circuit is to operate for the entire timing period even if the initiate switch is closed for a short duration, connect terminals 6 and 7 and operate as a single-shot timer. In single-shot operation the power switched to the load cannot be removed with the initiate switch once the cycle has been initiated. **10 amp zero voltage switching.** UL/CSA Listed. Other voltages and times available from factory.

Stock No.	Mfr.'s Type	Operating Voltage	Output Rating	Adjustable Timing Interval	EACH			
					1-9	10-24	25-49	50-99
519-4404	4310A-8-A-4	120VAC	1 Amp	10-4500 sec.	36.20	33.60	31.37	29.40
519-4411	4310A-8-B-1	120VAC	5 Amp	0.1-30 sec.	41.69	38.72	36.13	33.88
519-4412	4310A-8-B-2	120VAC	5 Amp	1-300 sec.	41.69	38.72	36.13	33.88
519-4414	4310A-8-B-4	120VAC	5 Amp	10-4500 sec.	41.69	38.72	36.13	33.88

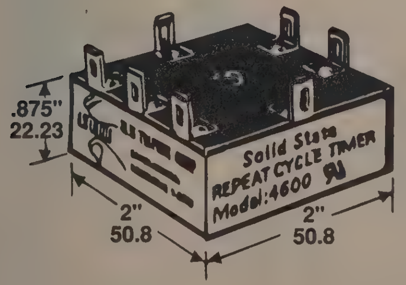
4710 Delay-On-Dropout Timer

The Model 4710 is a Delay-On-Dropout Timer which can control DC loads to 1 Amp or AC loads to 10 Amps with additional heatsinking. Closure of the initiate switch will energize the load. The timing period begins when the switch opens and resets to the beginning whenever it re-closes. To energize the load or reset the time delay, the switch must close for at least 100 milliseconds. All other specifications are identical to the Model 4310 above. UL/CSA listed. Other voltages and times available from factory.



Stock No.	Mfr.'s Type	Operating Voltage	Output Rating	Adjustable Timing Interval	EACH			
					1-9	10-24	25-49	50-99
519-5175	4710A-8-A-2	120VAC	1 Amp	1-300 sec.	36.20	33.60	31.37	29.40
519-5181	4710A-8-B-2	120VAC	5 Amp	1-300 sec.	43.35	40.27	37.57	35.23
519-5185	4710A-8-B-3	120VAC	5 Amp	2-1000 sec.	43.35	40.27	37.57	35.23

Adjustable Repeat Cycle Timers

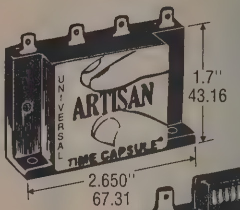


Model 4600 can be used in most applications which require a load circuit to "turn-on" for a predetermined period of time, "turn-off" for a period of time, and then repeat the cycle for as long as operating voltage is applied. Can control loads up to one ampere. Controlled by external resistors which establish the "Repeat Cycle Time" and the "Energize Time". Provides a Non-Zero Voltage switching output. UL/CSA listed. Model 4610 is the high power version of the 4600 Repeat Cycle Timer. Can control loads up to 10 amperes and provides zero-voltage switching. Operates from AC voltage only. UL recognized. UL/CSA listed. Other voltages and times available from factory.

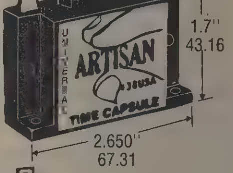
Stock No.	Mfr.'s Type	Volts	Time Range	Adjustable Energize Time	EACH			
					1-9	10-24	25-49	50-99
519-4001	4600A-2-1-A	24VDC	0.2-60 sec.	.1 sec. to 50%	30.50	28.34	26.44	24.78
519-4005	4600A-6-1-A	120VAC	0.2-60 sec.	.1 sec. to 50%	30.50	28.34	26.44	24.78
519-4007	4600A-6-2-A	120VAC	2-600 sec.	1 sec. to 50%	30.50	28.34	26.44	24.78
519-4009	4600A-6-3-A	120VAC	4-2000 sec.	2 sec. to 50%	31.35	29.13	27.17	25.49
519-4020	4610A-6-2-A	120VAC	2-600 sec.	1 sec. to 50%	46.55	43.21	40.32	37.81

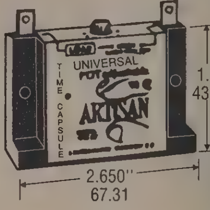
Universal Delay on Make and Universal Interval Solid State Timers and Universal Flashers

Artisan's Universal Series of Time Capsules is now available in three different timing modes: Delay On Make, Interval and Flasher.
All models are available in voltage ranges from 24 to 240 volts. They differ only in timing ranges and how the times are set. There is no need to observe polarity with any of this series. **Output:** 10 milliamps to 1 ampere inductive. Eight volt maximum drop across. **438, 438UI and 438UF**. The timing period is set by connecting a resistor across the middle two terminals. A jumper across the timing terminal produces a one second delay, add 10K per second to increase time. **438USA, 438USAI, 438USA-INT, 438USAF**. All timing is set by the binary coded DIP switch, which has ten programmable switches enabling the time to be easily set over the entire timing range. **438UP, 438PI, 438UPF**. Timing is controlled by a sealed potentiometer located between the terminals.

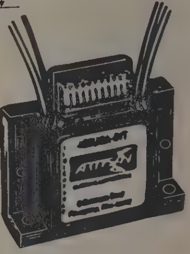


438U
438Ui
438UP

438USA
438USAI
438USAF




438UP
438UPF
438PI

438USA-INT


Universal Delay on Make

Stock No.	Mfr.'s Type	Voltage	Time Range	EACH
519-1000	438U	19-288 V AC/DC	1-1000 seconds	**26.73**
519-1001	438U-1	19-288 V AC/DC	2-2000 seconds	**27.27**
519-2010	438UP	19-288 V AC/DC	1 second-8 minutes	**25.01**
519-2000	438USA	19-288 V AC/DC	1-1024 seconds	**26.76**
519-1002	438USA-1	18-50 V AC/DC	0.1-102.4 seconds	**26.76**
519-1003	438USA-2	30-100 V AC/DC	0.1-102.4 seconds	**26.76**
519-1004	438USA-3	100-288 V AC/DC	0.1-102.4 seconds	**26.76**
519-1005	438USA-4	20-288 V AC/DC	2-2024 seconds	**26.76**

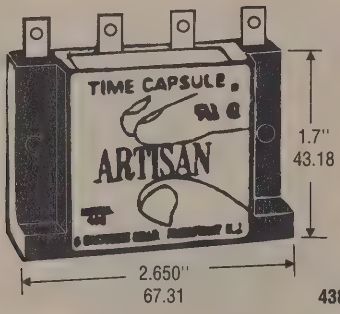
Universal Interval Solid State Timer

Stock No.	Mfr.'s Type	Voltage	Time Range	EACH
519-1006	438UI	19-288 V AC/DC	1-1000 seconds	**27.27**
519-1007	438UI-1	19-288 V AC/DC	0.1-100 seconds	**27.27**
519-1008	438UI-2	19-288 V AC/DC	10-10000 seconds	**27.27**
519-1009	438USAI	24-240 V AC/DC	1-1024 seconds	**32.73**
519-1010	438USAI-1	24-240 V AC/DC	0.1-102.4 seconds	**32.73**
519-1011	438USAI-2	24-240 V AC/DC	10-10240 seconds	**32.73**
519-2001	438USA-INT	24-240 V AC/DC	1-1024 seconds	**32.65**

Universal Flashers

Stock No.	Mfr.'s Type	Voltage	Time Range	EACH
519-1014	438UF	19-288 V AC/DC	2-2000 seconds	**27.27**
519-1015	438USAF	19-288 V AC/DC	2-2048 seconds	**32.73**
519-1016	438PF	19-288 V AC/DC	2 seconds-16 Minutes	**30.91**

438A Time Capsule



438A

The 438A Time Capsule is an all solid-state timing module for DELAY ON MAKE control of any load device. The timing period is controlled by a fixed or variable resistor connected across the center two terminals of the Time Capsule. Supplied in three timing ranges: (-1) is adjustable from 0.1-30 seconds. (-2) is adjustable from 1-300 seconds. (-5) is adjustable from 30-8000 seconds. To use the 438A over its full timing range, a 10 megohm potentiometer must be connected across the center two terminals. U.L./CSA listed.

Stock No.	Mfr.'s Type	Voltage	Time Range	EACH			
				1-9	10-24	25-49	50-Up
519-3000	438A-24-1	24	0.1-30 seconds	**21.95**	**20.38**	**19.03**	**17.83**
519-2005	438A-24-5	24	30-8000 seconds	**21.95**	**20.38**	**19.03**	**17.83**
519-2011	438A-115-1	120	0.1-30 seconds	**21.95**	**20.38**	**19.03**	**17.83**
519-2012	438A-115-2	120	1-300 seconds	**21.95**	**20.38**	**19.03**	**17.83**
519-2015	438A-115-5	120	30-8000 seconds	**21.95**	**20.38**	**19.03**	**17.83**

AC and DC Flashers

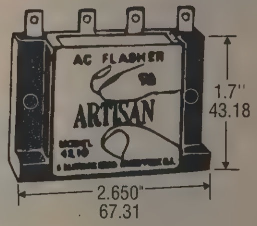
423 DC Flasher. Solid-state device intended for use in electrical and electronic equipment as a flasher for lamp, relay and solenoid circuits and in electronic systems as a power pulser or system clock-driver. Delivers one-half ampere at the operating voltage (24 VDC). Output is fixed at a 50% duty cycle at 1 pulse per second. (60 flashes per minute).

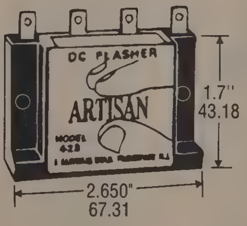
519-5001. Model 423-24-60. **1-9**	**EACH 22.14**
10-24	**EACH 20.57**
25-49	**EACH 19.20**
50-Up	**EACH 18.00**

4210 AC Flasher. Model 4210 is a solid-state device intended for use in electrical and electronic equipment which require a lamp, relay or solenoid to flash at a predetermined rate. Operates with AC line frequencies from 40 to 1200 Hz. 115 VAC. Model 4210-115-60PM has flash rate of 60 flashes per minute. U.L. Listed.

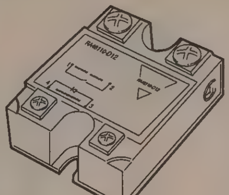
519-5160. Model 4210-115-60FPM. **1-9**	**EACH 22.33**
10-24	**EACH 20.73**
25-49	**EACH 19.36**
50-Up	**EACH 18.15**

Other voltages and flash rates available from factory.

4210


423


SCR Zero Switching Relays



- ► Direct Copper Bonding Technology
- ► Unique Raised Back Plate
- ► Optimum Heat Dissipation
- ► AC and/or DC Control Voltage
- ► Up to 90 Amps Switching Capability
- ► Up to 530 VAC Switching
- ► Up to 1200 Vp Non-Repetitive Voltage

Zero switching solid state relays are commonly used for resistive and small inductive loads. They provide high current carrying capabilities for operational voltages up to 530 VACrms. Normally open, back-to-back SCR outputs are utilized in the output circuitry to reduce leakage current. UL/CSA.

3-32 VDC Control Voltage

Stock No.	Mfr.'s Type	Line VAC	Amps	Amps (≤20 mS)	EACH
251-1006	RA2425-D06	24-280	25 A	250 A	27.00
251-1007	RA2450-D06	24-280	50 A	600 A	36.00
251-1008	RA2490-D06	24-280	90 A	1000 A	58.00
251-1010	RA4825-D12	42-530	25 A	250 A	38.00
251-1011	RA4850-D12	42-530	50 A	600 A	44.00
251-1012	RA4890-D12	42-530	90 A	1000 A	59.00

90-280 VAC/DC Control Voltage

Stock No.	Mfr.'s Type	Line VAC	Amps	Amps (≤20 mS)	EACH
251-1014	RA2425HA06	24-280	25 A	250 A	30.00
251-1015	RA2450HA06	24-280	50 A	600 A	39.00
251-1016	RA2490HA06	24-280	90 A	1000 A	61.00
251-1018	RA4825HA12	42-530	25 A	250 A	41.00
251-1019	RA4850HA12	42-530	50 A	600 A	47.00
251-4890	RA4890HA12	42-530	90 A	1000 A	62.00

Low Cost 25 Amp Triac Output Relays

Economical 25 amp triac output for less demanding applications. Zero switching for resistive loads. Up to 650 Vp non-rep. UL/CSA.

3-32 VDC Control Voltage

Stock No.	Mfr.'s Type	Line VAC	Amps	Amps (≤20 mS)	EACH
251-1002	RA 2425-D06T	24-280	25 A	200 A	19.00

90-280 VAC/DC Control Voltage

Stock No.	Mfr.'s Type	Line VAC	Amps	Amps (≤20 mS)	EACH
251-1004	RA 2425HA06T	24-280	25 A	200 A	21.00

Peak Switching Relay for Transformers

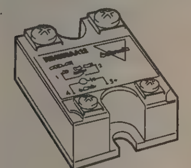
Ideal for switching transformers/heavy inductive loads with iron remnant cores which create severe inrush currents. The power output is activated at the first voltage peak reducing the peak of the inrush current during the first half period. Back-to-back SCR output, controlled by 4-32 VDC. UL/CSA.

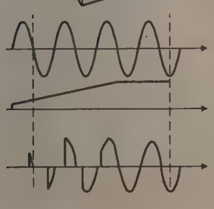
Stock No.	Mfr.'s Type	Line VAC	Amps	Amps (≤20 mS)	EACH
251-1041	RC 2425-D06	90-280	25 A	250 A	53.00
251-1042	RC 2450-D06	90-280	50 A	600 A	61.00
251-1044	RC 4425-D08	180-480	25 A	250 A	66.00
251-1045	RC 4450-D08	180-480	50 A	600 A	76.00

DC Switching Relay

For fast switching of small DC loads. Transistor output, 3-32 VDC control. CSA.

Stock No.	Mfr.'s Type	Line VDC	Amps	Amps (≤20 mS)	EACH
251-1037	RD0605-D	3-60	5 A	100 A	35.00
251-1038	RD2001-D	3-200	1 A	2 A	46.00
251-1039	RD3501-D	3-350	1 A	2 A	59.00





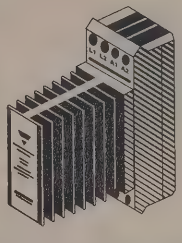
Phase Angle Fired Analog Switching Relays

Ideally suited for "phase angle" control of resistive loads, such as heater bands or incandescent lamps. The relay switches off every time the current crosses zero and switches the load voltage proportionally with the applied analog control current. Back-to-back SCR output, up to 530 VAC, controlled by 4-20 mA DC. LED illumination is proportional to the input signal. UL/CSA.

Stock No.	Mfr.'s Type	Line VAC	Amps	Amps (≤20 mS)	EACH
251-1047	RE 2425-AA06	90-280	25 A	250 A	81.00
251-1048	RE 2450-AA06	90-280	50 A	600 A	90.00
251-1050	RE 4825-AA12	265-530	25 A	250 A	93.00
251-1051	RE 4850-AA12	265-530	50 A	600 A	105.00

"Solitron" Solid State Contactor with Integrated Heat Sink

— NEW —



- ► User Friendly — Just Snap onto DIN Rail
- ► Ideal Alternative to Mercury Relays
- ► Front Mounted Heat Sink for Best Cooling
- ► One or Two Pole Switching
- ► Zero Switching for Resistive/Motor Loads
- ► Built-In MOV Protection
- ► LED Indication
- ► AC and/or DC Control Voltage
- ► Up to 50 Amps Switching @ 40°C
- ► 42-530 VAC Switching
- ► Up to 1200 Vp Non-Repetitive Voltage

The new solid state switching trend — solid state relays with heat sinks integrated directly onto the relay. Provides an excellent alternative to (environment hazardous) mercury relays. Front mounted heat sink cools more efficiently than rear mounted heat sinks, due to natural air convection within the panel. Higher surge current rated relays (90 A) for inductive loads are available.

Single Pole, 5-24 VDC Control, 42-530 VAC Switching

Stock No.	Mfr.'s Type	Size — mm (H × W × D)	Amps	Amps (≤20 mS)	EACH
251-2001	RN1A48D25	120 × 45 × 103	25 A	250 A	91.00
251-2002	RN1A48D50	120 × 89 × 103	50 A	600 A	102.00

Single Pole, 20-265 VAC/DC Control, 42-530 VAC Switching

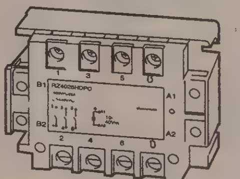
Stock No.	Mfr.'s Type	Size — mm (H × W × D)	Amps	Amps (≤20 mS)	EACH
251-2003	RN1A48A25	120 × 45 × 103	25 A	250 A	88.00
251-2004	RN1A48A50	120 × 89 × 103	50 A	600 A	100.00

Double Pole, 5-24 VDC Control, 42-530 VAC Switching

Stock No.	Mfr.'s Type	Size — mm (H × W × D)	Amps	Amps (≤20 mS)	EACH
251-2005	RN2A48D25	120 × 45 × 103	25 A	250 A	125.00
251-2006	RN2A48D50	120 × 89 × 103	50 A	600 A	139.00

Double Pole, 20-265 VAC/DC Control, 42-530 VAC Switching

Stock No.	Mfr.'s Type	Size — mm (H × W × D)	Amps	Amps (≤20 mS)	EACH
251-2007	RN2A48A25	120 × 45 × 103	25 A	250 A	128.00
251-2008	RN2A48A50	120 × 89 × 103	50 A	600 A	142.00



3 Phase Zero Switching Relays

- ► Built-In MOVs and Protective Cover
- ► Bright LED Indication
- ► Direct Copper Bonding Technology
- ► Unique Raised Back Plate
- ► Optimum Heat Dissipation
- ► AC and/or DC Control Voltage
- ► Up to 55 A, 660 VAC Switching
- ► Up to 1200 Vp Non-Repetitive Voltage

Three phase zero switching solid state relays for resistive loads (heater bands) and inductive loads. Optional pilot duty switch. Optional temperature limit switch, which monitors the back plate temperature. UL/CSA.

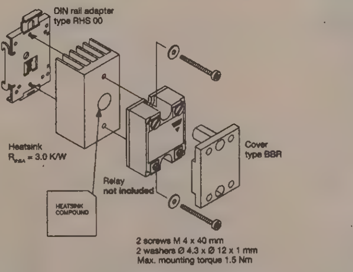
10-40 VDC Control

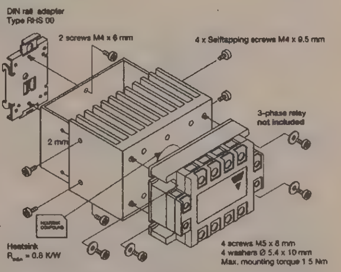
Stock No.	Mfr.'s Type	Line-Line V	Amps	Amps (≤20 mS)	EACH
251-1053	RZ4825HDPO	12-660 V	25 A	230 A	130.00
251-1055	RZ4855HDPO	12-660 V	55 A	550 A	150.00

20-265 VAC/DC Control

Stock No.	Mfr.'s Type	Line-Line V	Amps	Amps (≤20 mS)	EACH
251-1057	RZ4825HAPO	12-660 V	25 A	230 A	140.00
251-1059	RZ4855HAPO	12-660 V	55 A	550 A	160.00

Heat Sink Kits for Chassis Mount SSRs





Heat sink kits provide DIN rail mount capabilities of most chassis mount SSRs with standard 1 or 3 phase footprint. Kits delivered with heat sink, DIN rail adapter, thermally conductive compound and all necessary bolts and screws.

Stock No.	Mfr.'s Type	No. of Phases	°C/W*	EACH
251-1060	RHS00	DIN rail mounting clip (not a heat sink)	≤12.5°	5.50
251-1061	RHS100	Heat sink for one single phase SSR	≤3.0°	24.00
251-1062	RHS301	Heat sink for one or two single phase SSRs or one three phase SSR	≤0.8°	60.00
251-1063	RHS 301F 115C	RHS301 heat sink with 115 VAC fan to cool heat sink	≤0.25°	180.00

*Based on 30°C panel temperature.

156 Series 4PDT 3 and 5 Amp Industrial Relays

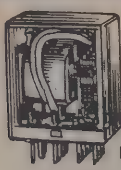


Fig. 1

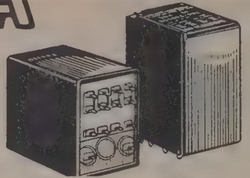


Fig. 2

For use in data processing and industrial control applications requiring 1/10 horsepower, 125 VA, 120/240 VAC. 4PDT relays are available with either solder/plug-in or printed circuit terminals, and either silver or gold flash or silver cadmium oxide with gold flash contacts. Silver contacts are rated 3 amps, 28 VDC, or 120 VAC, silver cadmium are rated 5 amps, 28 VDC or 120 VAC. All units are dust covered and UL recognized. **Operating Temperature Range:** –45°C to +75°C. **Size:** 1.281" L × 0.859" W × 1.109" H.

4PDT 3 Amp Silver Contact, Solder Plug-in Terminal, Lexan® Cover — Fig. 1

Stock No.	Mfr.'s Type	Coil		EACH		
		Volts	Ohms	1-24	25-49	50-99
789-0001	156-14B100	12 VDC	160	13.58	12.90	12.22
789-0003	156-14F100	110 VDC	11000	14.83	14.09	13.35
789-0004	156-14Q100	24 VAC	155	13.53	12.85	12.18
789-0005	156-14T100	120 VAC	3900	14.38	13.66	12.94

4PDT 5 Amp Silver Cadmium Oxide Contact, Solder Plug-in Terminals, Lexan® Cover

Stock No.	Mfr.'s Type	Volts	Ohms	1-24	25-49	50-99
789-0006	156-14B200	12 VDC	160	13.68	13.00	12.31
789-0007	156-14C200	24 VDC	650	13.68	13.00	12.31
789-0008	156-14F200	110 VDC	11000	14.93	14.18	13.44
789-0009	156-14Q200	24 VAC	155	14.34	13.63	12.91
789-0010	156-14T200	120 VAC	3900	14.48	13.76	13.03
789-0011	156-14U200	240 VAC	14900	18.28	17.37	16.45

4PDT 5 Amp Silver Contact .112" Long PC Terminals, Nylon Cover

Stock No.	Mfr.'s Type	Volts	Ohms	1-24	25-49	50-99
789-0012	156-24C100	24 VDC	650	12.50	11.88	11.25
789-0013	156-24T100	120 VAC	3900	13.30	12.64	11.97

4PDT 5 Amp Silver Cadmium Oxide .112" Long PC Terminals, Nylon Cover

Stock No.	Mfr.'s Type	Volts	Ohms	1-24	25-49	50-99
789-0014	156-24B200	12 VDC	160	12.60	11.97	11.34
789-0015	156-24C200	24 VDC	650	12.60	11.97	11.34
789-0016	156-24T200	120 VAC	3900	13.40	12.73	12.06

4PDT 5 Amp Silver Cadmium Oxide Contacts, PC Terminals, Opaque Green Polycarbonate Cover

Stock No.	Mfr.'s Type	Volts	Ohms	1-24	25-49	50-99
789-0018	156-24C250	24 VDC	650	13.60	12.92	12.24
789-0019	156-24D250	48 VDC	2600	14.50	13.78	13.05

2PDT 5 Amp Silver Cadmium Oxide Contacts, Solder Plug-In Terminal, Green Transparent Plastic Cover

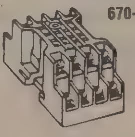
Stock No.	Mfr.'s Type	Volts	Ohms	1-24	25-49	50-99
789-0020	156-12B200	12 VDC	160	19.97	18.97	17.97
789-0021	156-12C200	24 VDC	650	19.97	18.97	17.97
789-0022	156-12Q200	24 VAC	155	21.22	20.16	19.10
789-0023	156-12T200	120 VAC	3900	21.22	20.16	19.10

4PDT Silver Cadmium Oxide Contacts, PC Terminals, Hermetically Sealed — Fig. 2

Stock No.	Mfr.'s Type	Volts	Ohms	1-24	25-49	50-99
789-0024	156-44B200	12 VDC	160	26.69	26.81	26.22
789-0025	156-44C200	24 VDC	650	29.75	26.86	26.27

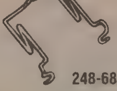
Sockets and Hold-Down Springs For 156 Series Relays

S156-4PC00


670-0120

139-0021

670-0020


248-6832

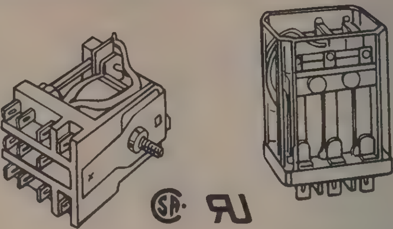
Sockets for Types 156 and 158 Relays

Stock No.	Mfr.'s Type	Description	EACH		
			1-24	25-49	50-99
789-0501	S156-4PC10	PC, Ground Lug	1.68	1.48	1.32
789-0502	S156-4PC00	PC, No Ground Lug	1.32	1.17	1.04
789-0503	670-0020	Solderless	3.36	2.98	2.79
789-0504	670-0120	Screw	9.71	9.22	8.74

Stock No.	Mfr.'s Type	Description	EACH
			1-99
789-0506	248-6832	Wire Wrap	2.40

Stock No.	Mfr.'s Type	Description	EACH		
			1-24	25-49	50-99
789-0507	139-0021	Socket Clip	.31	.29	.25

157 Series General Purpose Relays



Industrial design power driver. Cool running coil insures over-voltage and high ambient temperature performance. Maximum contact resistance 0.1 ohms. Coil rated 6 to 240 VAC 50/60 Hz. 6 to 110 VDC, continuous duty. 3/6" silver cadmium oxide contacts rated 10 amps for type numbers with 200 suffix; 15 amps for types with 300 suffix. 28 VDC/120/240 VAC, 80% pf. **Operate Make Time:** 20 MS maximum. **Operate Release Time:** 10 MS maximum. 0.187" quick-connect terminals. UL recognized.

157-1 Open Style with Mounting Stud, 2PDT 10 Amps

Stock No.	Mfr.'s Type	Coil		EACH		
		Volts	Ohms	1-24	25-49	50-99
789-0027	157-12C200	24 VDC	470	8.56	8.13	7.71
789-0028	157-12Q200	24 VDC	75	9.40	8.93	8.46
789-0029	157-12T200	120 VDC	2250	9.40	8.93	8.46

157-1 Open Style with Mounting Stud, 3PDT 10 Amps

Stock No.	Mfr.'s Type	Volts	Ohms	1-24	25-49	50-99
789-0030	157-13Q200	24 VAC	72	11.50	10.92	10.35
789-0031	157-13T200	120 VAC	1700	11.50	10.92	10.35

157-2 Plug-In with Dust Cover, 2PDT 10 Amps

Stock No.	Mfr.'s Type	Volts	Ohms	1-24	25-49	50-99
789-0032	157-22B200	12 VDC	120	8.93	8.48	8.03
789-0033	157-22T200	120 VAC	2250	9.45	8.98	8.51

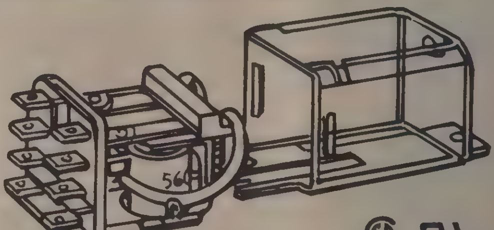
157-2 Plug-In with Dust Cover, 2PDT 15 Amps

Stock No.	Mfr.'s Type	Volts	Ohms	1-24	25-49	50-99
789-0034	157-22B300	12 VDC	120	10.24	9.73	9.21
789-0035	157-22T300	120 VAC	2250	10.29	9.78	9.26
789-0036	157-22U300	240 VAC	9100	12.13	11.52	10.92

157-2 Plug-In with Dust Cover, 3PDT with 10 Amps

Stock No.	Mfr.'s Type	Volts	Ohms	1-24	25-49	50-99
789-0037	157-23B200	12 VDC	120	10.24	9.72	9.22
789-0038	157-23C200	24 VDC	470	10.24	9.72	9.22
789-0039	157-23Q200	24 VAC	72	10.47	9.83	9.43
789-0040	157-23T200	120 VAC	1700	9.46	8.98	8.52

187 Series 20 Amp, 2-Pole Relays



20 amp power relays. 2PDT contact arrangement with UL ratings of 20 amps at 28 VDC/120 VAC and 3/4 HP at 120 VAC and 3/4 HP at 120 VAC or 1 1/2 HP at 240 VAC. Solder/Quick connect 280 VDC terminals. Silver cadmium oxide contacts. UL recognized and CSA certified.

Open Style, Solder/QC Terminals

Stock No.	Mfr.'s Type	Coil			EACH		
		Volts	Ohms	Power	1-24	25-49	50-99
789-0063	187-12B200	12 VDC	120	1.2 W	14.50	13.78	13.05
789-0064	187-12C200	24 VDC	470	1.2 W	14.50	13.78	13.05
789-0065	187-12F200	110 VDC	1000	1.2 W	16.40	15.58	14.76
789-0066	187-12Q200	24 VAC	72	2.7 VA	14.90	14.16	13.41
789-0067	187-12T200	120 VAC	1700	2.7 VA	14.90	14.16	13.41

Plain Enclosure 6/32 Tapped Core — Solder/QC Terminals

Stock No.	Mfr.'s Type	Volts	Ohms	Power	1-24	25-49	50-99
789-0068	187-22B200	12 VDC	120	1.2 W	13.00	12.35	11.70
789-0069	187-22C200	24 VDC	470	1.2 W	13.00	12.35	11.70
789-0070	187-22F200	110 VDC	1000	1.2 W	13.55	12.87	12.20
789-0071	187-22Q200	24 VAC	72	2.7 VA	13.15	12.49	11.84
789-0072	187-22T200	120 VAC	1700	2.7 VA	13.15	12.49	11.84

187 Series Flanged Mount with Dust Cover

Stock No.	Mfr.'s Type	Volts	Ohms	Power	1-24	25-49	50-99
789-0058	187-32B200	12 VDC	120	1.2 W	12.50	11.88	11.25
789-0059	187-32C200	24 VDC	470	1.2 W	12.50	11.88	11.25
789-0060	187-32F200	110 VDC	10000	1.2 W	13.75	13.06	12.38
789-0061	187-32Q200	24 VAC	72	2.7 VA	13.25	12.59	11.93
789-0062	187-32T200	120 VAC	1700	2.7 VA	13.37	12.70	12.04

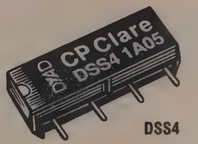
Dry Reed and Electromechanical Relays

Dry Reed Relays

- Miniature, Cost-Effective Switching Solution
- State-of-the-Art Capsule
- Diode and Electrostatic Shield Options Available
- Standard Nominal Coil Voltages Include 5, 12, and 24 Volts

Series LM, Electromechanical Relays

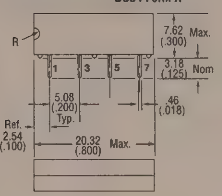
- Standard Nominal Coil Voltages 5,12, 24, VDC
- UL and CSA Approval on Some Models
- Sealed Construction for Automatic Board Cleaning Processes

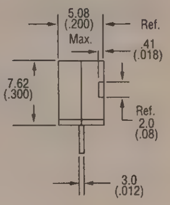


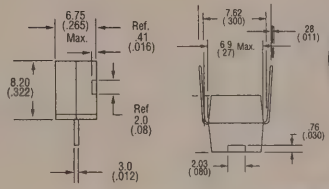
DSS4

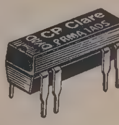
MSS4

DSS4 Form A



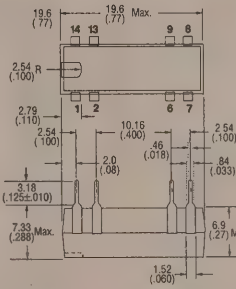




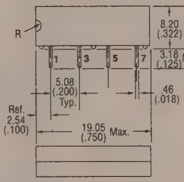


PRMA (Form A, B and C)

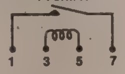
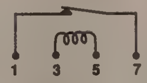
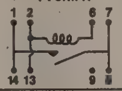
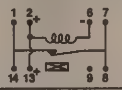
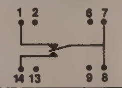
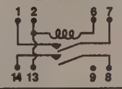
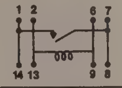
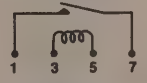
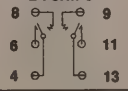
LM



DSS4 Form B

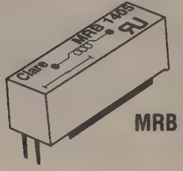


Engineering Specifications	DSS4 PRMA	PRMA (Form C)	MSS4	LM44
Contact Form	1A, 1B	1C	1A	2C
Contact Rating Maximum switching power Maximum switching voltage Maximum switching current Maximum carry current	 10 VA 100 VDC or Peak AC 0.50 A 1.00 A	 3 VA 100 VCD or Peak AC 0.25 A 0.40 A	 30 VA 100 VCD/Peak AC 0.75 A 2.00 A	 30 VA 125 VDC or AC 2.00 A 3.00 A
Contact Resistance, Initial	150 milliohms max.	200 milliohms max.	100 milliohms max.	100 milliohms max.
Contact Material	Ruthenium	Rhodium	Mercury (all positions)	Ag with Au cap
Life Expectancy Signal level loads (ref 10 VDC, 10 mA)	200 × 10⁶	20 × 10⁶	200 × 10⁶	10 × 10⁶
Timing (at nominal VDC, 10 Hz drive, 50% duty cycle with diode suppression) Operate time, maximum (including Bounce) Release time, maximum	 0.50 ms 0.50 ms	 3.00 ms 3.00 ms	 1.75 ms 1.50 ms	 6.00 ms 4.00 ms
Breakdown Voltage Coil to contact Across Contacts	 1000 Vrms 1400 VDC 175 Vrms 250 VDC	 1000 Vrms 1400 VDC 100 Vrms 150 VDC	 1000 Vrms 1400 VDC 1400 Vrms 5000 VDC	 1000 Vrms 1400 VDC 500 Vrms 70 VDC
Insulation Resistance (Ohms)	10^{10}	10^9	10^8	10^9

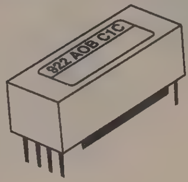
Stock No.	Mfr.'s Type	Schematic Contact Form (Bottom View)	Nominal Voltage (VDC)	Coil Resistance (Ohms ±10%)	Nominal Input Power (mW)	Must Operate Voltage (VDC)	Must Release Voltage (VDC)	Maximum Voltage (VDC)	EACH 1-24	EACH 25-49	EACH 50-99
681-0005 **681-0010** **681-0015** **681-0016**	DSS41A05 DSS41A12 DSS41A24 DSS41A05B*	1 Form A 	5 12 24 5	500 1000 2000 500	50 144 288 50	3.50 8.60 17.50 3.50	0.8 1.5 2.5 0.8	15.0 30.0 40.0 15.0	**4.06** **4.26** **4.27** **4.53**	**3.71** **3.89** **3.91** **4.35**	**3.07** **3.22** **3.24** **3.73**
681-0020 **681-0025** **681-0030**	DSS41B05 DSS41B12 DSS41B24	1 Form B 	5 12 24	500 1000 2150	50 144 268	3.75 9.00 18.00	0.8 1.0 2.0	6.0 14.5 29.0	**16.25** **16.25** **16.25**	**14.90** **14.90** **14.90**	**11.27** **11.27** **11.27**
681-0050 **681-0055** **681-0060** **681-0061**	PRMA1A05 PRMA1A12 PRMA1A24 PRMA1A05B*	1 Form A 	5 12 24 5	500 1000 2150 500	50 144 268 50	3.75 9.00 18.00 3.75	0.8 1.0 2.0 0.8	21.0 30.0 44.0 21.0	**4.22** **4.06** **4.27** **4.53**	**3.91** **3.71** **3.91** **4.35**	**3.30** **3.21** **3.39** **3.60**
681-0065 **681-0070** **681-0075**	PRMA1B05 PRMA1B12 PRMA1B24	1 Form B 	5 12 24	500 1000 2150	50 144 268	3.75 9.00 18.00	0.8 1.0 2.0	6.0 14.5 29.0	**5.90** **5.90** **5.90**	**5.78** **5.78** **5.78**	**4.85** **4.85** **4.85**
681-0080 **681-0085** **681-0090**	PRMA1C05 PRMA1C12 PRMA1C24	1 Form C 	5 12 24	200 500 2150	125 288 268	3.75 9.00 18.00	0.8 1.0 2.0	12.0 18.0 32.0	**8.50** **8.50** **8.90**	**8.32** **8.32** **8.71**	**6.98** **6.98** **7.26**
681-0095 **681-0100** **681-0105**	PRMA2A05 PRMA2A12 PRMA2A24	2 Form A 	5 12 24	140 500 2150	170 288 268	3.75 9.00 18.00	0.8 1.0 2.0	11.0 21.0 44.0	**5.90** **5.90** **5.90**	**5.78** **5.78** **5.78**	**4.85** **4.85** **4.85**
681-0110 **681-0115**	PRMA10037 PRMA10038	1 Form A 	5 12	380 530	66 271	3.75 9.00	0.8 1.0	15.0 19.0	**4.84** **4.84**	**4.65** **4.65**	**3.88** **3.88**
681-1100 **681-1101**	MSS41A05 MSS41A12	1 Form A 	5 12	140 500	178 288	3.75 9.00	0.5 1.0	11.0 21.0	**9.80** **9.80**	**9.59** **9.59**	**7.89** **7.89**
681-0116 **681-0117** **681-0118**	LM44B00 LM44D00 LM44E00	2 Form C 	5 12 24	167 960 2880	150 150 150	4.00 9.60 19.20	0.5 1.2 2.4	7.0 16.8 33.5	**5.05** **5.05** **6.50**	**4.40** **4.40** **5.79**	**3.82** **3.82** **5.07**

*With Diode **With Diode and Electrostatic Shield.

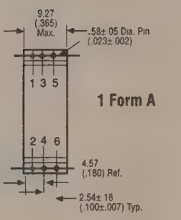
MRB and 922 1 × 0.1 Inch Grid Relays



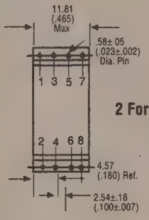
MRB



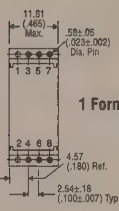
922



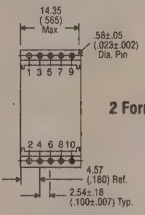
1 Form A



2 Form A



1 Form C



2 Form C

MRB Series units have ruthenium contacts rated 10 VA switching power, 200 VDC or peak AC switching voltage, and 0.5 A switching current. **Contact Resistance:** 200 Ω. **Life Expectancy:** 100 × 106. **Breakdown Voltage:** Coil to contact 1000 Vrms, 1400 VDC; across contacts 175 Vrms, 250 VDC. **Operate and Release Time:** 2.0 ms, max. **Insulation Resistance:** 1010. UL listed, CSA Certified, FCC 68 qualified. 922 Series units have rhodium contacts rated 3 VA switching power, 28 VDC or peak AC switching voltage, and 0.25 A switching current. **Contact Resistance:** 200 mΩ. **Life Expectancy:** 20 × 106. **Breakdown Voltage:** Coil to contact 1000 Vrms, 1400 VDC; across contacts 125 Vrms, 175 VDC. **Operate and Release Time:** 3.0 ms, max. **Insulation Resistance:** 109.

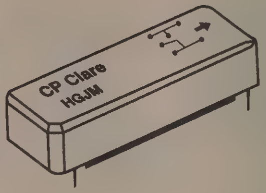
MRB Series

Stock No.	Mfr.'s Type	Volts DC	Coil Ohms	Contact Form	EACH		
					1-24	25-99	100-Up
681-1501	MRB1A05	5	225	1 Form A	**4.55**	**4.45**	**3.11**
681-1502	MRB1A12	12	1400	1 Form A	**4.65**	**4.55**	**3.18**
681-1503	MRB1A24	24	4340	1 Form A	**5.00**	**4.90**	**3.42**
681-1504	MRB2A05	5	105	2 Form A	**5.90**	**5.78**	**4.03**
681-1505	MRB2A12	12	730	2 Form A	**5.95**	**5.83**	**4.06**
681-1506	MRB2A24	24	2500	2 Form A	**6.00**	**5.87**	**4.10**

922 Series

Stock No.	Mfr.'s Type	Volts DC	Coil Ohms	Contact Form	1-24	25-99	100-Up
681-1507	922A05C1C	5	200	1 Form C	**10.20**	**9.99**	**7.97**
681-1508	922A12C1C	12	1080	1 Form C	**10.20**	**9.99**	**7.97**
681-1509	922A24C1C	24	4320	1 Form C	**10.75**	**10.52**	**7.34**
681-1510	922A05C2C	5	100	2 Form C	**17.90**	**17.52**	**12.65**
681-1511	922A12C2C	12	630	2 Form C	**17.90**	**17.52**	**12.65**
681-1512	922A24C2C	24	2520	2 Form C	**17.90**	**17.52**	**12.65**

HGJ2MT Series Mercury-Wetted Reed Relays

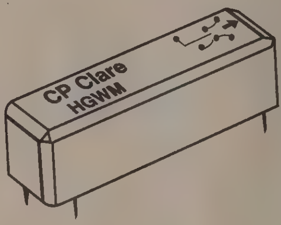


2 form C, DPDT relays feature the same electrical characteristics as the HGJM series relays, except they are shielded and insulation resistance is 10,000 mΩ, minimum. **Common Open Time Durations:** 50 µ minimum at 100 Hz for capacitor transfer technique applications. Excellent input to output isolation and electrostatic shielding.

0.400" (10.16) High Sensitivity Single-Side Stable With Shield

Stock No.	Mfr.'s Type	Contact Form	Nom. Coil VDC	Coil Resistance ±10%	EACH		
					1-24	25-99	100-Up
681-1513	HGJ2MT54211G00	2C	5	55	**48.25**	**47.04**	**31.85**
681-1514	HGJ2MT54211L00	2C	12	370	**48.25**	**47.04**	**31.85**
681-1515	HGJ2MT54211P00	2C	24	1370	**48.25**	**47.04**	**31.85**

HGWM Series Mercury-Wetted Reed Relays



Feature maintenance-free long life for billions of bounce-free operations. **Contact Ratjng:** 100 VA maximum; 500 VDC or peak AC, maximum; 2 amp switched maximum, 5 amp maximum carry current. **Contact Circuit Resistance:** 30 mΩ maximum; stable with ±2 mΩ over life. **Life Expectancy:** greater than 20 × 109 operations at rated load with proper contact protection. **Operate and Release Time:** 1.25 ms, maximum. **Bounce Time:** None. **Breakdown Voltage:** Coil-to-contact and across contacts 1000 VAC, rms, minimum or 1400 VDC; 60 Hz between all mutually insulated terminals. **Insulation Resistance:** 1000 mΩ minimum. **Operating Temperature Range:** –38.8° to +85°C. No interruption of signal or processing of false signals. Excellent input to output isolation. Mount on standard 0.100" (2.54) grid pattern; upright within 30° of vertical. 1 Form C, SPDT. FCC 68 qualified.

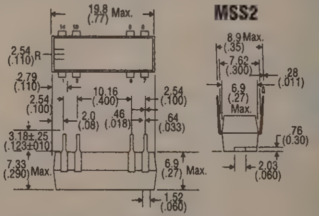
SPDT Single-Side Stable

Stock No.	Mfr.'s Type	Contact Form	Nom. Coil VDC	Coil Resistance ±10%	EACH		
					1-24	25-99	100-Up
681-1516	HGWM51111K00	1C	5	117	**24.90**	**24.28**	**16.43**
681-1517	HGWM51111P00	1C	12	720	**24.90**	**24.28**	**16.43**
681-1518	HGWM51111T00	1C	24	2730	**26.45**	**25.50**	**17.26**

Series MSS2 Mercury Wetted

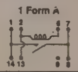
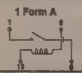
- **Molded Construction for Compatibility with Automatic Board Processing**
- **Automatic Insertion Capability**
- **Diode and Electrostatic Shield Options Available**
- **UL, VDE Versions Available on Some Models**
- **Miniature, Cost-Effective Switching Solutions**
- **State-of-the-Art Capsule Designs**
- **Standard Nominal-Coil Voltages Include 5, 12 and 24 Volts**

MSS2



MSS2

MSS7

Stock No.	Mfr.'s Type	Schematic Contact Form (Bottom View)	Nominal Voltage (VDC)	Coil Resistance (Ohms ±10%)	Nominal Input Power (mW)	Must Operate Voltage (VDC)	Must Release Voltage (VDC)	Maximum Voltage (VDC)	EACH		
									1-24	25-49	50-99
681-0035 681-0040 681-0045	MSS21A05 MSS21A12 MSS21A24	1 Form A 	5 12 24	140.0 500.0 2150.0	178 288 268	3.75 9.00 18.00	0.5 1.0 2.0	11.00 21.00 44.00	**9.85** **9.85** **10.85**	**9.75** **9.75** **10.74**	**9.64** **9.64** **10.62**
681-1102 681-1103 681-1104	MSS71A05 MSS71A12 MSS71A24	1 Form A 	5 12 24	140.0 500.0 2150.0	178 288 268	3.75 9.00 18.00	0.5 1.0 2.0	11.00 21.00 43.00	**10.35** **10.35** **11.40**	**10.24** **10.24** **11.38**	**10.13** **10.13** **11.16**

Series CG, CG2 and PMT3 (310)

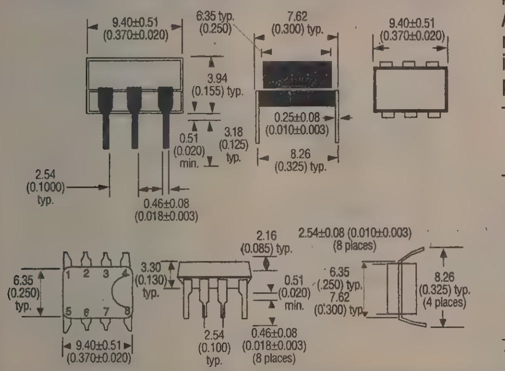
- Fastest Surge Arresting Response
- High Peak Surge Current Capability
- Lowest Interelectrode Capacitance
- Rugged Ceramic Construction
- Available on Tape and Reel for Automatic Insertion for Some Product Types
- Hermetically Sealed
- Meets the Requirements of REA PE-80, IEEE 587 and CCITT K-12
- UL Recognition on Some Products

Clare surge arrestors protect personnel and equipment from damaging high-voltage surges from lightning. Inductive switching, nuclear electromagnetic generation, or electrostatic discharge. Through ongoing research and engineering improvements, Clare has developed a family of surge arrestors that offer impressive characteristics for a variety of applications.

Engineering Specifications	AC	CG/CG2	PMT 3 (310)
Surge Life (No. of Operations)			
10 A 10/1000 surge life	—	2500	—
500 A 10/1000 surge life	—	1000	400
Surge Current 8/20 (kA)	10	20	20
AC Current 10 operations 60 Hz for 1 sec., with 3 minute intervals	—	20	—
AC Current 11 cycles 60 Hz (a)	—	20	130
Insulation Resistance 100 VDC, except 50 VDC for units with DC breakdown less than 150 V (MOhms)	10000	10000	1000
Temperature-Stabilize at temp. for 1 hour then measure DC, IR, Impulse			
Minimum operating temp.	–65°C	–65°C	–65°C
Maximum operating temp.	+125°C	+125°C	+125°C
Weight	2.0 g	1.0 g	3.5 g

Stock No.	Mfr.'s Type	DC Breakdown Voltage Nominal Voltage (VDC)	Min. Volts	Max. Volts	Impulse Breakdown @ (100 V/µs) Maximum Voltage	Maximum Capacitance Between Electrodes @ 1 MHz (pF)	EACH 1-24	25-49	50-99
681-0122	CG75L	75	60	90	400	1.0	**3.57**	**2.88**	**2.40**
681-0123	CG90L	90	72	108	400	1.0	**3.57**	**2.88**	**2.40**
681-0125	CG2-145L	145	116	174	500	1.0	**3.57**	**2.88**	**2.40**
681-0126	CG2-230L	230	195	265	600	1.0	**3.57**	**2.88**	**2.40**
681-0127	CG2-300L	300	255	345	700	1.0	**3.57**	**2.88**	**2.40**
681-0128	CG2-350L	350	297	403	750	1.0	**3.57**	**2.88**	**2.40**
681-0129	CG2-470L	470	400	540	850	1.0	**3.57**	**2.88**	**2.40**
681-0130	CG2-600L	600	510	690	1000	1.0	**4.27**	**3.28**	**2.75**
681-0131	CG2-800L	800	680	920	1200	1.0	**4.27**	**3.28**	**2.75**
681-0132	CG2-1000L	1000	850	1150	1500	1.0	**4.27**	**3.28**	**2.75**
681-1301	CG3-1.5L	1500	1275	1725	2200	1.0	**5.60**	**4.76**	**3.90**
681-1302	CG3-7.5L	7500	6375	8625	10000	1.0	**5.90**	**5.02**	**4.12**
681-0133	PMT3(310)25010	250	200	350	600	1.0	**6.60**	**4.80**	**3.80**
681-0134	PMT3(310)40010	400	300	500	750	1.0	**6.88**	**5.00**	**3.96**
681-1215	AC120L	—	225	—	700	1.0	**3.73**	**2.91**	**2.35**
681-1220	AC240L	—	425	—	800	1.0	**3.57**	**2.78**	**2.25**

Optomos® AC/DC Solid-State Switches



Ideal for telecommunications, data acquisition, process and industrial control, alarm systems, automatic test equipment, instrumentation, electronic metering and office equipment. Typical applications include tip/ring interface, hookswitch/dial pulse, AC ring injection, groundstart, flying capacitor multiplexing, I/O modules, microprocessor interface and replaces optocouplers, mechanical relays. Feature AC/DC switching, optical isolation to 3750 V, FCC compatible, negligible offset voltage, 100% dv/dt immunity, no EMI/RFI generation, no snubber needed, no contact bounce, machine insertable, wave solderable, low drive power, long life and conserves PC board space. Available in a 6-pin or 8-pin design. BABT and BSI approved. UL recognized.

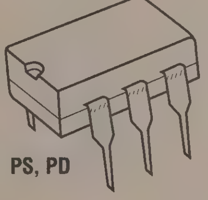
Stock No.	Mfr.'s Type	Contact Form	No. of Pins	Blocking Voltage	Load Current (mA)	On Resistance (Ohms)	Control Current (mA)	EACH 1-49	50-99	100-Up
252-0001	LCA-110	1A*	6	350	120	35	2	**5.69**	**4.40**	**3.61**
252-0002	LCA-125	1A*	6	300	170	20	5	**6.93**	**5.36**	**4.40**
252-0003	LCB-110	1B**	6	350	120	35	5	**5.40**	**4.18**	**3.43**
252-0004	LAA-110	2A†	8	350	120	35	5	**10.70**	**8.28**	**6.79**
252-0005	LBA-110	1A1B	8	350	120	35	5	**10.70**	**8.28**	**6.79**
252-0007	LCA-210	2A	8	350	120	35	5	**11.00**	**8.51**	**6.99**
252-0006	LCC-110	1C‡	8	350	120	35	8	**11.00**	**8.51**	**6.99**

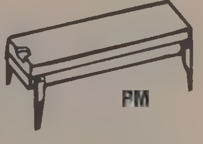
*Normally open output. **1 Normally closed output. †Independent 2 normally open outputs. ‡SPDT.

AC Solid-State Relays

Ideal for industrial control, vending machines, business equipment, gasoline pumps, temperature monitoring, process control, medical equipment, programmable controllers, appliance control and gambling machines. Typical applications include input/output modules, solenoid driver, motor, blower, heater and temperature controls, control of relays, switching fans, TTL-compatible driver for contactors and replacing TRIAC/TRIAC drivers. All versions feature optical-isolation and 1 Form A normally open contacts, as well as DC control/AC output. TTL- and CMOS-compatible, these units provide interface between logic and power systems, high transient immunity, high surge capability, and they save PC board space. No arcing, no contact bounce and long life. Type PM Power-MINI relays, Type PD PowerDIP and Type PS PowerSIP relays also feature 5 mA sensitivity, zero-crossing detection, low EMI and RFI generation, inherent noise immunity, are machine insertable, wave solderable and CSA, VDE compatible. Type OFA OptoFILM™ relays have all the features listed above with the exception of 5 mA sensitivity, machine insertable and wave solderable. Type PD, PS and OFA relays are UL recognized. Type MX and JTA PowerBLOC relays feature random turn-on and are UL recognized, CSA certified.

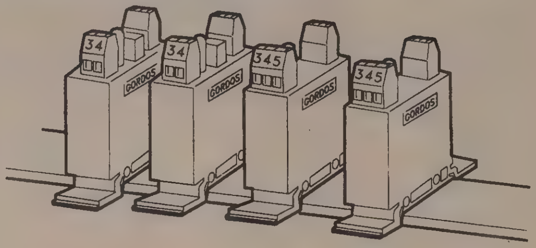
Stock No.	Mfr.'s Type	Blocking Voltage	Continuous Load	Input Control	EACH 1-49	50-99	100-Up
252-0009	PM1204	400	0.5 A	2 mA	**5.75**	**4.38**	**3.68**
252-0010	PM1205	500	0.5 A	2 mA	**5.90**	**4.49**	**3.78**
252-0011	PD1201	400	1.0 A	2 mA	**7.23**	**5.50**	**4.63**
252-0012	PD2401	500	1.0 A	2 mA	**7.33**	**5.58**	**4.69**
252-0013	PS1201	400	1.0 A	2 mA	**7.23**	**5.50**	**4.63**
252-0014	PS2401	500	1.0 A	2 mA	**7.33**	**5.58**	**4.69**

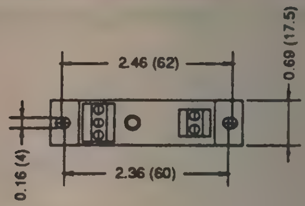


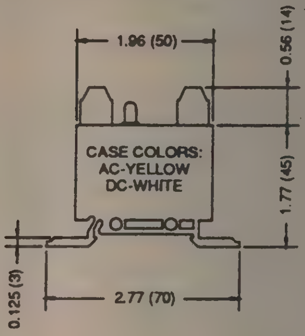


Gordos Digital I/O Modules Din Rail Mountable Input Modules

- DIN Rail Mountable Single Point Input Modules
- AC Inputs for 24 V, 120 V, 240 V
- DC Inputs for 3.3 to 32 V, 10 to 60 V
- UL Recognized (E46203)/CSA Certified (38595)
- 4 KV Optical Isolation
- Open-Collector Output, with LED Indicator
- Input and Output Barrier Strips Accept 14 to 28 AWG Wire
- Configured for Panel Mounting







Input Specifications

Parameter	DR-IAC5, DR-IAC24	DR-IAC5A, DR-IAC24A	DR-IAC5E	DR-IDC5, DR-IDC24	DR-IDC5A, DR-IDC24A
Nominal Voltage	120 VAC	240 VAC	24 VAC	5-28 VDC	12-48 VDC
Maximum Voltage	140 VAC/VDC	280 VAC/VDC	36 VAC/VDC	32 VDC/VAC	60 VDC
Minimum Voltage	90 VAC/VDC	180 VAC/VDC	18 VAC/VDC	3.3 VDC/VAC	10 VDC
Resistance	28K Ω	75K Ω	2K Ω	1K Ω	2K Ω
Maximum Current	5.0 m Arms	5.0 m Arms	10 m Arms	34 mA	34 mA
Drop-out Current	2.0 m Arms	1.5 m Arms	1.0 m Arms	1.0 mA	1.0 mA
Allowable Current	2.5 m Arms	2.0 m Arms	1.5 m Arms	1.5 mA	1.5 mA
Voltage for No Output	50 VAC/VDC	50 VAC/VDC	10 VAC/VDC	2.0 VDC	4.0 VDC

Output Specifications

Parameter	DR-IAC5, DR-IAC5A, DR-IAC5E, DR-IDC5, DR-IDC5A	DR-IAC24, DR-IAC24A DR-IDC24, DR-IDC24A
Nominal Logic Supply Voltage	5.0 VDC	24.0 VDC
Maximum Logic Supply Voltage	6.0 VDC	30.0 VDC
Minimum Logic Supply Voltage	3.0 VDC	20.0 VDC
Maximum Logic Supply Current	16.0 mA	16.0 mA
Max. Logic Supply Leakage Current	10.0 µA	10.0 µA
Maximum Voltage	30.0 VDC	30.0 VDC
Maximum Current	50.0 mA	50.0 mA
Maximum Leakage Current	10.0 µA	10.0 µA
Maximum Voltage Drop	0.2 VDC	0.2 VDC

793-3089. DR-IAC5	**EACH 17.20**
793-3090. DR-IAC5A	**EACH 17.50**
793-3092. DR-IAC24	**EACH 17.50**
793-3093. DR-IAC24A	**EACH 18.00**

General Specifications

Parameter	DR-IAC5, 24, DR-IAC5A, 24A, DR0IAC5E	DR-IDC5, 24 DR-IDC5A, 24A
Operating Temperature Range	-30°C to 80°C	-30°C to 80°C
Storage Temperature Range	-40°C to 100°C	-40°C to 100°C
Maximum Turn-on Time	20 mSec	1.0 mSec
Maximum Turn-off Time	30 mSec	1.0 mSec
Input/Output Isolation Voltage	4000 VAC	4000 VAC
Input/Output Capacitance (typical)	8 pF	8 pF
Line Frequency Range	47 to 63 Hertz	DC
—	—	—
—	—	—

793-3094: DR-IDC5	**EACH 17.00**
793-3095. DR-IDC5A	**EACH 19.00**
793-3096. DR-IDC24	**EACH 18.69**
793-3097. DR-IDC24A	**EACH 19.50**

Din Rail Mountable Output Modules

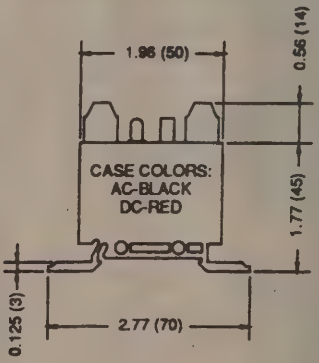
- DIN Rail Mountable Single Point Output Modules
- UL Recognized/Horse Power Rated (E46203)/CSA Certified (38595)
- AC Output Rating 5 Amp at 12 to 280 VAC, with 250 Amp Single Cycle Surge Capability
- DC Output Rating 3 Amp at 3 to 60 VDC
- 3 to 32 VDC Input for AC Module, 5 V or 24 V for DC Module
- Zero Voltage Turn-/on for AC Module
- 4 KV Optical Isolation with LED Indicator
- Barrier Strips Accept 14 to 28 AWG Wire
- Configured for Panel Mounting

Input Specifications

Parameter	DR-OAC	DR-ODC5	DR-ODC24
Nominal Voltage	5-24 VDC	5.0 VDC	24.0 VDC
Minimum Voltage	3.7 VDC	3.5 VDC	18.0 VDC
Maximum Voltage	32 VDC	8.0 VDC	32.0 VDC
Drop-out Voltage	1.0 VDC	1.0 VDC	1.0 VDC
Maximum Current	18.0 mA	18.0 mA	13.0 mA
Resistance	—	250 Ohms	2000 Ohms

General Specifications

Parameter	DR-OAC	DR-ODC5, DR-ODC24
Operating Temperature Range	-30°C to 80°C	-30°C to 80°C
Storage Temperature Range	-40°C to 100°C	-40°C to 100°C
Maximum Turn-on Time	8.33 mSec	0.1 mSec
Maximum Turn-off Time	8.33 mSec	0.75 mSec
Input/Output Isolation Voltage	4000 VAC	4000 VAC
Input/Output Capacitance (typical)	8 pF	8 pF
Line Frequency Range	47 to 63 Hertz	DC
Fuse	5 Amps	5 Amps



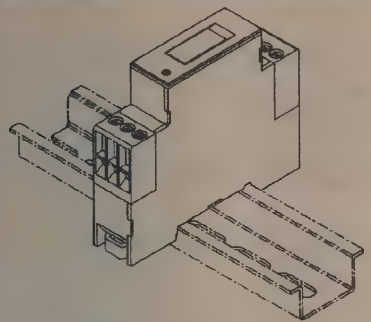
DIMENSIONS: INCHES (MILLIMETERS)
TOLERANCE: ±0.020 (±0.50)

Output Specifications

Parameter	DR-OAC	DR-ODC5, DR-ODC24
Nominal Line Voltage	120/240 VAC	5-48 V
Minimum Line Voltage	12 VAC	3.0 V
Maximum Line Voltage	280 VAC	60 V
Max. Off-state Voltage	600 Vpeak	60 V
Max. Off-state Leakage	6.0 mArms	500 µA
Static Off-state dv/dt	200 V/µsec	N/A
Maximum Rated On-State Current	5.0 Arms	3.0 A
Min. On-state Current	50 mArms	10 mA
Max. Surge Current	250 Apeak	5.0 A
On-state Voltage Drop	1.6 V	1.5 V
Horse Power Rating	1/2 H.P.	N/A

793-3098. DR-OAC	**EACH 17.30**
793-3099. DR-ODC5	**EACH 17.00**
793-3100. DR-ODC24	**EACH 17.70**

DIN Rail Mountable Output Modules — *NEW* —



- ► DIN Rail Mountable (17.5 mm Wide) Single Point Output Modules
- ► AC Output Rating 5 Amp at 12 to 280 VAC with 350 Amp Single Cycle Surge Capability
- ► DC Output Rating 3 Amp at 5 to 60 VDC
- ► 4 to 32 VDC Input Current Regulated
- ► Zero Voltage Turn-On for AC Module
- ► 4 KV Optical Isolation with LED Indicator
- ► Barrier Strips Accept 14 to 28 AWG Wire
- ► Configured for Panel Mounting

Input Specifications

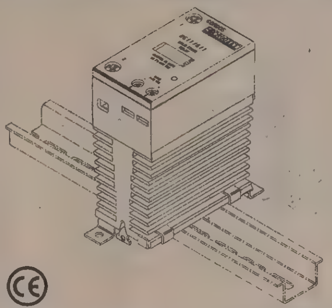
Parameter	All Models
Nominal Voltage	4-32 VDC
Minimum Voltage	4 VDC
Maximum Voltage	32 VDC
Drop-Out Voltage	1 VDC
Maximum Current	22 mA
Resistance	Current Regulated

Output Specifications

Parameter	84130105	84130104
Nominal Line Voltage	120/240 VAC	5-60 VDC
Minimum Line Voltage	12 VAC	5 VDC
Maximum Line Voltage	280 VAC	60 VDC
Maximum Off-State Voltage	800 Vpeak	60 VDC
Maximum Off-State Leakage	3 mA	10 μA
Static Off-State dv/dt	50 V/μ sec.	—
Maximum Rated On-State Current	5.0 Arms	3.0 A
Minimum On-State Current	50 mArms	10 mA
Maximum Surge Current	350 Apeak	5.0 A
On-State Voltage Drop	1.85 Vpeak	1.6 VDC

Stock No.	Mfr.'s Type	Input Voltage	Output Voltage	EACH
793-6001	84130104	4-32 VDC	5-60 VDC	**20.00**
793-6002	84130105	4-32 VDC	12-280 VAC	**22.50**

45 mm DIN Rail SSR — *NEW* —



- ► DIN Rail or Panel Mount
- ► Compact Size
- ► LED Indicator
- ► AC or DC Control
- ► Zero AC or Random Turn-On Models
- ► 4 KV Optical Isolation

Input Specifications

Parameter	84130110	84130111	84130112
Control Voltage	90-280 VAC	4-32 VDC	4-32 VDC
Drop-Out Voltage	10 VAC	1.0 VDC	1.0 VDC
Maximum Input Current	6	10	10
Maximum Turn-On Time	20	8.33	0.1
Maximum Turn-Off Time	30	8.33	8.33
Type	Zero Crossing	Zero Crossing	Random Turn-On

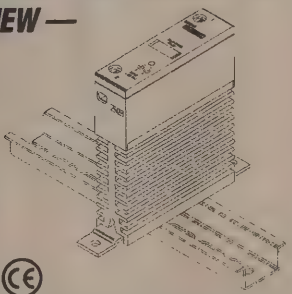
Output Specifications

Parameter	All Models	Units
Line Voltage	48-660	Vrms
Peak Off-State Voltage	1200	Vpeak
Maximum Off-State Leakage	8.0	mArms
Static Off-State dv/dt	200	V/μSec
Minimum On-State Current	100	mArms
Maximum On-State Current	35	Arms
Maximum 1-Cycle Surge	750	Apeak
Maximum 1-Second Surge	145	Apeak
Peak On-State Voltage Drop	1.6	Vpeak
I^2t (60 Hz, Half-Cycle)	1000	A^2Sec.

Stock No.	Mfr.'s Type	Input Voltage	Output Voltage	EACH
793-6003	84130110	90-280 VAC	48-660 VAC	**52.50**
793-6004	84130111	4-32 VDC	48-660 VAC	**54.50**
793-6005	84130112	4-32 VDC	48-660 VAC	**54.50**

22.5 mm DIN Rail SSR — *NEW* —

- ► DIN Rail or Panel Mount
- ► Compact Size
- ► LED Indicator
- ► AC or DC Control
- ► Zero AC Turn-On Models
- ► 12 and 25 Amp Outputs
- ► UL, cUL (25 Amp Model — UL Rating 20 Amps), 12 Amp .5 HP at 240 VAC; 20 Amp 1.5 HP at 240 VAC
- ► CE Compliance Per EN60950 and EN60204-1
- ► Complies to IEC 1000-4-4 Level 3 Requirements



Input Specifications

Parameter	84130101 84130103	84130100 84130102	Units
Control Voltage	4-32 VDC	90-280 VAC	—
Drop-Out Voltage	1.0 VDC	10 VAC	—
Maximum Input Current	12	6	mA
Maximum Turn-On Time	8.33	20	ms
Maximum Turn-Off Time	8.33	30	ms
Type	Zero Crossing	Zero Crossing	

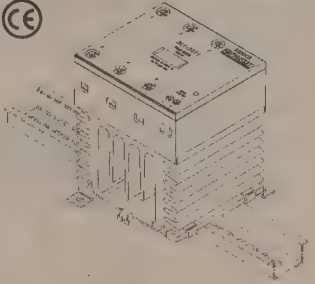
Output Specifications

Parameter	84130100 84130101	84130102 84130103	Units
Line Voltage	24-280	24-280	Vrms
Peak Off-State Voltage	600	800	Vpeak
Maximum Off-State Leakage	3	3	mArms
Static Off-State dv/dt	200	600	V/μSec
Minimum On-State Current	100	100	mArms
Maximum On-State Current	12	25	Arms
Maximum 1-Cycle Surge	250	400	Apeak
Maximum 1-Second Surge	60	140	Apeak
Peak On-State Voltage Drop	1.85	1.8	Vpeak
I^2t (60 Hz, Half-Cycle)	260	600	A^2Sec.
Output Type	TRIAC	ALTERNISTOR	—

Stock No.	Mfr.'s Type	Input Voltage	Output Voltage	EACH
793-6006	84130101	4-32 VDC	24-280 VAC	**38.00**
793-6007	84130103	4-32 VDC	24-280 VAC	**46.00**
793-6008	84130100	90-280 VAC	24-280 VAC	**41.00**
793-6009	84130102	90-280 VAC	24-280 VAC	**48.00**

90 mm 3 Phase DIN Rail SSR — *NEW* —

- ► DIN Rail or Panel Mount
- ► Compact Size
- ► LED Indicator
- ► AC or DC Control
- ► Zero AC or Random Turn-On Models
- ► 4 KV Optical Isolation
- ► Pending UL, cUL; File E79183
- ► Pending CE Compliance Per EN60950 and EN60204-1
- ► Complies to IEC 1000-4-4 Level 3 Requirements



Input Specifications

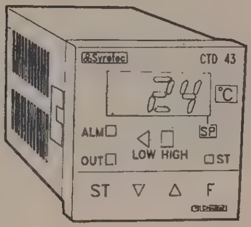
Parameter	84130310	84130312	84130311	Units
Control Voltage	4-32 VDC	4-32 VDC	90-280 VAC	—
Drop-Out Voltage	1.0 VDC	1.0 VDC	10 VDC	—
Maximum Input Current	22	22	6	mA
Maximum Turn-On Time	8.33	0.1	20	ms
Maximum Turn-Off Time	8.33	8.33	30	ms
Type	Zero Crossing	Random Turn-On	Zero Crossing	—

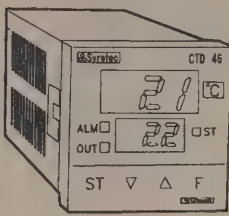
Output Specifications

Parameter	All Models	Units
Line Voltage	48-660	Vrms
Peak Off-State Voltage	1200	Vpeak
Maximum Off-State Leakage	8.0	mArms
Static Off-State dv/dt	500	V/μSec
Minimum On-State Current	100	mArms
Maximum On-State Current per Phase	25	Arms
Maximum 1-Cycle Surge	750	Apeak
Maximum 1-Second Surge	145	Apeak
Peak On-State Voltage Drop	1.6	Vpeak
I^2t (60 Hz, Half-Cycle)	1000	A^2Sec.

Stock No.	Mfr.'s Type	Input Voltage	Output Voltage	EACH
793-6010	8413010	4-32 VDC	48-660 VAC	**128.00**
793-6011	8413011	90-280 VAC	48-660 VAC	**130.00**
793-6012	8413012	4-32 VDC	48-660 VAC	**135.50**

CTD 46 and 43 Series Temperature Controller





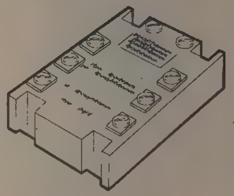
- ► 1/16 Din-Sized Enclosure
- ► 5 Temperature Control Modes
- ► Multiple Temperature Range (°F and °C)
- ► Auto-tuning
- ► Built-In Alarm
- ► Soft Start Function
- ► Nema 4X Front Panel

The CTD Series is a temperature controller available in two basic models — the CTD 43 is a single display unit and the CTD 46 is a dual display unit. Both models have a temperature range of –199 to 999°F or –199 to 999°C and will accept J, K, L, or N type thermocouples and RTDs as temperature sensors. Control modes include ON-OFF or proportioning action (PID, P, PL, PD). The main output can be programmed for direct (cooling) or inverse (heating) operations and the relay alarm output programmed to 16 different alarm configurations. The auto-tuning "Smart" function will calculate and set automatically the optimum values for the PID mode to insure the closest control of any heating or cooling load.

Stock No.	Mfr.'s Type	Description	Each
793-3001	89421108	CTD 43, Relay Output, 110/220 VAC	**219.00**
793-3002	89421118	CTD 43, Transistor Output, 110/220 VAC	**219.00**
793-3003	89422108	CTD 46, Relay Output, 110/220 VAC	**253.00**
793-3004	89422118	CTD 46, Transistor Output, 110/220 VAC	**253.00**

GA 3 Series Three-Phase Solid State Relays

- ► 10, 25 and 45 Amps Output Per Channel Available
- ► 24 to 600 VAC Output Voltage Range Suitable for Many Applications
- ► 1200 Volts Peak Blocking Voltage Helps Protect Against Transients in Harsh Electrical Environments
- ► Internal RC Snubber Network
- ► 4000 VAC Optical Isolation
- ► 4 to 32 Control Voltage for a Wide Variety of Logic Circuit Applications
- ► Zero Voltage or Random Turn-On
- ► Industry Standard Package

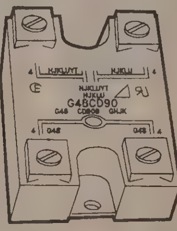


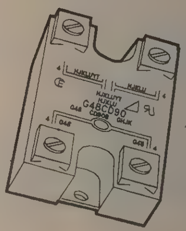
General Specifications	GA3-12D10R GA3-12D25R, GA3-12D45R	GA3-12D10Z GA3-12D25Z, GA3-12D45Z
Operating Temperature Range	-30 to 80°C	-30 to 80°C
Storage Temperature Range	-40 to 100°C	-40 to 100°C
Maximum Turn-on Time	.20 mSec	8.33 mSec
Maximum Turn-off Time	8.33 mSec	8.33 mSec
Input/Output Isolation	4000 VAC	4000 VAC
Input/Output to Base Isolation	4000 VAC	4000 VAC
Input/Output Capacit. (typical)	8 pF	8 pF
Line Frequency Range	47 to 63 Hz	47 to 63 Hz
Weight	450 g	450 g

Stock No.	Mfr.'s Type	Description	Each
793-3007	GA3-12D45R	45A, Random Turn-on	**100.90**
793-3008	GA3-12D10Z	10A, Zero Voltage Turn-on	**92.60**
793-3009	GA3-12D25Z	25A, Zero Voltage Turn-on	**94.65**
793-3010	GA3-12D45Z	45A, Zero Voltage Turn-on	**125.83**

G Series Power Relays

- ► Back-To-Back (Dual) SCR Output for Severe Inductive Loads
- ► Superior False Turn-On Immunity and Positive Turn-Off at High dv/dt
- ► Current Ratings to 90 A
- ► Output Voltage Rating to 660 VAC with 24 VAC Minimum
- ► AC or DC Inputs
- ► 4 KV Optical Isolation
- ► Zero AC or Random Turn-On Models
- ► RC Snubber Network for Inductive loads
- ► UL Recognized (E46203, E79183), CSA Certified (38595)
- ► VDE Approval on Many Models (37421)
- ► UL/CSA 5 H.P. Rated Models





Stock No.	Mfr.'s Type	Output Rating	Control Voltage	Each
793-3011	G240A10	10A	90-280VAC	**23.39**
793-3012	G240A25	25A	90-280VAC	**29.05**
793-3013	G240A45	45A	90-280VAC	**39.50**
793-3014	G240A75	75A	90-280VAC	**47.47**
793-3015	G240A90	90A	90-280VAC	**55.10**
793-3016	G240D10	10A	3-32VDC	**19.43**
793-3017	G240D25	25A	3-32VDC	**21.74**
793-3018	G240D45	45A	3-32VDC	**31.45**
793-3019	G240D75	75A	3-32VDC	**41.80**
793-3020	G240D90	90A	3-32VDC	**51.40**
793-3021	G240E10	10A	18-36VAC	**29.00**
793-3022	G240E25	25A	18-36VAC	**32.53**
793-3023	G240E45	45A	18-36VAC	**45.10**
793-3024	G240E75	75A	18-36VAC	**59.84**
793-3025	G240E90	90A	18-36VAC	**68.85**
793-3026	G480A10	10A	90-280VAC	**41.29**
793-3027	G480A25	25A	90-280VAC	**44.00**
793-3028	G480A50	45A	90-280VAC	**53.00**
793-3029	G480A75	75A	90-280VAC	**60.89**
793-3030	G480A90	90A	90-280VAC	**69.26**
793-3031	G480D10	10A	3-32VDC	**26.50**
793-3032	G480D25	25A	3-32VDC	**32.14**
793-3033	G480D50	50A	3-32VDC	**45.55**
793-3034	G480D75	75A	3-32VDC	**49.00**
793-3035	G480D90	90A	3-32VDC	**56.10**

General Specifications. Operating Temperature Range: –20 to +80°C. **Storage Temperature Range:** –40 to +100°C. **Input to Output Isolation Voltage:** 4,000 Vrms. **Input/Output to Ground Isolation Voltage:** 2,500 Vrms. **Capacitance Input to Output (Typical):** 8 pF. **Line Frequency Range:** 47 to 80 Hz. **Maximum Line Voltage (VRMS):** 280, 480, 660. **Minimum Line Voltage (Vrms):** 24, 36, 48. **Max. Off-State Voltage (Vpeak)*:** ±600, ±1,200, ±1200. **Max. Off-State Leakage (mArms)*:** 15.0, 15.0, 20.0. **Static (Off-State) dv/dt (V/µs)*:** 200, 200, 200.

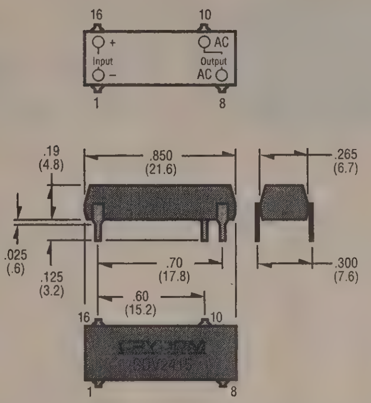
Stock No.	Mfr.'s Type	Output Rating	Control Voltage	Each
793-3036	G480E10	10A	18-36VAC	**52.00**
793-3038	G480E50	50A	18-36VAC	**67.00**
793-3039	G480E75	75A	18-36VAC	**71.00**
793-3040	G480E90	90A	18-36VAC	**82.00**
793-3041	G575A10	10A	90-280VAC	**44.31**
793-3042	G575A25	25A	90-280VAC	**47.00**
793-3045	G575A90	90A	90-280VAC	**67.00**
793-3046	G575D10	10A	3-32VDC	**30.00**
793-3047	G575D25	25A	3-32VDC	**34.00**
793-3048	G575D50	50A	3-32VDC	**45.00**
793-3049	G575D75	75A	3-32VDC	**52.00**
793-3050	G575D90	90A	3-32VDC	**55.00**
793-3051	G575E10	10A	18-36VAC	**55.00**
793-3053	G575E50	50A	18-36VAC	**70.00**
793-3054	G575E75	75A	18-36VAC	**73.00**
793-3055	G575E90	90A	18-36VAC	**84.00**

*G4800 and G575D DC input range is 4.0 to 32.0 VDC.

Series SDV, SDI

1.5 Amp, 120/240 VAC, 16 Pin DIP Package

- **DC Control**
- **SCR Output**
- **Compact for High Density PCB Mount**



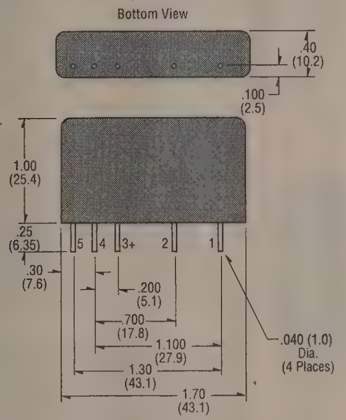
The Series SDV and SDI solid state relays are rated at 1.5 amps RMS at ambient temperatures up to 40°C. The compact 16 pin DIP package is perfect for high density printed circuit boards. The SDV is voltage operated, and the SDI is current operated. Both are offered in either zero voltage or random switching (R) versions. **Output Specifications. Operating Voltage Range (47-63 Hz):** 12-280 Vrms. **Power Factor (Min.) with Max. Load:** .05.

Stock No.	Mfr.'s Type	Control Voltage	Control Current	Input Impedance	Load Current Range	Surge Current (1 Cycle)	Must Turn Off Voltage	Transient Over Voltage (Non-Rep)	Must Turn Off Current	EACH
682-8104	SDV2415	3.5-10 VDC	—	270 Ohms	01-1.5 Arms	30 A pk	1.0 VDC	600 V pk	—	**6.99**
682-8105	SDV2415R	3.5-10 VDC	—	270 Ohms	01-1.5 Arms	30 A pk	1.0 VDC	600 V pk	—	**6.99**
682-8106	SDI2415	—	10-50 mA	—	01-1.5 Arms	30 A pk	—	600 V pk	1 mA	**6.14**
682-8107	SDI2415R	—	10-50 mA	—	01-1.5 Arms	30 A pk	—	600 V pk	1 mA	**6.14**

Mini-Pack I/O Modules

ISO 9002 CERTIFIED

Opto-Isolated Solid-State Modules



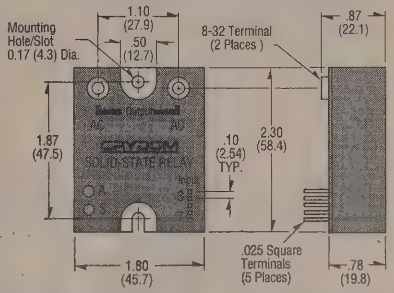
Solid state I/O switching modules deliver an electrically clean, photo-isolated, noise-free "output" interface from logic level control systems to external loads such as motors, valves, solenoids, etc. — or an "input" interface from the load or sensors to microprocessor or computer-based logic level systems. Designed for long, reliable service in demanding industrial environments. All this in the new compact mini-pack design

Stock No	Mfr.'s Type	Type	Voltage Range	Max. Load Current @ V	Turn-On Time	EACH
682-8108	MIAC-5	AC/DC Input	90-140 VAC	0.1-100mA @ 0.4-30	20.0 ms	**9.81**
682-8109	MIAC-5A	AC/DC Input	180-280 VAC	0.1-100mA @ 0.4-30	20.0 ms	**10.30**
682-8110	MIAC-15	AC/DC Input	90-140 VAC	0.1-100mA @ 0.4-30	20.0 ms	**9.81**
682-8111	MIAC-15A	AC/DC Input	180-280 VAC	0.1-100mA @ 0.4-30	20.0 ms	**9.81**
682-8112	MIAC-24	AC/DC Input	90-140 VAC	0.1-100mA @ 0.4-30	20.0 ms	**9.81**
682-8113	MIDC-5	DC Input	10-36 VDC	0.1-100mA @ 0.4-30	5.0 ms	**9.81**
682-8114	MIDC-5B	DC Input	3-32 VDC	0.1-100mA @ 0.4-30	1.0 ms	**13.93**
682-8115	MIDC-15	DC Input	10-36 VDC	0.1-100mA @ 0.4-30	1.0 ms	**9.81**
682-8116	MIDC-24	DC Input	10-36 VDC	0.1-100mA @ 0.4-30	5.0 ms	**9.81**
682-8117	MODC-5	DC Output	3-6 VDC	0.02-3A @ 5.0-60	0.3 ms	**9.81**
682-8118	MODC-5A	DC Output	3-6 VDC	0.02-1A @ 10-200	0.5 ms	**15.16**
682-8119	MODC-15	DC Output	9-18 VDC	0.02-3A @ 5.0-60	0.3 ms	**9.81**
682-8120	MODC-15A	DC Output	9-18 VDC	0.02-1A @ 10-200	0.5 ms	**16.13**
682-8121	MODC-24	DC Output	18-28 VDC	0.02-3A @ 5.0-60	0.3 ms	**9.81**
682-8122	MODC-24A	DC Output	18-28 VDC	0.02-1A @ 10-200	0.5 ms	**15.16**
682-8123	MOAC-5	AC Output	3-6 VDC	0.02-3A @ 12-140	1/2 cycle	**9.81**
682-8124	MOAC-5A	AC Output	3-6 VDC	0.02-3A @ 24-280	1/2 cycle	**10.30**
682-8125	MOAC-15	AC Output	9-18 VDC	0.02-3A @ 12-140	1/2 cycle	**9.81**
682-8126	MOAC-24	AC Output	18-28 VDC	0.02-3A @ 12-140	1/2 cycle	**9.81**
682-8127	MOAC-24A	AC Output	18-28 VDC	0.02-3A @ 24-280	1/2 cycle	**9.81**

Series SMR

25-90 Amp, AC Output, 240 VAC

- **System Monitoring Solid State Relay**
- **LED Status Indicators**
- **Alarm Output Signal**



The SMR Series of System Monitoring Relays offer the user a number of fault condition alarms. Loss of voltage, open circuit load, damaged relay output and loss of DC supply current are constantly monitored by this unique Solid State Relay (SSR). **Dielectric Strength:** 50/60 Hz; Input/Output/Base — 4000 Vrms. **Temperature Range:** -40° to 80°C. **Input Connector (Locking):** Panduit MLSS100-5 or equivalent. **Mating Connector:** Panduit CT100F22-5 or equivalent.

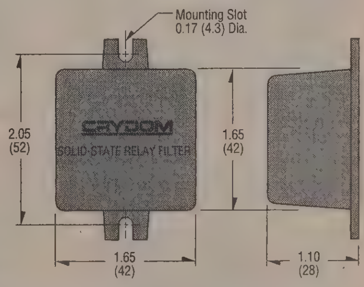
Stock No.	Mfr.'s Type	Input Voltage	Operating Voltage (47-63 Hz) [Vrms]	Max. Load Current (Arms)	EACH
682-8101	SMR2425	8-32 VDC	48-280	25	**46.97**
682-8102	SMR2450	8-32 VDC	48-280	50	**51.80**
682-8103	SMR2490	8-32 VDC	48-280	90	**77.28**

Solid State Relay Filters

For AC Solid State Relays

ISO 9002 CERTIFIED

- **Suppresses EMI Noise**
- **Simple Installation**
- **Crydom's Patented Design**



The Series F Solid State Relay Filters from Crydom are designed to significantly reduce EMI noise generated by Solid State Relays to meet EMC regulations. All AC Solid State Relays that use thyristor switching devices generate some low frequency noise, that may appear as conducted emissions on the main supply line connection. Crydom's patented design offers simple installation in new or existing equipment. SSR current is not required to pass through the filter, the only connections required are across the incoming supply line. Two models are available, the 1F25 for single-phase systems and 3F20 for three-phase.

Stock No.	Mfr.'s Type	Number of Phases	Maximum Operating Voltage	Operating Temp. Range	Attenuation (150 to 250 kHz) Typical	Current Drain at Vrms Max.	EACH
682-8128	1F25	Singles	275 Vrms	–40-100°C	30 dBµV	25 dBµV	**8.02**
682-8129	3F20	Three	475 Vrms	–40-100°C	40 mA	35 mA	**12.53**

Series AO 241

- ► Compact Package for High Density PC Board Mounting
- ► TTL Logic Compatible Input
- ► 4000 Vrms Optical Isolation
- ► Both "Zero Voltage" and Phase Controllable "Random" Switching Versions

1.0 AMP, 24-280 VAC Triac Output, DC Output AC Mini-SIP

The CRYDOM A0241/R AC relays are 1.0 amp rated SPST-NO miniature SIP solid state relays. Utilizing the popular 100-mil. grid they occupy only 0.36 square inches of board space. These miniature relays have the same high technology and reliable design found in all CRYDOM products. UL, CSA pending.

Stock No.	Mfr.'s Type	Line Voltage VDC	Surge Current 1 Cycle (Max.)	Load Voltage Range	Freq. Range	EACH
682-2103	A0241	3- 9	15 Apk	24-280 VRMS	47-70 Hz	**8.09**
682-2104	A0241R*	3- 9	15 Apk	24-280 VRMS	47-70 Hz	**8.09**
682-2377	AS0241	12-280	10 Apk	12-280 VRMS	47-70 Hz	**7.43**
682-2378	AS0241R*	12-280	10 Apk	12-280 VRMS	47-70 Hz	**7.43**

*Random Switching Version.

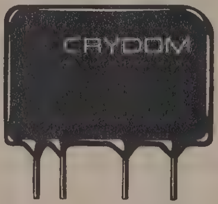
Series DO 061

DC Mini-SIP

The DO 061 are miniature DC output modules in a conformally coated SIP package, measuring only 0.46 x 0.9 x 0.4 in. with pinouts on the popular 100-mil grid. The input-to-output isolation is 4000 VRMS with an isolation resistance of 1 x 109 ohms. The units are derated 10mA per degree C above 60°C ambient temperature. Operating temperature range is –30°C to +80°C. When used for inductive loads, diode suppression across the load is recommended.

Stock No.	Mfr.'s Type	Line Voltage VDC	Max. I @ 60°C A (RMS)	Control Voltage Range	Must Operate Voltage, Min.	Must Release Voltage, Min.	Surge Current 1 Sec.	EACH
682-2101	DO 061A	3- 60	1.0	3.0- 9.0 VDC	3.0 VDC	1.0 VDC	5A	**8.09**
682-2102	DO 061B	3- 60	1.0	1.7- 9.0 VDC	3.0 VDC	1.0 VDC	5A	**8.09**

Series CX



- ► Extra High Surge Rating
- ► Extra Low Leakage (Off-state)
- ► Opto-Isolated 4000 Vrms
- ► Random And Zero Voltage Switching
- ► Compact Package for High Density
- ► PC Board Mounting
- ► 3-15 Vdc Logic Compatible Input

5.0 AMP, 12-280 VAC SCR Output, DC Control

The CX series is a group of solid state relays designed by CRYDOM to achieve the highest power switching capability in a PC mounted air cooled package. They feature exceptional steady state and high surge ratings by means of over sized inverse-parallel SCR chips, together with highly efficient thermal management for greatly increased cycle life. UL, CSA and VDE pending.

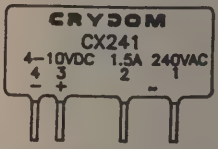
Stock No.	Mfr.'s Type	Control Voltage Range	Surge Current 1 Cycle (Max.)	Load Voltage Range	Freq. Range	EACH
682-2105	CX240D5	3-15 VDC	250 Apk	12-280 VRMS	47-63 Hz	**10.09**
682-2106	CX240D5R*	3-15 VDC	250 Apk	12-280 VRMS	47-63 Hz	**12.49**
682-2381	CXE240D5	15-32 VDC	250 Apk	12-280 VRMS	47-63 Hz	**9.02**
682-2382	CXE240D5R	15-32 VDC	250 Apk	12-280 VRMS	47-63 Hz	**11.17**
682-2383	CX380D5	4-13 VDC	250 Apk	48-530 VRMS	47-63 Hz	**12.63**
682-2384	CXE380D5	15-32 VDC	250 Apk	48-530 VRMS	47-63 Hz	**12.63**
682-2385	CX480D5	4-13 VDC	250 Apk	48-660 VRMS	47-63 Hz	**12.63**
628-2386	CXE480D5	15-32 VDC	250 Apk	48-660 VRMS	47-63 Hz	**12.63**

AC Input

Stock No.	Mfr.'s Type	Control Voltage Range	Surge Current 1 Cycle (Max.)	Load Voltage Range	Freq. Range	EACH
682-2387	CX240A5	90-140 VAC	250 Apk	12-280 VRMS	47-63 Hz	**10.08**
682-2388	CX240A5R	90-140 VAC	250 Apk	12-280 VRMS	47-63 Hz	**10.96**
682-2389	CXE240A5	18-36 VAC	250 Apk	12-280 VRMS	47-63 Hz	**10.08**
682-2390	CXE240A5R	18-36 VAC	250 Apk	12-280 VRMS	47-63 Hz	**10.08**

*Random Switching Version.

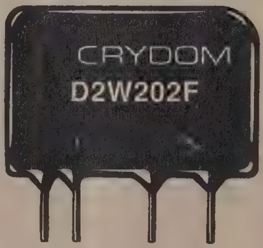
CX241 AC Output Solid State Relay



The new CX241/R Solid State Relays incorporates the SCR output ASO241/R circuit with the popular CX Series pinout.

Stock No.	Mfr.'s Type	Line Voltage Range (Vrms)	Load Current Range (Arms)	Off-State Leakage (mA)	Control Voltage Range	Input Current @ 5 VDC (Typical)	Surge Current 1-Cycle (Apk)	EACH
682-3070	CX241	12-280	.01-1.5	0.5	4-10	15 mA	10	**7.40**
682-3071	CX241R	12-280	.01-1.5	0.5	4-10	15 mA	10	**8.09**

Series D2W



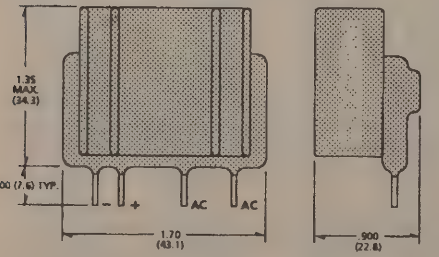
Solid State Relays Low Cost AC Output 80 to 280 VAC, 2 Amps

The D2W202F is designed to achieve optimum performance at a record low cost by means of completely automated assembly using labor saving robotics. The package has a hard skin-tight epoxy coating which provides excellent environmental protection and a pinout that matches the Series 6.

General Specifications. Control Signal Range: 3 to 28 VDC. **Must Operate Voltage, max.:** 3 VDC. **Must Release Voltage, min.:** 1 VDC. **Input Current @ 5 VDC max.:** 4 mA. **Input Impedance, min.:** 1500 OHMS. **Dielectric Strength 50/60 Hz:** 2500 VRMS. **Operating Temperature Range:** –20° to 80°C.

Stock No.	Mfr.'s Type	Control Voltage Range	Output Ratings	Surge One Cycle	EACH
682-0114	D2W202F	3-32VDC	2.0A @ 60-280VAC	28A pk	**8.03**
682-0115	D2W203F	3-32VDC	3.0A @ 60-280VAC	70A pk	**9.48**
682-0116	D2W203F-11	3-32VDC	3.5A @ 60-280VAC	80A pk	**9.94**

PowerFin™



- ► Integral Heatsink
- ► Ultra High Ratings
- ► Random and Zero Switching
- ► SCR Output

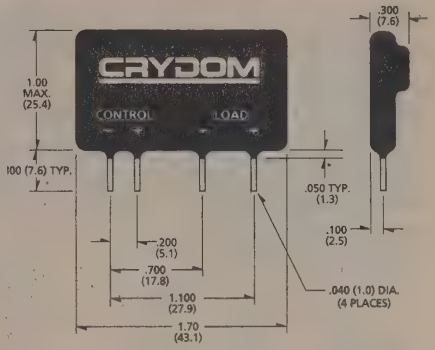
Up to 25 Amp, AC SIP. **Operating Temperature Range:** –30°C to 80°C. **Isolation Voltage (Vrms):** 4000.

Stock No.	Mfr.'s Type	Line Voltage Range (Vrms)	Load Current Range (Arms)	Control Voltage Range (Vdc)	Must Operate Voltage (Vdc)	Must Release Voltage (Vdc)	Surge Current 1-Cycle (Apk)	EACH
682-2379	PF240D25	240	.06-25*	3-15	3.0	1.0	250	**13.13**
682-2380	PFE240D25	240	.06-25*	15-32	15.0	1.0	250	**13.13**
682-2481	PF240D25R	240	.06-25*	3-15	3.0	1.0	250	**13.13**
682-2482	PFE240D25R	240	.06-25*	15-32	15.0	1.0	250	**13.13**

R suffix denotes Non-Zero Cross, Phase Controllable.
* .06-25 in forced air, Heat Sink 85°C max.,.06-10 in convection air

Series CMX — 6 - 10 Amp, DC SIP

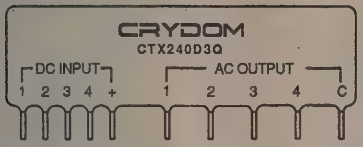
- ► MOSFET Output
- ► Extra Low On-State Resistance
- ► Printed Circuit Board Mounting



New DC output SPST-NO solid state relays use MOSFET output for high switching capabilities in a PC-mount air-cooled package. Pinouts are compatible with Series 6 and ODC type I/O modules. **Operating Temperature Range:** –30°C to 80°C. **Isolation Voltage:** 2500 Vrms. **Approvals:** UL E116950, CSA.

Stock No.	Mfr.'s Type	Line Voltage Range (VDC)	Load Current Range (ADC)	Control Voltage Range (VDC)	Must Operate Voltage (VDC)	Must Release Voltage (VDC)	Surge Current 10 ms (Apk)	EACH
682-2368	CMX100D6	0-100	0-6	3-10	3.0	1.0	100	**24.72**
682-2370	CMX60D10	0-60	0-10	3-10	3.0	1.0	100	**24.72**

CTX240D3Q®



- ► Four AC Output Relays in One Package
- ► Extra High Surge Rating
- ► Extra Low Leakage (Off-State)
- ► Opto-Isolated 2500 Vrms
- ► Random and Zero Voltage Switching
- ► Compact Package for High Density PC Board Mounting
- ► 4-10 VDC Logic Compatible Input

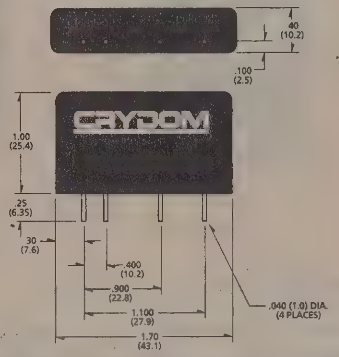
The CTX240D3Q features four independently controlled solid state relays in one package. This model is an extension of Crydom's popular CX Series which is designed to achieve the highest power switching capability in a PC mounted air cooled package. The CTX240D3Q exhibits exceptional steady state ratings by means of highly efficient thermal management for greatly increased cycle life.

Input Specifications. Control Voltage Range: 4-10 VDC. **Nominal Input Impedance:** 270 Ohms. **Typical Input Current at 5 VDC:** 15 mAdc. **Must Turn On Voltage:** 4.0 VDC. **Must Turn Off Voltage:** 1.0 VDC. **Output Specifications. Nominal Line Voltage:** 240 Vrms. **Load Current Range Per Section:** 1 Section On — 0.1 - 6.0 Arms; 2 Sections On — 0.1 - 4.0 Arms; 3 Sections On — 0.1 - 3.0 Arms; 4 Sections On — 0.1 - 2.5 Arms. **Surge Current, 1 Cycle (Max.):** 120 Apk. **Load Voltage Range:** 24 - 280 Vrms. **Transient Over-Voltage:** 600 Vpk. **Frequency Range:** 47-63 Hz. **Off-State dv/dt (Min.):** 200 V/µsec. **Off-State Leakage Current (Max.) at 240 Vrms:** 0.1 mArms. **On-State Voltage Drop (Max.):** 1.4 Vpk. **I² t Max. at t = 8.3 msec:** 60 A² sec. **Turn-Off Time (Max). at 60 Hz:** 8.3 msec. **Turn-On Time (Max.) at 60 Hz:** Zero-Cross Switch — 8.3 msec; Random Switch — 0.02 msec. **Power Factor (Min.) with Max. Load:** Zero-Cross Switch — 0.5; Random Switch — 0.6. **General Specifications. Dielectric (Min.):** 2500 Vrms. **Insulation Resistance (Min.) at 500 VDC:** 10⁹ Ohms. **Capacitance (Max.):** 10 pF. **Ambient Temperature Range:** Operating — –30° to 80°C; Storage — –40° to 125°C.

682-2328. CTX240D3Q. Zero Cross Switch..**EACH 36.05**
682-2330. CTX240D3QR. Random Switch..**EACH 36.05**

Series MP — 3 - 4 Amp, AC Output, SIP

- ► High Packaging Density
- ► Compatible with 5 through 24 Volt Logic Systems

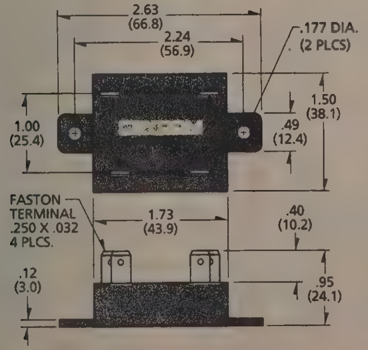


Available in 3 Arms and 4 Arms ratings, all are SPST-NO PC-mount relays that provide greater packaging density and compatibility with pinout of Series 6 and OAC output modules. Models include internal snubber for high dv/dt applications, together with zero-voltage switching to reduce high inrush currents and electrical noise. **Operating Temperature:** –30°C to 80°C. **Isolation Voltage:** 2500 Vrms. UL Approval E 116950, VDE.

Stock No.	Mfr.'s Type	Line Voltage Range (VAC)	Load Current Range (Arms)	Control Voltage Range (VDC)	Must Operate Voltage (VDC)	Must Release Voltage (VDC)	Surge Current 1-Cycle (Apk)	EACH
682-2316	MP120D3	12-140	.02-3.0	3-32	3	1.0	80	**16.50**
682-2318	MP240D3	24-280	.02-3.0	3-32	3	1.0	80	**16.50**
682-2320	MP240D4	24-280	.02-4.0	3-32	3	1.0	80	**16.97**

Series EZ — 12 - 18 Amp, AC Output

- ► Low Leakage
- ► SCR Output
- ► 24 Volt Control Available



The Series EZ SPST-NO AC output relays offer a low profile package with the convenience of quick connect terminals. 4000 Vrms opto-isolation and low off-state leakage are standard. The Series EZ is the preferred choice for replacement of 120V and 240V electro-mechanical relays. **Operating Temperature:** –30°C to 80°C. **Isolation Voltage:** 4000 Vrms.

DC Control Models — SCR Output

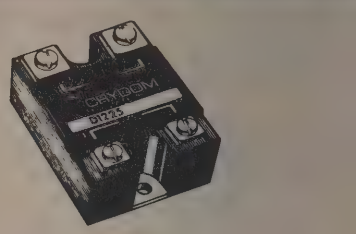
Stock No.	Mfr.'s Type	Line Voltage Range (VAC)	Load Current Range (Arms)	Control Voltage Range (VDC)	Must Operate Voltage (VDC)	Must Release Voltage (VDC)	Surge Current 1-Cycle (Apk)	EACH
682-2352	EZ240D12	24-280	.06-12	3-15	3.0	1.0	150	**20.71**
682-2354	EZ240D18	24-280	.06-18	3-15	3.0	1.0	200	**20.49**
682-2356	EZE240D12	24-280	.06-12	15-32	15.0	1.0	150	**15.93**
682-2358	EZE240D18	24-280	.06-18	15-32	15.0	1.0	200	**20.49**

AC Control Models — SCR Output

Stock No.	Mfr.'s Type	Line Voltage Range (VAC)	Load Current Range (Arms)	Control Voltage Range (VAC)	Must Operate Voltage (VAC)	Must Release Voltage (VAC)	Surge Current 1-Cycle (Apk)	EACH
682-2360	EZ204A12	24-280	.06-12	90-140	90.0	10.0	150	**20.70**
682-2362	EZ240A18	24-280	.06-18	90-140	90.0	10.0	200	**22.26**
682-2364	EZE240A12	24-280	.06-12	18-36	18.0	2.0	150	**20.70**
682-2366	EZE240A18	24-280	.06-18	18-36	18.0	2.0	200	**22.26**

Series 1

- 2.5 to 90 Amp
- 120, 240 and 480 VAC
- Panel Mount
- Solid-State Relays
- SCR AC Output



These Crydom SSRs make it possible to switch AC power loads up to 47 kw. Output circuit consists of inverse-parallel (back-to-back) dual SCRs to meet the most demanding requirements. Features include zero voltage switching, phase control and normally closed models available.**General Specifications. Isolation Voltage:** 4000 VAC Std. (Input to Output). **Operating Temperature Range:** –30°C to 80°C. UL, CSA and VDE. **DC Input Control Models. Control Signal Range:** 3-32 VDC. **Must Operate Voltage:** 3 VDC Max. **Must Release Voltage:** 1 VDC Min. **Input Current:** 4 mA max. @ 5 VDC. Additional DC input models available upon special order: "Normally Closed" —B Suffix; "Non-Zero Switch" —10 Suffix; "400 Hz" —4 prefix. **AC Input Models. Control Signal Range:** 90-280 VAC. **Must Operate Voltage:** 90 VAC Max. **Must Release Voltage:** 10 VAC Min. **Input Current:** 2 mA max. @ 120 VAC.

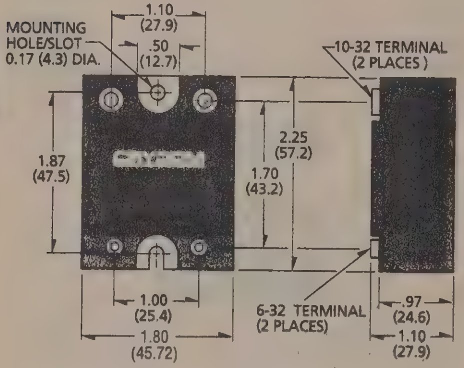
AC Control Models—SCR Output

Stock No.	Mfr.'s Type	Line VAC (46-63 Hz)	Max. Load Current, Amps (RMS)	One-Cycle Surge, Amps (PK)	EACH
682-0001	A1202	24-140	2.5	22.5	**22.70**
682-0002	A1210	24-140	10.0	120.0	**33.79**
682-0003	A1225	24-140	25.0	250.0	**33.26**
682-0004	A1240	24-140	40.0	625.0	**36.02**
682-0005	A2402	24-280	2.5	22.5	**23.44**
682-0006	A2410	24-280	10.0	120.0	**32.52**
682-0007	A2425	24-280	25.0	250.0	**33.10**
682-0008	A2440	24-280	40.0	625.0	**35.80**
682-0009	A2450	24-280	50.0	625.0	**37.55**
682-2391	A2490	24-280	90.0	1200.0	**66.25**
682-0010	A2475	24-280	75.0	1000.0	**60.42**
682-0012	A4812	80-530	12.0	140.0	**41.32**
682-0013	A4825	80-530	25.0	250.0	**44.03**
682-0014	A4840	80-530	40.0	625.0	**48.33**
682-0015	A4850	80-530	50.0	625.0	**49.17**
682-0016	A4875	80-530	75.0	1000.0	**67.16**
682-0017	A4890	80-530	90.0	1200.0	**73.57**

DC Control Models—SCR Output

Stock No.	Mfr.'s Type	Line VAC (46-63 Hz)	Max. Load Current, Amps (RMS)	One-Cycle Surge, Amps (PK)	EACH
682-0018	D1202	24-140	2.5	22.5	**18.25**
682-0019	D1210	24-140	10.0	120.0	**26.89**
682-0020	D1225	24-140	25.0	250.0	**27.32**
682-0021	D1240	24-140	40.0	625.0	**34.00**
682-0022	D2402	24-280	2.5	22.5	**20.31**
682-0023	D2410	24-280	10.0	120.0	**30.50**
682-0024	D2425	24-280	25.0	250.0	**30.87**
682-0025	D2440	24-280	40.0	625.0	**34.86**
682-0026	D2450	24-280	50.0	625.0	**35.01**
682-0027	D2475	24-280	75.0	1000.0	**57.44**
682-0142	D2490	24-280	90.0	1200.0	**63.18**
682-0029*	D4812	80-530	12.0	140.0	**36.29**
682-0030*	D4825	80-530	25.0	250.0	**38.51**
682-0031*	D4840	80-530	40.0	625.0	**41.00**
682-0032*	D4850	80-530	50.0	625.0	**39.41**
682-0033*	D4875	80-530	75.0	1000.0	**61.38**
682-0034*	D4890	80-530	90.0	1200.0	**69.17**

Series 1 — 110 - 125 Amp, 240 Volt AC Output



- **Zero Voltage and Random Turn-On Switching**
- **Panel Mount**

Featuring state-of-the-art Surface Mount Technology, these SPST- NO relays deliver proven reliability in the most demanding applications. Output consists of an SCR AC switch and is available in zero-cross, random turn-on (phase controllable) versions with either AC or DC input (coil) control.

DC Control Models — SCR Output

Stock No.	Mfr.'s Type	Line Voltage Range (VAC)	Load Current Range (Arms)	Control Voltage Range (VDC)	Must Operate Voltage (VDC)	Must Release Voltage (VDC)	Surge Current 1-Cycle (Apk)	EACH
682-2300	D24110	48-280	.04-110	3-32	3.0	1.0	1500	**68.75**
682-2302	D24110-10*	48-280	.04-110	3-32	3.0	1.0	1500	**71.33**
682-2304	D24125	48-280	.04-125	3-32	3.0	1.0	1750	**72.68**
682-2306	D24125-10*	48-280	.04-125	3-32	3.0	1.0	1750	**75.32**

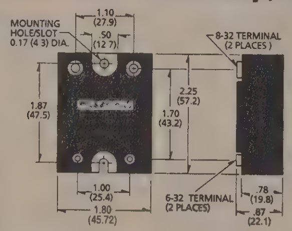
AC Control Models — SCR Output

Stock No.	Mfr.'s Type	Line Voltage Range (VAC)	Load Current Range (Arms)	Control Voltage Range (VAC)	Must Operate Voltage (VAC)	Must Release Voltage (VAC)	Surge Current 1-Cycle (Apk)	EACH
682-2308	A24110	48-280	.04-110	90-280	90.0	10.0	1500	**72.47**
682-2310	A24110-10*	48-280	.04-110	90-280	90.0	10.0	1500	**75.05**
682-2312	A24125	48-280	.04-125	90-280	90.0	10.0	1750	**76.17**
682-2314	A24125-10*	48-280	.04-125	90-280	90.0	10.0	1750	**78.74**

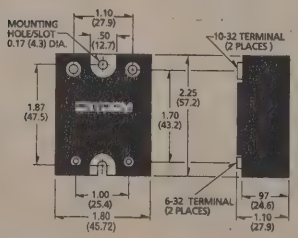
*-10: Non-Zero Cross, Phase Controllable Models.

Series HA, Series HD — 12-90 Amp, 480 Volt AC Output

12-50A



75-90A



- **Zero Voltage and Random Turn-On Switching**
- **1200 Volt Blocking**
- **Panel Mount**

Crydom's new HA (AC Control) and HD (DC Control) relays incorporate the same proven technologies as the Series 1. All models come with 1200V blocking as standard. **Operating Temperature:** –30°C to 80°C. **Isolation Voltage:** 4000 Vrms. **Minimum Off-State dv/dt:** 500 V/µsec. **Approvals:** UL (E116949), CSA (LR81689), VDE (10104).

DC Control Models — SCR Output

Stock No.	Mfr.'s Type	Line Voltage Range (VAC)	Load Current Range (Arms)	Control Voltage Range (VDC)	Must Operate Voltage (VDC)	Must Release Voltage (VDC)	Surge Current 1-Cycle (Apk)	EACH
682-2342	HD4812	48-530	.04-12	3-32	3.0	1.0	140	**37.35**
682-2344	HD4825	48-530	.04-25	3-32	3.0	1.0	250	**39.62**
682-2346	HD4850	48-530	.04-50	3-32	3.0	1.0	625	**44.03**
682-2348	HD4875	48-530	.04-75	3-32	3.0	1.0	1000	**70.17**
682-2350	HD4890	48-530	.04-90	3-32	3.0	1.0	1200	**71.18**

AC Control Models — SCR Output

Stock No.	Mfr.'s Type	Line Voltage Range (VAC)	Load Current Range (Arms)	Control Voltage Range (VAC)	Must Operate Voltage (VAC)	Must Release Voltage (VAC)	Surge Current 1-Cycle (Apk)	EACH
682-2332	HA4812	48-530	.04-12	90-280	90.0	10.0	140	**42.59**
682-2334	HA4825	48-530	.04-25	90-280	90.0	10.0	250	**45.46**
682-2336	HA4850	48-530	.04-50	90-280	90.0	10.0	625	**51.83**
682-2338	HA4875	48-530	.04-75	90-280	90.0	10.0	1000	**71.45**
682-2340	HA4890	48-530	.04-90	90-280	90.0	10.0	1200	**74.90**

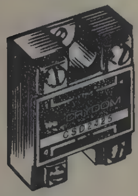
Products Not Cataloged Are Available — Call 1-800-433-5700 For Price And Delivery

50 To 90 Amp, 48-530 and 48-660 VAC High Voltage AC Output Solid-State Relays 1000V-1200V Blocking

The highest power rated SSRs, up to 59kw. 4000V of isolation with the highs available blocking voltages (1.2 KV) below which the SSRs will not mistrigger. The wide margin between operating and blocking voltages permits the proper use of transient suppression (MOV) devices on the 480V line. Features include high dv/dt and zero voltage switching.

General Specifications
Control Signal Range: "WD" —4 to 32 VDC; "CA" —90 to 140 VAC. **Input Current @ 5 VDC:** 15 mA max. **Isolation Voltage 50/60 Hz:** 7000 VRMS. **Operating Temperature Range:** -30°C to 80°C. 1.2 KV Blocking Voltage.

Stock No.	Mfr.'s Type	Line VAC (46-63 Hz)	Max. Load Current, Amps (RMS)	One-Cycle Surge, Amps (PK)	EACH
682-0047	H12CA4850	48-660	50	625	**54.69**
682-0048	H12CA4890	48-660	90	1200	**72.83**
682-0051	H12WD4850	48-660	50	625	**53.63**
682-0052	H12WD4890	48-660	90	1200	**71.40**

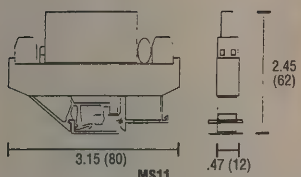


Series CTA/CTD Solid State Relays

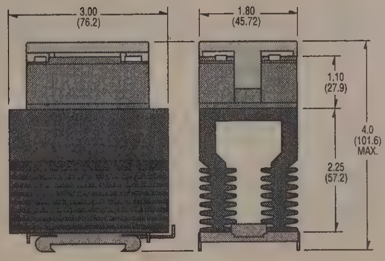
- ► TRIAC Output
- ► Cost Effective
- ► Industry Standard Package

Stock No.	Mfr.'s Type	Line Voltage Range (Vrms)	Load Current Range (Arms)	Off-State Leakage (mA)	Control Voltage Range	Input Current @ 5 VDC/120 VAC (Typical)	Surge Current 1-Cycle (Apk)	EACH
682-2395	CTD2410	48-280	0.25-10	10	4-28 VDC	7 mA	100	**20.05**
682-2396	CTD2425	48-280	0.25-25	10	4-28 VDC	7 mA	250	**20.85**
682-3064	CTA2410	48-280	0.25-10	10	90-280 VAC	8 mA	100	**22.96**
682-3065	CTA2425	48-280	0.25-25	10	90-280 VAG	8 mA	250	**27.42**

DIN Rail Mount Solid State Relays



MS11

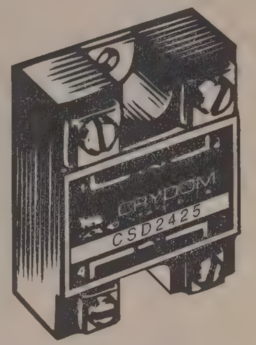


MS2

Stock No.	Mfr.'s Type	Input Range (VDC)	Load Current Range (Arms)	Load Voltage Range	Transient Voltage (Vpk)	Surge Current 1-Cycle (Apk)	Off-State Current (mA)	EACH
682-3066	MS2-D2420	3.0-32	.04-20	48-280 VAC	600	625	10.0	**52.38**
682-3067	MS2-D2430	3.0-32	.04-30	48-280 VAC	600	625	10.0	**60.97**
682-3068	MS11-CX240D5	4.5-15	.06-5.0	12-280 VAC	600	250	0.1	**23.07**
682-3069	MS11-DMP6301A	3.0-6	.02-3.0	5-60 VDC	—	5 A*	0.1	**24.15**

*1 second.

10 to 75 Amp, 120-240V DC Controlled, AC Output SSRs Feature IC Firing Circuits To Boost Reliability And Performance



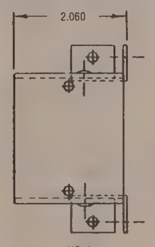
Combining integrated circuit technology and the proven Crydom series 1 high power dissipation output system results in superior SSRs. The reduction of control circuit components from 22 to 3 greatly increases life and reliability.

SCR Output

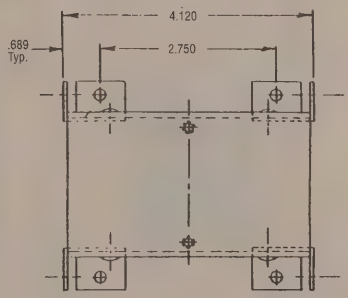
Stock No.	Mfr.'s Type	Input Control Voltage	Output Load Current	Ratings Volts (RMS)	EACH
682-0053	CSD2410	3.5-15VDC	10A	120/240	**23.19**
682-0054	CSD2425	3.5-15VDC	25A	120/240	**29.55**
682-0055	CSD2440	3.5-15VDC	40A	120/240	**32.84**
682-0056	CSD2450	3.5-15VDC	50A	120/240	**33.95**
682-0057	CSD2475	3.5-15VDC	75A	120/240	**49.76**
682-0058	CSE2410	15.0-32VDC	10A	120/240	**23.19**
682-0059	CSE2425	15.0-32VDC	25A	120/240	**29.55**
682-0060	CSE2450	15.0-32VDC	50A	120/240	**33.95**
682-2393	CSE-2475	15.0-32VDC	75A	120/240	**49.76**
682-2394	CSE-2490	15.0-32VDC	90A	120/240	**54.85**
682-2395	CTD-2410*	3.5-15VDC	10A	120/240	**20.05**
682-2396	CTD-2425*	3.5-15VDC	25A	120/240	**20.85**

*Triac output.

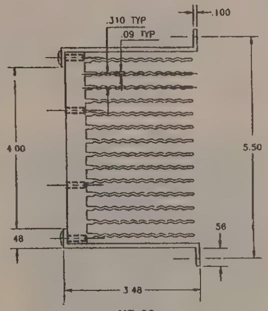
Heatsinks and Covers



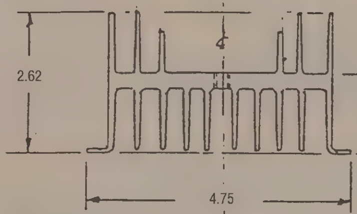
HS-1



HS-2



HE-90



HE-54

682-0063. HS-1. Heatsink — Up to 10 A........EACH 16.60
682-0064. HS-2. Heatsink — Up to 25 A........EACH 17.93
682-0066. HE-54. Heatsink — Up to 50 A........EACH 26.31
682-2392. HE-90. Heatsink — Up to 90 A........EACH 74.16
682-1050. KS100. Cover — Fits Series 1 Type Relays........EACH 3.03
682-1051. KS300. Cover — Fits Series 53TP Three Phase Relays........EACH 4.83

5 Thru 25 Amp/120 and 240 VAC—Triac AC Output Solid State Relays

Crydom Triac SSRs are quality-made devices designed for general purpose switching applications where performance requirements are less demanding than those offered by SCR output types. **General Specifications. Control Signal Range:** DC Input — 3 to 32 VDC; AC Input — 90 to 280 VAC. **Input Current:** DC Input — 4 mA @ 5 VDC; AC Input — 2 mA @120 VAC. **Isolation Voltage:** DC Input — 4000 VRMS; AC Input — 4000 VRMS. **Oper. Temp. Range:** DC Input — –30°C to 80°C; AC Input — –30°C to 80°C.

DC Control Models—Triac Output

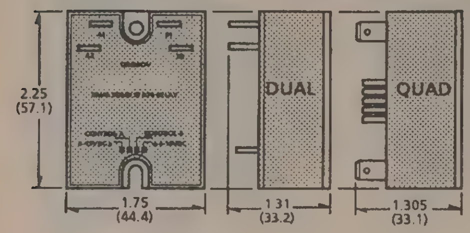
Stock No.	Mfr.'s Type	Line VDC	Max. Load Current @ 40°C Amps	One-Cycle Surge, Amps (PK)	EACH
682-0077	TD1210	24-140	10	100	**16.34**
682-0078	TD1225*	24-140	25	250	**16.45**
682-0079	TD2410*	48-280	10	100	**17.93**
682-0080	TD2425	48-280	25	250	**18.04**

*Available "Normally Closed" (-B Suffix) (from factory.)

AC Control Models Triac Output

Stock No.	Mfr.'s Type	Line VDC	Max. Load Current @ 40°C Amps	One-Cycle Surge, Amps (PK)	EACH
682-0082	TA1210	24-140	10	100	**20.21**
682-0083	TA1225	24-140	25	250	**22.38**
682-0084	TA2410	48-280	10	100	**20.11**
682-0085	TA2425	48-280	25	250	**24.03**

Dual/Quad Relays—120/240 Volt, AC Output



- ► Industry Standard Package
- ► UL, CSA Approved
- ► Zero Voltage and Random Turn-on Switching

Available Options: -10 Random Turn-on, Phase Controllable. **Operating Temperature Range:** –30°C to 80°C. **Isolation Voltage:** Dual — 4000 Vrms; Quad — 2500 Vrms.

Dual

Stock No.	Mfr.'s Type	Line Voltage Range (Vrms)	Load Current Range (Arms)	Control Voltage Range (Vdc)	Must Operate Voltage (Vdc)	Must Release Voltage (Vdc)	Surge Current 1-Cycle (Apk)	EACH
682-2397	D2425D	24-280	.15-25	4-15	4.0	1.0	250	**55.59**
682-2398	D2440D	24-280	.15-40	4-15	4.0	1.0	625	**62.70**

Quad

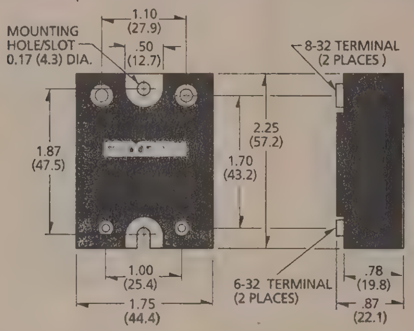
Stock No.	Mfr.'s Type	Line Voltage Range (Vrms)	Load Current Range (Arms)	Control Voltage Range (Vdc)	Must Operate Voltage (Vdc)	Must Release Voltage (Vdc)	Surge Current 1-Cycle (Apk)	EACH
682-2399	TD2420Q	24-280	.15-20	4-15	4.0	1.0	250	**81.67**

7.0 to 40 Amp, 100 to 500 VDC CMOS—DC Input Solid State Relay

This new Crydom series of DC power SSRs incorporates a power MOSFET as the output device in the classics Crydom package. The input can be driven from most logic circuits, requiring less than 1.6 mA at 5 VDC. **General Specifications. Control Signal Range:** 3.5 to 32 VDC. **Input Current @ 5 VDC:** 1.6 mA max. **Isolation voltage 50/60 Hz:** 2500 VRMS. **Operating Temperature Range:** –30°C to 80°C.

Stock No.	Mfr.'s Type	Line VDC	Max. Load Current @ 40°C Amps	One-Cycle Surge, Amps (PK)	EACH
682-0067	D1D07	0-100	7.0	15	**44.34**
682-0068	D1D12	0-100	12.0	28	**49.02**
682-0069	D1D20	0-100	20.0	42	**53.26**
682-0070	D1D40	0-100	40.0	106	**60.73**
682-0071	D2D07	0-200	7.0	22	**51.24**
682-0072	D2D12	0-200	12.0	27	**59.09**
682-0073	D4D07	0-400	7.0	17	**59.09**
682-0074	D4D12	0-400	12.0	36	**81.10**
682-0075	D5D07	0-500	7.0	19	**66.52**
682-0076	D5D10	0-500	10.0	29	**87.74**

Series DC60 — 3 - 7 Amp, DC Output, 60 VDC



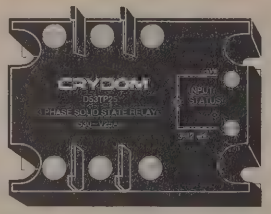
- ► Industry Standard Package
- ► Cost Effective

Bipolar transistor outputs are available in 3, 5, and 7 amp ratings. Cost-effective relays offer 4000 volt isolation and come in Crydom's standard panel-mount package. **Operating Temperature:** –30°C to 80°C. **Isolation Voltage:** 4000 Vrms.

Stock No.	Mfr.'s Type	Line Voltage Range (VDC)	Load Current Range (ADC)	Control Voltage Range (VDC)	Must Operate Voltage (VDC)	Must Release Voltage (VDC)	Surge Current 1-Cycle (Apk)	EACH
682-2322	DC60S3	3-60	.02-3	3-32	3.0	1.0	6.0	**10.98**
682-2324	DC60S5	3-60	.02-5	3-32	3.0	1.0	10.0	**17.19**
682-2326	DC60S7	3-60	.02-7	3-32	3.0	1.0	14.0	**21.49**

Series 53TP

3 Phase Solid State Relays
25A and 50A RMS 530V RMS

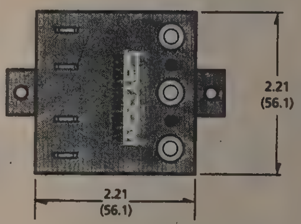


- ► Opto-isolated Input-Output 4000V rms
- ► Electrically Isolated Mounting Base
- ► DC or AC Control Signal Option
- ► Zero cross-over load voltage turn-on standard; instantaneous turn-on option available

The Crydom 53TP range of three phase solid state relays is designed to switch line voltages of up to 530V rms directly to loads such as motors, transformers and heating elements. The use of power semiconductor technology ensures switch-on at close to the zero cross-over point of load voltage thus virtually eliminating the generation of r.f.i. and electrical noise. For switching of highly inductive loads, an instantaneous turn-on option (-10) is available. Power semiconductors generate heat energy during operation and a suitable heatsink must be used to keep the unit within its temperature ratings. The high current surge characteristics allow trouble-free switching of capacitive loads. UL Approved.

Stock No.	Mfr.'s Type	Input	IRMS	VRMS	VPK	EACH
682-1100	A53TP25D	90-280VAC	25A	48-520	1200	**122.00**
682-1101	A53TP50D	90-280VAC	50A	48-530	1200	**133.25**
682-1102	D53TP25D	3-32VDC	25A	48-530	1200	**116.92**
682-1103	D53TP50D	3-32VDC	50A	48-530	1200	**128.15**

Form C Solid State Relay — True Break-Before-Make Device



The Form C Solid State Relay is a true break-before-make device. LEDs indicate the conducting side of the relay. Opto isolation, zero crossover and integral heatsink are standard. Units available with either DC or AC output.

AC Output

Stock No.	Mfr.'s Type	Line Voltage Range (VDC)	Load Current Range (ADC)	Off-State Leakage (mA)	Input Signal (VDC)	Constant Supply (VDC)	Surge Current 1-Cycle (Apk)	EACH
682-3044	D2415-C	90-300	0.1-15	5	4.7-29 VDC	4.7-29 VDC	150	**83.33**
682-3045	D2440-C	90-300	0.2-40	10	4.7-29 VDC	4.7-29 VDC	625	**117.16**
682-3046	A2415-C	90-300	0.1-15	5	Dry Closure	90-140 Vrms	150	**89.56**
682-3047	A2440-C	90-300	0.2-40	10	Dry Closure	90-140 Vrms	625	**123.40**

DC Output

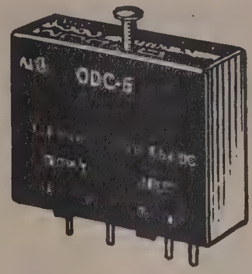
Stock No.	Mfr.'s Type	Line Voltage Range (VDC)	Load Current Range (ADC)	Off-State Leakage (mA)	Input Signal (VDC)	Constant Supply (VDC)	EACH
682-3048	DC300S6-C	2-300	.03-6	2	4.7-29	4.7-29	**109.70**
682-3049	DC80S15-C	2-80	.05-15	5	4.7-29	4.7-29	**91.21**
682-3050	DC300S15-C	2-300	.05-15	5	4.7-29	4.7-29	**133.69**

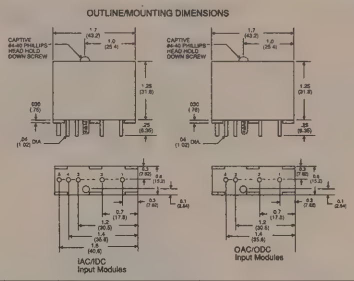
Solid State Relays and Input-Output Modules

CRYDOM
COMPANY

Series IAC/IDC/OAC/ODC

Solid State Opto-Isolated I/O Modules




OUTLINE/MOUNTING DIMENSIONS
CAPTIVE #4-40 PHILLIPS HEAD HOLD DOWN SCREW
IAC/IDC Input Modules
OAC/ODC Input Modules

- ► Color-Coded by Function
- ► 4000 Vrms Optical Isolation
- ► Industry Standard Package and Pin-Out
- ► High Transient Noise Immunity
- ► Series Operation Compatibility
- ► UL Recognized, CSA Certified, SEV Approved Types Available

5 VDC Models

Stock No.	Mfr.'s Type	Voltage Type	(Output) Load Current Over Load Volt.	(Input) Voltage Range	(Input) Max Load Current	EACH
682-1000	IAC-5	AC,DC/IN	.1-100mA@.4-30VDC	90-140VAC	10mA	9.74
682-1002	IAC-5A	AC,DC/IN	.1-100mA@.4-30VDC	180-280VAC	7mA	10.24
682-1004	IDC-5	DC/IN	.1-100mA@.4-30VDC	10-36VDC	13mA	9.74
682-1006	IDC-5B	DC/IN	.1-100mA@.4-30VDC	4-16VDC	20mA	13.91
682-1008	IDC-5D	DC/IN	.1-100mA@.4-30VDC	3-32VDC	12mA	9.12
682-1010	OAC-5	AC/OUT	.02-3A@12-280VAC	3-6VDC	20mA	9.74
682-1012	OAC-5A	AC/OUT	.02-3A@12-280VAC	3-6VDC	20mA	10.24
682-1014	ODC-5	DC/OUT	.02-3A@5-60VDC	3-6VDC	14mA	9.74
682-1016	ODC-5A	DC/OUT	.02-1A@10-200VDC	3-6VDC	14mA	15.07

15 VDC Models

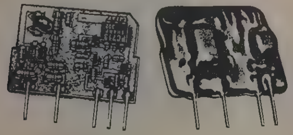
Stock No.	Mfr.'s Type	Voltage Type	(Output) Load Current Over Load Volt.	(Input) Voltage Range	(Input) Max Load Current	EACH
682-1018	IAC-15	AC,DC/IN	.1-100mA@.4-30VDC	90-14VAC	—	10.20
682-1020	IAC-15A	AC,DC/IN	.1-100mA@.4-30VDC	180-280VAC	—	10.20
682-1022	IDC-15	DC/IN	.1-100mA@.4-30VDC	10-36VDC	—	10.20
682-1024	OAC-15	AC/OUT	.02-3A@12-280VAC	9-18VDC	—	10.20
682-1026	OAC-15A	AC/OUT	.02-3A@12-280VAC	9-18VDC	—	10.20
682-1028	ODC-15	DC/OUT	.02-3A@5-60VDC	9-18VDC	—	10.20
682-1030	ODC-15A	DC/OUT	.02-1A@10-200VAC	9-18VDC	—	15.07

24 VDC Models

Stock No.	Mfr.'s Type	Voltage Type	(Output) Load Current Over Load Volt.	(Input) Voltage Range	(Input) Max Load Current	EACH
682-1032	IAC-24	AC,DC/IN	.1-100mA@.4-30VDC	90-140VAC	10mA	10.20
682-1034	IDC-24	DC/IN	.1-100mA@.4-30VDC	10-36VDC	13mA	10.20
682-1036	OAC-24	AC/OUT	.02-3A@12-280VAC	18-28VDC	17mA	10.20
682-1038	OAC-24A	AC/OUT	.02-3A@12-280VAC	18-28VDC	17mA	10.20
682-1040	ODC-24	DC/OUT	.02-3A@5-60VDC	18-28VDC	12mA	10.20
682-1042	ODC-24	DC/OUT	.02-1A@10-200VAC	18-28VDC	12mA	9.74

Series DMP

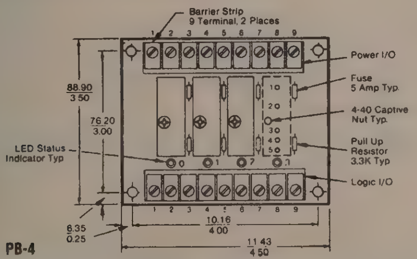
AC And DC Input/Output Modules 3 Amps, 30, 60 VDC And 280 VAC



Electrically identical to Series 6 models. Packaged in a hard, skin-tight epoxy conformal coating for excellent environmental protection and fast heat transfer. Pin-out matches Series. 6.

Stock No.	Mfr.'s Type	Module Type	Input Current vs. Voltage	Maximum Load Voltage	EACH
682-0132	DMP6101A	DC/IN	32mA @ 32VDC	30VDC	9.23
682-0133	DMP6201A	AC/IN	6mA @ 230VAC	30VDC	9.45
682-0134	DMP6202A	AC/IN	6mA @ 240VAC	30VDC	10.45
682-0135	DMP6301A	DC/OUT	15mA @ 5VDC	60VDC	9.55
682-0136	DMP6402A	AC/OUT	15mA @ 5VDC	280VAC	10.45

I/O Module Mounting Boards



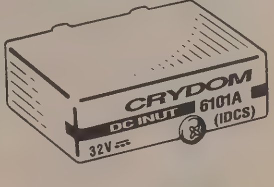
PB-4

These mounting boards accept I/O modules in any combination of input or output types. Modules are easily and quickly inserted without disturbing field wiring. Features included LED status indicator.

Stock No.	Mfr.'s Type	Description	EACH
682-3041	PB-4 (MS-4)	4 Module Mounting Board with Terminal Block Connections	30.30
682-3042	PB-4H (MS-4H)	4 Module Mounting Board with Edge Connector and Header	33.08
682-3043	PB-8H (MS-8H)	8 Module Mounting Board with Edge Connector and Header	59.20

Series 6

AC And DC Microprocessor Input/Output Modules—3.5 Amps, 60 VDC, 120 and 240 VAC



For electrically clean, photo-isolated, noise-free interfacing between logic level programmable controllers, microprocessors and computerized machine controls and power level loads. Input modules accept power level signals and convert them to logic level signals. Output modules accept logic level signals to switch AC or DC loads to 3.5 Amps.

General Specifications—All Models. Dielectric (Input/Output): 4000 VRMS. **Isolation Resistance (Input/Output) @ 500 V:** 10^{10} Ohms. **Capacitance (Input/Output):** 8.0pf. **Operating Temperature Range:** –40°C to 80°C.

Standard Input/Output Modules (5 Volt Models)

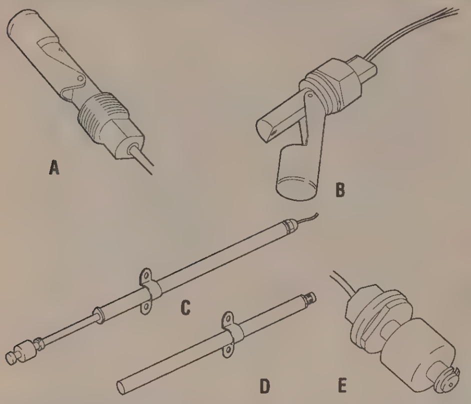
Stock No.	Mfr.'s Type	Type	Input Current vs. Voltage	Maximum Load Voltage	Maximum Load Current	EACH
682-0117	6101A*	DC/IN	7MA @ 32VDC	30VDC	25mA @ 80°C	11.25
682-0118	6201A*	AC/IN	6MA @ 120VAC	30VDC	25mA @ 80°C	10.34
682-0119	6202A*	AC/IN	6MA @ 240VAC	30VDC	25mA @ 80°C	12.14
682-0120	6301A*	DC/OUT	15MA @ 5VDC	60VDC	3ADC @ 45°C	11.45
682-0121	6401A*	AC/OUT	15MA @ 5VDC	140VAC	3A RMS @ 45°C	10.76
682-0122	6402A*	AC/OUT	15MA @ 5VDC	280VAC	3A RMS @ 45°C	11.94
682-0123	6102	DC/IN	6mA @ 180VDC	30VDC	25mA @ 80°C	10.76
682-0124	6200	AC/IN	6mA @ 24VAC	30VDC	25mA @ 80°C	14.33
682-0125	6302	DC/OUT	12mA @ 5VDC	200VDC	1.5A @ 45°C	17.51

*In Compliance With NEMA 2-230 (Noise Immunity).

Buffered Output Modules

Stock No.	Mfr.'s Type	Voltage	Type	Input Current vs. Voltage 5 Volt Models	Maximum Load Voltage	Maximum Load Current	EACH
682-0126	6311	5V	DC/OUT	75µA @ 0.8VDC*	60VDC	3.5ADC @ 45°C	17.98
682-0127	6321	5V	DC/OUT	75µA @ 2.4VDC**	60VDC	3.5ADC @ 45°C	18.35
682-0128	6411	5V	AC/OUT	75µA @ 0.8VDC*	140VAC	3.5A RMS @ 45°C	17.88
682-0129	6412	5V	AC/OUT	75µA @ 0.8VDC*	280VAC	3.5A RMS @ 45°C	18.46
682-0130	6421	5V	AC/OUT	75µA @ 2.4VDC**	140VAC	3.5A RMS @ 45°C	18.39
682-0131	6422	5V	AC/OUT	75µA @ 2.4VDC**	280VAC	3.5A RMS @ 45°C	17.77

*Sink Current (Non-Inverting). **Source Current (Inverting).



Liquid Level Sensors/Float Switches

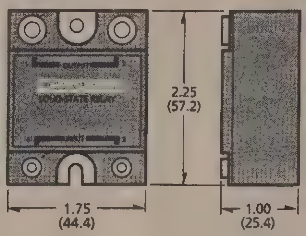
- ► Reliable Reedswitch Contacts
- ► Rugged Design
- ► Simple to Mount and Use

A range of reedswitch/magnet operated liquid level sensors suitable for a host of applications. Vertical or horizontal mounting styles are offered in a variety of plastics to suit most industrial applications. GFS Nylon is rated from –4°F to +167°F and suitable for use in organic chemicals, oils, fuel and diesel. GFS Polypropylene is rated –4°F to +212°F and suited for use in hot water applications. Polysulfone, rated from 14°F to +185°F is manufactured in FDA approved material and recommended for use in food grade applications. On vertical devices NO or NC operation may be achieved by removing the circlip and reversing the float chamber; on horizontal devices, simply rotate through 180°.

Stock No.	Mfr.'s Type	Fig.	Material	Contact Form	VA Rating	Switching Voltage AC	Switching Voltage DC	Switching Current Max.	EACH
682-3001	RSF84Y100R	A	GFS Polypropylene	A15	15	500	1000	1.00 A	**20.09**
682-3002	RSF85Y100R	A	Polysulfone	A15	15	500	1000	1.00 A	**18.70**
682-3003	RSF43Y100RF	B	GFS Nylon	A15	15	500	1000	1.00 A	**25.29**
682-3005	RSF64/EXT	C	Polyphenylene Sulphide (PPS)	A15	15	250	500	1.00 A	**47.38**
682-3006	EXT1	D	PVC	Extensions Tube Only — RSF66 Series					**14.06**
682-3007	RSF53Y100RC	E	GFS Nylon	A15	15	500	1000	1.00 A	**21.27**
682-3008	RSF54T100RC	E	GFS Polypropylene	A15	15	500	1000	1.00 A	**24.10**

Series PCV

- ► Proportional Load Control: 0%-100%

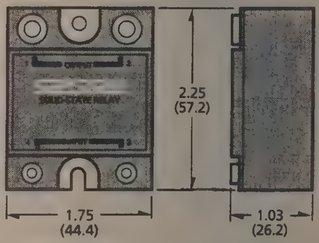


These proportional controllers provide a simple but improved method of speed, heat and universal power control over methods currently available. Requires no calibration. **Line Voltage Range at 60 Hz:** 100-240 Vrms. **Control Voltage Range:** 2-10 VDC. **Response Time:** 8 ms.

Stock No.	Mfr.'s Type	Load Current Range (Arms)	Off-State Leakage (mA)	Surge Current 1-Cycle (Apk)	EACH
682-3038	10PCV2415	.05-15	10	150	**66.95**
682-3039	10PCV2425	.05-25	15	250	**74.16**

Series RPC Proportional Controllers

- ► Uses Standard Potentiometers
- ► Manual Power Control



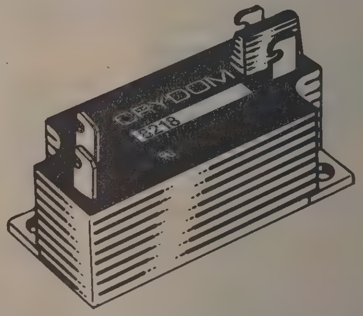
The R family of proportional controllers provide a stable yet less expensive method of controlling power. An inexpensive potentiometer connected to the input provides the proportional control. All models come with KS100 safety cover.

Stock No.	Mfr.'s Type	Line Voltage Range (Vrms, 60 Hz)	Load Current Range (Arms)	Off-State Leakage (mA)	Potentiometer Resistance (Ω)	Potentiometer Wattage	Surge Current 1-Cycle (Apk)	EACH
682-3051	RPC1215	90-130	.07-15	10	150 K	1 W	150	**50.26**
682-3052	RPC1225	90-130	.08-25	10	150 K	1 W	250	**65.05**
682-3055	RPC2425	200-240	.08-25	7	1 Meg	½ W	250	**68.08**
682-3058	RPC4825	400-480	.08-25	3	1 Meg	½ W	250	**76.89**

Series 2—8 Amps, 120 and 240 VAC AC Output, Panel Mount Solid-State Relays

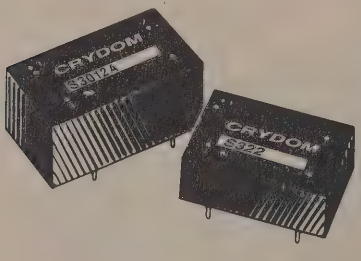
General Specifications. Control Signal Range: 3.5 to 8 VDC. **Control Signal Range "221C":** 3.5 to 7 VDC. **Must Operate Voltage:** 3.5 VDC max. **Must Release Voltage:** 1 VDC min. **Must Operate Current:** 12 mA max. **Isolation Voltage:** 2500 VAC. **Operating Temperature Range:** –30° to 80°C. **Snubber:** Internal.

The Crydom Series 2 solid-state relays combine small size, zero voltage switching and high current rating in a package designed for heat sink or panel mounting. Standard 0.187" push-on terminals allow quick connection and are positioned to provide maximum isolation between control and power circuits.



Stock No.	Mfr.'s Type	Line VAC (47-63 Hz)	Max. Load Current @ 40°C Amps (RMS)	One-Cycle Surge Amps (PK)	EACH
682-0100	S218	20-140	8.00	120	**29.86**
682-0101	S228	40-280	8.00	120	**31.46**
682-0103	S228C	24-280	8.00	120	**26.42**

Case Style 30A



Case Style 3

Series 3

AC Output PC Board Mount Solid-State Relays 0.3 Amps, 120 and 240 VAC
Designed for PCB applications. Units require only 1 sq. in. space on boards. Overall height of 0.45" on case 3 allows spacing on 0.5" centers. High current rating. Zero voltage switching.

General Specifications. Control Signal Range: 3.5 to 8 VDC. **(Models S3013A/S3023A:** 3.5 to 18 VDC**). Must Operate Voltage:** 3.5 VDC max. **Must Release Voltage:** 1 VDC min. **Isolation Voltage:** 2500 VAC. **(Models S3013A/S3023A:** 4000 VAC**). Operating Temperature Range:** –30°C to 80°C.

Stock No.	Mfr.'s Type	Line VAC (47-63 Hz)	Max. I @40°C A (RMS)	One-Cycle Surge Amps (PK)	Internal Snubbers	Case Style	EACH
682-0108	S312	20-140	2.0	55	No	3	**24.77**
682-0109	S3012A	20-140	2.0	55	Yes	30A	**23.61**
682-0110	S3013A	20-140	3.0	55	Yes	30A	**26.95**
682-0111	S322	40-280	2.0	55	No	3	**23.39**
682-0112	S3022A	40-280	2.0	55	Yes	30A	**25.73**
682-0113	S3023A	48-280	3.0	55	Yes	30A	**28.22**

Solid-State Relay Handbook

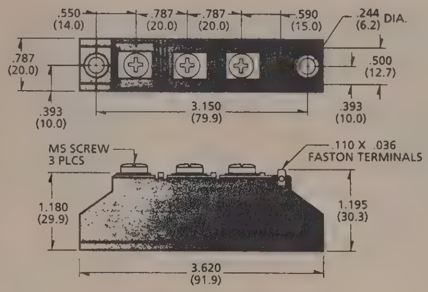
This handbook is an invaluable source of information for the engineer, technician, or hobbyist who is now or soon will be working with solid-state relays.

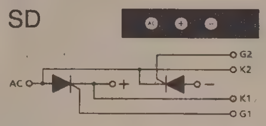
682-2000. Model HDBK-899 .... EACH 21.17

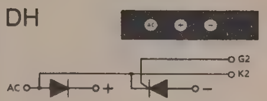
Series F18: 25-90 Amp Diode and SCR/Diode Modules

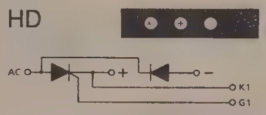
All dimensions are in inches (millimeters)

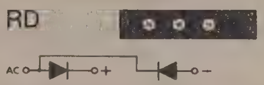
Stock No.	Mfr.'s Type	Average Output Current per Device: Id (Amps)	Repetitive Peak Reverse Voltage: Vrrm/AC Line	Schematic	Package	EACH
722-1500	F1842SD1200	40	1200/480 Vac	SD	F18	40.65
722-1510	F1842SD600	40	600/240 Vac	SD	F18	31.14
722-1520	F1857D1200	55	1200/480 Vac	D	F18	33.34
722-1530	F1857DH1200	55	1200/480 Vac	DH	F18	42.01
722-1540	F1857DH600	55	600/240 Vac	DH	F18	32.22
722-1550	F1857HD1200	55	1200/480 Vac	HD	F18	42.01
722-1560	F1857HD600	55	600/240 Vac	HD	F18	32.22
722-1570	F1857RD1200	55	1200/480 Vac	RD	F18	36.17
722-1580	F1857RD600	55	600/240 Vac	RD	F18	30.83
722-1590	F1857SD1200	55	1200/480 Vac	SD	F18	43.42
722-1600	F1857SD600	55	600/240 Vac	SD	F18	34.44
722-1610	F1892D1200	90	1200/480 Vac	D	F18	36.96
722-1620	F1892D600	90	600/240 Vac	D	F18	34.46
722-1630	F1892DH1200	90	1200/480 Vac	DH	F18	62.83
722-1640	F1892DH600	90	600/240 Vac	HD	F18	53.02
722-1650	F1892HD1200	90	1200/480 Vac	HD	F18	62.83
722-1660	F1892HD600	90	600/240 Vac	HD	F18	53.02
722-1670	F1892RD1200	90	1200/480 Vac	RD	F18	48.29
722-1680	F1892RD600	90	600/240 Vac	RD	F18	36.64
722-1690	F1892SD1200	90	1200/480 Vac	SD	F18	67.27
722-1700	F1892SD600	90	600/240 Vac	SD	F18	57.02

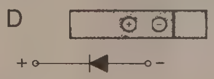






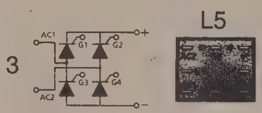


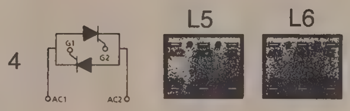


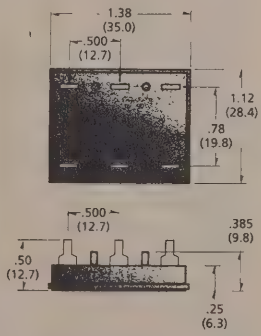


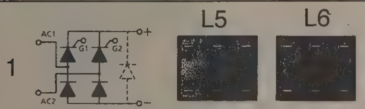
Series L: 15-42.5 Amp SCR/Diode Modules

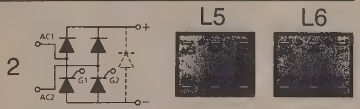
Stock No.	Mfr.'s Type	Max DC Output Current: Id (Amps)	Repetitive Peak Reverse Voltage: Vrrm/AC Line	Schematic	Package	EACH
722-3248	L513F	25	280/800	1	L	23.48
722-3250	L514F	25	480/1200	1	L	25.86
722-4130	L522F	25	240/600	2	L	19.96
722-4131	L542	25	240/600	3	L	30.52
722-4132	L612F	42.5	240/600	1	L	31.24
722-4136	L622F	42.5	240/600	2	L	31.24
722-4138	L652	42.5	240/600	4	L	29.73





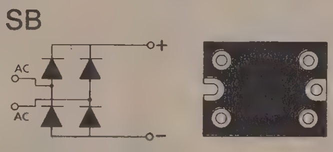


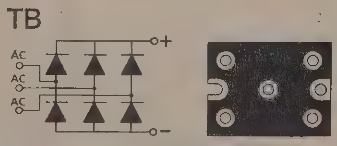


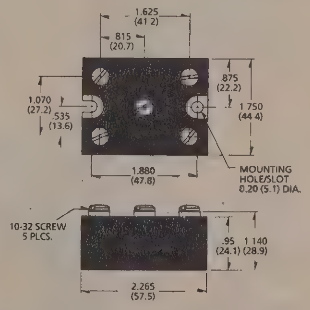


Series M50: 60-100 Amp Diode Modules

Stock No.	Mfr.'s Type	Max DC Output Current: Id (Amps)	Repetitive Peak Reverse Voltage: Vrrm/AC Line	Schematic	Package	EACH
722-4072	M50100SB1200	100	1200/480 Vac	SB	M50	55.03
722-4068	M50100SB600	100	600/240 Vac	SB	M50	49.23
722-4076	M50100TB1200	100	1200/480 Vac	TB	M50	66.55
722-4074	M50100TB600	100	600/240 Vac	TB	M50	61.03
722-4058	M5060SB1200	60	1200/480 Vac	SB	M50	34.11
722-4056	M5060SB600	60	600/240 Vac	SB	M50	30.08
722-4064	M5060TB1200	60	1200/480 Vac	TB	M50	44.15
722-4062	M5060TB600	60	600/240 Vac	TB	M50	40.18

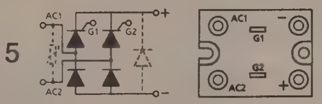


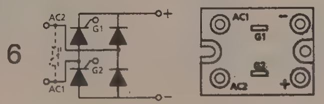


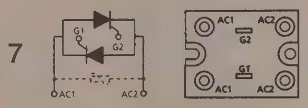


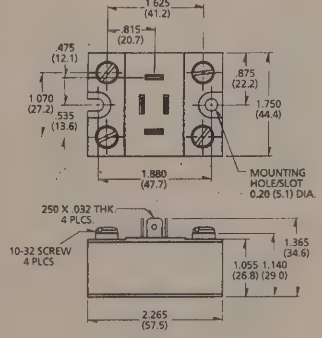
Series M50: 50-100 Amp SCR/Diode Modules

Stock No.	Mfr.'s Type	Max DC Output Current: Id (Amps)	AC Line Input Voltage: Vrms/Vrrm	Schematic	Package	EACH
722-4104	M5010045V	100	480/1200	7	M50	99.53
722-4078	M505012F	50	240/600	5	M50	78.26
722-4080	M505012FV	50	240/600	5	M50	79.75
722-4082	M505015F	50	480/1200	5	M50	115.50
722-4086	M505015FV	50	480/1200	5	M50	110.79
722-4094	M505032	50	240/600	6	M50	59.43
722-4096	M505035	50	480/1200	6	M50	82.65
722-4100	M505042	50	240/600	7	M50	42.28
722-4101	M505045	50	480/1200	7	M50	57.05







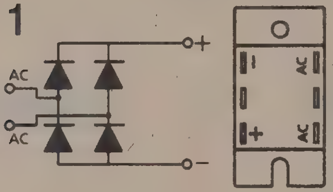


Series B48-2: 35-50 Amp Diode Modules

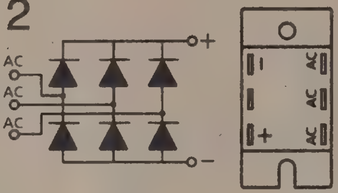
All dimensions are in inches (millimeters)

Stock No.	Mfr.'s Type	Max DC Output Current: Id (Amps)	Repetitive Peak Reverse Voltage: Vrrm/AC Line	Schematic	Package	EACH
722-3058	B483C-2	35	600/240 Vac	1	B-2	22.43
722-4010	B483F-2	35	1200/480 Vac	1	B-2	25.59
722-3062	B485C-2	50	600/240 Vac	2	B-2	25.85
722-0055	B485F-2	50	1200/480 Vac	2	B-2	31.30

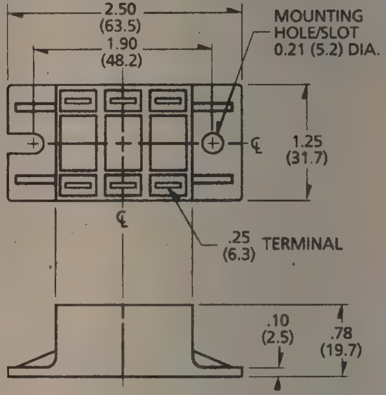
1



2



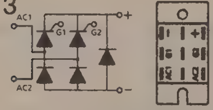
B48-2



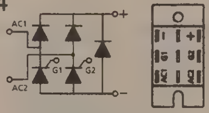
Series B-2T and B-2: 25-42.5 Amp SCR/Diode Modules

Stock No.	Mfr.'s Type	Max DC Output Current: Id (Amps)	AC Line Input Voltage: Vrms/Vrrm	Schematic	Package	EACH
722-0065	B512F-2	25	240/600	3	B-2	23.47
722-3272	B512F-2T	25	240/600	3	B-2T	23.47
722-4014	B512FS-2T	25	240/600	3	B-2T	36.67
722-4020	B514F-2T	25	480/1200	3	B-2T	32.09
722-4022	B514FS-2T	25	480/1200	3	B-2T	49.34
722-4024	B522F-2T	25	240/600	4	B-2T	23.47
722-0075	B522FS-2	25	240/600	4	B-2	25.06
722-4026	B522FS-2T	25	240/600	4	B-2T	36.67
722-4030	B532-2T	25	240/600	5	B-2T	21.89
722-4032	B542-2T	25	240/600	6	B-2T	29.02
722-4034	B552-2T	25	240/600	7	B-2T	21.89
722-4038	B554-2T	25	480/1200	7	B-2T	29.37
722-4040	B612F-2T	42.5	240/600	3	B-2T	32.45
722-4044	B622F-2T	42.5	240/600	4	B-2T	32.45
722-4048	B652-2T	42.5	240/600	7	B-2T	25.06

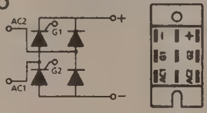
3



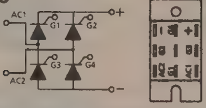
4



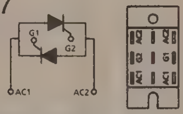
5



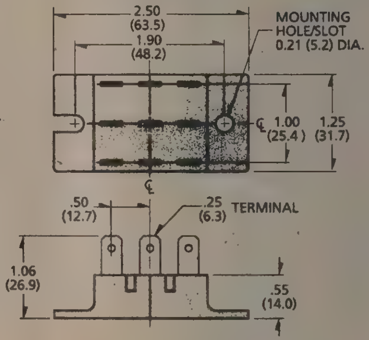
6



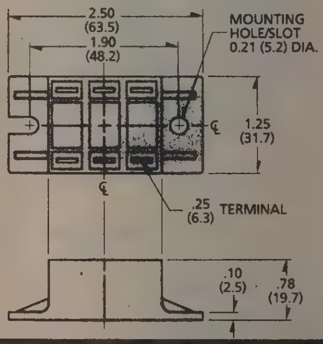
7



B-2T

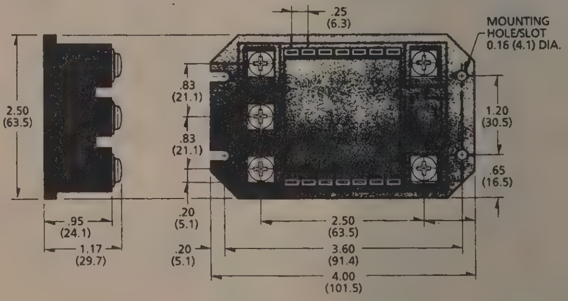


B-2

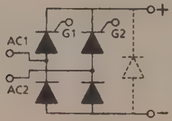


Series EF: 50-170 Amp Diode and SCR/Diode Modules

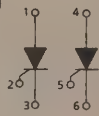
Stock No.	Mfr.'s Type	Max DC Output Current: Id (Amps)	Repetitive Peak Reverse Voltage: Vrrm/AC Line	Schematic	Package	EACH
722-1000	EFD01FF	50	1200/480 Vac	8	EF	67.10
722-1010	EFE01FF	75	1200/480 Vac	8	EF	82.53
722-1020	EFE13C	75	600/240 Vac	9	EF	52.76
722-1030	EFE15C	75	600/240 Vac	10	EF	62.43
722-1040	EFE15F	75	1200/480 Vac	10	EF	71.21
722-1050	EFE16F	75	1200/480 Vac	11	EF	84.76
722-1060	EFF01FF	100	1200/480 Vac	8	EF	95.73
722-1070	EFG13C	125	600/240 Vac	9	EF	66.82
722-1080	EFG15C	125	600/240 Vac	10	EF	72.10
722-1090	EFG15F	125	1200/480 Vac	10	EF	85.50



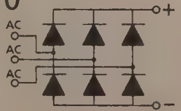
8



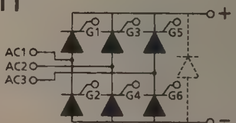
9



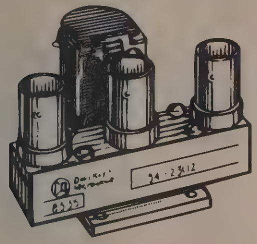
10



11



54 Series SPDT 318 Series

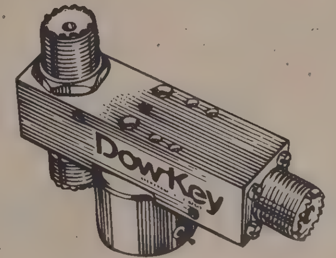


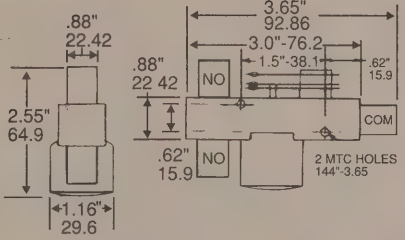
At a 150W maximum power rating, these medium size switches accomplish a variety of switching functions. With BNC, TNC or N connectors on the same plane as the power coil, this switch is suited for mounting in various positions. The switches are manufactured to the requirements of MIL-S-3928 with gold-plated silver contacts and two-bladed construction allowing 50 dB isolation at 50 MHz and 30 dB at 4 GHz.

Stock No.	Mfr.'s Type	Coil Volts	Conn.	Amphenol Model	EACH	
					1-4	5-9
771-6903	54-220201	12	BNC	318-10382-2	**423.83**	**411.43**
771-6904	54-230201	26	BNC	318-10382-3	**423.83**	**411.43**

Series 60 SPDT Remote Coaxial Relays

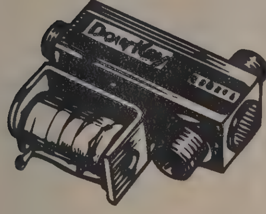
Remotely operated, ruggedly constructed, SPDT coaxial relays for operation to one kW. Specifications following for use in a 50-ohm transmission line. UHF connectors not recommended above 400 MHz. Operating time, 25 ms max. Gold plated silver contacts. *Has two Form C5A, 115VAC auxiliary contacts.

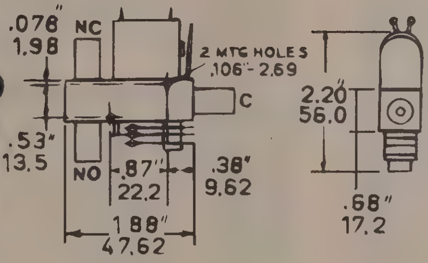




Stock No.	Mfr.'s Type	Coil V	EACH	
			1-4	5-9
771-6780	60-2301	26.0DC	**229.42**	**214.93**
771-6781	60-220142	12.0DC	**246.33**	**236.67**
771-6800	60-2201	12.0DC	**229.42**	**214.93**
771-6802	60-230142	26.5DC	**246.33**	**236.67**
771-6804	60-260142	115.0AC	**246.33**	**236.67**

Series 77
SPDT Remote Coaxial Relay





Medium size, lightweight relay for industrial and less critical military applications. The "T" shaped connector configuration has the common connector at one end and the NO and NC connectors 180° apart at the other end. Operating time 15ms max. BNC connector type except †. Gold plated silver contacts. **Weight:** 3 oz.

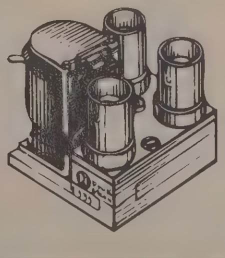
Stock No.	Mfr.'s Type	Coil V	EACH	
			1-4	5-9
771-6742	77-230232*	26.0DC	**220.45**	**209.42**
771-6806	77-2232†	12.0DC	**232.87**	**221.22**
771-6807	77-2302	26.5DC	**194.05**	**184.36**

*One Set Form C Auxiliary Contacts. † F Type Connector.

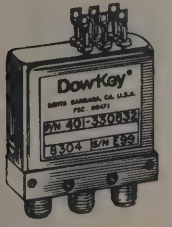
164 Series SPDT 315 Series

The 164 series is a small compact relay that has all connectors mounted opposite the mounting plane. Gold-plated contacts provide excellent low-level RF performance (50 dB isolation, .03 dB insertion loss, VSWR 1.03:1). With good performance to 1 GHz, these switches have many general purpose applications.

Stock No.	Mfr.'s Type	Coil Volts	Conn.	Amphenol Model	EACH	
					1-4	5-9
771-6919	164-2202	12	BNC	321-11064-2	**239.08**	**225.62**
771-6920	164-2302	26	BNC	321-11064-3	**239.08**	**225.62**



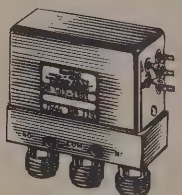
401 Series SPDT



The 401 SPDT switch with SMA connectors operates DC-18 GHz with minimum isolation of 60 dB (85 dB below 1 GHz), maximum VSWR of 1.5:1, and maximum insertion loss of 0.5 dB. Handles up to 200 W CW (25W at 18 GHz). Standard coils on failsafe relays are 12VDC (42 ohms), and 28VDC (260 ohms). Operate time at 20°C is 15mS max. Type 401-2208 is standard. Type 401-230832 has a set of form C indicator contacts. **Dimensions (exclude connectors):** 1.40"H × 1.34"L × .50"W (35.6 × 34.0 × 12.7mm). **Weight:** approximately 2 oz.

Stock No.	Mfr.'s Type	Coil V	EACH	
			1-4	5-9
771-6787	401-2208	12VDC	**225.11**	**210.10**
771-6794	401-2308	28VDC	**225.11**	**210.10**

402 Series SPDT

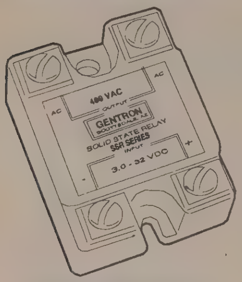


The 402 series SPDT failsafe switches operate DC-12.4 GHz with minimum isolation of 60 dB (85 dB below 1 GHz). **Maximum VSWR:** 1.5:1. **Maximum Insertion Loss:** 0.5 dB. Handles up to 1KW continuous power (100W at 12.4 GHz). Operate time at 20°C is 20mS maximum. N type connectors. Type 402-220132 is with a set of Form C indicator contacts. **Dimensions (excluding connectors):** 2.20"H × 2.64"L × 1.09"W (55.9 × 67.1 × 27.7mm). **Weight:** approximately 9 oz.

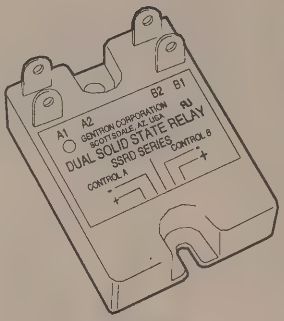
Stock No.	Mfr.'s Type	Coil V	EACH	
			1-4	5-9
771-6789	402-2201	12.0VDC	**397.43**	**370.94**
771-6790	402-2301	26.5VDC	**397.43**	**370.94**
771-6791	402-220132	12.0VDC	**437.79**	**408.62**

Solid State Relays

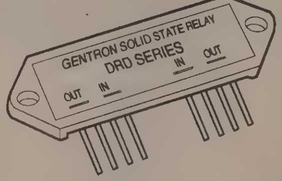
Dimensions (L × W × H) *Indicates No Leads



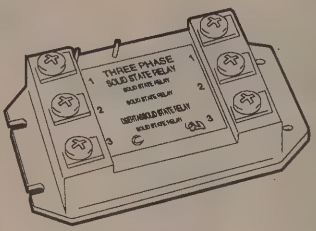
SSR/IGTD/MOSFD/SSRT
1.75 × 2.25 × .75*



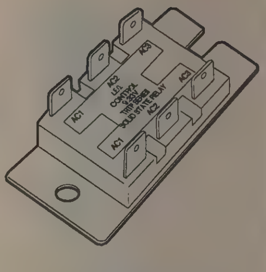
SSRD
1.750 × 2.25 × 0.793*



DRDT
2.469 × 0.746* × 2.0



EFRD/EFRTP
4.0 × 2.5 × 0.95*



TRTP
2.5 × 1.25 × 0.6*

Gentron's solid state relays are designed to handle loads from 10 amps to 250 amps and voltage as high as 1200 volts in standard industry package. Many of the recent developments in superconductor technology such as MOSFETS, IGBTs, and other types of newer devices, offer some interesting choices and performance advantages. Some of the vast advantages are selective on and off control, reduced RFI, alterable switching slopes, reduced off state leakage, higher immunity to false triggering, latch free operation, absolute zero cross firing (with options to switch on voltage or current for either on or off switching) and PWM availability. Available intelligence options are Current Sense™, thermal shutdown, load fault and current limit.

Solid State Relay Single Pole Zero Cross (D) OR NON ZERO CROSS (R) or AC Control (A)-AC OUTPUT-SCR

Stock No.	Mfr.'s Type	VAC	Current	Single Cycle Surge Current	EACH
601-0046	SSR1200480A125	48-530	125	1400	**61.38**
601-0036	SSR1200480A25	48-530	25	250	**46.44**
601-0038	SSR1200480A40	48-530	40	400	**46.66**
601-0040	SSR1200480A55	48-530	55	600	**46.68**
601-0042	SSR1200480A75	48-530	75	800	**61.14**
601-0044	SSR1200480A90	48-530	90	1000	**61.26**
601-0058	SSR1200480D125	48-530	125	1400	**55.76**
601-0048	SSR1200480D25	48-530	25	250	**34.42**
601-0050	SSR1200480D40	48-530	40	400	**35.91**
601-0052	SSR1200480D55	48-530	55	600	**36.05**
601-0056	SSR1200480D90	48-530	90	1000	**55.56**
601-0070	SSR1200480R125	48-530	125	1400	**56.27**
601-0060	SSR1200480R25	48-530	25	250	**34.42**
601-0062	SSR1200480R40	48-530	40	400	**35.90**
601-0064	SSR1200480R55	48-530	55	800	**36.04**
601-0066	SSR1200480R75	48-530	75	1000	**53.00**
601-0068	SSR1200480R90	48-530	90	1400	**53.13**
601-0010	SSR600240A125	24-330	125	250	**59.13**
601-0002	SSR600240A25	24-330	25	400	**44.19**
601-0004	SSR600240A55	24-330	55	800	**44.43**
601-0005	SSR600240A75	24-330	75	1000	**58.89**
601-0006	SSR600240A90	24-330	90	1400	**59.01**
601-0022	SSR600240D125	24-330	125	250	**53.79**
601-0012	SSR600240D25	24-330	25	400	**30.12**
601-0014	SSR600240D40	24-330	40	600	**30.24**
601-0016	SSR600240D55	24-330	55	800	**30.36**
601-0018	SSR600240D75	24-330	75	1000	**53.55**
601-0020	SSR600240D90	24-330	90	1400	**53.67**
601-0034	SSR600240R125	24-330	125	250	**53.78**
601-0024	SSR600240R25	24-330	25	400	**30.12**
601-0026	SSR600240R40	24-330	40	600	**30.24**
601-0028	SSR600240R55	24-330	55	800	**30.36**
601-0030	SSR600240R75	24-330	75	1000	**53.55**
601-0032	SSR600240R90	24-330	90	1400	**53.67**

Solid State Relay Dual Pole Zero Cross (D) or Non Zero Cross (R)-AC OUTPUT-SCR

601-0136	SSRD600240D25	24-330	25	250	**40.30**
601-0137	SSRD600240D40	24-330	40	400	**42.44**
601-0138	SSRD600240R25	24-330	25	250	**40.30**
601-0139	SSRD600240R40	24-330	40	400	**42.44**

Solid State Relay Dual Pole Zero Cross (D) or Non Zero Cross (R) or AC Control (A)-AC OUTPUT-Triac

601-0140	DRDT600240A10	24-330	10	250	**45.11**
601-0141	DRDT600240D10	24-330	10	250	**39.44**
601-0142	DRDT600240R10	24-330	10	250	**39.44**

Solid State Relay Dual Pole Zero Cross (D) or AC Control (A)-AC OUTPUT-SCR

601-0145	EFRD1200480A150	48-530	150	1600	**188.58**
601-0146	EFRD1200480A250	48-530	250	2500	**218.81**
601-0147	EFRD1200480D150	48-530	150	1600	**175.56**
601-0148	EFRD1200480D250	48-530	250	2500	**203.85**
601-0149	EFRD600240A150	24-330	150	1600	**182.73**
601-0150	EFRD600240A250	24-330	250	2500	**212.96**
601-0151	EFRD600240D150	24-330	150	1600	**169.71**
601-0152	EFRD600240D250	24-330	250	2500	**198.00**

Solid State Relay Three Phase Zero Cross (D) or Non Zero Cross (R) or AC Control (A)-AC OUTPUT-SCR

Stock No.	Mfr.'s Type	VAC	Current	Single Cycle Surge Current	EACH
601-0153	TRTP1200480A55	48-530	55	600	**95.90**
601-0154	TRTP1200480D55	48-530	55	600	**87.09**
601-0155	TRTP600240A55	24-330	55	600	**80.58**
601-0156	TRTP600240D55	24-330	55	600	**80.16**

Solid State Relay Three Phase Zero Cross (D) or Non Zero Cross (R) or AC Control (A)-AC OUTPUT-SCR

601-0157	EFRTP1200480A150	48-530	150	1950	**179.28**
601-0158	EFRTP1200480A55	48-530	55	600	**128.03**
601-0159	EFRTP1200480D150	48-530	150	1950	**169.61**
601-0160	EFRTP1200480D55	48-530	55	600	**118.36**
601-0161	EFRTP600240A150	24-330	150	1950	**171.18**
601-0162	EFRTP600240A55	24-330	55	600	**119.90**
601-0163	EFRTP600240D150	24-330	150	1950	**161.43**
601-0164	EFRTP600240D55	24-330	55	600	**110.23**

Solid State Relay DC Input — DC Output — IGBT

601-0184	IGTD1200480R25-L	48-530	25	80	**133.13**
601-0185	IGTD600240R100-L	24-330	100	200	**113.59**
601-0188	IGTD600240R25-L	24-330	25	80	**96.46**

Solid State Relay AC Input — DC Output — IGBT

601-0191	IGTD1200480A50-L	48-530	50	100	**181.69**
601-0193	IGTD600240A100-L	24-330	100	200	**110.74**
601-0195	IGTD600240A50-L	24-330	50	100	**100.09**
601-0196	IGTD600240A25-L	24-330	25	80	**95.70**

Solid State Relay DC Input — AC Output — TRIAC

601-0231	SSRT600240D25	24-330	25	250	**18.65**
601-0232	SSRT600240D10	24-330	10	100	**18.48**
601-0233	SSRT600240R25	24-330	25	250	**18.65**
601-0234	SSRT600240R10	24-330	10	100	**18.48**
601-0235	SSRT600240A25	24-330	25	250	**23.10**
601-0236	SSRT600240A10	24-330	10	100	**22.77**

Solid State Relay Fast Switching DC Input — DC Output — MOSFET

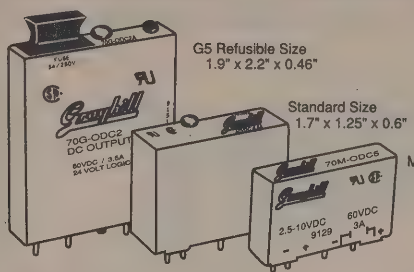
601-0205	MOSFD5050R100-L	3-25	100	400	**122.66**
601-0206	MOSFD100100R100-L	3-100	100	400	**118.24**
601-0207	MOSFD200200R100-L	3-200	100	400	**122.66**

Solid State Relay DC Input — DC Output — MOSFET

601-0197	MOSD5050R100-L	3-25	100	400	**139.73**
601-0198	MOSD100100R100-L	3-100	100	400	**135.38**
601-0199	MOSD200200R100-L	3-200	100	400	**133.73**

Standard, Miniature And G-5 Refusible Input/Output Modules

- ► G5 Refusible Module With Integral LED
- ► UL Recognized And CSA Certified
- ► Meets IEEE 472-1974 And ANSI C37.90 Noise Immunity Standards
- ► Surface Mount Internal Construction Provides Excellent High Thermal Conductivity
- ► Lifetime Warranty For All Standard I/O Module Part Numbers



G5 Refusible Size
1.9" x 2.2" x 0.46"

Standard Size
1.7" x 1.25" x 0.6"

Miniature Size
1.7" x 1.0" x 0.4"

Output Modules – 5 Volt Logic

Standard Size

Stock No.	Mfr.'s Type	Load Voltage	EACH		
			1-9	10-24	25-49
948-7301	70-OAC5	120VAC	12.48	11.35	9.60
948-7304	70-OAC5A	240VAC	13.81	12.56	10.62
948-7307	70-ODC5	60VDC	12.48	11.35	9.60
948-7310	70-ODC5A	200VDC	17.89	16.27	13.76

Miniature Size

Stock No.	Mfr.'s Type	Load Voltage	1-9	10-24	25-49
948-7311	70M-OAC5	120VAC	12.48	11.35	9.60
948-7314	70M-OAC5A	240VAC	13.81	12.56	10.62
948-7317	70M-ODC5	60VDC	12.48	11.35	9.60
948-8016	70M-ODC5A	200VDC	21.01	19.10	16.16

G-5 Size

Stock No.	Mfr.'s Type	Load Voltage	1-9	10-24	25-49
948-8017	70G-OAC5	120VAC	14.46	13.15	11.13
948-8018	70G-OAC5A	240VAC	15.71	14.28	12.08
948-9025	70G-ODC5	60VDC	14.46	13.15	11.13
948-8020	70G-ODC5B*	60VDC	14.46	13.15	11.13

Input Modules – 5 Volt Logic

Standard Size

Stock No.	Mfr.'s Type	Load Voltage	EACH		
			1-9	10-24	25-49
948-7320	70-IAC5	120 VAC	12.48	11.36	9.60
948-7323	70-IAC5A	240VAC	9.69	8.81	7.45
948-7326	70-IDC5	32VDC	12.48	11.35	9.60
948-8021	70-IDC5B**	32VDC	12.48	11.35	9.60
948-7329	70-IDC5NP***	32VDC/VAC	12.48	11.35	9.60

Miniature Size

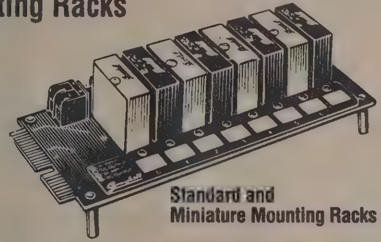
Stock No.	Mfr.'s Type	Load Voltage	1-9	10-24	25-49
948-7332	70M-IAC5	120VAC	12.48	11.35	9.60
948-7335	70M-IAC5A	240VAC	9.13	8.22	7.76
948-7338	70M-IDC5	32VDC	10.61	9.64	8.16
948-8022	70M-IDC5NP***	32VDC/VAC	12.48	11.35	9.60

G-5 Size

Stock No.	Mfr.'s Type	Load Voltage	1-9	10-24	25-49
948-8023	70G-IAC5	120VAC	13.16	11.96	10.12
948-8024	70G-IAC5A	240VAC	13.16	11.96	10.12
948-8025	70G-IDC5	32VDC	13.16	11.96	10.12

* Low Leakage, High Turn On/Off Version. ** High Speed Polarized Input Circuitry. *** Non- Polarized DC or AC Input.

Module Mounting Racks



Standard and Miniature Mounting Racks

Standard Size Module Mounting Rack

Stock No.	Mfr.'s Type †	Size	EACH	
			1-9	10-24
948-7359	70RCK4	4	34.97	31.79
948-8026	70RCK4R*	4	36.80	33.46
948-7360	70RCK8	8	69.32	63.02
948-7361	70RCK16	16	112.24	102.04
948-7543	70RCK16-HS	16	118.99	108.18
948-7544	70RCK16-HL	16	97.22	89.73
948-7362	70RCK24	24	186.46	169.51
948-7547	70RCK24-HS	24	193.84	176.22
948-7548	70RCK24-HL	24	158.37	146.18

Miniature Size Module Mounting Racks

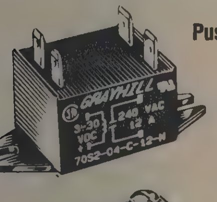
Stock No.	Mfr.'s Type	Size	EACH	
			1-9	10-24
948-8027	70MRCK8-EC	8	75.44	68.58
948-8028	70MRCK8-HS	8	79.74	72.49
948-8029	70MRCK8-HL	8	79.74	72.49
948-7534	70MRCK16-EC	16	104.28	94.80
948-7535	70MRCK16-HS	16	126.36	114.87
948-7537	70MRCK16-HL	16	126.36	114.87
948-7539	70MRCK24-EC	24	203.02	184.56
948-7540	70MRCK24-HS	24	210.39	191.26
948-7541	70MRCK24-HL	24	210.39	191.26
948-8030	70MRCQ24-EC	12 X 12	161.67	146.97
948-8031	70MRCQ24-HS	12 X 12	167.28	152.07
948-8032	70MRCQ24-HL	12 X 12	201.18	182.90
948-8033	70MRCQ32-EC	16 X 16	242.88	220.80
948-8034	70MRCQ32-HS	16 X 16	247.82	225.29
948-8035	70MRCQ32-HL	16 X 16	247.82	225.29

G-5 Refusible Module Mounting Rack

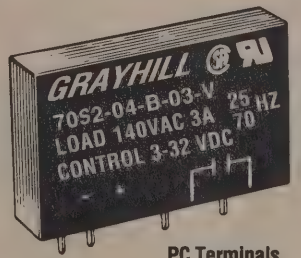
Stock No.	Mfr.'s Type	Size	1-9	10-24
948-8036	70GRCK16-HS	16	118.99	108.18
948-8037	70GRCK16-HL	16	118.99	108.18
948-8038	70GRCK4	4	34.97	31.79

*Accommodates Negative or True Logic. † Suffix: HS Header, short Ejectors; HL-Headers, long Ejectors; EC or none-Edge Connector.

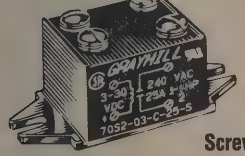
70S2 Series Solid State Relays



Push-on Terminals



PC Terminals



Screw Terminals

- ► UL Recognized, CSA Certified
- ► Miniature Size, High Performance
- ► High Surge Current Protection
- ► Built-in Transient Protection
- ► Zero Crossing Switching
- ► High Thermal Conductivity

Panel Mount Mini-Puck Relays
- ► Fit/Replacement for Hockey Puck Relays
- ► Switch Up to 25A in About 1/2 the Space

PC Mount SIP Relays
- ► Board Area 680 Sq. In.
- ► Switches 3A With No Additional Heat Sink

Push-On Terminal Panel Mount Relays

Stock No.	Mfr.'s Type	Load		Control Range VDC	EACH		
		VAC	A (Max.)		1-9	10-24	25-49
948-7341	70S2-04-B-06-N	120	6	3-30	17.75	16.13	13.65
948-7342	70S2-05-B-06-N	120	6	6-30	17.75	16.13	13.65
948-7343	70S2-04-C-06-N	240	6	3-30	18.67	16.97	14.36
948-7344	70S2-05-C-06-N	240	6	6-30	13.65	12.28	11.60
948-7345	70S2-04-B-12-N	120	12	3-30	18.67	16.97	14.36
948-7346	70S2-05-B-12-N	120	12	6-30	13.65	12.28	11.60
948-7347	70S2-04-C-12-N	240	12	3-30	19.71	17.91	15.16
948-7348	70S2-05-C-12-N	240	12	6-30	16.77	15.25	12.90

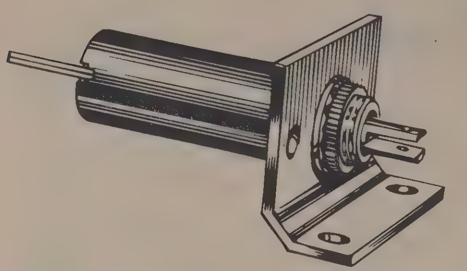
Screw Terminal Panel Mount Relays

Stock No.	Mfr.'s Type	VAC	A (Max.)	Control Range VDC	1-9	10-24	25-49
948-7349	70S2-04-B-06-S	120	6	3-30	19.71	17.91	15.16
948-7350	70S2-05-B-06-S	120	6	6-30	19.71	17.91	15.16
948-7351	70S2-04-B-12-S	120	12	3-30	20.50	18.64	15.77
948-7352	70S2-05-B-12-S	120	12	6-30	20.50	18.64	15.77
948-7353	70S2-03-B-25-S	120	25	3-30	29.17	26.52	22.44
948-7354	70S2-04-C-06-S	240	6	3-30	21.30	19.36	16.38
948-7355	70S2-05-C-06-S	240	6	6-30	17.10	15.54	13.15
948-7356	70S2-04-C-12-S	240	12	3-30	21.30	19.36	16.38
948-7357	70S2-05-C-12-S	240	12	6-30	18.12	16.47	13.93
948-7358	70S2-03-C-25-S	240	25	3-30	31.01	28.19	23.85

PC Mount SIP Relays

Stock No.	Mfr.'s Type	VAC	A (Max.)	Control Range VDC	1-9	10-24	25-49
948-7366	70S2-04-D-03-V	24	3	3-32	12.48	11.35	9.60
948-7367	70S2-05-D-03-V	24	3	6-32	12.48	11.35	9.60
948-7368	70S2-04-B-03-V	120	3	3-32	12.48	11.35	9.60
948-7369	70S2-05-B-03-V	120	3	6-32	12.48	11.35	9.60
948-7370	70S2-04-C-03-V	240	3	3-32	13.16	11.96	10.12
948-7371	70S2-05-C-03-V	240	3	6-32	13.16	11.96	10.12

T and TP Series Tubular Solenoids



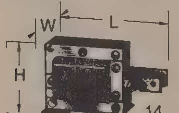
Tubular solenoids are available in either pull (T series) or push (TP series). TP series dimensions are identical to T series. Notched assembly of shell and bushing permits tightening of mounting nut without damaging coil. **Insulation Material:** Class "A" (110°C). **Termination:** 6" leads. Mounting hardware included. T and TP series recognized under the Component Program of Underwriters' Laboratories, Inc.

T3.5x9: L—1 1/8"; D—7/16"; Mounting thread size—5/16-32 UNEF; Bracket W—1 1/8". **T4x7:** L—7/8"; D—1/2"; Mounting thread size—3/8-32 UNEF; Bracket W—1 1/8". **T4x12:** L—1 1/2"; D 1/2"; Mounting thread size—3/8-32 UNEF; Bracket W—1 1/8". **T4x16:** L—2"; D—1/2"; Mounting thread size—3/8-32 UNEF; Bracket W—1 1/8". **T6x12:** L—1 1/2"; D—3/4"; Mounting thread size—5/32-32 UNEF; Bracket W—1 3/8". **T8x9:** L—1 1/8"; D—1"; Mounting thread size—3/4-24 UNS; Bracket W—2". **T8x16:** L—2"; D—1"; Mounting thread size—3/4-24 UNS: Bracket W—2". **T12x13:** L—1 5/8"; D—1 1/2"; Mounting thread size—1-27 UNS; Bracket W—2 1/2". **T12x19:** L—2 3/8"; D—1 1/2"; Mounting thread size—1-27 UNS; Bracket W—2 1/2".

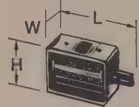
Stock No.	Mfr.'s Type	Duty	Coil Voltage	Ohms	Watts	Typical Lifts and Strokes		EACH		
						Minimum	Maximum	1-24	25-49	50-99
802-1151	T3.5x9*	Inter.	24DC	122.0	5.0	8.5 oz. at 1/32"	1 oz. at 1/2"	14.59	13.46	12.26
802-1152	T3.5x9*	Cont.	24DC	254.0	2.5	5.5 oz. at 1/32"	.75 oz. at 1/16"	14.59	13.46	12.26
802-1153	T3.5x9*	Inter.	12DC	31.1	5.0	8.5 oz. at 1/32"	1 oz. at 1/2"	14.59	13.46	12.26
802-1154	T3.5x9*	Cont.	12DC	60.2	2.5	5.5 oz. at 1/32"	.75 oz. at 5/16"	14.59	13.46	12.26
802-1155	TP3.5x9	Inter.	24DC	122.0	5.0	6.8 oz. at 1/32"	.96 oz. at 1/2"	20.60	19.02	18.65
802-1156	T4x7*	Inter.	24DC	131.0	4.5	12 oz. at 1/32"	8 oz. at 1/4"	16.52	15.25	13.86
802-1190	T4x7*	Cont.	24DC	27.0	2.3	6 oz. at 1/32"	1 oz. at 3/16"	16.52	15.25	13.86
802-1157	TP4x7	Cont.	24DC	270.0	2.3	4.8 oz. at 1/32"	.8 oz. at 3/16"	24.11	22.25	20.73
802-1158	T4x12*	Inter.	24DC	96.7	6.8	14 oz. at 1/32"	1.5 oz. at 7/8"	13.74	12.68	11.83
802-1159	T4x12*	Cont.	24DC	195.0	3.0	7 oz. at 1/32"	1.5 oz. at 1/4"	13.74	12.68	11.83
802-1160	TP4x12	Inter.	24DC	96.7	6.8	12 oz. at 1/32"	1.2 oz. at 7/8"	19.53	18.03	16.75
802-1161	TP4x12	Cont.	24DC	195.0	3.0	6 oz. at 1/32"	1.2 oz. at 1/4"	19.53	18.03	16.75
802-1162	T4x16*	Inter.	24DC	72.7	8.1	7 oz. at 1/32"	4 oz. at 1"	14.25	13.15	12.80
802-1163	T4x16*	Inter.	12DC	17.7	8.1	7 oz. at 1/32"	4 oz. at 1"	14.25	13.15	12.80
802-1191	T4x16*	Cont.	12DC	45.1	3.3	6.5 oz. at 1/32"	1.5 oz. at 7/8"	14.25	13.15	12.80
802-1192	TP4x16*	Inter.	24DC	72.7	8.1	5.6 oz. at 1/32"	3.2 oz. at 1"	20.18	18.63	17.03
802-1164	TP4x16	Cont.	24DC	173.0	3.3	5.2 oz. at 1/32"	1.2 oz. at 7/8"	20.18	18.63	17.03
802-1165	T6x12*	Inter.	24DC	60.6	11.9	30 oz. at 1/16"	4 oz. at 1/16"	13.48	12.44	11.81
802-1166	T6x12*	Cont.	24DC	121.0	4.9	12 oz. at 1/16"	1 oz. at 3/4"	13.48	12.44	11.81
802-1167	T6x12*	Inter.	12DC	12.1	11.9	30 oz. at 1/16"	4 oz. at 1/16"	13.48	12.44	11.81
802-0565	T6x12*	Cont.	12DC	31.7	4.9	12 oz. at 1/16"	1 oz. at 3/4"	13.48	12.44	11.81
802-1193	TP6x12*	Inter.	24DC	60.6	11.9	24 oz. at 1/16"	3.2 oz. at 3/4"	16.05	14.81	13.60
802-1194	TP6x12*	Cont.	24DC	121.0	4.9	9.6 oz. at 1/16"	.8 oz. at 3/4"	16.05	14.81	13.60
802-1168	T8x9*	Inter.	24DC	44.0	14.0	23 oz. at 1/16"	3 oz. at 7/16"	14.62	13.50	12.35
802-1195	TP8x9	Inter.	24DC	44.0	14.0	42 oz. at 1/16"	4.8 oz. at 7/16"	17.71	16.35	15.65
802-1169	TP8x9	Cont.	24DC	135.0	5.0	18.4 oz. at 1/16"	2.4 oz. at 7/16"	17.71	16.35	15.65
802-1170	T8x16*	Inter.	24DC	36.1	16.0	80 oz. at 1/16"	14 oz. at 7/8"	16.17	14.92	13.71
802-0574	T8x16*	Cont.	24DC	110.0	5.5	35 oz. at 5/8"	5.5 oz. at 7/8"	16.17	14.92	13.71
802-1171	T8x16*	Inter.	12DC	9.3	16.0	80 oz. at 1/16"	14 oz. at 7/8"	16.17	14.92	13.71
802-0573	T8x16*	Cont.	12DC	28.3	5.5	35 oz. at 1/16"	5.5 oz. at 7/8"	16.17	14.92	13.71
802-1172	T12x13*	Inter.	24DC	28.4	21.0	150 oz. at 1/8"	14 oz. at 3/4"	24.31	22.44	20.85
802-1173	T12x13*	Cont.	24DC	90.4	7.5	50 oz. at 1/8"	4 oz. at 3/4"	24.31	22.44	20.85
802-1178	TP12x13	Inter.	24DC	28.4	21.0	120 oz. at 1/8"	11.2 oz. at 3/4"	25.65	23.68	22.10
802-1179	TP12x13	Cont.	24DC	90.4	7.5	40 oz. at 1/8"	3.2 oz. at 3/4"	25.65	23.68	22.10
802-1174	T12x19*	Inter.	24DC	22.1	24.0	150 oz. at 1/8"	12 oz. at 1 1/2"	23.97	22.13	19.39
802-1175	T12x19*	Cont.	24DC	68.0	8.5	80 oz. at 1/8"	5 oz. at 1 1/2"	23.97	22.13	19.93
802-1176	TP12x19	Inter.	24DC	22.1	2.9	120 oz. at 1/8"	9.6 oz. at 1 1/2"	27.13	25.04	23.96
802-1177	TP12x19	Cont.	24DC	68.0	8.5	64 oz. at 1/8"	4 oz. at 1 1/2"	27.13	25.04	23.96

*U.L. Model.

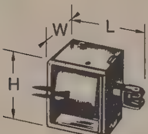
Industrial AC and DC Solenoids



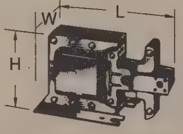
14



4,11



28



16, 18

Solenoids in a wide selection of sizes for AC or DC applications. Types 11 and 28 are for either AC or DC voltages. Laminated solenoids Types 14, 16 and 18 are for AC operation only. Tubular pull/push are for DC operation only. Intermittent-duty coils should not be energized for more than 3 consecutive minutes or be permitted to rise more than 85°C above 25°C ambient without time for cooling between cycles; continuous-duty types will not have a temperature rise of more than 85°C at rated voltage and ambient.

Stock No.	Mfr.'s Type	Volts	Ohms	Stroke and Lift Ounces @ Inches		Size H x W x L		Shpg. Wt., Oz.	EACH		
				Min.	Max.	In.	MM		1-24	25-49	50-99
802-1032	4†	120	133.0	8@1/8	4@1 1/4	1 5/8 x 1 7/16 x 2 1/16	41.27 x 36.51 x 53.38	14 1/2	18.90	17.45	16.20
802-1057	11†	24	9.0	12@1/8	10@3/4	1 3/16 x 15/16 x 1 7/8	30.16 x 23.81 x 47.62	7 1/2	12.75	11.77	10.37
802-1070	11*	120	85.0	40@1/16	10@3/4	1 3/16 x 15/16 x 1 7/8	30.16 x 23.81 x 47.62	7 1/2	12.75	11.77	10.37
802-1061	11†	120	225.0	12@1/8	6@3/4	1 3/16 x 15/16 x 1 7/8	30.16 x 23.81 x 47.62	7 1/2	12.75	11.77	10.37
802-1085	14†	120	18.0	75@1/8	35@1 1/2	2 1/16 x 1 15/16 x 2 7/16	53.38 x 49.21 x 61.91	19	32.01	29.55	27.60
802-1094	16*	120	41.0	110@1/8	30@3/4	1 1/2 x 1 1/4 x 1 5/8	38.10 x 31.75 x 41.27	7 1/2	27.35	25.25	24.05
802-1090	16†	120	85.0	60@1/8	15@3/4	1 1/2 x 1 1/4 x 1 5/8	38.10 x 31.75 x 41.27	7 1/2	27.35	25.25	24.05
802-1104	18*	120	8.8	340@1/8	200@7/8	2 3/32 x 1 13/16 x 2 1/2	53.18 x 46.03 x 63.50	16 1/2	33.69	31.10	29.85
802-1100	18†	120	19.7	150@1/8	100@7/8	2 3/32 x 1 13/16 x 2 1/2	53.18 x 46.03 x 63.50	16 1/2	33.69	31.10	29.85
802-1102	18†	240	78.0	150@1/8	100@7/8	2 3/32 x 1 13/16 x 2 1/2	53.18 x 46.03 x 63.50	16 1/2	33.69	31.10	29.85

DC Types (Specify Type No., Volts and Duty)

802-1059	11†	24	93.1	40@1/16	4@5/8	1 3/16 x 15/16 x 1 7/8	30.16 x 23.81 x 47.62	7 1/2	12.36	11.41	10.15
802-1150	28†	12	29.8	24@1/16	2@1/4	1 3/16 x 17/32 x 1 1/8	30.16 x 23.81 x 28.57	3 1/2	9.74	8.99	7.98

*Intermittent. †Continuous.

DC Pull-Type or AC/DC Push-Type Solenoids

12 and 120 Volt AC/DC Push-Types

Intermittent or continuous duty. Lengths of the push rods are equal to the maximum stroke length specified. Type 28P is approximately 20% less power than listed. Other specifications same as Tubular Pull Types. Please Specify Allied Stock Number, Manufacturer's Type Number, Volts and Duty.

Stock No.	Mfr.'s Type	Duty	Volts	Ohms	Stroke and Lift Ounces @ Inches		Size H x W x L		Shpg. Wt., Oz.	EACH		
					Min.	Max.	In.	MM		1-24	25-49	50-99
802-1097	16P	Cont.	120AC	85.0	60@1/8	15@3/4	1 1/2 x 1 1/4 x 1 5/8	38.10 x 31.75 x 41.27	7 1/2	35.67	32.92	31.12
802-1107	18P	Inter.	120AC	8.8	340@1/8	200@1/8	2 3/16 x 1 13/16 x 2 1/2	55.56 x 46.03 x 63.50	16 1/2	43.61	40.25	38.77
802-1108	18P	Cont.	120AC	19.7	150@1/8	100@1/8	2 3/16 x 1 13/16 x 2 1/2	55.56 x 46.03 x 63.50	16 1/2	43.61	40.25	38.77

Relays, Sockets, Solid State Relays

idec
CORPORATION

RSS Series Solid State Relays

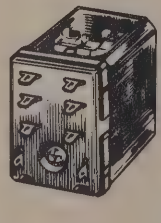
- ► DC/AC and AC/AC Models
- ► Photo Isolation
- ► 600 Volt Blocking Voltage
- ► 4000 Volt Isolation
- ► Zero Voltage Turn-On
- ► Built-In Snubber
- ► 100% Tested at Rated Current
- ► High Surge Capability
- ► UL Recognized (File No. E59804)
- ► Dual SCR Output (40 A)

RSS series relays provide highly reliable means of switching AC loads. Available in both AC and DC input voltage. **Dimensions:** 2.23" x 1.74" x .90".

DC/AC Input Series

Stock No.	Mfr.'s Type	Input Voltage	Output Current	EACH 1-9	10-49	50-99
812-1104	RSSD-10A	3-32 DC	10	21.88	19.92	18.81
812-1105	RSSD-25A	3-32 DC	25	23.19	21.09	19.92
812-1110	RSSD-40A	3-32 DC	40	32.20	29.29	27.69
812-1106	RSSA-10A	90-280 AC	10	32.19	29.28	27.67
812-1120	RSSA-25A	90-280 AC	25	31.20	28.39	26.83
812-1125	RSSA-40A	90-280 AC	40	37.80	34.41	32.52

RH Series Midget Power Relays

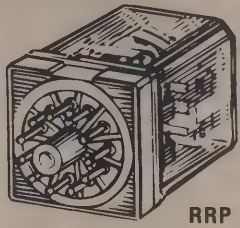


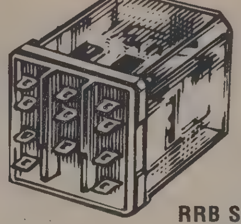
10 amp switching capacity and blade terminals. U.L./CSA listed. **Specifications. Contact Resistance:** 50 MΩ max. (initial value). **Operate Time and Release Time:** SPDT, DPDT—20 msec max.; 3PDT, 4DPT—25 msec. max. **Insulation Resistance:** 100MΩ min. (measured at 500VDC megger). **Power Consumption:** SPDT—AC: 1.1VA (50 Hz), 1VA (60Hz); DC: 0,8W. DPDT—AC: 1.4VA (50 Hz), 1.2VA (60 Hz); DC: 0.9W. 3PDT—AC: 2VA (50 Hz), 1.7VA (60 Hz); DC: 1.5W 4PDT—AC: 2.5VA (50 Hz), 2VA (60 Hz); DC: 1.5W. **Operating Temp.:** –30°C to + 70°C. **Temperature Rise:** Coil, 85°C max.; Contact, 65°C max.

Stock No.	Mfr.'s Type	Config-uration	Rated Voltage	Rated Current* mA	Coil Resis. Ω	EACH 1-9	10-49	50-99	100-Up
812-1040	RH1B-UAC24V	SPDT	24VAC	37.0	300.0	9.03	8.58	8.13	6.65
812-1044	RH1B-UDC12V	SPDT	12VDC	64.0	188.0	8.10	7.70	7.28	6.06
812-1046	RH1B-UDC24V	SPDT	24VDC	32.0	750.0	8.04	7.64	7.23	6.02
812-1055	RH2B-UAC24V	DPDT	24VAC	50.0	153.0	9.12	8.68	8.22	6.84
812-1060	RH2B-UAC120V	DPDT	120VAC	11.0	4170.0	9.12	8.68	8.22	6.84
812-1070	RH2B-UDC12V	DPDT	12VDC	75.0	160.0	9.16	8.70	8.24	6.86
812-1075	RH2B-UDC24V	DPDT	24VDC	36.9	650.0	8.59	8.16	7.73	6.44
812-1090	RH4B-UAC24V	4PDT	24VAC	83.0	84.5	14.24	13.53	12.82	10.69
812-1092	RH4B-UAC120V	4PDT	120VAC	16.5	2200.0	14.55	13.83	13.10	10.92
812-1094	RH4B-UDC12V	4PDT	12VDC	125.0	96.0	14.15	13.44	12.74	10.60
812-1096	RH4B-UDC24V	4PDT	24VDC	62.0	388.0	13.85	13.16	12.47	10.37

*Rated current ± 15% at 20°C, 60 Hz.

RR Series Heavy-Duty Relays

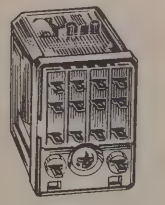

RRP Series


RRB Series

U.L./CSA listed Pin and Blade type terminals and 10 amp capacity. **Specifications. Contact Material:** Silver. **Contact Resistance:** 30MΩ max. (initial value). **Power Consumption:** AC—Approx. 3VA (50 Hz), 2.5VA (60 Hz); DC—Approx. 1.5W. **Operating Frequency:** 1800 operations/hour. **Temperature Rise:** Coil, 153°F (85°C) max.: Contact, 117°F (65°C) max. **Operating Temp.:** –22°F to + 158°F (– 30°C to + 70°C). **Horsepower Rating:** ¼ HP at 120VAC; ⅓ HP at 240VAC. **Maximum Continuous Applied Voltage at 68°F:** (110% of rated voltage without overheating. **Minimum Operate Voltage at 68°F:** 80% of rated voltage. **Contact Rating (U.L.):** 10A resistive, 7A inductive at 240VAC; 10A resistive, 7A inductive at 30 VDC.

Stock No.	Mfr.'s Type	Config-uration	Rated Voltage	Rated Current* mA	Coil Resis. Ω	EACH 1-9	10-49	50-99	100-Up
812-2010	RR2BA-UAC24V	DPDT	24VAC	105.0	80	11.68	11.09	10.51	8.76
812-2012	RR2BA-UAC120V	DPDT	120VAC	20.5	2100	11.68	11.09	10.51	8.76
812-2014	RR2BA-UDC12V	DPDT	12VDC	120.0	100	11.13	10.57	10.01	8.35
812-2020	RR3B-UAC24V	3PDT	24VAC	105.0	80	13.19	12.52	11.87	9.89
812-2022	RR3B-UAC120V	3PDT	120VAC	20.5	2100	13.19	12.52	11.87	9.89
812-2024	RR3B-UDC12V	3PDT	12VDC	120.0	100	12.22	11.62	11.00	9.17
812-2026	RR3B-UDC24V	3PDT	24VDC	60.0	400	12.22	11.62	11.00	9.17
812-4146	RR2P-UAC24V	DPDT	24VAC	105.0	80	16.35	15.53	14.71	12.27
812-4147	RR2P-UAC120V	DPDT	120VAC	18.0	2100	16.35	15.53	14.71	12.27
812-4148	RR2P-UDC12V	DPDT	12VDC	120.0	100	16.08	15.28	14.46	12.06
812-4149	RR2P-UDC24V	DPDT	24VDC	60.0	400	1629	15.49	14.66	12.20
812-4150	RR3PA-UAC24V	3PDT	24VAC	105.0	80	19.92	18.92	17.93	14.95
812-4151	RR3PA-UAC120V	3PDT	120VAC	18.0	2100	18.67	17.73	16.81	14.02
812-4152	RR3PA-UDC12V	3PDT	12VDC	120.0	100	18.57	17.65	16.72	13.93
812-4153	RR3PA-UDC24V	3PDT	24VDC	60.0	400	19.78	18.80	17.81	14.84

RY Series "Ice Cube" Relays



General purpose relay with 3 amp capacity on DPDT and 5 amp capacity on 4PDT, solder terminals and plug-in mounting. **Specifications. Contact Material:** Fine silver (gold-plated). **Contact Resistance:** 50 MΩ max. (initial value). **Operate Time:** 20mS max. **Operating Temperature:** – 22°F to + 158°F (– 30° to + 70°C). **Frequency Response:** 1800 operations per hour: **Power Consumption:** AC, approx. 1.1VA (50 Hz); 1VA (60 Hz). DC, approx. 0.8W. U.L. Listed, CSA Certified.

Stock No.	Mfr.'s Type	Config-uration	Rated Voltage	Rated Current* mA	Coil Resis. Ω	EACH 1-9	10-49	50-99	100-Up
812-4125	RY2S-UAC24V	DPDT	24VAC	37.0	300	8.31	7.91	7.47	6.24
812-4126	RY2S-UAC120V	DPDT	120VAC	7.5	7680	8.31	7.91	7.47	6.24
812-4127	RY2S-UDC12V	DPDT	12VDC	64.0	188	7.81	7.41	7.03	5.85
812-4128	RY2S-UDC24V	DPDT	24VDC	32.0	750	7.81	7.41	7.03	5.85
812-4131	RY4S-UAC120V	4PDT	120VAC	11.0	4170	9.61	9.13	8.65	7.21
812-4133	RY4S-UDC12V	4PDT	12VDC	75.0	160	7.89	7.50	7.11	5.92
812-4134	RY4S-UDC24V	4PDT	24VDC	36.9	650	8.76	8.32	7.89	6.57

*Rated Current (mA) + 15% at 20°C, 60 Hz.

Snap-Mount DIN Rail Sockets

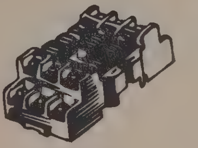
Snap-mount sockets are designed to mount on BNDN-1000 mounting rail. The built-in mounting clip eliminates mounting hardware and reduces mounting time by eighty percent. For spacing between adjoining sockets, use SA-406 DIN rail spacer. Spacers are .197" in width. Spacing can be adjusted according to the amount of spacers added. To prevent sideward movement, use BNL-5 end clip at each end of socket row.

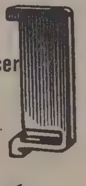
To Mount: Place socket on mounting rail and press down.

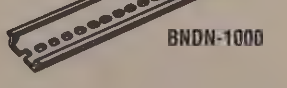
To Remove: Pull clip out with screwdriver and lift socket.

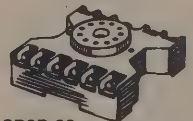
Stock No.	Mfr.'s Type	Fits Series	Description	EACH 1-9	10-49	50-99
812-0020	SR2P-06	RR2P, RTE-P	8-pin octal, snap-on rail mount	4.40	4.10	3.84
812-0040	SR3P-06	RR3PA	11-pin octal, snap-on rail mount	7.21	6.84	6.49
812-0060	SR3B-05	RR2BA, RR3B, RTE-B	11-blade, snap-on rail mount	6.87	6.52	6.18
812-0100	SH2B-05	RH2B	Blade, snap-mount (rail mount)	5.99	5.69	5.39
812-0080	SY4S-05	RY4S	Blade, snap-mount (surface mount)	8.13	7.72	7.31
812-0121	BNDN-1000	—	Aluminum DIN mounting rail (1 meter)	7.71	6.94	6.16
812-0130	BNL-5	—	End clip	1.40	1.18	.98
812-4145	SA-406	—	Din rail spacer	.56	.48	.41
812-0021	SH1B05	RH1B	5-blade, snap-on, rail mount	5.04	4.79	4.54
812-0023	SH4B05	RH4B	14-blade, snap-on, rail mount	8.86	8.40	7.96
812-0024	SY2S05	RY2S	8-blade, snap-on, rail mount	5.04	4.79	4.54

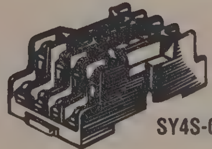
SR2P-06


SR3B-05


SA-406
DIN Rail Spacer


BNDN-1000


SR3P-06


SY4S-05

End Clip
BNL-5

Delay DPDT GT3 Series

Features

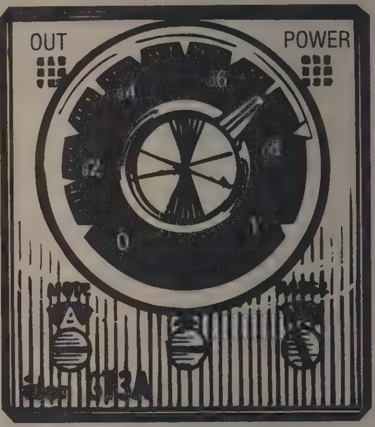
- ▶ Compact Spacing-Saving Size: 1.42" (36 m) Wide
- ▶ Choice of Four Basic Series: Multi-Mode — On-Delay, Interval-On, Single-Shot and Cycle (Available with Optional Input Controls). OFF-Delay — "True Off-Delay" Requires No External Control Switch to Initiate Timing Sequence. Sequence — Dual Knob Control Provides Separate Time-Delay Settings. Variable Duty Sequence — Solid-State Outputs (AC/DC), Duty Sequence Variable from 0 to 100%
- ▶ Repeat Accuracy ±0.2%, ±10 msec
- ▶ POWER On and Timing OUT LED Indicators
- ▶ Choice of Power Voltage Range: 100 V to 240 VAC, 12 V AC/DC, and 24 V AC/DC
- ▶ All Timers Compatible with IDEC's 8-Pin and 11-Pin DIN Rail, Panel Mount Sockets. Optional Panel-Mount Adapter Available
- ▶ UL Recognized and CSA Certified

Specifications

Input Voltages: 100 V to 240 V AC; 12 V AC/DC; 24 V AC/DC. **Contact Configurations:** Delayed SPDT, Delayed DPDT, Delayed SPDT + Instan. SPDT, solid state. **Contact Load Ratings (Maximum):** 250 V AC/5 A, 30 V DC/5 A. **Insulation Resistance:** 100 MΩ, minimum. **Time Ranges:** 0.05 seconds to 180 hours (GT3A), 0.05 seconds to 10 minutes (GT3F), 0.1 seconds to 6 hours (GT3W), 0.01 to 10 minutes (GT3P). **Reset Time:** 60 msec., maximum. **Life Expectancy:** Electrical — 100,000 operations, mechanical — 20,000,000 operations. **Termination:** 8- and 11- pin.

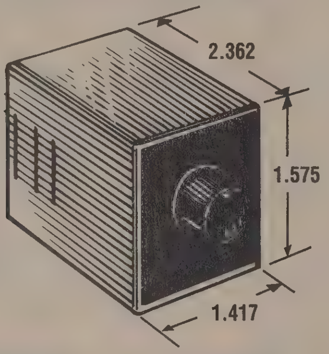
Stock No.	Mfr.'s Type	Description	EACH
812-9110	GT3A-4EAF20†	Multi-Mode, 100-240V AC, DPDT	54.25
812-9120	GT3A-4EAD12†	Multi-Mode, 12V AC/DC, DPDT	56.84
812-9130	GT3F-2A100*	Off Delay, 100-120 VAC, SPDT	70.19
812-9140	GT3F-2D24*	Off Delay, 24 VDC, SPDT	73.51
812-9150	GT3A-3AF20*	Multi-Mode, 100-240 VAC, DPDT	54.25

*Denotes 8 Pin; †Denotes 11 Pin.



RTE Series

Multi-Function/Time Range Electronic Timer



Features

- ▶ Redesigned Compact Housing
- ▶ Multi-Function Operation: On-Delay/Interval or Off-Delay/Single-Shot
- ▶ Multi-Time Range Settings from 0.1 Second to 10 Minutes and 0.1 Minute to 10 Hours
- ▶ High Repeat Accuracy of ± 0.25%
- ▶ Standard Pin and Blade Termination
- ▶ UL Recognized and CSA Certified

Specifications

Input Voltages: 120 V AC + 10% to –20% (50/60 Hz)
12 V AC/DC, ±10%
24 V AC/DC, +10% to –15%
Contact Configuration: 2 Form C, DPDT (Delay outputs)
Contact Load Ratings: 10 A Resist @ 240 V AC, 30 V DC
7 A Inductive @240 V AC, 30 V DC
1/6 HP @ 120 V AC
1/3 HP @ 240 V AC
Power Consumption: 2.2 VA, maximum
Repeat Accuracy: ±0.25% maximum, 10 ms
Reset Time: 0.1 second, maximum
Dielectric Strength: 1500 V AC, 1 minute (Bet. power and output terminal, except bet. contacts of the same pole)
Life Expectancy: Mechanical — 50,000,000 operations
Electrical 250,000 operations

Stock No.	Mfr.'s Type	Description	Time Range	EACH 1-9	EACH 10-49	EACH 50-99
812-5050	RTE-P11-12VAC/DC	On-Delay/Interval	.01 sec.-10 min.	48.19	43.38	38.56
812-5051	RTE-P11-24VAC/DC	On-Delay/Interval	.01 sec.-10 min.	48.61	43.76	38.90
812-5052	RTE-P11-120VAC	On-Delay/Interval	.01 sec.-10 min.	49.76	44.79	39.82
812-5053	RTE-P12-12VAC/DC	On-Delay/Interval	1 min. -10 Hrs.	49.76	44.79	39.82
812-5054	RTE-P12-24VAC/DC	On-Delay/Interval	1 min. -10 Hrs.	49.76	44.79	39.82
812-5055	RTE-P12-120VAC	On-Delay/Interval	1 min. -10 Hrs.	49.76	44.79	39.82
812-5056	RTE-P21-12VAC/DC	Off-Delay/Single-Shot	.01 sec.-10 min.	57.34	51.60	45.87
812-5057	RTE-P21-24VAC/DC	Off-Delay/Single-Shot	.01 sec.-10 min.	60.15	54.14	48.13
812-5058	RTE-P21-120VAC	Off-Delay/Single-Shot	.01 sec.-10 min.	60.98	54.89	48.80
812-5059	RTE-P22-12VAC/DC	Off-Delay/Single-Shot	1 min. -10 Hrs.	61.56	55.40	49.25
812-5060	RTE-P22-24VAC/DC	Off-Delay/Single-Shot	1 min. -10 Hrs.	61.56	55.40	49.25
812-5061	RTE-P22-120VAC	Off-Delay/Single-Shot	1 min. -10 Hrs.	59.61	53.64	47.69
812-5062	RTE-B11-12VAC/DC	On-Delay/Interval	.01 sec.-10 min.	57.63	51.85	46.11
812-5063	RTE-B11-24VAC/DC	On-Delay/Interval	.01 sec.-10 min.	57.63	51.85	46.11
812-5064	RTE-B11-120VAC	On-Delay/Interval	.01 sec.-10 min.	56.30	50.65	45.04
812-5065	RTE-B12-12VAC/DC	On-Delay/Interval	1 min. -10 Hrs.	57.63	51.85	46.11
812-5066	RTE-B12-24VAC/DC	On-Delay/Interval	1 min. -10 Hrs.	57.63	51.85	46.11
812-5067	RTE-B12-120VAC	On-Delay/Interval	1 min. -10 Hrs.	57.63	51.85	46.11
812-5068	RTE-B21-12VAC/DC	Off-Delay/Single-Shot	.01 sec.-10 min.	61.56	55.40	49.25
812-5069	RTE-B21-24VAC/DC	Off-Delay/Single-Shot	.01 sec.-10 min.	61.56	55.40	49.25
812-5070	RTE-B21-120VAC	Off-Delay/Single-Shot	.01 sec.-10 min.	60.15	54.14	48.13
812-5071	RTE-B22-12VAC/DC	Off-Delay/Single-Shot	1 min. -10 Hrs.	61.56	55.40	49.25
812-5072	RTE-B22-24VAC/DC	Off-Delay/Single-Shot	1 min. -10 Hrs.	61.56	55.40	49.25
812-5073	RTE-B22-120VAC	Off-Delay/Single-Shot	1 min. -10 Hrs.	61.56	55.40	49.25

Type List

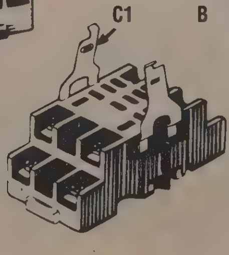
Mode of Operation	Basic Type No.	
	Pin Type	Blade Type
On-Delay/Interval	RTE-P1	RTE-B1
Off-Delay/Single-Shot	RTE-P2	RTE-B2

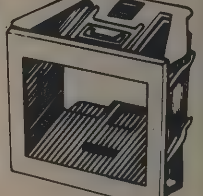
Time Range Settings

Time Range Group Code	Time Delay Settings
1	1, 3, 6, 10, 30, 60 sec.; 5, 10 minutes
2	1, 3, 6, 10, 30, 60 minutes; 5, 10 hours

Accessories

Stock No.	Mfr.'s Type	Fig.	Description	EACH 1-9	EACH 10-49	EACH 50-99	EACH 100-Up
812-0060	SR3B-05	B	11-Blade, Snap-Mount DIN Rail Socket	6.87	6.52	6.18	5.15
812-0020	SR2P-06	A	8-Pin, Snap-Mount DIN Rail Socket	4.40	4.10	3.84	3.20
812-0040	SR3P-06	—	11-Pin, Snap-Mount DIN Rail Socket	7.21	6.84	6.49	5.40
812-0121	BNDN-1000	—	Mounting DIN Rail (not shown)	7.71	6.94	6.16	5.03
812-5006	SFA-202	C1	Hold-down spring	7.22	6.50	5.78	5.05
812-5008	RTB-C01	D	Panel Mount Adapter	3.98	3.34	2.95	2.57





Time Ranger™ III — Digital-Set Multi-Function/Multi-Range

— NEW —

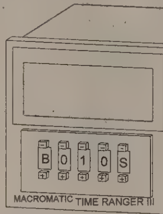
File No. 701134

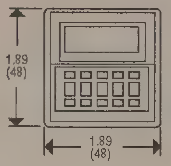
File No. E170213

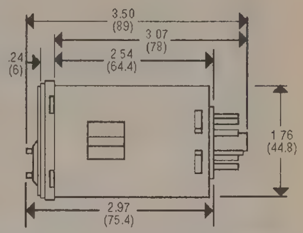
- 8 Field-Selectable Functions in One Unit
  - — On Delay
  - — Flasher
  - — Interval/Off Delay
  - — Off Delay (2 Versions)
  - — Interval
  - — Delayed Interval
  - — On Delay/Off Delay
- Universal AC/DC Input Voltage
- LCD Display with Output Status Indicator and Percent of Time Remaining Bar
- Pushbutton Thumbwheels for Accurate Digital Setting of Time Delay
- 0.1 Second to 9,990 Hour Programmable Timing Range
- ±0.3% Repeat Accuracy
- 3 A @ 250 VAC SPDT Contacts
- 1/16 DIN Style Case
- Panel, Track or Surface Mounting

Specifications. Input Voltage: 24-240 VAC, 50/60 Hz, 12-240 VDC. **Load (Burden):** 3 watts. **Repeat Accuracy:** ±0.3%. **Setting Accuracy:** ±0.5%. **Temperature Range:** –10° to 55°C (14° to 131°F). **Output Contact Rating:** 3 A resistive @ 250 VAC; 5 A resistive @ 28 VDC.

819-9000. 9816U1. 11 Pin Octal Socket .... **EACH 93.50**

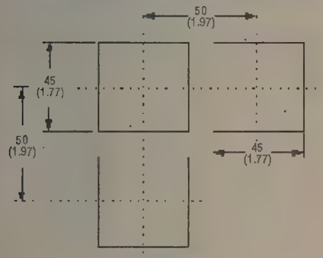




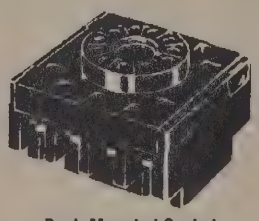


Mounting Configurations and Accessories for Time Ranger™ III

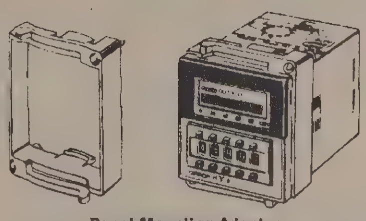
— NEW —



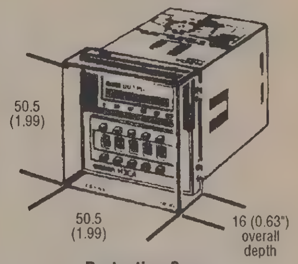
Panel Cutout



Back-Mounted Socket



Panel Mounting Adapter



Protective Cover

Stock No.	Mfr.'s Type	Type of Mounting	Accessory	Description	EACH			
					1-9	10-24	25-49	50-99
819-7063	70300	Panel (Door)*	Back-Mounted Socket	11 Pin Octal Socket with Terminals on Back for Easy Access	**8.50**	**7.98**	**7.41**	**6.91**
819-7064	70310	Panel (Door)*	Adapter	For Mounting the Time Delay Relay to a Panel (Door); Ideal for Side By Side Installation	**5.30**	**4.97**	**4.62**	**4.31**
819-7065	70320	Panel (Door)*	Protective Cover	Snaps onto the Front of the Timer to Protect Against Dust and Water, and Accidental Resetting; It Is Not Intended to Be Used in Areas Where Unusual Service Conditions Exist	**5.30**	**4.97**	**4.62**	**4.31**
819-7062	70170-D	35 mm DIN Track or Surface	Socket Socket	11 Pin Octal Socket for Mounting on 35 mm DIN Track or for Screw Mounting	**6.90**	**6.48**	**6.01**	**5.61**

*See panel cutout.

Compact Plug-In Time Delay Relays

File No. E109466

- Compact Economical Design
- Standard 8 Pin Octal Socket
- 5 A @ 120 VAC SPDT Contacts

Output: SPDT 5 A resistive @ 120 VAC/28 VDC, 1/6 hp @ 120 VAC. **Repeat Accuracy:** ±2%. **Temperature:** 0° to 60°C (32° to 140°F). **Power Required:** 2.5 VA.

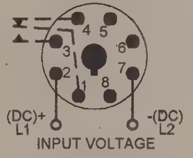


Diagram 5

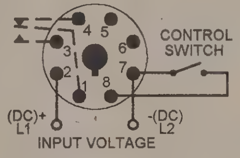
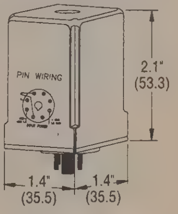


Diagram 6



On Delay

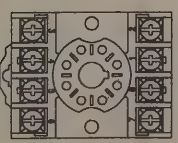
Upon application of input voltage, a preset time begins. At the end of the preset time, the relay contacts transfer. Input voltage must be removed and re-applied to reset the time delay relay.

Stock No.	Mfr.'s Type	Input Voltage	Timing Range (Sec.)	Socket	EACH			
					1-9	10-24	25-49	50-99
819-7104	SS-6262-04	120 VAC	0.2-5	8 Pin Octal 70169-D Diagram 5	**25.50**	**23.93**	**22.22**	**20.74**
819-7105	SS-6262-06	120 VAC	0.5-15		**25.50**	**23.93**	**22.22**	**20.74**
819-7107	SS-6262-08	120 VAC	2.0-60		**28.25**	**26.51**	**24.62**	**22.98**
819-9001	SS-6268-04	24 VAC/DC	0.2-5		**25.50**	**23.93**	**24.22**	**20.74**
819-7111	SS-6268-06	24 VAC/DC	0.5-15		**25.50**	**23.93**	**22.22**	**20.74**
819-7112	SS-6268-08	24 VAC/DC	2.0-60		**28.25**	**26.51**	**24.62**	**22.98**

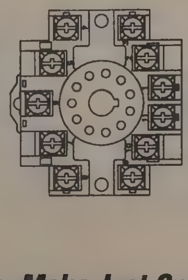
Off Delay

Input voltage must first be applied. Upon closure of the control switch, the relay contacts transfer and hold. Upon opening of the control switch, a preset time begins. At the end of the preset time, the relay contacts return to their normal condition. Any application of the control switch will reset the time. The time delay relay is reset by closing the control switch.

Stock No.	Mfr.'s Type	Input Voltage	Timing Range (Sec.)	Socket	EACH 1-9	EACH 10-24	EACH 25-49	EACH 50-99
819-7113	SS-8562-04	120 VAC	0.2-5	8 Pin Octal 70169-D Diagram 6	**32.00**	**30.03**	**27.89**	**26.02**
819-7114	SS-8562-06	120 VAC	0.5-15		**32.00**	**30.03**	**27.89**	**26.02**
819-7116	SS-8562-08	120 VAC	2.0-60		**33.00**	**30.97**	**28.76**	**26.84**
819-9002	SS-8568-04	24 VAC/DC	0.2-5		**32.00**	**30.03**	**27.89**	**26.02**
819-7120	SS-8568-06	24 VAC/DC	0.5-15		**32.00**	**30.03**	**27.89**	**26.02**
819-7121	SS-8568-08	24 VAC/DC	2.0-60		**33.00**	**30.97**	**28.76**	**26.84**



70169-D



70170-D

Sockets

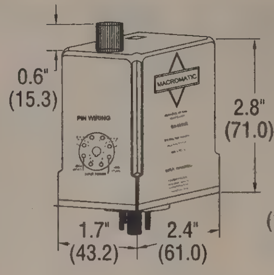
- For Use with All Macromatic Plug-In Products
- Can Be Either DIN Track (Except 70175) or Direct Panel-Mounted
- 10 A, 300 VAC (70175 Is 10 A, 600 VAC)
- Pressure Wire Clamps

Stock No.	Mfr.'s Type	Description	EACH			
			1-9	10-24	25-49	50-99
819-7061	70169-D	8 Pin Octal	**4.25**	**3.98**	**3.70**	**3.48**
819-7062	70170-D	11 Pin Octal	**6.90**	**6.48**	**6.01**	**5.61**
819-7066	70175	8 Pin Octal (600 V)	**4.25**	**3.98**	**3.70**	**3.48**
819-7067	70171-D	.187 Quick Connect	**6.90**	**6.48**	**6.01**	**5.61**

Time Ranger™ Programmable

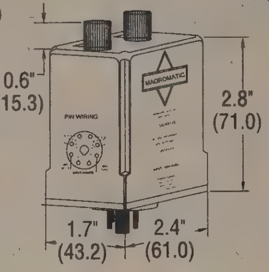
- ► 16 Timing Ranges in a Single Timer
- ► User Sets Time Ranges — No Math Required — Just Flip Switches
- ► Fine Tune Knob for Precision Timing
- ► Pin for Pin Interchangeable with Most Timers in the Field
- ► All Timers Operate on Either AC or DC
- ► 0.1% Repeat Accuracy

Timing range on non-cycle timers is 0.1 seconds to 2 hours and 0.6 seconds to 24 hours on repeat cycle and delayed interval timers. **Output:** DPDT 10 A resistive @ 240 VAC/30 VDC, 1/3 hp @ 240 VAC. **Repeat Accuracy:** ±0.1%. **Temperature:** –28° to 65°C (–20° to 150°F). **Power Required:** 3 VA.



File No. 701134

File No. E170213



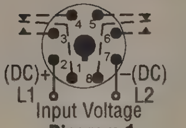


Diagram 1

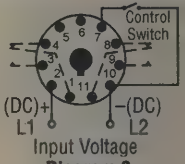


Diagram 3

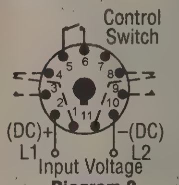


Diagram 2

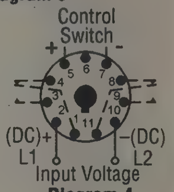


Diagram 4

On Delay

Upon application of input voltage, a preset time begins. At the end of the preset time, the relay contacts transfer. Input voltage must be removed and reapplied to reset the time delay relay.

Stock No.	Mfr.'s Type	Input Voltage	Socket	EACH			
				1-9	10-24	25-49	50-99
819-1000	SS-60222	120 VAC/VDC	8 Pin Octal	**42.79**	**40.62**	**38.77**	**36.56**
819-1001	SS-60228	24 VAC/VDC	Diagram 1	**42.79**	**40.62**	**38.77**	**36.56**
819-1002	SS-60226	12 VAC/VDC	70169-D	**42.79**	**40.62**	**38.77**	**36.56**

Interval On

Upon application of input voltage, the relay contacts transfer and a preset time begins. At the end of the preset time, the contacts return to their normal condition. Input voltage must be removed and reapplied to reset the time delay relay.

819-1003	SS-60522	120 VAC/VDC	8 Pin Octal	**45.52**	**43.09**	**41.14**	**38.79**
819-1004	SS-60528	24 VAC/VDC	Diagram 1	**45.52**	**43.09**	**41.14**	**38.79**
819-1005	SS-60526	12 VAC/VDC	70169-D	**45.52**	**43.09**	**41.14**	**38.79**

Single Shot (Momentary Interval)

Input voltage must first be applied. Upon closure of the control switch, the relay contacts transfer and the preset time begins. During time-out, the trigger input is ignored. The time delay relay is reset by applying the trigger when the relay is not energized.

819-1012	SS-61522	120 VAC/VDC	11 Pin Octal	**48.20**	**45.51**	**43.44**	**40.96**
819-1013	SS-61528	24 VAC/VDC	Diagram 2	**48.20**	**45.51**	**43.44**	**40.96**
819-1014	SS-61526	12 VAC/VDC	70170-D	**48.20**	**45.51**	**43.44**	**40.96**

Off Delay (Terminals 5-6 Trigger)

Input voltage must first be applied. Upon closure of the control switch, the relay contacts transfer and hold. Upon opening of the control switch, a preset time begins. At the end of the preset time, the relay contacts return to their normal condition. Any application of the control switch will reset the time. The time delay relay is reset by closing the control switch.

819-1006	SS-61622	120 VAC/VDC	11 Pin Octal	**48.20**	**45.51**	**43.44**	**40.96**
819-1007	SS-61628	24 VAC/VDC	Diagram 2	**48.20**	**45.51**	**43.44**	**40.96**
819-1008	SS-61626	12 VAC/VDC	70170-D	**48.20**	**45.51**	**43.44**	**40.96**

Off Delay (Terminals 7-10 Trigger)

819-7101	SS-61422	120 VAC/VDC	11 Pin Octal	**47.00**	**45.51**	**43.44**	**40.96**
819-7102	SS-61428	24 VAC/VDC	Diagram 3	**47.00**	**45.51**	**43.44**	**40.96**
819-7103	SS-61426	12 VAC/VDC	70170-D	**47.00**	**45.51**	**43.44**	**40.96**

Off Delay (Power Trigger)

819-1009	SS-61922	120 VAC/VDC	11 Pin Octal	**50.87**	**48.37**	**46.17**	**43.53**
819-1010	SS-61928	24 VAC/VDC	Diagram 4	**50.87**	**48.37**	**46.17**	**43.53**
819-1011	SS-61926	12 VAC/VDC	70170-D	**50.87**	**48.37**	**46.17**	**43.53**

Repeat Cycle (Off Time Followed By On Time)

Upon application of input voltage, "Off" time begins. When the "Off" time is completed, the "On" time begins. The sequence repeats until the input voltage is removed. The "Off" time and "On" time are independently adjustable.

819-6001	SS-63122	120 VAC/VDC	8 Pin Octal	**59.71**	**55.67**	**53.15**	**50.11**
819-6002	SS-63128	24 VAC/VDC	70169-D	**59.71**	**55.67**	**53.15**	**50.11**
819-6003	SS-63126	12 VAC/VDC	Diagram 1	**59.71**	**55.67**	**53.15**	**50.11**

Repeat Cycle (On Time Followed By Off Time)

Upon application of input voltage, "On" time begins. When the "On" time is completed, the "Off" time begins. The sequence repeats until the input voltage is removed. The "On" time and "Off" time are independently adjustable.

819-6004	SS-65122	120 VAC/VDC	8 Pin Octal	**59.71**	**55.67**	**53.15**	**50.11**
819-6005	SS-65128	24 VAC/VDC	70169-D	**59.71**	**55.67**	**53.15**	**50.11**
819-6006	SS-65126	12 VAC/VDC	Diagram 1	**59.71**	**55.67**	**53.15**	**50.11**

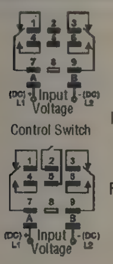
Delayed Interval (Off Time Followed By On Time Followed By Off State Until Reset)

Upon application of input voltage, "Off" time begins. When the "Off" time is completed, the "On" time begins. When "On" time is completed, sequence stops. Input voltage must be removed and reapplied to initiate action again. The "On" time and "Off" time are independently adjustable.

819-6007	SS-66122	120 VAC/VDC	8 Pin Octal	**59.71**	**55.67**	**53.15**	**50.11**
819-6008	SS-66128	24 VAC/VDC	70169-D	**59.71**	**55.67**	**53.15**	**50.11**
819-6009	SS-66126	12 VAC/VDC	Diagram 1	**59.71**	**55.67**	**53.15**	**50.11**

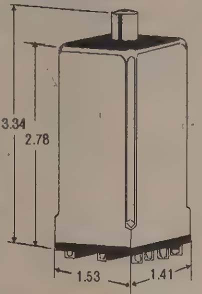
Note: See page 545 for socket selection.

Time Delay Relay with Quick Connect Terminals



File # LR45565

File # E109466



- ► Standard .187" Quick Connect Terminals
- ► 12 A at 240 VAC DPDT Contacts
- ► Operates on Both AC and DC

Output: DPDT 12 A resistive at 240 VAC/30 VDC, 1/2 hp at 240 VAC. **Repeat Accuracy:** ±0.1%. **Temperature:** –28° to 65°C (–20° to 150°F). **Power Required:** 3 VA.

On Delay

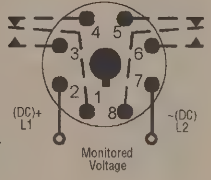
Stock No.	Mfr.'s Type	Input Voltage	Timing Range	Socket	EACH 1-9	10-24	25-49	50-99
819-9120	SS-40222-05	120 VAC/DC	0.1-10 Sec.	.187" Quick	**42.50**	**39.88**	**37.04**	**34.56**
819-9121	SS-40222-10	120 VAC/DC	1-180 Sec.	Connect	**42.50**	**39.88**	**37.04**	**34.56**
819-9122	SS-40228-05	24 VAC/DC	0.1-10 Sec.	70171-D	**42.50**	**39.88**	**37.04**	**34.56**
819-9123	SS-40228-10	24 VAC/DC	1-180 Sec.	Diagram 25	**42.50**	**39.88**	**37.04**	**34.56**

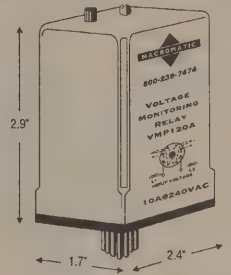
Off Delay

Stock No.	Mfr.'s Type	Input Voltage	Timing Range	Socket	EACH 1-9	10-24	25-49	50-99
819-9124	SS-41622-05	120 VAC/DC	0.1-10 Sec.	.187" Quick	**45.25**	**42.47**	**39.43**	**36.80**
819-9125	SS-41622-10	120 VAC/DC	1-180 Sec.	Connect	**45.25**	**42.47**	**39.43**	**36.80**
819-9126	SS-41628-05	24 VAC/DC	0.1-10 Sec.	70171-D	**45.25**	**42.47**	**39.43**	**36.80**
819-9127	SS-41628-10	24 VAC/DC	1-180 Sec.	Diagram 26	**45.25**	**42.47**	**39.43**	**36.80**

Voltage Monitoring Relay

- ► Monitors AC Single Phase or DC Voltages
- ► Pick-Up Voltage Setting Is Adjustable From 85-115% of Nominal
- ► Drop-Out Voltage Is Fixed at 3% Below Pick-Up Setting
- ► LED Indicates Relay Status





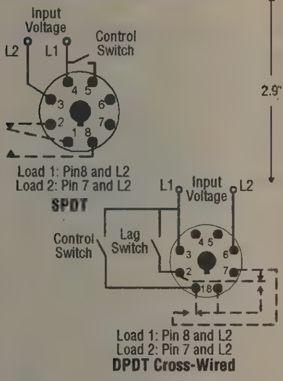
Output: DPDT 10 A resistive at 240 VAC/30 VDC, 1/2 hp at 240 VAC. **Response Time:** 50 ms for both pick-up and drop-out. **Temperature:** –28° to 65°C (–20° to 150°F). **Power Required:** 3 VA.

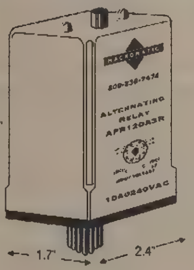
Relay energizes when the monitored voltage is above the pick-up setting. The relay de-energizes when the monitored voltage is below the drop-out setting.

Stock No.	Mfr.'s Type	Nominal Voltage	Pick-Up Voltage	Drop-Out Voltage	Socket	EACH 1-9	10-24	25-49	50-99
819-9107	VMP024A	24 VAC	21-27 V	19-25 V	8 pin octal 70169-D	**70.00**	**65.69**	**61.00**	**58.80**
819-9108	VMP120A	120 VAC	102-138 V	97-113 V	8 pin octal 70169-D	**70.00**	**65.69**	**61.00**	**58.80**
819-9109	VMP240A	240 VAC	204-276 V	194-266 V	8 pin octal 70169-D	**74.00**	**71.72**	**66.60**	**62.16**
819-9110	VMP012D	12 VDC	10-14 V	9-13 V	8 pin octal 70169-D	**70.00**	**65.69**	**61.00**	**58.80**
819-9111	VMP024D	24 VDC	21-27 V	19-25 V	8 pin octal 70169-D	**70.00**	**65.69**	**61.00**	**58.80**

10

Alternating Relay





- ► For Systems Requiring Equal Run Time of Two Loads
- ► Choice of SPDT or DPDT Cross-Wired Output
- ► Selector Switch Electrically Locks in One Sequence: Alternate, Load 1, or Load 2
- ► DPDT Cross-Wired Output Allows Either Alternating Loads, or Simultaneous Operation of Both Loads
- ► 2 LEDs Indicate Relay Status

Output: SPDT or DPDT cross-wired 10 A resistive at 240 VAC/30 VDC, 1/2 hp at 240 VAC. **Response Time:** 50 ms. **Temperature:** –28° to 65°C (–20 to 150°F). **Power Required:** 3 VA.

Each time the control switch is opened, the output relay contacts change state, thus alternating the two loads. On a unit with DPDT cross-wired output, a second lag switch can be used to simultaneously control the other load.

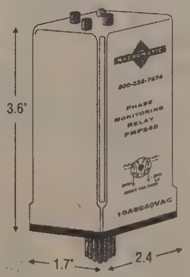
Stock No.	Mfr.'s Type	Input Voltage	Output Contacts	Socket	EACH 1-9	10-24	25-49	50-99
819-9112	ARP024A6R	24 VAC	SPDT	8 pin octal 70169-D	**57.00**	**55.25**	**51.30**	**47.00**
819-9113	ARP120A6R	120 VAC	SPDT	8 pin octal 70169-D	**57.00**	**55.25**	**51.30**	**47.00**
819-9114	ARP240A6R	240 VAC	SPDT	8 pin octal 70169-D	**57.00**	**55.25**	**51.30**	**47.00**
819-9115	ARP024A3R	24 VAC	DPDT cross-wired	8 pin octal 70169-D	**59.00**	**57.18**	**53.10**	**49.56**
819-9116	ARP120A3R	120 VAC	DPDT cross-wired	8 pin octal 70169-D	**59.00**	**57.18**	**53.10**	**49.56**
819-9117	ARP240A3R	240 VAC	DPDT cross-wired	8 pin octal 70169-D	**59.00**	**57.18**	**53.10**	**49.56**

Phase Monitoring Relay

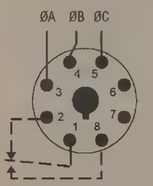
- ► Protects Against Phase Loss, Phase Reversal, Phase Unbalance, and Undervoltage
- ► User-Selectable Phase Unbalance (2-10%) and Undervoltage Settings
- ► Adjustable Time Delay Drop-Out (0.1-20 Seconds) On Undervoltage
- ► Choice of Plug-In or Surface-Mounted Enclosures
- ► LED Indicates Both Normal and Fault Conditions

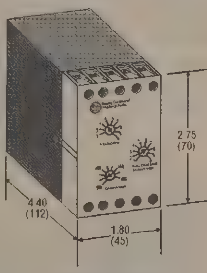
Output: SPDT (PMP240 and PMP480) or DPDT (PMD240 and PMD480) 10 A resistive at 240 VAC/30 VDC, 1/2 hp at 240 VAC. **Temperature:** –28° to 65°C (–20° to 150°F). **Power Required:** 3 VA. **Reset:** Automatic.

Relay is energized when the phase sequence and all voltages are correct. Any one of the four fault conditions will de-energize the relay.



PMP240/PMP480

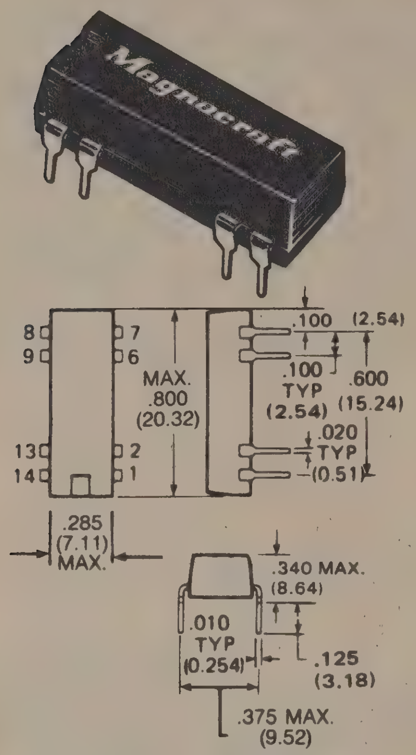




PMD240/PMD480

Stock No.	Mfr.'s Type	Operating Voltage (50-60 Hz)	Adjustable Under-Voltage Range	Output	Socket	EACH 1-9	10-24	25-49	50-99
819-9100	PMP240	208/240 VAC	180-230 V	SPDT	8 pin octal 70169-D	**70.00**	**65.64**	**61.00**	**58.80**
819-9101	PMP480	480 VAC	360-460 V	SPDT	8 pin octal 70175	**74.00**	**71.72**	**66.60**	**62.16**
819-9102	PMD240	208/240 VAC	180-230 V	DPDT	None Required	**86.00**	**83.35**	**77.40**	**72.24**
819-4103	PMD480	480 VAC	360-460 V	DPDT	None Required	**92.00**	**89.16**	**82.80**	**77.28**

Series 107, 171, 172 DIP Reed Relays



Note: (mm) for reference only.

	107 SPST-NO	171 SPST-NO	171 DPST-NO	172 SPDT	172 DPDT
Max. Resistive Load	10VA	10VA	10VA	4VA	3VA
Switching Volts Max. VDC	100	100	100	100	100
Switching Current Max. Amps	.5	.5	.5	.25	..25
Carry Current Amps	1.5	1.5	1.5	.5	.5
Life at Rated Load	5 x 10^6	5 x 10^6	5 x 10^6	5 x 10^6	5 x 10^6

Class 107 DIP—SPST-NO, 1 Form A

Stock No.	Mfr.'s Type	Coil		EACH			
		Volts	Ohms	1-9	10-24	25-49	50-99
850-1550	W107DIP-1	5	500	4.78	4.10	3.83	3.48
850-1554	W107DIP-5*	5	500	5.39	4.72	4.16	3.78
850-1642	W107DIP-7*	12	1200	5.39	4.72	4.16	3.78
850-1643	W107DIP-8*	24	2200	6.06	5.25	4.68	4.24

Class 171 DIP—SPST-NO, 1 Form A

Stock No.	Mfr.'s Type	Volts	Ohms	1-9	10-24	25-49	50-99
850-1602	W171DIP-2	5/6	500	5.05	4.43	3.79	3.43
850-1604	W171DIP-4	12	1200	5.05	4.43	3.79	3.43
850-1605	W171DIP-5	24	2200	5.55	4.86	4.16	3.78
850-1607	W171DIP-7*	5	500	5.55	4.86	4.16	3.78

Class 171 DIP—SPST-No. Form A

Stock No.	Mfr.'s Type	Volts	Ohms	1-9	10-24	25-49	50-99
850-1621	W171DIP-21	5/6	200	6.68	5.85	5.17	4.68
850-1652	W171DIP-23	12	500	6.68	5.85	5.17	4.68
850-1624	W171DIP-24	24	2200	7.33	7.12	6.42	5.51
850-1625	W171DIP-25*	5/6	200	7.33	7.12	6.42	5.51
850-1627	W171DIP-27*	12	500	7.94	6.94	6.23	5.51

Class 172 DIP—SPDT, 1 Form C

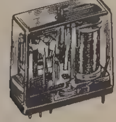
Stock No.	Mfr.'s Type	Volts	Ohms	1-9	10-24	25-49	50-99
850-1631	W172DIP-1	5/6	200	10.95	9.58	8.60	7.37
850-1633	W172DIP-3	12	500	11.28	9.87	8.46	7.67
850-1634	W172DIP-4	24	2200	11.28	9.87	8.46	7.67
850-1635	W172DIP-5*	5/6	200	9.90	8.66	7.43	6.73
850-1637	W172DIP-7*	12	500	12.71	11.12	9.53	8.65
850-1638	W172DIP-8*	24	2200	12.71	11.12	9.53	8.65

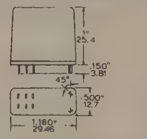
Class 172 DIP—DPDT, 2 Form C

Stock No.	Mfr.'s Type	Volts	Ohms	1-9	10-24	25-49	50-99
850-1673	W172DIP-21*	5/6	46	38.28	33.49	28.71	26.02
850-1676	W172DIP-24*	24	1066	38.28	33.49	28.71	26.02

*Internal Clamping Diode.

Class 76 Miniature Printed Circuit Relays—Epoxy Sealed

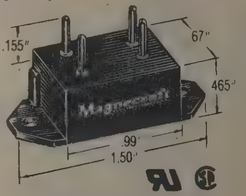




5, 10, and 16 amp general purpose, high-current, printed circuit relays. They are versatile, provide long life and reliable performance. Minimum mechanical life of 5,000,000 operations. After soldering and washing process, pierce the hole in the cover.

Stock No.	Mfr.'s Type	Action	Contact Rating	Coil		EACH			
				Volt DC	Resist. Ohms	1-9	10-24	25-49	50-99
850-7021	W76EURCPCX-16	SPDT	10 amp	12	250	7.99	7.29	6.62	5.91
850-7022	W76EURCPCX-17	SPDT	10 amp	24	1150	7.99	7.29	6.62	5.91
850-7026	W76EURCPCX-149	SPDT	16 amp	24	1150	9.04	8.25	7.49	6.97
850-7029	W76EURCPCX-63	DPDT	5 amp	12	180	8.78	8.01	7.27	6.76
850-7030	W76EURCPCX-64	DPDT	5 amp	24	800	8.78	8.01	7.27	6.76

Series 226 Solid State Miniature Relays



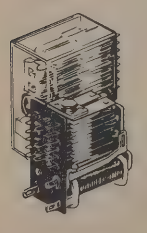
Low cost solid state relay designed to switch low to medium current AC loads from low level logic signals. Can be chassis mounted and connected with standard push on connectors. Compatible with TTL logic. Unit is completely potted to resist shock and moisture effects. DC input versions have LED activated optoisolator input. **Operate time:** 8 msec typ. **Release time:** 25 msec typ. **Dielectric strength:** 2500 VAC rms from input to output and case. Units have continuous current rating without heatsink of 0.05 to 1.5 amps; 0.05 to 7 amps with heatsink.

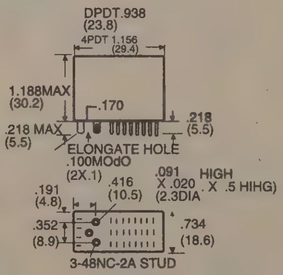
Stock No.	Mfr.'s Type	Input Volts (DC)	Output Volts		EACH			
			Non-line VRMS	Blocking	1-9	10-24	25-49	50-99
850-0400	W226R-7-5A1	5	120	400	20.23	18.68	17.34	16.85
850-0401	W226R-7-12A1	12	120	400	20.23	18.68	17.34	16.85
850-0404*	W226RE-7-5A1	5	120	400	20.23	18.68	17.34	16.85
850-0405*	W226RE-7-12A1	12	120	400	20.23	18.68	17.34	16.85

*PC Mount.

Class 67 Miniature Industrial Relays

Plug-in or solder terminal mount relays with 3-48 NC stud. Single and bifurcated crossbar contacts of silver alloy rated 3 to 5 amps at 32DC or 120VAC resistive load. All relays with plastic dust covers. Voltage specified relays pull-in at 80% of nominal or less. **Resistance values:** ±10% measured at 25°C. **Size:** DPDT, 0.734 x 0.938 x 1.88"; 4PDT, 0.734 x 1.156 x 1.188"; 6PDT, 0.734 x 1.375 x 1.188"; 8PDT, 0.734 x 1.592 x 1.188". U.L. File No. E52197. CSA File No. LR41729. **CSX or RCSX:** Solder terminals. PCX or RPCX: P.C. terminals.



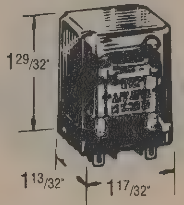


Stock No.	Mfr.'s Type	Arrangement	Contact Rating	Coil		EACH			
				DCV	Ohms	1-9	10-24	25-49	50-99
850-1021	W67CSX-1/W67RCSX-1	DPDT	5A	6	52	11.46	10.64	10.07	9.53
850-1023	W67CSX-3/W67RCSX-3	DPDT	5A	24	700	11.46	10.64	10.07	9.53
850-1056	W67CSX-12/W67RCSX-12	6PDT	5A	12	90	22.19	19.94	18.28	16.59
850-1027	W67CSX-7/W67RCSX-7	4PDT	5A	12	185	15.38	14.04	12.74	10.45
850-1028	W67CSX-8/W67RCSX-8	4PDT	5A	24	700	15.53	14.18	12.86	11.56
850-1072	W67CSX-17/W67RCSX-17	8PDT	5A	12	72	36.55	33.84	30.26	27.15

*Bifurcated contacts.

Class 388 Square Base Relays

Low cost, UL recognized CSA certified general purpose relays. AC and DC operated types, 13, 12 and 11 amps SPST, DPDT, or 3PDT silver alloy gold flashed contacts. Terminals are 3-way for plug-in, solder, or $^3/_{16}$" × .020" quick connect. UL/CSA E43641/LR37547.



AC Voltage Specified—Dust Cover Plug-In

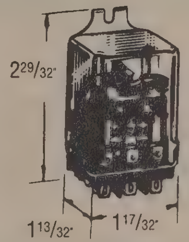
Stock No.	Mfr.'s Type	Cont. Comb.	Coil		EACH			
			Volts	Ohms	1-9	10-24	25-49	50-99
850-5058	W388ACPX-3	SPDT	24	—	11.57	10.39	9.57	8.93
850-5024	W388ACPX-4	SPDT	120	—	11.57	10.39	9.57	8.93
850-5028	W388ACPX-8	DPDT	24	—	14.36	13.60	11.37	10.35
850-5029	W388ACPX-9	DPDT	120	—	14.36	13.60	11.37	10.35
850-5049	W388ACPX-13	3PDT	24	—	17.23	16.73	15.77	12.49
850-5050	W388ACPX-14	3PDT	120	—	17.23	16.73	15.77	12.49

DC Voltage Specified—Dust Cover Plug-In

Stock No.	Mfr.'s Type	Cont. Comb.	Volts	Ohms	1-9	10-24	25-49	50-99
850-5032	W388CPX-2	SPDT	12	120	10.76	9.80	8.51	7.74
850-5051	W388CPX-3	SPDT	24	470	10.76	9.80	8.51	7.74
850-5036	W388CPX-6	DPDT	12	120	14.37	13.26	11.49	9.55
850-5037	W388CPX-7	DPDT	24	470	14.37	13.26	11.49	9.55
850-5052	W388CPX-10	3PDT	12	120	16.31	15.06	13.49	11.36
850-5053	W388CPX-11	3PDT	24	470	16.31	15.06	13.49	11.36

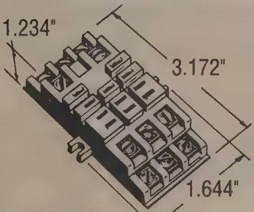
AC Voltage Specified—Flange Cover

Stock No.	Mfr.'s Type	Cont. Comb.	Volts	Ohms	1-9	10-24	25-49	50-99
850-5054	W388ACQX-4	SPDT	120	—	11.57	9.15	8.33	7.54
850-5055	W388ACQX-9	DPDT	120	—	13.94	11.04	10.05	9.36
850-5056	W388ACQX-14	3PDT	120	—	16.73	15.06	13.64	12.41

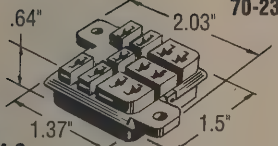


DC Voltage Specified—Flange Cover

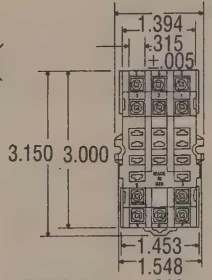
Stock No.	Mfr.'s Type	Cont. Comb.	Volts	Ohms	1-9	10-24	25-49	50-99
850-5042	W388CQX-2	SPDT	12	120	11.89	10.10	8.51	7.74
850-5043	W388CQX-3	SPDT	24	470	11.89	10.10	8.51	7.74
850-5046	W388CQX-6	DPDT	12	120	13.26	12.75	10.49	9.55
850-5047	W388CQX-7	DPDT	24	470	13.26	12.75	10.49	9.55
850-5057	W388CQX-11	3PDT	24	470	16.31	13.99	12.49	11.36



70-233-1



70-124-2



70-463-1

Class 388 Sockets

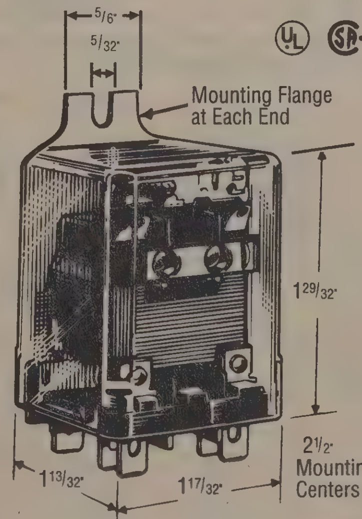
Heavy-duty molded thermoplastic screw terminal socket has closed back construction that requires no insulation. Nylon sockets offer choice of solder, quick connect, or printed circuit. U.L. recognized, File No. E43641, and CSA certified, File No. LR37547.

Stock No.	Mfr.'s Type	Description	EACH			
			1-9	10-24	25-49	50-99
850-5091	70-124-1	Nylon solder terminal	3.17	2.80	1.96	1.71
850-5092	70-124-2	Nylon quick connect	3.17	2.80	1.96	1.71
850-5093	70-178-1	Nylon printed circuit	3.30	2.90	2.05	1.78
850-5090	70-233-1	Screw terminal 11 pin*	19.67	12.81	11.13	9.55
850-1923	70-463-1	Screw term. 11 pin* DIN Mount	15.13	13.11	12.32	10.69

*Accepts all Class 388 plug-in relays.

Class 389 General Purpose Relays

Class 389 General Purpose Relays are designed to switch larger contact loads without increasing overall size. It is similar in design to Class 388 relays and features a flange mounted cover. **Contact Materials:** silver cadmium oxide, gold flashed. **Temperature Range:** Operating, – 30°C to + 50°C AC; – 30°C to + 65°C DC. **Enclosure:** Clear polycarbonate. Quick connect terminals are $^1/_4$ × .032" and suitable for soldering. **Size (max.):** $2\frac{29}{32}$"L × $1\frac{17}{32}$"W × $1\frac{13}{32}$"H. **Weight:** 3.3 oz UL/CSA E436 41/LR37547



Class 389C-20 Amp Contacts—AC Voltage Operated 50/60 Hz

Stock No.	Mfr.'s Type	Contacts	Coil			EACH			
			Volts	Ohms	Nom. Power	1-9	10-24	25-49	50-99
850-7004	W389ACX-4	SPDT	120VAC	—	2.75VA	14.57	11.55	11.05	10.35
850-7008	W389ACX-8	DPDT	24VAC	—	2.75VA	18.43	15.80	13.63	12.39
850-7009	W389ACX-9	DPDT	120VAC	—	2.75VA	17.87	14.66	13.61	12.42
850-7014	W389ACX-14	3PDT	120VAC	—	3.5VA	27.80	22.01	21.63	17.12

Class 389C-20 Amp Contacts—DC Voltage Operated

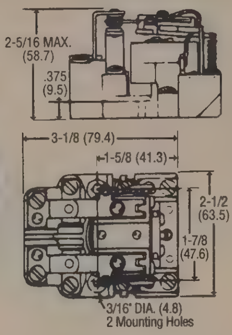
Stock No.	Mfr.'s Type	Contacts	Volts	Ohms	Nom. Power	1-9	10-24	25-49	50-99
850-7102	W389CX-2	SPDT	12VDC	100	1.5W	12.87	11.50	10.98	9.27
850-7103	W389CX-3	SPDT	24VDC	400	1.5W	12.87	11.50	10.98	9.27
850-7107	W389CX-7	DPDT	12VDC	100	1.5W	15.60	12.66	11.51	11.00
850-7108	W389CX-8	DPDT	24VDC	400	1.5W	16.30	12.91	11.74	10.63
850-7109	W389CX-12	3PDT	12VDC	100	1.5W	19.10	17.54	15.88	13.07
850-7110	W389CX-13	3PDT	24VDC	400	1.5W	19.36	17.54	15.88	13.07

Class 389D-30 Amp Contacts—AC (50/60 Hz) & DC Voltage Operated

Stock No.	Mfr.'s Type	Contacts	Volts	Ohms	Nom. Power	1-9	10-24	25-49	50-99
850-7204	W389ADCX-4	SPST-NO-DM	120VAC	—	3.5VA	14.52	13.82	12.45	11.33
850-7207	W389ADZCX-4	SPDT-NC-NO(DB-DM)	120VAC	—	3.5VA	17.40	16.57	14.10	12.52
850-7302	W389DCX-2	SPST-NO-DM	12VDC	100	1.5W	13.89	11.00	10.48	9.05
850-7303	W389DCX-3	SPST-NO-DM	24VDC	400	1.5W	13.89	11.00	10.48	9.05
850-7305	W389DZCX-2	SPDT-NC-NO(DB-DM)	12VDC	100	1.5W	19.28	17.80	15.73	12.77
850-7306	W389DZCX-3	SPDT-NC-NO(DB-DM)	24VDC	400	1.5W	19.28	17.80	15.73	12.77

Class W199 Series Relays

Dimensionally interchangeable with relays made by others. Outstanding quality, molded nylon bobbin and longer life. **Standard Dielectric Strength:** 3000 VAC rms. Screw type terminals and molded phenolic base. **Contacts:** Silver alloy, 5⁄16" dia. gold flashed. **Size:** SPDT — 27⁄16"L x 2½"W x 23⁄16"H; DPDT — 3⅛"L x 2½"W x 25⁄16"H. U.L. listed File No. 43641. CSA certified File No. LR37547.



AC Voltage Operated — 30 A Contacts

Stock No.	Mfr.'s Type	Contacts	Coil		EACH			
			Volts	Ohms	1-9	10-24	25-49	50-99
850-3009	W199AX-9	DPST-NO	120VAC	—	**25.33**	**20.06**	**18.23**	**16.51**
850-3014	W199AX-14	DPDT	120VAC	—	**27.65**	**23.69**	**21.70**	**19.56**
850-3015	W199AX-15	DPDT	240VAC	—	**29.75**	**23.55**	**20.85**	**18.87**
850-3204	W199ADX-4	SPST-NO-DM	120VAC	—	**19.88**	**15.73**	**14.31**	**12.96**

DC Voltage Operated — 30 A Contacts

Stock No.	Mfr.'s Type	Contacts	Coil Volts	Coil Ohms	1-9	10-24	25-49	50-99
850-3103	W199X-3	SPDT	24VDC	290	**19.91**	**15.77**	**14.34**	**12.98**
850-3107	W199X-7	DPST-NO	12VDC	70	**21.90**	**17.97**	**15.77**	**14.28**
850-3108	W199X-8	DPST-NO	24VDC	290	**21.90**	**17.97**	**15.77**	**14.28**
850-3112	W199X-12	DPDT	12VDC	70	**27.80**	**22.02**	**20.01**	**18.12**
850-3113	W199X-13	DPDT	24VDC	290	**27.80**	**22.02**	**20.01**	**18.12**

Mercury Displacement Relays

Mercury Displacement Contactor Tube operates in relative silence, eliminating "knocking" associated with conventional hard contactors. **Specifications. Pull-in Voltage:** 96 V typical. **Drop-Out Voltage:** 93 V typical. **Operate Time:** 50 milliseconds typical. **Release Time:** 80 milliseconds typical. **Contact Bounce:** None. ±10% of rated coil voltage. **Contact Resistance:** 35 amp models, .003 ohm terminal to terminal; 60 amp models, .002 ohm terminal to terminal. **Temperature Range:** –35C to +60C ambient (operating). **Dielectric Strength:** 2650 rms (1 sec.). **Insulation Material:** Class B (130° C) U.L. approved. **Terminals:** 35 amp models, pressure connectors for AWG 6-14; 60 amp models, pressure connectors for AWG 2-8. **Mounting:** vertical ±10.

35 Amp Steel Tube Relay

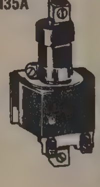
Stock No.	Mfr.'s Type	Contacts	Coil			EACH		
			Nominal Volts*	Nominal Current	Ohms	1-9	10-24	25-49
850-0035	WM35A-120A	SPST-NO	120VAC	.058	700	**30.94**	**26.58**	**25.84**
850-0038	WM35AA-120A	DPST-NO	120VAC	.135	218	**61.45**	**57.69**	**49.56**
850-0042	WM35AAA-120A	3PST-NO	120VAC	.220	111	**88.36**	**75.35**	**68.71**

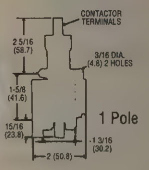
60 Amp Steel Tube Relay

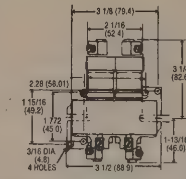
Stock No.	Mfr.'s Type	Contacts	Nominal Volts*	Nominal Current	Ohms	1-9	10-24	25-49
850-0060	WM60A-120A	SPST-NO	120VAC	.058	700	**49.23**	**42.29**	**39.94**
850-0048	WM60A-24D	SPST-NO	24VDC	.120	186	**49.23**	**42.29**	**39.94**
850-0062	WM60AA-120A	DPST-NO	120VAC	.135	218	**90.14**	**79.33**	**75.29**

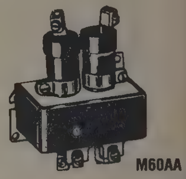
* 50/60 Hz.

M35A



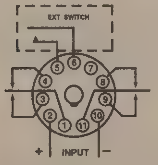


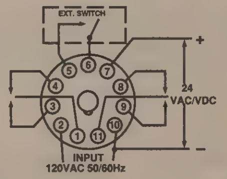


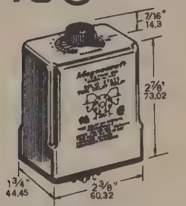


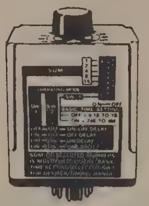
M60AA

Class 211 Time Delay Relays









The Class 211CP Time Delay Relay makes use of hybrid circuitry, combining solid state circuitry for timing function with an EMR for DPDT 10 amperes output switching. Features nylon dust covers, and reverse polarity protection on DC models. **Repeat Accuracy:** ±.1% of setting at nominal voltage at 25°C. **Contact Combination:** DPDT standard. **Reset Time:** 100 mS max. **Temperature Range:** Operate, –10°C to +55°C; Storage, 55°C to +85°C. Transient protection of 2000 V for 8 mS standard.

Operating Delay, DPDT Contacts 10 Amps

Stock No.	Mfr.'s Type	Time Delay	Coil Volts	EACH		
				1-9	10-24	25-49
850-4109	W211ACPSOX-5	.1-10 sec.	120VAC	**66.54**	**60.10**	**58.92**
850-4007	W211ACPSOX-7	1-180 sec.	120VAC	**66.54**	**60.10**	**58.92**

Release Delay, DPDT Contacts 10 Amps

Stock No.	Mfr.'s Type	Time Delay	Coil Volts	1-9	10-24	25-49
850-4105	W211ACPSRX-5	1-10 sec.	120VAC	**73.63**	**64.12**	**59.92**
850-4107	W211ACPSRX-7	1-180 sec.	120VAC	**73.63**	**64.12**	**59.92**
850-4108	W211ACPSRX-8	2-300 sec.	120VAC	**73.63**	**64.12**	**59.92**

Class W6 Solid State Relays

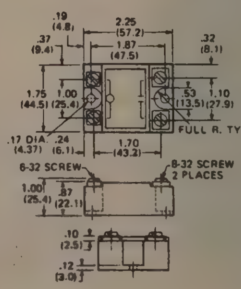
All models incorporate opto-isolation between input and output, and zero-voltage switching. Features high transient capability. DC controlled models have an input impedance of 1500 ohms min.; AC models, 60 K ohms typical.

SCR Output — DC Controlled

Stock No.	Mfr.'s Type	AC Load Max. L.		Control Sig. Range	EACH		
		Volt	Current		1-9	10-24	25-49
850-7308	W6102DSX-1	20-140VAC	2.5A	3-32VDC	**25.47**	**22.00**	**20.83**
850-7309	W6110DSX-1	20-140VAC	10.0A	3-32VDC	**32.25**	**27.86**	**26.39**
850-7310	W6125DSX-1	20-140VAC	25.0A	3-32VDC	**37.85**	**32.69**	**30.97**
850-7311	W6140DSX-1	20-140VAC	40.0A	3-32VDC	**39.02**	**33.70**	**31.27**
850-7313	W6210DSX-1	40-280VAC	10.0A	3-32VDC	**32.92**	**28.43**	**26.93**
850-7314	W6225DSX-1	40-280VAC	25.0A	3-32VDC	**36.43**	**31.47**	**29.81**
850-7315	W6240DSX-1	40-280VAC	40.0A	3-32VDC	**41.85**	**36.14**	**34.24**

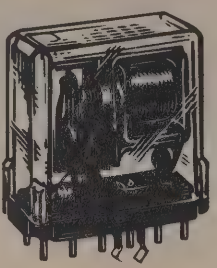
AC Controlled

Stock No.	Mfr.'s Type	Volt	Current	Control Sig. Range	1-9	10-24	25-49
850-7316	W6110ASX-1	20-140VAC	10.0A	90-280VAC 80-140VDC	**38.20**	**32.99**	**31.65**
850-7317	W6125ASX-1	20-140VAC	25.0A	90-280VAC 80-140VDC	**37.00**	**31.96**	**30.58**
850-7318	W6140ASX-1	20-140VAC	40.0A	90-280VAC 80-140VDC	**40.51**	**34.98**	**33.14**
850-7320	W6210ASX-1	40-280VAC	10.0A	90-280VAC 80-140VDC	**39.12**	**35.79**	**32.40**
850-7321	W6225ASX-1	40-280VAC	25.0A	90-280VAC 80-140VDC	**38.89**	**34.15**	**31.90**
850-7322	W6240ASX-1	40-280VAC	40.0A	90-280VAC 80-140VDC	**41.85**	**37.09**	**35.15**

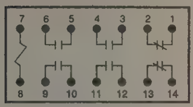


219 Series General-Purpose Relays

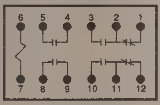
- ► **10 Amp Rating**
- ► **U.L. and CSA Listed**



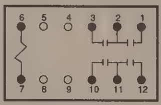
Type 219 relays provide long reliable contact life. They are designed for machine and process control applications requiring up to 20 million cycles of miss-face-operation. 12 pin models use socket #27390; 14 pin models use socket #33377. **Specifications. Insulation:** 1/4" surface, 1/8" air. **Dielectric:** 1500 Volt Test. **Operating Time:** 20 MS max. **Release Time:** 20 MS max. **Temperature Range:** –10°C to +60°C. **Cover:** Clear Polycarbonate. **Contacts:** Fold Diffused SCO. **Life:** 20 million Mech Operations.



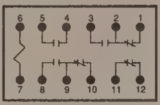
219DXBP



219BBXP



219XBXP



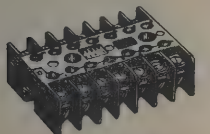
219ABAP

Type 219, 12 Pin (1 15/32 x 2 19/32 x 2 5/8")

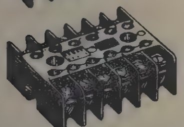
Stock No.	Mfr.'s Type	Volts	Contacts	EACH 1-24	25-49	50-Up
929-2133	219XBXP	120AC	DPDT	68.32	63.44	58.64
929-2172	219BBXP	24DC	DPDT, 2 N.O.	85.77	79.63	74.32
929-2173	219BBXP	125DC	DPDT, 2 N.O.	85.77	79.63	74.32
929-2174	219BBXP	120AC	DPDT, 2 N.O.	85.77	79.63	74.32
929-2142	219ABAP	24DC	DPDT, 1 N.O./1 N.C.	80.89	75.11	70.11
929-2144	219ABAP	120AC	DPDT, 1 N.O./1 N.C.	80.89	75.11	70.11
929-2175	219BBXPL*	120AC	DPDT, 2 N.O.	86.95	80.74	75.36
929-2176	219ABAPL*	120AC	DPDT, 1 N.O./1 N.C.	86.95	80.74	75.36
929-2186	219DXBP	120AC	4 N.O./2 N.C.	91.83	85.27	79.59

*With indicating light.

12 and 14 Pin Sockets

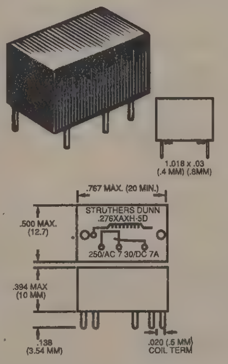


Type 27390. Twelve terminal socket accepts types 311, 219, 236, 237, 255, 349, and RSX alarm relays. **Overall Dimensions:** 2 21/32 x 2 3/16 x 27/32".
929-2030 ....**EACH 11.63**



Type 33377. Fourteen terminal socket for 219 series 4 and 6 pole relays. **Dimensions:** 2 5/64 x 2 3/16 x 27/32".
929-2035 ....**EACH 13.57**

Type 276 Miniature Power Relays

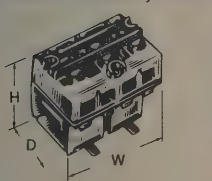


1 Form A contact @ 7 A; 1 Form C contact @ 10 A. Low power coil-40 MA @ 5 VDC. Terminals on 0.1" grid. Silver alloy contacts. Permanent magnet polarized single-sided stable design. Sealed PBT case for wave soldering and immersion cleaning. 4 mm spacing coil to contacts. 5 KV surge resistance. **Temperature Range:** –40° to +70°C. **Dielectric:** 1000 VAC between contact. **Operating Time:** 10 ms on loss. **Release Time:** 10 ms on loss. **Weight:** 0.2 oz.

Stock No.	Mfr.'s Type	Volts	Ohms +10%	EACH 1-24	25-49	50-Up
929-7405†	276AXXH	6DC	180	5.62	5.21	4.63
929-7410†	276AXXH	12DC	720	5.62	5.21	4.63
929-7420‡	276XAXH	6DC	180	5.12	4.76	4.43
929-7425‡	276XAXH	12DC	720	5.77	5.36	5.00

‡1 Form A contact @ 10 A. †Form C contact @ 7 A.

Type A275KXX, Reversing Control Relay (15 Amp)



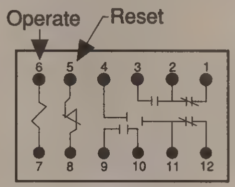
Compact reversing contactors consisting of a pair of 3-pole contactors mounted on a common frame and mechanically interlocked to prevent simultaneous closure. Designed for continuous operation in heavy-duty service. Vertical operating condition. Over 10 million mechanical operations. U.L. and CSA listed. **Weight:** 1 lb.

Stock No.	Mfr.'s Type	Volts	Contacts	EACH 1-24	25-49	50-Up
929-0550	A275KXX	24AC	3PNO/3PNC	60.76	56.41	52.64
929-0553	A275KXX	120AC	3PNO/3PNC	60.76	56.41	52.64

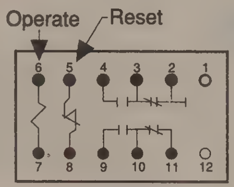
Type B255, 12 Pin Latching Relays

B255

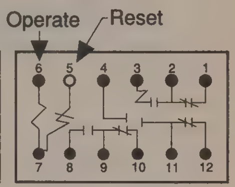
This is a two-coil latching version of the Type 219 relay. When the operate coil is momentarily energized the relay mechanically latches in the energized position even if power is interrupted. The second coil provides electrical reset. All contacts operate from a common armature to prevent contact overlapping, coils are rated for continuous duty. **Insulation:** 1/4" surface; 1/8" air. **Dielectric:** 1500 Volt test. **Oper. Time:** 25 ms max. **Release Time:** 20 ms max. **Temp. Range:** –10°C to +60°C. **Life Expectancy:** 10 million mechanical operations. **Cover:** Clear Polycarbonate. Uses socket #27390. **Dimensions:** 2 5/8 x 1 15/32 x 3 3/4".



B255BXBP



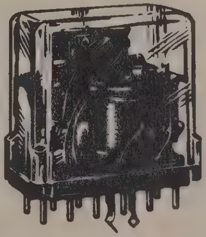
B255XBXP



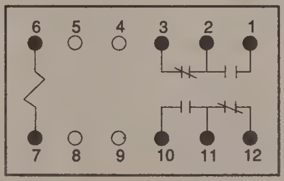
B255XCXP

Stock No.	Mfr.'s Type	Volts	Contacts	EACH 1-24	25-49	50-Up
929-2520	B255BXBP	120AC	2 N.O./2 N.C.	129.98	120.70	112.65
929-2522	B255XBXP	120AC	DPDT	121.64	112.93	105.41
929-2524	B255XCXP	120AC	3PDT	128.88	119.67	111.69

Type A311, Sequencing Relay



A311XBXP
A311XBXPR



A sequencing version of the Type 219 relay. Contacts transfer on each impulse. XBXP type transfers contacts when coil is energized. XBXPR type transfers contacts when coil is de-energized. 5 amp coil. Gold diffused SCO contacts. Uses base #27390. **Insulation:** 1/4" surface; 1/8" air. **Dielectric:** 1500 Volt test. **Temp. Range:** –10°C to +60°C. **Dimensions:** 2 5/8 x 1 15/32 x 2 19/32".

Stock No.	Mfr.'s Type	Volts	Contacts	EACH 1-24	25-49	50-Up
929-2122	A311XBXP	24DC	DPDT	131.66	122.26	114.11
929-2124	A311XBXP	120AC	DPDT	131.66	122.26	114.11
929-2126	A311XBXPR	24DC	DPDT	131.66	122.26	114.11
929-0001	A311XBXPR	120AC	DPDT	131.66	122.26	114.11

Type 425,25 and 30 Amp Power Relays

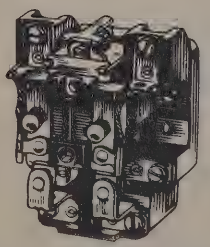


Fig. A

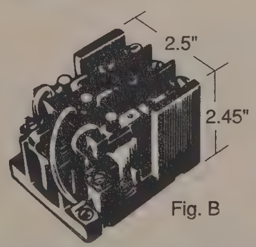


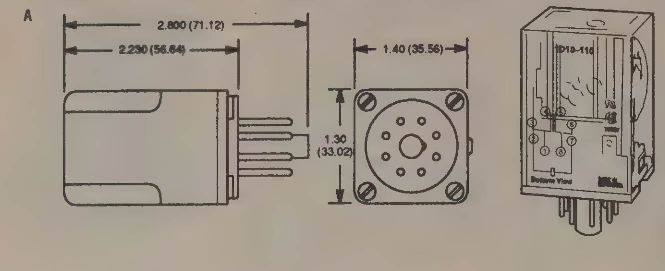
Fig. B

Modern low cost general purpose relays for all On/Off applications. **Dielectric:** 2500 VAC, 60 Hz. **Operations:** 30 mS. **Release Time:** 15 mS. **Temp. Range:** (AC) –55° to +45°C, (DC) –55°C to +80°C. **Life Expectancy:** 10 million mechanical operations, U.L. and CSA listed, SCO contacts.

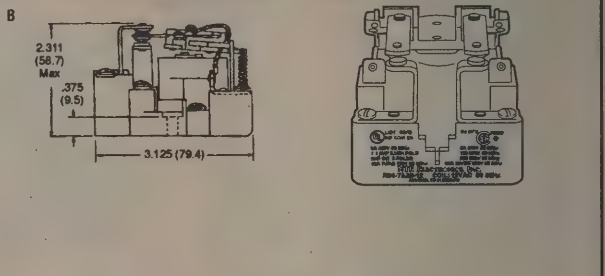
Stock No.	Mfr.'s Type	Volts	Contacts	EACH 1-24	25-49	50-Up
929-3120†	425BXX	120AC	DPST	32.52	30.20	28.18
929-5120†	425XAX	120AC	SPDT	29.68	27.55	25.72
929-3124†	425XAX	24AC	SPDT	29.68	27.55	25.72
929-7120†	425XBX	120AC	DPDT	40.27	37.40	34.90
929-3123†	425XBX	24DC	DPDT	39.46	36.64	36.64
929-7125‡	425XCX	120AC	3PDT	70.70	65.65	61.28

† Fig. A, 30 Amp. ‡ Fig. B, 25 Amp.

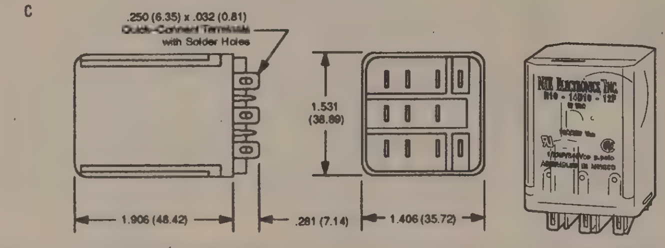
A



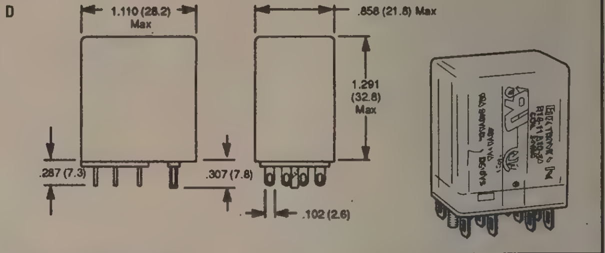
B



C


.250 (6.35) x .032 (0.81) Quick-Connect Terminals with Solder Holes
1.531 (38.89)
1.906 (48.42)
.281 (7.14)
1.406 (35.72)

D



General Purpose Relays

Features

- Clear Plastic Dust Cover
- DPDT and 3PDT Types
- 8 Pin and 11 Pin Octal Plug-In Types
- Indicator Lamp Type (N Suffix)

Electrical Specifications

- Operating Time: 25mS or Less
- Release Time: 28mS or Less
- Duty Cycle: Continuous
- Operating Temperature: –10° to +50°C (AC), –10° to +60°C (DC)

AC Operated

Stock No.	Mfr.'s Type	Nominal Voltage	Contact Arr.	Coil Res. Ω (Typ)	Nominal Power	Max. Contact Current @ 120VAC	Fig.	EACH
235-0001	R02-11A10-12	12VAC	DPDT	—	2.00VA	10A	A	13.87
235-0002	R02-11A10-24	20VAC	DPDT	—	2.00VA	10A	A	13.87
235-0003	R02-11A10-120	120VAC	DPDT	—	2.00VA	10A	A	13.00
235-0004	R02-11A10-120N	120VAC	DPDT	—	2.00VA	10A	A	16.85
235-0005	R02-11A10-240	240VAC	DPDT	—	2.00VA	10A	A	14.12
235-0006	R02-14A10-120	120VAC	3PDT	—	2.75VA	10A	A	15.94

DC Operated

Stock No.	Mfr.'s Type	Nominal Voltage	Contact Arr.	Coil Res. Ω (Typ)	Nominal Power	Max. Contact Current @ 28VDC	Fig.	EACH
235-0007	R02-11D10-12	12VDC	DPDT	120	1.0W	10A	A	12.83
235-0008	R02-11D10-24	24VDC	DPDT	470	1.0W	10A	A	12.83
235-0009	R02-14D10-12	12VDC	3PDT	120	1.0W	10A	A	15.75
235-0010	R02-14D10-24	24VDC	3PDT	470	1.0W	10A	A	15.75

Open Frame Heavy Duty Industrial Relays

Features

- Screw Terminals
- Long Life Contacts
- Molded Plastic Barrier Insulation
- Molded Nylon Bobbin Coil

Electrical Specifications

- Operating Time: 40mS or Less
- Release Time: 30mS or Less
- Duty Cycle: Continuous
- Operating Temperature: –30° to +50°C

AC Operated

Stock No.	Mfr.'s Type	Nominal Voltage	Contact Arr.	Coil Res. Ω (Typ)	Nominal Power	Max. Contact Current @ 120VAC	Fig.	EACH
235-0011	R04-11A30-120	120VAC	DPDT	—	10VA	30A	B	17.00

General Purpose Relays

Features

- Clear Plastic Dust Cover
- DPDT and 3PDT Types
- Plug-In or Solder Terminals, Will Also Accept .187" Quick Connect

Electrical Specifications

- Operating Time: 20mS (DPDT), 24mS (3PDT)
- Release Time: 28mS (DPDT), 26mS (3PDT)
- Duty Cycle: Continuous
- Operating Temperature: –30° to +50°C (AC), –30° to +65°C (DC)

AC Operated

Stock No.	Mfr.'s Type	Nominal Voltage	Contact Arr.	Coil Res. Ω (Typ)	Nominal Power	Max. Contact Current @ 120VAC	Fig.	EACH
235-0012	R10-11A10-120	120VAC	DPDT	—	2.00VA	12A	C	9.64
235-0013	R10-14A10-24	24VAC	3PDT	—	2.75VA	11A	C	10.19
235-0014	R10-14A10-120	120VAC	3PDT	—	2.75VA	11A	C	10.49

DC Operated

Stock No.	Mfr.'s Type	Nominal Voltage	Contact Arr.	Coil Res. Ω (Typ)	Nominal Power	Max. Contact Current @ 28VDC	Fig.	EACH
235-0015	R10-11D10-12	12VDC	DPDT	120	1.2W	12A	C	8.56
235-0016	R10-11D10-24	24VDC	DPDT	470	1.2W	12A	C	8.53
235-0017	R10-14D10-12	12VDC	3PDT	120	1.2W	11A	C	9.88
235-0018	R10-14D10-24	24VDC	3PDT	470	1.2W	11A	C	9.77

General Purpose Relays

Features

- Slightly Larger Than 1 Cubic Inch
- Clear Plastic Dust Cover
- High Reliability, 50 Million Operations
- Plug-In or Solder Terminals

Electrical Specifications

- Operating Time: 25mS or Less
- Release Time: 25mS or Less
- Duty Cycle: Continuous
- Operating Temperature: –30° to +55°C

AC Operated

Stock No.	Mfr.'s Type	Nominal Voltage	Contact Arr.	Coil Res. Ω (Typ)	Nominal Power	Max. Contact Current @ 120VAC	Fig.	EACH
235-0019	R12-17A3-24	24VAC	4PDT	—	1.2VA	3A	D	13.96
235-0020	R12-17A3-120	120VAC	4PDT	—	1.2VA	3A	D	13.96

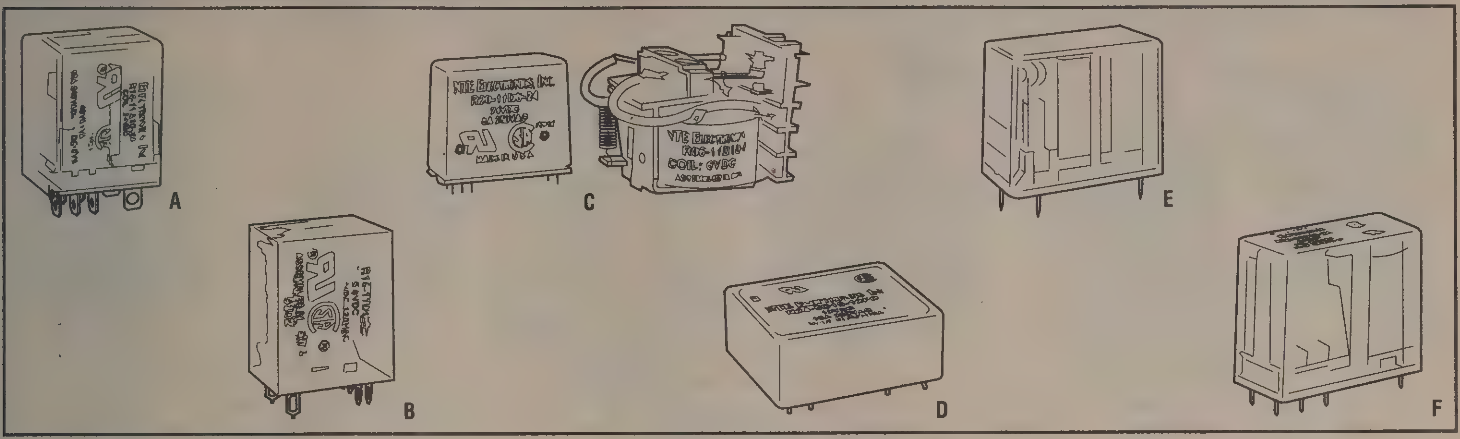
DC Operated

Stock No.	Mfr.'s Type	Nominal Voltage	Contact Arr.	Coil Res. Ω (Typ)	Nominal Power	Max. Contact Current @ 28VDC	Fig.	EACH
235-0021	R12-17D3-12	12VDC	4PDT	160	0.9W	3A	D	10.89
235-0022	R12-17D3-24	24VDC	4PDT	650	0.9W	3A	D	10.89

Sockets

Stock No.	Mfr.'s Type	Description	Electrical Rating		EACH
			Volts	Amps	
235-0051	R95-101	8-Pin Octal Socket	600	10	4.77
235-0052	R95-104	11-Pin Octal Socket	600	10	7.92
235-0053	R95-105	11-Pin Heavy Duty Square Base Socket	300	10	8.68
235-0054	R95-106A	14-Pin Miniature Socket	300	7	7.73
235-0055	R95-107	14-Pin Blade Socket	120	5	1.61
235-0056	R95-110	8-Pin Midget Blade Socket	300	10	7.51
235-0057	R95-111	8-Pin Midget Blade Socket	300	10	2.20

Stock No.	Mfr.'s Type	Description	Electrical Rating		EACH
			Volts	Amps	
235-0058	R95-113	8-Pin Octal Socket	300	10	4.18
235-0059	R95-114	11-Pin Octal Socket	300	10	5.88
235-0060	R95-115	11-Pin Square Base Socket	300	10	6.60
235-0061	R95-117	14-Pin Miniature Socket	300	7	7.47
235-0062	R95-120	8-Pin Midget Blade Socket	300	10	1.75
235-0063	R95-121	8-Pin Midget Blade Socket	300	10	5.21
235-0064	R95-122	14-Pin Blade Socket	120	5	1.28



General Purpose Relays

Features
- ► Slightly Larger Than 1 Cubic Inch
- ► Clear Plastic Dust Cover
- ► High Reliability, 50 Million Operations
- ► Plug-In or Solder Terminals

Electrical Specifications
- ► Operating Time: 25mS or Less
- ► Release Time: 25mS or Less
- ► Duty Cycle: Continuous
- ► Operating Temperature: –30° to +55°C

AC Operated

Stock No.	Mfr.'s Type	Nominal Voltage	Contact Arr.	Coil Res. Ω (Typ)	Nominal Power	Max. Contact Current @ 120VAC	Fig.	EACH
235-0023	R14-11A10-24	24VAC	DPDT	—	1.2VA	10A	A	**8.47**
235-0024	R14-11A10-120	120VAC	DPDT	—	1.2VA	10A	A	**8.58**

DC Operated

Stock No.	Mfr.'s Type	Nominal Voltage	Contact Arr.	Coil Res. Ω (Typ)	Nominal Power	Max. Contact Current @ 28VDC	Fig.	EACH
235-0025	R14-5D15-12	12VDC	SPDT	160	0.9W	15A	A	**7.40**
235-0026	R14-11D10-12	12VDC	DPDT	160	0.9W	10A	A	**7.89**
235-0027	R14-11D10-24	24VDC	DPDT	650	0.9W	10A	A	**7.89**

Miniature Industrial Relays

Features
- ► Combination Plug-In/Solder Terminals
- ► Clear Plastic Dust Cover
- ► Gold Overlay Bar Type Long Life Contacts

Electrical Specifications
- ► Operating Time: 12mS or Less
- ► Release Time: 8mS or Less
- ► Operating Temperature: –55° to +70°C, 10 Sec. Max.

DC Operated

Stock No.	Mfr.'s Type	Nominal Voltage	Contact Arr.	Coil Res. Ω (Typ)	Nominal Power	Max. Contact Current @ 28VDC	Fig.	EACH
235-0028	R16-11D3-12	12VDC	DPDT	185	0.75W	3A	B	**9.92**
235-0029	R16-11D5-12	12VDC	DPDT	185	0.75W	5A	B	**9.92**
235-0030	R16-11D5-24	24VDC	DPDT	700	1.00W	5A	B	**10.67**

General Purpose Relays

Features
- ► Requires Minimal PC Board Area
- ► Dust Proof Cover
- ► Switches Heavy Current With Low Coil Power

Electrical Specifications
- ► Operating Time: 10mS or Less
- ► Release Time: 8mS or Less
- ► Operating Temperature: –45° to +75°C

DC Operated

Stock No.	Mfr.'s Type	Nominal Voltage	Contact Arr.	Coil Res. Ω (Typ)	Nominal Power	Max. Contact Current @ 28VDC	Fig.	EACH
235-0031	R20-11D6-12	12VDC	DPDT	170	0.8W	8A	C	**11.81**

Slim Line Relays

Features
- ► Sealed Construction
- ► Long Life
- ► PC Board Mount

Electrical Specifications
- ► Operating Time: 30mS or Less
- ► Release Time: 8mS or less
- ► Operating Temperature: –30° to +70°C

DC Operated

Stock No.	Mfr.'s Type	Nominal Voltage	Contact Arr.	Coil Res. Ω (Typ)	Nominal Power	Max. Contact Current @ 28VDC	Fig.	EACH
235-0032	R22-1D16-12	12VDC	SPDT-NO	270	0.54W	16A	D	**4.83**
235-0033	R22-5D16-12	12VDC	SPDT	270	0.54W	16A	D	**4.83**

Upright Epoxy Sealed Power Relays

Features
- ► High Dielectric — 400VRMS Between Control and Switching Circuits
- ► Cut-Off Nib After PCB Washing
- ► 94 V-0 Enclosure

Electrical Specifications
- ► Operating Time: 15mS Approx.
- ► Release Time: 10mS Approx.
- ► Switching Rate: 5 Operations Per Second (Max.)
- ► Operating Temperature: –40° to +70°C

DC Operated

Stock No.	Mfr.'s Type	Nominal Voltage	Contact Arr.	Coil Res. Ω (Typ)	Nominal Power	Max. Contact Current @ 28VDC	Fig.	EACH
235-0034	R24-5D10-12V	12VDC	SPDT	230	0.6W	10A	E	**5.38**
235-0035	R24-5D10-24V	24VDC	SPDT	920	0.6W	10A	E	**5.46**

Upright Epoxy Sealed Power Relays — *NEW* —

Features
- ► High Dielectric — 400VRMS Between Control and Switching Circuits
- ► Suitable for 5 mm Grid Pattern
- ► Immersion Proof

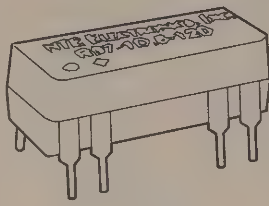
Electrical Specifications
- ► Operating Time: 8mS Approx.
- ► Release Time: 5mS Approx.
- ► Switching Rate: 20 Operations Per Second (Max.)
- ► Operating Temperature: –40° to +70°C

AC Operated

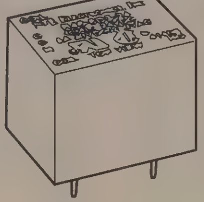
Stock No.	Mfr.'s Type	Nominal Voltage	Contact Arr.	Coil Res. Ω (Typ)	Nominal Power	Max. Contact Current @ 28VAC	Fig.	EACH
235-2001	R25-5A16-24	24VAC	SPDT	280	—	16A	F	**10.97**
235-2002	R25-5A16-120	120VAC	SPDT	5600	—	16A	F	**14.25**
235-2003	R25-11A10-24	24VAC	DPDT	280	—	10A	F	**14.38**
235-2004	R25-11A10-120	120VAC	DPDT	5600	—	10A	F	**15.41**

DC Operated

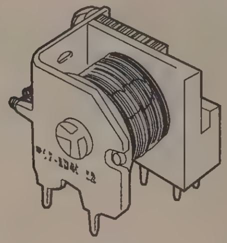
Stock No.	Mfr.'s Type	Nominal Voltage	Contact Arr.	Coil Res. Ω (Typ)	Nominal Power	Max. Contact Current @ 28VDC	Fig.	EACH
235-2005	R25-1D16-5/6	5/6VDC	SPST-NO	68	500mW	16A	F	**5.27**
235-2006	R25-1D16-12	12VDC	SPST-NO	270	500mW	16A	F	**5.27**
235-2007	R25-1D16-24	24VDC	SPST-NO	1100	500mW	16A	F	**5.27**
235-2008	R25-1D16-48	48VDC	SPST-NO	4200	500mW	16A	F	**5.27**
235-2009	R25-5D16-5/6	5/6VDC	SPDT	68	500mW	16A	F	**5.40**
235-2010	R25-5D16-12	12VDC	SPDT	270	500mW	16A	F	**5.40**
235-2011	R25-5D16-24	24VDC	SPDT	1100	500mW	16A	F	**5.40**
235-2012	R25-5D16-48	48VDC	SPDT	4200	500mW	16A	F	**5.40**
235-2013	R25-11D16-5/6	5/6VDC	DPDT	68	500mW	10A	F	**5.60**
235-2014	R25-11D16-12	12VDC	DPDT	270	500mW	10A	F	**5.60**
235-2015	R25-11D16-24	24VDC	DPDT	1100	500mW	10A	F	**5.60**
235-2016	R25-11D16-48	48VDC	DPDT	4200	500mW	10A	F	**5.60**



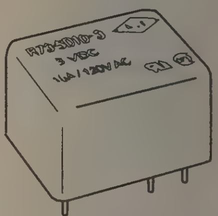
R56



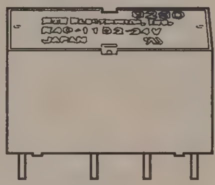
R46



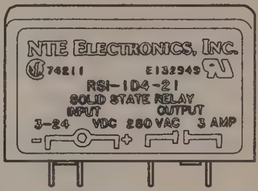
R52



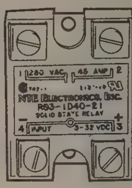
R73



R40



RS1



RS3

General Purpose DIP Reed Relays, DC Operated

Features
- ► Standard Industry Packaging
- ► Internal Clamping Diode Version (D-Suffix)
- ► Separate Time: 330 µs Max.

Electrical Specifications
- ► Release Time: 75 µs Max.
- ► Max. Current: 0.50 A
- ► Operating Temperature: –45° to +85°C

DC Operated

Stock No.	Mfr.'s Type	Nominal Voltage	Contact Arr.	Coil Res. Ω (Typ)	Max. Pickup VDC	Min. Drop Out VDC	EACH
235-0043	R56-1D.5-6	6VDC	SPST-NO	500	3.8	0.5	**3.56**
235-0044	R56-1D.5-6D	6VDC	SPST-NO	500	3.8	0.5	**4.80**

General Purpose Relays

Features
- ► All Sealed and Resistant to Wave Soldering and Cleaning
- ► Less Than 0.53 Cubic Inches

Electrical Specifications
- ► Operating Time: 10 mS Max.
- ► Release Time: 5 mS Max.
- ► Operating Temperature: –25° to +70°C

DC Operated

Stock No.	Mfr.'s Type	Nominal Voltage	Contact Arr.	Coil Res. Ω (Typ)	Nominal Power	Max. Contact Current @ 28 VDC	EACH
235-0039	R46-5D3-6	6 VDC	SPDT	90	0.4 W	5 A	**4.04**
235-0040	R46-5D3-12	12 VDC	SPDT	360	0.4 W	5 A	**4.04**
235-0041	R46-5D3-24	24 VDC	SPDT	1440	0.4 W	5 A	**4.04**

Automotive Relays — NEW —

Features
- ► Open Frame
- ► P.C. Board Mountable
- ► Subminiature Size

Electrical Specifications
- ► Operating Time: 10 mS Typ.
- ► Release Time: 10 mS Typ.
- ► Operating Temperature: –30° to +85°C

DC Operated

Stock No.	Mfr.'s Type	Nominal Voltage	Contact Arr.	Coil Res. Ω (Typ)	Nominal Power	Max. Contact Current @ 28VDC	EACH
235-2017	R52-1D40-12	12 VDC	SPST-NO	120	1.2 W	40 A	**3.42**
235-2018	R52-5D40-12	12 VDC	SPDT	120	1.2 W	40 A	**3.42**

R73 Series General Purpose Relays — NEW —

Features
- ► Epoxy Sealed
- ► P.C. Board Mountable
- ► Small Size

Electrical Specifications
- ► Operating Time: 5 mS Max.
- ► Release Time: 10 mS Max.
- ► Operating Temperature: –55° to +85°C

DC Operated

Stock No.	Mfr.'s Type	Nominal Voltage	Contact Arr.	Coil Res. Ω (Typ)	Nominal Power	Max. Contact Current @ 28VDC	EACH
235-2019	R73-1D10-3	3 VDC	SPST-NO	20	450 mW	10 A	**3.35**
235-2020	R73-1D10-5/6	6 VDC	SPST-NO	80	450 mW	10 A	**3.35**
235-2021	R73-1D10-12	12 VDC	SPST-NO	320	450 mW	10 A	**3.35**
235-2022	R73-1D10-24	24 VDC	SPST-NO	1280	450 mW	10 A	**3.35**
235-2023	R73-5D10-3	3 VDC	SPDT	20	450 mW	10 A	**3.35**
235-2024	R73-5D10-5/6	6 VDC	SPDT	580	450 mW	10 A	**3.35**
235-2025	R73-5D10-12	12 VDC	SPDT	320	450 mW	10 A	**3.35**
235-2026	R73-5D10-24	24 VDC	SPDT	1280	450 mW	10 A	**3.35**

Sensitive Coil Single Contact Relays

Features
- ► Epoxy Sealed
- ► Ultra-Sensitive Coil
- ► Standard .100" DIP PC Mount Terminal

Electrical Specifications
- ► Operating Time: 4.5 mS Approx.
- ► Release Time: 1.5 mS Approx.
- ► Operating Temperature: –40° to +70°C

DC Operated

Stock No.	Mfr.'s Type	Nominal Voltage	Contact Arr.	Coil Res. Ω (Typ)	Nominal Power	Max. Contact Current @ 28VDC	EACH
235-0036	R40-11D2-5/6	5/6 VDC	DPDT	167	0.15 W	2 A	**4.56**
235-0037	R40-11D2-12	12 VDC	DPDT	960	0.15 W	2 A	**4.56**
235-0038	R40-11D2-24	24 VDC	DPDT	2880	0.20 W	2 A	**4.56**

Solid State Relay, 4 Amp

Features
- ► Industry Standard Package
- ► Thick Film Hybrid Construction
- ► 4KV Optical Isolation
- ► PC Board Mountable

Electrical Specifications
- ► Response Time: 0.5 Cycle
- ► Input Current: 25 mA DC Max.
- ► On-State Voltage Drop: 1.6 V Peak
- ► Operating Temperature: –30° to +80°C

DC Operated

Stock No.	Mfr.'s Type	Input Parameters			Output Parameters			EACH
		Control Voltage VDC	Min. Turn On Voltage VDC	Drop Out Voltage VDC	Line Voltage Range VAC	Max. On-State Current	Max. 1-Cycle Surge	
235-0045	RS1-1D4-21	3-24	3	1	24-280	3.5 A	100 A	**11.79**

Solid State Heavy Duty Power Relays

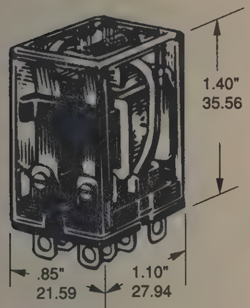
Features
- ► Back-to-Back Dual SCRs
- ► TRIAC Version (T Suffix)
- ► Panel Mount

Electrical Specifications
- ► Input Current: 4 mA DC Max
- ► On-State Voltage Drop: 1.6 V Peak

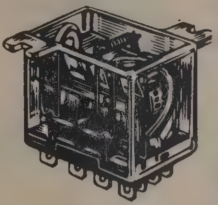
DC Operated

Stock No.	Mfr.'s Type	Input Parameters			Output Parameters			EACH
		Control Voltage VDC	Min. Turn On Voltage VDC	Drop Out Voltage VDC	Line Voltage Range VAC	Max. On-State Current	Max. 1-Cycle Surge	
235-0046	RS3-1D10-51	3-32	3	1	24-330	10 A	40 A	**17.81**
235-0047	RS3-1D25-24T	3-32	3	1	48-280	25 A	215 A	**30.75**
235-0048	RS3-1D40-21	3-32	3	1	80-530	40 A	600 A	**38.10**

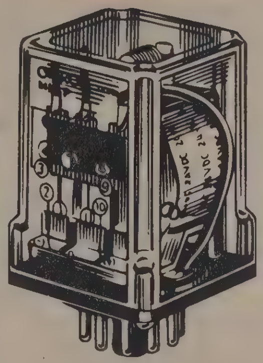
General Purpose Relays and Sockets



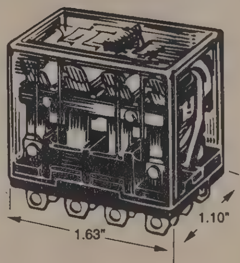
LY1



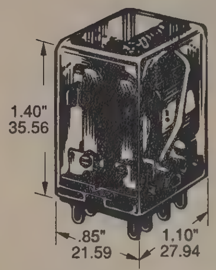
LY2F LY2 (without Flange)



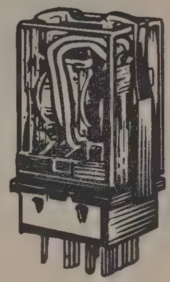
Super MK



LY4



MY 2-Pole Type



MY4

Model LY General-Purpose Relays

Small . . . Low Cost . . . Modern Design . . . Versatile . . . 12 Amps to 15 Amps . . . U.L.-CSA

► High Shock and Vibration Resistant **► Arc Barrier Equipped** **► High Dielectric Strength (2000 VAC)** **► Operate/Release Time, 25mS**

Stock No.	Mfr.'s Type	Coil Voltage	Contact		Coil		Terminal Type*	Case Style	EACH		
			Action	Amps	MA	Ohms			1-24	25-99	100-249
821-2000	LY1-AC120	120AC	SPDT	15	9.2	4430	Q/C	STD	**7.11**	**6.51**	**5.19**
821-2001	LY1-AC24	24AC	SPDT	15	46.0	180	Q/C	STD	**7.70**	**7.11**	**6.60**
821-2002	LY1-DC12	24DC	SPDT	15	75.0	160	Q/C	STD	**7.70**	**7.11**	**6.60**
821-2003	LY1-DC24	24DC	SPDT	15	36.9	650	Q/C	STD	**9.59**	**8.33**	**6.21**
821-2006	LY1F-AC120	120AC	SPDT	15	9.2	4430	Q/C	UBM	**7.76**	**6.71**	**6.26**
821-2007	LY1F-AC24	24AC	SPDT	15	46.0	180	Q/C	UBM	**7.76**	**6.71**	**6.26**
821-2009	LY1F-DC24	24DC	SPDT	15	36.9	650	Q/C	UBM	**7.20**	**6.71**	**6.26**
821-2010	LY2-AC120	120AC	DPDT	12	9.2	4430	Q/C	STD	**10.24**	**8.90**	**7.85**
821-2011	LY2-AC24	24AC	DPDT	12	46.0	180	Q/C	STD	**8.44**	**7.33**	**6.48**
821-2012	LY2-AC240	240AC	DPDT	12	4.6	18790	Q/C	STD	**8.44**	**7.33**	**6.48**
821-2013	LY2-DC12	12DC	DPDT	12	75.0	160	Q/C	STD	**8.02**	**7.14**	**6.10**
821-2014	LY2-DC24	24DC	DPDT	12	36.9	650	Q/C	STD	**8.17**	**7.11**	**6.27**
821-2015	LY2-DC6	6DC	DPDT	12	150.0	40	Q/C	STD	**11.74**	**10.60**	**9.93**
821-2016	LY2-0-DC12	12DC	DPDT	12	75.0	160	PCB	STD	**9.34**	**8.14**	**7.19**
821-2017	LY2-0-DC24	24DC	DPDT	12	36.9	650	PCB	STD	**9.15**	**7.90**	**6.93**
821-2018	LY2F-AC120	120AC	DPDT	12	9.2	4430	Q/C	UBM	**9.15**	**7.90**	**6.93**
821-2019	LY2F-DC12	12DC	DPDT	12	75.0	160	Q/C	UBM	**9.15**	**7.90**	**6.93**
821-2020	LY2F-DC24	24DC	DPDT	12	36.9	650	Q/C	UBM	**8.42**	**7.86**	**6.90**
821-2021	LY4-AC120	120AC	4PDT	12	16.4	2200	Q/C	STD	**13.43**	**11.68**	**10.35**
821-2022	LY4-AC24	24AC	4PDT	12	80.0	78	Q/C	STD	**13.43**	**11.68**	**10.35**
821-2023	LY4-DC12	12DC	4PDT	12	120.0	100	Q/C	STD	**13.43**	**11.68**	**10.35**
821-2024	LY4-DC24	24DC	4PDT	12	69.0	350	Q/C	STD	**12.98**	**11.29**	**10.01**

*In Terminal Type, UBM means UPPER BRACKET MOUNT, Q/C fits sockets or .200" quick connect terminals.

Super MK Series

Reliable, high quality, long life. (Silver contacts rated at 10 amps. U.L., CSA rated.)

Stock No.	Mfr.'s Type	Voltage	Contact Action	Coil		EACH		
				MA	Ohms	1-24	25-99	100-249
821-5020	MK2P-S-AC120	120AC	DPDT	18.0	1578	**11.23**	**10.44**	**9.76**
821-5025	MK2P-S-AC24	24AC	DPDT	88.0	68	**10.23**	**9.52**	**8.88**
821-5030	MK2P-S-AC240	240AC	DPDT	9.2	6737	**12.04**	**11.20**	**10.48**
821-5035	MK2P-S-DC12	12DC	DPDT	126.0	95	**8.75**	**8.14**	**7.60**
821-5040	MK2P-S-DC24	24DC	DPDT	56.0	430	**11.62**	**10.82**	**10.09**
821-5050	MK3P5-S-AC120	120AC	3PDT	18.0	1578	**11.92**	**11.06**	**10.35**
821-5055	MK3P5-S-AC24	24AC	3PDT	88.0	68	**11.77**	**10.95**	**10.25**
821-5060	MK3P5-S-AC240	240AC	3PDT	9.2	6737	**12.97**	**12.09**	**11.30**
821-5065	MK3P5-S-DC12	12DC	3PDT	126.0	95	**11.77**	**10.95**	**10.25**
821-5070	MK3P5-S-DC24	24DC	3PDT	56.0	430	**14.10**	**13.13**	**12.28**
821-5075	MK3P5-S-DC110	110DC	3PDT	15.1	7300	**24.14**	**22.48**	**21.02**

Dual Coil—Magnetic Latching*

Stock No.	Mfr.'s Type	Voltage	Contact Action	Coil		EACH		
				MA	Ohms	1-24	25-99	100-249
821-4013	MK2KP-AC24	24AC	DPDT-S DPDT-R	66.0 10.8	105 965	**33.42**	**31.08**	**25.73**
821-4014	MK2KP-AC120	120AC	DPDT-S DPDT-R	19.0 3.6	1,900 14,400	**33.42**	**31.08**	**25.73**
821-4015	MK2KP-DC12	12DC	DPDT-S DPDT-R	128.0 14.4	25 325	**33.42**	**31.08**	**25.73**
821-4016	MK2KP-DC24	24DC	DPDT-S DPDT-R	66.0 10.6	105 965	**33.42**	**31.08**	**25.73**

*S = Set, R = Reset in coil resistance. DPDT — 11 pin octal socket.

MY Series

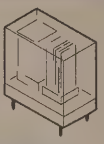
Miniature, high sensitivity power relays. Contacts rated at 3 and 5 amps. Type "E" are silver cadmium oxide contacts. U.L., CSA rated.

Stock No.	Mfr.'s Type	Voltage	Contact		Coil		EACH		
			Action	Amps	MA	Ohms	1-24	25-99	100-249
821-4029	MY2-AC24	24AC	DPDT	5A	46.0	—	**7.00**	**6.52**	**5.48**
821-4030	MY2-AC120	120AC	DPDT	5A	9.2	—	**9.82**	**8.58**	**7.58**
821-4031	MY2-DC12	12DC	DPDT	5A	75.0	160	**7.99**	**7.32**	**6.76**
821-4032	MY2-DC24	24DC	DPDT	5A	36.9	650	**7.06**	**6.17**	**5.45**
821-4036	MY2E-DC24	24DC	DPDT	5A	36.9	650	**9.05**	**7.50**	**6.68**
821-4037	MY4-AC24	24AC	4PDT	3A	46.0	—	**7.27**	**6.25**	**5.74**
821-4038	MY4-AC120	120AC	4PDT	3A	9.2	—	**7.74**	**6.75**	**5.96**
821-4039	MY4-DC6	6DC	4PDT	3A	150.0	40	**7.28**	**6.35**	**5.61**
821-4040	MY4-DC12	12DC	4PDT	3A	75.0	160	**7.28**	**6.35**	**5.61**
821-4041	MY4-DC24	24DC	4PDT	3A	36.9	650	**7.28**	**6.35**	**5.61**
821-4042	MY4-DC48	48DC	4PDT	3A	18.5	2,000	**7.28**	**6.35**	**5.61**
821-4044	MY4E-AC2	24AC	4PDT	5A	46.0	—	**9.49**	**8.73**	**7.50**
821-4045	MY4E-AC120	120AC	4PDT	5A	9.2	—	**6.72**	**5.85**	**4.52**
821-4046	MY4E-DC12	12DC	4PDT	5A	75.0	160	**9.54**	**8.59**	**7.84**
821-4047	MY4E-DC24	24DC	4PDT	5A	36.9	2,600	**9.54**	**8.59**	**7.84**
—	—	—	—	—	—	—	—	—	—

Quality Sockets and Clips for Relays

Stock No.	Mfr.'s Type	For Relay Series	Application	EACH		
				1-24	25-99	100-249
821-3013	PF083A-E	MK 1 and 2 Pole	Surface mount or rail	**6.17**	**5.38**	**4.74**
821-3014	PF113A-E	MK 3 Pole	Surface mount or rail	**10.72**	**9.34**	**8.26**
821-3015	PL08	MK 2 Pole	Solder	**2.22**	**1.81**	**1.52**
821-3016	PL11	MK 3 Pole	Solder	**2.48**	**1.93**	**1.75**
821-3017	PFP-100N	All Relays	Mounting rail	**10.84**	**9.43**	**8.35**
821-3021	PYF08A-E	MY 2 Pole	Surface or rail mount	**5.65**	**4.94**	**4.35**
821-3023	PYF14A-E	MY 4 Pole	Surface or rail mount	**9.38**	**8.16**	**7.25**
821-3024	PY08	MY 2 Pole	Solder	**2.56**	**2.16**	**1.89**
821-3026	PY14	MY 4 Pole	Solder	**1.96**	**1.66**	**1.55**
821-3027	PYC-A1	LY	Hold-down clip	**.49**	**.41**	**.36**
821-3028	PTF08A-E	LY 1 and 2 Pole	Surface or rail mount	**6.48**	**5.65**	**4.99**
821-3029	PTF14A-E	LY 4 Pole	Surface or rail mount	**9.90**	**8.63**	**7.69**
821-3030	PT08	LY 1 and 2 Pole	Chassis—solder	**5.19**	**4.21**	**3.48**
821-3032	PT08-0	LY 1 and 2 Pole	PCB terminal	**2.64**	**2.17**	**1.77**
821-3033	PT14-0	LY 4 Pole	PCB terminal	**2.75**	**2.47**	**2.26**
—	—	—	—	—	—	—

G2R Series General Purpose, Sealed Relays

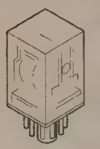


G2R-14, G2R-24 Specifications. Contact Form: G2R-1 — SPDT; G2R-2 — DPDT. **Contact Resistance:** G2R-1 — 30 Ω maximum; G2R-2 — 50 Ω maximum. **Contact Rating:** G2R-1 — 10 A 250 VAC (general use), 10 A 30 VDC (resistive); G2R-2 — 5 A 250 VAC (general use), 5 A 30 VDC (resistive). **Operate Time:** 15 mS maximum. **Release Time:** AC — 10 mS maximum; DC — 5 mS maximum.

Stock No.	Mfr.'s Type	Rated Voltage	Rated Current mA	Coil Resistance Ω	Power Consumption mW	EACH 1-24	25-49	50-99
821-5100	G2R-14-AC24	24 VAC	21.8	260	.90 VA	**6.43**	**5.96**	**5.69**
821-5101	G2R-14-AC120	120 VAC	7.5*	6500	.90 VA*	**6.81**	**6.34**	**5.81**
821-5102	G2R-14-DC5	5 VDC	106.0	47	.53 W	**4.04**	**3.50**	**2.88**
821-5103	G2R-14-DC12	12 VDC	43.6	275	.53 W	**4.19**	**3.64**	**2.99**
821-5104	G2R-14-DC24	24 VDC	21.8	1100	.53 W	**4.01**	**3.46**	**2.86**
821-5105	G2R-24-AC24	24 VAC	21.8	2670	.90 VA	**6.74**	**6.27**	**5.19**
821-5106	G2R-24-AC120	120 VAC	7.5*	6500	.90 VA*	**7.35**	**6.84**	**5.66**
821-5107	G2R-24-DC5	5 VDC	106.0	47	.53 W	**4.46**	**4.05**	**3.32**
821-5108	G2R-24-DC12	12 VDC	43.6	275	.53 W	**4.46**	**4.05**	**3.32**
821-5109	G2R-24-DC24	24 VDC	21.8	1100	.53 W	**4.62**	**4.21**	**3.46**

*At 60 Hz.

General-Purpose Relays with LED Indicator and Sockets



Super MK Series

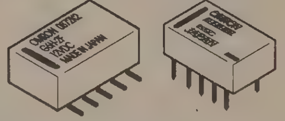
Reliable, high quality, long life. Silver contact rated at 10 amps. UL, CSA rated. LED indicator lets you monitor relay operation at a glance: red LED for AC version; green LED for DC version. Quality sockets and mounting rail complete your installation.

Stock No.	Mfr.'s Type	Rated Voltage	Contact Action	Coil mA	Coil Ohms	EACH 1-24	25-49	50-99
821-5110	MK2PN-S-AC120	120 VAC	DPDT	18.0	1578	**11.82**	**11.00**	**9.10**
821-5111	MK2PN-S-AC24	24 VAC	DPDT	88.0	68	**9.53**	**8.86**	**7.35**
821-5112	MK2PN-S-AC240	240 VAC	DPDT	9.2	6737	**24.63**	**22.93**	**18.97**
821-5113	MK2PN-S-DC12	12 VDC	DPDT	126.0	95	**26.46**	**24.60**	**20.38**
821-5115	MK2PN-S-DC110	110 VDC	DPDT	15.1	7300	**23.07**	**21.47**	**17.76**
821-5116	MK3PN-5-S-AC120	120 VAC	3PDT	18.0	1578	**16.85**	**15.69**	**12.98**
821-5117	MK3PN-5-S-AC24	24 VAC	3PDT	88.0	68	**23.98**	**22.30**	**18.45**
821-5118	MK3PN-5-S-AC240	240 VAC	3PDT	9.2	6737	**26.64**	**24.76**	**20.49**
821-5119	MK3PN-5-S-DC12	12 VDC	3PDT	126.0	95	**23.98**	**22.30**	**18.45**
821-5120	MK3PN-5-S-DC24	24 VDC	3PDT	56.0	430	**23.98**	**22.30**	**18.45**

Sockets and Track

Stock No.	Mfr.'s Type	For Relay Series	Application	EACH 1-24	25-49	50-99
821-3013	PF083A-E	MK 2 Pole	Surface mount or rail	**6.17**	**5.38**	**4.74**
821-3014	PF113A-E	MK 3 Pole	Surface mount or rail	**10.72**	**9.34**	**8.26**
821-3015	PL08	MK 2 Pole	Chassis mount	**2.22**	**1.81**	**1.52**
821-3016	PL11	MK 3 Pole	Chassis mount	**2.69**	**2.47**	**2.29**
821-3017	PFP-100N	All Relays	Mounting rail, 1 m	**10.84**	**9.43**	**8.35**

Compact, Low Profile G6H Series PC Board-Use Relays: 1 Amp Load

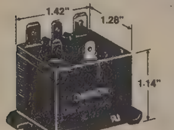


Low power consumption 1 amp, 30 VDC relay. Low magnetic interference allows high-density mounting. Just 5 mm profile. **Standard:** G6H-2. **Latching:** G6HK-2. **Surface Mount:** G6H-2-F. Surge withstand voltage of 1500 VDC meets FCC Part 68 requirements. DPDT bifurcated contacts. **Specifications. Rated Load:** 0.5 A 125 VAC (p.f.=1) and 1 A 30 VDC. **Pick-Up Voltage:** 75% max. **Dropout Voltage:** 10% min. Surface mount version can be soldered by VPS, IRS and DWS methods.

Stock No.	Mfr.'s Type	Rated Voltage	Rated Current mA	Coil Resis. Ohms	Coil Inductance Armature Off	Coil Inductance Armature On	Max. Voltage	Power Consump. mW	EACH 1-24	25-49	50-99
821-4250	G6H-2-DC5	5 VDC	46.7	64.3	.025	.022	200%	140	**4.54**	**3.95**	**3.24**
821-4251	G6H-2-DC12	12 VDC	11.7	1028.0	.430	.370	200%	140	**4.54**	**3.95**	**3.24**

Stock No.	Mfr.'s Type	Rated Voltage	Rated Current mA*	Coil Resis. Ohms*	Set Pickup Voltage†	Reset Pickup Voltage†	Max. Voltage	Power Consump. mW	EACH 1-24	25-49	50-99
821-4259	G6HK-2-DC5	5 VDC	40.0	125	75	75	150%	200	**7.42**	**6.91**	**5.71**

*Rated current and coil resistance for G6HK applies to set coil and reset coil. †% Rated Voltage.



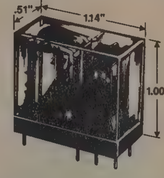
G4B Series Upper Mounting Bracket Type

Creepage distance of more than .08". Upper mounting bracket type for easy wiring and mounting. **Specifications. Load Contact Terminal:** quick connect #110. **Contact Form:** SPDT. **Contact Resistance:** 30 mΩ max. **Rated Load (resistive):** 220 VAC 15 A, 24 VDC 15 A. **Carry Current:** 20 A. **Max. Operating Voltage:** 250 VAC, 125 VDC. **Max. Operating Current:** 20 A. **Max. Switching Capacity (resistive):** 3,300 VA, 360 W.

Stock No.	Mfr.'s Type	Rated Voltage	Rated Current mA	Coil Resistance Ω	Power Consumption mW	EACH 1-24	25-49	50-99
821-1023	G4B-112T-C-US-120VAC	120VAC	10.8*	—	1.3VA	**9.19**	**8.55**	**7.08**
821-1025	G4B-112T-C-US-24VDC	24VDC	50.0	480	1.2W	**11.18**	**10.29**	**9.26**

*At 60 Hz.

G2R Series General Purpose, Unsealed Relays

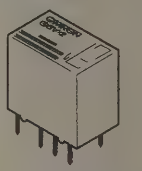


General Purpose, unsealed relays. **Specifications. Contact Form. G2R-1:** SPDT. **G2R-2:** DPDT. **Contact Resistance. G2R-1**: 30 Ω maximum. **G2R-2:** 50 Ω maximum. **Contact Rating. G2R-1:** 10 A 250 VAC (general use), 10 A 30 VDC (resistive). **G2R-2:** 5 A 250 VAC (general use), 5 A 30 VDC (resistive). **Operate Time:** 15 mS maximum. **Release Time. AC:** 10 mS maximum. **DC:** 5 mS maximum.

Stock No.	Mfr.'s Type	Rated Voltage	Rated Current mA	Coil Resistance Ω	Power Consumption mW	EACH 1-24	25-49	50-99
821-1026	G2R-1-120VAC	120VAC	7.5*	6500	0.90VA*	**7.43**	**6.69**	**5.56**
821-1028	G2R-1-12VDC	12VDC	43.6	275	0.53W	**6.04**	**5.45**	**4.49**
821-1029	G2R-1-24VDC	24VDC	21.8	1100	0.53W	**4.85**	**4.49**	**4.05**
821-1030	G2R-2-120VAC	120VAC	7.5*	6500	0.90VA*	**8.47**	**7.62**	**6.03**
821-1032	G2R-2-12VDC	12VDC	43.6	275	0.53W	**4.65**	**4.23**	**3.93**
821-1033	G2R-2-24VDC	24VDC	21.8	1100	0.53W	**5.77**	**5.19**	**4.74**

*At 60 Hz.

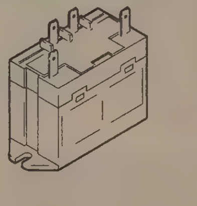
G5V-2 Series PC Board Use Relays: 2 Amp Load

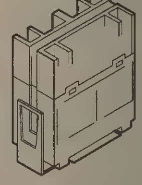


DPDT. Bifurcated contacts. Designed for telecommunications, computer peripherals, security equipment; low level to 2 amps maximum. **Standard:** G5 V-2. **High-Sensitivity:** G5V-2-H. **Ultra-Sensitive:** G5V-2-H1. **Specifications. Contact Resistance:** 50 mΩ. **Operate Time:** 7 mS max. **Release Time:** 3 mS max. Fully sealed case allows automatic soldering and cleaning. UL and CSA approved. Meets FCC part 68 1500 V surge withstand. **Pick-Up Voltage:** 75% max. **Dropout Voltage:** 5% min.

Stock No.	Mfr.'s Type	Rated Voltage	Rated Current mA	Coil Resistance Ohms	Power Consumption mW	EACH 1-24	25-49	50-99
821-7011	G5V-2-DC5	5 VDC	100.00	50.0	500	**3.89**	**3.37**	**3.15**
821-7012	G5V-2-DC12	12 VDC	41.70	288.0	500	**3.89**	**3.37**	**3.15**
821-7013	G5V-2-DC24	24 VDC	20.80	1152.0	500	**3.71**	**3.21**	**3.00**
821-7014	G5V-2-DC48	48 VDC	12.00	4000.0	580	**3.90**	**3.39**	**3.13**
821-7025	G5V-2-H-DC5	5 VDC	72.00	70.0	360	**5.15**	**4.44**	**3.66**
821-7026	G5V-2-H-DC12	12 VDC	30.00	400.0	360	**3.57**	**3.26**	**3.06**
821-7027	G5V-2-H-DC24	24 VDC	15.00	1600.0	360	**3.57**	**3.26**	**3.06**
821-7028	G5V-2-H1-DC5	5 VDC	30.00	166.7	150	**3.82**	**3.31**	**2.71**
821-7029	G5V-2-H1-DC12	12 VDC	12.50	960.0	150	**3.82**	**3.31**	**2.71**
821-7031	G5V-2-H1-DC48	48 VDC	6.25	7680.0	300	**4.17**	**3.64**	**2.97**

Model G7L Power Relays Offer Quick-Connect or Screw Terminal Versions



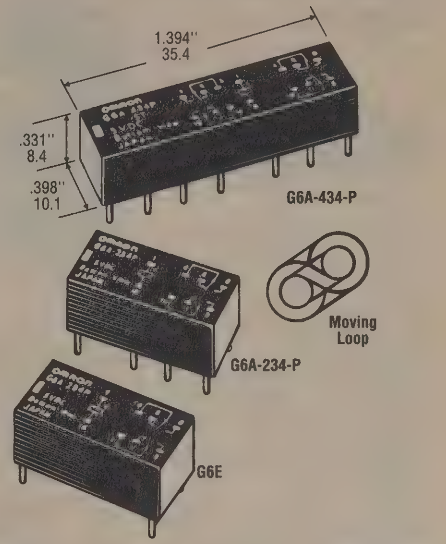


High capacity 25-30 amps. Low cost. Relay test button. Replaces G5D series. Upper bracket mounting. High dielectric strength: TUV, UL and CSA approved. VDE approval pending. Nonflammable insulating materials satisfying UL94V-0. **Quick Connect Terminals:** G7L-TUB. **Screw Terminals:** G7L-BUB.

Stock No.	Mfr.'s Type	Rated Voltage	Contact Action	Contact Amp	Coil mA	Coil Ohms	EACH 1-24	25-49	50-99
821-7001	G7L-1A-BUB-J-CB-AC100/120	100/120 VAC	SPST-NO	30	17.020.4	5260	**28.86**	**26.57**	**24.89**
821-7002	G7L-1A-BUB-J-CB-AC24	24 VAC	SPST-NO	30	71	303	**15.64**	**14.53**	**13.61**
821-7003	G7L-1A-BUB-J-CB-AC200/240	200 240 VAC	SPST-NO	30	8.5/10.2	21000	**22.99**	**21.39**	**20.01**
821-7005	G7L-1A-BUB-J-CB-DC24	24 VDC	SPST-NO	30	79	303	**14.79**	**13.77**	**12.88**
821-7007	G7L-2A-BUB-J-CB-AC100/120	100/120 VAC	DPST-NO	25	17.020.4	5260	**14.91**	**13.87**	**12.98**
821-7008	G7L-2A-BUB-J-CB-AC200/240	200/240 VAC	DPST-NO	25	8.5/10.2	21000	**17.04**	**15.85**	**14.84**
821-7009	G7L-2A-BUB-J-CB-DC12	12 VDC	DPST-NO	25	158	75	**19.80**	**17.83**	**15.63**
821-7010	G7L-2A-BUB-J-CB-DC24	24 VDC	DPST-NO	25	79	303	**14.79**	**13.77**	**12.88**
821-7015	G7L-1A-TUB-J-CB-AC100/120	100/120 VAC	SPST-NO	30	17.020.4	5260	**14.22**	**13.22**	**10.95**
821-7016	G7L-1A-TUB-J-CB-AC24	24 VAC	SPST-NO	30	71	303	**11.02**	**10.25**	**8.50**
821-7017	G7L-1A-TUB-J-CB-AC200/240	200/240 VAC	SPST-NO	30	8.5/10.2	21000	**13.63**	**12.58**	**11.68**
821-7020	G7L-2A-TUB-J-CB-AC100/120	100/120 VAC	DPST-NO	25	17.020.4	5260	**17.85**	**16.58**	**13.74**
821-7021	G7L-2A-TUB-J-CB-AC24	24 VAC	DPST-NO	25	71	303	**14.74**	**13.70**	**11.34**
821-7022	G7L-2A-TUB-J-CB-AC200/240	200/240 VAC	DPST-NO	25	8.5/10.2	21000	**12.32**	**11.46**	**9.50**

G6A Series PC Board-Use Relays

Plastic sealed relay with high surge dielectric for use in telecommunication equipment. High sensitivity. Low profile design for use in 1/2" PC board rack. Surge withstand voltage of 1500 VDC meets FCC Part 68 requirements. Unique moving loop (permanent magnet) armature reduces relay size, magnetic interference, and contact bounce time. DPDT or 4PDT bifurcated crossbar AgPd contacts (Au clad). Rated 2 amps carry current.



DPDT

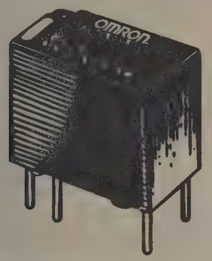
Stock No.	Mfr.'s Type	Coil Voltage	Coil mA	Coil Res.	Pwr. mW	EACH 1-24	EACH 25-49	EACH 50-99
821-3001	G6A-234P-ST-US-DC12	12DC	16.7	720	200	7.04	6.71	5.29
821-3002	G6A-234P-ST-US-DC24	24DC	8.3	2880	200	7.07	6.74	5.32
821-3003	G6A-234P-ST-US-DC48	48DC	4.9	9750	235	9.19	8.56	7.12
821-3004	G6A-234P-ST-US-DC5	5DC	40.0	125	200	6.70	6.39	5.03

4PDT

Stock No.	Mfr.'s Type	Coil Voltage	Coil mA	Coil Res.	Pwr. mW	EACH 1-24	EACH 25-49	EACH 50-99
821-3005	G6A-434P-ST-US-DC12	12DC	30.0	400	360	11.89	10.70	8.93
821-3006	G6A-434P-ST-US-DC24	24DC	15.0	1600	360	10.19	9.16	7.62
821-3008	G6A-434P-ST-US-DC5	5DC	72.5	69	360	12.50	11.24	9.36

G6E Series—SPDT With Features As Above

Stock No.	Mfr.'s Type	Coil Voltage	Coil mA	Coil Res.	Pwr. mW	EACH 1-24	EACH 25-49	EACH 50-99
821-3009	G6E-134P-ST-US-DC5	5DC	40.0	125	200	3.84	3.33	3.07
821-3010	G6E-134P-ST-US-DC12	12DC	16.7	720	200	5.29	3.86	3.59
821-3011	G6E-134P-ST-US-DC24	24CD	8.3	2880	200	5.38	4.84	4.04



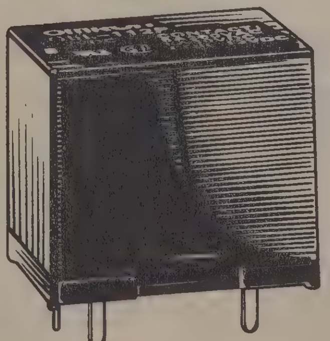
G5V1 Series General Purpose, Horizontal Mount Relays

Sealed, general purpose, horizontal mount types. Features high international .10" terminal pitch arrangement. **Specifications. Contact. Rated Load:** 110VAC 0.5A, 24VDC 1A. **Carry Current:** 2A. **Maximum Operating Voltage:** 125VAC, 60VDC. **Maximum Operating Current:** 1A. **Maximum Switching Capacity:** 60VA, 30W. **Minimum Permissible Load (reference value):** 5VDC 1mA. Replaces G2Q Series.

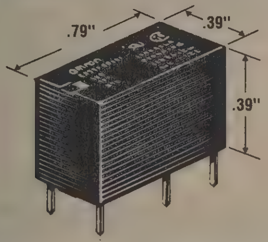
Stock No.	Mfr.'s Type	Rated Voltage	Rated Current mA	Coil Resistance Ω	Power Consumption mW	EACH 1-24	EACH 25-49	EACH 50-99
821-1041	G5V-1-5VDC	5VDC	56.0	89	150	3.28	2.84	2.65
821-1042	G5V-1-12VDC	12VDC	23.5	510	150	3.13	2.73	2.53
821-1043	G5V-1-24VDC	24VDC	15.0	1600	150	3.13	2.73	2.53

G5L Series

Sealed, SPDT relay ideal for applications in household electrical appliances. Construction resistant to flux wicking. Dip soldering is possible. **Specifications. Contact Resistance:** 100 m maximum. **Operate Time:** .6 mS maximum. **Release Time:** 7.2 mS maximum. **Insulation Resistance:** 100 MΩ minimum (at 500 VDC). G5L rated at 5 amps 120 VAC, 30 VDC; G5LE rated at 10 amps 120 VAC, 30 VDC. Replaces G2U and G4S.



Stock No.	Mfr.'s Type	Rated Current mA	Rated Voltage	Coil Resistance Ohms	Power Consumption mW	EACH 1-24	EACH 25-49	EACH 50-99
821-1034	G5L-114P-PS-5VDC	79.4	5VDC	63	approx. 400	2.63	2.28	2.04
821-1035	G5L-114P-PS-12VDC	33.3	12VDC	360	approx. 400	2.69	2.33	2.09
821-1036	G5L-114P-PS-24VDC	16.7	24VDC	1440	approx. 400	2.60	2.28	2.04
821-1200	G5LE-114P-PS-DC5	79.4	5VDC	63	400	3.70	3.22	2.83
821-1201	G5LE-114P-PS-DC12	33.3	12VDC	360	400	2.94	2.56	2.24
821-1202	G5LE-114P-PS-DC24	16.7	24VDC	1440	400	3.01	2.62	2.29



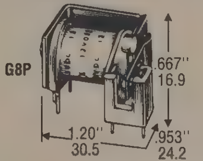
G6B Series

Sealed Power PCB Relay Available: SPST-NO and DPST-NO. **Contact Resistance:** 30 mΩ max. **Operate Time:** 10 mS max. **Release Time:** 10 mS max. **Insulation Resistance:** 1000 MΩ @ 500 VDC. **Contacts:** 5 Amps @ 250 VAC Resistive, 5 Amps @ 30 VDC Resistive.

Stock No.	Mfr.'s Type	Contact Form	Related Current mA	Rated Voltage	Coil Resistance Ω	Power Consumption mW	EACH 1-24	EACH 25-49	EACH 50-99
821-4200	G6B-1114P-US-DC12	1A	16.7	12VDC	720	200	4.87	4.45	4.11
821-4205	G6B-1114P-US-DC24	1A	8.3	24VDC	2880	200	5.46	4.85	4.20

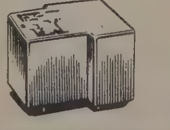
Model G8P PC-Board Use 30-Amp Relays

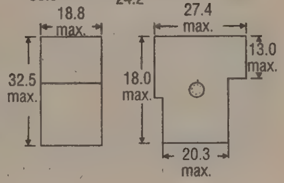
- ► U.L./CSA Recognized
- ► Ideal for Heating, Ventilation, Air Conditioning Uses
- ► Dust Cover Available
- ► Small Size, Yet Capable of Switching up to 30A Load



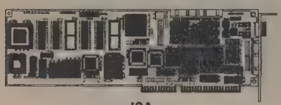
Stock No.	Mfr.'s Type	Coil Voltage	Contact Action	Contact Amp	Coil mA	Coil Ohms	EACH 1-24	EACH 25-49	EACH 50-99
821-2037	G8P-1111P-US-DC5	5DC	SPST-NO	30	185	27	4.94	4.44	4.05
821-2038	G8P-1111P-US-DC12	12DC	SPST-NO	30	77	155	4.57	4.28	3.34
821-2039	G8P-1111P-US-DC24	24DC	SPST-NO	30	36	660	4.57	4.28	3.34
821-2042	G8P-111P-US-DC24	24DC	SPDT	20/10	36	660	4.88	3.73	3.29
821-2044	R99-C01-G8P†	—	—	—	—	—	.30	.28	.25

* 20/10A SPDT, No Contact = 20A, NC Contact = 10A. † Dust Cover.

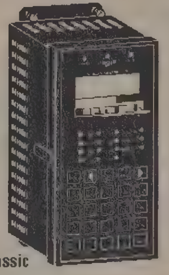

Dust Cover R99-C01-G8P



Controllers



ISA



Classic

Modular

Modular controllers deliver flexibility, power, and communications by design. Modular controllers take advantage of the Opto 22 distributed, intelligent I/O architecture and run Opto 22's new Windows 32-bit FactoryFloor software suite. The M4 bus supports a variety of communications interfaces with Ethernet, Arcnet, RS485, RS232, and fiber optic cards. The Modular Controller line includes a general purpose controller, an I/O controller for data acquisition and control, and a powerful remote telemetry unit/distributed automation system. All Modular controllers provide rugged industrial packaging and include an M4 processor, Opto 22's M4 Expansion Bus, and accommodate one of the various plug-in power supply options.

Modular Controllers

691-0401.	M4. Opto 22 Modular Controller	**EACH**	**1515.00**
691-0402.	M4 I/O. Opto 22 Modular I/O Controller	**EACH**	**1780.00**
691-0403.	M4RTU. Opto 22 Modular RTU/DAS Controller	**EACH**	**1780.00**
691-0404.	M4RTUX. Opto 22 Modular Controller I/O Extender	**EACH**	**335.00**

Modular Controller Power Supplies

691-0405.	M4PS12D. DC Power Supply 9-15 V	**EACH**	**265.00**
691-0406.	M4PS24D. DC Power Supply 18-35 V	**EACH**	**265.00**
691-0407.	M4PS48D. DC Power Supply 36-60 V	**EACH**	**265.00**
691-0408.	M4PSF. DC Filter Board	**EACH**	**145.00**
691-0409.	M4PS120A. AC Power Supply 90-130 V	**EACH**	**285.00**
691-0410.	M4PS125D. DC Power Supply 125 V	**EACH**	**265.00**
691-0411.	M4PS240A. AC Power Supply 180-250 V	**EACH**	**285.00**

Modular Controller Accessories

691-0412.	M4RTUF1M. Flash Memory 1 MB Upgrade	**EACH**	**215.00**

ISA

ISA controllers are PC bus based and are compatible with Opto 22's FactoryFloor software. Acting as a slave or bus master, the ISA controller can be used with either active or passive backplanes. Battery-backed RAM starts at 256K and is expandable to 2MB. A hardware math co-processor is available as an option.

ISA Controllers

691-0413.	G4LC32ISA. Opto 22 ISA Controller	**EACH**	**1295.00**
691-0414.	G4LC32ISA-LT. Opto 22 ISA Lite Controller	**EACH**	**635.00**

ISA Controller Accessories

691-0415.	G4LC32ISAF1M. Flash Memory 1 MB Upgrade	**EACH**	**215.00**

Classic

Classic controllers include all the options required to meet the most sophisticated control challenges. Classic controller performance is based on state-of-the-art 32-bit technology. The G4LC32 includes four high-speed serial ports, an ARCnet port, a 4-line backlit LCD display, 25-key membrane key pad, LED status indicators for diagnostics, and 512K battery-backed RAM for program and data storage. The Classic G4LC32SX controller is a low-cost alternative to the Classic G4LC32 for applications that do not require a key pad, display, or a floating point math co-processor. The SX controller is equipped with 256K of battery-backed RAM that is expandable to 1 MB. The SX is supplied with two RS232/485 serial ports. Additional ports can be added using either of the two available adapters.

Classic Controllers

691-0416.	G4LC32. Opto 22 Classic Controller	**EACH**	**2500.00**
691-0417.	G4LC32SX. Opto 22 Classic SX Controller	**EACH**	**1465.00**

Classic Controller Power Supplies (with 7 Bricks)

691-0418.	G4PS245A. 120 VAC	**EACH**	**450.00**
691-0419.	G4PS245AFM. 120 VAC, Factory Mutual Approved	**EACH**	**450.00**
691-0420.	G4PS245B. 220 VAC	**EACH**	**450.00**

Classic Controller Accessories

691-0421.	G4LC32F1M. G4LC32 Flash Memory 1 MB Upgrade	**EACH**	**400.00**
691-0422.	G4LC32RAMEX.5M. G4LC32 1 MB Ram Expansion Kit	**EACH**	**300.00**
691-0423.	G4LC32RAMEX2M. G4LC32 2 MB Ram Expansion Kit	**EACH**	**1500.00**
691-0424.	G4LC32RAMEX4M. G4LC32 4 MB Ram Expansion Kit	**EACH**	**3000.00**
691-0425.	G4LC32SXF1M. G4LC32SX Flash Mem. 1 MB Upgrade	**EACH**	**215.00**

Single Board

The Opto 22 LC4 family of controllers are powerful 8-bit single board computers intended for use with Optomux and Pamux I/O systems. The LC4 uses the EX1 interface for Pamux compatibility, while the EX2 provides two additional serial ports and a 24-line parallel port for direct connection to Classic or SNAP mounting racks. The LC4 is not FactoryFloor or Cyrano compatible. Programming is accomplished with interpretive BASIC or FORTH.

Single Board Controllers

691-0426.	LC4. Opto 22 LC Controller	**EACH**	**695.00**
691-0427.	LC4A. Opto 22 LC Controller 120 VAC	**EACH**	**745.00**
691-0428.	LC4B. Opto 22 LC4 Controller 220 VAC	**EACH**	**745.00**
691-0429.	LC4DC. Opto 22 LC Controller DC Filter Board	**EACH**	**745.00**

Single Board Controller Power Supplies

691-0430.	PS115-1.5A. LC4 Power Supply 115 VAC, 1.5 A	**EACH**	**135.00**
691-0431.	PS230-1.5A. LC4 Power Supply 240 VAC , 1.5 A	**EACH**	**135.00**

Controller Accessories

691-0432.	G4BATT32. 3.6 V Battery for Controller Memory	**EACH**	**18.25**

Controller Upgrades for Flash Based Controllers

691-0433.	G4RAM1M. 1 MB Memory Expansion RAM Chip	**EACH**	**50.00**
691-0434.	G4RAM4M. 4 MB Memory Expansion RAM Chip	**EACH**	**175.00**

Software

FactoryFloor

Opto 22's FactoryFloor is a tightly-integrated suite of Windows 32-bit software that delivers a Total Control Solution for industrial automation. FactoryFloor is made up of OptoControl, OptoDisplay, and OptoServer. OptoKernel and OptoUtilities are included with FactoryFloor and each of the FactoryFloor components.

Optocontrol

OptoControl is a graphical, flowchart based, multitasking control language that operates with Windows '95 and Windows NT. OptoControl takes advantage of Microsoft's 32-bit Windows graphical interface to make it easy to understand, configure, design, and troubleshoot your control environment. Some of OptoControl's key features include the following — OptoControl's "Strategy Tree," which provides a graphical tree-like view of your control system configuration; OptoControl's flowchart programming environment, which provides a precise, graphical view of your control process; OptoControl's animated debugger which makes it easy to step through your process and see what's happening at every point in your control program; OptoControl's subroutine builder provides extensive code reusability by packaging flowcharts for re-use; OptoControl's built in integration allows connectivity to third-party software and custom applications.

Optodisplay

OptoDisplay is a Windows 32-bit graphical multimedia operator interface package that is tightly integrated with OptoControl. OptoDisplay gives operators, technicians, and engineers the information that they need at a glance. Displays can mix pictures, symbols, bitmaps, sounds, and 3-D graphics from OptoDisplay's extensive library. OptoDisplay allows you to construct controller-driven animation and operator-driven commands. Operators can also utilize real-time data for trend plotting. Advanced features enable you to animate any graphical control object and to associate it with real-world events by choosing a tagname from the shared OptoControl database. OptoDisplay is easy to program — just point, click, and associate.

Optoserver

OptoServer is the 32-bit Windows-based client-server application that gathers and serves requested data from the Opto 22 controller network and the PC-based FactoryFloor network. Combined with Microsoft's communication-enabling technologies, OptoServer becomes the universal I/O server for Opto 22 I/O systems. OptoServer is fully integrated with OptoControl and OptoDisplay, either as stand-alone applications or within a complex client/server architecture. OptoServer can also be integrated with Microsoft products, third-party packages, and/or user-developed custom applications created with tools such as Microsoft Visual Basic®.

FactoryFloor Software

691Q0451.	FACTORYFLOOR. Factoryfloor Suite	**EACH**	**3000.00**
691Q0452	LIC.10 PAK-OPTOCNTL. 10 License — End User	**EACH**	**5000.00**
691Q0453.	LIC.100 PAK-OPTOCNTL*. 100 License	**EACH**	**15000.00**
691Q0454.	LIC.50 PAK-OPTOCNTL*. 50 License	**EACH**	**10000.00**
691Q0455.	LICENSE OPTOCNTL. Optocontrol License Only	**EACH**	**1000.00**
691Q0456.	OPTOCONTROL. Optocontrol	**EACH**	**2000.00**
691Q0457.	OPTODISPLAY. Optodisplay	**EACH**	**1200.00**
691Q0458.	OPTOSERVER. Optoserver	**EACH**	**800.00**
691Q0459.	PITM UPGRADE. Upgrade for Prove It to Me Toolbox	**EACH**	**1500.00**

*For OEM Resale Only.

FactoryFloor Documentation

691-0460.	FACTORYFLOO. Factoryfloor Manual Set	**EACH**	**371.00**
691-0461.	OPTO COMND MANUAL. Command Ref. Manual	**EACH**	**142.00**
691-0462.	OPTO CONTROL MANUAL. Optocontrol User Guide	**EACH**	**107.00**
691-0463.	OPTO DISPLAY MANUAL. Optodisplay User Guide	**EACH**	**72.00**
691-0464.	OPTO SERVER MANUAL. Optoserver User Guide	**EACH**	**50.00**

Optoconnect

OptoConnect introduces a new dimension of data management to manufacturing and makes FactoryFloor information available to the entire enterprise. OptoConnect allows the bi-directional flow of information between manufacturing and your Microsoft SQL server or JET database. Access to this information in an understandable format makes it possible to manage your manufacturing and business environments as never before. With OptoConnect, timely access to accurate manufacturing information is as easy as point-and-click — literally. Just use your mouse to select the items you want from the OptoControl strategy tree and associate them with your OptoConnect database. From there, data transfer is automatic. You can choose historical or snapshot data with data snapshots taken at user-defined intervals. OptoConnect utilizes standard infrastructure and communications technologies and is available with or without Microsoft SQL Server.

Database/Optocontrol Connectivity Software

691-0466.	OPTOCONNECT	**EACH**	**995.00**

Optointegration Software

Optodriver Toolkit Software

OptoDriver Toolkit helps you build custom solutions for Opto 22 I/O systems. Programmers using high-level languages, such as Microsoft C++ or Microsoft Visual Basic, can use the OptoDriver Toolkit to write Microsoft Windows and DOS software applications that can access the brain board, rack, and I/O combination that best fits their application. The OptoDriver Toolkit includes new 32-bit Windows-compatible drivers. Windows 16-bit drivers, and Opto 22's classic DOS drivers.

691-0467.	OPTODRIVER. Optodriver Toolkit	**EACH**	**450.00**

Classic Software

Classic Software-Cyrano-MMI-MDS-Opto 22 Classic software was Opto 22's first visual flowchart-based programming and graphic MMI environment for industrial automation. Opto 22's classic software products run as 16-bit applications and have a large installed base. Opto 22 is committed to supporting this installed base and to make these products available for those customers who have not moved to the Windows 32-bit platform. Opto 22 has also provided utilities to assist customers in migrating to FactoryFloor.

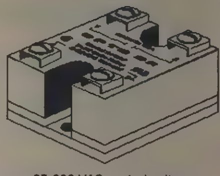
Classic Software Win3.1/ Dos

691-0468.	CYRANO 200. Software-Mistic 200 Processor	**EACH**	**1995.00**
691-0469.	MDS. Mistic Data Server	**EACH**	**995.00**
691-0470.	MISTIC MMI. Mistic 200 Windows MMI	**EACH**	**1295.00**
691-0471.	MISTIC MMI/MDS. Mistic 200 MMI and MDS	**EACH**	**1995.00**

Classic Software Documentation

691-0472.	CYRANO 200 MANL. Cyrano 200 Manual	**EACH**	**100.00**

Power Series Relays



Opto 22 provides a full range of Power Series relays with a wide variety of voltage and current options. All Power Series SSRs provide 4000 VRMS of optical isolation and provide a wide operating temperature range of –40°C to +100°C. Part numbers with a D are TTL compatible, with a 3-32 VDC control voltage. Part numbers with an A use an 85-280 VAC control voltage.

DC Switching Series

The DC Series delivers isolated DC control to large OEM customers worldwide. DC Power Series SSRs switch DC voltages between 5-60 volts. They have nominal current ratings of 3 and 5 amps.

691-0501.	DC60S3. 60 VDC, 3 Amp, DC Control	**EACH**	**9.60**
691-0502.	DC60S5. 60 VDC, 5 Amp, DC Control	**EACH**	**15.00**

AC Switching Series

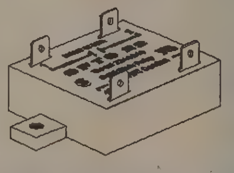
The AC Series offers the ultimate in solid-state reliability. AC Power Series SSRs switch voltages between 120 and 575 VAC with nominal current ratings from 3 to 45 amps. All AC Power Series SSRs feature a built-in snubber and a maximum zero voltage turn-on time of 1/2 cycle. All models are UL recognized and CSA certified. Relays with a -17 extension on the part number are VDE approved, while a -12 indicates a transient proof model.

691-0503.	120A10. 120 VAC, 10 A, AC Control	**EACH**	**19.00**
691-0504.	120A25. 120 VAC, 25 A, AC Control	**EACH**	**21.00**
691-0505.	120D10. 120 VAC, 10 A, DC Control	**EACH**	**16.00**
691-0506.	120D25. 120 VAC, 25 A, DC Control	**EACH**	**20.00**
691-0507.	120D3. 120 VAC, 3 A, DC Control	**EACH**	**12.50**
691-0508.	120D45. 120 VAC, 45 A, DC Control	**EACH**	**30.00**
691-0509.	240A10. 240 VAC, 10 A, AC Control	**EACH**	**18.50**
691-0510.	240A25. 240 VAC, 25 A, AC Control	**EACH**	**26.00**
691-0511.	240A45. 240 VAC, 45 A, AC Control	**EACH**	**34.00**
691-0512.	240D10. 240 VAC, 10 A, DC Control	**EACH**	**19.00**
691-0513.	240D10-17. 240 VAC, 10 A, DC Control, VDE Approved	**EACH**	**21.00**
691-0514.	240D25. 240 VAC, 25 A, DC Control	**EACH**	**22.00**
691-0515.	240D25-17. 240 VAC, 25 A, DC Control, VDE Approved	**EACH**	**24.00**
691-0516.	240D3. 240 VAC, 3 A, DC Control	**EACH**	**13.00**
691-0517.	240D45. 240 VAC, 45 A, DC Control	**EACH**	**31.00**
691-0518.	240D45-17. 240 VAC, 45 A, DC Control, VDE Approved	**EACH**	**33.00**
691-0519.	380D25. 380 VAC, 25 A, DC Control	**EACH**	**30.00**
691-0520.	380D45. 380 VAC, 45 A, DC Control	**EACH**	**52.00**
691-0521.	480D10-12. 480 VAC, 10 A, DC Control, Trans. Proof	**EACH**	**28.00**
691-0522.	480D15-12. 480 VAC, 15 A, DC Control, Trans. Proof	**EACH**	**30.00**
691-0523.	480D25-12. 480 VAC, 25 A, DC Control, Trans. Proof	**EACH**	**28.00**
691-0524.	480D45-12. 480 VAC, 45 A, DC Control, Trans. Proof	**EACH**	**32.00**
691-0525.	575D15-12. 575 VAC, 15 A, DC Control, Trans. Proof	**EACH**	**36.00**
691-0526.	575D45-12. 575 VAC, 45 A, DC Control, Trans. Proof	**EACH**	**33.00**

Power Series Accessories

691-0527.	SAFETY COVER. Standard Model SSR Cover	**EACH**	**1.00**

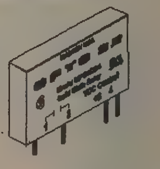
Z Series Relays



An economical 10 amp SSR in an all plastic package is made possible through a unique heat transfer system. All Z Series SSRs provide 4000 VRMS of optical isolation and provide a wide operating temperature range of –40°C to +100°C. Z Series SSRs are TTL compatible, with a 3-32 VDC control voltage. All Z Series SSRs feature a built-in snubber and a maximum zero voltage turn-on time of 1/2 cycle. All models are UL recognized and CSA certified. Relays with a -17 extension on the part number are VDE approved.

691-0528.	Z120D10. 120 VAC, 10 A, DC Control	**EACH**	**9.80**
691-0529.	Z240D10. 240 VAC, 10 A, DC Control	**EACH**	**10.00**
691-0530.	Z240D10-17. 40 VAC, 10 A, DC Control, VDE Approved	**EACH**	**11.50**

Printed Circuit Series



Opto 22's Printed Circuit Series allows OEMs to easily deploy solid-state relays on printed circuit boards with switch loads up to 4 amps.

MP Series

The MP Series packaging is designed with a minimum footprint to allow maximum relay density on the circuit board. Z Series SSRs switch nominal voltages of either 120 or 240 VAC with nominal current ratings of 2 and 4 amps. All MP Series SSRs provide 4000 VRMS of optical isolation and provide a wide operating temperature range of –40°C to +100°C. MP Series SSRs are TTL compatible, with a 3-32 VDC control voltage. All MP Series SSRs feature a built-in snubber and a maximum zero voltage turn-on time of 1/2 cycle. All models are UL recognized and CSA certified. Relays with a -17 extension on the part number are VDE approved.

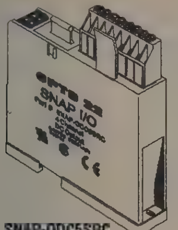
MP Series DC Switching

691-0531.	DC200MP. 200 VDC, 1 A, DC Control	**EACH**	**11.25**
691-0532.	DC60MP. 60 VDC, 3 A, DC Control	**EACH**	**8.00**

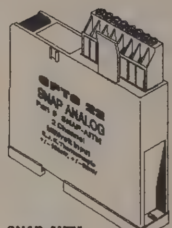
Mp Series AC Switching

691-0533.	MP120D2. 120 VAC, 2 A, DC Control	**EACH**	**8.50**
691-0534.	MP120D4. 120 VAC, 4 A, DC Control	**EACH**	**8.70**
691-0535.	MP240D2. 240 VAC, 2 A, DC Control	**EACH**	**9.15**
691-0536.	MP240D4. 240 VAC, 4 A, DC Control	**EACH**	**9.75**
691-0537.	MP240D4-17. 240 VAC, 4 A, DC Control, VDE Approved	**EACH**	**10.50**
691-0538.	MP380D4. 380 VAC, 4 A, DC Control	**EACH**	**10.50**

SNAP I/O Modules



SNAP-ODC5SRC



SNAP-AITM

SNAP I/O is Opto 22's newest and highest density I/O packaging. SNAP I/O includes 4-channel AC and DC digital modules and intelligent analog modules. SNAP's compact design delivers an overall space savings of 60 percent over traditional I/O, while innovative new packaging allows modules to simply snap in place. All SNAP modules have removable top-mounted connectors to provide easy access for field wiring. Digital modules include a built-in LED status indicator for each channel. Digital output modules use a standard fuse with a convenient handle for easy replacement. DC output modules are available in either current sinking or current sourcing versions. SNAP analog modules are software-configurable and offer both optical and transformer isolation. Each analog input module offers 15-bit resolution for high accuracy. All analog modules include a serial interface for easy programmability and integration into OEM applications.

SNAP Digital Modules

SNAP Digital AC Inputs

691-0001. SNAP-IAC5. 4-Channel AC Input 90-140 VAC, 5 VDC Logic	EACH	42.00
691-0002. SNAP-IAC5A. 4-Channel AC Input 180-280 VAC, 5 VDC Logic	EACH	42.00

SNAP Digital DC Inputs

691-0003. SNAP-IDC5. 4-Channel DC Input 10-32 VDC, 5 VDC Logic	EACH	42.00

SNAP Digital AC Outputs

691-0004. SNAP-OAC5. 4-Channel AC Output 12-280 VAC, 5 VDC Logic	EACH	42.00

SNAP Digital DC Outputs

691-0005. SNAP-ODC5SNK. 4-Channel DC Output 5-60 VDC, 5 VDC Logic Sink	EACH	42.00
691-0006. SNAP-ODC5SRC. 4-Channel DC Output 5-60 VDC, 5 VDC Logic Source	EACH	42.00

SNAP Analog Modules

SNAP Analog Inputs

691-0007. SNAP-AIMA. 2-Channel Analog Current Input –25 mA to +25 mA	EACH	182.00
691-0008. SNAP-AITM. 2-Channel Analog Type E, J, K Thermocouple or –160 mV to +160 mV Input	EACH	182.00
691-0009. SNAP-AIV. 2-Channel Analog Input Voltage –10 VDC to +10 VDC	EACH	182.00

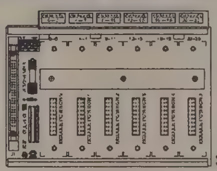
SNAP Analog Outputs

691-0010. SNAP-AOA-3. Single-Channel Analog Output Current 4-20 mA	EACH	150.00
691-0011. SNAP-AOV-5. Single-Channel Analog Output 0 to 10 VDC	EACH	150.00
691-0012. SNAP-AOV-7. Single-Channel Analog Output Voltage –10 to +10 VDC	EACH	150.00

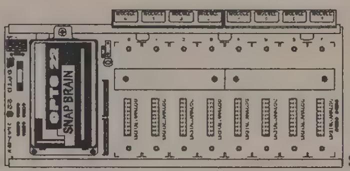
SNAP Module Accessories

691-0013. SNAP-FIELDCONB.Module Field Connector	PER PK./10	70.00
691-0014. SNAP-FUSE4AB. 4-Amp Fuse	PER PK./25	12.50
691-0015. SNAP-MODFUSEHLDRB. Digital Output Fuse Holder	PER PK./10	7.00
691-0016. SNAP-MODLATCHB. Module Release Latch	PER PK./10	14.00
691-0017. SNAP-RETN4B. 4-Module Retention Rail	PER PK./25	110.00
691-0018. SNAP-RETN6B. 6-Module Retention Rail	PER PK./25	135.00

Snap I/O Mounting Racks



SNAP-D6M



SNAP-B8M

SNAP racks come in two model types — D Series (digital only) and B Series (brain board). All SNAP racks use a single 5-volt power source, are configured for standard panel mounting, and offer a DIN rail mounting option. B Series racks are designed for integration with the B3000 SNAP I/O processor (brain board) and allow a combination of analog and digital modules on the same rack. D Series racks use the same 50-pin connector as Opto 22 Classic racks and are therefore compatible with Opto 22 Classic digital brain boards and interfaces. D Series racks provide an ideal direct connect solution for OEM applications.

"D" Series Digital Only Racks

691-0019. SNAP-D4M. 4-Module Rack	EACH	42.00
691-0020. SNAP-D4MC. 4-Module Rack With Extra Terminal Block For Field Wiring	EACH	45.00
691-0021. SNAP-D4MC-P. 4-Module Rack With Extra Terminal Block For Field Wiring, Pluggable	EACH	104.00
691-0022. SNAP-D6M. 6-Module Rack	EACH	60.00
691-0023. SNAP-D6MC. 6-Module Rack With Extra Terminal Block For Field Wiring	EACH	70.00
691-0024. SNAP-D6MC-P. 6-Module Rack With Extra Terminal Block For Field Wiring, Pluggable	EACH	160.00
691-0025. SNAP-D8M. 8-Module Rack	EACH	81.00
691-0026. SNAP-D8MC. 8-Module Rack With Extra Terminal Block For Field Wiring	EACH	94.00
691-0027. SNAP-D8MC-P. 8-Module Rack With Extra Terminal Block For Field Wiring, Pluggable	EACH	210.00
691-0028. SNAP-D12M. 12-Module Rack	EACH	104.00
691-0029. SNAP-D12MC. 12-Module Rack With Extra Terminal Block For Field Wiring	EACH	123.00
691-0030. SNAP-D12MC-P. 12-Module Rack With Extra Terminal Block For Field Wiring, Pluggable	EACH	294.00

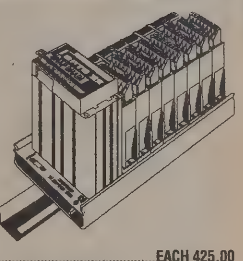
"B" Series Brain Board Racks

691-0031. SNAP-B8M. 8-Module Rack	EACH	94.00
691-0032. SNAP-B8MC. 8-Module Rack With Extra Terminal Block For Field Wiring	EACH	104.00
691-0033. SNAP-B8MC-P. 8-Module Rack With Extra Terminal Block For Field Wiring, Pluggable	EACH	217.00
691-0034. SNAP-B12M. 12-Module Rack	EACH	112.00
691-0035. SNAP-B12MC. 12-Module Rack With Extra Terminal Block For Field Wiring	EACH	133.00
691-0036. SNAP-B12MC-P. 12-Module Rack With Extra Terminal Block For Field Wiring, Pluggable	EACH	308.00
691-0037. SNAP-B16M. 16-Module Rack	EACH	161.00
691-0038. SNAP-B16MC. 16-Module Rack With Extra Terminal Block For Field Wiring	EACH	182.00
691-0039. SNAP-B16MC-P. 16-Module Rack With Extra Terminal Block For Field Wiring, Pluggable	EACH	420.00

Snap I/O Mounting Rack Accessories

691-0040. SNAP-CDBBDIN. Classic Digital Brain Board Din Rail Adapter	EACH	20.00
691-0041. SNAP-FUSE1AB. 1 Amp Fuse	PER PK./25	10.00
691-0042. SNAP-LABEL4B. 4-Module Label Holder With Labels	PER PK./25	60.00
691-0043. SNAP-LABEL6B. 6-Module Label Holder With Labels	PER PK./25	90.00
691-0044. SNAP-RACKDIN. SNAP Rack Din Rail Adapter Clip	EACH	11.25
691-0045. SNAP-RACKDINB. SNAP Rack Din Rail Adapter Clip	PER PK./25	245.00

SNAP Brain Board

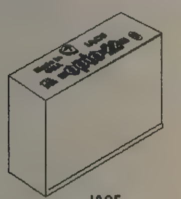


With SNAP I/O, a single processor does it all. SNAP controls analog, digital, or mixed I/O modules on the same compact SNAP B series mounting rack. Both Optomux and Mistic protocols are supported for easy integration into existing Optomux or Mistic installations. SNAP I/O processors offer a variety of high-speed serial communications options and can be daisy-chained on a simple serial link over very long distances. SNAP I/O processors feature flash-based firmware for easy upgrades and maintenance. The Mistic protocol provides seamless integration with Opto 22's FactoryFloor software.

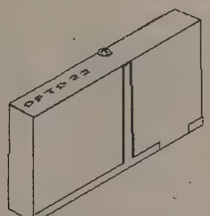
Distributed I/O Processor

691-0046. B3000. Snap Analog/Digital Brain Mistic/Optomux Protocol	EACH	425.00

Standard I/O Modules



IAC5



AD6

Both analog and digital modules are available in Opto 22's standard packaging. Standard digital modules offer a wide range of voltage and speed combinations and are available for 5, 15, or 24-volt logic. Analog modules offer 12-bit resolution. Analog input modules include voltage, current, thermocouple, RTD, ICTD, and frequency. Both voltage and current analog outputs are available.

Standard Digital Modules

Standard Digital AC Inputs (Brain Board Compatible)

691-0047. IAC5. AC Input 90-140 VAC, 5 VDC Logic	EACH	9.50
691-0048. IAC5A. AC Input 180-280 VAC, 5 VDC Logic	EACH	10.50

Standard Digital Modules (Continued)

Standard Digital AC Inputs

691-0049. IAC15. AC Input 90-140 VAC, 15 VDC Logic	EACH	9.50
691-0050. IAC15A. AC Input 180-280 VAC, 15 VDC Logic	EACH	10.50
691-0051. IAC24. AC Input 90-140 VAC, 24 VDC Logic	EACH	9.50
691-0052. IAC24A. AC Input 180-280 VAC, 24 VDC Logic	EACH	9.50
691-0053. INPUT SWITCH. Input Switch 5, 15, 24 VDC Logic	EACH	15.50

Standard Digital DC Inputs (Brain Board Compatible)

691-0054. IDC5..DC Input 10-32 VDC, 5 VDC Logic	EACH	9.50
691-0055. IDC5B. DC Input 4-16 VDC, 5 VDC Logic High Speed	EACH	13.00
691-0056. IDC5D. DC Input 2.5-28 VDC, 5 VDC Logic	EACH	8.50
691-0057. IDC5G. DC Input 35-60 VDC, 5 VDC Logic	EACH	9.50

Standard Digital DC Inputs

691-0058. IDC15. DC Input 10-32 VDC, 15 VDC Logic	EACH	9.50
691-0059. IDC24. DC Input 10-32 VDC, 24 VDC Logic	EACH	9.50

Standard Digital AC Outputs (Brain Board Compatible)

691-0060. OAC5. AC Output 12-140 VAC, 5 VDC Logic	EACH	9.50
691-0061. OAC5A. AC Output 24-280 VAC, 5 VDC Logic	EACH	10.50
691-0062. OAC5A5. AC Output 24-280 VAC, 5 VDC Logic, NC	EACH	10.50

Standard Digital AC Outputs

691-0063. OAC15. AC Output 12-140 VAC, 15 VDC Logic	EACH	9.50
691-0064. OAC15A. AC Output 24-280 VAC, 15 VDC Logic	EACH	10.50
691-0065. OAC24. AC Output 12-140 VAC, 24 VDC Logic	EACH	9.50
691-0066. OAC24A. AC Output 24-280 VAC, 24 VDC Logic	EACH	10.50
691-0067. OAC24H. 24-280 VAC, 24 VDC Logic, High Current	EACH	10.50
691-0068. OUTPUT SWITCH. Output Switch 250 VAC	EACH	15.50

Standard Digital DC Outputs (Brain Board Compatible)

691-0069. ODC5. DC Output 5-60 VDC, 5 VDC Logic	EACH	9.50
691-0070. ODC5A. DC Output 5-200 VDC, 5 VDC Logic	EACH	15.40
691-0071. ODC5R. Reed Relay Output, 5 VDC Logic	EACH	10.50

Standard Digital DC Outputs

691-0072. ODC15. DC Output 5-60 VDC, 15 VDC Logic	EACH	9.50
691-0073. ODC15A. DC Output 5-200 VDC, 15 VDC Logic	EACH	15.40
691-0074. ODC24. DC Output 5-60 VDC, 24 VDC Logic	EACH	9.50
691-0075. ODC24A. DC Output 5-200 VDC, 24 VDC Logic	EACH	15.40

Standard Analog Modules

Standard Analog Inputs

691-0076. AD2T. 0 to 20 mA Input Isolated	EACH	100.00
691-0077. AD3. 4 to 20 mA Input	EACH	45.00
691-0078. AD3T. 4 to 20 mA Input Isolated	EACH	100.00
691-0079. AD4. ICTD Input	EACH	60.00
691-0080. AD5. J Thermocouple Input	EACH	100.00
691-0081. AD5T. J Thermocouple Input Isolated	EACH	120.00
691-0082. AD6. 0 to +5 VDC Input	EACH	55.00
691-0083. AD6HS. 0 to +5 VDC Input-High Speed	EACH	55.00
691-0084. AD6T. 0 to +5 VDC Input Isolated	EACH	100.00
691-0085. AD7. 0 to +10 VDC Input	EACH	55.00
691-0086. AD8. K Thermocouple Input	EACH	100.00
691-0087. AD8T. K Thermocouple Input Isolated	EACH	120.00
691-0088. AD9T. 0 to 50 mV Input Isolated	EACH	120.00
691-0089. AD10T2. 100 Ohm RTD Input Isolated	EACH	120.00
691-0090. AD11. –5 to +5 VDC Input	EACH	65.00
691-0091. AD11T. –5v to +5v Input Isolated	EACH	100.00
691-0092. AD12. –10 to +10 VDC Input	EACH	65.00
691-0093. AD12T. +10 V to –10 V Input Isolated	EACH	100.00
691-0094. AD13T. 0 to 100 mV Input Isolated	EACH	120.00
691-0095. AD14T. 10 Ohm RTD Input Isolated	EACH	120.00
691-0096. AD15T. 28 to 140 VAC Input Isolated	EACH	100.00
691-0097. AD16T. 0 - 5 Amp Input Isolated	EACH	120.00
691-0098. AD17T. Type R or S Thermocouple Input Isolated	EACH	120.00
691-0099. AD18T. T Thermocouple Input Isolated	EACH	120.00
691-0100. AD19T. Type E Thermocouple Input Isolated	EACH	120.00
691-0101. AD20. 0 to 10.8 kHz Rate Input	EACH	120.00

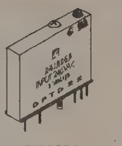
Standard Analog Outputs

691-0102. DA3. 4-20 mA Output	EACH	95.00
691-0103. DA3T. 4-20 mA Output Isolated	EACH	105.00
691-0104. DA4. 0 to +5 VDC Output	EACH	95.00
691-0105. DA4T. 0 to 5 VDC Output Isolated	EACH	105.00
691-0106. DA5. 0 to +10 VDC Output	EACH	95.00
691-0107. DA6. –5 to +5 VDC Output	EACH	110.00
691-0108. DA7. –10 to +10 VDC Output	EACH	110.00
691-0109. DA8. 0-20 mA Output	EACH	95.00

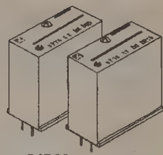
Standard Module Accessories

691-0110. FUSE05. 5-Amp Fuse Standard Digital Output Modules	EACH	1.00

G4 I/O Modules



G4IAC5A



G4DA9

G4 I/O includes both digital and analog modules. Each G4 module offers high-density single-channel packaging. Each digital module includes an LED status indicator and is also available with manual switching capability for field wiring and control logic testing. Digital modules support 5, 15, or 24-volt logic. G4 digital output modules feature a top-mounted replaceable fuse. G4 analog modules are factory-calibrated, offer 12-bit resolution, and require a single 24-volt power supply. All current loop modules include an isolated loop power supply for added flexibility and reduced instrumentation costs. Input types include voltage, current, thermocouple, RTD, ICTD, frequency, and velocity. Outputs include voltage, current, and time-proportional output.

G4 Digital Modules

G4 Digital AC Inputs (Brain Board Compatible)

691-0111.	G4IAC5. G4 AC Input 90-140 VAC, 5 VDC Logic	EACH	9.50
691-0112.	G4IAC5A. G4 AC Input 180-280 VAC, 5 VDC Logic	EACH	10.50
691-0113.	G4IAC5MA. G4 AC Input 90-140 VAC, 5vDC Logic with SW	EACH	21.00

G4 Digital AC Inputs

691-0114.	G4IAC15. G4 AC Input 90-140 VAC, 15 VDC Logic	EACH	9.50
691-0115.	G4IAC15A. G4 AC Input 180-280 VAC, 15 VDC Logic	EACH	10.50
691-0116.	G4IAC24. G4 AC Input 90-140 VAC, 24 VDC Logic	EACH	9.50
691-0117.	G4IAC24A. G4 AC Input 190-280 VAC, 24 VDC Logic	EACH	10.50
691-0118.	G4SWIN. G4 Input Switch 5,15,24 VDC Logic	EACH	19.00

G4 Digital DC Inputs (Brain Board Compatible)

691-0119.	G4IDC5. G4 DC Input 10-32 VDC, 5 VDC Logic	EACH	9.50
691-0120.	G4IDC5B. G4 DC Input 4-16 VDC, 5vDC Logic High Speed	EACH	13.00
691-0121.	G4IDC5D. G4 DC Input 2.5-28 VDC, 5 VDC Logic	EACH	8.50
691-0122.	G4IDC5G. G4 DC Input 35-60 VDC, 5 VDC Logic	EACH	9.50
691-0123.	G4IDC5K. G4 DC Input 2.5-16 VDC, 5 VDC Logic Very High Speed	EACH	13.00
691-0124.	G4IDC5MA. G4 DC Input 10-32 VDC, 5 VDC Logic with Hoa/SW	EACH	21.00
691-0125.	G4IDC5Q. G4 DC Input 2.5-16 VDC, 5 VDC Logic 2 Ch Quadrature	EACH	195.00

G4 Digital DC Inputs

691-0126.	G4IDC15. G4 DC Input 10-32 VDC, 15 VDC Logic	EACH	9.50
691-0127.	G4IDC24. G4 DC Input 10-32 VDC, 24 VDC Logic	EACH	9.50

G4 Digital AC Outputs (Brain Board Compatible)

691-0128.	G4OAC5. G4 AC Output 12-140 VAC, 5 VDC Logic	EACH	9.50
691-0129.	G4OAC5A. G4 AC Output 24-280 VAC, 5 VDC Logic	EACH	10.50
691-0130.	G4OAC5A5. G4 AC Output 24-280 VAC, 5 VDC Logic NC	EACH	10.50
691-0131.	G4OAC5A5FM. G4 AC Output 24-280 VAC, 5 VDC Logic , NC, FM	EACH	11.50
691-0132.	G4OAC5AFM. G4 AC Output 24-280 VAC, 5 VDC Logic, Factory Mutual Approved	EACH	11.50
691-0133.	G4OAC5AMA. G4 AC Output 24-280 VAC, 5 VDC Logic With Hoa/SW	EACH	21.00
691-0134.	G4OAC5MA. G4 AC Output 12-140 VAC, 5 VDC Logic With Hoa/SW	EACH	21.00

G4 Digital AC Outputs

691-0135.	G4OAC15. G4 AC Output 12-140 VAC, 15 VDC Logic	EACH	9.50
691-0136.	G4OAC15A. G4 AC Output 24-280 VAC, 15 VDC Logic	EACH	10.50
691-0137.	G4OAC24. G4 AC Output 12-140 VAC, 24 VDC Logic	EACH	9.50
691-0138.	G4OAC24A. G4 AC Output 24-280 VAC, 24 VDC Logic	EACH	10.50
691-0139.	G4SWOUT. G4 Output Switch 250 VAC	EACH	19.00

G4 Digital DC Outputs (Brain Board Compatible)

691-0140.	G4ODC5. G4 DC Output 5-60 VDC, 5 VDC Logic	EACH	9.50
691-0141.	G4ODC5A. G4 DC Output 5-200 VDC, 5 VDC Logic	EACH	15.40
691-0142.	G4ODC5AFM. G4 DC Output 5-200 VDC, 5 VDC Logic, Fm Approved	EACH	16.40

G4 Digital Modules (Continued)

G4 Digital DC Outputs (Brain Board Compatible) (Continued)

691-0143.	G4ODC5FM. G4 DC Output 5-60 VDC, 5 VDC Logic, Fm Approved	EACH	10.50
691-0144.	G4ODC5MA. G4 DC Output 5-60 VDC, 5 VDC Logic With Hoa/SW	EACH	21.00
691-0145.	G4ODC5R. G4 Reed Relay Output, 5 VDC Logic	EACH	10.50
691-0146.	G4ODC5R5. G4 Reed Relay Output, 5 VDC Logic, NC	EACH	10.50
691-0147.	G4ODC5R5FM. G4 Reed Relay Output 5 VDC Logic, NC, FM Approved	EACH	11.50
691-0148.	G4ODC5RFM. G4 Reed Relay Output 5 VDC Logic, FM Approved	EACH	11.50

G4 Digital DC Outputs

691-0149.	G4ODC15. G4 DC Output 5-60 VDC, 15 VDC Logic	EACH	9.50
691-0150.	G4ODC24. G4 DC Output 5-60 VDC, 24 VDC Logic	EACH	9.50
691-0151.	G4ODC24A. G4 DC Output 5-200 VDC, 24 VDC Logic	EACH	15.40

G4 Analog Modules

G4 Analog Inputs

691-0152.	G4AD3. +4 to +20 mA Input	EACH	100.00
691-0153.	G4AD4. ICTD Temperature Input	EACH	117.00
691-0154.	G4AD5. Type J Thermocouple Input	EACH	125.00
691-0155.	G4AD6. 0 to +5 VDC Input	EACH	117.00
691-0156.	G4AD6HS. 0 to +5 VDC Input High Speed	EACH	117.00
691-0157.	G4AD7. 0 to +10 VDC Input	EACH	117.00
691-0158.	G4AD7HS. 0 to +10 VDC Input High Speed	EACH	117.00
691-0159.	G4AD8. Type K Thermocouple Input	EACH	125.00
691-0160.	G4AD9. 0 to +50 mV Input	EACH	125.00
691-0161.	G4AD10. 100 Ohms Platinum RTD Input	EACH	125.00
691-0162.	G4AD11. -5 to 5 VDC Input	EACH	117.00
691-0163.	G4AD12. -10 to 10 VDC Input	EACH	117.00
691-0164.	G4AD13. 0 to 100 mV Input	EACH	125.00
691-0165.	G4AD16. 0 to +5 Amp AC/DC Input	EACH	167.00
691-0166.	G4AD17. Type R Thermocouple Input	EACH	125.00
691-0167.	G4AD18. Type T Thermocouple Input	EACH	125.00
691-0168.	G4AD19. Type E Thermocouple Input	EACH	125.00
691-0169.	G4AD20. 0 to 10.8 kHz Rate Input	EACH	150.00
691-0170.	G4AD22. 0 to 1 Volt DC Input	EACH	117.00
691-0171.	G4AD23. Type S Thermocouple Input	EACH	125.00
691-0172.	G4AD24. Type B Thermocouple Input	EACH	125.00
691-0173.	G4AD25. 0 to 100 Volt AC\DC Input	EACH	125.00
691-0174.	G4AD26. DV/DT Input Module	EACH	125.00

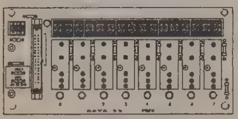
G4 Analog Outputs

691-0175.	G4DA3. +4 to +20 mA Output	EACH	100.00
691-0176.	G4DA4. 0 to +5 VDC Output	EACH	117.00
691-0177.	G4DA5. 0 to +10 VDC Output	EACH	117.00
691-0178.	G4DA6. -5 to +5 VDC Output	EACH	117.00
691-0179.	G4DA7. -10 to +10 VDC Output	EACH	117.00
691-0180.	G4DA8. 0 to +20 mA Output	EACH	117.00
691-0181.	G4DA9. Timed Proportional DC Output	EACH	100.00
691-0182.	G4DA10. Timed Proportional AC Output	EACH	100.00

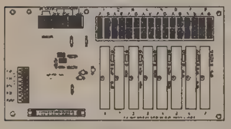
G4 Module Accessories

691-0183.	CJC. Cold Junction Compensator	EACH	10.00
691-0184.	FUSEG4. G4 4-Amp Fuse, R5026 TR5-F	EACH	1.00
691-0185.	G4 FUSE CLIP. Fuse Retaining Clip for Fuse G4	EACH	2.50
691-0186.	G4 FUSE SOCKETS. G4 — Fuse Socket	PER PK./100	7.00
691-0187.	G4-MOD-SOCKETS. G4 — Module Socket	PER PK./100	10.00
691-0188.	G4-PEM-NUTS. G4 Pem Nut	PER PK./100	10.00
691-0189.	ICTD. Temperature Probe for AD4/G4AD4	EACH	27.00

Classic Standard Mounting Racks



PH8H



PB8AH

Standard mounting racks include both digital and analog. Standard digital racks are available in 4, 8, 16, and 24-channel models and feature LED status indicators and plug-in replaceable fuses for each channel. Standard digital input and output modules can be combined on any Standard mounting rack. A Standard digital rack, with screw terminals for both field and logic connections, is available for custom application development targeted at isolating non-isolated devices such as PLCs. Standard digital racks are available for both direct connection and connection to Opto 22 Classic brain boards. Standard analog racks in 4, 8, or 16-channel models accept Opto 22 Standard analog I/O modules. Standard analog racks are compatible with all Classic analog brain boards.

Standard Digital Racks

Standard Digital Racks with Header Connector (Brain Board Compatible)

691-0190.	PB4H. 4-Channel Rack	EACH	85.00
691-0191.	PB8H. 8-Channel Rack	EACH	56.00
691-0192.	PB16H. 16-Channel Rack	EACH	69.00
691-0193.	PB16HC. 16-Channel Rack Common TB	EACH	98.00

Standard Digital Racks for Direct Connect

691-0194.	PB4. 4-Channel I/O Module Rack	EACH	21.00
691-0195.	PB4R. 4-Channel Output Module Rack	EACH	35.00
691-0196.	PB8. 8-Channel I/O Module Rack	EACH	38.00
691-0197.	PB16A. 16-Channel I/O Module Rack	EACH	62.00
691-0198.	PB16C. 16-Channel I/O Module Rack Extra Term. Strip	EACH	95.00
691-0199.	PB16T. 16-Channel I/O Module Rack	EACH	80.00
691-0200.	PB24. 24-Channel I/O Module Rack	EACH	97.00

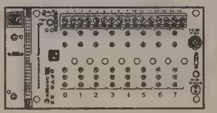
Standard Analog Racks

691-0201.	PB4AH. 4-Channel Analog Mounting Rack	EACH	85.00
691-0202.	PB8AH. 8-Channel Analog Mounting Rack	EACH	125.00
691-0203.	PB16AH. 16-Channel Analog Mounting Rack	EACH	170.00

Standard I/O Rack Accessories

691-0204.	FUSE.125. 1/8-Amp Fuse, Analog I/O Channel	EACH	1.00
691-0205.	FUSE01. 1-Amp Fuse G1 Digital Logic Power	EACH	1.00
691-0206.	PB4MOA. 4-Channel Switch Assembly	EACH	64.00
691-0207.	PBSA. Power Supply 120 VAC	EACH	70.00
691-0208.	PBSB. Power Supply 220 VAC	EACH	70.00
691-0209.	PBSC. Power Supply 12/24 VDC	EACH	95.00
691-0210.	STRAP2. 2 Position Strap Single Rack R0433	EACH	1.00
691-0211.	STRAP8. 8 Position Strap Single Rack R0430	EACH	1.65

Classic G4 Mounting Racks



G4PB8H

G4 mounting racks accept G4 digital I/O modules only and are available in 4, 8, 16, 24, and 32-channel models. G4 digital input and output modules can be used in any combination on any G4 mounting rack. A model with screw terminals for both field and logic connections is available for custom application development, targeted at isolating non-isolated devices such as PLCs. G4 models are available for both direct connection and connection to Opto 22 Classic brain boards.

G4 Racks (Brain Board Compatible)

G4 Digital Racks with Header Connector (Brain Board Compatible)

691-0212.	G4PB8H. 8-Channel Rack	EACH	42.00
691-0213.	G4PB16H. 16-Channel Rack	EACH	69.00
691-0214.	G4PB16HC. 16-Channel Rack Common TB	EACH	147.00
691-0215.	G4PB32H. 32-Channel Rack for B4 Brain	EACH	120.00

G4 Racks for Direct Connect

691-0216.	G4PB4. 4-Channel I/O Module Rack	EACH	21.00
691-0217.	G4PB4R. 4-Channel Output Module Rack	EACH	25.00
691-0218.	G4PB8. 8-Channel I/O Module Rack	EACH	38.00
691-0219.	G4PB16. 16-Channel I/O Module Rack	EACH	62.00
691-0220.	G4PB16I. 16-Channel I/O Module Rack Isolated Control	EACH	80.00
691-0221.	G4PB16T. 16-Channel I/O Module Rack Extra Term.Strip	EACH	80.00
691-0222.	G4PB24. 24-Channel I/O Module Rack	EACH	97.00
691-0223.	G4PB32DEC. 32-Channel I/O Module Rack	EACH	125.00

G4 Rack Accessories

691-0224.	G4STRAP. G4 16-Position Strap Single Rack, R5187	EACH	8.95

Classic Integral Mounting Racks

Integral mounting racks provide 16 channels of low cost, high-density I/O on the rack. Integral racks are compatible with all Classic digital brain boards and 5-volt TTL direct connect application. Integral mounting racks have pluggable field wiring connections for increased serviceability and are available in either 16-channel DC input or 16-channel DC output models.

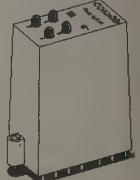
Integral Digital DC Input

691-0225.	G4PB16J. G4 DC Input 4-16 VDC 16-Channel Integral	EACH	175.00
691-0226.	G4PB16K. G4 DC Input 16-28 VDC 16-Channel Integral	EACH	175.00
691-0227.	PB16J. DC Input 4-16 VDC 16- Channel Integral	EACH	115.00
691-0228.	PB16K. DC Input 16-28 VDC 16-Channel Integral	EACH	115.00

Integral Digital DC Output

691-0229.	G4PB16L. G4 DC Output 5-60 VDC 16-Channel Integral	EACH	190.00
691-0230.	PB16L. DC Output 5-60 VDC 16-Channel Integral	EACH	115.00

Quad Pak I/O Modules



Quad Pak modules each contain four single channels of digital I/O in one high-density package. Each Quad Pak module includes an integral LED for each channel on the module.

Quad Pak Digital Modules

Quad AC Inputs

691-0231.	IAC5AQ. 4-Channel 180-280 VAC, 5 VDC Logic	EACH	35.00
691-0232.	IAC5Q. 4-Channel 90-140 VAC, 5 VDC Logic	EACH	35.00

Quad DC Inputs

691-0233.	IDC5BQ. 4-Channel 4-16 VDC, 5 VDC Logic, High Speed	EACH	45.00
691-0234.	IDC5Q. 4-Channel 10-32 VDC, 5 VDC Logic	EACH	35.00

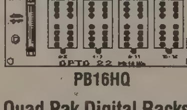
Quad AC Outputs

691-0235.	OAC5Q. 4-Channel 12-280 VAC, 5 VDC Logic	EACH	35.00

Quad DC Outputs

691-0236.	ODC5AQ. 4-Channel 5-200 VDC, 5 VDC Logic	EACH	50.00
691-0237.	ODC5Q. 4-Channel 5-60 VDC, 5 VDC Logic	EACH	35.00

Classic Quad Pak I/O Racks



PB16HQ

Quad racks provide a high-density digital I/O solution and accept Opto 22 Quad Pak modules. Both 50-pin header and card edge connectors are available.

Quad Pak Digital Racks (Brain Board Compatible)

691-0238.	PB16HQ. Quad 4-Module Position Rack	EACH	69.00
691-0239.	PB32HQ*. Quad 8-Module Rack For B4 Brain	EACH	120.00

Quad Pak Digital Racks for Direct Connect

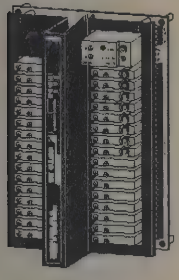
691-0240.	PB24HQ*. Quad 6-Module Position Rack	EACH	115.00
691-0241.	PB24Q. Quad 6-Module Position Rack	EACH	108.00
691-0242.	PB32DEC. Quad 8-Module Position Rack	EACH	125.00

Quad Pak I/O Rack Accessories

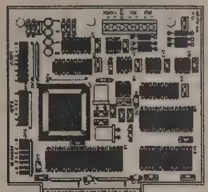
691-0243.	STRAP2Q. 2-Position Strap Quad Rack R0432	EACH	1.00
691-0244.	STRAP4Q. 4-Position Strap Quad Rack R0431	EACH	1.65

*With Header Connector.

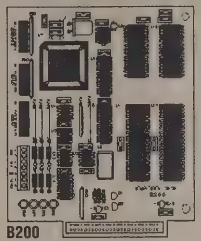
Brain Boards



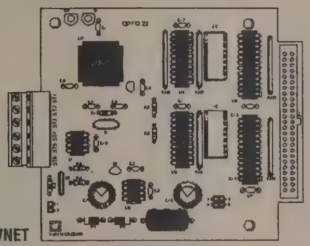
G4D32RS



B100



B200



BD-DEVNET

Opto 22's brain board technology creates a truly distributed and scalable, intelligent I/O system. Opto 22's brain boards (I/O processors) connect to I/O mounting racks to form intelligent I/O units, because each brain board has its own on-board microprocessor and custom multi-function ASIC chip. Brain boards communicate with a computer in a command response mode as a slave device, and provide the local intelligence necessary to perform basic control functions such as on/off control, counting and latching, or complex tasks such as PID control, temperature conversion, time proportional output, and emergency shutdown. Opto 22 brain boards have two distinguishing factors: the form factor of the racks that they support and the protocol(s) that they utilize. Pamux protocol brain boards utilize a parallel interface to a computer and provide very high-speed communications for distances up to 500 feet. Brain boards that communicate serially support one or both of Opto 22's open industry-standard protocols (Mistic and Optomux) and support multifunction capabilities such as PID, latching, high-speed counting, and programmable event reactions.

Bricks

Bricks offer a unique packaging scheme for G4 digital or G4 analog I/O and support either Mistic or Optomux protocols. Bricks combine I/O with a mounting rack and a brain board to form an I/O unit in a dead-front package with an enclosed wire way. The Mistic protocol provides seamless integration with Opto 22's FactoryFloor software. Bricks operate from a single 24-volt DC power supply and provide on-board voltage regulation.

Remote Digital

691-0250. G4B1. Remote Digital 16 Channel I/O Unit Optomux Protocol	EACH	435.00
691-0251. G4D16R. Remote Digital 16 Channel Multifunction I/O Unit Mistic Protocol	EACH	615.00
691-0252. G4D32RS. Remote Digital 32 Channel I/O Unit Mistic Protocol	EACH	450.00

Remote Analog

691-0253. G4A8R. Remote Analog 8 Channel Multifunction I/O Unit Mistic Protocol	EACH	615.00
691-0254. G4B2. Remote Analog 8 Channel I/O Unit Optomux Protocol	EACH	225.00
691-0255. G4RAX. Remote Analog 8 Channel I/O Unit Extender	EACH	335.00

Brick Brain Boards

Remote Digital

691-0256. G4RD. Remote Digital 16 Channel Multifunction Brain Mistic Protocol	EACH	495.00
691-0257. G4RS. Remote Digital 32 Channel Brain Mistic Protocol	EACH	230.00

Remote Analog

691-0258. G4EXR. Remote Analog Extender Brain Card	EACH	85.00
691-0259. G4RA. Remote Analog 16 Channel Multifunction Brain Mistic Protocol	EACH	495.00

Brick Accessories

691-0260. BRICKSTRAP. Bus Bar For Brick Base	EACH	5.00
691-0261. FUSE01G4. 1 Amp Fuse G4 Digital Rack Logic Power, Brick Regulator	EACH	1.00
691-0262. G4ABRICK. Analog 8-Channel Brick Assembly	EACH	245.00
691-0263. G4BRICKBASE. Mounting Base for Brick Assembly	EACH	75.00
691-0264. G4DBRICK. Digital 16-Channel Brick Assembly	EACH	225.00
691-0265. G4IOR. Remote Panel Interface Mistic Protocol	EACH	62.00
691-0266. G4PS24XA. Brick Power Supply 7 Bricks 120 VAC	EACH	345.00
691-0267. G4PS24XAFM. Brick Power Supply 7 Bricks 120 VAC Factory Mutual Approved	EACH	345.00
691-0268. G4PS24XB. Brick Power Supply 7 Bricks 220 VAC	EACH	345.00
691-0269. G4RCOMMKIT. .Remote Brick Communication Kit	EACH	142.00
691-0270. G4REG. Brick Power Regulation Module	EACH	90.00
691-0271. G4RPANEL. Remote Brick Panel Kit	EACH	290.00
691-0272. G4TELEMTRY. Mistic Telemetry Eprom and Software	EACH	200.00
691-0273. G4TERMR. Remote Brick Terminator	EACH	35.00
691-0274. REMOTE CABLE200. Remote Brick Interpanel Cable	EACH	45.00
691-0275. SBTA. Single Brick Terminal Adapter	EACH	25.00

Classic Brain Boards

Classic brain boards are distinguished by the protocol that they support. Mistic protocol brain boards include the B100 (digital) and B200 (analog). The Optomux protocol is supported by the B1 and B100 (digital) and B2 and B200 (analog) brain boards. Pamux brain boards include B4 (32-channel digital), B5 (16-channel digital), and B6 (16-channel analog). The Mistic protocol provides seamless integration with Opto 22's FactoryFloor software.

Mistic Brain Boards

691-0276. B100. 16-Channel Digital Brain Mistic/Optomux Protocol	EACH	240.00
691-0277. B200. 16-Channel.Analog Brain Mistic/Optomux Protocol	EACH	250.00

Optomux Brain Boards

691-0278. B1. 16-Channel Digital Brain Optomux Protocol	EACH	221.00
691-0279. B2. 16-Channel Analog Brain Optomux Protocol	EACH	225.00

Pamux Brain Boards

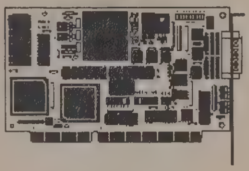
691-0280. B4. 32-Channel Digital Brain Pamux	EACH	158.00
691-0281. B5. 16-Channel Digital Brain Pamux	EACH	151.00
691-0282. B6. 16-Channel Analog Brain Pamux	EACH	310.00

DeviceNet Brain Boards

The Opto 22 DeviceNet brain board allows DeviceNet customers to take advantage of Opto 22 I/O. The DeviceNet brain board, operating as a Group 2 slave, can be integrated with Opto 22 Classic and SNAP digital mounting racks.

691-0283. BD-DEVNET. 16-Channel Digital Brain DeviceNet	EACH	295.00

Interfaces



AC37 PC Adapter Card

Opto 22's interface layer is divided into two segments: Interface Cards for Opto 22 controllers and Traditional adapter cards that support a wide variety of communication options. Traditional adapter cards include PC adapter cards and standalone adapter cards to facilitate communication between Opto 22's control system and a wide range of third-party computers, devices, and protocols. Opto 22 offers a variety of bus-based adapters to fully harness the power of the PC in industrial control.

Traditional Adapter Cards

PC Adapter Cards

PC adapter cards provide a direct connection from the PC to Opto 22 serial addressable intelligent I/O and parallel addressable I/O as well as direct connection to I/O mounting racks. PC adapter cards are designed to provide high-speed, noise-immune communications to many third-party devices.

691-0301. AC5. ISA Bus to Card Edge I/O Rack with 6-Ft Cable	EACH	140.00
691-0302. G4AC5. ISA Bus to Header I/O Rack with 6-Ft Cable	EACH	140.00
691-0303. AC24AT. ISA Bus Serial Port RS422/485, Isolated	EACH	190.00
691-0304. AC28. ISA Bus to Pamux Bus Adapter	EACH	170.00
691-0305. AC37. ISA Bus High Speed Serial Co-Processor, RS485	EACH	550.00
691-0306. AC39. ISA Bus to Local Bus Adapter — AT	EACH	395.00
691-0307. AC42. ISA Bus Fiber Optic Serial Co-Processor	EACH	550.00
691-0308. AC422AT. ISA Bus Serial Port RS422/485, Non-Isolated	EACH	155.00

Stand Alone Adapter Cards

Standalone adapter cards include the latest in fiber optic repeaters, and provide RS232 to RS485 conversion, modem support, and addressability for RS232 devices.

691-0309. AC7. RS232 to 422/485 Converter	EACH	85.00
691-0310. AC7A. RS232-RS422/485 Converter 120 V	EACH	105.00
691-0311. AC7B. RS232-RS422/485 Converter 220 V	EACH	105.00
691-0312. AC8. Half Duplex Modem Interface	EACH	170.00
691-0313. AC8A. Half Duplex Modem Interface 120 VAC	EACH	250.00
691-0314. AC8B. Half Duplex Modem Interface 220 VAC	EACH	250.00
691-0315. AC30A. RS485 Multidrop Repeater 120 VAC	EACH	105.00
691-0316. AC30B. RS485 Multidrop Repeater 220 VAC	EACH	105.00
691-0317. AC31A. Addressable RS232 Interface 120 VAC	EACH	295.00
691-0318. AC31B. Addressable RS232 Interface 220 VAC	EACH	295.00
691-0319. AC31C. Addressable RS232 Interface DC	EACH	295.00
691-0320. AC36. Multibus to Pamux Bus Adapter	EACH	120.00
691-0321. AC38A. High Speed RS485 Repeater 120 VAC	EACH	365.00
691-0322. AC38B. High Speed RS485 Repeater 220 VAC	EACH	365.00
691-0323. AC40A. Fiber Optic Repeater, 120 VAC	EACH	550.00
691-0324. AC40B. Fiber Optic Repeater, 240 VAC	EACH	550.00
691-0325. AC40C. Fiber Optic Repeater, 24 VDC	EACH	590.00
691-0326. TERM 1. Pamux Bus Termination Card	EACH	30.00
691-0327. TERM 2. Pamux Bus Termination Card Shielded Cable	EACH	30.00
691-0328. UCA4. General Purpose Pamux Interface	EACH	120.00

Controller Interfaces

Modular Controller Interfaces

Opto 22's interface products for Modular controllers include plug-in cards that provide Ethernet, Arcnet, RS485, and Fiber Optic communications. The Ethernet interface provides TCP/IP support, allowing the Opto 22 Modular controller network to be integrated into enterprise networks.

691-0329. M4SARC. M4 Arcnet Adapter	EACH	210.00
691-0330. M4SARCF. M4 Arcnet Adapter Fiber Optic	EACH	350.00
691-0331. M4SARCFR. M4 Arcnet Repeater Fiber Optic	EACH	450.00
691-0332. M4SENETC. M4 Ethernet Adapter Coaxial Cable	EACH	595.00
691-0333. M4SENETU. M4 Ethernet Adapter Unshielded Twisted Pair	EACH	595.00
691-0334. M4SSER. M4 Serial Adapter Card	EACH	210.00

ISA Controller Interfaces

ISA controller interface cards come in two types, one with an Arcnet port and the other with three serial ports. ISA interface cards and the ISA controllers plug into a PC backplane.

691-0335. G4LC32ISAARC. ISA Arcnet Adapter For G4LC32ISA	EACH	210.00
691-0336. G4LC32ISASER. ISA Serial Adapter For G4LC32ISA	EACH	210.00

Classic Controller Interfaces

Opto 22's Classic SX controller offers two types of interface cards. One features two RS232/485 serial ports, the other offers two RS485 ports and an Arcnet port.

691-0337. G4LC32ARC. Classic Arcnet Adapter For G4LC32SX	EACH	270.00
691-0338. G4LC32SER. Classic Serial Adapter For G4LC32SX	EACH	270.00

Single Board Controller Interfaces

691-0339. EX1. Pamux Adapter for LC4	EACH	140.00
691-0340. EX2. Serial/Pamux Adapter for LC4	EACH	140.00

Cables and Miscellaneous Accessories

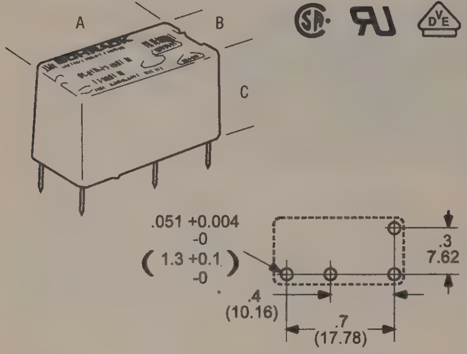
Cables

691-0351. CA10. 10-Ft Cable Edge to Edge.	EACH	60.00
691-0352. CA2. 2-Ft Cable Edge to Edge	EACH	36.00
691-0353. CA4. 4-Ft Cable Edge to Edge	EACH	42.00
691-0354. CA6. 6-Ft Cable Edge to Edge	EACH	48.00
691-0355. CA8. 8-Ft Cable Edge to Edge	EACH	54.00
691-0356. HH1.5. 1.5-Ft Header to Header Cable	EACH	40.00
691-0357. HH10. 10-Ft Header to Header Cable	EACH	64.00
691-0358. HH4. 4-Ft Header to Header Cable	EACH	47.00
691-0359. HH6. 6-Ft Header to Header Cable	EACH	54.00
691-0360. HH8. 8-Ft Header to Header Cable	EACH	60.00
691-0361. OD10. 10-Ft Edge to Header Cable	EACH	66.00
691-0362. OD2. 2-Ft Edge to Header Cable	EACH	39.00
691-0363. OD4. 4-Ft Edge to Header Cable	EACH	45.00
691-0364. OD6. 6-Ft Edge to Header Cable	EACH	52.00
691-0365. OD8. 8-Ft Edge to Header Cable	EACH	58.00

Accessories

691-0366. JUMPERS. Jumpers	PER PK./10	1.00
691-0367. LC COMMUNICATOR. Hand Held Terminal	EACH	325.00

RE Miniature PCB Relays

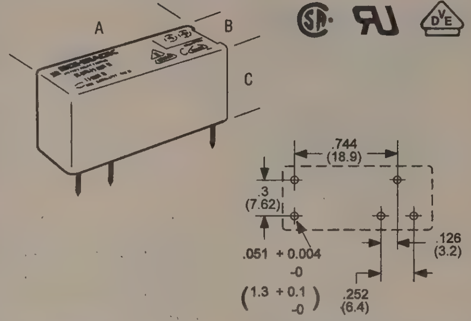


- ▶ 6 A Rating
- ▶ Sensitive Coil
- ▶ DIP Configuration
- ▶ 4 kV Coil-to-Contact Isolation
- ▶ Immersion-Cleanable Case with Knock-Off Nib
- ▶ Low Profile Case
- ▶ VDE 0110

Dimensions: A — 0.79"; B — 0.39"; C — 0.42". **Weight:** 0.18 oz. **Contacts:** 1 Form A. **Material:** AgCdO. **Maximum Contact Rating:** 6 A, AC or DC, 250 VAC, 30 VDC. **Nominal Coil Power:** 200 mW.

Stock No.	Mfr.'s Type	Volts DC	Contact Arrangement	EACH		
				1-24	25-99	100-499
685-0001	RE-030-005	5	SPST-NO	2.65	2.47	2.30
685-0002	RE-030-012	12	SPST-NO	2.65	2.47	2.30
685-0003	RE-030-024	24	SPST-NO	2.65	2.47	2.30

RYII Miniature PCB Relays (Sealed)

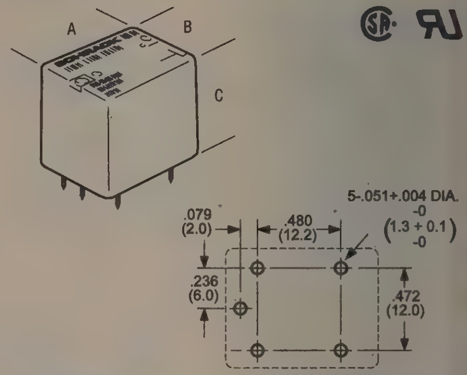


- ▶ 8 A Rating
- ▶ Sensitive Coil
- ▶ 8 mm Coil-to-Contact Spacing for 5 kV Isolation
- ▶ Immersion-Cleanable Case with Knock-Off Nib
- ▶ Low Profile Case
- ▶ VDE 0110

Dimensions: A — 1.12"; B — 0.40"; C — 0.48". **Weight:** 0.25 oz. **Contacts:** 1 Form A; 1 Form C (SPDT). **Material:** AgCdO. **Maximum Contact Rating:** 8 A, AC or DC, 250 VAC, 30 VDC. **Nominal Coil Power:** 220 mW.

Stock No.	Mfr.'s Type	Volts DC	Contact Arrangement	EACH		
				1-24	25-99	100-499
685-0004	RY-610-005	5	SPDT	3.12	2.90	2.70
685-0005	RY-610-012	12	SPDT	3.12	2.90	2.70
685-0006	RY-610-024	24	SPDT	3.12	2.90	2.70
685-0007	RY-630-012	12	SPST-NO	3.12	2.90	2.70
685-0008	RY-630-024	24	SPST-NO	3.12	2.90	2.70

TN Low Profile PCB Relay (Sealed)

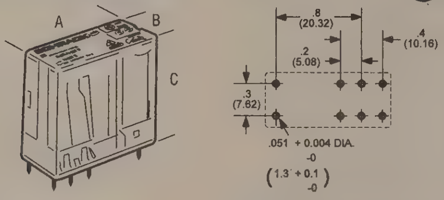


- ▶ 7 A Rating (UL)
- ▶ Sensitive Coil
- ▶ Low Profile Case
- ▶ Immersion-Cleanable Case with Knock-Off Nib

Dimensions: A — 0.83"; B — 0.63"; C — 0.64". **Weight:** 0.35 oz. **Contacts:** 1 Form C. **Material:** AgSnO. **Maximum Contact Rating:** 7 A, AC or DC, 250 VAC, 30 VDC. **Nominal Coil Power:** 360 mW.

Stock No.	Mfr.'s Type	Volts DC	Contact Arrangement	EACH		
				1-24	25-99	100-499
685-0009	TN-413-005	5	SPDT	1.25	1.16	1.08
685-0010	TN-413-012	12	SPDT	1.25	1.16	1.08
685-0011	TN-413-024	24	SPDT	1.25	1.16	1.08

RPII/2 PCB Relay (Sealed)

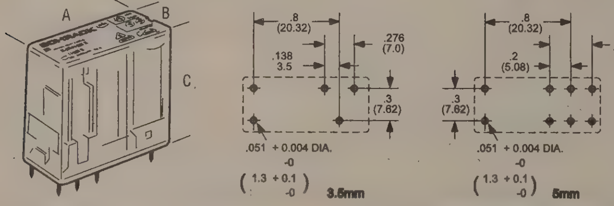


- ▶ 10 A Rating
- ▶ Immersion-Cleanable Case with Knock-Off Nib
- ▶ 8 mm Coil-to-Contact Spacing for 4 kV Isolation

Dimensions: A — 1.14"; B — 0.50"; C — 1.00". **Weight:** 0.63 oz. **Contacts:** 2 Form A; 2 Form C (DPDT). **Material:** AgCdO. **Maximum Contact Rating:** 10 A, AC or DC, 250 VAC, 30 VDC. **Nominal Coil Power:** 500 mW.

Stock No.	Mfr.'s Type	Volts DC	Contact Arrangement	EACH		
				1-24	25-99	100-499
685-0012	RP-820-005	5	DPDT	3.58	3.32	3.10
685-0013	RP-820-012	12	DPDT	3.58	3.32	3.10
685-0014	RP-820-024	24	DPDT	3.58	3.32	3.10
685-0015	RP-840-012	12	DPST-NO	3.40	3.15	2.94
685-0016	RP-840-024	24	DPST-NO	3.40	3.15	2.94

RPII/1 PCB Relay (Sealed)

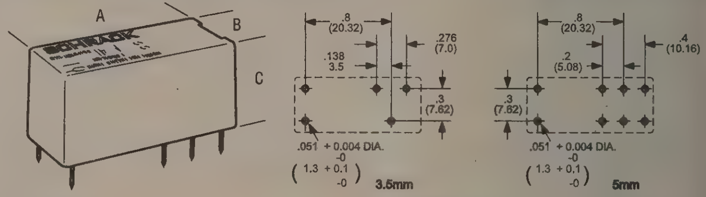


- ▶ 12/16 A Rating
- ▶ Immersion-Cleanable Case with Knock-Off Nib
- ▶ 8 mm Coil-to-Contact Spacing for 4 kV Isolation

Dimensions: A — 1.14"; B — 0.50"; C — 1.00". **Weight:** 0.63 oz. **Contacts:** 1 Form A; 1 Form C (SPDT). **Material:** AgCdO. **Maximum Contact Rating:** 16 A, AC or DC; 250 VAC, 30 VDC. **Nominal Coil Power:** 500 mW.

Stock No.	Mfr.'s Type	Volts DC	Amps	Contact Arrangement	EACH		
					1-24	25-99	100-499
685-0017	RP-710-005	5	16	SPDT	3.58	3.32	3.10
685-0018	RP-710-012	12	16	SPDT	3.58	3.32	3.10
685-0019	RP-710-024	24	16	SPDT	3.58	3.32	3.10
685-0020	RP-730-012	12	16	SPST-NO	3.46	3.21	3.00
685-0021	RP-730-024	24	16	SPST-NO	3.46	3.21	3.00
685-0022	RP-818-005	5	12	SPDT	3.17	2.94	2.75
685-0023	RP-818-012	12	12	SPDT	3.17	2.94	2.75
685-0024	RP-818-024	24	12	SPDT	3.17	2.94	2.75
685-0025	RP-838-012	12	12	SPST-NO	3.00	2.78	2.60
685-0026	RP-838-024	24	12	SPST-NO	3.00	2.78	2.60

RT Power PCB Relay (Sealed)



- ▶ 8-16 A Rating
- ▶ Sensitive Coil
- ▶ Immersion-Cleanable Case with Knock-Off Nib
- ▶ Low-Profile Case
- ▶ 10 mm Coil-to-Contact Spacing for 5 kV Isolation

Dimensions: A — 1.14"; B — 0.50"; C — 0.62". **Weight:** 0.42 oz. **Contacts:** 1 Form A; 2 Form A, 1 Form C, 2 Form C. **Material:** AgNi 90/10. **Maximum Contact Rating:** 16 A, AC or DC; 250 VAC, 30 VDC. **Nominal Coil Power:** 400 mW. Uses RP sockets and accessories.

Stock No.	Mfr.'s Type	Volts DC	Amps	Contact Arrangement	EACH		
					1-24	25-99	100-499
685-0033	RTB-14-005*	5	12	SPDT	3.17	2.94	2.75
685-0034	RTB-14-012*	12	12	SPDT	3.17	2.94	2.75
685-0035	RTB-14-024*	24	12	SPDT	3.17	2.94	2.75
685-0036	RTB-34-012*	12	12	SPST-NO	3.17	2.94	2.75
685-0037	RTB-34-024*	24	12	SPST-NO	3.17	2.94	2.75
685-0038	RTD-14-005	5	16	SPDT	3.17	2.94	2.75
685-0039	RTD-14-012	12	16	SPDT	3.17	2.94	2.75
685-0040	RTD-14-024	24	16	SPDT	3.17	2.94	2.75
685-0041	RTD-34-012	12	16	SPST-NO	3.17	2.94	2.75
685-0042	RTD-34-024	24	16	SPST-NO	3.17	2.94	2.75
685-0043	RTE-24-005	5	8	DPDT	3.17	2.94	2.75
685-0044	RTE-24-012	12	8	DPDT	3.17	2.94	2.75
685-0045	RTE-24-024	24	8	DPDT	3.17	2.94	2.75
685-0046	RTE-44-012	12	8	DPST-NO	3.17	2.94	2.75
685-0047	RTE-44-024	24	8	DPST-NO	3.17	2.94	2.75

*Denotes 3.5 mm spacing; all others 5 mm spacing.

RP Sockets and Accessories

PC terminal sockets measure 1.22 × 0.5 × 0.354 high. **Rated:** 12 A at 250 VAC. Screw terminal sockets measure 0.610 × 2.972 × 1.693 high. **Rated:** 12 A at 300 VAC. Standard 32 mm DIN rail mounting.

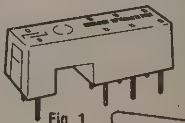


Fig. 1

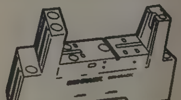
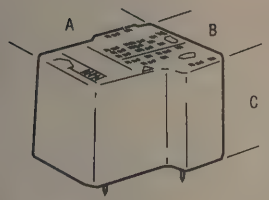


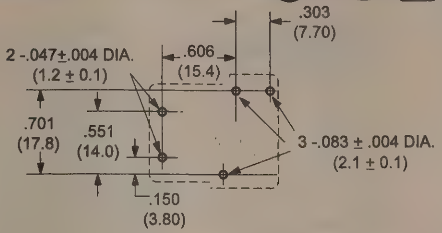
Fig. 2

Fig. 3

Stock No.	Mfr.'s Type	Fig.	Description	EACH		
				1-24	25-99	100-499
685-0027	RP-78-601	1	PCB Terminals, 3.5 mm Spacing	.86	.80	.75
685-0028	RP-78-602	1	PCB Terminals, 5 mm Spacing	1.15	1.07	1.00
685-0029	RP-16-100	—	Plastic Retaining Clip for PCB Terminals	.35	.33	.30
685-0030	RT-78-624	2	Screw Terminals, 3.5 mm Spacing	4.05	3.75	3.50
685-0031	RT-78-625	2	Screw Terminals, 5 mm Spacing	4.23	3.92	3.70
685-0032	RP-16-104	3	Plastic Retainer/Ejector Clip	.35	.33	.30

ZD Heavy Duty PCB Relays



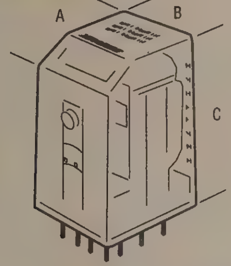


- ► **30 A Rating**
- ► **Immersion-Cleanable Case with Knock-Off Nib**

Dimensions: A — 1.28"; B — 1.08"; C — 0.81". **Weight:** 0.92 oz. **Contacts:** 1 Form A; 1 Form C. **Material:** AgCdO. **Maximum Contact Rating:** 30 A DC, 250 VAC, 30 VDC. **Nominal Coil Power:** 1 W.

Stock No.	Mfr.'s Type	Volts DC	Contact Arrangement	EACH 1-24	EACH 25-99	EACH 100-499
685-0053	ZD-321-012	12	SPDT	**3.75**	**3.46**	**3.21**
685-0054	ZD-321-024	24	SPDT	**3.75**	**3.46**	**3.21**
685-0055	ZD-322-012	12	SPST-NO	**3.75**	**3.46**	**3.21**
685-0056	ZD-322-024	24	SPST-NO	**3.75**	**3.46**	**3.21**

ZG Heavy Duty PCB Relays



- ► **5 A Rating**
- ► **Mechanical Indicator**
- ► **Push-to-Test Button**
- ► **AC or DC Versions**

Dimensions: A — 1.10"; B — 0.88"; C — 1.41". **Weight:** 1.09 oz. **Contacts:** 2 Form C; 4 Form C. **Material:** AgCdO. **Maximum Contact Rating:** 5 A, AC or DC; 250 VAC, 30 VDC. **Nominal Coil Power:** 1 W, 1.6 V A (AC volts)..All with push-to-test button..

Stock No.	Mfr.'s Type	Volts	Contact Arrangement	EACH 1-24	EACH 25-99	EACH 100-499
685-0057	ZG-260-012	12 VDC	DPDT	**7.20**	**6.43**	**5.97**
685-0058	ZG-260-024	24 VDC	DPDT	**7.20**	**6.43**	**5.97**
685-0059	ZG-460-012	12 VDC	4PDT	**7.40**	**6.60**	**6.13**
685-0060	ZG-460-024	24 VDC	4PDT	**7.40**	**6.60**	**6.13**
685-0061	ZG-260-524	24 VAC	DPDT	**7.20**	**6.43**	**5.97**
685-0062	ZG-260-615	115 VAC	DPDT	**7.40**	**6.60**	**6.13**
685-0063	ZG-460-524	24 VAC	4PDT	**7.40**	**6.60**	**6.13**
685-0064	ZG-460-615	115 VAC	4PDT	**7.40**	**6.60**	**6.13**

Sockets and Accessories for ZG Relays

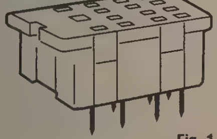


Fig. 1

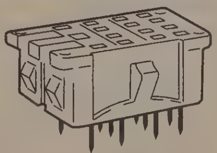


Fig. 2

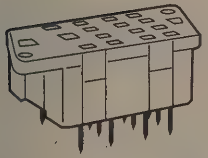


Fig. 3

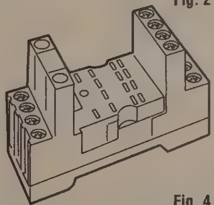
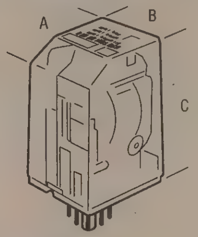


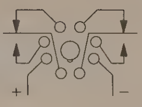
Fig. 4

Stock No.	Mfr.'s Type	Fig.	Description	EACH 1-24	EACH 25-99	EACH 100-499
685-0065	ZG-78-759	1	2 Pole, PCB Terminals	**1.40**	**1.25**	**1.16**
685-0066	ZG-78-752	1	4 Pole, PCB Terminals	**1.40**	**1.25**	**1.16**
685-0067	ZG-78-753	2	4 Pole, Solder Terminals with Socket Retainer	**1.40**	**1.25**	**1.16**
685-0068	ZG-78-750	3	4 Pole, Solder Terminals with Mounting Ears	**1.40**	**1.25**	**1.16**
685-0069	ZG-28-800	—	Plastic Retaining Clip	**.30**	**.26**	**.24**
685-0070	ZG-78-700	4	Screw Terminals	**4.20**	**3.75**	**3.49**
685-0071	ZG-78-110	4	Screw Terminals with Protection Diode IN4007	**6.00**	**5.35**	**4.97**
685-0072	ZG-28-801	—	Metal Retaining Clip	**.30**	**.26**	**.24**

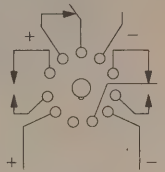
MR Relays and Modules

MR Multimode Relays





MR2
2 Pole



MR3
3 Pole

- ► **10 A Rating**
- ► **Lockable Push-to-Test Button**
- ► **AC or DC**
- ► **Functional Modules**
- ► **Time Delay Sockets Available**

Dimensions: A — 1.40"; B — 1.40"; C — 2.24". **Weight:** 2.82 oz. **Contacts:** 2 Form C; 3 Form C. **Material:** AgCdO. **Maximum Contact Rating:** 10 A at 250 VAC, 30 VDC. **Nominal Coil Power:** DC — 1.2 W; AC — 2.3 V A. All with push-to-test button.

Stock No.	Mfr.'s Type	Volts	Contact Arrangement	EACH 1-24	EACH 25-99	EACH 100-499
685-0087	MR-201-012	12 VDC	DPDT	**9.50**	**8.48**	**7.87**
685-0088	MR-201-024	24 VDC	DPDT	**9.50**	**8.48**	**7.87**
685-0089	MR-206-024	24 VAC	DPDT	**9.50**	**8.48**	**7.87**
685-0090	MR-206-115	115 VAC	DPDT	**10.50**	**9.36**	**8.70**
685-0091	MR-206-220	220 VAC	DPDT	**11.50**	**10.26**	**9.53**
685-0092	MR-301-012	12 VDC	3PDT	**11.00**	**9.82**	**9.11**
685-0093	MR-301-024	24 VDC	3PDT	**11.00**	**9.82**	**9.11**
685-0094	MR-306-024	24 VAC	3PDT	**11.00**	**9.82**	**9.11**
685-0095	MR-306-115	115 VAC	3PDT	**12.00**	**10.71**	**9.94**
685-0096	MR-306-220	220 VAC	3PDT	**12.50**	**11.15**	**10.36**

MR LED Protection Modules

Stock No.	Mfr.'s Type	Input Volts	EACH 1-24	EACH 25-99	EACH 100-499
685-0097	MRML0-024	24 AC/DC	**6.95**	**6.20**	**5.78**
685-0098	MRML0-615	115 AC	**7.65**	**6.83**	**6.34**
685-0099	MRML0-730	230 AC	**8.35**	**7.45**	**6.91**

MR Protection Diode Module

Stock No.	Mfr.'s Type	Description	EACH 1-24	EACH 25-99	EACH 100-499
685-0100	MRMT00A0	IN4007 Diode, 1000 VDC Peak	**7.26**	**6.48**	**6.34**

MR RC-Network Protection Modules

Stock No.	Mfr.'s Type	Volts	EACH 1-24	EACH 25-99	EACH 100-499
685-0101	MRMU0-524	24/115 VAC	**16.65**	**14.85**	**13.76**
685-0102	MRMU0-730	230 VAC	**16.65**	**14.85**	**13.76**

MR Multivoltage Timing Modules

All timers are switch and potentiometer adjustable.

Stock No.	Mfr.'s Type	Input Volts	Timer Type	Time Range	EACH 1-24	EACH 25-99	EACH 100-499
685-0103	MRMW0W00	24-240 VAC/DC	Interval	0.1 sec.-10 hr.*	**37.00**	**33.00**	**30.66**
685-0104	MRMX0024	24 VDC	Cyclic	0.5-5 sec.	**29.60**	**26.42**	**24.53**
685-0105	MRMX0524	24 VAC	Cyclic	0.5-5 sec.	**29.60**	**26.42**	**24.53**
685-0106	MRMX0720	230 VAC	Cyclic	0.5-5 sec.	**29.60**	**26.42**	**24.53**
685-0107	MRMY0W00	24-240 VAC/DC	Delay Off	0.1 sec.-10 hr.*	**51.05**	**45.55**	**42.30**
685-0108	MRMZ0W00	24-240 VAC/DC	Delay On	0.1 sec.-10 Hr.*	**37.00**	**33.00**	**30.66**

*Ranges: 0.1-1 sec., 1-10 sec., 0.1-1 min., 1-10 min., 0.1-1 hr., 1-10 hr.

Sockets and Accessories for MR Relays

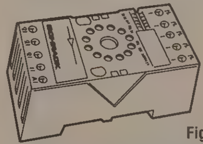


Fig. 1

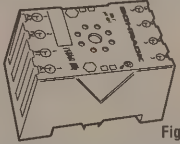


Fig. 2

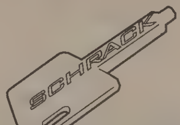
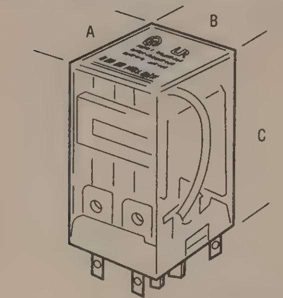


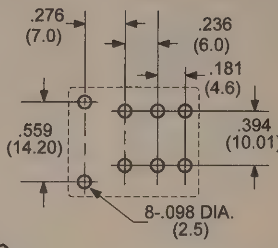
Fig. 3

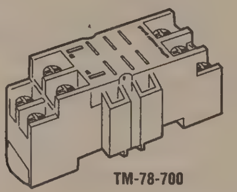
11 Pin Octal Socket. Multimode 3 pole, standard 32 mm DIN rail mount, suitable for chassis mounting. Measures 2.947 × 1.493 × 1.024 high. **Rated:** 10 A at 380 V. **8 or 11 Pin Octal Socket.** Low cost, 3 pole, standard 32 mm DIN rail mount, suitable for chassis mounting. Measures 2.441 × 1.496 × 1.024. **Rated:** 10 A at 400 V.

Stock No.	Mfr.'s Type	Fig.	Description	EACH 1-24	EACH 25-99	EACH 100-499
685-0109	MR-78-700	1	11 Pin Octal Socket	**5.90**	**5.26**	**4.89**
685-0110	MR-78-110	1	11 Pin Octal Socket with EMF Protection Diode	**6.65**	**5.97**	**5.54**
685-0111	MR-78-755	2	8 Pin Octal Socket	**4.81**	**4.29**	**3.98**
685-0112	MR-78-750	2	11 Pin Octal Socket	**5.34**	**4.77**	**4.43**
685-0113	MR-28-800	—	Plastic Retaining Clip	**.80**	**.71**	**.66**
685-0114	MR-16-000	3	Neon Colored Plastic Key to Activate Locking Test Feature	**.65**	**.58**	**.54**

TM Miniature Power Relay






TM-78-700

- ► 10 A Rating
- ► AC or DC Versions
- ► Various Mounting Options

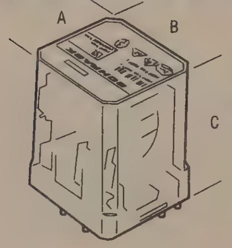
Dimensions: A — 1.08"; B — 0.85"; C — 1.39". **Weight:** 1.23 oz. **Contacts:** 2 Form C. **Material:** AgCdO. **Maximum Contact Rating:** 10 A at 240 VAC, 28 VDC. **Nominal Coil Power:** DC — 0.9 W; AC — 1.2 V A.

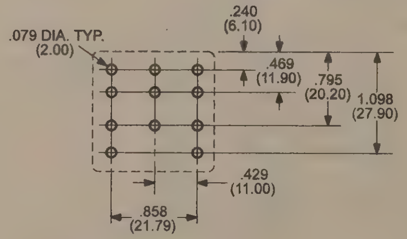
Stock No.	Mfr.'s Type*	Volts	Contact Arrangement	EACH 1-24	25-99	100-499
685-0073	TM-010-012	12 VDC	DPDT	6.75	6.03	5.57
685-0074	TM-010-024	24 VDC	DPDT	6.75	6.03	5.57
685-0075	TM-012-012	12 VDC	DPDT	6.75	6.03	5.57
685-0076	TM-012-024	24 VDC	DPDT	6.75	6.03	5.57
685-0077	TM-013-012	12 VDC	DPDT	6.75	6.03	5.57
685-0078	TM-013-024	24 VDC	DPDT	6.75	6.03	5.57
685-0079	TM-010-524	24 VAC	DPDT	6.75	6.03	5.57
685-0080	TM-010-620	120 VAC	DPDT	6.75	6.03	5.57
685-0081	TM-012-524	24 VAC	DPDT	6.75	6.03	5.57
685-0082	TM-012-620	120 VAC	DPDT	6.75	6.03	5.57
685-0083	TM-013-524	24 VAC	DPDT	6.75	6.03	5.57
685-0084	TM-013-620	120 VAC	DPDT	6.75	6.03	5.57

***Third Digit in Mfr.'s Type:** 0 — Denotes plain case for socket mounting; 2 — Denotes mounting slots on 1.5 (38) centers and .187 quick connect terminals; 3 — Denotes plain case with PCB terminals.

Stock No.	Mfr.'s Type	Description	EACH 1-24	25-99	100-499
685-0085	TM-78-700	Screw Terminal Socket	4.60	4.15	3.81
685-0086	TM-28-800	Plastic Retaining Clip	.30	.26	.24

RM 5/6 Power Relays





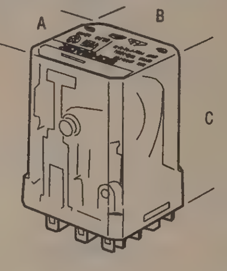
- ► 10/16 A Rating
- ► 3 mm Contact Gap
- ► AC or DC Versions
- ► Mechanical Indicator

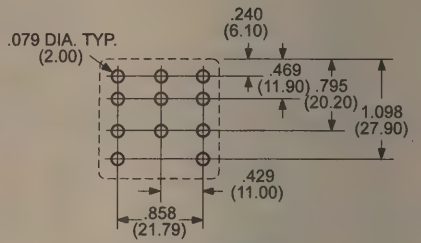
Dimensions: A — 1.40"; B — 1.52"; C — 1.91". **Weight:** 2.85 oz. **Contacts:** 2 Form A; 3 Form A. **Material:** AgCdO. **Maximum Contact Rating:** RM5 — 16 A , 380 VAC, 30 VDC; RM6 — 10 A, 380 VAC, 30 VDC. **Nominal Coil Power:** DC — 1.6 W; AC — 2.8 V A.

Stock No.	Mfr.'s Type*	Volts	Amps	Contact Arrangement	EACH 1-24	25-99	100-499
685-0148	RM-502-024	24 VDC	16	DPST-NO	11.50	10.26	9.53
685-0149	RM-502-524	24 VAC	16	DPST-NO	11.50	10.26	9.53
685-0150	RM-502-615	115 VAC	16	DPST-NO	12.00	10.71	9.94
685-0151	RM-502-720	220 VAC	16	DPST-NO	13.00	11.75	10.91
685-0152	RM-503-012	12 VDC	16	DPST-NO	11.50	10.26	9.53
685-0153	RM-503-024	24 VDC	16	DPST-NO	11.50	10.26	9.53
685-0154	RM-503-615	115 VAC	16	DPST-NO	12.00	10.71	9.94
685-0155	RM-503-720	220 VAC	16	DPST-NO	13.00	11.75	10.91
685-0156	RM-505-024	24 VDC	16	DPST-NO	11.50	10.26	9.53
685-0157	RM-505-615	115 VAC	16	DPST-NO	12.00	10.71	9.94
685-0158	RM-602-012	12 VDC	10	3PST-NO	11.50	10.26	9.53
685-0159	RM-602-024	24 VDC	10	3PST-NO	11.50	10.26	9.53
685-0160	RM-602-524	24 VAC	10	3PST-NO	11.50	10.26	9.53
685-0161	RM-602-615	115 VAC	10	3PST-NO	12.00	10.71	9.94

***Third Digit in Mfr.'s Type:** 2 — Denotes plain case for socket mounting; 3 — Denotes case with mounting slots on 2.52 (64.0) centers and .187 quick connect terminals; 5 — Denotes case with mounting slots on 2.52 (64.0) centers and .250 quick connect terminals.

RM 2/3/7 Power Relays





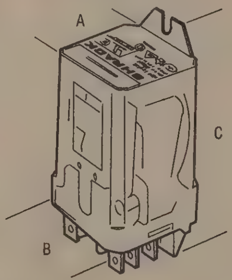
- ► 10/16 A Rating
- ► Mechanical Indicator
- ► Push-to-Test Button Option
- ► Variety of Mounting Options

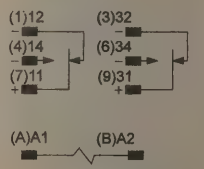
Dimensions: A — 1.40"; B — 1.52"; C — 1.91". **Weight:** 2.85 oz. **Contacts:** 2 Form C; 3 Form C. **Material:** AgCdO. **Maximum Contact Rating:** RM2/RM7 — 16 A , 380 VAC, 30 VDC; RM3 — 10 A, 380 VAC, 30 VDC. **Nominal Coil Power:** RM2/RM3 — 1.2 W, 2.3 V A; RM7 — 1.6 W, 2.8 V A.

Stock No.	Mfr.'s Type*	Volts	Amps	Contact Arrangement	EACH 1-24	25-99	100-499
685-0115	RM-202-012	12 VDC	16	DPDT	10.50	9.36	8.70
685-0116	RM-202-024	24 VDC	16	DPDT	10.50	9.36	8.70
685-0117	RM-202-524	24 VAC	16	DPDT	10.50	9.36	8.70
685-0118	RM-202-615	115 VAC	16	DPDT	11.00	9.82	9.11
685-0119	RM-202-720	230 VAC	16	DPDT	12.00	10.71	9.94
685-0120	RM-203-012	12 VDC	16	DPDT	10.50	9.36	8.70
685-0121	RM-203-024	24 VDC	16	DPDT	10.50	9.36	8.70
685-0122	RM-203-524	24 VAC	16	DPDT	10.50	9.36	8.70
685-0123	RM-203-615	115 VAC	16	DPDT	11.00	9.82	9.11
685-0124	RM-205-012	12 VDC	16	DPDT	10.50	9.36	8.70
685-0125	RM-205-024	24 VDC	16	DPDT	10.50	9.36	8.70
685-0126	RM-205-524	24 VAC	16	DPDT	10.50	9.36	8.70
685-0127	RM-205-615	115 VAC	16	DPDT	11.00	9.82	9.11
685-0128	RM-205-720	230 VAC	16	DPDT	12.00	10.71	9.94
685-0129	RM-302-012	12 VDC	10	3PDT	11.50	10.26	9.53
685-0130	RM-302-024	24 VDC	10	3PDT	11.50	10.26	9.53
685-0131	RM-302-524	24 VAC	10	3PDT	11.50	10.26	9.53
685-0132	RM-302-615	115 VAC	10	3PDT	12.00	10.71	9.94
685-0133	RM-303-024	24 VDC	10	3PDT	11.50	10.26	9.53
685-0134	RM-303-524	24 VAC	10	3PDT	11.50	10.26	9.53
685-0135	RM-303-615	115 VAC	10	3PDT	12.00	10.71	9.94
685-0136	RM-702-012	12 VDC	16	3PDT	12.50	11.15	10.36
685-0137	RM-702-024	24 VDC	16	3PDT	12.50	11.15	10.36
685-0138	RM-702-524	24 VAC	16	3PDT	12.50	11.15	10.36
685-0139	RM-702-615	115 VAC	16	3PDT	13.00	11.75	10.91
685-0140	RM-703-012	12 VDC	16	3PDT	12.50	11.15	10.36
685-0141	RM-703-615	115 VAC	16	3PDT	13.00	11.75	10.91
685-0142	RM-705-024	24 VDC	16	3PDT	12.50	11.15	10.36
685-0143	RM-705-524	24 VAC	16	3PDT	12.50	11.15	10.36
685-0144	RM-705-615	115 VAC	16	3PDT	13.00	11.75	10.91

***Third Digit in Mfr.'s Type:** 2 — Denotes plain case for socket mounting; 3 — Denotes case with mounting slots on 2.52 (64.0) centers and .187 quick connect terminals; 5 — Denotes case with mounting slots on 2.52 (64.0) centers and .250 quick connect terminals.

RM8 Power Relays





- ► 25 A Rating
- ► AC or DC Versions
- ► Mechanical Indicator

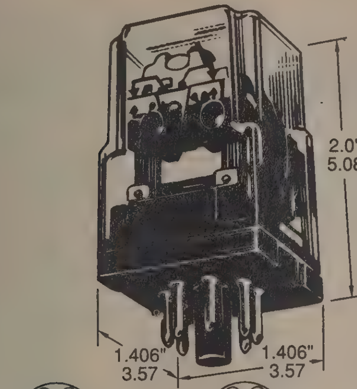
Dimensions: A — 1.40"; B — 1.52"; C — 1.91". **Weight:** 2.85 oz. **Contacts:** 2 Form C. **Material:** AgCdO. **Maximum Contact Rating:** 25 A at 250 VAC, 30 VDC. **Nominal Coil Power:** DC — 1.2 W; AC — 2.8 V A.

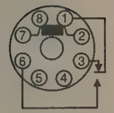
Stock No.	Mfr.'s Type*	Volts	Contact Arrangement	EACH 1-24	25-99	100-499
685-0162	RM-805-012	12 VDC	DPDT	13.50	12.05	11.19
685-0163	RM-805-024	24 VDC	DPDT	13.50	12.05	11.19
685-0164	RM-805-524	24 VAC	DPDT	13.50	12.05	11.19
685-0165	RM-805-615	115 VAC	DPDT	14.00	12.49	11.60
685-0166	RM-805-720	220 VAC	DPDT	15.00	13.38	12.43

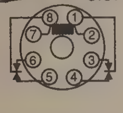
***Third Digit in Mfr.'s Type:** 5 — Denotes case with mounting slots on 2.52 (64.0) centers and .250 quick connect terminals.

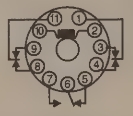
See Our Manufacturer Index Located In Section 1

Series KRPA General Purpose Relays




KRPA5


KRPA11


KRPA14

- ▶ **Multi-Contact Arrangement**
- ▶ **Octal Plug Termination**
- ▶ **Clear Dust Cover**
- ▶ **Hold-down spring for KRPA and KRPA-N will accommodate machine screws or rivets; For use with flush mount chassis sockets**

U.L. Contact Ratings for KRPA

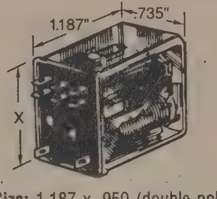
Material	**Silver**	**Silver**	
Code	**Y**	**Y**	
Models	**SPDT,DPDT & 3PDT**	**SPDT,DPDT**	**3PDT**
Ratings	5 amps @120VAC 1/10HP @120VAC 3 amps @240VAC 1/6HP @240VAC	10amps@250VAC 1/3HP@250VAC 1/6HP@120VAC	10amps@120VAC 1/6HP@120VAC 6amps@250VAC 1/3HP@250VAC

Ruggedly constructed relay offered with silver contacts, code "Y", rated 5 Amps; and silver-cadmium oxide contacts, code "G" rated 10 Amps. Contact arrangements are available up through 3 form (3PDT). Expected life exceeds 100,000 operations at rated load. Mechanical life is 10 million operations, minimum. Enclosed in a clear dust cover. U.L. recognized under file E22575. Low cost version of the KRP relay.

KRPA-N Series has an indicator lamp wired in parallel with its coil, making this model ideal for voltage or current monitoring applications. Silver-cadmium oxide contacts are rated 10 Amps. KRPA-N specifications are identical to those of other models in the KRPA series.

Stock No.	Mfr.'s Type	EACH		
		1-24	25-49	50-99
886-0603	KRPA-5AY-120V	**18.31**	**17.39**	**16.48**
886-0606	KRPA-5AG-120V	**18.52**	**17.61**	**16.67**
886-0608	KRPA-5DY-12V	**17.81**	**16.92**	**16.02**
886-0609	KRPA-5DY24V	**17.81**	**16.92**	**16.02**
886-0615	KRPA-11AY-6V	**20.14**	**19.15**	**18.12**
886-0616	KRPA-11AY-12V	**20.14**	**19.15**	**18.12**
886-0617	KRPA-11AY-24V	**20.14**	**19.15**	**18.12**
886-0618	KRPA-11AY-120V	**20.14**	**19.15**	**18.12**
886-0620	KRPA-11AG-6V	**20.66**	**19.65**	**18.61**
886-0621	KRPA-11AG-12V	**20.66**	**19.65**	**18.61**
886-0622	KRPA-11AG-24V	**20.66**	**19.65**	**18.61**
886-0623	KRPA-11AG-120V	**20.66**	**19.65**	**18.61**
886-0626	KRPA-11DY-12V	**19.26**	**18.32**	**17.36**
886-0627	KRPA-11DY-24V	**19.86**	**18.88**	**17.86**
886-0629	KRPA-11DY-110V	**21.84**	**20.76**	**19.68**
886-0631	KRPA-11DG-12V	**20.66**	**19.65**	**18.61**
886-0632	KRPA-11DG-24V	**20.66**	**19.65**	**18.61**
886-0634	KRPA-11DG-110V*	**22.43**	**21.32**	**20.19**
886-0637	KRPA-14AY-24V	**24.79**	**23.55**	**22.30**
886-0638	KRPA-14AY-120V	**23.73**	**22.55**	**21.35**
886-0641	KRPA-14AG-12V	**25.38**	**24.10**	**22.84**
886-0642	KRPA-14AG-24V	**25.38**	**24.10**	**22.84**
886-0643	KRPA-14AG-120V	**25.38**	**24.10**	**22.84**
886-0647	KRPA-14DY-24V	**24.62**	**23.41**	**22.19**
886-0651	KRPA-14DG-12V	**25.22**	**23.96**	**22.70**
886-0652	KRPA-14DG-24V	**25.22**	**23.96**	**22.70**
886-0654	KRPA-14DG-110V	**27.28**	**25.91**	**24.56**
886-0656	KRPA-11AN-12V	**23.54**	**22.36**	**21.18**
886-0657	KRPA-11AN-24V	**23.54**	**22.36**	**21.18**
886-0658	KRPA-11AN-120V	**23.54**	**22.36**	**21.18**
886-0661	KRPA-11DN-12V	**23.39**	**22.22**	**21.05**
886-0662	KRPA-11DN-24V	**23.39**	**22.22**	**21.05**
886-0663	KRPA-11DN-110V	**25.22**	**23.96**	**22.70**
886-0667	KRPA-14AN-120V	**28.68**	**27.26**	**25.83**

R10 Series
DC Industrial Relays

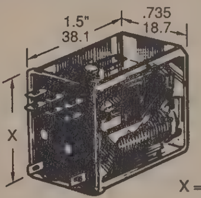


Transparent enclosures. Solder terminals for stud or plug-in mounting. **Mechanical Life:** 100 million operations/ Y series contacts are fine silver. X series contacts are silver-cadmium oxide. **Operating Temperature:** –55° to 75°C. **Size:** 1.187 x .950 (double pole models only) x .735" (3.02 x 2.41 x 1.85cm) max. **Wt.:** 1 1/2 oz. (42.5gm). **Contact Rating:** Y Series 3A; X Series 5A.

Stock No.	Mfr.'s Type	Coil Watts DC	EACH		
			1-24	25-49	50-99
886-1075	R10E1Y2V185*	12V	**12.95**	**12.31**	**11.64**
886-1076	R10E1Y2V700*	24V	**12.95**	**12.31**	**11.64**
886-1070	R10E1Y2J2.5K*	48V	**17.93**	**17.05**	**16.15**
886-1091	R10E1X2115V	115VAC	**27.07**	**25.72**	**24.36**
886-1092	R10E1X4115V	115VAC	**31.76**	**30.18**	**28.58**
886-1050	R10E1X2V185*	12V	**14.04**	**13.36**	**12.64**
886-1051	R10E1X2V700*	24V	**17.51**	**16.64**	**15.76**
886-1053	R10E1X4V185†	12V	**17.51**	**16.64**	**15.76**
886-1054	R10E1x4v700†	24V	**17.51**	**16.64**	**15.76**

* 2 Contacts. †4 Contacts.

R10S Series
CMOS-TTL Compatible Relays

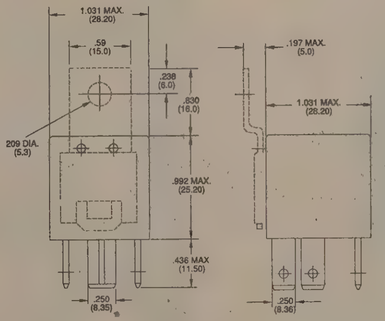


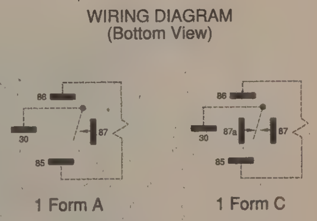
X = 1.0"/25.4 (2 PDT)

Will accept drive directly from many CMOS and TTL ICs–no interface needed. Contacts are .078" in dia. made of fine silver. **Resistive Load Rating:** 28VDC or 115VAC form. 0.1 to 3A max. **Insulation Resistance:** 10,000 meg. at 25° C and 50% R.H. **Typical Capacitance:** Contact-contact, 2 picofarads; coil frame, 30 picofarads; Coil-contacts, 2 picofarads. **Temperature Range:** -55°C to 75°C. Has pierced solder terminals. **Weight:** 0.8 to 1.4 oz. **Rated:** 2 Amps Typ. (3 Amps max.).

Stock No.	Mfr.'s Type	Coils			EACH		
		Input	Res. in Ohms	Nom. Power	1-24	25-49	50-Up
886-1160	R10SE1Y1-J1.0K	3.2mA	1000	10mW	**20.00**	**19.00**	**18.00**
886-1162	R10SE1Y1-J2.5K	2.0mA	1500	10mW	**20.00**	**19.00**	**18.00**
886-1164	R10SE1Y1-J5.0K	1.4mA	5000	10mW	**24.10**	**22.92**	**21.71**
886-1166	R10SE1Y2-J1.0K	4.5mA	1000	20mW	**21.69**	**20.61**	**19.53**
886-1168	R10SE1Y2-J2.5K	2.9mA	2500	20mW	**21.69**	**20.61**	**19.53**
886-1170	R10SE1Y2-J5.0K	2.0mA	5000	20mW	**25.83**	**24.53**	**23.24**

VF4 Automotive Relays





Plastic enclosed relay. 40 Amp contact rating with 1 Form A and 1 Form C contact arrangements. Quick connect or P.C. board terminals. Standardized design for many automotive applications in the United States. **Contacts:** 1 Form A (SPST-NO) and 1 Form C (SPDT). **Contact Material:** Silver-Nickel. **Operating Voltage:** 12 VDC. **Weight:** approx 1.1 oz.

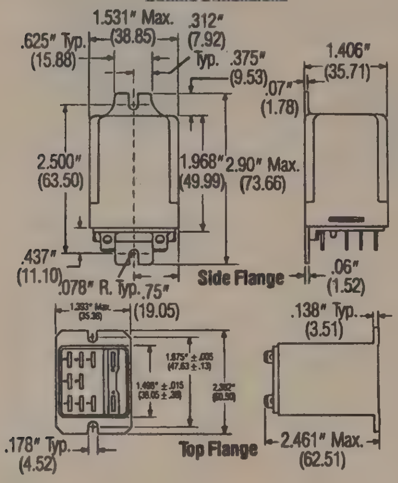
Stock No.	Mfr.'s Type	Terminals	Contact	EACH		
				1-49	50-99	100-249
886-1111	VF4-11F11	Quick Connect	SPST-NO	**8.46**	**7.20**	**6.24**
886-0312	VF4-15F11	Quick Connect	SPDT	**9.52**	**8.84**	**7.60**
886-0313	VF4-11F13	P.C. Terminals	SPST-NO	**9.32**	**8.37**	**7.20**
886-0314	VF4-15F13	P.C. Terminals	SPDT	**9.52**	**8.84**	**7.60**
886-0315	VF4-41F11*	Quick Connect	SPST-NO	**9.17**	**8.51**	**7.83**
886-0316	VF4-45F11	Quick Connect	SPDT	**8.36**	**7.52**	**6.90**

* Dust cover with mounting bracket. All others standard dust cover.

KUHP Series

KUHP Series relays are an extension of the KUP product line, offering 30 amp switching capability in a 1 Form C (SPDT) configuration and 20 amp switching capability in a 2 Form C (DPDT) configuration. This relay has been designed to meet the requirements of international regulatory agencies such as BSI and VDE for many applications. Enclosed KUHP relays are equipped with slotted flanges for bracket mounting to a chassis. Termination to this relay is normally facilitated by .250" (6.35 mm) push-on terminals or by solder connection. Contact material for the KUHP is silver-cadmium oxide.

Outline Dimensions



Stock No.	Mfr.'s Type	Voltage	Amps	Contacts	EACH 1-24	EACH 25-49	EACH 50-99
886-0117	KUHP-5A51-24	24VAC	30	SPDT	14.64	13.91	13.25
886-0318	KUHP-5A51-120	120VAC	30	SPDT	14.11	13.40	12.72
886-0319*	KUHP-5AT1-120	120VAC	30	SPDT	14.11	13.40	12.72
886-0320	KUHP-5D51-12	12VDC	30	SPDT	14.11	13.40	12.72
886-0321	KUHP-5D51-24	24VDC	30	SPDT	14.11	13.40	12.72
886-0322*	KUHP-5DT1-12	12VDC	30	SPDT	14.27	13.52	12.83
886-0323*	KUHP-5DT1-24	24VDC	30	SPDT	13.59	12.89	12.22
886-0324	KUHP-11A51-24	24VAC	20	DPDT	16.72	15.89	15.04
886-0325	KUHP-11A51-120	120VAC	20	DPDT	16.72	15.89	15.04
886-0326*	KUHP-11AT1-120	120VAC	20	DPDT	16.18	15.37	14.56
886-0327	KUHP-11D51-12	12VDC	20	DPDT	16.18	15.37	14.56
886-0328	KUHP-11D51-24	24VDC	20	DPDT	16.18	15.37	14.56
886-0329*	KUHP-11DT1-12	12VDC	20	DPDT	14.27	13.52	12.83
886-0330*	KUHP-11DT1-24	24VDC	20	DPDT	13.59	12.89	12.22

*Top bracket mounting. All others side brackets.

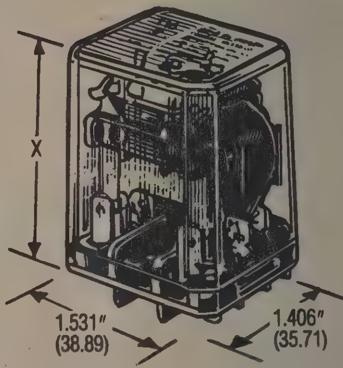
KUMP Series

► **UL File E22575**

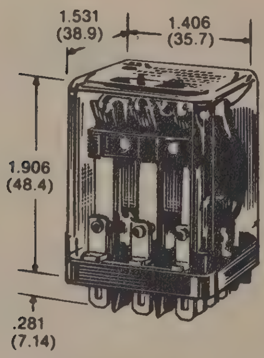
► **CSA File LR15734**

KUMP Series relays offer higher current ratings than those available in the KUP series but relay dimensions, wiring diagrams and operating characteristics are the same. Relay types ending with "18" mount in the same sockets as the KUP series relays. Relay types ending with "5G" have a side-flange mount case for surface mounting and have .250" (6.35mm) by .032" (0.8mm) quick connect terminals.

Stock No.	Mfr.'s Type	Voltage	Contacts	EACH 1-24	EACH 25-49	EACH 50-99
886-0331	KUMP-11A18-24	24VAC	DPDT	16.14	15.35	14.54
886-0332	KUMP-11A18-120	120VAC	DPDT	15.37	14.62	13.85
886-0333	KUMP-11A18-240	240VAC	DPDT	18.23	17.34	16.43
886-0334	KUMP-11D18-12	12VDC	DPDT	14.91	14.15	13.42
886-0335	KUMP-11D18-24	24VDC	DPDT	14.91	14.15	13.42
886-0336	KUMP-11D18-110	110VDC	DPDT	19.59	18.61	17.64
886-0337	KUMP-11D5G-24	24VDC	DPDT	15.37	14.62	13.05
886-0338	KUMP-14A18-24	24VAC	3PDT	16.97	16.14	15.28
886-0339	KUMP-14A18-120	120VAC	3PDT	16.97	16.14	15.28
886-0340	KUMP-14D18-12	12VDC	3PDT	16.45	15.63	14.79
886-0341	KUMP-14D18-24	24VDC	3PDT	16.45	15.63	14.79



KUP Series Enclosed Relays



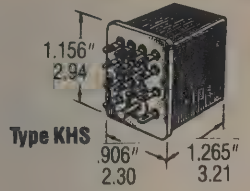
KUP Series relays are U.L. recognized under File E22575 and CSA certified under File LR15734. They are ideally suited for many diverse applications. "A" in the manufacturer's type number denotes 50/60 Hz coil; "D" denotes DC coil. Relays are socket mountable with these exceptions: types KUP11A25, KUP14A25 and KUP14D25 are socket mountable with push-to-test button for manually actuating contacts. KUP14A35, KUP14D35, KUP11A35 and KUP11D35 types are socket mountable with highly visible neon lamps which indicate the presence of coil power. KUP14A45 is socket mountable with neon indicator and push-to-test button. KUP5A55, KUP5D55, KUP11A55, and KUP11D55 have flange mount cases. Relays have silver-cadmium oxide, 10 amp contacts with .187" (4.8mm) by .020" (0.5mm) quick connect/solder terminals except for types KUP11A11, KUP11D11, KUP14A11, and KUP14D11, which have fine silver, 5 amp contacts with .187" (4.8mm) by .020" (0.5mm) quick connector/solder terminals.

Stock No.	Mfr.'s Type	Coil			Contacts		EACH		
		Input	Res. Ohms	Nom. Power	Arrang.	Rating Amps	1-24	25-49	50-99
886-0889	KUP5A15-24*	24V	85	2.00VA	SPDT	10	12.42	11.81	11.18
886-0838	KUP5A15-120*	120V	2,250	2.00VA	SPDT	10	12.42	11.81	11.18
886-0839	KUP5A15-240*	240V	9,110	2.00VA	SPDT	10	15.58	14.80	14.03
886-0842	KUP5D15-12*	12V	120	1.20W	SPDT	10	11.48	10.90	10.33
886-0843	KUP5D15-24*	24V	472	1.20W	SPDT	10	11.48	10.90	10.33
886-0845	KUP5A55-120	120V	2,250	2.00VA	SPDT	10	13.09	12.46	11.78
886-0846	KUP5D55-24	24V	472	1.20W	SPDT	10	11.99	11.38	10.79
886-0847	KUP11A11-120*	120V	2,250	2.00VA	DPDT	5	14.86	14.12	13.38
886-0848	KUP11D11-24*	24V	472	1.20W	DPDT	5	14.04	13.36	12.64
886-0849	KUP11A15-6*	6V	6	2.00VA	DPDT	10	14.64	13.90	13.19
886-0850	KUP11A15-12*	12V	24	2.00VA	DPDT	10	14.64	13.90	13.19
886-0851	KUP11A15-24*	24V	85	2.00VA	DPDT	10	14.64	13.90	13.19
886-0781	KUP11A15-120*	120V	2,250	2.00VA	DPDT	10	14.64	13.90	13.19
886-0853	KUP11D15-5*	5V	21	1.20W	DPDT	10	13.14	12.38	11.74
886-0784	KUP11D15-12*	12V	120	1.20W	DPDT	10	13.90	13.21	12.52
886-0785	KUP11D-15-24*	24V	472	1.20W	DPDT	10	13.90	13.21	12.52
886-0855	KUP11D15-110*	110V	10,000	1.20W	DPDT	10	18.91	17.97	17.03
886-0856	KUP11A25-120*	120V	2,250	1.20W	DPDT	10	17.13	16.29	15.44
886-0890	KUP11A35-120*	120V	2,250	2.00VA	DPDT	10	18.02	17.11	16.22
886-0859	KUP11D35-24*	24V	472	1.20W	DPDT	10	21.69	20.61	19.53
886-0861	KUP11A55-24	24V	85	2.00VA	DPDT	10	26.29	14.53	13.78
886-0862	KUP11A55-120	120V	2,250	2.00VA	DPDT	10	15.29	14.53	13.78
886-0864	KUP11D55-12	12V	120	1.20W	DPDT	10	14.35	13.63	12.91
886-0865	KUP11D55-24	24V	472	1.20W	DPDT	10	14.35	13.63	12.91
886-0867	KUP11D55-110	110V	10,000	1.20W	DPDT	10	19.42	18.45	17.46
886-0868	KUP14A11-120*	120V	1,700	2.7VA	3PDT	5	16.55	15.72	14.90
886-0869	KUP14D11-24*	24V	472	1.20W	3PDT	10	16.27	15.45	14.64
886-0871	KUP14A15-12*	12V	18	2.7VA	3PDT	10	16.32	15.51	14.69
886-0872	KUP14A15-24*	24V	72	2.7VA	3PDT	10	16.32	15.51	14.69
886-0788	KUP14A15-120*	120V	1,700	2.7VA	3PDT	10	16.55	15.72	14.90
886-0874	KUP14D15-6*	6V	32.1	1.20W	3PDT	10	15.96	15.16	14.38
886-0791	KUP14D15-12*	12V	120	1.20W	3PDT	10	15.96	15.16	14.38
886-0792	KUP14D15-24*	24V	472	1.20W	3PDT	10	15.96	15.16	14.38
886-0875	KUP14D15-48*	48V	1,800	1.20W	3PDT	10	17.44	16.58	15.71
886-0793	KUP14D15-110*	110V	10,000	1.20W	3PDT	10	20.97	19.91	18.88
886-0876	KUP14A25-120*	120V	1,700	2.7VA	3PDT	10	18.74	17.82	16.89
886-0877	KUP14D25-24*	24V	472	1.20W	3PDT	10	17.32	16.45	15.58
886-0879	KUP14A35-120*	120V	1,700	2.7VA	3PDT	10	19.65	18.67	17.67
886-0880	KUP14D35-24*	24V	472	1.20W	3PDT	10	23.82	22.65	21.44
886-0881	KUP14A45-120*	120V	1,700	2.75VA	3PDT	10	21.84	20.76	19.68

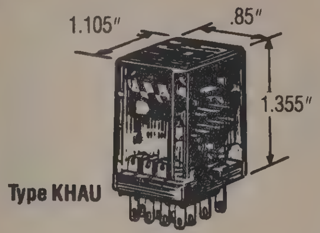
*Socket mountable in 27E121 screw terminal socket.

KH Series Miniature 4PDT Relays

Small, Rugged Relays for AC and DC Operations.



Type KHS



Type KHAU

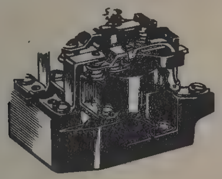
KHAU relays are manufactured using automated techniques to provide dependable, low cost switching in a package only slightly larger than a cubic inch. KHAU has smoke-grey polycarbonate dust cover. KHS, hermetically sealed with metal cover. All models U.L. Recognized. KHS is recognized for class 1 division 2 hazardous environments. Silver contacts, rated 3 amps at 28VDC, or 120VAC res. Solder term, 3-48 mtg. stud. 2 oz. (57gm). All fit KH Series sockets.

Stock No.	Mfr.'s Type	Coil Volts	EACH 1-24	25-49	50-99	100-249
886-0566	KHS17D11	6 DC	45.52	42.40	40.15	38.24
886-0567	KHS17D11	12 DC	45.52	42.40	40.15	38.24
886-0563	KHS17A11	24 AC	48.94	46.52	44.06	41.96
886-0568	KHS17D11	24 DC	42.52	40.38	38.24	34.57
886-0564	KHS17A11	120 AC	46.61	44.30	41.96	38.75
886-0569	KHS17D11	110 DC	50.28	47.74	45.23	43.08
886-0301	KHAU-17A11–6	6 VAC	9.49	9.09	8.86	7.90
886-0302	KHAU-17A11–12	12 VAC	9.49	9.09	8.86	7.90
886-0303	KHAU-17A11–24	24 VAC	94.9	9.09	8.86	7.90
886-0304	KHAU-17A11–120	120 VAC	9.95	9.55	9.30	8.69
886-0305	KHAU-17D11–6	6 VDC	8.62	8.20	7.98	6.90
886-0306	KHAU-17D11–12	12 VDC	8.62	8.20	7.98	6.90
886-0307	KHAU-17D11–24	24 VDC	8.62	8.20	7.98	6.90
886-0308	KHAU-17D11–110	110 VDC	11.82	11.34	11.04	9.87

Coil Data for Series KH Relays

DC Coils (0.5-2 Watts)			AC Coils (1.20VA)		
V	Resistance in Ohms ± 10% @ 25°C	Induct in H (approx.)	V	Resistance in Ohms ± 10% @ 25°C	Average Current mA
6	40	0.08	6	10.5	200
12	160	0.28	24	160.0	52
24	650	1.00	120	2900.0	11
48	2600	4.50	—	—	—
110	11K	17.00	—	—	—

PRD Type Heavy Duty Power Relays

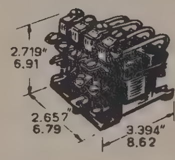


PRD relays are interchargeable with PR relays; same size and mounting holes. Improved design allows use of power screwdrivers on terminals. All models are U.L. and CSA listed and have silver contacts. Model PRD-3AYO is rated 40 amps, all other rated 25 amps. **Mounting:** two .188" dia. holes on 1.875" centers. **Weight:** 11 oz.

Stock No.	Mfr.'s Type	Coil Volts	Coil Resistance in Ohms	Contacts	EACH 1-24	25-49	50-99	100-249
886-0973	PRD-3AYO	120AC	290.0	SPST	18.24	17.34	16.41	15.63
886-0982	PRD-5AYO	120AC	290.0	SPDT	20.97	19.91	18.88	16.79
886-0985	PRD-5DYO	12DC	71.0	SPDT	20.30	19.27	18.26	17.39
886-0986	PRD-5DYO	24DC	288.0	SPDT	20.88	19.83	18.79	16.64
886-0990	PRD-7AYO	24AC	12.0	DPST	22.72	21.60	20.45	18.73
886-0991	PRD-7AYO	120AC	290.0	DPST	22.72	21.60	20.45	18.73
886-0992	PRD-7AYO	240AC	1.2K	DPST	23.09	21.93	20.78	19.03
886-0994	PRD-7DYO	12DC	71.0	DPST	21.99	20.89	19.80	17.53
886-0995	PRD-7DYO	24DC	288.0	DPST	21.18	19.84	18.80	16.25
886-1004	PRD-11AYO	24AC	12.0	DPDT	28.25	26.83	25.42	21.18
886-1005	PRD-11AYO	120AC	290.0	DPDT	28.25	26.83	25.42	21.18
886-1006	PRD-11AYO	240AC	1.2K	DPDT	28.62	27.17	25.75	22.00
886-1009	PRD-11DYO	12DC	71.0	DPDT	31.64	30.04	28.47	25.93
886-1010	PRD-11DYO	24DC	288.0	DPDT	27.45	26.06	24.70	20.58
886-1011	PRD-11DYO	110DC	6050.0	DPDT	30.21	28.70	27.23	25.93

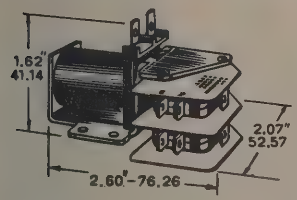
PM17 4DPT 25-Amp Power Relays

4PDT for polyphase and heavy-duty switching. Contacts are silver-cadmium-oxide. Rated at 25 amps, 240V, 50-60 Hz, non-inductive. 1 HP per moveable arm at 120 or 240V single-phase. Mount by keyhole and 2 channels for 8-32 screws on 2 x 2$^1/_2$" triangular centers. Screw term. 2$^{45}/_{64}$ x 2$^{31}/_{32}$ x 3$^{23}/_{64}$." **Weight:** 1 lb. UL, CSA listed.



Stock No.	Mfr.'s Type	Coil Volts	EACH 1-24	25-49	50-99	100-249
886-0951	PM17AY	24AC	73.09	69.45	65.78	62.65
886-0952	PM17AY	120AC	73.09	69.45	65.78	62.65
886-0953	PM17AY	240AC	73.39	69.73	66.06	62.91
886-0956	PM17DY	12DC	69.08	65.63	62.18	58.76
886-0957	PM17DY	24DC	71.72	66.60	62.16	58.79
886-0958	PM17DY	110DC	72.84	69.21	65.57	61.03

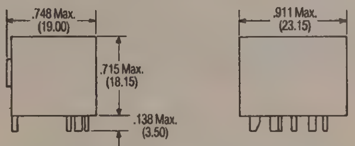
20-Amp Power Relays

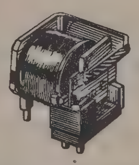


Contact Rating: 20 amps, 277VAC; 60 LRA, 12 FLA, 1 HP at 125VAC; 48 LRA, 8 FLA, 2 HP at 250VAC; pilot duty, 360VA, 125-250VAC. **Life Expectancy:** 50,000 operations at full load; 1 million operations, mechanical. **Operating Temperature Range:** -10° to +65°C. **Mounting:** One .166" (4.21mm) diameter mounting hole and .160" (4.06mm) diameter boss. **Termination:** .250" (6.35mm) quick-connect. UL Recognized.

Stock No.	Mfr.'s Type	Coil Volts	Contacts	EACH 1-24	25-49	50-99	100-249
886-1290	S87R5A2B1D1	24AC	SPDT	13.09	12.46	11.78	10.22
886-1291	S87R5A2B1D1	120AC	SPDT	13.74	13.08	12.37	10.99
886-1292	S87R5D2B1D1	12DC	SPDT	13.43	12.76	12.09	10.78
886-1293	S87R5D2B1D1	24DC	SPDT	12.82	12.18	11.54	9.98
886-1295	S87R11A2B1D1	24AC	DPDT	17.81	16.92	16.02	15.26
886-1294	S87R11A2B1D1	120AC	DPDT	17.81	16.92	16.02	15.26

VKP 40-Amp Automotive Relay

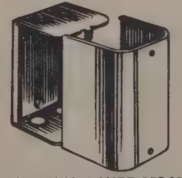




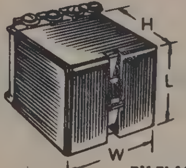
Open frame design switches up to 40 amps. One Form A and one Form C. Contact arrangements well suited for many automotive applications. **Resistance in Ohms:** 90. **Nominal Power:** 1.6 watts. **Termination:** Printed circuit terminals. **Weight:** 0.7 oz.

Stock No.	Mfr.'s Type	Input VDC	Contact Arrangements	EACH 1-24	25-49	50-99	100-249
886-0309	VKP-11F42	12	SPST-NO	6.53	5.95	5.55	4.25
886-0310	VKP-15F42	12	SPDT	7.12	6.63	6.17	5.36

Dust Covers for PM and PRD Relays



PM METAL COVER 35D227



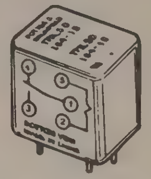
PM PLASTIC DUST COVER 35D203

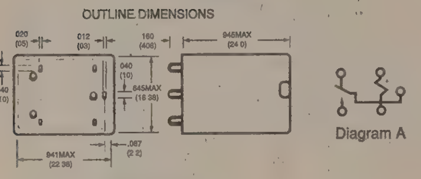
35D013

Heavy steel cover screws in place on sheet metal base. Knockouts accept 0.5" diameter conduit. Predrilled mounting holes. Type 35D013 has holes to accept PRD mounting. Type 35D277 accepts PM mounting. Plastic dust cover for PM Series only.

Stock No.	Mfr.'s Type	Dimensions Length	Width	Height	EACH 1-24	25-49	50-99	100-249
886-1455	35D013	5.312"	3.375"	3.125"	20.66	19.65	18.61	17.72
886-1456	35D203	3.394"	2.657"	2.719"	5.06	4.72	4.44	4.03
886-1457	35D227	5.313"	3.812"	3.812"	24.99	23.77	22.50	20.93

T70 Series Miniature Printed Circuit Board Relays





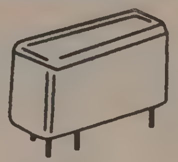
Wiring Diagrams
(Bottom View)

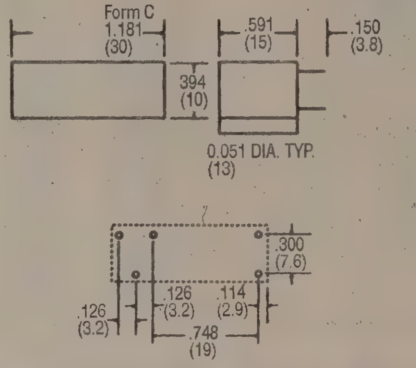
- **10 Million Mechanical Operations**
- **Low Power Consumption**

T70 Series relays are for printed circuit board mounting. Feature sealed, immersion-cleanable case. **Two Contact Materials Available**: Type number with code 31 are fine silver with gold flash, type numbers with code 64 are silver cadmium oxide. Contact arrangement 1 form C (SPDT). **Nominal Coil Power**: 360 mW. SPDT 1 form XX 10 amps. UL recognized, CSA certified.

Stock No.	Mfr.'s Type	Coil		EACH		
		Input VDC	Ohms	1-24	25-49	50-99
886-9204	T70L5D164-5	5	70	**4.40**	**3.92**	**3.69**
886-9206	T70L5D131-6	6	100	**4.05**	**3.59**	**3.37**
886-9208	T70L5D131-9	9	225	**4.25**	**3.77**	**3.54**
886-9210	T70L5D131-12	12	400	**4.05**	**3.59**	**3.37**
886-9212	T70L5D164-12	12	400	**4.40**	**3.92**	**3.69**
886-9216	T70L5D131-24	24	1600	**4.50**	**4.19**	**3.92**
886-9218	T70L5D164-24	24	1600	**4.48**	**4.17**	**3.93**
886-9222	T70L5D131-48	48	6400	**5.33**	**5.07**	**4.81**
886-9224	T70L5D164-48	48	6400	**5.61**	**5.33**	**5.06**

T75 Series Miniature DIP Relays

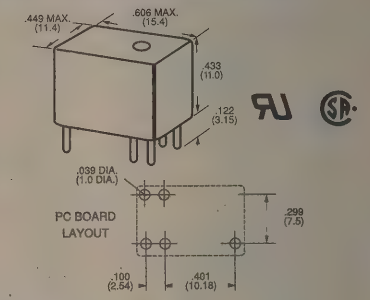




T75 Series relays feature high sensitivity for HVAC, appliance, security, and industrial applications. Nominal coil power requirement is as low as 212 mW. Low profile 0.591" (15.01) tall case uses only 0.465" (11.81) square of PC board for high-density circuit design. **Power Switching Capability:** 1 form C (SPDT) contacts rated 14 amps. **Coil Voltage:** 5-48 VDC. **Normal Power at 25°C:** 230 mW, typ. Continuous duty cycle.

Stock No.	Mfr.'s Type	Voltage	Ohms	EACH		
				1-24	25-49	50-99
886-9521	T75S5D112-05	5	118	**7.00**	**6.49**	**6.07**
886-9523	T75S5D112-12	12	650	**7.00**	**6.49**	**6.07**
886-9525	T75S5D112-24	24	2270	**7.00**	**6.49**	**6.07**

T81 Series Miniature High Density Printed Circuit Board Relays



- **High Dielectric**
- **Standard Coil and Sensitive Coil Models Available**
- **Ideal for Office Machines, Logic and Process Control**

T81 Series relays are ultra-miniature devices for printed circuit board mounting. Permit high density packaging for savings in equipment size and cost. SPDT contacts are silver-palladium alloy with gold overlay provide load handling of 1 amp @ 24 VDC or 0.5 amp at 120 VAC, resistive. 81N Series are standard coil models and 81H Series are sensitive coil models. T81 relays are enclosed in an immersion cleanable polycarbonate case. Printed circuit terminals are on .100" × .300", DIP compatible grid layout. UL recognized, CSA certified. **Temperature Range:** –40°C to +55°C (standard coil); –40°C to +75°C (sensitive coil).

T81N Series Standard Coil Relays

Stock No.	Mfr.'s Type	Coil Voltage	EACH		
			1-24	25-49	50-99
886-9242	T81N5D312-12	12 VDC	**4.55**	**4.23**	**3.98**
886-9244	T81N5D312-24	24 VDC	**4.55**	**4.23**	**3.98**

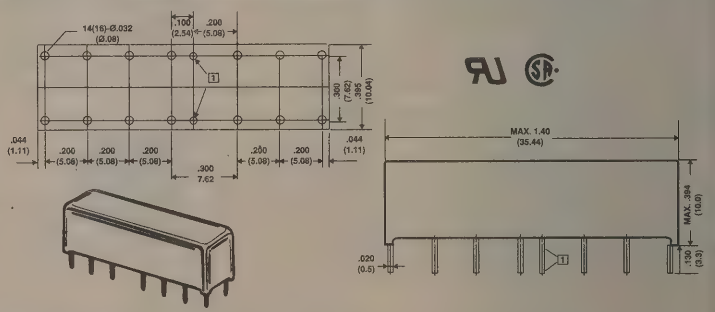
T81H Series Sensitive Coil Relays

Stock No.	Mfr.'s Type	Coil Voltage	1-24	25-49	50-99
886-9246	T81H5D312-05	5 VDC	**5.06**	**4.64**	**4.24**
886-9250	T81H5D312-12	12 VDC	**5.10**	**4.72**	**4.42**
886-9252	T81H5D312-24	24 VDC	**4.45**	**4.45**	**4.21**

T84 Series 4 Pole High Dielectric Strength Miniature DIP Relays

- **Standard 28-Pin DIP**
- **Meets FCC Part 68 Isolation**
- **UL Recognized**
- **CSA Certified**

T84 Series relays designed for telecommunication applications. Dielectric strength between open contacts is 1000 Vrms. DIP termination allows direct PC board mounting or plugging into 28-pin IC socket. **Available Three Types:** Single coil non-latching, single coil latching and dual coil latching. All have polarized coils. Enclosed in permanently sealed plastic case backfilled with inert gas. Designed to withstand automatic wave soldering and immersion cleaning. **Contact Ratings Maximum Switching Voltage:** 250 VDC, 220 VAC. **Maximum Switching Power:** DC — 35 watts resistive load; AC — 60 VA resistive. **Maximum Switching Current:** 2 amps DC or AC. **Minimum Switching Current:** Dry circuit. **Maximum Carrying Current:** 2 amps DC or AC.



Sensitive Coil 4PDT DIP Relay

Stock No.	Mfr.'s Type	Coil Voltage	Action*	EACH		
				1-24	25-49	50-99
886-9396	T84S17D214-05	5 VDC	SC, NL	**13.24**	**12.50**	**11.92**
886-9398	T84S17D214-12	12 VDC	SC, NL	**13.24**	**12.50**	**11.92**
886-9400	T84S17D214-24	24 VDC	SC, NL	**13.24**	**12.50**	**11.92**
886-9402	T84S17D214-48	48 VDC	SC, NL	**17.55**	**16.67**	**15.25**

Standard Coil 4PDT DIP Relay

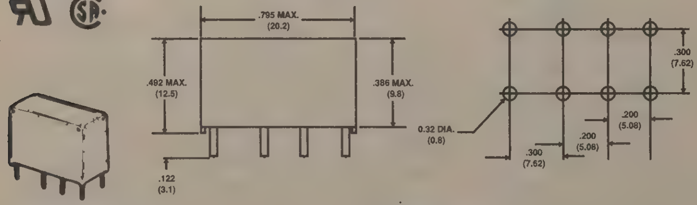
Stock No.	Mfr.'s Type	Coil Voltage	Action*	1-24	25-49	50-99
886-9412	T84S17D414-05	5 VDC	SC, NL	**13.06**	**12.13**	**11.32**
886-9414	T84S17D414-12	12 VDC	SC, NL	**13.06**	**12.13**	**11.32**
886-9416	T84S17D414-24	24 VDC	SC, NL	**13.06**	**12.13**	**11.32**
886-9418	T84S17D414-48	48 VDC	SC, NL	**15.45**	**14.66**	**13.90**
886-9420	T84S17D434-05	5 VDC	DC, L	**14.38**	**13.66**	**12.95**
886-9422	T84S17D434-12	12 VDC	DC, L	**14.38**	**13.66**	**12.95**

*SC, NL = Single coil non-latching. DC, L = Dual coil latching.

Coil Data Table

	Standard Coil		Sensitive Coil		
	Single Coil Non-Latching	Dual Coil Latching	Single Coil Non-Latching	Single Coil Latching	Dual Coil Latching
Nom. Coil Power	400 mW	360 mW	200 mW	90 mW	180 mW
Nom. Coil Voltage	Resistance in Ohms @ 20° C ± 10%				
5 VDC	62.5	69	125	278	139
12 VDC	360.0	400	720	1600	800
24 VDC	1440.0	1600	2880	6400	3200
48 VDC	5760.0	6400	11520	25600	12800

T85 Series High Sensitivity Dual In-Line Ultra-Miniature PC Board Relays



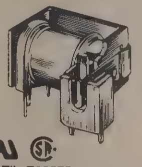
- **Ultra-Sensitive Coils**
- **Switch Up To 1.25 Amp**
- **UL Recognized**
- **CSA Certified**

T85 Series DIP relays are 2 form C DPDT and feature terminals on a .100" × .300" grid layout. This configuration permits terminal mating with a 16-pin-DIP socket. Relays are enclosed in PBT polyester dust cover designed for immersion cleaning applications using freon, alcohol or water. Contacts are bifurcated. Suitable for applications in telecommunications equipment, audio equipment and business machines. **Contact Ratings Maximum Switched Current:** 1.25 A, AC or DC with contact style "4"; 2 amp AC or DC with contact style "5". **Maximum Switched Voltage:** 60 VDC, 120 VAC with contact style "4"; 150 VDC, 125 VAC with contact style "5". **Maximum Switched Power:** 24 W or 60 VA with contact style "4"; 30 W or 62.5 VA with contact style "5". **Maximum Carry Current:** 2 amps. **Minimum Switched Current:** 10 µA, AC or DC. **Minimum Switched Voltage:** 50 µV, AC or DC. **Minimum Switched Power:** 25 µW, AC or DC.

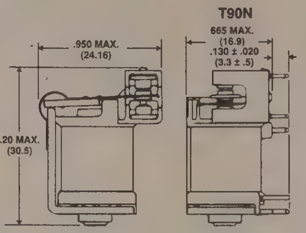
Stock No.	Mfr.'s Type	Coil Voltage	Ohms	Coil Power @ Nom. Voltage	EACH		
					1-24	25-49	50-99
886-9426	T85N11D114-05	5 VDC	167	150 mW	**6.15**	**5.85**	**5.23**
886-9428	T85N11D114-12	12 VDC	960	150 mW	**6.15**	**5.85**	**5.23**
886-9430	T85N11D114-24	24 VDC	2880	200 mW	**7.21**	**6.70**	**5.56**
886-9432	T85N11D114-48	48 VDC	7680	300 mW	**8.39**	**7.79**	**7.27**
886-9434	T85N11D115-05	5 VDC	45	560 mW	**6.49**	**6.04**	**5.63**
886-9436	T85N11D115-12	12 VDC	280	510 mW	**6.49**	**6.04**	**5.63**
886-9438	T85N11D115-24	24 VDC	1070	540 mW	**6.49**	**6.04**	**5.63**

T90 Series Low Cost, 30 A, DC Coil PC Board Relay

T90 printed circuit board relays provide an inexpensive means of switching loads up to 30 A. While these small, low-cost relays are designed primarily for the appliance industry and heating, ventilating and air conditioning markets, they are also well suited for load management automotive and other applications. The T90 is available with silver-cadmium oxide contacts in 1 Form A or C arrangements. A plastic, snap-on dust cover is available for the open-style T90, but must be ordered separately. See below. Mechanical life expectancy of T90 relays is 10 million operations. Electrical life expectancy is 100,000 operations at rated loads. T90S is sealed version.



UL File E22575
CSA File LR15734

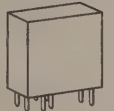


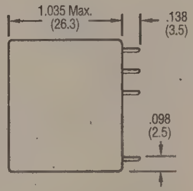
Coil Data. Temperature, Max.: 130°C. **Insulation Class:** B. **Insulation Resistance, Initial:** 1000 megohms, minimum, at 25°C, 500 VDC and 50% relative humidity. **Breakdown Voltage, Initial:** 1500 V rms, contact to coil. **Operate Data. Must-Operate Voltage:** Less than 75% of nominal voltage at 25°C. **Must-Release Voltage:** More than 10% of nominal voltage at 25°C. **Operate Time (Including Bounce):** 15 milliseconds, maximum. **Release Time (Including Bounce):** 15 milliseconds, maximum. **Environmental Data. Ambient Temperature Range:** Storage — –55°C to +105°C; Operating — –55°C to +85°C. **Vibration:** .065" maximum excursions from 10 to 55 Hz. **Resistance, Initial:** 50 milliohms, maximum. **Breakdown Voltage, Initial:** 1500 V rms, contact to contact. **Expected Life:** 10 million operations, mechanical; 100,000 operations at rated load.

Stock No.	Mfr.'s Type	Coils			Contacts		EACH			
		Input VDC	Res. In Ohms	Nom. Power	Arrangement	Amps Rating	1-24	25-49	50-99	100-249
886-1525	T90N1D12-5	5	27	.93 W	SPST-NO	30	**5.13**	**4.72**	**4.44**	**3.70**
886-1526	T90N1D12-12	12	155	.93 W	SPST-NO	30	**5.13**	**4.72**	**4.44**	**3.70**
886-1527	T90N1D12-24	24	660	.87 W	SPST-NO	30	**5.13**	**4.72**	**4.44**	**3.70**
886-1528	T90N5D12-5	5	27	.93 W	SPDT	20	**5.25**	**4.98**	**4.70**	**4.15**
886-1529	T90N5D12-12	12	155	.93 W	SPDT	20	**5.25**	**4.98**	**4.70**	**4.15**
886-1530	T90N5D12-24	24	660	.87 W	SPDT	20	**5.25**	**4.98**	**4.70**	**4.15**
886-1533	T90S1D12-5	5	27	.93 W	SPST-NO	30	**6.68**	**6.33**	**6.01**	**5.72**
886-1534	T90S1D12-12	12	155	.93 W	SPST-NO	30	**6.68**	**6.33**	**6.01**	**5.72**
886-1535	T90S1D12-24	24	660	.87 W	SPST-NO	30	**6.68**	**6.33**	**6.01**	**5.72**
886-1536	T90S5D12-5	5	27	.93 W	SPDT	20	**6.96**	**6.61**	**6.26**	**5.96**
886-1537	T90S5D12-12	12	155	.93 W	SPDT	20	**6.96**	**6.61**	**6.26**	**5.96**
886-1538	T90S5D12-24	24	660	.87 W	SPDT	20	**6.96**	**6.61**	**6.26**	**5.96**

RKA Series 5 to 10 A PC Board Miniature Relays

- **Immersion Cleanable, Plastic Sealed Case.**
- **Designed To Meet VDE 8 mm Spacing, 4 kV Dielectric**
- **UL Recognized File E22575, CSA Certified LR72171**
- **VDE Licensed 1661, 1662**





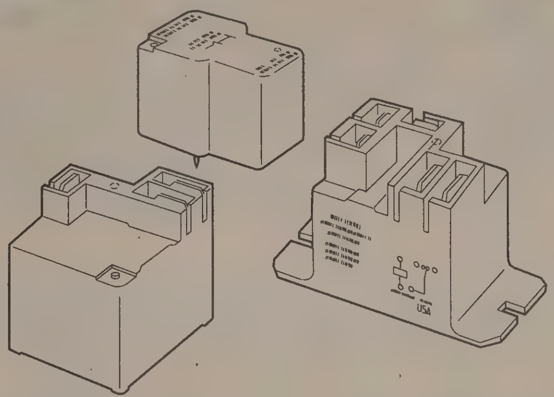
RKA Series miniature relays designed for printed circuit board mounting. Relays are enclosed in plastic immersion cleanable case. Contacts are silver-nickel alloy except for types RKA-xDT-xx which are silver-cadmium oxide. All contact ratings are at 24 VDC or 240 VAC. **Initial Dielectric Strength From Coil To Contacts:** 5,000 V rms. **Maximum Power:** 1.4 W at +25°C. **Operating Temperature:** –40°C to +65°C. **Operating Time Excluding Bounce:** 14 ms typical. **Release Time Excluding Bounce:** 5 ms typical.

Engineering Data

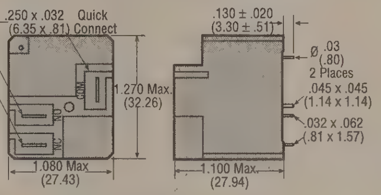
Voltage (VDC)	Contact Code	Voltage Range	Resistance (Ohms)
5	Z and G	3.5-7.7	47
12	Z and G	8.4-18.5	270
24	Z and G	16.8-37.1	1100
5	T	3.5-7.0	36
12	T	8.4-16.8	200
24	T	16.8-33.6	820

Stock No.	Mfr.'s Type	Coil		Contacts	EACH		
		VDC	Sensitivity		1-24	25-49	50-99
886-9320	RKA-5DG-05	5	Sensitive	SPDT, 10 A	**7.61**	**7.07**	**6.58**
886-9322	RKA-5DG-12	12	Sensitive	SPDT, 10 A	**7.25**	**6.73**	**6.27**
886-9324	RKA-5DG-24	24	Sensitive	SPDT, 10 A	**7.61**	**7.07**	**6.58**
886-9332	RKA-7DZ-05	5	Sensitive	DPST-NO, 5 A	**8.39**	**7.79**	**7.27**
886-9334	RKA-7DZ-12	12	Sensitive	DPST-NO, 5 A	**8.24**	**7.61**	**7.07**
886-9336	RKA-7DZ-24	24	Sensitive	DPST-NO, 5 A	**7.99**	**7.42**	**6.92**
886-9338	RKA-11DZ-05	5	Sensitive	DPDT, 5 A	**8.40**	**7.79**	**7.28**
886-9340	RKA-11DZ-12	12	Sensitive	DPDT, 5 A	**7.93**	**7.54**	**7.13**
886-9342	RKA-11DZ-24	24	Sensitive	SDDT, 5 A	**8.60**	**7.98**	**7.46**

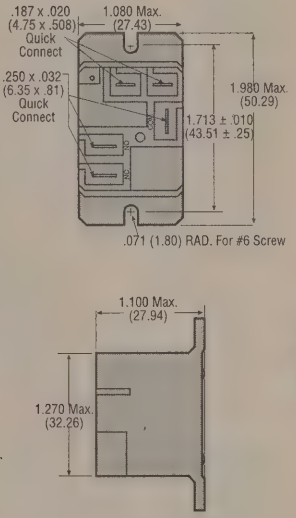
T9A Series



T9AS — Mounting and Termination Code 2

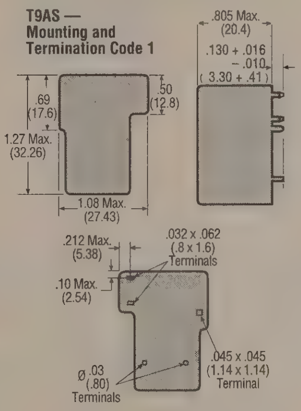


T9AP — Mounting and Termination Code 5

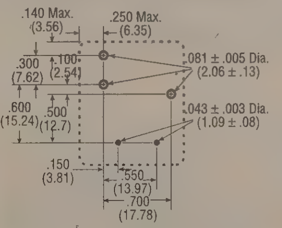


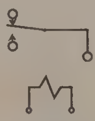
NOTE: Recommended mounting screw torque is 4.0-5.0 lbs.in when #6 screw is used.

T9AS — Mounting and Termination Code 1



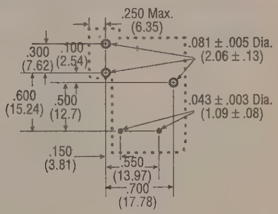
T9AS — Mounting and Termination Code 2





1 Form C
(Unused Terminals
Are Not Present)

T9AP/S — Mounting and Termination Code 1

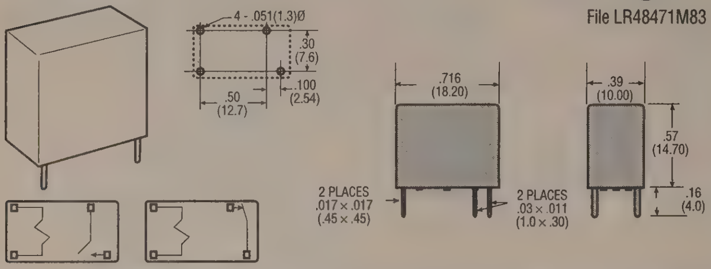


T9A Series are low cost, printed circuit board or panel mount relays. Up to 30 A switching in SPST and 20 A in SPDT arrangements. Silver-cadmium oxide contacts in 1 Form A (SPST-NO) and 1 Form C (SPDT). Available in unsealed, plastic dust cover (T9AP) or immersion cleanable, sealed plastic case (T9AS). UL Class F insulation system standard. Well suited for various industrial, commercial and residential applications.

Stock No.	Mfr.'s Type	Volts (DC)	Termination	Contacts	EACH		
					1-49	50-99	100-Up
886-2101	T9AS1D12-12	12	P.C. Mount	SPST-NO	**2.63**	**2.38**	**2.19**
886-2102	T9AS5D12-12	12	P.C. Mount	SPDT	**2.63**	**2.38**	**2.19**
886-2103	T9AS1D12-24	24	P.C. Mount	SPST-NO	**2.63**	**2.38**	**2.19**
886-2104	T9AS5D12-24	24	P.C. Mount	SPDT	**2.63**	**2.38**	**2.19**
886-2105	T9AS5D12-18	18	P.C. Mount	SPDT	**2.63**	**2.38**	**2.19**
886-2106	T9AS1D12-18	18	P.C. Mount	SPST-NO	**2.63**	**2.38**	**2.19**
886-2107	T9AP5D52-12	12	Flange Mount, Q.C.	SPDT	**3.24**	**2.94**	**2.70**
886-2108	T9AP5D52-24	24	Flange Mount, Q.C.	SPDT	**3.24**	**2.94**	**2.70**
886-2109	T9AS1D22-12	12	P.C. Mount, Q.C.	SPST-NO	**2.84**	**2.58**	**2.36**
886-2110	T9AS1D22-24	24	P.C. Mount, Q.C.	SPST-NO	**2.84**	**2.58**	**2.36**
886-2111	T9AS5D22-12	12	P.C. Mount, Q.C.	SPDT	**2.84**	**2.58**	**2.36**
886-2112	T9AS5D22-24	24	P.C. Mount, Q.C.	SPDT	**2.84**	**2.58**	**2.36**

T77 Series

File LR48471M83

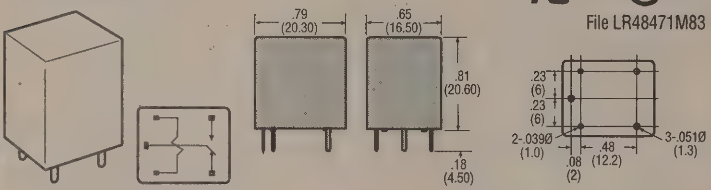


Up to 10 AMP miniature PCB Relay. Small size for high density PC Board mounting. 1 form A (SPST-NO) contact arrangement. Creepage spacings of 6.5 mm between contact and coil. **Contact Material:** Contact Rating 3 — Silver; Contact Rating 10 — Silver alloy. **Enclosure:** V = Vented (flux-tight not suitable for immersion cleaning); 5 = Plastic epoxy resin sealed. Ideal for appliance and office equipment.

Stock No.	Mfr.'s Type	Voltage	Amps	EACH		
				1-99	100-249	250-Up
886-2134	T77V1D3-5	5 VDC	3	**1.57**	**1.45**	**1.34**
886-2135	T77V1D3-12	12 VDC	3	**1.57**	**1.45**	**1.34**
886-2136	T77V1D3-24	24 VDC	3	**1.57**	**1.45**	**1.34**
886-2137	T77V1D10-5	5 VDC	10	**1.63**	**1.52**	**1.45**
886-2138	T77V1D10-12	12 VDC	10	**1.63**	**1.52**	**1.45**
886-2139	T77V1D10-24	24 VDC	10	**1.63**	**1.52**	**1.45**
886-2140	T77S1D3-5	5 VDC	3	**1.63**	**1.52**	**1.45**
886-2141	T77S1D3-12	12 VDC	3	**1.63**	**1.52**	**1.45**
886-2142	T77S1D3-24	24 VDC	3	**1.63**	**1.52**	**1.45**
886-2143	T77S1D10-5	5 VDC	10	**1.68**	**1.57**	**1.49**
886-2144	T77S1D10-12	12 VDC	10	**1.68**	**1.57**	**1.49**
886-2145	T77S1D10-24	24 VDC	10	**1.68**	**1.57**	**1.49**

T7C Series

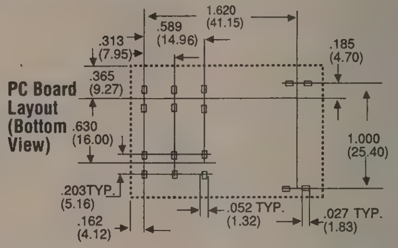
File LR48471M83



Immersion cleanable, tape sealed case, 12 A miniature power PCB Relay. 1 form C (SPDT) silver-cadmium oxide contacts. Ideal for domestic appliances and office machines. Resists high temperature and various chemical solutions.

Stock No.	Mfr.'s Type	Voltage	Ohms	EACH		
				1-99	100-249	250-Up
886-2150	T7CS5D-05	5 VDC	70	**1.49**	**1.38**	**1.25**
886-2131	T7CS5D-06	6 VDC	100	**1.49**	**1.38**	**1.25**
886-2132	T7CS5D-12	12 VDC	400	**1.49**	**1.38**	**1.25**
886-2133	T7CS5D-24	24 VDC	1600	**1.49**	**1.38**	**1.25**

T92 Series P.C. Board Relays

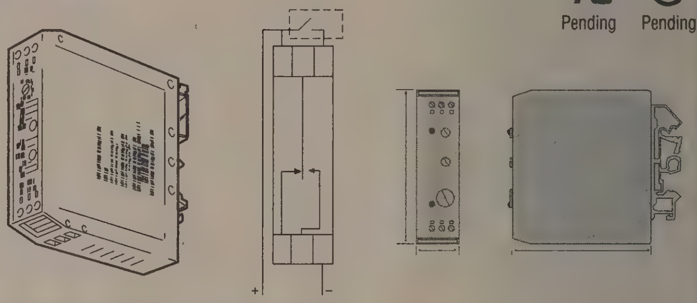


T92 Series relays are DPDT configuration with 30 amp switching capabilities, immersion cleanable, tape sealed plastic case. Designed to control compressor loads to 3.5 tons, 25.3 FLA, 110 LRA. Meets requirements of UL873 and UL508 spacings. Meets requirements of VDA 8 mm spacing, 4 KV dielectric coil-to-contacts. Meets requirements of UL class F Construction. **Contact Material:** Silver cadmium oxide. Printed circuit terminals. **Weight:** 2.95 oz. approximately.

Stock No.	Mfr.'s Type	Voltage	Ohms	Contact Arrangement	EACH		
					1-24	25-49	50-99
886-9527	T92S11D12-12	12 VDC	86	DPDT	**12.52**	**11.90**	**11.39**
886-9528	T92S11D12-24	24 VDC	350	DPDT	**12.52**	**11.90**	**11.39**
886-9530	T92S11D12-110	110 VDC	7255	DPDT	**15.20**	**14.43**	**13.67**

CND Series

Pending Pending



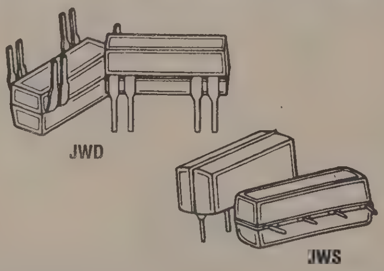
Multifunction DIN Mount Time Delay Relay

- ▶ **5 Programmable Timing Modes**
- ▶ **0.5 Sec. To 100 Min. Programmable Timing Range**
- ▶ **Universal Input (24-240 VAC/VDC)**
- ▶ **10 A Output Relay With SPDT Contacts**
- ▶ **Timing Range and Timing Function Switch Selectable**
- ▶ **Time Adjust Is Potentiometer Adjustable**
- ▶ **Fits 35 mm DIN Track**

Universal input model, 24-240 VAC/VDC, screw termination. Plastic DIN Case. Silver-cadmium oxide alloy, 1 form C (SPDT) contacts. **Contact Rating:** 10 A @ 28 VDC or 240 VAC, Resistive; 1/2 HP @ 480 VAC; 1/3 HP @ 240 VAC; 1/4 HP @ 120 VAC. Transient protection and reverse voltage protection. **Timing Adjustment:** Potentiometer adjustable within selected range.

886-2150. Type CND ....**EACH 91.53**

JWD Series DIP and JWS Series SIP Dry Reed Relays



JWD Series DIP units and JWS Series SIP units are designed not only to accommodate automatic component insertion but to permit high density packaging of components on printed circuit boards as well. Relay's mounted height is only 0.315" (8.00), allowing PC board spacing on 0.500" (12.70) centers. Molded epoxy package with terminals on 0.100" (2.54) centers compatible with automatic wave soldering, and can be immersion or spray cleaned. Will withstand 100g shock and vibration to 20g between 10 and 5000 Hz. **Operating Temperature Range:** –35°C to +85°C.

1 Form A DIP SPST-NO, 10 Watts, 0.5 Amp, 100 VDC

Stock No.	Mfr.'s Type	Diode	Coil VDC	Coil Ω±10	Max. Pick-Up VDC	EACH		
						1-24	25-49	50-99
886-9553	JWD-107-1	No	5/6	500	3.8	**5.03**	**4.59**	**4.13**
886-9554	JWD-107-5	Yes	5/6	500	3.8	**5.30**	**4.73**	**4.35**
886-9555	JWD-107-3	No	12/15	500	9.6	**4.79**	**4.55**	**4.22**
886-9556	JWD-107-7	Yes	12/15	500	9.6	**5.32**	**4.93**	**4.62**
886-9557	JWD-171-5	No	24	2200	19.2	**6.49**	**6.01**	**5.62**
886-9558	JWD-171-10	Yes	24	2200	19.2	**6.47**	**6.03**	**5.64**

1 Form A SIP SPST-NO, 10 Watts, 0.5 Amp, 100 VDC

Stock No.	Mfr.'s Type	Diode	Coil VDC	Coil Ω±10	Max. Pick-Up VDC	EACH		
						1-24	25-49	50-99
886-9559	JWS-117-1	No	5/6	380	3.8	**5.03**	**4.59**	**4.22**
886-9560	JWS-117-3	No	12/15	530	9.6	**4.79**	**4.36**	**4.19**
886-9561	JWS-117-5	No	24	2000	19.2	**6.51**	**6.03**	**5.64**

2 Form A DIP DPST-NO, 10 Watts, 0.5 Amp, 100 VDC

886-9563	JWD-171-25	Yes	5/6	200	3.8	**6.83**	**6.34**	**6.00**
886-9564	JWD-171-23	No	12/15	500	9.6	**6.29**	**5.74**	**5.36**
886-9565	JWD-171-27	Yes	12/15	500	9.6	**6.46**	**6.00**	**5.60**
886-9567	JWD-171-28	Yes	24	2200	19.2	**8.03**	**7.46**	**6.96**

1 Form B DIP SPST-NC, 10 Watts, 0.5 Amp, 100 VDC

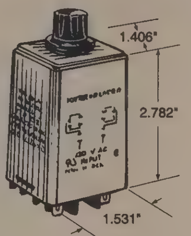
886-9568	JWD-171-17	Yes	5/6	500	3.8	**6.74**	**6.26**	**5.84**
886-9570	JWD-171-20	Yes	24	2200	19.2	**8.26**	**7.67**	**7.16**

1 Form C DIP SPDT, 3 Watts, 0.5 Amp, 28 VDC

886-9571	JWD-172-1	No	5/6	200	3.8	**9.01**	**8.62**	**7.84**
886-9572	JWD-172-5	Yes	5/6	200	3.8	**10.09**	**9.38**	**8.75**
886-9573	JWD-172-3	No	12/15	500	9.6	**9.23**	**8.57**	**7.99**
886-9574	JWD-172-7	Yes	12/15	500	9.6	**9.43**	**8.76**	**8.17**
886-9575	JWD-172-4	No	24	2200	19.2	**10.55**	**9.59**	**9.14**
886-9576	JWD-172-8	Yes	24	2200	19.2	**11.08**	**10.53**	**9.96**

SIEMENS Potter & Brumfield Products Division
Siemens Electromechanical Components, Inc.

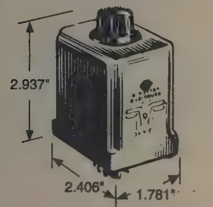
CUB51 Time-Delay Relays



Knob-adjustable delay-on-operate time delay relays. DPDT contacts 10A at 28VDC resis., or 120V, 60 Hz AC. 80% power factor. **Tol.:** adjust., –0, + 20% of max. specified at high end; min. specified or less at low end. **Release:** 150 msec. **Recycle:** 150 msec. **Transient Protection:** Yes. Polarity protected. Operate room temp. Timing intervals adjust, over timing ranges *1 to 10 secs. or † 1 to 120 secs. 1.53 x 1.406 x 2.78" (3.87 x 3.57 x 7.07mm) (including knob). 120VAC. 3¹/₂ oz.

Stock No.	Mfr.'s Type	EACH		
		1-24	25-49	50-99
886-0131	CUB51-70010*	83.42	79.25	75.08
886-0132	CUB51-70120†	83.42	79.25	75.08

CB Series Relays



CB series relays are economy, octal-type plug-in models with CMOS integrated circuits. Available in delay-on-operate, delay-on-release or interval on timing modes, all units are knob-adjustable. Molded enclosure houses the timing circuit and an internal relay. All models are DPDT, except type **CB-1022B78** which is SPDT. Contacts rated 10 amps at 240VAC, 6Hz. Power requirements typically less than 3VA for AC types; 3 watts for DC types. **Operating temperature range:** -10°C to + 55°C. Polarity protection. UL recognized, CSA certified.

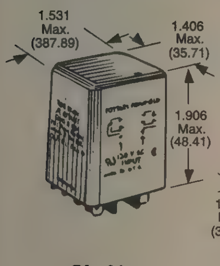
Delay-On-Operate Relays

Stock No.	Mfr.'s Type	Voltage	Delay Seconds	Pins	EACH		
					1-24	25-49	50-99
886-0107	CB-1042B30	24AC	1.8-180	8	66.89	62.12	59.01
886-0108	CB-1001B70	120AC	.1-1	8	66.89	62.12	59.01
886-0109	CB-1002B70	120AC	.1-5	8	63.87	60.66	57.77
886-0110	CB-1003B70	120AC	.1-10	8	63.70	59.16	56.34
886-0005	CB-1004B70	120AC	.6-60	8	63.85	60.65	57.47
886-0111	CB-1005B70	120AC	1.8-180	8	66.89	62.12	59.05
886-0112	CB-1006B70	120AC	1.0-10	8	63.87	60.66	57.77
886-0113	CB-1007B70	120AC	10-100	8	63.70	59.16	56.34
886-0104	CB-1047D20	12DC	.1-10	8	63.85	60.65	57.47
886-0114	CB-1026D30	24DC	.1-1	8	66.89	62.12	59.01
886-0115	CB-1028D30	24DC	.1-10	8	66.89	62.12	59.01
886-0116	CB-1029D30	24DC	.6-60	8	65.22	61.96	57.25

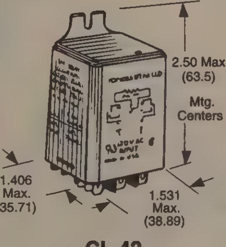
Delay-On-Release Relays

886-1045	CB-1045B38	24AC	.1-10	11	66.92	62.15	59.80
886-0119	CB-1046B38	24AC	1.8-180	11	66.89	62.12	59.01
886-0126	CB-1021B78	120AC	.1-10	11	66.89	62.12	59.01
886-0121	CB-1022B78	120AC	.1-10	8	63.87	60.66	57.77
886-0122	CB-1023B78	120AC	.6-60	11	66.89	62.12	59.01
886-0123	CB-1024B78	120AC	1.8-180	11	65.22	61.96	57.25
886-0124	CB-1038D38	24DC	.1-10	11	63.87	60.66	57.77
886-0125	CB-1039D38	24DC	1.8-180	11	66.89	62.12	59.01

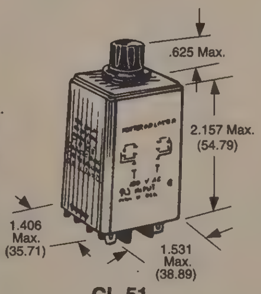
CL Series Time Delay Relays



CL-41



CL-42



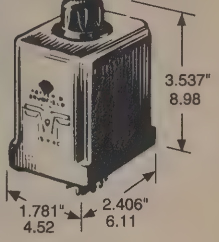
CL-51

Delay on operate. Similar to the CU Series except they don't have timing cycle interrupt transfer and will time to .1 second. DPDT rated at 10 amps. CL relays are enclosed in yellow polycarbonate dust covers. Plug-in/quick connect terminals. Uses KU Series sockets. Available in fixed, resistor adjustable and knob adjustable. **Weight:** Approx. 3.5 oz. External resistor not included.

Stock No.	Mfr.'s Type	Time Delay (Sec.)	Input Voltage	EACH		
				1-24	25-49	50-99
886-0021	CLB-51-70010†	0.1-10	120VAC	81.95	76.10	71.78
886-0022	CLB-51-70030†	0.3-30	120VAC	81.95	76.10	71.78
886-0023	CLB-51-70120†	1.2-120	120VAC	81.95	76.10	71.78
886-0024	CLF-41-70010*	0.1-10	120VAC	73.62	70.37	66.51
886-0026	CLF-42-70010*	0.1-10	120VAC	73.62	70.37	66.51

*External 1/4 watt minimum. †Knob adjustable.

Series CH and CD Time-Delay Devices and Relays



Solid-state devices. reset within milli-seconds. Adjustable over entire time range. Plastic enclosures. **Series CH. Temperature:** –10°C to +55°C. **Tol:** –0, + 20% of max. specified @ high end; min. specified or less @ low end. **Reset:** 125 msec. **Repeatability:** ±2%. **Series CD. Temperature:** - 40°C to +55°C. **Tol:** ±5%. **Reset:** 60 msec. **Repeatability:** ± 1%. CHB/CDB38 time delays have internal DPDT 10-amp relay. CHB38-70011 and CHB38-70013 provide delay on release, others delay on operate. **Wts.:** CD38-9oz. (255gm); CH38-6 oz. (168gm).

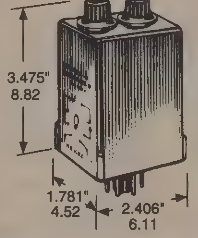
Delay On Operate (Use 8-Pin Octal Sockets)

Stock No.	Mfr.'s Type	Input Volts	Delay Sec.	EACH		
				1-24	25-49	50-99
886-0090	CHB38-70001	120AC	1.0-10	92.31	87.67	83.08
886-0091	CHB38-70003	120AC	1.0-180	92.31	87.67	83.08
886-0085	CHD38-30001	24DC	1.0-10	92.31	87.67	83.08
886-0086	CHD38-30003	24DC	1.0-180	92.31	87.67	83.08
886-0053	CDB38-70003	120AC	0.1-10	147.72	140.32	132.93
886-0054	CDB38-70004	120AC	0.6-60	147.72	140.32	132.93
886-0055	CDB38-70005	120AC	1.8-180	147.72	140.32	132.93

Delay On Release (Use 11-Pin Sockets)

886-0082	CHB38-70011	120AC	1.0-10	92.31	87.67	83.08
886-0083	CHB38-70013	120AC	1.0-180	92.31	87.67	83.08

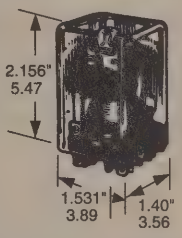
CS Series Solid-State Voltage Sensors



Adjustable pick-up, drop-out voltages. **Drain:** 3mA (max.); after sensing. 30mA. DC polarity protection. **2 form C(DPDT) Contacts:** 10A at 28VDC resistive; 120VAC resistive. **Ambient:** -40° to +55°C. AC types—50 –60 Hz. Octal plug. Cover. Uses 8-pin octal sockets. **Wt.:** 10 oz. (284 gm).

Stock No.	Mfr.'s Type	Pick-Up Range	Drop-Out Range	V	EACH		
					1-24	25-49	50-99
886-0118	CSJ-38-70010	92-140V	90-138V	AC	108.10	102.70	97.29

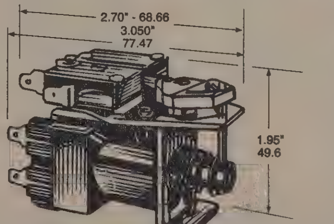
KUL Magnetic Latching Relays



Continuous duty single coil types. Uses a permanent magnet in parallel with normal magnetic circuit, requires only half the space of mechanical interlock types. Continuous latch condition even during loss of power. Contacts rated 10 amps at 28VDC or 120VAC, 80% power factor. **Temp. range:** –45° to 70°C. All are DPDT. **Av. wt.:** 3¹/₂ oz.

Stock No.	Mfr.'s Type	Coil		EACH		
		V	Ohms	1-24	25-49	50-99
886-0763	KUL-11A15S	120AC	3700	35.01	33.25	31.50
886-0766	KUL-11D15S	24DC	472	29.18	27.75	26.28

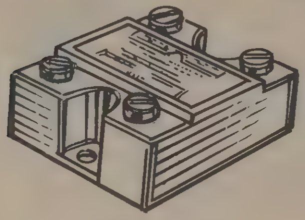
Impulse Relays



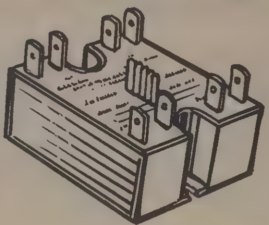
The S89R is a bistable, impulse relay that can affect a savings of power in applications where the load is on for long periods of time. Contact rating is 15 amps, ¹/₂HP, 125/250VAC amps, 125VAC tungsten filament lamp load; ¹/₂ amp, 125VDC; and ¹/₄ amp, 250VDC. Life expectancy at full load is 50,000 operations minimum; 100,000 operations, mechanical. Operating temperature range is –10°C to +60°C. Mounting is by two #8-32 tapped holes on 1.844" (46.83 mm) centers. "ACI" indicates .187" (4.75 mm) quick connects. S90 relay is identical to the S89 Series except that terminals are .250" (6.35 mm) quick connect and contacts are rated at 20 amps. Coil for both series are rated for continuous duty operation.

Stock No.	Mfr.'s Type	Coil Voltage	Contacts	EACH		
				1-24	25-49	50-99
886-1278	S89R5ABD1-24	24VAC	SPDT	22.95	21.32	19.37
886-1279	S89R5ABD1-120	120VAC	SPDT	22.95	21.32	19.37
886-1280	S89R5DBD1-12	12VDC	SPDT	20.07	19.30	18.32
886-1281	S89R11AAC1-24	24VAC	DPDT	26.98	25.05	23.80
886-1282	S89R11AAC1-120	120VAC	DPDT	26.98	25.05	23.80
886-1283	S89R11ABD1-24	24VAC	DPDT	26.98	25.05	23.80
886-1284	S89R11ABD1-120	120VAC	DPDT	25.69	23.86	22.91
886-1285	S89R11DAC1-12	12VDC	DPDT	25.69	23.86	22.91
886-1286	S89R11DAC1-24	24VDC	DPDT	25.69	23.86	22.91
886-1287	S89R11DBD1-12	12VDC	DPDT	24.33	23.11	21.90
886-1288	S89R11DBD1-24	24VDC	DPDT	23.44	22.28	21.11
886-1289	S90R5ABD1-120	120VAC	SPDT	22.98	21.35	19.92
886-1277	S90R11ABD1-24	24VAC	DPDT	29.14	27.86	24.13
886-1276	S90R11ABD1-120	120VAC	DPDT	29.14	27.86	24.13

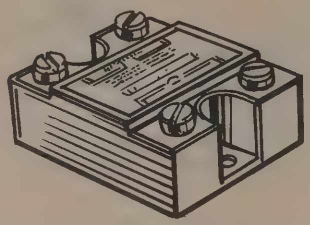
Solid State Relays



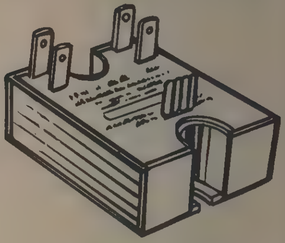
SSR Series



SSRQ Series



SSRT Series



SSRD Series

SSR Series

SSR Series is a medium/high power, 120/240 VAC, 47-70Hz inverse parallel SCR output solid state relay that is controlled by an opto-electronic coupler intended for use as On/Off switch for loads through 110 amps. Ideal for interfacing between logic output of TTL, HTL, or MOS and AC loads such as solenoids, motors and transformers.

Stock No.	Mfr.'s Type	Input Voltage	Max. Switching Rating/Output	EACH	
				1-24	25-49
886-7010	SSR-240A25	90-280 VAC	.05-25A rms	38.23	36.34
886-7011	SSR-240A50	90-280 VAC	.05-50A rms	52.95	50.30
886-7013	SSR-240D25	3-32 VDC	.05-25A rms	32.36	30.75
886-7014	SSR-240D25R*	3-32 VDC	.05-25A rms	35.30	33.54
886-7015	SSR-240D50	3-32 VDC	.05-50A rms	47.07	44.72

*R = Random Voltage Turn-on.

SSRQ Series

SSRQ series relay comprises four totally independent, optically isolated, triac output solid state relays in one standard package. Designed to be used as four On/Off switches for loads through 20 amps.

Stock No.	Mfr.'s Type	Line Voltage	Input Voltage	Max. Switching Rating/Output	EACH	
					1-24	25-49
886-7024	SSRQ-240D20	24-280VAC	4-15 VDC	20A rms	94.13	89.14

SSRT Series

SSRT series relay ia a triac output solid state relay that is controlled by an opto-electronic coupler. Intended for use as an On/Off switch for loads through 25 amps. EMI and RFI are greatly reduced due to zero voltage turn-on and zero current turn-off of the load. 1 Form A (SPST-NO). Plastic case is UL rated self-extinguishing.

Stock No.	Mfr.'s Type	Line Voltage	Input Voltage	Max. Switching Rating	EACH	
					1-24	25-49
886-7020	SSRT-240A10	24-280 VAC	90-280 VAC	.05-10A rms	27.94	26.54
886-7021	SSRT-240A25	24-280 VAC	90-280 VAC	.05-25A rms	35.30	33.54
886-7022	SSRT-240D10	24-280 VAC	3-32 VDC	.05-10A rms	24.99	23.76
886-7023	SSRT-240D25	24-280 VAC	3-32 VDC	.05-25A rms	29.40	27.94

SSRD Series

SSRD series relays comprise two totally independent, optically isolated, inverse parallel SCR output solid state relays in one standard package. Intended to be used as two On/Off switches for loads through 40 amps. UL recognized and CSA certified for industrial applications.

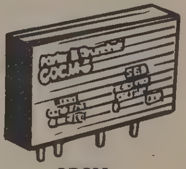
Stock No.	Mfr.'s Type	Line Voltage	Input Voltage	Max. Switching Rating/Output	EACH	
					1-24	25-49
886-7025	SSRD-240D25	24-280 VAC	4-15 VDC	25A rms @ 25°C	58.83	55.88
886-7026	SSRD-240D40	24-280 VAC	4-15 VDC	40A rms @ 25°C	73.54	69.87

Input/Output Modules

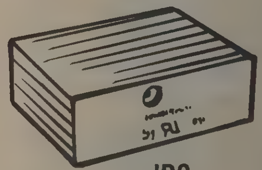
Slim Line Input/Output Modules

Slim line input/output modules provide interfacing between microprocessor- or computer-based control systems and external input devices and loads such as switches, sensors, valves and motor starters. Offered in four photo-isolated versions: AC input, AC output, DC input, DC output. Units are color-coded and have high isolation and noise immunity. Packaged in a 0.4" enclosure for replacement without disturbing wiring. On modules of the same voltage, output is compatible with input of the input module. Ideal for series operation. 1 Form A (SPST-NO).

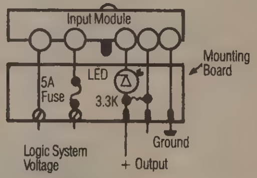
Stock No.	Mfr.'s Type	Logic Voltage	Input		Output		EACH	
			MAX V	MAX mA	MAX mV	MAX m	1-24	25-49
886-7027	IACM-5	5VDC	140VAC	9	30VDC	.100	11.76	11.18
886-7028	IACM-5A	5VDC	280VAC	6	30VDC	.100	11.76	11.18
886-7029	IDCM-5	5VDC	3VDC	39	60VDC	.100	11.76	11.18
886-7030	OACM-5	5VDC	6VDC	28	280VAC	3	11.76	11.18
886-7032	OACM-U	3-15VDC	15VDC	44	280VAC	3	11.76	11.18
886-7033	ODCM-5	5VDC	6VDC	21	60VDC	3	11.76	11.18
886-7100	OACM-UH	3-15VDC	15VDC	44	280VAC	5	9.35	8.88
886-7101	OACM-5H	5VDC	6VDC	28	280VAC	5	10.70	10.16

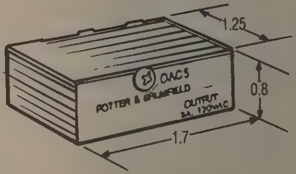


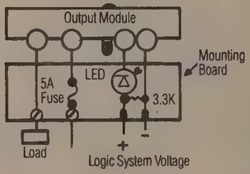
ODCM



IDC







Solid State Input/Output Modules

A reliable interface between microprocessor- or computer-based control systems and external input devices and loads, these photo-isolated modules feature excellent isolation and transient immunity. On modules of the same voltage type, AC or DC, the output of the output modules is compatible with the input of the input modules, making them ideal for series operation. Modules are color-coded and packaged in industry standard plug-in enclosure. Units interchange easily without disturbing wiring. UL recognized, CSA certified. Order mounting boards separately below.

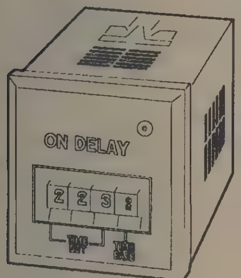
Stock No.	Mfr.'s Type	Usage	Logic Voltage VDC	Typ. Input Curr.@ Nom. Input Voltage	Max. Load Curr. @ Max. Load Voltage	EACH	
						1-24	25-49
886-7034	IAC5	AC Input	5VDC	8mA @ 120VAC	100mA @ 30VDC	13.24	12.58
886-8008	OAC5	AC Output	5VDC	24mA @ 5VDC	3A @ 140VAC	12.03	11.44
886-7035	IDC5	DC Input	5VDC	13mA @ 32VDC	100mA @ 30VDC	13.24	12.58
886-7036	ODC5	DC Output	5VDC	18mA @ 5VDC	3A @ 60VDC	13.24	12.58
886-7037	OAC5A	AC Output	5VDC	24mA @ 5VDC	3A @ 280VAC	13.24	12.58
886-8002	OAC15	AC Output	15VDC	25mA @ 15VDC	3A @ 140VAC	14.02	13.30
886-7038	IAC5A	AC Input	5VDC	6mA @ 240VAC	100mA @ 30VDC	13.24	12.58
886-7039	IAC15	AC Input	15VDC	8mA @ 120VAC	100mA @ 30VDC	14.02	13.30
886-7105	OAC-5H	AC Output	5VDC	24mA @ 5VDC	5A @ 280VAC	12.63	12.00

UL Recognized Mounting Boards for I/O Modules

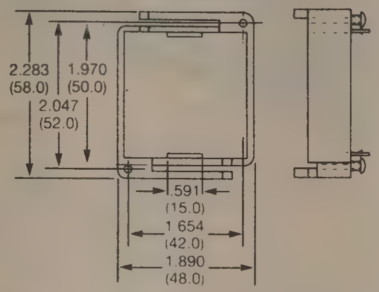
Stock No.	Mfr.'s Type	No,of Module Positions	Approx. Dimensions L x W x H	EACH	
				1-24	25-49
886-7040	2IO4A	4	4.5 x 3.5 x 2.2"	30.88	29.34
886-7041	2IO8	8	8.4 x 3.5 x 2.2"	51.46	48.90
886-7042	2IO16	16	14.4 x 3.5 x 2.2"	91.19	86.64
886-7043	2IO24	24	18.75 x 4.5 x 2.2"	147.08	139.72
886-7110	2IOM16*	16	9.5 x 3.25 x 2.16"	76.41	72.59
886-7111	2IOM24*	24	8 x 6 x 2.16"	124.79	118.57

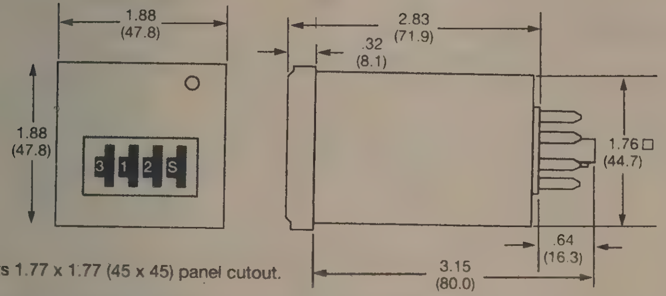
*For slim line input/output modules.

CN1 Series



SSA-24C667
MOUNTING CLIP





Fits 1.77 x 1.77 (45 x 45) panel cutout.

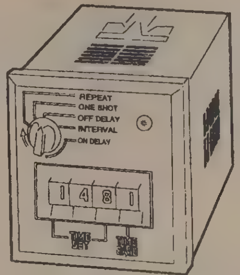
On Delay, Time Delay Relay for Plug-in or Panel Mounting. Output relay turns on at the end of a programmed time interval which is started by applying input voltage. LED flashes when output relay is off and is on continuously when the output relay is on. Removal of input voltage turns off output relay. Reapplying input voltage resets the unit. **Timing:** 0.1 sec. to 9,990 hr. Adjustable with thumbwheel switches. **Contacts:** 2 form C (DPDT) silver-cadmium oxide alloy. **Input Voltage:** 120 VAC ±15%, 60 Hz. **Rating:** 10A @ 30 VDC or 277 VAC, resistive; 1/2 HP @ 250 VAC. **Termination:** 8-pin octal style plug. **Enclosure:** Black plastic 1/16 DIN (48mm x 48mm) case. **Sockets:** Fits either 27E122 or 27E891 (snap-on) screw terminal sockets. **Weight:** 4.3 oz.

886-0100. Type CN1 .... **EACH 51.06**

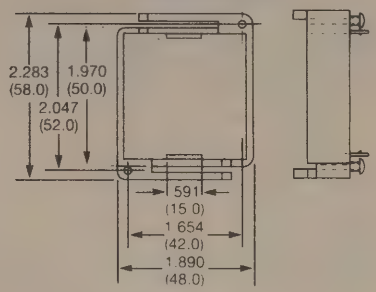
Accessory
SSA-24C667 Mounting Clip. Ratchet-fit clip slides onto CNM5 from behind to secure CNM5 in panel mount applications.

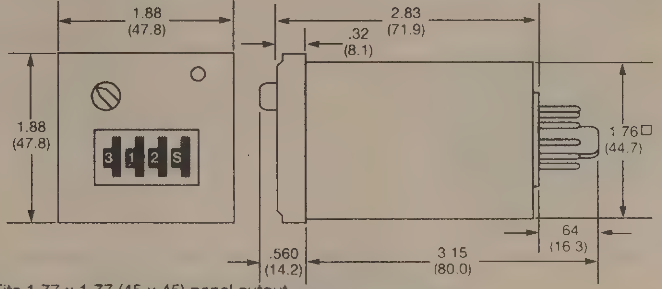
886-0102. SSA-24C667 .... **EACH 11.93**

CNM5 Series



SSA-24C667
MOUNTING CLIP





Fits 1.77 x 1.77 (45 x 45) panel cutout.

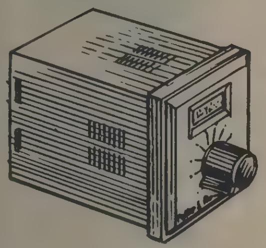
Multifunction Time Delay Relay for Plug-in or Panel Mounting. Five timing functions selectable via rotary switch. **Timing:** 0.1 sec. to 9,990 hr. Adjustable with thumbwheel switches. **Contacts:** 2 form C (DPDT) silver-cadmium oxide alloy contacts. **Input Voltage:** 120 VAC ±15%, 60 Hz. **Rating:** 10A @ 30 VDC or 277 VAC resistive; 1/2 HP @ 250 VAC; 1/3 HP @ 120 VAC. **Termination:** 11-pin octal style plug. **Enclosure:** Black plastic 1/16 DIN (48mm x 48mm) case. **Sockets:** Fits either 27E123 or 27E892 (snap-on) screw terminal sockets. **Weight:** 4.3 oz.

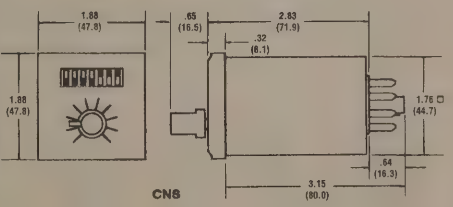
886-0101. Type CNM5 .... **EACH 63.21**

Accessory
SSA-24C667 Mounting Clip. Ratchet-fit clip slides onto CNM5 from behind to secure CNM5 in panel mount applications.

886-0102. SSA-24C667 .... **EACH 11.93**

CNS Type Multi-Function, DIP Switch Programmable, Knob Adjustable, Time Delay Relay





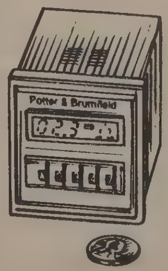
CNS

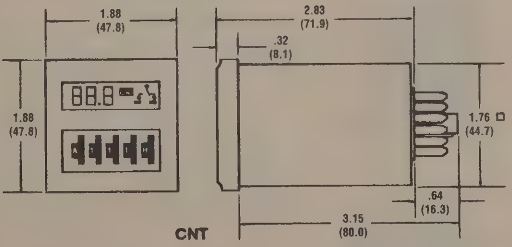
CNS series are economical, multi-functional, programmable, time delay relays housed in 1/16DIN style enclosures. Available programmable functions in units with 8-pin octal-style bases are delay on operate, interval on, recycler – initially on and recycler – initially off. Units with 11-pin octal-style bases provide those timing functions plus delay on release, interval off, inverted delay on release and an additional interval on function. Timing function and range is selected by a DIP switch, and actual delay time is set with an adjustment knob and calibrated dial. Delay is selectable on all units from .1 sec. to 100 min. All models have DPDT output contacts rated 10 amps @ 240VAC/30VDC. Operating temperature range is –10°C to +55°C.

Stock No.	Mfr.'s Type	Input		Pins*	EACH	
		Voltage	Max. Power		1-24	25-49
886-7072	CNS-35-72	120VAC	3VA	8	**50.54**	**48.01**
886-7073	CNS-35-76	120VAC	3VA	11	**56.16**	**53.34**
886-7074	CNS-35-92	24-240VAC/VDC	1-10VA or watts	8	**66.79**	**62.02**
886-7075	CNS-35-96	24-240VAC/VDC	1-10VA or watts	11	**71.87**	**66.74**

*8-pin units provide four timing functions, and 11-pin units provide eight timing functions.

CNT Type 12-Function Digitally Programmable Time Delay Relay/Counter





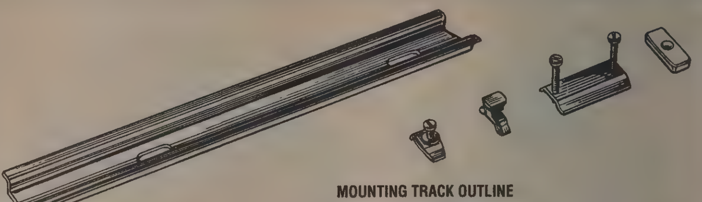
CNT

CNT series are multi-functional, programmable, time delay relays/counters housed in 1/16 DIN style enclosures with an octal-style 11-pin plug-ins. The units feature thumbwheel switches for digital programming. An LCD digital readout permits easy monitoring of status. Available programmable functions are delay on operate, delay on release, three interval on functions, delay on operate and release, cumulative delay on operate, 50% duty cycle recycler, output pulsing, single cycle, up counter and down counter. Delay is selectable from .1 sec. to 9990 hours. Counter range is selectable from 1 to 99,900 counts. All models have DPDT output contacts rated 10 amps @ 240VAC/30VDC. Operating temperature range is –10°C to +55°C.

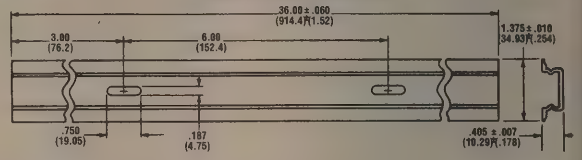
Stock No.	Mfr.'s Type	Input		EACH	
		Voltage	Max. Power	1-24	25-49
886-7076	CNT-35-26	12VDC	3 watts @ 12DC	**89.05**	**82.69**
886-7077	CNT-35-76	120VAC	3VA @ 120VAC	**79.99**	**76.02**
886-7078	CNT-35-96	24-240VAC/VDC	1-10VA or watts	**86.10**	**79.96**

Track and Mounting Accessories

Mounting track and holding clips for screw terminal sockets. The Track 24A110 is available in three foot length with mounting holes on 6" centers. Track can be cut to shorter lengths for small chassis assemblies or full sections can be used end-to-end in larger installations. Made of lightweight, sturdy extruded aluminum, track accepts several styles of screw terminal sockets: KU Series 27E121, 27E867 and 27E893; Octal Type 27E122, 27E123, 27E891 and 27E892; KH Series 27E166 and 27E894; R10 Series 27E460, 27E461 and 27E462; and K10 Series 27E487 and 27E895. The track will also mount the following relays: EOTZ, KUB, PM, PRD, SSR, SSRD, SSRQ and SSRT.

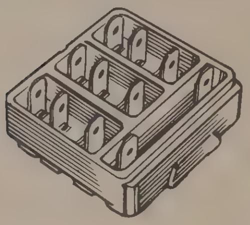


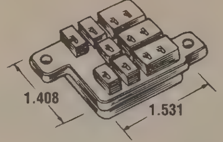
MOUNTING TRACK OUTLINE



Stock No.	Mfr.'s Type	Description	EACH 1-24	EACH 25-49	EACH 50-99
886-5015	24A110	Mounting Track–3 ft. length	11.04	10.51	9.53
886-1504	24A071	Steel mounting clip with $^{7}/_{16}$" long, 6-32 screw	.68	.65	.58
886-1502	24A072	Plastic twist clip for 27E166, 27E122, 27E123 and 27E487	.80	.74	.64
886-1503	40G432	Insulator. Use with 27E460, 27E461, 27E462 and 27E867	.80	.74	.64

KUP Sockets and KU Mounting Strip





SPDT/DPDT/3PDT sockets rated 15 amps snap into a chassis without additional hardware for support. Socket **27E396** has .187" quick connect terminals. **27E400** has solder terminals. KU mounting strip **37D632** will mount six KU sockets (except 27E121) in aluminum strip 11.9 x 3.00 x .062".

Stock No.	Mfr.'s Type	Term. Type	EACH 1-24	EACH 25-49	EACH 50-99	EACH 100-249
886-1436	27E396	Q.C.	4.75	3.59	3.39	3.23
886-1437	27E400	Solder	2.49	2.24	2.13	1.83

Hard mount sockets are rated 15 amperes. Will accept .187-in. terminals of all Series KU and plain case series KUP relays.

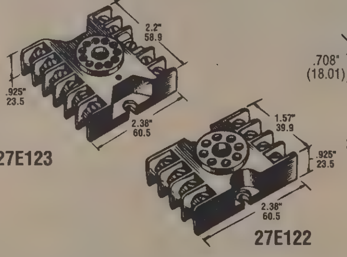
Stock No.	Mfr.'s Type	Term. Type	EACH 1-24	EACH 25-49	EACH 50-99	EACH 100-249
886-1420	27E043	Solder	2.54	2.25	2.12	1.83
886-1421	27E046	P.C.	3.11	2.74	2.59	1.98
886-1425	27E121	Screw	8.99	8.54	8.07	6.74
886-1422	20C228*	Spring	.69	.66	.60	.57
886-5003	27E867†	Screw	19.66	18.69	17.68	16.84
886-5004	27E893‡	Screw	10.16	9.66	9.15	8.50

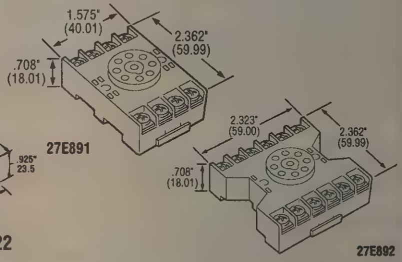
*Type 20C228 hold-down spring. † 4 pole. ‡ 3 pole.

Octal-Style Sockets

For **KRP**, **KRPA**, **KRP3-H**, **KAP**, **KBP**, and **KCP** relays; **CD-21**, **CD-38**, **CH**, **CK**, **CNS**, **CNT** and **CR** time delays; and **CS** sensor. **Type 27E122** is molded polycarbonate, 8-pin screw terminal socket, rated 10 amperes. **Type 27E123** is molded polycarbonate, 11-pin screw terminal socket, rated 10 amperes. **Type 27E891** is 8-pin Din rail mount, screw terminals. **Type 27E892** is 11-pin Din rail mount, screw terminals.

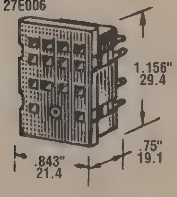
Stock No.	Mfr.'s Type	Terminal Type	EACH 1-24	EACH 25-49	EACH 50-99	EACH 100-249
886-1426	27E122	Screw Term.	5.74	5.46	5.16	4.32
886-1427	27E123	Screw Term.	8.45	8.04	7.62	6.34
886-1606	27E891	Screw Term.	6.85	6.52	5.91	5.30
886-9997	27E892	Screw Term.	11.23	10.70	8.70	7.95

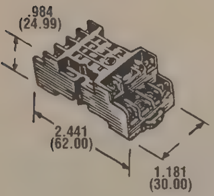




Sockets for KH Series

27E006





For **KHS** and **KHU** Series relays. **27E006**, 4PDT solder terminal socket; **27E007**, 4PDT printed circuit socket; **27E166**, 4PDT screw terminal socket. 1 oz.

Stock No.	Mfr.'s Type	Socket Term.	EACH 1-24	EACH 25-49	EACH 50-99	EACH 100-249
886-1410	27E006	Solder	2.02	1.82	1.66	1.36
886-1411	27E007	P.C.	1.97	1.80	1.71	1.43
886-1404	27E166	Screw	13.02	12.38	11.73	9.78
886-1412	20C217	*	.52	.49	.46	.43
886-1409	24A032	**	.24	.20	.17	.15
886-5001	27E894	Screw	15.76	14.97	14.19	12.87

*Hold-down spring. **Retainer for 27E006 and 27E007.

Mounting Strip for KH Series

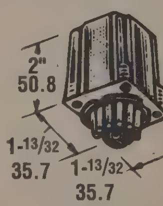
Type 37D633 will mount 8KH sockets (except 27E166 and 27E894) in one length of aluminum strip, measuring 10.9 x 2.5 x .062".

886-1495. 1-24	**EACH 5.81**
25-49	**EACH 5.52**
50-99	**EACH 5.25**
100-249	**EACH 4.73**

Relay Accessories

8-Pin "P" Case. Type 35D070. Clear plastic; octal base. For mounting rectifiers, capacitors. 4 screws. 2 x $1^{13}/_{32}$ x $1^{19}/_{32}$" (5.08 x 3.57 x 3.57 cm). **Wt.:** 1 oz (28 gm).

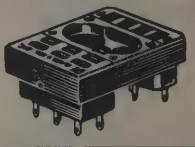
886-1460. 1-24	**EACH 3.67**
25-49	**EACH 3.25**
50-99	**EACH 3.04**
100-249	**EACH 2.54**



KRP. Hold down Spring. Type 20C176. Wt.: 3 oz. (85 gm).

886-1416. 1-24	**EACH .75**
25-49	**EACH .68**
50-99	**EACH .61**
100-249	**EACH .58**

Strip Ground Sockets for Series R10 Relays



Types 27E125 and **27E128** are 2PDT sockets, spring ground; **Type 27E126** and **27E129,** 4PDT socket, spring ground; **Type 27E127** is 6PDT socket spring ground. **Contact your nearest Allied facility for larger quantity pricing.**

Stock No.	Mfr.'s Type	Terminal Type	EACH 1-24	EACH 25-49	EACH 50-99	EACH 100-249
886-1430	27E125	Solder	1.75	1.56	1.45	1.38
886-1431	27E126	Solder	2.13	1.91	1.80	1.71
886-1432	27E127	Solder	2.71	2.40	2.25	2.14
886-1433	27E128	PC Term.	1.83	1.65	1.45	1.38
886-1434	27E129	PC Term.	2.13	1.91	1.80	1.71
886-9018*	27E460	Screw	19.12	17.90	16.21	15.47
886-9017†	27E461	Screw	23.53	22.34	21.28	18.38
886-9019‡	27E462	Screw	31.34	29.79	28.23	26.89

*2 pole. † 4 pole. ‡ 6 pole.

Hold Down Springs

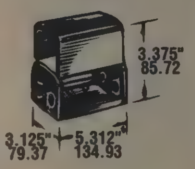
Stock No.	Mfr.'s Type	Poles	EACH 1-24	EACH 25-49	EACH 50-99	EACH 100-249
886-1440	20C249	2	.38	.29	.25	.22
886-1441	20C250	4	.28	.26	.24	.21
886-1442	20C251	6	.28	.26	.24	.21

Relay Cover

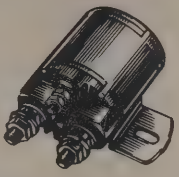
For Type PRD. Grey enameled heavy steel. Has predrilled mounting holes in base and knockouts for $^{1}/_{2}$" (1.27 cm) dia. conduit.

PRD Cover #35D013. Size: 3.125 x 3.375 x 5.312" (13.49 x 8.57 x 7.94 cm). **Wt.:** 1 lb. (454 gm).

886-1455. 35D013. **1-24**	**EACH 20.66**
25-49	**EACH 19.65**
50-99	**EACH 18.61**
100-249	**EACH 17.72**



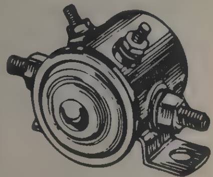
Type 124 Heavy Duty DC Power Contactors



Design meets UL 583 industrial truck standard. Dust and splash proof cover silver alloy contacts rated at 100 amps (400 amps inrush) at 6 to 36 VDC. **Temperature Range:** –40°C to +65°C. **Max. Continuous Coil Watts:** 12 at rated voltage. **Sizes:** 3¹/₈ × 3⁹/₁₆ × 2¹/₄" except (*) 3¹/₈ × 4³/₄ × 2¹/₄".

Stock No.	Mfr.'s Type	Volts DC	Action	EACH			
				1-9	10-24	25-49	50-Up
576-1060	124-902	12	SPNO/4-TER	**31.15**	**26.28**	**23.84**	**21.45**
576-1061	124-903	24	SPNO/4-TER	**31.82**	**28.78**	**27.18**	**26.55**
576-1062	124-904	36	SPNO/4-TER	**31.15**	**26.28**	**23.84**	**21.45**
576-1063	124-906	12	SPNO/3-TER	**30.04**	**28.98**	**27.56**	**25.74**
576-1064	124-910*	12	SPDT/6-TER	**48.31**	**41.07**	**36.96**	**33.26**
576-1065	124-911*	24	SPDT/6-TER	**48.31**	**41.07**	**36.96**	**33.26**

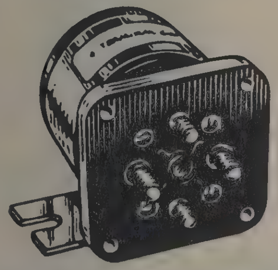
Type 70 DC Power Contactors

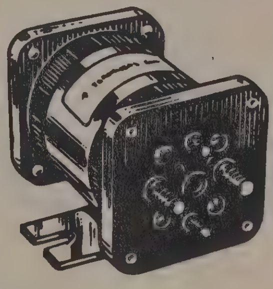


Solenoid actuated DC power contactors feature drawn steel dust-proof enclosure, copper stud power and coil terminals, double break rotating disc movable contact, isolated coil terminals. **Magnet Coil Rating:** 9 watts. **Breakdown Voltage:** 500 V rms, 60 Hz. Copper contacts except (*) which are silver. **Size:** SPDT — 2¹/₂ × 3¹/₂ × 2¹/₂"; SPNO — 3³/₈ × 3⁹/₁₀ × 2¹/₂". Mounting holes on 2.109" centers. Hardware included.

Stock No.	Mfr.'s Type	Volts DC	Action	Term. No.	EACH			
					1-9	10-24	25-49	50-Up
576-1013	70-902	12	SPNO	4	**19.70**	**16.75**	**15.07**	**13.57**
576-1014	70-903	24	SPNO	4	**20.63**	**18.73**	**17.64**	**16.75**
576-1015	70-904	36	SPNO	4	**18.77**	**15.96**	**14.36**	**12.93**
576-1020	70-914	12	SPNO	3	**18.07**	**17.21**	**16.35**	**15.49**
576-1021	70-915	24	SPNO	3	**19.92**	**18.34**	**17.42**	**16.51**
576-1022	70-918	12	SPNO	3	**19.71**	**16.74**	**15.07**	**13.56**
576-1023	70-922*	12	SPDT	6	**46.42**	**44.21**	**41.99**	**39.78**

Type 586 Sealed Contactors

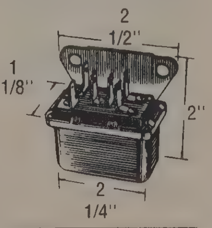




Sealed contacts designed for controlling DC starting motors on gasoline engine driven auxiliaries. Battery charging power circuits and low-voltage DC motor generator sets. Coil rated at 12 continuous duty. Silver contacts rated 200 amps. Dust and splash proof. 4 terminal.

Stock No.	Mfr.'s Type	Cast VDC	Pole Form	Ohms	EACH			
					1-9	10-24	25-49	50-Up
576-1078	586-902	12	SPNO	21.0	**45.71**	**43.42**	**41.14**	**38.85**
576-1079	586-905	24	SPNO	84.0	**48.42**	**46.10**	**43.79**	**41.49**
576-1080	586-911	12	SPDT	13.2	**67.52**	**64.30**	**61.08**	**57.87**
576-1081	586-914	24	SPDT	53.0	**67.67**	**64.44**	**61.22**	**57.99**

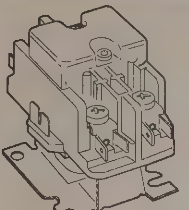
Type 150 DC Power Relays

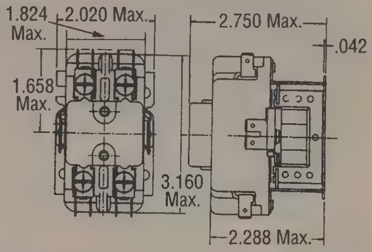


Totally enclosed. Side bracket. ¹/₄" quick-connect termination. Hardware included in boxed units.

Stock No.	Mfr.'s Type	Contacts		Action	EACH			
		Volts	Amps		1-9	10-24	25-49	50-Up
576-1030	150-902	12	25.0	SPNO	**16.31**	**13.87**	**12.47**	**11.80**
576-1031	150-903	24	12.0	SPNO	**16.83**	**15.29**	**13.92**	**12.57**
576-1032	150-905	12	15.0	SPDT	**17.38**	**14.77**	**13.30**	**11.97**
576-1033	150-906	24	7.5	SPDT	**20.72**	**18.83**	**15.90**	**14.50**

Type 122 AC Power Contactors

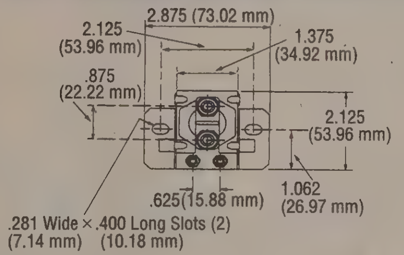


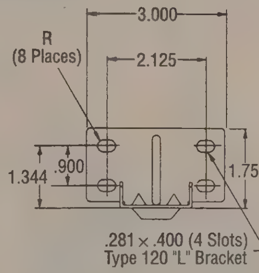


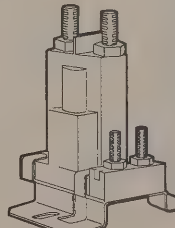
Low cost straight-thru wiring AC power contactors have UL File No. E12139 and CSA File No. LR13360 approvals. ¹/₄" auxiliary quick-connect terminals, screw power terminals for #10 solid wire max. Two pole normally open double make contacts. **Weight:** 10.5 oz approx.

Stock No.	Mfr.'s Type	Voltage	Contact Rating		EACH			
			Inductive	Resistive	1-9	10-24	25-49	50-Up
576-3001 **576-3002** **576-3003**	122-901 122-902 122-903	24 VAC 120 VAC 208/240 VAC	30 Amp Cont. 150 Amp Inrush @ 277 VAC Per Pole	40 Amp @ 600 VAC	**23.74** **23.74** **23.74**	**20.18** **20.18** **20.18**	**18.17** **18.17** **18.17**	**16.35** **16.35** **16.35**
576-3004 **576-3005**	122-905 122-906	24 VAC 120 VAC	40 Amp Cont. 200 Amp Inrush @ 277 VAC Per Pole With Cover	40 Amp @ 600 VAC	**24.31** **24.31**	**20.66** **20.66**	**18.60** **18.60**	**16.74** **16.74**

Type 120 Heavy Duty DC Power Contactor



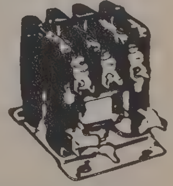




Water resistant durable in both high temperature and high vibration conditions. Capable of handling low-level and high current requirements. Continuous duty. Silver alloy contacts. **Temperature Range:** –20°F to 120°F. **Weight:** 6 oz approx. Single pole normally open.

Stock No.	Mfr.'s Type	Volts DC	Coil Resistance	EACH			
				1-9	10-24	25-49	50-Up
576-3007	120-901	12	16.0 Ohms	**18.32**	**15.58**	**14.02**	**12.63**
576-3009	120-904	24	64.0 Ohms	**14.99**	**12.75**	**11.47**	**10.32**

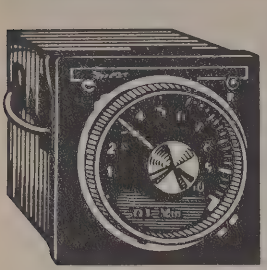
Type 154 AC Power Contactors



3PNO contacts. Interchangeable mounting with low coil wattage and ¹/₄", double quick-connect terminals. Non-positional, non-corroding structure. Low temperature rise. Hardware included in boxed units. 50/60 Hz. Size: 2³/₄ × 3³/₄ × 3³/₁₆". UL Recognition File #E12139.

Stock No.	Mfr.'s Type	Coil		Contact Rating		EACH			
		Volts	Amps	Ind.*	Res.	1-9	10-24	25-49	50-Up
576-1035	154-902	120	20	1	30 A @ 600 V	**45.02**	**42.88**	**40.73**	**38.59**
576-1037	154-905	120	25	2	35 A @ 600 V	**47.71**	**45.42**	**43.15**	**40.88**
576-1038	154-907	24	30	3	40 A @ 600 V	**65.35**	**62.24**	**59.13**	**56.01**
576-1039	154-908	120	30	3	40 A @ 600 V	**65.35**	**62.24**	**59.13**	**56.01**
576-1041	154-911	120	40	4	50 A @ 600 V	**68.59**	**65.32**	**62.05**	**58.79**
576-1042	154-912	208/240	40	4	50 A @ 600 V	**68.59**	**65.32**	**62.05**	**58.79**

*1 = 20 A @ 600 V Inrush: 120 @ 277 V; 2 = 25 A @ 600 V Inrush: 150 A @ 277 V; 3 = 30 A @ 600 V Inrush: 180 A @ 277 V; 4 = 40 A @ 600 V Inrush, 240 A @ 277 V, 200 A @ 480 V.



Multifunction Model GLR2U

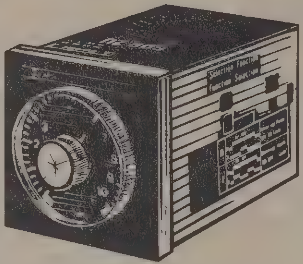
- ▶ 4 Functions in One Unit
- ▶ Multi Time Range (0.1 Sec. to 10 Hrs.)
- ▶ DPDT 10 Amp Relay Output
- ▶ LED Indicators — Power/Relay Status

Four Function Timer: Delay on make, single shot, delay on break, interval timer. Slide switch selects time range in seconds, minutes, or hours. Easy to set dial for direct reading. Fits standard 11-pin sockets. Also available in DIN-rail version (FLR2U). Other voltages available on special order.

Stock No.	Mfr.'s Type	Voltage	EACH
793-5004	GLR2U	110 VAC	61.34

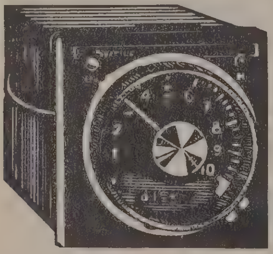
Repeat Cycle Timer Model DR2U

- ▶ Large Dial Face with Independently Adjustable "ON" and "OFF" Time Range
- ▶ 10 Amp DPDT Relay Output
- ▶ LED Relay and Power Status Indicators
- ▶ Dual Voltage



Selection of the time ranges (.1 sec. to 10 hrs.) is made by slide switch on the front of the case. "On" or "Off" time first is also switch selectable. Inner dial selects "On" time; outer dial selects "Off". 48 × 48 mm size for easy panel mounting. Dual voltage feature is identical to CHRONOS series. 110 VAC.

Stock No.	Mfr.'s Type	Description	EACH
793-5514	MDR2U110A	8 Pin Plug-In	80.22
793-5515	GDR2U110A/24AD	11 Pin Plug-In	82.58



Delay on Make Model MAXR2U

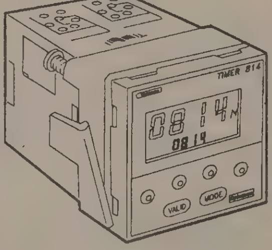
- ▶ 2 Delayed SPDT or 1 Delayed SPDT and 1 Instantaneous SPDT
- ▶ Multi Time Range (0.1 Sec. to 10 Hrs.)
- ▶ 48 × 48 mm
- ▶ LED indicators — Power/Relay Status

Selection of the two functions is programmed by a slide switch on the side of the timer. Easy to set dial for direct reading. Fits standard 8-pin sockets. Also available in DIN-rail (FAXR2U), or 11-pin plug-in (GAXR2U). Other voltages available on special order.

Stock No.	Mfr.'s Type	Voltage	EACH
793-5006	MAXR2U	110 VAC	58.40

814 Series Multifunction Timer

- ▶ 6 Modes of Operation
- ▶ LCD 0.3" Display
- ▶ Multirange Timing
- ▶ Din-Sized (48 × 48 mm) Housing
- ▶ Up or Down Timing
- ▶ SPDT 10 Amp Relay Output
- ▶ NEMA 12 Front Panel



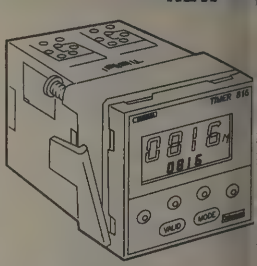
The 814 timer is a multifunction timer with multi-time ranges (0.01 sec. to 999.9 hours) housed in a 1/16 Din (48 × 48 mm) style enclosure. Easy programming from the front panel push buttons allows selection of up or down timing. 6 different timing functions (delay on make, delay on break, interval, single shot, repeat cycle on time first and repeat off time first) and 11 different timing ranges. A large 4 digit LCD display indicates current and preset values as well as relay output, power input, and initiate switch status. Load such, as light bulb or contactor, can be connected to the start switch.

Stock No.	Mfr.'s Type	Description	EACH
793-5031	88857005	8-Pin 110/220 VAC, 24 VAC/DC	79.80
793-5032	88857003	8-Pin 24/48 VAC/DC, 12 VDC	79.80
793-5033	88857105	11-Pin 110/220 VAC, 24 VAC/DC	79.80
793-5034	88857103	11-Pin 24/48 VAC/DC, 12 VDC	79.80

816 Series Multifunction Timer

— NEW —

- ▶ Red Backlit LCD Actual Display
- ▶ Multirange Timing
- ▶ DIN Sized (48 × 48 mm) Housing
- ▶ Up or Down Timing
- ▶ NEMA 12 Front Panel

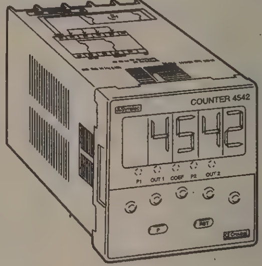


The 816 series timer is a multifunction timer with dual display. A red backlit LCD display shows actual process time and a high contrast LCD display shows setpoint time. The 816 timer has eleven selectable time ranges (.01 sec. to 9999 hrs.) and is housed in a 1/16 DIN (48 × 48 mm) style enclosure. Front panel rating is NEMA 12. Relay output is SPDT, 8 amp. Side slide switch provides front panel lockout. Units accept multiple voltage inputs.

Stock No.	Mfr.'s Type	Description	EACH
793-8801	88857607	8 Pin, 110 VAC, 24 VAC/VDC	128.00
793-8802	88857601	8 Pin, 220 VAC, 24 VAC/VDC	128.00

4541/4542 Series Up/Down Counter

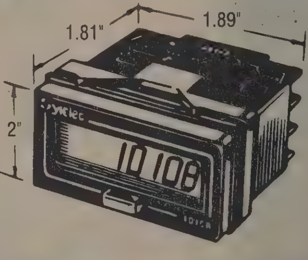
— NEW —



- ▶ DIN Sized (72 × 72 mm) Housing
- ▶ Single or Dual Preset
- ▶ Built-In Prescaler
- ▶ Built-In Sensor (12 V) Supply
- ▶ Memory Module Option
- ▶ NEMA 12 Front Panel

Stock No.	Mfr.'s Type	Voltage	Preset	EACH
793-8803	87615228	115/230 VAC	2	199.00
793-8804	87615128	115/230 VAC	1	189.00

10108 Series Totalizing Counter, 10108H Elapsed Time Indicator and 10506 Programmable Elapsed Time Indicator



- ▶ 8 Digit 0.3" High LCD Display
- ▶ Totalizer or Elapsed Time Indicator
- ▶ Replaceable Battery Supply
- ▶ Custom CMOS Technology

The 10108 series consists of two models — the 10108 totalizer and the 10108H elapsed time indicator for recording time in hours and hundredths of hours (0.01 Hr.). Count input or time enable can be a contact closure. NPN or PNP open collector transistor, 2 or 3 wire proximity switch, or voltage pulse 24 VDC max. In addition, a voltage converter module, p.n. 10,000, will accept voltage inputs from 6 to 240 VAC/DC. Input speed is 40 Hz (low) or up to 5 KHz (high).

Count total or time is displayed on 0.3" high (7 mm) liquid crystal displays, LCDs. Power for the internal logic and displays is provided by two (2) Size N alkaline batteries with a projected four (4) year life. Mercury batteries, with an estimated eight (8) year life, can also be used. Two (2) of the alkaline batteries are included with each unit.

Stock No.	Mfr.'s Type	Description	EACH
793-2000	10108	Totalizing Counter	42.00
793-2001	10108H	Elapsed Time Indicator	42.00
793-2002	10000	Converter Mod. for 10108	11.98
793-5061	10506	Programmable Elapsed Time Indicator	38.85

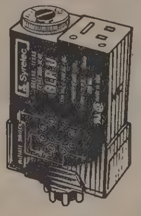
Syrelec
A Crouzet Company

The new CHRONOS series of Timers is now available from Syrelec that will make ordering a much simpler process. Time setting and testing is simplified by the dial face and direct reading capability. Featured below are the five models including, Multifunction, Repeat Cycle, Delay on Make (two versions), and Delay on Break. CHRONOS Timers feature dual voltages in the following combinations: 48 VAC/DC or 24 VAC/DC.110 VAC or 24 VAC/DC.220 VAC or 24 VAC/DC. 12 VDC is also available on all CHRONOS models on special request. SPDT or DPDT relay outputs available on all models.

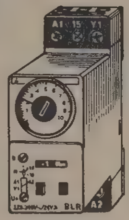
CHRONOS Multi-Function Model OLRU

- 4 functions in one unit
- Multi time range (0.1 sec to 10 hrs.)
- SPDT or DPDT 10 Amp Relay Output
- LED Indicators – Power/Relay Status

Four Function Timer: delay on make, single shot, delay on break, interval timer. Slide switch selects time range in seconds, minutes, or hours. Easy to set dial for direct reading. Fits standard 8-pin sockets. For DIN-rail mounting, order Model BLRU. TLR2U fits standard 11-pin socket.

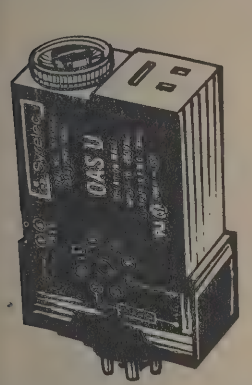


OLRU



BLRU

Stock No.	Mfr.'s Type	Voltage	EACH
793-5000	OLRU	110VAC/24VAC/DC	51.90
793-5001	BLRU	110VAC/24VAC/DC	53.39
793-5025	TLR2U	110VAC/24VAC/DC	48.00



CHRONOS Delay on Make Model OARU/OASU

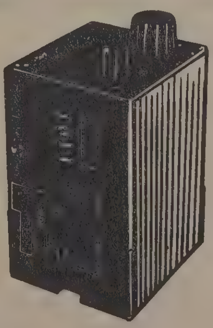
- Multi Time Range (0.1 sec. to 10 hrs.)
- SPDT or DPDT 10 Amp Relay Output OARU/OAR2U or SCR Solid State Output OASU
- LED Indicators – Power/Relay Status OARU/OAR2U

For the relay output version OARU, when input power is applied, the relay delays the preset time period prior to energizing. The model OASU, delays the solid state output for the preset time period prior to turning on. Next timing cycle begins when the input power is reapplied. Fits standard 8-pin sockets.

Stock No.	Mfr.'s Type	Voltage	EACH
793-5500	OARU	110VAC / 24VAC/DC	36.58
793-5501	BARU	110VAC / 24VAC/DC	35.11
793-5502	OASU	10-260VAC/DC	32.50
793-5503	BASU	10-260VAC/DC	39.00
793-5026	OAR2U	110VAC	35.20

Current Control Relays IR.T and IAR.T Series

- Automatic or Manual Control
- Start-Up Inhibit
- Adjustable Hysteresis
- Multiple Voltages
- LED Relay Status Indicator



IR.T Series will monitor current ranges of 5 mA up to 10 A, and can be set for latching or non-latching operation. The IAR.T series monitors 5 A to 100 A (Peak to Peak) with the addition of a TIXP3 Current Transformer. All are 110 VAC. Other voltages available from factory upon request.

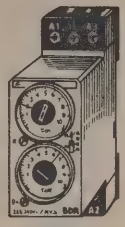
Stock No.	Mfr.'s Type	Description	EACH
793-5519	LIR.T	11 Pin Plug-In	62.36
793-5520	DIR.T	DIN Rail Mount	65.48
793-5521	LIAR.T/TIXP3	1 Pin Plug-In w/current transformer	95.00
793-5522	DIAR.T/TIXP3	DIN Rail Mount w/current transformer	95.00
793-5523	TIXP3	Additional current transformer	32.50

CHRONOS Repeat Cycle Model ODRU

- Multi Time Range (0.1 sec to 10 hrs.)
- SPDT or DPDT 10 Amp Relay Output
- LED Indicators – Power/Relay Status
- Individual "on" and "off" settings

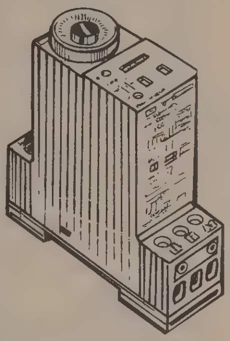
Time range selection is made by dip switches on the case. T1 is the adjustable "off time" for relay R and T2 is the adjustable "on time". When input power is applied, the relay will alternate between "off and on" according to the preset times selected. For DIN-Rail mounting, order Model BDRU.

ODRU



BDRU

Stock No.	Mfr.'s Type	Voltage	EACH
793-5002	ODRU	110VAC	60.16
793-5003	BDRU	110VAC	59.58
793-5028	ODR2U	110VAC	57.00
793-5029	TDR2U	110VAC / 24VAC/DC	59.00



CHRONOS Delay on Break Model OCRU

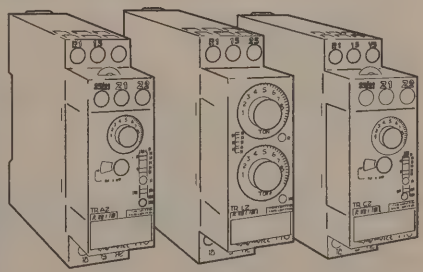
- Multi Time Range (0.1 sec. to 10 hrs.)
- SPDT or DPDT 10 Amp Relay Output
- LED Indicators – Power/Relay Status

Input power is continuously supplied to the timer. When an external initiate switch is closed, the output relay is energized. Timing begins when the initiate switch opens. At the end of the delay time, the output is de-energized and the timer is ready for another cycle. Fits standard 8-pin sockets.

Stock No.	Mfr.'s Type	Voltage	EACH
793-5504	OCRU	110VAC /24VAC/DC	42.48
793-5505	BCRU	110VAC /24VAC/DC	41.58

TR 2 Series DIN Rail Timers

- Slimline 22.5 mm Enclosure
- Multi-Time Ranges
- 2 SPDT Output Ranges



The TR 2 Series are timers in a slimline DIN rail mount enclosure. TR2 timers are available in Delay on Make, Delay on Break, and Repeat Cycle operating modes. The TR Series features multiple supply voltage ranges, LED timing and output indication and a remote panel mount potentiometer option. Output relay can be programmed either as 2 SPDT delayed outputs or 1 SPDT instantaneous output and 1 SPDT delayed output.

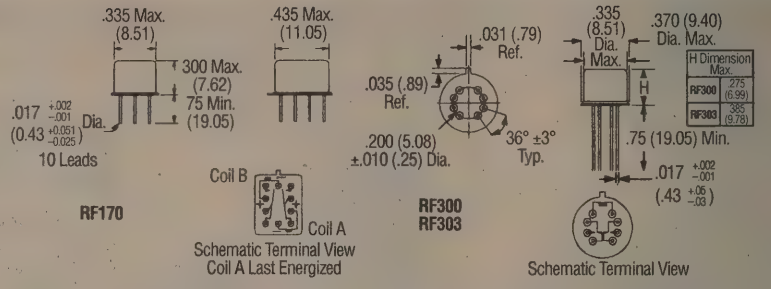
Stock No.	Mfr.'s Type	Description	EACH
793-8002	88 893 135	Delay on Make 24 VAC/VDC and 110 240 VAC	45.00
793-8003	88 893 335	Delay on Break 24 VAC/VDC and 110 240 VAC	51.45
793-8004	88 893 525	Repeat Cycle 24 VAC/VDC and 110 240 VAC	92.87

RF Relays Series RF170 and Series RF300 and RF303

- Hermetically Sealed
- Gold Plated Contacts
- Frequency RF170 DC to 4 GHz
- Frequency RF300, RF303 DC to 3 GHz

The RF170 series are DPDT magnetic latching relays designed to optimize isolation across contacts and poles.

The RF300 and RF303 relays are DPDT relays designed to provide RF signal repeatability over the frequency range by balancing the aggregate insertion loss of the relays' design.

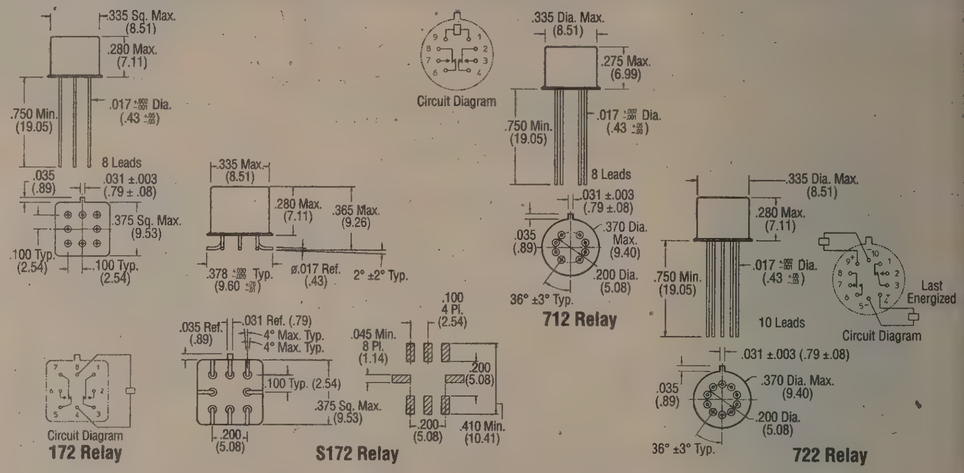


Stock No.	Mfr.'s Type	Style	Nom. Coil Voltage (VDC)	Coil Resistance (Ω±20% @ 25°C)	Contact Resistance (mΩ)	Typ. Isolation Across Contacts	Repeatability Typ. (dB)	VSWR Typ. (@ 1 GHz)	Insertion Loss Typ. (dB @ 1 GHz)	EACH
280-1000	RF170-5	Magnetic Latching	5.0	61	150	70-30 dB	—	1.15:1	.20	45.27
280-1001	RF170-6	Magnetic Latching	6.0	120	150	70-30 dB	—	1.15:1	.20	45.27
280-1002	RF170-9	Magnetic Latching	9.0	280	150	70-30 dB	—	1.15:1	.20	45.27
280-1003	RF170-12	Magnetic Latching	12.0	500	150	70-30 dB	—	1.15:1	.20	45.27
280-1004	RF170-18	Magnetic Latching	18.0	1130	150	70-30 dB	—	1.15:1	.20	45.27
280-1005	RF170-26	Magnetic Latching	26.5	2000	150	70-30 dB	—	1.15:1	.20	45.27
280-1006	RF300-5	Non-Latching	5.0	50	150	—	±0.1	1.12:1	.13	36.65
280-1007	RF300-12	Non-Latching	12.0	390	150	—	±0.1	1.12:1	.13	36.65
280-1008	RF303-5	Non-Latching	5.0	100	150	—	±0.1	1.12:1	.13	38.50
280-1009	RF303-12	Non-Latching	12.0	850	150	—	±0.1	1.12:1	.13	38.50

General Purpose Armature Relays Series 172, 712, and 722

- Hermetically Sealed
- Surface Mount (S172 Series)
- Gold Plated Contacts
- Dry Circuit to 1 A 28 VDC
- Excellent RF Performance, DC to 1 GHz

Commercial versions of Teledyne Relays' DPDT, Established Reliability, T²R® relay line. Hermetic sealing, uni-frame design, all welded construction and gold plated, precious metal contacts assure reliable switching of loads from dry circuit to 1 ampere. Contact geometry and low inter contact capacitance provide excellent RF switching capability well into the UHF spectrum.

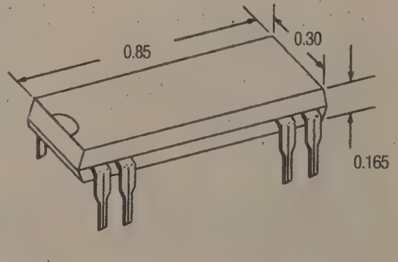


Stock No.	Mfr.'s Type	Type	Nominal Coil Voltage	Coil Resistance Ohms (± 20%) @ +25°C	Operate Voltage (Vdc) @ +25°C	Operate Time (msec) @ +25°C	Release Time (msec) @ +25°C	EACH 1-49	EACH 50-99
280-0001	172-5/28	Non-Latch	5.0	64	3.8	6.0	3.0	17.05	16.21
280-0002	172-12/28	Non-Latch	12.0	400	9.0	6.0	3.0	17.05	16.21
280-0003	172-26/28	Non-Latch	26.5	1600	18.0	6.0	3.0	17.05	16.21
280-0004	S172-5/28	Non-Latch Surface Mount	5.0	64	3.8	6.0	3.0	18.05	17.64
280-0007	712-5	Non-Latch	5.0	50	3.6	4.0	3.0	19.90	18.36
280-0008	712-12	Non-Latch	12.0	390	8.4	4.0	3.0	19.90	18.36
280-0009	712-26	Non-Latch	26.5	1560	17.0	4.0	3.0	19.90	18.36
280-0010	722-5	Magnetic Latch	5.0	61	3.5	2.0	N/A	34.14	31.90
280-0011	722-12	Magnetic Latch	12.0	500	9.0	2.0	N/A	34.14	31.90
280-0012	722-26	Magnetic Latch	26.5	2000	18.0	2.0	N/A	34.14	31.90

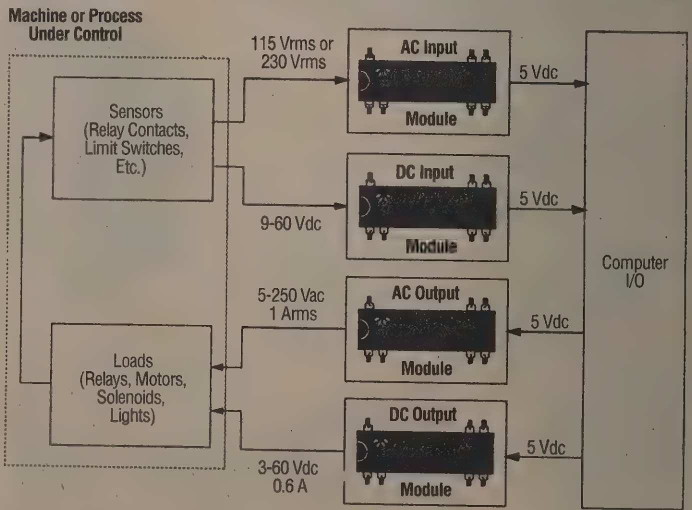
Solid State Computer Input/Output Interface Modules

C76 DIP I/O™ System Optically Isolated — TTL/CMOS Logic Compatible Control

Teledyne Solid State C76 DIP I/O™ Modules are designed for use in computerized control systems for noise-free isolation interfacing of computer logic to harsh industrial environments. Eliminates mounting tracks for low per point cost. Features CMOS and TTL compatibility, optical isolation, high noise immunity and function on input modules. For use in robotics, computerized process control, programmable controllers and ATE.

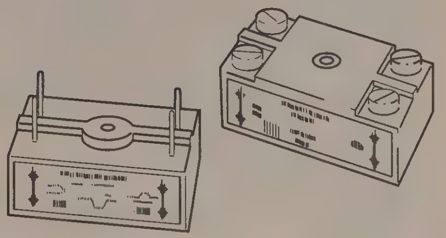


Stock No.	Mfr.'s Type	Type	Characteristics	EACH
281-0011	C76AO-1	AC Output	3.8-16 Vdc Input 5-250 Vrms, 1 A Output	12.16
281-0012	C76AI-1	AC Input	90-135 Vrms and 180-250 Vrms Input	12.16
281-0013	C76DO-1	DC Output	3.8-16 Vdc Input 3-60 Vdc, 0.6 A Output	14.83
281-0014	C76DI-1	DC Input	9-60 Vdc Input	13.08

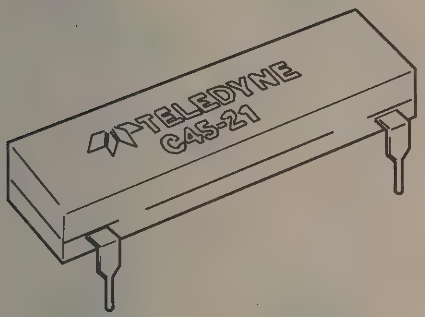


601 Series

- ► Optically Isolated
- ► Zero Voltage Turn-On
- ► 5 and 10 Arms
- ► PC or Rack Mount Options
- ► TTL Compatible, Control Voltage 3.0 to 32 VDC
- ► Operating Temperature Range: –40°C to 80°C
- ► Plastic Package, 2.0" × 1.0" × 0.97"
- ► UL and CSA Registered



Stock No.	Mfr.'s Type	Control Voltage Range	Load Current Amps	Terminals	Mounting	Minimum Load Voltage		EACH
						Continuous (RMS)	Transient (Peak)	
281-1007	601-1	3-32 VDC	5	PC	PC Mount	250	500	**48.30**
281-1008	601-2	3-32 VDC	10	Screw	Rack Mount	250	500	**48.30**
281-1009	601-1H	3-32 VDC	5	PC	PC Mount	250	600	**48.30**
281-1010	601-2H	3-32 VDC	10	Screw	Rack Mount	250	600	**48.30**
281-1011	601-2QQ	3-32 VDC	10	Quick Connect	Rack Mount	250	500	**48.30**



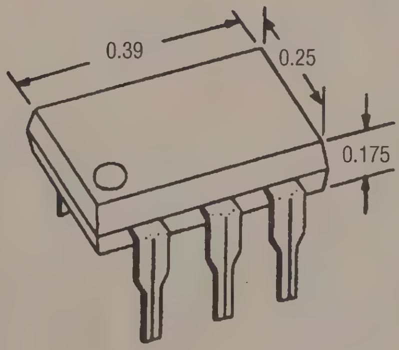
C45 Series

- ► Optically Isolated
- ► Zero Voltage Turn-On
- ► TTL Compatible
- ► 16 Pin DIP Epoxy Package, 0.85" × 0.25" × 0.165"
- ► Operating Temperature: –40°C to 100°C
- ► UL and CUL Registered

Stock No.	Mfr.'s Type	Voltage Rating	Input Control Current	Load Current Amps	Minimum Load Voltage		EACH
					Continuous (RMS)	Transient (Peak)	
281-1001	C45-11	1.5 VDC	5 mA	1.0	280	400	**9.00**
281-1002	C45-12	1.5 VDC	10 mA	1.0	280	400	**9.00**
281-1003	C45-13	3.5 VDC	10 mA	1.0	280	400	**9.00**
281-1004	C45-21	1.5 VDC	5 mA	1.0	280	500	**9.00**
281-1005	C45-22	1.5 VDC	10 mA	1.0	280	500	**9.00**
281-1006	C45-23	3.5 VDC	10 mA	1.0	280	500	**9.00**

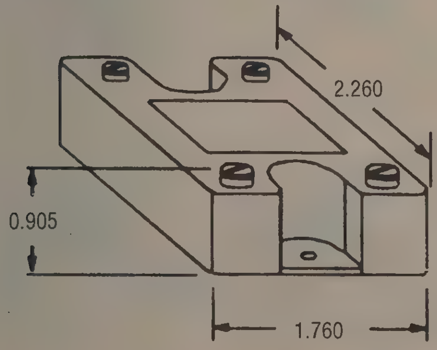
C60 Series

- ► Bi-Directional
- ► AC or DC
- ► Subminiature
- ► Optically Isolated Solid State Relays
- ► 6 Pin DIP Packages
- ► Available in Surface and Through Hole Mounting



Stock No.	Mfr.'s Type	Input Control Rating	Output Load Rating		Mounting	EACH
			Voltage	Current		
281-6010	C60-10	10MA @ 1.5 VDC	60 VDC	2.0 ADC	Through Hole	**14.50**
281-6012	C60-20	10MA @ 1.5 VDC	100 VDC	1.5 ADC	Through Hole	**14.17**
281-6013	C60-30	10MA @ 1.5 VDC	200 VDC	0.8 ADC	Through Hole	**14.17**
281-6014	C60-40	10MA @ 1.5 VDC	400 VDC	0.5 ADC	Through Hole	**14.50**
281-6011	SC60-10	10MA @ 1.5 VDC	60 VDC	2.0 ADC	Surface	**15.00**
281-6015	SC60-20	10MA @ 1.5 VDC	100 VDC	1.5 ADC	Surface	**14.70**
281-6016	SC60-30	10MA @ 1.5 VDC	200 VDC	0.8 ADC	Surface	**14.70**
281-6017	SC60-40	10MA @ 1.5 VDC	400 VDC	0.5 ADC	Surface	**15.00**

For AC or bi-directional operation, the output load current is ½ of the above ratings.



C15 Series

- ► Optically Isolated
- ► Zero Voltage Turn-On
- ► Zero Current Turn Off
- ► 10 and 25 Amps
- ► TTL Logic Compatible
- ► High Dielectric Isolation
- ► UL Recognized File# E55197

Stock No.	Mfr.'s Type	Control Voltage Range	Load Current Amps	Minimum Load Voltage		EACH
				Continuous (RMS)	Transient (Peak)	
281-0009	C15-31	3-32 VDC	10 A	250	600	**17.55**
281-0010	C15-32	3-32 VDC	25 A	250	600	**18.35**

Inductive Proximity Sensors

Inductive Proximity Sensors are used to detect metal objects in many applications including automotive, automation systems, machine tools, conveyor systems, metal working, knitting industry, etc. Altech offers a broad line of sensor products in four packaging styles; cylindrical, limit style, block and ring. Sensors are available with a wide variety of quick disconnect connectors or 2 meter (6 ft., 6 in.) cables. Other cable lengths are available. Inductive Proximity Sensors are available in AC, DC and AC/DC, 2 wire and 3 wire systems, flush and non-flush mounting, PNP and NPN versions, Normally Open (NO) and Normally Closed (NC) configurations. Most sensors listed feature IP67 (NEMA 1, 2, 3, 3R, 4, 4X, 5, 6, 12, 13) protection, total circuit protection (short circuit, overload, reverse polarity and wire break) and temperature range of –20 to 70°C (–4 to 158°F). Additional products not shown include weld immune, extended temperature range, NAMUR and mini sensors (4.0, 5.0 and 6.5 mm (0.16, 0.20 and 0.26 in.)). All sensors are manufactured in a certified ISO9001 facility and most have the CE mark (European Directive 93/68/EEC).

DC Cylindrical Proximity Sensors

- **Brass, Nickel Plated (BN) Housing**
- **LED (1 for L and Standard, 2 for GL)**
- **Normally Open (NO) Contacts**
- **2 Meter (6 ft., 6 in.) PVC Polyvinylchloride Cable or Quick Disconnect Connectors**
- **Total Circuit Protection (Short Circuit, Overload, Reverse Polarity and Wire Break)**
- **3 Wire Sensors**

L-Series

10-30 VDC, 200 mA (8 mm (.31 in.)); 18-30 VDC, 120 mA (12 mm (.47 in.), 18 m (.71 in.) and 30 mm (1.18 in.)), IP67 (NEMA 1, 2, 3, 3R, 4, 4X, 5, 6, 12, 13) Protection, 1 LED.

Stock No.	Mfr.'s Type	Fig.	Dia. A mm (in.)	Sensing Distance mm (in.)	Body Length B mm (in.)	Thread Length C mm (in.)	Mounting	DC Type	Connection Type*	EACH
501-7001	9981-2000	A	8.0 (0.31)	1.5 (0.06)	35.0 (1.38)	35.0 (1.38)	Flush	PNP	2M PVC Cable	**65.00**
501-7002	9981-2064	B	8.0 (0.31)	1.5 (0.06)	50.0 (1.97)	24.0 (0.94)	Flush	PNP	64 Connector	**75.00**
501-7003	9981-2100	A	8.0 (0.31)	1.5 (0.06)	35.0 (1.38)	35.0 (1.38)	Flush	NPN	2M PVC Cable	**65.00**
501-7004	9981-2164	B	8.0 (0.31)	1.5 (0.06)	50.0 (1.97)	24.0 (0.94)	Flush	NPN	64 Connector	**75.00**
501-7005	9981-2200	C	8.0 (0.31)	2.0 (0.08)	35.0 (1.38)	35.0 (1.38)	Non-Flush	PNP	2M PVC Cable	**65.00**
501-7006	9981-2264	D	8.0 (0.31)	2.0 (0.08)	50.0 (1.97)	24.0 (0.94)	Non-Flush	PNP	64 Connector	**75.00**
501-7007	9981-2300	C	8.0 (0.31)	2.0 (0.08)	35.0 (1.38)	35.0 (1.38)	Non-Flush	NPN	2M PVC Cable	**65.00**
501-7008	9981-2364	D	8.0 (0.31)	2.0 (0.08)	50.0 (1.97)	24.0 (0.94)	Non-Flush	NPN	64 Connector	**75.00**
501-7009	9982-2000	A	12.0 (0.47)	2.0 (0.08)	35.0 (1.38)	35.0 (1.38)	Flush	PNP	2M PVC Cable	**49.00**
501-7010	9982-2064	B	12.0 (0.47)	2.0 (0.08)	50.0 (1.97)	30.0 (1.18)	Flush	PNP	64 Connector	**59.00**
501-7011	9982-2065	B	12.0 (0.47)	2.0 (0.08)	50.0 (1.97)	30.0 (1.18)	Flush	PNP	65 Connector	**54.00**
501-7012	9982-2100	A	12.0 (0.47)	2.0 (0.08)	35.0 (1.38)	35.0 (1.38)	Flush	NPN	2M PVC Cable	**49.00**
501-7013	9982-2164	B	12.0 (0.47)	2.0 (0.08)	50.0 (1.97)	30.0 (1.18)	Flush	NPN	64 Connector	**59.00**
501-7014	9982-2165	B	12.0 (0.47)	2.0 (0.08)	50.0 (1.97)	30.0 (1.18)	Flush	NPN	65 Connector	**54.00**
501-7015	9982-2200	C	12.0 (0.47)	4.0 (0.16)	35.0 (1.38)	29.0 (1.14)	Non-Flush	PNP	2M PVC Cable	**49.00**
501-7016	9982-2264	D	12.0 (0.47)	4.0 (0.16)	50.0 (1.97)	24.0 (0.94)	Non-Flush	PNP	64 Connector	**59.00**
501-7017	9982-2265	D	12.0 (0.47)	4.0 (0.16)	50.0 (1.97)	24.0 (0.94)	Non-Flush	PNP	65 Connector	**54.00**
501-7018	9982-2300	C	12.0 (0.47)	4.0 (0.16)	35.0 (1.38)	29.0 (1.14)	Non-Flush	NPN	2M PVC Cable	**49.00**
501-7019	9982-2364	D	12.0 (0.47)	4.0 (0.16)	50.0 (1.97)	24.0 (0.94)	Non-Flush	NPN	64 Connector	**59.00**
501-7020	9982-2365	D	12.0 (0.47)	4.0 (0.16)	50.0 (1.97)	24.0 (0.94)	Non-Flush	NPN	65 Connector	**54.00**
501-7021	9984-2000	A	18.0 (0.71)	5.0 (0.20)	35.0 (1.38)	35.0 (1.38)	Flush	PNP	2M PVC Cable	**55.00**
501-7022	9984-2065	B	18.0 (0.71)	5.0 (0.20)	50.0 (1.97)	30.0 (1.18)	Flush	PNP	65 Connector	**60.00**
501-7023	9984-2100	A	18.0 (0.71)	5.0 (0.20)	35.0 (1.38)	35.0 (1.38)	Flush	NPN	2M PVC Cable	**55.00**
501-7024	9984-2165	B	18.0 (0.71)	5.0 (0.20)	50.0 (1.97)	30.0 (1.18)	Flush	NPN	65 Connector	**60.00**
501-7025	9984-2200	C	18.0 (0.71)	8.0 (0.31)	35.0 (1.38)	27.0 (1.06)	Non-Flush	PNP	2M PVC Cable	**55.00**
501-7026	9984-2265	D	18.0 (0.71)	8.0 (0.31)	50.0 (1.97)	30.0 (1.18)	Non-Flush	PNP	65 Connector	**60.00**
501-7027	9984-2300	C	18.0 (0.71)	8.0 (0.31)	35.0 (1.38)	27.0 (1.06)	Non-Flush	NPN	2M PVC Cable	**55.00**
501-7028	9984-2365	D	18.0 (0.71)	8.0 (0.31)	50.0 (1.97)	30.0 (1.18)	Non-Flush	NPN	65 Connector	**60.00**
501-7029	9986-2000	A	30.0 (1.18)	10.0 (0.39)	35.0 (1.38)	35.0 (1.38)	Flush	PNP	2M PVC Cable	**60.00**
501-7030	9986-2065	B	30.0 (1.18)	10.0 (0.39)	50.0 (1.97)	30.0 (1.18)	Flush	PNP	65 Connector	**65.00**
501-7031	9986-2100	A	30.0 (1.18)	10.0 (0.39)	35.0 (1.38)	35.0 (1.38)	Flush	NPN	2M PVC Cable	**60.00**
501-7032	9986-2165	B	30.0 (1.18)	10.0 (0.39)	50.0 (1.97)	30.0 (1.18)	Flush	NPN	65 Connector	**65.00**
501-7033	9986-2200	C	30.0 (1.18)	15.0 (0.59)	35.0 (1.38)	23.0 (0.91)	Non-Flush	PNP	2M PVC Cable	**60.00**
501-7034	9986-2265	D	30.0 (1.18)	15.0 (0.59)	50.0 (1.97)	18.0 (0.71)	Non-Flush	PNP	65 Connector	**65.00**
501-7035	9986-2300	C	30.0 (1.18)	15.0 (0.59)	35.0 (1.38)	23.0 (0.91)	Non-Flush	NPN	2M PVC Cable	**60.00**
501-7036	9986-2365	D	30.0 (1.18)	15.0 (0.59)	50.0 (1.97)	18.0 (0.71)	Non-Flush	NPN	65 Connector	**65.00**

*The 64 Connector is a 3 Pin, 8 mm (0.31 in.) Pico Change Connector. The 65 Connector is a 4 Pin, 12 mm (0.47 in.) Micro Change Connector.

GL Series

10-60 VDC, 400 mA, IP67 (NEMA 1, 2, 3, 3R, 4, 4X, 5, 6, 12, 13) Protection, 2 LED (1 for Power, 1 for Detection).

501-7037	9982-4000	E	12.0 (0.47)	2.0 (0.08)	45.0 (1.77)	35.0 (1.38)	Flush	PNP	2M PVC Cable	**65.00**
501-7038	9982-4065	F	12.0 (0.47)	2.0 (0.08)	60.0 (2.36)	35.0 (1.38)	Flush	PNP	65 Connector	**70.00**
501-7039	9982-4100	E	12.0 (0.47)	2.0 (0.08)	45.0 (1.77)	35.0 (1.38)	Flush	NPN	2M PVC Cable	**65.00**
501-7040	9982-4165	F	12.0 (0.47)	2.0 (0.08)	60.0 (2.36)	35.0 (1.38)	Flush	NPN	65 Connector	**70.00**
501-7041	9982-4200	G	12.0 (0.47)	4.0 (0.16)	45.0 (1.77)	29.0 (1.14)	Non Flush	PNP	2M PVC Cable	**65.00**
501-7042	9982-4265	H	12.0 (0.47)	4.0 (0.16)	60.0 (2.36)	29.0 (1.14)	Non Flush	PNP	65 Connector	**70.00**
501-7043	9982-4300	G	12.0 (0.47)	4.0 (0.16)	45.0 (1.77)	29.0 (1.14)	Non Flush	NPN	2M PVC Cable	**65.00**
501-7044	9982-4365	H	12.0 (0.47)	4.0 (0.16)	60.0 (2.36)	29.0 (1.14)	Non Flush	NPN	65 Connector	**70.00**
501-7045	9984-4000	E	18.0 (0.71)	5.0 (0.20)	45.0 (1.77)	35.0 (1.38)	Flush	PNP	2M PVC Cable	**66.00**
501-7046	9984-4065	F	18.0 (0.71)	5.0 (0.20)	60.0 (2.36)	35.0 (1.38)	Flush	PNP	65 Connector	**74.00**
501-7047	9984-4100	E	18.0 (0.71)	5.0 (0.20)	45.0 (1.77)	35.0 (1.38)	Flush	NPN	2M PVC Cable	**66.00**
501-7048	9984-4165	F	18.0 (0.71)	5.0 (0.20)	60.0 (2.36)	35.0 (1.38)	Flush	NPN	65 Connector	**74.00**
501-7049	9984-4200	G	18.0 (0.71)	8.0 (0.31)	45.0 (1.77)	27.0 (1.06)	Non Flush	PNP	2M PVC Cable	**66.00**
501-7050	9984-4265	H	18.0 (0.71)	8.0 (0.31)	60.0 (2.36)	27.0 (1.06)	Non Flush	PNP	65 Connector	**74.00**
501-7051	9984-4300	G	18.0 (0.71)	8.0 (0.31)	45.0 (1.77)	27.0 (1.06)	Non Flush	NPN	2M PVC Cable	**66.00**
501-7052	9984-4365	H	18.0 (0.71)	8.0 (0.31)	60.0 (2.36)	27.0 (1.06)	Non Flush	NPN	65 Connector	**74.00**
501-7053	9986-4000	E	30.0 (1.18)	10.0 (0.39)	45.0 (1.77)	35.0 (1.38)	Flush	PNP	2M PVC Cable	**72.00**
501-7054	9986-4065	F	30.0 (1.18)	10.0 (0.39)	60.0 (2.36)	35.0 (1.38)	Flush	PNP	65 Connector	**77.00**
501-7055	9986-4100	E	30.0 (1.18)	10.0 (0.39)	45.0 (1.77)	35.0 (1.38)	Flush	NPN	2M PVC Cable	**72.00**
501-7056	9986-4165	F	30.0 (1.18)	10.0 (0.39)	60.0 (2.36)	35.0 (1.38)	Flush	NPN	65 Connector	**77.00**
501-7057	9986-4200	G	30.0 (1.18)	15.0 (0.59)	45.0 (1.77)	23.0 (0.91)	Non Flush	PNP	2M PVC Cable	**72.00**
501-7058	9986-4265	H	30.0 (1.18)	15.0 (0.59)	60.0 (2.36)	23.0 (0.91)	Non Flush	PNP	65 Connector	**77.00**
501-7059	9986-4300	G	30.0 (1.18)	15.0 (0.59)	45.0 (1.77)	23.0 (0.91)	Non Flush	NPN	2M PVC Cable	**72.00**
501-7060	9986-4365	H	30.0 (1.18)	15.0 (0.59)	60.0 (1.77)	23.0 (0.91)	Non Flush	NPN	65 Connector	**77.00**

*The 65 Connector is a 4 Pin, 12 mm (0.47 in.) Micro Change Connector.

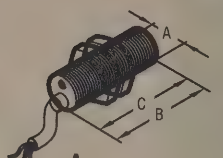
Standard Series

10-30 V, 200 mA, IP67 (NEMA 1, 2, 3, 3R, 4, 4X, 5, 6, 12, 13) Protection, 1 LED.

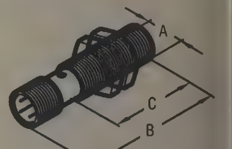
501-7061	9961-0200	I	8.0 (0.31)	1.5 (0.06)	43.0 (1.69)	40.0 (1.57)	Flush	PNP	2M PVC Cable	**65.00**
501-7062	9961-0263	J	8.0 (0.31)	1.5 (0.06)	50.0 (1.97)	28.0 (1.10)	Flush	PNP	63 Connector	**69.00**
501-7063	9961-0264	J	8.0 (0.31)	1.5 (0.06)	50.0 (1.97)	34.0 (1.34)	Flush	PNP	64 Connector	**75.00**
501-7064	9961-0265	J	8.0 (0.31)	1.5 (0.06)	50.0 (1.97)	28.0 (1.10)	Flush	PNP	65 Connector	**75.00**
501-7065	9961-0300	I	8.0 (0.31)	1.5 (0.06)	43.0 (1.69)	40.0 (1.57)	Flush	NPN	2M PVC Cable	**65.00**
501-7066	9961-0363	J	8.0 (0.31)	1.5 (0.06)	50.0 (1.97)	28.0 (1.10)	Flush	NPN	63 Connector	**69.00**
501-7067	9961-0364	J	8.0 (0.31)	1.5 (0.06)	50.0 (1.97)	34.0 (1.34)	Flush	NPN	64 Connector	**75.00**
501-7068	9961-0365	J	8.0 (0.31)	1.5 (0.06)	50.0 (1.97)	28.0 (1.10)	Flush	NPN	65 Connector	**75.00**

*The 63 Connector is a 4 Pin, 12 mm (0.47 in.) clear Micro Change Connector with 360° LED viewing. The 64 Connector is a 3 Pin, 8 mm (0.31 in.) Pico Change Connector. The 65 Connector is a 4 Pin, 12 mm (0.47 in.) Micro Change Connector.

Flush Mount

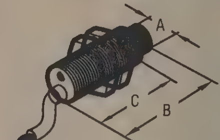


A

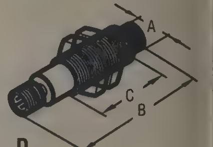


B

Non-Flush Mount

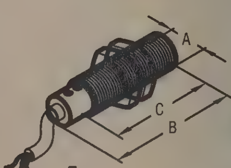


C

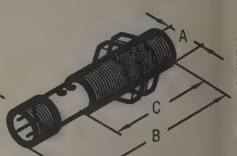


D

Flush Mount

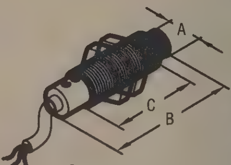


E

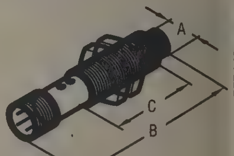


F

Non-Flush Mount

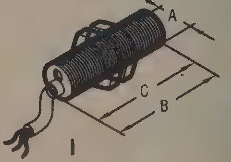


G

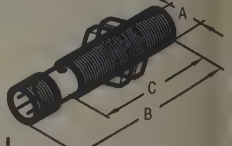


H

Flush Mount

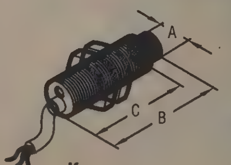


I

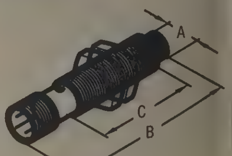


J

Non-Flush Mount



K



L

DC Cylindrical Proximity Sensors — Continued

Standard Series — Continued

Stock No.	Mfr.'s Type	Fig.	Dia. A mm (in.)	Sensing Distance mm (in.)	Body Length B mm (in.)	Thread Length C mm (in.)	Mounting	DC Type	Connection Type*	EACH
501-7069	9961-0400	K	8.0 (0.31)	2.0 (0.08)	43.0 (1.69)	35.0 (1.38)	Non-Flush	PNP	2M PVC Cable	**65.00**
501-7070	9961-0463	L	8.0 (0.31)	2.0 (0.08)	50.0 (1.97)	23.0 (0.91)	Non-Flush	PNP	63 Connector	**69.00**
501-7071	9961-0464	L	8.0 (0.31)	2.0 (0.08)	50.0 (1.97)	29.0 (1.14)	Non-Flush	PNP	64 Connector	**75.00**
501-7072	9961-0465	L	8.0 (0.31)	2.0 (0.08)	50.0 (1.97)	23.0 (0.91)	Non-Flush	PNP	65 Connector	**75.00**
501-7073	9961-0500	K	8.0 (0.31)	2.0 (0.08)	43.0 (1.69)	35.0 (1.38)	Non-Flush	NPN	2M PVC Cable	**65.00**
501-7074	9961-0563	L	8.0 (0.31)	2.0 (0.08)	50.0 (1.97)	23.0 (0.91)	Non-Flush	NPN	63 Connector	**69.00**
501-7075	9961-0564	L	8.0 (0.31)	2.0 (0.08)	50.0 (1.97)	29.0 (1.14)	Non-Flush	NPN	64 Connector	**75.00**
501-7076	9961-0565	L	8.0 (0.31)	2.0 (0.08)	50.0 (1.97)	23.0 (0.91)	Non-Flush	NPN	65 Connector	**75.00**
501-7077	9962-4000	I	12.0 (0.47)	2.0 (0.08)	40.0 (1.57)	40.0 (1.57)	Flush	PNP	2M PVC Cable	**65.00**
501-7078	9962-4063	J	12.0 (0.47)	2.0 (0.08)	60.0 (2.36)	40.0 (1.57)	Flush	PNP	63 Connector	**65.00**
501-7079	9962-4064	J	12.0 (0.47)	2.0 (0.08)	60.0 (2.36)	40.0 (1.57)	Flush	PNP	64 Connector	**75.00**
501-7080	9962-4065	J	12.0 (0.47)	2.0 (0.08)	60.0 (2.36)	40.0 (1.57)	Flush	PNP	65 Connector	**65.00**
501-7081	9962-4100	I	12.0 (0.47)	2.0 (0.08)	40.0 (1.57)	40.0 (1.57)	Flush	NPN	2M PVC Cable	**65.00**
501-7082	9962-4163	J	12.0 (0.47)	2.0 (0.08)	60.0 (2.36)	40.0 (1.57)	Flush	NPN	63 Connector	**65.00**
501-7083	9962-4164	J	12.0 (0.47)	2.0 (0.08)	60.0 (2.36)	40.0 (1.57)	Flush	NPN	64 Connector	**75.00**
501-7084	9962-4165	J	12.0 (0.47)	2.0 (0.08)	60.0 (2.36)	40.0 (1.57)	Flush	NPN	65 Connector	**65.00**
501-7085	9962-4200	K	12.0 (0.47)	4.0 (0.16)	40.0 (1.57)	34.0 (1.34)	Non-Flush	PNP	2M PVC Cable	**65.00**
501-7086	9962-4263	L	12.0 (0.47)	4.0 (0.16)	60.0 (2.36)	34.0 (1.34)	Non-Flush	PNP	63 Connector	**65.00**
501-7087	9962-4264	L	12.0 (0.47)	4.0 (0.16)	60.0 (2.36)	34.0 (1.34)	Non-Flush	PNP	64 Connector	**75.00**
501-7088	9962-4265	L	12.0 (0.47)	4.0 (0.16)	60.0 (2.36)	34.0 (1.34)	Non-Flush	PNP	65 Connector	**65.00**
501-7089	9962-4300	K	12.0 (0.47)	4.0 (0.16)	40.0 (1.57)	34.0 (1.34)	Non-Flush	NPN	2M PVC Cable	**65.00**
501-7090	9962-4363	L	12.0 (0.47)	4.0 (0.16)	60.0 (2.36)	34.0 (1.34)	Non-Flush	NPN	63 Connector	**65.00**
501-7091	9962-4364	L	12.0 (0.47)	4.0 (0.16)	60.0 (2.36)	34.0 (1.34)	Non-Flush	NPN	64 Connector	**75.00**
501-7092	9962-4365	L	12.0 (0.47)	4.0 (0.16)	60.0 (2.36)	34.0 (1.34)	Non-Flush	NPN	65 Connector	**65.00**
501-7093	9964-4000	I	18.0 (0.71)	5.0 (0.20)	40.0 (1.57)	40.0 (1.57)	Flush	PNP	2M PVC Cable	**66.00**
501-7094	9964-4063	J	18.0 (0.71)	5.0 (0.20)	60.0 (2.36)	40.0 (1.57)	Flush	PNP	63 Connector	**66.00**
501-7095	9964-4065	J	18.0 (0.71)	5.0 (0.20)	60.0 (2.36)	40.0 (1.57)	Flush	PNP	65 Connector	**66.00**
501-7096	9964-4100	I	18.0 (0.71)	5.0 (0.20)	40.0 (1.57)	40.0 (1.57)	Flush	NPN	2M PVC Cable	**66.00**
501-7097	9964-4163	J	18.0 (0.71)	5.0 (0.20)	60.0 (2.36)	40.0 (1.57)	Flush	NPN	63 Connector	**66.00**
501-7098	9964-4165	J	18.0 (0.71)	5.0 (0.20)	60.0 (2.36)	40.0 (1.57)	Flush	NPN	65 Connector	**66.00**
501-7099	9964-4200	K	18.0 (0.71)	8.0 (0.31)	40.0 (1.57)	32.0 (1.26)	Non-Flush	PNP	2M PVC Cable	**66.00**
501-7100	9964-4263	L	18.0 (0.71)	8.0 (0.31)	60.0 (2.36)	32.0 (1.26)	Non-Flush	PNP	63 Connector	**66.00**
501-7101	9964-4265	L	18.0 (0.71)	8.0 (0.31)	60.0 (2.36)	32.0 (1.26)	Non-Flush	PNP	65 Connector	**66.00**
501-7102	9964-4300	K	18.0 (0.71)	8.0 (0.31)	40.0 (1.57)	32.0 (1.26)	Non-Flush	NPN	2M PVC Cable	**66.00**
501-7103	9964-4363	L	18.0 (0.71)	8.0 (0.31)	60.0 (1.57)	32.0 (1.26)	Non-Flush	NPN	63 Connector	**66.00**
501-7104	9964-4365	L	18.0 (0.71)	8.0 (0.31)	60.0 (1.57)	32.0 (1.26)	Non-Flush	NPN	65 Connector	**66.00**
501-7105	9966-4000	I	30.0 (1.18)	10.0 (0.39)	40.0 (1.57)	40.0 (1.57)	Flush	PNP	2M PVC Cable	**72.00**
501-7106	9966-4063	J	30.0 (1.18)	10.0 (0.39)	60.0 (2.36)	40.0 (1.57)	Flush	PNP	63 Connector	**72.00**
501-7107	9966-4065	J	30.0 (1.18)	10.0 (0.39)	60.0 (2.36)	40.0 (1.57)	Flush	PNP	65 Connector	**72.00**
501-7108	9966-4100	I	30.0 (1.18)	10.0 (0.39)	40.0 (1.57)	40.0 (1.57)	Flush	NPN	2M PVC Cable	**72.00**
501-7109	9966-4163	J	30.0 (1.18)	10.0 (0.39)	60.0 (2.36)	40.0 (1.57)	Flush	NPN	63 Connector	**72.00**
501-7110	9966-4165	J	30.0 (1.18)	10.0 (0.39)	60.0 (2.36)	40.0 (1.57)	Flush	NPN	65 Connector	**72.00**
501-7111	9966-4200	K	30.0 (1.18)	15.0 (0.59)	40.0 (1.57)	28.0 (1.10)	Non-Flush	PNP	2M PVC Cable	**72.00**
501-7112	9966-4263	L	30.0 (1.18)	15.0 (0.59)	60.0 (2.36)	40.0 (1.57)	Non-Flush	PNP	63 Connector	**72.00**
501-7113	9966-4265	L	30.0 (1.18)	15.0 (0.59)	60.0 (2.36)	40.0 (1.57)	Non-Flush	PNP	65 Connector	**72.00**
501-7114	9966-4300	K	30.0 (1.18)	15.0 (0.59)	40.0 (1.57)	28.0 (1.10)	Non-Flush	NPN	2M PVC Cable	**72.00**
501-7115	9966-4365	L	30.0 (1.18)	15.0 (0.59)	60.0 (2.36)	40.0 (1.57)	Non-Flush	NPN	65 Connector	**72.00**

*The 63 Connector is a 4 Pin, 12 mm (0.47 in.) clear Micro Change Connector with 360° LED viewing. The 64 Connector is a 3 Pin, 8 mm (0.31 in.) Pico Change Connector. The 65 Connector is a 4 Pin, 12 mm (0.47 in.) Micro Change Connector.

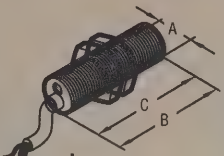
Extended Sensing Range

10-30 VDC, 200 mA, Normally Open (NO), IP67 (NEMA 1, 2, 3, 3R, 4, 4X, 5, 6, 12, 13) Protection, 1 LED.

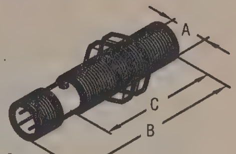
Stock No.	Mfr.'s Type	Fig.	Dia. A mm (in.)	Sensing Distance mm (in.)	Body Length B mm (in.)	Thread Length C mm (in.)	Mounting	DC Type	Connection Type*	EACH
501-7144	9981-4000	M	8.0 (0.31)	2.0 (0.08)	35.0 (1.34)	32.0 (1.26)	Flush	PNP	2M PVC Cable	**65.00**
501-7145	9962-3900	M	12.0 (0.47)	4.0 (0.16)	60.0 (2.36)	50.0 (1.97)	Flush	PNP	2M PVC Cable	**65.00**
501-7146	9962-3965	N	12.0 (0.47)	4.0 (0.16)	70.0 (2.76)	50.0 (1.97)	Flush	PNP	65 Connector	**79.00**
501-7147	9964-3900	M	18.0 (0.71)	8.0 (0.31)	60.0 (2.36)	50.0 (1.97)	Flush	PNP	2M PVC Cable	**67.00**
501-7148	9964-3965	N	18.0 (0.71)	8.0 (0.31)	70.0 (2.76)	50.0 (1.97)	Flush	PNP	65 Connector	**81.00**
501-7149	9966-3900	M	30.0 (1.18)	15.0 (0.59)	60.0 (2.36)	50.0 (1.97)	Flush	PNP	2M PVC Cable	**82.00**
501-7150	9966-3965	N	30.0 (1.18)	15.0 (0.59)	70.0 (2.76)	50.0 (1.97)	Flush	PNP	65 Connector	**96.00**

*The 65 Connector is a 4 Pin, 12 mm (0.47 in.) Micro Change Connector.

Flush Mount

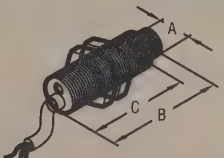


I

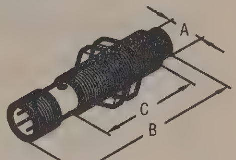


J

Non-Flush Mount

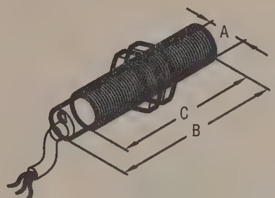


K

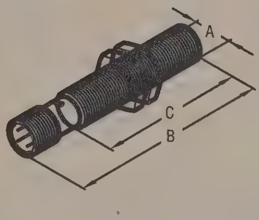


L

Flush Mount

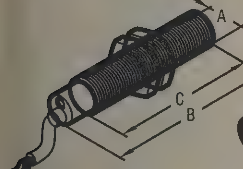


M

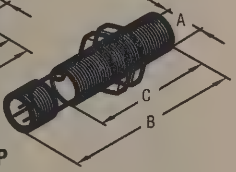


N

Flush Mount

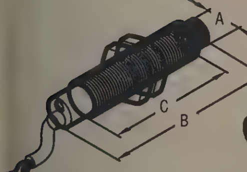


O

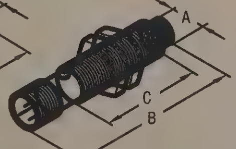


P

Non-Flush Mount



Q



R

AC Cylindrical Proximity Sensors

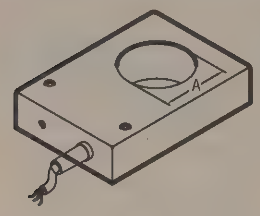
- ► **Brass, Nickel Plated (BN) Housing**
- ► **1 LED**
- ► **Normally Open (NO) Configuration**
- ► **2 Meter (6 ft., 6 in.) Cable or Quick Disconnect Styles**

90-250 VAC, 180 mA, IP67 (NEMA 1, 2, 3, 3R, 4, 4X, 5, 6, 12, 13) Protection, 1 LED.

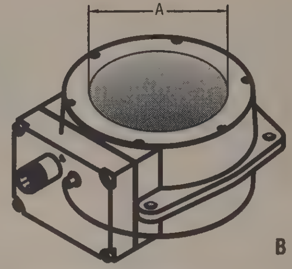
Stock No.	Mfr.'s Type	Fig.	Dia. A mm (in.)	Sensing Distance mm (in.)	Body Length B mm (in.)	Thread Length C mm (in.)	Mounting	Connection Type*	EACH
501-7116	9952-0500	O	12.0 (0.47)	2.0 (0.08)	60.0 (2.36)	50.0 (1.97)	Flush	2M PVC Cable	**87.00**
501-7117	9952-0562	P	12.0 (0.47)	2.0 (0.08)	90.0 (3.54)	55.0 (2.17)	Flush	62 Connector	**99.00**
501-7118	9952-0566	P	12.0 (0.47)	2.0 (0.08)	60.0 (2.36)	40.0 (1.57)	Flush	66 Connector	**92.00**
501-7119	9952-0567	P	12.0 (0.47)	2.0 (0.08)	60.0 (2.36)	40.0 (1.57)	Flush	67 Connector	**92.00**
501-7120	9952-0568	P	12.0 (0.47)	2.0 (0.08)	60.0 (2.36)	40.0 (1.57)	Flush	68 Connector	**92.00**
501-7121	9952-0400	Q	12.0 (0.47)	4.0 (0.16)	60.0 (2.36)	44.0 (1.73)	Non-Flush	2M PVC Cable	**87.00**
501-7122	9952-0462	R	12.0 (0.47)	4.0 (0.16)	90.0 (3.54)	49.0 (1.93)	Non-Flush	62 Connector	**99.00**
501-7123	9952-0466	R	12.0 (0.47)	4.0 (0.16)	60.0 (2.36)	34.0 (1.34)	Non-Flush	66 Connector	**92.00**
501-7124	9952-0467	R	12.0 (0.47)	4.0 (0.16)	60.0 (2.36)	34.0 (1.34)	Non-Flush	67 Connector	**92.00**
501-7125	9952-0468	R	12.0 (0.47)	4.0 (0.16)	60.0 (2.36)	34.0 (1.34)	Non-Flush	68 Connector	**92.00**
501-7126	9954-2200	O	18.0 (0.71)	5.0 (0.20)	60.0 (2.36)	50.0 (1.97)	Flush	2M PVC Cable	**82.00**
501-7127	9954-2262	P	18.0 (0.71)	5.0 (0.20)	90.0 (3.54)	55.0 (2.17)	Flush	62 Connector	**92.00**
501-7128	9954-2266	P	18.0 (0.71)	5.0 (0.20)	60.0 (2.36)	40.0 (1.57)	Flush	66 Connector	**87.00**
501-7129	9954-2267	P	18.0 (0.71)	5.0 (0.20)	60.0 (2.36)	40.0 (1.57)	Flush	67 Connector	**87.00**
501-7130	9954-2268	P	18.0 (0.71)	5.0 (0.20)	60.0 (2.36)	40.0 (1.57)	Flush	68 Connector	**87.00**
501-7131	9954-1900	Q	18.0 (0.71)	8.0 (0.31)	60.0 (2.36)	42.0 (1.65)	Non-Flush	2M PVC Cable	**82.00**
501-7132	9954-1962	R	18.0 (0.71)	8.0 (0.31)	90.0 (3.54)	47.0 (1.85)	Non-Flush	62 Connector	**92.00**
501-7133	9954-1966	R	18.0 (0.71)	8.0 (0.31)	60.0 (2.36)	32.0 (1.26)	Non-Flush	66 Connector	**87.00**
501-7134	9954-1967	R	18.0 (0.71)	8.0 (0.31)	60.0 (2.36)	32.0 (1.26)	Non-Flush	67 Connector	**87.00**
501-7135	9954-1968	R	18.0 (0.71)	8.0 (0.31)	60.0 (2.36)	32.0 (1.26)	Non-Flush	68 Connector	**87.00**
501-7136	9956-1500	O	30.0 (1.18)	10.0 (0.39)	60.0 (2.36)	50.0 (1.97)	Flush	2M PVC Cable	**84.00**
501-7137	9956-1562	P	30.0 (1.18)	10.0 (0.39)	90.0 (3.54)	55.0 (2.17)	Flush	62 Connector	**95.00**
501-7138	9956-1566	P	30.0 (1.18)	10.0 (0.39)	60.0 (2.36)	50.0 (1.97)	Flush	66 Connector	**90.00**
501-7139	9956-1567	P	30.0 (1.18)	10.0 (0.39)	60.0 (2.36)	50.0 (1.97)	Flush	67 Connector	**90.00**
501-7140	9956-1568	P	30.0 (1.18)	10.0 (0.39)	60.0 (2.36)	50.0 (1.97)	Flush	68 Connector	**90.00**
501-7141	9956-1400	Q	30.0 (1.18)	15.0 (0.59)	60.0 (2.36)	38.0 (1.50)	Non-Flush	2M PVC Cable	**84.00**
501-7142	9956-1462	R	30.0 (1.18)	15.0 (0.59)	90.0 (3.54)	43.0 (1.69)	Non-Flush	62 Connector	**95.00**
501-7143	9956-1466	R	30.0 (1.18)	15.0 (0.59)	60.0 (2.36)	28.0 (1.10)	Non-Flush	66 Connector	**90.00**

*The 62 Connector is a 3 Pin, 25.4 mm (1.0 in.) Mini Change Connector; the 66 Connector is a 4 Pin, 12 mm (0.47 in.) Micro Change Connector; the 67 Connector is a 4 Pin, 12 mm (0.47 in.) Micro Change Connector with 360° LED Viewing; the 68 Connector is a 3 Pin 12 mm (0.47 in.) Micro Change Connector.

DC Ring Proximity Sensors



A



B

- ► Detect Small Precision Parts
- ► Use in Stamping/Punching Operations

DC Ring, Plastic Body

Normally Open (NO), PNP, 10-30 VDC, IP67 (NEMA 1, 2, 3, 3R, 4, 4X, 5, 6, 12, 13) Protection.

Stock No.	Mfr.'s Type	Fig.	Ring Dia. A mm (in.)	Min. Target Detection, Steel Ball Dia. mm (in.)	Output Current	EACH
501-7151	9702-0400	A	12.0 (0.47)	2.5 (0.10)	400 mA	**174.00**
501-7152	9702-0500	A	20.0 (0.79)	6.0 (0.24)	200 mA	**120.00**
501-7153	9705-0500	A	43.0 (1.69)	9.0 (0.35)	200 mA	**196.00**

DC Ring, High Sensitivity

Normally Open (NO), Metal Body, NPN, 20-30 VDC, IP67 (NEMA 1, 2, 3, 3R, 4, 4X, 5, 6, 12, 13) Protection.

501-7154	9702-0259	B	20.0 (0.79)	0.5 (0.02)	50 mA	**1853.00**
501-7155	9701-0259	B	50.0 (1.97)	1.0 (0.04)	50 mA	**1957.00**
501-7156	9701-0759	B	50.0 (1.97)	0.8 (0.03)	50 mA	**2096.00**
501-7157	9711-0059	B	70.0 (2.76)	1.1 (0.04)	50 mA	**2095.00**
501-7158	9700-0159	B	100.0 (3.94)	1.6 (0.06)	50 mA	**2173.00**
501-7159	9703-0159	B	200.0 (7.87)	3.0 (0.12)	50 mA	**2960.00**
501-7160	9704-0159	B	300.0 (11.81)	5.0 (0.20)	50 mA	**3229.00**

*Sensitivity is adjustable. **Note:** Must be operated with 8102-0900 amplifier.

DC Ring, Normal Sensitivity

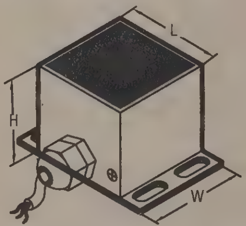
Metal Body, PNP,10-30V DC, IP67 (NEMA 1, 2, 3, 3R, 4, 4X, 5, 6, 12, 13) Protection.

501-7161	9705-0659	B	50.0 (1.97)	3.0 (0.12)	80 mA	**673.00**
501-7162	9708-0559	B	100.0 (3.94)	8.0 (0.31)	80 mA	**694.00**
501-7163	9708-0659	B	100.0 (3.94)	6.0 (0.24)	80 mA	**715.00**
501-7164	9706-0659	B	200.0 (7.87)	15.0 (0.59)	80 mA	**1574.00**
501-7165	9707-0659	B	300.0 (11.81)	30.0 (1.18)	80 mA	**1780.00**

*Sensitivity is adjustable. **Note:** Can be operated with 8300-0100 amplifier/power supply.

10

Block Proximity Sensors



- ► For Large Sensing Distances Up to 70 mm (2.76 in.)
- ► Normally Open (NO) Configuration
- ► 2 Meter (6 ft., 6 in.) PVC Polyvinylchloride Cable Outputs
- ► DC and AC Available
- ► Some Models Offer Adjustable Sensing Distance

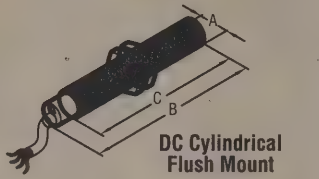
Block Series AC and DC

IP67 (NEMA 1, 2, 3, 3R, 4, 4X, 5, 6, 12, 13) Protection, 1 LED.

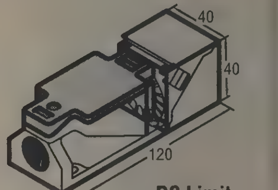
Stock No.	Mfr.'s Type	Size (L × W × H) mm (in.)	Sensing Distance mm (in.)	Operation Voltage	Max. Current	Mounting	Type	EACH
501-7166	9863-0400	40 × 12 × 26 (1.57 × .47 × 1.02)	2.0 (0.08)	10-30 VDC	400 mA	Flush	DC-PNP	**65.00**
501-7167	9863-2100	40 × 12 × 26 (1.57 × .47 × 1.02)	2.0 (0.08)	10-30 VDC	400 mA	Flush	DC-NPN	**65.00**
501-7168	9863-2700	40 × 12 × 26 (1.57 × .47 × 1.02)	4.0 (0.16)	10-30 VDC	200 mA	Non-Flush	DC-PNP	**65.00**
501-7169	9864-0200	53 × 22 × 9.5 (2.09 × .87 × .37)	6.0 (0.24)	10-30 VDC	400 mA	Flush	DC-PNP	**78.00**
501-7170	9863-4000	34 × 34 × 80 (1.34 × 1.34 × 3.15)	13.0 (0.51)	10-30 VDC	400 mA	Flush	DC-PNP	**72.00**
501-7171	9807-0900*	50 × 50 × 47 (1.97 × 1.97 × 1.85)	40.0 (1.57)	10-30 VDC	400 mA	Flush	DC-PNP	**158.00**
501-7172	9807-0100*	50 × 50 × 47 (1.97 × 1.97 × 1.85)	40.0 (1.57)	10-30 VDC	400 mA	Flush	DC-NPN	**158.00**
501-7173	9865-1100*	80 × 80 × 40 (3.15 × 3.15 × 1.57)	40.0 (1.57)	10-30 VDC	200 mA	Flush	DC-PNP	**163.00**
501-7174	9865-1000*	80 × 80 × 40 (3.15 × 3.15 × 1.57)	50.0 (1.97)	10-30 VDC	200 mA	Non-Flush	DC-PNP	**142.00**
501-7175	9809-0100*	100 × 50 × 40 (3.94 × 1.97 × 1.57)	70.0 (2.76)	10-30 VDC	400 mA	Non-Flush	DC-PNP	**262.00**
501-7176	9809-0300*	100 × 50 × 40 (3.94 × 1.97 × 1.57)	70.0 (2.76)	10-30 VDC	400 mA	Non-Flush	DC-NPN	**262.00**
501-7177	9853-2400	40 × 12 × 26 (1.57 × .47 × 1.02)	2.0 (0.08)	90-250 VAC	180 mA	Flush	AC	**93.00**
501-7178	9853-3800	34 × 34 × 80 (1.34 × 1.34 × 3.15)	13.0 (0.51)	20-280 VAC	500 mA	Non-Flush	AC	**87.00**
501-7179	9855-0062	50 × 50 × 41 (1.97 × 1.97 × 1.61)	20.0 (0.79)	20-250 VAC	500 mA	Flush	AC	**142.00**
501-7180	9803-3000	70 × 70 × 60 (2.76 × 2.76 × 2.36)	40.0 (1.57)	20-250 VAC	500 mA	Flush	AC	**226.00**
501-7181	9855-1000	80 × 80 × 40 (3.15 × 3.15 × 1.57)	50.0 (1.97)	20-250 VAC	500 mA	Non-Flush	AC	**163.00**

*Adjustable Sensing Distance.

Analog Proximity Sensors



DC Cylindrical Flush Mount



DC Limit

- ► Detect Target Distance from the Sensing Head
- ► Provide an Analog Output Voltage
- ► Cylindrical and Limit Style Available

DC Cylindrical Series

18-30 VDC. **Analog Output:** 1-9 VDC. **Maximum Load Current:** 5 mA. IP67 (NEMA 1, 2, 3, 3R, 4, 4X, 5, 6, 12, 13) Protection, 1 LED.

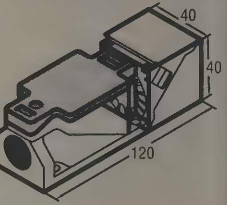
Stock No.	Mfr.'s Type	Dia. A mm (in.)	Sensing Range mm (in.)	Body Length B mm (in.)	Thread Length C mm (in.)	Mounting	EACH
501-7182	9914-0800	12.0 (0.47)	0.5-2.5 (0.02-0.01)	80.0 (3.15)	70.0 (2.76)	Flush	**137.00**
501-7183	9914-0900	18.0 (0.71)	1.0-4.0 (0.04-0.16)	80.0 (3.15)	70.0 (2.76)	Flush	**147.00**
501-7184	9914-1000	30.0 (1.18)	7.0-14.0 (0.28-0.55)	80.0 (3.15)	58.0 (2.28)	Non-Flush	**164.00**

DC Limit Style

18-30 VDC. **Analog Output:** 1-9 VDC. **Maximum Load Current:** 5 mA. IP67 (NEMA 1, 2, 3, 3R, 4, 4X, 5, 6, 12, 13) Protection, 2 LED.

Stock No.	Mfr.'s Type	Sensing Range mm (in.)	Mounting	EACH
501-7185	9814-1100	10.0-20.0 (0.39-0.79)	Non-Flush	**142.00**

Limit Style Proximity Sensors



- ► 17 Position Sensing Head
- ► Switch Programmable Normally Open (NO) or Normally Closed (NC)
- ► Threaded Opening: ½" — 14 NPT
- ► Rigid Snap Together Construction — No Screws
- ► 3 LEDs for LS/GLDC Sensors, All Other Models Have 2 LEDs
- ► Total Circuit Protection (Short Circuit, Overload, Reverse Polarity, Wire Break) for DC and AC/DC Versions Only

LS/LDC Limit Style Sensors

10-30 VDC, 120 mA, IP67 (NEMA 1, 2, 3, 3R, 4, 4X, 5, 6, 12, 13) Protection.

Stock No.	Mfr.'s Type	Sensing Distance mm (in.)	Mounting	DC Type	EACH
501-7186	9883-2033	20.0 (0.79)	Flush	PNP	**78.00**
501-7187	9883-2233	40.0 (1.57)	Non-Flush	PNP	**94.00**
501-7188	9883-2333	20.0 (0.79)	Flush	NPN	**78.00**
501-7189	9883-2533	40.0 (1.57)	Non-Flush	NPN	**94.00**

LS/GLDC Limit Style Sensors

10-60 VDC, 400 mA, IP67 (NEMA 1, 2, 3, 3R, 4, 4X, 5, 6, 12, 13) Protection.

501-7190	9883-3033	20.0 (0.79)	Flush	PNP	**87.00**
501-7191	9883-3233	40.0 (1.57)	Non-Flush	PNP	**104.00**
501-7192	9883-3333	20.0 (0.79)	Flush	NPN	**87.00**
501-7193	9883-3533	40.0 (1.57)	Non-Flush	NPN	**104.00**

LS/GLAC Limit Style Sensors

20-250 VAC, 500 mA, IP67 (NEMA 1, 2, 3, 3R, 4, 4X, 5, 6, 12, 13) Protection.

Stock No.	Mfr.'s Type	Sensing Distance mm (in.)	Mounting	EACH
501-7194	9873-3031	20.0 (0.79)	Flush	**93.00**
501-7195	9873-3231	40.0 (1.57)	Non-Flush	**104.00**

AC/DC Limit Style Sensors

20-250 VAC/DC, 500 mA, IP67 (NEMA 1, 2, 3, 3R, 4, 4X, 5, 6, 12, 13) Protection.

501-7196	9873-0031	20.0 (0.79)	Flush	**106.00**
501-7197	9873-0231	40.0 (1.57)	Non-Flush	**120.00**

Accessories

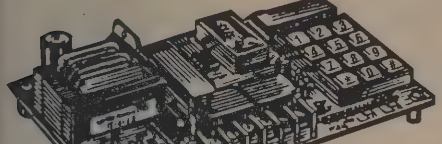
DC Cables with Connectors. 2 meter (6 ft., 6 in.) length, PVC polyvinylchloride.

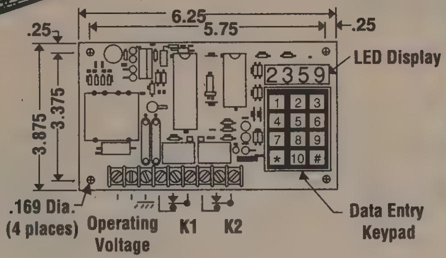
501-7250. 8000-5030. Connector Type 62. Straight	**EACH 26.00**
501-7251. 8000-5110. Connector Type 63/65. Straight	**EACH 19.50**
501-7252. 8000-5120. Connector Type 63/65. 90° (right angle) LEDs	**EACH 19.50**
501-7253. 8000-5150. Connector Type 63/65. 90° — 2 LED for NPN	**EACH 25.00**
501-7254. 8000-5160. Connector Type 63/65. 90° — 2 LED for PNP	**EACH 25.00**
501-7255. 8000-5220. Connector Type 64. Straight	**EACH 22.50**
501-7256. 8000-5230. Connector Type 64. 90° — 2 LED for PNP	**EACH 31.50**
501-7257. 8000-5240. Connector Type 64. 90° — 2 LED for NPN	**EACH 31.50**

AC Cables with Connectors. 2 meter (6 ft., 6 in.) length, PVC polyvinylchloride.

501-7258. 8000-5040. Connector Type 62. Straight	**EACH 30.00**
501-7259. 8000-5050. Connector Type 66/67. 90°	**EACH 19.50**
501-7260. 8000-5070. Connector Type 66/67. Straight	**EACH 19.50**
501-7261. 8000-5130. Connector Type 68. Straight	**EACH 19.50**
501-7262. 8000-5140. Connector Type 68. 90°	**EACH 19.50**

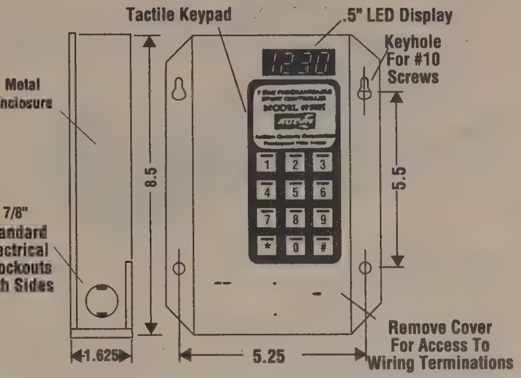
7 Day Programmable Controllers





4950

4950B
4950H

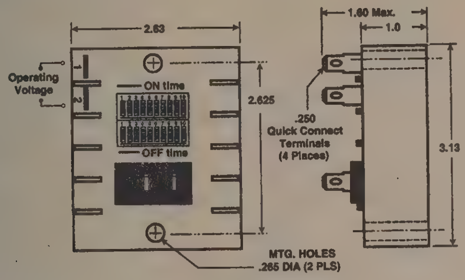

Tactile Keypad
.5" LED Display
Keyhole For #10 Screws
Metal Enclosure
7/8" Standard Electrical Knockouts Both Sides
8.5
5.5
1.625
5.25
Remove Cover For Access To Wiring Terminations

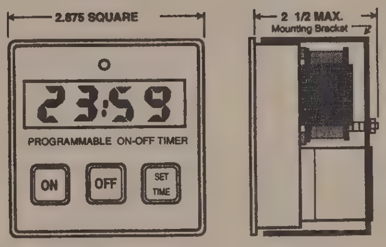
These Programmable Controllers program two separate relays to turn ON or OFF up to 56 times during a 7 day period. Once a pattern of events is programmed, they will operate on a continuous basis, remembering the program, time of day and day of week even during a power failure. **Operating Voltage:** 105-135 VAC, 50-60 Hz. **Operating Temperature:** 0° to + 70°C. **Accuracy:** + 2 minutes per month. **Display:** 4 digit, LED type, 0.5" high. **Output:** Two (2) SPDT sets of programmable contacts. 4950 — rated at 5 amperes, 4950H — rated at 15 amperes. **Construction:** 4950 — open P.C. Board with screw terminals. 4950H — Metal enclosure with a 9 pin terminal strip to accommodate 12 AWG or smaller wiring. Two standard electrical knockout provided. **Other Voltages Available.**

519-5210.	Model 4950-115VAC	**EACH 176.75**
519-6000.	Model 4950H-115VAC	**EACH 231.00**
519-6001.	Model 4950B-115VAC	**EACH 231.00**
519-6002.	Model 4950PM-115VAC	**EACH 151.00**

***Model 4950 "B" is specially designed to ring school or factory bells.**

Repeat Cycle Timers


2.63
Operating Voltage
ON time
OFF time
2.625
1.60 Max.
1.0
.250 Quick Connect Terminals (4 Places)
3.13
MTG. HOLES .265 DIA (2 PLS)



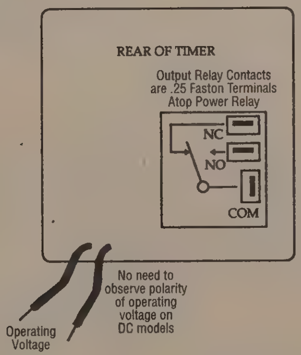
4608 ON/OFF Repeat Cycle Timer. The model 4608 is a solid state timing module that operates a set of high power 20 Amp contacts on a repeat cycle basis. The on and off times of the cycle are set with DIP switches. The on and off time can be set from 1-1024 seconds in one second increments. The output contacts are closed for the portion of the cycle which always starts first on initial application of operating voltage. SPST normally open contacts rated at 20 amps. **Terminals:**(Input/Output) .250 Quick Connect. **Voltage:** 115 VAC.

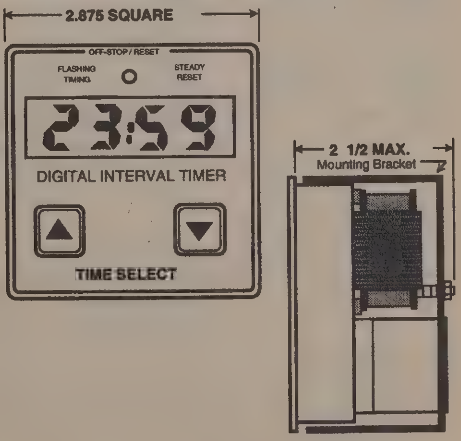
519-6003. Model 4608..**EACH 62.00**

4980 Repeat Cycle Timer. The 4980 is a microcontroller based on-off timed with digital display of timing. The 4980 controls a set of high current output contacts in accordance with a preprogrammed on-off schedule which continues for as long as power is applied. The on and off time can be programmed to be any time from 1 second to 99 minutes and 59 seconds in 1 second increments. Sealed tactile front panel; large 1/2" LED display; audible alarm; 20 Amp output. **Wiring:** 3, 1/4" quick connect terminals supplied for contacts, 2, 18 AWG Stranded Wires, 12" long supplied for operating voltage.

519-6005. Model 4980-2-115VAC..**EACH 145.00**

Digital Countdown Interval Timers


REAR OF TIMER
Output Relay Contacts are .25 Faston Terminals Atop Power Relay
NC
NO
COM
No need to observe polarity of operating voltage on DC models
Operating Voltage



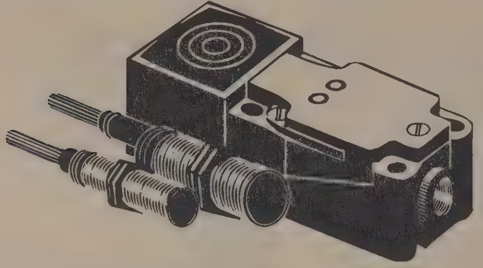
The **Model 4970** is a microcontroller-based interval timer with digital display of timing. High power 20 amp, SPDT output contacts. Preset time kept in non-volatile memory. Countdown can be stopped in middle of countdown cycle. Always remembers last time selected and resets to that time. Front panel overlay provides protection. Easy setting with two buttons. **Operating Voltage:** 105 VAC- 130 VAC. **Timing Range:** The time base can be programmed to countdown the time in the following ranges — 000.1-999.9 seconds, 0001-9999 seconds, 00:01-59:59 minutes:seconds, and 00:01-23:59 hours:minutes. **Display:** 4 digit red LED, 0.5" characters. **Timing Accuracy:** Better than 1% over operating temperature and voltage. **Operating Temperature:** 0 to 70°C. **Audible Indicator:** A solid state alarm will sound for 5 seconds at the end of a timing cycle. **Front Panel Switches:** 3 momentary push-buttons behind front panel label overlay, 2 for setting the time and 1 for starting and stopping the timer. **Mounting:** 2.62" square cutout accepts timer. Timer secured with rear attached bracket. **Wiring Terminals:** .25" quick connect terminals.

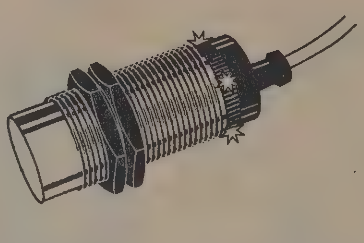
519-1276. Model 4970-2..**EACH 146.66**

4972 Count Down Interval Timer. The 4972 is a digital countdown timer with remote start, and provides 20 Amps High Capacity output contacts.The time base can be programmed to countdown the time in one of four selectable ranges — 000.1-999.9 seconds, 0001-9999 seconds, 00:01-99:59 minutes:seconds, and 00:01-23:59 hours:minutes. The 4972 has a selection switch which allows the user to select 115 or 230 VAC, 50/60 Hz input voltages. Large 1/2" LED display; microcomputer control; time memory retention; tactile front panel; remote start operation.

519-6004. Model 4972..**EACH 172.00**

Proximity/Photoelectric Sensors





EI Inductive Sensors

- ► For Sensing of All Ferrous Metals
- ► 12, 18 and 30 mm Diameters
- ► Stainless Steel Housing or Polyester Housing
- ► Sensing Distances Up to 25 mm
- ► Easy to View LED Indication

Common Applications Include:

- ► End of Travel Detection
- ► Broken Drill or Saw Blade Detection
- ► RPM/Zero Speed Detection

EC Capacitive Sensors

- ► For Sensing of Granulates, Plastics and other Ferrous/Non-Ferrous Materials
- ► 18 and 30 mm Diameters Polyester Housings
- ► NEW Patented TRIPLESHIELD™ Protection with Ring LED Indication†
- ► Easy to View LED Indication
- ► Adjustable Sensitivity

Common Applications Include:

- ► Grain/Plastic Pellet Hopper Level Detection
- ► Level Control Through Sight Glass
- ► Detection Inside of Cardboard/Plastic Containers

EO Photoelectric Sensors

- ► For Sensing of Light Colored/Reflective Objects
- ► Detects up to 16 Inches (400 mm)
- ► Rugged 18 mm Nickel Plated Brass Housing
- ► Easy to View LED Indication
- ► Adjustable 270° Potentiometer

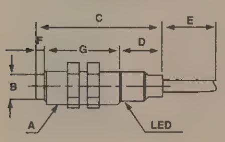
Common Applications Include:

- ► Material Detection on a Conveyor
- ► People and/or Vehicle Detection Through Doorway/Aisle
- ► Detection of Parts in an Automation Process

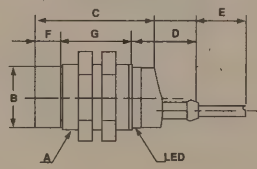
Stock No.	Mfr.'s Type	Sensing Technology	Housing (Thread) Material	Diameter (mm)	Sensing Range (mm)	Shielded (Flush Mount)	Supply Voltage	Output Type*	Maximum Current (mA)	Switching Speed (Hz)	EACH
251-1101	EI 1202 NPOPS	Inductive	PBTP	12	2	yes	10-40 VDC	NPN N/O	200	800	**37.00**
251-1102	EI 1202 NPOSS	Inductive	SS 304	12	2	Yes	10-40 VDC	NPN N/O	200	800	**49.00**
251-0003	EI 1202 TBOS	Inductive	SS 304	12	2	Yes	20-250 VAC	SCR N/O	500	25	**76.00**
251-1103	EI 1204 NPOPS	Inductive	PBTP	12	4	No	10-40 VDC	NPN N/O	200	500	**37.00**
251-1104	EI 1204 NPOSS	Inductive	SS 304	12	4	No	10-40 VDC	NPN N/O	200	500	**49.00**
251-0007	EI 1204 TBOS	Inductive	SS 304	12	4	No	20-250 VAC	SCR N/O	500	25	**76.00**
251-1105	EI 1805 NPOPS	Inductive	PBTP	18	5	Yes	10-40 VDC	NPN N/O	200	500	**43.00**
251-1106	EI 1805 TBOS	Inductive	SS 304	18	5	Yes	10-40 VAC	NPN N/O	200	500	**57.00**
251-0010	EI 1805 TBOS	Inductive	SS 304	18	5	Yes	20-250 VAC	SCR N/O	500	25	**84.00**
251-1107	EI 1808 NPOPS	Inductive	PBTP	18	8	No	10-40 VDC	NPN N/O	200	400	**43.00**
251-1108	EI 1808 NPOSS	Inductive	SS 304	18	8	No	10-40 VDC	NPN N/O	200	400	**57.00**
251-0013	EI 1808 TBOS	Inductive	SS 304	18	8	No	20-250 VAC	SCR N/O	500	25	**84.00**
251-1109	EI 3010 NPOPS	Inductive	PBTP	30	10	Yes	10-40 VDC	NPN N/O	200	300	**48.00**
251-1110	EI 3010 NPOSS	Inductive	SS 304	30	10	Yes	10-40 VDC	NPN N/O	200	300	**64.00**
251-0016	EI 3010 TBOS	Inductive	SS 304	30	10	Yes	20-250 VAC	SCR N/O	500	25	**85.00**
251-1111	EI 3015 NPOPS	Inductive	PBTP	30	15	No	10-40 VDC	NPN N/O	200	100	**48.00**
251-1112	EI 3015 NPOSS	Inductive	SS 304	30	15	No	10-40 VDC	NPN N/O	200	100	**74.00**
251-0019	EI 3015 TBOS	Inductive	SS 304	30	15	No	20-250 VAC	SCR N/O	500	25	**85.00**
251-1020	EIA 4025 NPAP	Inductive	PBTP	40 × 40	25	No	10-55 VDC	NPN N/O and C	200	100	**112.00**
251-1022	EIA 4025 UPAP	Inductive	PBTP	40 × 40	25	No	20-250 VAC/DC	VMOS N/O and C	250	100	**123.00**
251-0024	EC 1808 NPOP	Capacitive	PBTP	18	1-16	No	10-40 VDC	NPN N/O	200	25	**72.00**
251-0025	EC 1808 PPOP	Capacitive	PBTP	18	1-16	No	10-40 VDC	PNP N/O	200	25	**72.00**
251-0026	EC 1808 PPOP	Capacitive	PBTP	18	2-10	No	20-250 VAC	SCR N/O	500	10	**116.00**
251-0027	EC 1808 TBCP	Capacitive	PBTP	18	2-10	No	20-250 VAC	SCR N/C	500	10	**116.00**
251-0028	EC 3015 NNAP	Capacitive	PBTP	30	3-20	No	10-40 VDC	NPN N/O and C	200	60	**78.00**
251-0029	EC 3015 PNAP	Capacitive	PBTP	30	3-20	No	10-40 VDC	PNP N/O and C	200	60	**78.00**
251-0030	EC 3015 TBOP	Capacitive	PBTP	30	5-15	No	20-250 VAC	SCR N/O	500	10	**116.00**
251-0031	EC 3015 TBCP	Capacitive	PBTP	30	5-15	No	20-250 VAC	SCR N/C	500	10	**116.00**
251-1113	EC 3025 NPAPL†	Capacitive	PBTP	30	4-25	No	10-40 VDC	NPN N/O and C	200	100	**90.00**
251-1114	EC 3025 PPAPL†	Capacitive	PBTP	30	4-25	No	10-40 VDC	PNP N/O and C	200	100	**90.00**
251-1115	EC 3025 TBAPL†	Capacitive	PBTP	30	4-25	No	20-250 VAC	SCR N/O or C	500	25	**121.00**
251-0032	EO 1804 NPAS	Diffuse Photo	NiBr	18	0-400	Yes	10-40 VDC	NPN N/O and C	200	100	**83.00**
251-0033	EO 1804 PPAS	Diffuse Photo	NiBr	18	0-400	Yes	10-40 VDC	PNP N/O and C	200	100	**83.00**
251-0034	EO 1804 TBOS	Diffuse Photo	NiBr	18	0-400	Yes	20-250 VAC	SCR N/O	500	25	**95.00**
251-0035	EO 1840 TBCS	Diffuse Photo	NiBr	18	0-400	Yes	20-250 VAC	SCR N/C	500	25	**95.00**

*Upon request, most of the sensors above are available with M12 quick disconnect, PNP and/or N/C outputs. †Utilizes NEW patented TRIPLESHIELD™ protection from noise interference caused by ESD, GSM or transient bursts, also features a ring LED indication.

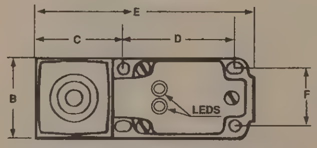
EI 1202 / EI 1204



EI 180x / EI 130x

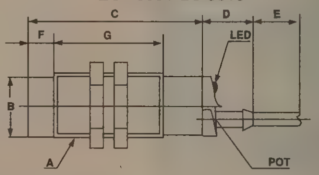


EIA 4025

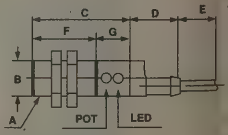


Rotatable Nine Position Sensing Head

EC 1808 / EC 3015



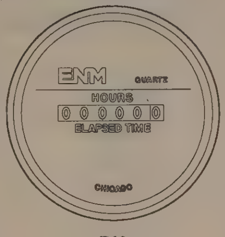
EO 1804



Sensor Dimensions

Mfr.'s Type	Dimensions (mm)						
	A	B	C	D	E	F	G
EI 1202 xPOxS	M12 × 1.0	10.7	46.0	16.0	2000	0.0	30
EI 1204 xPOxS	M12 × 1.0	10.7	50.0	16.0	2000	4.0	30
EI 1202 TBOS	M12 × 1.0	10.7	66.0	16.0	2000	0.0	50
EI 1204 TBOS	M12 × 1.0	10.7	70.0	16.0	2000	4.0	50
EI 1805 (All)	M18 × 1.0	16.7	40.1	23.5	2000	0.0	30
EI 1808 (All)	M18 × 1.0	16.7	48.1	23.5	2000	8.0	30
EI 3010 (All)	M30 × 1.5	28.0	40.6	25.0	2000	0.0	30
EI 3015 (All)	M30 × 1.5	28.0	52.6	25.0	2000	12.0	30
EIA 4025 (All)	—	40.0	46.0	60.0	120	30.0	PG 13.5
EC 1808 (All)	M18 × 1.0	16.5	79.0	20.5	2000	8.0	52
EC 3015 (All)	M30 × 1.5	28.0	79.0	20.5	2000	12.0	48
EO 1804 xPOS	M18 × 1.0	16.7	47.0	23.5	2000	30.0	17
EO 1804 TBOS	M18 × 1.0	16.7	63.5	23.5	2000	46.5	17

T40A and T50A Quartz Hour Meters



T40

ENM's Series T40/T50 hour meter is the answer to applications requiring a low power, economical, and a reliable hour meter. This compact, tamper-resistant meter is sealed against the environment to provide years of service. A quartz crystal time base insures supersilent operation and accurate time keeping. This AC voltage model is also frequency insensitive.

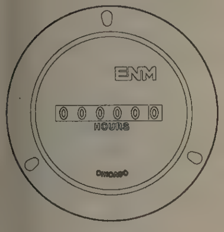
Power: Less than 0.4 watts.

207-0038. T50A1. 230 AC	**EACH 27.00**
207-0039. T50A2. 115 AC	**EACH 27.00**
207-0040. T50A4. 24 AC	**EACH 27.00**

Power: .03 watts at 12 VDC; .70 watts at 48 VDC.

207-0037. T40A45. 10-80 DC	**EACH 27.00**

T40B and T50B Quartz Hour Meters



T50

ENM's Series T40B and T50B in a large 3-hole flange. This unit has all the standard features which includes a quartz crystal time base in a sealed and tamper-resistant case. NEMA 4X, 12 rated gasket for corrosion and water resistant panel mounting is available (see accessories). This AC voltage model is also frequency insensitive.

Power: Less than 0.4 watts.

207-0001. T50B1. 230 AC	**EACH 27.00**
207-0002. T50B2. 115 AC	**EACH 27.00**
207-0003. T50B4. 24 AC	**EACH 27.00**

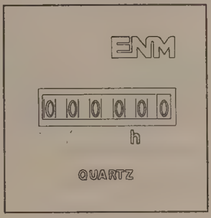
Power: .03 watts @ 12 VDC; .70 watts at 48 VDC.

207-0004. T40B45. 10-80 DC	**EACH 27.00**

Accessories

207-0005. A40047-S. NEMA Gasket	**EACH 1.62**
207-0006. B20017. NEMA Gasket with Mounting Hardware	**EACH 2.70**

T40E and T50E



This unit is the 52 mm panel mount version of the T40/T50 Series with a printed aluminum faceplate.

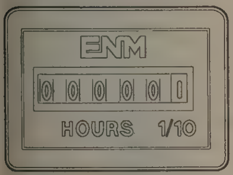
Power: Less than 0.4 watts.

207-0043. T50E213. 115 AC. Brushed Aluminum	**EACH 27.00**
207-0044. T50E113. 230 AC. Brushed Aluminum	**EACH 27.00**
207-0045. T50E413. 24 AC. Brushed Aluminum	**EACH 27.00**

Power: .03 watts at 12 VDC; .70 watts at 48 VDC.

207-0041. T40E4534. 10-80 DC. Brushed Aluminum	**EACH 27.00**
207-0042. T40E4536. 10-80 DC. Blacked Anodized	**EACH 27.00**

T41D and T51D



This is the panel mount version of the T41/T51 Series is secured with an easy to install spring clip. No fasteners are required. This unit has all the standard features which includes a 6-digit display, low power design, and a water sealed case. The DC voltage model is also polarity insensitive. AC voltage is frequency insensitive.

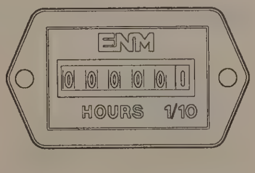
Power: .03 watts at 12 VDC; .70 watts at 48 VDC.

207-0033. T41D45. 10-80 DC	**EACH 27.00**

Power: .50 watts.

207-0034. T51D2. 115 AC	**EACH 27.00**
207-0035. T51D1. 230 AC	**EACH 27.00**
207-0036. T51D4. 24 AC	**EACH 27.00**

T41E and T51E Quartz Hour Meters



The Series T41E/T51E hour meter is ideal for applications requiring a low power, reliable, and economical hour meter. The solid state electronic circuit is a low power design that insures accurate time keeping over a large voltage range. The high impact plastic case is sealed against the environment. The DC voltage model is polarity insensitive. AC voltage is frequency insensitive.

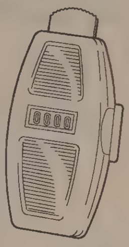
Power: .03 watts at 12 VDC; .70 watts at 48 VDC.

207-0007. T41E45. 10-80 VDC	**EACH 27.00**

Power: .50 watts.

207-0008. T51E2. 115 AC	**EACH 27.00**
207-0009. T51E1. 230 AC	**EACH 27.00**
207-0010. T51E4. 24 AC	**EACH 27.00**

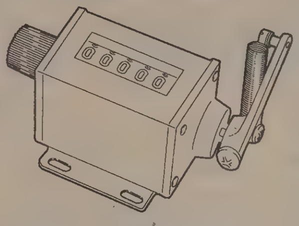
M24 Series Hand Tally



This hand held plastic tally is perfect for personal counting of events or operations. Unit comes with a reset knob on the side. A black unit is included with a base for desk mounting. A blue unit includes a 36" neck cord.

207-0015. M24Z01. Black Case with Base	**EACH 29.00**
207-0016. M24Z04. Blue Case with Neck Cord	**EACH 29.00**

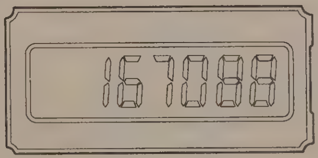
M39 Series Miniature Ratchet Driven Counter



The M39 is a mechanical counter in a case designed for rugged and corrosive environments. Easy base mounting and manual reset coupled with the long life design make this counter ideal for use on machine tools, vending machines, and many industrial applications. Lever is returned to original position by an internal spring. Standard unit is 5 digits. Also available in 3 and 4 digit counters by special order.

207-0011. M39CA50A. 5 digit, RH, Top Coming	**EACH 30.00**
207-0012. M39CA50B. 5 digit, RH, Top Going	**EACH 30.00**
207-0013. M39CA50C. 5 digit, LH, Top Coming	**EACH 30.00**
207-0014. M39CA50D. 5 digit, LH, Top Going	**EACH 30.00**

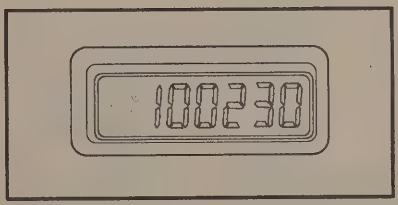
1101 Series DC Pulse PCB Counter



The ENM Series 1101 PCB pulse counter features a 6-digit, 7 segment LCD display with powerless data backup using CMOS EEPROM technology. These modes are ideal for applications where small space and high speed counting are required. An external reset is also available. **Memory:** EEProm. **Count Speed:** 500 Hz.

207-0017. LCD1111. 5-12 DC with Reset	**EACH 25.00**
207-0018. LCD1121. 5-12 DC	**EACH 25.00**
207-0019. LCD1131. 12-48 DC with Reset	**EACH 25.00**
207-0020. LCD1141. 12-48 DC	**EACH 25.00**
207-0023. LCD1171. 48-150 DC with Reset	**EACH 25.00**
207-0024. LCD1181. 48-150 DC	**EACH 25.00**

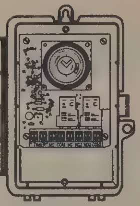
2101 Series DC Pulse Panel Mount Counter



This is the 2101 Series in a panel mount version. This series also has the optional external reset. **Memory:** EEProm. **Count Speed:** 500 Hz.

207-0025. LCD2111. 5-12 DC with Reset	**EACH 31.00**
207-0026. LCD2121. 5-12 DC	**EACH 31.00**
207-0027. LCD2131. 12-48 DC with Reset	**EACH 31.00**
207-0028. LCD2141. 12-48 DC	**EACH 31.00**
207-0031. LCD2171. 48-150 DC with Reset	**EACH 31.00**
207-0032. LCD2181. 48-150 DC	**EACH 31.00**

Enclosed Time Switches



- ► Size: 10" L × 6.5" W × 3.75" D
- ► SPDT or DPDT Switching
- ► Rating: 30 A, 240 V General Purpose, 2 HP, 240 V; 1 HP, 120 V Motor
- ► Manual On-Off-Auto Switch
- ► Electromechanical or Electronic
- ► Indoor or Outdoor Enclosure
- ► UL Listed, US and Canada

24 Hour and 7 Day

24 Hour — NEMA 1 Indoor Enclosure

Stock No.	Mfr.'s Type	Voltage	Switch	Max. On/Offs	EACH 1-9	EACH 10-25
684-0034	GM1 ST-I-120V	120 VAC	SPDT	48	71.60	64.44
684-0035	GM1 ST-I-240V	240 VAC	SPDT	48	76.70	69.03
684-0036	GMD ST-I-120V	120 VAC	DPDT	48	80.10	72.09
684-0037	GMD ST-I-240V	240 VAC	DPDT	48	83.40	75.06

24 Hour — NEMA 3R Indoor/Outdoor Enclosure

Stock No.	Mfr.'s Type	Voltage	Switch	Max. On/Offs	EACH 1-9	EACH 10-25
684-0038	GM1 ST-O-120V	120 VAC	SPDT	48	85.75	77.17
684-0039	GM1 ST-O-240V	240 VAC	SPDT	48	90.90	81.81
684-0040	GMD ST-O-120V	120 VAC	DPDT	48	94.25	84.82
684-0041	GMD ST-O-240V	240 VAC	DPDT	48	97.60	87.84

7 Day — NEMA 1 Indoor Enclosure

Stock No.	Mfr.'s Type	Voltage	Switch	Max. On/Offs	EACH 1-9	EACH 10-25
684-0042	GM1 SW-I-120V	120 VAC	SPDT	42	98.55	88.69
684-0043	GM1 SW-I-240V	240 VAC	SPDT	42	102.95	92.65
684-0044	GMD SW-I-120V	120 VAC	DPDT	42	106.00	95.40
684-0045	GMD SW-I-240V	240 VAC	DPDT	42	111.28	100.15

7 Day — NEMA 3R Indoor/Outdoor Enclosure

Stock No.	Mfr.'s Type	Voltage	Switch	Max. On/Offs	EACH 1-9	EACH 10-25
684-0046	GM1 SW-O-120V	120 VAC	SPDT	42	126.60	113.94
684-0047	GM1 SW-O-240V	240 VAC	SPDT	42	131.80	118.62
684-0048	GMD SW-O-120V	120 VAC	DPDT	42	133.90	120.51
684-0049	GMD SW-O-240V	240 VAC	DPDT	42	129.10	116.19

7 Day with Quartz Clock Motor; Provides 7 Day Battery Backup — NEMA 3R Indoor/Outdoor Enclosure

Stock No.	Mfr.'s Type	Voltage	Switch	Max. On/Offs	EACH 1-9	EACH 10-25
684-0050	GM1 QRW-O-120V	120 VAC	SPDT	42	235.55	211.99
684-0051	GM1 QRW-O-240V	240 VAC	SPDT	42	246.20	221.58
684-0052	GMD QRW-O-120V	120 VAC	DPDT	42	248.30	223.47
684-0053	GMD QRW-O-240V	240 VAC	DPDT	42	258.95	233.05

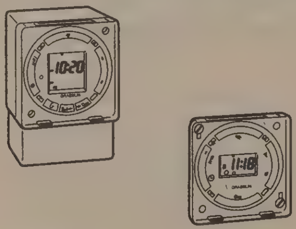
Electronic 24 Hour/7Day — NEMA 3R Indoor/Outdoor Enclosure

Stock No.	Mfr.'s Type	Voltage	Switch	Max. On/Offs	EACH 1-9	EACH 10-25
684-0054	GM1 Digi 20-O-120V	120 VAC	SPDT	20	171.00	153.90
684-0055	GM1 Digi 20-O-240V	240 VAC	SPDT	20	177.15	159.43
684-0056	GMD Digi 20-O-120V	120 VAC	DPDT	20	189.00	170.10
684-0057	GMD Digi 20-O-240V	240 VAC	DPDT	20	199.50	179.55

Electronic Two Channel — NEMA 3R Indoor/Outdoor Enclosure

Stock No.	Mfr.'s Type	Voltage	Switch	Max. On/Offs	EACH 1-9	EACH 10-25
684-0058	GM2 Digi 32-O-120V	120 VAC	2 SPDT	32	224.00	201.60
684-0059	GM2 Digi 32-O-240V	240 VAC	2 SPDT	32	235.00	211.50

Electronic 24 Hour and 7 Day Time Switches

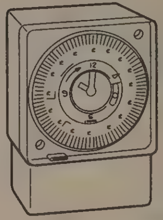


- ► SPDT Switch Rating: 16 A @ 250 VAC Resistive
- ► Manual On-Off-Auto Override
- ► UL Recognized, US and Canada

Digi 20A Surface or DIN Rail Mounting. Size: 2.83" W × 4.0" L × 2.06" D. Screw terminals, AWG 10-24 wire.
Digi 20E Flush Panel Mounting. Size: 2.83" W × 2.83" L × 1.36" D. 1/4" quick connect terminals.

Stock No.	Mfr.'s Type	Voltage	Min. On/Off Time	Max. On/Offs	EACH 1-9	EACH 10-25
684-0023	Digi 20A-24V	24 VAC	1 Min.	20	117.69	105.84
684-0024	Digi 20A-120V	120 VAC	1 Min.	20	114.10	102.69
684-0025	Digi 20A-240V	240 VAC	1 Min.	20	117.60	105.84
684-0026	Digi 20E-24V	24 VAC	1 Min.	20	114.10	102.69
684-0027	Digi 20E-120V	120 VAC	1 Min.	20	117.60	105.84
684-0028	Digi 20E-240V	240 VAC	1 Min.	20	114.10	102.69
684-0029	Digi 42A-12V	12 VDC	1 Min.	42	125.00	112.50
684-0030	Digi 42E-12V	12 VDC	1 Min.	42	120.00	108.00

Electromechanical 24 Hour and 7 Day Time Switches



- ► SPDT Switch Rating: 21 A @ 250 VAC Resistive; 2 HP, 240 V; 1 HP, 120 V Motor
- ► Captive Trippers
- ► Manual On-Off-Auto Override
- ► UL Recognized, CSA Certified

MIL 72A Surface or DIN Rail Mounting. Size: 2.83" W × 4.0" L × 2.06" D. Screw terminals, AWG 10-24 wire
MIL 72E Flush Panel Mounting. Size: 2.83" W × 2.83" L × 1.36" D. 1/4" quick connect terminals.

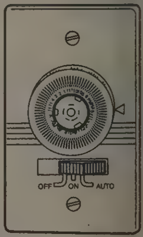
With Synchronous Clock Motor

Stock No.	Mfr.'s Type	Voltage	Time Program	Shortest On/Off Time	Max. On/Offs	EACH 1-9
684-0002	MIL72A ST-24V	24 VAC	24 Hr.	15 Min.	48	55.65
684-0003	MIL72A ST-120V	120 VAC	24 Hr.	15 Min.	48	54.00
684-0004	MIL72A ST-240V	240 VAC	24 Hr.	15 Min.	48	55.65
684-0005	MIL72E ST-24V	24 VAC	24 Hr.	15 Min.	48	54.10
684-0006	MIL72E ST-120V	120 VAC	24 Hr.	15 Min.	48	52.50
684-0007	MIL72E ST-240V	240 VAC	24 Hr.	15 Min.	48	54.10
684-0008	MIL72A SW-24V	24 VAC	7 Day	2 Hr.	42	79.55
684-0009	MIL72A SW-120V	120 VAC	7 Day	2 Hr.	42	77.20
684-0010	MIL72A SW-240V	240 VAC	7 Day	2 Hr.	42	79.55
684-0012	MIL72E SW-24V	24 VAC	7 Day	2 Hr.	42	78.00
684-0013	MIL72E SW-120V	120 VAC	7 Day	2 Hr.	42	75.65
684-0014	MIL72E SW-240V	240 VAC	7 Day	2 Hr.	42	78.00

With Quartz Clock Motor; Provides 7 Day Battery Backup of Time — (24 VAC Models also Operate on 12 to 24 VDC)

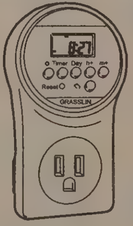
Stock No.	Mfr.'s Type	Voltage	Time Program	Shortest On/Off Time	Max. On/Offs	EACH 1-9
684-0015	MIL72A QRT-24V	24 VAC	24 Hr.	15 Min.	48	114.90
684-0016	MIL72A QRT-120V	120 VAC	24 Hr.	15 Min.	48	111.70
684-0017	MIL72E QRT-24V	24 VAC	24 Hr.	15 Min.	48	113.60
684-0018	MIL72E QRT-120V	120 VAC	24 Hr.	15 Min.	48	110.25
684-0019	MIL72A QRW-24V	24 VAC	7 Day	2 Hr.	42	120.20
684-0020	MIL72A QRW-120V	120 VAC	7 Day	2 Hr.	42	116.75
684-0021	MIL72E QRW-24V	24 VAC	7 Day	2 Hr.	42	118.80
684-0022	MIL72E QRW-120V	120 VAC	7 Day	2 Hr.	42	115.20

In-Wall Timer



- ► Replaces Std. Wall Switch
- ► Leadwire Connections
- ► 24 Hour Time Switch
- ► Captive Trippers
- ► Minimum 20 Minute On or Off Time
- ► Manual On-Auto-Off Switch
- ► 15 A, 120 VAC Switch Rating

684-0033. KM2 ST-IG. **1-9**....................EACH 37.60



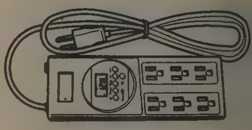
Electronic Plug-In Timer

- ► 3-Prong Plug for Std. Outlet
- ► Simple to Program
- ► 24 Hour and 7 Day Programs
- ► 1 Minute Program Intervals
- ► Up to 6 Ons and 6 Offs Per Day
- ► Rechargeable Battery Backup
- ► Manual Override
- ► 15 A, 120 VAC Switch Rating
- ► UL Listed

684-0001. CP 924. **1-9**....................EACH 42.20
10-24....................EACH 36.58
25-49....................EACH 33.76

Time Controlled Outlet Strips

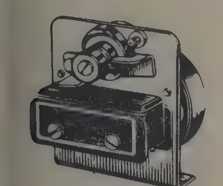
- ► UL Listed
- ► 3 Time Controlled Outlets, 3 Manually Switched Outlets
- ► 4 Ft. Line Cord with Ground
- ► 15 A Circuit Breaker
- ► Rating: 15 A, 125 VAC, Max.
- ► Size: 8 1/4" L × 3" W × 1 1/2" H
- ► Electronic Model Has Battery Backup
- ► Electromechanical Model Has Surge Suppression

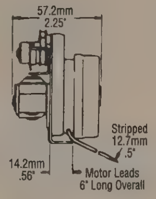


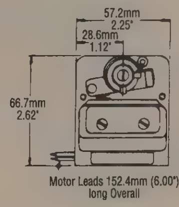
Electronic and Electromechanical

Stock No.	Mfr.'s Type	Timer Type	Time Program	Shortest On/Off Time	Max. On/Offs	EACH 1-9	EACH 10-25
684-0031	1450N	Mechanical	24 Hr.	15 Min.	48	60.00	50.00
684-0032	1451N	Electronic	7 Day	1 Min.	6	80.00	70.00

90 Series Delay Timers



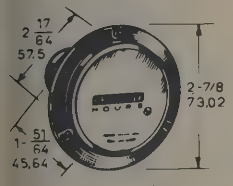




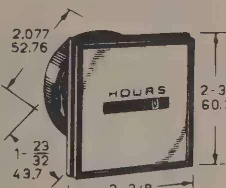
The 90 Series is a basic time delay timer designed for remote surface mounting where infrequent adjustment of the time delay setting is anticipated. It features automatic reset upon removal of power. These timers are designed for applications that do not require high repeat accuracy, fast reset or long time cycles. Isolated SPDT load switch rated at 10 amps. **Wiring:** Motor, 6-inch leads; switch, screw terminals. 120 VAC, UL and CSA approved.

Stock No.	Mfr.'s Type	Max. Setting	Min. Setting	EACH 1-9	EACH 10-24	EACH 25-Up
815-1009	90-6S	6 sec.	1/2 sec.	**103.85**	**96.43**	**90.00**
815-1010	90-15S	15 sec.	1 1/2 sec.	**103.85**	**96.43**	**90.00**
815-1011	90-30S	30 sec.	3 sec.	**103.85**	**96.43**	**90.00**
815-1012	90-60S	60 sec.	6 sec.	**103.85**	**96.43**	**90.00**

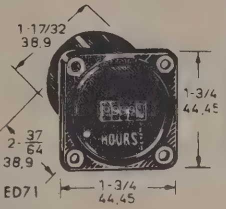
Non-Reset Elapsed Time Indicators



EF13



EF27



ED71

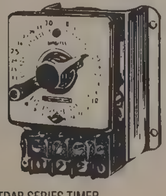
Wide variety of meters for use where accurate time readings are required. All are synchronous-motor driven. Round or square bezel. Panel mount and rear mount available. Non-resettable, readout is digital with a range of five figures plus tenths; in hours and tenths, †minutes and tenths or *4 figures and tenths. Units are 120VAC, 60 Hz. **Operating temperature:** -12°C to +55°C.

120 Volts AC 60 Hz

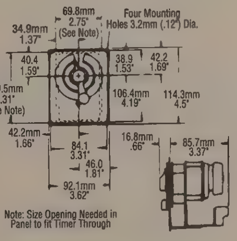
Stock No.	Mfr.'s Type	Bezel In.	Depth In.	Dia. In.	Max. W Motor Rating	Leads	EACH 1-9	EACH 10-24	EACH 25-49
815-0110	EF1333†	2 7/8 rd.	1 51/64	2 17/64	2.5	6"	**55.39**	**51.43**	**48.00**
815-0112	EF1335	2 7/8 rd.	1 51/64	2 17/64	2.5	6"	**55.39**	**51.43**	**48.00**
815-0118	EF2733†	2 3/8 sq.	1 23/32	2 5/64	5.0	6"	**55.39**	**51.43**	**48.00**
815-0120	EF2735	2 3/8 sq.	1 23/32	2 5/64	5.0	6"	**55.39**	**51.43**	**48.00**
815-0180	ED7112*	1 3/4 sq.	2 37/64	1 17/32	2.5	11 1/4"	**110.77**	**102.86**	**96.00**

TDAB and TDAF Series Timers

TDAF SERIES TIMER



TDAB SERIES TIMER

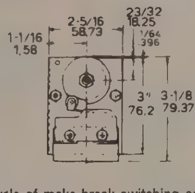


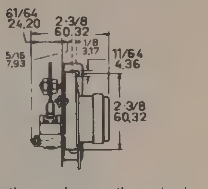
Note: Size Opening Needed in Panel to fit Timer Through

The TDAB and TDAF timers are rugged, high precision time delay timers. They feature automatic reset and an infinite-resolution clutch. The TDAF is designed for panel mounting while the TDAB is designed for back or surface mounting. On both units, wiring connections are made on the screw type terminal block. Both have isolated SPDT load switch rated at 15 amps, 120 VAC. UL and CSA approved.

Stock No.	Mfr.'s Type	Time Cycle	Dial Division	EACH 1-9	EACH 10-24	EACH 25-Up
815-1019	TDAB-6S	6 sec.	1/10 sec.	**174.23**	**161.77**	**151.00**
815-1020	TDAB-15S	15 sec.	1/4 sec.	**174.23**	**161.77**	**151.00**
815-1022	TDAB-60S	60 sec.	1 sec.	**174.23**	**161.77**	**151.00**
815-1023	TDAB-5M	5 min.	5 sec.	**174.23**	**161.77**	**151.00**
815-1024	TDAB-15M	15 min.	15 sec.	**174.23**	**161.77**	**151.00**
815-1026	TDAB-60M	60 min.	60 sec.	**174.23**	**161.77**	**151.00**
815-1027	TDAB-6S	6 sec.	1/10 sec.	**174.23**	**161.77**	**151.00**
815-1028	TDAF-15S	15 sec.	1/4 sec.	**174.23**	**161.77**	**151.00**
815-1030	TDAF-60S	60 sec.	1 sec.	**174.23**	**161.77**	**151.00**
815-1031	TDAF-60M	5 min.	5 sec.	**174.23**	**161.77**	**151.00**
815-1032	TDAF-15M	15 min.	15 sec.	**174.23**	**161.77**	**151.00**
815-1034	TDAF-60M	60 min.	60 sec.	**174.23**	**161.77**	**151.00**

Series RG21, Single Switch

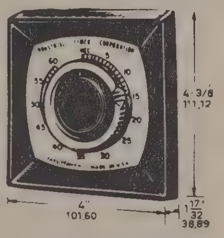




Designed to run continuously, repeating a set cycle of make-break switching operations as long as the motor is energized. This unit may be applied to operations requiring only a single time cycle. The unit's timing motor drives the cam to actuate a SPDT snap-action switch in a definite make-break sequence at predetermined speeds. Switch cams adjustable from minimum notch of 7° to a maximum notch of 169° (±3°). **Cam Shaft Speed for One Complete Revolution (360°):** RG21-093: 1 minute; RG21-096: 15 minutes; RG21-098: 60 minutes. 120V, 60 Hz. U.L. recognized and CSA listed.

Stock No.	Mfr.'s Type	EACH 1-9	EACH 10-24	EACH 25-49
815-0190	RG21-093	**76.15**	**70.71**	**66.00**
815-0194	RG21-096	**76.15**	**70.71**	**66.00**
815-0198	RG21-098	**76.15**	**70.71**	**66.00**

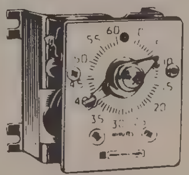
Type MPB Interval Timers

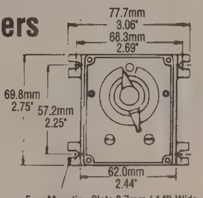


Depressing pushbutton in center of selector ring engages synchronous motor and closes SPDT snap action isolated load switch. At end of cycle, timer automatically resets to zero and opens load switch. Contact rated 15 amps non-inductive at 115 volts, 60 Hz AC. Double load operation possible. Specify timing range desired. **Shpg. wt.:** 3 lbs.

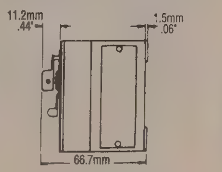
Stock No.	Mfr.'s Type	Time Setting Max.	Time Setting Min.	EACH 1-9	EACH 10-24	EACH 25-49
815-0324	MPB15M	15 min.	15 sec.	**86.54**	**80.36**	**75.00**
815-0328	MPB60M	60 min.	60 sec.	**86.54**	**80.36**	**75.00**

SF and CSF Series Timers





Four Mounting Slots 3.7mm (.14") Wide

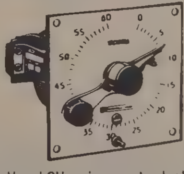


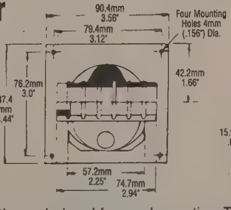
†CSF Models 73.9mm 2.91"

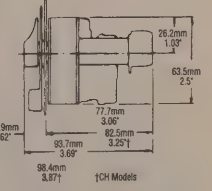
These standard time delay timers are designed for remote surface mounting where infrequent adjustment of the time delay setting is anticipated. The SF timers are in the 6, 15, and 30 second ranges and use a clutch motor. The CSF timers operate in ranges of 1 minute and above and use an external clutch to provide fast reset. Both units feature automatic reset upon removal of power, and isolated SPDT load switch. The CSF also features a motor control switch to protect the motor at the end of the time cycle. **Repeat Accuracy:** SF—±1%; CSF—±1.5%. 10 amp load switch contacts, screw terminal wiring. 120 VAC. UL and CSA approved.

Stock No.	Mfr.'s Type	Time Cycle	Dial Division	EACH 1-9	EACH 10-24	EACH 25-Up
815-1001	SF-6S	6 sec.	1/10 sec.	**115.38**	**107.14**	**100.00**
815-1002	SF-15S	15 sec.	1/4 sec.	**115.38**	**107.14**	**100.00**
815-1003	SF-30S	30 sec.	1/2 sec.	**115.38**	**107.14**	**100.00**
815-1004	CSF-1M	1 min.	1 sec.	**115.38**	**107.14**	**100.00**
815-1005	CSF-5M	5 min.	5 sec.	**115.38**	**107.14**	**100.00**
815-1006	CSF-15M	15 min.	15 sec.	**115.38**	**107.14**	**100.00**
815-1007	CSF-30M	30 min.	30 sec.	**115.38**	**107.14**	**100.00**
815-1008	CSF-60M	60 min.	1 min.	**115.38**	**107.14**	**100.00**

H and CH Series Timer





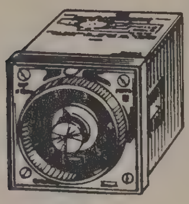


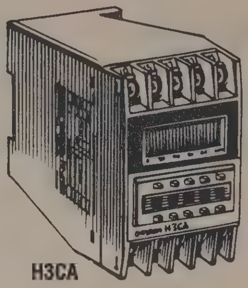
†CH Models

The H and CH series are standard time delay timers designed for panel mounting. They are designed for applications that require medium repeat accuracy and reset time and that may require the operator to change the time delay cycle. The H timers cover the 6, 15, and 30 second time ranges and have a clutch motor. The CH timers are available in 1, 3 and 5 minute time ranges and feature and external clutch to enable fast reset. It also features a motor control switch to protect the motor at the end of the time cycle. Both have isolated SPDT load switch rated at 10 amps, screw terminal block wiring, 120 VAC. UL and CSA approved.

Stock No.	Mfr.'s Type	Time Cycle	Dial Division	EACH 1-9	EACH 10-24	EACH 25-Up
815-1013	H-6S	6 sec.	1/10 sec.	**121.15**	**112.50**	**105.00**
815-1014	H-15S	15 sec.	1/4 sec.	**121.15**	**112.50**	**105.00**
815-1015	H-30S	30 sec.	1/2 sec.	**121.15**	**112.50**	**105.00**
815-1016	CH-1M	1 min.	1 sec.	**121.15**	**112.50**	**105.00**
815-1017	CH-3M	3 min.	3 sec.	**121.15**	**112.50**	**105.00**
815-1018	CH-5M	5 min.	5 sec.	**121.15**	**112.50**	**105.00**

Solid State Timers


H3BA


H3CA

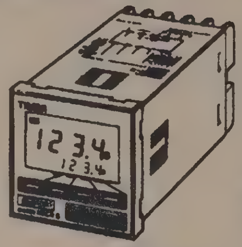
H3B Series. 16 ranges (.05 sec. to 100 hrs.) and 4 output modes in a single unit. 8-pin, 11-pin, or screw terminal connection. SPDT or DPDT outputs. Starts, reset, and gate inputs on 11-pin and screw terminal models. "RUN" and "OUTPUT" indication on all units.

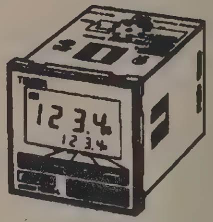
H3CA Series. Digital setting. Universal power (24-240 VAC, 12-240 VDC). 8 operation modes. Range of 0.1 sec. to 999 hrs. in single unit. Same connection options, indicators, and outputs as H3BA Series. Bar graph elapsed time indication.

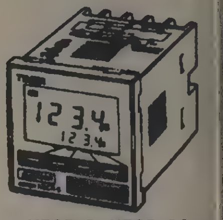
Stock No.	Mfr.'s Type	Connection	Output	Description	EACH
834-3000	H3BA-120AC	11-Pin	DPDT	4 Output Modes	**67.66**
834-3001	H3BA-24DC	11-Pin	DPDT	4 Output Modes	**67.66**
834-3004	H3BA-8H-120AC	8-Pin	2, SPDT	On Delay Only	**70.57**
834-3006	H3BA-8-120AC	8-Pin	DPDT	On Delay Only	**70.35**
834-3008	H3BF-8-120AC	8-Pin	DPDT	Sep. On, Off Delay	**81.52**
834-3010	H3CA-A	11-Pin	SPDT	8 Output Modes	**100.48**
834-3011	H3CA-FA	Frt. Screw	SPDT	8 Output Modes	**133.19**
834-3012	H3CA-8H-120AC	8-Pin	2, SPDT	On Delay Only	**91.42**
834-3014	H3CA-8-120AC	8-Pin	DPDT	On Delay Only	**90.23**

Other voltages available upon special request from factory.

H5CR Series


H5CR-B, H5CR-BS


H5CR-L, H5CR-LS

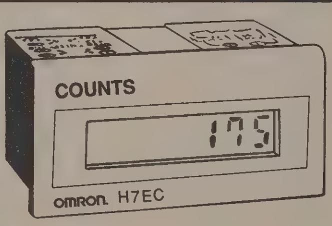

H5CR-S, H5CR-SS

Compact 1/16 DIN digital timer with 9 output modes including ON-delay, repeat cycle, OFF-delay, and one-shot. Field selectable time rages from 0.001 second to 9999 hours. Scroll through menus accessed from the highly visible LCD front panel. Four levels of key protection provided. Ten year battery back-up.

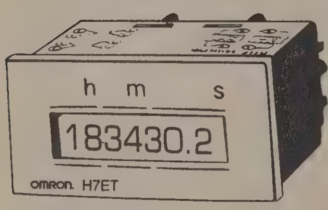
Stock No.	Mfr.'s Type	Contact Type	Size	Connection	EACH
834-6247	H5CR-B-AC100-240	SPDT Relay	100 mm (3.94 in.)	Screw Terminal	**139.00**
834-6249	H5CR-L-AC100-240*	SPDT Relay	78 mm (3.07 in.)	8-Pin	**129.00**
834-6250	H5CR-L-DC12-24*	SPDT Relay	78 mm (3.07 in.)	8-Pin	**129.00**
834-6251	H5CR-LS-DC12-24*	Solid-State	78 mm (3.07 in.)	8-Pin	**129.00**
834-6252	H5CR-S-DC12-24	SPDT Relay	64 mm (2.52 in.)	Screw Terminal	**132.00**
834-6253	H5CR-SS-DC12-24	Solid-State	64 mm (2.52 in.)	Screw Terminal	**132.00**

*All H5CR-L models do not include panel mounting hardware.

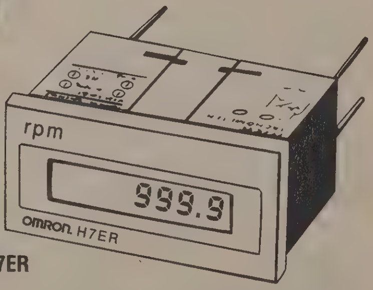
Self-Powered Counters and Tachometers



H7EC



H7ET



H7ER

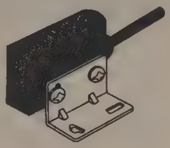
H7EC Series. Subminiature (DIN-sized 48 X 24 mm.); improved noise immunity. Screw terminal and wire-wrap types available. AC, DC and no-voltage input types available. Printed circuit board type available. Internal 3V lithium battery allows unit to operate with no external power supply.

H7ET Series. Subminiature (DIN-sized 48 X 24 mm.); improved noise immunity. Screw terminal and wire-wrap types available. AC, DC, and no-voltage input types available. Displays cumulative time by counting the output signals received from a sensor. Internal 3V lithium battery allows unit to operate with no external power supply.

H7ER Tachometers. Subminiature (DIN-sized 48 X 24 mm.); improved noise immunity. Screw terminal and wire-wrap types available. DC and no-voltage input types available. DC-powered model can display the number of revolutions of an encoder in user-selectable units of measure. Internal 3V lithium battery allows unit to operate with no external power supply.

Stock No.	Mfr.'s Type	Description	EACH
834-5001	H7EC-B	7 Digit LCD, No-Voltage Input, 1 KCPS, Screw Terminals, External Reset	**49.61**
834-5002	H7EC-BL	7 Digit LCD, No-Voltage Input, 30 CPS, Screw Terminals, External Reset	**52.02**
834-5003	H7EC-BLM	6 Digit LCD, No-Voltage Input, 30 CPS, Screw Terminals, External/Manual Reset	**52.50**
834-5004	H7EC-BM	6 Digit LCD, No-Voltage Input, 1 KCPS, Screw Terminals, External/Manual Reset	**52.02**
834-5006	H7EC-BVL	7 Digit LCD, DC Voltage Input, 30 CPS, Screw Terminals, External Reset	**52.02**
834-5007	H7EC-BVLM	6 Digit LCD, DC Voltage Input, 30 CPS, Screw Terminals, External/Manual Reset	**52.02**
834-5008	H7EC-BVM	6 Digit LCD, DC Voltage Input, 1 KCPS, Screw Terminals, External/Manual Reset	**52.02**
834-5009	H7EC-FBV	7 Digit LCD, AC/DC Voltage Input, 20 CPS, Screw Terminals, External Reset	**52.02**
834-5011	H7ET-B	7 Digit LCD, No-Voltage Input Totalizer, 0-999999.9 Hrs., Screw Terminals	**60.82**
834-5012	H7ET-BM	6 Digit LCD, No-Voltage Input Totalizer, 0-999999.9 Hrs., Screw Terminals	**60.82**
834-5014	H7ET-FBV	7 Digit LCD, AC/DC Voltage Input Totalizer, 0-999999.9 Hrs., Screw Terminals	**74.98**
834-5015	H7ER-B	4 Digit LCD, No-Voltage Input, 1 KCPS, 1000 RPS, 1 Pulse/Rev., Screw Terminals	**63.95**
834-5016	H7ER-BV2	5 Digit LCD, DC Voltage Input, 10 KCPS, 10,000 RPM, 60 Pulses/Rev., Screw Terminals	**63.95**
834-5017	H7ER-SBV	5 Digit LCD, DC Voltage Input, 10 KCPS, Selectable Rev. and Res., Screw Terminals	**96.03**

E3S-A Series



General purpose high performance small DC sensors offer fast 0.5 msec. response time for high-speed sensing. Self-diagnostic functions for easy installation. **Rating:** NEMA 4x, 6, and IP67. Choose prewired or quick disconnect models. Timer models feature an OFF-delay output from 0 to 100 ms.

Through-Beam, 7 m (22.97 ft.) Sensing Distance
Horizontal Mounting

Stock No.	Mfr.'s Type	Output	Connection	Features	EACH
834-6101	E3S-AT11	NPN	Prewired	None	131.00
834-6102	E3S-AT16	NPN	Connector	None	138.00
834-6104	E3S-AT31	PNP	Prewired	None	131.00
834-6105	E3S-AT36	PNP	Connector	None	138.00

Vertical Mounting

Stock No.	Mfr.'s Type	Output	Connection	Features	EACH
834-6107	E3S-AT61	NPN	Prewired	None	131.00
834-6108	E3S-AT66	NPN	Connector	None	138.00
834-6110	E3S-AT81	PNP	Prewired	None	131.00
834-6111	E3S-AT86	PNP	Connector	None	138.00

Retroreflective, 2 m (6.56 ft.)
Horizontal Mounting

Stock No.	Mfr.'s Type	Output	Connection	Features	EACH
834-6113	E3S-AR11	NPN	Prewired	None	112.00
834-6114	E3S-AR16	NPN	Connector	None	115.00
834-6116	E3S-AR31	PNP	Prewired	None	112.00
834-6117	E3S-AR36	PNP	Connector	None	115.00

Retroreflective, 2 m (6.56 ft.) (continued)
Vertical Mounting

Stock No.	Mfr.'s Type	Output	Connection	Features	EACH
834-6119	E3S-AR61	NPN	Prewired	None	112.00
834-6120	E3S-AR66	NPN	Connector	None	115.00
834-6122	E3S-AR81	PNP	Prewired	None	112.00
834-6123	E3S-AR86	PNP	Connector	None	115.00

Diffuse Reflective, 20 cm (7.87 in.)
Horizontal Mounting

Stock No.	Mfr.'s Type	Output	Connection	Features	EACH
834-6125	E3S-AD11	NPN	Prewired	None	98.00
834-6126	E3S-AD16	NPN	Connector	None	104.00
834-6128	E3S-AD31	PNP	Prewired	None	98.00
834-6129	E3S-AD36	PNP	Connector	None	104.00

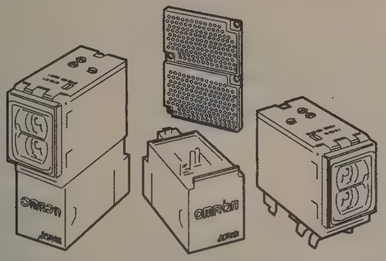
Vertical Mounting

Stock No.	Mfr.'s Type	Output	Connection	Features	EACH
834-6131	E3S-AD61	NPN	Prewired	None	98.00
834-6132	E3S-AD66	NPN	Connector	None	104.00
834-6134	E3S-AD81	PNP	Prewired	None	98.00
834-6135	E3S-AD86	PNP	Connector	None	104.00

Diffuse Reflective, 70 cm (2.3 ft.)
Horizontal Mounting

Stock No.	Mfr.'s Type	Output	Connection	Features	EACH
834-6137	E3S-AD12	NPN	Prewired	None	98.00
834-6138	E3S-AD17	NPN	Connector	None	104.00
834-6140	E3S-AD32	PNP	Prewired	None	98.00
834-6141	E3S-AD37	PNP	Connector	None	104.00

E3B2 Series



General purpose photoelectric sensor with plug-in terminal for easy maintenance and installation. Replace sensing head without rewiring. Detect shiny objects with polarized retroreflective models and dark objects at long distances with the high-gain diffuse reflective models. Includes built-in ON-delay and OFF-delay timers, switch selectable light-ON/dark-ON operation, and mutual interference protection. Ready to use with 3 A relay and mounting brackets. Supply voltages of 24 to 240 VAC, 50/60 Hz; 12 to 240 VDC. Output of 3 A, 250 VAC.

High-Gain Diffuse Reflective

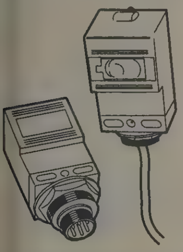
Stock No.	Mfr.'s Type	Features	EACH
834-6009	E3B2-D2M4-US-N	No timer, 3 m (9.84 ft.) sensing distance	179.00
834-6010	E3B2-D2M4D-US-N-3	0.05 to 5 sec. timer, 3 m sensing distance	189.00

Diffuse Reflective

Stock No.	Mfr.'s Type	Features	EACH
834-6006	E3B2-D2M4-US	No timer, 2 m (6.56 ft.) sensing distance	188.00
834-6007	E3B2-D2M4D-US	0.5 to 20 sec. timer, 2 m sensing distance	199.00
834-6008	E3B2-D2M4D-US-3	0.05 to 5 sec. timer, 2 m sensing distance	199.00

Retroreflective

Stock No.	Mfr.'s Type	Features	EACH
834-6001	E3B2-R5M4-US	Polarized, no timer, 5 m (16.4 ft.) sensing distance	199.00
834-6002	E3B2-R5M4D-US	Polarized, 0.5 to 20 sec. timer, 5 m sensing distance	210.00
834-6003	E3B2-R5M4D-US-3	Polarized, 0.05 to 5 sec. timer, 5 m sensing distance	210.00
834-6004	E3B2-R7M4-US	No timer, 7 m (22.97 ft.) sensing distance	199.00
834-6005	E3B2-R7M4D-US	0.5 to 20 sec. timer, 7 m sensing distance	210.00



E3JU Series

Compact limit switch style universal AC/DC photoelectric sensor with choice of Relay or FET output. FET allows for Solid State switching of AC or DC. Includes universal AC/DC Power Supply, flexible M30 or direct body mounting, sensitivity adjustment, and switch selectable timer operations of ON-delay, OFF-delay, ON/OFF delay, one-shot, and delayed one-shot. Supply voltages of Universal, 24 to 240 VAC, 24 to 240 VDC. UL/CSA certified and NEMA 4x, IP67 rated.

Through-Beam, 25 m (85 ft.) Sensing Distance

Stock No.	Mfr.'s Type	Output	Connection	Timer	EACH
834-6149	E3JU-25M4	Relay	Cable	No	154.00
834-6150	E3JU-25M4T	Relay	Cable	Yes	165.00
834-6151	E3JU-25P4	FET	Cable	No	165.00
834-6152	E3JU-25P4T	FET	Cable	Yes	175.00
834-6153	E3JU-25M4-MN	Relay	Connector	No	154.00
834-6154	E3JU-25M4T-MN	Relay	Connector	Yes	165.00

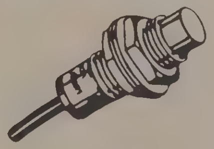
Retroreflective, 5 m (16.4 ft.)

Stock No.	Mfr.'s Type	Output	Connection	Timer	EACH
834-6157	E3JU-R5M4	Relay	Cable	No	98.00
834-6158	E3JU-R5M4T	Relay	Cable	Yes	108.00
834-6159	E3JU-R5P4	FET	Cable	No	108.00
834-6160	E3JU-R5P4T	FET	Cable	Yes	120.00
834-6161	E3JU-R5M4-MN	Relay	Connector	No	98.00
834-6162	E3JU-R5M4T-MN	Relay	Connector	Yes	108.00

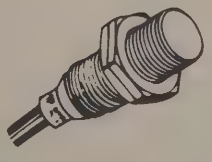
Diffuse Reflective, 1 m (3.3 ft.)

Stock No.	Mfr.'s Type	Output	Connection	Timer	EACH
834-6165	E3JU-D1M4	Relay	Cable	No	98.00
834-6166	E3JU-D1M4T	Relay	Cable	Yes	108.00
834-6167	E3JU-D1P4	FET	Cable	No	108.00
834-6168	E3JU-D1P4T	FET	Cable	Yes	120.00
834-6169	E3JU-D1M4-MN	Relay	Connector	No	98.00
834-6170	E3JU-D1M4T-MN	Relay	Connector	Yes	108.00

Inductive Proximity Sensors



E2E-XY



TL-X-GE

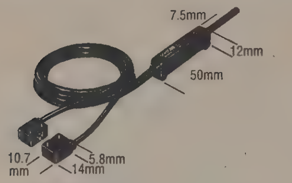
Omron's 100% performance-tested proximity sensors detect ferrous metal objects. AC sensors have an LED indicator; DC sensors have high-visibility LED ring indicator.

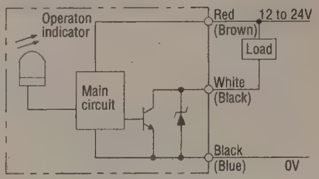
AC, 2-Wire Sensors, 100 mA, SCR Output, 20 to 264 VAC

Stock No.	Mfr.'s Type	Description			EACH
834-4080	E2E-X1R5Y1-N	M8	Shielded	NO	84.00
834-4081	E2E-X2Y1-N	M12	Shielded	NO	84.00

DC, 3-Wire Sensors, 200 mA, NPN Output, 10 to 30 VDC

Stock No.	Mfr.'s Type	Description			EACH
834-4038	TL-X2MC1-GE	M8	Unshielded	NO	65.00
834-4040	TL-X5MC1-GE	M12	Unshielded	NO	65.00
834-4044	TL-X18MC1-GE	M30	Unshielded	NO	65.00
834-4046	TL-X1R5C1-GE	M8	Shielded	NO	73.00
834-4048	TL-X2C1-GE	M12	Shielded	NO	65.00
834-4051	TL-X5C2-GE	M12	5 mm (0.20 in.)	NC	67.00
834-4052	TL-X10C1-GE	M30	Shielded	NO	72.00





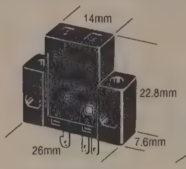
Compact, Prewired Photomicrosensors with 30cm Range

Through-beam (transmissive) sensor with in-line remote DC amplifier and compact sensing heads fit into space-confin locations. Prewired amplifier has 2m (6.6 ft.) of three-conductor cable. Sensor includes two pair of aperture decals reduce beam width for smaller object detection. Modulated infrared light source reduces external light, dust and humidi interference. Operation indicators on both amplifier body and sensing head simplify alignment and monitoring.

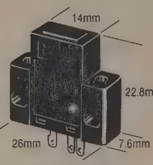
Stock No.	Mfr.'s Type	Output Type	Head to Amp Cable Length	Sensing Method	Sensing Distance	Power Requirements	Control Output	EACH
821-8100	EE-SPW321	Dark-ON	0.5 m (1.64 ft.)	Transmissive	30 cm with 2mm dia. opaque object	10.8 to 26.4 VDC	Transistor, 100 mA load	112.92
821-8101	EE-SPW321-A	Dark-ON	1.0 m (3.28 ft.)		20 cm with 1mm dia. object using 1 × 3 mm aperture	30 mA current consumption	1 V max. residual voltage	115.29
821-8102	EE-SPW421	Light-ON	0.5 m (1.64 ft.)		10 cm with 0.5mm dia. object using 0.5 × 3 mm aperture		1 ms max. response time	145.91

Sensing Heads Detect Objects in Front of Mirror-Like Backgrounds

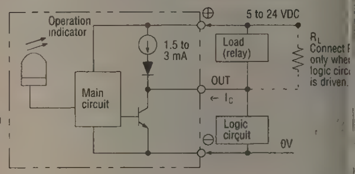
Convergent beam reflective sensors with built-in amplifier offers 5mm sensing distance to solve these tough detection problems: objects in front of highly reflective backgrounds at least 20mm away; dark colored objects; small, thin objects such as 0.05mm diameter pure copper wire. Modulated infrared light source reduces external light interference. Choose top or side sensing models. Operation indicator allows monitoring. Wire directly to sensor or use optional EE-1001 unwired or EE-1006 prewired connectors for convenience in servicing. **Output Specifications:** 80 mA load with 1.0V residual voltage; 10 mA load 0.4V residual voltage when driving TTL. **Response Frequency:** 100 Hz.



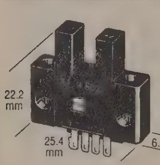
EE-SPY411



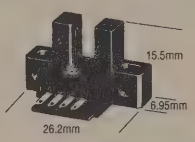
EE-SPY412



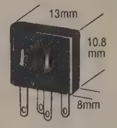
Stock No.	Mfr.'s Type	Output Type	Sensing Face Position	Sensing Method	Sensing Distance	Power Requirements	EACH
821-8105	EE-SPY411	Light-ON	Side Face	Convergent beam reflective	2 to 6 mm (5 mm rated distance) with 15 × 15 mm 90% reflectance white mat paper 0.2 mm differential distance at 3 mm sensing distance	10% max. ripple peak-to-peak 15 mA current consumption 50 mA max. at peak	28.52
821-8106	EE-SPY312	Dark-ON	Top				29.10
821-8107	EE-SPY412	Light-ON	Top				29.08



EE-SX670

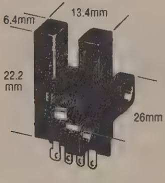


EE-SX671

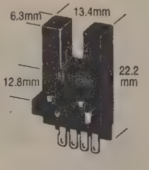


EE-1001

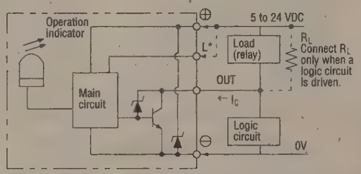
EE-1006



EE-SX672



EE-SX673



5 mm Slot Sensing Heads in Wide Variety of Configurations

Transmissive sensing heads in standard, L-shaped, T-shaped and close-mounting configurations match mos applications. Wide 5-24 VDC operating voltage range makes these photomicrosensors compatible with TTLs, relays an programmable controllers. Wire selectable Light-ON/Dark-ON output operation. Operation indicator for easy monitorin Wire directly to sensor or use optional EE-1001 unwired or EE-1006 prewired connectors for convenience in servicin **Output Specifications:** 100 mA load with 0.8 V residual voltage; 40 mA load with 0.4 V residual voltage when driving TTL **Response Frequency:** 1 kHz (3 kHz typical).

Accessories

821-8112. EE-1001. Unwired Connector..**EACH 2.1**
821-8113. EE-1006. Prewired Connector, 2 m (6.6 ft.) Cable.......................**EACH 8.8**

Stock No.	Mfr.'s Type	Output Type	Body Configuration	Sensing Method	Sensing Distance	Power Requirements	EACH
821-8108	EE-SX670	Light-ON/Dark-ON	Standard	Transmissive	5mm slot width with Opaque 0.8 × 2mm object 0.025mm differential distance	5 to 24 VDC ±10% 10% max. ripple peak-to-peak 35 mA current consumption	14.42
821-8109	EE-SX671	Light-ON/Dark-ON	L-Shaped				14.42
821-8110	EE-SX672	Light-ON/Dark-ON	T-Shaped				14.60
821-8111	EE-SX673	Light-ON/Dark-ON	Close-Mounting				15.12

Photomicrosensors

Photomicrosensors with Phototransistor Output (Fig. 1)

The EE-SF5/-B, EE-SG3/-B are all available with solder and PC terminals. MAX V = 1.5, IF (mA) = 30.

Stock No.	Mfr.'s Type	Sensing Distance (mm)	Slot Width (mm)	IL				tr, tf					EACH
				Min. (mA)	Max. (mA)	IF (mA)	VCE (V)	tr (µsec.)	tf (µsec.)	VCC (V)	RL (Ω)	IL (mA)	1-24
821-8001	EE-SG3/-B	—	3.6	2.0	40.0	15	10	4	4	10	0.1 K	5	3.64
821-8002	EE-SB5/-B	5	—	0.2	2.0	20	10	30	30	5	1.0 K	1	4.54
821-8003	EE-SF5/-B	5	—	0.2	2.0	20	10	30	50	5	1.0 K	1	4.46

Fig. 1

Phototransistor and Photo IC Output Photomicrosensors (Fig. 2)

The EE-SH# is a high resolution type with aperture widths from 0.2 mm to 1 mm. EE-SX298/498 is a PCB mountable Photo IC. MAX V = 1.5, IF (mA) = 30, except EE-SX398, EE-SX498 = 20.

821-8005	EE-SX1071	—	3.4	0.5	14.0	20	10	4	4	5	100.0	5	1.91
821-8006	EE-SX398	—	3.0	—	—	—	—	—	—	—	—	—	1.95
821-8007	EE-SX498	—	3.0	—	—	—	—	—	—	—	—	—	1.95
821-8008	EE-SX1070	—	8.0	0.5	0.5	10	10	4	4	5	100.0	5	1.66

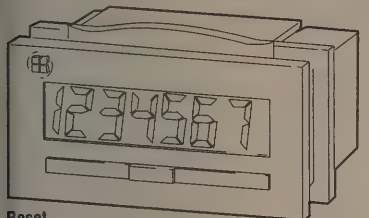
Fig. 2

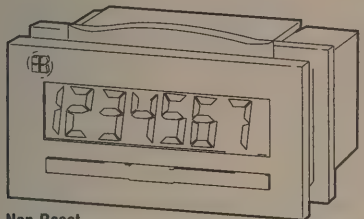
Slot Type Phototransistor Output Configured Photomicrosensor (Fig. 3)

The EE-SX1042 has deep wide slots 12 mm × 5 mm. The EE-SX1018 and EE-SX1025-EP are PC mountable and compact. The EE-SV3 is a high resolution type. MAX V = 1.5, IF (mA) = 30.

821-8009	EE-SX1042	—	5.0	0.5	14.0	20	10	4	4	5	100.0	5	1.65
821-8012	EE-SV3	—	3.4	0.5	0.5	20	10	4	4	5	100.0	5	4.13

Fig. 3


Reset


Non-Reset

"Eagle" Self-Powered, Digital Counters and Tachometer

Small size and large numerals make this LCD device ideal for control panels, business machines and instrumentation designed to monitor operational cycles and functions. All models are 7 Figure, with .315" high numerals. Requires only 1.79" × .89" panel cutout. Inputs available include non-voltage (switch, 3-30 VDC or 20-250 VAC/VDC; remote only or manual and remote reset; and termination by either a terminal block or an optional connector with wire leads. UL Recognized, CSA Certified. 20 year typical life with lithium battery. Weighs 2 ozs.

Series 5300, 5301: Electronic, Dual-Speed Counter

Stock No.	Mfr.'s Type	Description	EACH		
			1-9	10-24	25-49
620-3008	5300-0000	0-40 and 0-150 Dual CPS Counter, non-voltage (switch) input, remote reset, terminal block	39.60	37.62	35.64
620-3009	5300-1000	0-40 and 0-150 Dual CPS Counter, 3-30 VDC input, remote reset, terminal block	39.60	37.62	35.64
620-3010	5300-1100	0-40 and 0-150 Dual CPS Counter, 3-30 VDC input, manual and remote reset, terminal block	39.60	37.62	35.64
620-3012	5300-2000	0-40 CPS Counter, 20-250 VAC/VDC input, remote reset, terminal block	51.50	48.92	46.35

Series 5330: Electronic Tachometer/Rate Meter. Practical for production rate and process speed indication.

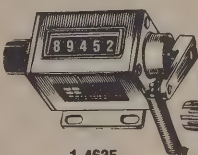
620-3013	5330-0000	10,000 RPM Tachometer/rate meter, with non-voltage (switch) input, remote reset, terminal block	46.50	44.17	41.85

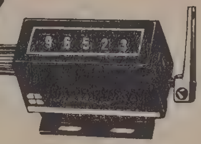
Mechanical Counters

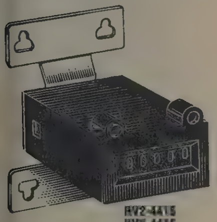
Series 46. Low cost, compact size, 5-figure, long life, knob reset stroke counter. 1-4635 counts via right-hand lever with top coming action, internal spring return. **Size:** 2.53" × 1.44" × 1.25".

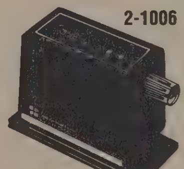
Series 20. Versatile, 5-figure, low cost, knob reset stroke counter with built-in lever return spring. **Size:** 3.13" × 1.44" × 1.38".

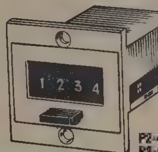
Stock No.	Mfr.'s Type	Description	EACH		
			1-9	10-24	25-49
620-2435	1-4635	.195" high figures, manual reset, right hand, top coming lever	38.44	35.57	33.70
620-2035	1-2035	.190" high figures, manual reset, right hand, top coming lever	43.45	41.27	39.10

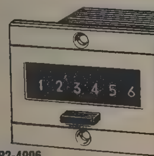

1-4635

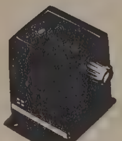

1-2035

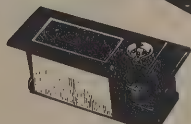

RV2-4416
RV8-4416


2-1006


P2-4904
P8-4904


P2-4906
P8-4906


2-1284


P32-1026

Electromechanical Counters/Totalizers

Series 44. Rugged, low cost, 6-figure, non-resettable totalizer. "RV" combines behind the panel and base mounts for flexibility in assembly. **Size:** 1.36" × .78" × 2.36". UL Recognized.

Series 4904 and 4906. Economical, compact, 4 or 6-figure, panel mount, pushbutton reset totalizer. Model 4904 fits 1.46" × 1.01" panel cut-out; 4906 fits 2.00" × 1.01" cut-out. Both UL Recognized.

Series 100. Premium quality, 6-figure electromechanical counter with heavy-duty rectifier, transient protection, convenient reset, 1000 CPM capability. **Size:** 3.92" × 1.74" × 2.51". 8" lead wires, 22 AWG. UL Recognized, CSA Certified.

Series 128. General purpose, 4-figure, reset electromechanical counter, with heavy-duty rectifier, transient protection, 1000 CPM capability. **Size:** 2.66" × 2.26" × 2.42". 8" lead wires, 22 AWG. UL Recognized, CSA Certified.

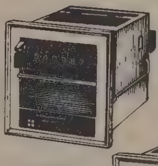
Stock No.	Mfr.'s Type	Description	EACH		
			1-9	10-24	25-49
620-9418	RV2-4416	115 VAC, .177" high figures, 10" 22 AWG leadwires	38.04	35.13	32.62
620-9419	RV8-4416	24 VDC, .177" high figures, 10" 22 AWG leadwires	20.32	18.76	17.41
620-9420	P2-4904	115 VAC, .157" high figures, 10" 22 AWG leadwires	36.22	33.42	31.04
620-9421	P8-4904	24 VDC, .157" high figures, 10" 22 AWG leadwires	33.40	30.82	28.62
620-9422	P2-4906	115 VAC, .157" high figures, 10" 22 AWG leadwires	44.84	41.38	38.44
620-9423	P8-4906	24 VDC, .157" high figures, 10" 22 AWG leadwires	41.70	38.66	36.63
620-0072	2-1006	115 VAC, .190" high figures, base mount, knob reset	88.42	81.63	77.22
620-0076	P2-1006	115 VAC, .190" high figures, panel mount, thumb wheel reset	97.77	90.24	83.80
620-0165	P32-1026	115 VAC, .190" high figures, panel mount, lock/key reset	129.27	119.33	112.90
620-0028	2-1284	115 VAC, .190" high figures, base mount, knob reset	73.19	67.56	62.72
620-0032	P2-1284	115 VAC, .190" high figures, panel mount, knob reset	85.55	78.98	73.34

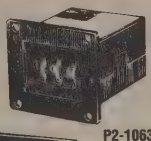
Predetermining Counter

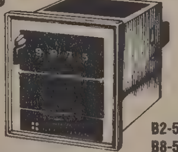
Series 5804 or 5806. 4 or 6-figure, preset, electromechanical counter .156" high figures, manual pushbutton reset (electric reset optional). Pulse time min, 50 ms "on", 50 ms "off". Fits panel cut-out of 2.17" × 2.17". UL Recognized.

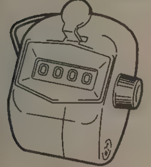
Series 106. 3-figure, panel mount, subtractive predetermining counter; subtracts one count per pulse from preset number to zero, then SPDT switch activates. Switch remains in position until new cycle started. Fits 2.31" × 1.63" panel cut-out. UL Recognized, CSA Certified.

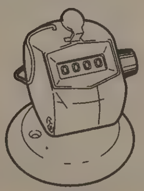
Stock No.	Mfr.'s Type	Description	EACH		
			1-9	10-24	25-49
620-9426	B2-8504	4-fig., 115 VAC, pushbutton reset	165.67	154.37	146.25
620-9428	B2-5806	6-fig., 115 VAC, pushbutton reset	284.42	262.54	243.79
620-9429	B8-5806	6-fig., 24 VDC, pushbutton reset	326.33	309.98	293.67
620-9430	P2-1063	3-fig., 115 VAC, thumbwheel preset	120.73	111.44	103.47
620-9431	P8-1063	3-fig., 24 VDC, thumbwheel preset	104.92	98.78	91.73


B2-5806
B8-5806


P2-1063
P8-1063


B2-5804
B8-5804


T4-1804


T5-1804

Hand or Desk Tally Counters

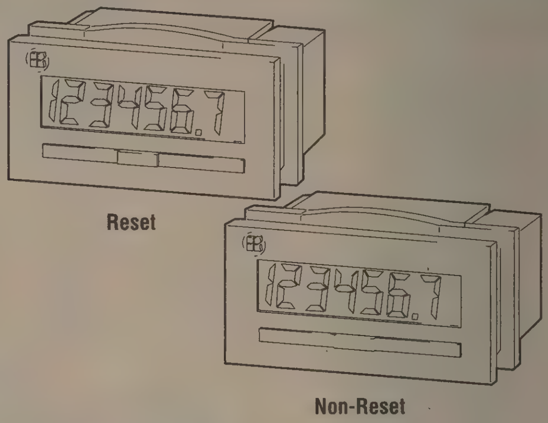
Series 18. Hand operated reset counter with pushbutton actuator. 4-figure, chrome plated metal case. Hand held or base mount. Size of plastic base mount: 2.1" Dia. with two .14" Diá. mounting holes on 1.34" centers. Practical for inventory counts, attendance, traffic.

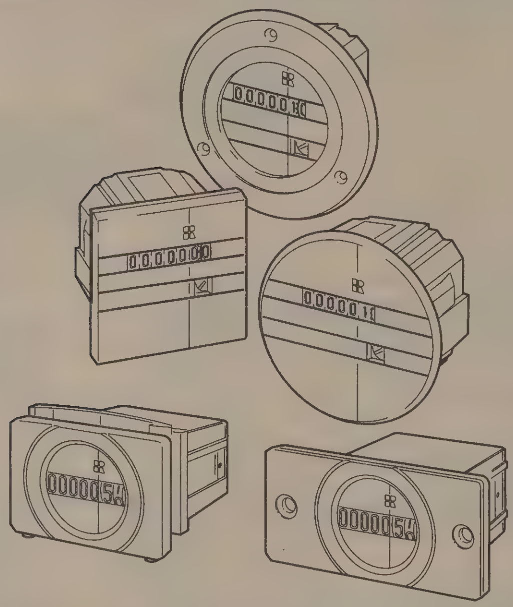
Stock No.	Mfr.'s Type	Description	EACH		
			1-9	10-24	25-49
620-1804	T4-1804	Hand Tally	12.16	11.22	10.42
620-0083	T5-1804	Desk Tally	25.79	24.61	23.39

“Eagle” Self-Powered, Digital Hourmeter

Series 5320. 7 figure, .315" height LCD display, electronic hourmeter. Inputs available include non-voltage (switch), 3-30 VDC or 20-250 VAC/VDC; remote only or manual and remote reset; and termination by either a terminal block or an optional connector with wire leads. UL Recognized. CSA Certified. Fits panel cutout of 1.79" × .89". 20 year typical life with lithium battery. **Weight:** 2 ozs.

Stock No.	Mfr.'s Type	Description	EACH		
			1-9	10-24	25-49
620-3001	5320-0000	Hourmeter, with non-voltage (switch) input, remote only reset, terminal block	**46.50**	**44.17**	**41.85**
620-3002	5320-0100	Hourmeter, with non-voltage (switch) input, manual and remote reset, terminal block	**46.50**	**44.17**	**41.85**
620-3003	5320-1000	Hourmeter, with 3-30 VDC input, remote only reset, terminal block	**46.50**	**44.17**	**41.85**
620-3004	5320-1100	Hourmeter, with 3-30 VDC input, manual and remote reset, terminal block	**46.50**	**44.17**	**41.85**
620-3005	5320-2000	Hourmeter, with 20-250 VAC/VDC input, remote only reset, terminal block	**60.45**	**57.42**	**54.40**





Electromechanical AC Hourmeters

Series 711 “Blackbird” AC Hourmeters. Lightweight, low power, rugged electromechanical design, with .138" high figures. Records to 99,999.99 hours. Available in both round or square bezel with retainer clip or 3-hole round versions (with mounting hardware), sealed front bezel and tell-tale operation indicator. UL Recognized, CSA Certified, CE Approved.

Series 711 “Bullseye” AC Minimeters. Compact, low-cost, synchronous motor controlled AC hourmeters, .138" magnified figures, records to 99,999.99 hours. **Panel Cutout:** 1.45" × .87". UL Recognized, CSA Certified, CE Approved.

“Blackbird” AC Hourmeters

Stock No.	Mfr.'s Type	Description	EACH		
			1-9	10-24	25-49
620-4015	711-0160	115 VAC, 60 Hz, 2.93" dia., 3-hole round bezel (.125" dia. on 2.44" B.C.), 1.80" sq. or 2.00" dia. panel cutout, screw clamp terminal	**36.88**	**33.20**	**29.50**
620-4016	711-0150	115 VAC, 60 Hz, 2.28" dia. flush mount, 1.80" sq. or 2.00" dia. panel cutout, screw clamp terminal	**35.56**	**33.01**	**32.56**
620-0190	711-0190	115 VAC, 60 Hz, 2.05" sq. flush mount, 1.80" sq. or 2.00" dia. panel cutout, screw clamp terminal	**38.50**	**36.57**	**34.65**

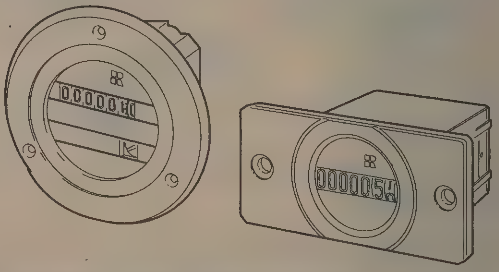
“Bullseye” AC Minimeters

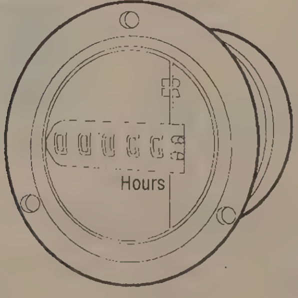
Stock No.	Mfr.'s Type	Description	1-9	10-24	25-49
620-4023	711-0113	115 VAC, 60 Hz,1.60" × 1.08" flush mount, 1/4" screw terminals	**40.87**	**37.95**	**35.95**
620-4024	711-0130	115 VAC, 60 Hz, 2.06" × 1.08" 2-hole mount, 1/4" screw terminals	**40.87**	**37.95**	**35.95**

Electromechanical DC Hourmeters

Series 731 DC Hourmeters. 10-50 VDC (731-0040) or 10-80 VDC (731-0046) quartz controlled hourmeters, .138" magnified figures, records to 999,999.9 hours.

Stock No.	Mfr.'s Type	Description	EACH		
			1-9	10-24	25-49
620-4021	731-0040	2.06" × 1.08" 2-hole bezel, 1/4" screw terminals, 1.45" × .87" panel cutout	**69.50**	**63.79**	**60.43**
620-0046	731-0046	2.83" dia., 3-hole round bezel (.125" dia. on 2.44 B.C.), 1/4" screw terminals, 2.00" panel cutout	**81.80**	**73.62**	**65.44**





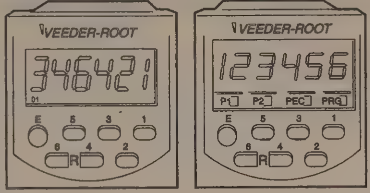
Electromechanical AC Hourmeters

Series 710 AC Hourmeters. 115 VAC or 230 VAC, 50 or 60 Hz hourmeter (or minute meter), with large .19" figures. 5 or 6 figure readout; 2.84" dia. tough poly-carbonate case. 3-hole panel mount (fits #4 screw on 2.44" B.C. or #6 screw on 2.53" B.C.), 2.21" panel cutout. UL Recognized, CSA Certified.

Stock No.	Mfr.'s Type	Description	EACH		
			1-9	10-24	25-49
620-4010	710-0001	115 VAC, 60 Hz records to 99,999.9 hours, 8" wire leads, non-reset	**40.75**	**37.57**	**35.59**
620-9440	710-0002	115 VAC, 60 Hz records to 99,999.9 hours, terminal block, non-reset	**44.60**	**41.13**	**38.97**
620-9992	710-0003	115 VAC, 60 Hz records to 99,999.9 hours, 8" wire leads, non-reset	**42.50**	**38.99**	**36.94**
620-4011	710-0019	115 VAC, 60 Hz records to 9,999.9 minutes, 8" wire leads, resettable	**107.48**	**96.73**	**85.98**
620-4012	710-0013	115 VAC, 60 Hz records to 9,999.9 hours, 8" wire leads, resettable	**82.54**	**74.90**	**70.95**

Veeder-Root brand Series C346 Preset Counter

— NEW —

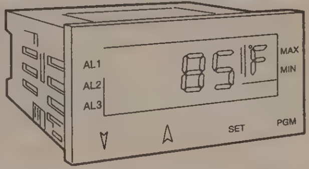


Simple button per digit setting and choice of single line 6 digit LED or LCD display allow optimum operator interface. Very flexible input circuit with scaling feature accepts signals from encoders, NPN (sinking), PNP (sourcing), and contact-closure inputs. The right choice for most preset counting applications. **Size:** 1/16 DIN (48 mm × 48 mm). **Display:** 6 Digit, LED or LCD. **Power:** 120 VAC standard, optional 240 VAC, 24 VDC. **Preset Levels:** 1 or 2, 5 amp relay and NPN transistor per output. **Input Scaling:** X0.001 to 9.999. **Input:** Sinking; sourcing, contact closure, add/subtract, add/add, quadrature. **Max. Count Speed:** 5 kHz.

Stock No.	Mfr.'s Type	Description	EACH
687-9022	C346-0411	LCD/Single Preset	**145.00**
687-9023	C346-0421	LCD/Dual Preset	**170.00**
687-9024	C346-0511	LED/Single Preset	**175.00**
687-9025	C346-0521	LED/Dual Preset	**200.00**

Dynapar brand Series S428 Intelligent Process Meter

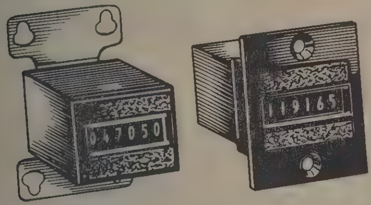
— NEW —



Housed in an industry standard 1/8 DIN case, the S428 process meter can display a wide variety of process input signals including DC current or voltage, as well as most thermocouples and RTDs. 0.56" high LED display is available in red or green, and easily scaled to display in engineering units. Standard with 1, 2, or 3 relay alarm outputs that can be field configured for high or low operation. Other functions can be installed at the factory or later in the field. **Dimensions:** 48 mm × 96 mm, 110 mm deep. **Mounting:** Panel mount (mounting bracket supplied) 45 mm × 92 mm cutout. **Power Supply:** 90-264 VAC, 50/60 Hz; 4 watts. **Operating Temperature:** 0° to 55°C, 32° to 131°F.

Stock No.	Mfr.'s Type	Description	EACH
687-9026	S428-311001	4-20 mA Input, 2 Relay, Red Display	**224.00**
687-9027	S428-311801	4-20 mA Input, 2 Relay, Red Display, Trans. PWS	**289.00**
687-9028	S428-311102	4-20 mA Input, 3 Relay, Green Display	**274.00**
687-9029	S428-210001	T/C Input, 1 Relay, Red Display	**199.00**
687-9030	S428-411001	DC Volt Input, 2 Relay, Red Display	**224.00**

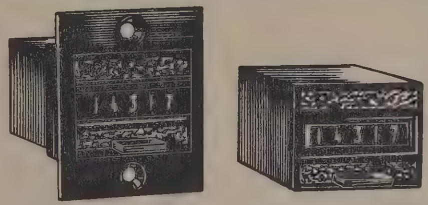
VEEDER-ROOT brand 7790 Series



6 digit non-reset, miniature electrical counter provides excellent performance and reliability characteristics. Count speed is 600 CPM. UL recognized components. **Case Size:** 1.306" wide, 2.163" deep, 1" high.

Stock No.	Mfr.'s Type	Description	EACH
687-9086	779086-101	Base Mount, 115 VAC	**24.20**
687-1006	779086-201	Panel Mount, 115 VAC	**23.62**

Veeder-ROOT brand 7791 Series

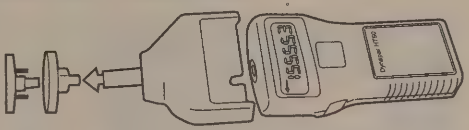


5 digit resettable miniature electrical counter. Outstanding reliability for OEM applications. Count speed in 600 CPM. UL recognized components. **Case Size:** 1.306" wide, 1" high, 2.163" deep.

Stock No.	Mfr.'s Type	Description	EACH
687-9185	779185-201	Panel Mount, 115 VAC	**31.92**
687-7918	779185-401	Rear Mount, 115 VAC	**30.00**

Dynapar brand HT50 Hand Tachometer System

— NEW —



Series HT50 hand tachometer provides a convenient, accurate means of measuring rotary or surface speeds on all types of machinery. For non-contacting measurement, the tachometer optically detects a reflective target on the rotating object. Where in-contact measurement is desired, an accessory adapter is used with the appropriate device — a wheel for surface speed or rubber tip for shaft rotation. **System Includes:** Hand tachometer; in-contact adapter; rubber tips (3 pcs.); reflective tape (10 sheets); surface speed wheels (1/10 m/min. and 1/10 yd./min.); carrying case; dry batteries (4-AAA size, 1.5 V); instruction manual.

687-9031. HT50. Type HT50 01 System ....**EACH 250.00**

VEEDER-ROOT brand Series 7795 Hourmeters

AC Hourmeters

Specifications. Weight: 3 oz. **Case:** Polycarbonate, shock resistant tamperproof. **Capacity:** Records up to 99,999 hours — automatic recycle at zero. **Markings:** White numerals indicate hours; black numerals indicate 10ths of hours. **Motor:** Single phase, synchronous, permanently lubricated. **Voltage:** 120 V ac or 240 V ac (range ± 10%). **Frequency:** 60 hertz. **Power Rating:** 3.0 watts. **Operating Temperature:** –65°F to + 154°F (–18°C to + 68°C). **Accuracy:** ± 1%. **Termination:** Screw type or 7" leads. UL listed.

Stock No.	Mfr.'s Type	Mount Type	EACH
687-0200	779516-201	Round	**36.79**
687-0210	779536-201	Rectangular	**36.31**
687-0215	779546-201	Rectangular	**39.23**

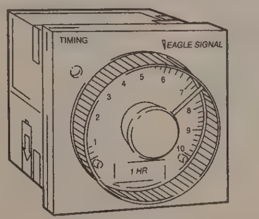
DC Hourmeters

Specifications. Weight: 2.5 oz. **Case:** Polycarbonate, shock resistant tamperproof (2.25 cu. in.). **Capacity:** Records up to 9,999 hours — automatic recycle at zero. **Markings:** White numerals indicate hours; black numerals indicate 10ths of hours. **Motor:** Unique in-line mechanism, permanently lubricated. **Voltage:** 4-40 V dc. **Operating Temperature:** – 65°F to + 160°F (–18°C to + 71°C). **Accuracy:** ± 1%. Conforms to MIL-M-3971.

Stock No.	Mfr.'s Type	Mount Type	EACH
687-0220	779555-216	Round	**54.92**
687-0225	779565-216	Rectangular	**53.99**

Eagle Signal brand Series B846 Timer

— NEW —



Housed in a compact 1/16 DIN package, changing the set time is as simple as turning a dial. Selectable time ranges from 0.06 seconds to 10 hours. Field configurable to operate in on-delay, off-delay, interval, or repeat cycle timing modes. A unique on-delay/interval model performs two timing functions in one unit. In addition to working as an on-delay timer, an independent output interval time is provided. Industry standard 8 or 11 pin socket connection. DIN rail mounted, or with optional hardware, panel mounted. NEMA 4 front panel and IEC 801 level 4 noise immunity. Universal power supply for 90-240 VAC or 24 VDC operation. **Time Ranges:** Field selectable — 1, 10 seconds; 1, 10 minutes; 1, 10 hours. **Operating Modes:** On-delay, off-delay, interval, repeat (B846-500/511), delay interval (B846-100). **Setting Accuracy:** ±5%. **Repeat Accuracy:** ±5%.

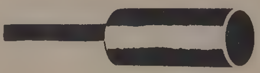
Series B846 Timer

Stock No.	Mfr.'s Type	Description	EACH
687-2031	B846-500	Multi-Function Timer	**50.00**
687-2032	B846-511	Multi-Function Timer with Instant Contacts	**55.00**
687-2033	B846-100	Multi-Function Timer with On-Delay/Interval Timer	**60.00**

Accessories

Stock No.	Mfr.'s Type	Description	EACH
687-2034	B846-A30	Mounting Bracket and Lock Ring	**3.00**
687-2035	60SR2P06	8 Pin Socket	**5.00**
687-2036	60SR3P06	11 Pin Socket	**7.00**

DYNAPAR brand Series 54Z Sensor



The 54Z Sensors operate over a wide range of air gaps making them suitable for parts counting and speed sensing applications. The wide operating voltage makes them compatible with most counters, indicators or controllers. The 54Z Series does not require a minimum target speed and can operate from zero up to 20,000 targets per second. **Power Requirements:** 5-18 VDC, 10 mA plus load. **Weight:** 2 oz. **Operating Temperature:** –40° to +105°C. **Vibration:** 15 G, 10 to 2000 Hz. **Speed Range:** 0 to 20,000 targets/second. **Output:** 1 sink 17 mA. At 18 V supply; 1 sink 23 mA @ 5 V supply; 1 source 2200 Ω pull-up. **Cable:** 105°C PVC insulation, 10 feet long.

Stock No.	Mfr.'s Type	Description	EACH
687-4104	54Z	Pickup	**58.31**
687-4105	605213	Clamp	**5.58**

Gears For Series 54Z

Stock No.	Mfr.'s Type	No. of Teeth	Pitch Dia.	Pitch	Rough Hole Bore	Largest Hole Possible	EACH
687-4106	16002070081	60	3.00"	20"	3/8"	1.00"	**44.52**

VEEDER-ROOT brand Series 7990 Tachometer/Totalizer/Running Hourmeter/Elapsed Time Indicator

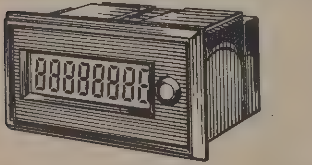
Low-cost, combined unit, the Series 7990, Model 200 is programmable as tachometer, totalizer, running hourmeter, or precise elapsed time indicator. 8 digit LCD display; 5 digits in tachometer mode, 0.35" high characters. Rugged die-cast metal housing, sealed, meets NEMA 4 standards. **Power:** 3 volt Lithium battery. Fits 2.6" × 1.3" panel cutout, 1" depth. Series 7990 is available without the tachometer mode. Accessories include three snap-on modules, a panel adapter and panel adapter with key-lock reset. Panel adapters retrofit popular electro-mechanical general purpose totalizers. The Screw Terminal Module provides for the convenience of screw terminal connection. The High Voltage AC/DC Input Module features the above, plus provides for input of AC or DC signal of 25 to 270 volts. The TRIAC Input Module features the above, plus provides for AC-type, solid state input devices such as TRIAC switching devices.

Stock No.	Mfr.'s Type	Description	EACH
687-3041	799008-101	Totalizer/Running Hourmeter/Elapsed Time Indicator	**63.00**
687-7990	799008-201	Tachometer/Totalizer/Running Hourmeter/Elapsed Time Indicator	**81.90**
687-3050	328992-010	Screw Terminal Module	**13.98**
687-3055	328992-020	High Voltage AC/DC Input Module	**20.61**
687-3060	328992-030	TRIAC Input Module	**20.61**
687-3065	328992-110	Panel Adapter, Key Lock Reset	**10.30**
687-3070	328992-120	Panel Adapter	**5.15**

Veeder-Root brand Predetermining Counters

The Backlit LCD Display provides simultaneous count and preset indication. Compact design requires 48 mm panel space, Form C (SPDT) relays, accessory sensor power supply, reset to zero or set to a number operation, two level program and preset data security, NEMA 4/1P65 front panel seal. **Power Supply:** 95 to 130 VAC, 50/60 Hz, 6 VA max. 10 to 26 VDC, 0.4 A max. **Output:** Relay Output; Form C, 5 amp resistive at 24 VDC or 120 VAC 3 amp resistive at 240 VAC; 1/8 H.P. at 120/240 VAC. **Output Time:** 0.01 to 99.99 seconds momentary, or latch. **Reset:** Pushbutton; selectable enable, remote or automatic. **Accessory Power:** 12 VDC ± 25%, 100 mA maximum. **Operating Temperature:** 32° to 112°F (–0 to 50°C).

Stock No.	Mfr.'s Type	Count Rate	Count Modes	Preset 1	Preset 2	Batch Preset	Calibrator and Dec. Pt.	EACH
687-4100	SQC11000	20.0 Hz	add/sub	Yes	No	No	No	**132.36**
687-4101	SQC12000	2.5 kHz	a/s, quad	Yes	No	No	Yes	**158.78**
687-4102	SQC22000	2.5 kHz	a/s, quad	Yes	Yes	No	Yes	**195.41**
687-4103	SQB22000	2.5 kHz	a/s, quad	Yes	No	Yes	Yes	**195.41**



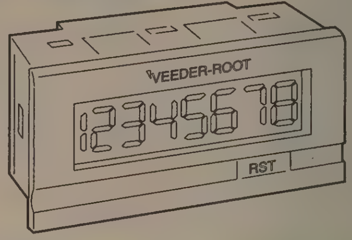
Veeder-Root Series 7999 "Mite"

Low cost family of compact totalizers, elapsed-time-indicators, and rate indicators with totalizer. Easy-to-read 8 mm high LCD display. Unidirectional totalizers and timer models are self-powered by a long life lithium battery. Fast panel mounting into a 1" × 2" cut out. NEMA-4 rated; CSA certified, UL recognized.

Stock No.	Mfr.'s Type	Description	EACH
687-2010	799988-110	8-digit totalizer, panel reset	**32.98**
687-2015	799988-410	8-digit totalizer, bidirectional, panel reset	**42.26**
687-2020	799988-510	8-digit timer, sec. or min. and sec., panel reset	**37.10**
687-2025	799988-610	8-digit timer, hrs. and min. or hrs. and hun., panel reset	**37.10**
687-5001	799988-801	5-digit rate, 6 digit count, 10-30 VDC power	**46.38**
687-2030	329587-001	Adapter module, 5-240 VAC/DC for 799988-110	**12.36**
687-2035	329588-001	Adapter module, 5-240 VAC/DC for timers	**12.36**
687-2040	329589-001	Quadrature input adapter for 799988-410	**27.30**
687-2045	329590-001	Screw terminal adapter	**9.00**

Veeder-Root brand Totalizing and Preset Counters

— NEW —



The A103 totalizing and preset counters are compact and cost-efficient. Features include a supertwist LCD with .47 (12 mm) high digits and green illumination display backlight capability. 3-volt lithium battery eliminates need for externa power. Accepts input signals from dry contact, PNP, or NPN sensors and encoders. High and low speed count inputs Reset on front panel or remotely. Fits 68 × 33 mm cut-out. Order quick-attach option modules separately on this page Front panel rated NEMA 4/IP65.

Stock No.	Mfr.'s Type	Description	EACH
687-9001	A103-000	Totalizer	**59.00**
687-9002	A103-001	Add/Subtract Totalizer	**79.00**
687-9003	A103-002	Position Indicator	**79.00**
687-9004	A103-007	Preset Counter	**89.00**

DYNAPAR brand Tachometers and Rate Indicators

— NEW —

A103 tachometers provide readout of motor, machine shaft or other RPM. Rate indicators provide a readout of virtually any rate: gallons/minute, parts/hour, feet/minute, etc. LCD with backlighting capability. All units use an internal 3-vol single or dual battery. Magnetic input is capacitative coupled; 10 kHz (50% duty cycle); 0.2 V peak (28 VVDC max.). Fits 68 × 38 mm cutout. **Ranges and Resolution:** seconds, minutes to 1/10, hours to 1/10, and hours: minutes: seconds. **Weight:** 2.25 oz. (64 g). Order matching totalizing and preset counters, elapsed time indicators, and quick-action option modules separately on this page. Front panel is rated NEMA 4/IP65 for use in washdown environments.

Stock No.	Mfr.'s Type	Description	EACH
687-9005	A103-003	Tachometer	**69.00**
687-9006	A103-004	Programmable Rate Meter	**79.00**
687-9007	A103-005	Rate Meter and Totalizer	**89.00**
687-9008	A103-009	Rate Meter and Totalizer with Pulse Output	**99.00**

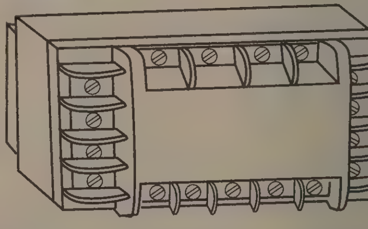
Eagle Signal brand Elapsed and Preset Timers — NEW —

A103 elapsed time indicators and preset timers can be programmed to meet your needs. They display in seconds, minutes, hours, or hours: minutes: seconds. All units use an internal 3-volt single or dual battery. Features include a 7-digit supertwist LCD with .47" (12 mm) high digits and green illumination display backlight capability. Accepts input signals from dry contact, PNP, or NPN sensors. Timing start/stop can be initiated by solid-state signals or mechanical switches. Reset on front panel or remotely. **Ranges and Resolution:** seconds, minutes to 1/10, hours to 1/10, hours: minutes: seconds. Connections made at screw terminals. **Weight:** 2.25 oz. (64 g). Order matching counters, rate indicators, and quick-attach option modules separately on this page. Front panel rated NEMA 4/IP65 for use in washdown environments.

Stock No.	Mfr.'s Type	Description	EACH
687-9009	A103-006	Elapsed Time Indicator	**59.00**
687-9010	A103-008	Preset Timer	**89.00**

A103 Series Option Modules

— NEW —



These quick-attach option modules provide a power supply for sensors, display backlighting, timing signals, and mechanical relay output. They accept high or low voltage AC or DC input signals. Low voltage input accepts 15 to 30 VAC or VDC for count input. High voltage input accepts 100 to 260 volt AC/DC for count input. Mechanical relay output is SPDT (Form C); 120/240 VAC, 30 VDC contacts.

Stock No.	Mfr.'s Type	Description	EACH
687-9011	A103-A10	HV Input Module	**15.00**
687-9012	A103-A11	Relay Output Module	**15.00**
687-9013	A103-A12	AC Power Supply	**30.00**
687-9014	A103-A13	HV Input/Relay Out Module	**25.00**
687-9015	A103-A14	HV Input/Power Supply Module	**40.00**
687-9016	A103-A15	Power Supply/Relay Module	**40.00**
687-9017	A103-A16	HV Input/Power Supply/Relay Module	**50.00**
687-9018	A103-A17	LV Input Module	**15.00**
687-9019	A103-A18	LV Input/Relay Out Module	**25.00**
687-9020	A103-A19	LV Input/Power Supply	**40.00**
687-9021	A103-A20	LV Input/Power Supply/Relay Module	**50.00**

Section Index

Semiconductors

Page

- **Advanced Micro Devices**
  - Complex Programmable Logic Devices (MACH) ... 630
  - Non-Volatile Memory ... 630, 631
  - PAL Devices
    - Asynchronous PALs ... 632
    - Standard PALs ... 632
    - Universal PALs ... 631
- **Analog Devices**
  - AC to DC Modular Power Supplies ... 642
  - Accelerometers ... 634
  - Amplifiers
    - Audio ... 639
    - Buffer ... 639
    - Comparators ... 639
    - Current Feedback High Speed ... 638
    - Difference ... 639
    - Instrumentation ... 637
    - Isolation ... 637
    - Low Current Noise ... 637
    - Low Voltage Noise ... 638
    - Low/Micro Power ... 637
    - Precision ... 638
    - Sample/Track and Hold ... 637
    - Single Supply ... 638
    - Voltage Feedback High Speed ... 638
  - Analog Multipliers/Dividers ... 639
  - Analog Switches and Multiplexers ... 636
  - Analog to Digital Converters
    - High Speed ... 634
    - Non-Sampling ... 635
    - Sampling ... 634, 635
    - Sigma Delta ... 635
  - DC to DC Converters ... 641, 642
  - Digital Signal Processors ... 633
  - Digital to Analog Converters
    - Current Output ... 635, 636
    - Voltage Output ... 635, 636
  - Interface
    - Line Drivers/Receivers ... 640
    - Transceivers ... 640
  - Micropower Linear Voltage Regulators ... 641
  - Microprocessor Supervisory Circuits ... 641
  - Modulator/Demodulator ... 639
  - Motion Control Circuits ... 643
  - RGB to NTSC/PAL Encoder ... 640
  - RMS to DC Converters ... 639
  - Signal Compression
    - Logarithmic Amplifiers ... 640
    - Variable Gain Amplifiers ... 640
  - Signal Conditioners ... 643
  - Temperature Sensors ... 642
  - Temperature Switches ... 643
  - Thermocouple Signal Conditioners ... 643
  - Voltage References ... 641
  - Voltage to Freq./Freq. to Voltage Converters ... 640, 641
- **Collmer Semiconductor, Inc.**
  - MOSFETs ... 647
  - Rectifiers
    - 1 and 3 Amp Silicon ... 645
    - Bridge, 3 Phase Full Wave ... 645
    - Bridge, Silicon ... 645, 646
    - Fast Recovery ... 644
    - Fast Recovery High Voltage ... 648
    - Schottky Barrier ... 644
    - X-Ray/Microwave/Power Supply ... 647
  - Z-Trap Metal Oxide Varistors ... 648
- **Harris**
  - AC to DC Converters ... 652
  - Amplifiers
    - Differential ... 655
    - General Purpose ... 654, 655
    - High Performance ... 654
    - Sample and Hold ... 651
  - Analog to Digital Converters ... 650
  - Buffers, High Performance ... 654
  - Comparators ... 653, 654
  - Data Communications ... 649, 650
  - Digital Imaging Products ... 650
  - Digital Signal Processor Filters ... 650
  - Digital Signal Synthesis ... 650
  - Digital to Analog Converters ... 651
  - Diode Arrays ... 655
  - Display Drivers ... 651
  - ESD Protection Circuits ... 653
  - Evaluation Boards ... 653
  - Full Bridge Drivers ... 652
  - Half Bridge MOSFET Drivers ... 652
  - High Side Switches ... 652
  - High Speed Data Converters
    - Analog to Digital ... 650
    - Digital to Analog ... 651
  - IGBTs ... 659
  - Interface
    - Multiplexers ... 651
    - Switches ... 652
    - Transceivers ... 651
  - Logic
    - AC and ACT CMOS ... 657, 658
    - CD4000 CMOS ... 658
    - FCT CMOS ... 658, 659
    - HC and HCT CMOS ... 655, 656, 657
    - LPT ... 659
  - Low Side Switches ... 652
  - Microprocessor Peripherals ... 649
  - Microprocessors ... 649
  - MOSFETs
    - BUZ and RF Series ... 660
    - Full Bridge Drivers ... 652
    - Half Bridge Drivers ... 652
    - JEDEC ... 660
    - Logic Level ... 660
    - MEGAFET ... 660
    - N-Channel ... 660
    - P-Channel ... 660
  - MOVs
    - "C" III Series ... 663
    - LA Series ... 662
    - ML Series ... 663
    - ZA Series ... 661, 662
  - Operational Amplifiers
    - General Purpose ... 654
    - High Performance ... 654
  - Power Supply Circuits
    - Pulse Width Modulator ... 653
    - Voltage Converters ... 653
    - Voltage Regulators ... 653
  - PRISM Radio Chipset ... 649
  - Protection Circuits ... 653
  - Rectifiers
    - Fast Recovery ... 660
    - Hyper-Fast Recovery ... 659
    - Standard Recovery ... 660
    - Ultra-Fast Recovery ... 660
  - Sample and Hold Amplifiers ... 651
  - Switches
    - High Side ... 652
    - Low Side ... 652
  - Timers/Oscillators ... 655
  - Transient Surge Suppressors
    - "C" III Series ... 663
    - LA Series ... 662
    - ML Series ... 663
    - Surgectors ... 663
    - ZA Series ... 661, 662
  - Transistor Arrays ... 655
  - Voltage Monitoring Circuits ... 653
- **Hewlett Packard**
  - Microwave Diodes and Transistors ... 664
- **Intel**
  - Microcontrollers ... 665, 666
- **Lattice**
  - Generic Gate Array Logic ... 667
  - High Density Programmable Logic ... 668
  - isp Starter Kit ... 668
  - isp Synario System ... 668
- **Maxim**
  - Analog to Digital Converters ... 670
  - Battery Chargers ... 671
  - Boost Converters ... 671
  - Charge-Pumps ... 671
  - Comparators ... 672
  - Digital to Analog Converters ... 670
  - Flash Memory Programming Supplies ... 671
  - Interface
    - High ESD RS-232 and RS-485 Products ... 669
    - RS-232 and RS-485 Isolation Products ... 669
    - RS-485/RS-422 Products ... 669
    - Transceivers ... 669
  - LCD Power Supplies ... 671
  - Linear Regulators ... 671
  - Microprocessor Supervisory Circuits ... 670, 671
  - Multiplexers ... 670
  - Op-Amps ... 671, 672
  - Switches ... 670
  - Video Amplifiers ... 672
  - Video Buffers ... 672
  - Video Multiplexers/Amplifiers ... 672
  - Video Switches, RGB ... 672
- **Mosel Vitelic**
  - DRAMs ... 673
  - FIFOs ... 673
  - SIMMs ... 673
  - SRAMs ... 673
  - Video RAMs ... 673
- **Motorola**
  - Analog to Digital Converters ... 686
  - Clock Drivers ... 684
  - Comparators ... 688
  - Data Books ... 674
  - Digital Signal Processors ... 675
  - Digital to Analog Converters ... 687
  - Diodes
    - Hot-Carrier (Schottky) ... 701
    - Rectifiers ... 705, 706
    - Schottky ... 705
    - Surface Mount ... 705, 706
    - Switching ... 701, 702
    - Tuning ... 700, 701
    - TVS ... 703, 704
    - Zener ... 702, 703
  - Embedded Controllers ... 676, 677
  - Integrated Data Communication Processors ... 677
  - Integrated Processors ... 677
  - Interface
    - Display Drivers ... 685
    - Line Drivers ... 684
    - Line Receivers ... 684
    - Transceivers ... 685
  - ISDN: Integrated Services Digital Network ICs ... 684
  - Logic
    - 74AC and 74ACT ... 680
    - 74F ... 680
    - 74HC and 74HCT ... 681
    - 74LS ... 682
    - ECLinPS ... 682, 683
    - MC10 ... 683
    - MC10E and MC100E ... 682
    - MC10EL and MC100EL ... 683
    - MC10ELT and MC100ELT ... 683
    - MC10H and MC100H ... 683
    - MC14000 ... 679
    - MC16 ... 683
    - MECL ... 683
  - Microcontrollers ... 677, 678, 679
  - Microprocessor Voltage Regulator/Supervisory Circuit ... 690
  - Microprocessors ... 675, 676
  - Operational Amplifiers ... 687, 688
  - Optoisolators ... 692, 693
  - Phase Locked Loop Clock Drivers ... 684
  - Phase Locked Loop Frequency Synthesizers ... 684
  - Phase Locked Loops ... 684
  - Power Factor Controllers ... 690
  - Pressure Sensors ... 691, 692
  - Rectifiers
    - Fast Recovery ... 706
    - General Purpose ... 706
    - Schottky ... 705
    - Surface Mount ... 705, 706
    - Ultrafast ... 706
  - Regulators
    - Switching ... 690
    - Voltage ... 689, 690
  - Remote Control ICs ... 684
  - RF Communications ICs
    - Modulator/Demodulator ... 686
    - Narrowband ... 686
    - Transmitters ... 686
    - Wideband ... 685
  - SCRs ... 707
  - Switching Regulators ... 690
  - Technical Literature
    - Data Books ... 674
  - Thyristors ... 707
  - Transient Voltage Suppressors ... 703, 704
  - Transistors
    - Bipolar ... 693, 694, 695
    - Bipolar Power ... 695, 696, 697
    - FETs ... 697, 698
    - JFETs ... 697
    - MOSFETs ... 697, 698, 699
    - Multiple ... 694
    - RF Amplifiers ... 700
    - RF Monolithic ICs ... 700
    - RF Power Bipolar Transistors ... 699
    - RF Power MOSFETs ... 698, 699
    - RF Small Signal ... 699, 700
    - Surface Mount Bipolar ... 694
    - Surface Mount JFETs ... 697
    - Surface Mount TMOS ... 698
    - TMOS ... 697, 698
    - TMOS Power MOSFETs ... 698
  - TRIACs ... 707
  - Under Voltage Sense/Reset Controllers ... 690
  - Voice ICs
    - Encoders ... 686
    - IF Circuits ... 686
    - Modulators ... 686
    - Sound IF Detector ... 686
    - Video Capture Chip Sets ... 686
  - Voltage References ... 690
  - Voltage Regulators ... 689, 690
- **National Semiconductor**
  - Amplifiers
    - General Purpose ... 708
    - High Speed ... 708
    - Low Power ... 708
  - Analog to Digital Converters ... 710
  - Audio Control/Noise Reduction Pre-Amps ... 709
  - Audio Power Amps ... 709
  - Buffers
    - General Purpose ... 709
    - High Speed ... 708
  - Clocks ... 715
  - Digital to Analog Converters ... 710

Semiconductors (Continued)

Page
- Frequency to Voltage Converters 712
- Interface
  - Future Bus+ and Backplane 715
  - Line Drivers 714
  - Line Receivers 714
  - Line Transceivers 714
- Logic
  - 74AC and 74ACT 715
  - 74ALS and 74LS 715
  - 74AS 716
  - 74C 716
  - 74F 716
  - CD4000 CMOS 716
- Motion Control Circuits 714
- Power Converters 711
- Regulators
  - Adjustable Negative 713
  - Adjustable Positive 712
  - Fixed Negative 713
  - Fixed Positive 713
  - Low Dropout 712
  - Shunt Voltage 713
- Sample and Hold Circuits 712
- Switched Capacitor Filters 712
- Switches, High Current 713
- Switching Regulators 712
- Temperature Sensors 711
- Video Pre-Amps/CRT Drivers 710
- Voltage Comparators 709
- Voltage References 710, 711

NTE
- Diodes
  - General Purpose 719
  - Zener 719
- Insulator Kits 717
- Integrated Circuits 719
- Linear ICs 719
- Logic ICs 719
- Rectifiers
  - Bridge 719
  - Fast Recovery 719
  - General Purpose 719
  - High Voltage 719
- Software 717, 743
- Technical Manuals 717, 743
- Thermo Pads 717
- Transistors
  - Bipolar 717, 718

Philips
- Analog to Digital Converters 722
- Compandors 721

Page
- Comparators 721
- Digital to Analog Converters 722
- FM IF Systems 722
- Mixer Systems 722
- Function Generators 722
- Line Drivers/Receivers 722
- Logic
  - 74ABT 720
  - 74F 720
  - 74HC and 74HCT 720
- Microcontrollers 720
- Operational Amplifiers 721
- Phase Lock Loops 722
- Programmable Logic Arrays 721
- Relay/Peripheral Drivers 722
- RF Amplifiers 721
- Timers 722

Semiconductors Inc.
- Diodes, Silicon Single Junction 723
- Transistors
  - Power 723
  - Small Signal General Purpose 723
  - Unijunction 723
- Voltage Regulators 723

Siemens Components
- SIOV Metal Oxide Varistors 724, 725
- SVP Surge Voltage Protectors 725

Simple Technology
- Flash Memory Cards 726
- Hard Drives 726
- Memory Modules 726
- SIMMs 726

Texas Instruments
- Analog Interface for DSP 731
- Analog to Digital Converters 730
- Bipolar Programmable Logic 729
- Comparators 732
- Digital Signal Processors 730
- Digital to Analog Converters 730
- Interface
  - General Purpose Drivers 731
  - Line Drivers 731
  - Line Receivers 731
  - Line Transceivers 731
  - Motor Drivers 732
  - Transistor Arrays 732
  - UARTs 731
  - Vacuum Fluorescent Display Drivers 731
- Logic
  - 7400 727
  - 74ACT11 727

Pag
  - 74ALS 72
  - 74AS 72
  - 74BCT 72
  - 74F 727, 72
  - 74HC 72
  - 74HCT 72
  - 74LS 72
  - 74S 72
- Operational Amplifiers
  - Internally Compensated, Dual 732, 73
  - Internally Compensated, Quad 73
  - Internally Compensated, Single 73
- Power Supply Supervisors 73
- Programmable Read Only Memory
  - EPROMs 729, 73
  - One Time Programmable 729, 73
- Switched Capacitor Voltage Converters 73
- Switching Power Supply Controllers 73
- Telecommunication Circuits 73
- Timers 73
- Voltage References 73
- Voltage Regulators 73

Thomson Consumer Electronics
- Linear ICs 735
- Rectifiers 736
- SCRs 736
- Software 735, 743
- Technical Manuals 735, 743
- Thyristors 736
- Transistors 735, 736
- TRIACs 736
- Voltage Regulators 736

Unitrode
- Battery Charger ICs 738
- Communications Interface Drivers and Receivers 737
- Drivers 737
- Electronic Circuit Breaker 738
- Evaluation Boards 737
- Lighting Controllers 738
- Linear Regulators 738
- Power Factor Correction 737
- Power Supply Support ICs 738
- PWM Controllers 738, 739
- SCSI Active Terminators 737
- Supply Monitors 739
- Switching Regulators 739

Xilinx
- CPLDs 742
- FPGAs 740, 741, 742

Technical Manuals and Software

Hearst Business Publishing
- IC MASTER 743
- IC MASTER Alternate Source Directory 743
- IC MASTER CD ROM 743

NTE
- Technical Manual/Selection Guide 717, 743
- Quick Cross 717, 743
- WinBoard 717
- WinDraft 717

Thomson Consumer Electronics
- SK Cross 735, 743
- SK Replacement Technical Manual 735, 743

Breadboards, Card Cages, Extender Cards and Prototyping Boards

Twin Industries
- Extender Cards 744, 745
- Prototyping Bread Boards 745
- Prototyping BUS Specific Boards 744
- Prototyping General Purpose Boards 744
- Surface Mount Adapters 745
- VME Backplanes 745

Vector Electronic Company
- Card Guides 748
- Extender Cards 747
- Metric Extender Cards 747
- PC Bus Plug Boards 746
- PCI Developers Kit 748
- PCI Extender Cards 747
- PCI Prototyping Boards 749
- PCMCIA Test Extender 749
- Prototyping Boards 746, 747, 748
- Punchboards 746
- Subrack Modules 748
- Subracks 748
- VME Prototyping Boards 746
- Wire Wrap Terminals and Pins 749

Vero
- Card Cages 750
- Card Guides 750
- Prototyping Boards 750
- Terminals 750
- VME Backplane Spacer Strips 750
- VME Extender Cards 750
- VME Microracks 750
- VMExcel Monolithic Backplanes 750

Heatsinks

Aavid Thermal Technologies, Inc.
- Extrusions, 4 Foot 753
- Heat Sinks
  - Slide-On For DIPs 751
  - TO-3 751
  - TO-5 751
  - TO-92 753
  - TO-126 ..... 752, 753
  - TO-127 752
  - TO-202 752
  - TO-218 752
  - TO-220 ..... 751, 752, 753
- Insulators 753
- Software, Thermal Management 752
- Ther-O-Bond Adhesive 753
- Ther-O-Link, Thermally Conductive Compound 753

NTE
- Insulator Kits 717

Programmers and UV Erasers

Logical Devices
- E/EEPROM Programmers 754
- FPGA Programmers 754
- PC Based Universal Programmer 754
- UV EPROM Erasers 754

Spectroline
- Digital Ultraviolet Radiometers 755
- Replacement UV Tubes and Grids 755
- UV EPROM Erasers 755

Static Control Products

3M
- Anti-Static Utility Tape 757
- Anti-Static Warning Labels 757
- Clean-Walk Mats 757
- Computer and Keyboard Static Control Pads 756
- Conductive Foam 757
- Conductive Hinged Container 757
- Floor Mats 756
- Ionized Air Blower 757
- Portable Field Service Grounding Kit 756
- Shoe Grounding Assembly 756
- Static Sensors 757
- Static Shielding Bags 756
- Static Shielding Wrap 757
- Table Mats 756
- Test Kit for Control Surfaces 756
- Work Station Grounding Kits 756
- Wrist Strap Tester 756
- Wrist Straps and Grounding Cords 756

Manufacturer's Code Log

ADI	Analog Devices Inc.
AMD	Advanced Micro Devices
COL	Collmer Semiconductors, Inc.
DLS	Dallas Semiconductor
HAR	Harris Semiconductor
ITL	Intel
LAT	Lattice
MXM	Maxim
MOS	Mosel-Vitelic
MOT	Motorola Semiconductor
NSC	National Semiconductor
NTE	NTE Electronics
PHI	Philips Semiconductors
SEM	Semiconductors Inc.
SIE	Siemens Components, Inc
TIS	Texas Instruments
THO	Thomson Conusumer Electronics
UNI	Unitrode Integrated Circuits
XLX	Xilinx

Mfr.'s Type	Price	Mfr.'s Code	Page
920	167.56	ADI	642
923	178.73	ADI	642
941	149.04	ADI	642
945	166.57	ADI	642
949	80.85	ADI	642
955	167.03	ADI	642
958	71.23	ADI	642
960	77.80	ADI	642
962	77.80	ADI	642
966	185.19	ADI	642
970	177.62	ADI	642
975	242.41	ADI	642
977	312.79	ADI	642
1.5KE12CA	0.96	MOT	703
1.5KE130A	1.12	MOT	704
1.5KE130CA	1.58	MOT	704
1.5KE150CA	1.58	MOT	704
1.5KE15A	0.69	MOT	703
1.5KE15CA	0.62	MOT	703
1.5KE16A	0.68	MOT	703
1.5KE18A	0.68	MOT	703
1.5KE18CA	0.96	MOT	703
1.5KE200A	1.12	MOT	704
1.5KE20A	0.68	MOT	703
1.5KE20CA	0.96	MOT	703
1.5KE220A	1.12	MOT	704
1.5KE220CA	1.58	MOT	704
1.5KE22A	0.68	MOT	703
1.5KE22CA	0.96	MOT	703
1.5KE24CA	0.96	MOT	703
1.5KE250A	1.12	MOT	704
1.5KE30A	0.69	MOT	703
1.5KE33A	0.69	MOT	704
1.5KE36A	0.69	MOT	704
1.5KE36CA	0.96	MOT	704
1.5KE39A	0.69	MOT	704
1.5KE43A	0.68	MOT	704
1.5KE6.8A	0.69	MOT	703
1.5KE6.8CA	0.96	MOT	703
1.5KE62A	0.69	MOT	704
1.5KE75CA	0.96	MOT	704
1.5KE8.2A	0.68	MOT	703
1.5KE8.2CA	0.96	MOT	703
1.5KE82CA	0.96	MOT	704
1.5KE91CA	0.96	MOT	704
1.5SMC15AT3	1.12	MOT	704
1.5SMC27AT3	1.12	MOT	704
1.5SMC36AT3	1.12	MOT	704
1.5SMC51AT3	1.12	MOT	704
1B21AN	84.03	ADI	643
1B22AN	114.68	ADI	643
1B31AN	90.85	ADI	643
1B32AN	102.20	ADI	643
1B41AN	155.74	ADI	643
1B51AN	140.38	ADI	643
1N4001	0.05	MOT	—
1N4001	0.06	COL	645
1N4002	0.05	MOT	—
1N4002	0.06	COL	645
1N4003	0.05	MOT	—
1N4003	0.06	COL	645
1N4004	0.05	MOT	706
1N4004	0.07	COL	645
1N4005	0.06	MOT	—
1N4005	0.07	COL	645
1N4006	0.06	MOT	—
1N4006	0.07	COL	645
1N4007	0.07	MOT	706
1N4007	0.08	COL	645
1N4148	0.16	SEM	723
1N4245	0.33	HAR	660
1N4372A	0.15	MOT	702
1N4678	0.40	MOT	702
1N4682	0.40	MOT	702
1N4683	0.40	MOT	702
1N4686	0.40	MOT	702
1N4687	0.80	MOT	702
1N4688	0.40	MOT	702
1N4689	0.26	MOT	702
1N4690	0.40	MOT	702
1N4691	0.40	MOT	702
1N4692	0.80	MOT	702
1N4693	0.80	MOT	702
1N4697	0.40	MOT	702
1N4728A	0.10	MOT	702
1N4730A	0.10	MOT	702
1N4731A	0.10	MOT	702
1N4732A	0.10	MOT	702
1N4733A	0.10	MOT	702
1N4734A	0.10	MOT	702
1N4735A	0.09	MOT	702
1N4736A	0.10	MOT	702
1N4737A	0.10	MOT	702
1N4738A	0.10	MOT	702
1N4739A	0.10	MOT	702
1N4740A	0.10	MOT	702
1N4742A	0.09	MOT	702
1N4743A	0.10	MOT	702
1N4744A	0.10	MOT	702
1N4745A	0.10	MOT	702
1N4746A	0.20	MOT	702
1N4747A	0.10	MOT	702
1N4748A	0.10	MOT	702
1N4749A	0.10	MOT	702
1N4750A	0.10	MOT	702
1N4751A	0.10	MOT	702
1N4752A	0.10	MOT	702
1N4754A	0.16	MOT	702
1N4759A	0.32	MOT	702
1N4760A	0.32	MOT	702
1N4761A	0.32	MOT	702
1N4764A	0.38	MOT	702
1N4933	0.08	MOT	—
1N4934	0.10	MOT	—
1N4935	0.12	MOT	706
1N4936	0.13	MOT	—
1N4937	0.15	MOT	706
1N5221B	0.24	MOT	702
1N5223B	0.24	MOT	702
1N5226B	0.08	MOT	702
1N5228B	0.08	MOT	702
1N5229B	0.08	MOT	702
1N5230B	0.08	MOT	702
1N5231B	0.07	MOT	702
1N5232B	0.08	MOT	702
1N5233B	0.08	MOT	702
1N5234B	0.08	MOT	702
1N5235B	0.08	MOT	702
1N5236B	0.08	MOT	702
1N5237B	0.08	MOT	702
1N5239B	0.08	MOT	702
1N5240B	0.07	MOT	702
1N5242B	0.06	MOT	702
1N5245B	0.08	MOT	702
1N5248B	0.08	MOT	702
1N5254B	0.08	MOT	702
1N5271B	0.34	MOT	702
1N5276B	0.68	MOT	702
1N5279B	0.68	MOT	702
1N5281B	0.34	MOT	702
1N5283	7.50	MOT	703
1N5287	5.30	MOT	703
1N5298	5.30	MOT	703
1N5305	7.50	MOT	703
1N5309	5.30	MOT	703
1N5314	6.30	MOT	703
1N5333B	0.61	MOT	702
1N5335B	1.32	MOT	702
1N5336B	1.32	MOT	702
1N5337B	0.66	MOT	702
1N5338B	0.66	MOT	702
1N5339B	0.46	MOT	702
1N5340B	0.66	MOT	702
1N5341B	0.66	MOT	702
1N5342B	0.66	MOT	702
1N5343B	0.66	MOT	702
1N5344B	0.66	MOT	702
1N5346B	0.66	MOT	702
1N5347B	0.66	MOT	702
1N5348B	0.66	MOT	702
1N5349B	0.52	MOT	702
1N5350B	0.66	MOT	702
1N5351B	1.32	MOT	702
1N5352B	0.66	MOT	702
1N5353B	0.66	MOT	702
1N5354B	1.32	MOT	702
1N5355B	0.66	MOT	702
1N5357B	0.66	MOT	702
1N5358B	0.66	MOT	702
1N5359B	0.66	MOT	702
1N5360B	1.32	MOT	702
1N5362B	1.32	MOT	702
1N5363B	0.66	MOT	702
1N5364B	0.66	MOT	702
1N5365B	0.66	MOT	702
1N5366B	0.66	MOT	702
1N5367B	0.66	MOT	702
1N5368B	0.66	MOT	702
1N5369B	1.32	MOT	702
1N5370B	0.66	MOT	702
1N5371B	1.32	MOT	702
1N5372B	0.66	MOT	702
1N5374B	0.66	MOT	702
1N5375B	0.66	MOT	702
1N5377B	1.32	MOT	702
1N5378B	0.66	MOT	702
1N5380B	0.66	MOT	702
1N5383B	0.66	MOT	702
1N5386B	1.32	MOT	702
1N5388B	0.66	MOT	702
1N5400	0.12	MOT	—
1N5400	0.15	COL	645
1N5401	0.12	MOT	—
1N5401	0.16	COL	645
1N5402	0.12	MOT	—
1N5402	0.19	COL	645
1N5404	0.13	MOT	706
1N5404	0.18	COL	645
1N5406	0.15	MOT	706
1N5406	0.18	COL	645
1N5407	0.21	COL	645
1N5408	0.22	COL	645
1N5817	0.23	MOT	705
1N5818	0.25	MOT	705
1N5819	0.26	MOT	705
1N5820	0.39	MOT	705
1N5821	0.39	MOT	705
1N5822	0.39	MOT	705
1N5908	0.69	MOT	—
1N6267A	0.69	MOT	703
1N6271A	0.68	MOT	703
1N6273A	0.68	MOT	703
1N6274A	0.69	MOT	703
1N6275A	0.69	MOT	703
1N6276A	0.68	MOT	703
1N6277A	0.68	MOT	703
1N6278A	0.68	MOT	703
1N6280A	0.69	MOT	703
1N6281A	0.68	MOT	703
1N6282A	0.69	MOT	703
1N6283A	0.70	MOT	704
1N6284A	0.69	MOT	704
1N6285A	0.69	MOT	704
1N6286A	0.68	MOT	704
1N6287A	0.68	MOT	704
1N6288A	0.69	MOT	704
1N6289A	0.69	MOT	704
1N6290A	0.69	MOT	704
1N6291A	0.68	MOT	704
1N6294A	0.68	MOT	704
1N6295A	0.72	MOT	704
1N6299A	1.12	MOT	704
1N6302A	1.12	MOT	704
1N6303A	1.12	MOT	704
1N746A	0.08	MOT	702
1N749A	0.08	MOT	702
1N750A	0.08	MOT	702
1N751A	0.08	MOT	702
1N752A	0.08	MOT	702
1N753A	0.08	MOT	702
1N754A	0.08	MOT	702
1N759A	0.08	MOT	702
1N823	0.76	MOT	698
1N823A	0.80	MOT	—
1N825	0.84	MOT	—
1N825A	0.92	MOT	—
1N827	1.32	MOT	—
1N827A	2.20	MOT	—
1N829A	3.20	MOT	—
1N914B	0.18	SEM	723
1N959B	0.15	MOT	702
1N961B	0.08	MOT	702
1N963B	0.08	MOT	702
1N965B	0.08	MOT	702
1SMB100AT3	0.58	MOT	704
1SMB10AT3	0.94	MOT	704
1SMB12AT3	0.58	MOT	704
1SMB130AT3	0.58	MOT	704
1SMB13AT3	0.94	MOT	704
1SMB15AT3	0.94	MOT	704
1SMB170AT3	0.58	MOT	704
1SMB18AT3	0.58	MOT	704
1SMB20AT3	0.94	MOT	704
1SMB22AT3	0.58	MOT	704
1SMB28AT3	0.94	MOT	704
1SMB30AT3	0.94	MOT	704
1SMB36AT3	0.58	MOT	704
1SMB40AT3	0.58	MOT	704
1SMB43AT3	0.94	MOT	704
1SMB48AT3	0.94	MOT	704
1SMB5.0AT3	0.94	MOT	704
1SMB51AT3	0.58	MOT	704
1SMB5913BT3	0.48	MOT	702
1SMB5915BT3	0.48	MOT	702
1SMB5918BT3	0.48	MOT	702
1SMB5919BT3	0.48	MOT	702
1SMB5920BT3	0.48	MOT	702
1SMB5921BT3	0.48	MOT	702
1SMB5925BT3	0.48	MOT	702
1SMB5927BT3	0.48	MOT	703
1SMB5928BT3	0.48	MOT	703
1SMB5929BT3	0.48	MOT	703
1SMB5930BT3	0.48	MOT	703
1SMB5932BT3	0.48	MOT	703
1SMB5934BT3	0.48	MOT	703
1SMB5935BT3	0.48	MOT	703
1SMB6.0AT3	0.58	MOT	704
1SMB7.0AT3	0.58	MOT	704
1SMB85AT3	0.58	MOT	704
1SMC12AT3	1.12	MOT	704
1SMC13AT3	1.12	MOT	704
1SMC15AT3	1.12	MOT	704
1SMC26AT3	1.12	MOT	704
1SMC33AT3	1.12	MOT	704
1SMC40AT3	1.12	MOT	704
1SMC5.0AT3	1.12	MOT	704
1SMC6.0AT3	1.12	MOT	704
2N2102	0.86	MOT	—
2N2219	1.08	MOT	—
2N2219A	1.08	MOT	695
2N2222	0.28	MOT	—
2N2222A	0.30	MOT	695
2N2369A	0.52	MOT	695
2N2484	0.60	MOT	695
2N2646	2.86	SEM	723
2N2647	3.24	SEM	723
2N2857	1.66	MOT	—
2N2904A	0.70	MOT	—
2N2905	0.46	MOT	—
2N2905A	0.48	MOT	695
2N2907	0.30	MOT	—
2N2907A	0.32	MOT	695
2N3019	0.64	MOT	695
2N3053	0.58	MOT	—
2N3055	1.30	MOT	696
2N3055	1.36	SEM	—
2N3055A	1.66	MOT	696
2N3439	1.94	MOT	—
2N3440	1.90	MOT	—
2N3442	1.62	MOT	696
2N3467	1.10	MOT	695
2N3700	0.70	MOT	695
2N3716	1.97	MOT	696
2N3771	2.04	MOT	697
2N3772	2.36	MOT	697
2N3773	2.42	MOT	696
2N3773	2.71	SEM	—
2N3791	1.56	MOT	696
2N3792	1.49	MOT	696
2N3799	1.10	MOT	695
2N3866	2.47	MOT	—
2N3903	0.08	MOT	—
2N3904	0.06	MOT	693
2N3906	0.06	MOT	693
2N3958	3.03	SEM	—
2N3964	3.04	MOT	695
2N4033	1.00	MOT	—
2N4036	1.70	MOT	—
2N4037	1.70	MOT	—
2N4124	0.08	MOT	—
2N4125	0.08	MOT	—
2N4398	3.34	MOT	697
2N4399	3.56	MOT	697
2N4400	0.07	MOT	—
2N4401	0.07	MOT	693
2N4402	0.07	MOT	—
2N4403	0.07	MOT	693
2N4427	2.42	MOT	—
2N4851	3.44	SEM	—
2N4852	3.44	SEM	—
2N4853	3.44	SEM	723
2N4870	1.91	SEM	723
2N4871	1.91	SEM	723
2N4918	0.56	MOT	696
2N4919	0.56	MOT	696
2N4920	0.47	MOT	696
2N4921	0.56	MOT	696
2N4922	0.56	MOT	696
2N4923	0.56	MOT	696
2N5038	3.56	MOT	697
2N5039	3.49	MOT	697
2N5060	0.19	MOT	707
2N5061	0.19	MOT	707
2N5062	0.19	MOT	—
2N5064	0.23	MOT	707
2N5087	0.10	MOT	693
2N5088	0.12	MOT	—
2N5109	3.36	MOT	—
2N5116	1.94	SEM	—
2N5179	1.84	MOT	—
2N5190	0.60	MOT	—
2N5191	0.58	MOT	696
2N5192	0.54	MOT	696
2N5194	0.71	MOT	696
2N5195	0.54	MOT	696
2N5210	0.19	MOT	—

Mfr.'s Type	Price	Mfr.'s Code	Page
2N5302	2.23	MOT	697
2N5401	0.19	MOT	693
2N5416	2.20	MOT	—
2N5457	0.42	MOT	697
2N5458	0.34	MOT	697
2N5459	0.34	MOT	697
2N5460	0.40	MOT	697
2N5461	0.40	MOT	697
2N5462	0.40	MOT	697
2N5484	0.34	MOT	697
2N5485	0.34	MOT	697
2N5486	0.34	MOT	697
2N5550	0.19	MOT	—
2N5551	0.28	MOT	693
2N5640	0.40	MOT	—
2N5655	0.56	MOT	696
2N5657	0.56	MOT	696
2N5684	8.54	MOT	697
2N5685	5.55	MOT	697
2N5686	6.68	MOT	697
2N5879	1.86	MOT	696
2N5880	2.08	MOT	696
2N5881	1.86	MOT	696
2N5882	2.08	MOT	696
2N5883	2.60	MOT	697
2N5884	2.42	MOT	697
2N5885	2.32	MOT	697
2N5886	2.42	MOT	697
2N5911	9.00	SEM	—
2N6027	0.22	MOT	707
2N6028	0.22	MOT	707
2N6031	3.56	MOT	697
2N6035	0.50	MOT	696
2N6036	0.50	MOT	696
2N6038	0.45	MOT	696
2N6039	0.45	MOT	696
2N6040	0.79	MOT	696
2N6041	0.76	MOT	696
2N6042	0.80	MOT	696
2N6043	0.64	MOT	696
2N6044	0.70	MOT	696
2N6045	0.74	MOT	696
2N6050	2.77	MOT	696
2N6051	2.95	MOT	696
2N6052	2.47	MOT	696
2N6055	1.49	MOT	696
2N6057	2.75	MOT	696
2N6058	2.97	MOT	696
2N6059	2.32	MOT	696
2N6071A	0.68	MOT	707
2N6071B	0.80	MOT	707
2N6073	0.62	MOT	707
2N6073A	0.72	MOT	707
2N6073B	0.82	MOT	707
2N6075A	0.76	MOT	707
2N6075B	0.86	MOT	707
2N6107	0.80	MOT	696
2N6109	0.76	MOT	696
2N6111	0.60	MOT	—
2N6240	0.64	MOT	707
2N6251	4.73	MOT	696
2N6282	2.42	MOT	697
2N6284	3.81	MOT	697
2N6285	3.81	MOT	697
2N6286	4.01	MOT	697
2N6287	4.36	MOT	697
2N6288	0.64	MOT	696
2N6292	0.68	MOT	696
2N6338	4.86	MOT	697
2N6341	15.10	MOT	697
2N6343	0.92	MOT	707
2N6343A	1.11	MOT	—
2N6344	0.94	MOT	707
2N6347A	1.11	MOT	707
2N6348A	1.12	MOT	707
2N6349	1.00	MOT	707
2N6349A	1.16	MOT	707
2N6379	27.82	MOT	697
2N6387	0.72	MOT	696
2N6397	0.96	MOT	—
2N6426	0.30	MOT	—
2N6427	0.34	MOT	—
2N6431	2.00	MOT	695
2N6487	0.70	MOT	696
2N6488	0.86	MOT	696
2N6490	0.76	MOT	696
2N6491	0.88	MOT	696
2N6497	1.44	MOT	696
2N6504	1.34	MOT	707
2N6505	1.44	MOT	707
2N6507	1.60	MOT	707
2N6508	1.74	MOT	707
2N6509	2.00	MOT	707
2N6517	0.30	MOT	693
2N6520	0.26	MOT	693
2N6547	4.92	MOT	696
2N6576	1.12	MOT	696
2N6578	1.49	MOT	696
2N6609	3.25	MOT	696
2N6667	0.98	MOT	696
2N6678	6.94	THO	—
2N6796	3.38	HAR	—
2N6849	2.55	HAR	660
2N6895	2.12	HAR	660
2N6901	2.16	HAR	—
2N7000	0.34	MOT	697
2N7002LT1	0.34	MOT	698
2SJ314-01L	1.31	COL	647
2SJ314-01S	1.31	COL	647
2SK1008-01	1.98	COL	—
2SK1009-01	2.20	COL	—
2SK1010-01	2.16	COL	647
2SK1017-01	7.37	COL	647
2SK1018-01	5.00	COL	—
2SK1020	17.45	COL	—
2SK1023-01	2.59	COL	—
2SK1024-01	2.63	COL	—
2SK1081-01	3.91	COL	647
2SK1082-01	3.91	COL	647
2SK1083M	1.18	COL	—
2SK1083MR	0.99	COL	647
2SK1086M	1.90	COL	—
2SK1088M	1.90	COL	—
2SK1089	2.93	COL	647
2SK1102-01M	2.96	COL	647
2SK1387M	3.12	COL	—
2SK1388	4.71	COL	—
2SK1389	4.30	COL	647
2SK1503-01	3.43	COL	—
2SK1505M	4.72	COL	—
2SK1505MR	2.99	COL	647
2SK1506	6.75	COL	647
2SK1508	2.71	COL	647
2SK1510-01L	3.72	COL	647
2SK1510-01S	3.72	COL	647
2SK1512	8.35	COL	—
2SK1820-01L	2.06	COL	647
2SK1820-01S	2.06	COL	647
2SK2018-01L	1.33	COL	647
2SK2018-01S	1.33	COL	—
2SK2049	2.57	COL	—
2SK2080-01MR	3.83	COL	647
2SK2226-01L	2.31	COL	647
2SK2226-01S	2.31	COL	647
2SK2248-01L	1.11	COL	647
2SK2248-01S	1.11	COL	647
2SK724	5.09	COL	—
2SK725	8.02	COL	647
2SK727-01	5.63	COL	647
2SK897M	3.09	COL	—
2SK899	8.54	COL	647
2SK900	3.17	COL	647
2SK901	5.10	COL	—
2SK902	7.67	COL	647
2SK903M	3.10	COL	—
2SK904	3.92	COL	—
2SK905	4.67	COL	647
2SK906	4.49	COL	647
2SK949M	3.41	COL	—
2SK951M	1.85	COL	—
2SK952	1.89	COL	647
2SK955	5.76	COL	—
2SK956-01	5.75	COL	647
2SK961	3.17	COL	—
2SK962-01	5.68	COL	647
4N25	0.44	MOT	692
4N25A	0.44	MOT	—
4N26	0.44	MOT	692
4N27	0.44	MOT	692
4N28	0.44	MOT	692
4N29A	0.44	MOT	692
4N30	0.44	MOT	692
4N32	0.44	MOT	692
4N33	0.44	MOT	692
4N35	0.44	MOT	692
4N35	0.93	TIS	—
4N36	0.44	MOT	692
4N37	0.44	MOT	692
4N38	0.56	MOT	—
4N38A	0.56	MOT	692
6N137	2.21	TIS	—
6RI100E-060	76.07	COL	645
6RI100G-120	79.58	COL	—
6RI30E-060	16.00	COL	645
6RI30G-120	25.97	COL	645
6RI50E-060	30.65	COL	645
6RI75E-060	39.00	COL	645
6RI75G-120	59.63	COL	—
74113SC	0.64	NSC	—
74ABT244D	1.60	PHI	720
74ABT244N	1.60	PHI	720
74ABT245D	1.70	PHI	720
74ABT245N	1.75	PHI	720
74ABT541D	2.00	PHI	720
74ABT574D	1.60	PHI	720
74ABT574N	1.65	PHI	720
74ABT657D	5.40	PHI	720
74ABT821D	2.60	PHI	720
74ABT841D	2.80	PHI	720
74AC00PC	0.40	NSC	715
74AC00SC	0.40	NSC	715
74AC02PC	0.40	NSC	715
74AC02SC	0.40	NSC	715
74AC04PC	0.40	NSC	715
74AC04SC	0.40	NSC	715
74AC08PC	0.40	NSC	715
74AC08SC	0.40	NSC	715
74AC109PC	0.73	NSC	715
74AC109SC	0.73	NSC	715
74AC10PC	0.40	NSC	715
74AC10SC	0.40	NSC	715
74AC11PC	0.40	NSC	715
74AC11SC	0.50	NSC	715
74AC125PC	0.89	NSC	715
74AC125SC	0.89	NSC	715
74AC138PC	0.78	NSC	715
74AC138SC	0.78	NSC	715
74AC139PC	0.78	NSC	715
74AC139SC	0.78	NSC	—
74AC14PC	0.60	NSC	715
74AC14SC	0.60	NSC	—
74AC151SC	0.78	NSC	715
74AC153PC	0.78	NSC	—
74AC153SC	0.78	NSC	715
74AC157PC	0.78	NSC	715
74AC157SC	0.84	NSC	715
74AC161PC	1.38	NSC	715
74AC161SC	1.34	NSC	715
74AC163PC	1.38	NSC	715
74AC163SC	1.34	NSC	715
74AC169PC	1.54	NSC	715
74AC169SC	1.54	NSC	715
74AC174PC	0.89	NSC	715
74AC174SC	0.89	NSC	715
74AC175SC	0.89	NSC	715
74AC191PC	2.45	NSC	715
74AC191SC	2.45	NSC	715
74AC240PC	0.89	NSC	715
74AC240SC	0.89	NSC	715
74AC244PC	1.38	NSC	715
74AC244SC	1.34	NSC	715
74AC245PC	1.61	NSC	715
74AC245SC	1.56	NSC	715
74AC257PC	0.89	NSC	715
74AC257SC	0.89	NSC	715
74AC273PC	1.34	NSC	715
74AC273SC	1.34	NSC	715
74AC299PC	4.43	NSC	715
74AC299SC	4.43	NSC	715
74AC373PC	0.89	NSC	715
74AC373SC	0.89	NSC	715
74AC374PC	0.89	NSC	715
74AC374SC	0.89	NSC	715
74AC377PC	1.78	NSC	715
74AC521PC	2.78	NSC	715
74AC521SC	2.78	NSC	715
74AC540SC	1.45	NSC	715
74AC541PC	1.49	NSC	715
74AC541SC	1.49	NSC	715
74AC574PC	1.49	NSC	715
74AC574SC	1.49	NSC	715
74AC646SC	7.15	NSC	715
74AC646SPC	7.15	NSC	715
74AC74PC	0.44	NSC	715
74AC74SC	0.44	NSC	715
74AC821SC	3.67	NSC	715
74AC821SPC	3.67	NSC	715
74AC86PC	0.82	NSC	715
74AC86SC	0.82	NSC	715
74ACT00PC	0.40	NSC	715
74ACT00SC	0.40	NSC	715
74ACT02PC	0.40	NSC	715
74ACT02SC	0.40	NSC	715
74ACT04PC	0.40	NSC	715
74ACT08PC	0.40	NSC	715
74ACT08SC	0.40	NSC	715
74ACT109SC	0.73	NSC	715
74ACT10SC	0.40	NSC	715
74ACT11008D	0.54	TIS	727
74ACT11008N	0.55	TIS	727
74ACT11240DW	1.70	TIS	727
74ACT11240NT	1.76	TIS	727
74ACT11244DW	1.70	TIS	727
74ACT11244NT	1.85	TIS	727
74ACT11245DW	1.82	TIS	727
74ACT11245NT	1.90	TIS	727
74ACT11373DW	1.70	TIS	727
74ACT11373NT	1.85	TIS	727
74ACT11374NT	1.85	TIS	727
74ACT11544DW	4.37	TIS	727
74ACT11593DW	6.25	TIS	727
74ACT11593NT	6.25	TIS	727
74ACT11657DW	7.25	TIS	727
74ACT11898DW	7.12	TIS	727
74ACT125PC	0.88	NSC	715
74ACT125SC	0.88	NSC	715
74ACT138PC	0.82	NSC	715
74ACT138SC	0.82	NSC	715
74ACT139PC	0.82	NSC	715
74ACT139SC	0.82	NSC	715
74ACT151PC	0.82	NSC	715
74ACT157SC	0.82	NSC	715
74ACT158PC	0.82	NSC	715
74ACT158SC	0.89	NSC	715
74ACT161SC	2.00	NSC	715
74ACT16241DL	4.25	TIS	727
74ACT16244DL	4.25	TIS	727
74ACT16245DL	4.50	TIS	727
74ACT16373DL	4.38	TIS	727
74ACT16374DL	4.38	TIS	727
74ACT163PC	1.38	NSC	715
74ACT16470DL	10.00	TIS	727
74ACT16474DL	10.37	TIS	727
74ACT16540DL	4.62	TIS	727
74ACT16541DL	4.62	TIS	727
74ACT16543DL	7.00	TIS	727
74ACT16620DL	4.75	TIS	727
74ACT16646DL	8.25	TIS	727
74ACT16648DL	8.25	TIS	727
74ACT16652DL	8.25	TIS	727
74ACT16861DL	6.50	TIS	727
74ACT16864DL	6.50	TIS	727
74ACT174PC	0.77	NSC	715
74ACT174SC	0.77	NSC	715
74ACT175SC	0.77	NSC	715
74ACT240PC	0.88	NSC	715
74ACT240SC	0.88	NSC	715
74ACT244PC	0.88	NSC	715
74ACT244SC	0.89	NSC	715
74ACT245PC	0.89	NSC	715
74ACT245SC	0.89	NSC	715
74ACT251PC	0.78	NSC	715
74ACT251SC	0.78	NSC	715
74ACT253PC	0.78	NSC	715
74ACT253SC	0.78	NSC	715
74ACT257PC	0.78	NSC	715
74ACT257SC	0.78	NSC	715
74ACT258PC	0.78	NSC	715
74ACT258SC	0.78	NSC	715
74ACT2708PC	21.20	NSC	715
74ACT299PC	2.67	NSC	715
74ACT299SC	2.67	NSC	715
74ACT32PC	0.40	NSC	715
74ACT32SC	0.40	NSC	715
74ACT373PC	0.89	NSC	715
74ACT373SC	0.89	NSC	715
74ACT374PC	0.89	NSC	715
74ACT374SC	0.89	NSC	715
74ACT399SC	2.03	NSC	715
74ACT520PC	2.56	NSC	715
74ACT520SC	2.56	NSC	715
74ACT521PC	2.64	NSC	715
74ACT521SC	2.56	NSC	715
74ACT534PC	1.45	NSC	715
74ACT573PC	1.00	NSC	715
74ACT573SC	1.00	NSC	—
74ACT574PC	1.00	NSC	715
74ACT574SC	1.00	NSC	715
74ACT715PC	10.60	NSC	715
74ACT715SC	10.60	NSC	715
74ACT74PC	0.44	NSC	715
74ACT74SC	0.44	NSC	—
74ACT818SPC	5.15	NSC	715
74ACT821SPC	3.78	NSC	715
74ACT823SC	3.67	NSC	715
74ACT823SPC	3.67	NSC	715
74ACT825SC	3.67	NSC	715
74ACT825SPC	3.67	NSC	715
74ACT841SC	3.67	NSC	715
74ACT841SPC	3.67	NSC	715
74ACT843SC	3.67	NSC	715
74ACT843SPC	3.67	NSC	715
74ACT899QC	10.00	NSC	715
74F00PC	0.27	NSC	716
74F00SC	0.27	NSC	716
74F02PC	0.27	NSC	716
74F04D	0.30	PHI	720
74F04N	0.27	PHI	720
74F04PC	0.27	NSC	716
74F04SC	0.27	NSC	716
74F06D	0.58	PHI	720
74F07D	0.58	PHI	720
74F07N	0.58	PHI	720
74F08N	0.30	PHI	720
74F08PC	0.27	NSC	716
74F08SC	0.27	NSC	716
74F1056SC	1.45	NSC	—
74F1071SC	1.75	NSC	—
74F109PC	0.56	NSC	716
74F10PC	0.34	NSC	716
74F112PC	0.64	NSC	716
74F113PC	0.64	NSC	—
74F11PC	0.29	NSC	716
74F11SC	0.29	NSC	716
74F1244D	1.40	PHI	720
74F125D	0.60	PHI	720
74F125PC	0.37	NSC	716
74F125SC	0.37	NSC	716
74F138PC	0.57	NSC	716
74F138SC	0.57	NSC	716
74F139PC	0.69	NSC	716
74F139SC	0.67	NSC	—
74F148PC	1.00	NSC	716
74F14D	0.44	PHI	720
74F153N	0.50	PHI	720
74F153PC	0.56	NSC	716
74F157APC	0.56	NSC	716
74F158APC	0.67	NSC	716
74F161APC	0.78	NSC	716
74F163APC	0.78	NSC	716
74F163ASC	0.82	NSC	716
74F164N	0.60	PHI	720

Manufacturer's Code Log

ADI	Analog Devices Inc.
AMD	Advanced Micro Devices
COL	Collmer Semiconductors, Inc.
DLS	Dallas Semiconductor
HAR	Harris Semiconductor
ITL	Intel
LAT	Lattice
MXM	Maxim
MOS	Mosel-Vitelic
MOT	Motorola Semiconductor
NSC	National Semiconductor
NTE	NTE Electronics
PHI	Philips Semiconductors
SEM	Semiconductors Inc.
SIE	Siemens Components, Inc
TIS	Texas Instruments
THO	Thomson Consumer Electronics
UNI	Unitrode Integrated Circuits
XLX	Xilinx

Mfr.'s Type	Price	Mfr.'s Code	Page
74F166D	2.54	PHI	720
74F166N	2.62	PHI	720
74F169PC	2.68	NSC	716
74F169SC	2.60	NSC	716
74F174PC	0.82	NSC	716
74F175PC	0.62	NSC	716
74F175SC	0.62	NSC	716
74F181SPC	3.12	NSC	716
74F189PC	6.15	NSC	716
74F189SC	6.15	NSC	716
74F191D	2.00	PHI	720
74F191N	2.00	PHI	720
74F191PC	2.64	NSC	716
74F191SC	2.56	NSC	—
74F193PC	4.58	NSC	716
74F20PC	0.33	NSC	716
74F219PC	6.15	NSC	716
74F2244PC	0.89	NSC	716
74F2244SC	0.89	NSC	716
74F240PC	0.49	NSC	716
74F240SC	0.49	NSC	716
74F241PC	0.64	NSC	716
74F244D	0.70	PHI	720
74F244N	0.70	PHI	720
74F244PC	0.49	NSC	716
74F244SC	0.49	NSC	716
74F245D	0.70	PHI	720
74F245N	0.70	PHI	720
74F245PC	0.49	NSC	716
74F245SC	0.49	NSC	716
74F257APC	0.53	NSC	716
74F258APC	0.53	NSC	716
74F269D	5.80	PHI	720
74F269N	5.80	PHI	720
74F269SC	4.27	NSC	716
74F269SPC	4.27	NSC	716
74F273D	0.70	PHI	720
74F273N	0.70	PHI	720
74F273PC	0.67	NSC	716
74F280PC	0.39	NSC	716
74F283D	0.80	PHI	720
74F283PC	0.91	NSC	716
74F299D	3.80	PHI	720
74F299PC	5.15	NSC	716
74F299SC	5.00	NSC	716
74F3037D	1.08	PHI	720
74F3037N	1.11	PHI	720
74F32D	0.30	PHI	720
74F32N	0.30	PHI	720
74F32PC	0.26	NSC	716
74F32SC	0.26	NSC	716
74F365PC	1.12	NSC	716
74F367D	2.00	PHI	720
74F373D	0.70	PHI	720
74F373N	0.70	PHI	720
74F373PC	0.49	NSC	716
74F373SC	0.49	NSC	716
74F374D	0.70	PHI	720
74F374N	0.70	PHI	720
74F374PC	0.49	NSC	716
74F374SC	0.49	NSC	716
74F377D	1.10	PHI	720
74F377N	1.10	PHI	720
74F382PC	2.92	NSC	716
74F38D	0.44	PHI	720
74F38N	0.44	PHI	720
74F393N	1.20	PHI	720
74F399PC	1.07	NSC	716
74F399SC	1.07	NSC	716
74F401PC	7.00	NSC	716
74F402PC	7.00	NSC	—
74F413PC	25.60	NSC	—
74F433SPC	38.90	NSC	—
74F521N	1.06	PHI	720
74F521PC	1.06	NSC	716
74F521SC	1.06	NSC	716
74F524PC	7.25	NSC	716
74F524SC	12.80	NSC	716
74F534PC	1.05	NSC	716
74F538PC	2.27	NSC	716
74F540D	3.00	PHI	720
74F540N	3.00	PHI	720
74F541D	3.00	PHI	720
74F541N	3.00	PHI	720
74F541PC	3.34	NSC	716
74F541SC	3.34	NSC	716
74F543D	1.90	PHI	720
74F543N	1.90	PHI	720
74F543PC	1.90	NSC	—
74F543SC	1.90	NSC	716
74F543SPC	2.56	NSC	716
74F544SC	1.90	NSC	716
74F544SPC	3.89	NSC	716
74F545PC	3.20	NSC	716
74F552QC	8.70	NSC	—
74F569PC	3.78	NSC	716
74F569SC	3.78	NSC	716
74F573D	1.10	PHI	720
74F573N	1.10	PHI	720
74F573PC	0.76	NSC	716
74F573SC	0.76	NSC	716
74F574D	1.10	PHI	720
74F574N	1.10	PHI	720
74F574PC	1.10	NSC	—
74F574SC	1.10	NSC	—
74F579D	5.60	PHI	720
74F579N	5.60	PHI	720
74F579PC	5.80	NSC	716
74F583PC	8.60	NSC	—
74F595D	2.92	PHI	720
74F595N	3.16	PHI	720
74F620PC	1.47	NSC	716
74F623PC	4.12	NSC	716
74F632VC	62.00	NSC	716
74F640PC	3.34	NSC	716
74F646BSPC	5.60	NSC	716
74F646D	4.50	PHI	720
74F646N	4.50	PHI	720
74F646SC	5.00	NSC	716
74F646SPC	5.00	NSC	716
74F64PC	0.31	NSC	—
74F652AD	6.50	PHI	720
74F652AN	6.50	PHI	720
74F652SC	7.25	NSC	716
74F652SPC	7.25	NSC	716
74F657D	3.60	PHI	720
74F657N	3.60	PHI	720
74F657SC	5.70	NSC	—
74F657SPC	5.70	NSC	716
74F673ASC	13.40	NSC	716
74F673ASPC	13.40	NSC	—
74F675ASPC	12.90	NSC	716
74F676SPC	10.20	NSC	—
74F74D	0.38	PHI	720
74F74N	0.38	PHI	720
74F74PC	0.29	NSC	—
74F74SC	0.29	NSC	716
74F760D	2.72	PHI	720
74F779D	6.20	PHI	720
74F779N	6.20	PHI	720
74F779PC	5.75	NSC	716
74F779SC	5.75	NSC	716
74F786D	3.12	PHI	720
74F786N	3.12	PHI	720
74F794PC	6.20	NSC	716
74F821D	2.90	PHI	720
74F821N	2.90	PHI	720
74F821SC	4.23	NSC	716
74F821SPC	4.23	NSC	716
74F823D	2.90	PHI	720
74F823N	2.90	PHI	720
74F823SC	4.23	NSC	—
74F823SPC	4.23	NSC	—
74F825SC	4.23	NSC	716
74F825SPC	4.23	NSC	716
74F827D	2.90	PHI	720
74F827N	2.90	PHI	720
74F827SC	4.23	NSC	716
74F841D	2.90	PHI	720
74F841N	2.90	PHI	720
74F841SPC	4.23	NSC	716
74F85D	2.16	PHI	720
74F85N	2.16	PHI	720
74F86PC	0.42	NSC	716
74F86SC	0.42	NSC	716
74F899QC	15.70	NSC	716
74HC00D	0.25	PHI	720
74HC00N	0.26	PHI	720
74HC02D	0.24	PHI	720
74HC02N	0.28	PHI	720
74HC04D	0.24	PHI	720
74HC04N	0.26	PHI	720
74HC08D	0.24	PHI	720
74HC08N	0.28	PHI	720
74HC123D	0.50	PHI	720
74HC125D	0.37	PHI	720
74HC132D	0.38	PHI	720
74HC132N	0.38	PHI	720
74HC138D	0.36	PHI	720
74HC138N	0.36	PHI	720
74HC139D	0.36	PHI	720
74HC14D	0.32	PHI	720
74HC14N	0.32	PHI	720
74HC154N	1.32	PHI	720
74HC157D	0.40	PHI	720
74HC191D	0.50	PHI	720
74HC191N	0.50	PHI	720
74HC221D	0.56	PHI	720
74HC238N	0.50	PHI	720
74HC244D	0.46	PHI	720
74HC244N	0.48	PHI	720
74HC245D	0.46	PHI	720
74HC245N	0.50	PHI	720
74HC259D	0.50	PHI	720
74HC259N	0.50	PHI	720
74HC273D	0.46	PHI	720
74HC273N	0.48	PHI	720
74HC32D	0.24	PHI	720
74HC32N	0.26	PHI	720
74HC365D	0.43	PHI	720
74HC373D	0.48	PHI	720
74HC373N	0.44	PHI	720
74HC374D	0.46	PHI	720
74HC374N	0.48	PHI	720
74HC377D	0.46	PHI	720
74HC377N	0.48	PHI	720
74HC393D	0.43	PHI	720
74HC393N	0.42	PHI	720
74HC40103N	0.70	PHI	720
74HC40105N	0.78	PHI	720
74HC4020D	0.50	PHI	720
74HC4040D	0.50	PHI	720
74HC4046AD	1.30	PHI	720
74HC4046AN	1.32	PHI	720
74HC4051D	0.54	PHI	720
74HC4051N	0.56	PHI	720
74HC4052D	0.54	PHI	720
74HC4052N	0.56	PHI	720
74HC4053D	0.54	PHI	720
74HC4053N	0.56	PHI	720
74HC4060D	0.58	PHI	720
74HC4066D	0.43	PHI	720
74HC423N	0.50	PHI	720
74HC4538D	0.60	PHI	720
74HC4538N	0.60	PHI	720
74HC541D	0.58	PHI	720
74HC541N	0.58	PHI	720
74HC573D	0.54	PHI	720
74HC573N	0.58	PHI	720
74HC574D	0.54	PHI	720
74HC574N	0.56	PHI	720
74HC595D	0.62	PHI	720
74HC595N	0.64	PHI	—
74HC597N	0.56	PHI	720
74HC640N	0.70	PHI	720
74HC7046AD	1.40	PHI	720
74HC74D	0.32	PHI	720
74HC86D	0.32	PHI	720
74HC86N	0.32	PHI	720
74HCT00D	0.24	PHI	720
74HCT00N	0.26	PHI	720
74HCT02D	0.24	PHI	720
74HCT02N	0.26	PHI	720
74HCT04D	0.24	PHI	720
74HCT04N	0.26	PHI	720
74HCT08N	0.26	PHI	720
74HCT10N	0.26	PHI	720
74HCT11N	0.26	PHI	720
74HCT123D	0.50	PHI	720
74HCT123N	0.50	PHI	720
74HCT125D	0.36	PHI	720
74HCT125N	0.36	PHI	720
74HCT126D	0.36	PHI	720
74HCT126N	0.37	PHI	720
74HCT132N	0.38	PHI	720
74HCT138D	0.36	PHI	720
74HCT138N	0.36	PHI	720
74HCT139N	0.36	PHI	720
74HCT14D	0.32	PHI	720
74HCT14N	0.32	PHI	720
74HCT151N	0.40	PHI	720
74HCT153N	0.40	PHI	720
74HCT154N	1.16	PHI	720
74HCT157D	0.40	PHI	720
74HCT157N	0.40	PHI	720
74HCT161N	0.46	PHI	720
74HCT163N	0.46	PHI	720
74HCT164D	0.46	PHI	720
74HCT164N	0.46	PHI	720
74HCT165D	0.46	PHI	720
74HCT165N	0.46	PHI	720
74HCT166N	0.46	PHI	720
74HCT174D	0.40	PHI	720
74HCT174N	0.40	PHI	720
74HCT175D	0.40	PHI	720
74HCT175N	0.40	PHI	720
74HCT20N	0.26	PHI	720
74HCT238N	0.50	PHI	720
74HCT240N	0.48	PHI	720
74HCT244D	0.46	PHI	720
74HCT244N	0.48	PHI	720
74HCT245D	0.46	PHI	720
74HCT245N	0.48	PHI	720
74HCT251N	0.44	PHI	720
74HCT257N	0.44	PHI	720
74HCT259D	0.50	PHI	720
74HCT259N	0.50	PHI	720
74HCT273D	0.46	PHI	720
74HCT273N	0.48	PHI	720
74HCT27N	0.26	PHI	720
74HCT32D	0.24	PHI	720
74HCT32N	0.26	PHI	720
74HCT365N	0.46	PHI	720
74HCT367N	0.46	PHI	720
74HCT373D	0.46	PHI	720
74HCT373N	0.48	PHI	720
74HCT374D	0.46	PHI	720
74HCT374N	0.48	PHI	720
74HCT377N	0.48	PHI	720
74HCT393D	0.42	PHI	720
74HCT393N	0.42	PHI	720
74HCT40103N	0.70	PHI	720
74HCT40105N	0.78	PHI	720
74HCT4020D	0.50	PHI	720
74HCT4040N	0.50	PHI	720
74HCT4046AN	1.32	PHI	720
74HCT4051N	0.56	PHI	720
74HCT4053D	0.54	PHI	720
74HCT4053N	0.56	PHI	720
74HCT4066N	0.42	PHI	720
74HCT4538N	0.60	PHI	720
74HCT540N	0.54	PHI	720
74HCT541D	0.58	PHI	720
74HCT541N	0.58	PHI	720
74HCT573D	0.54	PHI	720
74HCT573N	0.56	PHI	720
74HCT574D	0.54	PHI	720
74HCT574N	0.56	PHI	720
74HCT595D	0.62	PHI	720
74HCT597N	0.56	PHI	720
74HCT640N	0.70	PHI	720
74HCT646D	1.44	PHI	720
74HCT688D	0.60	PHI	720
74HCT688N	0.60	PHI	720
74HCT74D	0.32	PHI	720
74HCT74N	0.32	PHI	720
74HCT86N	0.32	PHI	720
A115C	1.10	HAR	—
A14F	0.19	HAR	660
A81-A230X	3.30	SIE	725
A81-A350X	3.30	SIE	725
A81-C90X	3.63	SIE	725
AC2626L6	134.40	ADI	—
AD1382KD	910.86	ADI	—
AD1385KD	1101.60	ADI	—
AD1403AN	4.87	ADI	641
AD1403N	3.40	ADI	641
AD1671JP	59.96	ADI	635
AD1671JQ	80.95	ADI	635
AD1671KP	109.01	ADI	—
AD1672AP	45.00	ADI	634
AD1674JN	26.05	ADI	634
AD1674KN	36.46	ADI	634
AD1845JP	8.20	ADI	—
AD1893JN	16.80	ADI	—
AD1893JST	16.80	ADI	—
AD202JN	45.00	ADI	637
AD202JY	45.00	ADI	—
AD202KN	52.00	ADI	637
AD202KY	52.00	ADI	637
AD203SN	129.47	ADI	637
AD204JN	39.00	ADI	637
AD204JY	39.00	ADI	637
AD204KN	47.00	ADI	637
AD204KY	47.00	ADI	—
AD208AY	65.34	ADI	637
AD208BY	77.45	ADI	637
AD210AN	72.00	ADI	637
AD210BN	89.00	ADI	637
AD210JN	66.00	ADI	637
AD22100AR	5.50	ADI	642
AD22100AT	5.15	ADI	642
AD22100KR	2.76	ADI	642
AD22100KT	2.37	ADI	642
AD22100SR	6.05	ADI	642
AD22100ST	5.50	ADI	642
AD22103KR	2.22	ADI	642
AD22103KT	2.03	ADI	642
AD2S80AJD	124.74	ADI	643
AD2S80AKD	152.46	ADI	643
AD2S80ALD	207.90	ADI	643
AD2S81AJD	105.00	ADI	643
AD2S82AHP	50.00	ADI	643
AD2S82AJP	119.75	ADI	643
AD2S82AKP	146.07	ADI	643
AD2S83AP	96.30	ADI	643

Mfr.'s Type	Price	Mfr.'s Code	Page
AD2S99AP	8.45	ADI	643
AD390KD	252.48	ADI	—
AD493FS	4.46	ADI	—
AD515AJH	20.50	ADI	—
AD521JD	28.60	ADI	—
AD524AD	16.33	ADI	637
AD524BD	21.34	ADI	637
AD524CD	33.00	ADI	637
AD526BD	21.89	ADI	637
AD526JN	11.55	ADI	637
AD532JD	34.00	ADI	—
AD532JH	25.50	ADI	—
AD532KD	60.00	ADI	—
AD534JD	37.00	ADI	639
AD534JH	29.95	ADI	639
AD534KD	49.00	ADI	639
AD534LD	99.00	ADI	639
AD536AJD	26.00	ADI	639
AD536AJH	15.10	ADI	639
AD536AJQ	15.10	ADI	—
AD536AKD	47.00	ADI	—
AD536AKQ	31.00	ADI	639
AD537JD	58.83	ADI	641
AD537JH	16.06	ADI	641
AD537KD	93.01	ADI	641
AD537KH	26.86	ADI	641
AD537SD	135.69	ADI	—
AD538AD	33.41	ADI	—
AD544JH	6.82	ADI	—
AD546JN	7.50	ADI	637
AD548JN	2.25	ADI	637
AD548JR	1.59	ADI	637
AD548KN	6.01	ADI	637
AD549JH	17.90	ADI	637
AD549KH	25.00	ADI	637
AD549LH	30.90	ADI	637
AD557JN	7.70	ADI	635
AD557JP	7.70	ADI	—
AD558JD	27.58	ADI	—
AD558JN	13.75	ADI	635
AD558JP	12.50	ADI	—
AD558KD	36.98	ADI	—
AD558KN	20.68	ADI	635
AD565AJD	42.74	ADI	635
AD566AJD	43.89	ADI	635
AD568KQ	72.38	ADI	—
AD569AD	52.35	ADI	—
AD569JN	30.69	ADI	—
AD570JD	70.77	ADI	—
AD571JD	94.02	ADI	635
AD573JN	40.90	ADI	635
AD573KN	55.18	ADI	—
AD574AJD	48.30	ADI	635
AD574AJN	36.30	ADI	635
AD574AKD	63.00	ADI	635
AD574AKN	47.50	ADI	635
AD574ASD	132.30	ADI	—
AD580JH	3.41	ADI	641
AD580KH	5.83	ADI	—
AD580LH	9.19	ADI	—
AD580MH	15.86	ADI	641
AD580UH	32.34	ADI	—
AD581JH	5.09	ADI	641
AD581KH	7.93	ADI	641
AD584JH	5.72	ADI	641
AD584JN	4.49	ADI	641
AD584KH	11.34	ADI	641
AD584LH	19.11	ADI	641
AD585AQ	19.36	ADI	637
AD585JP	22.00	ADI	637
AD586JN	4.22	ADI	—
AD586JQ	4.27	ADI	641
AD586KQ	5.45	ADI	641
AD586KR	5.45	ADI	641
AD586LN	7.04	ADI	641
AD586LQ	9.56	ADI	641
AD586MN	8.09	ADI	641
AD587JN	3.94	ADI	641
AD587JR	4.27	ADI	—
AD587KN	4.27	ADI	641
AD587KR	4.84	ADI	—
AD587LN	5.30	ADI	641
AD587LQ	7.72	ADI	—
AD588JQ	26.40	ADI	641
AD589JH	2.16	ADI	641
AD589JR	1.90	ADI	641
AD589KH	3.03	ADI	641
AD589LH	8.09	ADI	641
AD589MH	17.64	ADI	641
AD590JF	14.55	ADI	642
AD590JH	4.06	ADI	642
AD590KF	18.74	ADI	642
AD590KH	10.71	ADI	642
AD590LF	46.75	ADI	642
AD590LH	23.81	ADI	642
AD590MF	93.50	ADI	642
AD590MH	58.53	ADI	642
AD592AN	3.41	ADI	642
AD592BN	12.50	ADI	642
AD592CN	16.67	ADI	642
AD594AD	25.14	ADI	643
AD594AQ	13.23	ADI	643
AD594CD	38.37	ADI	643

Mfr.'s Type	Price	Mfr.'s Code	Page
AD594CQ	23.93	ADI	643
AD595AD	25.14	ADI	643
AD595AQ	13.23	ADI	643
AD595CQ	23.93	ADI	643
AD596AH	14.70	ADI	643
AD597AH	14.70	ADI	643
AD597AR	7.87	ADI	643
AD598AD	51.87	ADI	643
AD598JR	34.58	ADI	643
AD600AQ	54.00	ADI	640
AD600AR	39.00	ADI	—
AD600JN	30.00	ADI	640
AD600JR	30.00	ADI	640
AD602AQ	54.00	ADI	640
AD602AR	39.00	ADI	—
AD602JN	30.00	ADI	640
AD602JR	30.00	ADI	—
AD603AQ	7.99	ADI	640
AD603AR	7.18	ADI	640
AD606JN	49.90	ADI	640
AD606JR	49.90	ADI	—
AD607ARS	9.95	ADI	—
AD620AN	6.75	ADI	637
AD620AR	6.75	ADI	637
AD620BN	9.21	ADI	637
AD620BR	10.04	ADI	637
AD621AN	7.33	ADI	637
AD621AR	6.98	ADI	637
AD621BN	9.82	ADI	637
AD621BR	9.82	ADI	637
AD624AD	19.64	ADI	637
AD624BD	25.63	ADI	637
AD624CD	38.50	ADI	637
AD625AD	13.54	ADI	637
AD625BD	22.27	ADI	637
AD625CD	37.12	ADI	637
AD625JN	12.37	ADI	637
AD625KN	17.60	ADI	637
AD626AN	4.83	ADI	637
AD626AR	4.83	ADI	637
AD626BN	6.39	ADI	637
AD630AD	23.00	ADI	639
AD630BD	34.00	ADI	639
AD630JN	13.10	ADI	639
AD630KN	20.90	ADI	639
AD633JN	5.63	ADI	639
AD633JR	5.63	ADI	639
AD636JD	20.00	ADI	639
AD636JH	12.50	ADI	639
AD637AQ	27.18	ADI	—
AD637AR	25.02	ADI	—
AD637JD	34.00	ADI	—
AD637JQ	15.10	ADI	639
AD637JR	13.90	ADI	639
AD637KD	61.00	ADI	639
AD637KQ	25.80	ADI	639
AD637KR	23.90	ADI	639
AD639AD	62.68	ADI	637
AD640BD	131.00	ADI	—
AD640BP	111.10	ADI	—
AD640JN	59.90	ADI	640
AD640JP	59.90	ADI	640
AD641AN	52.90	ADI	640
AD641AP	52.90	ADI	640
AD645AH	11.31	ADI	637
AD645KN	6.20	ADI	—
AD648JN	2.87	ADI	637
AD648JR	2.54	ADI	637
AD648KR	9.43	ADI	637
AD650JN	17.00	ADI	641
AD650KN	21.00	ADI	641
AD652AQ	15.18	ADI	640
AD652BQ	24.04	ADI	640
AD654JN	7.26	ADI	640
AD654JR	7.26	ADI	641
AD664BD-UNI	83.85	ADI	—
AD664JN-BIP	58.44	ADI	—
AD664JN-UNI	83.85	ADI	—
AD664KN-BIP	79.26	ADI	—
AD664KN-UNI	65.50	ADI	—
AD667JN	22.70	ADI	—
AD667KN	30.30	ADI	—
AD668JQ	50.82	ADI	—
AD669AN	22.40	ADI	635
AD669AR	22.40	ADI	—
AD669BR	33.60	ADI	—
AD670JN	20.13	ADI	635
AD673JN	20.13	ADI	635
AD674BAD	59.46	ADI	635
AD674BBD	77.17	ADI	—
AD674BJN	42.78	ADI	635
AD674BKN	56.12	ADI	—
AD676JD	70.88	ADI	—
AD677JR	42.88	ADI	635
AD677KN	50.45	ADI	—
AD677KR	50.45	ADI	—
AD678JD	59.72	ADI	—
AD678JN	41.58	ADI	—
AD678KD	72.42	ADI	—
AD678KN	50.82	ADI	—
AD680JN	2.45	ADI	641
AD680JR	2.45	ADI	641
AD680JT	1.40	ADI	641

Mfr.'s Type	Price	Mfr.'s Code	Page
AD684AQ	52.03	ADI	637
AD684JQ	42.35	ADI	637
AD688AQ	25.50	ADI	641
AD688BQ	43.00	ADI	641
AD693AQ	14.33	ADI	643
AD694JN	9.81	ADI	643
AD698AP	22.49	ADI	643
AD698SQ	58.44	ADI	643
AD704JN	7.65	ADI	637
AD704JR-16	7.65	ADI	637
AD705JN	1.74	ADI	637
AD705JR	1.82	ADI	637
AD706JN	3.91	ADI	637
AD706JR	4.11	ADI	637
AD707JN	2.84	ADI	638
AD708AQ	7.00	ADI	—
AD708BQ	11.80	ADI	638
AD708JN	5.90	ADI	638
AD711AQ	3.44	ADI	—
AD711JN	1.90	ADI	638
AD711JR	2.07	ADI	638
AD711KN	4.50	ADI	638
AD712JN	2.97	ADI	638
AD712JR	3.25	ADI	638
AD712KN	8.63	ADI	638
AD712SQ	12.19	ADI	—
AD713JN	8.05	ADI	638
AD713JR-16	6.19	ADI	638
AD713KN	13.69	ADI	638
AD720JP	17.12	ADI	640
AD7224KN	8.17	ADI	635
AD7224LN	11.47	ADI	—
AD7225KN	30.50	ADI	636
AD7225KR	16.80	ADI	636
AD7225LN	35.07	ADI	636
AD7225LR	19.32	ADI	636
AD7226KN	30.50	ADI	636
AD7226KR	35.00	ADI	636
AD7228ABN	24.14	ADI	636
AD7228ACN	28.35	ADI	636
AD7228LN	61.88	ADI	—
AD7233AN	11.55	ADI	635
AD7237JN	27.23	ADI	636
AD7237JR	27.32	ADI	636
AD7237KN	31.96	ADI	636
AD7237KR	31.96	ADI	—
AD7242JN	25.41	ADI	636
AD7243AN	13.09	ADI	635
AD7243AR	11.55	ADI	—
AD7243BN	14.86	ADI	635
AD7243BR	14.86	ADI	—
AD7245AAN	15.10	ADI	636
AD7245AAR	15.10	ADI	—
AD7245ABN	19.60	ADI	—
AD7245JN	19.70	ADI	—
AD7247JN	27.23	ADI	—
AD7247JR	27.23	ADI	—
AD7247KN	31.96	ADI	636
AD7247KR	31.96	ADI	636
AD7248AAN	15.10	ADI	—
AD7248AAR	15.10	ADI	—
AD7248ABN	19.60	ADI	—
AD7248ABR	19.60	ADI	—
AD7248JN	19.70	ADI	—
AD7249AN	18.86	ADI	—
AD734AN	15.51	ADI	639
AD734AQ	17.84	ADI	639
AD734BQ	28.74	ADI	639
AD736AQ	10.32	ADI	639
AD736JN	5.96	ADI	639
AD736JR	5.96	ADI	639
AD736KN	9.50	ADI	639
AD736KR	9.95	ADI	639
AD737JN	5.96	ADI	639
AD743JN	5.53	ADI	—
AD744JN	4.64	ADI	637
AD744JR	5.10	ADI	637
AD746JN	8.50	ADI	637
AD746JR	8.50	ADI	637
AD75019JP	21.00	ADI	—
AD7501JN	9.75	ADI	—
AD7501KN	10.10	ADI	—
AD7502JN	9.75	ADI	—
AD7506JN	14.00	ADI	—
AD7506KN	15.00	ADI	—
AD7510DIJN	8.80	ADI	—
AD7511DIJN	8.80	ADI	—
AD7511DIKN	9.90	ADI	—
AD7512DIKN	9.90	ADI	—
AD7522LN	23.00	ADI	—
AD7523JN	4.33	ADI	—
AD7524AQ	14.18	ADI	—
AD7524JN	7.50	ADI	635
AD7524JP	8.90	ADI	—
AD7524JR	8.90	ADI	635
AD7524KN	7.80	ADI	635
AD7528JN	9.80	ADI	636
AD7528JP	11.50	ADI	—
AD7528JR	11.50	ADI	636
AD7528KN	10.20	ADI	—
AD7528LN	16.40	ADI	—
AD7533JN	5.50	ADI	—
AD7533KN	5.85	ADI	—

Mfr.'s Type	Price	Mfr.'s Code	Page
AD7533LN	7.02	ADI	—
AD7534JN	27.97	ADI	—
AD7537JN	25.51	ADI	636
AD7538AQ	25.08	ADI	—
AD7538BQ	31.41	ADI	—
AD7538JN	17.35	ADI	635
AD7538JR	17.35	ADI	635
AD7538KR	23.10	ADI	—
AD7541ABQ	17.33	ADI	—
AD7541AJN	12.85	ADI	—
AD7541AKN	14.30	ADI	—
AD7545JN	13.20	ADI	—
AD7548JN	15.64	ADI	—
AD7549JN	27.95	ADI	—
AD7564AR-B	19.60	ADI	636
AD7564ARS-B	19.60	ADI	—
AD7564BN	19.60	ADI	636
AD7564BR	19.60	ADI	636
AD7564BRS	19.60	ADI	—
AD7568BS	46.00	ADI	636
AD7569JN	10.89	ADI	635
AD7569KN	16.34	ADI	—
AD7574JN	12.50	ADI	—
AD7575JN	9.10	ADI	634
AD7581KN	30.30	ADI	—
AD7582KN	40.38	ADI	—
AD760AQ	77.00	ADI	635
AD7628KN	4.17	ADI	636
AD766AN	26.68	ADI	636
AD766JN	20.24	ADI	636
AD767AD	34.31	ADI	—
AD767JN	21.67	ADI	635
AD767KN	28.60	ADI	635
AD7701AN	21.00	ADI	—
AD7701BN	28.00	ADI	635
AD7701BR	28.00	ADI	—
AD7703AN	25.90	ADI	—
AD7703AR	25.90	ADI	—
AD7703BN	30.80	ADI	—
AD7703BR	30.80	ADI	635
AD7703CN	37.80	ADI	—
AD7703CR	37.80	ADI	—
AD7710AN	29.65	ADI	—
AD7710AQ	31.44	ADI	—
AD7710AR	24.71	ADI	—
AD7711AN	25.20	ADI	—
AD7711AR	25.20	ADI	—
AD7712AN	21.70	ADI	—
AD7712AQ	27.72	ADI	—
AD7713AN	26.60	ADI	—
AD7713AR	26.60	ADI	—
AD7714AN-3	22.00	ADI	—
AD7714AN-5	22.00	ADI	—
AD7714AR-3	22.00	ADI	635
AD7714AR-5	22.00	ADI	635
AD7714ARS-3	22.00	ADI	—
AD7714ARS-5	22.00	ADI	—
AD7715AN-3	10.65	ADI	—
AD7715AR-3	10.65	ADI	—
AD7715AR-5	10.65	ADI	—
AD775JN	14.00	ADI	—
AD776AQ	29.70	ADI	—
AD779JD	64.80	ADI	—
AD779JN	45.76	ADI	—
AD779KD	77.51	ADI	—
AD7804BN	10.20	ADI	641
AD7804BR	10.20	ADI	636
AD7805BN	11.11	ADI	636
AD7805BR	11.11	ADI	636
AD7805BRS	11.11	ADI	—
AD780AN	6.48	ADI	641
AD780AR	5.75	ADI	641
AD780BN	9.45	ADI	—
AD780BR	9.45	ADI	—
AD781AN	10.40	ADI	—
AD781JN	8.40	ADI	637
AD7821KN	16.40	ADI	634
AD7821KP	19.50	ADI	634
AD7821KR	19.50	ADI	634
AD7824KN	17.25	ADI	634
AD7824KR	17.25	ADI	634
AD7824LN	23.85	ADI	—
AD7828KN	18.05	ADI	634
AD7828KP	21.50	ADI	634
AD7828LN	24.65	ADI	634
AD7828LP	29.00	ADI	634
AD7834AN	42.47	ADI	636
AD7834AR	42.47	ADI	—
AD7834BN	53.69	ADI	636
AD7834BR	53.69	ADI	636
AD7835AP	44.68	ADI	—
AD7835AS	44.68	ADI	—
AD7837AN	27.23	ADI	—
AD7837AR	27.23	ADI	—
AD7837BR	31.96	ADI	—
AD783AR	24.31	ADI	637
AD783JQ	19.69	ADI	637
AD783JR	18.70	ADI	637
AD7840JN	19.06	ADI	635
AD7840KN	21.78	ADI	635
AD7845JN	12.20	ADI	—
AD7845KN	16.40	ADI	—
AD7846JN	34.49	ADI	—

Manufacturer's Code Log

ADI	Analog Devices Inc.
AMD	Advanced Micro Devices
COL	Collmer Semiconductors, Inc.
DLS	Dallas Semiconductor
HAR	Harris Semiconductor
ITL	Intel
LAT	Lattice
MXM	Maxim
MOS	Mosel-Vitelic
MOT	Motorola Semiconductor
NSC	National Semiconductor
NTE	NTE Electronics
PHI	Philips Semiconductors
SEM	Semiconductors Inc.
SIE	Siemens Components, Inc
TIS	Texas Instruments
THO	Thomson Consumer Electronics
UNI	Unitrode Integrated Circuits
XLX	Xilinx

Mfr.'s Type	Price	Mfr.'s Code	Page
AD7846KN	43.56	ADI	—
AD7849AN	17.80	ADI	636
AD7849AR	17.80	ADI	636
AD7849BN	22.03	ADI	636
AD7849BR	22.03	ADI	636
AD7849CN	30.59	ADI	636
AD7849CR	30.59	ADI	636
AD7853AN	16.50	ADI	634
AD7853AR	16.50	ADI	634
AD7853BN	21.37	ADI	634
AD7853BR	21.37	ADI	634
AD7853LAN	12.46	ADI	634
AD7853LAR	12.46	ADI	634
AD7853LARS	12.46	ADI	634
AD7853LBN	16.74	ADI	634
AD7853LBR	16.25	ADI	634
AD7858AN	18.73	ADI	634
AD7858AR	18.73	ADI	634
AD7858BN	23.93	ADI	634
AD7858BR	23.93	ADI	634
AD7858LAN	13.45	ADI	634
AD7858LAR	13.45	ADI	634
AD7858LARS	13.45	ADI	634
AD7858LBN	17.33	ADI	634
AD7858LBR	17.33	ADI	634
AD7869JN	44.80	ADI	—
AD7869JR	44.80	ADI	—
AD7870JN	32.67	ADI	634
AD7870JP	32.67	ADI	634
AD7870KN	39.93	ADI	—
AD7870KP	39.93	ADI	—
AD7870LN	54.45	ADI	—
AD7870LP	54.45	ADI	—
AD7871JN	45.76	ADI	—
AD7872JN	43.12	ADI	—
AD7874AN	50.82	ADI	635
AD7875KN	39.93	ADI	—
AD7876BN	27.72	ADI	635
AD7880BN	25.41	ADI	—
AD7880BR	25.41	ADI	—
AD7880CN	29.04	ADI	—
AD7880CR	29.04	ADI	—
AD7884AP	63.00	ADI	—
AD7884BP	72.80	ADI	—
AD7885AAP	63.00	ADI	—
AD7885ABP	72.80	ADI	—
AD7886JD	87.94	ADI	—
AD7886KD	103.93	ADI	—
AD7890AN-10	16.80	ADI	635
AD7890AN-2	16.80	ADI	—
AD7890AN-4	16.80	ADI	635
AD7893AN-10	14.54	ADI	—
AD7893AN-2	14.54	ADI	—
AD7896AN	13.00	ADI	634
AD7896AR	13.00	ADI	634
AD7896BN	17.00	ADI	634
AD7896BR	17.00	ADI	634
AD790JN	5.90	ADI	639
AD790JR	5.18	ADI	639
AD790KN	7.91	ADI	—
AD795JN	5.70	ADI	—
AD795JR	4.64	ADI	637
AD795KN	7.46	ADI	637
AD797AN	6.43	ADI	638
AD797AR	5.74	ADI	638
AD8001AN	5.37	ADI	638
AD8001AR	4.90	ADI	638
AD8002AR	6.21	ADI	—
AD8011AN	3.46	ADI	—
AD8011AR	3.46	ADI	—
AD8036AN	6.79	ADI	—
AD8036AR	6.79	ADI	—
AD8037AN	6.79	ADI	—
AD8037AR	6.79	ADI	—
AD8041AN	2.66	ADI	—
AD8041AR	2.66	ADI	—
AD8047AN	3.85	ADI	—
AD8047AR	3.85	ADI	—
AD8048AN	3.85	ADI	—
AD8048AR	3.85	ADI	—
AD810AN	3.71	ADI	638
AD810AR	3.43	ADI	638
AD811AN	5.46	ADI	638
AD811AR-16	5.71	ADI	638
AD811JR	5.08	ADI	638
AD812AN	4.21	ADI	638
AD813AN	6.16	ADI	638
AD813AR-14	6.16	ADI	638
AD817AN	2.72	ADI	638
AD817AR	2.59	ADI	638
AD818AN	2.87	ADI	638
AD818AR	2.87	ADI	638
AD820AN	2.44	ADI	638
AD820AR-3V	2.28	ADI	638

Mfr.'s Type	Price	Mfr.'s Code	Page
AD822AN	3.65	ADI	638
AD822AR-3V	3.54	ADI	638
AD822AR	3.65	ADI	638
AD822BN	5.23	ADI	638
AD824AN	5.63	ADI	—
AD826AN	3.56	ADI	638
AD826AR	3.56	ADI	638
AD827AQ	12.24	ADI	—
AD827JN	10.62	ADI	638
AD828AN	3.56	ADI	638
AD828AR	3.46	ADI	638
AD829JN	4.25	ADI	638
AD829JR	4.25	ADI	638
AD8300AN	7.88	ADI	635
AD8300AR	7.88	ADI	635
AD830AN	4.78	ADI	639
AD830JR	4.20	ADI	639
AD834AQ	38.40	ADI	639
AD834JN	23.40	ADI	639
AD834JR	23.40	ADI	—
AD835AN	17.90	ADI	639
AD835AR	17.90	ADI	639
AD8402AN10	2.93	ADI	636
AD8402AN100	2.93	ADI	636
AD8402AN50	2.93	ADI	636
AD8402AR10	2.93	ADI	636
AD8402AR100	2.93	ADI	636
AD8402AR50	2.93	ADI	636
AD8403AN10	5.25	ADI	636
AD8403AN100	5.25	ADI	—
AD8403AN50	5.25	ADI	—
AD8403AR10	4.43	ADI	636
AD8403AR100	4.43	ADI	636
AD8403AR50	4.43	ADI	636
AD841JN	8.30	ADI	638
AD842JN	9.35	ADI	638
AD842KN	10.67	ADI	638
AD843AQ	13.09	ADI	638
AD843JN	9.57	ADI	638
AD843JR-16	7.37	ADI	638
AD843KN	10.89	ADI	638
AD844AN	4.68	ADI	638
AD844JR-16	5.23	ADI	638
AD845JN	5.01	ADI	—
AD845KN	5.78	ADI	638
AD846AN	13.75	ADI	638
AD846BN	16.39	ADI	—
AD847JN	5.90	ADI	638
AD847JR	5.90	ADI	638
AD848JN	6.20	ADI	638
AD848JR	6.20	ADI	638
AD849JR	5.90	ADI	—
AD875JST	23.10	ADI	634
AD876JR	22.03	ADI	634
AD876JST	22.33	ADI	634
AD8801AN	4.35	ADI	636
AD8801AR	4.35	ADI	636
AD8802AN	4.99	ADI	636
AD8802AR	4.99	ADI	—
AD8803AN	4.35	ADI	636
AD8803AR	4.35	ADI	636
AD8804AN	4.99	ADI	636
AD8804AR	4.99	ADI	636
AD9000JD	73.92	ADI	—
AD9002AD	166.32	ADI	—
AD9012AQ	129.36	ADI	634
AD9012BQ	263.90	ADI	—
AD9020JE	329.87	ADI	—
AD9022AQ	264.00	ADI	634
AD9022BQ	304.00	ADI	634
AD9023AQ	264.00	ADI	634
AD9026AD	288.00	ADI	634
AD9026BD	448.00	ADI	634
AD9027AD	288.00	ADI	634
AD9027BD	448.00	ADI	634
AD9048JQ	45.36	ADI	—
AD9048KQ	63.84	ADI	—
AD9050BR	39.00	ADI	634
AD9050BRS	39.00	ADI	634
AD9058JD	54.66	ADI	634
AD9060KE	508.94	ADI	—
AD9066AR	8.05	ADI	634
AD9066JR	5.18	ADI	634
AD9100AD	160.08	ADI	—
AD9100JD	127.74	ADI	—
AD9101AR	49.56	ADI	637
AD9300KP	14.08	ADI	—
AD9300KQ	14.08	ADI	—
AD9501JN	15.48	ADI	—
AD9617JN	14.00	ADI	—
AD9617JR	14.00	ADI	638
AD9623AQ	15.60	ADI	—
AD9623AR	7.72	ADI	638
AD9630AN	11.25	ADI	639

Mfr.'s Type	Price	Mfr.'s Code	Page
AD9630AR	10.00	ADI	639
AD96685BH	5.54	ADI	639
AD96685BQ	7.36	ADI	—
AD96687BQ	5.54	ADI	639
AD9696KN	3.04	ADI	639
AD9696KR	2.85	ADI	639
AD9698KN	8.12	ADI	639
AD9698KR	10.40	ADI	639
AD9720BN	80.00	ADI	635
AD9720BR	80.00	ADI	635
AD9721BN	64.00	ADI	635
AD9721BR	64.00	ADI	635
AD9901KP	6.16	ADI	—
ADADC80-12	102.00	ADI	—
ADC0801LCN	14.00	NSC	710
ADC0802LCN	9.25	NSC	—
ADC08031BIN	6.60	NSC	—
ADC08032CIN	4.52	NSC	710
ADC08032CIWM	4.52	NSC	—
ADC08034BIN	7.40	NSC	710
ADC08034BIWM	7.40	NSC	710
ADC08034CIWM	4.94	NSC	—
ADC08038BIN	8.20	NSC	—
ADC08038BIWM	8.20	NSC	—
ADC08038CIWM	5.45	NSC	—
ADC08038CMJ	14.20	NSC	—
ADC0803LCN	6.90	NSC	710
ADC0804LCJ	5.50	NSC	710
ADC0804LCN	2.98	NSC	710
ADC0804LCWM	2.98	NSC	710
ADC08061BIN	12.60	NSC	710
ADC0808CCJ	7.65	NSC	710
ADC0808CCN	5.90	NSC	710
ADC0808CCV	6.50	NSC	710
ADC0809CCN	4.15	NSC	710
ADC0809CCV	5.80	NSC	710
ADC08131BIN	7.40	NSC	—
ADC08131CIN	4.94	NSC	—
ADC08134BIN	8.20	NSC	—
ADC08134BIWM	8.20	NSC	—
ADC08138BIWM	9.05	NSC	710
ADC08138CIWM	6.05	NSC	—
ADC08161CIN	9.20	NSC	—
ADC0816CCN	23.20	NSC	—
ADC0819BCN	10.40	NSC	—
ADC0819BCV	11.60	NSC	—
ADC0819CCV	7.65	NSC	—
ADC0820CCN	10.50	NSC	710
ADC08231CIN	6.20	NSC	—
ADC08231CIWM	6.20	NSC	—
ADC08234CIN	6.65	NSC	—
ADC08234CIWM	6.65	NSC	710
ADC08238CIN	7.25	NSC	—
ADC08238CIWM	7.25	NSC	—
ADC0831CCN	2.96	NSC	710
ADC0831CCWM	3.42	NSC	710
ADC0831CIWM	3.74	NSC	—
ADC0833CCN	5.50	NSC	710
ADC0834BCN	4.58	NSC	—
ADC0834CCN	3.83	NSC	710
ADC0838CCN	3.67	NSC	710
ADC0838CCWM	4.81	NSC	710
ADC0841CCN	5.50	NSC	710
ADC0844BCN	9.10	NSC	—
ADC0844CCJ	12.20	NSC	710
ADC0844CCN	5.50	NSC	710
ADC0848BCN	9.45	NSC	710
ADC0848CCN	5.70	NSC	710
ADC0851BIN	14.20	NSC	710
ADC0851BIV	14.20	NSC	710
ADC0858BIN	16.90	NSC	710
ADC0858CIV	11.30	NSC	—
ADC1001CCJ-1	25.50	NSC	710
ADC1001CCJ	33.90	NSC	710
ADC1005BCJ	40.90	NSC	710
ADC1005CCJ-1	16.70	NSC	710
ADC10061CIN	12.60	NSC	710
ADC10062CIN	13.20	NSC	710
ADC10154CIN	12.00	NSC	710
ADC10158CIN	12.70	NSC	710
ADC10158CIWM	12.70	NSC	710
ADC1031CIN	8.20	NSC	710
ADC1034CIN	8.55	NSC	710
ADC1034CIWM	8.55	NSC	—
ADC1038CIN	8.90	NSC	710
ADC10662CIWM	26.30	NSC	—
ADC10664CIN	27.30	NSC	—
ADC10664CIWM	27.30	NSC	710
ADC1205CCJ-1	41.70	NSC	—
ADC1241CIJ	15.90	NSC	—
ADDAC80N-CBI-V	17.99	ADI	635
ADDS-2101-EZ-KIT	604.41	ADI	—
ADDS-21XX-EZLITE	89.00	ADI	633
ADEL2020AN	3.28	ADI	638

Mfr.'s Type	Price	Mfr.'s Code	Page
ADEL2020AR-20	3.28	ADI	638
ADG201AKN	4.55	ADI	636
ADG201AKR	5.30	ADI	636
ADG201HSJN	5.10	ADI	636
ADG201HSKN	7.90	ADI	636
ADG202AKN	4.55	ADI	636
ADG202AKR	5.30	ADI	636
ADG211AKN	2.85	ADI	636
ADG211AKR	3.27	ADI	636
ADG212AKN	2.85	ADI	636
ADG212AKR	3.27	ADI	636
ADG221KN	4.31	ADI	—
ADG406BN	8.75	ADI	636
ADG406BP	10.71	ADI	636
ADG407BN	8.75	ADI	636
ADG407BP	10.71	ADI	636
ADG408BN	5.05	ADI	636
ADG408BR	4.90	ADI	—
ADG417BN	1.68	ADI	636
ADG417BR	1.68	ADI	636
ADG426BN	9.31	ADI	—
ADG426BRS	9.31	ADI	—
ADG428BN	5.18	ADI	636
ADG428BP	5.96	ADI	636
ADG429BN	5.18	ADI	636
ADG429BP	5.96	ADI	—
ADG431BN	3.21	ADI	636
ADG431BR	3.33	ADI	636
ADG432BN	3.31	ADI	636
ADG432BR	3.21	ADI	636
ADG433BN	3.31	ADI	636
ADG433BR	3.21	ADI	636
ADG438FBN	6.08	ADI	636
ADG438FBR	6.08	ADI	636
ADG439FBN	6.08	ADI	636
ADG439FBR	6.08	ADI	636
ADG441BN	2.96	ADI	636
ADG441BR	2.87	ADI	636
ADG442BN	2.87	ADI	636
ADG442BR	2.87	ADI	636
ADG444BN	1.86	ADI	636
ADG444BR	1.86	ADI	636
ADG506AKN	11.47	ADI	—
ADG507AKN	11.47	ADI	—
ADG508AKN	6.51	ADI	636
ADG508AKR	7.81	ADI	636
ADG508FBN	5.81	ADI	636
ADG508FBRN	5.81	ADI	636
ADG508FBRW	5.81	ADI	—
ADG509AKN	6.51	ADI	636
ADG509FBN	5.53	ADI	636
ADG509FBRN	5.53	ADI	636
ADG509FBRW	5.53	ADI	—
ADG511BN	3.54	ADI	636
ADG511BR	3.36	ADI	—
ADG512BN	3.46	ADI	636
ADG512BR	3.36	ADI	636
ADG513BN	3.46	ADI	636
ADG513BR	3.36	ADI	636
ADG526AKN	12.78	ADI	—
ADG526AKP	15.34	ADI	—
ADG528AKN	7.49	ADI	—
ADG528FBN	6.36	ADI	636
ADG528FBP	7.02	ADI	636
ADG608BN	5.67	ADI	636
ADG609BN	5.39	ADI	636
ADM1485AN	3.03	ADI	640
ADM1485AR	2.94	ADI	640
ADM1485JN	2.21	ADI	640
ADM1485JR	2.21	ADI	640
ADM202JN	2.37	ADI	640
ADM202JRN	2.37	ADI	640
ADM202JRW	2.30	ADI	640
ADM222AN	2.88	ADI	640
ADM222AR	2.80	ADI	640
ADM230LAN	5.24	ADI	640
ADM230LAR	5.24	ADI	640
ADM230LJN	4.38	ADI	640
ADM230LJR	4.38	ADI	640
ADM231LAN	2.84	ADI	640
ADM231LAR	2.84	ADI	640
ADM231LJN	2.37	ADI	640
ADM231LJR	2.30	ADI	640
ADM232AAN	2.88	ADI	640
ADM232AARN	2.97	ADI	640
ADM232LAN	2.93	ADI	640
ADM232LAR	2.93	ADI	640
ADM232LJN	2.49	ADI	640
ADM232LJR	2.30	ADI	640
ADM233LAN	7.72	ADI	640
ADM233LJN	5.30	ADI	640
ADM234LAN	4.09	ADI	640
ADM234LAR	4.09	ADI	640
ADM234LJN	3.50	ADI	640

Mfr.'s Type	Price	Mfr.'s Code	Page
ADM234LJR	3.40	ADI	640
ADM236LAN	5.24	ADI	640
ADM236LAR	5.24	ADI	640
ADM236LJN	4.38	ADI	—
ADM236LJR	4.51	ADI	640
ADM237LAN	5.24	ADI	640
ADM237LAR	5.24	ADI	640
ADM237LJN	4.38	ADI	640
ADM237LJR	4.38	ADI	640
ADM238LAN	5.24	ADI	640
ADM238LAR	5.24	ADI	640
ADM238LJN	4.38	ADI	640
ADM238LJR	4.38	ADI	640
ADM239LAN	5.24	ADI	640
ADM239LAR	5.24	ADI	640
ADM239LJN	4.38	ADI	640
ADM239LJR	4.38	ADI	—
ADM241LAR	5.24	ADI	640
ADM241LARS	5.47	ADI	640
ADM241LJR	4.51	ADI	640
ADM242AN	3.11	ADI	—
ADM242AR	2.88	ADI	640
ADM485AN	2.35	ADI	640
ADM485AR	2.42	ADI	—
ADM485JN	1.77	ADI	640
ADM485JR	1.82	ADI	640
ADM5170AN	4.34	ADI	640
ADM5170JN	3.61	ADI	640
ADM5180AN	4.34	ADI	640
ADM5180JN	3.61	ADI	640
ADM660AN	1.98	ADI	641
ADM660AR	1.98	ADI	641
ADM663AN	1.74	ADI	641
ADM663AR	1.94	ADI	641
ADM666AN	2.06	ADI	641
ADM666AR	2.18	ADI	641
ADM690AN	4.12	ADI	641
ADM691AN	4.69	ADI	641
ADM691AR	4.75	ADI	641
ADM692AN	4.12	ADI	641
ADM693AN	4.55	ADI	641
ADM693AR	5.00	ADI	641
ADM694AN	4.20	ADI	641
ADM695AN	4.55	ADI	641
ADM695AR	5.00	ADI	641
ADM696AN	4.55	ADI	641
ADM696AR	5.00	ADI	641
ADM697AN	4.55	ADI	641
ADM697AR	5.00	ADI	641
ADM698AN	2.40	ADI	641
ADM698AR	2.68	ADI	641
ADM699AN	2.94	ADI	641
ADM699AR	3.10	ADI	641
ADM705AN	1.51	ADI	—
ADM705AR	1.70	ADI	—
ADM706AN	2.54	ADI	—
ADM706AR	2.54	ADI	—
ADM707AN	1.44	ADI	—
ADM707AR	1.50	ADI	—
ADM708AN	1.31	ADI	—
ADM708AR	1.50	ADI	—
ADM8660AN	2.09	ADI	641
ADM8660AR	2.09	ADI	641
ADP667AN	3.20	ADI	641
ADP667AR	3.30	ADI	641
ADS82ALP	199.58	ADI	643
ADSP-2105KP-55	12.80	ADI	—
ADSP-2115KP-80	22.74	ADI	—
ADSP-2171KS-133	45.22	ADI	—
ADSP-2181KS-133	67.96	ADI	—
ADXL05AH	34.96	ADI	634
ADXL05EB	15.00	ADI	634
ADXL05EM-1	99.95	ADI	634
ADXL05EM-3	220.00	ADI	634
ADXL05JH	26.18	ADI	634
ADXL05SP	65.00	ADI	634
ADXL50AH	34.96	ADI	634
ADXL50EM-1	99.95	ADI	634
ADXL50JH	28.19	ADI	634
ADXL50SP	83.98	ADI	634
AH5012CN	5.15	NSC	—
AKBPC602	3.87	COL	—
AKBPC604	4.07	COL	—
AKBPC608	4.41	COL	—
AM26C31CD	2.50	TIS	731
AM26C31CN	2.71	TIS	731
AM26LS30PC	1.36	MOT	685
AM26LS31CD	0.84	TIS	731
AM26LS31CN	0.84	TIS	731
AM26LS31PC	0.80	MOT	685
AM26LS32ACD	0.84	TIS	731
AM26LS32ACN	0.84	TIS	731
AM26LS32PC	0.80	MOT	684
AM26LS33ACD	1.29	TIS	731
AM26LS33ACN	1.29	TIS	731
AM26S10CN	2.28	TIS	731
AM27C010-120DC	5.25	AMD	631
AM27C010-120PC	4.85	AMD	631
AM27C010-150DC	5.25	AMD	631
AM27C010-150PC	4.85	AMD	631
AM27C010-200DC	5.25	AMD	631
AM27C010-200PC	4.85	AMD	631
AM27C020-120DC	7.65	AMD	631

Mfr.'s Type	Price	Mfr.'s Code	Page
AM27C020-150DC	7.65	AMD	631
AM27C020-200DC	7.65	AMD	631
AM27C020-200PC	7.25	AMD	631
AM27C040-120DC	13.40	AMD	631
AM27C040-150DC	13.40	AMD	631
AM27C040-200DC	13.40	AMD	631
AM27C1024-120DC	7.40	AMD	631
AM27C1024-150DC	7.40	AMD	631
AM27C1024-200DC	7.40	AMD	631
AM27C1024-200PC	7.15	AMD	631
AM27C1024-90DC	8.85	AMD	631
AM27C128-120DC	3.25	AMD	630
AM27C128-150DC	3.25	AMD	630
AM27C128-150PC	3.10	AMD	630
AM27C128-200DC	3.25	AMD	630
AM27C128-200PC	3.10	AMD	630
AM27C128-90DC	3.90	AMD	630
AM27C2048-120DC	11.75	AMD	631
AM27C2048-150DC	11.75	AMD	631
AM27C256-120DC	3.15	AMD	630
AM27C256-120PC	3.00	AMD	630
AM27C256-150DC	3.15	AMD	630
AM27C256-150PC	3.00	AMD	630
AM27C256-200DC	3.15	AMD	630
AM27C256-200PC	3.00	AMD	630
AM27C256-90DC	3.85	AMD	630
AM27C4096-150DC	18.50	AMD	—
AM27C512-120DC	3.40	AMD	630
AM27C512-150DC	3.40	AMD	630
AM27C512-150PC	3.25	AMD	630
AM27C512-200DC	3.40	AMD	630
AM27C512-200PC	3.25	AMD	630
AM27C512-75DC	4.85	AMD	630
AM27C512-90DC	4.10	AMD	630
AM27C64-120DC	3.25	AMD	630
AM27C64-150DC	3.25	AMD	630
AM27C64-150PC	3.10	AMD	630
AM27C64-200DC	3.25	AMD	630
AM27C64-200PC	3.10	AMD	630
AM27C64-90DC	3.90	AMD	630
AMP01EX	25.35	ADI	637
AMP01FX	14.85	ADI	637
AMP01GS	13.35	ADI	637
AMP02EP	13.13	ADI	637
AMP02FP	7.88	ADI	637
AMP02FS	7.88	ADI	637
AMP03GP	4.25	ADI	—
AMP04EP	10.95	ADI	637
AMP04ES	10.43	ADI	637
AMP04FP	7.80	ADI	637
AMP04FS	7.80	ADI	637
AMPAL22V10AJC	4.84	AMD	631
AMPAL22V10APC	4.99	AMD	631
AW04M	1.94	COL	—
AW06M	2.01	COL	—
AW08M	2.13	COL	—
B1-A230	2.06	SIE	725
B1-A350	2.10	SIE	725
B1-C145	1.98	SIE	725
B1-C75	2.10	SIE	725
B1-C90/20	2.56	SIE	725
B2-B600	2.32	SIE	725
B32K130	12.54	SIE	724
B32K150	12.54	SIE	724
B32K250	12.54	SIE	724
B32K275	12.54	SIE	724
B32K385	12.54	SIE	724
B32K460	12.54	SIE	724
B32K550	12.54	SIE	724
B40K130	15.58	SIE	724
B40K150	15.58	SIE	724
B40K250	15.58	SIE	724
B40K275	15.58	SIE	724
B40K750	22.97	SIE	724
B60K130	53.35	SIE	724
B60K150	53.35	SIE	724
B60K250	52.71	SIE	724
B60K275	53.35	SIE	724
B60K460	53.35	SIE	724
B60K550	53.35	SIE	—
B80K130	138.35	SIE	724
B80K150	138.35	SIE	724
B80K250	138.35	SIE	724
BAS116LT1	0.13	MOT	701
BAV170LT1	0.14	MOT	701
BAV199LT1	0.14	MOT	701
BAV70LT1	0.14	MOT	701
BAV99LT1	0.14	MOT	701
BAW156LT1	0.14	MOT	701
BAW56LT1	0.14	MOT	701
BC846ALT1	0.10	MOT	694
BC846BLT1	0.10	MOT	694
BC847BLT1	0.10	MOT	694
BC847CLT1	0.10	MOT	—
BC848BLT1	0.10	MOT	694
BC856BLT1	0.10	MOT	694
BCP53T1	0.43	MOT	695
BCP56T1	0.44	MOT	695
BCP68T1	0.43	MOT	695
BCP69T1	0.44	MOT	695
BS107	0.70	MOT	697
BS107A	0.80	MOT	697
BS170	0.40	MOT	—

Mfr.'s Type	Price	Mfr.'s Code	Page
BSP16T1	0.50	MOT	695
BSS123LT1	0.70	MOT	698
BU323AP	3.30	MOT	696
BUF03AJ	35.25	ADI	639
BUF03FJ	11.25	ADI	—
BUF04GP	7.41	ADI	639
BUF04GS	7.60	ADI	639
BUV48A	4.68	MOT	696
BUX85	0.90	MOT	696
BUZ11	1.05	HAR	660
BUZ20	1.88	HAR	—
BUZ41A	1.61	HAR	660
BUZ71	0.84	HAR	660
BUZ71A	0.70	HAR	660
C106B	0.36	MOT	707
C106D	0.40	MOT	707
C106F	0.34	MOT	707
C106M	0.44	MOT	707
CA139E	2.22	HAR	653
CA1458E	0.55	HAR	655
CA1524E	1.08	HAR	653
CA1558T	1.75	HAR	—
CA239E	1.33	HAR	653
CA2524E	0.97	HAR	653
CA3028AE	1.81	HAR	655
CA3039	2.45	HAR	655
CA3046	0.67	HAR	655
CA3059	1.36	HAR	652
CA3079	0.99	HAR	652
CA3080AE	1.13	HAR	—
CA3080E	0.82	HAR	654
CA3080M	0.96	HAR	654
CA3081	0.91	HAR	655
CA3082	0.96	HAR	655
CA3083	0.96	HAR	655
CA3086	0.47	HAR	655
CA3089E	1.19	HAR	—
CA3094AE	0.96	HAR	—
CA3096AE	3.32	HAR	655
CA3096CE	0.95	HAR	655
CA3096E	1.95	HAR	655
CA3098E	2.01	HAR	653
CA3100E	1.57	HAR	654
CA3100M	1.82	HAR	—
CA3102E	3.50	HAR	655
CA3126E	1.59	HAR	—
CA3127E	2.58	HAR	655
CA3130AE	1.59	HAR	654
CA3130AM	1.92	HAR	—
CA3130E	1.03	HAR	654
CA3130M	1.44	HAR	—
CA3130T	1.98	HAR	—
CA3140AE	0.93	HAR	654
CA3140AM	1.46	HAR	654
CA3140E	0.57	HAR	654
CA3140M	1.00	HAR	654
CA3140T	2.17	HAR	—
CA3141E	1.32	HAR	—
CA3146AE	1.60	HAR	655
CA3146E	0.80	HAR	655
CA3160AE	1.55	HAR	654
CA3160E	0.87	HAR	654
CA3161E	1.57	HAR	651
CA3162E	6.30	HAR	651
CA3183AE	1.63	HAR	655
CA3183E	1.36	HAR	655
CA32246E	2.40	HAR	655
CA3227E	3.10	HAR	655
CA3240AE	2.20	HAR	655
CA3240E	1.13	HAR	655
CA3242E	2.88	HAR	652
CA324E	0.77	HAR	—
CA3260E	1.81	HAR	—
CA3262AE	2.95	HAR	652
CA3262E	2.88	HAR	652
CA3272AQ	5.16	HAR	—
CA3272Q	6.48	HAR	—
CA3275E	3.40	HAR	652
CA3280E	3.06	HAR	654
CA3290AE	1.03	HAR	653
CA3290E	0.76	HAR	653
CA3292AQ	5.30	HAR	652
CA3304E	4.25	HAR	—
CA3306CE	6.44	HAR	—
CA3318CE	25.58	HAR	—
CA3338AE	12.41	HAR	651
CA339E	0.77	HAR	653
CA3450E	3.71	HAR	654
CA3524E	0.87	HAR	653
CA5130AE	1.68	HAR	654
CA5130E	1.20	HAR	654
CA5260AE	2.88	HAR	—
CA5260AM	3.46	HAR	655
CA5260E	1.92	HAR	655
CA5260M	2.37	HAR	655
CA555E	0.62	HAR	655
CA555T	1.75	HAR	655
CA723CE	0.43	HAR	653
CA723CT	1.24	HAR	653
CA723E	0.56	HAR	653
CA723T	0.95	HAR	653
CA741CE	0.37	HAR	—
CA741E	0.49	HAR	654

Mfr.'s Type	Price	Mfr.'s Code	Page
CA741T	1.84	HAR	—
CD14538BE	0.70	HAR	658
CD22402E	7.50	HAR	658
CD22777E	0.59	HAR	658
CD4001BCM	0.34	NSC	716
CD4001BCN	0.34	NSC	710
CD4001BE	0.25	HAR	658
CD4001UBE	0.26	HAR	658
CD4002BE	0.26	HAR	658
CD4006BE	0.61	HAR	658
CD4007UBE	0.26	HAR	658
CD4008BE	0.61	HAR	658
CD4009UBE	0.47	HAR	658
CD40100BE	0.85	HAR	658
CD40102BE	0.88	HAR	658
CD40103BE	0.79	HAR	658
CD40105BE	1.05	HAR	658
CD40106BCM	0.56	NSC	716
CD40106BCN	0.57	NSC	716
CD40106BE	0.35	HAR	658
CD40107BE	0.39	HAR	658
CD40109BE	0.63	HAR	658
CD4010BE	0.46	HAR	658
CD40110BE	1.05	HAR	658
CD40116E	8.98	HAR	658
CD40117BE	0.41	HAR	658
CD4011BCM	0.34	NSC	716
CD4011BCN	0.34	NSC	—
CD4011BE	0.26	HAR	658
CD4011UBE	0.26	HAR	658
CD4012BE	0.25	HAR	658
CD4013BCM	0.41	NSC	—
CD4013BCN	0.41	NSC	716
CD4013BE	0.28	HAR	658
CD40147BE	0.78	HAR	658
CD4014BCN	0.84	NSC	716
CD4014BE	0.67	HAR	658
CD4015BCN	0.75	NSC	716
CD4015BE	0.60	HAR	658
CD40160BE	0.66	HAR	658
CD40161BE	0.60	HAR	658
CD40163BE	0.65	HAR	658
CD4016BCM	0.44	NSC	716
CD4016BCN	0.46	NSC	716
CD4016BE	0.32	HAR	658
CD40174BCN	0.75	NSC	716
CD40174BE	0.53	HAR	658
CD40175BE	0.53	HAR	658
CD4017BCN	0.75	NSC	716
CD4017BE	0.60	HAR	658
CD4018BE	0.67	HAR	658
CD40192BE	0.84	HAR	658
CD40193BCN	1.12	NSC	716
CD40193BE	0.88	HAR	658
CD40194BE	0.57	HAR	658
CD4019BE	0.26	HAR	658
CD4020BCM	0.73	NSC	—
CD4020BCN	0.75	NSC	716
CD4020BE	0.58	HAR	658
CD4021BCM	0.73	NSC	716
CD4021BCN	0.73	NSC	716
CD4021BE	0.58	HAR	658
CD4022BCN	0.73	NSC	—
CD4022BE	0.58	HAR	658
CD4023BCN	0.34	NSC	716
CD4023BE	0.26	HAR	658
CD4024BCM	0.55	NSC	716
CD4024BCN	0.53	NSC	716
CD4024BE	0.42	HAR	658
CD40257BE	0.96	HAR	658
CD4025BE	0.25	HAR	658
CD4026BE	0.61	HAR	658
CD4027BCN	0.46	NSC	716
CD4027BE	0.32	HAR	658
CD4028BE	0.58	HAR	658
CD4029BGN	0.73	NSC	—
CD4029BE	0.58	HAR	658
CD4030BE	0.35	HAR	658
CD4031BE	1.07	HAR	658
CD4033BE	0.81	HAR	658
CD4034BE	2.72	HAR	658
CD4035BE	0.63	HAR	658
CD4040BCM	0.73	NSC	716
CD4040BCN	0.75	NSC	716
CD4040BE	0.58	HAR	658
CD4041UBE	1.00	HAR	658
CD4042BE	0.44	HAR	658
CD4043BE	0.58	HAR	658
CD4044BCN	0.87	NSC	716
CD4044BE	0.58	HAR	658
CD4046BCM	0.92	NSC	716
CD4046BCN	0.92	NSC	716
CD4046BE	0.67	HAR	658
CD4047BCM	1.00	NSC	716
CD4047BCN	0.92	NSC	716
CD4047BE	0.60	HAR	658
CD4048BE	0.45	HAR	658
CD4049UBCM	0.46	NSC	716
CD4049UBCN	0.46	NSC	716
CD4049UBE	0.32	HAR	658
CD4050BCN	0.46	NSC	716
CD4050BE	0.35	HAR	658
CD4051BCM	0.75	NSC	716

Manufacturer's Code Log

ADI	**Analog Devices Inc.**
AMD	**Advanced Micro Devices**
COL	**Collmer Semiconductors, Inc.**
DLS	**Dallas Semiconductor**
HAR	**Harris Semiconductor**
ITL	**Intel**
LAT	**Lattice**
MXM	**Maxim**
MOS	**Mosel-Vitelic**
MOT	**Motorola Semiconductor**
NSC	**National Semiconductor**
NTE	**NTE Electronics**
PHI	**Philips Semiconductors**
SEM	**Semiconductors Inc.**
SIE	**Siemens Components, Inc**
TIS	**Texas Instruments**
THO	**Thomson Conusumer Electronics**
UNI	**Unitrode Integrated Circuits**
XLX	**Xilinx**

Mfr.'s Type	Price	Mfr.'s Code	Page
CD4051BCN	0.75	NSC	716
CD4051BE	0.49	HAR	658
CD4052BCM	0.75	NSC	—
CD4052BCN	0.75	NSC	716
CD4052BE	0.49	HAR	658
CD4053BCM	0.73	NSC	716
CD4053BCN	0.80	NSC	716
CD4053BE	0.49	HAR	658
CD4054BE	0.63	HAR	662
CD4055BE	0.69	HAR	658
CD4056BE	0.63	HAR	658
CD4059AE	2.81	HAR	658
CD4060BCM	0.75	NSC	716
CD4060BCN	0.75	NSC	716
CD4060BE	0.56	HAR	658
CD4063BE	0.61	HAR	658
CD4066BCM	0.50	NSC	716
CD4066BCN	0.50	NSC	716
CD4066BE	0.35	HAR	658
CD4067BE	1.67	HAR	658
CD4068BE	0.26	HAR	658
CD4069UBE	0.26	HAR	658
CD4070BCM	0.40	NSC	—
CD4070BE	0.26	HAR	658
CD4071BCN	0.34	NSC	716
CD4071BE	0.26	HAR	658
CD4072BE	0.26	HAR	658
CD4073BE	0.25	HAR	658
CD4075BE	0.25	HAR	658
CD4076BE	0.61	HAR	658
CD4077BE	0.26	HAR	658
CD4078BE	0.26	HAR	658
CD4081BCN	0.34	NSC	716
CD4081BE	0.26	HAR	658
CD4082BE	0.26	HAR	658
CD4085BE	0.42	HAR	658
CD4086BE	0.35	HAR	658
CD4089BE	0.91	HAR	658
CD4093BCM	0.46	NSC	716
CD4093BCN	0.46	NSC	716
CD4093BE	0.33	HAR	658
CD4094BE	0.53	HAR	658
CD4097BE	1.84	HAR	658
CD4098BE	0.51	HAR	658
CD4099BCN	0.92	NSC	716
CD4099BE	0.67	HAR	658
CD4502BE	0.61	HAR	658
CD4503BCN	1.38	NSC	716
CD4503BE	0.51	HAR	658
CD4504BE	1.14	HAR	658
CD4508BE	1.76	HAR	658
CD4510BE	0.68	HAR	658
CD4511BE	0.67	HAR	658
CD4512BE	0.61	HAR	658
CD4514BCN	1.79	NSC	716
CD4514BE	1.49	HAR	658
CD4515BCN	1.79	NSC	716
CD4515BE	1.58	HAR	658
CD4516BE	0.65	HAR	658
CD4517BE	1.28	HAR	658
CD4518BE	0.67	HAR	658
CD4519BE	0.51	HAR	658
CD4520BE	0.61	HAR	658
CD4521BE	1.07	HAR	658
CD4522BE	0.84	HAR	658
CD4527BE	0.71	HAR	658
CD4528BCN	0.96	NSC	716
CD4529BE	0.97	HAR	658
CD4532BE	0.74	HAR	658
CD4536BE	1.12	HAR	658
CD4538BCN	1.03	NSC	716
CD4541BCN	0.80	NSC	716
CD4541BE	0.60	HAR	658
CD4543BE	0.60	HAR	658
CD4555BE	0.60	HAR	658
CD4556BE	0.60	HAR	658
CD4560BE	1.79	HAR	—
CD4566BE	1.31	HAR	658
CD4572UBE	0.67	HAR	658
CD4585BE	0.67	HAR	658
CD4724BCN	1.15	NSC	716
CD4724BE	0.86	HAR	658
CD7211AE	3.74	HAR	658
CD7211AME	3.91	HAR	658
CD7211E	1.28	HAR	658
CD74AC00E	0.47	HAR	—
CD74AC00M	0.48	HAR	657
CD74AC02E	0.46	HAR	657
CD74AC02M	0.48	HAR	657
CD74AC04E	0.47	HAR	657
CD74AC04M	0.48	HAR	657
CD74AC05E	0.48	HAR	657
CD74AC05M	0.51	HAR	657
CD74AC08E	0.47	HAR	657

Mfr.'s Type	Price	Mfr.'s Code	Page
CD74AC08M	0.48	HAR	657
CD74AC109E	0.60	HAR	657
CD74AC109M	0.62	HAR	657
CD74AC10E	0.47	HAR	657
CD74AC10M	0.48	HAR	657
CD74AC112E	0.97	HAR	657
CD74AC112M	0.97	HAR	657
CD74AC138E	0.78	HAR	657
CD74AC138M	0.80	HAR	657
CD74AC139E	0.78	HAR	657
CD74AC139M	0.80	HAR	657
CD74AC14E	0.53	HAR	657
CD74AC14M	0.53	HAR	657
CD74AC151E	0.78	HAR	657
CD74AC151M	0.81	HAR	657
CD74AC153E	0.78	HAR	657
CD74AC153M	0.81	HAR	657
CD74AC157E	0.78	HAR	657
CD74AC157M	0.81	HAR	657
CD74AC158E	0.78	HAR	657
CD74AC158M	0.81	HAR	657
CD74AC161E	1.17	HAR	657
CD74AC161M	1.20	HAR	657
CD74AC163E	1.17	HAR	657
CD74AC163M	1.20	HAR	—
CD74AC164E	1.26	HAR	657
CD74AC164M	1.29	HAR	657
CD74AC174E	0.78	HAR	657
CD74AC174M	0.81	HAR	657
CD74AC175E	0.78	HAR	657
CD74AC175M	0.81	HAR	657
CD74AC191E	2.53	HAR	657
CD74AC191M	2.55	HAR	657
CD74AC193E	2.53	HAR	657
CD74AC193M	2.55	HAR	657
CD74AC20E	0.46	HAR	657
CD74AC20M	0.46	HAR	657
CD74AC238E	0.87	HAR	657
CD74AC238M	0.90	HAR	657
CD74AC240E	1.15	HAR	657
CD74AC240M	1.17	HAR	657
CD74AC241E	1.15	HAR	657
CD74AC241M	1.17	HAR	657
CD74AC244E	1.15	HAR	657
CD74AC244M	1.17	HAR	657
CD74AC245E	1.26	HAR	657
CD74AC245M	1.29	HAR	657
CD74AC251E	0.78	HAR	657
CD74AC253E	0.78	HAR	657
CD74AC253M	0.81	HAR	657
CD74AC257E	0.78	HAR	657
CD74AC257M	0.81	HAR	657
CD74AC273E	1.15	HAR	657
CD74AC273M	1.17	HAR	657
CD74AC280E	0.83	HAR	657
CD74AC280M	0.85	HAR	657
CD74AC283E	1.15	HAR	657
CD74AC283M	1.17	HAR	657
CD74AC297M	1.49	HAR	657
CD74AC299E	2.30	HAR	657
CD74AC299M	2.32	HAR	657
CD74AC323E	2.88	HAR	657
CD74AC32E	0.40	HAR	657
CD74AC32M	0.46	HAR	657
CD74AC373E	1.24	HAR	657
CD74AC373M	1.22	HAR	657
CD74AC374M	1.22	HAR	657
CD74AC533M	1.29	HAR	657
CD74AC534E	1.27	HAR	657
CD74AC534M	1.29	HAR	657
CD74AC540E	1.22	HAR	657
CD74AC540M	1.24	HAR	657
CD74AC541E	1.22	HAR	657
CD74AC541M	1.24	HAR	657
CD74AC563E	1.27	HAR	657
CD74AC564E	1.27	HAR	657
CD74AC564M	1.29	HAR	657
CD74AC573E	1.28	HAR	657
CD74AC573M	1.24	HAR	657
CD74AC574E	1.24	HAR	657
CD74AC574M	1.24	HAR	657
CD74AC623E	1.47	HAR	657
CD74AC623M	1.49	HAR	657
CD74AC646M	5.17	HAR	657
CD74AC652M	5.17	HAR	657
CD74AC7060E	1.24	HAR	658
CD74AC7060M	1.26	HAR	658
CD74AC74E	0.51	HAR	657
CD74AC7623M	1.47	HAR	658
CD74AC86E	0.71	HAR	657
CD74AC86M	0.71	HAR	657
CD74ACT00E	0.46	HAR	—
CD74ACT00M	0.49	HAR	657
CD74ACT02E	0.46	HAR	—

Mfr.'s Type	Price	Mfr.'s Code	Page
CD74ACT02M	0.48	HAR	657
CD74ACT04E	0.46	HAR	—
CD74ACT04M	0.49	HAR	657
CD74ACT05E	0.47	HAR	—
CD74ACT05M	0.48	HAR	657
CD74ACT08E	0.46	HAR	—
CD74ACT08M	0.49	HAR	657
CD74ACT109E	0.60	HAR	—
CD74ACT109M	0.62	HAR	657
CD74ACT10E	0.46	HAR	—
CD74ACT10M	0.48	HAR	657
CD74ACT112E	0.97	HAR	—
CD74ACT112M	0.97	HAR	657
CD74ACT138E	0.80	HAR	—
CD74ACT138M	0.83	HAR	657
CD74ACT139E	0.78	HAR	—
CD74ACT139M	0.94	HAR	657
CD74ACT14E	0.53	HAR	—
CD74ACT14M	0.53	HAR	657
CD74ACT151E	0.78	HAR	—
CD74ACT151M	0.81	HAR	657
CD74ACT153M	0.81	HAR	657
CD74ACT157E	0.80	HAR	—
CD74ACT157M	0.81	HAR	657
CD74ACT158E	0.78	HAR	—
CD74ACT158M	0.81	HAR	657
CD74ACT161E	1.21	HAR	—
CD74ACT161M	1.20	HAR	657
CD74ACT163E	1.17	HAR	—
CD74ACT163M	1.20	HAR	657
CD74ACT164E	1.27	HAR	—
CD74ACT164M	1.29	HAR	657
CD74ACT174E	0.78	HAR	—
CD74ACT174M	0.81	HAR	657
CD74ACT175E	0.78	HAR	—
CD74ACT175M	0.81	HAR	657
CD74ACT191E	2.53	HAR	—
CD74ACT191M	2.55	HAR	657
CD74ACT193E	2.53	HAR	—
CD74ACT193M	2.55	HAR	657
CD74ACT20E	0.46	HAR	—
CD74ACT20M	0.46	HAR	657
CD74ACT238E	0.87	HAR	—
CD74ACT238M	0.90	HAR	657
CD74ACT240E	1.15	HAR	—
CD74ACT240M	1.17	HAR	657
CD74ACT241E	1.15	HAR	—
CD74ACT241M	1.17	HAR	657
CD74ACT244E	1.18	HAR	—
CD74ACT244M	1.17	HAR	657
CD74ACT245E	1.31	HAR	657
CD74ACT245M	1.29	HAR	657
CD74ACT251E	0.78	HAR	—
CD74ACT253E	0.78	HAR	—
CD74ACT253M	0.81	HAR	657
CD74ACT257E	0.78	HAR	—
CD74ACT257M	0.81	HAR	657
CD74ACT258E	0.78	HAR	—
CD74ACT258M	0.81	HAR	657
CD74ACT273E	1.15	HAR	—
CD74ACT273M	1.17	HAR	657
CD74ACT280E	0.83	HAR	—
CD74ACT280M	0.85	HAR	657
CD74ACT283E	1.15	HAR	—
CD74ACT283M	1.17	HAR	657
CD74ACT297M	1.49	HAR	657
CD74ACT299E	2.30	HAR	657
CD74ACT299M	2.32	HAR	657
CD74ACT323E	2.88	HAR	657
CD74ACT32E	0.46	HAR	—
CD74ACT32M	0.51	HAR	657
CD74ACT373E	1.20	HAR	657
CD74ACT373M	1.22	HAR	657
CD74ACT374E	1.24	HAR	657
CD74ACT374M	1.22	HAR	657
CD74ACT533E	1.27	HAR	657
CD74ACT533M	1.29	HAR	657
CD74ACT534E	1.26	HAR	657
CD74ACT534M	1.29	HAR	657
CD74ACT540E	1.22	HAR	657
CD74ACT540M	1.24	HAR	657
CD74ACT541E	1.26	HAR	657
CD74ACT541M	1.24	HAR	657
CD74ACT563E	1.27	HAR	657
CD74ACT563M	1.29	HAR	657
CD74ACT564E	1.26	HAR	657
CD74ACT564M	1.29	HAR	657
CD74ACT573E	1.24	HAR	657
CD74ACT573M	1.24	HAR	657
CD74ACT574E	1.24	HAR	657
CD74ACT574M	1.28	HAR	657
CD74ACT623E	1.47	HAR	657
CD74ACT623M	1.49	HAR	657
CD74ACT646M	5.17	HAR	—

Mfr.'s Type	Price	Mfr.'s Code	Page
CD74ACT647M	4.91	HAR	657
CD74ACT648M	4.91	HAR	—
CD74ACT651M	4.91	HAR	657
CD74ACT652M	5.17	HAR	657
CD74ACT7060E	1.31	HAR	658
CD74ACT7060M	1.29	HAR	658
CD74ACT74E	0.53	HAR	657
CD74ACT74M	0.55	HAR	657
CD74ACT7623E	1.47	HAR	658
CD74ACT7623M	1.49	HAR	658
CD74ACT86E	0.71	HAR	—
CD74ACT86M	0.71	HAR	657
CD74FCT138ATM	1.56	HAR	659
CD74FCT157ATM	1.56	HAR	659
CD74FCT157ATQM	1.56	HAR	659
CD74FCT162244ATMT	2.94	HAR	659
CD74FCT162244ATSM	2.67	HAR	659
CD74FCT162244CTSM	2.67	HAR	659
CD74FCT162245ATSM	2.67	HAR	659
CD74FCT162373ATMT	2.94	HAR	659
CD74FCT162373ATSM	2.67	HAR	659
CD74FCT162374ATSM	2.67	HAR	659
CD74FCT162374CTSM	2.48	HAR	659
CD74FCT16244ATMT	2.94	HAR	659
CD74FCT16244ATSM	2.08	HAR	659
CD74FCT16244CTMT	2.94	HAR	659
CD74FCT16244CTSM	2.67	HAR	659
CD74FCT16245ATMT	2.94	HAR	659
CD74FCT16245ATSM	2.67	HAR	659
CD74FCT16245CTMT	2.94	HAR	659
CD74FCT16245CTSM	2.67	HAR	659
CD74FCT162646ATSM	3.88	HAR	659
CD74FCT162827ATSM	3.88	HAR	659
CD74FCT163674CTSM	3.19	HAR	659
CD74FCT16373ATMT	2.94	HAR	659
CD74FCT16373ATSM	2.67	HAR	659
CD74FCT16374ATMT	2.94	HAR	659
CD74FCT16374ATSM	2.67	HAR	659
CD74FCT16374CTMT	3.45	HAR	659
CD74FCT16646ATMT	4.15	HAR	659
CD74FCT16646ATSM	3.88	HAR	659
CD74FCT16646CTSM	5.10	HAR	659
CD74FCT16827ATMT	4.15	HAR	659
CD74FCT16827ATSM	3.88	HAR	659
CD74FCT16952ATMT	4.15	HAR	659
CD74FCT2244ATM	1.33	HAR	659
CD74FCT2244ATQM	1.33	HAR	659
CD74FCT2244CTM	1.33	HAR	659
CD74FCT2244CTQM	1.33	HAR	659
CD74FCT2245ATM	1.33	HAR	659
CD74FCT2245ATQM	1.33	HAR	659
CD74FCT2245CTM	1.33	HAR	659
CD74FCT2245CTQM	1.33	HAR	659
CD74FCT2374ATM	1.33	HAR	659
CD74FCT2374ATQM	1.33	HAR	659
CD74FCT240E	1.41	HAR	658
CD74FCT240M	1.33	HAR	658
CD74FCT241ATM	1.33	HAR	659
CD74FCT241ATQM	1.33	HAR	659
CD74FCT244ATQM	1.33	HAR	659
CD74FCT244CTM	1.33	HAR	659
CD74FCT244CTQM	1.33	HAR	659
CD74FCT244E	1.41	HAR	658
CD74FCT244M	1.33	HAR	658
CD74FCT245ATQM	1.33	HAR	659
CD74FCT245CTM	1.33	HAR	659
CD74FCT245CTQM	1.33	HAR	659
CD74FCT245E	1.49	HAR	658
CD74FCT245M	1.41	HAR	658
CD74FCT2574ATM	1.33	HAR	659
CD74FCT2574ATQM	1.33	HAR	659
CD74FCT2574CTQM	2.24	HAR	659
CD74FCT2646ATM	1.99	HAR	659
CD74FCT2646ATQM	1.99	HAR	659
CD74FCT273E	1.41	HAR	658
CD74FCT273M	1.33	HAR	658
CD74FCT373ATQM	1.33	HAR	659
CD74FCT373CTQM	2.24	HAR	659
CD74FCT373E	1.41	HAR	658
CD74FCT373M	1.33	HAR	658
CD74FCT374ATQM	1.33	HAR	659
CD74FCT374CTQM	2.24	HAR	659
CD74FCT374E	1.41	HAR	658
CD74FCT374M	1.33	HAR	658
CD74FCT533M	1.33	HAR	658
CD74FCT540M	1.49	HAR	658
CD74FCT541ATM	1.56	HAR	659
CD74FCT541ATQM	1.56	HAR	659
CD74FCT541E	1.49	HAR	—
CD74FCT541M	1.49	HAR	658
CD74FCT543ATQM	1.55	HAR	659
CD74FCT543CTQM	3.02	HAR	659
CD74FCT543M	1.91	HAR	658
CD74FCT564E	1.41	HAR	658

Mfr.'s Type	Price	Mfr.'s Code	Page
CD74FCT564M	1.42	HAR	658
CD74FCT573ATQM	1.33	HAR	659
CD74FCT573CTQM	2.24	HAR	659
CD74FCT573E	1.42	HAR	658
CD74FCT573M	1.42	HAR	658
CD74FCT574ATQM	1.33	HAR	659
CD74FCT574CTQM	2.24	HAR	659
CD74FCT574E	1.41	HAR	658
CD74FCT574M	1.42	HAR	658
CD74FCT623M	1.91	HAR	658
CD74FCT646ATQM	1.99	HAR	659
CD74FCT646M	2.72	HAR	658
CD74FCT651M	1.96	HAR	658
CD74FCT652M	1.96	HAR	658
CD74FCT653M	1.96	HAR	658
CD74FCT654M	1.96	HAR	658
CD74FCT7623M	2.34	HAR	658
CD74FCT821AM	1.53	HAR	658
CD74FCT827ATM	1.81	HAR	659
CD74FCT827ATQM	1.81	HAR	659
CD74FCT827CTM	2.86	HAR	659
CD74FCT827CTQM	2.86	HAR	659
CD74FCT841AM	1.86	HAR	658
CD74FCT842AM	1.86	HAR	658
CD74FCT843AM	1.86	HAR	658
CD74FCT861AM	1.86	HAR	658
CD74FCT863AM	1.86	HAR	658
CD74HC00E	0.30	HAR	655
CD74HC00M	0.33	HAR	655
CD74HC02E	0.27	HAR	655
CD74HC02M	0.35	HAR	655
CD74HC03E	0.38	HAR	655
CD74HC03M	0.39	HAR	655
CD74HC04E	0.30	HAR	656
CD74HC04M	0.36	HAR	656
CD74HC08E	0.30	HAR	656
CD74HC08M	0.36	HAR	656
CD74HC107E	0.54	HAR	656
CD74HC107M	0.55	HAR	656
CD74HC109E	0.40	HAR	656
CD74HC109M	0.51	HAR	656
CD74HC10E	0.30	HAR	—
CD74HC10M	0.35	HAR	656
CD74HC112E	0.40	HAR	656
CD74HC11E	0.38	HAR	656
CD74HC11M	0.39	HAR	656
CD74HC123E	0.69	HAR	656
CD74HC123M	0.73	HAR	656
CD74HC125E	0.43	HAR	656
CD74HC125M	0.51	HAR	656
CD74HC126E	0.59	HAR	656
CD74HC126M	0.62	HAR	656
CD74HC132E	0.66	HAR	656
CD74HC132M	0.69	HAR	656
CD74HC137E	0.66	HAR	656
CD74HC137M	0.69	HAR	656
CD74HC138E	0.47	HAR	656
CD74HC138M	0.55	HAR	656
CD74HC139E	0.50	HAR	656
CD74HC139M	0.55	HAR	656
CD74HC147E	0.64	HAR	656
CD74HC147M	0.78	HAR	656
CD74HC14E	0.40	HAR	656
CD74HC14M	0.43	HAR	656
CD74HC151E	0.50	HAR	656
CD74HC151M	0.53	HAR	656
CD74HC153E	0.52	HAR	656
CD74HC153M	0.55	HAR	656
CD74HC154E	1.90	HAR	656
CD74HC154M	2.30	HAR	656
CD74HC157E	0.52	HAR	656
CD74HC157M	0.57	HAR	656
CD74HC158E	0.52	HAR	656
CD74HC158M	0.62	HAR	656
CD74HC160E	0.64	HAR	656
CD74HC160M	0.71	HAR	656
CD74HC161E	0.59	HAR	656
CD74HC161M	0.64	HAR	656
CD74HC163E	0.59	HAR	656
CD74HC163M	0.67	HAR	656
CD74HC164E	0.59	HAR	656
CD74HC164M	0.62	HAR	656
CD74HC165E	0.59	HAR	656
CD74HC165M	0.64	HAR	656
CD74HC166E	0.71	HAR	656
CD74HC166M	0.76	HAR	656
CD74HC173E	0.66	HAR	656
CD74HC173M	0.71	HAR	656
CD74HC174E	0.52	HAR	656
CD74HC174M	0.57	HAR	656
CD74HC175E	0.42	HAR	656
CD74HC175M	0.53	HAR	656
CD74HC190E	0.66	HAR	656
CD74HC190M	0.71	HAR	656
CD74HC191E	0.76	HAR	656
CD74HC191M	0.76	HAR	656
CD74HC192E	0.66	HAR	656
CD74HC192M	0.71	HAR	656
CD74HC193E	0.73	HAR	656
CD74HC193M	0.74	HAR	656
CD74HC194E	0.67	HAR	656
CD74HC194M	0.69	HAR	656
CD74HC195E	0.67	HAR	656

Mfr.'s Type	Price	Mfr.'s Code	Page
CD74HC195M	0.69	HAR	656
CD74HC20E	0.40	HAR	656
CD74HC20M	0.41	HAR	656
CD74HC21E	0.40	HAR	656
CD74HC21M	0.41	HAR	656
CD74HC221E	0.69	HAR	656
CD74HC221M	0.69	HAR	656
CD74HC237E	0.71	HAR	656
CD74HC237M	0.71	HAR	656
CD74HC238E	0.83	HAR	656
CD74HC238M	0.90	HAR	656
CD74HC240E	0.71	HAR	656
CD74HC240M	0.74	HAR	656
CD74HC241E	0.69	HAR	656
CD74HC241M	0.76	HAR	656
CD74HC242M	0.78	HAR	656
CD74HC243E	0.69	HAR	656
CD74HC243M	0.74	HAR	656
CD74HC244E	0.73	HAR	656
CD74HC244M	0.76	HAR	656
CD74HC245E	0.73	HAR	656
CD74HC245M	0.76	HAR	656
CD74HC251E	0.57	HAR	656
CD74HC251M	0.60	HAR	656
CD74HC253E	0.62	HAR	656
CD74HC253M	0.67	HAR	656
CD74HC257E	0.57	HAR	656
CD74HC257M	0.62	HAR	656
CD74HC258M	0.67	HAR	656
CD74HC259E	0.73	HAR	656
CD74HC259M	0.76	HAR	656
CD74HC273E	0.71	HAR	656
CD74HC273M	0.76	HAR	656
CD74HC27E	0.40	HAR	656
CD74HC27M	0.41	HAR	656
CD74HC280E	0.71	HAR	656
CD74HC280M	0.78	HAR	656
CD74HC283E	0.71	HAR	656
CD74HC283M	0.78	HAR	656
CD74HC297E	1.73	HAR	656
CD74HC299M	1.13	HAR	656
CD74HC30E	0.30	HAR	656
CD74HC30M	0.35	HAR	656
CD74HC32E	0.33	HAR	656
CD74HC32M	0.36	HAR	656
CD74HC354E	0.69	HAR	656
CD74HC356E	0.67	HAR	656
CD74HC365E	0.76	HAR	656
CD74HC365M	0.81	HAR	656
CD74HC366E	0.71	HAR	656
CD74HC366M	0.81	HAR	656
CD74HC367E	0.71	HAR	656
CD74HC367M	0.81	HAR	656
CD74HC368E	0.71	HAR	656
CD74HC368M	0.81	HAR	656
CD74HC373E	0.71	HAR	656
CD74HC373M	0.74	HAR	656
CD74HC374E	0.71	HAR	656
CD74HC374M	0.74	HAR	656
CD74HC377E	0.85	HAR	656
CD74HC377M	0.99	HAR	656
CD74HC390E	0.71	HAR	656
CD74HC390M	0.81	HAR	656
CD74HC393E	0.71	HAR	656
CD74HC393M	0.71	HAR	656
CD74HC4002E	0.38	HAR	656
CD74HC4002M	0.41	HAR	656
CD74HC40102M	1.03	HAR	657
CD74HC40103M	0.99	HAR	657
CD74HC40105E	1.02	HAR	657
CD74HC40105M	1.06	HAR	657
CD74HC4015E	0.78	HAR	656
CD74HC4015M	0.85	HAR	656
CD74HC4016E	0.64	HAR	656
CD74HC4017E	0.73	HAR	657
CD74HC4017M	0.78	HAR	657
CD74HC4020E	0.81	HAR	657
CD74HC4020M	0.81	HAR	657
CD74HC4024E	0.62	HAR	657
CD74HC4024M	0.67	HAR	657
CD74HC4040E	0.76	HAR	657
CD74HC4040M	0.81	HAR	657
CD74HC4046AE	1.66	HAR	657
CD74HC4046AM	1.68	HAR	657
CD74HC4049E	0.66	HAR	657
CD74HC4049M	0.67	HAR	657
CD74HC4050E	0.66	HAR	657
CD74HC4050M	0.67	HAR	657
CD74HC4051M	0.90	HAR	657
CD74HC4052E	0.83	HAR	657
CD74HC4052M	0.83	HAR	657
CD74HC4053E	0.85	HAR	657
CD74HC4053M	0.90	HAR	657
CD74HC4059E	2.11	HAR	657
CD74HC4059M	2.16	HAR	657
CD74HC4060E	0.81	HAR	657
CD74HC4060M	0.85	HAR	657
CD74HC4066E	0.66	HAR	657
CD74HC4066M	0.69	HAR	657
CD74HC4067E	2.13	HAR	657
CD74HC4067M	2.19	HAR	657
CD74HC4075E	0.46	HAR	657
CD74HC4075M	0.51	HAR	657

Mfr.'s Type	Price	Mfr.'s Code	Page
CD74HC4094E	0.69	HAR	657
CD74HC4094M	0.74	HAR	657
CD74HC423E	0.69	HAR	656
CD74HC423M	0.69	HAR	656
CD74HC42E	0.62	HAR	656
CD74HC42M	0.62	HAR	656
CD74HC4316E	0.71	HAR	657
CD74HC4316M	0.78	HAR	657
CD74HC4351E	0.90	HAR	657
CD74HC4352E	0.90	HAR	657
CD74HC4352M	0.97	HAR	657
CD74HC4353E	0.81	HAR	657
CD74HC4511E	0.69	HAR	657
CD74HC4511M	0.76	HAR	657
CD74HC4514E	1.86	HAR	657
CD74HC4514M	1.96	HAR	657
CD74HC4515E	1.86	HAR	657
CD74HC4515M	1.96	HAR	657
CD74HC4516E	0.76	HAR	657
CD74HC4518M	0.85	HAR	657
CD74HC4520E	0.83	HAR	657
CD74HC4520M	0.85	HAR	657
CD74HC4538E	0.90	HAR	657
CD74HC4538M	0.99	HAR	657
CD74HC4543E	0.66	HAR	657
CD74HC533E	0.90	HAR	656
CD74HC534E	0.87	HAR	656
CD74HC534M	0.97	HAR	656
CD74HC540E	0.88	HAR	656
CD74HC540M	0.94	HAR	656
CD74HC541E	0.90	HAR	656
CD74HC541M	0.90	HAR	656
CD74HC563E	0.90	HAR	656
CD74HC563M	0.92	HAR	656
CD74HC564E	0.94	HAR	656
CD74HC564M	1.08	HAR	656
CD74HC573E	0.95	HAR	656
CD74HC574E	0.90	HAR	656
CD74HC574M	0.99	HAR	656
CD74HC583E	0.76	HAR	656
CD74HC597E	0.83	HAR	656
CD74HC597M	0.83	HAR	656
CD74HC640E	1.06	HAR	656
CD74HC640M	1.17	HAR	656
CD74HC646E	3.51	HAR	656
CD74HC646M	4.83	HAR	656
CD74HC648E	2.83	HAR	656
CD74HC648M	4.83	HAR	656
CD74HC652M	4.83	HAR	656
CD74HC670E	0.92	HAR	656
CD74HC670M	0.97	HAR	656
CD74HC688E	0.92	HAR	656
CD74HC688M	1.02	HAR	656
CD74HC7030E	10.35	HAR	657
CD74HC7046AE	1.66	HAR	657
CD74HC7046AM	2.05	HAR	657
CD74HC7266E	0.62	HAR	657
CD74HC73E	0.34	HAR	656
CD74HC73M	0.46	HAR	656
CD74HC74E	0.40	HAR	656
CD74HC74M	0.47	HAR	656
CD74HC75E	0.38	HAR	656
CD74HC75M	0.46	HAR	656
CD74HC85E	0.64	HAR	656
CD74HC85M	0.69	HAR	656
CD74HC86E	0.45	HAR	656
CD74HC86M	0.47	HAR	656
CD74HC93E	0.64	HAR	656
CD74HC93M	0.69	HAR	656
CD74HCT00E	0.30	HAR	655
CD74HCT00M	0.36	HAR	655
CD74HCT02E	0.33	HAR	655
CD74HCT02M	0.36	HAR	655
CD74HCT03E	0.37	HAR	655
CD74HCT03M	0.37	HAR	655
CD74HCT04E	0.33	HAR	656
CD74HCT04M	0.35	HAR	656
CD74HCT08E	0.33	HAR	656
CD74HCT08M	0.36	HAR	656
CD74HCT107E	0.56	HAR	656
CD74HCT107M	0.61	HAR	656
CD74HCT109E	0.40	HAR	656
CD74HCT109M	0.51	HAR	656
CD74HCT10E	0.33	HAR	656
CD74HCT10M	0.36	HAR	656
CD74HCT112E	0.45	HAR	656
CD74HCT112M	0.53	HAR	656
CD74HCT11E	0.38	HAR	656
CD74HCT11M	0.37	HAR	656
CD74HCT123E	0.69	HAR	656
CD74HCT123M	0.73	HAR	656
CD74HCT125E	0.59	HAR	656
CD74HCT125M	0.64	HAR	656
CD74HCT126E	0.59	HAR	656
CD74HCT126M	0.62	HAR	656
CD74HCT132E	0.66	HAR	656
CD74HCT132M	0.67	HAR	656
CD74HCT137E	0.66	HAR	656
CD74HCT137M	0.68	HAR	656
CD74HCT138E	0.47	HAR	656
CD74HCT138M	0.55	HAR	656
CD74HCT139E	0.59	HAR	656
CD74HCT139M	0.67	HAR	656

Mfr.'s Type	Price	Mfr.'s Code	Page
CD74HCT147E	0.71	HAR	656
CD74HCT14E	0.40	HAR	656
CD74HCT14M	0.41	HAR	656
CD74HCT151E	0.54	HAR	656
CD74HCT151M	0.60	HAR	656
CD74HCT153E	0.54	HAR	656
CD74HCT153M	0.60	HAR	656
CD74HCT154E	1.90	HAR	656
CD74HCT154M	2.30	HAR	656
CD74HCT157E	0.52	HAR	656
CD74HCT157M	0.59	HAR	656
CD74HCT160E	0.66	HAR	656
CD74HCT161E	0.57	HAR	656
CD74HCT161M	0.69	HAR	656
CD74HCT163E	0.57	HAR	656
CD74HCT163M	0.67	HAR	656
CD74HCT164E	0.59	HAR	656
CD74HCT164M	0.62	HAR	656
CD74HCT165E	0.59	HAR	656
CD74HCT165M	0.64	HAR	656
CD74HCT166E	0.71	HAR	656
CD74HCT166M	0.76	HAR	656
CD74HCT173E	0.66	HAR	656
CD74HCT173M	0.71	HAR	656
CD74HCT174E	0.52	HAR	656
CD74HCT174M	0.57	HAR	656
CD74HCT175E	0.47	HAR	656
CD74HCT175M	0.55	HAR	656
CD74HCT190E	0.64	HAR	656
CD74HCT191E	0.76	HAR	656
CD74HCT191M	0.76	HAR	656
CD74HCT192E	0.66	HAR	656
CD74HCT193E	0.71	HAR	656
CD74HCT193M	0.74	HAR	656
CD74HCT194E	0.69	HAR	656
CD74HCT195E	0.67	HAR	656
CD74HCT20E	0.40	HAR	656
CD74HCT21E	0.40	HAR	656
CD74HCT21M	0.41	HAR	656
CD74HCT221E	0.71	HAR	656
CD74HCT221M	0.83	HAR	656
CD74HCT237E	0.69	HAR	656
CD74HCT238E	0.83	HAR	656
CD74HCT238M	0.90	HAR	656
CD74HCT240E	0.71	HAR	656
CD74HCT240M	0.74	HAR	656
CD74HCT241E	0.69	HAR	656
CD74HCT242E	0.71	HAR	656
CD74HCT243E	0.67	HAR	656
CD74HCT243M	0.74	HAR	656
CD74HCT244E	0.73	HAR	656
CD74HCT244M	0.78	HAR	656
CD74HCT245E	0.73	HAR	656
CD74HCT245M	0.78	HAR	656
CD74HCT251E	0.62	HAR	656
CD74HCT251M	0.67	HAR	656
CD74HCT253E	0.62	HAR	656
CD74HCT253M	0.67	HAR	656
CD74HCT257E	0.62	HAR	656
CD74HCT257M	0.62	HAR	656
CD74HCT258E	0.62	HAR	656
CD74HCT258M	0.67	HAR	656
CD74HCT259E	0.73	HAR	656
CD74HCT259M	0.76	HAR	656
CD74HCT273E	0.71	HAR	656
CD74HCT273M	0.74	HAR	656
CD74HCT27E	0.40	HAR	656
CD74HCT27M	0.41	HAR	656
CD74HCT280E	0.71	HAR	656
CD74HCT280M	0.78	HAR	656
CD74HCT283E	0.71	HAR	656
CD74HCT283M	0.78	HAR	656
CD74HCT297E	1.73	HAR	656
CD74HCT299E	1.14	HAR	656
CD74HCT299M	1.16	HAR	656
CD74HCT30E	0.30	HAR	656
CD74HCT30M	0.35	HAR	656
CD74HCT32E	0.36	HAR	656
CD74HCT32M	0.37	HAR	656
CD74HCT354E	0.83	HAR	656
CD74HCT356E	0.83	HAR	656
CD74HCT365E	0.76	HAR	656
CD74HCT365M	0.81	HAR	656
CD74HCT366E	0.69	HAR	656
CD74HCT367E	0.71	HAR	656
CD74HCT367M	0.81	HAR	656
CD74HCT368E	0.71	HAR	656
CD74HCT368M	0.81	HAR	656
CD74HCT373E	0.71	HAR	656
CD74HCT373M	0.78	HAR	656
CD74HCT374E	0.71	HAR	656
CD74HCT374M	0.78	HAR	656
CD74HCT377E	0.83	HAR	656
CD74HCT377M	0.97	HAR	656
CD74HCT390E	0.71	HAR	656
CD74HCT390M	0.81	HAR	656
CD74HCT393E	0.71	HAR	656
CD74HCT393M	0.71	HAR	656
CD74HCT4002E	0.37	HAR	656
CD74HCT40103E	0.94	HAR	657
CD74HCT40103M	0.99	HAR	657
CD74HCT40105E	0.99	HAR	657
CD74HCT40105M	1.06	HAR	657

Manufacturer's Code Log

ADI	Analog Devices Inc.
AMD	Advanced Micro Devices
COL	Collmer Semiconductors, Inc.
DLS	Dallas Semiconductor
HAR	Harris Semiconductor
ITL	Intel
LAT	Lattice
MXM	Maxim
MOS	Mosel-Vitelic
MOT	Motorola Semiconductor
NSC	National Semiconductor
NTE	NTE Electronics
PHI	Philips Semiconductors
SEM	Semiconductors Inc.
SIE	Siemens Components, Inc
TIS	Texas Instruments
THO	Thomson Conusumer Electronics
UNI	Unitrode Integrated Circuits
XLX	Xilinx

Mfr.'s Type	Price	Mfr.'s Code	Page
CD74HCT4015E	0.76	HAR	656
CD74HCT4015M	0.76	HAR	656
CD74HCT4017E	0.71	HAR	657
CD74HCT4017M	0.78	HAR	657
CD74HCT4020E	0.81	HAR	657
CD74HCT4020M	0.81	HAR	657
CD74HCT4024E	0.62	HAR	657
CD74HCT4024M	0.67	HAR	657
CD74HCT4040E	0.76	HAR	657
CD74HCT4040M	0.78	HAR	657
CD74HCT4046AE	1.66	HAR	657
CD74HCT4046AM	1.68	HAR	657
CD74HCT4051E	0.85	HAR	657
CD74HCT4051M	0.90	HAR	657
CD74HCT4052E	0.81	HAR	657
CD74HCT4052M	0.85	HAR	657
CD74HCT4053E	0.85	HAR	657
CD74HCT4053M	0.90	HAR	657
CD74HCT4059E	2.11	HAR	657
CD74HCT4059M	2.16	HAR	657
CD74HCT4060E	0.81	HAR	657
CD74HCT4060M	0.78	HAR	657
CD74HCT4066E	0.66	HAR	657
CD74HCT4066M	0.71	HAR	657
CD74HCT4067E	2.07	HAR	657
CD74HCT4067M	2.19	HAR	657
CD74HCT4075E	0.37	HAR	—
CD74HCT4075M	0.52	HAR	657
CD74HCT4094E	0.67	HAR	657
CD74HCT4094M	0.74	HAR	657
CD74HCT423E	0.69	HAR	656
CD74HCT423M	0.57	HAR	656
CD74HCT42E	0.60	HAR	656
CD74HCT4316E	0.69	HAR	657
CD74HCT4316M	0.78	HAR	657
CD74HCT4351E	0.87	HAR	657
CD74HCT4351M	0.90	HAR	657
CD74HCT4352E	0.92	HAR	657
CD74HCT4511E	0.69	HAR	657
CD74HCT4514E	1.86	HAR	657
CD74HCT4514M	1.91	HAR	657
CD74HCT4515E	1.86	HAR	657
CD74HCT4515M	1.96	HAR	657
CD74HCT4518E	0.76	HAR	657
CD74HCT4520E	0.83	HAR	657
CD74HCT4520M	0.85	HAR	657
CD74HCT4538E	0.90	HAR	657
CD74HCT4538M	0.99	HAR	657
CD74HCT4543E	0.64	HAR	657
CD74HCT533E	0.87	HAR	656
CD74HCT534E	0.87	HAR	656
CD74HCT534M	0.80	HAR	656
CD74HCT540E	0.88	HAR	656
CD74HCT540M	0.94	HAR	656
CD74HCT541E	0.90	HAR	656
CD74HCT541M	0.90	HAR	—
CD74HCT563E	0.90	HAR	656
CD74HCT563M	0.92	HAR	656
CD74HCT564E	0.97	HAR	656
CD74HCT564M	1.08	HAR	656
CD74HCT573E	0.95	HAR	656
CD74HCT573M	0.99	HAR	656
CD74HCT574E	0.90	HAR	656
CD74HCT574M	0.99	HAR	656
CD74HCT583E	0.76	HAR	656
CD74HCT597E	0.83	HAR	656
CD74HCT597M	0.83	HAR	656
CD74HCT640E	1.09	HAR	656
CD74HCT640M	1.17	HAR	656
CD74HCT643E	1.06	HAR	656
CD74HCT646E	3.40	HAR	656
CD74HCT646M	4.83	HAR	656
CD74HCT652M	4.83	HAR	656
CD74HCT670E	0.90	HAR	656
CD74HCT670M	0.97	HAR	656
CD74HCT688E	0.92	HAR	656
CD74HCT688M	0.99	HAR	656
CD74HCT7030E	10.35	HAR	657
CD74HCT7046AE	1.71	HAR	657
CD74HCT7046AM	1.94	HAR	657
CD74HCT73E	0.34	HAR	656
CD74HCT73M	0.46	HAR	656
CD74HCT74E	0.40	HAR	656
CD74HCT74M	0.47	HAR	656
CD74HCT75E	0.38	HAR	656
CD74HCT75M	0.46	HAR	656
CD74HCT85E	0.64	HAR	656
CD74HCT85M	0.71	HAR	656
CD74HCT86E	0.45	HAR	656
CD74HCT86M	0.46	HAR	656
CD74HCT93E	0.62	HAR	656
CD74HCT93M	0.69	HAR	656
CD74LPT16240ASM	2.74	HAR	659
CD74LPT16244ASM	2.74	HAR	659

Mfr.'s Type	Price	Mfr.'s Code	Page
CD74LPT16245ASM	2.74	HAR	659
CD74LPT16373ASM	2.74	HAR	659
CD74LPT16374ASM	2.74	HAR	659
CD74LPT16827ASM	3.98	HAR	659
CD74LPT16952ASM	3.98	HAR	659
CD74LPT244AM	1.36	HAR	659
CD74LPT244AQM	1.36	HAR	659
CD74LPT245AQM	1.36	HAR	659
CD74LPT373AQM	1.36	HAR	659
CD74LPT541AM	1.58	HAR	659
CD74LPT541AQM	1.58	HAR	659
CD74LPT573AM	2.08	HAR	659
CD74LPT573AQM	2.08	HAR	659
CD7LPT373AM	1.36	HAR	659
CDP1802ACE	7.45	HAR	649
CDP1802BCE	11.20	HAR	649
CDP1805ACE	20.70	HAR	649
CDP1806ACE	17.40	HAR	649
CDP1822CD	22.85	HAR	—
CDP1822CE	6.35	HAR	—
CDP1824CD	13.55	HAR	—
CDP1824CE	3.75	HAR	—
CDP1851CE	9.40	HAR	—
CDP1852CE	5.35	HAR	—
CDP1852E	7.50	HAR	—
CDP1853CD	11.50	HAR	—
CDP1853CE	3.30	HAR	—
CDP1854ACE	5.50	HAR	—
CDP1854AE	7.65	HAR	—
CDP1855CE	11.40	HAR	—
CDP1871ACE	5.10	HAR	—
CDP1877CE	8.55	HAR	—
CDP6402CE	5.55	HAR	650
CDP6402E	7.80	HAR	650
CDP68HC68R1E	3.44	HAR	—
CMP01CP	5.37	ADI	—
CMP04FP	7.80	ADI	639
CNY17-1	0.50	MOT	692
CNY17-3	0.48	MOT	692
COP472N-3	4.62	NSC	—
COP472WM-3	4.62	NSC	—
CP80C88-2	17.75	HAR	—
CP80C88	13.60	HAR	—
CP82C54-12	5.94	HAR	649
CP82C54	5.09	HAR	649
CP82C55A	4.71	HAR	649
CP82C59A-12	7.13	HAR	649
CP82C59A	4.75	HAR	649
CP82C84A	3.40	HAR	649
CS52-10	0.94	COL	648
CS52-12	1.19	COL	648
CS52-14	1.34	COL	648
CS53-16	1.55	COL	—
CS53-18	1.75	COL	—
CS53-20	1.96	COL	648
CS54-08	0.90	COL	648
CS56-24	2.15	COL	648
CS57-04	0.81	COL	648
CS82C54-12	6.24	HAR	649
CS82C54	5.24	HAR	649
CS82C55A	5.48	HAR	649
CS82C59A-12	8.55	HAR	649
CS82C59A	5.70	HAR	649
D44H10	1.10	MOT	696
D44H11	0.90	MOT	696
D44H8	0.90	MOT	696
D44VH10	1.20	MOT	696
D45H11	1.10	MOT	696
D45H8	1.24	MOT	696
D45VH10	1.24	MOT	696
D80C31BH-1	6.05	ITL	665
D80C31BH	4.80	ITL	665
D87C51	22.90	ITL	665
D87C51FA-1	29.78	ITL	665
D87C51FA-20	30.74	ITL	665
D87C51FA	28.56	ITL	665
D87C51FB	35.50	ITL	665
D87C51FC-1	42.98	ITL	666
D87C51FC-20	43.93	ITL	666
D87C51FC	41.89	ITL	666
D87C52-1	27.80	ITL	665
D87C52	26.40	ITL	665
D87C54-1	32.90	ITL	665
D87C54-20	34.40	ITL	665
D87C54	31.30	ITL	665
D87C58-1	39.20	ITL	665
D87C58-20	41.00	ITL	665
D87C58	37.30	ITL	665
DAC-08CN	0.72	PHI	722
DAC0800LCJ	2.05	NSC	710
DAC0800LCN	1.74	NSC	710
DAC0801LCN	1.61	NSC	710
DAC0806LCN	1.38	NSC	710
DAC0808LCM	1.63	NSC	710

Mfr.'s Type	Price	Mfr.'s Code	Page
DAC0808LCN	1.57	NSC	—
DAC0830LCJ	9.80	NSC	710
DAC0830LCN	8.25	NSC	710
DAC0832LCJ	7.85	NSC	710
DAC0832LCN	4.36	NSC	710
DAC0832LCWM	5.50	NSC	710
DAC0854BIN	22.00	NSC	—
DAC0854CIN	14.70	NSC	710
DAC0854CIWM	14.60	NSC	710
DAC08CP	2.04	ADI	635
DAC08CQ	2.13	ADI	—
DAC08CS	1.85	ADI	635
DAC08EP	2.32	ADI	635
DAC08HP	3.48	ADI	—
DAC1006LCN	9.85	NSC	710
DAC1007LCN	7.80	NSC	710
DAC1008LCN	6.50	NSC	—
DAC1020LCN	8.35	NSC	710
DAC1020LCV	8.35	NSC	—
DAC1021LCN	6.55	NSC	—
DAC1022LCN	5.45	NSC	710
DAC1208LCJ	16.60	NSC	710
DAC1210LCJ	11.60	NSC	—
DAC1218LCJ	16.60	NSC	710
DAC1230LCJ	16.60	NSC	710
DAC1231LCJ	14.20	NSC	710
DAC1232LCJ-1	10.00	NSC	710
DAC1232LCJ	11.60	NSC	710
DAC16EP	48.00	ADI	—
DAC16ES	48.00	ADI	—
DAC16FP	37.50	ADI	—
DAC16FS	37.50	ADI	—
DAC312FR	14.77	ADI	—
DAC312HP	6.75	ADI	—
DAC312HS	6.75	ADI	—
DAC8043FP	13.43	ADI	635
DAC8043GP	19.95	ADI	635
DAC8143FP	9.80	ADI	—
DAC8143FS	9.80	ADI	—
DAC8222GP	30.36	ADI	—
DAC8228FP	6.52	ADI	—
DAC8228FS	7.18	ADI	—
DAC8229FS	5.89	ADI	—
DAC8248FP	21.05	ADI	636
DAC8408FP	20.25	ADI	—
DAC8408FS	13.25	ADI	—
DAC8408GP	20.25	ADI	—
DAC8412EP	70.20	ADI	—
DAC8412FP	51.75	ADI	—
DAC8426FP	23.93	ADI	—
DAC8426FS	23.93	ADI	—
DAC8800FP	12.38	ADI	—
DAC8800FS	12.38	ADI	—
DAC8840FP	14.93	ADI	636
DAC8840FS	14.93	ADI	636
DB1B	0.36	HAR	—
DB1N	0.65	HAR	660
DF005	0.93	COL	645
DF01	0.96	COL	645
DF02	1.00	COL	645
DF04	1.03	COL	645
DF06	1.10	COL	645
DF10	1.16	COL	645
DG201ABK	4.69	HAR	—
DG211CJ	2.86	MXM	—
DG212CJ	2.29	HAR	—
DG401DJ	2.33	HAR	652
DG403DJ	7.28	HAR	652
DG403DJ	7.65	MXM	—
DG405DJ	4.28	HAR	652
DG406DJ	9.79	MXM	670
DG407DJ	9.79	MXM	670
DG408DJ	3.66	HAR	651
DG408DJ	5.07	MXM	—
DG409DJ	3.55	HAR	651
DG409DJ	5.07	MXM	670
DG411DJ	2.96	HAR	652
DG411DJ	4.92	MXM	670
DG412DJ	2.67	HAR	652
DG413DJ	2.67	HAR	652
DG441DJ	2.13	HAR	652
DG441DJ	4.12	MXM	670
DG442DJ	2.19	HAR	652
DG444DJ	1.98	HAR	652
DG444DJ	2.36	MXM	670
DG445DJ	1.61	HAR	652
DG445DY	2.88	MXM	670
DG508ACJ	4.74	MXM	—
DM74ALS00AM	0.42	NSC	715
DM74ALS00AN	0.43	NSC	715
DM74ALS02N	0.43	NSC	715
DM74ALS04BM	0.42	NSC	715
DM74ALS04BN	0.43	NSC	715
DM74ALS05AN	0.42	NSC	715

Mfr.'s Type	Price	Mfr.'s Code	Page
DM74ALS08M	0.42	NSC	715
DM74ALS08N	0.42	NSC	715
DM74ALS1000AN	1.60	NSC	715
DM74ALS109AN	0.51	NSC	715
DM74ALS10AM	0.42	NSC	715
DM74ALS10AN	0.42	NSC	715
DM74ALS11AN	0.42	NSC	715
DM74ALS125M	1.40	NSC	—
DM74ALS125N	1.40	NSC	715
DM74ALS133M	1.05	NSC	715
DM74ALS138M	0.87	NSC	715
DM74ALS138N	0.82	NSC	715
DM74ALS14M	1.89	NSC	715
DM74ALS14N	1.89	NSC	715
DM74ALS161BN	0.78	NSC	715
DM74ALS163BN	0.78	NSC	715
DM74ALS169BN	0.78	NSC	—
DM74ALS174N	0.78	NSC	715
DM74ALS20AN	0.53	NSC	—
DM74ALS240AN	1.00	NSC	715
DM74ALS240AWM	1.00	NSC	715
DM74ALS241AN	1.00	NSC	715
DM74ALS244AN	1.03	NSC	715
DM74ALS244AWM	1.00	NSC	715
DM74ALS245AN	1.03	NSC	715
DM74ALS245AWM	1.03	NSC	715
DM74ALS253N	0.78	NSC	715
DM74ALS257M	0.78	NSC	715
DM74ALS257N	0.78	NSC	—
DM74ALS258N	1.23	NSC	715
DM74ALS273N	1.07	NSC	715
DM74ALS27N	0.42	NSC	715
DM74ALS30AN	0.47	NSC	715
DM74ALS32M	0.42	NSC	715
DM74ALS32N	0.43	NSC	715
DM74ALS373N	1.00	NSC	715
DM74ALS374N	1.03	NSC	715
DM74ALS374WM	1.00	NSC	715
DM74ALS38AN	0.67	NSC	715
DM74ALS520N	2.00	NSC	715
DM74ALS520WM	2.00	NSC	715
DM74ALS521WM	2.00	NSC	715
DM74ALS5245N	2.34	NSC	715
DM74ALS5245WM	2.34	NSC	715
DM74ALS533N	2.00	NSC	—
DM74ALS541N	1.52	NSC	715
DM74ALS541WM	1.58	NSC	715
DM74ALS574AN	1.15	NSC	715
DM74ALS574AWM	1.12	NSC	715
DM74ALS576AN	1.67	NSC	715
DM74ALS640AN	1.76	NSC	715
DM74ALS640AWM	1.76	NSC	715
DM74ALS645AN	1.76	NSC	715
DM74ALS645AWM	1.76	NSC	715
DM74ALS646NT	4.56	NSC	715
DM74ALS646WM	4.56	NSC	715
DM74ALS648NT	4.78	NSC	715
DM74ALS648WM	4.78	NSC	715
DM74ALS652WM	4.78	NSC	715
DM74ALS74AM	0.56	NSC	715
DM74ALS74AN	0.57	NSC	715
DM74ALS808AN	3.23	NSC	715
DM74ALS86N	0.49	NSC	715
DM74AS00M	0.51	NSC	716
DM74AS00N	0.46	NSC	716
DM74AS02M	0.51	NSC	716
DM74AS02N	0.44	NSC	716
DM74AS04M	0.51	NSC	716
DM74AS04N	0.44	NSC	716
DM74AS08M	0.51	NSC	716
DM74AS08N	0.44	NSC	716
DM74AS1000AM	1.07	NSC	716
DM74AS1000AN	1.00	NSC	716
DM74AS1004AM	1.07	NSC	716
DM74AS1004AN	1.00	NSC	716
DM74AS1032AN	1.00	NSC	716
DM74AS1034AM	1.07	NSC	716
DM74AS10M	0.51	NSC	716
DM74AS10N	0.44	NSC	716
DM74AS157M	1.12	NSC	716
DM74AS157N	1.03	NSC	716
DM74AS1804N	2.89	NSC	—
DM74AS20N	0.44	NSC	716
DM74AS21N	0.44	NSC	716
DM74AS240N	1.89	NSC	716
DM74AS240WM	1.89	NSC	716
DM74AS244N	1.89	NSC	716
DM74AS244WM	1.89	NSC	716
DM74AS245N	2.00	NSC	716
DM74AS245WM	2.00	NSC	716
DM74AS257N	1.16	NSC	716
DM74AS258M	1.27	NSC	716
DM74AS258N	1.16	NSC	716
DM74AS27N	0.44	NSC	716

Mfr.'s Type	Price	Mfr.'s Code	Page
DM74AS280N	1.34	NSC	—
DM74AS286M	1.45	NSC	716
DM74AS286N	1.34	NSC	716
DM74AS30N	0.67	NSC	716
DM74AS32M	0.51	NSC	716
DM74AS32N	0.44	NSC	716
DM74AS373N	1.89	NSC	716
DM74AS373WM	1.89	NSC	716
DM74AS374N	1.89	NSC	—
DM74AS374WM	1.89	NSC	—
DM74AS573N	2.00	NSC	716
DM74AS573WM	2.12	NSC	—
DM74AS574N	2.00	NSC	716
DM74AS640N	2.23	NSC	716
DM74AS646NT	5.60	NSC	716
DM74AS646WM	5.70	NSC	716
DM74AS648NT	6.15	NSC	716
DM74AS74N	0.56	NSC	—
DM74AS804BN	2.12	NSC	716
DM74AS804BWM	2.16	NSC	716
DM74AS874NT	4.23	NSC	716
DM74LS00M	0.39	NSC	715
DM74LS00N	0.34	NSC	715
DM74LS02N	0.34	NSC	715
DM74LS04M	0.38	NSC	715
DM74LS04N	0.34	NSC	715
DM74LS05N	0.34	NSC	715
DM74LS08M	0.38	NSC	715
DM74LS08N	0.34	NSC	715
DM74LS10N	0.34	NSC	715
DM74LS123M	0.67	NSC	715
DM74LS123N	0.57	NSC	715
DM74LS125AM	0.53	NSC	715
DM74LS125AN	0.48	NSC	715
DM74LS138M	0.56	NSC	—
DM74LS138N	0.43	NSC	715
DM74LS139N	0.53	NSC	715
DM74LS14N	0.39	NSC	715
DM74LS154N	3.71	NSC	715
DM74LS156M	0.56	NSC	—
DM74LS156N	0.42	NSC	715
DM74LS157N	0.43	NSC	715
DM74LS161AM	0.58	NSC	715
DM74LS161AN	0.48	NSC	715
DM74LS163AN	0.47	NSC	715
DM74LS164N	0.47	NSC	715
DM74LS165N	0.89	NSC	715
DM74LS174M	0.56	NSC	715
DM74LS174N	0.47	NSC	715
DM74LS175N	0.47	NSC	715
DM74LS193N	0.57	NSC	715
DM74LS221N	0.82	NSC	715
DM74LS240N	0.69	NSC	715
DM74LS240WM	0.71	NSC	715
DM74LS244N	0.69	NSC	715
DM74LS244WM	0.71	NSC	715
DM74LS245N	0.71	NSC	715
DM74LS245WM	0.73	NSC	715
DM74LS257BN	0.67	NSC	715
DM74LS259N	0.71	NSC	715
DM74LS273N	0.69	NSC	715
DM74LS273WM	0.80	NSC	715
DM74LS32M	0.38	NSC	—
DM74LS32N	0.34	NSC	715
DM74LS373N	0.69	NSC	715
DM74LS373WM	0.71	NSC	715
DM74LS374N	0.69	NSC	715
DM74LS374WM	0.71	NSC	715
DM74LS377N	0.84	NSC	715
DM74LS38N	0.37	NSC	715
DM74LS393M	0.76	NSC	715
DM74LS393N	0.71	NSC	715
DM74LS503N	8.25	NSC	715
DM74LS534N	3.23	NSC	715
DM74LS573N	3.07	NSC	715
DM74LS574N	2.08	NSC	715
DM74LS74AM	0.42	NSC	715
DM74LS74AN	0.39	NSC	715
DM74LS85N	0.51	NSC	715
DM74LS86N	0.46	NSC	715
DP7310J	13.90	NSC	—
DP8304BN	2.18	NSC	715
DP8310N	7.55	NSC	—
DP8311N	8.25	NSC	—
DP8344BV	57.00	NSC	—
DP83901AV	20.60	NSC	—
DP83902AV	21.70	NSC	—
DP83902AVJG	23.40	NSC	—
DP83902AVLJ	21.70	NSC	—
DP83905AVQB	23.80	NSC	—
DP8390DN	19.50	NSC	—
DP8390DV	19.50	NSC	—
DP83910AN	23.80	NSC	—
DP83916VF	61.20	NSC	—
DP8391AN	20.00	NSC	—
DP8391AV	20.00	NSC	—
DP8392CN-1	21.70	NSC	—
DP8392CN	7.40	NSC	—
DP8392CV	10.30	NSC	—
DP83932BVF-25	54.40	NSC	—
DP83932BVF	47.60	NSC	—
DP83934AVQB	51.68	NSC	—
DP83955AV	40.80	NSC	—

Mfr.'s Type	Price	Mfr.'s Code	Page
DP8402AD	67.00	NSC	—
DP8409AN-2	27.20	NSC	—
DP8409AN	20.40	NSC	—
DP8419N-70	48.96	NSC	—
DP8419N-80	38.08	NSC	—
DP8419V-80	38.08	NSC	—
DP8420AV-20	19.86	NSC	—
DP8420AV-25	24.48	NSC	—
DP8421AV-20	24.89	NSC	—
DP8421AV-25	33.73	NSC	—
DP8422ATV-25	67.32	NSC	—
DP8422AV-20	39.85	NSC	—
DP8422AV-25	47.60	NSC	—
DP8428V-70	61.20	NSC	—
DP8429D-70	76.16	NSC	—
DP8429D-80	76.16	NSC	—
DP8429TD-70	85.68	NSC	—
DP8429V-70	61.20	NSC	—
DP8429V-80	61.20	NSC	—
DP8459V-10	17.00	NSC	—
DP8570AN	28.80	NSC	715
DP8570AV	28.80	NSC	715
DP8571AN	27.30	NSC	715
DP8572AV	20.60	NSC	715
DP8573AN	18.50	NSC	—
DP8573AV	18.50	NSC	715
DS0026CJ	5.15	NSC	—
DS0026CN	2.75	NSC	—
DS0026H	20.00	NSC	—
DS1005M-100	6.30	DLS	—
DS1013-100	7.60	DLS	—
DS1210	3.55	DLS	—
DS1213C	12.60	DLS	—
DS1213D	16.62	DLS	—
DS1216B	22.60	DLS	—
DS1216C	21.25	DLS	—
DS1220Y-150	11.50	DLS	—
DS1220Y-200	8.38	DLS	—
DS1225AB-170	12.32	DLS	—
DS1225AD-150	16.50	DLS	—
DS1230Y-120	16.40	DLS	—
DS1231-20	4.74	DLS	—
DS1232	3.08	DLS	—
DS1232LP	2.46	DLS	—
DS1233-10	1.63	DLS	—
DS1233-15	1.63	DLS	—
DS1287	17.38	DLS	—
DS12887	5.40	DLS	—
DS14185WM	1.23	NSC	—
DS1488M	0.69	NSC	714
DS1488N	0.69	NSC	714
DS1489AM	0.67	NSC	714
DS1489AN	0.69	NSC	714
DS1489M	0.69	NSC	—
DS1489N	0.69	NSC	714
DS14C232CM	1.30	NSC	714
DS14C232CN	4.12	NSC	714
DS14C232TM	3.34	NSC	—
DS14C232TN	3.34	NSC	—
DS14C88M	1.38	NSC	714
DS14C88N	1.38	NSC	714
DS14C88TM	1.74	NSC	714
DS14C88TN	1.74	NSC	714
DS14C89AM	1.27	NSC	714
DS14C89AN	1.38	NSC	714
DS14C89ATM	1.74	NSC	714
DS14C89ATN	1.74	NSC	—
DS1692J	9.85	NSC	714
DS2004CN	0.89	NSC	—
DS26C32ATM	2.30	NSC	714
DS26F31CJ	4.89	NSC	714
DS26F32CJ	4.89	NSC	714
DS26LS31CJ	1.78	NSC	714
DS26LS31CM	1.38	NSC	714
DS26LS31CN	0.69	NSC	714
DS26LS31MJ	7.80	NSC	714
DS26LS32ACM	1.38	NSC	714
DS26LS32ACN	1.03	NSC	714
DS26LS32CN	1.03	NSC	714
DS26LS33ACN	1.27	NSC	—
DS26LS33CN	1.27	NSC	714
DS3486M	0.89	NSC	714
DS3486N	0.92	NSC	714
DS3487M	0.89	NSC	714
DS3487N	0.92	NSC	714
DS3631N	2.81	NSC	—
DS3632N	2.41	NSC	—
DS3633N	2.90	NSC	—
DS3650M	1.89	NSC	714
DS3658N	5.80	NSC	—
DS3662N	4.83	NSC	715
DS3667N	9.85	NSC	—
DS3680N	2.98	NSC	—
DS3691M	3.12	NSC	714
DS3691N	2.06	NSC	714
DS3692N	3.21	NSC	714
DS36950V	14.20	NSC	—
DS36954V	14.20	NSC	—
DS3695AM	2.41	NSC	714
DS3695ATM	3.34	NSC	714
DS3695N	2.06	NSC	714
DS3695TN	3.42	NSC	714
DS3696N	2.41	NSC	714

Mfr.'s Type	Price	Mfr.'s Code	Page
DS3696TN	3.32	NSC	714
DS3697N	2.34	NSC	714
DS36F95J	6.70	NSC	714
DS3862N	10.60	NSC	715
DS3875V	55.49	NSC	—
DS3890N	15.40	NSC	715
DS3893AV	10.00	NSC	715
DS3896M	11.80	NSC	715
DS3896N	11.70	NSC	715
DS3897M	6.80	NSC	—
DS3897N	6.80	NSC	—
DS75107AM	0.96	NSC	—
DS75108N	0.96	NSC	714
DS75110AM	0.78	NSC	—
DS75110AN	0.78	NSC	—
DS75113N	1.45	NSC	714
DS75150M	0.89	NSC	—
DS75150N	0.92	NSC	714
DS75154M	1.12	NSC	—
DS75154N	1.12	NSC	714
DS75160AN	5.00	NSC	—
DS75162AN	5.00	NSC	—
DS75176BM	1.27	NSC	714
DS75176BN	1.27	NSC	714
DS75176BTM	2.23	NSC	714
DS75176BTN	2.00	NSC	714
DS75451M	0.58	NSC	—
DS75452N	0.57	NSC	—
DS75453M	0.56	NSC	—
DS75453N	0.57	NSC	—
DS75463N	0.69	NSC	—
DS75492N	2.03	NSC	—
DS75494N	1.30	NSC	—
DS8640N	1.24	NSC	—
DS8641N	2.86	NSC	—
DS8830N	1.56	TIS	—
DS8830N	1.72	NSC	714
DS8834N	1.67	NSC	—
DS8837M	2.77	NSC	715
DS8837N	2.30	NSC	—
DS8838M	2.20	NSC	—
DS8838N	1.95	NSC	—
DS88C20N	5.65	NSC	714
DS88LS120N	4.44	NSC	—
DS8921AM	3.23	NSC	714
DS8921AN	2.18	NSC	714
DS8921ATJ	5.00	NSC	714
DS8921ATM	3.56	NSC	714
DS8921ATN	2.86	NSC	714
DS8921M	1.56	NSC	714
DS8921N	1.38	NSC	714
DS8922AM	3.89	NSC	714
DS8922AN	3.67	NSC	714
DS8922M	2.41	NSC	714
DS8922N	2.12	NSC	714
DS8923AM	3.89	NSC	714
DS8923AN	3.67	NSC	714
DS8923M	2.34	NSC	714
DS8923N	2.18	NSC	714
DS96172CN	2.91	NSC	714
DS96174CN	2.91	NSC	714
DS96175CN	2.86	NSC	714
DS96176CJ	3.09	NSC	714
DS96176CN	2.52	NSC	714
DS96177CN	1.89	NSC	714
DS9636ACN	1.40	NSC	714
DS9637ACM	1.67	NSC	714
DS9637ACN	1.61	NSC	714
DS9638CJ	13.40	NSC	714
DS9638CN	1.49	NSC	714
DS96F172CJ	6.70	NSC	714
DS96F173CJ	6.70	NSC	714
DS96F174CJ	6.70	NSC	714
DS96F175CJ	6.70	NSC	714
DSP56000CLASA	417.28	MOT	675
DSP56000CLASF	417.28	MOT	675
DSP56002ADM	1738.64	MOT	675
DSP56002ADSA	2086.37	MOT	675
DSP56002ADSF	2086.37	MOT	675
DSP56002EVM	222.48	MOT	—
DSP56002FC40	38.06	MOT	675
DSP56002FC66	33.83	MOT	675
DSP56002PV40	29.31	MOT	675
DSP56002RC40	124.82	MOT	675
DSP56004ADM	1738.64	MOT	675
DSP56004ADSA	2086.37	MOT	675
DSP56004FJ50	22.21	MOT	675
DSP56100CLASA	417.28	MOT	675
DSP56156ADM	1738.64	MOT	675
DSP56156ADSA	2086.37	MOT	675
DSP56156ADSF	2086.37	MOT	675
DSP56166ADM	1738.64	MOT	675
DSP56166ADSA	2086.37	MOT	675
DSP56ADC16S	37.00	MOT	675
DSP56KCCA	486.82	MOT	675
DSP56KCCF	486.82	MOT	675
DSP56KCCH	486.82	MOT	675
DSP56KT2A	2086.37	MOT	675
DSP56L002FC40	38.06	MOT	675
DSPCOMMAND	486.82	MOT	675
DSPMACHOST	486.82	MOT	675
DSPPCHOST	486.82	MOT	675
DSPSUN4HOST	486.82	MOT	675

Mfr.'s Type	Price	Mfr.'s Code	Pag
ENC101D-14A	0.58	COL	—
ENC102D-10A	0.88	COL	648
ENC102D-14A	1.30	COL	—
ENC102D-20A	3.40	COL	648
ENC121D-07A	0.36	COL	—
ENC121D-20A	1.79	COL	—
ENC151D-20A	1.79	COL	648
ENC201D-05A	0.33	COL	648
ENC201D-07A	0.36	COL	648
ENC201D-10A	0.41	COL	648
ENC201D-14A	0.60	COL	648
ENC201D-20A	1.79	COL	648
ENC220D-05B	0.59	COL	648
ENC220D-07B	0.63	COL	—
ENC220D-10B	0.71	COL	—
ENC220D-14B	0.79	COL	—
ENC220D-20B	1.94	COL	648
ENC221D-05A	0.33	COL	—
ENC221D-10A	0.41	COL	648
ENC221D-14A	0.60	COL	648
ENC221D-20A	1.79	COL	648
ENC241D-07A	0.36	COL	—
ENC241D-10A	0.41	COL	—
ENC241D-20A	1.79	COL	648
ENC270D-20B	1.94	COL	—
ENC271D-07A	0.34	COL	—
ENC271D-14A	0.60	COL	—
ENC330D-07B	0.63	COL	648
ENC330D-10B	0.71	COL	—
ENC361D-05A	0.37	COL	—
ENC361D-07A	0.40	COL	—
ENC361D-10A	0.44	COL	648
ENC361D-14A	0.60	COL	—
ENC361D-20A	1.79	COL	648
ENC390D-05B	0.57	COL	—
ENC390D-07B	0.61	COL	—
ENC390D-10B	0.69	COL	—
ENC390D-20B	1.94	COL	—
ENC391D-07A	0.40	COL	648
ENC391D-10A	0.44	COL	—
ENC391D-14A	0.63	COL	—
ENC391D-20A	1.79	COL	648
ENC431D-07A	0.40	COL	—
ENC431D-10A	0.43	COL	—
ENC431D-14A	0.61	COL	648
ENC470D-07B	0.63	COL	648
ENC470D-20B	1.94	COL	648
ENC471D-07A	0.39	COL	—
ENC471D-10A	0.43	COL	—
ENC471D-14A	0.63	COL	—
ENC471D-20A	1.74	COL	648
ENC560D-05B	0.59	COL	648
ENC560D-07B	0.63	COL	—
ENC560D-20B	1.94	COL	—
ENC621D-14A	1.30	COL	—
ENC621D-20A	3.64	COL	648
ENC680D-07B	0.63	COL	648
ENC680D-14B	0.77	COL	—
ENC680D-20B	1.94	COL	—
ENC681D-14A	1.30	COL	648
ENC681D-20A	3.64	COL	648
ENC820D-07A	0.36	COL	648
ENC820D-10A	0.41	COL	—
ENC820D-20A	1.79	COL	648
ERA34-10	0.39	COL	644
ERA81-004	0.44	COL	644
ERA82-004	0.33	COL	644
ERA83-006	0.39	COL	644
ERA84-009	0.57	COL	644
ERA91-02	0.44	COL	—
ERB06-15	0.46	COL	—
ERB38-04	0.52	COL	—
ERB44-10	0.48	COL	—
ERB81-004	0.59	COL	644
ERB83-004	0.39	COL	644
ERB91-02	0.45	COL	—
ERB93-02	0.95	COL	—
ERC06-15	0.68	COL	644
ERC62-004	3.76	COL	—
ERC80-004	2.10	COL	—
ERC81-004	2.43	COL	644
ERC81-006	0.93	COL	644
ERC81S-004	4.05	COL	644
ERC84-009	1.68	COL	—
ERC90-02B	2.08	COL	644
ERD32-01	0.91	COL	—
ERD32-02	0.84	COL	—
ERD38-06	0.48	COL	—
ESAB82-004	2.66	COL	644
ESAC63-004	5.22	COL	—
ESAC82-004K	3.09	COL	644
ESAC82M-004	2.20	COL	—
ESAC82M-006	2.32	COL	—
ESAC83M-006	4.10	COL	—
ESAC85-009	4.20	COL	—
ESAC92-02B	2.91	COL	644
ESAD33-02CS	4.28	COL	—
ESAD83-004K	5.52	COL	644
ESAD83-006	4.06	COL	644
ESAD83M-006	3.58	COL	644
ESAD92-02B	4.32	COL	644
ESAE83-004	8.64	COL	644
ESAE83-006	7.34	COL	644

Manufacturer's Code Log

DI	Analog Devices Inc.
MD	Advanced Micro Devices
OL	Collmer Semiconductors, Inc.
LS	Dallas Semiconductor
AR	Harris Semiconductor
ITL	Intel
LAT	Lattice
MXM	Maxim
MOS	Mosel-Vitelic
MOT	Motorola Semiconductor
NSC	National Semiconductor
NTE	NTE Electronics
PHI	Philips Semiconductors
SEM	Semiconductors Inc.
SIE	Siemens Components, Inc
TIS	Texas Instruments
THO	Thomson Conusumer Electronics
UNI	Unitrode Integrated Circuits
XLX	Xilinx

Mfr.'s Type	Price	Mfr.'s Code	Page
ESJC01-09B	3.24	COL	—
ESJC01-12B	2.53	COL	647
ESJC03-09	2.44	COL	—
ESJC04-05	3.47	COL	—
ESJC07-09B	1.57	COL	647
ESJC07-12B	1.80	COL	647
ESJC30-08	2.82	COL	647
GAL16V8B-10LJ	4.20	LAT	667
GAL16V8B-10LP	4.07	LAT	667
GAL16V8B-15LJ	1.65	LAT	667
GAL16V8B-15LP	1.60	LAT	667
GAL16V8B-15QJ	2.10	LAT	667
GAL16V8B-15QP	2.06	LAT	667
GAL16V8B-25LJ	1.45	LAT	667
GAL16V8B-25LP	1.49	LAT	667
GAL16V8B-25QJ	1.80	LAT	667
GAL16V8B-25QP	1.70	LAT	667
GAL16V8B-7LJ	4.40	LAT	667
GAL16V8B-7LP	4.33	LAT	667
GAL16V8C-5LJ	11.90	LAT	667
GAL16V8C-5LP	11.55	LAT	667
GAL16V8C-7LJ	4.40	LAT	667
GAL16V8V-7LP	4.20	LAT	667
GAL16V8Z-12QJ	6.25	LAT	—
GAL16V8Z-12QP	5.95	LAT	—
GAL16V8Z-15QJ	5.05	LAT	—
GAL16V8ZD-15QJ	5.05	LAT	—
GAL16V8ZD-15QP	4.85	LAT	—
GAL16VP8B-15LJ	1.65	LAT	667
GAL16VP8B-15LP	1.55	LAT	667
GAL16VP8B-25LJ	1.45	LAT	667
GAL16VP8B-25LP	1.45	LAT	667
GAL18V10-15LJ	4.40	LAT	—
GAL18V10-20LJ	3.30	LAT	—
GAL18V10B-15LJ	4.40	LAT	667
GAL18V10B-15LP	4.20	LAT	667
GAL18V10B-20LJ	3.30	LAT	667
GAL18V10B-20LP	3.10	LAT	667
GAL20RA10B-10LJ	17.95	LAT	667
GAL20RA10B-10LP	17.05	LAT	667
GAL20RA10B-15LJ	13.30	LAT	667
GAL20RA10B-15LP	12.65	LAT	667
GAL20RA10B-20LJ	6.34	LAT	667
GAL20RA10B-20LP	9.35	LAT	667
GAL20RA10B-30LJ	9.25	LAT	667
GAL20RA10B-30LP	8.80	LAT	667
GAL20RA10B-7LJ	21.55	LAT	667
GAL20V8B-10LJ	6.05	LAT	667
GAL20V8B-10LP	5.85	LAT	667
GAL20V8B-15LJ	2.40	LAT	667
GAL20V8B-15LP	2.37	LAT	667
GAL20V8B-15QJ	3.30	LAT	667
GAL20V8B-15QP	3.10	LAT	667
GAL20V8B-25LJ	1.85	LAT	—
GAL20V8B-25LP	1.80	LAT	667
GAL20V8B-25QJ	2.20	LAT	667
GAL20V8B-25QP	2.16	LAT	667
GAL20V8B-7LJ	7.70	LAT	667
GAL20V8B-7LP	7.50	LAT	667
GAL20V8C-10LJ	6.05	LAT	667
GAL20V8C-5LJ	17.50	LAT	667
GAL20V8C-7LJ	7.70	LAT	667
GAL20V8Z-15QP	7.25	LAT	—
GAL20VP8B-15LJ	2.40	LAT	667
GAL20VP8B-15LP	2.30	LAT	667
GAL20VP8B-25LJ	1.85	LAT	667
GAL20VP8B-25LP	1.85	LAT	667
GAL20XV10B-10LJ	8.80	LAT	667
GAL20XV10B-10LP	8.35	LAT	667
GAL20XV10B-15LJ	4.95	LAT	667
GAL20XV10B-15LP	4.89	LAT	667
GAL20XV10B-20LJ	4.50	LAT	667
GAL20XV10B-20LP	4.43	LAT	667
GAL22V10B-10LP	7.05	LAT	667
GAL22V10B-15LJ	8.80	LAT	667
GAL22V10B-15LP	5.95	LAT	667
GAL22V10B-15QJ	10.45	LAT	667
GAL22V10B-15QP	10.00	LAT	667
GAL22V10B-25LJ	5.95	LAT	667
GAL22V10B-25LP	4.89	LAT	667
GAL22V10B-25QJ	5.50	LAT	667
GAL22V10B-25QP	5.30	LAT	667
GAL22V10B-7LP	13.00	LAT	667
GAL22V10C-10LJ	7.05	LAT	667
GAL22V10C-5LJ	19.25	LAT	667
GAL22V10C-7LJ	13.00	LAT	667
GAL26CV12B-10LJ	11.00	LAT	667
GAL26CV12B-10LP	10.45	LAT	667
GAL26CV12B-15LJ	8.80	LAT	667
GAL26CV12B-15LP	8.35	LAT	667
GAL26CV12B-20LJ	8.25	LAT	667
GAL26CV12B-20LP	7.90	LAT	667
GAL26CV12C-10LJ	10.45	LAT	667
GAL26CV12C-10LP	10.45	LAT	667
GAL26CV12C-15LJ	8.80	LAT	667
GAL26CV12C-15LP	8.35	LAT	667
GAL26CV12C-7LJ	14.30	LAT	667
GAL26CV12C-7LP	13.65	LAT	667
GAL6001B-30LJ	9.70	LAT	667
GAL6001B-30LP	9.25	LAT	667
GAL6002B-15LJ	11.45	LAT	667
GAL6002B-15LP	10.90	LAT	667
GAL6002B-20LJ	8.15	LAT	667
GAL6002B-20LP	7.70	LAT	667
H11A1	0.50	MOT	—
H11AA1	0.80	MOT	692
H11AA2	0.82	MOT	692
H11AA3	0.90	MOT	692
H11AA4	0.90	MOT	692
H11AV1	0.72	MOT	692
H11B1	0.60	MOT	692
H11D1	0.88	MOT	692
H11D2	0.80	MOT	692
H11G1	0.70	MOT	692
H11G2	0.64	MOT	692
H11G3	0.70	MOT	692
H11L1	1.40	MOT	693
H11L2	1.20	MOT	693
HA1-2425-5	8.02	HAR	651
HA1-4900-2	38.00	HAR	654
HA1-4902-2	20.90	HAR	654
HA1-4905-5	9.50	HAR	654
HA1-5320-5	10.95	HAR	651
HA1-5330-5	30.84	HAR	651
HA1-5340-9	23.54	HAR	651
HA3-2425-5	5.86	HAR	651
HA3-2444-5	8.82	HAR	654
HA3-2525-5	4.30	HAR	654
HA3-2544-5	3.87	HAR	654
HA3-2625-5	4.30	HAR	654
HA3-2840-5	2.93	HAR	—
HA3-2841-5	3.02	HAR	654
HA3-2842-5	3.02	HAR	654
HA3-2850-5	3.02	HAR	654
HA3-5002-5	3.02	HAR	654
HA3-5020-5	2.04	HAR	654
HA3-5033-5	3.02	HAR	654
HA3-5102-5	3.24	HAR	655
HA3-5104-5	3.89	HAR	655
HA3-5114-5	3.89	HAR	655
HA5013IB	4.43	HAR	654
HA5013IP	4.43	HAR	654
HA5022IB	3.42	HAR	654
HA5022IP	3.42	HAR	654
HA5023IB	3.24	HAR	654
HA5023IP	3.24	HAR	654
HA5024IB	6.26	HAR	—
HA5024IP	6.26	HAR	654
HA5025IB	6.09	HAR	654
HA5025IP	6.09	HAR	654
HA7-2645-5	5.70	HAR	654
HA7210IB	1.28	HAR	655
HA7210IP	1.28	HAR	655
HA9P2425-5	5.86	HAR	651
HA9P2444-5	8.82	HAR	654
HA9P2525-5	4.30	HAR	657
HA9P2544-5	3.24	HAR	654
HA9P2625-5	5.53	HAR	654
HA9P2841-5	2.93	HAR	654
HA9P2842-5	2.93	HAR	—
HA9P2850-5	2.93	HAR	—
HA9P5002-5	2.93	HAR	654
HA9P5020-5	2.62	HAR	654
HA9P5102-5	3.60	HAR	—
HA9P5104-5	4.20	HAR	655
HA9P5114-5	4.20	HAR	—
HCPL2630	3.03	TIS	—
HD1-15530-9	84.75	HAR	—
HD1-15531-9	113.05	HAR	—
HD1-4702-9	10.70	HAR	650
HD1-6402B-9	13.90	HAR	650
HD1-6402R-9	10.55	HAR	650
HD1-6408-9	55.35	HAR	650
HD3-15531B-9	101.75	HAR	—
HD3-4702-9	5.65	HAR	650
HD3-6402B-9	7.25	HAR	650
HD3-6402C-9	5.55	HAR	650
HD3-6402R-9	5.55	HAR	650
HD3-6408-9	29.15	HAR	650
HD3-6409-9	15.95	HAR	650
HD9P6409-9	15.25	HAR	—
HFA1100IB	3.86	HAR	654
HFA1100IP	3.86	HAR	654
HFA1105IB	3.45	HAR	654
HFA1105IP	3.45	HAR	—
HFA1106IB	4.39	HAR	—
HFA1106IP	4.39	HAR	—
HFA1110IB	3.45	HAR	—
HFA1110IP	3.55	HAR	654
HFA1112IB	3.75	HAR	—
HFA1112IP	3.86	HAR	654
HFA1113IB	3.75	HAR	654
HFA1113IP	3.75	HAR	654
HFA1114IB	3.75	HAR	—
HFA1114IP	3.75	HAR	654
HFA1115IP	3.75	HAR	654
HFA1120IB	3.75	HAR	—
HFA1120IP	3.75	HAR	654
HFA1130IB	3.86	HAR	654
HFA1130IP	3.86	HAR	654
HFA1135IB	3.45	HAR	—
HFA1135IP	3.45	HAR	654
HFA1145IB	3.45	HAR	—
HFA1145IP	3.45	HAR	—
HFA1205IB	6.15	HAR	—
HFA1205IP	6.15	HAR	654
HFA1212IB	6.15	HAR	654
HFA1212IP	6.15	HAR	654
HFA1245IB	6.75	HAR	654
HFA1245IP	6.75	HAR	654
HFA1405IB	11.93	HAR	—
HFA1412IB	11.93	HAR	654
HFA1412IP	11.93	HAR	654
HFA3046B	2.73	HAR	655
HFA3096B	2.73	HAR	655
HFA3127B	2.73	HAR	655
HFA3128B	2.73	HAR	655
HFA3424EVAL	129.11	HAR	649
HFA3424IB	5.41	HAR	649
HFA3524EVAL	309.87	HAR	649
HFA3524IA	16.23	HAR	649
HFA3624EVAL	281.47	HAR	649
HFA3624IA	14.64	HAR	649
HFA3724EVAL	322.78	HAR	649
HFA3724IN	37.47	HAR	649
HFA3925EVAL	193.67	HAR	649
HFA3925IA	15.25	HAR	649
HGTD3N60C3	1.03	HAR	659
HGTD6N40E1	1.24	HAR	659
HGTD6N50E1S	1.48	HAR	659
HGTD7N60C3	1.47	HAR	659
HGTG20N100D2	12.71	HAR	659
HGTG20N50C1D	7.27	HAR	659
HGTG20N60B3	4.99	HAR	659
HGTG20N60B3D	6.98	HAR	659
HGTG24N60D1D	10.70	HAR	659
HGTG30N60C3	4.99	HAR	659
HGTG30N60C3D	11.55	HAR	659
HGTG40N60B3	16.32	HAR	—
HGTH20N50C1D	6.47	HAR	659
HGTH20N60C3R	4.99	HAR	659
HGTP10N50C1	2.23	HAR	659
HGTP10N50E1D	2.98	HAR	659
HGTP12N60C3D	4.48	HAR	659
HGTP12N60D1	3.78	HAR	659
HGTP14N40F3VL	2.73	HAR	—
HGTP15N50C1	4.76	HAR	659
HGTP20N60B3	4.26	HAR	659
HGTP3N60C3D	1.54	HAR	659
HGTP7N60C3D	2.10	HAR	659
HI1-5046-5	7.98	HAR	—
HI1106JCP	12.35	HAR	651
HI1166AIL	271.86	HAR	650
HI1171JCB	5.65	HAR	651
HI1172JCP	4.07	HAR	650
HI1175JCP	8.80	HAR	—
HI1176JCQ	13.31	HAR	—
HI1177JCQ	7.11	HAR	651
HI1178JCQ	10.80	HAR	651
HI1179JCQ	11.30	HAR	—
HI1201JCQ	14.00	HAR	650
HI1260JCQ	21.84	HAR	651
HI1276AIL	338.58	HAR	650
HI1386JCP	77.12	HAR	650
HI1396JCP	95.52	HAR	650
HI1826JCQ	27.51	HAR	650
HI1866JCQ	27.51	HAR	650
HI20201JCP	82.90	HAR	651
HI20203JCP	30.78	HAR	651
HI20206JCP	20.79	HAR	651
HI2300JCQ	12.61	HAR	650
HI2302JCQ	23.16	HAR	650
HI2304JCQ	11.74	HAR	651
HI2307JCQ	30.89	HAR	651
HI2309JCQ	24.71	HAR	651
HI2315JCQ	12.41	HAR	651
HI3026JCQ	105.01	HAR	650
HI3050JCQ	30.41	HAR	651
HI3304JIP	3.75	HAR	650
HI3306JIP/15	7.94	HAR	650
HI3318JIP	25.58	HAR	650
HI3338KIP	10.00	HAR	651
HI5702KCB	48.02	HAR	650
HI5703KCB	45.59	HAR	650
HI5710AJCQ	12.50	HAR	650
HI5710JCQ	19.31	HAR	—
HI5714/6CB	12.65	HAR	650
HI5714/7CB	9.83	HAR	650
HI5714/7CB	15.40	HAR	650
HI5721BIP	17.50	HAR	651
HI5731BIP	26.32	HAR	651
HI5741BIP	39.48	HAR	651
HI5780JCQ	11.90	HAR	651
HI5800KCD	157.30	HAR	650
HI5804KCB	19.72	HAR	650
HIN202CB	2.13	HAR	—
HIN202CP	2.13	HAR	—
HIN230CB	3.90	HAR	—
HIN231CB	2.07	HAR	—
HIN232CB	2.17	HAR	651
HIN232CP	2.17	HAR	651
HIN234CB	3.05	HAR	—
HIN236CB	3.90	HAR	651
HIN236CP	3.90	HAR	651
HIN237CB	3.90	HAR	—
HIN237CP	3.90	HAR	—
HIN238CB	3.90	HAR	—
HIN238CP	3.90	HAR	—
HIN239CB	3.90	HAR	651
HIN239CP	3.90	HAR	651
HIN240CN	6.55	HAR	—
HIN241CB	3.90	HAR	651
HIP0080AM	12.00	HAR	—
HIP0081AS1	15.20	HAR	652
HIP0082AS1	15.90	HAR	—
HIP1030AS	3.12	HAR	652
HIP1031AS	2.60	HAR	—
HIP2030EVAL	42.00	HAR	—
HIP2030IM	7.47	HAR	652
HIP2100IB	2.71	HAR	652
HIP2500IP	4.02	HAR	652
HIP4080AIP	5.67	HAR	652
HIP4080IP	7.54	HAR	652
HIP4081AIP	5.67	HAR	652
HIP4082IB	4.11	HAR	652
HIP4082IP	3.91	HAR	652
HIP5500IP	4.27	HAR	652
HIP5600EVAL1	36.67	HAR	—
HIP5600EVAL2	40.00	HAR	—
HIP5600EVAL3	43.34	HAR	—
HIP5600IS	2.10	HAR	653
HM1-6508-9	24.84	HAR	—
HM1-6514-9	16.86	HAR	—
HM1-6516-9	35.77	HAR	—
HM3-6508-9	13.06	HAR	—
HM3-6551-9	12.40	HAR	—
HS1-3182-8	42.23	HAR	649
HS1-3282-8	103.75	HAR	650
HS4-3182-8	97.34	HAR	649
HS4-3282-8	128.50	HAR	650
HSP3824EVAL	516.46	HAR	649
HSP3824VI	30.29	HAR	649
HSP43124SC-45	28.85	HAR	650
HSP43168JC-33	46.84	HAR	650
HSP43168JC-40	55.15	HAR	650
HSP43168JC-45	55.41	HAR	650
HSP43216JC-52	42.09	HAR	650
HSP43220JC-15	74.40	HAR	650
HSP43220JC-25	95.65	HAR	650
HSP45102PC-33	12.52	HAR	650
HSP45102PC-40	15.66	HAR	650
HSP45102SI-33	15.42	HAR	—
HSP45106JC-33	29.67	HAR	650
HSP48212JC-40	19.01	HAR	650
HSP48410JC-33	70.05	HAR	650
HSP50016-EV	333.33	HAR	—
HSP9501JC-25	14.92	HAR	650
HV3-2405E-5	3.19	HAR	652
ICL7106CPL	8.90	HAR	651
ICL7107CPL	8.93	HAR	651
ICL7109CPL	13.43	HAR	—
ICL7117CPL	8.93	HAR	651
ICL7129ACPL	14.93	MXM	—
ICL7136CPL	8.93	HAR	651
ICL7137CPL	8.93	HAR	651
ICL7611ACPA	6.26	HAR	—
ICL7631ECPE	3.42	MXM	—
ICL7660ACBA	1.02	HAR	653
ICL7660ACPA	0.97	HAR	653
ICL7660CPA	1.02	HAR	—
ICL7660CSA	2.38	MXM	—
ICL7660SCPA	1.10	HAR	653
ICL7660SIPA	1.22	HAR	653
ICL7662CPA	1.36	HAR	653
ICL7662MTV	5.14	HAR	653
ICL7663SCPA	1.52	HAR	653

Mfr.'s Type	Price	Mfr.'s Code	Page
ICL7664ACPA	4.88	MXM	—
ICL7665ACPA	4.11	MXM	—
ICL7665SACPA	1.83	HAR	653
ICL7665SAIPA	2.38	HAR	653
ICL7665SCPA	1.69	HAR	653
ICL7665SIPA	2.20	HAR	653
ICL7667CPA	1.43	HAR	652
ICL7667CTV	2.88	HAR	—
ICL7673CBA	1.42	HAR	653
ICL7673CPA	1.11	HAR	653
ICL8069DCSQ	1.88	HAR	—
ICL8211CBA	1.11	HAR	653
ICL8211CPA	1.50	HAR	653
ICL8212CBA	1.42	HAR	653
ICL8212CPA	1.50	HAR	653
ICM7211AIPL	4.25	HAR	651
ICM7211AMIPL	4.25	HAR	651
ICM7212AMIPL	3.86	HAR	651
ICM7218AIPI	7.64	MXM	—
ICM7218DIJI	4.64	HAR	—
ICM7228AIPI	5.55	HAR	651
ICM7242IPA	1.47	HAR	655
ICM7243BIPL	10.71	HAR	651
ICM7555IBA	0.90	HAR	655
ICM7555IPA	0.69	HAR	655
ICM7555MTV	3.47	HAR	655
ICM7556IPD	0.99	HAR	655
IP82C54-12	10.37	HAR	649
IP82C54	6.91	HAR	649
IP82C55A	6.40	HAR	649
IP82C59A-12	9.98	HAR	649
IP82C59A	6.65	HAR	649
IRF510	0.88	HAR	660
IRF520	0.57	HAR	660
IRF530	0.84	HAR	660
IRF540	2.15	HAR	660
IRF610	0.62	HAR	660
IRF630	0.84	HAR	660
IRF640	1.06	HAR	660
IRF720	0.77	HAR	660
IRF723	0.87	HAR	660
IRF730	0.99	HAR	660
IRF740	1.28	HAR	660
IRF820	0.84	HAR	660
IRF840	1.66	HAR	660
IRF9520	0.85	HAR	660
IRF9530	1.32	HAR	660
IRF9531	1.31	HAR	660
IRF9532	1.68	HAR	660
IRF9540	1.29	HAR	660
IRF9541	1.59	HAR	660
IS82C54-12	12.44	HAR	649
IS82C54	8.29	HAR	649
IS82C55A	7.68	HAR	649
IS82C59A-12	11.98	HAR	649
IS82C59A	7.98	HAR	649
ISP-SK2	119.91	LAT	668
ISP-SYN	614.94	LAT	668
ISPGAL22V10C-10LJ	7.80	LAT	667
ISPGAL22V10C-15LJ	6.60	LAT	667
ISPGAL22V10C-7LJ	14.30	LAT	667
ISPLSI1016-110LJ	41.25	LAT	668
ISPLSI1016-60LJ	8.50	LAT	668
ISPLSI1016-60LT	9.50	LAT	668
ISPLSI1016-80LJ	8.50	LAT	668
ISPLSI1016-80LT	9.50	LAT	668
ISPLSI1016-90LJ	9.75	LAT	668
ISPLSI1016-90LT	10.50	LAT	668
ISPLSI1016E-100LJ	15.00	LAT	668
ISPLSI1016E-100LT44	15.75	LAT	668
ISPLSI1016E-125LJ	22.75	LAT	668
ISPLSI1016E-125LT44	23.50	LAT	668
ISPLSI1024-60LJ	22.50	LAT	668
ISPLSI1024-80LJ	25.25	LAT	668
ISPLSI1024-90LJ	29.75	LAT	668
ISPLSI1032-60LJ	26.00	LAT	668
ISPLSI1032-60LT	28.00	LAT	668
ISPLSI1032-80LJ	32.50	LAT	668
ISPLSI1032-80LT	34.75	LAT	668
ISPLSI1032-90LJ	43.75	LAT	668
ISPLSI1032-90LT	45.75	LAT	668
ISPLSI103E-90LJ	2.00	LAT	668
ISPLSI1048-50LQ	101.25	LAT	668
ISPLSI1048-70LQ	127.00	LAT	668
ISPLSI1048-80LQ	163.75	LAT	668
ISPLSI1048C-50LQ	101.25	LAT	668
ISPLSI1048C-70LQ	127.00	LAT	668
ISPLSI1048E-50LQ	89.25	LAT	668
ISPLSI1048E-70LQ	113.50	LAT	668
ISPLSI1048E-90LQ	280.12	LAT	668
ISPLSI2032-110LJ	10.75	LAT	668
ISPLSI2032-110LT	11.50	LAT	668
ISPLSI2032-135LJ	16.50	LAT	668
ISPLSI2032-150LJ	24.25	LAT	668
ISPLSI2032-80LJ	7.25	LAT	668
ISPLSI2032-80LT	8.00	LAT	—
ISPLSI2032LV-60LJ	12.95	LAT	668
ISPLSI2032LV-60LT44	13.70	LAT	668
ISPLSI2032LV-80LJ	19.45	LAT	668
ISPLSI2032LV-80LT44	20.15	LAT	668
ISPLSI2064-100LJ	27.75	LAT	668
ISPLSI2064-125LJ	38.75	LAT	668
ISPLSI2064-80LJ	19.25	LAT	668

Mfr.'s Type	Price	Mfr.'s Code	Page
ISPLSI2096-100LQ	48.75	LAT	668
ISPLSI2096-100LT	51.50	LAT	668
ISPLSI2096-125LQ	68.25	LAT	668
ISPLSI2096-125LT	71.00	LAT	668
ISPLSI2096-80LQ	34.00	LAT	668
ISPLSI2096-80LT	37.00	LAT	668
ISPLSI2128-100LM	107.50	LAT	668
ISPLSI2128-100LT	107.50	LAT	668
ISPLSI2128-80LM	62.25	LAT	668
ISPLSI2128-80LT	55.00	LAT	668
ISPLSI3192-100LM	235.25	LAT	668
ISPLSI3192-70LM	154.00	LAT	668
ISPLSI3256-50LM	146.00	LAT	668
ISPLSI3256-70LM	178.25	LAT	668
J309	0.34	MOT	697
J310	0.34	MOT	697
KBL01	2.06	COL	646
KBL02	2.15	COL	—
KBL04	2.21	COL	646
KBL08	2.42	COL	646
KBP01	0.81	COL	646
KBP04	0.88	COL	646
KBPC1001P	3.51	COL	646
KBPC1002P	3.64	COL	646
KBPC1004P	3.76	COL	646
KBPC1006P	4.12	COL	—
KBPC1008P	4.30	COL	646
KBPC1010P	4.54	COL	646
KBPC2501	5.20	COL	646
KBPC2502	5.29	COL	646
KBPC2504	5.53	COL	646
KBPC2506	5.70	COL	646
KBPC2508	6.06	COL	646
KBPC35005	5.47	COL	646
KBPC3501	5.59	COL	646
KBPC3502	5.88	COL	646
KBPC3504	6.17	COL	646
KBPC3506	6.47	COL	646
KBPC3508	6.94	COL	646
KBPC3510	7.35	COL	646
KBPC6005	2.06	COL	646
KBPC601	2.12	COL	—
KBPC602	2.21	COL	646
KBPC604	2.28	COL	646
KBPC606	2.33	COL	646
KBPC610	2.67	COL	—
KBU1002	1.41	COL	646
KBU1004	1.53	COL	646
KBU1006	1.67	COL	646
KBU1010	1.82	COL	646
KBU402	1.12	COL	646
KBU404	1.21	COL	646
KBU406	1.26	COL	646
KBU410	1.46	COL	646
KBU602	1.17	COL	646
KBU604	1.29	COL	646
KBU606	1.36	COL	646
KBU610	1.60	COL	646
KBU8005	2.67	COL	646
KBU801	2.84	COL	646
KBU802	3.00	COL	646
KBU804	3.30	COL	646
KBU806	3.61	COL	646
KBU808	3.76	COL	646
KBU810	3.78	COL	646
KS826S04	1.61	COL	644
KS923C04	1.52	COL	644
KS926S2	1.57	COL	644
KU80C51SLAH	13.87	ITL	666
KU87C51SLAH	29.10	ITL	666
L293DN	4.59	UNI	737
L293DNE	3.09	TIS	732
L293N	4.51	UNI	737
L293NE	3.09	TIS	732
L71-A270X	3.92	SIE	725
L71-A470X	3.27	SIE	725
L71-A800X	2.88	SIE	725
LF13202N	4.90	NSC	—
LF13331N	4.90	NSC	—
LF156H	5.80	NSC	708
LF311H	4.58	NSC	709
LF347BN	2.86	NSC	709
LF347BN	3.38	TIS	—
LF347D	1.75	TIS	733
LF347M	1.47	NSC	708
LF347N	0.73	MOT	687
LF347N	1.43	NSC	708
LF347N	1.80	TIS	733
LF351M	0.85	NSC	709
LF351N	0.52	MOT	687
LF351N	0.85	NSC	709
LF351P	0.95	TIS	—
LF353D	0.43	TIS	732
LF353H	1.63	NSC	709
LF353M	0.47	NSC	709
LF353N	0.60	MOT	687
LF353N	0.69	NSC	709
LF353P	0.43	TIS	732
LF355M	1.20	NSC	708
LF355N	1.24	NSC	708
LF356BN	1.74	NSC	—
LF356H	1.83	NSC	708
LF356M	1.24	NSC	708

Mfr.'s Type	Price	Mfr.'s Code	Page
LF356N	1.24	NSC	708
LF357N	1.38	NSC	708
LF398AN	5.45	NSC	712
LF398H	4.77	NSC	712
LF398N	2.18	NSC	712
LF398N	2.28	PHI	—
LF411ACN	4.01	NSC	708
LF411CN	1.10	NSC	708
LF411CP	1.28	TIS	—
LF412ACN	5.90	NSC	708
LF412CD	2.00	TIS	732
LF412CN	0.91	MOT	687
LF412CN	1.38	NSC	708
LF412CP	2.28	TIS	732
LF441ACN	4.01	NSC	708
LF441CM	0.98	NSC	—
LF441CN	0.98	NSC	—
LF442ACN	5.90	NSC	708
LF442CN	0.98	NSC	—
LF444ACN	4.01	NSC	708
LF444CN	2.02	NSC	709
LH0002CH	8.40	NSC	709
LH0002CN	8.70	NSC	709
LH0002H	20.00	NSC	709
LH0021CK	28.90	NSC	—
LH0024CH	24.50	NSC	—
LH0032CG	25.60	NSC	—
LH0032G	46.70	NSC	708
LH0033CG	25.60	NSC	709
LH0033G	44.50	NSC	—
LH0041CG	19.80	NSC	—
LH0042CH	7.35	NSC	—
LH0042H	22.30	NSC	708
LH0063CK	40.00	NSC	709
LH0070-1H	11.20	NSC	—
LH0071-0H	19.50	NSC	—
LH0094CD	119.00	NSC	—
LH1605CK	33.30	NSC	712
LM108AH	5.60	NSC	708
LM10CH	6.70	NSC	708
LM10CLN	3.44	NSC	708
LM10CN	5.60	NSC	708
LM111H	3.33	NSC	709
LM111J-8	4.01	NSC	709
LM113H	12.60	NSC	710
LM117H	10.30	NSC	712
LM1201M	3.29	NSC	710
LM1201N	5.25	NSC	710
LM1202N	12.80	NSC	710
LM1203AN	7.80	NSC	710
LM1203N	4.01	NSC	710
LM1204V	9.25	NSC	710
LM1205N	5.40	NSC	710
LM120H-5.0	9.80	NSC	713
LM124AJ	9.60	NSC	708
LM124J	3.09	NSC	708
LM12CLK	33.10	NSC	—
LM135AH	15.20	NSC	711
LM135H	8.55	NSC	711
LM136AH-2.5	14.50	NSC	710
LM136H-2.5	10.00	NSC	711
LM139J	2.06	NSC	709
LM139J	2.18	TIS	—
LM140LAH-5.0	3.53	NSC	713
LM1458M	0.60	NSC	708
LM1458N	0.60	NSC	708
LM148J	2.30	NSC	708
LM1496N	1.38	NSC	—
LM158H	3.59	NSC	708
LM1819N	1.67	NSC	—
LM18293N	3.09	NSC	—
LM1830N	3.85	NSC	—
LM1851N	1.56	NSC	—
LM185H-2.5	16.20	NSC	711
LM1875T	3.16	NSC	709
LM1877M-9	2.47	NSC	709
LM1877N-9	2.54	NSC	709
LM1881M	5.04	NSC	710
LM1881N	5.04	NSC	710
LM1894N	7.50	NSC	709
LM1921T	2.94	NSC	713
LM193H	5.15	NSC	709
LM193JG	3.81	TIS	—
LM1951T	4.53	NSC	713
LM201AH	2.30	NSC	708
LM211D	0.50	TIS	732
LM211P	0.50	TIS	732
LM224D	0.50	TIS	733
LM224J	1.83	NSC	708
LM224N	0.50	TIS	733
LM231N	6.20	NSC	712
LM234Z-3	2.06	NSC	711
LM235AH	12.70	NSC	711
LM236AH-5.0	6.15	NSC	711
LM236H-2.5	4.12	NSC	711
LM239AN	0.65	MOT	688
LM239N	0.50	TIS	732
LM239N	0.62	MOT	—
LM2524DN	3.44	NSC	712
LM2574HVM-5.0	3.85	NSC	711
LM2574HVN-12	3.25	NSC	711
LM2574HVN-15	3.25	NSC	—
LM2574HVN-5.0	3.35	NSC	711

Mfr.'s Type	Price	Mfr.'s Code	Page
LM2574HVN-ADJ	3.35	NSC	711
LM2574M-12	3.25	NSC	—
LM2574M-3.3	3.25	NSC	—
LM2574M-5.0	3.25	NSC	711
LM2574M-ADJ	3.25	NSC	—
LM2574N-12	2.87	NSC	—
LM2574N-15	2.87	NSC	711
LM2574N-5.0	2.96	NSC	711
LM2574N-ADJ	2.87	NSC	711
LM2575HVM-5.0	5.05	NSC	711
LM2575HVM-ADJ	5.05	NSC	711
LM2575HVN-12	4.63	NSC	—
LM2575HVN-15	4.63	NSC	711
LM2575HVN-5.0	4.63	NSC	711
LM2575HVN-ADJ	4.63	NSC	—
LM2575HVT-12	5.05	NSC	711
LM2575HVT-15	5.05	NSC	711
LM2575HVT-5.0	5.05	NSC	711
LM2575HVT-ADJ	5.05	NSC	711
LM2575M-5.0	3.96	NSC	711
LM2575M-ADJ	3.96	NSC	—
LM2575N-12	3.96	NSC	—
LM2575N-15	3.96	NSC	—
LM2575N-5.0	3.96	NSC	711
LM2575N-ADJ	3.96	NSC	711
LM2575T-12	4.08	NSC	711
LM2575T-15	4.08	NSC	711
LM2575T-3.3	3.96	NSC	—
LM2575T-5.0	4.08	NSC	711
LM2575T-ADJ	4.08	NSC	711
LM2576HVT-12	8.75	NSC	711
LM2576HVT-15	8.75	NSC	711
LM2576HVT-5.0	8.75	NSC	711
LM2576HVT-ADJ	8.75	NSC	711
LM2576T-12	7.80	NSC	711
LM2576T-15	7.80	NSC	—
LM2576T-5.0	7.80	NSC	711
LM2576T-ADJ	7.80	NSC	711
LM2577M-12	7.30	NSC	711
LM2577M-ADJ	7.30	NSC	711
LM2577N-12	6.60	NSC	711
LM2577N-15	6.60	NSC	—
LM2577N-ADJ	6.60	NSC	—
LM2577T-12	5.75	NSC	711
LM2577T-15	5.75	NSC	711
LM2577T-ADJ	5.75	NSC	711
LM2578AM	4.89	NSC	712
LM2578AN	4.31	NSC	712
LM258D	0.50	TIS	732
LM258D	0.94	PHI	721
LM258N	0.60	PHI	721
LM258N	0.65	MOT	687
LM258P	0.50	TIS	732
LM285BXZ-2.5	4.36	NSC	711
LM285BYZ-2.5	3.74	NSC	711
LM285M-1.2	1.34	NSC	711
LM285Z-1.2	0.78	MOT	690
LM285Z-2.5	0.78	MOT	690
LM2878P	3.44	NSC	709
LM2901D	0.42	TIS	732
LM2901M	0.49	NSC	709
LM2901N	0.43	TIS	732
LM2901N	0.45	NSC	709
LM2901N	0.49	MOT	688
LM2902D	0.42	TIS	733
LM2902M	0.87	NSC	—
LM2902N	0.43	TIS	733
LM2902N	0.49	MOT	688
LM2903D	0.42	TIS	732
LM2903D	0.60	PHI	721
LM2903M	0.84	NSC	709
LM2903N	0.36	PHI	721
LM2903N	0.49	MOT	688
LM2903N	0.64	NSC	709
LM2903P	0.43	TIS	732
LM2904D	0.42	TIS	732
LM2904N	0.45	NSC	—
LM2904N	0.49	MOT	687
LM2907N-8	2.75	NSC	—
LM2907N	2.75	NSC	—
LM2917N-8	2.75	NSC	—
LM2917N	2.86	NSC	—
LM2924M	2.59	NSC	709
LM2925T	3.53	NSC	712
LM2926T	4.53	NSC	712
LM2930T-5.0	0.92	NSC	712
LM2930T-8.0	0.89	NSC	712
LM2931AM-5.0	1.03	NSC	—
LM2931AT-5.0	0.75	MOT	689
LM2931AT-5.0	1.61	NSC	—
LM2931AZ-5.0	0.64	MOT	689
LM2931AZ-5.0	0.80	NSC	—
LM2931CT	0.75	MOT	689
LM2931CT	1.72	NSC	712
LM2931M-5.0	0.80	NSC	712
LM2931T-5.0	0.75	MOT	689
LM2931T-5.0	0.92	NSC	712
LM2931Z-5.0	0.47	MOT	689
LM2931Z-5.0	0.69	NSC	712
LM2935T	2.67	NSC	712
LM2936Z-5.0	2.31	NSC	712
LM2937ET-10	1.29	NSC	—
LM2937ET-12	1.29	NSC	712

Manufacturer's Code Log

ADI	Analog Devices Inc.	ITL	Intel	NSC	National Semiconductor	TIS	Texas Instruments
AMD	Advanced Micro Devices	LAT	Lattice	NTE	NTE Electronics	THO	Thomson Conusumer Electronics
COL	Collmer Semiconductors, Inc.	MXM	Maxim	PHI	Philips Semiconductors	UNI	Unitrode Integrated Circuits
DLS	Dallas Semiconductor	MOS	Mosel-Vitelic	SEM	Semiconductors Inc.	XLX	Xilinx
HAR	Harris Semiconductor	MOT	Motorola Semiconductor	SIE	Siemens Components, Inc		

Mfr.'s Type	Price	Mfr.'s Code	Page
LM2937ET-15	1.29	NSC	712
LM2937ET-5.0	1.33	NSC	712
LM2937ET-8.0	1.29	NSC	712
LM293D	0.50	TIS	732
LM293P	0.50	TIS	732
LM2940CT-12	1.61	NSC	712
LM2940CT-15	1.61	NSC	712
LM2940CT-5.0	1.61	NSC	712
LM2940T-10.0	1.95	NSC	712
LM2940T-12.0	1.95	NSC	712
LM2940T-5.0	1.95	NSC	712
LM2940T-8.0	1.95	NSC	712
LM2940T-9.0	1.95	NSC	712
LM2941CT	1.72	NSC	712
LM2941T	1.95	NSC	712
LM2990T-12	3.03	NSC	712
LM2990T-15	3.03	NSC	712
LM2990T-5.0	3.03	NSC	712
LM2990T-5.2	2.94	NSC	712
LM2991T	3.03	NSC	712
LM301AH	2.30	NSC	708
LM301AN	0.73	NSC	708
LM305H	1.15	NSC	713
LM306D	1.62	TIS	732
LM306P	1.67	TIS	732
LM307N	0.92	NSC	708
LM3080M	1.16	NSC	—
LM3080N	1.12	NSC	—
LM3086N	0.75	NSC	—
LM308AH	2.06	NSC	708
LM308AM	1.12	NSC	708
LM308AN	0.69	MOT	687
LM308AN	1.15	NSC	708
LM308M	0.82	NSC	708
LM308N	0.85	NSC	708
LM310H	2.64	NSC	709
LM310N	2.86	NSC	709
LM311D	0.33	TIS	732
LM311D	0.40	PHI	721
LM311H	2.30	NSC	709
LM311M	0.80	NSC	709
LM311N	0.36	PHI	721
LM311N	0.47	MOT	688
LM311N	0.73	NSC	709
LM311P	0.33	TIS	732
LM313H	7.45	NSC	711
LM317AH	4.81	NSC	712
LM317H	4.48	NSC	712
LM317HVH	6.70	NSC	712
LM317HVT	2.52	NSC	712
LM317LM	0.71	NSC	712
LM317LZ	0.47	MOT	689
LM317LZ	0.62	NSC	712
LM317MT	0.73	MOT	689
LM317T	0.59	NSC	712
LM317T	0.73	SEM	723
LM317T	0.80	MOT	689
LM318D	1.29	TIS	732
LM318H	3.09	NSC	708
LM318M	1.07	NSC	—
LM318N	1.07	NSC	708
LM318P	1.43	TIS	732
LM319D	1.00	PHI	721
LM319M	1.67	NSC	709
LM319N	0.68	PHI	721
LM319N	1.72	NSC	709
LM320H-5.0	5.04	NSC	713
LM320K-15	5.60	NSC	713
LM320LZ-12	0.50	NSC	713
LM320LZ-5.0	0.50	NSC	713
LM320T-12	1.42	NSC	713
LM320T-15	2.75	NSC	713
LM320T-5.0	2.75	NSC	713
LM323AT	1.82	MOT	689
LM324AD	0.50	PHI	721
LM324AM	0.69	NSC	708
LM324AN	0.52	PHI	721
LM324AN	0.94	NSC	708
LM324AN	1.56	TIS	733
LM324D	0.33	TIS	733
LM324D	0.52	PHI	721
LM324M	0.40	NSC	708
LM324N	0.33	TIS	733
LM324N	0.38	PHI	721
LM324N	0.41	MOT	687
LM324N	0.57	NSC	708
LM325H	9.00	NSC	—
LM329AH	6.15	NSC	—
LM329BZ	2.30	NSC	711
LM329CZ	1.72	NSC	711
LM329DZ	0.69	NSC	711
LM3302D	0.82	TIS	732
LM3302N	0.80	NSC	—
LM3302N	0.84	TIS	732

Mfr.'s Type	Price	Mfr.'s Code	Page
LM330T-5.0	1.03	NSC	712
LM331AN	6.80	NSC	—
LM331N	5.25	NSC	712
LM334H	2.30	NSC	—
LM334M	1.65	NSC	711
LM334Z	1.38	NSC	711
LM335AH	7.50	NSC	711
LM335AZ	4.12	NSC	711
LM335Z	2.04	NSC	711
LM336BM-2.5	2.06	NSC	711
LM336BM-5.0	2.00	NSC	711
LM336BZ-2.5	2.06	NSC	711
LM336BZ-5.0	2.06	NSC	711
LM336M-5.0	1.12	NSC	711
LM336Z-2.5	1.15	NSC	711
LM336Z-5.0	1.15	NSC	711
LM337H	5.25	NSC	713
LM337KC	2.58	TIS	—
LM337KSTEEL	6.00	NSC	713
LM337LM	1.19	NSC	713
LM337LZ	1.19	NSC	713
LM337MT	1.02	MOT	689
LM337T	1.02	MOT	689
LM337T	1.38	NSC	713
LM338T	1.98	NSC	712
LM339AD	1.29	TIS	732
LM339AN	0.45	MOT	688
LM339AN	0.66	PHI	721
LM339AN	0.67	NSC	—
LM339AN	1.28	TIS	732
LM339D	0.33	TIS	732
LM339M	0.62	NSC	709
LM339N	0.33	TIS	732
LM339N	0.34	PHI	721
LM339N	0.57	NSC	709
LM340AT-12	1.16	MOT	689
LM340AT-15	1.16	MOT	689
LM340AT-5.0	0.84	MOT	689
LM340AT-5.0	1.49	NSC	—
LM340K-5.0	4.12	NSC	713
LM340LAH-12	1.72	NSC	713
LM340LAH-5.0	1.67	NSC	713
LM340LAZ-5.0	0.87	NSC	713
LM340T-12	0.71	MOT	689
LM340T-12	0.98	NSC	—
LM340T-15	0.71	MOT	689
LM340T-15	0.80	NSC	713
LM340T-5.0	0.65	MOT	689
LM340T-5.0	0.80	NSC	713
LM341T-12	0.98	NSC	713
LM341T-15	0.96	NSC	713
LM341T-5.0	0.98	NSC	713
LM343H	7.15	NSC	708
LM346N	2.11	NSC	708
LM348D	0.80	TIS	733
LM348N	0.73	NSC	708
LM348N	0.82	TIS	733
LM349N	1.45	NSC	—
LM34CAH	12.90	NSC	711
LM34CAZ	8.25	NSC	711
LM34CH	10.50	NSC	711
LM34CZ	6.30	NSC	711
LM34DH	4.00	NSC	711
LM34DZ	2.01	NSC	711
LM350AT	5.04	NSC	712
LM350T	2.32	MOT	689
LM350T	4.31	NSC	712
LM3524DM	2.30	NSC	712
LM3578AN	2.77	NSC	712
LM358AD	0.82	TIS	732
LM358AN	0.69	NSC	708
LM358AP	0.90	TIS	732
LM358D	0.32	TIS	732
LM358D	0.50	PHI	721
LM358M	0.62	NSC	708
LM358N	0.41	MOT	687
LM358N	0.50	PHI	721
LM358N	0.58	NSC	708
LM358P	0.33	TIS	732
LM359M	2.84	NSC	708
LM359N	2.67	NSC	708
LM35AH	22.40	NSC	—
LM35CAH	13.00	NSC	—
LM35CAZ	8.25	NSC	711
LM35CH	10.50	NSC	711
LM35CZ	6.30	NSC	711
LM35DH	3.39	NSC	711
LM35DM	1.89	NSC	711
LM35DZ	1.76	NSC	711
LM360H	6.55	NSC	—
LM360N	4.46	NSC	709
LM361N	3.37	NSC	709
LM376N	0.64	NSC	713
LM380N	1.15	NSC	709

Mfr.'s Type	Price	Mfr.'s Code	Page
LM383T	2.64	NSC	709
LM384N	2.30	NSC	709
LM385BD-1-2	2.00	TIS	734
LM385BLP-1-2	2.28	TIS	734
LM385BM-1.2	1.17	NSC	—
LM385BM-2.5	1.14	NSC	711
LM385BZ-1.2	0.78	MOT	690
LM385BZ-1.2	1.53	NSC	711
LM385BZ-2.5	0.78	MOT	690
LM385BZ-2.5	1.53	NSC	711
LM385D-1-2	1.50	TIS	734
LM385LP-1-2	1.71	TIS	734
LM385M-1.2	0.98	NSC	711
LM385M-2.5	0.98	NSC	711
LM385M	1.20	NSC	711
LM385Z-1.2	0.71	MOT	690
LM385Z-1.2	0.98	NSC	711
LM385Z-2.5	0.71	MOT	690
LM385Z-2.5	0.98	NSC	711
LM385Z	1.20	NSC	711
LM386M-1	0.62	NSC	709
LM386N-1	0.62	NSC	709
LM386N-3	1.40	NSC	709
LM386N-4	1.55	NSC	709
LM3875T	7.85	NSC	709
LM3876T	8.45	NSC	709
LM387AN	2.64	NSC	—
LM3886T	8.75	NSC	709
LM388N-1	1.57	NSC	709
LM3900D	1.12	TIS	733
LM3900N	0.80	NSC	—
LM3900N	1.28	TIS	733
LM3909N	1.55	NSC	—
LM3914N	2.86	NSC	—
LM3915N	2.86	NSC	—
LM3916N	2.86	NSC	—
LM392M	1.17	NSC	709
LM392N	1.10	NSC	709
LM393AD	1.12	TIS	732
LM393AN	0.45	MOT	688
LM393AN	0.80	PHI	721
LM393AP	1.28	TIS	732
LM393D	0.33	TIS	732
LM393D	0.44	PHI	721
LM393M	0.62	NSC	709
LM393N	0.31	PHI	721
LM393N	0.41	MOT	688
LM393N	0.69	NSC	709
LM393P	0.33	TIS	732
LM394CH	4.64	NSC	—
LM394H	7.20	NSC	—
LM395T	3.35	NSC	—
LM399H	4.12	NSC	711
LM4040AIM-10.0	3.25	NSC	—
LM4040AIM-2.5	3.25	NSC	711
LM4040AIM-4.1	2.68	NSC	711
LM4040AIM-5.0	3.25	NSC	—
LM4040AIM3-10.0	3.25	NSC	—
LM4040AIM3-2.5	3.25	NSC	—
LM4040AIM3-5.0	3.35	NSC	711
LM4040AIZ-10.0	3.35	NSC	711
LM4040AIZ-2.5	3.35	NSC	711
LM4040AIZ-4.1	3.35	NSC	711
LM4040AIZ-5.0	3.35	NSC	711
LM4040BIM-2.5	2.45	NSC	—
LM4040BIM-4.1	2.45	NSC	—
LM4040BIM-5.0	2.45	NSC	—
LM4040BIM3-10.0	2.45	NSC	711
LM4040BIM3-2.5	2.45	NSC	711
LM4040BIM3-4.1	2.45	NSC	711
LM4040BIM3-5.0	2.45	NSC	711
LM4040BIZ-10.0	2.45	NSC	—
LM4040BIZ-2.5	2.45	NSC	711
LM4040BIZ-5.0	2.52	NSC	711
LM4040CIM-2.5	1.83	NSC	—
LM4040CIM-4.1	1.83	NSC	—
LM4040CIM-5.0	1.83	NSC	—
LM4040CIM-8.2	1.83	NSC	—
LM4040CIM3-2.5	1.83	NSC	711
LM4040CIM3-4.1	1.83	NSC	711
LM4040CIM3-5.0	1.83	NSC	711
LM4040CIM3-8.2	1.83	NSC	—
LM4040CIZ-10.0	1.83	NSC	711
LM4040CIZ-2.5	1.83	NSC	—
LM4040CIZ-4.1	1.83	NSC	—
LM4040CIZ-5.0	1.42	NSC	711
LM4040CIZ-8.2	1.83	NSC	—
LM4040DIM-10.0	1.45	NSC	—
LM4040DIM-2.5	1.45	NSC	711
LM4040DIM-4.1	1.45	NSC	—
LM4040DIM-5.0	1.45	NSC	711
LM4040DIM3-10.0	1.45	NSC	711
LM4040DIM3-2.5	1.45	NSC	711
LM4040DIM3-4.1	1.45	NSC	711

Mfr.'s Type	Price	Mfr.'s Code	Page
LM4040DIM3-5.0	1.45	NSC	—
LM4040DIZ-10.0	1.49	NSC	711
LM4040DIZ-2.5	1.45	NSC	—
LM4040DIZ-4.1	1.45	NSC	711
LM4040DIZ-5.0	1.49	NSC	711
LM4040DIZ-8.2	1.45	NSC	—
LM4040EIZ-2.5	1.34	NSC	—
LM4041AIM-1.2	3.23	NSC	—
LM4041AIM3-1.2	3.23	NSC	—
LM4041BIM-1.2	2.40	NSC	—
LM4041BIM3-1.2	2.40	NSC	—
LM4041CIM-1.2	1.83	NSC	—
LM4041CIM-ADJ	1.83	NSC	—
LM4041CIM3-1.2	1.83	NSC	—
LM4041CIZ-1.2	1.83	NSC	—
LM4041CIZ-ADJ	1.83	NSC	—
LM4041DIM-ADJ	1.43	NSC	—
LM4041DIM3-1.2	1.43	NSC	—
LM4041DIM3-ADJ	1.47	NSC	—
LM4041EIM3-1.2	1.32	NSC	—
LM4250CH	2.45	NSC	708
LM4250CN	1.49	NSC	708
LM431ACM	0.57	NSC	713
LM431ACZ	0.48	NSC	713
LM431AIZ	0.60	NSC	713
LM4431M3-2.5	0.76	NSC	—
LM555CJ	1.49	NSC	—
LM555CM	0.57	NSC	—
LM555CN	0.53	NSC	—
LM555CN	0.58	HAR	655
LM556CM	0.80	NSC	—
LM556CN	0.69	NSC	—
LM566CN	0.92	NSC	—
LM567CM	0.73	NSC	—
LM567CN	0.73	NSC	—
LM611CN	1.65	NSC	—
LM612IM	1.75	NSC	—
LM612IN	1.75	NSC	—
LM613CN	2.63	NSC	709
LM613IN	2.67	NSC	—
LM613IWM	2.67	NSC	709
LM614AIN	4.31	NSC	—
LM614CN	2.45	NSC	—
LM615IM	2.47	NSC	709
LM6162N	17.80	NSC	708
LM6181AIM	6.20	NSC	—
LM6181AIN	6.20	NSC	708
LM6181IM	3.32	NSC	708
LM6181IN	3.41	NSC	708
LM6218AN	10.10	NSC	708
LM6218N	7.80	NSC	708
LM6218WM	7.80	NSC	—
LM6261N	5.08	NSC	—
LM6262M	4.93	NSC	—
LM6264N	5.08	NSC	708
LM6265N	4.93	NSC	—
LM628N-6	40.10	NSC	714
LM628N-8	54.00	NSC	714
LM629M-8	54.00	NSC	—
LM629N-6	40.10	NSC	714
LM629N-8	54.00	NSC	714
LM6321N	7.40	NSC	708
LM6361M	4.64	NSC	708
LM6361N	4.64	NSC	708
LM6362M	4.50	NSC	—
LM6362N	4.50	NSC	—
LM6364M	4.50	NSC	708
LM6364N	4.50	NSC	708
LM6365M	4.50	NSC	—
LM6365N	4.64	NSC	708
LM675T	8.25	NSC	—
LM709CH	2.30	NSC	—
LM709CN	0.80	NSC	—
LM710CH	2.30	NSC	—
LM710CN	0.80	NSC	—
LM723CN	0.69	NSC	713
LM723H	4.24	NSC	713
LM725CN	4.12	NSC	—
LM741CH	2.06	NSC	708
LM741CM	0.36	NSC	708
LM741CN	0.60	NSC	708
LM741H	3.21	NSC	708
LM747CN	0.64	NSC	—
LM748CN	0.69	NSC	—
LM759CH	4.34	NSC	—
LM759CP	3.41	NSC	—
LM7805CT	0.63	SEM	723
LM7808CT	0.57	NSC	713
LM7808CT	0.63	SEM	723
LM7812CT	0.63	SEM	723
LM7815CT	0.63	SEM	723
LM7818CT	0.98	NSC	713
LM78L05ACM	0.50	NSC	713
LM78L05ACZ	0.31	SEM	723

Mfr.'s Type	Price	Mfr.'s Code	Page
LM78L05ACZ	0.46	NSC	713
LM78L06ACZ	0.31	SEM	723
LM78L08ACZ	0.31	SEM	723
LM78L09ACZ	0.31	SEM	723
LM78L09ACZ	0.46	NSC	713
LM78L12ACM	0.50	NSC	713
LM78L12ACZ	0.31	SEM	723
LM78L12ACZ	0.46	NSC	713
LM78L15ACM	0.50	NSC	713
LM78L15ACZ	0.31	SEM	723
LM78L15ACZ	0.46	NSC	713
LM78L24ACZ	0.30	SEM	723
LM78M05CH	1.83	NSC	—
LM78M05CT	0.63	SEM	723
LM78M08CT	0.63	SEM	723
LM78M12CH	1.78	NSC	—
LM78M12CT	0.63	SEM	723
LM78M12CT	0.78	NSC	—
LM78M15CH	1.83	NSC	—
LM78M15CT	0.63	SEM	723
LM78M15CT	0.78	NSC	—
LM78S40CN	2.02	NSC	712
LM78S40N	3.01	NSC	—
LM7905CT	0.63	SEM	723
LM7905CT	0.80	NSC	713
LM7908CT	0.63	SEM	723
LM7912CT	0.63	SEM	723
LM7912CT	0.80	NSC	713
LM7915CT	0.63	SEM	723
LM7915CT	0.80	NSC	713
LM79L05ACM	0.55	NSC	713
LM79L05ACZ	0.31	SEM	723
LM79L05ACZ	0.35	NSC	713
LM79L06ACZ	0.31	SEM	723
LM79L08ACZ	0.31	SEM	723
LM79L09ACZ	0.31	SEM	723
LM79L12ACZ	0.31	SEM	723
LM79L12ACZ	0.46	NSC	713
LM79L15ACM	0.55	NSC	713
LM79L15ACZ	0.31	SEM	723
LM79M05CT	0.63	SEM	723
LM79M05CT	0.80	NSC	713
LM79M08CT	0.63	SEM	—
LM79M12CT	0.63	SEM	—
LM79M12CT	0.80	NSC	713
LM79M15CT	0.63	SEM	723
LM831N	2.52	NSC	709
LM833M	1.06	NSC	709
LM833N	1.06	NSC	709
LM837M	2.12	NSC	709
LM837N	2.18	NSC	709
LM9140BYZ-10.0	2.80	NSC	—
LM9140BYZ-2.5	2.80	NSC	—
LM9140BYZ-5.0	2.80	NSC	—
LMC1982CIN	6.70	NSC	709
LMC1983CIN	6.70	NSC	—
LMC1992CCN	13.40	NSC	709
LMC555CM	0.84	NSC	—
LMC555CN	0.87	NSC	—
LMC567CN	1.38	NSC	—
LMC568CM	2.76	NSC	—
LMC660AIM	2.34	NSC	708
LMC660CM	2.12	NSC	708
LMC660CN	2.12	NSC	708
LMC662CN	1.61	NSC	708
LMC7660IN	1.67	NSC	712
LMC835N	13.50	NSC	709
LMC835V	15.60	NSC	709
LMD18200T	16.20	NSC	—
LMD18201T	14.80	NSC	—
LP211D	0.90	TIS	732
LP211P	0.90	TIS	732
LP239D	0.95	TIS	732
LP239N	0.95	TIS	732
LP2901D	1.03	TIS	732
LP2901N	1.00	TIS	732
LP2950ACZ-5.0	1.81	NSC	—
LP2950CZ-5.0	1.59	NSC	712
LP2951ACN	2.09	NSC	—
LP2951CM	2.12	NSC	712
LP2951CN	1.93	NSC	712
LP2952AIM	4.78	NSC	—
LP2952AIN	4.92	NSC	—
LP2952IM	4.13	NSC	—
LP2952IN	4.01	NSC	—
LP2953IM	4.74	NSC	712
LP2953IN	4.74	NSC	712
LP2954IT	4.64	NSC	712
LP311D	0.82	TIS	732
LP311N	0.82	NSC	709
LP311P	0.90	TIS	732
LP324M	0.89	NSC	708
LP339M	0.92	NSC	709
LP339N	0.92	NSC	709
LP365N	0.87	NSC	709
LS40K130QP	7.92	SIE	725
LS40K150QP	6.97	SIE	725
LS40K230QP	6.97	SIE	725
LS40K250QP	6.97	SIE	725
LS40K275QP	6.97	SIE	725
LS40K320QP	6.97	SIE	725
LS40K385QP	7.92	SIE	725
LS40K420QP	10.30	SIE	725

Mfr.'s Type	Price	Mfr.'s Code	Page
LS40K460QP	10.30	SIE	725
LS40K550QP	9.09	SIE	725
LS40K680QP	10.30	SIE	725
LS40K750QP	10.30	SIE	725
LT1004CLP-1-2	2.53	TIS	—
LT1009CLP	2.41	TIS	734
LT1013CP	2.76	TIS	732
LT1013DD	2.00	TIS	732
LT1014CN	7.50	TIS	—
LT1030CD	2.50	TIS	731
LT1030CN	2.71	TIS	731
LT1054CDW	3.75	TIS	734
LT1054CP	3.86	TIS	734
LT1072CP	4.50	TIS	734
M51-A230X	4.36	SIE	725
M51-A350X	4.36	SIE	725
M51-C90	5.13	SIE	725
MAC08MT1	0.72	MOT	707
MAC12M	0.88	MOT	707
MAC12N	0.92	MOT	707
MAC15-6	1.14	MOT	707
MAC15-8	1.16	MOT	707
MAC15A6	1.20	MOT	707
MAC15A8	1.22	MOT	707
MAC15D	1.06	MOT	707
MAC15M	1.08	MOT	707
MAC15N	1.12	MOT	707
MAC16M	1.08	MOT	707
MAC16N	1.12	MOT	707
MAC210A10	1.08	MOT	707
MAC210A8	1.08	MOT	707
MAC223A10	2.00	MOT	707
MAC223A6	1.80	MOT	707
MAC223A8	1.90	MOT	707
MAC224A10	2.70	MOT	707
MAC224A4	2.50	MOT	707
MAC224A6	2.54	MOT	707
MAC224A8	2.60	MOT	707
MAC228A10	1.70	MOT	707
MAC228A4	1.08	MOT	707
MAC228A6	1.18	MOT	707
MAC228A8	1.52	MOT	707
MAC8D	0.82	MOT	707
MAC8M	0.84	MOT	707
MAC8N	0.88	MOT	707
MAC97-6	0.32	MOT	707
MAC97A4	0.32	MOT	707
MAC97A6	0.34	MOT	707
MAC97A8	0.44	MOT	707
MAC9D	0.82	MOT	707
MAC9M	0.84	MOT	707
MAC9N	0.88	MOT	707
MACH110-12JC	7.45	AMD	630
MACH110-15JC	7.22	AMD	630
MACH110-20JC	7.22	AMD	630
MACH111-10JC	8.77	AMD	630
MACH111-12JC	7.45	AMD	630
MACH111-15JC	6.12	AMD	630
MACH111-20JC	6.12	AMD	630
MACH111-7JC	13.94	AMD	630
MACH120-12JC	20.32	AMD	630
MACH120-15JC	16.56	AMD	630
MACH120-20JC	16.56	AMD	630
MACH130-15JC	20.40	AMD	630
MACH130-20JC	20.40	AMD	630
MACH131-10JC	23.60	AMD	630
MACH131-12JC	18.97	AMD	630
MACH131-15JC	16.25	AMD	630
MACH131-20JC	18.05	AMD	630
MACH131-7JC	29.50	AMD	630
MACH210-15JC	8.08	AMD	630
MACH210-20JC	8.08	AMD	630
MACH210A-10JC	11.38	AMD	630
MACH210A-12JC	8.32	AMD	630
MACH210A-7JC	16.87	AMD	630
MACH210AQ-12JC	10.17	AMD	630
MACH210AQ-15JC	9.65	AMD	630
MACH210AQ-20JC	9.26	AMD	630
MACH215-12JC	8.00	AMD	630
MACH215-15JC	7.85	AMD	630
MACH215-20JC	7.85	AMD	630
MACH220-10JC	35.36	AMD	630
MACH220-12JC	28.49	AMD	630
MACH220-15JC	29.68	AMD	630
MACH220-20JC	27.46	AMD	630
MACH230-10JC	62.56	AMD	630
MACH230-15JC	42.43	AMD	630
MACH230-20JC	29.68	AMD	630
MACH355-15YC	47.60	AMD	630
MACH355-20YC	46.92	AMD	630
MACH435-12JC	52.78	AMD	630
MACH435-15JC	38.08	AMD	630
MACH435-20JC	38.08	AMD	630
MACH435Q-20JC	52.78	AMD	630
MACH435Q-25JC	38.08	AMD	630
MACH465-15YC	131.61	AMD	—
MACH465-20YC	125.12	AMD	—
MACHLV210-12JC	15.89	AMD	630
MACHLV210-15JC	11.22	AMD	630
MACHLV210-20JC	9.81	AMD	630
MAD1103P	2.64	MOT	702
MAD1107P	2.82	MOT	—
MAD1108P	2.46	MOT	702

Mfr.'s Type	Price	Mfr.'s Code	Page
MAD1109P	4.92	MOT	702
MAD130P	4.90	MOT	702
MAT02EH	13.13	ADI	—
MAX1044CSA	2.26	MXM	671
MAX111BCWE	9.60	MXM	670
MAX120EWG	39.29	MXM	—
MAX1232CPA	2.40	MXM	670
MAX1232CSA	3.18	MXM	670
MAX132CNG	15.11	MXM	670
MAX147BCAP	12.64	MXM	670
MAX147BCPP	12.64	MXM	670
MAX1480ACPI	16.04	MXM	669
MAX1480BCPI	15.34	MXM	669
MAX1482CPD	1.93	MXM	669
MAX1482CSD	1.93	MXM	669
MAX1483CPA	1.93	MXM	669
MAX1483CSA	1.93	MXM	669
MAX1487ECPA	2.35	MXM	669
MAX1487ECSA	2.35	MXM	669
MAX1488ECPD	1.49	MXM	669
MAX1488ECSD	1.49	MXM	669
MAX1489ECPD	1.49	MXM	669
MAX1489ECSD	1.49	MXM	669
MAX148BCAP	8.71	MXM	670
MAX148BCPP	8.71	MXM	670
MAX172BCNG	20.40	MXM	—
MAX180ACPL	41.75	MXM	670
MAX180BCPL	36.93	MXM	—
MAX186CCPP	17.54	MXM	—
MAX186DCAP	17.00	MXM	670
MAX186DCPP	16.19	MXM	670
MAX187ACPA	20.89	MXM	670
MAX191ACNG	23.04	MXM	—
MAX192ACPP	15.13	MXM	670
MAX192BCAP	12.80	MXM	670
MAX192BCPP	11.63	MXM	670
MAX195BCPE	51.00	MXM	—
MAX196BCAI	20.52	MXM	670
MAX196BCNI	20.52	MXM	670
MAX197ACNI	26.68	MXM	—
MAX2003ACPE	5.99	MXM	671
MAX2003ACSE	6.40	MXM	671
MAX2003CPE	5.12	MXM	671
MAX201CPD	2.40	MXM	669
MAX202CPE	2.47	MXM	669
MAX202CSE	2.47	MXM	669
MAX202ECPE	2.95	MXM	669
MAX202ECSE	2.86	MXM	669
MAX203CWP	5.40	MXM	—
MAX203ECPP	5.57	MXM	669
MAX203ECWP	5.57	MXM	669
MAX205CPG	11.88	MXM	—
MAX206CNG	5.48	MXM	669
MAX208CWG	5.48	MXM	—
MAX211CAI	5.78	MXM	669
MAX211CWI	5.48	MXM	669
MAX213ECAI	6.28	MXM	—
MAX222CPN	3.79	MXM	669
MAX222CWN	3.68	MXM	—
MAX230CPP	5.48	MXM	669
MAX230CWP	5.48	MXM	—
MAX231CPD	2.47	MXM	669
MAX232ACPE	3.79	MXM	669
MAX232ACSE	3.79	MXM	669
MAX232ACWE	3.79	MXM	669
MAX232CPE	2.60	MXM	669
MAX232CSE	2.47	MXM	669
MAX232CWE	2.47	MXM	669
MAX232D	1.50	TIS	731
MAX232DW	1.75	TIS	731
MAX232ECPE	2.95	MXM	669
MAX232EPE	2.97	MXM	—
MAX232N	2.56	TIS	731
MAX233ACPP	7.80	MXM	669
MAX233ACWP	7.80	MXM	669
MAX233AEPP	10.62	MXM	—
MAX233CPP	5.40	MXM	669
MAX233EPP	6.48	MXM	—
MAX234CPE	4.41	MXM	669
MAX235CPG	11.88	MXM	669
MAX236CNG	5.48	MXM	669
MAX237CNG	5.48	MXM	669
MAX238CNG	5.48	MXM	669
MAX239CNG	5.48	MXM	669
MAX239CWG	5.48	MXM	669
MAX240CMH	9.00	MXM	669
MAX241CWI	5.48	MXM	669
MAX242CPN	3.79	MXM	669
MAX242CWN	3.68	MXM	669
MAX243CPE	3.68	MXM	—
MAX248CQH	13.50	MXM	—
MAX250CPD	5.78	MXM	669
MAX251CPD	5.78	MXM	669
MAX252BCHL	50.15	MXM	—
MAX253CSA	1.93	MXM	—
MAX291CPA	5.58	MXM	—
MAX3222CPN	2.95	MXM	—
MAX3223CPP	2.86	MXM	—
MAX333ACPP	6.85	MXM	670
MAX333CPP	6.17	MXM	—
MAX338CPE	4.60	MXM	670
MAX339CPE	4.60	MXM	670
MAX349CPN	4.87	MXM	670

Mfr.'s Type	Price	Mfr.'s Code	Pag
MAX350CPN	4.87	MXM	670
MAX354CPE	8.17	MXM	670
MAX355CPE	8.17	MXM	670
MAX358CPE	8.18	MXM	—
MAX359CPE	8.18	MXM	—
MAX391CSE	3.64	MXM	670
MAX393CPE	3.64	MXM	670
MAX394CPP	6.85	MXM	670
MAX395CNG	4.87	MXM	670
MAX400CPA	9.00	MXM	671
MAX400CSA	9.90	MXM	671
MAX4051CPE	2.76	MXM	670
MAX4052CPE	2.76	MXM	670
MAX4053CPE	2.76	MXM	670
MAX405CPA	8.42	MXM	—
MAX406ACPA	8.48	MXM	671
MAX406ACSA	8.65	MXM	671
MAX407CPA	5.95	MXM	—
MAX407CSA	5.95	MXM	—
MAX4099CPD	1.87	MXM	670
MAX4100ESA	3.71	MXM	672
MAX4101ESA	3.71	MXM	672
MAX4102ESA	3.71	MXM	672
MAX4103ESA	3.71	MXM	672
MAX4106ESA	7.39	MXM	672
MAX4107ESA	7.39	MXM	672
MAX4108ESA	7.39	MXM	672
MAX4109ESA	7.39	MXM	672
MAX410CPA	4.52	MXM	—
MAX410CSA	4.52	MXM	—
MAX4111CSA	3.06	MXM	672
MAX4112ESA	3.71	MXM	672
MAX4113ESA	3.71	MXM	672
MAX4121CSA	3.77	MXM	672
MAX412CPA	6.38	MXM	671
MAX412CSA	6.38	MXM	671
MAX4141CSD	8.10	MXM	672
MAX4178EPA	4.57	MXM	672
MAX4178ESA	4.57	MXM	672
MAX417CPA	5.63	MXM	—
MAX418CSD	7.51	MXM	—
MAX4221CSE	8.10	MXM	672
MAX4278EPA	4.57	MXM	672
MAX4278ESA	4.57	MXM	672
MAX427CSA	4.17	MXM	—
MAX435CSD	5.13	MXM	—
MAX436CPD	5.13	MXM	672
MAX436CSD	5.13	MXM	672
MAX437CPA	3.42	MXM	—
MAX439CPA	5.53	MXM	—
MAX442CPA	8.42	MXM	672
MAX442CSA	8.42	MXM	672
MAX452CPA	4.64	MXM	—
MAX453CPA	7.12	MXM	672
MAX453CSA	7.84	MXM	672
MAX454CPD	9.50	MXM	672
MAX454CSD	10.46	MXM	672
MAX455CPP	15.83	MXM	—
MAX457CPA	7.50	MXM	—
MAX457CSA	8.25	MXM	—
MAX463CNG	10.78	MXM	—
MAX463CWG	10.79	MXM	—
MAX470CPE	6.38	MXM	672
MAX470CWE	6.38	MXM	672
MAX471CPA	4.59	MXM	671
MAX471CSA	4.46	MXM	671
MAX471ESA	5.51	MXM	—
MAX472CPA	3.76	MXM	671
MAX473CPA	2.58	MXM	—
MAX474CPA	4.00	MXM	671
MAX474CSA	4.12	MXM	671
MAX477EPA	4.57	MXM	672
MAX477ESA	4.57	MXM	672
MAX478CPA	4.73	MXM	671
MAX478CSA	4.73	MXM	671
MAX480CPA	6.44	MXM	672
MAX480CSA	6.83	MXM	672
MAX481CPA	2.06	MXM	669
MAX481ECPA	2.35	MXM	669
MAX481ECSA	2.35	MXM	669
MAX483CPA	2.06	MXM	669
MAX483CSA	2.06	MXM	669
MAX483ECPA	2.35	MXM	669
MAX483ECSA	2.35	MXM	669
MAX485CPA	2.06	MXM	669
MAX485CSA	2.06	MXM	669
MAX485ECPA	2.35	MXM	669
MAX485ECSA	2.35	MXM	669
MAX487CPA	1.99	MXM	669
MAX487ECPA	2.35	MXM	669
MAX487ECSA	2.35	MXM	669
MAX488CPA	1.93	MXM	669
MAX488CSA	1.99	MXM	669
MAX488ECPA	2.35	MXM	669
MAX488ECSA	2.35	MXM	669
MAX489CPD	1.93	MXM	—
MAX489ECPD	2.35	MXM	669
MAX489ECSD	2.35	MXM	669
MAX490CPA	1.99	MXM	669
MAX490CSA	1.93	MXM	—
MAX490ECPA	2.35	MXM	669
MAX490ECSA	2.35	MXM	669
MAX491CPD	1.99	MXM	669

Manufacturer's Code Log

ADI	**Analog Devices Inc.**
AMD	**Advanced Micro Devices**
COL	**Collmer Semiconductors, Inc.**
DLS	**Dallas Semiconductor**
HAR	**Harris Semiconductor**
ITL	**Intel**
LAT	**Lattice**
MXM	**Maxim**
MOS	**Mosel-Vitelic**
MOT	**Motorola Semiconductor**
NSC	**National Semiconductor**
NTE	**NTE Electronics**
PHI	**Philips Semiconductors**
SEM	**Semiconductors Inc.**
SIE	**Siemens Components, Inc**
TIS	**Texas Instruments**
THO	**Thomson Conusumer Electronics**
UNI	**Unitrode Integrated Circuits**
XLX	**Xilinx**

Mfr.'s Type	Price	Mfr.'s Code	Page
MAX491ECPD	2.35	MXM	669
MAX491ECSD	2.35	MXM	669
MAX495CPA	2.58	MXM	672
MAX495CSA	2.66	MXM	672
MAX500ACPE	13.11	MXM	—
MAX504CSD	5.95	MXM	670
MAX506ACPP	15.37	MXM	670
MAX506BCPP	11.82	MXM	—
MAX507ACNG	19.59	MXM	—
MAX508BCPP	15.07	MXM	—
MAX512CPD	5.70	MXM	670
MAX514ACNG	32.30	MXM	670
MAX515CPA	5.31	MXM	—
MAX517BCSA	4.25	MXM	670
MAX518BCSA	4.55	MXM	670
MAX520BCPE	7.00	MXM	670
MAX520BCWE	7.00	MXM	670
MAX522CPA	4.69	MXM	670
MAX522CSA	4.55	MXM	670
MAX528CPP	12.75	MXM	670
MAX532ACPE	21.71	MXM	670
MAX539ACPA	14.38	MXM	—
MAX543ACPA	17.34	MXM	670
MAX543BCPA	14.45	MXM	—
MAX603CSA	3.27	MXM	—
MAX606EUA	6.52	MXM	671
MAX607ESA	5.37	MXM	671
MAX608ESA	3.20	MXM	671
MAX619CSA	2.96	MXM	671
MAX638ACPA	4.58	MXM	—
MAX639CSA	5.65	MXM	—
MAX641ACPA	5.19	MXM	—
MAX649CSA	2.72	MXM	—
MAX660CSA	6.26	MXM	671
MAX662ACSA	3.66	MXM	671
MAX662CSA	3.67	MXM	—
MAX663CPA	3.56	MXM	—
MAX663CSA	3.92	MXM	671
MAX664CSA	4.78	MXM	—
MAX666CPA	4.13	MXM	—
MAX666CSA	4.53	MXM	671
MAX667CPA	4.69	MXM	—
MAX667CSA	5.05	MXM	671
MAX680CPA	3.38	MXM	—
MAX680CSA	3.82	MXM	671
MAX690ACPA	3.18	MXM	670
MAX690ACSA	5.22	MXM	—
MAX690CPA	5.25	MXM	—
MAX691ACPE	5.70	MXM	670
MAX691CPE	5.70	MXM	—
MAX692ACPA	5.12	MXM	670
MAX692ACSA	5.22	MXM	—
MAX695CPE	5.70	MXM	—
MAX696CPE	6.43	MXM	670
MAX697CWE	7.11	MXM	670
MAX700CPA	4.05	MXM	670
MAX700CSA	4.05	MXM	670
MAX701CPA	3.55	MXM	—
MAX703CPA	5.02	MXM	670
MAX705CPA	4.62	MXM	671
MAX705CSA	4.62	MXM	671
MAX706CPA	4.62	MXM	671
MAX706CSA	4.49	MXM	—
MAX706TCSA	5.01	MXM	671
MAX707CPA	4.03	MXM	—
MAX707CSA	4.15	MXM	671
MAX708CPA	4.15	MXM	671
MAX708CSA	4.15	MXM	671
MAX708ESA	5.24	MXM	—
MAX708TCSA	4.48	MXM	671
MAX709LCSA	2.18	MXM	—
MAX712CPE	5.81	MXM	—
MAX713CPE	5.81	MXM	—
MAX713CSE	6.10	MXM	—
MAX7219CNG	7.04	MXM	—
MAX7219CWG	7.04	MXM	—
MAX734CSA	3.85	MXM	—
MAX749CSA	4.64	MXM	—
MAX756CSA	3.48	MXM	671
MAX757CSA	3.48	MXM	671
MAX761CSA	4.14	MXM	671
MAX774CSA	3.75	MXM	—
MAX782CBX	10.57	MXM	671
MAX791CPE	6.15	MXM	671
MAX805LCPA	5.04	MXM	671
MAX810MEUR-T	1.13	MXM	—
MAX813LCPA	3.14	MXM	671
MAX813LCSA	3.14	MXM	671
MAX828EUK-T	3.02	MXM	671
MAX829EUK-T	3.02	MXM	671
MAX856CSA	2.75	MXM	—
MAX858CSA	2.75	MXM	—
MAX860CUA	2.82	MXM	671
MAX861CSA	2.56	MXM	671
MAX864EEE	2.61	MXM	671
MAX865EUA	2.27	MXM	671
MAX883CSA	2.74	MXM	—
MAX8863REUK-T	1.11	MXM	671
MAX8863SEUK-T	1.11	MXM	671
MAX8863TEUK-T	1.11	MXM	671
MAX8864REUK-T	1.11	MXM	671
MAX8864SEUK-T	1.11	MXM	671
MAX8864TEUK-T	1.11	MXM	671
MAX8865REUA	2.21	MXM	671
MAX8865SEUA	3.00	MXM	671
MAX8865TEUA	3.00	MXM	671
MAX8866EUA	2.21	MXM	671
MAX8866SEUA	3.00	MXM	671
MAX8866TEUA	3.00	MXM	671
MAX901BCPE	9.35	MXM	672
MAX901BCSE	9.35	MXM	672
MAX903CPA	5.95	MXM	672
MAX903CSA	6.04	MXM	672
MAX907CPA	3.33	MXM	672
MAX907CSA	3.23	MXM	672
MAX908CPD	5.61	MXM	672
MAX908CSD	5.61	MXM	672
MAX909CPA	2.84	MXM	—
MAX909CSA	2.84	MXM	—
MAX912CSE	7.36	MXM	—
MAX913CPA	4.81	MXM	672
MAX913CSA	4.95	MXM	672
MAX921CPA	2.98	MXM	672
MAX921CSA	3.07	MXM	672
MAX921CUA	2.74	MXM	672
MAX922CPA	2.84	MXM	672
MAX922CSA	2.93	MXM	672
MAX922CUA	2.60	MXM	672
MAX923CPA	3.69	MXM	672
MAX923CSA	3.69	MXM	672
MAX924CPE	4.38	MXM	672
MAX924CSE	4.38	MXM	672
MAX931CPA	1.85	MXM	672
MAX931CSA	1.85	MXM	672
MAX931CUA	2.18	MXM	672
MAX932CPA	2.38	MXM	672
MAX932CSA	2.38	MXM	672
MAX932CUA	2.18	MXM	672
MAX933CPA	2.38	MXM	672
MAX933CSA	2.38	MXM	672
MAX933CUA	2.18	MXM	672
MAX934CPE	2.47	MXM	672
MAX934CSE	2.47	MXM	672
MAX941CPA	2.17	MXM	672
MAX941CSA	2.24	MXM	672
MAX941CUA	2.38	MXM	672
MAX942CPA	2.39	MXM	672
MAX942CSA	2.32	MXM	672
MAX942CUA	2.57	MXM	672
MAX944CPD	3.99	MXM	672
MAX944CSD	3.87	MXM	672
MAX971CPA	2.98	MXM	672
MAX971EUA	2.74	MXM	672
MAX972CPA	1.85	MXM	672
MAX972CSA	1.85	MXM	672
MAX972EUA	1.70	MXM	672
MAX973CPA	3.69	MXM	672
MAX973CSA	3.69	MXM	672
MAX973EUA	3.77	MXM	672
MAX974CPE	4.25	MXM	672
MAX974CSE	4.25	MXM	672
MAX981CPA	1.85	MXM	672
MAX981CSA	1.85	MXM	672
MAX981EUA	1.70	MXM	672
MAX982CPA	2.38	MXM	672
MAX982CSA	2.38	MXM	672
MAX982EUA	2.18	MXM	672
MAX983CPA	2.38	MXM	672
MAX983CSA	2.38	MXM	672
MAX983EUA	2.18	MXM	672
MAX984CPE	2.47	MXM	672
MAX984CSA	2.47	MXM	672
MAXL001	7.22	MXM	—
MBD101	0.36	MOT	701
MBD301	0.40	MOT	701
MBD701	0.40	MOT	701
MBR0520LT1	0.25	MOT	705
MBR0530T1	0.25	MOT	705
MBR0540T1	0.25	MOT	705
MBR10100	1.80	MOT	705
MBR1045	1.40	MOT	705
MBR1060	1.40	MOT	705
MBR1100	0.56	MOT	705
MBR1545CT	1.20	MOT	705
MBR160	0.47	MOT	705
MBR1635	1.38	MOT	—
MBR1645	1.38	MOT	705
MBR20100CT	3.00	MOT	705
MBR20200CT	3.50	MOT	705
MBR2030CTL	2.70	MOT	705
MBR2045CT	1.54	MOT	705
MBR2060CT	2.00	MOT	705
MBR2515L	3.30	MOT	705
MBR2535CTL	2.90	MOT	705
MBR2545CT	2.10	MOT	705
MBR3045PT	4.00	MOT	705
MBR3045ST	2.30	MOT	705
MBR3100	0.93	MOT	705
MBR340	0.86	MOT	705
MBR360	0.73	MOT	705
MBR4045PT	4.40	MOT	705
MBR4045WT	4.72	MOT	705
MBR5025L	5.56	MOT	705
MBR6045PT	5.60	MOT	705
MBR6045WT	5.60	MOT	705
MBR745	1.10	MOT	705
MBRB1545CT	2.20	MOT	705
MBRB20100CT	3.90	MOT	705
MBRB20200CT	3.90	MOT	705
MBRB2515L	3.80	MOT	705
MBRB2535CTL	3.36	MOT	705
MBRB2545CT	3.20	MOT	705
MBRB3030CT	3.30	MOT	705
MBRB3030CTL	3.60	MOT	705
MBRB4030	3.60	MOT	705
MBRD1035CTL	1.30	MOT	705
MBRD640CT	1.38	MOT	705
MBRD660CT	1.38	MOT	705
MBRD835L	1.10	MOT	705
MBRP20030CTL	39.00	MOT	705
MBRP20045CT	35.10	MOT	705
MBRP20060CT	37.70	MOT	705
MBRP30045CT	39.00	MOT	705
MBRP30060CT	41.60	MOT	705
MBRP60035CTL	70.00	MOT	705
MBRS1100T3	0.78	MOT	705
MBRS130LT3	0.75	MOT	705
MBRS140T3	0.65	MOT	705
MBRS340T3	0.78	MOT	705
MBRS360T3	0.78	MOT	705
MBS4991	0.28	MOT	707
MBS4992	0.88	MOT	707
MBS4993	0.46	MOT	707
MC100E016FN	25.04	MOT	682
MC100E101FN	20.40	MOT	682
MC100E104FN	20.40	MOT	682
MC100E107FN	20.40	MOT	682
MC100E111FN	24.36	MOT	682
MC100E112FN	20.40	MOT	682
MC100E116FN	20.40	MOT	682
MC100E122FN	20.40	MOT	682
MC100E131FN	24.39	MOT	682
MC100E141FN	28.56	MOT	682
MC100E142FN	32.46	MOT	682
MC100E143FN	32.46	MOT	682
MC100E151FN	28.56	MOT	682
MC100E156FN	28.56	MOT	682
MC100E158FN	24.39	MOT	682
MC100E163FN	24.39	MOT	682
MC100E167FN	28.56	MOT	682
MC100E195FN	32.46	MOT	682
MC100E416FN	20.40	MOT	682
MC100E445FN	32.46	MOT	682
MC100E452FN	28.56	MOT	682
MC100E457FN	24.39	MOT	682
MC100EL01D	9.28	MOT	—
MC100EL04D	9.28	MOT	—
MC100EL05D	9.28	MOT	683
MC100EL07D	9.28	MOT	683
MC100EL11D	9.28	MOT	683
MC100EL12D	9.28	MOT	683
MC100EL15D	9.28	MOT	683
MC100EL16D	9.28	MOT	683
MC100EL31D	9.28	MOT	683
MC100EL32D	9.28	MOT	683
MC100EL33D	9.28	MOT	683
MC100EL34D	9.28	MOT	683
MC100EL35D	9.28	MOT	683
MC100EL51D	9.28	MOT	683
MC100EL52D	9.28	MOT	683
MC100EL57D	9.28	MOT	683
MC100EL58D	9.28	MOT	683
MC100ELT21D	7.55	MOT	683
MC100ELT22D	7.55	MOT	683
MC100ELT23D	7.55	MOT	683
MC100ELT25D	7.55	MOT	683
MC100H600FN	15.30	MOT	683
MC100H602FN	17.27	MOT	683
MC100H640FN	16.14	MOT	683
MC100H641FN	11.13	MOT	683
MC100H643FN	20.87	MOT	683
MC10101P	0.82	MOT	683
MC10102FN	2.21	MOT	683
MC10102P	0.82	MOT	683
MC10103P	0.82	MOT	683
MC10104P	0.82	MOT	683
MC10105P	0.82	MOT	683
MC10107P	0.91	MOT	683
MC10109P	0.91	MOT	683
MC10113P	0.97	MOT	683
MC10114FN	2.30	MOT	683
MC10114P	0.97	MOT	683
MC10115FN	2.30	MOT	683
MC10115P	0.90	MOT	683
MC10116FN	2.30	MOT	683
MC10116P	0.90	MOT	683
MC10123P	1.02	MOT	683
MC10124FN	3.40	MOT	683
MC10124L	2.53	MOT	—
MC10124P	2.14	MOT	683
MC10125FN	3.40	MOT	683
MC10125L	2.53	MOT	—
MC10125P	2.14	MOT	683
MC10131FN	3.79	MOT	683
MC10131P	2.42	MOT	683
MC10135P	2.92	MOT	683
MC10136FN	15.73	MOT	683
MC10136P	11.34	MOT	683
MC10137P	11.97	MOT	683
MC10138P	8.81	MOT	683
MC10158P	3.08	MOT	683
MC10161P	3.08	MOT	683
MC10164P	3.08	MOT	683
MC10174P	3.08	MOT	683
MC10176P	4.46	MOT	683
MC10178P	8.18	MOT	683
MC10188P	2.77	MOT	—
MC10192FN	5.92	MOT	683
MC10192P	4.53	MOT	683
MC10198FN	20.94	MOT	683
MC10198P	17.81	MOT	683
MC10216FN	2.99	MOT	683
MC10216P	1.60	MOT	683
MC10231P	4.79	MOT	683
MC10319DW	24.73	MOT	687
MC10319P	24.54	MOT	687
MC10E016FN	25.04	MOT	682
MC10E101FN	20.40	MOT	682
MC10E104FN	20.40	MOT	682
MC10E107FN	20.40	MOT	682
MC10E111FN	24.36	MOT	682
MC10E112FN	20.40	MOT	682
MC10E116FN	20.40	MOT	—
MC10E131FN	24.39	MOT	682
MC10E136FN	32.46	MOT	682
MC10E141FN	32.46	MOT	682
MC10E142FN	32.46	MOT	682
MC10E143FN	32.46	MOT	682
MC10E151FN	28.56	MOT	682
MC10E158FN	24.39	MOT	682
MC10E164FN	24.39	MOT	682
MC10E1651FN	48.87	MOT	682
MC10E166FN	28.56	MOT	682
MC10E171FN	24.39	MOT	682
MC10E195FN	32.46	MOT	682
MC10E416FN	20.40	MOT	682
MC10E431FN	24.39	MOT	682
MC10E457FN	24.39	MOT	682
MC10EL01D	11.14	MOT	682
MC10EL04D	9.28	MOT	682
MC10EL05D	9.28	MOT	683
MC10EL07D	9.28	MOT	683
MC10EL11D	9.28	MOT	683
MC10EL12D	9.28	MOT	683
MC10EL15D	9.28	MOT	683
MC10EL16D	9.28	MOT	683
MC10EL31D	9.28	MOT	683
MC10EL32D	9.28	MOT	683
MC10EL33D	9.28	MOT	683
MC10EL34D	9.28	MOT	683
MC10EL35D	9.28	MOT	683
MC10EL51D	9.28	MOT	683
MC10EL52D	9.28	MOT	683
MC10EL57D	9.28	MOT	683
MC10EL58D	9.28	MOT	683
MC10EL89D	9.28	MOT	683
MC10ELT22D	7.55	MOT	683
MC10ELT25D	7.55	MOT	683
MC10H016FN	19.51	MOT	683
MC10H016P	14.47	MOT	683
MC10H101FN	2.36	MOT	683
MC10H101P	1.34	MOT	683
MC10H102FN	2.36	MOT	683
MC10H102P	1.34	MOT	683
MC10H103FN	2.36	MOT	683
MC10H103P	1.34	MOT	683

Mfr.'s Type	Price	Mfr.'s Code	Page
MC10H104FN	2.36	MOT	683
MC10H104P	1.34	MOT	683
MC10H105FN	2.36	MOT	683
MC10H105P	1.34	MOT	683
MC10H107FN	2.36	MOT	683
MC10H107P	1.41	MOT	683
MC10H109FN	2.36	MOT	683
MC10H109P	1.41	MOT	683
MC10H113FN	2.36	MOT	683
MC10H113P	1.41	MOT	683
MC10H115FN	2.36	MOT	683
MC10H115P	1.41	MOT	683
MC10H116FN	2.36	MOT	683
MC10H116P	1.41	MOT	683
MC10H117FN	2.36	MOT	683
MC10H117P	1.41	MOT	683
MC10H123FN	2.82	MOT	683
MC10H123P	1.62	MOT	683
MC10H124FN	4.51	MOT	683
MC10H124P	3.25	MOT	683
MC10H125FN	4.51	MOT	683
MC10H125P	3.25	MOT	683
MC10H131FN	4.84	MOT	683
MC10H131P	2.82	MOT	683
MC10H135FN	5.66	MOT	683
MC10H135P	4.44	MOT	683
MC10H136FN	19.38	MOT	683
MC10H136P	14.47	MOT	683
MC10H141FN	7.76	MOT	683
MC10H141P	4.44	MOT	683
MC10H158FN	4.10	MOT	683
MC10H158P	3.08	MOT	683
MC10H164FN	4.10	MOT	683
MC10H164P	3.08	MOT	683
MC10H174FN	4.10	MOT	683
MC10H174P	3.08	MOT	683
MC10H176FN	6.98	MOT	683
MC10H176P	4.46	MOT	683
MC10H186P	6.72	MOT	683
MC10H188FN	8.26	MOT	683
MC10H188P	4.46	MOT	683
MC10H189P	4.46	MOT	683
MC10H210P	2.17	MOT	683
MC10H350FN	15.60	MOT	683
MC10H350P	11.21	MOT	683
MC10H351FN	15.60	MOT	683
MC10H351P	11.21	MOT	683
MC10H424FN	14.36	MOT	683
MC10H424P	11.21	MOT	683
MC10H600FN	11.28	MOT	683
MC10H601FN	11.28	MOT	683
MC10H602FN	12.73	MOT	683
MC10H603FN	12.73	MOT	683
MC10H604FN	12.73	MOT	683
MC10H605FN	12.73	MOT	683
MC10H607FN	12.73	MOT	683
MC10H640FN	16.14	MOT	683
MC10H641FN	11.13	MOT	683
MC10H643FN	20.87	MOT	683
MC10H645FN	9.09	MOT	683
MC10H680FN	31.72	MOT	683
MC12002P	7.76	MOT	684
MC12009FN	15.53	MOT	684
MC12009P	14.47	MOT	684
MC12011FN	15.53	MOT	684
MC12011P	13.14	MOT	684
MC12013D	15.53	MOT	684
MC12013FN	15.53	MOT	684
MC12015D	8.81	MOT	684
MC12015P	8.81	MOT	684
MC12016D	8.81	MOT	684
MC12016P	8.81	MOT	684
MC12017D	8.81	MOT	684
MC12017P	8.81	MOT	684
MC12018P	21.15	MOT	684
MC12019D	9.44	MOT	684
MC12019P	8.81	MOT	684
MC12022AD	5.96	MOT	684
MC12022AP	5.96	MOT	684
MC12028AD	7.44	MOT	684
MC12028AP	7.44	MOT	684
MC12034AD	8.16	MOT	684
MC12040FN	13.47	MOT	684
MC12040P	11.54	MOT	684
MC12061P	5.51	MOT	684
MC12073P	8.81	MOT	684
MC12079D	5.96	MOT	684
MC12079P	5.96	MOT	684
MC13055D	3.58	MOT	685
MC13055P	3.58	MOT	685
MC13077P	5.10	MOT	686
MC13135DW	3.62	MOT	686
MC13136DW	3.62	MOT	686
MC13155D	4.42	MOT	685
MC13156DW	5.18	MOT	685
MC13175D	3.90	MOT	686
MC13176D	3.90	MOT	686
MC1350D	1.49	MOT	688
MC1350P	1.49	MOT	688
MC1357P	1.01	MOT	686
MC1374P	1.90	MOT	686
MC1377DW	3.56	MOT	686
MC1377P	3.38	MOT	686

Mfr.'s Type	Price	Mfr.'s Code	Page
MC1378FN	13.52	MOT	686
MC1391P	0.69	MOT	686
MC14001BCP	0.28	MOT	679
MC14001BD	0.30	MOT	679
MC14001UBCP	0.28	MOT	—
MC14001UBD	0.30	MOT	679
MC14002BCP	0.28	MOT	679
MC14006BCP	0.65	MOT	679
MC14007UBCP	0.28	MOT	679
MC14007UBD	0.30	MOT	679
MC14008BCP	0.65	MOT	679
MC14011BCL	0.84	MOT	—
MC14011BCP	0.28	MOT	679
MC14011UBCP	0.28	MOT	679
MC14011UBD	0.30	MOT	679
MC14012BCP	0.28	MOT	679
MC14013BCL	0.93	MOT	—
MC14013BCP	0.30	MOT	679
MC14013BD	0.32	MOT	679
MC14014BCP	0.71	MOT	679
MC14015BCP	0.64	MOT	679
MC14015BD	0.65	MOT	679
MC14016BCP	0.38	MOT	679
MC14016BD	0.39	MOT	679
MC14017BCL	1.86	MOT	—
MC14017BCP	0.64	MOT	679
MC14017BD	0.65	MOT	679
MC14018BCP	0.71	MOT	679
MC14020BCP	0.62	MOT	679
MC14020BD	0.64	MOT	679
MC14021BCP	0.62	MOT	679
MC14021BD	0.64	MOT	679
MC14022BCP	0.62	MOT	679
MC14023BCP	0.28	MOT	679
MC14023BD	0,30	MOT	679
MC14024BCP	0.45	MOT	679
MC14024BD	0.47	MOT	679
MC14025BCP	0.28	MOT	679
MC14027BCP	0.34	MOT	679
MC14027BD	0.36	MOT	679
MC14028BCP	0.62	MOT	679
MC14028BD	0.64	MOT	679
MC14029BCP	0.62	MOT	679
MC14035BCP	0.67	MOT	679
MC1403D	1.67	MOT	690
MC14040BCP	0.62	MOT	679
MC14040BD	0.64	MOT	679
MC14042BCP	0.47	MOT	679
MC14043BCP	0.62	MOT	679
MC14043BD	0.64	MOT	679
MC14044BCP	0.62	MOT	679
MC14046BCP	0.71	MOT	679
MC14046BDW	0.73	MOT	679
MC14049BCP	0.34	MOT	679
MC14049BD	0.36	MOT	679
MC14049UBCL	1.25	MOT	—
MC14049UBCP	0.34	MOT	679
MC14049UBD	0.36	MOT	679
MC14050BCP	0.38	MOT	679
MC14050BD	0.39	MOT	679
MC14051BCP	0.52	MOT	679
MC14051BD	0.54	MOT	679
MC14052BCP	0.52	MOT	679
MC14052BD	0.54	MOT	679
MC14053BCP	0.52	MOT	679
MC14053BD	0.54	MOT	679
MC14060BCP	0.60	MOT	679
MC14060BD	0.62	MOT	679
MC14066BCL	0.78	MOT	—
MC14066BCP	0.38	MOT	679
MC14066BD	0.39	MOT	679
MC14067BCP	1.77	MOT	679
MC14068BCP	0.28	MOT	679
MC14069UBCP	0.28	MOT	679
MC14069UBD	0.30	MOT	679
MC14070BCP	0.28	MOT	679
MC14070BD	0.30	MOT	679
MC14071BCP	0.28	MOT	679
MC14071BD	0.30	MOT	679
MC14072BCP	0.28	MOT	679
MC14073BCP	0.28	MOT	679
MC14075BCP	0.28	MOT	679
MC14076BCP	0.65	MOT	679
MC14077BCP	0.28	MOT	679
MC14078BCP	0.28	MOT	679
MC14081BCL	0.84	MOT	—
MC14081BCP	0.28	MOT	679
MC14081BD	0.30	MOT	679
MC14082BCP	0.28	MOT	679
MC14093BCL	0.84	MOT	—
MC14093BCP	0.36	MOT	679
MC14093BD	0.38	MOT	679
MC14094BCP	0.56	MOT	679
MC14094BD	0.58	MOT	680
MC14099BCP	0.71	MOT	679
MC14099BDW	0.75	MOT	679
MC14106BCP	0.38	MOT	679
MC14106BD	0.39	MOT	679
MC14161BCP	0.64	MOT	679
MC14174BCP	0.56	MOT	679
MC14175BCP	0.56	MOT	679
MC144110DW	4.46	MOT	687
MC144110P	4.46	MOT	687

Mfr.'s Type	Price	Mfr.'s Code	Page
MC144111DW	3.29	MOT	687
MC144111P	3.29	MOT	687
MC14433P	8.00	MOT	687
MC14443P	3.68	MOT	687
MC14489DW	3.45	MOT	685
MC14489P	3.45	MOT	685
MC14490DW	4.81	MOT	679
MC14490P	4.81	MOT	679
MC14495P1	2.69	MOT	685
MC14499P	3.34	MOT	685
MC145000P	6.22	MOT	685
MC14500BCP	6.88	MOT	679
MC145026D	1.30	MOT	684
MC145026P	1.30	MOT	684
MC145027DW	1.86	MOT	684
MC145027P	1.86	MOT	684
MC145028P	1.86	MOT	684
MC14502BCP	0.65	MOT	679
MC14503BCP	0.54	MOT	679
MC14503BD	0.47	MOT	679
MC145040P	2.82	MOT	—
MC145041P	2.82	MOT	686
MC14504BCP	1.21	MOT	679
MC14504BD	1.30	MOT	679
MC145050P	3.25	MOT	686
MC145051DW	3.25	MOT	686
MC145051P	3.25	MOT	686
MC145053D	2.77	MOT	686
MC145053P	2.77	MOT	686
MC14508BCP	1.82	MOT	679
MC145106DW	3.36	MOT	684
MC145106P	3.36	MOT	684
MC14510BCP	0.73	MOT	679
MC14511BCP	0.71	MOT	685
MC14512BCP	0.65	MOT	679
MC14513BCP	2.27	MOT	685
MC14514BCP	1.27	MOT	679
MC145151DW2	5.57	MOT	684
MC145151P2	5.57	MOT	684
MC145152DW2	7.24	MOT	684
MC145152P2	7.24	MOT	684
MC145155P2	3.90	MOT	684
MC145156DW2	4.36	MOT	684
MC145156P2	4.36	MOT	684
MC145157DW2	4.46	MOT	684
MC145157P2	4.46	MOT	684
MC145158DW2	4.46	MOT	684
MC145158P2	4.46	MOT	684
MC14515BCP	1.27	MOT	679
MC145162P	1.95	MOT	684
MC14516BCP	0.62	MOT	679
MC14517BCP	1.36	MOT	679
MC14517BDW	1.38	MOT	679
MC14518BCP	0.71	MOT	679
MC145191F	3.71	MOT	684
MC14519BCP	0.47	MOT	679
MC14520BCP	0.65	MOT	679
MC14521BCP	0.64	MOT	679
MC14521BD	0.64	MOT	679
MC14522BCP	0.90	MOT	679
MC14526BCP	0.84	MOT	679
MC14527BCP	0.75	MOT	679
MC14528BCP	0.75	MOT	679
MC14529BCP	1.02	MOT	679
MC14529BD	1.04	MOT	679
MC14532BCP	0.75	MOT	679
MC14534BCP	3.25	MOT	679
MC14536BCP	1.19	MOT	679
MC14536BDW	1.21	MOT	679
MC14538BCL	1.51	MOT	—
MC14538BCP	0.84	MOT	679
MC14538BDW	0.86	MOT	679
MC14539BCP	0.75	MOT	679
MC145403DW	2.14	MOT	685
MC145403P	2.14	MOT	685
MC145404DW	2.14	MOT	685
MC145404P	2.14	MOT	685
MC145406D	1.52	PHI	722
MC145406DW	1.58	MOT	685
MC145406N	1.34	PHI	722
MC145406P	1.58	MOT	685
MC145407DW	2.88	MOT	685
MC145407P	2.88	MOT	685
MC145408DW	2.36	MOT	—
MC14541BCP	0.54	MOT	679
MC14541BD	0.54	MOT	679
MC14543BCP	0.64	MOT	685
MC14543BD	0.65	MOT	679
MC14544BCP	3.71	MOT	685
MC145453FN	3.96	MOT	685
MC145453P	3.44	MOT	685
MC145475DW	12.17	MOT	684
MC14547BCP	2.10	MOT	685
MC14549BCP	9.50	MOT	679
MC14551BCP	1.82	MOT	679
MC14551BD	1.82	MOT	679
MC14553BCP	4.96	MOT	679
MC14555BCP	0.49	MOT	679
MC14556BCP	0.50	MOT	679
MC14557BCP	2.14	MOT	679
MC14557BDW	2.14	MOT	679
MC14559BCP	9.50	MOT	679
MC1455P1	0.39	MOT	—

Mfr.'s Type	Price	Mfr.'s Code	Page
MC14560BCP	1.95	MOT	679
MC14562BCP	6.37	MOT	679
MC14566BCP	1.43	MOT	679
MC14568BCP	5.44	MOT	679
MC14569BCP	2.42	MOT	679
MC14572UBCP	0.62	MOT	679
MC14573D	2.69	MOT	688
MC14573P	2.69	MOT	688
MC14575D	2.69	MOT	688
MC14575P	2.69	MOT	688
MC14577CP	0.92	MOT	688
MC14583BCP	1.02	MOT	679
MC14584BCL	0.82	MOT	—
MC14584BCP	0.47	MOT	679
MC14584BD	0.47	MOT	679
MC14585BCP	0.71	MOT	679
MC1458CP1	0.43	MOT	687
MC1458D	0.52	PHI	721
MC1458D	0.72	TIS	733
MC1458N	0.35	PHI	721
MC1458P	0.78	TIS	733
MC1458P1	0.49	MOT	687
MC14599BCP	4.68	MOT	679
MC1488D	0.60	MOT	685
MC1488N	0.46	TIS	731
MC1488P	0.60	MOT	685
MC1489AD	0.60	MOT	684
MC1489AN	0.46	TIS	731
MC1489AP	0.60	MOT	684
MC1489D	0.60	MOT	684
MC1489N	0.46	TIS	731
MC1489P	0.60	MOT	684
MC1490P	2.10	MOT	688
MC1496D	0.75	MOT	686
MC1496P	0.75	MOT	686
MC14C88BD	1.27	MOT	685
MC14C88BP	1.27	MOT	685
MC14C89BP	1.27	MOT	684
MC14LC5472FU	43.12	MOT	684
MC1558P	1.36	TIS	—
MC1648D	3.96	MOT	683
MC1648P	3.92	MOT	683
MC1658D	4.98	MOT	—
MC1658P	4.98	MOT	683
MC1723CP	0.47	MOT	689
MC1776CP1	0.78	MOT	687
MC26LS30D	1.36	MOT	685
MC26LS31D	0.80	MOT	685
MC26LS32D	0.80	MOT	684
MC2833D	0.78	MOT	686
MC2833P	0.78	MOT	686
MC3302P	0.56	MOT	688
MC3303P	0.54	MOT	688
MC33060AD	1.93	MOT	690
MC33060AP	1.93	MOT	690
MC33063AD	2.21	MOT	690
MC33063AP1	2.21	MOT	690
MC33064D-5	1.21	MOT	690
MC33064P-5	1.12	MOT	690
MC33071AP	1.12	MOT	687
MC33071P	0.97	MOT	687
MC33072AP	1.49	MOT	687
MC33072P	0.99	MOT	687
MC33074AP	1.88	MOT	688
MC33074P	1.60	MOT	688
MC33077P	1.66	MOT	687
MC33078P	1.02	MOT	687
MC33079P	1.77	MOT	690
MC33129D	3.44	MOT	690
MC33129P	3.44	MOT	—
MC33160P	2.14	MOT	690
MC33164D-3	1.21	MOT	690
MC33164D-5	1.21	MOT	690
MC33164P-3	1.17	MOT	690
MC33164P-5	1.17	MOT	690
MC33166T	4.49	MOT	690
MC33171P	1.47	MOT	687
MC33172P	1.60	MOT	687
MC33174P	2.42	MOT	688
MC33178P	1.34	MOT	687
MC33179P	1.88	MOT	688
MC33182P	1.36	MOT	687
MC33202D	1.58	MOT	687
MC33202P	1.58	MOT	687
MC33272AP	1.67	MOT	—
MC33284P	2.73	MOT	688
MC3335DW	2.27	MOT	686
MC3356DW	1.78	MOT	685
MC3356P	1.78	MOT	685
MC3357P	1.27	MOT	—
MC3358P1	0.93	MOT	687
MC3359P	1.71	MOT	686
MC3362P	3.19	MOT	686
MC3363DW	4.51	MOT	686
MC3367DW	3.12	MOT	686
MC3371D	2.64	MOT	686
MC3372D	2.64	MOT	686
MC3373P	1.21	MOT	—
MC34004BP	1.01	MOT	688
MC34004P	0.84	MOT	688
MC3403N	0.41	TIS	733
MC3403P	0.45	MOT	687
MC34050D	1.47	MOT	—

Manufacturer's Code Log

ADI	Analog Devices Inc.
AMD	Advanced Micro Devices
COL	Collmer Semiconductors, Inc.
DLS	Dallas Semiconductor
HAR	Harris Semiconductor
ITL	Intel
LAT	Lattice
MXM	Maxim
MOS	Mosel-Vitelic
MOT	Motorola Semiconductor
NSC	National Semiconductor
NTE	NTE Electronics
PHI	Philips Semiconductors
SEM	Semiconductors Inc.
SIE	Siemens Components, Inc
TIS	Texas Instruments
THO	Thomson Conusumer Electronics
UNI	Unitrode Integrated Circuits
XLX	Xilinx

Mfr.'s Type	Price	Mfr.'s Code	Page
MC34050P	1.47	MOT	685
MC34051D	1.47	MOT	685
MC34051P	1.47	MOT	685
MC3405P	0.99	MOT	688
MC34060AD	1.62	MOT	690
MC34060AP	1.62	MOT	690
MC34063AD	1.84	MOT	690
MC34063AP1	1.84	MOT	690
MC34064D-5	1.06	MOT	690
MC34064P-5	1.02	MOT	690
MC34071P	0.80	MOT	687
MC34072AP	1.19	MOT	687
MC34072P	0.99	MOT	687
MC34074AP	1.47	MOT	688
MC34074P	1.34	MOT	688
MC34082P	1.27	MOT	687
MC34084P	2.12	MOT	688
MC34129D	2.86	MOT	690
MC34129P	2.86	MOT	690
MC34160P	1.78	MOT	690
MC34163P	3.12	MOT	690
MC34164D-3	1.06	MOT	690
MC34164D-5	1.06	MOT	690
MC34164P-3	1.02	MOT	690
MC34164P-5	1.02	MOT	690
MC34165P	2.27	MOT	690
MC34166T	3.75	MOT	690
MC34167T	4.12	MOT	690
MC34181P	0.97	MOT	687
MC34182P	1.30	MOT	687
MC34184P	2.03	MOT	688
MC3423P1	0.78	MOT	—
MC34261P	1.84	MOT	690
MC34262P	2.21	MOT	690
MC3458P1	0.93	MOT	687
MC3476P1	0.73	MOT	687
MC3479P	4.03	MOT	—
MC3486D	0.95	MOT	684
MC3486D	1.03	TIS	731
MC3486N	1.03	TIS	731
MC3486P	0.95	MOT	684
MC3487D	0.95	MOT	—
MC3487D	1.00	TIS	731
MC3487N	1.13	TIS	731
MC3487P	0.95	MOT	685
MC3488AD	1.47	MOT	685
MC3488AP1	1.47	MOT	685
MC4018P	41.73	MOT	—
MC4024P	10.30	MOT	684
MC4044D	15.42	MOT	—
MC4044P	15.21	MOT	684
MC44011FN	21.05	MOT	686
MC44140P	3.08	MOT	686
MC44144P	1.69	MOT	686
MC44145D	6.25	MOT	686
MC44301DW	6.12	MOT	686
MC44301P	5.94	MOT	686
MC44602P2	2.32	MOT	690
MC4558CP1	0.78	MOT	687
MC4741CP	0.56	MOT	687
MC672P	12.08	MOT	—
MC68020RC16E	221.62	MOT	676
MC68020RC20E	238.68	MOT	676
MC68020RC25E	254.45	MOT	676
MC68020RC33E	292.10	MOT	676
MC68020RP16E	95.88	MOT	676
MC68020RP20E	98.30	MOT	676
MC68020RP25E	102.00	MOT	676
MC6802P	5.10	MOT	—
MC68030FE16C	59.13	MOT	676
MC68030FE20C	59.13	MOT	676
MC68030FE25C	76.89	MOT	676
MC68030RC16C	116.94	MOT	676
MC68030RC20C	116.94	MOT	676
MC68030RC25C	133.31	MOT	676
MC68030RC33C	133.31	MOT	676
MC68030RC40C	146.17	MOT	676
MC68030RC50C	163.72	MOT	676
MC68040FE25	183.60	MOT	676
MC68040FE33	222.62	MOT	676
MC68040FE40	367.19	MOT	676
MC68040RC25	236.98	MOT	676
MC68040RC33	274.39	MOT	676
MC68040RC40	424.05	MOT	676
MC68302FC16C	58.05	MOT	677
MC68302FC20C	62.69	MOT	677
MC68302FC25C	78.36	MOT	677
MC68302RC16C	157.86	MOT	677
MC68302RC20C	197.33	MOT	677
MC68302RC25C	246.64	MOT	677
MC68306FC16	25.36	MOT	677
MC68306PV16	25.36	MOT	677
MC68331CFC16	29.01	MOT	679
MC68332ACFC16	34.54	MOT	679
MC68340PV16C	29.58	MOT	677
MC68340PV25C	41.44	MOT	677
MC68349FT16A	82.90	MOT	677
MC68349FT25A	99.84	MOT	677
MC68360FE25C	98.00	MOT	677
MC68360RC25C	132.15	MOT	677
MC68882FN16A	62.87	MOT	676
MC68882FN20A	69.55	MOT	676
MC68882FN25A	75.52	MOT	676
MC68882FN33A	81.73	MOT	676
MC68882FN40A	125.89	MOT	676
MC68882RC16A	114.02	MOT	676
MC68882RC20A	114.02	MOT	676
MC68882RC25A	127.95	MOT	676
MC68882RC33A	127.95	MOT	676
MC68882RC40A	164.21	MOT	676
MC68882RC50A	176.78	MOT	676
MC68B21CP	2.97	MOT	—
MC68EC000FN10	10.11	MOT	676
MC68EC000FN12	12.52	MOT	676
MC68EC000FN16	15.77	MOT	676
MC68EC000FN20	18.92	MOT	676
MC68EC000FN8	8.07	MOT	676
MC68EC000FU10	10.06	MOT	676
MC68EC000FU12	12.34	MOT	676
MC68EC000FU16	15.42	MOT	676
MC68EC000FU20	19.27	MOT	676
MC68EC000FU8	8.11	MOT	676
MC68EC020FG16	28.03	MOT	676
MC68EC020FG25	31.38	MOT	676
MC68EC020RP16	73.82	MOT	676
MC68EC020RP25	88.65	MOT	676
MC68EC030FE40C	52.50	MOT	676
MC68EC030RP25C	62.83	MOT	676
MC68EC030RP40C	81.30	MOT	676
MC68EC040FE20	77.73	MOT	677
MC68EC040FE25	77.73	MOT	677
MC68EC040FE33	122.74	MOT	677
MC68EC040RC20	112.59	MOT	677
MC68EC040RC25	112.59	MOT	677
MC68EC040RC33	158.06	MOT	677
MC68EN360FE25C	107.29	MOT	677
MC68EN360RC25C	165.07	MOT	677
MC68HC000FN10	10.13	MOT	675
MC68HC000FN12	11.54	MOT	675
MC68HC000FN16	14.45	MOT	675
MC68HC000FN20	19.01	MOT	675
MC68HC000FN8	8.65	MOT	675
MC68HC000P10	12.15	MOT	675
MC68HC000P12	13.64	MOT	675
MC68HC000P16	16.70	MOT	675
MC68HC000P8	10.67	MOT	675
MC68HC11A0FN	12.13	MOT	678
MC68HC11A0P	14.36	MOT	678
MC68HC11A1FN	12.52	MOT	678
MC68HC11A1P	14.75	MOT	678
MC68HC11D0FB	7.24	MOT	678
MC68HC11D0FN	6.62	MOT	678
MC68HC11D0P	6.62	MOT	678
MC68HC11E0FN	13.80	MOT	678
MC68HC11E1FN	14.28	MOT	678
MC68HC11F1CFN3	16.99	MOT	678
MC68HC11K1CFN3	22.26	MOT	678
MC68HC11L1CFN2	18.09	MOT	678
MC68HC16Z1CFC16	26.14	MOT	679
MC68HC705B16CFN	15.77	MOT	677
MC68HC705B16CFU	15.77	MOT	677
MC68HC705B5CB	14.01	MOT	677
MC68HC705B5CFN	14.01	MOT	677
MC68HC705C8ACB	8.72	MOT	677
MC68HC705C8ACFB	8.72	MOT	677
MC68HC705C8ACFN	8.72	MOT	677
MC68HC705C8ACP	8.72	MOT	677
MC68HC705E1DW	14.99	MOT	678
MC68HC705E1P	14.99	MOT	678
MC68HC705J2CDW	8.55	MOT	678
MC68HC705J2CP	8.72	MOT	678
MC68HC705K1CP	4.84	MOT	678
MC68HC705L5FU	23.80	MOT	678
MC68HC705P6CDW	10.48	MOT	678
MC68HC705P6CP	10.48	MOT	678
MC68HC705P9CDW	5.20	MOT	678
MC68HC705P9CP	5.20	MOT	678
MC68HC711D3CFB2	14.64	MOT	678
MC68HC711D3CFN2	14.02	MOT	678
MC68HC711D3CP2	14.02	MOT	678
MC68HC711E9CFN2	25.95	MOT	679
MC68HC711L6CFN2	30.31	MOT	679
MC68HC811E2FN	23.11	MOT	679
MC68HC811E2P	23.11	MOT	679
MC68L11A0FN2	13.93	MOT	678
MC68L11A1FN2	14.40	MOT	678
MC68L11E0FN2	15.88	MOT	678
MC68L11E1FN2	16.42	MOT	678
MC68LC040FE20	147.90	MOT	676
MC68LC040FE25	147.90	MOT	676
MC68LC040FE33	161.86	MOT	676
MC68LC040RC20	169.27	MOT	676
MC68LC040RC25	169.27	MOT	676
MC68LC040RC33	190.07	MOT	676
MC68SEC811E2FN	27.62	MOT	679
MC68SEC811E2P	27.62	MOT	679
MC74AC00D	0.34	MOT	680
MC74AC00N	0.34	MOT	680
MC74AC02D	0.34	MOT	680
MC74AC02N	0.34	MOT	680
MC74AC04D	0.34	MOT	680
MC74AC04N	0.34	MOT	680
MC74AC05D	0.34	MOT	680
MC74AC05N	0.34	MOT	680
MC74AC08D	0.34	MOT	680
MC74AC08N	0.34	MOT	680
MC74AC112D	0.91	MOT	680
MC74AC112N	0.90	MOT	680
MC74AC113D	1.36	MOT	680
MC74AC113N	1.32	MOT	680
MC74AC125D	0.78	MOT	680
MC74AC125N	0.75	MOT	680
MC74AC138D	0.75	MOT	680
MC74AC138N	0.75	MOT	680
MC74AC139D	0.75	MOT	680
MC74AC139N	0.75	MOT	680
MC74AC14D	0.38	MOT	680
MC74AC14N	0.38	MOT	680
MC74AC151D	0.75	MOT	680
MC74AC151N	0.75	MOT	680
MC74AC157D	0.75	MOT	680
MC74AC157N	0.75	MOT	680
MC74AC160D	1.25	MOT	680
MC74AC160N	1.21	MOT	680
MC74AC161D	1.12	MOT	680
MC74AC161N	1.12	MOT	680
MC74AC163D	1.12	MOT	680
MC74AC163N	1.12	MOT	680
MC74AC174D	0.75	MOT	680
MC74AC174N	0.75	MOT	680
MC74AC175D	0.75	MOT	680
MC74AC175N	0.75	MOT	680
MC74AC20D	0.41	MOT	680
MC74AC20N	0.38	MOT	680
MC74AC240N	0.75	MOT	680
MC74AC241DW	0.75	MOT	680
MC74AC241N	0.75	MOT	680
MC74AC244DW	0.75	MOT	680
MC74AC244N	0.75	MOT	680
MC74AC245DW	0.75	MOT	680
MC74AC245N	0.75	MOT	680
MC74AC251D	0.75	MOT	680
MC74AC251N	0.75	MOT	680
MC74AC273DW	0.75	MOT	680
MC74AC273N	0.75	MOT	680
MC74AC32D	0.34	MOT	680
MC74AC32N	0.34	MOT	680
MC74AC373DW	0.75	MOT	680
MC74AC373N	0.75	MOT	680
MC74AC374DW	0.75	MOT	680
MC74AC374N	0.75	MOT	680
MC74AC4040N	1.93	MOT	680
MC74AC533DW	1.25	MOT	680
MC74AC534DW	1.25	MOT	680
MC74AC534N	1.21	MOT	680
MC74AC540N	1.15	MOT	680
MC74AC541DW	1.17	MOT	680
MC74AC541N	1.15	MOT	680
MC74AC573DW	0.75	MOT	680
MC74AC573N	0.75	MOT	680
MC74AC574DW	0.75	MOT	680
MC74AC574N	0.75	MOT	680
MC74AC652DW	3.47	MOT	680
MC74AC652N	3.45	MOT	680
MC74AC74D	0.41	MOT	680
MC74AC74N	0.41	MOT	680
MC74AC86D	0.41	MOT	680
MC74AC86N	0.41	MOT	680
MC74ACT00D	0.34	MOT	680
MC74ACT00N	0.34	MOT	680
MC74ACT02N	0.34	MOT	680
MC74ACT04D	0.34	MOT	680
MC74ACT04N	0.34	MOT	680
MC74ACT05D	0.34	MOT	680
MC74ACT05N	0.34	MOT	680
MC74ACT08D	0.34	MOT	680
MC74ACT08N	0.34	MOT	680
MC74ACT109D	0.58	MOT	680
MC74ACT109N	0.58	MOT	680
MC74ACT112D	0.91	MOT	680
MC74ACT112N	0.90	MOT	680
MC74ACT113D	1.36	MOT	680
MC74ACT113N	1.32	MOT	680
MC74ACT125D	0.78	MOT	680
MC74ACT125N	0.75	MOT	680
MC74ACT132D	0.93	MOT	680
MC74ACT138D	0.75	MOT	680
MC74ACT138N	0.75	MOT	680
MC74ACT139D	0.75	MOT	680
MC74ACT14D	0.38	MOT	680
MC74ACT14N	0.38	MOT	680
MC74ACT151D	0.75	MOT	680
MC74ACT151N	0.75	MOT	680
MC74ACT153D	0.75	MOT	680
MC74ACT157D	0.75	MOT	680
MC74ACT157N	0.75	MOT	680
MC74ACT158D	0.78	MOT	680
MC74ACT158N	0.75	MOT	680
MC74ACT161D	1.14	MOT	680
MC74ACT161N	1.12	MOT	680
MC74ACT163D	1.14	MOT	680
MC74ACT163N	1.12	MOT	680
MC74ACT174D	0.75	MOT	680
MC74ACT174N	0.75	MOT	680
MC74ACT175D	0.75	MOT	680
MC74ACT175N	0.75	MOT	680
MC74ACT240DW	0.75	MOT	680
MC74ACT240N	0.75	MOT	680
MC74ACT244DW	0.75	MOT	680
MC74ACT244N	0.75	MOT	680
MC74ACT245DW	0.75	MOT	680
MC74ACT245N	0.75	MOT	680
MC74ACT251D	0.75	MOT	680
MC74ACT253D	0.75	MOT	680
MC74ACT257D	0.75	MOT	680
MC74ACT257N	0.75	MOT	680
MC74ACT258D	0.75	MOT	680
MC74ACT273DW	0.75	MOT	680
MC74ACT273N	0.75	MOT	680
MC74ACT299DW	1.88	MOT	680
MC74ACT299N	1.86	MOT	680
MC74ACT323DW	2.34	MOT	680
MC74ACT323N	2.32	MOT	680
MC74ACT32D	0.34	MOT	680
MC74ACT32N	0.34	MOT	680
MC74ACT373DW	0.75	MOT	680
MC74ACT373N	0.75	MOT	680
MC74ACT374DW	0.75	MOT	680
MC74ACT377DW	1.67	MOT	680
MC74ACT377N	1.67	MOT	680
MC74ACT378D	1.62	MOT	680
MC74ACT533DW	1.25	MOT	680
MC74ACT533N	1.21	MOT	680
MC74ACT540DW	1.17	MOT	680
MC74ACT540N	1.15	MOT	680
MC74ACT541DW	1.17	MOT	680
MC74ACT541N	1.15	MOT	680
MC74ACT573DW	0.75	MOT	680
MC74ACT573N	0.75	MOT	680
MC74ACT574DW	0.75	MOT	680
MC74ACT574N	0.75	MOT	680
MC74ACT640N	2.79	MOT	680
MC74ACT643N	2.79	MOT	680
MC74ACT646DW	2.97	MOT	680
MC74ACT646N	2.97	MOT	680
MC74ACT652DW	3.47	MOT	680
MC74ACT652N	3.44	MOT	680
MC74ACT74D	0.41	MOT	680
MC74ACT74N	0.41	MOT	680
MC74ACT86D	0.41	MOT	680
MC74ACT86N	0.41	MOT	680
MC74F00D	0.32	MOT	680
MC74F00N	0.28	MOT	680
MC74F02D	0.32	MOT	680
MC74F02N	0.28	MOT	680
MC74F04D	0.32	MOT	680
MC74F04N	0.28	MOT	680
MC74F08D	0.32	MOT	680
MC74F08N	0.28	MOT	680
MC74F109D	0.47	MOT	680
MC74F109N	0.47	MOT	680
MC74F10D	0.32	MOT	680
MC74F10N	0.28	MOT	680
MC74F112D	0.54	MOT	680
MC74F112N	0.54	MOT	680
MC74F11D	0.32	MOT	680
MC74F11N	0.28	MOT	680
MC74F1245N	2.42	MOT	680
MC74F125D	0.56	MOT	680
MC74F125N	0.56	MOT	680
MC74F126D	0.56	MOT	680
MC74F126N	0.56	MOT	680
MC74F132N	0.45	MOT	680
MC74F138D	0.47	MOT	680
MC74F138N	0.47	MOT	680
MC74F139D	0.56	MOT	680

Mfr.'s Type	Price	Mfr.'s Code	Page
MC74F139N	0.56	MOT	680
MC74F148D	0.84	MOT	680
MC74F148N	0.84	MOT	680
MC74F14D	0.43	MOT	680
MC74F14N	0.43	MOT	680
MC74F151D	0.49	MOT	680
MC74F151N	0.47	MOT	680
MC74F153D	0.47	MOT	680
MC74F153N	0.47	MOT	680
MC74F157AD	0.47	MOT	680
MC74F157AN	0.47	MOT	680
MC74F158AD	0.47	MOT	680
MC74F158AN	0.47	MOT	680
MC74F160AN	0.65	MOT	680
MC74F161AD	0.69	MOT	680
MC74F161AN	0.65	MOT	680
MC74F163AD	0.69	MOT	680
MC74F163AN	0.65	MOT	680
MC74F164D	0.71	MOT	680
MC74F164N	0.65	MOT	680
MC74F169D	1.49	MOT	680
MC74F169N	1.49	MOT	680
MC74F174D	0.67	MOT	680
MC74F174N	0.67	MOT	680
MC74F175D	0.52	MOT	680
MC74F175N	0.52	MOT	680
MC74F194D	1.58	MOT	680
MC74F194N	1.58	MOT	680
MC74F20D	0.32	MOT	680
MC74F20N	0.28	MOT	680
MC74F21D	0.32	MOT	680
MC74F21N	0.28	MOT	680
MC74F240DW	0.65	MOT	680
MC74F240N	0.64	MOT	680
MC74F241DW	0.67	MOT	680
MC74F241N	0.64	MOT	680
MC74F243D	0.64	MOT	680
MC74F244DW	0.65	MOT	680
MC74F244N	0.64	MOT	680
MC74F245DW	0.67	MOT	680
MC74F245N	0.64	MOT	680
MC74F251D	0.62	MOT	680
MC74F251N	0.62	MOT	680
MC74F253D	0.50	MOT	680
MC74F253N	0.50	MOT	680
MC74F257AD	0.50	MOT	680
MC74F257AN	0.50	MOT	680
MC74F258AD	0.50	MOT	680
MC74F258AN	0.50	MOT	680
MC74F259D	2.51	MOT	680
MC74F259N	2.51	MOT	680
MC74F269DW	3.71	MOT	680
MC74F269N	3.71	MOT	680
MC74F280D	0.47	MOT	680
MC74F280N	0.47	MOT	680
MC74F283D	0.93	MOT	680
MC74F283N	0.93	MOT	680
MC74F299DW	4.18	MOT	680
MC74F32D	0.32	MOT	680
MC74F32N	0.28	MOT	680
MC74F350N	1.34	MOT	680
MC74F365D	1.12	MOT	680
MC74F367D	1.12	MOT	680
MC74F367N	1.12	MOT	680
MC74F373DW	0.65	MOT	680
MC74F373N	0.64	MOT	680
MC74F374DW	0.65	MOT	—
MC74F374N	0.64	MOT	680
MC74F377DW	1.86	MOT	680
MC74F377N	1.86	MOT	680
MC74F378D	1.04	MOT	680
MC74F378N	1.04	MOT	680
MC74F379N	1.04	MOT	680
MC74F38D	0.41	MOT	680
MC74F38N	0.41	MOT	680
MC74F399D	1.30	MOT	680
MC74F399N	1.30	MOT	680
MC74F51N	0.28	MOT	680
MC74F521DW	0.93	MOT	680
MC74F521N	0.93	MOT	680
MC74F533DW	1.12	MOT	680
MC74F533N	1.10	MOT	680
MC74F534N	1.21	MOT	680
MC74F543DW	1.67	MOT	680
MC74F543N	1.67	MOT	680
MC74F544DW	1.67	MOT	680
MC74F544N	1.67	MOT	680
MC74F568DW	3.51	MOT	—
MC74F569DW	1.86	MOT	680
MC74F569N	1.86	MOT	—
MC74F569N	1.86	MOT	680
MC74F574DW	0.86	MOT	680
MC74F574N	0.84	MOT	680
MC74F579DW	3.34	MOT	680
MC74F579N	3.34	MOT	680
MC74F620DW	1.86	MOT	680
MC74F623N	1.12	MOT	680
MC74F640N	1.21	MOT	680
MC74F646DW	2.79	MOT	680
MC74F646N	2.97	MOT	680
MC74F64N	0.28	MOT	680
MC74F657ADW	2.79	MOT	680
MC74F657AN	2.79	MOT	680

Mfr.'s Type	Price	Mfr.'s Code	Page
MC74F74D	0.36	MOT	680
MC74F74N	0.32	MOT	680
MC74F779D	3.90	MOT	680
MC74F779N	3.90	MOT	680
MC74F803D	8.55	MOT	680
MC74F803N	8.52	MOT	680
MC74F823DW	2.27	MOT	680
MC74F823N	2.27	MOT	680
MC74F827DW	2.27	MOT	680
MC74F827N	2.27	MOT	680
MC74F85D	1.40	MOT	680
MC74F85N	1.40	MOT	680
MC74F86D	0.45	MOT	680
MC74F86N	0.45	MOT	680
MC74HC00AD	0.28	MOT	681
MC74HC00AN	0.26	MOT	681
MC74HC02AD	0.28	MOT	681
MC74HC02AN	0.26	MOT	681
MC74HC03AD	0.28	MOT	681
MC74HC03AN	0.26	MOT	681
MC74HC04AD	0.28	MOT	681
MC74HC04AN	0.26	MOT	681
MC74HC08AD	0.28	MOT	681
MC74HC08AN	0.26	MOT	681
MC74HC107D	0.45	MOT	681
MC74HC107N	0.43	MOT	681
MC74HC109D	0.41	MOT	681
MC74HC109N	0.39	MOT	681
MC74HC10D	0.28	MOT	681
MC74HC10N	0.26	MOT	681
MC74HC112D	0.43	MOT	681
MC74HC112N	0.41	MOT	681
MC74HC11D	0.28	MOT	681
MC74HC11N	0.26	MOT	681
MC74HC125AD	0.41	MOT	681
MC74HC125AN	0.39	MOT	681
MC74HC126AD	0.49	MOT	681
MC74HC126AN	0.47	MOT	681
MC74HC132AD	0.54	MOT	681
MC74HC132AN	0.52	MOT	681
MC74HC133N	0.52	MOT	681
MC74HC137D	0.54	MOT	681
MC74HC137N	0.52	MOT	681
MC74HC138AD	0.39	MOT	681
MC74HC138AN	0.38	MOT	681
MC74HC139AD	0.41	MOT	689
MC74HC139AN	0.39	MOT	681
MC74HC147D	0.52	MOT	681
MC74HC147N	0.50	MOT	681
MC74HC14AD	0.34	MOT	681
MC74HC14AN	0.32	MOT	681
MC74HC151N	0.39	MOT	681
MC74HC153D	0.43	MOT	681
MC74HC153N	0.41	MOT	681
MC74HC154DW	1.77	MOT	681
MC74HC154N	1.40	MOT	681
MC74HC157AD	0.43	MOT	681
MC74HC157AN	0.41	MOT	681
MC74HC160N	0.50	MOT	681
MC74HC161AD	0.49	MOT	681
MC74HC161AN	0.47	MOT	681
MC74HC163AD	0.49	MOT	681
MC74HC163AN	0.47	MOT	681
MC74HC165D	0.49	MOT	681
MC74HC165N	0.47	MOT	681
MC74HC173D	0.54	MOT	681
MC74HC173N	0.52	MOT	681
MC74HC174AD	0.43	MOT	681
MC74HC174AN	0.41	MOT	681
MC74HC175D	0.41	MOT	681
MC74HC175N	0.39	MOT	681
MC74HC194N	0.54	MOT	681
MC74HC195N	0.54	MOT	681
MC74HC20N	0.26	MOT	681
MC74HC237N	0.56	MOT	681
MC74HC240ADW	0.58	MOT	681
MC74HC240AN	0.56	MOT	681
MC74HC241ADW	0.58	MOT	681
MC74HC241AN	0.56	MOT	681
MC74HC242N	0.62	MOT	681
MC74HC244ADW	0.58	MOT	681
MC74HC244AN	0.56	MOT	681
MC74HC245ADW	0.58	MOT	681
MC74HC245AN	0.56	MOT	681
MC74HC251D	0.43	MOT	681
MC74HC251N	0.41	MOT	681
MC74HC253D	0.50	MOT	681
MC74HC253N	0.49	MOT	681
MC74HC257D	0.47	MOT	681
MC74HC257N	0.45	MOT	681
MC74HC259D	0.60	MOT	681
MC74HC259N	0.58	MOT	681
MC74HC273ADW	0.58	MOT	681
MC74HC273AN	0.56	MOT	681
MC74HC27N	0.26	MOT	681
MC74HC280D	0.58	MOT	681
MC74HC280N	0.56	MOT	681
MC74HC299DW	0.91	MOT	681
MC74HC299N	0.90	MOT	681
MC74HC30D	0.28	MOT	681
MC74HC30N	0.26	MOT	681
MC74HC32AD	0.28	MOT	681
MC74HC32AN	0.26	MOT	681

Mfr.'s Type	Price	Mfr.'s Code	Page
MC74HC354N	0.62	MOT	681
MC74HC365N	0.60	MOT	681
MC74HC367N	0.56	MOT	681
MC74HC368N	0.56	MOT	681
MC74HC373ADW	0.58	MOT	681
MC74HC373AN	0.56	MOT	681
MC74HC374ADW	0.58	MOT	681
MC74HC374AN	0.56	MOT	681
MC74HC390D	0.60	MOT	681
MC74HC390N	0.56	MOT	681
MC74HC393D	0.58	MOT	681
MC74HC393N	0.56	MOT	681
MC74HC4002D	0.32	MOT	681
MC74HC4002N	0.30	MOT	681
MC74HC4017D	0.60	MOT	681
MC74HC4017N	0.58	MOT	681
MC74HC4020AD	0.49	MOT	681
MC74HC4020AN	0.61	MOT	681
MC74HC4024D	0.50	MOT	681
MC74HC4024N	0.49	MOT	681
MC74HC4040AD	48.00	MOT	681
MC74HC4046AD	1.08	MOT	681
MC74HC4046AN	1.06	MOT	681
MC74HC4049D	0.54	MOT	681
MC74HC4049N	0.52	MOT	681
MC74HC4050D	0.54	MOT	681
MC74HC4050N	0.52	MOT	681
MC74HC4051DW	0.69	MOT	681
MC74HC4051N	0.67	MOT	681
MC74HC4052DW	0.67	MOT	681
MC74HC4052N	0.65	MOT	681
MC74HC4053DW	0.69	MOT	681
MC74HC4053N	0.67	MOT	681
MC74HC4060AD	0.61	MOT	681
MC74HC4060AN	0.58	MOT	681
MC74HC4066D	0.54	MOT	681
MC74HC4066N	0.52	MOT	681
MC74HC4075D	0.36	MOT	681
MC74HC4075N	0.34	MOT	681
MC74HC4078D	0.47	MOT	681
MC74HC4078N	0.43	MOT	681
MC74HC42N	0.49	MOT	681
MC74HC4316D	0.58	MOT	681
MC74HC4316N	0.56	MOT	681
MC74HC4351N	0.71	MOT	681
MC74HC4511N	0.54	MOT	681
MC74HC4514N	1.51	MOT	681
MC74HC4538AD	0.73	MOT	681
MC74HC4538AN	0.71	MOT	681
MC74HC51N	0.38	MOT	681
MC74HC534AN	0.71	MOT	681
MC74HC540ADW	0.71	MOT	681
MC74HC540AN	0.69	MOT	681
MC74HC541ADW	0.73	MOT	681
MC74HC541AN	0.71	MOT	681
MC74HC573ADW	0.71	MOT	681
MC74HC573AN	0.69	MOT	681
MC74HC574ADW	0.73	MOT	681
MC74HC574AN	0.71	MOT	681
MC74HC589N	1.86	MOT	681
MC74HC58N	0.47	MOT	681
MC74HC595AD	0.76	MOT	681
MC74HC595AN	0.75	MOT	681
MC74HC597D	0.67	MOT	681
MC74HC597N	0.65	MOT	681
MC74HC646N	2.75	MOT	681
MC74HC688DW	0.75	MOT	681
MC74HC688N	0.73	MOT	681
MC74HC7266N	0.49	MOT	681
MC74HC73N	0.49	MOT	681
MC74HC74AD	0.30	MOT	681
MC74HC74AN	0.28	MOT	681
MC74HC75N	0.43	MOT	681
MC74HC85N	0.65	MOT	681
MC74HCT00AD	0.28	MOT	681
MC74HCT00AN	0.26	MOT	681
MC74HCT04AD	0.28	MOT	681
MC74HCT04AN	0.26	MOT	681
MC74HCT08AN	0.26	MOT	681
MC74HCT138AD	0.39	MOT	681
MC74HCT138AN	0.38	MOT	681
MC74HCT14AD	0.34	MOT	681
MC74HCT14AN	0.32	MOT	681
MC74HCT157AN	0.41	MOT	681
MC74HCT161AN	0.45	MOT	681
MC74HCT163AN	0.45	MOT	681
MC74HCT174AD	0.43	MOT	681
MC74HCT174AN	0.41	MOT	681
MC74HCT240ADW	0.58	MOT	681
MC74HCT240AN	0.56	MOT	681
MC74HCT244ADW	0.58	MOT	681
MC74HCT244AN	0.56	MOT	681
MC74HCT245ADW	0.58	MOT	681
MC74HCT245AN	0.56	MOT	681
MC74HCT273ADW	0.58	MOT	681
MC74HCT273AN	0.56	MOT	681
MC74HCT32AD	0.28	MOT	681
MC74HCT32AN	0.26	MOT	681
MC74HCT373ADW	0.58	MOT	681
MC74HCT373AN	0.56	MOT	681
MC74HCT374ADW	0.58	MOT	681
MC74HCT374AN	0.56	MOT	681
MC74HCT541ADW	0.73	MOT	681

Mfr.'s Type	Price	Mfr.'s Code	Page
MC74HCT541AN	0.71	MOT	681
MC74HCT573ADW	0.76	MOT	681
MC74HCT573AN	0.75	MOT	681
MC74HCT574ADW	0.73	MOT	681
MC74HCT574AN	0.71	MOT	681
MC74HCT74AD	0.30	MOT	681
MC74HCT74AN	0.28	MOT	681
MC75174BP	2.23	MOT	684
MC7805ACT	0.82	MOT	689
MC7805CT	0.71	MOT	689
MC7806CT	0.71	MOT	689
MC7808CT	0.71	MOT	689
MC7812ACT	0.82	MOT	689
MC7812CT	0.71	MOT	689
MC7815ACT	0.82	MOT	689
MC7815BT	0.86	MOT	689
MC7815CT	0.71	MOT	689
MC7818CT	0.71	MOT	689
MC7824BT	0.86	MOT	689
MC7824CT	0.71	MOT	—
MC78L05ACD	0.47	MOT	689
MC78L05ACP	0.47	MOT	689
MC78L05CP	0.43	MOT	689
MC78L08ACP	0.47	MOT	689
MC78L12ACD	0.47	MOT	689
MC78L12ACP	0.47	MOT	689
MC78L12CP	0.43	MOT	689
MC78L15ACP	0.47	MOT	689
MC78L18ACP	0.47	MOT	689
MC78L24ACP	0.47	MOT	689
MC78M05CDT	0.71	MOT	689
MC78M05CT	0.60	MOT	689
MC78M06CT	0.60	MOT	689
MC78M08CDT	0.71	MOT	689
MC78M08CT	0.60	MOT	689
MC78M12CDT	0.71	MOT	689
MC78M12CT	0.60	MOT	689
MC78M15CDT	0.71	MOT	689
MC78M15CT	0.60	MOT	689
MC78M20CT	0.60	MOT	689
MC78M24CT	0.60	MOT	689
MC78T05ACT	2.53	MOT	689
MC78T05CT	2.27	MOT	689
MC78T08CT	2.27	MOT	689
MC78T12ACT	2.53	MOT	689
MC78T12CT	2.27	MOT	689
MC78T15CT	2.27	MOT	689
MC7905ACT	0.82	MOT	689
MC7905CT	0.71	MOT	689
MC7906CT	0.71	MOT	689
MC7908CT	0.71	MOT	689
MC7912CT	0.71	MOT	689
MC7915ACT	0.82	MOT	689
MC7915CT	0.71	MOT	689
MC7918CT	0.71	MOT	689
MC7924CT	0.71	MOT	689
MC79L05ACD	0.35	TIS	734
MC79L05ACD	0.47	MOT	689
MC79L05ACLP	0.36	TIS	734
MC79L05ACP	0.47	MOT	689
MC79L05CD	0.35	TIS	734
MC79L05CP	0.43	MOT	689
MC79L12ACD	0.35	TIS	734
MC79L12ACD	0.47	MOT	689
MC79L12ACLP	0.36	TIS	734
MC79L12ACP	0.47	MOT	689
MC79L15ACD	0.35	TIS	734
MC79L15ACLP	0.36	TIS	734
MC79L15ACP	0.47	MOT	689
MC79M05CDT	0.71	MOT	689
MC79M05CT	0.60	MOT	689
MC846P	7.68	MOT	—
MC88913D	11.87	MOT	684
MC88913N	11.84	MOT	684
MC88914D	11.87	MOT	684
MC88914N	11.84	MOT	—
MC88915FN55	7.52	MOT	684
MC88915FN70	7.52	MOT	684
MC88915TFN100	9.93	MOT	684
MC88915TFN133	9.93	MOT	684
MC88915TFN160	12.99	MOT	684
MC88915TFN55	7.52	MOT	684
MC88915TFN70	7.52	MOT	684
MC88916DW70	16.29	MOT	684
MC88916DW80	20.90	MOT	684
MC88920DW	17.88	MOT	684
MC88921DW	17.34	MOT	684
MCH12140D	20.46	MOT	684
MCK12140D	20.46	MOT	684
MCR08MT1	0.66	MOT	707
MCR100-6	0.32	MOT	707
MCR106-2	0.38	MOT	707
MCR106-4	0.42	MOT	707
MCR106-6	0.44	MOT	707
MCR106-8	0.48	MOT	707
MCR12M	0.90	MOT	707
MCR12N	0.94	MOT	707
MCR16M	1.12	MOT	707
MCR22-3	0.30	MOT	707
MCR22-6	0.36	MOT	707
MCR264-10	2.36	MOT	707
MCR264-8	2.18	MOT	707
MCR265-10	2.96	MOT	707

Manufacturer's Code Log

Code	Manufacturer
ADI	Analog Devices Inc.
AMD	Advanced Micro Devices
COL	Collmer Semiconductors, Inc.
DLS	Dallas Semiconductor
HAR	Harris Semiconductor
ITL	Intel
LAT	Lattice
MXM	Maxim
MOS	Mosel-Vitelic
MOT	Motorola Semiconductor
NSC	National Semiconductor
NTE	NTE Electronics
PHI	Philips Semiconductors
SEM	Semiconductors Inc.
SIE	Siemens Components, Inc
TIS	Texas Instruments
THO	Thomson Consumer Electronics
UNI	Unitrode Integrated Circuits
XLX	Xilinx

Mfr.'s Type	Price	Mfr.'s Code	Page
MCR265-4	2.50	MOT	707
MCR265-6	2.56	MOT	707
MCR265-8	2.64	MOT	707
MCR69-2	1.44	MOT	707
MCR69-3	1.48	MOT	707
MCR69-6	1.56	MOT	707
MCR72-2	0.76	MOT	707
MCR72-6	0.84	MOT	707
MCR72-8	0.88	MOT	707
MCR8M	0.76	MOT	707
MCR8N	0.80	MOT	707
MCR8SM	0.88	MOT	707
MCR8SN	0.96	MOT	707
MCT2	0.44	MOT	692
MCT2E	0.44	MOT	692
MF4CN-100	1.68	NSC	712
MF4CN-50	1.68	NSC	712
MF4CWM-100	2.23	NSC	712
MF6CN-100	3.29	NSC	—
MF6CN-50	3.39	NSC	—
MF6CWM-50	3.80	NSC	712
MHW7142	55.64	MOT	700
MHW8142	61.20	MOT	700
MHW913	55.64	MOT	700
MHW9142	76.04	MOT	700
MJ1000	1.64	MOT	696
MJ10000	6.53	MOT	697
MJ10005	5.20	MOT	697
MJ10009	11.35	MOT	697
MJ10012	3.01	MOT	696
MJ10015	20.40	MOT	697
MJ10016	25.00	MOT	697
MJ10020	12.06	MOT	697
MJ10021	13.91	MOT	697
MJ10022	12.24	MOT	697
MJ10023	14.47	MOT	697
MJ11012	3.71	MOT	697
MJ11013	5.38	MOT	697
MJ11014	4.14	MOT	697
MJ11015	7.42	MOT	697
MJ11016	4.36	MOT	697
MJ11019	12.84	MOT	696
MJ11020	7.27	MOT	696
MJ11021	9.35	MOT	696
MJ11030	7.94	MOT	697
MJ11031	8.76	MOT	697
MJ11032	7.42	MOT	697
MJ11033	7.98	MOT	697
MJ13333	5.57	MOT	697
MJ14001	15.30	MOT	697
MJ14002	7.89	MOT	697
MJ14003	16.70	MOT	—
MJ15001	3.27	MOT	696
MJ15002	3.27	MOT	696
MJ15003	3.16	MOT	697
MJ15004	4.08	MOT	697
MJ15011	3.56	MOT	696
MJ15015	1.88	MOT	696
MJ15016	1.99	MOT	696
MJ15020	4.12	MOT	696
MJ15021	4.36	MOT	696
MJ15022	3.62	MOT	697
MJ15023	3.96	MOT	697
MJ15024	3.62	MOT	697
MJ15025	4.38	MOT	697
MJ16010	4.46	MOT	696
MJ16012	6.03	MOT	696
MJ2500	3.06	MOT	696
MJ2955	1.54	MOT	696
MJ410	2.75	MOT	696
MJ413	2.79	MOT	696
MJ423	4.55	MOT	696
MJ4502	3.16	MOT	697
MJ802	2.42	MOT	697
MJD112	0.62	MOT	696
MJD117	0.62	MOT	696
MJD127	0.78	MOT	696
MJD210	0.70	MOT	696
MJD243	1.54	MOT	696
MJD2955	0.64	MOT	696
MJD3055	0.62	MOT	696
MJD31	0.42	MOT	696
MJD31C	0.42	MOT	696
MJD32	0.46	MOT	696
MJD350	1.08	MOT	696
MJD44H11	1.24	MOT	696
MJD45H11	1.30	MOT	696
MJD47	0.68	MOT	696
MJD50	0.72	MOT	696
MJE13003	0.75	MOT	696
MJE13005	1.20	MOT	696
MJE13007	1.40	MOT	696
MJE1320	2.70	MOT	696
MJE15028	1.39	MOT	696

Mfr.'s Type	Price	Mfr.'s Code	Page
MJE15029	1.60	MOT	696
MJE15030	1.34	MOT	696
MJE15031	1.40	MOT	696
MJE16002	1.38	MOT	—
MJE171	0.36	MOT	696
MJE172	0.36	MOT	696
MJE180	0.36	MOT	—
MJE18004	0.90	MOT	—
MJE18006	0.99	MOT	—
MJE18008	1.27	MOT	—
MJE181	0.36	MOT	696
MJE182	0.36	MOT	696
MJE18204	1.28	MOT	—
MJE200	0.56	MOT	696
MJE210	0.49	MOT	696
MJE243	0.75	MOT	696
MJE253	0.80	MOT	696
MJE270	1.02	MOT	696
MJE271	0.99	MOT	696
MJE2955T	0.72	MOT	696
MJE3055T	0.70	MOT	696
MJE340	0.54	MOT	696
MJE3439	0.65	MOT	696
MJE344	0.73	MOT	696
MJE350	0.65	MOT	696
MJE371	0.65	MOT	696
MJE4343	4.74	MOT	696
MJE4353	3.04	MOT	696
MJE521	0.50	MOT	696
MJE5731	1.50	MOT	696
MJE5740	1.58	MOT	696
MJE5742	2.16	MOT	696
MJE5850	5.18	MOT	696
MJE5851	5.18	MOT	696
MJE5852	3.10	MOT	696
MJE700	0.60	MOT	696
MJE702	0.52	MOT	696
MJE703	0.52	MOT	696
MJE800	0.40	MOT	696
MJE802	0.40	MOT	696
MJE803	0.40	MOT	696
MJE9780	1.50	MOT	696
MJF122	0.74	MOT	696
MJF127	0.74	MOT	—
MJF15030	2.64	MOT	696
MJF18004	1.78	MOT	696
MJF2955	1.24	MOT	696
MJF3055	0.90	MOT	696
MJF31C	0.78	MOT	696
MJF44H11	1.40	MOT	696
MJF45H11	1.54	MOT	696
MJF47	1.20	MOT	696
MJF6388	1.00	MOT	696
MJF6668	1.30	MOT	696
MJH10012	3.50	MOT	696
MJH11019	8.20	MOT	696
MJH11020	4.50	MOT	696
MJH11021	5.20	MOT	696
MJH11022	8.25	MOT	696
MJH6284	5.04	MOT	696
MJH6287	5.24	MOT	696
MJL1302A	5.40	MOT	—
MJL21193	5.00	MOT	—
MJL21194	5.00	MOT	696
MJL3281A	5.40	MOT	696
MJW16018	7.20	MOT	696
MJW16206	6.00	MOT	696
MJW16210	5.76	MOT	696
MJW16212	13.68	MOT	696
MLT04GP	17.93	ADI	639
MLT04GS	17.93	ADI	639
MM53200N	2.34	NSC	—
MM5450N	4.67	NSC	—
MM5451N	4.81	NSC	—
MM5480N	4.56	NSC	—
MM5484N	2.77	NSC	—
MM5486N	4.01	NSC	—
MM58167BN	14.90	NSC	—
MM58167BV	15.40	NSC	—
MM58174AN	13.60	NSC	—
MM58274CV	14.30	NSC	—
MM58342N	5.65	NSC	—
MM74C00N	1.49	NSC	708
MM74C02N	1.49	NSC	716
MM74C08N	1.49	NSC	716
MM74C154N	7.15	NSC	716
MM74C157N	4.92	NSC	716
MM74C164N	2.86	NSC	716
MM74C221N	4.92	NSC	716
MM74C240N	4.92	NSC	716
MM74C244N	4.92	NSC	716
MM74C32N	1.49	NSC	716
MM74C373N	4.92	NSC	716
MM74C374N	4.92	NSC	716

Mfr.'s Type	Price	Mfr.'s Code	Page
MM74C42N	3.89	NSC	716
MM74C74M	2.18	NSC	716
MM74C74N	2.13	NSC	716
MM74C85N	3.89	NSC	716
MM74C902N	2.80	NSC	716
MM74C905N	15.90	NSC	716
MM74C906M	2.36	NSC	716
MM74C906N	2.25	NSC	716
MM74C911N	17.80	NSC	716
MM74C912N	17.80	NSC	716
MM74C914N	3.21	NSC	716
MM74C922N	8.35	NSC	716
MM74C923N	8.35	NSC	716
MM74C925N	11.70	NSC	716
MM74C926N	11.70	NSC	716
MM80C98N	1.98	NSC	—
MM88C30N	5.60	NSC	—
MMAD1103	3.04	MOT	702
MMAD1108	2.82	MOT	702
MMAD1109	2.82	MOT	702
MMBD101LT1	0.44	MOT	701
MMBD301LT1	0.44	MOT	701
MMBD352LT1	0.66	MOT	701
MMBD7000LT1	0.14	MOT	701
MMBD701LT1	0.44	MOT	701
MMBD914LT1	0.13	MOT	—
MMBF4393LT1	0.34	MOT	697
MMBF4416LT1	0.34	MOT	697
MMBF5459LT1	0.34	MOT	697
MMBF5460LT1	0.40	MOT	697
MMBF5484LT1	0.34	MOT	697
MMBFJ175LT1	0.40	MOT	697
MMBFJ177LT1	0.40	MOT	697
MMBFJ309LT1	0.34	MOT	697
MMBFJ310LT1	0.34	MOT	697
MMBFU310LT1	0.34	MOT	697
MMBR5179LT1	0.45	MOT	700
MMBR901LT1	0.32	MOT	700
MMBT2222ALT1	0.15	MOT	694
MMBT2369LT1	0.19	MOT	694
MMBT2907ALT1	0.15	MOT	694
MMBT3640LT1	0.28	MOT	694
MMBT3904LT1	0.14	MOT	—
MMBT3906LT1	0.14	MOT	—
MMBT3906T/R	0.13	SEM	723
MMBT404ALT1	0.36	MOT	694
MMBT4401LT1	0.15	MOT	694
MMBT4401T/R	0.13	SEM	723
MMBT4403T/R	0.13	SEM	723
MMBT5087LT1	0.13	MOT	694
MMBT5089LT1	0.14	MOT	694
MMBT5401LT1	0.23	MOT	694
MMBT5551LT1	0.23	MOT	694
MMBT6517LT1	0.30	MOT	694
MMBTA06LT1	0.17	MOT	694
MMBTA14LT1	0.16	MOT	694
MMBTA42LT1	0.19	MOT	694
MMBTA56LT1	0.17	MOT	695
MMBTH10LT1	0.26	MOT	694
MMBTH69LT1	0.36	MOT	694
MMBTH81LT1	0.28	MOT	694
MMBV105GLT1	0.46	MOT	701
MMBV109LT1	0.46	MOT	701
MMBV3102LT1	0.46	MOT	701
MMBV3401LT1	0.46	MOT	701
MMBV409LT1	0.46	MOT	701
MMBV432LT1	0.70	MOT	700
MMBV609LT1	0.70	MOT	701
MMBZ15VDLT1	0.26	MOT	704
MMBZ5226BLT1	0.15	MOT	702
MMBZ5228BLT1	0.15	MOT	702
MMBZ5229BLT1	0.15	MOT	702
MMBZ5230BLT1	0.15	MOT	702
MMBZ5231BLT1	0.15	MOT	702
MMBZ5232BLT1	0.15	MOT	702
MMBZ5233BLT1	0.15	MOT	702
MMBZ5234BLT1	0.15	MOT	702
MMBZ5235BLT1	0.15	MOT	702
MMBZ5236BLT1	0.15	MOT	702
MMBZ5237BLT1	0.15	MOT	702
MMBZ5239BLT1	0.15	MOT	702
MMBZ5240BLT1	0.15	MOT	702
MMBZ5242BLT1	0.15	MOT	703
MMBZ5243BLT1	0.15	MOT	703
MMBZ5245BLT1	0.15	MOT	703
MMBZ5246BLT1	0.15	MOT	703
MMBZ5248BLT1	0.15	MOT	703
MMBZ5254BLT1	0.15	MOT	703
MMBZ5V6ALT1	0.24	MOT	704
MMFT107T1	0.85	MOT	698
MMFT1N10ET1	1.70	MOT	698
MMFT2406T1	0.85	MOT	698
MMFT2955ET1	1.36	MOT	698
MMFT2N02ELT1	1.02	MOT	698

Mfr.'s Type	Price	Mfr.'s Code	Page
MMFT3055ELT1	1.02	MOT	698
MMFT3055ET1	0.92	MOT	698
MMFT6661T1	0.75	MOT	698
MMFT960T1	0.85	MOT	—
MMPQ2222A	2.24	MOT	694
MMPQ2369	3.72	MOT	694
MMPQ2907A	2.24	MOT	694
MMPQ3467	3.68	MOT	694
MMPQ3904	4.72	MOT	—
MMPQ3906	2.36	MOT	694
MMPQ6700	2.54	MOT	694
MMSZ4678T1	0.14	MOT	702
MMSZ4679T1	0.14	MOT	702
MMSZ4681T1	0.14	MOT	702
MMSZ4683T1	0.14	MOT	—
MMSZ4684T1	0.14	MOT	702
MMSZ4686T1	0.14	MOT	702
MMSZ4688T1	0.14	MOT	702
MMSZ4689T1	0.14	MOT	702
MMSZ4690T1	0.14	MOT	702
MMSZ4691T1	0.14	MOT	702
MMSZ4692T1	0.14	MOT	702
MMSZ4694T1	0.14	MOT	702
MMSZ4699T1	0.14	MOT	703
MMSZ4701T1	0.14	MOT	703
MMSZ5221BT1	0.09	MOT	702
MMSZ5222BT1	0.09	MOT	702
MMSZ5223BT1	0.09	MOT	702
MMSZ5230BT1	0.09	MOT	702
MMSZ5231BT1	0.09	MOT	702
MMSZ5232BT1	0.09	MOT	702
MMSZ5233BT1	0.09	MOT	702
MMSZ5234BT1	0.09	MOT	702
MMSZ5235BT1	0.09	MOT	702
MMSZ5240BT1	0.09	MOT	702
MMSZ5241BT1	0.09	MOT	703
MMSZ5242BT1	0.09	MOT	703
MMSZ5243BT1	0.09	MOT	703
MMSZ5246BT1	0.09	MOT	703
MMSZ5247BT1	0.09	MOT	703
MMSZ5248BT1	0.09	MOT	703
MMSZ5250BT1	0.09	MOT	703
MMSZ5257BT1	0.09	MOT	703
MMSZ5261BT1	0.09	MOT	703
MMSZ5262BT1	0.09	MOT	703
MMSZ5265BT1	0.09	MOT	703
MOC2A40-10	3.64	MOT	—
MOC2A40-5	3.84	MOT	—
MOC2A60-10	3.94	MOT	693
MOC2A60-5	4.02	MOT	693
MOC3009	0.62	MOT	693
MOC3010	0.62	MOT	693
MOC3011	0.64	MOT	693
MOC3012	0.66	MOT	693
MOC3020	0.72	MOT	693
MOC3021	0.74	MOT	693
MOC3022	0.76	MOT	693
MOC3023	0.78	MOT	693
MOC3031	1.26	MOT	693
MOC3032	1.30	MOT	693
MOC3033	1.34	MOT	693
MOC3041	1.38	MOT	693
MOC3042	1.42	MOT	693
MOC3043	1.46	MOT	693
MOC3051	0.74	MOT	693
MOC3052	0.72	MOT	693
MOC3061	1.60	MOT	693
MOC3062	1.68	MOT	693
MOC3063	1.76	MOT	693
MOC3081	1.90	MOT	693
MOC3082	2.10	MOT	693
MOC3163	1.68	MOT	693
MOC5007	2.00	MOT	693
MOC5008	1.30	MOT	693
MOC5009	1.20	MOT	693
MOC8020	0.90	MOT	692
MOC8021	1.10	MOT	692
MOC8030	0.90	MOT	692
MOC8050	0.96	MOT	692
MOC8080	1.80	MOT	692
MOC8100	1.00	MOT	692
MOC8102	0.86	MOT	692
MOC8104	0.98	MOT	692
MOC8111	0.54	MOT	692
MOC8112	0.56	MOT	692
MOC8113	0.80	MOT	692
MOC8204	2.04	MOT	692
MP3502	2.40	COL	646
MP3504	2.48	COL	646
MP3506	2.56	COL	646
MP3508	2.79	COL	646
MP3510	2.99	COL	646
MPF102	0.32	MOT	—
MPF6659	0.90	MOT	697

Mfr.'s Type	Price	Mfr.'s Code	Page
MPF6660	0.90	MOT	697
MPF6661	0.90	MOT	697
MPF910	0.90	MOT	697
MPF960	0.90	MOT	697
MPN3404	0.42	MOT	701
MPN3700	0.78	MOT	—
MPQ2222	1.50	MOT	—
MPQ2222A	1.60	MOT	694
MPQ2369	1.62	MOT	694
MPQ2907A	1.60	MOT	694
MPQ3904	1.70	MOT	694
MPQ3906	1.70	MOT	694
MPQ6700	1.98	MOT	694
MPS2222	0.07	MOT	—
MPS2222A	0.07	MOT	695
MPS2369	0.19	MOT	—
MPS2369A	0.20	MOT	693
MPS2907	0.07	MOT	—
MPS2907A	0.07	MOT	693
MPS3563	0.18	MOT	—
MPS3646	0.20	MOT	693
MPS3866	0.45	MOT	—
MPS404A	0.36	MOT	694
MPS4123	0.05	MOT	—
MPS4124	0.05	MOT	—
MPS5172	0.07	MOT	—
MPS5179	0.34	MOT	693
MPS651	0.60	MOT	693
MPS6521	0.16	MOT	693
MPS6523	0.18	MOT	—
MPS6602	1.28	MOT	693
MPS6652	0.29	MOT	693
MPS6725	0.38	MOT	—
MPS751	0.54	MOT	693
MPS8099	0.22	MOT	693
MPS8599	0.21	MOT	693
MPS918	0.18	MOT	693
MPSA05	0.10	MOT	—
MPSA06	0.09	MOT	693
MPSA13	0.12	MOT	—
MPSA14	0.12	MOT	693
MPSA17	1.00	MOT	694
MPSA18	0.19	MOT	693
MPSA20	0.07	MOT	—
MPSA29	0.48	MOT	693
MPSA42	0.15	MOT	693
MPSA43	0.24	MOT	—
MPSA44	0.34	MOT	693
MPSA55	0.12	MOT	—
MPSA56	0.10	MOT	693
MPSA63	0.12	MOT	—
MPSA64	0.14	MOT	693
MPSA75	0.50	MOT	—
MPSA92	0.18	MOT	693
MPSA93	0.30	MOT	—
MPSH10	0.22	MOT	693
MPSH11	0.35	MOT	693
MPSH17	0.37	MOT	693
MPSH81	0.22	MOT	693
MPSW01	0.30	MOT	—
MPSW01A	0.64	MOT	693
MPSW06	0.68	MOT	693
MPSW42	0.40	MOT	693
MPSW45A	0.36	MOT	693
MPSW51A	0.38	MOT	693
MPSW92	0.98	MOT	693
MPX100A	7.42	MOT	691
MPX100AP	8.35	MOT	691
MPX100AS	8.35	MOT	691
MPX100GP	8.35	MOT	691
MPX100GVP	8.35	MOT	691
MPX10DP	9.28	MOT	—
MPX10GP	8.35	MOT	691
MPX200A	7.42	MOT	691
MPX200AP	8.35	MOT	691
MPX200D	7.42	MOT	691
MPX200GP	8.35	MOT	691
MPX2010D	21.33	MOT	691
MPX2010DP	23.19	MOT	691
MPX2010GP	22.26	MOT	691
MPX2010GS	22.26	MOT	691
MPX2010GSX	22.26	MOT	691
MPX2050DP	21.33	MOT	691
MPX2050GP	20.40	MOT	691
MPX2050GSX	20.40	MOT	691
MPX2052D	19.48	MOT	691
MPX2052DP	21.33	MOT	691
MPX2100DP	21.33	MOT	691
MPX2100GP	20.40	MOT	691
MPX2100GVP	20.40	MOT	691
MPX2100GVSX	20.40	MOT	691
MPX2200DP	21.33	MOT	691
MPX2200GP	20.40	MOT	691
MPX4100A	21.33	MOT	691
MPX4100AP	22.26	MOT	691
MPX4101A	21.33	MOT	691
MPX4115A	21.33	MOT	692
MPX4115AP	22.26	MOT	692
MPX4115ASX	22.26	MOT	692
MPX4250A	21.33	MOT	692
MPX4250AP	22.26	MOT	692
MPX4250ASX	22.26	MOT	692
MPX5050D	22.26	MOT	692

Mfr.'s Type	Price	Mfr.'s Code	Page
MPX5050DP	24.11	MOT	692
MPX5050GP	23.19	MOT	692
MPX5050GSX	23.19	MOT	692
MPX5050GVP	23.19	MOT	692
MPX5050GVS	23.19	MOT	692
MPX50GP	8.35	MOT	691
MPX5100A	22.26	MOT	692
MPX5100AP	23.19	MOT	692
MPX5100ASX	23.19	MOT	692
MPX5100D	22.26	MOT	692
MPX5100DP	24.11	MOT	692
MPX5100GP	23.19	MOT	692
MPX700AP	8.35	MOT	691
MPX700D	7.42	MOT	691
MPX700DP	9.28	MOT	691
MPX700GP	8.35	MOT	691
MPX7050D	17.62	MOT	691
MPX7050GP	18.55	MOT	691
MPX7100D	17.62	MOT	691
MPX7200A	17.62	MOT	691
MR750	0.60	MOT	—
MR751	0.63	MOT	—
MR752	0.63	MOT	—
MR754	0.63	MOT	706
MR756	0.69	MOT	—
MR760	0.78	MOT	706
MR850	0.28	MOT	—
MR851	0.28	MOT	—
MR852	0.38	MOT	706
MR854	0.38	MOT	—
MR856	0.38	MOT	706
MRF134	22.54	MOT	699
MRF141G	248.51	MOT	699
MRF148	49.89	MOT	699
MRF150	77.90	MOT	699
MRF15030	270.77	MOT	699
MRF151G	213.28	MOT	699
MRF160	25.04	MOT	699
MRF16006	122.40	MOT	699
MRF166W	100.35	MOT	699
MRF174	87.17	MOT	699
MRF182	111.28	MOT	699
MRF183	129.82	MOT	699
MRF247	37.56	MOT	699
MRF454	17.07	MOT	699
MRF455	14.01	MOT	699
MRF5003	11.04	MOT	699
MRF5015	35.61	MOT	699
MRF5035	46.15	MOT	699
MRF557	4.18	MOT	699
MRF559	1.30	MOT	—
MRF571	1.27	MOT	—
MRF5711LT1	1.21	MOT	700
MRF581	1.77	MOT	699
MRF847	48.61	MOT	699
MRF857	30.05	MOT	699
MRF857S	28.94	MOT	699
MRF858	39.30	MOT	699
MRF860	155.79	MOT	699
MRF861	411.71	MOT	699
MRF862	417.28	MOT	699
MRF898	113.13	MOT	699
MRF901	1.02	MOT	699
MRF904	2.79	MOT	—
MRFIC1801	3.12	MOT	700
MRFIC1803	6.77	MOT	700
MRFIC1804	6.87	MOT	700
MRFIC2401	7.70	MOT	700
MRFIC2403	7.61	MOT	700
MRFIC2404	5.20	MOT	700
MS621002A-20KC	37.00	MOS	673
MS621002A-25KC	35.15	MOS	673
MS621002A-35KC	34.23	MOS	673
MS62256CLL-70FC	6.85	MOS	673
MS62256CLL-70PC	6.85	MOS	673
MS62256L-70FC	5.92	MOS	—
MS62256L-70PC	5.92	MOS	—
MS6264H-20RC	4.44	MOS	673
MS6264L-10FC	3.05	MOS	673
MS6264L-10PC	3.05	MOS	673
MS6264L-70FC	3.24	MOS	673
MS6264L-70PC	3.24	MOS	673
MS6265-10FC	6.00	MOS	673
MS6265-10NC	6.00	MOS	673
MS6265-10PC	6.00	MOS	673
MS7200L-25FC	12.95	MOS	673
MS7200L-25JC	12.95	MOS	673
MS7200L-35FC	10.18	MOS	673
MS7200L-35JC	10.18	MOS	673
MS7200L-35NC	10.18	MOS	—
MS7200L-50FC	7.40	MOS	673
MS7200L-50JC	7.40	MOS	673
MS7200L-50NC	7.40	MOS	673
MS7200L-80FC	5.92	MOS	673
MS7200L-80JC	5.92	MOS	673
MS7200L-80NC	5.92	MOS	673
MS7200L-80PC	5.92	MOS	673
MS7201AL-25FC	14.80	MOS	673
MS7201AL-25JC	14.80	MOS	673
MS7201AL-25PC	14.80	MOS	673
MS7201AL-35FC	14.80	MOS	673
MS7201AL-35JC	12.03	MOS	673
MS7201AL-35NC	12.03	MOS	673

Mfr.'s Type	Price	Mfr.'s Code	Page
MS7201AL-35PC	12.03	MOS	673
MS7201AL-50FC	9.25	MOS	673
MS7201AL-50JC	9.25	MOS	673
MS7201AL-50PC	9.25	MOS	—
MS7201AL-80FC	7.03	MOS	673
MS7201AL-80JC	7.03	MOS	673
MS7201AL-80PC	7.03	MOS	—
MS7202AL-25FC	20.35	MOS	673
MS7202AL-25JC	20.35	MOS	673
MS7202AL-25PC	20.35	MOS	—
MS7202AL-35FC	14.00	MOS	673
MS7202AL-35JC	14.80	MOS	673
MS7202AL-35PC	14.80	MOS	673
MS7202AL-50FC	11.10	MOS	673
MS7202AL-50JC	11.10	MOS	673
MS7202AL-50NC	11.10	MOS	—
MS7202AL-50PC	11.10	MOS	673
MS7202AL-80FC	9.25	MOS	673
MS7202AL-80JC	9.25	MOS	673
MS7202AL-80NC	9.25	MOS	—
MS7203L-25NC	27.75	MOS	673
MS7203L-25PC	27.75	MOS	673
MS7203L-35FC	24.05	MOS	673
MS7203L-35PC	24.05	MOS	673
MS7203L-50FC	14.80	MOS	673
MS7203L-50PC	14.80	MOS	673
MS7203L-80FC	11.10	MOS	673
MS7203L-80PC	11.10	MOS	673
MS7204L-35FC	27.75	MOS	673
MS7204L-35PC	27.75	MOS	673
MS7204L-50FC	18.50	MOS	673
MS7204L-80FC	14.80	MOS	673
MS7204L-80PC	14.80	MOS	673
MTB10N40E	3.68	MOT	698
MTB16N25E	2.50	MOT	698
MTB1N100E	3.26	MOT	698
MTB20N20E	5.50	MOT	698
MTB30N06EL	3.32	MOT	698
MTB33N10E	6.62	MOT	698
MTB3N100E	3.50	MOT	698
MTB4N80E	4.42	MOT	698
MTB50N06E	3.86	MOT	698
MTB60N06HD	4.50	MOT	698
MTB6N60E	4.34	MOT	698
MTB75N03HDL	7.40	MOT	698
MTB75N05HD	6.40	MOT	698
MTB75N06HD	6.48	MOT	698
MTB8N50E	3.64	MOT	698
MTD15N06V	1.10	MOT	698
MTD20N03HDL	1.30	MOT	698
MTD20P03HDL	3.24	MOT	698
MTD2955E	1.24	MOT	698
MTD2N50E	1.52	MOT	698
MTD3055E	0.88	MOT	698
MTD3055V	0.80	MOT	698
MTD3055VL	1.08	MOT	—
MTD9N10E	1.18	MOT	698
MTP10N10E	0.84	MOT	698
MTP10N40E	2.72	MOT	698
MTP12N10E	1.04	MOT	698
MTP12P10	2.40	MOT	698
MTP15N05EL	1.36	MOT	698
MTP15N06V	1.10	MOT	698
MTP16N25E	2.40	MOT	698
MTP1N100E	3.90	MOT	698
MTP1N50E	0.90	MOT	698
MTP1N60E	0.96	MOT	698
MTP20N20E	3.50	MOT	698
MTP23P06	2.90	MOT	698
MTP27N10E	1.54	MOT	—
MTP2955E	1.56	MOT	—
MTP2N40E	1.40	MOT	698
MTP2N50E	1.60	MOT	698
MTP2N60E	1.58	MOT	698
MTP2P50E	3.44	MOT	698
MTP3055V	0.84	MOT	698
MTP33N10E	4.60	MOT	698
MTP36N06V	1.70	MOT	698
MTP3N100E	3.40	MOT	698
MTP3N50E	1.40	MOT	698
MTP3N60E	1.98	MOT	698
MTP4N40E	1.28	MOT	698
MTP4N80E	4.02	MOT	698
MTP50N05E	2.40	MOT	698
MTP50N05EL	2.88	MOT	698
MTP50N06V	1.96	MOT	698
MTP50P03HDL	5.70	MOT	698
MTP5N40E	1.90	MOT	698
MTP60N06HD	4.50	MOT	698
MTP6N60E	4.00	MOT	698
MTP6P20E	2.60	MOT	698
MTP75N03HDL	7.10	MOT	698
MTP75N05HD	6.42	MOT	698
MTP75N06HD	6.48	MOT	698
MTP8N50E	2.64	MOT	698
MTW10N100E	14.38	MOT	698
MTW14N50E	4.30	MOT	698
MTW16N40E	4.80	MOT	698
MTW20N50E	7.00	MOT	698
MTW24N40E	7.60	MOT	698
MTW32N20E	7.04	MOT	698
MTW32N25E	7.60	MOT	698
MTW35N15E	7.04	MOT	698

Mfr.'s Type	Price	Mfr.'s Code	Page
MTW45N10E	7.04	MOT	698
MTW6N100E	11.50	MOT	698
MTW7N80E	9.26	MOT	698
MTW8N60E	4.50	MOT	698
MU4891	2.30	SEM	—
MU4892	2.23	SEM	723
MU4893	2.30	SEM	723
MUN2111T1	0.12	MOT	694
MUN2211T1	0.12	MOT	694
MUN2212T1	0.12	MOT	694
MUN2213T1	0.12	MOT	694
MUR10120E	6.72	MOT	706
MUR10150E	7.70	MOT	706
MUR110	0.47	MOT	—
MUR1100E	0.93	MOT	706
MUR120	0.47	MOT	706
MUR140	0.65	MOT	706
MUR1510	1.81	HAR	660
MUR1515	1.86	HAR	660
MUR1520	1.80	MOT	706
MUR1520	1.81	HAR	660
MUR1540	2.10	MOT	706
MUR1560	2.20	MOT	706
MUR160	0.75	MOT	706
MUR1620CT	1.30	MOT	706
MUR1620CT	1.64	HAR	660
MUR1620CTR	2.70	MOT	706
MUR1640CT	2.84	MOT	706
MUR1660CT	3.20	MOT	706
MUR3020PT	4.20	MOT	706
MUR3020PT	5.07	HAR	660
MUR3040PT	4.50	MOT	706
MUR3060PT	5.30	MOT	706
MUR3060WT	4.20	MOT	706
MUR3080	4.80	MOT	706
MUR4100E	1.28	MOT	706
MUR415	0.64	MOT	—
MUR420	0.64	MOT	706
MUR440	0.73	MOT	706
MUR460	0.82	MOT	706
MUR6040	7.00	MOT	706
MUR620CT	2.10	MOT	706
MUR805	1.04	MOT	—
MUR810	1.07	HAR	660
MUR8100E	3.14	MOT	706
MUR820	1.04	MOT	706
MUR840	1.18	MOT	706
MUR840	1.24	HAR	660
MUR860	1.28	MOT	706
MURB1620CT	2.00	MOT	706
MURB1660CT	3.50	MOT	706
MURD620CT	1.10	MOT	706
MURH840CT	3.20	MOT	706
MURH860CT	3.60	MOT	706
MURHB840CT	3.40	MOT	706
MURP20020CT	35.50	MOT	706
MURP20040CT	40.50	MOT	706
MURS120T3	0.65	MOT	706
MURS160T3	0.80	MOT	706
MURS320T3	1.08	MOT	706
MURS360T3	1.25	MOT	706
MUX08EP	9.00	ADI	636
MUX08FP	6.38	ADI	636
MUX16ET	18.15	ADI	—
MUX24EP	14.40	ADI	—
MV104	0.64	MOT	700
MV209	0.66	MOT	701
MV2101	0.74	MOT	700
MV2105	0.74	MOT	—
MV2107	0.74	MOT	—
MV2108	0.74	MOT	700
MV2109	0.74	MOT	700
MV2115	1.00	MOT	700
MV7005T1	1.04	MOT	701
MV7404T1	4.30	MOT	701
MVAM108	0.78	MOT	701
MVAM109	0.78	MOT	701
MVAM115	0.78	MOT	701
MVAM125	0.78	MOT	701
MWA110	7.05	MOT	—
N80C152JA-1	28.42	ITL	666
N80C152JA	23.73	ITL	666
N80C152JB-1	37.40	ITL	666
N80C152JB	26.11	ITL	666
N80C152JC-1	22.17	ITL	666
N80C152JC	14.10	ITL	666
N80C152JD-1	24.55	ITL	666
N80C152JD	19.86	ITL	666
N80C31BH-1	3.85	ITL	665
N80C31BH	3.40	ITL	665
N80C32-1	5.35	ITL	665
N80C32-20	5.50	ITL	665
N80C32	5.05	ITL	665
N80C51FA-1	5.98	ITL	665
N80C51FA	5.85	ITL	665
N80C51GB-1	10.88	ITL	666
N80C51GB	10.49	ITL	666
N80C51RA	6.39	ITL	666
N80L51FA	7.34	ITL	666
N81-A230X	2.46	SIE	725
N81-A350X	2.46	SIE	725
N81-C90X	2.48	SIE	725
N87C51-1	13.90	ITL	665

Manufacturer's Code Log

ADI	Analog Devices Inc.
AMD	Advanced Micro Devices
COL	Collmer Semiconductors, Inc.
DLS	Dallas Semiconductor
HAR	Harris Semiconductor
ITL	Intel
LAT	Lattice
MXM	Maxim
MOS	Mosel-Vitelic
MOT	Motorola Semiconductor
NSC	National Semiconductor
NTE	NTE Electronics
PHI	Philips Semiconductors
SEM	Semiconductors Inc.
SIE	Siemens Components, Inc
TIS	Texas Instruments
THO	Thomson Consumer Electronics
UNI	Unitrode Integrated Circuits
XLX	Xilinx

Mfr.'s Type	Price	Mfr.'s Code	Page
N87C51-20	14.60	ITL	665
N87C51	13.30	ITL	665
N87C51FA-1	20.67	ITL	665
N87C51FA-20	21.62	ITL	665
N87C51FA	19.58	ITL	665
N87C51FB-1	25.43	ITL	665
N87C51FB	24.34	ITL	665
N87C51FC-1	31.82	ITL	666
N87C51FC-20	32.91	ITL	666
N87C51FC	30.87	ITL	666
N87C51GB	22.03	ITL	666
N87C51RA	20.94	ITL	666
N87C51RB-20	28.29	ITL	666
N87C51RB	25.84	ITL	666
N87C51RC-20	35.09	ITL	666
N87C51RC	31.82	ITL	666
N87C52-1	16.30	ITL	665
N87C52	15.60	ITL	665
N87C54-1	20.70	ITL	665
N87C54-20	21.70	ITL	665
N87C54	19.70	ITL	665
N87C58-20	27.00	ITL	665
N87C58	24.50	ITL	665
N87L51FA-20	24.75	ITL	666
N87L51FA	22.71	ITL	666
N87L51FB-20	30.06	ITL	666
N87L51FC-20	37.54	ITL	666
NE4558D	0.44	PHI	721
NE4558N	0.52	PHI	721
NE5018N	5.86	PHI	722
NE5090D	2.34	PHI	722
NE5090N	2.34	PHI	722
NE5204AN	1.54	PHI	—
NE5205AN	2.09	PHI	721
NE5209D	16.92	PHI	721
NE5209N	16.92	PHI	721
NE521D	1.83	PHI	721
NE521N	1.83	PHI	721
NE5230D	0.95	PHI	721
NE5230N	1.34	PHI	721
NE527N	1.45	PHI	721
NE529D	1.46	PHI	721
NE529N	1.90	PHI	721
NE531N	1.00	PHI	—
NE532N	0.52	PHI	721
NE5514N	1.46	PHI	721
NE5517D	0.72	PHI	721
NE5517N	0.72	PHI	721
NE5532AN	1.13	PHI	721
NE5532AP	1.56	TIS	733
NE5532N	0.82	PHI	721
NE5532P	1.03	TIS	733
NE5533AN	1.98	PHI	721
NE5534AD	1.24	PHI	721
NE5534AD	1.50	TIS	732
NE5534AN	1.36	PHI	721
NE5534AP	1.55	TIS	732
NE5534D	0.60	PHI	721
NE5534D	0.95	TIS	732
NE5534N	0.70	PHI	721
NE5539N	2.16	PHI	—
NE555D	0.40	PHI	722
NE555D	0.50	TIS	733
NE555N	0.41	PHI	722
NE555P	0.64	TIS	733
NE5561N	1.26	PHI	—
NE556D	0.46	PHI	722
NE556D	0.77	TIS	733
NE556N	0.64	TIS	733
NE556N	0.65	PHI	722
NE558D	1.10	PHI	722
NE558N	0.84	PHI	722
NE564D	1.40	PHI	722
NE564N	1.59	PHI	722
NE567D	0.42	PHI	722
NE567N	0.48	PHI	722
NE568AD	2.37	PHI	722
NE568AN	2.56	PHI	722
NE570D	3.08	PHI	721
NE570N	2.50	PHI	721
NE571D	2.14	PHI	721
NE571N	2.31	PHI	721
NE572D	2.08	PHI	721
NE572N	2.94	PHI	721
NE575D	2.69	PHI	721
NE575N	2.89	PHI	721
NE577N	2.54	PHI	—
NE578D	2.69	PHI	721
NE590N	2.22	PHI	722
NE591N	2.47	PHI	722
NE592N14	0.48	PHI	—
NE592N8	0.48	PHI	—
NE602AD	1.45	PHI	722
NE602AN	1.66	PHI	722
NE604AD	4.27	PHI	722
NE604AN	4.61	PHI	722
NE605N	5.08	PHI	—
NE612AN	1.40	PHI	722
NE614AD	2.58	PHI	722
NE614AN	2.67	PHI	722
NE615N	3.77	PHI	—
NE627N	5.18	PHI	—
NTE-CRM7	4.95	NTE	743
NTE10	2.02	NTE	—
NTE100	4.72	NTE	717
NTE101	5.37	NTE	717
NTE102	4.08	NTE	717
NTE1027	21.22	NTE	—
NTE102A	2.04	NTE	717
NTE103	5.40	NTE	717
NTE103A	2.08	NTE	717
NTE105	20.74	NTE	—
NTE106	1.44	NTE	—
NTE107	1.73	NTE	718
NTE108	1.69	NTE	718
NTE109	0.78	NTE	719
NTE11	1.55	NTE	—
NTE110MP	0.96	NTE	—
NTE1115	8.59	NTE	—
NTE112	1.62	NTE	719
NTE116	0.42	NTE	719
NTE117	1.15	NTE	719
NTE118	2.98	NTE	—
NTE121	16.01	NTE	—
NTE123	1.30	NTE	—
NTE1231	5.74	NTE	—
NTE1231A	5.74	NTE	—
NTE1232	6.45	NTE	—
NTE123A	1.51	NTE	718
NTE123AP	1.29	NTE	718
NTE124	5.54	NTE	718
NTE1245	5.80	NTE	—
NTE125	0.81	NTE	719
NTE126	4.97	NTE	718
NTE126A	5.85	NTE	—
NTE127	35.40	NTE	718
NTE1278	6.48	NTE	—
NTE128	2.09	NTE	718
NTE1289	11.63	NTE	—
NTE128P	1.44	NTE	—
NTE129	2.29	NTE	718
NTE129P	1.49	NTE	—
NTE130	4.18	NTE	718
NTE131	3.20	NTE	—
NTE132	1.18	NTE	—
NTE1322	22.13	NTE	—
NTE133	1.01	NTE	—
NTE1338	14.32	NTE	—
NTE135A	1.02	NTE	719
NTE136A	1.02	NTE	719
NTE1376	14.53	NTE	—
NTE137A	1.02	NTE	719
NTE1380	14.26	NTE	—
NTE1389	8.86	NTE	—
NTE138A	1.02	NTE	719
NTE1394	8.95	NTE	—
NTE1396	13.78	NTE	—
NTE139A	1.02	NTE	719
NTE140A	1.02	NTE	719
NTE1417	9.00	NTE	—
NTE142A	1.02	NTE	719
NTE143A	1.02	NTE	719
NTE144A	1.02	NTE	—
NTE145A	0.79	NTE	719
NTE146A	1.02	NTE	—
NTE1471	7.86	NTE	719
NTE147A	1.02	NTE	—
NTE1489	7.09	NTE	—
NTE149A	1.02	NTE	—
NTE15021	9.44	NTE	—
NTE1508	8.18	NTE	—
NTE150A	1.02	NTE	—
NTE152	2.46	NTE	718
NTE153	2.99	NTE	718
NTE1538	6.16	NTE	—
NTE154	3.49	NTE	718
NTE1547	15.22	NTE	—
NTE1550	7.42	NTE	—
NTE156	1.45	NTE	719
NTE156A	1.80	NTE	719
NTE157	2.37	NTE	718
NTE158	2.31	NTE	718
NTE159	1.69	NTE	718
NTE159M	0.87	NTE	—
NTE160	2.88	NTE	718
NTE161	2.32	NTE	718
NTE162	9.00	NTE	718
NTE163A	10.75	NTE	—
NTE165	13.50	NTE	718
NTE166	2.04	NTE	719
NTE167	2.43	NTE	719
NTE1672	4.79	NTE	—
NTE1674	3.90	NTE	—
NTE1676	5.26	NTE	—
NTE168	2.70	NTE	719
NTE1681	12.32	NTE	—
NTE1684	5.10	NTE	—
NTE169	3.40	NTE	—
NTE170	5.41	NTE	—
NTE171	2.95	NTE	718
NTE1720	5.09	NTE	—
NTE1721	5.72	NTE	—
NTE1729	4.59	NTE	—
NTE172A	1.01	NTE	718
NTE1743	14.28	NTE	—
NTE1749	15.40	NTE	—
NTE175	4.02	NTE	718
NTE1750	9.48	NTE	—
NTE176	4.80	NTE	—
NTE177	1.11	NTE	719
NTE1784	5.19	NTE	—
NTE179	24.08	NTE	718
NTE1797	4.89	NTE	—
NTE18	2.18	NTE	—
NTE180	9.44	NTE	718
NTE1804	9.01	NTE	—
NTE180MCP	17.59	NTE	—
NTE181	7.90	NTE	718
NTE182	11.86	NTE	—
NTE1830	5.85	NTE	—
NTE184	2.36	NTE	718
NTE1840	14.44	NTE	—
NTE185	2.83	NTE	718
NTE186	2.46	NTE	718
NTE186A	2.46	NTE	718
NTE187	2.58	NTE	718
NTE1870	10.42	NTE	—
NTE187A	2.58	NTE	—
NTE189	2.97	NTE	718
NTE19	2.16	NTE	—
NTE190	3.40	NTE	—
NTE1900	1.94	NTE	—
NTE1903	1.96	NTE	—
NTE1905	1.96	NTE	—
NTE1908	1.78	NTE	—
NTE191	4.10	NTE	—
NTE1911	9.68	NTE	—
NTE1912	25.75	NTE	—
NTE1914	8.17	NTE	—
NTE1915	8.05	NTE	—
NTE1916	5.75	NTE	—
NTE1917	3.45	NTE	—
NTE1918	13.10	NTE	—
NTE1919	6.12	NTE	—
NTE192	2.05	NTE	718
NTE1924	6.10	NTE	—
NTE1928	2.34	NTE	—
NTE192A	1.85	NTE	—
NTE193	2.11	NTE	718
NTE1930	1.82	NTE	—
NTE1932	4.55	NTE	—
NTE1934	7.41	NTE	—
NTE194	1.23	NTE	718
NTE1940	6.45	NTE	719
NTE1942	3.86	NTE	—
NTE195A	4.90	NTE	—
NTE196	3.27	NTE	718
NTE197	2.97	NTE	718
NTE198	3.72	NTE	718
NTE199	1.09	NTE	718
NTE1V014	1.24	NTE	—
NTE1V130	1.55	NTE	—
NTE1V150	1.65	NTE	—
NTE20	2.02	NTE	—
NTE2011	2.71	NTE	—
NTE2013	3.69	NTE	719
NTE2014	4.57	NTE	—
NTE2018	3.62	NTE	—
NTE2019	3.24	NTE	—
NTE2020	3.24	NTE	—
NTE2028	5.60	NTE	—
NTE2030	5.45	NTE	—
NTE2050	19.58	NTE	—
NTE2051	19.90	NTE	—
NTE2085	6.55	NTE	—
NTE2087	6.55	NTE	—
NTE210	2.35	NTE	—
NTE2102	4.61	NTE	—
NTE2107	7.95	NTE	—
NTE211	2.58	NTE	718
NTE21128	12.71	NTE	—
NTE2114	12.10	NTE	—
NTE2128	13.10	NTE	—
NTE213	27.12	NTE	—
NTE218	5.25	NTE	—
NTE219	6.97	NTE	718
NTE221	3.33	NTE	—
NTE222	4.02	NTE	—
NTE229	1.94	NTE	—
NTE2300	7.52	NTE	—
NTE2301	5.69	NTE	—
NTE2302	6.44	NTE	718
NTE2304	5.04	NTE	—
NTE2305	5.10	NTE	—
NTE2306	5.40	NTE	—
NTE2308	7.42	NTE	718
NTE2309	6.79	NTE	—
NTE231	17.67	NTE	—
NTE2310	8.59	NTE	—
NTE2311	15.63	NTE	—
NTE2312	5.29	NTE	—
NTE2313	3.00	NTE	—
NTE2315	5.90	NTE	—
NTE2318	8.75	NTE	—
NTE2319	14.34	NTE	—
NTE232	1.07	NTE	—
NTE2321	3.93	NTE	—
NTE2322	3.40	NTE	—
NTE2324	9.10	NTE	—
NTE2325	3.22	NTE	—
NTE2327	1.74	NTE	—
NTE2328	6.39	NTE	—
NTE2329	6.12	NTE	—
NTE2334	1.70	NTE	—
NTE2339	5.90	NTE	—
NTE234	1.12	NTE	718
NTE2343	2.27	NTE	—
NTE2344	2.27	NTE	—
NTE2349	16.44	NTE	—
NTE235	6.30	NTE	718
NTE2350	17.00	NTE	—
NTE2359	1.00	NTE	—
NTE236	10.40	NTE	718
NTE2376	8.38	NTE	—
NTE238	15.75	NTE	718
NTE2380	6.65	NTE	—
NTE2382	4.93	NTE	—
NTE2383	9.35	NTE	—
NTE2385	6.56	NTE	—
NTE2388	7.73	NTE	—
NTE239	3.74	NTE	—
NTE2392	19.31	NTE	—
NTE24	1.69	NTE	—
NTE240	4.58	NTE	—
NTE2406	2.20	NTE	—
NTE2409	1.91	NTE	—
NTE241	2.49	NTE	—
NTE242	2.60	NTE	—
NTE243	3.46	NTE	—
NTE244	4.07	NTE	—
NTE245	4.69	NTE	—
NTE246	5.80	NTE	—
NTE247	5.63	NTE	—
NTE248	6.42	NTE	—
NTE249	8.38	NTE	718
NTE25	1.77	NTE	—
NTE250	8.50	NTE	718
NTE251	8.73	NTE	—
NTE252	8.50	NTE	—
NTE253	2.44	NTE	718
NTE2532	24.08	NTE	—
NTE254	2.71	NTE	718
NTE261	2.49	NTE	718
NTE262	2.79	NTE	718
NTE263	2.38	NTE	718
NTE264	3.19	NTE	718
NTE265	1.48	NTE	718
NTE268	1.62	NTE	—
NTE27	34.20	NTE	—
NTE270	5.66	NTE	—
NTE271	6.15	NTE	—
NTE2716	14.29	NTE	—
NTE272	1.90	NTE	—
NTE2732A	13.32	NTE	—
NTE276	13.11	NTE	—
NTE2764	22.40	NTE	—
NTE278	3.35	NTE	—
NTE280	6.57	NTE	718
NTE281	10.17	NTE	—
NTE283	10.29	NTE	718
NTE284	10.43	NTE	718
NTE285	11.17	NTE	718
NTE287	1.19	NTE	718
NTE288	1.08	NTE	718
NTE289	1.37	NTE	718
NTE289A	1.46	NTE	718

Mfr.'s Type	Price	Mfr.'s Code	Page
NTE29	16.40	NTE	—
NTE290	1.15	NTE	718
NTE290A	1.51	NTE	718
NTE291	3.47	NTE	718
NTE292	3.68	NTE	718
NTE293	1.90	NTE	718
NTE294	1.85	NTE	718
NTE295	3.30	NTE	—
NTE298	1.69	NTE	—
NTE2V010	2.03	NTE	—
NTE2V025	2.03	NTE	—
NTE2V130	2.03	NTE	—
NTE2V150	2.39	NTE	—
NTE2V250	2.91	NTE	—
NTE3010	1.23	NTE	—
NTE3025	1.46	NTE	—
NTE3027	3.35	NTE	—
NTE3028	5.00	NTE	—
NTE3030	3.57	NTE	—
NTE3032	11.70	NTE	—
NTE3035A	2.34	NTE	—
NTE3036	5.11	NTE	—
NTE3040	2.00	NTE	—
NTE3041	2.17	NTE	—
NTE3042	1.78	NTE	—
NTE3043	3.19	NTE	—
NTE3044	2.55	NTE	—
NTE3045	2.67	NTE	—
NTE3046	4.24	NTE	—
NTE3047	3.22	NTE	—
NTE3048	4.05	NTE	—
NTE3049	6.08	NTE	—
NTE3056	3.13	NTE	—
NTE3061	2.70	NTE	—
NTE3068	3.04	NTE	—
NTE3081	4.57	NTE	—
NTE3083	2.67	NTE	—
NTE3084	2.60	NTE	—
NTE3085	6.10	NTE	—
NTE3086	4.10	NTE	—
NTE3089	5.10	NTE	—
NTE308P	8.70	NTE	—
NTE3090	4.00	NTE	—
NTE3091	4.45	NTE	—
NTE3092	5.07	NTE	—
NTE3093	5.29	NTE	—
NTE3097	5.63	NTE	—
NTE3098	2.37	NTE	—
NTE309K	4.64	NTE	—
NTE31	3.46	NTE	—
NTE3100	7.37	NTE	—
NTE3101	7.72	NTE	—
NTE3102	6.95	NTE	—
NTE3103	6.90	NTE	—
NTE311	3.05	NTE	718
NTE3115	5.75	NTE	—
NTE312	1.38	NTE	—
NTE314	9.93	NTE	—
NTE316	3.40	NTE	—
NTE32	4.09	NTE	—
NTE323	4.43	NTE	—
NTE324	4.64	NTE	—
NTE326	1.77	NTE	—
NTE327	19.55	NTE	—
NTE331	3.40	NTE	718
NTE332	3.67	NTE	718
NTE334	28.15	NTE	—
NTE359	33.16	NTE	—
NTE36	5.00	NTE	717
NTE37	5.10	NTE	717
NTE373	2.04	NTE	718
NTE374	2.25	NTE	718
NTE375	3.01	NTE	718
NTE376	3.74	NTE	—
NTE377	3.10	NTE	718
NTE378	3.48	NTE	718
NTE379	7.60	NTE	718
NTE37MCP	10.13	NTE	—
NTE38	8.72	NTE	—
NTE382	2.35	NTE	718
NTE383	2.37	NTE	718
NTE384	6.52	NTE	718
NTE385	9.10	NTE	718
NTE386	18.61	NTE	718
NTE388	7.45	NTE	—
NTE3880	23.20	NTE	—
NTE3881	20.45	NTE	—
NTE3882	20.45	NTE	—
NTE389	6.97	NTE	718
NTE39	3.91	NTE	717
NTE390	4.58	NTE	—
NTE391	4.38	NTE	—
NTE392	6.20	NTE	—
NTE393	6.53	NTE	—
NTE394	6.55	NTE	—
NTE395	3.55	NTE	—
NTE396	3.45	NTE	718
NTE397	3.44	NTE	718
NTE398	3.30	NTE	718
NTE399	3.48	NTE	718
NTE4000	0.84	NTE	—
NTE4001B	0.87	NTE	719
NTE40106B	1.36	NTE	—

Mfr.'s Type	Price	Mfr.'s Code	Page
NTE4011B	1.04	NTE	719
NTE4012B	0.95	NTE	—
NTE4013B	1.31	NTE	719
NTE4015B	3.66	NTE	—
NTE4016B	1.31	NTE	—
NTE4017B	3.66	NTE	—
NTE40194B	2.72	NTE	—
NTE4020B	3.87	NTE	—
NTE4023B	0.88	NTE	—
NTE4024B	3.23	NTE	—
NTE4025B	0.84	NTE	—
NTE4027B	1.86	NTE	—
NTE4028B	3.04	NTE	—
NTE4029B	4.03	NTE	—
NTE4030B	1.37	NTE	—
NTE4040B	3.87	NTE	—
NTE4042B	2.65	NTE	—
NTE4043B	2.59	NTE	—
NTE4044B	2.68	NTE	—
NTE4046B	2.42	NTE	—
NTE4049	1.39	NTE	—
NTE4050B	1.74	NTE	—
NTE4051B	4.22	NTE	—
NTE4053B	3.12	NTE	—
NTE4060B	3.39	NTE	—
NTE4066B	1.76	NTE	—
NTE4069	0.84	NTE	—
NTE4070B	0.94	NTE	—
NTE4071B	0.94	NTE	—
NTE4077B	0.77	NTE	—
NTE4081B	0.75	NTE	—
NTE4093B	1.15	NTE	—
NTE4097B	4.74	NTE	—
NTE4098B	2.87	NTE	—
NTE413	2.04	NTE	717
NTE414	1.83	NTE	717
NTE4164	10.45	NTE	—
NTE422	2.02	NTE	717
NTE423	1.69	NTE	—
NTE429	1.85	NTE	—
NTE43	2.04	NTE	—
NTE435P20	1.56	NTE	—
NTE435P6	1.50	NTE	—
NTE438	0.66	NTE	717
NTE439	0.80	NTE	717
NTE451	1.80	NTE	—
NTE4511B	3.76	NTE	—
NTE4512B	3.04	NTE	—
NTE4518B	4.74	NTE	—
NTE452	2.39	NTE	—
NTE4520B	4.33	NTE	—
NTE4526B	2.96	NTE	—
NTE4528B	3.52	NTE	—
NTE4538B	2.99	NTE	—
NTE454	2.90	NTE	—
NTE4541B	2.50	NTE	—
NTE4543B	4.76	NTE	—
NTE455	3.07	NTE	—
NTE456	1.99	NTE	—
NTE457	1.65	NTE	—
NTE4584B	1.40	NTE	—
NTE459	2.55	NTE	—
NTE46	2.02	NTE	717
NTE466	3.06	NTE	—
NTE467	1.35	NTE	—
NTE47	1.19	NTE	—
NTE477	59.36	NTE	—
NTE48	1.42	NTE	—
NTE480	55.92	NTE	—
NTE49	4.08	NTE	—
NTE4900	2.53	NTE	—
NTE4902	3.73	NTE	—
NTE4926	2.67	NTE	—
NTE4927	3.73	NTE	—
NTE4928	2.63	NTE	—
NTE4935	3.73	NTE	—
NTE4950	2.97	NTE	—
NTE4951	3.73	NTE	—
NTE4988	5.05	NTE	—
NTE4989	4.75	NTE	—
NTE50	3.78	NTE	—
NTE5000A	1.63	NTE	—
NTE5001A	0.81	NTE	—
NTE5002A	0.81	NTE	—
NTE5003A	0.81	NTE	—
NTE5004A	0.81	NTE	—
NTE5005A	0.81	NTE	—
NTE5007A	0.81	NTE	—
NTE5008A	0.81	NTE	—
NTE5009A	0.81	NTE	—
NTE5010A	0.81	NTE	—
NTE5011A	0.81	NTE	—
NTE5012A	0.81	NTE	—
NTE5013A	0.81	NTE	—
NTE5014A	0.81	NTE	—
NTE5016A	0.81	NTE	—
NTE5018A	0.81	NTE	—
NTE5019A	0.81	NTE	—
NTE5020A	0.81	NTE	—
NTE5021A	0.81	NTE	—
NTE5022A	0.81	NTE	—
NTE5023A	0.81	NTE	—
NTE5024A	0.81	NTE	—

Mfr.'s Type	Price	Mfr.'s Code	Page
NTE5025A	0.81	NTE	—
NTE5027A	0.81	NTE	—
NTE5030A	0.81	NTE	—
NTE5031A	0.81	NTE	—
NTE5032A	0.81	NTE	—
NTE5033A	0.81	NTE	—
NTE5035A	0.81	NTE	—
NTE5038A	0.81	NTE	—
NTE5039A	0.81	NTE	—
NTE5040A	0.81	NTE	—
NTE505	4.69	NTE	—
NTE5056A	0.81	NTE	—
NTE506	1.83	NTE	719
NTE5060A	0.81	NTE	—
NTE5065A	0.95	NTE	—
NTE5066A	1.02	NTE	—
NTE5067A	1.02	NTE	—
NTE5068A	1.02	NTE	—
NTE5069A	1.02	NTE	—
NTE5070A	1.02	NTE	—
NTE5071A	1.02	NTE	—
NTE5072A	1.02	NTE	—
NTE5074A	1.02	NTE	—
NTE5075A	1.02	NTE	—
NTE5077A	1.02	NTE	—
NTE5078A	1.02	NTE	—
NTE5079A	1.02	NTE	—
NTE5080A	1.02	NTE	—
NTE5081A	1.02	NTE	—
NTE5084A	1.02	NTE	—
NTE5085A	1.02	NTE	—
NTE5086A	1.02	NTE	—
NTE5087A	1.02	NTE	—
NTE5088A	1.02	NTE	—
NTE5090A	1.02	NTE	—
NTE5092A	1.02	NTE	—
NTE5095A	1.02	NTE	—
NTE5097A	1.02	NTE	—
NTE5098A	1.02	NTE	—
NTE51	4.09	NTE	717
NTE5105A	1.02	NTE	—
NTE5117A	2.25	NTE	—
NTE5118A	2.25	NTE	—
NTE5119A	2.25	NTE	—
NTE5121A	2.25	NTE	—
NTE5125A	2.25	NTE	—
NTE5126A	2.25	NTE	—
NTE5127A	2.25	NTE	—
NTE5128A	2.25	NTE	—
NTE5130A	2.25	NTE	—
NTE5133A	2.25	NTE	—
NTE5134A	2.25	NTE	—
NTE5135A	2.25	NTE	—
NTE5136A	2.25	NTE	—
NTE5137A	2.25	NTE	—
NTE5138A	2.25	NTE	—
NTE5139A	2.25	NTE	—
NTE5142A	2.25	NTE	—
NTE5143A	2.25	NTE	—
NTE5146A	2.25	NTE	—
NTE5150A	2.25	NTE	—
NTE5152A	2.25	NTE	—
NTE5155A	2.25	NTE	—
NTE5156A	2.25	NTE	—
NTE5158A	2.25	NTE	—
NTE5159A	2.25	NTE	—
NTE5164A	2.25	NTE	—
NTE5166A	2.25	NTE	—
NTE518	4.59	NTE	—
NTE5185A	8.60	NTE	—
NTE5188A	8.60	NTE	—
NTE519	1.11	NTE	719
NTE5191A	8.60	NTE	—
NTE52	6.34	NTE	—
NTE5202A	8.60	NTE	—
NTE5202A	8.60	NTE	—
NTE5203A	8.60	NTE	—
NTE5208A	8.60	NTE	—
NTE5224A	8.60	NTE	—
NTE5226A	8.60	NTE	—
NTE523	24.43	NTE	—
NTE5232A	8.60	NTE	—
NTE524V13	2.99	NTE	—
NTE524V25	3.19	NTE	—
NTE525	6.01	NTE	719
NTE5254AK	14.18	NTE	—
NTE5285A	14.18	NTE	—
NTE5296A	14.18	NTE	—
NTE53	11.53	NTE	717
NTE5304	1.75	NTE	719
NTE5305	1.93	NTE	719
NTE5306	2.22	NTE	—
NTE5309	3.06	NTE	—
NTE5310	4.45	NTE	—
NTE5312	3.52	NTE	—
NTE5313	3.78	NTE	719
NTE5314	4.22	NTE	719
NTE5315	5.10	NTE	719
NTE5316	5.80	NTE	—
NTE5317	6.05	NTE	—
NTE5318	2.38	NTE	—
NTE5319	3.15	NTE	—
NTE5320	4.52	NTE	—

Mfr.'s Type	Price	Mfr.'s Code	Page
NTE5322	5.75	NTE	719
NTE5324	6.40	NTE	719
NTE5326	6.80	NTE	719
NTE5328	8.40	NTE	—
NTE5329	3.35	NTE	—
NTE5332	1.72	NTE	719
NTE5335	91.53	NTE	—
NTE5340	8.70	NTE	—
NTE5342	10.85	NTE	—
NTE5344	12.50	NTE	—
NTE5346	74.58	NTE	—
NTE5351	11.61	NTE	—
NTE5360	37.71	NTE	—
NTE54	4.03	NTE	717
NTE5400	0.89	NTE	—
NTE5401	1.08	NTE	—
NTE5402	1.15	NTE	—
NTE5404	1.29	NTE	—
NTE5408	5.91	NTE	—
NTE5409	6.80	NTE	—
NTE5413	1.58	NTE	—
NTE5414	1.77	NTE	—
NTE5415	2.38	NTE	—
NTE5418	2.76	NTE	—
NTE542	10.15	NTE	—
NTE5426	3.30	NTE	—
NTE5429	7.50	NTE	—
NTE5437	2.35	NTE	—
NTE5448	19.05	NTE	—
NTE5452	1.14	NTE	—
NTE5453	1.29	NTE	—
NTE5454	1.78	NTE	—
NTE5455	1.93	NTE	—
NTE5456	2.02	NTE	—
NTE5457	2.02	NTE	—
NTE5461	2.11	NTE	—
NTE5463	2.68	NTE	—
NTE5465	3.19	NTE	—
NTE5466	4.58	NTE	—
NTE5468	5.05	NTE	—
NTE5483	16.52	NTE	—
NTE5484	17.36	NTE	—
NTE5492	8.77	NTE	—
NTE55	4.94	NTE	717
NTE5511	5.10	NTE	—
NTE5514	7.78	NTE	—
NTE5515	8.39	NTE	—
NTE5518	7.82	NTE	—
NTE552	1.43	NTE	719
NTE5529	11.69	NTE	—
NTE5541	8.67	NTE	—
NTE5542	9.63	NTE	—
NTE5543	10.38	NTE	—
NTE5545	12.64	NTE	—
NTE5547	16.49	NTE	—
NTE555	1.98	NTE	—
NTE5550	3.74	NTE	—
NTE5552	4.38	NTE	—
NTE5554	6.00	NTE	—
NTE5556	7.60	NTE	—
NTE5558	11.60	NTE	—
NTE5564	13.28	NTE	—
NTE5568	28.10	NTE	—
NTE5569	45.25	NTE	—
NTE5574	127.32	NTE	—
NTE5577	71.05	NTE	—
NTE558	2.53	NTE	719
NTE5582	119.95	NTE	—
NTE56	3.81	NTE	—
NTE56004	3.91	NTE	—
NTE56006	5.05	NTE	—
NTE56008	5.65	NTE	—
NTE56010	6.55	NTE	—
NTE56014	12.78	NTE	—
NTE56018	7.05	NTE	—
NTE56022	13.33	NTE	—
NTE56024	16.06	NTE	—
NTE56026	16.36	NTE	—
NTE5603	1.95	NTE	—
NTE5604	2.42	NTE	—
NTE5605	3.35	NTE	—
NTE5608	2.80	NTE	—
NTE5629	2.17	NTE	—
NTE5633	2.75	NTE	—
NTE5635	4.08	NTE	—
NTE5637	4.54	NTE	—
NTE5640	2.67	NTE	—
NTE5642	3.16	NTE	—
NTE5643	3.73	NTE	—
NTE5645	4.04	NTE	—
NTE5646	4.91	NTE	—
NTE5651	4.69	NTE	—
NTE5652	6.90	NTE	—
NTE5655	1.33	NTE	—
NTE5656	1.88	NTE	—
NTE5671	6.32	NTE	—
NTE5675	11.39	NTE	—
NTE5679	17.19	NTE	—
NTE5687	16.40	NTE	—
NTE5695	11.40	NTE	—
NTE5697	12.15	NTE	—
NTE5700	47.45	NTE	—
NTE5710	89.96	NTE	—

Manufacturer's Code Log

ADI	**Analog Devices Inc.**
AMD	**Advanced Micro Devices**
COL	**Collmer Semiconductors, Inc.**
DLS	**Dallas Semiconductor**
HAR	**Harris Semiconductor**
ITL	**Intel**
LAT	**Lattice**
MXM	**Maxim**
MOS	**Mosel-Vitelic**
MOT	**Motorola Semiconductor**
NSC	**National Semiconductor**
NTE	**NTE Electronics**
PHI	**Philips Semiconductors**
SEM	**Semiconductors Inc.**
SIE	**Siemens Components, Inc**
TIS	**Texas Instruments**
THO	**Thomson Conusumer Electronics**
UNI	**Unitrode Integrated Circuits**
XLX	**Xilinx**

Mfr.'s Type	Price	Mfr.'s Code	Page
NTE5721	79.51	NTE	—
NTE580	2.68	NTE	719
NTE5800	0.53	NTE	719
NTE5801	0.78	NTE	719
NTE5802	0.90	NTE	719
NTE5804	1.22	NTE	719
NTE5806	1.50	NTE	—
NTE5808	1.99	NTE	—
NTE5809	2.68	NTE	719
NTE581	3.30	NTE	—
NTE5812	1.63	NTE	719
NTE5814	1.90	NTE	719
NTE5817	3.81	NTE	719
NTE5820	6.17	NTE	—
NTE583	2.41	NTE	—
NTE585	1.33	NTE	—
NTE586	1.91	NTE	—
NTE587	1.16	NTE	—
NTE5870	2.90	NTE	—
NTE5871	2.90	NTE	—
NTE5874	4.04	NTE	—
NTE588	1.81	NTE	—
NTE5882	4.88	NTE	—
NTE5890	9.40	NTE	—
NTE5916	5.50	NTE	—
NTE5917	5.50	NTE	—
NTE5920	6.32	NTE	—
NTE5921	6.32	NTE	—
NTE5925	7.18	NTE	—
NTE5933	10.43	NTE	—
NTE5962	4.23	NTE	—
NTE5963	4.23	NTE	—
NTE5966	6.22	NTE	—
NTE597	1.84	NTE	—
NTE5980	5.01	NTE	—
NTE5982	5.33	NTE	—
NTE5986	5.54	NTE	—
NTE5994	7.56	NTE	719
NTE5995	7.56	NTE	—
NTE5998	10.11	NTE	—
NTE60	10.20	NTE	—
NTE6002	9.51	NTE	—
NTE6006	9.51	NTE	—
NTE6034	15.60	NTE	—
NTE6040	16.55	NTE	—
NTE6041	16.55	NTE	—
NTE6050	11.31	NTE	—
NTE6064	15.30	NTE	—
NTE6073	18.50	NTE	—
NTE6076	14.04	NTE	—
NTE6077	14.04	NTE	—
NTE6084	11.80	NTE	—
NTE6085	6.26	NTE	—
NTE6087	5.85	NTE	—
NTE6090	8.29	NTE	—
NTE6094	12.45	NTE	—
NTE61	11.60	NTE	—
NTE612	2.13	NTE	—
NTE614	2.13	NTE	—
NTE6154	26.75	NTE	—
NTE6157	36.34	NTE	—
NTE6158	51.20	NTE	—
NTE6200	5.78	NTE	—
NTE6240	4.72	NTE	—
NTE6244	5.20	NTE	—
NTE6357	53.20	NTE	—
NTE6400A	23.65	NTE	—
NTE6401	5.98	NTE	719
NTE6402	1.59	NTE	—
NTE6403	8.06	NTE	—
NTE6407	1.85	NTE	—
NTE6408	1.14	NTE	—
NTE6409	6.43	NTE	719
NTE6410	5.09	NTE	719
NTE6419	2.84	NTE	—
NTE65101	14.80	NTE	—
NTE66	10.70	NTE	—
NTE67	10.20	NTE	—
NTE68	10.33	NTE	—
NTE6821	8.29	NTE	—
NTE6850	8.38	NTE	—
NTE7001	6.78	NTE	—
NTE7002	6.56	NTE	—
NTE7006	13.27	NTE	—
NTE703	3.39	NTE	—
NTE725	8.09	NTE	—
NTE7400	0.75	NTE	—
NTE7402	1.03	NTE	—
NTE7403	0.71	NTE	—
NTE7404	0.93	NTE	—
NTE7406	1.62	NTE	—
NTE7407	1.62	NTE	—
NTE7408	1.16	NTE	—
NTE740A	6.23	NTE	—
NTE7410	0.83	NTE	—
NTE7411	0.95	NTE	—
NTE74121	1.36	NTE	—
NTE74123	2.48	NTE	—
NTE7414	3.80	NTE	—
NTE74154	4.88	NTE	—
NTE7416	1.49	NTE	—
NTE74161	3.30	NTE	—
NTE74164	3.23	NTE	—
NTE7417	1.38	NTE	—
NTE74176	2.94	NTE	—
NTE74177	2.94	NTE	—
NTE74191	4.27	NTE	—
NTE74192	3.99	NTE	—
NTE74193	3.99	NTE	—
NTE7420	0.79	NTE	—
NTE7425	0.95	NTE	—
NTE7426	1.06	NTE	—
NTE7430	0.76	NTE	—
NTE7432	1.03	NTE	—
NTE7437	1.19	NTE	—
NTE7439	1.79	NTE	—
NTE7440	0.66	NTE	—
NTE7441	4.08	NTE	—
NTE7442	1.87	NTE	—
NTE7447	2.67	NTE	—
NTE745	5.81	NTE	—
NTE7454	0.98	NTE	—
NTE7472	2.83	NTE	—
NTE7473	2.06	NTE	—
NTE7474	1.12	NTE	—
NTE7475	1.96	NTE	—
NTE7476	1.87	NTE	—
NTE7483	2.84	NTE	—
NTE7486	0.98	NTE	—
NTE7489	11.64	NTE	—
NTE7490	1.58	NTE	—
NTE7493A	1.86	NTE	—
NTE74C00	1.62	NTE	—
NTE74C02	0.91	NTE	—
NTE74C08	2.02	NTE	—
NTE74C14	2.17	NTE	—
NTE74C151	6.10	NTE	—
NTE74C154	9.66	NTE	—
NTE74C193	5.03	NTE	—
NTE74C20	1.30	NTE	—
NTE74C221	8.18	NTE	—
NTE74C32	0.91	NTE	—
NTE74C74	2.88	NTE	—
NTE74C76	4.05	NTE	—
NTE74C85	5.05	NTE	—
NTE74C901	3.85	NTE	—
NTE74C922	12.45	NTE	—
NTE74C923	11.29	NTE	—
NTE74H04	1.55	NTE	—
NTE74H40	1.49	NTE	—
NTE74H51	1.49	NTE	—
NTE74H74	2.32	NTE	—
NTE74HC32	0.50	NTE	—
NTE74LS00	0.81	NTE	—
NTE74LS04	1.00	NTE	—
NTE74LS05	1.11	NTE	—
NTE74LS06	1.79	NTE	—
NTE74LS08	0.89	NTE	—
NTE74LS125A	1.44	NTE	—
NTE74LS138	2.39	NTE	—
NTE74LS14	3.06	NTE	—
NTE74LS244	3.99	NTE	—
NTE74LS27	0.91	NTE	—
NTE74LS373	2.95	NTE	—
NTE74LS74A	1.09	NTE	—
NTE74S188	3.55	NTE	—
NTE74S287	4.49	NTE	—
NTE74S288	3.66	NTE	—
NTE74S387	3.87	NTE	—
NTE74S571	6.66	NTE	—
NTE75188	2.09	NTE	—
NTE75451B	1.37	NTE	—
NTE75452B	1.25	NTE	—
NTE75491B	2.25	NTE	—
NTE75492B	2.20	NTE	—
NTE778A	3.92	NTE	719
NTE778SM	1.75	NTE	—
NTE8076	1.24	NTE	—
NTE8080A	11.86	NTE	—
NTE8081	1.24	NTE	—
NTE8085	1.24	NTE	—
NTE8090	1.24	NTE	—
NTE8096	1.24	NTE	—
NTE8098	1.24	NTE	—
NTE80C95	1.73	NTE	—
NTE81	12.33	NTE	—
NTE8103	1.24	NTE	—
NTE8108	1.24	NTE	—
NTE8115	1.24	NTE	—
NTE8118	1.24	NTE	—
NTE8125	1.24	NTE	—
NTE8139	1.24	NTE	—
NTE815	3.31	NTE	—
NTE8167	1.24	NTE	—
NTE8181	1.24	NTE	—
NTE8212	4.90	NTE	—
NTE8226	1.24	NTE	—
NTE823	2.38	NTE	—
NTE824	3.02	NTE	—
NTE8242	1.24	NTE	—
NTE8255	12.25	NTE	—
NTE832	4.20	NTE	—
NTE834	2.97	NTE	719
NTE8374	5.95	NTE	—
NTE844	14.87	NTE	—
NTE85	0.97	NTE	717
NTE857M	4.20	NTE	—
NTE858M	3.74	NTE	—
NTE859	4.10	NTE	—
NTE862	4.02	NTE	—
NTE864	7.58	NTE	—
NTE873	13.70	NTE	—
NTE874	12.92	NTE	—
NTE88	8.55	NTE	—
NTE889M	1.98	NTE	—
NTE89	11.75	NTE	717
NTE90	1.52	NTE	717
NTE909	2.49	NTE	—
NTE909D	1.48	NTE	—
NTE91	1.44	NTE	717
NTE911	2.79	NTE	—
NTE912	5.18	NTE	—
NTE914	10.32	NTE	—
NTE918	5.25	NTE	—
NTE919	6.30	NTE	—
NTE919D	4.68	NTE	—
NTE92	10.85	NTE	—
NTE922	2.98	NTE	—
NTE922M	2.53	NTE	—
NTE923	2.42	NTE	719
NTE923D	1.55	NTE	719
NTE925	12.50	NTE	—
NTE926	3.41	NTE	—
NTE927D	2.37	NTE	—
NTE928	3.02	NTE	—
NTE928M	3.22	NTE	719
NTE931	12.83	NTE	719
NTE932	15.53	NTE	—
NTE933	26.79	NTE	—
NTE934	18.40	NTE	—
NTE935	14.60	NTE	—
NTE937	3.32	NTE	—
NTE937M	3.08	NTE	—
NTE938	2.94	NTE	—
NTE938M	2.16	NTE	—
NTE94	5.20	NTE	717
NTE941	1.98	NTE	719
NTE941D	3.44	NTE	719
NTE941M	1.02	NTE	719
NTE943M	4.00	NTE	719
NTE947D	6.65	NTE	—
NTE948	3.70	NTE	—
NTE950	2.31	NTE	—
NTE951	2.33	NTE	—
NTE953	4.78	NTE	—
NTE955M	1.92	NTE	719
NTE955MC	1.48	NTE	—
NTE956	3.32	NTE	719
NTE957	3.90	NTE	—
NTE960	3.84	NTE	719
NTE961	4.94	NTE	—
NTE962	4.01	NTE	—
NTE964	3.66	NTE	719
NTE965	3.67	NTE	—
NTE966	4.05	NTE	719
NTE967	5.38	NTE	719
NTE9671	24.69	NTE	—
NTE9672	23.72	NTE	—
NTE968	3.97	NTE	719
NTE969	5.15	NTE	—
NTE96LS02	4.12	NTE	—
NTE97	12.00	NTE	—
NTE970	11.08	NTE	—
NTE972	3.88	NTE	719
NTE974	7.15	NTE	—
NTE975	2.66	NTE	—
NTE977	1.82	NTE	719
NTE978	2.78	NTE	—
NTE98	19.35	NTE	717
NTE9812	3.34	NTE	—
NTE987	2.55	NTE	719
NTE989	2.88	NTE	—
NTE99	30.60	NTE	—
NTE990	6.29	NTE	—
NTE992	3.04	NTE	719
NTE9935	5.13	NTE	—
NTE994M	3.35	NTE	—
NTE995	3.86	NTE	—
NTE9962	4.53	NTE	—
NTE997	3.86	NTE	—
OP05CP	5.03	ADI	—
OP07AZ	18.38	ADI	638
OP07CJ	4.64	ADI	638
OP07CP	1.97	ADI	638
OP07CP	2.13	TIS	732
OP07CS	1.85	ADI	638
OP07CZ	4.50	ADI	638
OP07DP	1.43	TIS	732
OP07DP	1.71	ADI	638
OP07EJ	7.50	ADI	638
OP07EP	3.24	ADI	638
OP07EZ	5.25	ADI	638
OP113EZ	5.40	ADI	638
OP113FP	2.47	ADI	638
OP113FS	2.47	ADI	638
OP11FP	8.10	ADI	—
OP176GP	1.48	ADI	639
OP176GS	1.48	ADI	639
OP177EZ	22.43	ADI	638
OP177FP	4.56	ADI	638
OP177GP	1.71	ADI	638
OP177GS	1.55	ADI	638
OP183GP	2.44	ADI	638
OP183GS	2.37	ADI	638
OP191GP	2.31	ADI	—
OP191GS	2.31	ADI	—
OP193EP	5.33	ADI	—
OP193ES	5.33	ADI	—
OP193FP	2.24	ADI	—
OP193FS	2.24	ADI	—
OP200AZ	14.70	ADI	638
OP200EZ	8.85	ADI	638
OP200FZ	5.25	ADI	638
OP200GP	4.56	ADI	638
OP213FP	2.85	ADI	638
OP213FS	4.48	ADI	638
OP215GZ	6.60	ADI	—
OP220EZ	7.50	ADI	638
OP220FZ	6.00	ADI	638
OP220GP	3.46	ADI	638
OP220GZ	4.41	ADI	638
OP221AZ	12.20	ADI	638
OP221EZ	7.50	ADI	638
OP221GZ	4.41	ADI	638
OP227EY	16.50	ADI	—
OP227GY	8.78	ADI	—
OP249AZ	13.13	ADI	—
OP249FZ	5.93	ADI	637
OP249GP	2.84	ADI	637
OP249GS	4.56	ADI	637
OP260GP	11.93	ADI	—
OP270EZ	9.00	ADI	638
OP270GP	5.25	ADI	638
OP271GP	5.25	ADI	638
OP275GP	2.04	ADI	639
OP275GS	2.04	ADI	639
OP279GP	1.88	ADI	—
OP279GS	1.88	ADI	—
OP27AZ	27.00	ADI	638
OP27CZ	11.25	ADI	638
OP27EJ	10.50	ADI	638
OP27EP	5.30	ADI	638
OP27EZ	10.50	ADI	638
OP27FP	3.75	ADI	638
OP27FZ	7.20	ADI	638
OP27GP	2.50	ADI	638
OP27GS	2.87	ADI	638
OP27GZ	5.70	ADI	638
OP282GP	2.03	ADI	637
OP282GS	2.01	ADI	637
OP283GP	3.70	ADI	638
OP283GS	3.70	ADI	638
OP284EP	7.07	ADI	—
OP284ES	7.07	ADI	—
OP284FS	4.88	ADI	—
OP285GP	2.67	ADI	638
OP285GS	3.50	ADI	638
OP290GP	4.06	ADI	637
OP290GS	3.75	ADI	637
OP291GP	3.09	ADI	638
OP291GS	3.09	ADI	638
OP292GP	1.65	ADI	638
OP292GS	1.70	ADI	638
OP293EP	7.43	ADI	—
OP293ES	7.43	ADI	—
OP293FP	3.38	ADI	—

Mfr.'s Type	Price	Mfr.'s Code	Page
OP293FS	3.38	ADI	—
OP295GP	4.15	ADI	638
OP295GS	3.75	ADI	638
OP297FZ	5.10	ADI	—
OP297GP	4.10	ADI	637
OP297GS	4.31	ADI	637
OP37EP	4.88	ADI	638
OP37EZ	10.50	ADI	638
OP37FP	2.42	ADI	—
OP37GP	2.15	ADI	638
OP37GS	2.47	ADI	638
OP400AY	26.85	ADI	638
OP400EY	12.75	ADI	638
OP400FY	8.63	ADI	638
OP400GP	8.03	ADI	638
OP413FS	8.78	ADI	638
OP420GY	5.25	ADI	638
OP42GP	3.66	ADI	—
OP467GP	9.75	ADI	638
OP467GS	10.50	ADI	638
OP470AY	24.75	ADI	638
OP470EY	13.13	ADI	638
OP470FY	8.78	ADI	638
OP470GP	7.80	ADI	638
OP470GS	8.40	ADI	638
OP471AY	26.85	ADI	638
OP471GP	8.25	ADI	638
OP482GP	3.17	ADI	—
OP482GS	3.33	ADI	637
OP484EP	12.72	ADI	—
OP484ES	12.72	ADI	—
OP484FP	8.78	ADI	—
OP484FS	8.78	ADI	—
OP490FY	6.75	ADI	637
OP490GP	5.10	ADI	637
OP491GS	5.07	ADI	638
OP492GP	4.44	ADI	638
OP492GS	4.44	ADI	638
OP493EP	8.78	ADI	—
OP493ES	8.78	ADI	—
OP493FP	4.46	ADI	—
OP495GP	5.93	ADI	638
OP495GS	5.96	ADI	638
OP496GP	3.75	ADI	—
OP496GS	3.83	ADI	—
OP497FP	10.70	ADI	—
OP497GP	7.13	ADI	637
OP497GS	7.13	ADI	637
OP77EJ	7.95	ADI	—
OP77EP	4.64	ADI	638
OP77EZ	5.63	ADI	638
OP77FJ	3.41	ADI	638
OP77FP	2.71	ADI	638
OP77GP	2.14	ADI	638
OP77GS	2.13	ADI	638
OP90GP	2.68	ADI	637
OP90GS	2.68	ADI	637
OP97EP	5.63	ADI	637
OP97EZ	7.50	ADI	637
OP97FP	2.01	ADI	637
P1086	0.71	NSC	—
P6KE110CA	0.78	MOT	703
P6KE13CA	0.60	MOT	703
P6KE15A	0.36	MOT	703
P6KE15CA	0.60	MOT	703
P6KE18A	0.36	MOT	703
P6KE18CA	0.60	MOT	703
P6KE20CA	0.58	MOT	703
P6KE24A	0.36	MOT	703
P6KE30A	0.36	MOT	703
P6KE33A	0.36	MOT	703
P6KE33CA	0.60	MOT	703
P6KE36A	0.36	MOT	703
P6KE39A	0.44	MOT	703
P6KE6.8A	0.36	MOT	703
P6KE6.8CA	0.60	MOT	703
P6KE7.5A	0.44	MOT	703
P6KE7.5CA	0.58	MOT	703
P6SMB12AT3	0.78	MOT	704
P6SMB13AT3	0.78	MOT	704
P6SMB15AT3	0.78	MOT	704
P6SMB18AT3	0.78	MOT	704
P6SMB22AT3	0.78	MOT	704
P6SMB27AT3	0.78	MOT	704
P6SMB33AT3	0.78	MOT	704
P6SMB36AT3	0.78	MOT	704
P6SMB51AT3	0.78	MOT	704
P6SMB6.8AT3	0.78	MOT	704
P6SMB62AT3	0.78	MOT	704
P6SMB68AT3	0.78	MOT	704
P80C152JA-1	28.42	ITL	666
P80C152JA	23.73	ITL	666
P80C152JC-1	22.17	ITL	666
P80C152JC	17.48	ITL	666
P80C31BH-1	3.85	ITL	665
P80C31BH	2.50	ITL	665
P80C32-1	5.35	ITL	665
P80C32-20	6.85	ITL	665
P80C32	2.65	ITL	665
P80C32EBAA	5.50	PHI	720
P80C32EBPN	5.54	PHI	720
P80C51FA-1	5.85	ITL	665
P80C51FA	5.38	ITL	665

Mfr.'s Type	Price	Mfr.'s Code	Page
P80C550EBPN	7.62	PHI	—
P80CL410HFN	5.20	PHI	720
P87C51-20	14.60	ITL	665
P87C51	11.00	ITL	665
P87C51FA-1	20.67	ITL	665
P87C51FA-20	21.62	ITL	665
P87C51FB-1	25.43	ITL	665
P87C51FB	24.34	ITL	665
P87C51FC-1	31.82	ITL	666
P87C51FC-20	32.91	ITL	666
P87C51FC	30.87	ITL	666
P87C52-1	16.30	ITL	665
P87C52	15.60	ITL	665
P87C528EBAA	38.08	PHI	720
P87C528EBFFA	52.46	PHI	720
P87C528EBLKA	61.77	PHI	720
P87C52EBAA	19.26	PHI	720
P87C52EBFFA	32.34	PHI	720
P87C52EBLKA	56.98	PHI	720
P87C52EFAA	21.18	PHI	720
P87C52EFFFA	35.42	PHI	720
P87C52EFLKA	61.60	PHI	720
P87C52EFPN	21.18	PHI	720
P87C54-1	20.70	ITL	665
P87C54-20	21.70	ITL	665
P87C54	19.70	ITL	665
P87C550EBFFA	33.00	PHI	720
P87C58-20	27.00	ITL	665
P87C750EBFFA	12.62	PHI	720
P87C750EBPN	4.44	PHI	720
PA886C02	3.88	COL	644
PA905C4	2.84	COL	644
PA905C6	3.74	COL	644
PAL16L8-4JC	17.48	AMD	632
PAL16L8-5JC	16.00	AMD	632
PAL16L8-5PC	13.35	AMD	632
PAL16L8-7JC	6.00	AMD	632
PAL16L8-7PC	6.00	AMD	632
PAL16L8ACN	1.53	AMD	632
PAL16L8ACNL	1.49	AMD	632
PAL16L8B2CN	1.11	AMD	632
PAL16L8B2CNL	1.08	AMD	632
PAL16L8B4CN	3.75	AMD	632
PAL16L8BCN	1.92	AMD	632
PAL16L8BCNL	1.86	AMD	632
PAL16L8D/2JC	3.09	AMD	632
PAL16L8D/2PC	3.09	AMD	632
PAL16R4-4JC	17.48	AMD	632
PAL16R4-5JC	13.35	AMD	632
PAL16R4-5PC	13.35	AMD	632
PAL16R4-7JC	6.00	AMD	632
PAL16R4-7PC	6.00	AMD	632
PAL16R4ACN	1.53	AMD	632
PAL16R4ACNL	1.49	AMD	632
PAL16R4B2CN	1.08	AMD	632
PAL16R4B2CNL	1.08	AMD	632
PAL16R4B4CN	3.86	AMD	632
PAL16R4BCN	1.86	AMD	632
PAL16R4BCNL	1.86	AMD	632
PAL16R4D/2JC	3.00	AMD	632
PAL16R4D/2PC	3.00	AMD	632
PAL16R6-5JC	16.00	AMD	632
PAL16R6-5PC	16.00	AMD	—
PAL16R6-7JC	6.00	AMD	632
PAL16R6-7PC	6.00	AMD	632
PAL16R6ACN	1.49	AMD	632
PAL16R6ACNL	1.49	AMD	632
PAL16R6B2CN	1.09	AMD	—
PAL16R6B4CN	3.75	AMD	632
PAL16R6BCN	1.92	AMD	632
PAL16R6BCNL	1.86	AMD	632
PAL16R6D/2JC	3.00	AMD	632
PAL16R6D/2PC	3.00	AMD	632
PAL16R8-4JC	17.48	AMD	632
PAL16R8-5JC	13.35	AMD	632
PAL16R8-5PC	13.35	AMD	632
PAL16R8-7JC	6.00	AMD	632
PAL16R8-7PC	6.00	AMD	632
PAL16R8ACN	1.49	AMD	632
PAL16R8ACNL	1.49	AMD	632
PAL16R8B2CN	1.08	AMD	632
PAL16R8B2CNL	1.08	AMD	632
PAL16R8B4CN	3.75	AMD	632
PAL16R8BCN	1.86	AMD	632
PAL16R8BCNL	1.86	AMD	632
PAL16R8D/2JC	3.00	AMD	632
PAL16R8D/2PC	3.00	AMD	632
PAL20L8-10/2JC	7.15	AMD	632
PAL20L8-10/2PC	7.15	AMD	632
PAL20L8-5JC	20.00	AMD	632
PAL20L8-5PC	20.00	AMD	632
PAL20L8-7JC	10.60	AMD	632
PAL20L8-7PC	10.60	AMD	632
PAL20L8ACNL	2.42	AMD	632
PAL20L8ACNS	2.32	AMD	632
PAL20L8BCNL	3.00	AMD	632
PAL20L8BCNS	3.09	AMD	632
PAL20R4-10/2JC	7.15	AMD	632
PAL20R4-10/2PC	7.15	AMD	632
PAL20R4-5JC	20.00	AMD	632
PAL20R4-5PC	20.00	AMD	632
PAL20R4-7JC	10.60	AMD	632
PAL20R4-7PC	10.60	AMD	632

Mfr.'s Type	Price	Mfr.'s Code	Page
PAL20R4ACNS	2.35	AMD	632
PAL20R4BCNS	3.00	AMD	632
PAL20R6-10/2JC	7.15	AMD	632
PAL20R6-10/2PC	7.15	AMD	632
PAL20R6-5JC	20.00	AMD	632
PAL20R6-5PC	20.00	AMD	632
PAL20R6-7JC	10.60	AMD	632
PAL20R6-7PC	10.60	AMD	632
PAL20R6ACNS	2.42	AMD	632
PAL20R6BCNS	3.00	AMD	632
PAL20R8-10/2JC	7.15	AMD	632
PAL20R8-10/2PC	7.15	AMD	632
PAL20R8-5JC	20.00	AMD	632
PAL20R8-7JC	10.60	AMD	632
PAL20R8-7PC	10.60	AMD	632
PAL20R8ACNS	2.42	AMD	632
PAL20R8BCNL	3.00	AMD	632
PAL20R8BCNS	3.00	AMD	632
PAL22V10-10JC	12.13	AMD	631
PAL22V10-10PC	12.04	AMD	631
PAL22V10-15JC	7.50	AMD	631
PAL22V10-15PC	7.41	AMD	631
PAL22V10-7JC	18.52	AMD	631
PAL22V10-7PC	18.52	AMD	631
PALCE16V8H-10JC/4	2.24	AMD	631
PALCE16V8H-10PC/4	2.24	AMD	631
PALCE16V8H-15JC/4	1.55	AMD	631
PALCE16V8H-15PC/4	1.55	AMD	631
PALCE16V8H-25JC/4	1.30	AMD	631
PALCE16V8H-25PC/4	1.34	AMD	631
PALCE16V8H-5JC/5	6.91	AMD	631
PALCE16V8H-7JC/5	2.69	AMD	631
PALCE16V8H-7PC/5	2.69	AMD	631
PALCE16V8Q-10JC/5	5.34	AMD	631
PALCE16V8Q-15JC/4	1.90	AMD	631
PALCE16V8Q-15PC/4	1.96	AMD	631
PALCE16V8Q-25JC/4	1.55	AMD	631
PALCE16V8Q-25PC/4	1.55	AMD	631
PALCE16V8Z-25JC	4.21	AMD	631
PALCE16V8Z-25PC	4.21	AMD	631
PALCE20RA10H-10JC	16.20	AMD	632
PALCE20RA10H-10PC	16.20	AMD	632
PALCE20RA10H-15JC	8.53	AMD	632
PALCE20RA10H-15PC	8.53	AMD	632
PALCE20RA10H-20JC	8.90	AMD	632
PALCE20RA10H-20PC	8.90	AMD	632
PALCE20V8H-10JC/4	3.45	AMD	631
PALCE20V8H-10PC/4	3.45	AMD	631
PALCE20V8H-15JC/4	2.27	AMD	631
PALCE20V8H-15PC/4	2.27	AMD	631
PALCE20V8H-25JC/4	1.70	AMD	631
PALCE20V8H-25PC/4	1.65	AMD	631
PALCE20V8H-5JC/5	12.57	AMD	631
PALCE20V8H-7JC/5	7.00	AMD	631
PALCE20V8H-7PC/5	7.00	AMD	631
PALCE20V8Q-10PC/5	5.30	AMD	631
PALCE20V8Q-15JC/4	2.01	AMD	631
PALCE20V8Q-15PC/4	2.01	AMD	631
PALCE20V8Q-25JC/4	1.75	AMD	631
PALCE20V8Q-25PC/4	1.80	AMD	631
PALCE22V10H-10JC/5	11.00	AMD	631
PALCE22V10H-10PC/5	11.00	AMD	631
PALCE22V10H-15JC/4	8.00	AMD	631
PALCE22V10H-15PC/4	8.00	AMD	631
PALCE22V10H-25JC/4	2.60	AMD	631
PALCE22V10H-25PC/4	2.60	AMD	631
PALCE22V10H-5JC/5	29.90	AMD	631
PALCE22V10H-7JC/5	18.00	AMD	631
PALCE22V10H-7PC/5	10.05	AMD	631
PALCE22V10Q-10JC/5	9.19	AMD	631
PALCE22V10Q-10PC/5	9.19	AMD	631
PALCE22V10Q-15JC/5	5.39	AMD	631
PALCE22V10Q-15PC/5	5.39	AMD	631
PALCE22V10Q-25JC/4	5.00	AMD	631
PALCE22V10Q-25PC/4	5.15	AMD	631
PALCE22V10Z-25JC	10.88	AMD	631
PALCE22V10Z-25PC	10.88	AMD	631
PALCE24V10H-15JC	5.00	AMD	631
PALCE24V10H-15PC	5.00	AMD	631
PALCE24V10H-25JC	3.00	AMD	631
PALCE24V10H-25PC	3.00	AMD	631
PALCE26V12H-10JC/4	11.40	AMD	631
PALCE26V12H-10PC/4	11.40	AMD	631
PALCE26V12H-15JC/4	10.00	AMD	631
PALCE26V12H-15PC/4	10.00	AMD	631
PALCE26V12H-20JC/4	8.00	AMD	631
PALCE26V12H-20PC/4	8.00	AMD	631
PALCE26V12H-7JC/4	14.30	AMD	631
PALCE29M16H25JC/4	12.78	AMD	—
PALCE29M16H25PC/4	12.78	AMD	—
PALCE29MA16H25JC/4	13.76	AMD	632
PALCE29MA16H25PC/4	13.76	AMD	632
PALCE610H-15JC	8.93	AMD	632
PALCE610H-15PC	8.93	AMD	632
PALCE610H-25JC	6.68	AMD	632
PALCE610H-25PC	6.68	AMD	632
PC16550DN	6.70	NSC	—
PKD01EP	12.35	ADI	—
PKD01FP	10.28	ADI	—
PKD01FY	12.86	ADI	—
PLC18V8Z35N	4.12	PHI	721
PLS100N	16.00	PHI	721
PLS105AN	13.80	PHI	721

Mfr.'s Type	Price	Mfr.'s Code	Page
PLS153N	3.68	PHI	721
PLS159AN	8.00	PHI	721
PLS167AN	22.10	PHI	721
PLS168AN	16.60	PHI	721
PLS173A	6.30	PHI	721
PLS173N	5.40	PHI	721
PLSI1016-110LJ	37.50	LAT	668
PLSI1016-60LJ	7.75	LAT	668
PLSI1016-60LT	10.25	LAT	668
PLSI1016-80LJ	7.75	LAT	668
PLSI1016-80LT	10.75	LAT	668
PLSI1016-90LJ	8.75	LAT	668
PLSI1016-90LT	11.25	LAT	668
PLSI1016E-100LJ	13.75	LAT	668
PLSI1016E-125JL	20.75	LAT	668
PLSI1016E-125LJ	20.75	LAT	668
PLSI1024-60LJ	23.50	LAT	668
PLSI1024-80LJ	22.00	LAT	—
PLSI1024-90LJ	40.00	LAT	668
PLSI1032-60LJ	28.75	LAT	668
PLSI1032-80LJ	29.50	LAT	668
PLSI1032-80LT	51.00	LAT	668
PLSI1032-90LJ	46.00	LAT	668
PLSI1048-50LQ	81.25	LAT	668
PLSI1048-70LQ	101.75	LAT	668
PLSI1048-80LQ	131.25	LAT	668
PLSI1048C-50LQ	81.25	LAT	668
PLSI1048C-70LQ	101.75	LAT	668
PLSI1048E-50LQ	81.25	LAT	668
PLSI1048E-70LQ	103.25	LAT	668
PLSI1048E-90LQ	162.00	LAT	668
PLSI2032-110LJ	9.75	LAT	668
PLSI2032-110LT	14.00	LAT	668
PLSI2032-135LJ	16.50	LAT	668
PLSI2032-150LJ	22.00	LAT	668
PLSI2032-80LJ	6.75	LAT	668
PLSI2032-80LT	10.25	LAT	668
PLSI2032LV-60LJ	11.75	LAT	668
PLSI2032LV-80LJ	17.70	LAT	668
PLSI2064-100LJ	25.25	LAT	668
PLSI2064-125LJ	35.25	LAT	668
PLSI2064-80LJ	17.25	LAT	668
PLSI2096-100LQ	44.00	LAT	668
PLSI2096-125LQ	62.00	LAT	668
PLSI2096-80LQ	30.75	LAT	668
PLSI2128-100LM	97.75	LAT	668
PLSI2128-80LM	56.75	LAT	668
PLSI3192-100LM	213.75	LAT	668
PLSI3192-70LM	140.00	LAT	668
PLSI3256-50LM	132.75	LAT	668
PLSI3256-70LM	197.99	LAT	668
PM7528HP	5.25	ADI	—
PM7545HP	9.60	ADI	—
PN2222A	0.07	MOT	—
PR3001	0.12	COL	—
PR3002	0.13	COL	—
PR3003	0.15	COL	645
PR3005	0.18	COL	—
PRISM1KIT-EVAL	1440.91	HAR	649
PX6A01	0.65	COL	—
PX6A02	0.65	COL	—
PX6A03	0.65	COL	645
PX6A04	0.65	COL	645
PX6A05	0.65	COL	645
PX6A06	0.65	COL	645
PX6A07	0.65	COL	645
PZT2222AT1	0.38	MOT	695
PZT2907AT1	0.38	MOT	695
PZT651T1	0.46	MOT	695
PZT751T1	0.46	MOT	695
PZTA14T1	0.46	MOT	695
PZTA64T1	0.46	MOT	695
PZTA92T1	0.50	MOT	695
RC4136N	1.03	TIS	733
RC4558D	0.74	TIS	733
RC4558P	0.74	TIS	733
RDF005	1.60	COL	645
RDF01	1.74	COL	—
RDF02	1.87	COL	645
RDF04	2.02	COL	645
RDF06	2.22	COL	—
REF01CJ	4.86	ADI	—
REF01CP	2.56	ADI	641
REF01CS	3.20	ADI	641
REF01CZ	4.73	ADI	641
REF01EZ	8.98	ADI	—
REF01HP	4.02	ADI	641
REF02CJ	4.86	ADI	641
REF02CP	3.49	ADI	641
REF02CS	3.33	ADI	641
REF02CZ	4.64	ADI	641
REF02DP	2.68	ADI	—
REF02HP	4.79	ADI	641
REF03GP	2.84	ADI	—
REF08HP	5.40	ADI	—
REF191ES	11.25	ADI	641
REF191GP	3.75	ADI	641
REF191GS	3.30	ADI	641
REF192FS	5.40	ADI	641
REF192GP	3.30	ADI	641
REF192GS	3.30	ADI	641
REF193GP	3.75	ADI	641
REF193GS	3.30	ADI	641

Manufacturer's Code Log

ADI	Analog Devices Inc.
AMD	Advanced Micro Devices
COL	Collmer Semiconductors, Inc.
DLS	Dallas Semiconductor
HAR	Harris Semiconductor
ITL	Intel
LAT	Lattice
MXM	Maxim
MOS	Mosel-Vitelic
MOT	Motorola Semiconductor
NSC	National Semiconductor
NTE	NTE Electronics
PHI	Philips Semiconductors
SEM	Semiconductors Inc.
SIE	Siemens Components, Inc
TIS	Texas Instruments
THO	Thomson Conusumer Electronics
UNI	Unitrode Integrated Circuits
XLX	Xilinx

Mfr.'s Type	Price	Mfr.'s Code	Page
REF194ES	11.25	ADI	641
REF194FS	5.40	ADI	641
REF194GP	3.75	ADI	641
REF194GS	3.30	ADI	641
REF195ES	11.25	ADI	—
REF195FS	5.40	ADI	641
REF195GP	3.75	ADI	641
REF195GS	3.30	ADI	641
REF196GP	3.75	ADI	641
REF196GS	3.30	ADI	641
REF198ES	11.25	ADI	641
REF198FS	5.40	ADI	641
REF198GP	3.75	ADI	641
REF198GS	3.30	ADI	641
REF43FZ	13.39	ADI	—
REF43GP	5.63	ADI	641
REF43GS	5.63	ADI	641
RF1K49086	1.48	HAR	660
RF1K49088	1.56	HAR	660
RF1K49090	2.17	HAR	660
RF1K49092	1.49	HAR	660
RF1K49093	1.48	HAR	660
RF1K49154	1.34	HAR	660
RF1K49156	1.28	HAR	660
RF1K49157	1.23	HAR	660
RF1S23N06LE	1.67	HAR	660
RF1S23N06LESM	1.52	HAR	660
RF1S25N06	1.90	HAR	660
RF1S25N06SM	1.80	HAR	660
RF1S30N06LE	2.22	HAR	660
RF1S30N06LESM	2.02	HAR	660
RF1S30P05	4.33	HAR	660
RF1S30P05SM	3.94	HAR	660
RF1S30P06	4.57	HAR	660
RF1S30P06SM	4.15	HAR	660
RF1S40N10	4.43	HAR	660
RF1S40N10SM	4.33	HAR	660
RF1S45N03L	2.26	HAR	660
RF1S45N03LSM	2.16	HAR	660
RF1S45N06	2.76	HAR	660
RF1S50N06	2.98	HAR	660
RF1S50N06SM	2.88	HAR	660
RF1S530	2.83	HAR	660
RF1S540	3.19	HAR	660
RF1S540SM	3.09	HAR	660
RF1S60P03	4.29	HAR	660
RF1S60P03SM	4.19	HAR	660
RF1S630	3.27	HAR	660
RF1S630SM	2.97	HAR	660
RF1S640	4.28	HAR	660
RF1S640SM	3.89	HAR	660
RF1S70N03	4.43	HAR	660
RF1S70N03SM	4.33	HAR	660
RF1S70N06	4.14	HAR	660
RF1S70N06SM	4.04	HAR	660
RF1S9530	2.83	HAR	660
RF1S9530SM	2.73	HAR	660
RF1S9540	3.36	HAR	660
RF1S9540SM	3.26	HAR	660
RF1S9630	2.97	HAR	660
RF1S9630SM	2.87	HAR	660
RF1S9640	3.52	HAR	660
RF1S9640SM	3.42	HAR	660
RFD12N06RLE	0.66	HAR	660
RFD12N06RLESM	0.71	HAR	660
RFD14N05	0.74	HAR	659
RFD14N05L	0.74	HAR	660
RFD14N05LSM	0.91	HAR	660
RFD14N05SM	0.76	HAR	660
RFD14N06	1.14	HAR	660
RFD14N06L	0.92	HAR	660
RFD14N06LSM	0.92	HAR	660
RFD14N06SM	1.15	HAR	660
RFD15N06LE	1.12	HAR	660
RFD15N06LESM	1.13	HAR	660
RFD15P05	1.58	HAR	660
RFD15P05SM	1.60	HAR	660
RFD15P06	2.13	HAR	660
RFD15P06SM	2.14	HAR	660
RFD16N03L	1.91	HAR	660
RFD16N03LSM	1.92	HAR	660
RFD16N05	1.33	HAR	660
RFD16N05L	1.63	HAR	660
RFD16N05LSM	1.64	HAR	660
RFD16N05SM	1.34	HAR	660
RFD16N06	1.63	HAR	660
RFD16N06LE	1.87	HAR	660
RFD16N06LESM	1.88	HAR	660
RFD16N06SM	1.64	HAR	660
RFD3055	0.52	HAR	660
RFD3055LE	0.44	HAR	660
RFD3055LESM	0.77	HAR	660
RFD3055SM	0.68	HAR	660
RFD3N08L	0.69	HAR	660
RFD3N08LSM	0.70	HAR	660
RFD4N06L	0.65	HAR	660
RFD4N06LSM	0.67	HAR	660
RFD7N10LE	1.02	HAR	660
RFD7N10LESM	1.29	HAR	660
RFD8P05	0.97	HAR	660
RFD8P05SM	0.98	HAR	660
RFD8P06E	0.88	HAR	660
RFD8P06ESM	1.34	HAR	660
RFG30P05	9.94	HAR	—
RFG45N06	4.38	HAR	660
RFG60P05E	12.86	HAR	660
RFG60P06E	13.50	HAR	660
RFG70N06	4.83	HAR	660
RFG75N05E	8.50	HAR	660
RFH25P08	6.28	HAR	660
RFH25P10	8.23	HAR	660
RFH75N05E	8.64	HAR	660
RFK25N20	8.79	HAR	660
RFL1N08	2.20	HAR	660
RFL1N08L	1.80	HAR	660
RFL1N10	2.30	HAR	660
RFL1N10L	1.84	HAR	660
RFL1N12L	2.20	HAR	660
RFL1N15	2.28	HAR	660
RFL1N15L	1.92	HAR	660
RFL1N18L	1.75	HAR	660
RFL1N20L	2.28	HAR	—
RFL1P08	2.20	HAR	660
RFL2N05L	1.85	HAR	660
RFL4N12	2.64	HAR	660
RFM10P12	3.94	HAR	660
RFM10P15	4.47	HAR	660
RFM12N20	3.96	HAR	660
RFM12P08	4.16	HAR	660
RFM3N45	2.04	HAR	660
RFM8P10	4.70	HAR	660
RFP10N12	1.03	HAR	660
RFP10N12L	1.22	HAR	660
RFP10N15	0.94	HAR	660
RFP10N15L	1.37	HAR	660
RFP12N08	0.98	HAR	660
RFP12N08L	1.08	HAR	660
RFP12N10	1.09	HAR	660
RFP12N10L	1.21	HAR	660
RFP12N20	2.72	HAR	660
RFP12P08	2.54	HAR	660
RFP12P10	2.80	HAR	660
RFP14N05	0.90	HAR	660
RFP14N05L	0.81	HAR	660
RFP15N05	0.99	HAR	660
RFP15N05L	1.12	HAR	660
RFP15N06	0.92	HAR	660
RFP15N15	2.75	HAR	660
RFP15P05	1.66	HAR	660
RFP17N06L	1.33	HAR	660
RFP18N08	2.35	HAR	660
RFP18N10	2.38	HAR	660
RFP25N05	1.66	HAR	660
RFP25N05L	1.85	HAR	660
RFP25N06	1.82	HAR	660
RFP25N06L	2.77	HAR	660
RFP2N08	0.68	HAR	660
RFP2N08L	0.54	HAR	660
RFP2N10	0.72	HAR	660
RFP2N10L	0.73	HAR	660
RFP2N12	0.61	HAR	660
RFP2N12L	0.63	HAR	660
RFP2N15	0.70	HAR	660
RFP2N18L	0.64	HAR	660
RFP2N20L	0.68	HAR	660
RFP2P08	0.49	HAR	660
RFP2P10	0.70	HAR	660
RFP30P05	6.53	HAR	660
RFP30P06	7.35	HAR	660
RFP3N45	1.05	HAR	660
RFP40N10	3.52	HAR	660
RFP45N06	1.85	HAR	660
RFP4N05	0.61	HAR	660
RFP4N05L	0.65	HAR	660
RFP4N06L	0.71	HAR	660
RFP50N05	2.02	HAR	660
RFP50N05L	3.79	HAR	660
RFP50N06	1.85	HAR	660
RFP6P08	1.07	HAR	660
RFP6P10	1.12	HAR	660
RFP70N03	3.52	HAR	660
RFP70N06	3.67	HAR	660
RFP7N40	2.77	HAR	660
RFP8N18L	0.92	HAR	660
RFP8N20L	1.26	HAR	660
RFP8P05	1.10	HAR	660
RFP8P08	2.40	HAR	660
RFP8P10	2.72	HAR	660
RHRD450	0.93	HAR	659
RHRD460	0.93	HAR	659
RHRD650	1.07	HAR	659
RHRD660	1.07	HAR	659
RHRG7560	6.99	HAR	659
RHRG7590	6.76	HAR	659
RHRP1540	1.89	HAR	659
RHRP1550	1.89	HAR	659
RHRP1560	1.95	HAR	659
RHRP3040	2.64	HAR	659
RHRP3060	2.64	HAR	659
RHRP3090	2.69	HAR	659
RHRU100120	9.59	HAR	659
RHRU10060	8.25	HAR	659
RHRU150100	15.87	HAR	659
RHRU150120	16.71	HAR	659
RHRU15060	15.37	HAR	659
RHTD440	0.93	HAR	659
RKBPC3501	16.09	COL	—
RKBPC3502	16.37	COL	646
RKBPC3504	16.86	COL	646
RKBPC3506	17.91	COL	646
RKBPC6005	6.21	COL	646
RKBPC601	6.40	COL	646
RKBPC602	6.68	COL	646
RKBPC604	6.87	COL	—
RKBPC606	7.15	COL	—
RKBPC801	6.77	COL	646
RKBPC802	6.96	COL	646
RKBPC804	7.15	COL	646
RKBPC806	7.62	COL	—
RLD03N06CLE	1.54	HAR	660
RLD03N06CLESM	1.55	HAR	660
RLP03N06CLE	1.52	HAR	—
RURD420	0.74	HAR	660
RURD460	0.92	HAR	660
RURG1520CC	3.85	HAR	660
RURG30120	3.63	HAR	660
RURG5080	4.76	HAR	660
RURH3020CC	6.27	HAR	660
RURP15120	1.99	HAR	660
RURP1560	2.05	HAR	660
RURP30120	2.89	HAR	660
RURP3060	2.59	HAR	660
RURP8120	1.27	HAR	660
RURP860	1.20	HAR	660
RURU10060	8.25	HAR	660
RURU150100	13.33	HAR	660
RURU15060	13.07	HAR	660
RURU5040	6.02	HAR	660
RURU75120	8.40	HAR	660
RURU80100	8.77	HAR	660
RURU8040	7.28	HAR	660
RURU8060	7.28	HAR	660
RV4558D	0.60	TIS	733
RW01M	3.16	COL	646
RW02M	3.34	COL	646
RW04M	3.61	COL	646
S05K11	0.36	SIE	724
S05K14	0.36	SIE	724
S05K17	0.36	SIE	724
S05K20	0.36	SIE	—
S05K25	0.36	SIE	724
S05K35	0.36	SIE	724
S05K40	0.36	SIE	724
S05K50	0.31	SIE	724
S05K60	0.30	SIE	724
S05K75	0.30	SIE	724
S05K95	0.29	SIE	724
S07K11	0.33	SIE	724
S07K130	0.30	SIE	724
S07K14	0.33	SIE	724
S07K140	0.30	SIE	724
S07K150	0.30	SIE	724
S07K17	0.31	SIE	724
S07K175	0.30	SIE	724
S07K20	0.33	SIE	724
S07K230	0.30	SIE	724
S07K25	0.33	SIE	724
S07K250	0.30	SIE	724
S07K275	0.30	SIE	724
S07K30	0.33	SIE	724
S07K300	0.30	SIE	724
S07K35	0.33	SIE	724
S07K40	0.33	SIE	724
S07K50	0.30	SIE	724
S07K75	0.30	SIE	724
S10K11	0.59	SIE	724
S10K130	0.50	SIE	724
S10K14	0.59	SIE	724
S10K150	0.50	SIE	724
S10K17	0.55	SIE	—
S10K20	0.57	SIE	724
S10K25	0.57	SIE	724
S10K250	0.50	SIE	724
S10K275	0.53	SIE	724
S10K30	0.57	SIE	724
S10K35	0.57	SIE	724
S10K40	0.59	SIE	724
S10K50	0.50	SIE	724
S10K60	0.50	SIE	724
S10K75	0.49	SIE	724
S10K95	0.50	SIE	724
S14K1000	3.27	SIE	724
S14K11	0.65	SIE	724
S14K130	0.57	SIE	724
S14K14	0.65	SIE	724
S14K140	0.57	SIE	724
S14K150	0.58	SIE	724
S14K17	0.65	SIE	724
S14K175	0.65	SIE	724
S14K20	0.65	SIE	724
S14K230	0.65	SIE	724
S14K25	0.65	SIE	724
S14K250	0.65	SIE	724
S14K275	0.65	SIE	724
S14K30	0.65	SIE	724
S14K300	0.65	SIE	724
S14K35	0.65	SIE	724
S14K385	0.80	SIE	724
S14K40	0.65	SIE	724
S14K420	0.80	SIE	724
S14K50	0.57	SIE	724
S14K510	1.21	SIE	724
S14K550	1.21	SIE	724
S14K60	0.57	SIE	724
S14K625	1.21	SIE	724
S14K680	1.21	SIE	724
S14K75	0.57	SIE	—
S14K95	0.57	SIE	724
S20K1000	4.15	SIE	724
S20K11	0.94	SIE	724
S20K130	0.78	SIE	724
S20K14	0.94	SIE	724
S20K150	0.78	SIE	724
S20K17	0.94	SIE	724
S20K20	0.94	SIE	724
S20K25	0.94	SIE	724
S20K250	0.88	SIE	724
S20K275	0.88	SIE	724
S20K300	0.88	SIE	724
S20K385	1.21	SIE	724
S20K420	1.21	SIE	724
S20K460	1.21	SIE	—
S20K510	1.55	SIE	724
S20K550	1.55	SIE	724
S20K625	1.55	SIE	724
S20K680	1.55	SIE	724
S20K75	0.88	SIE	724
S2800D	0.88	MOT	707
S2800M	0.94	MOT	707
S80C31BH-1	3.85	ITL	665
S80C31BH	3.90	ITL	665
S80C32-1	5.35	ITL	665
S80C32-24	6.30	ITL	665
S80C32	4.90	ITL	665
S80C51FA-1	5.98	ITL	665
S80C51FA	5.85	ITL	665
S87C51-1	13.90	ITL	665
S87C51-20	14.60	ITL	665
S87C51	13.30	ITL	665
S87C51FA-1	21.22	ITL	665
S87C51FA-20	22.17	ITL	665
S87C51FA	20.13	ITL	665
S87C51FB-1	25.98	ITL	665
S87C51FB-20	26.93	ITL	665
S87C51FB-5K44	65.24	PHI	—
S87C51FB	24.89	ITL	665
S87C51FC-1	32.37	ITL	666
S87C51FC-20	33.46	ITL	666
S87C51FC	31.42	ITL	666
S87C52-1	16.30	ITL	665
S87C52-20	17.10	ITL	665
S87C54-1	24.70	ITL	665
S87C54-20	25.00	ITL	665
S87C54	22.50	ITL	665
S87C58-1	25.70	ITL	665
S87C58-20	27.00	ITL	665
S87C58	24.50	ITL	665
S87L51FB-20	30.74	ITL	666
S87L51FB	28.70	ITL	666
S87L51FC-20	37.54	ITL	666
SA12A	0.32	MOT	703
SA12CA	0.56	MOT	703
SA13A	0.32	MOT	703
SA13CA	0.56	MOT	703
SA15A	0.32	MOT	703
SA15CA	0.56	MOT	703

Mfr.'s Type	Price	Mfr.'s Code	Page
SA20A	0.32	MOT	703
SA20CA	0.56	MOT	703
SA36CA	0.56	MOT	703
SA5.0A	0.32	MOT	703
SA5230D	1.68	PHI	721
SA5534AD	1.50	PHI	721
SA5534AN	1.50	PHI	721
SA555D	0.64	PHI	722
SA555N	0.55	PHI	722
SA555P	0.73	TIS	733
SA6.0A	0.32	MOT	703
SA602AD	1.91	PHI	722
SA602AN	1.91	PHI	722
SA604AD	4.46	PHI	722
SB80C51SLAH	14.55	ITL	666
SB80C51SLAL	16.86	ITL	666
SB87C51SLAH	29.72	ITL	666
SB87C51SLAL	31.62	ITL	666
SC141D	0.84	MOT	—
SC311-4	0.56	COL	644
SC311-6	0.58	COL	644
SC321-2	0.31	COL	644
SC802-04	0.50	COL	644
SC802-06	0.59	COL	644
SC802-09	0.63	COL	644
SC902-2	0.51	COL	644
SE014	0.50	COL	644
SE024	0.52	COL	644
SE555P	2.18	TIS	733
SG2524N	3.86	TIS	734
SG3524D	2.30	TIS	734
SG3524N	1.15	TIS	734
SG3525AN	2.58	MOT	690
SG3526N	4.69	SEM	—
SGT03U13	1.06	HAR	663
SGT06U13	1.19	HAR	663
SGT21B13	1.54	HAR	663
SGT23B13	1.59	HAR	663
SGT23U13	1.30	HAR	663
SGT27B13	1.79	HAR	663
SGT27B13A	1.62	HAR	663
SGT27B27	2.98	HAR	663
SGT27B27A	2.86	HAR	663
SGT27S10	1.61	HAR	663
SGT27S23	1.65	HAR	663
SK10000	4.74	THO	—
SK11V	1.00	THO	—
SK2040	1.95	THO	—
SK2041	2.15	THO	—
SK2086	3.94	THO	—
SK3003A	6.38	THO	735
SK3004	2.10	THO	735
SK3006	2.64	THO	735
SK3008	2.32	THO	—
SK3009	8.30	THO	735
SK3012	22.13	THO	735
SK3017B	1.67	THO	736
SK3018	2.43	THO	735
SK3020	1.97	THO	—
SK3021	4.39	THO	735
SK3022	6.37	THO	735
SK3026	3.36	THO	735
SK3027	4.22	THO	735
SK3028	5.90	THO	—
SK3029	8.40	THO	735
SK3031A	0.87	THO	736
SK3033A	1.38	THO	736
SK3036	8.55	THO	735
SK3037	17.00	THO	735
SK3039	3.40	THO	735
SK3043B	3.73	THO	736
SK3044	4.07	THO	735
SK3050	3.17	THO	—
SK3051	1.21	THO	736
SK3052	1.82	THO	735
SK3054	3.23	THO	735
SK3065	5.01	THO	—
SK3072	4.85	THO	735
SK3079	8.65	THO	735
SK3080	0.43	THO	—
SK3081	0.85	THO	736
SK3083	2.95	THO	—
SK3085	4.79	THO	735
SK3086	6.90	THO	—
SK3087	0.55	THO	—
SK3090	0.79	THO	—
SK30A	0.68	THO	—
SK30X	2.25	THO	—
SK3100	1.23	THO	—
SK3103A	3.30	THO	735
SK3104A	2.33	THO	—
SK3105	2.43	THO	736
SK3106	1.97	THO	—
SK3107	2.50	THO	736
SK3112	2.33	THO	—
SK3114A	1.74	THO	735
SK3115	13.50	THO	735
SK3117	2.10	THO	735
SK3118	1.26	THO	—
SK3122	1.81	THO	735
SK3123	9.08	THO	735
SK3124A	1.50	THO	735
SK3129	5.15	THO	735

Mfr.'s Type	Price	Mfr.'s Code	Page
SK3133	8.40	THO	735
SK3134	11.34	THO	735
SK3137	2.04	THO	—
SK3149	4.85	THO	735
SK3158	6.10	THO	735
SK3159	6.20	THO	735
SK3164	2.51	THO	735
SK3175A	2.27	THO	—
SK3176	24.30	THO	735
SK3177	26.06	THO	735
SK3179B	3.40	THO	735
SK3180	2.87	THO	735
SK3181A	3.33	THO	735
SK3182	3.58	THO	735
SK3183A	4.07	THO	—
SK3188A	4.80	THO	735
SK3189A	5.25	THO	735
SK3190	2.39	THO	735
SK3191	2.69	THO	735
SK3192	2.59	THO	735
SK3193	2.58	THO	—
SK3194	8.45	THO	735
SK3195	2.87	THO	735
SK3197	6.30	THO	—
SK3198	4.86	THO	735
SK3199	2.61	THO	—
SK3200	2.87	THO	735
SK3201	2.68	THO	—
SK3207	4.84	THO	735
SK3214	5.70	THO	735
SK3218	3.41	THO	735
SK3219	3.41	THO	—
SK3223	4.61	THO	735
SK3226	11.45	THO	735
SK3227	9.68	THO	735
SK3231	10.82	THO	—
SK3234	3.68	THO	735
SK3238	9.05	THO	735
SK3244	1.48	THO	—
SK3245	1.14	THO	735
SK3246A	1.88	THO	735
SK3247	1.13	THO	735
SK3249	2.30	THO	735
SK3250	2.99	THO	735
SK3255	3.30	THO	735
SK3259	2.73	THO	—
SK3260	8.81	THO	735
SK3261	2.76	THO	735
SK3265	2.67	THO	735
SK3274	3.14	THO	—
SK3275	1.21	THO	735
SK3279	5.27	THO	—
SK3281	4.81	THO	735
SK3282	11.60	THO	735
SK3283	4.61	THO	735
SK3284	13.19	THO	735
SK3286	8.35	THO	735
SK3288	7.97	THO	735
SK3293	1.81	THO	—
SK3294	7.35	THO	735
SK3297	6.30	THO	—
SK3298	3.32	THO	735
SK3299	8.10	THO	735
SK3311	0.33	THO	736
SK3312	0.36	THO	736
SK3313	0.49	THO	736
SK3318A	2.98	THO	736
SK3324	1.12	THO	—
SK3328	6.00	THO	—
SK3356	1.32	THO	735
SK3357	2.39	THO	736
SK3364	2.57	THO	735
SK3365	8.80	THO	735
SK3370	8.12	THO	735
SK33X	2.36	THO	—
SK3433	1.09	THO	—
SK3434	1.11	THO	736
SK3438	8.95	THO	736
SK3439A	10.75	THO	736
SK3440	3.21	THO	736
SK3441	3.51	THO	—
SK3444	1.58	THO	736
SK3445	8.38	THO	735
SK3447	2.18	THO	735
SK3449	1.87	THO	736
SK3450	1.75	THO	736
SK3451	6.50	THO	735
SK3452	1.69	THO	736
SK3456	7.10	THO	735
SK3461	4.85	THO	735
SK3462	1.88	THO	736
SK3465	4.39	THO	735
SK3466	1.87	THO	736
SK3467	9.90	THO	736
SK3468	6.50	THO	735
SK3472	4.66	THO	735
SK3474	12.20	THO	735
SK3476	4.80	THO	735
SK3477	4.80	THO	735
SK3478	8.75	THO	—
SK3479	1.43	THO	736
SK3481	8.00	THO	735
SK3483	5.75	THO	735

Mfr.'s Type	Price	Mfr.'s Code	Page
SK3487	3.62	THO	735
SK3493	3.05	THO	735
SK3500	3.91	THO	736
SK3501	6.45	THO	736
SK3503	5.13	THO	736
SK3504	11.15	THO	736
SK3505	15.20	THO	736
SK3506	2.93	THO	736
SK3508	9.28	THO	736
SK3509	11.22	THO	736
SK3512	5.20	THO	736
SK3513	5.75	THO	736
SK3514	2.61	THO	735
SK3517	4.66	THO	736
SK3518	7.15	THO	736
SK3519	3.51	THO	736
SK3520	13.52	THO	736
SK3521	16.40	THO	736
SK3522	10.93	THO	736
SK3525	5.10	THO	—
SK3528	3.41	THO	736
SK3529	4.33	THO	736
SK3533	3.68	THO	736
SK3538	3.24	THO	736
SK3541	9.85	THO	—
SK3542	3.66	THO	—
SK3543	4.94	THO	—
SK3544	3.87	THO	735
SK3545	3.30	THO	735
SK3548	5.75	THO	735
SK3550	4.64	THO	735
SK3552	1.08	THO	735
SK3555	2.86	THO	735
SK3557	2.63	THO	—
SK3559	9.37	THO	736
SK3562	5.45	THO	—
SK3564	1.81	THO	735
SK3565	7.14	THO	735
SK3567A	3.46	THO	735
SK3568	5.04	THO	735
SK3569	2.62	THO	735
SK3574	4.64	THO	736
SK3575	6.15	THO	736
SK3576	9.25	THO	736
SK3577	3.94	THO	736
SK3578	3.86	THO	—
SK3580	10.96	THO	—
SK3581	8.65	THO	—
SK3582	11.50	THO	736
SK3583	2.47	THO	736
SK3584	5.27	THO	736
SK3585	6.73	THO	736
SK3586A	5.15	THO	736
SK3587A	7.34	THO	736
SK3588A	27.45	THO	—
SK3589A	36.15	THO	736
SK3591	3.79	THO	736
SK3592	3.89	THO	736
SK3593	3.89	THO	736
SK3594	6.95	THO	735
SK3596	2.81	THO	735
SK3597	1.37	THO	736
SK3598	1.92	THO	736
SK3599	3.83	THO	—
SK3600	4.21	THO	736
SK3601	3.95	THO	736
SK3602	3.96	THO	—
SK3603	4.78	THO	—
SK3604	4.40	THO	—
SK3605	6.50	THO	736
SK3606	4.24	THO	736
SK3607	6.24	THO	736
SK3608	5.55	THO	736
SK3609	5.13	THO	736
SK3610	5.79	THO	736
SK3615	6.25	THO	—
SK3617	3.86	THO	735
SK3619	23.10	THO	—
SK3620	5.75	THO	—
SK3621	12.70	THO	736
SK3625	5.25	THO	—
SK3626	4.79	THO	736
SK3627	1.43	THO	—
SK3628	3.47	THO	—
SK3629	5.99	THO	—
SK3630	4.04	THO	736
SK3631	3.85	THO	736
SK3633	7.30	THO	736
SK3634	11.39	THO	736
SK3638	1.28	THO	736
SK3639	1.62	THO	736
SK3640	3.12	THO	736
SK3641	2.32	THO	735
SK3642	20.95	THO	736
SK3643	2.37	THO	735
SK3647	2.69	THO	736
SK3648	2.62	THO	736
SK3649	5.10	THO	—
SK3650	12.00	THO	736
SK3651	16.79	THO	736
SK3652	8.90	THO	736
SK3653	9.04	THO	—
SK3654	9.38	THO	—

Mfr.'s Type	Price	Mfr.'s Code	Page
SK3655	13.09	THO	736
SK3656	12.95	THO	736
SK3657	15.35	THO	736
SK3658	4.11	THO	736
SK3659	5.05	THO	736
SK3660	5.65	THO	736
SK3661	18.53	THO	—
SK3662	16.61	THO	736
SK3663	16.43	THO	736
SK3665	1.95	THO	736
SK3666	2.28	THO	736
SK3668	2.27	THO	735
SK3669	4.78	THO	—
SK3670	4.27	THO	736
SK3671	4.94	THO	736
SK3672	4.89	THO	—
SK3673	5.15	THO	736
SK3674	5.05	THO	—
SK3675	4.95	THO	—
SK3676	2.13	THO	736
SK3677	2.16	THO	736
SK3678	3.30	THO	736
SK3679	7.50	THO	736
SK3680	5.75	THO	736
SK3681	6.40	THO	736
SK3682	7.56	THO	736
SK3683	2.93	THO	736
SK3688	2.52	THO	735
SK3689	2.76	THO	735
SK3691	5.36	THO	—
SK3692	3.17	THO	735
SK3693	2.71	THO	735
SK3694	2.16	THO	735
SK3695	1.84	THO	735
SK3696	2.21	THO	735
SK3697	2.54	THO	735
SK3698	7.98	THO	736
SK3699	4.24	THO	—
SK3702	5.80	THO	735
SK3705	22.70	THO	735
SK3706	5.85	THO	735
SK3710	15.75	THO	736
SK3711	9.40	THO	735
SK3715	1.99	THO	—
SK3716A	2.76	THO	736
SK3717	12.40	THO	736
SK3718	23.28	THO	736
SK3719	7.50	THO	736
SK3720	16.50	THO	736
SK3721	3.38	THO	736
SK3722	3.70	THO	736
SK3724	2.03	THO	—
SK3726	6.11	THO	—
SK3730	8.18	THO	735
SK3731	6.25	THO	735
SK3737	3.75	THO	735
SK3738	4.35	THO	735
SK3742	3.39	THO	735
SK3743	9.78	THO	735
SK3745	6.20	THO	735
SK3746	1.96	THO	—
SK3747	2.62	THO	736
SK3762	3.94	THO	735
SK3763	5.07	THO	735
SK3764	20.20	THO	736
SK3828	3.57	THO	735
SK3829	6.90	THO	735
SK3831	2.28	THO	—
SK3832	5.38	THO	735
SK3835	1.98	THO	736
SK3836	9.97	THO	736
SK3839	4.45	THO	—
SK3840	8.54	THO	736
SK3841	1.86	THO	736
SK3842	1.41	THO	736
SK3845	4.28	THO	736
SK3846	9.85	THO	—
SK3848	1.67	THO	736
SK3849	1.87	THO	736
SK3854	1.33	THO	736
SK3858	8.40	THO	736
SK3859	8.50	THO	—
SK3861	5.16	THO	—
SK3862	4.87	THO	736
SK3865A	5.45	THO	736
SK3866A	3.14	THO	736
SK3867A	3.68	THO	736
SK3870	10.71	THO	—
SK3876	4.50	THO	735
SK3878	5.80	THO	735
SK3879	6.21	THO	735
SK3885	15.73	THO	735
SK3892	3.46	THO	735
SK3893	2.59	THO	—
SK3894	6.20	THO	—
SK3895	11.50	THO	736
SK3896	2.21	THO	736
SK3897	2.89	THO	736
SK3898	9.80	THO	—
SK3899	1.14	THO	736
SK3911	1.26	THO	—
SK3912	1.31	THO	736
SK3914	2.38	THO	735

Manufacturer's Code Log

DI	Analog Devices Inc.
MD	Advanced Micro Devices
OL	Collmer Semiconductors, Inc.
LS	Dallas Semiconductor
AR	Harris Semiconductor
ITL	Intel
LAT	Lattice
MXM	Maxim
MOS	Mosel-Vitelic
MOT	Motorola Semiconductor
NSC	National Semiconductor
NTE	NTE Electronics
PHI	Philips Semiconductors
SEM	Semiconductors Inc.
SIE	Siemens Components, Inc
TIS	Texas Instruments
THO	Thomson Conusumer Electronics
UNI	Unitrode Integrated Circuits
XLX	Xilinx

Mfr.'s Type	Price	Mfr.'s Code	Page
SK3916	7.14	THO	735
SK3925	3.24	THO	—
SK3929	3.30	THO	736
SK3930	3.89	THO	—
SK3931	1.59	THO	736
SK3932	1.59	THO	736
SK3935	5.44	THO	—
SK3936	5.75	THO	—
SK3937	2.30	THO	736
SK3940	6.70	THO	736
SK3942	10.95	THO	736
SK3943	15.94	THO	—
SK3945	19.55	THO	736
SK3946	8.65	THO	—
SK3947	8.24	THO	736
SK3948	5.25	THO	—
SK3949	7.14	THO	736
SK3950	0.94	THO	—
SK3951	2.44	THO	—
SK3953	1.56	THO	736
SK3955	2.38	THO	736
SK3958	3.76	THO	736
SK3962	1.97	THO	—
SK3966	9.40	THO	—
SK3969	6.20	THO	735
SK3985	3.70	THO	736
SK3986	3.97	THO	—
SK3987	4.22	THO	—
SK3988	5.10	THO	736
SK3989	5.80	THO	—
SK3993	13.35	THO	—
SK3996	2.36	THO	—
SK3997	2.61	THO	—
SK3998	2.35	THO	736
SK3A6	0.66	THO	—
SK3V3	1.00	THO	—
SK4001B	0.79	THO	—
SK4007UB	0.85	THO	—
SK40106B	1.50	THO	—
SK4011B	1.14	THO	—
SK4013B	1.31	THO	—
SK4016B	1.45	THO	—
SK4023B	0.79	THO	—
SK4027B	2.06	THO	—
SK4040B	4.07	THO	—
SK4046B	2.54	THO	—
SK4049UB	1.53	THO	—
SK4050B	1.93	THO	—
SK4051B	4.22	THO	—
SK4053B	2.81	THO	—
SK4066B	1.75	THO	—
SK4069UB	0.90	THO	—
SK4070B	0.99	THO	—
SK4071B	0.99	THO	—
SK4081B	0.79	THO	—
SK4098B	3.02	THO	—
SK4510B	2.93	THO	—
SK4538B	1.47	THO	—
SK4826	3.94	THO	—
SK4908	7.00	THO	—
SK4909	5.50	THO	—
SK4930	6.95	THO	—
SK4A7	0.68	THO	—
SK5014	2.60	THO	—
SK5028	2.54	THO	—
SK5030	3.38	THO	—
SK5101	8.35	THO	—
SK5114	11.01	THO	—
SK5188	2.19	THO	—
SK5189	2.32	THO	—
SK5237	3.22	THO	—
SK534	9.15	THO	—
SK5538	3.08	THO	—
SK5545	4.24	THO	—
SK5552	6.90	THO	—
SK5555	1.47	THO	—
SK5579	15.32	THO	—
SK5A6	0.64	THO	—
SK5V1	1.00	THO	—
SK5V6	1.00	THO	—
SK5X1	2.36	THO	—
SK626D	0.42	PHI	—
SK6554	48.60	THO	—
SK6629	10.40	THO	736
SK6630	3.85	THO	736
SK6631	19.45	THO	736
SK6632	28.60	THO	736
SK6641	7.60	THO	736
SK6642	7.77	THO	736
SK6648	15.50	THO	736
SK6649	31.10	THO	—
SK6651	5.15	THO	—
SK6652	4.38	THO	736
SK6654	6.00	THO	736
SK6656	8.45	THO	736
SK6683	8.40	THO	736
SK6685	13.70	THO	736
SK6707	2.43	THO	—
SK6708	3.27	THO	736
SK6709	3.46	THO	736
SK6719	45.25	THO	—
SK6V0	0.92	THO	—
SK6V2	1.00	THO	—
SK6X0	2.25	THO	—
SK6X8	2.25	THO	—
SK7101	4.38	THO	—
SK7202	12.10	THO	—
SK7354	26.75	THO	—
SK7362	3.32	THO	—
SK7402	1.32	THO	—
SK7404	0.92	THO	—
SK7406	1.78	THO	—
SK7407	1.78	THO	—
SK7408	1.56	THO	—
SK74121	1.66	THO	—
SK7432	1.13	THO	—
SK7474	1.25	THO	—
SK74LS123	2.45	THO	—
SK74LS14	2.53	THO	—
SK7613	7.70	THO	—
SK7626	8.44	THO	—
SK7629	3.66	THO	—
SK7641	3.68	THO	—
SK7665	7.66	THO	—
SK7815	6.83	THO	—
SK7817	13.20	THO	—
SK7841	11.30	THO	—
SK7A5	0.68	THO	—
SK7C4040	1.58	THO	—
SK7CT154	2.38	THO	—
SK7CT373	1.74	THO	—
SK7V5	0.92	THO	—
SK847	1.30	THO	—
SK859	1.20	THO	—
SK890	1.36	THO	—
SK8A2	0.68	THO	—
SK8V2	1.00	THO	—
SK8V7	1.00	THO	—
SK9000	1.30	THO	736
SK9003	0.58	THO	—
SK9004	0.82	THO	—
SK9005	1.34	THO	—
SK9007	1.34	THO	736
SK901	1.36	THO	—
SK9010	2.73	THO	736
SK9012	5.89	THO	—
SK9016	10.47	THO	—
SK9039	18.10	THO	—
SK9041	2.12	THO	736
SK9042	1.95	THO	—
SK9062	3.40	THO	—
SK9067	12.45	THO	—
SK9075	2.16	THO	—
SK9085	7.93	THO	736
SK9088	8.40	THO	—
SK9089	4.22	THO	—
SK9091	1.24	THO	736
SK9093	4.22	THO	—
SK9094	5.28	THO	—
SK9101	8.70	THO	—
SK9103	10.85	THO	—
SK9105	12.50	THO	—
SK9111	18.99	THO	—
SK9112	3.08	THO	—
SK9113	3.24	THO	—
SK9118	2.90	THO	736
SK9119	10.16	THO	736
SK9120	1.58	THO	—
SK9121	3.98	THO	—
SK9122	22.00	THO	—
SK9123	5.23	THO	—
SK9125	5.15	THO	—
SK9128	4.37	THO	—
SK9129	3.65	THO	—
SK9131	15.15	THO	—
SK9132	1.99	THO	—
SK9134	7.50	THO	—
SK9136	8.84	THO	—
SK9138	2.30	THO	—
SK9140	8.48	THO	—
SK9155	3.40	THO	—
SK9157	1.52	THO	—
SK9158	6.61	THO	—
SK9163	2.02	THO	—
SK9165	10.20	THO	—
SK9166	2.55	THO	—
SK9167	2.06	THO	—
SK9169	2.24	THO	736
SK9172	3.79	THO	—
SK9173	3.55	THO	—
SK9182	11.07	THO	—
SK9210	2.28	THO	—
SK9215	3.24	THO	736
SK9216	3.81	THO	736
SK9219	3.63	THO	736
SK9221	2.06	THO	736
SK9227	6.31	THO	—
SK9229	0.96	THO	—
SK9230	1.81	THO	—
SK9232	2.21	THO	—
SK9234	2.85	THO	—
SK9237	8.28	THO	—
SK9262	11.32	THO	—
SK9278	1.71	THO	—
SK9292	2.81	THO	—
SK9293	3.36	THO	—
SK9294	4.58	THO	—
SK930	1.36	THO	—
SK9306	15.90	THO	—
SK9332	6.38	THO	—
SK9335	6.12	THO	—
SK9336	6.12	THO	—
SK9339	9.67	THO	—
SK9340	15.20	THO	—
SK9344	14.89	THO	736
SK9352	3.24	THO	—
SK9363	3.12	THO	—
SK9366	3.94	THO	—
SK9367	4.53	THO	—
SK9370	1.53	THO	—
SK9378	1.71	THO	—
SK9391	4.14	THO	—
SK9411	7.54	THO	—
SK9415	4.74	THO	—
SK9422	6.60	THO	736
SK9435	3.19	THO	—
SK9438	6.52	THO	—
SK9439	5.80	THO	—
SK9440	8.38	THO	—
SK9441	7.65	THO	—
SK9442	3.41	THO	—
SK9443	1.19	THO	—
SK9445	4.14	THO	—
SK9446	7.75	THO	—
SK9447	11.75	THO	—
SK9452	4.16	THO	—
SK9453	0.81	THO	—
SK9455A	1.09	THO	—
SK9461	2.22	THO	—
SK9467	2.39	THO	—
SK9470	1.27	THO	—
SK9476	7.10	THO	—
SK9489	6.49	THO	—
SK9503	3.57	THO	—
SK9509	10.20	THO	—
SK952	1.36	THO	—
SK9602	11.87	THO	—
SK9708	2.95	THO	—
SK9763	1.56	THO	—
SK9808	7.21	THO	—
SK9855	3.29	THO	—
SK9934	1.02	THO	—
SK9972	6.04	THO	—
SK9A1	0.68	THO	—
SK9V1	1.00	THO	—
SKG202DK1	5.00	THO	—
SKG202G	4.95	THO	735
SMP04EP	6.44	ADI	637
SMP04ES	6.52	ADI	637
SMP08FP	10.32	ADI	637
SMP08FS	10.32	ADI	637
SN64BCT306P	1.58	TIS	—
SN65176BD	3.50	TIS	731
SN65176BP	3.79	TIS	731
SN65ALS176P	3.73	TIS	731
SN65ALS180D	2.87	TIS	731
SN65C188D	2.50	TIS	731
SN65C188N	2.50	TIS	731
SN7400D	0.64	TIS	727
SN7400N	0.62	TIS	727
SN7402N	0.88	TIS	727
SN7404N	0.62	TIS	727
SN7405D	0.62	TIS	727
SN7405N	0.62	TIS	727
SN7406D	0.77	TIS	727
SN7406N	0.77	TIS	727
SN7407D	0.77	TIS	727
SN7407N	0.49	TIS	727
SN74107N	1.62	TIS	—
SN7410N	1.08	TIS	727
SN74121N	1.46	TIS	727
SN74123N	1.62	TIS	727
SN74128N	0.90	TIS	727
SN74132N	1.03	TIS	727
SN74145N	2.50	TIS	727
SN7414D	0.72	TIS	727
SN7414N	0.72	TIS	727
SN74150N	2.42	TIS	727
SN74154N	2.18	TIS	727
SN74156N	1.16	TIS	727
SN74157N	1.46	TIS	727
SN74159N	2.83	TIS	727
SN74161N	1.82	TIS	—
SN74164N	1.96	TIS	727
SN7416D	0.72	TIS	727
SN7416N	0.72	TIS	727
SN74175N	1.15	TIS	727
SN7417D	0.67	TIS	727
SN7417N	0.67	TIS	727
SN74193N	2.16	TIS	—
SN74221N	2.69	TIS	—
SN74251N	3.24	TIS	—
SN7425N	1.21	TIS	727
SN74273N	3.35	TIS	—
SN74279N	2.06	TIS	727
SN7430N	1.43	TIS	727
SN7432N	0.88	TIS	727
SN74367AN	1.41	TIS	—
SN74368AN	1.56	TIS	—
SN7437N	0.93	TIS	727
SN7438D	0.67	TIS	727
SN7438N	0.57	TIS	727
SN7445N	1.39	TIS	727
SN7447AN	1.44	TIS	727
SN7474N	0.67	TIS	727
SN7486N	1.48	TIS	727
SN7490AN	3.61	TIS	727
SN7497N	3.55	TIS	—
SN74ALS00AD	0.43	TIS	727
SN74ALS00AN	0.41	TIS	727
SN74ALS02AD	0.42	TIS	727
SN74ALS04BD	0.42	TIS	727
SN74ALS04BN	0.43	TIS	727
SN74ALS05AD	0.60	TIS	727
SN74ALS05AN	0.57	TIS	727
SN74ALS08D	0.42	TIS	727
SN74ALS08N	0.43	TIS	727
SN74ALS1005D	0.90	TIS	727
SN74ALS1005N	0.68	TIS	727
SN74ALS1034N	1.43	TIS	727
SN74ALS1035D	0.90	TIS	727
SN74ALS1035N	0.68	TIS	727
SN74ALS109AD	0.69	TIS	727
SN74ALS109AN	0.62	TIS	727
SN74ALS10AD	0.42	TIS	727
SN74ALS10AN	0.41	TIS	727
SN74ALS112AN	0.64	TIS	—
SN74ALS11AN	0.55	TIS	727
SN74ALS139D	0.97	TIS	727
SN74ALS139N	0.98	TIS	727
SN74ALS151D	0.97	TIS	727
SN74ALS151N	0.98	TIS	—
SN74ALS153D	0.97	TIS	727
SN74ALS153N	0.93	TIS	727
SN74ALS157AD	0.97	TIS	727
SN74ALS157AN	0.98	TIS	727
SN74ALS161BD	0.92	TIS	727
SN74ALS161BN	0.95	TIS	727
SN74ALS163BD	0.92	TIS	727
SN74ALS163BN	0.95	TIS	727
SN74ALS1645ADW	3.57	TIS	727
SN74ALS1645AN	3.57	TIS	727
SN74ALS165N	3.38	TIS	727
SN74ALS166N	3.21	TIS	—
SN74ALS169BN	0.95	TIS	—
SN74ALS174D	0.80	TIS	727
SN74ALS174N	0.81	TIS	727
SN74ALS175D	0.80	TIS	727
SN74ALS175N	0.81	TIS	727
SN74ALS240ADW	1.05	TIS	727
SN74ALS240AN	1.13	TIS	727
SN74ALS241BDW	1.05	TIS	727
SN74ALS244CN	0.62	TIS	—
SN74ALS245A-1DW	1.87	TIS	727
SN74ALS245A-1N	2.04	TIS	727
SN74ALS245ADW	1.05	TIS	727
SN74ALS245AN	0.60	TIS	727
SN74ALS251D	0.80	TIS	727
SN74ALS251N	0.79	TIS	727
SN74ALS253D	0.80	TIS	727
SN74ALS253N	0.81	TIS	727
SN74ALS259D	1.87	TIS	727
SN74ALS259N	2.03	TIS	727
SN74ALS273DW	1.15	TIS	727
SN74ALS273N	1.18	TIS	727
SN74ALS29821DW	5.25	TIS	727

Mfr.'s Type	Price	Mfr.'s Code	Page
SN74ALS29821NT	5.25	TIS	727
SN74ALS29827DW	5.12	TIS	727
SN74ALS29827NT	5.12	TIS	727
SN74ALS29863DW	5.12	TIS	727
SN74ALS29863NT	5.12	TIS	727
SN74ALS299DW	3.72	TIS	727
SN74ALS299N	3.91	TIS	727
SN74ALS30AN	0.68	TIS	—
SN74ALS32D	0.42	TIS	727
SN74ALS32N	0.43	TIS	727
SN74ALS373ADW	1.05	TIS	727
SN74ALS373AN	1.03	TIS	727
SN74ALS374ADW	1.05	TIS	727
SN74ALS374AN	1.03	TIS	727
SN74ALS520DW	3.62	TIS	727
SN74ALS520N	2.56	TIS	727
SN74ALS521DW	3.62	TIS	727
SN74ALS521N	2.32	TIS	727
SN74ALS533AN	2.32	TIS	—
SN74ALS540DW	1.77	TIS	727
SN74ALS540N	1.94	TIS	727
SN74ALS541DW	1.77	TIS	727
SN74ALS541N	1.75	TIS	727
SN74ALS569ADW	3.25	TIS	727
SN74ALS569AN	2.83	TIS	727
SN74ALS573CN	1.31	TIS	727
SN74ALS574BDW	1.24	TIS	727
SN74ALS574BN	1.18	TIS	727
SN74ALS576BDW	2.25	TIS	727
SN74ALS576BN	2.13	TIS	727
SN74ALS623ADW	2.47	TIS	727
SN74ALS623AN	2.67	TIS	727
SN74ALS640B-1DW	3.12	TIS	727
SN74ALS640B-1N	2.96	TIS	727
SN74ALS640BDW	1.97	TIS	727
SN74ALS640BN	2.03	TIS	727
SN74ALS641A-1DW	3.12	TIS	727
SN74ALS641A-1N	2.96	TIS	727
SN74ALS645A-1DW	2.62	TIS	727
SN74ALS645A-1N	2.83	TIS	727
SN74ALS645ADW	2.03	TIS	727
SN74ALS645AN	2.03	TIS	727
SN74ALS651DW	5.75	TIS	727
SN74ALS651NT	5.75	TIS	727
SN74ALS652-1DW	6.87	TIS	727
SN74ALS652-1NT	6.62	TIS	727
SN74ALS653NT	13.50	TIS	—
SN74ALS666DW	8.75	TIS	727
SN74ALS666NT	8.75	TIS	727
SN74ALS688DW	4.00	TIS	727
SN74ALS688N	4.12	TIS	727
SN74ALS74AD	0.52	TIS	727
SN74ALS74AN	0.55	TIS	727
SN74ALS760N	2.47	TIS	—
SN74ALS841DW	4.12	TIS	727
SN74ALS841NT	4.24	TIS	727
SN74ALS867ADW	7.87	TIS	727
SN74ALS867ANT	7.87	TIS	727
SN74ALS869DW	7.87	TIS	727
SN74ALS869NT	7.87	TIS	727
SN74ALS86D	0.52	TIS	727
SN74ALS86N	0.52	TIS	727
SN74ALS873BNT	3.35	TIS	—
SN74ALS874BDW	2.47	TIS	727
SN74ALS874BNT	2.54	TIS	727
SN74ALS990DW	5.75	TIS	727
SN74ALS990N	5.75	TIS	727
SN74ALS992DW	11.50	TIS	727
SN74ALS992NT	11.50	TIS	727
SN74ALS996DW	10.00	TIS	727
SN74ALS996NT	10.00	TIS	727
SN74AS00D	0.57	TIS	727
SN74AS00N	0.52	TIS	727
SN74AS04D	0.57	TIS	727
SN74AS04N	0.52	TIS	727
SN74AS08D	0.57	TIS	727
SN74AS08N	0.52	TIS	727
SN74AS1000AD	1.20	TIS	727
SN74AS1000AN	1.28	TIS	727
SN74AS1004AD	1.20	TIS	727
SN74AS1004AN	1.28	TIS	727
SN74AS1032AD	1.20	TIS	727
SN74AS1032AN	1.22	TIS	727
SN74AS1034AD	1.20	TIS	727
SN74AS1034AN	1.28	TIS	727
SN74AS11D	0.57	TIS	727
SN74AS11N	0.50	TIS	727
SN74AS138D	1.27	TIS	727
SN74AS138N	1.18	TIS	727
SN74AS153N	1.31	TIS	—
SN74AS157D	1.27	TIS	727
SN74AS157N	1.31	TIS	727
SN74AS158D	1.27	TIS	727
SN74AS158N	1.25	TIS	—
SN74AS161D	3.00	TIS	727
SN74AS161N	2.83	TIS	727
SN74AS163D	3.00	TIS	727
SN74AS163N	2.83	TIS	727
SN74AS174D	1.87	TIS	727
SN74AS174N	1.72	TIS	727
SN74AS1804N	3.25	TIS	727
SN74AS240DW	199.84	TIS	727
SN74AS241N	3.67	TIS	—

Mfr.'s Type	Price	Mfr.'s Code	Page
SN74AS245DW	2.47	TIS	727
SN74AS245N	2.32	TIS	—
SN74AS258D	1.42	TIS	727
SN74AS258N	1.37	TIS	727
SN74AS27D	0.57	TIS	727
SN74AS27N	0.52	TIS	727
SN74AS280D	1.65	TIS	727
SN74AS280N	1.55	TIS	727
SN74AS286D	1.65	TIS	727
SN74AS286N	1.71	TIS	727
SN74AS32D	0.57	TIS	727
SN74AS32N	0.55	TIS	727
SN74AS373DW	2.30	TIS	727
SN74AS373N	2.41	TIS	727
SN74AS374DW	2.30	TIS	727
SN74AS374N	2.41	TIS	727
SN74AS573ADW	2.40	TIS	727
SN74AS573AN	2.32	TIS	727
SN74AS574DW	2.40	TIS	727
SN74AS574N	2.56	TIS	727
SN74AS640DW	2.67	TIS	727
SN74AS640N	2.58	TIS	727
SN74AS646DW	6.45	TIS	727
SN74AS646NT	6.25	TIS	727
SN74AS648DW	7.37	TIS	727
SN74AS648NT	6.87	TIS	727
SN74AS651DW	6.45	TIS	727
SN74AS651NT	6.25	TIS	727
SN74AS652DW	6.45	TIS	727
SN74AS652NT	6.25	TIS	727
SN74AS760DW	3.75	TIS	727
SN74AS760N	4.06	TIS	727
SN74AS804BDW	2.55	TIS	727
SN74AS804BN	2.69	TIS	727
SN74AS805BDW	2.62	TIS	727
SN74AS805BN	2.70	TIS	727
SN74AS808BDW	2.55	TIS	727
SN74AS808BN	2.69	TIS	727
SN74AS821ADW	4.75	TIS	727
SN74AS821ANT	4.75	TIS	727
SN74AS867NT	7.12	TIS	727
SN74AS869DW	7.87	TIS	727
SN74AS869NT	7.12	TIS	727
SN74AS873ADW	4.75	TIS	727
SN74AS873ANT	4.89	TIS	727
SN74AS874DW	4.75	TIS	727
SN74AS874NT	4.89	TIS	—
SN74AS885DW	9.75	TIS	727
SN74AS885NT	9.75	TIS	727
SN74BCT2240DW	2.75	TIS	727
SN74BCT2240N	2.83	TIS	727
SN74BCT2244N	2.98	TIS	727
SN74BCT2245DW	2.87	TIS	727
SN74BCT2245N	2.87	TIS	727
SN74BCT244DW	2.25	TIS	727
SN74BCT244N	2.44	TIS	727
SN74BCT245DW	2.37	TIS	727
SN74BCT245N	2.69	TIS	727
SN74BCT25245DW	4.00	TIS	727
SN74BCT25245NT	4.12	TIS	727
SN74BCT2827CDW	3.12	TIS	727
SN74BCT2827CNT	3.12	TIS	727
SN74BCT2828BDW	3.12	TIS	727
SN74BCT2828BNT	3.12	TIS	727
SN74BCT2953DW	3.12	TIS	727
SN74BCT2953NT	3.12	TIS	727
SN74BCT29854DW	3.00	TIS	—
SN74BCT373DW	2.25	TIS	727
SN74BCT373N	2.44	TIS	727
SN74BCT543DW	5.62	TIS	727
SN74BCT543NT	5.62	TIS	727
SN74BCT646DW	7.50	TIS	727
SN74BCT646NT	7.50	TIS	727
SN74BCT652DW	7.50	TIS	—
SN74BCT8245ADW	4.50	TIS	727
SN74BCT8245ANT	4.50	TIS	727
SN74F00D	0.42	TIS	727
SN74F00N	0.46	TIS	727
SN74F02D	0.42	TIS	727
SN74F02N	0.46	TIS	727
SN74F04D	0.42	TIS	728
SN74F04N	0.28	TIS	728
SN74F08D	0.42	TIS	728
SN74F08N	0.46	TIS	728
SN74F1056D	2.12	TIS	728
SN74F11D	0.42	TIS	728
SN74F11N	0.46	TIS	728
SN74F125D	0.85	TIS	728
SN74F125N	0.77	TIS	728
SN74F126D	0.85	TIS	728
SN74F126N	0.81	TIS	728
SN74F138D	0.75	TIS	728
SN74F138N	0.68	TIS	728
SN74F157AD	0.72	TIS	728
SN74F157AN	0.62	TIS	728
SN74F161AD	0.92	TIS	728
SN74F161AN	0.90	TIS	728
SN74F163AD	0.92	TIS	728
SN74F163AN	0.87	TIS	728
SN74F240DW	0.87	TIS	728
SN74F240N	0.88	TIS	728
SN74F243D	1.25	TIS	728
SN74F243N	1.25	TIS	728

Mfr.'s Type	Price	Mfr.'s Code	Page
SN74F244DW	0.49	TIS	728
SN74F244N	0.93	TIS	728
SN74F245DW	0.90	TIS	728
SN74F245N	0.88	TIS	728
SN74F257D	0.72	TIS	728
SN74F257N	0.67	TIS	728
SN74F260D	0.72	TIS	728
SN74F260N	0.68	TIS	—
SN74F27D	0.60	TIS	728
SN74F27N	0.62	TIS	728
SN74F280BD	0.77	TIS	728
SN74F280BN	0.68	TIS	728
SN74F283N	1.43	TIS	—
SN74F30D	0.42	TIS	728
SN74F30N	0.43	TIS	728
SN74F32D	0.43	TIS	728
SN74F32N	0.46	TIS	728
SN74F373DW	0.87	TIS	728
SN74F373N	0.93	TIS	728
SN74F374DW	0.87	TIS	728
SN74F374N	0.93	TIS	728
SN74F38D	0.54	TIS	728
SN74F38N	0.54	TIS	728
SN74F521DW	1.36	TIS	728
SN74F521N	1.43	TIS	728
SN74F541DW	3.75	TIS	728
SN74F541N	4.06	TIS	728
SN74F543DW	3.07	TIS	728
SN74F543NT	2.96	TIS	728
SN74F573DW	1.20	TIS	728
SN74F573N	1.18	TIS	728
SN74F574DW	1.20	TIS	728
SN74F574N	1.18	TIS	728
SN74F74D	0.48	TIS	728
SN74F74N	0.47	TIS	728
SN74F86N	0.77	TIS	—
SN74HC00D	0.38	TIS	728
SN74HC00N	0.36	TIS	728
SN74HC02D	0.38	TIS	728
SN74HC02N	0.36	TIS	728
SN74HC04D	0.38	TIS	728
SN74HC04N	0.36	TIS	728
SN74HC05D	0.46	TIS	728
SN74HC05N	0.43	TIS	728
SN74HC08D	0.38	TIS	728
SN74HC08N	0.36	TIS	728
SN74HC10D	0.37	TIS	728
SN74HC10N	0.36	TIS	728
SN74HC125D	0.57	TIS	728
SN74HC125N	0.49	TIS	728
SN74HC126D	0.80	TIS	728
SN74HC126N	0.82	TIS	728
SN74HC132D	0.92	TIS	728
SN74HC132N	0.84	TIS	728
SN74HC138D	0.52	TIS	728
SN74HC138N	0.52	TIS	728
SN74HC139D	0.55	TIS	728
SN74HC139N	0.54	TIS	728
SN74HC148N	1.53	TIS	—
SN74HC14D	0.38	TIS	728
SN74HC14N	0.36	TIS	728
SN74HC151D	0.62	TIS	728
SN74HC151N	0.54	TIS	728
SN74HC157D	0.52	TIS	728
SN74HC157N	0.52	TIS	—
SN74HC161D	0.79	TIS	728
SN74HC161N	0.69	TIS	728
SN74HC163D	0.77	TIS	728
SN74HC163N	0.69	TIS	728
SN74HC164D	0.77	TIS	728
SN74HC164N	0.69	TIS	728
SN74HC165D	0.77	TIS	728
SN74HC165N	0.69	TIS	728
SN74HC166D	1.22	TIS	728
SN74HC166N	1.15	TIS	728
SN74HC174D	0.65	TIS	728
SN74HC174N	0.54	TIS	728
SN74HC175D	0.65	TIS	728
SN74HC175N	0.57	TIS	728
SN74HC191N	1.00	TIS	—
SN74HC193N	1.13	TIS	—
SN74HC240DW	0.95	TIS	728
SN74HC240N	0.93	TIS	728
SN74HC244DW	0.98	TIS	728
SN74HC244N	0.74	TIS	728
SN74HC245DW	0.97	TIS	728
SN74HC245N	0.93	TIS	728
SN74HC251D	0.65	TIS	728
SN74HC251N	0.60	TIS	728
SN74HC257D	0.65	TIS	728
SN74HC257N	0.57	TIS	728
SN74HC259D	1.10	TIS	—
SN74HC273DW	0.98	TIS	728
SN74HC273N	0.93	TIS	728
SN74HC32N	0.36	TIS	728
SN74HC367D	0.87	TIS	728
SN74HC367N	0.95	TIS	728
SN74HC373DW	0.77	TIS	728
SN74HC373N	0.74	TIS	728
SN74HC374DW	0.77	TIS	728
SN74HC374N	0.74	TIS	728
SN74HC377DW	2.25	TIS	728
SN74HC377N	1.65	TIS	728

Mfr.'s Type	Price	Mfr.'s Code	Page
SN74HC393D	1.00	TIS	728
SN74HC393N	0.93	TIS	728
SN74HC4020N	1.36	TIS	—
SN74HC4040D	1.10	TIS	728
SN74HC4040N	1.03	TIS	728
SN74HC540DW	1.22	TIS	728
SN74HC540N	1.15	TIS	728
SN74HC541DW	1.26	TIS	728
SN74HC541N	1.15	TIS	728
SN74HC573ADW	1.22	TIS	728
SN74HC573AN	1.28	TIS	728
SN74HC574DW	0.95	TIS	728
SN74HC574N	0.95	TIS	728
SN74HC590ADW	1.97	TIS	728
SN74HC590AN	1.93	TIS	728
SN74HC594DW	2.95	TIS	728
SN74HC594N	3.04	TIS	728
SN74HC595DW	2.73	TIS	728
SN74HC595N	2.56	TIS	728
SN74HC7001D	1.02	TIS	728
SN74HC7001N	1.16	TIS	728
SN74HC74D	0.41	TIS	728
SN74HC74N	0.38	TIS	728
SN74HC86D	0.54	TIS	728
SN74HC86N	0.46	TIS	728
SN74HCT00D	0.45	TIS	728
SN74HCT00N	0.46	TIS	728
SN74HCT02N	0.81	TIS	—
SN74HCT04D	0.45	TIS	728
SN74HCT04N	0.46	TIS	728
SN74HCT08D	0.45	TIS	728
SN74HCT08N	0.43	TIS	728
SN74HCT138D	0.62	TIS	728
SN74HCT138N	0.46	TIS	728
SN74HCT240DW	0.95	TIS	728
SN74HCT240N	0.98	TIS	728
SN74HCT244DW	0.75	TIS	728
SN74HCT244N	0.74	TIS	728
SN74HCT245DW	0.75	TIS	728
SN74HCT245N	0.74	TIS	728
SN74HCT273DW	0.95	TIS	728
SN74HCT273N	0.98	TIS	728
SN74HCT32D	0.45	TIS	—
SN74HCT32N	0.46	TIS	728
SN74HCT373DW	0.95	TIS	728
SN74HCT373N	0.98	TIS	728
SN74HCT374DW	0.75	TIS	728
SN74HCT374N	0.74	TIS	728
SN74HCT541DW	1.22	TIS	728
SN74HCT541N	1.28	TIS	728
SN74HCT573DW	1.22	TIS	728
SN74HCT573N	1.15	TIS	728
SN74HCT574DW	1.22	TIS	728
SN74HCT574N	1.28	TIS	728
SN74HCT645N	4.27	TIS	—
SN74HCT646DW	5.87	TIS	728
SN74HCT646NT	5.75	TIS	728
SN74HCT652NT	5.75	TIS	728
SN74HCT74D	0.47	TIS	728
SN74HCT74N	0.40	TIS	728
SN74LS00D	0.32	MOT	682
SN74LS00D	0.37	TIS	728
SN74LS00N	0.28	MOT	682
SN74LS00N	0.31	TIS	728
SN74LS01N	0.28	MOT	682
SN74LS01N	0.55	TIS	—
SN74LS02D	0.32	MOT	682
SN74LS02D	0.37	TIS	728
SN74LS02N	0.28	MOT	682
SN74LS02N	0.31	TIS	728
SN74LS03N	0.28	MOT	682
SN74LS04D	0.32	MOT	682
SN74LS04D	0.38	TIS	728
SN74LS04N	0.28	MOT	682
SN74LS04N	0.31	TIS	728
SN74LS05D	0.32	MOT	682
SN74LS05D	0.37	TIS	728
SN74LS05N	0.28	MOT	682
SN74LS05N	0.31	TIS	728
SN74LS06D	0.80	TIS	728
SN74LS06N	0.82	TIS	728
SN74LS07D	0.80	TIS	728
SN74LS07N	0.82	TIS	728
SN74LS08D	0.32	MOT	682
SN74LS08D	0.37	TIS	728
SN74LS08N	0.28	MOT	682
SN74LS08N	0.31	TIS	728
SN74LS09D	0.32	MOT	682
SN74LS09N	0.28	MOT	682
SN74LS107AN	0.34	MOT	682
SN74LS107AN	0.93	TIS	—
SN74LS109AN	0.34	MOT	682
SN74LS109AN	0.77	TIS	—
SN74LS10D	0.32	MOT	682
SN74LS10D	0.37	TIS	728
SN74LS10N	0.28	MOT	682
SN74LS10N	0.31	TIS	728
SN74LS112AN	0.34	MOT	682
SN74LS112AN	0.77	TIS	—
SN74LS113AN	0.34	MOT	682
SN74LS11N	0.28	MOT	682
SN74LS11N	0.52	TIS	—
SN74LS122N	0.47	MOT	682

Manufacturer's Code Log

ADI	Analog Devices Inc.
AMD	Advanced Micro Devices
COL	Collmer Semiconductors, Inc.
DLS	Dallas Semiconductor
HAR	Harris Semiconductor
ITL	Intel
LAT	Lattice
MXM	Maxim
MOS	Mosel-Vitelic
MOT	Motorola Semiconductor
NSC	National Semiconductor
NTE	NTE Electronics
PHI	Philips Semiconductors
SEM	Semiconductors Inc.
SIE	Siemens Components, Inc
TIS	Texas Instruments
THO	Thomson Conusumer Electronics
UNI	Unitrode Integrated Circuits
XLX	Xilinx

Mfr.'s Type	Price	Mfr.'s Code	Page
SN74LS122N	0.77	TIS	—
SN74LS123D	0.50	MOT	682
SN74LS123D	0.72	TIS	728
SN74LS123N	0.47	MOT	682
SN74LS123N	0.64	TIS	728
SN74LS125AD	0.39	MOT	682
SN74LS125AD	0.57	TIS	728
SN74LS125AN	0.38	MOT	682
SN74LS125AN	0.52	TIS	728
SN74LS126AD	0.38	MOT	682
SN74LS126AD	0.57	TIS	728
SN74LS126AN	0.36	MOT	682
SN74LS126AN	0.55	TIS	728
SN74LS12N	0.28	MOT	682
SN74LS132D	0.56	MOT	682
SN74LS132D	1.02	TIS	728
SN74LS132N	0.52	MOT	682
SN74LS132N	1.05	TIS	728
SN74LS133N	0.41	MOT	682
SN74LS136N	0.41	MOT	682
SN74LS137D	1.50	TIS	728
SN74LS137N	0.39	MOT	682
SN74LS137N	1.50	TIS	728
SN74LS138D	0.39	MOT	682
SN74LS138D	0.60	TIS	728
SN74LS138N	0.36	MOT	682
SN74LS138N	0.48	TIS	728
SN74LS139AD	0.62	TIS	728
SN74LS139AN	0.59	TIS	728
SN74LS139N	0.43	MOT	682
SN74LS13N	0.36	MOT	682
SN74LS145D	0.77	TIS	728
SN74LS145N	0.50	MOT	682
SN74LS145N	0.69	TIS	728
SN74LS147N	1.14	MOT	682
SN74LS148D	0.90	MOT	682
SN74LS148D	1.30	TIS	728
SN74LS148N	0.90	MOT	682
SN74LS148N	1.24	TIS	728
SN74LS14D	0.32	MOT	682
SN74LS14D	0.42	TIS	728
SN74LS14N	0.28	MOT	682
SN74LS14N	0.29	TIS	728
SN74LS151D	0.60	TIS	728
SN74LS151N	0.36	MOT	682
SN74LS151N	0.48	TIS	728
SN74LS153D	0.60	TIS	728
SN74LS153N	0.36	MOT	682
SN74LS153N	0.48	TIS	728
SN74LS155AN	0.77	TIS	—
SN74LS155N	0.36	MOT	682
SN74LS156D	0.39	MOT	682
SN74LS156D	0.60	TIS	728
SN74LS156N	0.36	MOT	682
SN74LS156N	0.48	TIS	728
SN74LS157D	0.39	MOT	682
SN74LS157D	0.60	TIS	728
SN74LS157N	0.36	MOT	682
SN74LS157N	0.48	TIS	728
SN74LS158N	0.36	MOT	682
SN74LS15N	0.28	MOT	682
SN74LS160AN	0.39	MOT	682
SN74LS161AD	0.62	TIS	728
SN74LS161AN	0.39	MOT	682
SN74LS161AN	0.54	TIS	728
SN74LS163AD	0.62	TIS	728
SN74LS163AN	0.39	MOT	682
SN74LS163AN	0.54	TIS	728
SN74LS164D	0.43	MOT	682
SN74LS164D	0.62	TIS	728
SN74LS164N	0.39	MOT	682
SN74LS164N	0.54	TIS	728
SN74LS165AD	1.10	TIS	728
SN74LS165AN	1.13	TIS	728
SN74LS165D	0.78	MOT	682
SN74LS165N	0.75	MOT	682
SN74LS166AD	1.22	TIS	728
SN74LS166AN	1.15	TIS	728
SN74LS166D	0.88	MOT	682
SN74LS166N	0.84	MOT	682
SN74LS169N	0.93	MOT	682
SN74LS173AN	0.43	MOT	682
SN74LS173AN	0.77	TIS	—
SN74LS174D	0.43	MOT	682
SN74LS174D	0.60	TIS	728
SN74LS174N	0.36	MOT	682
SN74LS174N	0.48	TIS	728
SN74LS175D	0.43	MOT	682
SN74LS175D	0.60	TIS	728
SN74LS175N	0.36	MOT	682
SN74LS175N	0.48	TIS	728
SN74LS190N	0.47	MOT	—
SN74LS191N	0.47	MOT	682
SN74LS191N	0.90	TIS	—

Mfr.'s Type	Price	Mfr.'s Code	Page
SN74LS192N	0.47	MOT	682
SN74LS193D	0.72	TIS	728
SN74LS193N	0.47	MOT	682
SN74LS193N	0.64	TIS	728
SN74LS194AN	0.81	TIS	—
SN74LS195AN	0.47	MOT	682
SN74LS197N	0.75	MOT	682
SN74LS19AD	0.72	TIS	728
SN74LS19AN	0.78	TIS	728
SN74LS20N	0.28	MOT	682
SN74LS20N	0.52	TIS	—
SN74LS21N	0.28	MOT	682
SN74LS21N	0.87	TIS	—
SN74LS221D	0.67	MOT	682
SN74LS221D	1.00	TIS	728
SN74LS221N	0.67	MOT	682
SN74LS221N	0.98	TIS	728
SN74LS240DW	0.56	MOT	682
SN74LS240DW	0.75	TIS	728
SN74LS240N	0.52	MOT	682
SN74LS240N	0.72	TIS	728
SN74LS241DW	0.75	TIS	728
SN74LS241N	0.52	MOT	682
SN74LS241N	0.72	TIS	728
SN74LS242N	0.60	MOT	682
SN74LS243D	0.64	MOT	682
SN74LS243N	0.60	MOT	682
SN74LS244DW	0.56	MOT	682
SN74LS244DW	0.75	TIS	728
SN74LS244N	0.52	MOT	682
SN74LS244N	0.72	TIS	728
SN74LS245DW	0.56	MOT	682
SN74LS245DW	0.77	TIS	728
SN74LS245N	0.52	MOT	682
SN74LS245N	0.72	TIS	728
SN74LS247D	0.71	MOT	682
SN74LS247N	0.71	MOT	682
SN74LS251D	0.57	TIS	728
SN74LS251N	0.38	MOT	682
SN74LS251N	0.52	TIS	728
SN74LS253D	0.57	TIS	728
SN74LS253N	0.38	MOT	682
SN74LS253N	0.52	TIS	728
SN74LS256N	0.93	MOT	682
SN74LS257BD	0.41	MOT	682
SN74LS257BD	0.57	TIS	728
SN74LS257BN	0.38	MOT	682
SN74LS257BN	0.52	TIS	728
SN74LS258BD	0.41	MOT	682
SN74LS258BN	0.38	MOT	682
SN74LS259BD	0.87	TIS	728
SN74LS259BN	0.79	TIS	728
SN74LS259D	0.62	MOT	682
SN74LS259N	0.58	MOT	682
SN74LS260N	0.34	MOT	682
SN74LS266N	0.36	MOT	682
SN74LS266N	0.52	TIS	—
SN74LS26N	0.28	MOT	682
SN74LS273DW	0.56	MOT	682
SN74LS273DW	0.85	TIS	728
SN74LS273N	0.52	MOT	682
SN74LS273N	0.69	TIS	728
SN74LS279AN	0.64	TIS	—
SN74LS279N	0.38	MOT	682
SN74LS27N	0.28	MOT	682
SN74LS27N	0.52	TIS	—
SN74LS280D	0.95	TIS	728
SN74LS280N	0.60	MOT	682
SN74LS280N	0.88	TIS	728
SN74LS283D	0.80	TIS	728
SN74LS283N	0.52	MOT	682
SN74LS283N	0.72	TIS	728
SN74LS290N	0.58	MOT	682
SN74LS292N	17.50	TIS	728
SN74LS293N	0.60	MOT	682
SN74LS298N	0.65	MOT	682
SN74LS299DW	1.28	MOT	682
SN74LS299DW	1.87	TIS	728
SN74LS299N	1.28	MOT	682
SN74LS299N	1.77	TIS	728
SN74LS30D	0.32	MOT	682
SN74LS30D	0.37	TIS	728
SN74LS30N	0.28	MOT	682
SN74LS30N	0.33	TIS	728
SN74LS31N	1.28	TIS	—
SN74LS322AN	1.49	MOT	682
SN74LS32D	0.32	MOT	682
SN74LS32D	0.37	TIS	728
SN74LS32N	0.28	MOT	682
SN74LS32N	0.38	TIS	728
SN74LS33D	0.32	MOT	682
SN74LS33N	0.28	MOT	682
SN74LS348N	0.95	MOT	682
SN74LS365AD	0.47	MOT	682

Mfr.'s Type	Price	Mfr.'s Code	Page
SN74LS365AD	1.05	TIS	728
SN74LS365AN	0.43	MOT	682
SN74LS365AN	0.82	TIS	728
SN74LS366AN	0.43	MOT	682
SN74LS367AD	0.47	MOT	682
SN74LS367AD	0.67	TIS	728
SN74LS367AN	0.43	MOT	682
SN74LS367AN	0.59	TIS	728
SN74LS368AD	0.67	TIS	728
SN74LS368AN	0.43	MOT	682
SN74LS368AN	0.59	TIS	728
SN74LS373DW	0.56	MOT	682
SN74LS373DW	0.75	TIS	728
SN74LS373N	0.52	MOT	682
SN74LS373N	0.72	TIS	728
SN74LS374DW	0.56	MOT	682
SN74LS374DW	0.75	TIS	728
SN74LS374N	0.52	MOT	682
SN74LS374N	0.72	TIS	728
SN74LS375N	0.43	MOT	682
SN74LS377DW	1.05	TIS	728
SN74LS377N	0.67	MOT	682
SN74LS377N	0.93	TIS	728
SN74LS378D	1.02	TIS	728
SN74LS378N	0.69	MOT	682
SN74LS378N	0.95	TIS	728
SN74LS37N	0.36	MOT	682
SN74LS38D	0.37	TIS	728
SN74LS38N	0.28	MOT	682
SN74LS38N	0.41	TIS	728
SN74LS390N	0.54	MOT	682
SN74LS390N	0.77	TIS	—
SN74LS393D	0.56	MOT	682
SN74LS393D	0.82	TIS	728
SN74LS393N	0.52	MOT	682
SN74LS393N	0.78	TIS	728
SN74LS395AN	0.95	TIS	—
SN74LS399N	0.75	MOT	682
SN74LS423N	1.28	TIS	—
SN74LS42N	0.45	MOT	682
SN74LS42N	1.26	TIS	—
SN74LS47N	0.71	MOT	682
SN74LS47N	1.13	TIS	—
SN74LS48N	0.67	MOT	682
SN74LS490N	2.14	MOT	682
SN74LS51N	0.28	MOT	682
SN74LS51N	0.52	TIS	—
SN74LS540DW	1.15	TIS	728
SN74LS540N	0.75	MOT	682
SN74LS540N	1.03	TIS	728
SN74LS541DW	0.78	MOT	682
SN74LS541DW	1.15	TIS	728
SN74LS541N	0.65	TIS	728
SN74LS541N	0.75	MOT	682
SN74LS569AN	1.40	MOT	682
SN74LS590D	6.87	TIS	728
SN74LS590N	6.87	TIS	728
SN74LS592D	6.87	TIS	728
SN74LS592N	6.87	TIS	728
SN74LS593DW	8.75	TIS	728
SN74LS593N	8.75	TIS	728
SN74LS595D	6.87	TIS	728
SN74LS595N	6.87	TIS	728
SN74LS597D	6.87	TIS	728
SN74LS597N	6.87	TIS	728
SN74LS623N	1.67	MOT	682
SN74LS624N	2.16	TIS	728
SN74LS628N	2.10	TIS	728
SN74LS640-1DW	3.75	TIS	728
SN74LS640-1N	4.06	TIS	728
SN74LS640DW	1.21	MOT	682
SN74LS640DW	1.77	TIS	728
SN74LS640N	1.21	MOT	682
SN74LS640N	1.67	TIS	728
SN74LS641N	1.27	MOT	682
SN74LS641N	1.94	TIS	—
SN74LS642N	1.27	MOT	682
SN74LS645-1DW	3.86	TIS	728
SN74LS645-1N	3.86	TIS	728
SN74LS645N	0.86	MOT	682
SN74LS645N	1.18	TIS	—
SN74LS646DW	5.07	TIS	728
SN74LS646NT	5.02	TIS	728
SN74LS652DW	5.07	TIS	728
SN74LS652NT	5.02	TIS	728
SN74LS669N	0.75	MOT	682
SN74LS670D	0.84	MOT	682
SN74LS670D	1.22	TIS	728
SN74LS670N	0.84	MOT	682
SN74LS670N	1.15	TIS	728
SN74LS682DW	1.67	MOT	—
SN74LS682DW	2.40	TIS	728
SN74LS682N	1.67	MOT	682
SN74LS682N	2.32	TIS	728

Mfr.'s Type	Price	Mfr.'s Code	Page
SN74LS684DW	4.22	TIS	728
SN74LS684N	2.04	MOT	682
SN74LS684N	4.35	TIS	728
SN74LS688DW	1.62	MOT	682
SN74LS688DW	2.32	TIS	728
SN74LS688N	1.40	MOT	682
SN74LS688N	1.93	TIS	728
SN74LS73AN	0.39	MOT	682
SN74LS74AD	0.30	MOT	682
SN74LS74AD	0.40	TIS	728
SN74LS74AN	0.26	MOT	682
SN74LS74AN	0.36	TIS	728
SN74LS75N	0.39	MOT	682
SN74LS75N	1.18	TIS	—
SN74LS76AN	0.38	MOT	682
SN74LS795N	0.93	MOT	682
SN74LS85D	0.47	MOT	682
SN74LS85D	0.67	TIS	728
SN74LS85N	0.43	MOT	682
SN74LS85N	0.59	TIS	728
SN74LS86AD	0.57	TIS	728
SN74LS86AN	0.36	TIS	728
SN74LS86D	0.38	MOT	682
SN74LS86N	0.26	MOT	682
SN74LS90N	0.47	MOT	682
SN74LS90N	1.36	TIS	—
SN74LS92N	0.47	MOT	682
SN74LS93N	0.43	MOT	682
SN74LS93N	1.32	TIS	—
SN74LS95BN	0.52	MOT	682
SN74S00D	0.60	TIS	728
SN74S00N	0.59	TIS	728
SN74S02N	0.59	TIS	728
SN74S04D	0.60	TIS	728
SN74S04N	0.59	TIS	728
SN74S05D	0.60	TIS	728
SN74S05N	0.62	TIS	728
SN74S08N	0.59	TIS	—
SN74S1050D	1.87	TIS	728
SN74S1050N	1.97	TIS	728
SN74S1051D	1.87	TIS	728
SN74S1051N	2.03	TIS	728
SN74S1053DW	1.87	TIS	728
SN74S1053N	2.03	TIS	728
SN74S1056D	2.62	TIS	728
SN74S1056SC	3.12	TIS	728
SN74S10N	0.59	TIS	—
SN74S112AD	0.72	TIS	728
SN74S112AN	0.78	TIS	728
SN74S11N	0.59	TIS	—
SN74S124D	4.37	TIS	728
SN74S124N	4.50	TIS	728
SN74S132N	2.73	TIS	—
SN74S138AD	1.07	TIS	728
SN74S138AN	1.21	TIS	728
SN74S139AN	1.08	TIS	—
SN74S140N	1.50	TIS	—
SN74S163D	3.05	TIS	728
SN74S163N	3.14	TIS	728
SN74S169N	4.94	TIS	—
SN74S174N	1.21	TIS	—
SN74S175D	1.07	TIS	728
SN74S175N	1.21	TIS	728
SN74S20N	0.98	TIS	—
SN74S225N	7.50	TIS	728
SN74S240DW	2.02	TIS	728
SN74S240N	2.06	TIS	728
SN74S241DW	2.02	TIS	728
SN74S241N	2.06	TIS	728
SN74S244DW	2.02	TIS	728
SN74S244N	2.06	TIS	728
SN74S260N	0.64	TIS	—
SN74S280D	1.95	TIS	728
SN74S280N	1.93	TIS	728
SN74S299N	6.75	TIS	—
SN74S32D	0.60	TIS	728
SN74S32N	0.59	TIS	728
SN74S373DW	2.02	TIS	728
SN74S373N	2.21	TIS	728
SN74S374DW	2.02	TIS	728
SN74S374N	2.01	TIS	728
SN74S38D	0.90	TIS	728
SN74S38N	0.88	TIS	728
SN74S74D	0.72	TIS	728
SN74S74N	0.69	TIS	728
SN74S85D	1.67	TIS	728
SN74S85N	1.67	TIS	728
SN75107AD	1.20	TIS	731
SN75107AN	1.24	TIS	731
SN75107BD	1.20	TIS	731
SN75107BN	1.24	TIS	731
SN75108BD	1.20	TIS	731
SN75108BN	1.24	TIS	731
SN75110AN	1.24	TIS	731

Mfr.'s Type	Price	Mfr.'s Code	Page
SN75112D	3.12	TIS	731
SN75112N	3.21	TIS	731
SN75113D	3.12	TIS	731
SN75113N	3.21	TIS	731
SN75114D	2.50	TIS	731
SN75114N	2.58	TIS	731
SN75115N	2.58	TIS	731
SN75116N	4.50	TIS	731
SN75117P	4.37	TIS	731
SN75118N	4.50	TIS	731
SN75119P	4.50	TIS	731
SN75126N	5.50	TIS	731
SN75128N	3.75	TIS	731
SN75129DW	3.75	TIS	731
SN75129N	3.75	TIS	731
SN75130D	5.50	TIS	—
SN75138N	2.83	TIS	731
SN75150D	1.03	TIS	731
SN75150P	1.03	TIS	731
SN75154D	1.25	TIS	731
SN75154N	1.29	TIS	731
SN75155D	1.25	TIS	731
SN75155P	1.29	TIS	731
SN75157P	2.06	TIS	731
SN75158D	5.00	TIS	731
SN75158P	5.15	TIS	731
SN75159D	5.00	TIS	731
SN75159N	5.15	TIS	731
SN75160BDW	6.75	TIS	731
SN75160BN	5.62	TIS	731
SN75161BN	5.62	TIS	731
SN75162BN	5.50	TIS	731
SN75172N	2.83	TIS	731
SN751730D	4.37	TIS	—
SN75173D	3.17	TIS	731
SN75173N	1.45	MOT	684
SN75173N	2.58	TIS	731
SN75174DW	2.75	TIS	731
SN75174N	2.83	TIS	731
SN75175D	3.27	TIS	731
SN75175N	1.45	MOT	684
SN75175N	2.58	TIS	731
SN75176AD	1.37	TIS	731
SN75176AP	1.41	TIS	731
SN75176BD	1.55	TIS	731
SN75176BP	1.55	TIS	731
SN75178BP	2.32	TIS	731
SN75179BD	2.32	TIS	731
SN75179BP	2.32	TIS	731
SN75182N	2.58	TIS	—
SN75183N	2.58	TIS	—
SN75188D	0.46	TIS	731
SN75188N	0.46	TIS	731
SN75189AD	0.45	TIS	731
SN75189AN	0.46	TIS	731
SN75189D	0.46	TIS	731
SN75189N	0.46	TIS	731
SN75207BN	3.40	TIS	731
SN75372D	1.93	TIS	731
SN75372P	2.13	TIS	731
SN75374D	2.87	TIS	731
SN75374N	2.96	TIS	731
SN75437ANE	2.64	TIS	731
SN754410NE	4.38	TIS	732
SN75451BP	0.90	TIS	731
SN75452BD	0.87	TIS	731
SN75452BP	0.90	TIS	731
SN75453BP	0.90	TIS	731
SN75454BD	0.95	TIS	731
SN75454BP	0.95	TIS	731
SN75462P	1.15	TIS	731
SN75463D	1.00	TIS	731
SN75463P	1.08	TIS	731
SN75468D	1.62	TIS	732
SN75468N	1.67	TIS	732
SN75469N	1.67	TIS	—
SN75471D	1.07	TIS	731
SN75471P	1.10	TIS	731
SN75472P	1.67	TIS	731
SN75477D	0.95	TIS	731
SN75477P	0.77	TIS	731
SN75512CN	8.25	TIS	731
SN75ALS056DW	11.25	TIS	731
SN75ALS056N	11.25	TIS	731
SN75ALS160DW	6.75	TIS	731
SN75ALS160N	6.75	TIS	731
SN75ALS170DW	6.75	TIS	731
SN75ALS170J	6.75	TIS	731
SN75ALS171DW	8.00	TIS	731
SN75ALS171J	8.00	TIS	731
SN75ALS176AD	3.62	TIS	731
SN75ALS176AP	3.91	TIS	731
SN75ALS176BD	4.89	TIS	731
SN75ALS176BP	4.89	TIS	731
SN75ALS176D	2.96	TIS	731
SN75ALS176P	3.10	TIS	731
SN75ALS180D	2.87	TIS	731
SN75ALS180N	3.10	TIS	731
SN75ALS192D	2.12	TIS	731
SN75ALS192N	2.41	TIS	731
SN75ALS193N	2.06	TIS	731
SN75ALS194N	2.41	TIS	731
SN75ALS195N	2.06	TIS	731
SN75ALS197D	2.00	TIS	731
SN75C185DW	3.12	TIS	731
SN75C185N	3.38	TIS	731
SN75C188D	1.55	TIS	731
SN75C188N	1.71	TIS	731
SN75C189AD	1.50	TIS	731
SN75C189AN	1.25	TIS	731
SN75C189D	1.50	TIS	731
SN75C189N	1.63	TIS	731
SP600	6.00	HAR	652
SP601	6.00	HAR	652
SP710AS	5.00	HAR	—
SP720AB	1.91	HAR	653
SP720AP	1.97	HAR	653
SP721AB	1.50	HAR	653
SP721AP	1.55	HAR	653
SP723AB	1.98	HAR	653
SP723AP	1.98	HAR	653
SSM2017P	2.78	ADI	639
SSM2018P	4.64	ADI	639
SSM2024P	4.41	ADI	639
SSM2110P	5.25	ADI	—
SSM2120P	6.23	ADI	639
SSM2135P	3.24	ADI	639
SSM2135S	3.53	ADI	639
SSM2141P	3.17	ADI	639
SSM2142P	4.56	ADI	639
SSM2143P	2.84	ADI	639
SSM2164P	4.75	ADI	—
SSM2164S	4.75	ADI	—
SSM2402P	5.30	ADI	636
SSM2402S	5.30	ADI	—
SW06GP	3.10	ADI	636
SW201GP	4.59	ADI	—
T23-A230X	2.52	SIE	725
T23-A350	2.52	SIE	725
T2322B	0.56	MOT	707
T2322D	0.64	MOT	707
T2500B	0.78	MOT	707
T2500D	0.76	MOT	707
T2800D	0.82	MOT	707
T2800M	0.84	MOT	707
T61-C350	3.59	SIE	725
TCA0372DP1	1.15	MOT	687
TCM1060P	2.37	TIS	—
TCM29C13N	4.17	TIS	—
TCM29C16AN	4.38	TIS	730
TCM29C16N	4.12	TIS	730
TD80C31BH	6.40	ITL	665
TD80C51FA-1	8.84	ITL	665
TD80C51FA	8.84	ITL	665
TD87C51	23.40	ITL	665
TD87C51FA-1	30.33	ITL	665
TD87C51FA	29.38	ITL	665
TD87C51FC-1	43.52	ITL	666
TD87C51FC	42.57	ITL	666
TD87C54	31.80	ITL	665
TDA1541AN	14.62	PHI	722
TDA8702N	3.46	PHI	722
TDA8702TD	3.46	PHI	722
TIBPAL16L8-10CFN	2.50	TIS	729
TIBPAL16L8-10CN	2.58	TIS	729
TIBPAL16L8-15CFN	1.36	TIS	729
TIBPAL16L8-15CN	1.36	TIS	729
TIBPAL16L8-25CFN	1.24	TIS	729
TIBPAL16L8-25CN	1.24	TIS	729
TIBPAL16L8-5CFN	10.00	TIS	729
TIBPAL16L8-5CN	10.00	TIS	729
TIBPAL16L8-7CFN	4.37	TIS	729
TIBPAL16L8-7CN	4.50	TIS	729
TIBPAL16R4-10CFN	2.50	TIS	729
TIBPAL16R4-10CN	2.50	TIS	729
TIBPAL16R4-15CFN	1.36	TIS	729
TIBPAL16R4-15CN	1.36	TIS	729
TIBPAL16R4-25CFN	1.20	TIS	729
TIBPAL16R4-25CN	1.24	TIS	729
TIBPAL16R4-5CFN	10.00	TIS	729
TIBPAL16R4-5CN	10.00	TIS	729
TIBPAL16R4-7CFN	4.50	TIS	729
TIBPAL16R4-7CN	4.50	TIS	729
TIBPAL16R6-10CFN	2.50	TIS	729
TIBPAL16R6-10CN	2.58	TIS	729
TIBPAL16R6-15CFN	1.36	TIS	729
TIBPAL16R6-15CN	1.36	TIS	729
TIBPAL16R6-25CFN	1.20	TIS	729
TIBPAL16R6-25CN	1.24	TIS	729
TIBPAL16R6-5CFN	10.00	TIS	729
TIBPAL16R6-5CN	10.00	TIS	729
TIBPAL16R6-7CFN	4.37	TIS	729
TIBPAL16R6-7CN	4.50	TIS	729
TIBPAL16R8-10CFN	2.50	TIS	729
TIBPAL16R8-10CN	2.58	TIS	729
TIBPAL16R8-15CFN	1.36	TIS	729
TIBPAL16R8-15CN	1.36	TIS	729
TIBPAL16R8-25CFN	1.24	TIS	729
TIBPAL16R8-25CN	1.24	TIS	729
TIBPAL16R8-5CFN	10.00	TIS	729
TIBPAL16R8-5CN	10.00	TIS	729
TIBPAL16R8-7CFN	4.37	TIS	729
TIBPAL16R8-7CN	4.37	TIS	729
TIBPAL20L8-10CFN	5.00	TIS	729
TIBPAL20L8-10CNT	5.00	TIS	729
TIBPAL20L8-15CFN	2.44	TIS	729
TIBPAL20L8-15CNT	2.44	TIS	729
TIBPAL20L8-25CFN	1.80	TIS	729
TIBPAL20L8-25CNT	1.80	TIS	729
TIBPAL20L8-5CFN	15.00	TIS	729
TIBPAL20L8-5CNT	15.00	TIS	729
TIBPAL20L8-7CFN	7.50	TIS	729
TIBPAL20L8-7CNT	8.00	TIS	729
TIBPAL20R4-10CFN	5.15	TIS	729
TIBPAL20R4-10CNT	5.00	TIS	729
TIBPAL20R4-15CFN	2.58	TIS	729
TIBPAL20R4-15CNT	2.50	TIS	729
TIBPAL20R4-25CFN	1.75	TIS	729
TIBPAL20R4-25CNT	1.75	TIS	729
TIBPAL20R4-5CFN	15.00	TIS	729
TIBPAL20R4-5CNT	15.00	TIS	729
TIBPAL20R4-7CFN	7.50	TIS	729
TIBPAL20R4-7CNT	7.50	TIS	729
TIBPAL20R6-10CFN	5.00	TIS	729
TIBPAL20R6-10CNT	5.00	TIS	729
TIBPAL20R6-15CFN	2.50	TIS	729
TIBPAL20R6-15CNT	2.58	TIS	729
TIBPAL20R6-25CNT	1.80	TIS	729
TIBPAL20R6-5CFN	15.00	TIS	729
TIBPAL20R6-5CNT	15.00	TIS	729
TIBPAL20R6-7CFN	7.50	TIS	729
TIBPAL20R6-7CNT	7.50	TIS	729
TIBPAL20R8-10CNT	5.00	TIS	729
TIBPAL20R8-15CFN	2.50	TIS	729
TIBPAL20R8-15CNT	2.63	TIS	729
TIBPAL20R8-25CNT	1.75	TIS	729
TIBPAL20R8-5CFN	15.00	TIS	729
TIBPAL20R8-5CNT	15.00	TIS	729
TIBPAL20R8-7CFN	7.50	TIS	729
TIBPAL20R8-7CNT	7.50	TIS	729
TIBPAL22V10-10CFN	10.62	TIS	729
TIBPAL22V10-10CNT	10.62	TIS	729
TIBPAL22V10-15BCFN	6.87	TIS	729
TIBPAL22V10-15BCNT	6.87	TIS	729
TIBPAL22V10ACFN	4.12	TIS	729
TIBPAL22V10ACNT	4.24	TIS	729
TIBPAL22VP10-20CNT	6.87	TIS	729
TIL111	0.44	MOT	692
TIL113	0.46	MOT	692
TIL117	0.52	MOT	692
TIL117	0.93	TIS	—
TIL306	13.95	TIS	—
TIL311	14.32	TIS	—
TIP100	0.70	MOT	696
TIP101	0.70	MOT	696
TIP102	0.70	MOT	696
TIP105	0.70	MOT	696
TIP106	0.70	MOT	696
TIP107	0.70	MOT	696
TIP110	0.60	MOT	696
TIP110	0.76	SEM	723
TIP111	0.60	MOT	696
TIP111	0.76	SEM	723
TIP112	0.60	MOT	696
TIP112	0.76	SEM	723
TIP115	0.56	MOT	696
TIP115	0.76	SEM	—
TIP116	0.76	SEM	723
TIP117	0.60	MOT	696
TIP117	0.76	SEM	723
TIP120	0.60	MOT	696
TIP120	0.87	SEM	723
TIP121	0.60	MOT	696
TIP121	0.87	SEM	723
TIP122	0.60	MOT	696
TIP122	0.87	SEM	723
TIP125	0.66	MOT	696
TIP125	0.87	SEM	723
TIP126	0.66	MOT	696
TIP126	0.87	SEM	723
TIP127	0.66	MOT	696
TIP127	0.87	SEM	723
TIP140	1.90	MOT	696
TIP141	1.90	MOT	696
TIP142	1.92	MOT	696
TIP145	1.90	MOT	696
TIP146	1.90	MOT	696
TIP147	1.92	MOT	696
TIP29	0.54	MOT	—
TIP29	0.59	SEM	723
TIP2955	1.32	MOT	696
TIP29A	0.65	SEM	723
TIP29B	0.54	MOT	696
TIP29B	0.68	SEM	723
TIP29C	0.54	MOT	696
TIP29C	0.70	SEM	723
TIP30	0.54	MOT	—
TIP30	0.59	SEM	723
TIP3055	1.22	MOT	696
TIP30A	0.54	MOT	—
TIP30A	0.65	SEM	723
TIP30B	0.54	MOT	696
TIP30B	0.68	SEM	723
TIP30C	0.54	MOT	696
TIP30C	0.70	SEM	723
TIP31	0.54	MOT	—
TIP31	0.59	SEM	723
TIP31A	0.54	MOT	696
TIP31A	0.65	SEM	723
TIP31B	0.54	MOT	696
TIP31B	0.68	SEM	723
TIP31C	0.54	MOT	696
TIP31C	0.70	SEM	723
TIP32	0.54	MOT	—
TIP32	0.59	SEM	723
TIP32A	0.54	MOT	696
TIP32A	0.65	SEM	723
TIP32B	0.54	MOT	696
TIP32B	0.68	SEM	723
TIP32C	0.54	MOT	696
TIP32C	0.70	SEM	723
TIP33C	1.30	MOT	696
TIP35C	2.12	MOT	696
TIP36A	1.68	MOT	696
TIP36C	2.12	MOT	696
TIP41	0.80	SEM	723
TIP41A	0.64	MOT	696
TIP41A	0.82	SEM	723
TIP41B	0.64	MOT	696
TIP41B	0.84	SEM	723
TIP41C	0.64	MOT	696
TIP41C	0.87	SEM	723
TIP42	0.62	MOT	—
TIP42	0.80	SEM	723
TIP42A	0.62	MOT	696
TIP42A	0.82	SEM	723
TIP42B	0.62	MOT	696
TIP42B	0.84	SEM	723
TIP42C	0.62	MOT	696
TIP42C	0.87	SEM	723
TIP47	0.64	MOT	696
TIP48	0.66	MOT	696
TIP49	0.74	MOT	696
TIP50	0.76	MOT	696
TIS75	0.53	NSC	—
TIS97	0.36	NSC	—
TL031CD	0.85	TIS	732
TL031CP	0.93	TIS	732
TL032ACD	2.83	TIS	733
TL032ACP	2.75	TIS	733
TL032CD	1.15	TIS	733
TL032CP	1.31	TIS	733
TL034ACN	5.07	TIS	733
TL034CD	1.75	TIS	733
TL034CN	1.99	TIS	733
TL051CD	1.10	TIS	732
TL051CP	1.13	TIS	732
TL052ACD	6.47	TIS	733
TL052ACP	5.17	TIS	733
TL052CD	1.72	TIS	733
TL054ACD	8.10	TIS	733
TL054ACN	6.97	TIS	733
TL054CN	1.96	TIS	733
TL061ACD	0.87	TIS	732
TL061ACP	0.87	TIS	732
TL061BCD	1.50	TIS	732
TL061BCP	1.50	TIS	732
TL061CD	0.52	TIS	732
TL061CP	0.54	TIS	732
TL062ACP	0.92	TIS	733
TL062BCD	1.75	TIS	733
TL062CD	0.59	TIS	733
TL062CP	0.59	TIS	733
TL062CP	0.75	MOT	687
TL064ACD	1.00	TIS	733
TL064ACN	1.00	TIS	733
TL064BCD	2.00	TIS	733
TL064BCN	2.28	TIS	—
TL064CD	0.75	TIS	733
TL064CN	0.77	TIS	733
TL071ACP	0.87	TIS	—
TL071CD	0.54	TIS	732
TL071CP	0.54	TIS	732
TL072ACD	0.92	TIS	733
TL072ACP	0.92	TIS	733
TL072BCD	1.80	TIS	733
TL072BCP	1.80	TIS	733
TL072CD	0.57	TIS	733
TL072CP	0.59	TIS	733
TL074ACD	1.00	TIS	733
TL074ACN	1.00	TIS	733
TL074BCD	2.05	TIS	733
TL074BCN	2.41	TIS	733
TL074CD	0.75	TIS	733
TL074CN	0.77	TIS	733
TL074CN	1.19	MOT	688
TL081ACP	0.87	TIS	732
TL081BCP	1.50	TIS	732
TL081CD	0.52	TIS	732
TL081CP	0.54	TIS	732
TL082ACD	0.92	TIS	733
TL082ACP	0.80	MOT	687
TL082ACP	0.87	TIS	733
TL082BCD	1.75	TIS	733
TL082BCP	1.80	TIS	733
TL082CD	0.59	TIS	733
TL082CP	0.50	NSC	—
TL082CP	0.59	TIS	733
TL082CP	0.65	MOT	687
TL084ACN	0.84	MOT	688
TL084ACN	1.00	TIS	733
TL084BCN	2.18	TIS	733

Manufacturer's Code Log

ADI	Analog Devices Inc.
AMD	Advanced Micro Devices
COL	Collmer Semiconductors, Inc.
DLS	Dallas Semiconductor
HAR	Harris Semiconductor
ITL	Intel
LAT	Lattice
MXM	Maxim
MOS	Mosel-Vitelic
MOT	Motorola Semiconductor
NSC	National Semiconductor
NTE	NTE Electronics
PHI	Philips Semiconductors
SEM	Semiconductors Inc.
SIE	Siemens Components, Inc
TIS	Texas Instruments
THO	Thomson Conusumer Electronics
UNI	Unitrode Integrated Circuits
XLX	Xilinx

Mfr.'s Type	Price	Mfr.'s Code	Page
TL084CD	0.75	TIS	733
TL084CN	0.76	MOT	688
TL084CN	0.77	TIS	733
TL084IN	1.00	TIS	—
TL16C450FN	4.50	TIS	731
TL16C450N	4.50	TIS	731
TL16C451FN	5.62	TIS	731
TL16C452FN	6.75	TIS	731
TL16C550AFN	6.25	TIS	731
TL16C550AN	6.25	TIS	731
TL16C550BFN	4.87	TIS	731
TL16C550BN	5.02	TIS	731
TL16C552FN	10.00	TIS	731
TL317CLP	0.90	TIS	734
TL3695D	2.00	TIS	731
TL3695P	2.28	TIS	731
TL430CLP	0.82	TIS	734
TL431ACD	0.56	MOT	690
TL431ACD	1.10	TIS	734
TL431ACLP	0.56	MOT	690
TL431ACLP	0.77	TIS	734
TL431ACP	0.50	TIS	734
TL431ACP	0.56	MOT	690
TL431CD	0.41	TIS	734
TL431CD	0.50	MOT	690
TL431CLP	0.41	TIS	734
TL431CLP	0.50	MOT	690
TL431CP	0.41	TIS	734
TL431CP	0.50	MOT	690
TL431ILP	0.64	TIS	—
TL494CN	0.88	MOT	690
TL494CN	1.13	TIS	734
TL497ACD	2.50	TIS	734
TL497ACN	2.69	TIS	734
TL499ACP	1.75	TIS	734
TL594CN	1.56	TIS	734
TL712CD	1.25	TIS	732
TL712CP	1.29	TIS	732
TL750L05CD	1.12	TIS	734
TL750L05CLP	1.33	TIS	734
TL7702ACD	1.25	TIS	734
TL7702ACP	1.25	TIS	734
TL7702BCP	1.70	TIS	734
TL7705ACD	1.25	TIS	734
TL7705ACP	1.25	TIS	734
TL7705BCD	1.70	TIS	734
TL7705BCP	1.70	TIS	734
TL7757CLP	1.43	TIS	734
TL7757CPK	1.43	TIS	734
TL7759CD	1.25	TIS	734
TL7759CP	1.43	TIS	734
TL7770-5CDW	3.15	TIS	734
TL780-05CKC	0.82	MOT	689
TL780-12CKC	0.82	MOT	689
TL780-15CKC	0.82	MOT	689
TL783CKC	2.52	TIS	734
TLC0820ACN	4.50	TIS	730
TLC1078CD	5.15	TIS	733
TLC1078CP	4.24	TIS	733
TLC1079CD	7.50	TIS	733
TLC1079CN	6.00	TIS	733
TLC1540CFN	12.75	TIS	730
TLC1540CN	12.75	TIS	730
TLC2201ACD	5.57	TIS	732
TLC2201ACP	5.57	TIS	732
TLC2201CD	4.12	TIS	732
TLC2201CP	4.24	TIS	732
TLC2202ACD	8.10	TIS	733
TLC2202ACP	8.10	TIS	733
TLC2202BCD	11.10	TIS	733
TLC2202BCP	11.10	TIS	733
TLC2202CP	6.00	TIS	733
TLC2272ACD	2.39	TIS	733
TLC2272ACP	2.32	TIS	733
TLC2272CD	1.77	TIS	733
TLC2272CP	1.77	TIS	733
TLC2274CN	3.66	TIS	—
TLC252ACP	3.25	TIS	733
TLC252BCD	4.10	TIS	733
TLC252BCP	4.10	TIS	733
TLC252CD	2.62	TIS	733
TLC252CP	2.62	TIS	733
TLC254ACD	5.30	TIS	733
TLC254ACN	5.30	TIS	733
TLC254BCN	6.67	TIS	733
TLC254CD	4.27	TIS	733
TLC254CN	4.27	TIS	733
TLC271ACP	0.90	TIS	—
TLC271CD	0.72	TIS	732
TLC271CP	0.72	TIS	732
TLC272CD	1.18	TIS	733
TLC272CP	1.18	TIS	733
TLC274ACD	2.32	TIS	733
TLC274ACN	2.39	TIS	733
TLC274BCD	3.01	TIS	733
TLC274CD	1.93	TIS	733
TLC274CN	2.13	TIS	733
TLC277CD	1.87	TIS	733
TLC277CP	2.13	TIS	733
TLC27L2ACP	1.63	TIS	733
TLC27L2CD	1.15	TIS	733
TLC27L2CP	1.31	TIS	733
TLC27L4ACD	2.32	TIS	733
TLC27L4ACN	2.64	TIS	733
TLC27L4CD	1.93	TIS	733
TLC27L4CN	1.93	TIS	733
TLC27L7CD	2.37	TIS	733
TLC27L9CD	3.90	TIS	733
TLC27M2CD	1.18	TIS	733
TLC27M2CP	1.18	TIS	733
TLC27M4ACD	2.32	TIS	733
TLC27M4CD	1.93	TIS	733
TLC27M4CN	2.13	TIS	733
TLC27M7CD	2.37	TIS	733
TLC27M7CP	2.37	TIS	733
TLC27M9CD	3.90	TIS	733
TLC32040CFN	17.50	TIS	731
TLC32040CN	17.50	TIS	731
TLC32044CFN	17.50	TIS	731
TLC32046CN	13.81	TIS	731
TLC352CD	2.24	TIS	732
TLC352CP	2.17	TIS	732
TLC3702CD	1.03	TIS	732
TLC3702CP	1.13	TIS	732
TLC372CD	0.95	TIS	732
TLC372CP	0.98	TIS	732
TLC374CN	1.24	TIS	732
TLC393CD	0.93	TIS	732
TLC393CP	0.98	TIS	732
TLC548IP	3.21	TIS	—
TLC549CP	1.99	TIS	730
TLC549IP	2.32	TIS	—
TLC555CD	0.70	TIS	733
TLC555CP	0.72	TIS	733
TLC555IP	1.15	TIS	—
TLC556CD	1.39	TIS	733
TLC556CN	1.42	TIS	733
TLC7135CN	6.25	TIS	730
TLC7524CN	3.53	TIS	—
TLC7528CFN	3.50	TIS	730
TLC7528CN	3.86	TIS	730
TLE2022CP	1.46	TIS	—
TLE2061IP	1.30	TIS	—
TLE2062AMP	2.57	TIS	—
TLE2062CP	1.39	TIS	—
TLE2064ACN	3.68	TIS	—
TLE2064AMN	4.32	TIS	—
TLE2064BCN	7.02	TIS	—
TLE2082IP	1.68	TIS	—
TLE2142IP	1.81	TIS	—
TMDS3200051	123.75	TIS	—
TMP01EP	7.02	ADI	643
TMP01ES	7.02	ADI	643
TMP01FJ	9.38	ADI	643
TMP01FP	3.90	ADI	643
TMP01FS	3.93	ADI	643
TMP03FS	4.43	ADI	642
TMP04FS	4.43	ADI	642
TMP35FS	2.55	ADI	642
TMP35GS	1.28	ADI	642
TMP36FS	2.55	ADI	642
TMP36GS	1.28	ADI	642
TMP37FS	2.55	ADI	642
TMP37GS	1.28	ADI	642
TMS27C010A-10JL	4.78	TIS	729
TMS27C010A-12JL	4.18	TIS	729
TMS27C010A-15JL	4.78	TIS	729
TMS27C010A-20JL	4.18	TIS	729
TMS27C020-12JL	7.08	TIS	729
TMS27C020-15JL	7.08	TIS	729
TMS27C040-10JL	12.83	TIS	729
TMS27C040-12JL	12.83	TIS	729
TMS27C040-15JL	10.90	TIS	729
TMS27C210A-12JL	6.46	TIS	729
TMS27C210A-15JL	5.72	TIS	729
TMS27C240-12JL	13.18	TIS	729
TMS27C240-15JL	13.18	TIS	729
TMS27C256-10JL	3.10	TIS	729
TMS27C256-12JL	3.10	TIS	729
TMS27C256-150JL	2.72	TIS	729
TMS27C256-15JL	3.01	TIS	729
TMS27C256-17JL	2.72	TIS	729
TMS27C256-20JL	2.72	TIS	729
TMS27C256-25JL	2.72	TIS	729
TMS27C256-2JE	3.09	TIS	729
TMS27C512-10JL	3.36	TIS	729
TMS27C512-120JL	2.90	TIS	729
TMS27C512-12JE	3.27	TIS	729
TMS27C512-12JL	3.27	TIS	729
TMS27C512-150JL	2.90	TIS	729
TMS27C512-15JL	3.19	TIS	729
TMS27C512-20JL	2.90	TIS	729
TMS27C512-25JL	2.90	TIS	729
TMS27C512-2JL	2.90	TIS	729
TMS27PC010A-12FML	4.00	TIS	730
TMS27PC020-15FML	7.08	TIS	730
TMS27PC256-12FML	2.63	TIS	729
TMS27PC256-20FML	2.63	TIS	729
TMS27PC256-2NL	2.54	TIS	729
TMS27PC512-120FML	2.72	TIS	729
TMS27PC512-15NL	2.72	TIS	729
TMS27PC512-20FML	2.72	TIS	729
TMS27PC512-20NL	2.72	TIS	729
TMS27PC512-2NL	2.72	TIS	730
TMS320C10NL	5.43	TIS	730
TMS320C25FNL	15.97	TIS	730
TMS320C25FNL50	16.71	TIS	730
TMS320C25GBL	82.96	TIS	730
TMS320C30GEL	214.28	TIS	730
TMS320C31PQA	66.72	TIS	730
TMS320C31PQL	60.66	TIS	730
TMS320C31PQL50	73.42	TIS	730
TMS320C40GFL40	226.95	TIS	730
TMS320C50PQ	35.70	TIS	730
TMS320C50PQ57	35.70	TIS	730
TMS320C51PQ57	27.14	TIS	730
TN80C31BH-1	4.70	ITL	665
TN80C31BH	4.25	ITL	665
TN80C32-1	3.94	ITL	665
TN80C32	5.70	ITL	665
TN80C51FA-1	6.66	ITL	665
TN80C51FA	6.53	ITL	665
TN80C51GB-1	11.15	ITL	666
TN80C51GB	11.15	ITL	666
TN87C51-1	14.40	ITL	665
TN87C51	13.70	ITL	665
TN87C51FA-1	21.22	ITL	665
TN87C51FA	20.26	ITL	665
TN87C51FB-1	25.98	ITL	666
TN87C51FB	25.02	ITL	666
TN87C51FC-1	32.50	ITL	666
TN87C51FC	31.42	ITL	666
TN87C52-1	16.80	ITL	665
TN87C54	20.10	ITL	665
TN87C58	25.00	ITL	665
TP0001	1.50	NTE	717
TP0002	1.26	NTE	717
TP0003	0.91	NTE	717
TP0004	0.76	NTE	717
TP0005	1.13	NTE	717
TP0006	1.10	NTE	717
TP0007	1.13	NTE	717
TP0008	1.51	NTE	717
TP0009	1.51	NTE	717
TP0010	2.05	NTE	717
TP80C31BH-1	4.70	ITL	665
TP80C31BH	4.25	ITL	665
TP80C32	5.70	ITL	665
TP80C51FA-1	6.66	ITL	665
TP80C51FA	6.53	ITL	665
TP87C51	13.70	ITL	665
TP87C51FA-1	21.22	ITL	665
TP87C51FA	20.26	ITL	665
TP87C51FC-1	32.50	ITL	666
TP87C51FC	31.42	ITL	666
TP87C54	25.00	ITL	665
TS802C04	2.14	COL	644
TS802C09	2.70	COL	644
TS805C04	3.06	COL	644
TS808C04	3.28	COL	644
TS80C31BH-1	4.70	ITL	665
TS80C31BH	4.25	ITL	665
TS80C32-1	7.05	ITL	665
TS80C32	5.70	ITL	665
TS80C51FA	6.53	ITL	665
TS87C51FA-1	21.76	ITL	665
TS87C51FA	20.81	ITL	665
TS902C2	2.19	COL	644
TS906C2	2.87	COL	644
TS912S6	3.59	COL	644
TSL250	1.99	TIS	—
TSL252	1.99	TIS	—
UA723CD	0.79	TIS	734
UA723CN	0.79	TIS	734
UA733CN	0.95	TIS	—
UA741CN	0.37	PHI	—
UA741CP	0.68	TIS	732
UA747CN	0.54	PHI	721
UA78L05ACD	0.35	TIS	734
UA78L05ACLP	0.36	TIS	734
UA78L05CD	0.35	TIS	734
UA78L05CLP	0.36	TIS	734
UA78L06ACD	0.35	TIS	734
UA78L06ACLP	0.36	TIS	734
UA78L08ACD	0.35	TIS	734
UA78L08ACLP	0.36	TIS	734
UA78L10ACD	0.35	TIS	734
UA78L10ACLP	0.36	TIS	734
UA78L12ACD	0.35	TIS	734
UA78L12ACLP	0.36	TIS	734
UA78L12CD	0.35	TIS	734
UA78L12CLP	0.35	TIS	734
UA78L15ACD	0.35	TIS	734
UA78L15ACLP	0.36	TIS	734
UA78L15CD	0.35	TIS	734
UA78S40PC	1.52	MOT	690
UA9636ACD	1.55	TIS	731
UA9636ACP	1.76	TIS	731
UA9637ACD	1.87	TIS	731
UA9637ACP	2.13	TIS	731
UA9638CP	1.93	TIS	731
UA9639CP	2.13	TIS	731
UC2577T-ADJ	5.71	UNI	739
UC2825N	7.98	UNI	—
UC2842AN	1.43	MOT	690
UC2842AN	4.33	UNI	739
UC2842N	3.81	UNI	—
UC2843AN	1.43	MOT	690
UC2844N	1.43	MOT	690
UC2844P	1.55	TIS	734
UC2845D	1.50	TIS	734
UC2845N	1.43	MOT	690
UC2846N	6.08	UNI	—
UC2906N	10.95	UNI	—
UC2950T	5.31	UNI	737
UC3517N	5.32	UNI	737
UC3524AN	3.43	UNI	—
UC3544N	7.25	UNI	739
UC3548N	7.75	UNI	738
UC3573EVAL	14.25	UNI	737
UC3578N	3.42	UNI	738
UC3625N	7.98	UNI	737
UC3633N	3.91	UNI	737
UC3635N	3.91	UNI	737
UC3637N	5.13	UNI	737
UC3638N	4.27	UNI	737
UC3705N	3.44	UNI	737
UC3706N	4.11	UNI	—
UC3707N	4.09	UNI	737
UC3708N	4.97	UNI	737
UC3709N	3.66	UNI	737
UC3710N	4.24	UNI	737
UC3711N	5.12	UNI	737
UC3717AN	6.38	UNI	737
UC3717N	5.70	UNI	737
UC3724N	4.28	UNI	737
UC3725N	4.28	UNI	—
UC3726N	3.43	UNI	737
UC3727N	5.59	UNI	737
UC3730N	5.70	UNI	738
UC3770AN	5.63	UNI	737
UC3770BN	6.66	UNI	737
UC381DP-3	3.95	UNI	738
UC381DP-5	3.95	UNI	738
UC381DP-ADJ	3.95	UNI	738
UC3823BN	8.18	UNI	738
UC3823N	4.80	UNI	738
UC3824N	7.77	UNI	738
UC3825AN	8.40	UNI	738
UC3825DW	7.51	UNI	738
UC3825N	6.33	UNI	738
UC3825Q	7.51	UNI	738
UC3827N	6.48	UNI	738
UC382T-1	6.46	UNI	738
UC382T-2	6.46	UNI	738
UC382T-3	6.46	UNI	738
UC382T-ADJ	6.46	UNI	738
UC3840N	6.52	UNI	—
UC3841N	6.53	UNI	739
UC3842AN	1.25	MOT	690
UC3842AN	2.11	UNI	739
UC3842D	2.06	UNI	739
UC3842N	1.92	UNI	739
UC3843AD	1.25	MOT	690
UC3843AD	2.27	UNI	739
UC3843AN	1.25	MOT	690
UC3843AN	2.11	UNI	739
UC3843D	2.06	UNI	739
UC3843J	4.58	UNI	—
UC3843N	1.92	UNI	739
UC3844AN	2.11	UNI	739
UC3844N	1.25	MOT	690
UC3844N	1.92	UNI	739
UC3845AN	2.11	UNI	739
UC3845D	1.29	TIS	734
UC3845N	1.25	MOT	690

Mfr.'s Type	Price	Mfr.'s Code	Page
UC3845N	1.92	UNI	739
UC3846N	4.33	UNI	739
UC3847N	6.06	UNI	739
UC3848N	7.75	UNI	739
UC3852N	2.85	UNI	737
UC3853N	5.01	UNI	737
UC3854AN	7.13	UNI	737
UC3854BN	7.13	UNI	737
UC3854N	6.77	UNI	737
UC3856N	8.15	UNI	739
UC3871N	5.64	UNI	738
UC3872N	3.66	UNI	738
UC3874N-1	6.12	UNI	739
UC3874N-2	6.12	UNI	739
UC3875N	9.88	UNI	739
UC3878N	16.25	UNI	739
UC3886N	4.26	UNI	739
UC3902D	2.75	UNI	738
UC3902N	2.50	UNI	738
UC3903N	7.04	UNI	739
UC3904N	6.50	UNI	739
UC3906N	5.99	UNI	738
UC3908D	3.26	UNI	738
UC3908T	4.10	UNI	738
UC3909EVAL	14.25	UNI	737
UC3910D	4.26	UNI	738
UC3910N	4.09	UNI	738
UC5170CN	7.10	UNI	737
UC5601N	7.14	UNI	737
UC5603N	4.55	UNI	737
UC560DP	4.16	UNI	738
UC7812ACT	3.12	UNI	—
UC7905ACT	3.40	UNI	—
UC7912ACT	3.40	UNI	—
UCC1806J	23.79	UNI	—
UCC2801D	5.43	UNI	—
UCC2806N	7.32	UNI	—
UCC3570N	4.01	UNI	739
UCC3581N	2.95	UNI	739
UCC3583N	5.23	UNI	739
UCC3800N	3.25	UNI	739
UCC3801N	3.25	UNI	739
UCC3802D	4.02	UNI	—
UCC3802N	3.25	UNI	739
UCC3804N	3.25	UNI	—
UCC3806N	5.61	UNI	739
UCC3813N-0	2.19	UNI	739
UCC3813N-1	2.19	UNI	739
UCC3813N-2	2.19	UNI	739
UCC3888N	2.56	UNI	739
UCC3889EVAL	14.25	UNI	737
UCC3889N	2.45	UNI	—
UCC3890N	2.32	UNI	739
UCC3911DP	7.66	UNI	738
UCC3912EVAL	14.25	UNI	737
UCC3913N	2.67	UNI	738
UCC3915N	5.92	UNI	738
UCC3916N	2.66	UNI	738
UCC3941D	5.04	UNI	738
ULN2002AD	1.00	TIS	732
ULN2002AN	1.03	TIS	732
ULN2003A	0.78	MOT	685
ULN2003AD	0.64	TIS	732
ULN2003AN	0.64	TIS	732
ULN2004A	0.78	MOT	685
ULN2004AD	0.64	TIS	732
ULN2004AN	0.64	TIS	732
ULN2803A	0.84	MOT	685
ULN2804A	0.84	MOT	685
V1000LA160B	1.38	HAR	663
V1000LA80A	0.97	HAR	662
V100J8S60	112.50	MOS	673
V100J8S70	110.00	MOS	673
V100J9S60	127.50	MOS	673
V100J9S70	125.00	MOS	673
V100ZA05	0.30	HAR	662
V100ZA15	0.39	HAR	662
V100ZA3	0.27	HAR	662
V100ZA4	0.44	HAR	662
V104J8S70	32.50	MOS	673
V120ZA05	0.26	HAR	662
V120ZA1	0.45	HAR	662
V120ZA4	0.30	HAR	662
V120ZA6	0.54	HAR	662
V12ZA05	0.22	HAR	661
V12ZA1	0.27	HAR	661
V12ZA2	0.45	HAR	661
V130LA1	0.27	HAR	662
V130LA10A	0.54	HAR	662
V130LA10C	0.78	HAR	663
V130LA2	0.27	HAR	662
V130LA20A	0.82	HAR	662
V130LA20B	0.82	HAR	662
V130LA20C	0.78	HAR	663
V130LA20CX325	0.78	HAR	663
V130LA5	0.45	HAR	662
V140LA10A	0.54	HAR	662
V140LA10C	0.76	HAR	663
V140LA2	0.27	HAR	662
V140LA20C	0.78	HAR	663
V140LA20CX340	0.76	HAR	663
V140LA5	0.44	HAR	662
V150LA1	0.27	HAR	662

Mfr.'s Type	Price	Mfr.'s Code	Page
V150LA10A	0.54	HAR	662
V150LA10C	0.76	HAR	663
V150LA2	0.27	HAR	662
V150LA20A	0.82	HAR	662
V150LA20B	0.82	HAR	662
V150LA20C	0.82	HAR	663
V150LA20CX360	0.76	HAR	663
V150LA5	0.45	HAR	662
V150ZA05	0.30	HAR	662
V150ZA1	0.27	HAR	662
V150ZA4	0.44	HAR	662
V150ZA8	0.54	HAR	662
V175LA10A	0.54	HAR	662
V175LA2	0.27	HAR	662
V175LA20CX425	0.76	HAR	663
V175LA5	0.44	HAR	662
V180ZA05	0.31	HAR	662
V180ZA1	0.27	HAR	662
V180ZA10	0.54	HAR	662
V180ZA5	0.45	HAR	662
V18ZA05	0.58	HAR	661
V18ZA1	0.27	HAR	661
V18ZA2	0.45	HAR	661
V18ZA3	0.47	HAR	661
V18ZA40	0.91	HAR	661
V220MA2A	0.35	HAR	—
V220MA4B	0.41	HAR	—
V220ZA05	0.58	HAR	662
V22ZA05	0.58	HAR	661
V22ZA1	0.27	HAR	661
V22ZA2	0.45	HAR	661
V22ZA3	0.47	HAR	661
V230LA10	0.45	HAR	662
V230LA20A	0.54	HAR	662
V230LA20C	0.76	HAR	663
V230LA4	0.27	HAR	662
V230LA40C	0.76	HAR	663
V230LA40CX570	0.76	HAR	663
V24ZA50	0.63	HAR	661
V250LA10	0.45	HAR	662
V250LA2	0.27	HAR	662
V250LA20A	0.54	HAR	662
V250LA20C	0.78	HAR	663
V250LA4	0.23	HAR	662
V250LA40A	0.82	HAR	662
V250LA40B	0.82	HAR	662
V250LA40C	0.78	HAR	663
V250LA40CX620	0.78	HAR	663
V270ZA05	0.58	HAR	662
V275LA10	0.45	HAR	662
V275LA2	0.27	HAR	662
V275LA20A	0.54	HAR	662
V275LA4	0.27	HAR	662
V275LA40A	0.82	HAR	662
V275LA40B	0.82	HAR	662
V275LA40CX680	0.76	HAR	663
V27ZA05	0.30	HAR	661
V27ZA1	0.27	HAR	661
V27ZA2	0.44	HAR	661
V27ZA4	0.47	HAR	661
V27ZA60	0.60	HAR	661
V3.5MLA0805A23	0.34	HAR	663
V3.5MLA0805LA23	0.30	HAR	663
V300LA2	0.27	HAR	662
V300LA20C	1.08	HAR	663
V300LA4	0.27	HAR	662
V300LA40C	0.80	HAR	663
V300LA40CX745	0.80	HAR	663
V320LA20A	0.68	HAR	662
V320LA40B	0.68	HAR	662
V330ZA05	0.31	HAR	662
V33ZA05	0.31	HAR	661
V33ZA1	0.20	HAR	661
V33ZA2	0.45	HAR	661
V33ZA5	0.47	HAR	661
V33ZA70	0.91	HAR	661
V36ZA80	0.91	HAR	661
V390ZA05	0.31	HAR	662
V39ZA05	0.31	HAR	661
V39ZA1	0.27	HAR	661
V39ZA3	0.45	HAR	661
V39ZA6	0.47	HAR	661
V404J236S70	872.50	MOS	673
V404J36S70	440.00	MOS	673
V404J8S70	100.00	MOS	673
V404J9S70	120.00	MOS	673
V420LA10	0.68	HAR	662
V420LA20A	0.68	HAR	662
V420LA40B	1.11	HAR	662
V430ZA05	0.30	HAR	662
V47ZA05	0.31	HAR	661
V47ZA1	0.27	HAR	661
V47ZA3	0.45	HAR	661
V47ZA7	0.47	HAR	661
V480LA40A	0.68	HAR	662
V480LA80B	1.11	HAR	662
V5.5MLA0805A23	0.34	HAR	663
V510LA40A	3.07	HAR	662
V510LA80B	1.38	HAR	662
V52C8126K80	15.60	MOS	673
V52C8126Z80	15.60	MOS	673
V52C8128K80	17.50	MOS	673
V52C8256K60	37.50	MOS	673

Mfr.'s Type	Price	Mfr.'s Code	Page
V52C8258K60	37.50	MOS	673
V53C104DK60	11.30	MOS	673
V53C104DK70	11.30	MOS	673
V53C104FK60L	11.30	MOS	673
V53C104FK70	11.30	MOS	673
V53C104FP60L	11.30	MOS	673
V53C104FP70	11.30	MOS	673
V53C16258HK50	17.50	MOS	673
V53C404HK40	20.00	MOS	673
V53C404HK45	17.50	MOS	673
V53C404HK60	15.00	MOS	673
V53C408HK40	20.00	MOS	673
V53C408HK45	17.50	MOS	673
V53C664HK50	20.00	MOS	673
V53C664HK55	17.50	MOS	673
V53C8256HK45	15.00	MOS	673
V53C8256HP45	15.00	MOS	673
V53C8257HK45	30.00	MOS	673
V53C8257HP45	30.00	MOS	673
V53C8258HK45	15.00	MOS	673
V53C8258HP45	15.00	MOS	673
V56ZA05	0.31	HAR	661
V56ZA2	0.27	HAR	661
V56ZA3	0.45	HAR	661
V56ZA8	0.47	HAR	661
V575LA40A	0.97	HAR	662
V575LA80B	1.38	HAR	662
V660LA100B	1.38	HAR	662
V660LA50A	0.97	HAR	662
V68ZA05	0.30	HAR	661
V68ZA10	0.47	HAR	662
V68ZA2	0.27	HAR	662
V68ZA3	0.44	HAR	662
V82ZA05	0.31	HAR	662
V82ZA12	0.47	HAR	662
V82ZA2	0.27	HAR	662
V82ZA4	0.44	HAR	662
V8ZA05	0.31	HAR	661
V8ZA1	0.27	HAR	661
V8ZA2	0.45	HAR	661
VN10LM	0.70	MOT	697
VN2222LL	0.50	MOT	697
VN2406L	0.90	MOT	697
W005M	0.88	COL	646
W01M	0.92	COL	646
W02M	0.96	COL	646
W04M	1.13	COL	646
WB01	29.95	NTE	717
WB350	99.95	NTE	717
WD01	29.95	NTE	717
WD350	99.95	NTE	717
XC1765DPD8C	5.60	XLX	—
XC3020A-6PC68C	17.95	XLX	740
XC3020A-6PC84C	18.85	XLX	740
XC3020A-6PQ100C	21.85	XLX	740
XC3020A-7PC68C	13.75	XLX	740
XC3020A-7PQ100C	16.90	XLX	740
XC3020A7PC84C	14.20	XLX	740
XC3030A-6PC44C	21.30	XLX	740
XC3030A-6PC68C	22.10	XLX	740
XC3030A-6PC84C	24.05	XLX	740
XC3030A-7PC44C	14.30	XLX	740
XC3030A-7PC68C	15.20	XLX	740
XC3030A-7PC84C	16.00	XLX	740
XC3030A-7PQ100C	17.35	XLX	740
XC3042A-6PC84C	28.30	XLX	740
XC3042A-6PQ100C	32.35	XLX	740
XC3042A-7PC84C	20.10	XLX	740
XC3042A-7PQ100C	22.20	XLX	740
XC3064A-6PC84C	48.15	XLX	740
XC3064A-6PP132C	110.00	XLX	740
XC3064A-6PQ160C	64.45	XLX	740
XC3064A-7PC84C	37.65	XLX	740
XC3064A-7PQ160C	50.65	XLX	740
XC3090A-6PC84C	79.00	XLX	740
XC3090A-6PP175C	152.00	XLX	740
XC3090A-6PQ160C	84.35	XLX	740
XC3090A-7PC84C	62.35	XLX	740
XC3090A-7PP175C	122.00	XLX	740
XC3090A-7PQ160C	69.30	XLX	740
XC3120A-09PC68C	28.40	XLX	740
XC3120A-09PC84C	29.40	XLX	740
XC3120A-09PQ100C	35.40	XLX	740
XC3120A-1PC68C	18.95	XLX	740
XC3120A-1PC84C	19.55	XLX	740
XC3120A-1PQ100C	23.55	XLX	740
XC3120A-2PC68C	17.85	XLX	740
XC3120A-2PC84C	18.45	XLX	740
XC3120A-2PQ100C	20.40	XLX	740
XC3120A-3PC68C	16.40	XLX	740
XC3120A-3PC84C	16.95	XLX	740
XC3120A-4PC68C	15.45	XLX	740
XC3120A-4PC84C	15.95	XLX	740
XC3120A-4PQ100C	19.20	XLX	740
XC3120A-5PC68C	17.55	XLX	740
XC3120A-5PC84C	18.10	XLX	740
XC3120A-5PQ100C	21.75	XLX	740
XC3130A-09PC668C	40.40	XLX	740
XC3130A-09PC84C	41.30	XLX	740
XC3130A-09PQ100C	45.75	XLX	740
XC3130A-1PC68C	26.40	XLX	740
XC3130A-1PC84C	27.05	XLX	740
XC3130A-1PQ100C	29.95	XLX	740

Mfr.'s Type	Price	Mfr.'s Code	Pag
XC3130A-2PC68C	22.40	XLX	740
XC3130A-2PC84C	22.95	XLX	740
XC3130A-2PQ100C	25.40	XLX	740
XC3130A-3PC68C	21.75	XLX	740
XC3130A-3PC84C	22.30	XLX	740
XC3130A-4PC68C	20.95	XLX	740
XC3130A-4PC84C	21.50	XLX	740
XC3130A-4PQ100C	23.75	XLX	740
XC3130A-5PC68C	22.20	XLX	740
XC3130A-5PC84C	22.80	XLX	740
XC3130A-5PQ100C	25.25	XLX	740
XC3142A-09PC84C	46.95	XLX	740
XC3142A-09PQ100C	52.15	XLX	740
XC3142A-1PC84C	31.95	XLX	740
XC3142A-1PQ100C	35.50	XLX	740
XC3142A-2PC84C	27.55	XLX	740
XC3142A-2PQ100C	30.60	XLX	740
XC3142A-3PC84C	26.50	XLX	740
XC3142A-3PQ100C	30.10	XLX	740
XC3142A-4PC84C	25.20	XLX	740
XC3142A-4PQ100C	35.25	XLX	740
XC3142A-5PQ100C	30.20	XLX	740
XC314A-3PQ160C	50.70	XLX	740
XC3164A-09PC84C	81.65	XLX	740
XC3164A-09PQ160C	94.80	XLX	740
XC3164A-2PC84C	45.40	XLX	740
XC3164A-3PC84C	45.00	XLX	740
XC3164A-4PC84C	41.60	XLX	740
XC3164A-4PQ160C	48.25	XLX	740
XC3164A-5PC84C	47.75	XLX	740
XC3164A-5PQ160C	55.55	XLX	740
XC3190A-09PC84C	111.00	XLX	740
XC3190A-09PP175C	210.00	XLX	740
XC3190A-09PQ160C	116.00	XLX	740
XC3190A-1PC84C	75.35	XLX	740
XC3190A-1PP175C	142.00	XLX	740
XC3190A-1PQ160C	79.10	XLX	740
XC3190A-2PC84C	67.25	XLX	740
XC3190A-2PP175C	127.00	XLX	740
XC3190A-2PQ160C	70.60	XLX	740
XC3190A-3PC84C	65.25	XLX	740
XC3190A-3PP175C	118.65	XLX	740
XC3190A-3PQ160C	69.00	XLX	740
XC3190A-4PC84C	61.60	XLX	740
XC3190A-4PP175C	116.00	XLX	740
XC3190A-5PC84C	65.80	XLX	740
XC3190A-5PP175C	124.00	XLX	740
XC3190A-5PQ160C	69.15	XLX	740
XC3195A-09PC84C	124.00	XLX	740
XC3195A-09PP175C	261.00	XLX	740
XC3195A-09PQ160C	191.00	XLX	740
XC3195A-1PC84C	110.00	XLX	740
XC3195A-1PP175C	174.00	XLX	740
XC3195A-1PQ160C	128.00	XLX	740
XC3195A-2PC84C	93.15	XLX	740
XC3195A-2PP175C	146.00	XLX	740
XC3195A-2PQ160C	107.00	XLX	740
XC3195A-3PC84C	87.90	XLX	740
XC3195A-3PP175C	141.70	XLX	740
XC3195A-3PQ160C	101.00	XLX	740
XC3195A-4PC84C	83.70	XLX	740
XC3195A-4PP175C	131.00	XLX	740
XC3195A-4PQ160C	96.25	XLX	740
XC3195A-5PC84C	90.35	XLX	740
XC3195A-5PP175C	141.00	XLX	740
XC3195A-5PQ160C	104.30	XLX	740
XC4002A-6VQ100C	44.15	XLX	740
XC4003E-2PC84C	43.10	XLX	741
XC4003E-2PG120C	108.00	XLX	741
XC4003E-2PQ100C	46.60	XLX	741
XC4003E-3PC84C	31.90	XLX	741
XC4003E-3PG120C	79.85	XLX	741
XC4003E-3PQ100C	34.50	XLX	741
XC4003E-4PC84C	24.55	XLX	741
XC4003E-4PG120C	61.35	XLX	741
XC4003E4PQ100C	26.55	XLX	741
XC4005E-2PC84C	56.08	XLX	741
XC4005E-2PG156C	219.00	XLX	741
XC4005E-2PQ100C	79.25	XLX	741
XC4005E-2PQ160C	81.85	XLX	741
XC4005E-3PC84C	34.95	XLX	741
XC4005E-3PG156C	162.00	XLX	741
XC4005E-3PQ100C	58.70	XLX	741
XC4005E-3PQ160C	60.60	XLX	741
XC4005E-4PC84C	26.85	XLX	741
XC4005E-4PG156C	124.00	XLX	741
XC4005E-4PQ100C	45.15	XLX	741
XC4005E-4PQ160C	46.60	XLX	741
XC4006E-2PC84C	70.70	XLX	741
XC4006E-2PG156C	233.00	XLX	741
XC4006E-2PQ160C	114.00	XLX	741
XC4006E-3PC84C	52.35	XLX	741
XC4006E-3PG156C	172.00	XLX	741
XC4006E-3PQ160C	84.60	XLX	741
XC4006E-4PG156C	132.00	XLX	741
XC4006E-4PQ160C	65.05	XLX	741
XC4006E4PC84C	40.25	XLX	741
XC4008E-2PC84C	95.00	XLX	741
XC4008E-2PG191C	271.00	XLX	741
XC4008E-2PQ160C	140.00	XLX	741
XC4008E-3PC84C	70.40	XLX	741
XC4008E-3PG191C	200.00	XLX	741
XC4008E-3PQ160C	104.00	XLX	741

Manufacturer's Code Log

ADI	Analog Devices Inc.
AMD	Advanced Micro Devices
COL	Collmer Semiconductors, Inc.
DLS	Dallas Semiconductor
HAR	Harris Semiconductor
ITL	Intel
LAT	Lattice
MXM	Maxim
MOS	Mosel-Vitelic
MOT	Motorola Semiconductor
NSC	National Semiconductor
NTE	NTE Electronics
PHI	Philips Semiconductors
SEM	Semiconductors Inc.
SIE	Siemens Components, Inc
TIS	Texas Instruments
THO	Thomson Conusumer Electronics
UNI	Unitrode Integrated Circuits
XLX	Xilinx

Mfr.'s Type	Price	Mfr.'s Code	Page
XC4008E-4PC84C	54.15	XLX	741
XC4008E-4PG191C	154.00	XLX	741
XC4008E-4PQ160C	79.85	XLX	741
XC4010E-2PC84C	111.00	XLX	741
XC4010E-2PG191C	387.00	XLX	741
XC4010E-2PQ160C	154.00	XLX	741
XC4010E-3PC84C	82.15	XLX	741
XC4010E-3PG191C	287.00	XLX	741
XC4010E-3PQ160C	114.00	XLX	741
XC4010E-4PC84C	63.20	XLX	741
XC4010E-4PG191C	220.00	XLX	741
XC4010E-4PQ160C	87.75	XLX	741
XC4013E-2PG223C	616.00	XLX	741
XC4013E-2PQ160C	180.00	XLX	741
XC4013E-3PG223C	456.00	XLX	741
XC4013E-3PQ160C	134.00	XLX	741
XC4013E-4PG223C	351.00	XLX	741
XC4013E-4PQ160C	103.00	XLX	741
XC4020E-2PG223C	651.00	XLX	741
XC4020E-3PG223C	483.00	XLX	741
XC4020E-4PG223C	371.00	XLX	741
XC4025E-2PG223C	1174.00	XLX	741
XC4025E-3PG223C	870.00	XLX	741
XC4025E-4PG223C	670.00	XLX	741
XC4026EX-4PG411C	877.00	XLX	741
XC4028EX-3PG299C	999.00	XLX	741
XC4028EX-4PG299C	769.00	XLX	741
XC4036EX-3PG411C	1140.00	XLX	741
XC5202-5PC84C	15.85	XLX	742
XC5202-6PC84C	13.20	XLX	742
XC5202-6PQ100C	15.95	XLX	742
XC5204-5PC84C	28.95	XLX	742
XC5204-5PQ100C	32.10	XLX	742
XC5204-5PQ160C	37.60	XLX	742
XC5204-6PC84C	24.10	XLX	742
XC5204-6PQ160C	31.40	XLX	742
XC52046PQ100C	26.75	XLX	742
XC5205-5PQ100C	19.20	XLX	742
XC5206-5PC84C	49.30	XLX	742
XC5206-5PQ100C	52.35	XLX	742
XC5206-5PQ160C	58.25	XLX	742
XC5206-6PC84C	41.15	XLX	742
XC5206-6PQ100C	43.60	XLX	742
XC5206-6PQ160C	48.50	XLX	742
XC5210-4PC84C	113.00	XLX	742
XC5210-4PQ160C	128.10	XLX	742
XC5210-5PC84C	102.75	XLX	742
XC5210-5PQ160C	115.35	XLX	742
XC5210-6PQ160C	92.30	XLX	742
XC5215-5PC160C	160.00	XLX	742
XC5215-6PQ160C	133.00	XLX	742
XC56002PV66	48.78	MOT	675
XC56005PV50	42.84	MOT	675
XC56156FE60	68.72	MOT	675
XC56166FE60	50.52	MOT	675
XC68HC705C9CP	21.05	MOT	678
XC72108-20PG144C	77.15	XLX	742
XC731008-7PG144C	228.00	XLX	742
XC73108-10PC84C	31.95	XLX	742
XC73108-10PG144C	151.00	XLX	742
XC73108-10PQ100C	42.50	XLX	742
XC73108-10PQ160C	45.85	XLX	742
XC73108-12PC84C	30.55	XLX	742
XC73108-12PG144C	107.00	XLX	742
XC73108-12PQ100C	29.95	XLX	742
XC73108-12PQ160C	34.40	XLX	742
XC73108-15PC84C	25.53	XLX	742
XC73108-15PG144C	88.80	XLX	742
XC73108-15PQ100C	24.95	XLX	742
XC73108-15PQ160C	28.65	XLX	742
XC73108-20PC84C	21.82	XLX	742
XC73108-20PQ100C	21.65	XLX	742
XC73108-20PQ160C	24.95	XLX	742
XC73108-7PC84C	47.95	XLX	742
XC73108-7PQ100C	63.80	XLX	742
XC73108-7PQ160C	73.35	XLX	742
XC7336-10PC44C	9.25	XLX	742
XC7336-10PQ44C	7.65	XLX	742
XC7336-12PC44C	5.35	XLX	742
XC7336-12PQ44C	6.20	XLX	742
XC7336-15PC44C	6.35	XLX	742
XC7336-15PQ44C	5.00	XLX	742
XC7336-5PC44C	13.65	XLX	742
XC7336-5PQ44C	15.75	XLX	742
XC7336-7PC44C	10.60	XLX	742
XC7336-7PQ44C	10.45	XLX	742
XC7354-10PC44C	11.75	XLX	742
XC7354-10PC68C	21.41	XLX	742
XC7354-12PC44C	9.65	XLX	742
XC7354-12PC68C	13.45	XLX	742
XC7354-15PC44C	10.55	XLX	742
XC7354-15PC68C	14.76	XLX	742
XC7354-7PC68C	22.75	XLX	742
XC7372-10PC68C	20.30	XLX	742
XC7372-10PC84C	22.30	XLX	742
XC7372-12PC68C	16.65	XLX	742
XC7372-12PC84C	18.30	XLX	742
XC7372-15PC68C	18.18	XLX	742
XC7372-15PC84C	20.00	XLX	742
XC7372-7PC68C	28.20	XLX	742
XC7372-7PC84C	31.05	XLX	742
—	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—

ANALOG DEVICES

ADVANCED MICRO DEVICES

Collmer Semiconductor, Inc.

DALLAS SEMICONDUCTOR

HARRIS SEMICONDUCTOR

intel

Lattice™ Semiconductor Corporation

MAXIM

MOSEL VITELIC

MOTOROLA

National Semiconductor®

NTE ELECTRONICS, INC.

PHILIPS

SEMICONDUCTORS INC.

SIEMENS

TEXAS INSTRUMENTS

THOMSON CONSUMER ELECTRONICS

INTEGRATED CIRCUITS UNITRODE

XILINX®

CPLD — MACH (Macro Array CMOS High-Density) Family

MACH 1: Performance Architecture

Mfr.'s Type	Technology	I/Ps	I/Os	Buried Cells	PTs Per O/P	Ratings @				Icc (mA)	Package Type
						0 to +70°C		–40 to +85°C			
						t_{PD} (ns)	t_{Max} (MHz)	t_{PD} (ns)	t_{Max} (MHz)		
MACH110-12JC	EE CMOS	6	32	—	0-12	12.0	67.0	14.0	53.5	95	44 Lead PLCC
MACH110-15JC	EE CMOS	6	32	—	0-12	15.0	50.0	18.0	40.0	95	44 Lead PLCC
MACH110-20JC	EE CMOS	6	32	—	0-12	20.0	40.0	24.0	32.0	95	44 Lead PLCC
MACH120-12JC	EE CMOS	8	48	—	0-12	12.0	66.7	—	—	85	68 Lead PLCC
MACH120-15JC	EE CMOS	8	48	—	0-12	15.0	50.0	18.0	40.0	85	68 Lead PLCC
MACH120-20JC	EE CMOS	8	48	—	0-12	20.0	40.0	24.0	32.0	85	68 Lead PLCC
MACH130-15JC	EE CMOS	6	64	—	0-12	15.0	50.0	18.0	40.0	190	84 Lead PLCC
MACH130-20JC	EE CMOS	6	64	—	0-12	20.0	40.0	24.0	32.0	190	84 Lead PLCC

MACH 1: Performance Plus Architecture

MACH111-7JC	EE CMOS	6	32	—	0-12	7.5	100.0	—	—	90	44 Lead PLCC
MACH111-10JC	EE CMOS	6	32	—	0-12	10.0	80.0	—	—	90	44 Lead PLCC
MACH111-12JC	EE CMOS	6	32	—	0-12	12.0	66.7	—	—	95	44 Lead PLCC
MACH111-15JC	EE CMOS	6	32	—	0-12	15.0	50.0	—	—	95	44 Lead PLCC
MACH111-20JC	EE CMOS	6	32	—	0-12	20.0	40.0	—	—	95	44 Lead PLCC
MACH131-7JC	EE CMOS	6	64	—	0-12	7.5	100.0	—	—	90	68 Lead PLCC
MACH131-10JC	EE CMOS	6	64	—	0-12	10.0	80.0	—	—	90	68 Lead PLCC
MACH131-12JC	EE CMOS	6	64	—	0-12	12.0	66.7	—	—	90	68 Lead PLCC
MACH131-15JC	EE CMOS	6	64	—	0-12	15.0	50.0	—	—	90	68 Lead PLCC
MACH131-20JC	EE CMOS	6	64	—	0-12	20.0	40.0	—	—	90	68 Lead PLCC

MACH 2: Performance Architecture

MACH210A-7JC	EE CMOS	6	32	32	0-16	7.5	100.0	—	—	130	44 Lead PLCC
MACH210A-10JC	EE CMOS	6	32	32	0-16	10.0	80.0	12.0	64.0	135	44 Lead PLCC
MACH210A-12JC	EE CMOS	6	32	32	0-16	12.0	67.0	14.0	53.0	120	44 Lead PLCC
MACH210-15JC	EE CMOS	6	32	32	0-16	15.0	50.0	18.0	40.0	120	44 Lead PLCC
MACH210-20JC	EE CMOS	6	32	32	0-16	20.0	40.0	24.0	32.0	120	44 Lead PLCC
MACH210AQ-12JC	EE CMOS	6	32	32	0-16	12.0	56.0	—	—	45	44 Lead PLCC
MACH210AQ-15JC	EE CMOS	6	32	32	0-16	15.0	50.0	18.0	40.0	45	44 Lead PLCC
MACH210AQ-20JC	EE CMOS	6	32	32	0-16	20.0	40.0	24.0	32.0	45	44 Lead PLCC
MACHLV210-12JC	EE CMOS	6	32	32	0-16	12.0	59.0	—	—	45	44 Lead PLCC
MACHLV210-15JC	EE CMOS	6	32	32	0-16	15.0	50.0	18.0	40.0	60	44 Lead PLCC
MACHLV210-20JC	EE CMOS	6	32	32	0-16	20.0	38.5	24.0	30.5	60	44 Lead PLCC
MACH220-10JC	EE CMOS	8	48	48	0-16	10.0	80.0	—	—	205	68 Lead PLCC
MACH220-12JC	EE CMOS	8	48	48	0-16	12.0	67.0	14.0	53.0	205	68 Lead PLCC
MACH220-15JC	EE CMOS	8	48	48	0-16	15.0	50.0	18.0	40.0	205	68 Lead PLCC
MACH220-20JC	EE CMOS	8	48	48	0-16	20.0	40.0	24.0	32.0	205	68 Lead PLCC
MACH230-10JC	EE CMOS	6	64	64	0-16	10.0	77.0	—	—	235	84 Lead PLCC
MACH230-15JC	EE CMOS	6	64	64	0-16	15.0	50.0	18.0	40.0	235	84 Lead PLCC
MACH230-20JC	EE CMOS	6	64	64	0-16	20.0	40.0	24.0	32.0	235	84 Lead PLCC

MACH 2: Synchronous/Asynchronous Performance Architecture

MACH215-12JC	EE CMOS	6	32	32 Input Cells	0-12	12.0	52.6	14.0	42.0	95	44 Lead PLCC
MACH215-15JC	EE CMOS	6	32	32 Input Cells	0-12	15.0	41.7	18.0	33.0	95	44 Lead PLCC
MACH215-20JC	EE CMOS	6	32	32 Input Cells	0-12	20.0	33.3	24.0	26.5	95	44 Lead PLCC

MACH 3: Super Set Architecture

MACH355-15YC	EE CMOS	6	96	—	0-20	15.0	50.0	—	—	230	144 Lead PQFP
MACH355-20YC	EE CMOS	6	96	—	0-20	20.0	40.0	—	—	230	144 Lead PQFP

MACH 4: Super Set Architecture

MACH435-12JC	EE CMOS	6	64	64 Buried and 64 Input Cells	0-20	12.0	66.7	—	—	255	84 Lead PLCC
MACH435-15JC	EE CMOS	6	64	64 Buried and 64 Input Cells	0-20	15.0	50.0	—	—	255	84 Lead PLCC
MACH435-20JC	EE CMOS	6	64	64 Buried and 64 Input Cells	0-20	20.0	40.0	—	—	255	84 Lead PLCC
MACH435Q-20JC	EE CMOS	6	64	64 Buried and 64 Input Cells	0-20	20.0	40.0	—	—	115	84 Lead PLCC
MACH435Q-25JC	EE CMOS	6	64	64 Buried and 64 Input Cells	0-20	25.0	31.3	—	—	115	84 Lead PLCC

Non-Volatile Memory

UV EPROMs and One Time Programmable (OTP) EPROMs

Mfr.'s Type		Organization	Access Time (ns)	Temperature Range (°C)	No. of Leads
Windowed CERDIP	PDIP (OTP)				
Am27C64-90DC	—	8 K × 8	90	0 to +70	28
Am27C64-120DC	—	8 K × 8	120	0 to +70	28
Am27C64-150DC	Am27C64-150PC	8 K × 8	150	0 to +70	28
Am27C64-200DC	Am27C64-200PC	8 K × 8	200	0 to +70	28
Am27C128-90DC	—	16 K × 8	90	0 to +70	28
Am27C128-120DC	—	16 K × 8	120	0 to +70	28
Am27C128-150DC	Am27C128-150PC	16 K × 8	150	0 to +70	28
Am27C128-200DC	Am27C128-200PC	16 K × 8	200	0 to +70	28
Am27C256-90DC	—	32 K × 8	90	0 to +70	28
Am27C256-120DC	Am27C256-120PC	32 K × 8	120	0 to +70	28
Am27C256-150DC	Am27C256-150PC	32 K × 8	150	0 to +70	28
Am27C256-200DC	Am27C256-200PC	32 K × 8	200	0 to +70	28
Am27C512-75DC	—	64 K × 8	70	0 to +70	28
Am27C512-90DC	—	64 K × 8	90	0 to +70	28
Am27C512-120DC	—	64 K × 8	120	0 to +70	28
Am27C512-150DC	Am27C512-150PC	64 K × 8	150	0 to +70	28
Am27C512-200DC	Am27C512-200PC	64 K × 8	200	0 to +70	28

Non-Volatile Memory and PAL Devices

Non-Volatile Memory (continued)

UV EPROMs and One Time Programmable (OTP) EPROMs (continued)

Mfr.'s Type		Organization	Access Time (ns)	Temperature Range (°C)	No. of Leads
Windowed CERDIP	PDIP (OTP)				
Am27C010-120DC	Am27C010-120PC	128 K × 8	120	0 to +70	32
Am27C010-150DC	Am27C010-150PC	128 K × 8	150	0 to +70	32
Am27C010-200DC	Am27C010-200PC	128 K × 8	200	0 to +70	32
Am27C1024-90DC	—	64 K × 16	90	0 to +70	40
Am27C1024-120DC	—	64 K × 16	120	0 to +70	40
Am27C1024-150DC	—	64 K × 16	150	0 to +70	40
Am27C1024-200DC	Am27C1024-200PC	64 K × 16	200	0 to +70	40
Am27C020-120DC	—	256 K × 8	120	0 to +70	32
Am27C020-150DC	—	256 K × 8	150	0 to +70	32
Am27C020-200DC	Am27C020-200PC	256 K × 8	200	0 to +70	32
Am27C2048-120DC	—	128 K × 16	120	0 to +70	40
Am27C2048-150DC	—	128 K × 16	150	0 to +70	40
Am27C040-120DC	—	512 K × 8	120	0 to +70	32
Am27C040-150DC	—	512 K × 8	150	0 to +70	32
Am27C040-200DC	—	512 K × 8	200	0 to +70	32

Universal PAL Devices

16V8 Family

Mfr.'s Type		Technology	I/Ps	I/Os	PTs Per O/P	Features	Ratings @ 0 to +70°C		Icc (mA)	No. of Leads
PLCC	PDIP						tPD (ns)	tMax (MHz)		
PALCE16V8H-5JC/5	—	EE CMOS	8	8	8	GAL Device Equivalent	5.0	142.8	125.000	20
PALCE16V8H-7JC/5	PALCE16V8H-7PC/5	EE CMOS	8	8	8	GAL Device Equivalent	7.5	100.0	115.000	20
PALCE16V8H-10JC/4	PALCE16V8H-10PC/4	EE CMOS	8	8	8	GAL Device Equivalent	10.0	66.7	115.000	20
PALCE16V8Q-10JC/5	—	EE CMOS	8	8	8	GAL Device Equivalent	10.0	66.7	55.000	20
PALCE16V8H-15JC/4	PALCE16V8H-15PC/4	EE CMOS	8	8	8	GAL Device Equivalent	15.0	45.5	90.000	20
PALCE16V8Q-15JC/4	PALCE16V8Q-15PC/4	EE CMOS	8	8	8	GAL Device Equivalent	15.0	45.5	55.000	20
PALCE16V8H-25JC/4	PALCE16V8H-25PC/4	EE CMOS	8	8	8	GAL Device Equivalent	25.0	37.0	90.000	20
PALCE16V8Q-25JC/4	PALCE16V8Q-25PC/4	EE CMOS	8	8	8	GAL Device Equivalent	25.0	37.0	50.000	20
PALCE16V8Z-25JC	PALCE16V8Z-25PC	EE CMOS	8	8	8	Zero Power	25.0	33.3	0.015	20

20V8 Family

PALCE20V8H-5JC/5	—	EE CMOS	12	8	8	GAL Device Equivalent	5.0	142.8	125.000	28
PALCE20V8H-7JC/5	PALCE20V8H-7PC/5	EE CMOS	12	8	8	GAL Device Equivalent	7.5	100.0	115.000	28/24
PALCE20V8H-10JC/4	PALCE20V8H-10PC/4	EE CMOS	12	8	8	GAL Device Equivalent	10.0	66.7	115.000	28/24
—	PALCE20V8Q-10PC/5	EE CMOS	12	8	8	GAL Device Equivalent	10.0	66.7	55.000	24
PALCE20V8H-15JC/4	PALCE20V8H-15PC/4	EE CMOS	12	8	8	GAL Device Equivalent	15.0	45.5	90.000	28/24
PALCE20V8Q-15JC/4	PALCE20V8Q-15PC/4	EE CMOS	12	8	8	GAL Device Equivalent	15.0	45.5	55.000	28/24
PALCE20V8H-25JC/4	PALCE20V8H-25PC/4	EE CMOS	12	8	8	GAL Device Equivalent	25.0	37.0	90.000	28/24
PALCE20V8Q-25JC/4	PALCE20V8Q-25PC/4	EE CMOS	12	8	8	GAL Device Equivalent	25.0	37.0	55.000	28/24

22V10 Family

PAL22V10-7JC	PAL22V10-7PC	TTL	12	10	8-16	Varied Term Distribution	7.5	91.0	220.000	28/24
PAL22V10-10JC	PAL22V10-10PC	TTL	12	10	8-16	Varied Term Distribution	10.0	71.0	180.000	28/24
PAL22V10-15JC	PAL22V10-15PC	TTL	12	10	8-16	Varied Term Distribution	15.0	50.0	180.000	28/24
AmPAL22V10AJC	AmPAL22V10APC	TTL	12	10	8-16	Varied Term Distribution	25.0	28.5	180.000	28/24
PALCE22V10H-5JC/5	—	EE CMOS	12	10	8-16	Varied Term Distribution	5.0	142.8	115.000	28
PALCE22V10H-7JC/5	PALCE22V10H-7PC/5	EE CMOS	12	10	8-16	Varied Term Distribution	7.5	100.0	115.000	28/24
PALCE22V10H-10JC/5	PALCE22V10H-10PC/5	EE CMOS	12	10	8-16	Varied Term Distribution	10.0	83.3	120.000	28/24
PALCE22V10Q-10JC/5	PALCE22V10Q-10PC/5	EE CMOS	12	10	8-16	Varied Term Distribution	10.0	83.3	120.000	28/24
PALCE22V10H-15JC/4	PALCE22V10H-15PC/4	EE CMOS	12	10	8-16	Varied Term Distribution	15.0	50.0	90.000	28/24
PALCE22V10Q-15JC/5	PALCE22V10Q-15PC/5	EE CMOS	12	10	8-16	Varied Term Distribution	15.0	50.0	55.000	28/24
PALCE22V10H-25JC/4	PALCE22V10H-25PC/4	EE CMOS	12	10	8-16	Varied Term Distribution	25.0	33.3	90.000	28/24
PALCE22V10Q-25JC/4	PALCE22V10Q-25PC/4	EE CMOS	12	10	8-16	Varied Term Distribution	25.0	33.3	55.000	28/24
PALCE22V10Z-25JC	PALCE22V10Z-25PC	EE CMOS	12	10	8-16	Zero Power	25.0	33.3	0.015	28/24

24V10 Family

PALCE24V10H-15JC	PALCE24V10H-15PC	EE CMOS	14	10	8	GAL Type	15.0	45.5	115.000	28
PALCE24V10H-25JC	PALCE24V10H-25PC	EE CMOS	14	10	8	GAL Type	25.0	37.0	115.000	28

26V12 Family

PALCE26V12H-7JC/4	—	EE CMOS	14	12	8-16	Advanced 22V10 Macrocell	7.5	105.3	115.000	28
PALCE26V12H-10JC/4	PALCE26V12H-10PC/4	EE CMOS	14	12	8-16	Advanced 22V10 Macrocell	10.0	71.4	115.000	28
PALCE26V12H-15JC/4	PALCE26V12H-15PC/4	EE CMOS	14	12	8-16	Advanced 22V10 Macrocell	15.0	50.0	105.000	28
PALCE26V12H-20JC/4	PALCE26V12H-20PC/4	EE CMOS	14	12	8-16	Advanced 22V10 Macrocell	20.0	40.0	105.000	28

29M16 Family

PALCE29M16H25JC/4	PALCE29M16H25PC/4	EE CMOS	5	16	8-16	Advanced Macrocell	25.0	28.5	100.000	28/24

Asynchronous PAL Devices

610 Family

Mfr.'s Type		Technology	I/Ps	I/Os	PTs Per O/P	Features	Ratings @ 0 to +70°C		Icc (mA)	No. of Leads
PLCC	PDIP						t_{PD} (ns)	t_{Max} (MHz)		
PALCE610H-15JC	PALCE610H-15PC	EE CMOS	4	16	8	J-K Flip-Flops, Programmable Clock	15.0	45.5	90	28/24
PALCE610H-25JC	PALCE610H-25PC	EE CMOS	4	16	8	J-K Flip-Flops, Programmable Clock	27.0	37.0	90	28/24

20RA10 Family

PALCE20RA10H-10JC	PALCE20RA10H-10PC	EE CMOS	10	10	4	Programmable Clock	10.0	76.9	100	28/24
PALCE20RA10H-15JC	PALCE20RA10H-15PC	EE CMOS	10	10	4	Programmable Clock	15.0	52.6	100	28/24
PALCE20RA10H-20JC	PALCE20RA10H-20PC	EE CMOS	10	10	4	Programmable Clock	20.0	37.0	90	28/24

29MA16 Family

PALCE29MA16H25JC/4	PALCE29MA16H25PC/4	EE CMOS	5	16	4-12	Programmable Clock, Adv. Macrocell	25.0	28.5	100	28/24

Standard PAL Devices

16R8 Family

Mfr.'s Type		Technology	I/Ps	I/Os	O/Ps	PTs Per O/P	Ratings @ 0 to +70°C		Icc (mA)	No. of Leads
PLCC	PDIP						t_{PD} (ns)	t_{Max} (MHz)		
PAL16L8-4JC	—	TTL	10	6 Comb	2 Comb	7	4.5	125.0	210	28
PAL16R8-4JC	—	TTL	8	—	8 Reg	8	4.5	125.0	210	28
PAL16R4-4JC	—	TTL	8	4 Comb	4 Reg	7, 8	4.5	125.0	210	28
PAL16L8-5JC	PAL16L8-5PC	TTL	10	6 Comb	2 Comb	7	5.0	117.0	210	20
PAL16R8-5JC	PAL16R8-5PC	TTL	8	—	8 Reg	8	5.0	117.0	210	20
PAL16R6-5JC	PAL16R6-5PC	TTL	8	2 Comb	6 Reg	7, 8	5.0	117.0	210	20
PAL16R4-5JC	PAL16R4-5PC	TTL	8	4 Comb	4 Reg	7, 8	5.0	117.0	210	20
PAL16L8-7JC	PAL16L8-7PC	TTL	10	6 Comb	2 Comb	7	7.5	74.0	180	20
PAL16R8-7JC	PAL16R8-7PC	TTL	8	—	8 Reg	8	7.5	74.0	180	20
PAL16R6-7JC	PAL16R6-7PC	TTL	8	2 Comb	6 Reg	7, 8	7.5	74.0	180	20
PAL16R4-7JC	PAL16R4-7PC	TTL	8	4 Comb	4 Reg	7, 8	7.5	74.0	180	20
PAL16L8D/2JC	PAL16L8D/2PC	TTL	10	6 Comb	2 Comb	7	10.0	58.8	180	20
PAL16R8D/2JC	PAL16R8D/2PC	TTL	8	—	8 Reg	8	10.0	58.8	180	20
PAL16R6D/2JC	PAL16R6D/2PC	TTL	8	2 Comb	6 Reg	7, 8	10.0	58.8	180	20
PAL16R4D/2JC	PAL16R4D/2PC	TTL	8	4 Comb	4 Reg	7, 8	10.0	58.8	180	20
PAL16L8BCNL	PAL16L8BCN	TTL	10	6 Comb	2 Comb	7	15.0	37.0	180	20
PAL16R8BCNL	PAL16R8BCN	TTL	8	—	8 Reg	8	15.0	37.0	180	20
PAL16R6BCNL	PAL16R6BCN	TTL	8	2 Comb	6 Reg	7, 8	15.0	37.0	180	20
PAL16R4BCNL	PAL16R4BCN	TTL	8	4 Comb	4 Reg	7, 8	15.0	37.0	180	20
PAL16L8B2CNL	PAL16L8B2CN	TTL	10	6 Comb	2 Comb	7	25.0	25.0	90	20
PAL16R8B2CNL	PAL16R8B2CN	TTL	8	—	8 Reg	8	25.0	25.0	90	20
PAL16R4B2CNL	PAL16R4B2CN	TTL	8	4 Comb	4 Reg	7, 8	25.0	25.0	90	20
PAL16L8ACNL	PAL16L8ACN	TTL	10	6 Comb	2 Comb	7	25.0	25.0	180	20
PAL16R8ACNL	PAL16R8ACN	TTL	8	—	8 Reg	8	25.0	25.0	180	20
PAL16R6ACNL	PAL16R6ACN	TTL	8	2 Comb	6 Reg	7, 8	25.0	25.0	180	20
PAL16R4ACNL	PAL16R4ACN	TTL	8	4 Comb	4 Reg	7, 8	25.0	25.0	180	20
—	PAL16L8B4CN	TTL	10	6 Comb	2 Comb	7	35.0	16.0	55	20
—	PAL16R8B4CN	TTL	8	—	8 Reg	8	35.0	16.0	55	20
—	PAL16R6B4CN	TTL	8	2 Comb	6 Reg	7, 8	35.0	16.0	55	20
—	PAL16R4B4CN	TTL	8	4 Comb	4 Reg	7, 8	35.0	16.0	55	20

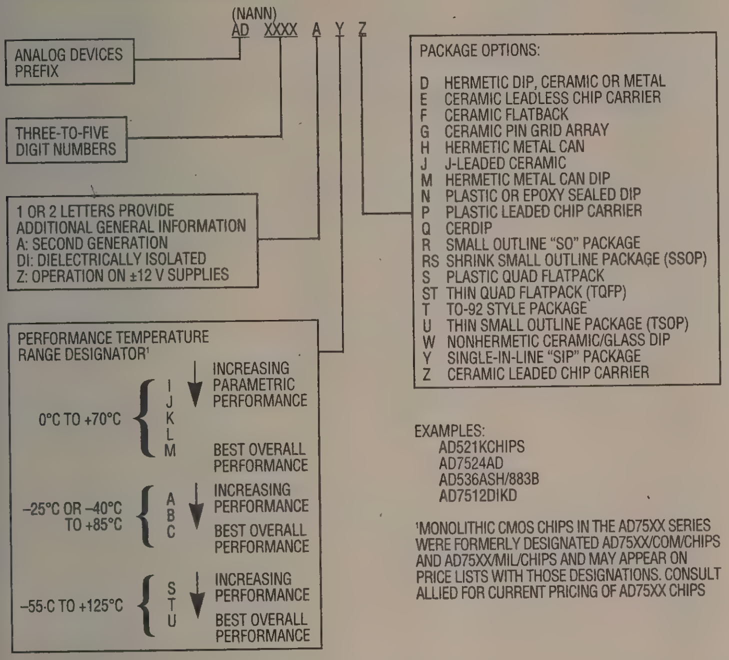
20R8 Family

PAL20L8-5JC	PAL20L8-5PC	TTL	14	6 Comb	2 Comb	7	5.0	117.0	210	28/24
PAL20R8-5JC	PAL20R8-5PC	TTL	12	—	8 Reg	8	5.0	117.0	210	28/24
PAL20R6-5JC	PAL20R6-5PC	TTL	12	2 Comb	6 Reg	7, 8	5.0	117.0	210	28/24
PAL20R4-5JC	PAL20R4-5PC	TTL	12	4 Comb	4 Reg	7, 8	5.0	117.0	210	28/24
PAL20L8-7JC	PAL20L8-7PC	TTL	14	6 Comb	2 Comb	7	7.5	74.0	210	28/24
PAL20R8-7JC	PAL20R8-7PC	TTL	12	—	8 Reg	8	7.5	74.0	210	28/24
PAL20R6-7JC	PAL20R6-7PC	TTL	12	2 Comb	6 Reg	7, 8	7.5	74.0	210	28/24
PAL20R4-7JC	PAL20R4-7PC	TTL	12	4 Comb	4 Reg	7, 8	7.5	74.0	210	28/24
PAL20L8-10/2JC	PAL20L8-10/2PC	TTL	14	6 Comb	2 Comb	7	10.0	55.5	210	28/24
PAL20R8-10/2JC	PAL20R8-10/2PC	TTL	12	—	8 Reg	8	10.0	55.5	210	28/24
PAL20R6-10/2JC	PAL20R6-10/2PC	TTL	12	2 Comb	6 Reg	7, 8	10.0	55.5	210	28/24
PAL20R4-10/2JC	PAL20R4-10/2PC	TTL	12	4 Comb	4 Reg	7, 8	10.0	55.5	210	28/24
PAL20L8BCNL	PAL20L8BCNS	TTL	14	6 Comb	2 Comb	7	15.0	37.0	210	28/24
PAL20R8BCNL	PAL20R8BCNS	TTL	12	—	8 Reg	8	15.0	37.0	210	28/24
—	PAL20R6BCNS	TTL	12	2 Comb	6 Reg	7, 8	15.0	37.0	210	24
—	PAL20R4BCNS	TTL	12	4 Comb	4 Reg	7, 8	15.0	37.0	210	24
PAL20L8ACNL	PAL20L8ACNS	TTL	14	6 Comb	2 Comb	7	25.0	25.0	210	28/24
—	PAL20R8ACNS	TTL	12	—	8 Reg	8	25.0	25.0	210	24
—	PAL20R6ACNS	TTL	12	2 Comb	6 Reg	7, 8	25.0	25.0	210	24
—	PAL20R4ACNS	TTL	12	4 Comb	4 Reg	7, 8	25.0	25.0	210	24

To obtain the latest data sheets on Analog Devices' products, call AnalogFax, the 24 hour automated literature delivery system at 1-800-446-6212. Or search Analog Devices' on-line products guide on the world wide web at: http://www.analog.com

To obtain data books, call Analog Devices Literature Center at (617) 461-3392. To obtain technical support call Analog Devices' Customer Support Hotline at 1-800-262-5643. Voice support is available 8:00 AM to 5:00 PM (EST) on Linear/Converter ICs, 8:00 AM to 5:00 PM (EST) on all other products.

Ordering Information


(NANN)
AD XXXX A Y Z
ANALOG DEVICES PREFIX
THREE-TO-FIVE DIGIT NUMBERS
1 OR 2 LETTERS PROVIDE ADDITIONAL GENERAL INFORMATION
A: SECOND GENERATION
DI: DIELECTRICALLY ISOLATED
Z: OPERATION ON ±12 V SUPPLIES
PERFORMANCE TEMPERATURE RANGE DESIGNATOR[1]
0°C TO +70°C
I
J
K
L
M
INCREASING PARAMETRIC PERFORMANCE
BEST OVERALL PERFORMANCE
–25°C OR –40°C TO +85°C
A
B
C
INCREASING PERFORMANCE
BEST OVERALL PERFORMANCE
–55·C TO +125°C
S
T
U
INCREASING PERFORMANCE
BEST OVERALL PERFORMANCE
PACKAGE OPTIONS:
D HERMETIC DIP, CERAMIC OR METAL
E CERAMIC LEADLESS CHIP CARRIER
F CERAMIC FLATBACK
G CERAMIC PIN GRID ARRAY
H HERMETIC METAL CAN
J J-LEADED CERAMIC
M HERMETIC METAL CAN DIP
N PLASTIC OR EPOXY SEALED DIP
P PLASTIC LEADED CHIP CARRIER
Q CERDIP
R SMALL OUTLINE "SO" PACKAGE
RS SHRINK SMALL OUTLINE PACKAGE (SSOP)
S PLASTIC QUAD FLATPACK
ST THIN QUAD FLATPACK (TQFP)
T TO-92 STYLE PACKAGE
U THIN SMALL OUTLINE PACKAGE (TSOP)
W NONHERMETIC CERAMIC/GLASS DIP
Y SINGLE-IN-LINE "SIP" PACKAGE
Z CERAMIC LEADED CHIP CARRIER

EXAMPLES:
AD521KCHIPS
AD7524AD
AD536ASH/883B
AD7512DIKD

[1]MONOLITHIC CMOS CHIPS IN THE AD75XX SERIES WERE FORMERLY DESIGNATED AD75XX/COM/CHIPS AND AD75XX/MIL/CHIPS AND MAY APPEAR ON PRICE LISTS WITH THOSE DESIGNATIONS. CONSULT ALLIED FOR CURRENT PRICING OF AD75XX CHIPS

Figure 1 — Model-Number Designations for Standard Analog Devices Monolithic and Hybrid IC Products. S, T and U Grades Have the Added Suffix /883B for Devices that Qualify to the Latest Revision of MIL-STD-883, Level B.

Two model numbering schemes are used by Analog Devices. The first model numbering scheme is used for designating standard Analog Devices monolithic and hybrid products. The second scheme is used by our Precision Monolithics Division (formerly PMI) as designators for its product line. Figure 1 shows the form of model number used for our proprietary standard monolithic ICs and many of our hybrids. It consists of an "AD" (Analog Devices) prefix, a 3-to-5 digit number*, an alphabetic performance/temperature-range designator and a package designator. One or two additional letters may immediately follow the digits ("A" for second-generation redesigned ICS, "DI" for dielectrically isolated CMOS, e.g., AD536AJH, AD7512DIKD).

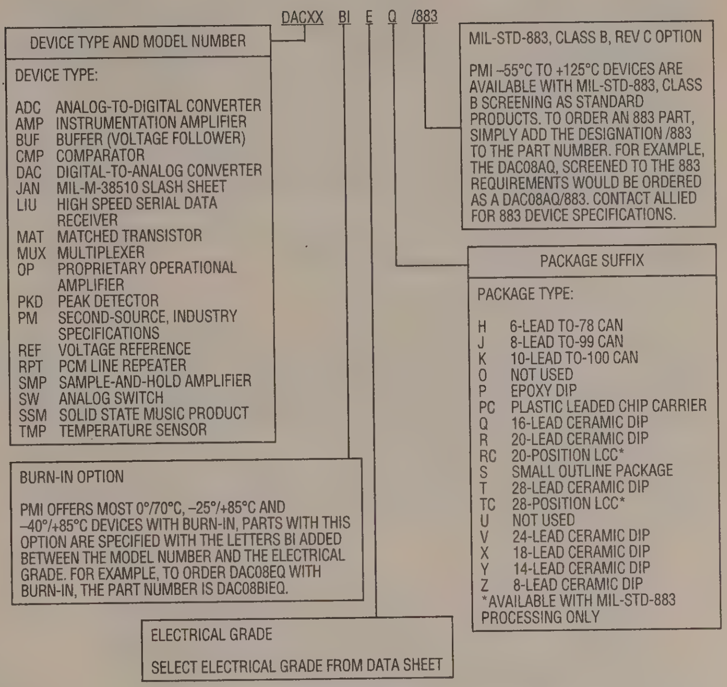

DACXX BI E Q /883
DEVICE TYPE AND MODEL NUMBER
DEVICE TYPE:
ADC ANALOG-TO-DIGITAL CONVERTER
AMP INSTRUMENTATION AMPLIFIER
BUF BUFFER (VOLTAGE FOLLOWER)
CMP COMPARATOR
DAC DIGITAL-TO-ANALOG CONVERTER
JAN MIL-M-38510 SLASH SHEET
LIU HIGH SPEED SERIAL DATA RECEIVER
MAT MATCHED TRANSISTOR
MUX MULTIPLEXER
OP PROPRIETARY OPERATIONAL AMPLIFIER
PKD PEAK DETECTOR
PM SECOND-SOURCE, INDUSTRY SPECIFICATIONS
REF VOLTAGE REFERENCE
RPT PCM LINE REPEATER
SMP SAMPLE-AND-HOLD AMPLIFIER
SW ANALOG SWITCH
SSM SOLID STATE MUSIC PRODUCT
TMP TEMPERATURE SENSOR
BURN-IN OPTION
PMI OFFERS MOST 0°/70°C, –25°/+85°C AND –40°/+85°C DEVICES WITH BURN-IN, PARTS WITH THIS OPTION ARE SPECIFIED WITH THE LETTERS BI ADDED BETWEEN THE MODEL NUMBER AND THE ELECTRICAL GRADE. FOR EXAMPLE, TO ORDER DAC08EQ WITH BURN-IN, THE PART NUMBER IS DAC08BIEQ.
ELECTRICAL GRADE
SELECT ELECTRICAL GRADE FROM DATA SHEET
MIL-STD-883, CLASS B, REV C OPTION
PMI –55°C TO +125°C DEVICES ARE AVAILABLE WITH MIL-STD-883, CLASS B SCREENING AS STANDARD PRODUCTS. TO ORDER AN 883 PART, SIMPLY ADD THE DESIGNATION /883 TO THE PART NUMBER. FOR EXAMPLE, THE DAC08AQ, SCREENED TO THE 883 REQUIREMENTS WOULD BE ORDERED AS A DAC08AQ/883. CONTACT ALLIED FOR 883 DEVICE SPECIFICATIONS.
PACKAGE SUFFIX
PACKAGE TYPE:
H 6-LEAD TO-78 CAN
J 8-LEAD TO-99 CAN
K 10-LEAD TO-100 CAN
O NOT USED
P EPOXY DIP
PC PLASTIC LEADED CHIP CARRIER
Q 16-LEAD CERAMIC DIP
R 20-LEAD CERAMIC DIP
RC 20-POSITION LCC*
S SMALL OUTLINE PACKAGE
T 28-LEAD CERAMIC DIP
TC 28-POSITION LCC*
U NOT USED
V 24-LEAD CERAMIC DIP
X 18-LEAD CERAMIC DIP
Y 14-LEAD CERAMIC DIP
Z 8-LEAD CERAMIC DIP
*AVAILABLE WITH MIL-STD-883 PROCESSING ONLY

Figure 2 — Precision Monolithics Division's Product Designations

Figure 2 shows a different numbering scheme used by our Precision Monolithics Division. This numbering scheme starts with a prefix which designates the device type and model number. It is then followed a suffix consisting of alphabetic designators (as applicable) to indicate additional functional designations or options and packaging options.

*For some models, the combination (digit) (letter) (two or three digits) is used instead of ADXXXX, e.g., 2S80.

DACPORT, TrimDAC and SoundPort are registered trademarks of Analog Devices, Inc.

ADSP-2100 Family EZ-KIT Lite Development Kit

Evaluation Tools

- MPEG Audio Decode
- Echo Cancellation
- ADPCM and LPC Speech Compression
- Filtering

DSP Board

- Full 16-Bit Stereo Audio I/O
- ADSP-2181 16-Bit DSP
- 32 K Words On-Chip RAM
- 128 K × 8 Socketed EPROM

Code Development Tools

- Assembler
- Linker
- Algorithm Source Code

Prototyping Tools

- Simulator
- PROM Splitter Utility
- I/O and Memory Expansion Ports

The EZ-KIT Lite is a powerful, inexpensive development tool that not only helps get your DSP design started, it includes the tools you need to get it prototyped and ready for market. This kit is specifically designed to support both evaluation and development. It takes you beyond the starter phase into serious DSP development. Unique features such as a socketed EPROM, PROM splitter utility and simulator let you plug in your own custom EPROM and fully prototype a sophisticated DSP-based solution. Packaged demonstration programs highlight the performance of the ADSP-2100 architecture, providing a clear picture of how well Analog Devices' DSPs meet your application requirements.

16-Bit Stereo Audio I/O Capability
The EZ-KIT Lite development board provides full, 16-bit stereo audio I/O capability for evaluating and developing a range of audio applications from digital filtering to MPEG audio decode. The onboard AD1847 codec is user programmable from 5.5 to 48 kHz with convenient programmable gain. Although the board is based on the highly integrated ADSP-2181 DSP, ADSP-2100 Family code compatibility assures that the EZ-KIT Lite can be used for development with any family member. The ADSP-2181 is a 16-bit, fixed-point DSP featuring 32 K words of on-chip RAM, DMA ports and low power modes. Running the EZ-KIT Lite's MPEG audio decode demonstration, the ADSP-2181 DSP plays approximately 7 seconds of audio without the use of external RAM. The closest competitor's DSP has 10 K words of internal memory and limited DMA support which translates to only about 0.7 seconds of audio playback. The ADSP-2181's performance is equally impressive in many other applications.

Supports Custom Code Download
A monitor program running on the DSP in conjunction with a host program running on the PC lets you interactively interrogate the onboard ADSP-2181. You can upload and download segments of data memory and program memory as well as download and run programs. A socketed EPROM gives the user the flexibility to run the monitor program and demonstrations provided or plug in an EPROM containing custom code. A custom EPROM coupled with the EZ-KIT Lite tools creates an evaluation and development platform for developing your own application.

Full-Function Simulator and Assembler
Designers can prototype their target application using the EZ-KIT Lite simulation tools. The instruction-level simulation lets you inspect all ADSP-2181 operations on a cycle-by-cycle basis. A user-configurable windows interface lets you see all registers in memory. You can also set breakpoints, single step and perform functions such as plotting data memory. The EZ-KIT Lite's Assembler is a full-function code development tool. This algebraic syntax-based assembler supports all ADSP-2181 instructions. It also supports a number of assembler directives and macros, as well as allowing flexible use of constants, labels and variables.

Something Must Be Missing
The EZ-KIT Lite is a complete and ultralow-cost DSP development system. The only necessary elements not included are the speakers, signal source and the PC — which you have to supply. Analog Devices even includes the RS-232 cable to connect to the PC and a power supply. If you require the high-level language support of a C-Compiler, C-source level debugger, C runtime library, librarian and simulations for other ADSP-2100 family members, you can upgrade your EZ-KIT Lite. In this case, you'll want to purchase the ADDS-21xx-SW Package to complete your design.

In-circuit emulators (ICE) are also available for all ADSP-2100 products.

Order Part No. ADDS-21XX-EZLITE

ADSP-2115 Code Example

```
        AR=DM (Error);                                        {Get Err Value From Mem    }
        MY1=Beta;                                             {Load Beta Value           }
        MF=AR*MY1(RND), AY0=PM(I4,M4), MX0=DM(I0,M0);         {MF=Beta*Err, Get Ck, A    }
        MR=MX0*MF(RND);                                       {MR=Beta*Error*A(n)        }

        CNTR=A;                                               {Set Loop Counter          }
        DO uloop UNTIL CE;                                    {Tap Update Loop           }
              AR=MR1+AY0, AY0=PM(I4,M6), MX0=DM(I0,M1);       {AR=Ck+Beta*Error*A(n)     }
uloop:        PM(I4,M7)=AR, MR=MX0*MF(RND);                   {Store CK+1, Do Next       }
        RTS;                                                  {Return}
```

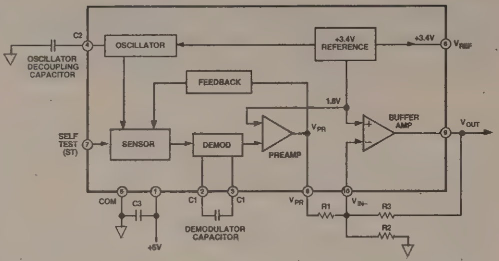
TMS320C50 Code Example

```
              LT        ERR                 ;  T=Err
              MPY       BETA                ;  P=Beta*Err(i)
              PAC                           ;  errf(i)=Beta*Err(i)
              ADD       ONE, 14             ;  Round The Results
              SACH      ERRF, 1             ;  Save errf(i)

              LACC      #126
              SAMM      BRCR                ;  127 Coeffs To Update In The Loop
              LAR       AR2, #COEFFD        ;  Point To The Coefficients
              LAR       AR3, #LASTAP        ;  Point To The Data Samples
              LT        ERRF
              MPY       *-,AR2              ;  P=Beta*Err(i)*x(i-255)

              RPTB      LOOP-1              ;  For I=0, I<=126, I++
ADAPT         ZALR      *,AR3               ;  Load ACCH With Ak(i)
              MPYA      *-,AR2              ;  P=Beta*Err(i)*X(i-k-1),
                                               ACC=ak(i)+Beta*err(i)*x(i-k)
              SACH      *+                  ;  Store ak(i+1)

LOOP          ZALR      *,AR3               ;  Final Update Last Coefficient a0(i)
              RETD                          ;  Delayed Return
              APAC                          ;  ACC=a0(i)+Beta*Err(i)*x(i)
              SACH      *+                  ;  Save a0(i+1)
```

The LMS adoption of FIR filter coefficients code examples shown above illustrate how the ADSP-2100 Family's algebraic syntax and processor architecture yield significant improvements in ease-of-use and efficiency. In this example, the ADSP-2115 completes the calculation in 35% fewer cycles.

Accelerometers

- Full Scale Measurement Range: ADXL05 — ±5 g; ADXL50 — ±50 g
- Self-Test on Digital Command
- Single Supply Operation
- Sensitivity Precalibrated to 200 mV/g (ADXL05), to 19 mV/g (ADXL50)
- Internal Voltage Reference
- Internal Output Buffer Amplifier for User Adjustable Span and Zero-g Levels
- Post Filtering with External Passive Components
- Complete Acceleration Measurement System on a Single Monolithic IC
- Frequency Response: ADXL05 — DC to 4 kHz; ADXL50 — DC to 10 kHz
- High Shock Survival: ADXL05 — >1000 g; ADXL50 — >2000 g
- Internally Temperature Compensated



ADXL05 ±1 to ±5 g Single Chip Accelerometer with Signal Conditioning

Low g designed for ±1 and ±2 g applications. **Tilt Measurement:** Virtual reality headsets, pointing devices/joysticks, compass correction. **Inertial Measurement:** GPS navigation systems, missile guidance and control, stabilized platforms. **Vibration and Shock:** Machine health, instrumentation. **Resolution:** 0.005 g.

Mfr.'s Type	Measurement Range	Typical 0 g Bias Drift*	Temperature Range (°C)	Package Type
ADXL05JH	±1 to ±5 g	±0.5	0 to +70	10 Lead Header (TO-100)
ADXL05AH	±1 to ±5 g	±0.5	–40 to +85	10 Lead Header (TO-100)
ADXL05SP†	±1 to ±5 g	±0.5	0 to +70	10 Lead Header (TO-100)

ADXL50 0 to ±50 g Monolithic Accelerometer with Signal Conditioning

Mfr.'s Type	Measurement Range	Typical 0 g Bias Drift*	Temperature Range (°C)	Package Type
ADXL50JH	0 to ±50 g	±15 mV	0 to +70	10 Lead Header (TO-100)
ADXL50AH	0 to ±50 g	±35 mV	–40 to +85	10 Lead Header (TO-100)
ADXL50SP‡	0 to ±50 g	±35 mV	–40 to +85	10 Lead Header (TO-100)

*% of reading, specification refers to the maximum change in parameter from its initial at +25°C to its worst case value at Tmin. to Tmax. †Sample Pack: Contains two ADXL05 plus circuit boards and application notes. ‡Sample Pack: Contains two ADXL50AH and application notes.

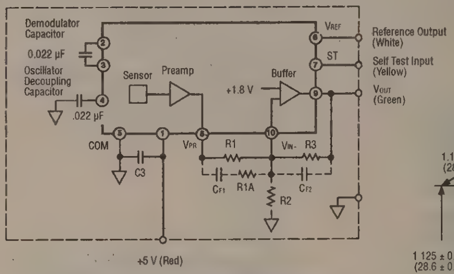
ADXL Accelerometer Evaluation Kits

- Simplify System Development, Reduce Design Time (ADXL-EM)

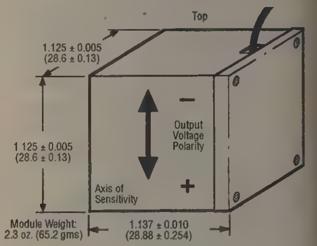
Analog Devices has evaluation boards and pre-packaged evaluation modules for their industry-standard family of low-cost single-chip accelerometers. Either kit can be used to evaluate the popular ADXL50 (±50 g device) or the new ADXL05 (±5 g device). The ADXL-EM evaluation module is a pre-packaged accelerometer subsystem designed for users who require immediate evaluation of either ADXL05 or ADXL50. These modules are preset to convenient gains and bandwidths and operate from a single 5 V supply — no external components are required for fully specified operation. The ADXL-EM is available in three versions. The single-axis ADXL05-EM-1 and tri-axial ADXL05-EM-3 are factory preset with ±4 g output spans; the ADXL50-EM-1 is a single-axis module with a ±25 g span.

The ADXL-EB evaluation board comes complete with non-resonant surface-mount resistors and capacitors and allows users to configure and customize the accelerometer's scale factor, 0 g bias level, and bandwidth; with either ac or dc coupling. This compact (0.8" × 0.8") board provides access to every pin, including output, self-test and reference terminals — perfect for initial evaluation and introductory operation.

Mfr.'s Type	Description
ADXL05EB	ADXL05 Evaluation Board with Resistors and Capacitors
ADXL05EM-1	ADXL05 Single Axis Evaluation Module
ADXL05EM-3	ADXL05 Triple Axis Evaluation Module
ADXL50EB	ADXL50 Evaluation Board with Resistors and Capacitors
ADXL50EM-1	ADXL50 Single Axis Evaluation Module



ADXL-EM Evaluation Module Schematic



Dimensions shown are in inches and (mm).
NOTE: The metal case of the evaluation module is isolated.

ADXL-EM Module Mechanical Dimensions

Analog-to-Digital Converters

This section contains selection guides for stand alone, general — and special purpose — analog-to-digital converters (ADCs), including many sampling types.

High Speed ADCs

Mfr.'s Type			Resolution in Bits	Throughput Rate MSPS Max.	Linearity Error (LSB @ TA = +25°C)	Full Power BW (MHz Typ.)	Bus Interface Bits†	Reference Voltage Int./Ext.‡	Comments
CERDIP	SOIC	SSOP							
—	AD9066AR	—	6	60.00	±0.50 @ Full Temperature	100	6	Int.	Dual 6-Bit, CMOS Compatible I/O
—	AD9066JR	—	6	60.00	±0.50 @ Full Temperature	100	6	Int.	Dual 6-Bit, CMOS Compatible I/O
AD9012AQ	—	—	8	75.00	±3/4	160	8	Ext.	TTL Outputs, Low Power, Low Input Capacitance
AD9058JD	—	—	8	50.00	±1.30	175	8	+2 V, Int.	Dual 8-Bit, TTL Output
—	AD9050BR	AD9050BRS	10	40.00	±1.00	100	10	+2.5 V, Ext.	BiCMOS, Low Power
—	AD876JR	—	10	20.00	±1.00	150	10	+2 V, +4 V/Ext.	CMOS, 160 mW
—	AD875JR	—	10	15.00	±2.50	—	10	+2 V, +4 V/Ext.	CMOS, 185 mW, 10-Bit, 15 MHz ADC
AD9027AD	—	—	12	25.60	±0.75	150	10	Int.	ECL Logic, On-Chip T/H and Reference
AD9027BD	—	—	12	31.00	±0.75	150	10	Int.	ECL Logic, On-Chip T/H and Reference
AD9026AD	—	—	12	25.60	±0.75	150	10	Int.	TTL Logic, On-Chip T/H and Reference
AD9026BD	—	—	12	20.00	±0.75	150	10	Int.	TTL Logic, On-Chip T/H and Reference
AD9022AQ	—	—	12	20.00	±0.75	110	12	Int.	TTL Logic, On-Chip T/H and Reference
AD9022BQ	—	—	12	20.00	±0.50	110	12	Int.	TTL Logic, On-Chip T/H and Reference
AD9023AQ	—	—	12	20.00	±0.75	110	12	Int.	ECL Logic, On-Chip T/H and Reference
AD9023BQ	—	—	12	20.00	±0.50	110	12	Int.	ECL Logic, On-Chip T/H and Reference
AD1672AP*	—	—	12	3.00	±0.50	5	12	+2.5 V, Ext.	On-Chip Sample and Hold and Voltage Reference

*Plastic Dip Package. †This column lists the data format for the bus with "µP" indicating microprocessor capability — i.e., for a 12-bit converter 8/12, µP indicates that the data can be formatted for an 8-bit bus or can be in parallel (12 bits) and is microprocessor compatible. ‡Ext. indicates external reference with the range of voltages listed where applicable. Ext. (M) indicates external reference with multiplying capability. Int. indicates reference is internal. A voltage value is given if the reference is pinned out.

Sampling Analog-to-Digital Converters

Mfr.'s Type				Resolution in Bits	Throughput Rate kSPS Max.	Linearity Error (LSB @ TA = +25°C)	SHA BW (kHz Typ.)	Bus Interface Bits*	Reference Voltage Int./Ext.†	Comments
PDIP	SOIC	SSOP	PLCC							
AD7821KN	AD7821KR	—	AD7821KP	8	1000.00	±1.0	100	8, µP	0-5 V, Ext.	CMOS, Bipolar or Unipolar Operation
AD7824KN	AD7824KR	—	—	8	400.00	±1.0	10	8, µP	0-5 V, Ext.	CMOS, 4-Channel, 8-Bit Sampling ADC
AD7828KN	—	—	AD7828KP	8	400.00	±1.0	10	8, µP	0-5 V, Ext.	CMOS, 8-Channel, 8-Bit Sampling ADC
AD7828LN	—	—	AD7828LP	8	400.00	±1/2	10	8, µP	0-5 V, Ext.	CMOS, 8-Channel, 8-Bit Sampling ADC
AD7575JN	—	—	—	8	190.00	±1.0	50	8, µP	1.23 V, Ext.	CMOS, Low Cost
AD7853AN	AD7853AR	—	—	12	200.00	±1.0 Typ.	100	Serial	2.5 V, Int.	+3.0 V to +5.5 V, System and Self-Calibration
AD7853BN	AD7853BR	—	—	12	200.00	±1/2 Typ.	100	Serial	2.5 V, Int.	+3.0 V to +5.5 V, System and Self-Calibration
AD7853LAN	AD7853LAR	AD7853LARS	—	12	100.00	±1.0 Typ.	100	Serial	2.5 V, Int.	+3.0 V to +5.5 V, System and Self-Calibration
AD7853LBN	AD7853LBR	—	—	12	100.00	±1.0 Typ.	100	Serial	2.5 V, Int.	+3.0 V to +5.5 V, System and Self-Calibration
AD7858AN	AD7858AR	—	—	12	200.00	±1.0 Typ.	100	Serial	2.5 V, Int.	+3.0 V to +5.5 V, System and Self-Calibration
AD7858BN	AD7858BR	—	—	12	200.00	±1/2 Typ.	100	Serial	2.5 V, Int.	+3.0 V to +5.5 V, System and Self-Calibration
AD7858LAN	AD7858LAR	AD7858LARS	—	12	100.00	±1.0 Typ.	100	Serial	2.5 V, Int.	+3.0 V to +5.5 V, System and Self-Calibration
AD7858LBN	AD7858LBR	—	—	12	100.00	±1.0 Typ.	100	Serial	2.5 V, Int.	+3.0 V to +5.5 V, System and Self-Calibration
AD7896AN	AD7896AR	—	—	12	117.00	±1.0	100	Serial	2.7 V to +5.5	With Power Down, Iq = 10 µA
AD7896BN	AD7896BR	—	—	12	117.00	±1/2	100	Serial	2.7 V to +5.5	With Power Down, Iq = 10 µA
AD1674JN	—	—	—	12	100.00	±1.0	500	8/12/16, µP	10 V, Int.	Complete AD574A Pinout Compatible, Sampling Input, AC/DC Tested
AD1674KN	—	—	—	12	100.00	±1/2	500	8/12/16, µP	10 V, Int.	Complete AD574A Pinout Compatible, Sampling Input, AC/DC Tested
AD7870JN	—	—	AD7870JP	12	100.00	±1/2 Typ.	50	8/12/Serial, µP	3 V, Int.	CMOS, 100 kHz Throughput, +3 V Input

*This column lists the data format for the bus with "µP" indicating microprocessor capability — i.e., for a 12-bit converter 8/12, µP indicates that the data can be formatted for an 8-bit bus or can be in parallel (12 bits) and is microprocessor compatible. †Ext. indicates external reference with the range of voltages listed where applicable. Ext. (M) indicates external reference with multiplying capability. Int. indicates reference is internal. A voltage value is given if the reference is pinned out.

Analog-to-Digital Converters

Sampling Analog-to-Digital Converters (Continued)

Mfr.'s Type				Resolution in Bits	Throughput Rate kSPS Max.	Linearity Error (LSB @ TA = +25°C)	SHA BW (kHz Typ.)	Bus Interface Bits*	Reference Voltage Int./Ext.†	Comments
PDIP	SOIC	SSOP	PLCC							
AD7876BN	—	—	—	12	100.00	±1.0	500	8/12/Serial, µP	3 V, Int.	CMOS, 100 kHz Throughput, +10 V Input
AD7890AN-10	—	—	—	12	100.00	±1.0	1000	Serial	2.5 V, Ext.	8-Channel Single Supply Sampling ADC
AD7890AN-4	—	—	—	12	100.00	±1.0	1000	Serial	2.5 V, Ext.	8-Channel Single Supply Sampling ADC
AD7874AN	—	—	—	12	29.00	±1.0	500	12, µP	Int. (+3 V), Ext.	CMOS, Simultaneous Sampling 4-Channel ADC for +10 V Input Signals
—	AD1671JQ	—	AD1671JP	12	1.25	±2.5	2	2.5 V, Int.	12	Complete, Monolithic 12-Bit, 1.25 MSPS ADC
AD679JN	—	—	—	14	128.00	±2.0 Typ.	1000	8, µP	5 V, Int.	BiMOS, High Impedance, High Bandwidth, 10 V Input Range
AD679KN	—	—	—	14	128.00	±2.0	1000	8, µP	5 V, Int.	BiMOS, High Impedance, High Bandwidth, 10 V Input Range
AD676KD	—	—	—	16	100.00	±1.5	1000	16	3-10 V, Ext.	Autocalibrating, 28-Pin, DIP, Parallel Output
AD677JR	—	—	—	16	100.00	±1.0 Typ.	1000	Serial	3-10 V, Ext.	Autocalibrating, 16-Pin Narrow DIP, Serial Output

*This column lists the data format for the bus with "µP" indicating microprocessor capability — i.e., for a 12-bit converter 8/12, µP indicates that the data can be formatted for an 8-bit bus or can be in parallel (12 bits) and is microprocessor compatible.
†Ext. indicates external reference with the range of voltages listed where applicable. Ext. (M) indicates external reference with multiplying capability. Int. indicates reference is internal. A voltage value is given if the reference is pinned out.

Non-Sampling Analog-to-Digital Converters

Mfr.'s Type		Resolution in Bits	Conv. Rate (µS Max.)	Linearity Error (LSB @ TA = +25°C)	Bus Interface Bits*	Reference Voltage Int./Ext.†	Comments
Hermetic DIP	PDIP						
—	AD670JN	8	10	±1/2	8, µP	Int.	Single +5 V Supply, Including In-Amp and Reference
—	AD673JN	8	30	±1/2	8, µP	Int.	Complete 8-Bit ADC with Reference, Clock and Comparator
AD571JD	—	10	25	±1	10	Int.	Complete 10-Bit ADC
—	AD573JN	10	30	±1	8/10, µP	Int.	Complete 10-Bit ADC, Byte or Parallel Interface
AD574AJD	AD574AJN	12	35	±1	8/12, µP	10 V, Int.	Complete ADC with Reference and Clock; Industry Standard
AD574AKD	AD574AKN	12	35	±1/2	8/12, µP	10 V, Int.	Complete ADC with Reference and Clock; Industry Standard
AD674BAD	—	12	15	±1	8/12, µP	10 V, Int.	Complete Monolithic 12-Bit A/D Converter with Reference, Clock, and 3-State Output Buffers
—	AD674BJN	12	15	±1	8/12, µP	10 V, Int.	Complete Monolithic 12-Bit A/D Converter with Reference, Clock, and 3-State Output Buffers

*This column lists the data format for the bus with "µP" indicating microprocessor capability — i.e., for a 12-bit converter 8/12, µP indicates that the data can be formatted for an 8-bit bus or can be in parallel (12 bits) and is microprocessor compatible.
†Ext. indicates external reference with the range of voltages listed where applicable. Ext. (M) indicates external reference with multiplying capability. Int. indicates reference is internal. A voltage value is given if the reference is pinned out.

Sigma Delta Analog-to-Digital Converters

Mfr.'s Type			Resolution in Bits	Linearity Error (LSB @ TA = +25°C)	Bus Interface Bits*	Reference Voltage Int./Ext.†	Comments
PDIP	SOIC	SSOP					
AD7701BN	AD7701BR	—	16	±0.0007% FSR Typ.	Serial, µP	2.50 V, Ext.	0.1-10 Hz Input Bandwidth
AD7703BN	AD7703BR	—	20	±0.0007% FSR Typ.	Serial, µP	2.50 V, Ext.	0.1-10 Hz Input Bandwidth
AD7712AN	AD7712AR	—	24	±0.0045% FSR Typ.	Serial, µP	2.50 V, Int.	24-Bit ADC with 1 Differential Input Channel and 1 High Voltage Input Channel
AD7714AN-3	AD7714AR-3	AD7714ARS-3	24	±0.0015% FSR	Serial, µP	1.25 V, Ext.	3 V, Charge Balancing ADC with PGA, MUX and Low Pass Filter with Programmable Cutoffs
AD7714AN-5	AD7714AR-5	AD7714ARS-5	24	±0.0015% FSR	Serial, µP	1.25 V, Ext.	5 V, Charge Balancing ADC with PGA, MUX and Low Pass Filter with Programmable Cutoffs

*This column lists the data format for the bus with "µP" indicating microprocessor capability — i.e., for a 12-bit converter 8/12, µe data can be formatted for an 8-bit bus or can be in parallel (12 bits) and is microprocessor compatible. †Ext. indicates external reference with the range of voltages listed where applicable. Ext. (M) indicates external reference with multiplying capability. Int. indicates reference is internal. A voltage value is given if the reference is pinned out.

Digital-to-Analog Converters

A Digital-to-Analog (DAC) Converter accepts a digital input and produces an analog output. The basic DAC consists of a voltage or current reference, binary weighted precision resistors, a set of electronic switches and a means of summing the weighted currents. Three important criteria are required for selecting the right DAC — resolution, accuracy and speed. Other requirements to be considered are temperature stability, input coding, output format, reference requirements and power consumption.

Single DACs, Current Output

Mfr.'s Type		Resolution in Bits	Settling Time (µs Typ.)	Linearity Error (LSB @ TA = +25°C)	Bus Interface Bits*	Reference Voltage Int./Ext. (M)†	Comments
PDIP	SOIC						
AD7524JN	AD7524JR	8	0.100	±1/2	8, µP	Ext. (M)	CMOS, Low Cost, 8-Bit Multiplying DAC with Latch
AD7524KN	—	8	0.100	±1/4	8, µP	Ext. (M)	CMOS, Low Cost, 8-Bit Multiplying DAC with Latch
DAC08CP	DAC08CS	8	0.085	±0.390% FS	8	Ext. (M)	8-Bit High Speed Multiplying DAC
DAC08EP	—	8	0.085	±0.190% FS	8	Ext. (M)	8-Bit High Speed Multiplying DAC
AD9720BN	AD9720BR	10	0.010	1.000	10	Int.	Ultrahigh Speed, ECL Compatible, Low Power, 10 pV-s Glitch
AD9721BN	AD9721BR	10	0.010	1.000	10	Int.	Ultrahigh Speed, TTL Compatible, Low Power, 10 pV-s Glitch
AD565AJD	—	12	0.250	±1/2	12	10 V, Int.	Industry Workhorse High Speed, JAN Part Available
AD566AJD	—	12	0.250	±1/2	12	10 V, Int.	Industry Workhorse High Speed, JAN Part Available
ADDAC80N-CBI-V	—	12	4.000 Max.	±1/2	12	6.3, ±2%	Low Cost, 12-Bit Digital-to-Analog Converter
DAC8043FP	—	12	0.250	1.000	Serial, µP	Ext. (M)	8-Pin DIP Serial Input 12-Bit CMOS Multiplying DAC
DAC8043GP	—	12	0.250	±1/2	Serial, µP	Ext. (M)	8-Pin DIP Serial Input 12-Bit CMOS Multiplying DAC
AD7538JN	AD7538JR	14	1.500	±2.000	14, µP	Ext. (M)	CMOS, Parallel Load

Single DACs, Voltage Output

AD557JN	—	8	0.800	1.000	8, µP	Int.	Lowest Cost 8-Bit DACPORT; Single +5 V Supply
AD558JN	—	8	3.000	±1/2	8, µP	Int.	10 V Out DACPORT, Single or Dual Supply
AD558KN	—	8	3.000	±1/4	8, µP	Int.	10 V Out DACPORT, Single or Dual Supply
AD7224KN	—	8	5.000 Max.	±2.000	8, µP	2-12.5 V, Ext.	CMOS, Low Cost 8-Bit DAC
AD7569JN	—	8	1.000	±1.000	8, µP	Int.	CMOS, Complete 8-Bit DAC/ADC/SHA/Reference
AD667JN	—	12	3.000	±1/2	4/8/12, µP	10 V, Int.	Highest Accuracy Complete 12-Bit DAC
AD667KN	—	12	3.000	±1/4	4/8/12, µP	10 V, Int.	Highest Accuracy Complete 12-Bit DAC
AD7233AN	—	12	10.000 Max.	±1.000	Serial, µP	Int.	Smallest 12-Bit Serial DACPORT (8-Pin) Bipolar ±5 V Output Range
AD7233BN	—	12	10.000 Max.	±1/2	Serial, µP	Int.	Smallest 12-Bit Serial DACPORT (8-Pin) Bipolar ±5 V Output Range
AD7243AN	—	12	10.000 Max.	±1.000	Serial	Int. (+5 V), Ext.	Low Cost 12-Bit Serial DACPORT in 16-Pin SOP
AD7243BN	—	12	10.000 Max.	±1/2	Serial	Int. (+5 V), Ext.	Low Cost 12-Bit Serial DACPORT in 16-Pin SOP
AD767JN	—	12	3.000	±1.000	12, µP	10 V, Int.	Fastest Interface Complete 12-Bit DAC
AD767KN	—	12	3.000	±1/2	12, µP	10 V, Int.	Fastest Interface Complete 12-Bit DAC
AD7845JN	—	12	2.500	±1.000	12, µP	Ext. (M)	CMOS, 12-Bit Multiplying DAC with Output Amplifier
AD7845KN	—	12	2.500	±1/2	12, µP	Ext. (M)	CMOS, 12-Bit Multiplying DAC with Output Amplifier
AD8300AN	AD8300AR	12	7.000	±2.000	Serial	Int.	16 MHz Serial Clock with Reset
AD7840JN	—	14	2.000	±2.000	14/Serial, µP	Int. (+3 V), Ext.	CMOS, 14-Bit Complete DAC, Parallel or Serial Load
AD7840KN	—	14	2.000	±1.000	14/Serial, µP	Int. (+3 V), Ext.	CMOS, 14-Bit Complete DAC, Parallel or Serial Load
AD569KN	—	16	3.000	±0.024% FS	8/16, µP	+5 V, Ext. (M)	Monolithic, 16-Bit Monotonic DAC
AD669AN	—	16	8.000	±4.000	16, µP	10 V, Int.	Monolithic, Complete 16-Bit DAC
AD760AQ	—	16	8.000	±2.000	8, Serial, µP	Int. (+10 V), Ext.	16 Bit Self Calibrating High Accuracy DACPORT

*This column lists the data format for the bus with "µP" indicating microprocessor capability — i.e., for a 12-bit converter 8/12, µP indicates that the data can be formatted for an 8-bit bus or can be in parallel (12 bits) and is microprocessor compatible.
†Ext. indicates external reference with the range of voltages listed where applicable. Ext. (M) indicates external reference with multiplying capability. Int. indicates reference is internal. A voltage value is given if the reference is pinned out.

Digital-to-Analog Converters

Single DACs, Voltage Output (Continued)

Mfr.'s Type		Resolution in Bits	Settling Time (µs Typ.)	Linearity Error (LSB @ TA = +25°C)	Bus Interface Bits*	Reference Voltage Int./Ext. (M)†	Comments
PDIP	SOIC						
AD766AN	—	16	1.500	±2% FSR Typ.	Serial, µP	Int.	Zero-Chip Interface 16-Bit DSP DACPORT
AD766JN	—	16	1.500	±2% FSR Typ.	Serial, µP	Int.	Zero-Chip Interface 16-Bit DSP DACPORT
AD7849AN	AD7849AR	14/16	7.000	±4.000	Serial, µP	Ext. (M)	High Accuracy Multiplying DAC
AD7849BN	AD7849BR	14/16	7.000	±6.000	Serial, µP	Ext. (M)	High Accuracy Multiplying DAC
AD7849CN	AD7849CR	14/16	7.000	±4.000	Serial, µP	Ext. (M)	High Accuracy Multiplying DAC

Multiple DACs, Voltage Output

AD7225KN	AD7225KR	8	5.000 Max.	±2.000	8, µP	2-12.5 V, Ext.	CMOS, Separate References for Each DAC
AD7225LN	AD7225LR	8	5.000 Max.	±1.000	8, µP	2-12.5 V, Ext.	CMOS, Separate References for Each DAC
AD7226KN	AD7226KR	8	3.000	±2.000	8, µP	2-12.5 V, Ext.	CMOS, No User Trims, Specified with Single or Dual Supplies
AD7228ABN	—	8	5.000 Max.	±2.000	8, µP	2-10 V, Ext.	CMOS, Specified for Single or Dual Supply, 5 V to 15 V
AD7228ACN	—	8	5.000 Max.	±1.000	8, µP	2-10 V, Ext.	CMOS, Specified for Single or Dual Supply, 5 V to 15 V
AD8402AN10	AD8402AR10	8	25.000	±1.500	Serial	Ext.	2 Channel Digital Potentiometer
AD8402AN100	AD8402AR100	8	25.000	±1.500	Serial	Ext.	2 Channel Digital Potentiometer
AD8402AN50	AD8402AR50	8	25.000	±1.500	Serial	Ext.	2 Channel Digital Potentiometer
AD8403AN10	AD8403AR10	8	25.000	±1.500	Serial	Ext.	4 Channel Digital Potentiometer
AD8403AN100	AD8403AR100	8	25.000	±1.500	Serial	Ext.	4 Channel Digital Potentiometer
AD8403AN50	AD8403AR50	8	25.000	±1.500	Serial	Ext.	4 Channel Digital Potentiometer
AD8801AN	AD8801AR	8	0.600	±1.500	Serial	Ext.	Octal TrimDAC 30 MHz I/O with Power Shutdown and Midscale Preset
AD8802AN	AD8802AR	8	0.600	±1.500	Serial	Ext.	12 Channel TrimDAC 30 MHz I/O with Midscale Preset
AD8803AN	AD8803AR	8	0.600	±1.500	Serial	Ext.	Octal TrimDAC 30 MHz I/O with Power Shutdown and Vrefl
AD8804AN	AD8804AR	8	0.600	±1.500	Serial	Ext.	12 Channel TrimDAC 30 MHz I/O with Separate Midscale Converter
DAC8840FP	DAC8840FS	8	3.500	±1.000	Serial	Ext. (M)	CMOS, Four-Quadrant Multiplying TrimDACs with Op Amps, 8 Channel
AD7804BN	AD7804BR	10	4.000	±2.000 - ±3.000	Serial	1.2 V, Int.	10 MHz I/O with Reset, Iq = 230 µA in Shutdown
AD7805BN	AD7805BR	10	4.000	±2.000 - ±3.000	8 Parallel	1.2 V, Int.	10 MHz I/O with Reset, Iq = 230 µA in Shutdown
AD7237JN	AD7237JR	12	5.000	±1.000	8, µP	Ext. (M)	CMOS, MDAC, Byte Load, Double Buffered
AD7237KN	—	12	5.000	±1/2	8, µP	Ext. (M)	CMOS, MDAC, Byte Load, Double Buffered
AD7242JN	—	12	2.000	±2.000	Serial, µP	3 V, Int.	Complete +5 V 12-Bit Dual DAC
AD7245AAN	—	12	10.000 Max.	±1.000	12, µP	5 V, Int.	Faster Interface, 12 V and 15 V AD7245
AD7247KN	AD7247KR	12	5.000	±1/2	12, µP	Ext. (M)	CMOS MDAC, Parallel Load
AD7834AN	AD7834BN	14	10.000	±2.000	Serial	Ext.	10 MHz I/O Requires a +5 V Logic Supply
AD7834BN	AD7834BR	14	10.000	±2.000	Serial	Ext.	10 MHz I/O Requires a +5 V Logic Supply

Multiple DACs, Current Output

AD7528JN	AD7528JR	8	0.180	±1.000	8, µP	Ext. (M)	CMOS, +5 V to +15 V Operation, TTL Compatible at VDD = +5 V
AD7628KN	—	8	0.350	±1/2	8, µP	Ext. (M)	CMOS, +12 V to +15 V Operation, TTL Compatible at VDD = 12 V to 15 V
—	AD7568BS**	12	0.200	±1/2	Serial, µP	Ext. (M)	Single +5 V Supply, Separate References
—	AD7564AR-B	12	0.500	±1.000	Serial, µP	Ext. (M).	LC2MOS Quad Monolithic Multiplying DAC
AD7537JN	—	12	1.500 Max.	±1.000	8, µP	Ext. (M)	CMOS, Byte Load, Double Buffered
AD7564BN	AD7564BR	12	0.500	±1/2	Serial, µP	Ext. (M)	LC2MOS Quad Monolithic Multiplying DAC
DAC8248FP	—	12	1.000 Max.	±1.000	8, µP	Ext. (M)	CMOS, Double Buffered Inputs, Byte Load

*This column lists the data format for the bus with "µP" indicating microprocessor capability — i.e., for a 12-bit converter 8/12, µP indicates that the data can be formatted for an 8-bit bus or can be in parallel (12 bits) and is microprocessor compatible.
**PQFP package type. †Ext. indicates external reference with the range of voltages listed where applicable. Ext. (M) indicates external reference with multiplying capability. Int. indicates reference is internal. A voltage value is given if the reference is pinned out.

Analog Switches and Multiplexers

Analog Devices offers a complete line of monolithic analog multiplexers and switches which are well suited for a wide range of applications including data acquisition, process control, instrumentation, video systems and telephone systems. Solid-state analog multiplexers and switches provide the ability to control and select a specified transmission path for an analog signal. In selecting analog multiplexers and switches attention must be paid to several key specifications which affect system performance, including ON Resistance (Ron) and Analog Input Leakage Current (Isoff).

Analog Switches

Mfr.'s Type		Function	Analog Input Leakage Current (nA Max.)	ON Resistance (Ohms Max.)	Latched	Comments
PDIP	SOIC					
ADG417BN	ADG417BR	Single SPST	±0.10	25	No	Single Switch
ADG511BN	—	Quad SPST	±0.10	50	No	DI LC2MOS Precision 5 V/3 V
ADG512BN	ADG512BR	Quad SPST	±0.10	50	No	DI LC2MOS Precision 5 V/3 V
ADG513BN	ADG513BR	Quad SPST	±0.10	50	No	DI LC2MOS Precision 5 V/3 V
ADG431BN	ADG431BR	Quad SPST	±0.25	24	No	DI LC2MOS Quad
ADG432BN	ADG432BR	Quad SPST	±0.25	24	No	DI LC2MOS Quad
ADG433BN	ADG433BR	Quad SPST	±0.25	24	No	DI LC2MOS Quad
ADG441BN	ADG441BR	Quad SPST	±0.50	70	No	LC2MOS Quad
ADG442BN	ADG442BR	Quad SPST	±0.50	70	No	LC2MOS Quad
ADG444BN	ADG444BR	Quad SPST	±0.50	70	No	LC2MOS Quad
ADG201HSJN	—	Quad SPST	1.00	50	No	LC2MOS Quad High Speed
ADG201HSKN	—	Quad SPST	1.00	50	No	LC2MOS Quad Higher Speed
ADG201AKN	ADG201AKR	Quad SPST	2.00	90	No	LC2MOS Quad
ADG202AKN	ADG202AKR	Quad SPST	2.00	90	No	LC2MOS Quad
ADG211AKN	ADG211AKR	Quad SPST	5.00	115	No	LC2MOS Quad
ADG212AKN	ADG212AKR	Quad SPST	5.00	115	No	LC2MOS Quad
SSM2402P	—	Dual SPST	10.00	85	No	Clickless Bilateral Dual Audio Switch
SW06GP	—	Quad SPST JFET	60.00	175	No	Quad Analog Switch

Multiplexers

ADG608BN	—	8:1 Mux	0.05	90/40	No	+3 V, +5 V, or ±5 Operation
ADG609BN	—	Diff. 4:1	0.05	90/40	No	+3 V, +5 V, or ±5 Operation
ADG408BN	—	8:1 Mux	±0.50	100	No	LC2MOS 8 Channel Analog Multiplier
ADG409BN	ADG409BR	Diff. 4:1	±0.50	100	No	LC2MOS Differential 4 Channel Analog
ADG428BN	ADG428BP*	8:1 Mux	±0.50	100	Yes	With Address Decoder and Control Latches
ADG429BN	—	Diff. 4:1 Mux	±0.50	100	Yes	With Address Decoder and Control Latches
ADG438FBN	ADG438FBR	8:1 Mux	0.50	300	No	Fault Protected
ADG439FBN	ADG439FBR	Diff. 4:1 Mux	0.50	300	No	Fault Protected
ADG508AKN	ADG508AKR	8:1 Mux	1.00	300	No	Superior Second Source to DG508A
ADG508FBN	ADG508FBRN	8:1 Mux	1.00	300	No	Fault Protected
ADG509AKN	—	Diff. 4:1	1.00	300	No	Superior Second Source to DG509A
ADG509FBN	ADG509FBRN	Diff. 4:1	1.00	300	No	Fault Protected
ADG528FBN	ADG528FBP*	8:1 Mux	1.00	300	Yes	Fault Protected
MUX08EP	—	8:1 JFET Mux	1.00	300	No	With Overvoltage and Power Supply Loss Protection
MUX08FP	—	8:1 JFET Mux	2.00	400	No	With Overvoltage and Power Supply Loss Protection
ADG406BN	ADG406BP*	16:1 Mux	±20.00	80	No	LC2MOS 16 Channel Analog Multiplier
ADG407BN	ADG407BP*	Diff. 8:1 Mux	±20.00	80	No	LC2MOS Differential 8 Channel

*PLCC Package Type.

Isolation Amplifiers

AD202/AD204 Miniature Input Isolation Amplifier
AD202 — Single-Channel; AD204 — Multi-Channel.

Mfr.'s Type	Peak Volt Iso (V pk)	Gain Range (V/V)	Gain Nonlin. (% Max.)	Freq. Resp. (kHz)
AD202JN	1000	1-100	±0.050	2.0
AD202KN	2000	1-100	±0.025	2.0
AD202KY	2000	1-100	±0.025	2.0
AD204JN	1000	1-100	±0.050	5.0
AD204JY	1000	1-100	±0.050	5.0
AD204KN	2000	1-100	±0.025	5.0
AD204KY	2000	1-100	±0.025	5.0

AD203 Military Temperature Range Isolation Amplifier
Full Power Bandwidth: 10 kHz.

AD203SN	2000	1-100	±0.025	10.0

AD208 Precision, mV Input Isolation Amplifier
Gain Range: 1 to 1000 V/V. **Input Offset Voltage:** 0.27 mV max.

AD208BY	2000	1-1000	±0.015	0.4-4

AD210 Precision, 3-Port Input and Output Isolation Amplifier
Input, output power ports. **Isolated Power:** ±15 V at 5 mA.

AD210AN	3500	1-100	±0.025	20.0
AD210BN	2500	1-100	±0.012	20.0
AD210JN	1500	1-100	±0.012	20.0

Sample/Track-and-Hold Amplifiers

A sample/track-and-hold amplifier (SHA/THA) is a device that samples an analog input signal then holds the instantaneous value upon the command of a logic control signal. This device is basically an analog memory where a capacitor serves as the storage element.

Popular applications utilizing the sample-and-hold function include data acquisition in which the SHA is used to capture the last instantaneous sampled analog input voltage prior to a conversion and hold this sample with minimal degradation during the conversion process. SHAs/THAs are also popular in signal processing applications using ADCs with a subranging or successive approximation architecture.

Significant improvement in dynamic performance can be made by placing fast SHAs with low aperture jitter ahead of flash ADCs. SHAs are also useful in applications including D/A deglitchers, simultaneous sampling systems, peak detectors, pulse stretchers, delay lines and data distribution systems.

Mfr.'s Type	Nonlinearity (% FS Max.)	Acquisition Time (to 0.01%)	Aperture Time (ns Typ.)	Aperture Jitter Typ.	Droop Rate (µV/µs Max.)
AD9101AR	0.010	23.0 ns max.	+800 ps	<1.0 ps	±6 mV/µs
AD585AQ	0.300	3.0 µs max.	35	0.5 ns	1 mV/ms
AD585JP	0.300	3.0 µs max.	35	0.5 ns	1 mV/ms
SMP04EP	0.010 typ.	9.0 µs typ.	NS	NS	25 mV/s
SMP04ES	0.010 typ.	9.0 µs typ.	NS	NS	25 mV/s
SMP08FP	0.010 typ.	7.0 µs typ.	NS	NS	20 mV/s
SMP08FS	0.010 typ.	7.0 µs typ.	NS	NS	20 mV/s
SMP18FP	0.010 typ.	3.5 µs typ.	NS	NS	40 mV/s
SMP18FS	0.010 typ.	3.5 µs typ.	NS	NS	40 mV/s
AD684AQ	±0.003	1.0 µs max.	–25	50.0 ps	1
AD684JQ	±0.003	1.0 µs max.	–25	50.0 ps	1
AD781JN	±0.003	700.0 ns max.	–25	50.0 ps	1
AD783AR	±0.005 typ.	375.0 ns max.	15	20.0 ps	1 µV/µs
AD783JQ	±0.005 typ.	375.0 ns max.	15	20.0 ps	1 µV/µs
AD783JR	±0.005 typ.	375.0 ns max.	15	20.0 ps	1 µV/µs

Amplifiers

Instrumentation Amplifiers
Analog Devices, Inc. offers the full range of Instrumentation Amplifiers from resistor to software programmable, single supply, low noise, low Ib, and, of course, high accuracy. No more need to "roll your own"!

Mfr.'s Type	Gain Range	Gain Error ±% Max. (G=1)	Gain TC ppm/°C Max. (G=1)	Nonlinearity % Max. (G=1)	Input Offset (V µV Max.)	Input Offset Current (nA Max.)	Voltage Noise @ 1 kHz nV√Hz RTI Typ.	Slew Rate (V/µs Typ.) (G=1)	Power Supply Range ±V
AD524CD	1-1 k	0.02	5	0.003	50	±10.0	7	5.00	6.0 to 18.0
AD524BD	1-1 k	0.03	5	0.005	100	±15.0	7	5.00	6.0 to 18.0
AD524AD	1-1 k	0.05	5	0.010	250	±35.0	7	5.00	6.0 to 18.0
AD526BD	1, 2, 4, 8, 16	0.01	2	0.005	500	—	30	6.00	4.5 to 16.5
AD526JN	1, 2, 4, 8, 16	0.05	2	0.005	1500	—	30	6.00	4.5 to 16.5
AD620BN	1-10 k	0.02	–50 (G ≤ 1 k)	0.004 (G ≤ 1 k)	50	0.5	9	1.20	2.3 to 18.0
AD620BR	1-10 k	0.02	–50 (G ≤ 1 k)	0.004 (G ≤ 1 k)	50	0.5	9	1.20	2.3 to 18.0
AD620AN	1-10 k	0.10	–50 (G ≤ 1 k)	0.004 (G ≤ 1 k)	125	1.0	9	1.20	2.3 to 18.0
AD620AR	1-10 k	0.10	–50 (G ≤ 1 k)	0.004 (G ≤ 1 k)	125	1.0	9	1.20	2.3 to 18.0
AD621BN	10-100	0.05 (G = 10 or 100)	5 (G = 10)	0.001 (G = 10)	125	0.5	13	1.20	2.3 to 18.0
AD621BR	10-100	0.05 (G = 10 or 100)	5 (G = 10)	0.001 (G = 10)	125	0.5	13	1.20	2.3 to 18.0
AD621AN	10-100	0.15 (G = 10 or 100)	5 (G = 10)	0.001 (G = 10)	250	1.0	13	1.20	2.3 to 18.0
AD621AR	10-100	0.15 (G = 10 or 100)	5 (G = 10)	0.001 (G = 10)	250	1.0	13	1.20	2.3 to 18.0
AD624CD	1-1 k	0.02	5	0.001	25	±10.0	4	5.00	6.0 to 18.0
AD624BD	1-1 k	0.03	5	0.003	75	±15.0	4	5.00	6.0 to 18.0
AD624AD	1-1 k	0.05	5	0.005	200	±35.0	4	5.00	6.0 to 18.0
AD625CD	1-10 k	0.02	5 (G ≤ 1 k)	0.001 (G ≤ 256)	25	±5.0	4	5.00	6.0 to 18.0
AD625BD	1-10 k	0.03	5 (G ≤ 1 k)	0.002 (G ≤ 256)	50	±15.0	4	5.00	6.0 to 18.0
AD625KN	1-10 k	0.03	5 (G ≤ 1 k)	0.002 (G ≤ 256)	50	±15.0	4	5.00	6.0 to 18.0
AD625AD	1-10 k	0.05	5 (G ≤ 1 k)	0.005 (G ≤ 256)	200	±35.0	4	5.00	6.0 to 18.0
AD625JN	1-10 k	0.05	5 (G ≤ 1 k)	0.005 (G ≤ 256)	200	±35.0	4	5.00	6.0 to 18.0
AD626BN	10-100	0.60 (G = 10)	30 (G = 10)	0.016 (G = 10)	250	—	250	0.22	ds ±1.2-±6.0
AD626AN	10-100	1.00 (G = 10)	50 (G = 10)	0.016 (G = 10)	250	—	250	0.22	ss 2.4-10.0
AD626AR	10-100	1.00 (G = 10)	50 (G = 10)	0.016 (G = 10)	250	—	250	0.22	ds ±1.2-±6.0
AMP01EX	0.1-10 k	0.60 (G = 1-1 k)	10 (G ≤ 1 k)	0.010	50	1.0	5	4.50	4.5 to 18.0
AMP01FX	0.1-10 k	0.80 (G = 1-1 k)	15 (G ≤ 1 k)	0.015	100	1.0	5	4.50	4.5 to 18.0
AMP01GS	0.1-10 k	0.80 (G = 1-1 k)	15 (G ≤ 1 k)	0.015	100	1.0	5	4.50	4.5 to 18.0
AMP02EP	1-10 k	0.02	50 (G ≤ 1 k)	0.006 (G ≤ 1 k)	100	5.0	9	6.00	4.5 to 18.0
AMP02FP	1-10 k	0.05	50 (G ≤ 1 k)	0.006 (G ≤ 1 k)	200	10.0	9	6.00	4.5 to 18.0
AMP02FS	1-10 k	0.05	50 (G ≤ 1 k)	0.006 (G ≤ 1 k)	200	10.0	9	6.00	4.5 to 18.0
AMP04EP	1-1 k	0.50	30	0.005 typ.	150	5.0	270	0.12	+4.5 to +36.0
AMP04ES	1-1 k	0.50	30	0.005 typ.	150	5.0	270	0.12	+4.5 to +36.0
AMP04FP	1-1 k	0.75	50	0.005 typ.	300	10.0	270	0.12	+4.5 to +36.0
AMP04FS	1-1 k	0.75	50	0.005 typ.	300	10.0	270	0.12	+4.5 to +36.0

Low Current Noise Amplifiers
These amplifiers offer both low current noise and low input bias current specs. Products are available in single and dual configurations.

Mfr.'s Type	Ib pA Max.	In f = 1 kHz fA/√Hz	Input Impedance Differential Ω‖pF Typ.	Input Impedance Common Mode Ω‖pF Typ.	CMRR dB f=1 kHz Typ.	Vos mV Max.	Vos TC µV/°C Max.	BW MHz Typ.	Single Dual
AD549LH	0.06	0.11	10E13‖1	10E15‖0.8	100	0.50	10.0	1.0	S
AD549KH	0.10	0.16	10E13‖1	10E15‖0.8	100	0.25	5.0	1.0	S
AD549JH	0.25	0.22	10E13‖1	10E15‖0.8	90	1.00	20.0	1.0	S
AD546JN	1.00	0.40	10E13‖1	10E15‖0.8	90	2.00	100.0	1.0	S
AD795JR	2.00	0.60	10E12‖1	10E14‖2.2	110	0.50	10.0	1.6	S
AD795KN	1.00	0.60	10E12‖1	10E14‖2.2	110	0.25	3.0	1.6	S
AD645AH	5.00	0.60	10E12‖1	10E14‖2.2	110	0.50	5.0	2.0	S
AD548JN	20.00	1.80	1X10E12‖3	3X10E12‖3	90	2.00	20.0	1.0	S
AD548JR	20.00	1.80	1X10E12‖3	3X10E12‖3	90	2.00	20.0	1.0	S
AD548KN	10.00	1.80	1X10E12‖3	3X10E12‖3	92	0.50	5.0	1.0	S
AD648JN	20.00	1.80	1X10E12‖3	3X10E12‖3	76	2.00	20.0	1.0	D
AD648JR	20.00	1.80	1X10E12‖3	3X10E12‖3	76	2.00	20.0	1.0	D
AD648KR	10.00	1.80	1X10E12‖3	3X10E12‖3	82	1.00	10.0	1.0	D
OP249FZ	75.00	3.00	10E12‖6	—	90	0.70	6.0	4.7	D
OP249GP	75.00	3.00	10E12‖6	—	90	2.00	25.0	4.7	D
OP249GS	75.00	3.00	10E12‖6	—	90	2.00	25.0	4.7	D
AD744JN	100.00	10.00	3X10E12‖5.5	3X10E12‖5.5	88	1.00	20.0	13.0	S
AD744JR	100.00	10.00	3X10E12‖5.5	3X10E12‖5.5	88	1.00	20.0	13.0	S
AD746JN	250.00	10.00	2.5X10E11‖5.5	2.5X10E11‖5.5	88	1.50	20.0	13.0	D
AD746JR	250.00	10.00	2.5X10E11‖5.5	2.5X10E11‖5.5	88	1.50	20.0	13.0	D
—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—

Low/Micro Power Amplifiers
Low power amplifiers are typically 0.1 mA<ISY<1 mA while micropower amplifiers are ISY<0.1 mA. Analog Devices, Inc. has a complete offering of single, dual and quad amplifiers to meet your needs.

Mfr.'s Type	ISY Max. (mA)	Vos Max. (mV)	Ib Max. (nA)	GBW Typ. (MHz)	SR Typ. (V/µs)	Single Dual Quad
OP90GP	0.015	0.450	25.00	0.02	—	S
OP90GS	0.015	0.450	25.00	0.02	—	S
OP290GP	0.030	0.500	25.00	0.02	—	D
OP290GS	0.030	0.500	25.00	0.02	—	D
OP490FY	0.060	0.750	20.00	0.02	—	Q
OP490GP	0.060	1.000	25.00	0.02	—	Q
OP282GP	0.500	3.000	0.10	4.00	9.00	D
OP282GS	0.500	3.000	0.10	4.00	9.00	D
AD705JN	0.600	0.090	0.15	0.80	0.15	S
AD705JR	0.600	0.090	0.15	0.80	0.15	S
OP97EP	0.600	0.025	±0.10	0.90	0.20	S
OP97EZ	0.600	0.075	±0.15	0.90	0.20	S
OP97FP	0.600	0.075	±0.15	0.90	0.20	S
OP297GP	0.625	0.200	±0.20	0.50	0.15	D
OP297GS	0.625	0.200	±0.20	0.50	0.15	D
OP497GP	2.500	0.150	0.20	0.50	0.15	Q
OP497GS	2.500	0.150	0.20	0.50	0.15	Q
OP482GS	1.000	4.000	0.10	4.00	9.00	Q
AD706JN	1.200	0.100	0.20	0.80	0.15	D
AD706JR	1.200	0.100	0.20	0.80	0.15	D
AD704JN	2.400	0.150	0.27	0.80	0.10	Q
AD704JR-16	2.400	0.150	0.27	0.80	0.10	Q

Amplifiers (Continued)

Low Voltage Noise Amplifiers

The market for low noise amplifiers are growing. Our performance specifications combined with low noise features allows ADI to provide you with a vast selection.

Mfr.'s Type	Voltage Noise en Typ. 1 kHz nV√Hz	Voltage Noise en Typ. 10 kHz nV√Hz	Current Noise In. ±In.-Typ. 1 kHz pA√Hz	Ib Typ. (nA)	Vos Typ. (mV)	GBW Typ. (MHz)	SR Typ. (V/μs)	Single Dual Quad
AD797AN	0.9	0.9	2.000	800	0.025	110.0	18.0	S
AD797AR	0.9	0.9	2.000	800	0.025	110.0	18.0	S
OP27AZ	3.0	3.5	0.400	±10	0.010	8.0	2.8	S
OP27EJ	3.0	3.5	0.400	±10	0.010	8.0	2.8	S
OP27EP	3.0	3.5	0.400	±10	0.010	8.0	2.8	S
OP27EZ	3.0	3.5	0.400	±10	0.010	8.0	2.8	S
OP27FP	3.0	3.5	0.400	±12	0.020	8.0	2.8	S
OP27FZ	3.0	3.5	0.400	±12	0.020	8.0	2.8	S
OP27GP	3.2	3.5	0.400	±15	0.030	8.0	2.8	S
OP27GS	3.2	3.5	0.400	±15	0.030	8.0	2.8	S
OP27GZ	3.2	3.5	0.400	±15	0.030	8.0	2.8	S
OP27CZ	3.2	3.5	0.400	±15	0.030	8.0	2.8	S
OP37EP	3.0	3.5	0.400	±10	0.010	63.0	17.0	S
OP37EZ	3.0	3.5	0.400	±10	0.010	63.0	17.0	S
OP37GP	3.2	3.5	0.400	±15	0.030	63.0	17.0	S
OP37GS	3.2	3.5	0.400	±15	0.030	63.0	17.0	S
OP270EZ	3.2	3.6	0.600	5	0.010	5.0	2.4	D
OP270GP	3.2	3.6	0.600	15	0.050	5.0	2.4	D
OP470AY	3.2	3.8	0.400	6	0.100	6.0	2.0	Q
OP470EY	3.2	3.8	0.400	6	0.100	6.0	2.0	Q
OP470FY	3.2	3.8	0.400	15	0.200	6.0	2.0	Q
OP470GP	3.2	3.8	0.400	25	0.400	6.0	2.0	Q
OP470GS	3.2	3.8	0.400	25	0.400	6.0	2.0	Q
OP471AY	6.5	9.0	0.400	7	0.250	6.0	8.0	Q
OP471GP	6.5	9.0	0.400	25	0.250	6.0	8.0	Q
OP271GP	7.6	16.0	0.600	12	0.020	5.0	8.5	D

Precision Amplifiers

Analog Devices, Inc. leads the market in precision amplifiers. Below are listed products from the highest precision to the most affordable. Our goal is "Affordable Performance"!

Mfr.'s Type	Vos Max. (μV)	Vos TC Max. (μV/°C)	Noise μVp-p 0.1-10 Hz Typ.	GBW Typ. (MHz)	Slew Rate (V/μs Typ.)	Ib nA Max.	CMRR dB f=1 kHz Typ.	Single Dual Quad
AD707JN	90	1.0	0.23	0.9	0.30	2.500	140	S
OP177EZ	25	0.3	0.35	0.6	0.30	2.000	140	S
OP177FP	25	0.3	0.35	0.6	0.30	2.000	140	S
OP177GP	25	0.3	0.35	0.6	0.30	2.000	140	S
OP177GS	25	0.3	0.35	0.6	0.30	2.000	140	S
OP77EP	25	0.6	0.35	0.6	0.30	2.000	105	S
OP77EZ	25	0.3	0.35	0.6	0.30	2.000	105	S
OP77FJ	60	0.6	0.38	0.6	0.30	2.800	105	S
OP77FP	60	1.0	0.38	0.6	0.30	2.800	105	S
OP77GP	100	1.2	0.38	0.6	0.30	2.800	105	S
OP77GS	100	1.2	0.38	0.6	0.30	2.800	105	S
AD708BQ	50	0.4	0.23	0.9	0.30	1.000	140	D
AD708JN	100	1.0	0.23	0.9	0.30	2.500	140	D
AD711JN	1000	3.0	2.00	4.0	20.00	0.050	88	S
AD711JR	1000	3.0	2.00	4.0	20.00	0.050	88	S
AD711KN	500	1.0	2.00	4.0	20.00	0.050	88	S
AD712JN	3000	20.0	2.00	4.0	20.00	0.025	88	D
AD712JR	3000	20.0	2.00	4.0	20.00	0.025	88	D
AD712KN	1000	10.0	2.00	4.0	20.00	0.020	88	D
AD713JN	1500	5.0	2.00	4.0	20.00	0.150	88	Q
AD713JR-16	1500	5.0	2.00	4.0	20.00	0.150	88	Q
AD713KN	500	20.0	2.00	4.0	20.00	0.075	94	Q
OP285GP	250	5.0	1.00	150.0	20.00	150.000	86	D
OP285GS	250	5.0	1.10	150.0	20.00	150.000	86	D
OP07AZ	25	0.6	0.35	0.6	0.30	±2.000	126	S
OP07CJ	75	1.3	0.35	0.6	0.30	±3.000	126	S
OP07CP	75	1.3	0.35	0.6	0.30	±3.000	126	S
OP07CS	75	1.3	0.35	0.6	0.30	±3.000	126	S
OP07CZ	75	1.3	0.35	0.6	0.30	±3.000	126	S
OP07DP	75	1.3	0.35	0.6	0.30	±3.000	126	S
OP07EJ	75	1.3	0.35	0.6	0.30	±3.000	126	S
OP07EP	75	1.3	0.35	0.6	0.30	±3.000	126	S
OP07EZ	75	1.3	0.35	0.6	0.30	±3.000	126	S
OP200AZ	75	0.5	0.50	0.5	0.15	2.000	135	S
OP200EZ	75	0.5	0.50	0.5	0.15	2.000	135	S
OP200FZ	150	1.5	0.50	0.5	0.15	4.000	135	S
OP200GP	200	2.0	0.50	0.5	0.15	5.000	130	S
OP400AY	150	1.2	0.50	0.5	0.15	3.000	140	Q
OP400EY	150	1.2	0.50	0.5	0.15	3.000	140	Q
OP400FY	230	2.0	0.50	0.5	0.15	6.000	140	Q
OP400GP	300	2.5	0.50	0.5	0.15	7.000	135	Q
OP400GS	300	2.5	0.50	0.5	0.15	7.000	135	Q

Single Supply Amplifiers

You've demanded single supply operation at lower and lower supplies and WE'VE listened. Ask about current new offerings in this product family. If we don't have what you need right now, it's probably on its way!

Mfr.'s Type	ISY Max. (mA)	Vos Max. (mV)	Supply Voltage Range (V)	GBW Typ. (MHz)	SR Typ. (V/μs)	Single Dual Quad
OP220EZ	0.115	0.150	+5.0 to +30	0.200	0.05	D
OP220FZ	0.125	0.300	+5.0 to +30	0.200	0.05	D
OP220GP	0.135	0.750	+5.0 to +30	0.200	0.05	D
OP220GZ	0.135	0.750	+5.0 to +30	0.200	0.05	D
OP295GP	0.300	0.300	+3.0 to +36	0.075	0.03	D
OP295GS	0.300	0.300	+3.0 to +36	0.075	0.03	D
OP420GY	0.300	4.000	+5.0 to +30	0.150	0.05	Q
OP221AZ	0.550	0.150	+5.0 to +30	0.600	0.30	D
OP221EZ	0.550	0.150	+5.0 to +30	0.600	0.30	D
OP495GP	0.600	0.300	+3.0 to +36	0.075	0.03	Q
OP495GS	0.600	0.300	+3.0 to +36	0.075	0.03	Q
OP221GZ	0.650	0.500	+5.0 to +30	0.600	0.30	D
AD820AN	0.700	1.000	+4.0 to +36	2.000	3.50	S
AD820AR-3V	0.700	1.000	+4.0 to +36	2.000	3.50	S
AD822AN	0.700	1.000	+4.0 to +36	2.000	3.50	D
AD822AR	0.700	1.000	+4.0 to +36	2.000	3.50	D
AD822AR-3V	0.700	1.000	+4.0 to +36	2.000	3.50	D
AD822BN	0.700	0.500	+4.0 to +36	2.000	3.50	D
OP291GP	0.700	0.700	+2.7 to +12	3.000	1.00	D
OP291GS	0.700	0.700	+2.7 to +12	3.000	1.00	D
OP491GS	1.400	0.700	+2.7 to +12	3.000	1.00	Q
OP183GP	1.500	1.000	+3.0 to ±18	5.000	10.00	S
OP183GS	1.500	1.000	+3.0 to ±18	5.000	10.00	S
OP283GP	1.500	1.000	+3.0 to ±18	5.000	10.00	D
OP283GS	1.500	1.000	+3.0 to ±18	5.000	10.00	D
OP213FP	1.750	0.300	+4.0 to ±18	3.500	—	D
OP213FS	1.750	0.300	+4.0 to ±18	3.500	—	D
OP113EZ	2.000	0.075	+4.0 to ±18	3.400	1.20	S
OP113FP	2.000	0.150	+4.0 to ±18	3.400	1.20	S
OP113FS	2.000	0.150	+4.0 to ±18	3.400	1.20	S
OP413FS	2.000	0.150	+4.0 to ±18	3.400	1.20	Q
OP292GP	2.400	0.800	+4.5 to +33	4.000	3.00	D
OP292GS	2.400	0.800	+4.5 to +33	4.000	3.00	D
OP492GP	4.800	1.000	+4.5 to +33	4.000	3.00	Q
OP492GS	4.800	1.000	+4.5 to +33	4.000	3.00	Q
—	—	—	—	—	—	—

Current Feedback High Speed Amplifiers

Analog Devices leads the market in high speed amplifiers. The listings below show our offering of a very full line of both current and voltage feedback products.

Mfr.'s Type	Slew Rate Typ. (V/μs)	GBW Typ. (MHz)	Settling Time Typ. (ns-%)	Vos Typ. (mV)	IOUT Min. (mA)	Supply Current Typ. (mA)	Single Dual Quad
AD811AN	2500	1000	65-0.01	0.500	100 typ.	16.5	S
AD811AR-16	2500	1000	65-0.01	0.500	100 typ.	16.5	S
AD811JR	2500	1000	65-0.01	0.500	100 typ.	16.5	S
AD844AN	2000	60	100-0.10	0.050	60	6.5	S
AD844JR-16	2000	60	100-0.10	0.500	60	34.0	S
AD9617JR	1600	190	10-0.10	0.500	60	34.0	S
AD812AN	1600	100	40	2.000	40	4.5	D
AD8001AN	1200	880	10	2.000	50	5.0	S
AD8001AR	1200	880	10	2.000	50	5.0	S
AD810AN	1000	650	50-0.10	1.500	40	6.8	S
AD810AR	1000	650	50-0.10	1.500	40	6.8	S
ADEL2020AN	500	300	60-0.10	1.500	30	6.8	S
ADEL2020AR-20	500	300	60-0.10	1.500	30	6.8	S
AD846AN	450	80	110-0.01	0.025	65	5.0	S
AD846BN	450	80	110-0.01	0.025	65	5.0	S
AD813AN	250	100	40	2.000	30	4.5	T
AD813AR-14	250	100	40	2.000	30	4.5	T
—	—	—	—	—	—	—	—

Voltage Feedback High Speed Amplifiers

AD9623AR	2100	1080	14-0.01	2.000	60	23.0	S
AD9623SQ	2100	1080	14-0.01	2.000	60	23.0	S
AD818AN	500	260	80-0.01	0.500	50	7.0	S
AD818AR	500	260	80-0.01	0.500	50	7.0	S
AD828AN	500	260	80-0.01	0.500	50	7.0	D
AD828AR	500	260	80-0.01	0.500	50	7.0	D
AD842JN	375	80	100-0.01	0.500	100	13.0	S
AD842KN	375	80	100-0.01	0.300	100	13.0	S
AD817AN	350	50	70-0.01	0.500	50	7.0	S
AD817AR	350	50	70-0.01	0.500	50	7.0	S
AD826AN	350	50	70-0.01	0.500	50	7.0	D
AD826AR	350	50	70-0.01	0.500	50	7.0	D
AD827JN	300	50	120-0.10	0.500	20 typ.	10.5	D
AD827JR-16	300	50	120-0.10	0.500	20 typ.	10.5	D
AD841JN	300	40	110-0.01	0.800	50	11.0	S
AD847JN	300	50	120-0.01	0.500	32	5.3	S
AD847JR	300	50	120-0.01	0.500	32	5.3	S
AD848JN	300	175	100-0.10	0.200	20 typ.	5.1	S
AD848JR	300	175	100-0.10	0.200	20 typ.	5.1	S
AD849JR	300	725	80-0.10	0.300	20 typ.	5.1	S
AD843AQ	250	34	135-0.01	1.000	50	12.0	S
AD843JN	250	34	135-0.01	1.000	50	12.0	S
AD843JR-16	250	34	135-0.01	1.000	50	12.0	S
AD843KN	250	34	135-0.01	0.500	50	12.0	S
AD829JN	230	750	65-0.10	0.200	20 typ.	5.3	S
AD829JR	230	750	65-0.10	0.200	20 typ.	5.3	S
OP467GP	170	25	170-0.01	0.200	10	8.0	Q
OP467GS	170	25	170-0.01	0.200	10	8.0	Q
AD845KN	100	16	350-0.01	0.100	50	10.0	S
—	—	—	—	—	—	—	—

Amplifiers (Continued)

Difference Amplifiers

Mfr.'s Type	Slew Rate Typ. (V/µs)	GBW Typ. (MHz)	Settling Time Typ. (ns-%)	Vos Typ. (mV)	Iout Min. (mA)	Supply Current Typ. (mA)	Single Dual Quad
AD830AN	530	100	25-0.10	1.500	50	14.5	S
AD830JR	530	100	25-0.10	1.500	50	14.5	S

Buffer Amplifiers

Mfr.'s Type	–3 dB BW Typ. (MHz)	SR Min. (V/µs)	Settling Time to 0.02% Typ. (ns)	Rise Time 1 V Step Typ. (ns)	Iout Min. (mA)	Vos Typ. (mV)	Iss Max. (mA)
AD9630AN	750	700	8	1.1	50	±3.0	26.0
AD9630AR	750	700	8	1.1	50	±3.0	26.0
BUF04GP	110	2000	60 (0.1%)	0.5	±65	0.3	8.5
BUF04GS	110	2000	60 (0.1%)	0.5	±65	0.3	8.5
BUF03AJ	50	220	100 (0.1%)	7.0 (1/2 V)	70	10.0	25.0

Audio Amplifiers

ADI offers a full line of products for high-end audio applications. Below are listed a sampling of the audio amplifier products. Other listings show audio switches, matched transistors, DACs, and others. Featured here are the OP176 and OP275 with excellent noise specs, low power consumption and small packaging.

Mfr.'s Type	Description
OP176GP	The OP176 is a low noise, high output drive op amp with a combination bipolar and JFET front end
OP176GS	Noise = 6 nV√Hz, SR = 25 V/µs, ISY = 2.5 mA, GBW = 10 MHz — excellent for high performance applications
OP275GP	The OP275 is a dual, bipolar/JFET amplifier featuring low distortion (0.0006%) at low supply current (5 mA). Noise = 6 nV√Hz, SR = 22 V/µs, GBW = 9 MHz
OP275GS	The OP275 is a dual, bipolar/JFET amplifier featuring low distortion (0.0006%) at low supply current (5 mA). Noise = 6 nV√Hz, SR = 22 V/µs, GBW = 9 MHz
SSM2017P	The SSM2017, ultra low noise audio preamplifier features 0.95 nV/√Hz at 20 kHz BW and low cost
SSM2018P	The SSM2018 Voltage Controlled Amplifier has the highest performance available. No external amp required
SSM2024P	The SSM2024 quad is a low cost current controlled amplifier
SSM2120P	The SSM2120 dual VCA also encompasses 2 level detectors on board for dynamic range processing
SSM2135P	The SSM2135 is a dual, single supply amplifier offering high output drive capability with excellent sonic characteristics. 5.2 nV/√Hz, 0.001% THD+N
SSM2135S	The SSM2135 is a dual, single supply amplifier offering high output drive capability with excellent sonic characteristics. 5.2 nV/√Hz, 0.001% THD+N
SSM2141P	The SSM2141 is a high CMR differential Line receiver complementing the SSM2142 line driver
SSM2142P	The SSM2142 is a balanced differential line driver, capable of driving 10 V RMS into a 600 Ω load
SSM2143P	The SSM2143 is a –6 dB differential line receiver. CMR = 90 dB typ. with ultra low THD (0.0006% typ.)

Comparators

Mfr.'s Type	Propagation Delay Max. (ns)	Dispersion (ps)	Logic	Vos Max. (mV)	Single Dual Quad
AD96685BH	3.5	50	ECL	2.0	S
AD96687BQ	3.5	50	ECL	2.0	D
AD9696KN	7.0	100	TTL	2.0	S
AD9696KR	7.0	100	TTL	2.0	S
AD9698KN	7.0	100	TTL	2.0	D
AD9698KR	7.0	100	TTL	2.0	D
AD790JN	45.0	—	TTL	1.0	S
AD790JR	45.0	—	TTL	1.0	S
CMP04FP	300.0	—	TTL	1.0	S

Analog Multipliers/Dividers

Analog Multipliers/Dividers are devices that can accept analog voltages and multiply, divide, square and/or square-root them. These devices can process signals over a wide frequency range, from DC to over 500MHz, and with varying degrees of accuracy, from 0.4% full scale to 2% full scale, depending on the device selected. Most of these devices are referred to as "4-quadrant multipliers," meaning that these devices can accept any combination of input signal polarity and provide output signals of appropriate polarity. Analog Multipliers can be used to implement a wide variety of signal processing functions including modulation and demodulation, fixed and variable remote gain adjustment, power measurement and mathematical operations in analog computing, curve fitting and linearizing.

Mfr.'s Type	BW Typ. (MHz)	Total Error Max. (% FS)	Supply Voltage Range	Output Voltage Swing Min.
AD534JD	1	±1.00	±8.00 V to ±18.00 V	±11.0 V
AD534JH	1	±1.00	±8.00 V to ±18.00 V	±11.0 V
AD534KD	1	±0.50	±8.00 V to ±18.00 V	±11.0 V
AD534LD	1	±0.25	±8.00 V to ±18.00 V	±11.0 V
AD633JN	1	±2.00	±8.00 V to ±18.00 V	±11.0 V
AD633JR	1	±2.00	±8.00 V to ±18.00 V	±11.0 V
MLT04GP	8	±5.00	±4.75 V to ±5.25 V	±3.0 V
MLT04GS	8	±5.00	±4.75 V to ±5.25 V	±3.0 V

Mfr.'s Type	BW Typ. (MHz)	Total Error Max. (% FS)	Supply Voltage Range	Output Voltage Swing Min.
AD734AN	10	±0.40	±8.00 V to ±16.50 V	±12.0 V
AD734AQ	10	±0.40	±8.00 V to ±16.50 V	±12.0 V
AD734BQ	10	±0.25	±8.00 V to ±16.50 V	±12.0 V
AD835AN	250	NS	±4.50 V to ±5.50 V	±2.2 V
AD835AR	250	NS	±4.50 V to ±5.50 V	±2.2 V
AD834JN	>500	±2.00	±4.00 V to ±9.00 V	Current O/P
AD834JR	>500	±2.00	±4.00 V to ±9.00 V	Current O/P
AD834AQ	>500	±2.00	±4.00 V to ±9.00 V	Current O/P

Modulator/Demodulator

This category is unusual in that it includes a single product, the AD630. The AD630 is a fast, flexible switched dual-input op amp with an on-chip comparator. The AD630 is intended to operate in wide-band, low level and wide-dynamic range instrumentation applications and coherent systems. The AD630 is capable of many analog signal processing functions such as balanced modulation and demodulation, phase detection, square-wave multiplication, absolute-value amplification, and two-channel precision multiplexing. It can also be used as a lock-in amplifier, synchronous detector, rectifier, and much more. The AD630 essentially provides a complete, solution, with on-chip scaling resistors and requires little or no additional circuitry.

Mfr.'s Type	Unity Gain Channel BW Typ. (MHz)*	Open Loop Gain Min./dB	Input Offset Voltage Max./µV	Output Voltage Swing Min.
AD630JN	2	90	500	±10 V
AD630KN	2	100	100	±10 V
AD630AD	2	90	500	±10 V
AD630BD	2	100	100	±10 V

*Unity gain small signal bandwidth.

RMS-to-DC Converters

RMS-to-DC converters continuously compute the instantaneous square of an input signal, average it, and take the square root of the result, to provide a dc voltage proportional to the rms of the input. Some of these devices, like the AD536A and the AD636, also provide an auxiliary dc output voltage that is proportional to the logarithm of the the rms value, for dB measurements.

True rms devices like these are widely used for the measurement of electrical signals derived from mechanical phenomena, such as strain, stress, vibration, shock, expansion, bearing noise, thermal noise and acoustical noise. The electrical signals produced by these mechanical actions are often noisy, nonperiodic, nonsinusoidal, and superimposed on dc levels, and require true rms measurement for consistent, valid and accurate measurements. RMS converters are also useful for accurate measurements on low-repetition-rate pulse trains having high crest factors (ratio of peak to rms value), and for the measurements of Silicon Controlled Rectifier waveforms at different firing angles.

These devices provide excellent pre-trimmed performance, improvable by simple optional trims, making them ideal for all types of laboratory and OEM rms instrumentation where amplitude measurements must be made with high accuracy and independent of waveshape.

Mfr.'s Type	Conversion Accuracy mV ±% Read Max.	Full-Scale Range (V RMS)	dB Output Error dB Max
AD636KD	±0.2±0.5	0.2	±0.2
AD736KN	±0.3±0.3	0.2	—
AD736KR	±0.3±0.3	0.2	—
AD737JN	±0.4±0.5	0.2	—
AD637KD	±0.5±0.2	7.0	±0.3 typ.
AD637KQ	±0.5±0.2	7.0	±0.3 typ.
AD637KR	±0.5±0.2	7.0	±0.3 typ.
AD736JN	±0.5±0.5	0.2	—
AD736JR	±0.5±0.5	0.2	—

Mfr.'s Type	Conversion Accuracy mV ±% Read Max.	Full-Scale Range (V RMS)	dB Output Error dB Max
AD736AQ	±0.5±0.5	0.2	—
AD636JD	±0.5±1.0	0.2	±0.5
AD637JQ	±1.0±0.5	7.0	±0.5 typ.
AD637JR	±1.0±0.5	7.0	±0.5 typ.
AD536AKQ	±2.0±0.2	7.0	±0.3
AD536AKD	±2.0±0.2	7.0	±0.3
AD536AJD	±5.0±0.5	7.0	±0.6
AD536AJH	±5.0±0.5	7.0	±0.6
—	—	—	—

Signal Compression

Signal compression products fall into two categories: variable gain amplifiers and logarithmic amplifiers. Logarithmic amplifiers like the AD606 and the AD640 provide an output voltage proportional to the logarithm of the input voltage for signals from dc to 120 MHz. Variable gain amplifiers like the AD600/602 and AD603 use a patented X-AMP technology which allows the amplifier gain to be varied as the dynamic range of the input signal changes.

Logarithmic amplifiers are excellent in all applications that require compression of wide-range analog input data. Variable gain amplifiers are typically employed as fast-response automatic gain control (AGC) elements in RF and IF systems. Alternatively, they can be used to provide time gain control (TGC) in applications such as commercial sonar.

Variable Gain Amplifiers

Mfr.'s Type	Gain Range	Gain Accuracy Max.	Bandwidth Typ. (MHz)
AD600JN	0 dB to +40 dB	±0.5 dB*	35
AD600JR	0 dB to +40 dB	±0.5 dB*	35
AD600AQ	0 dB to +40 dB	±1.0 dB*	35
AD602JN	–10 dB to +30 dB	±0.5 dB*	35
AD602AQ	–10 dB to +30 dB	±1.0 dB*	35
AD603AQ	–11 dB to +31 dB	±1.0 dB	90
AD603AR	–11 dB to +31 dB	±1.0 dB	90
—	—	—	—

*Gain accuracy measured over the 3 dB to 37 dB gain range.

Logarithmic Amplifiers

Mfr.'s Type		Vss (V)	Iss (mA)	–3 dB BW (MHz)	AC Linearity (dB)	DC Linearity (dB)	Gain (dB)
PDIP	PLCC						
AD640JN	AD640JP	±5	15, –60	145	0.5 to 2	0.6 to 1.2	50
AD641AN	AD641AP	±5	15, –60	250	2.0	NS	44
AD606JN	—	±5	20	50	1.5	NS	80
—	—	—	—	—	—	—	—

Special Function

Analog RGB-to-NTSC/PAL encoders like the AD720 encode red,green and blue (RGB) component video signals into National Television Standards Committee (NTSC) or Phase Alternating Line (PAL) luminance (brightness), chrominance (color), and composite (luminance summed with chrominance) baseband signals. This device can be used to perform video signal encoding in many OEM systems including personal computers, CATV converters, flight simulators, CD ROMs and medical ultrasound systems. The AD720 is a highly integrated, cost-effective video encoding system, which offers substantially better video picture quality than that of other analog video encoders available today.

Mfr.'s Type	Video Output Typ. (BW)	Supply Voltage	Power Consumption (mW)
AD720JP	5 MHz	±5 V	200

Interface Products

The ADM2XXL family is designed to meet the EIA-232E specifications while operating from a single +5 V power supply. This is achieved by the use of an on-chip voltage doubler. Older generation RS-232 drivers required three separate power supplies: +5 V, +12 V, and –12 V, resulting in large bulky power supply units. Linear voltage regulators tend to be inefficient and are wasteful of power. This is especially a problem in today's portable equipment which operates with battery powered supplies. Ideally the single power supply should be used which can easily be derived from a battery pack. A new design, Analog Devices' process for the 5 V RS-232 market offers lowest ICC, lowest I shutdown and the highest speed in its class. Our ADM23XL series of line drivers/receivers are major upgrades.

Line Drivers/Receivers, RS-232

Mfr.'s Type	Power Supply Voltage (V)	No. of Drivers	No. of Receivers	External Capacitors	Low Power Shutdown	TTL Three-State Enable
ADM202JN	+5	2	2	Y	N	N
ADM202JRW	+5	2	2	Y	N	N
ADM202JRN	+5	2	2	Y	N	N
ADM230LJN	+5	5	0	Y	Y	N
ADM222AN	+5	2	2	Y	Y	N
ADM222AR	+5	2	2	Y	Y	N
ADM230LJR	+5	5	0	Y	Y	N
ADM230LAN	+5	5	0	Y	Y	N
ADM230LAR	+5	5	0	Y	Y	N
ADM231LJN	+5 and +7.5 to +13.2	2	2	Y	N	N
ADM231LJR	+5 and +7.5 to +13.2	2	2	Y	N	N
ADM231LAN	+5 and +7.5 to +13.2	2	2	Y	N	N
ADM231LAR	+5 and +7.5 to +13.2	2	2	Y	N	N
ADM232LJN	+5	2	2	Y	N	N
ADM232LJR	+5	2	2	Y	N	N
ADM232LAN	+5	2	2	Y	N	N
ADM232LAR	+5	2	2	Y	N	N
ADM232AAN	+5	2	2	Y	N	N
ADM232AARN	+5	2	2	Y	N	N
ADM232AARW	+5	2	2	Y	N	N
ADM233LJN	+5	2	2	N	N	N
ADM233LAN	+5	2	2	N	N	N
ADM234LJN	+5	4	0	Y	N	N
ADM234LJR	+5	4	0	Y	N	N
ADM234LAN	+5	4	0	Y	N	N
ADM234LAR	+5	4	0	Y	N	N
ADM235LJN	+5	5	5	N	Y	Y
ADM236LJR	+5	4	3	Y	Y	Y
ADM236LAN	+5	4	3	Y	Y	Y
ADM236LAR	+5	4	3	Y	Y	Y
ADM237LJN	+5	5	3	Y	N	N
ADM237LJR	+5	5	3	Y	N	N
ADM237LAN	+5	5	3	Y	N	N
ADM237LAR	+5	5	3	Y	N	N
ADM238LJN	+5	4	4	Y	N	N
ADM238LJR	+5	4	4	Y	N	N
ADM238LAN	+5	4	4	Y	N	N
ADM238LAR	+5	4	4	Y	N	N
ADM239LJN	+5 and +7.5 to +13.2	3	5	Y	N	Y
ADM239LAN	+5 and +7.5 to +13.2	3	5	Y	N	Y
ADM239LAR	+5 and +7.5 to +13.2	3	5	Y	N	Y
ADM241LJR	+5	4	5	Y	Y	Y
ADM241LAR	+5	4	5	Y	Y	Y
ADM241LARS	+5	4	5	Y	Y	Y
ADM242AR	+5	2	2	Y	Y	Y
ADM5170JN	+10	8	0	N	Y	Y
ADM5170AN	+10	8	0	N	Y	Y
ADM5180JN	+5	0	8	N	Y	Y
ADM5180AN	+5	0	8	N	Y	Y
—	—	—	—	—	—	—

Transceivers, EIA RS-485

Mfr.'s Type	Transmission Type	Drivers/Receivers Per Line	Max. Cable Length (Ft.)	Min. Driver Output Voltage	Driver Load Impedance	Receiver Input Resistance	Receiver Input Sensitivity	Receiver Input Voltage Range	Data Rate
ADM485JN	Differential	32/32	4000	±1.5 V	54 Ω	12 KΩ min.	±200 mV	–7 V to +12 V	5 Mb/s
ADM485JR	Differential	32/32	4000	±1.5 V	54 Ω	12 KΩ min.	±200 mV	–7 V to +12 V	5 Mb/s
ADM485AN	Differential	32/32	4000	±1.5 V	54 Ω	12 KΩ min.	±200 mV	–7 V to +12 V	5 Mb/s
ADM485AR	Differential	32/32	4000	±1.5 V	54 Ω	12 KΩ min.	±200 mV	–7 V to +12 V	5 Mb/s
ADM1485JN	Differential	32/32	4000	±1.5 V	54 Ω	12 KΩ min.	±200 mV	–7 V to +12 V	30 Mb/s
ADM1485JR	Differential	32/32	4000	±1.5 V	54 Ω	12 KΩ min.	±200 mV	–7 V to +12 V	30 Mb/s
ADM1485AN	Differential	32/32	4000	±1.5 V	54 Ω	12 KΩ min.	±200 mV	–7 V to +12 V	30 Mb/s
ADM1485AR	Differential	32/32	4000	±1.5 V	54 Ω	12 KΩ min.	±200 mV	–7 V to +12 V	30 Mb/s

Voltage-to-Frequency/Frequency-to-Voltage Converters

Voltage-to-Frequency Converters (VFCs) convert analog voltage or current levels to pulse trains or square waves in logic compatible form (usually TTL) at frequencies that are accurately proportional to the analog quantity. The output continuously tracks the input signal, responding directly to changes in the input signal. Frequency-to-Voltage Converters (FVCs) perform the inverse operation; they accept a wide variety of periodic waveforms and produce an analog output proportional to frequency. Combining adjustable threshold, gain and output offset with low linearity error, F/V converters offer economical solutions to a wide variety of applications where it is required to convert frequency to an analog voltage. Applications of both forms of conversion, as appropriate to specific device types, are illustrated with varying degrees of detail on the individual product datasheets.

Voltage-to-Frequency Converters

Mfr.'s Type	Full-Scale Frequency (MHz)	Linearity Max. (%)	FS Calib. Error % Typ.	Output Format	Input Range V
AD652AQ	2.00	±0.020	0.50	Pulse Train	0 to 10, ±5, 0 to –10
AD652BQ	2.00	±0.010	0.25	Pulse Train	0 to 10, ±5, 0 to –10
AD650JN	1.00	0.005	5.00	Pulse Train	0 to 10, ±5, 0 to –10
AD654JN	0.50	0.100	10.00 Max.	Square Wave	0 to (Vs)

Voltage-to-Frequency/Frequency-to-Voltage Converters — Continued

Voltage-to-Frequency Converters — Continued

Mfr.'s Type	Full-Scale Frequency (MHz)	Linearity Max. (%)	FS Calib. Error % Typ.	Output Format	Input Range (V)
AD654JR	0.50	0.100	10.00 Max.	Square Wave	0 to (Vs)
AD537JD	0.15	0.150	5.00	Square Wave	–Vs to (+Vs –4)
AD537JH	0.15	0.150	5.00	Square Wave	–Vs to (+Vs –4)
AD537KH	0.15	0.070	5.00	Square Wave	–Vs to (+Vs –4)
AD537KD	0.15	0.070	5.00	Square Wave	–Vs to (+Vs –4)
—	—	—	—	—	—

Frequency-to-Voltage Converters

Mfr.'s Type	Linearity Input Range (kHz)	Response Time Max. (%)	Comments
AD650JN	0-1000	0.005	Low Nonlinearity, Multiple Input Ranges F-V Converter
AD650KN	0-1000	0.005	Low Nonlinearity, Multiple Input Ranges F-V Converter

Power Management Products

µProcessor Supervisory Circuits

The ADM69X series are CMOS Microprocessor Supervisory Circuits that operate from a single 5 V supply. This family of parts are monitor circuits that take emergency action when the main VCC supply or other system monitors to the µprocessor drop below a precisely defined level. These products are superior upgrades to other manufacturers, with five times less supply current to deliver twice the output current. Chip Endable (CE) propagation delay an order of magnitude faster, a V_{CC} to reset comparator response time an order of magnitude faster and a guaranteed valid reset down to 1 V V_{CC}. These benefits over other manufacturer's products will extend battery life, allow for a wider application base and offer faster response times allowing for more accurate system supervision at competitive prices.

Mfr.'s Type	Operating Voltage Range	V_{CC} Timeout Delay (ms)	Reset Max. (mA)	I_{DD} (Norm. Oper.)	R_{ON}* (Battery B.U.)	Output Current Drive	Valid RESET @ 1 V	Specified Over Temp.	CE Propagation Delay	Comments
ADM690AN	4.75 V to 5.5 V	35 to 70	1.95	1.5 Ω	20 Ω	100 mA	50 mA	Yes	9 ns	4-Function, 8-pin, 4.65 V Reset, 50 ms Reset Pulse Width
ADM691AN	4.75 V to 5.5 V	35 to 70	1.95	1.5 Ω	20 Ω	100 mA	50 mA	Yes	9 ns	5-Function, 16-pin, 4.4 V Reset
ADM691AR	4.75 V to 5.5 V	35 to 70	1.95	1.5 Ω	20 Ω	100 mA	50 mA	Yes	9 ns	5-Function, 16-pin, 4.4 V Reset
ADM692AN	4.50 V to 5.5 V	35 to 70	1.95	1.5 Ω	20 Ω	100 mA	50 mA	Yes	9 ns	4-Function, 8-pin, 4.4 V Reset, 50 ms Reset Pulse Width
ADM693AN	4.50 V to 5.5 V	35 to 70	1.95	1.5 Ω	20 Ω	100 mA	50 mA	Yes	9 ns	5-Function, 16-pin, 4.4 V Reset
ADM693AR	4.50 V to 5.5 V	35 to 70	1.95	1.5 Ω	20 Ω	100 mA	50 mA	Yes	9 ns	5-Function, 16-pin, 4.4 V Reset
ADM694AN	4.75 V to 5.5 V	140 to 280	1.95	1.5 Ω	20 Ω	100 mA	50 mA	Yes	9 ns	4-Function, 8-pin, 200 ms Reset Pulse Width
ADM695AN	4.75 V to 5.5 V	140 to 280	1.95	1.5 Ω	20 Ω	100 mA	50 mA	Yes	9 ns	5-Function, 16-pin, 200 ms Reset Pulse Width
ADM695AR	4.75 V to 5.5 V	140 to 280	1.95	1.5 Ω	20 Ω	100 mA	50 mA	Yes	9 ns	5-Function, 16-pin, 200 ms Reset Pulse Width
ADM696AN	3.00 V to 5.5 V	35 to 70	1.95	1.5 Ω	20 Ω	100 mA	50 mA	Yes	9 ns	4-Function, 16-pin, Adjustable Reset Threshold, with automatic battery backup switching
ADM696AR	3.00 V to 5.5 V	35 to 70	1.95	1.5 Ω	20 Ω	100 mA	50 mA	Yes	9 ns	4-Function, 16-pin, Adjustable Reset Threshold, with automatic battery backup switching
ADM697AN	3.00 V to 5.5 V	35 to 70	1.95	1.5 Ω	20 Ω	100 mA	50 mA	Yes	9 ns	4-Function, 16-pin, Adjustable Reset Threshold, with fast gating of CE signals
ADM697AR	3.00 V to 5.5 V	35 to 70	1.95	1.5 Ω	20 Ω	100 mA	50 mA	Yes	9 ns	4-Function, 16-pin, Adjustable Reset Threshold, with fast gating of CE signals
ADM698AN	3.00 V to 5.5 V	140 to 280	1.95	1.5 Ω	20 Ω	100 mA	50 mA	Yes	9 ns	Single Function, 8-pin, Reset Only
ADM698AR	3.00 V to 5.5 V	140 to 280	1.95	1.5 Ω	20 Ω	100 mA	50 mA	Yes	9 ns	Single Function, 16-pin, Reset Only
ADM699AN	3.00 V to 5.5 V	140 to 280	1.95	1.5 Ω	20 Ω	100 mA	50 mA	Yes	9 ns	Dual Function, 8-pin, Reset and Watchdog
ADM699AR	3.00 V to 5.5 V	140 to 280	1.95	1.5 Ω	20 Ω	100 mA	50 mA	Yes	9 ns	Dual Function, 16-pin, Reset and Watchdog

*$R_{ON}=V_{DROP}/I_{OUT}$.

Voltage References

Mfr.'s Type	Output Voltage (+V)	Initial Accuracy Max. (±mV)	Output Voltage Drift (ppm/°C)
AD589MH	1.235	5.0	10
AD589LH	1.235	5.0	25
AD589KH	1.235	5.0	50
AD589JH	1.235	5.0	100
AD589JR	1.235	5.0	100
REF191ES	2.048	10.0	25
REF191GP	2.048	10.0	25
REF191GS	2.048	10.0	25
REF43GP	2.500	2.5	25
REF43GS	2.500	2.5	25
REF43GZ	2.500	2.5	25
REF192FS	2.500	5.0	25
AD580MH	2.500	10.0	2
REF192GP	2.500	10.0	25
REF192GS	2.500	10.0	25
AD680JN	2.500	10.0	25
AD680JR	2.500	10.0	25
AD1403AN	2.500	10.0	25
AD680JT	2.500	10.0	30
AD1403N	2.500	25.0	40
AD580JH	2.500	75.0	15
AD780BN	2.500/3.000	1.0	3
AD780AN	2.500/3.000	5.0	7
AD780AR	2.500/3.000	5.0	7
REF193GP	3.000	10.0	25
REF193GS	3.000	10.0	25
REF196GP	3.300	10.0	25
REF196GS	3.300	10.0	25
REF194ES	4.500	2.0	5
REF194FS	4.500	5.0	10
REF194GP	4.500	10.0	25
REF194GS	4.500	10.0	25
REF198ES	4.096	2.0	5
REF198FS	4.096	5.0	10
REF198GP	4.096	10.0	25
REF198GS	4.096	10.0	25
REF195ES	5.000	2.0	5
AD586MN	5.000	2.0	2
AD586LN	5.000	2.5	5
AD586LQ	5.000	2.5	5
REF02HP	5.000	2.5	25
AD586KQ	5.000	5.0	15
AD586KR	5.000	5.0	15
REF195FS	5.000	5.0	20
REF02CS	5.000	5.0	65
REF02CP	5.000	5.0	65
REF02CJ	5.000	5.0	65
REF02CZ	5.000	5.0	65
REF195GP	5.000	10.0	20
REF195GS	5.000	10.0	20
AD586JQ	5.000	20.0	25
AD688BQ	10.000	2.0	3
AD688AQ	10.000	5.0	3
AD587LN	10.000	5.0	5
AD587KN	10.000	5.0	10
REF01HP	10.000	5.0	25
AD581KH	10.000	10.0	15
AD587JN	10.000	10.0	20
REF01CP	10.000	10.0	65
REF01CS	10.000	10.0	65
REF01CZ	10.000	10.0	65
AD581JH	10.000	30.0	30
AD588JQ	Selectable	3.0	3
AD584LH	Selectable	2.5*	5
AD584KH	Selectable	3.5*	15
AD584JH	Selectable	7.5*	30
AD584JN	Selectable	7.5*	30
—	—	—	—
—	—	—	—

*Voltage Inverter Configuration.

Micropower Linear Voltage Regulators — Dual Mode, +5, or Adjustable +1.6 V to +16 V

Mfr.'s Type		Input Voltage Range (V)		Nominal Output Voltage (V)		I_{OUT} (mA)	I_Q (µA)	Line Reg. (%/V)	Load Reg. (mV/mA)	Vreference (V)		V_{batt} Detect	I_{OUT} Sense	V_{temp} Output	Dropout Voltage mV @ Imax
PDIP	SOIC	Min.	Max.	Min.	Max.					Min.	Max.				
ADM663AN	ADM663AR	+2.0	+16.5	+4.75	+5.25	40	12	0.35	7.0	+1.27	+1.33	No	Yes	Yes	NS
ADP667AN	ADP667AR	+3.5	+16.5	+4.80	+5.20	200	20	0.25	0.5	+1.23	+1.28	Yes	No	No	250
ADM666AN	ADM666AR	+2.0	+16.5	+4.75	+5.25	40	12	0.35	7.0	+1.27	+1.33	Yes	No	No	NS

DC to DC Converters — Unregulated Switch Cap Voltage

Mfr.'s Type		DC Input Voltage Range (V)	Integral EMI Filter	DC Output Voltage Range (V)	I_{OUT} (A)
PDIP	SOIC				
ADM660AN	ADM660AR	+1.5 to +7*, +2.5 to +7†	No	–1.5 to –7*, +5 to +14†	0.1
ADM8660AN	ADM8660AR	+1.5 to +7	No	–1.5 to –7	0.1

*Voltage Inverter Configuration. †Voltage Double Configuration.

Modular DC/DC Converters

- ► Inaudible >20 kHz Converter Switching Frequency
- ► Continuous, Six-Sided EMI/RFI Shielding Except on 1 Watt and 1.8 Watt Models
- ► Output Short Circuit Protection; Either Output to Common
- ► Automatic Restart after Short Condition Removed
- ► Automatic Starting with Reverse Current Injected into Outputs
- ► Low Output Ripple and Noise
- ► High Temperature Stability
- ► Free Air Convection Cooling; No External Heat Sink or Specification Derating Is Required over the Operating Temperature Range

Analog Devices' line of compact dc/dc converters offers system designers a means of supplying a reliable, easy to use, low cost solution to a variety of floating (analog and digital) power applications. These devices provide high accuracy, short circuit protected, regulated outputs with very low output noise and ripple characteristics. **Specifications:** Typical @ +25°C at nominal input voltage unless otherwise noted.

Mfr.'s Type	Output Voltage (Volts)	Output Current (mA)	Input Voltage (Volts)	Input* Voltage Range (Volts)	Input Current Full Load	Output Voltage Error Max.	Temperature Coefficient /°C Max.	Efficiency Full Load Min.	Dimensions (Inches)
958	5	100	5	4.50/5.50	200.00 mA	±5.0%	±0.010% typ.	50%	1.25 × 0.8 × 0.400
941	±12	±150	5	4.75/5.25	1.17 A	±1.0%	±0.010%	58%	2.00 × 2.0 × 0.380
960	±12	±40	5	4.50/5.50	384.00 mA	±5.0%	±0.010% typ.	50%	1.25 × 0.8 × 0.400
962	±15	±33	5	4.50/5.50	396.00 mA	±5.0%	±0.010% typ.	50%	1.25 × 0.8 × 0.400
966	±15	±190	12	11.20/13.20	710.00 mA	±1.0%	±0.005% typ.	62% typ.	2.00 × 2.0 × 0.380
949	±15	±60†	5	4.65/5.50	0.60 A	±2.0%	±0.030%	58%	2.00 × 1.0 × 0.375
940	±15	±150	5	4.75/5.25	1.35 A	±1.0%	±0.010%	62%	2.00 × 2.0 × 0.380
945	±15	±150	28	23.00/31.00	250.00 mA	±0.5%	±0.010%	61%	2.00 × 2.0 × 0.380

*Models 940 and 941 will deliver up to 120 mA output current over an input voltage range of 4.65 V dc and 5.5 V dc. †Single-ended or unbalanced operation is permissible such that total output current load does not exceed a total of 120 mA.

Modular AC/DC Power Supplies

- ► Current Limit Short Circuit Protection
- ► PC Mounted and Chassis Mounted Versions
- ► Single (+5 V), Dual (±15 V), and Triple (±15 V/+5 V) Output Supplies
- ► Current Outputs: 100 mA to 500 mA for Dual and Triple Output Supplies; 1000 mA to 5000 mA for Single Output Supplies
- ► Wide Input Voltage Range
- ► Low Output Ripple and Noise
- ► Excellent Line and Load Regulation Characteristics
- ► High Temperature Stability
- ► Free Air Convection Cooling; No External Heat Sink Required

Analog Devices offers a broad line of modular ac/dc power supplies that provide both OEMs and designers a reliable, easy to use, low-cost solution to their power requirements. Models are available in PC mountable and chassis mountable designs with 5 volt to 15 volt (single, dual, triple) outputs and current ratings from 100 mA to 5 amps. Since these modular supplies are fully encapsulated, no trimming or external component selection is necessary; simply mount the unit, connect power and output leads, and you're on the air! **Specifications:** Typical @ +25°C and 115 V ac 60 Hz unless otherwise noted.

PC Board Mounted — Dual Output

Mfr.'s Type	Output Voltage (Volts)	Output Current (mA)	Line Reg. Max. (%)	Load Reg. Max. (%)	Output Voltage Error Max.	Ripple and Noise Max. (mV rms)	Dimensions (Inches)
902-2	±15	±100	0.02	0.02	+300 mV, –0 mV	0.5	3.50 × 2.5 × 0.875
920	±15	±200	0.02	0.02	+300 mV, –0 mV	0.5	3.50 × 2.5 × 1.250
925	±15	±350	0.02	0.02	±1%	0.5	3.50 × 2.5 × 1.620

PC Board Mounted — Triple Output

923	±15, +5	±100, 500	0.02, 0.02	0.02, 0.05	±1%, ±1%	0.5, 0.5	3.50 × 2.5 × 1.250

Chassis Mounted — Dual Output

970	±15	±200	0.05	0.05	±2%	1.0	4.40 × 2.7 × 1.450
975	±15	±500	0.05	0.05	±2%	1.0	4.40 x 2.7 × 2.000

Chassis Mounted — Single Output

955	5	1000	0.05	0.15	±2%	2.0	4.40 × 2.7 × 1.450
977	5	5000	0.05	0.10	±2%	100.0 (p-p typ.)	4.75 × 2.7 × 1.450

Thermal Management

Voltage Output Temperature Sensors

Mfr.'s Type		Voltage Output @ +25°C (V)	Output Scale Factor	Accuracy @ +25°C Typ.	Linearity (°C)	Operating Range (°C)	Digital Output	Supply Range (V)	Iq Typ. (µA)
TO-92	SOIC								
AD22100AT	AD22100AR	1.375	22.5 mV/°C	±1.0	0.50%	–50 to +150	—	+4.0 to +6.0	500.00
AD22100KT	AD22100KR	1.375	22.5 mV/°C	±0.5	0.50%	–50 to +150	—	+4.0 to +6.0	500.00
AD22100ST	AD22100SR	1.375	22.5 mV/°C	±1.0	1.00%	–50 to +150	—	+4.0 to +6.0	500.00
AD22103KT	AD22103KR	0.250	28.0 mV/°C	±2.0	0.50%	–50 to +150	—	+2.7 to +3.6	500.00
—	TMP03FS	*	†	±1.0	±1.00	–55 to +150	1 Open Collector	+4.5 to +7.0	900.00
—	TMP04FS	*	‡	±1.0	±1.00	–55 to +150	TTL/CMOS	+4.5 to +7.0	900.00
—	TMP35FS	0.250	10.0 mV/°C	±1.0	0.50	+10 to +125	—	+2.7 to +5.5	0.01
—	TMP35GS	0.250	10.0 mV/°C	±1.0	0.50	+10 to +125	—	+2.7 to +5.5	0.01
—	TMP36FS	0.750	10.0 mV/°C	±1.0	0.50	–40 to +125	—	+2.7 to +5.5	0.01
—	TMP36GS	0.750	10.0 mV/°C	±1.0	0.50	–40 to +125	—	+2.7 to +5.5	0.01
—	TMP37FS	0.500	20.0 mV/°C	±1.0	0.50	+5 to +100	—	+2.7 to +5.5	0.01
—	TMP37GS	0.500	20.0 mV/°C	±1.0	0.50	+5 to +100	—	+2.7 to +5.5	0.01

*35 Hz Serial Digital Output. †(°C = 260 – {450 * T1} /T2). ‡(°F = 500 – {810 * T1} /T2).

Current Output Temperature Sensors

Mfr.'s Type		Current Output @ +25°C	Output Scale Factor	Accuracy @ +25°C	Linearity (°C)	Operating Range (°C)	Supply Range (V)	Iq (µA)
TO-52	Flat Pack							
AD590JH	AD590JF	298.2 µA	1 µA/°K	±5.0 µA	±1.50	–55 to +150	+4 to +30	Iout = Iq
AD590KH	AD590KF	298.2 µA	1 µA/°K	±2.5 µA	±0.80	–55 to +150	+4 to +30	Iout = Iq
AD590LH	AD590LF	298.2 µA	1 µA/°K	±1.0 µA	±0.40	–55 to +150	+4 to +30	Iout = Iq
AD590MH	AD590MF	298.2 µA	1 µA/°K	±0.5 µA	±0.30	–55 to +150	+4 to +30	Iout = Iq
AD592AN*	—	298.2 µA	1 µA/°K	±2.5 µA	±0.50	–55 to +150	+4 to +30	Iout = Iq
AD592BN*	—	298.2 µA	1 µA/°K	±1.0 µA	±0.40	–55 to +150	+4 to +30	Iout = Iq
AD592CN*	—	298.2 µA	1 µA/°K	±0.5 µA	±0.35	–55 to +150	+4 to +30	Iout = Iq

*TO-92 Package.

Thermal Management (Continued)

Temperature Switches with Temperature Output

Mfr.'s Type		Voltage Output @ +25°C (V)	Output Scale Factor	Accuracy @ +25°C	Linearity (°C)	Operating Range (°C)	Digital Output	Supply Range (V)	Iq (µA)
PDIP	SOIC								
TMP01EP	TMP01ES	1.49	5 mV/°K	±1.5	±0.5	–55 to +150	2 Open Collector	+4.5 to +13.2	800
TMP01FP	TMP01FS	1.49	5 mV/°K	±3.0	±0.5	–55 to +150	2 Open Collector	+4.5 to +13.2	800
TMP01FJ*	—	1.49	5 mV/°K	±3.0	±0.5	–55 to +150	2 Open Collector	+4.5 to +13.2	800

*TO-99.

Thermocouple Signal Conditioners

Mfr.'s Type			Voltage Output @ +25°C (V)	Output Scale Factor	Accuracy @ +25°C	Operating Range (°C)	Digital Output	Supply Range (V)	Iq (µA)
TO-116	CERDIP	SOIC							
AD594AD	AD594AQ	—	0.250	10 mV/°C	±3	+25 to +100	1 Open Collector	+5 to ±15	300
AD594CD	AD594CQ	—	0.250	10 mV/°C	±1	+25 to +100	1 Open Collector	+5 to ±15	300
AD595AD	AD595AQ	—	0.250	10 mV/°C	±3	+25 to +100	1 Open Collector	+5 to ±15	300
AD595CD	AD595CQ	—	0.250	10 mV/°C	±1	+25 to +100	1 Open Collector	+5 to ±15	300
AD596AH*	—	—	0.282	10 mV/°C	±4	+25 to +100	1 Open Collector	+5 to ±15	160
AD597AH*	—	AD597AR	0.282	10 mV/°C	±4	+25 to +100	1 Open Collector	+5 to ±15	160

*TO-100.

Signal Conditioners

4-to-20 mA Transmitter Signal Conditioners

Mfr.'s Type	Power (+Vcc Volts)	CMV Volts (rms)	CMR Min. (dB)	Accuracy ±/% Max.	Input Range (Volts)	Int. (VREF)	Output Range (mA)
1B21AN	±15 @ 10 mA	1500	90	0.050	0-+5/10, +1-+5	Y	0, 4-20
1B22AN	±15 @ 7.5 mA	1500	90	0.050	0-+5/10	N	0, 4-20
AD693AQ*	+12-+36 @ 0.7 mA	Vcc-4 V	80	0.050-0.07	@ 30 mV/60 mV	Y	0, 4-20
AD694JN	+4.5-+36 @ 2.0 mA	—	—	0.015-0.30	or 0 to +2	Y	0, 4-20

*Loop powered, no local supply needed.

Strain Gage Signal Conditioners

Mfr.'s Type	No. of Ports	Power Supply (Volts)	Power Supply (mA)	CMRR @ Av = 1000 @ 60 Hz dB Min.	Bandwidth AV = 1	Linearily ±% Max.	Gain Error @ +25°C ±%	Output Offset +25°C ±mV Max.	Output Offset TC ±µV Max.
1B32AN	0	±15	+4/–1	140	4 Hz	0.005	0.1	40.0	0.2
1B31AN	0	±15	±10	100	1 kHz	0.005	3.0	0.2	2.0

mV or Thermocouple Signal Conditioner

1B51AN	2	±15	+12/–4	160 @ Av = 1	3 Hz	0.050	1.0	25.0-50.0 (RTO)	50.0-175.0 (RTO)

RTD Signal Conditioner

1B41AN	2	±15	+12/–4	160 @ Av = 1	3 Hz	0.025	5.0	25.0-50.0 (RTO)	50.0-175.0 (RTO)

Motion Control

Monolithic Single Channel Resolver to Digital Converters

Mfr.'s Type	Resolution	Accuracy (±1 LSB)	Max. Track RPS	Max. Bandwidth	Input Signal Format	Signal Levels (Volts RMS)	Reference Frequency Hz	Velocity Linearity	Temperature Range (°C)	Package Type
AD2S80AJD	10-16	±8.000	1040	Selectable	R only	2.0	50-20 K	±3.00%	0 to +70	40 Lead CERDIP
AD2S80AKD	10-16	±4.000	1040	Selectable	R only	2.0	50-20 K	±3.00%	0 to +70	40 Lead CERDIP
AD2S80ALD	10-16	±2.000	1040	Selectable	R only	2.0	50-20 K	±3.00%	0 to +70	40 Lead CERDIP
AD2S82AHP	10-16	±22.000	1040	Selectable	R only	2.0	50-20 K	±3.00%	0 to +70	44 Lead PLCC
AD2S82AJP	10-16	±8.000	1040	Selectable	R only	2.0	50-20 K	±3.00%	0 to +70	44 Lead PLCC
AD2S82AKP	10-16	±4.000	1040	Selectable	R only	2.0	50-20 K	±3.00%	0 to +70	44 Lead PLCC
AD2S82ALP	10-16	±2.000	1040	Selectable	R only	2.0	50-20 K	±3.00%	0 to +70	44 Lead PLCC
AD2S83AP	10-16	±8.000	1040	Selectable	R only	2.0	50-20 K	±0.25%	0 to +70	44 Lead PLCC
AD2S81AJD	12	±30.000	260	Selectable	R only	2.0	400-20 K	±3.00%	0 to +70	28 Lead CERDIP
AD2S90AP	12	±8.000	750	10 kHz	R only	2.0	10 K	±1.00%	0 to +70	20 Lead PLCC

Programmable Sine Wave Oscillator

AD2S99AP	—	±10.000%	—	—	—	2.2	2-20 K	—	–40 to +85	20 Lead PLCC

LVDT Signal Conditioners

Mfr.'s Type	Transfer Function	Gain Error (%)	Gain Drift Max. (ppm)	Excitation Output Voltage (Vrms)	Supply Voltage (V)	Temperature Range (°C)	Package Type
AD598AD	Vout = (Va – Vb) /Va + Vb) * 500 µA * R	±1	±50	+2.1 to +24	+13 to +36, ±13	–40 to +85	20 Lead CERDIP
AD598JR	Vout = (Va – Vb) /Va + Vb) * 500 µA * R	±1	±100	+2.1 to +24	+13 to +36, ±13	0 to +70	20 Lead SOIC
AD698AP	Vout = (Va / Vb) * 500 µA * R	±1	±100	+2.1 to +24	+13 to +36, ±13	–40 to +85	28 Lead PLCC
AD698SQ	Vout = (Va / Vb) * 500 µA * R	±1	±100	+2.1 to +24	+13 to +36, ±13	–55 to +125	24 Lead CERDIP

Packages

Dimensions mm (inch)

Fig. 1-9

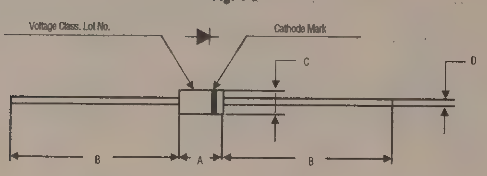


Figure	A		B		C		D	
	mm	In.	mm	In.	mm	In.	mm	In.
1	3	0.12	25 min	0.98	Ø2.5	Ø0.10	Ø0.58	Ø0.02
2	5	0.20	25 min	0.98	Ø3	Ø0.12	Ø0.60	Ø0.02
3	5	0.20	30 min	1.18	Ø3	Ø0.12	Ø0.8	Ø0.03
4	7.5	0.295	25 min	0.98	Ø4	Ø0.157	Ø0.8	Ø0.03
5	7.5	0.295	30 min	1.18	Ø6.4	Ø0.25	Ø1.2	Ø0.05
6	5	0.20	25 min	0.98	Ø3	Ø0.12	Ø0.8	Ø0.30
7	7.5	0.295	25 min	0.98	Ø4	Ø0.157	Ø0.8	Ø0.30
8	7.5	0.295	25 min	0.98	Ø4	Ø0.157	Ø1.0	Ø0.039
9	10	0.394	24 min	0.945	Ø7.5	Ø0.295	Ø1.8	Ø0.071

Fig. 10A

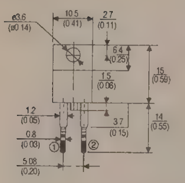


Fig. 10B

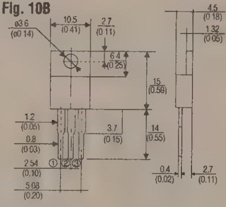


Fig. 11

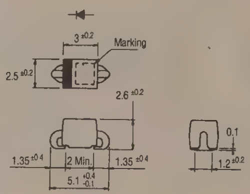


Fig. 12

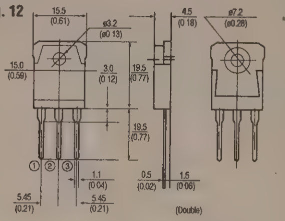


Fig. 13

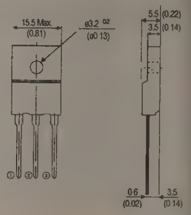


Fig. 14

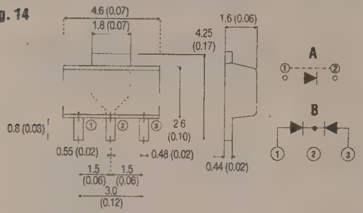


Fig. 15

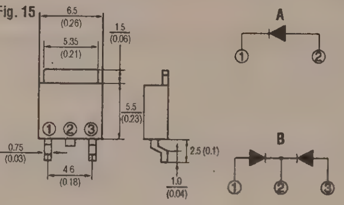
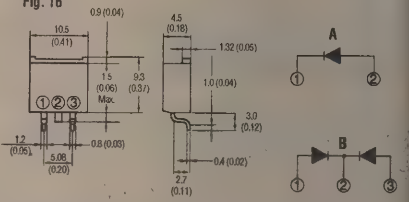


Fig. 16



Full molded package eliminates the need for isolating hardware and greatly reduces your cost as compared with mounting non-isolated package. Contact Allied for information on complete line availability.

Schottky Barrier Rectifiers

Mfr.'s Type	Maximum Ratings		I_{FSM} ^{*2} Amps	Characteristics (T_a = 25°C) V_{FM} Max. Volts	I_{RRM} ^{*3} Max. mA	Dimensions Figure
	V_{RRM} Volts	I_o ^{*1} Amps				
ERA82-004	45	0.60 (T_a = 60°C)	25	0.55 (I_F = 0.6 A)	1.0	1
ERA83-006	60	1.00 (T_l = 111°C)	30	0.58 (I_F = 1.0 A)	2.0	1
ERA81-004	45	1.00 (T_a = 25°C)	50	0.55 (I_F = 1.0 A)	2.0	2
ERA84-009	90	1.00 (T_a = 25°C)	30	0.90 (I_F = 1.0 A)	1.0	2
ERB81-004	45	2.00 (T_a = 25°C)	100	0.55 (I_F = 2.0 A)	5.0	4
ERC81-004	45	3.00 (T_a = 25°C)	120	0.55 (I_F = 3.0 A)	5.0	5
ERC81-006	60	3.00 (T_J = 104°C)	80	0.58 (I_F = 3.0 A)	5.0	5
ERC81S-004	45	5.00 (T_a = 25°C)	120	0.55 (I_F = 3.0 A)	5.0	5
ESAB82-004†	45	5.00 (T_c = 103°C)	100	0.55 (I_F = 2.0 A)	5.0	10B
ESAC82-004K†	45	15.00 (T_c = 97°C)	120	0.55 (I_F = 4.0 A)	5.0	10B
ESAD83-004K	45	30.00 (T_c = 90°C)	250	0.55 (I_F = 12.5 A)	20.0	12
ESAD83M-006	60	30.00 (T_c = 75°C)	200	0.58 (I_F = 12.5 A)	20.0	13
ESAE83-004	45	60.00 (T_c = 84°C)	500	0.55 (I_F = 25.0 A)	50.0	12
SE014	40	1.00 (T_c = 25°C)	10	0.55 (I_F = 1.0 A)	2.0	14A
SE024	40	0.95 (T_c = 25°C)	5	0.55 (I_F = 0.3 A)	2.0	14B
SC802-04	45	1.00 (T_l = 115°C)	40	0.55 (I_F = 1.0 A)	2.0	11
SC802-06	60	1.00 (T_l = 111°C)	30	0.58 (I_F = 1.0 A)	2.0	11
SC802-09	90	1.00 (T_l = 110°C)	30	0.85 (I_F = 1.0 A)	1.0	11
ERB83-004	45	2.00 (T_a = 25°C)	80	0.55 (I_F = 2.0 A)	5.0	3
PA886C02	20	30.00 (T_c = 85°C)	250	0.40 (I_F = 12.5 A)	50.0	12
ESAE83-006	60	60.00 (T_c = 71°C)	500	0.55 (I_F = 25 A)	50.0	12
ESAD83-006	60	30.00 (T_c = 90°C)	200	0.58 (I_F = 125 A)	20.0	12
KS826S04	45	5.00 (T_c = 92°C)	80	0.55 (I_F = 5.0 A)	5.0	15A
KS823C04	45	5.00 (T_c = 87°C)	60	0.55 (I_F = 2.5 A)	5.0	15B
TS802C04	45	10.00 (T_c = 97°C)	120	0.55 (I_F = 4.0 A)	5.0	16B
TS805C04	45	20.00 (T_c = 92°C)	120	0.60 (I_F = 10 A)	15.0	16B
TS808C04	45	30.00 (T_c = 93°C)	250	0.55 (I_F = 12.5 A)	20.0	16B
TS802C09	90	10.00 (T_c = 92°C)	80	0.90 (I_F = 4.0 A)	5.0	16B

Notes: ( ) indicates conditions. **Other Conditions:** ^{*1}Square wave duty 1/2. ^{*2}Sine wave, 10 ms. ^{*3}V_R = V_{RRM}. † 220. **Thermal Ratings:** –40 to +125°C.

Fast Recovery Rectifiers

Mfr.'s Type	Maximum Ratings		I_{FSM} ^{*2} Amps	Characteristics (T_a = 25°C)		T_{RR} µS	Dimensions Figure
	V_{RRM} Volts	I_o ^{*1} Amps		V_{FM} Max. Volts	I_{RRM} ^{*3} Max. µA		
ERA34-10	1000	0.1 (T_a = 60°C)	2	3.00 (I_F = 0.1 A)	50	0.150 (I_F = I_R = 0.1 A)	1
ERC06-15	1500	1.5 (T_a = 40°C)	50	1.50 (I_F = 4.0 A)	10	4.000 (I_F = I_R = 0.1 A)	5
SC902-2	200	1.0 (T_a = 25°C)	25	1.05 (I_F = 1.0 A)	50	0.035 (I_F = 0.1 A, I_R = 0.2 A)	11
SC311-4	400	0.5 (T_a = 25°C)	10	2.50 (I_F = 0.5 A)	50	0.050 (I_F = 0.1 A, I_R = 0.2 A)	11
SC311-6	600	0.5 (T_a = 25°C)	10	2.50 (I_F = 0.5 A)	50	0.050 (I_F = 0.1 A, I_R = 0.2 A)	11
ERC90-02B	200	8.0 (T_c = 125°C)	50	0.98 (I_F = 8.0 A)	100	0.035 (I_F = 0.1 A, I_R = 0.2 A)	10A
ESAC92-02B	200	16.0 (T_c = 105°C)	50	0.98 (I_F = 8.0 A)	100	0.035 (I_F = 0.1 A, I_R = 0.2 A)	10B
ESAD92-02B	200	30.0 (T_c = 98°C)	100	0.98 (I_F = 15.0 A)	200	0.040 (I_F = 0.1 A, I_R = 0.2 A)	12
PA905C4	400	20.0 (T_c = 92°C)	80	1.50 (I_F = 10.0 A)	500	0.050 (I_F = 0.1 A, I_R = 0.2 A)	12
PA905C6	600	20.0 (T_c = 100°C)	80	1.70 (I_F = 10.0 A)	500	0.050 (I_F = 0.1 A, I_R = 0.2 A)	12
SC321-2	200	1.0 (T_a = 25°C)	40	1.05 (I_F = 1.0 A)	50	0.100 (I_F = 0.1 A, I_R = 0.1 A)	11
KS926S2	200	5.0 (T_c = 106°C)	70	0.95 (I_F = 5.0 A)	100	0.035 (I_F = 0.1 A, I_R = 0.2 A)	15A
KS923C2	200	5.0 (T_c = 103°C)	50	0.95 (I_F = 2.5 A)	100	0.035 (I_F = 0.1 A, I_R = 0.2 A)	15B
TS902C2	200	10.0 (T_c = 125°C)	50	0.95 (I_F = 5.0 A)	100	0.035 (I_F = 0.1 A, I_R = 0.2 A)	16B
TS912S6	200	10.0 (T_c = 105°C)	80	1.70 (I_F = 10.0 A)	500	0.050 (I_F = 0.1 A, I_R = 0.2 A)	16A
TS906C2	200	20.0 (T_c = 112°C)	80	0.98 (I_F = 10.0 A)	200	0.035 (I_F = 0.1 A, I_R = 0.2 A)	16B

Notes: ( ) Indicates conditions. **Other Conditions:** ^{*1}Single phase, sine half wave. ^{*2}1/2 cycle, 50 Hz. ^{*3}V_R = V_{RRM}. Additional full molded packages. **Thermal Ratings:** –40°C to +150°C.

1 and 3 Amp Silicon Rectifiers

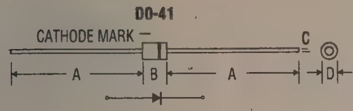


Fig. 1

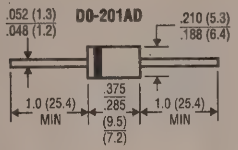


Fig. 2

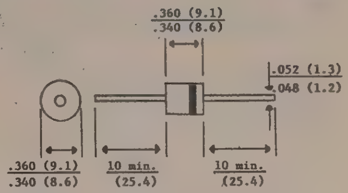


Fig. 3

Mfr.'s Type	V_{RM} V_{RRM} V_{RWM}	V_R (RMS)	I_O	I_{FMS}	T_{RR} nSec*	Figure
1N4001	50 V	35 V	1.0 A	30 A	—	1
1N4002	100 V	70 V	1.0 A	30 A	—	1
1N4003	200 V	140 V	1.0 A	30 A	—	1
1N4004	400 V	280 V	1.0 A	30 A	—	1
1N4005	600 V	420 V	1.0 A	30 A	—	1
1N4006	800 V	560 V	1.0 A	30 A	—	1
1N4007	1000 V	700 V	1.0 A	30 A	—	1
1N5400	50 V	35 V	3.0 A	200 A	—	2
1N5401	100 V	70 V	3.0 A	200 A	—	2
1N5402	200 V	140 V	3.0 A	200 A	—	2
1N5404	400 V	280 V	3.0 A	200 A	—	2
1N5406	600 V	420 V	3.0 A	200 A	—	2
1N5407	800 V	560 V	3.0 A	200 A	—	2
1N5408	1000 V	700 V	3.0 A	200 A	—	2
PR3003	200 V	140 V	3.0 A	150 A	150	2
PR3005	600 V	420 V	3.0 A	150 A	250	2
PX6A03	200 V	140 V	6.0 A	400 A	—	3
PX6A04	400 V	280 V	6.0 A	400 A	—	3
PX6A05	600 V	420 V	6.0 A	400 A	—	3
PX6A06	800 V	560 V	6.0 A	400 A	—	3
PX6A07	1000 V	700 V	6.0 A	400 A	—	3

T_JT_{STG} = –65 to +175°C. 6 Amp standard and fast recovery rectifiers also available. *I_F = 0.5 A, I_R = –1.0 A, I_{RR} = –0.25 A.

Standard Recovery — 3 Phase Full Wave Bridges

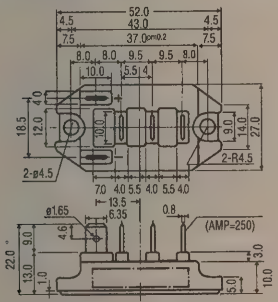


Fig. 1

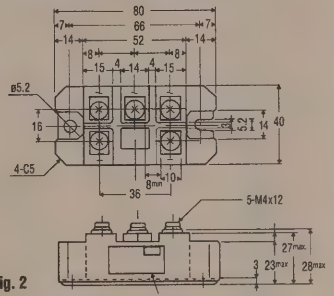


Fig. 2

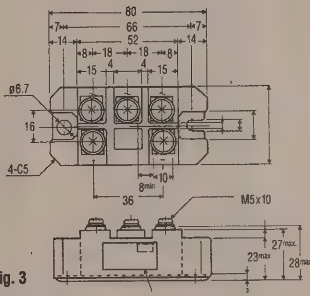


Fig. 3

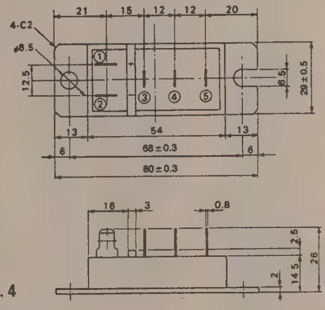


Fig. 4

- Glass Passivated Chip
- Ideal for Inverters, DC Motors and Battery Chargers

Mfr.'s Type	Ratings and Characteristics							Figure
	Rated Voltage (V)	Rated Current (A)	Surge Current (A)	Junction Temperature (°C)	Insulation Voltage (V)	Forward Voltage (V)	Thermal Resistance (°C/W)	
6RI30E-060	600	30	360	150	2000	1.10	0.80	1
6RI50E-060	600	50	480	150	2000	1.20	0.42	2
6RI75E-060	600	75	1000	150	2000	1.15	0.30	3
6RI100E-060	600	100	1200	150	2000	1.15	0.22	3
6RI30G-120	1200	30	320	150	2500	1.30	0.80	4

800, 1200 and 1600 V versions also available.

Silicon Bridge Rectifiers

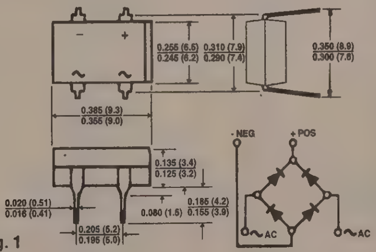


Fig. 1

Mfr.'s Type	V_{RM} V_{RRM} V_{RWM}	V_R (RMS)	I_{FSM}	I_O	T_{RR} nSec	V_{FM}	I_{RM} T_A= 100°C	Figure
DF005	50 V	35 V	30 A	1.0 A @ Ta = 40°C	—	1.1 V	0.5 mA	1
RDF005	50 V	35 V	30 A	1.0 A @ T_a = 40°C	200	1.3 V	0.5 mA	1
DF01	100 V	70 V	30 A	1.0 A @ T_a = 40°C	—	1.1 V	0.5 mA	1
DF02	200 V	140 V	30 A	1.0 A @ T_a = 40°C	—	1.1 V	0.5 mA	1
RDF02	200 V	140 V	30 A	1.0 A @ T_a = 40°C	200	1.3 V	0.5 mA	1
DF04	400 V	280 V	30 A	1.0 A @ T_a = 40°C	—	1.1 V	0.5 mA	1
RDF04	400 V	280 V	30 A	1.0 A @ T_a = 40°C	200	1.3 V	0.5 mA	1
DF06	600 V	420 V	30 A	1.0 A @ T_a = 40°C	—	1.1 V	0.5 mA	1
DF10	1000 V	700 V	30 A	1.0 A @ T_a = 40°C	—	1.1 V	0.5 mA	1

T_{STG} = –55 to +150°C. Recovery Test Conditions — I_F = 0.5 A, I_R = –1.0 A, I_{RR} = –0.25 A. T_j = –55 to +125°C.

Silicon Bridge Rectifiers (continued)

Dimensions — inches and (millimeters)

Fig. 2

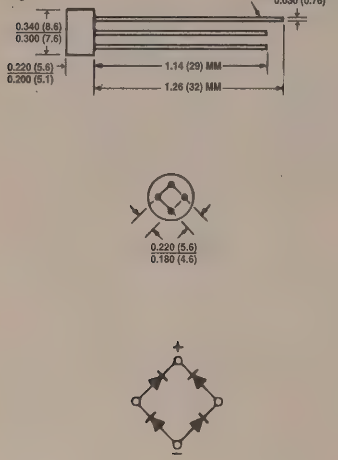


Fig. 3

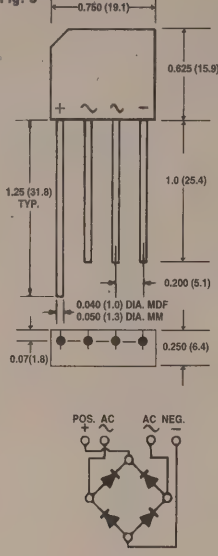


Fig. 4

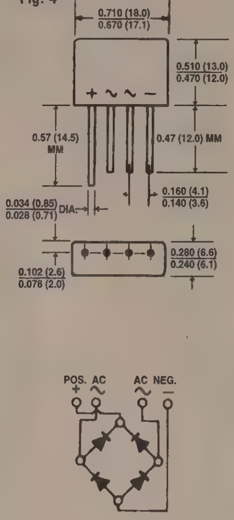
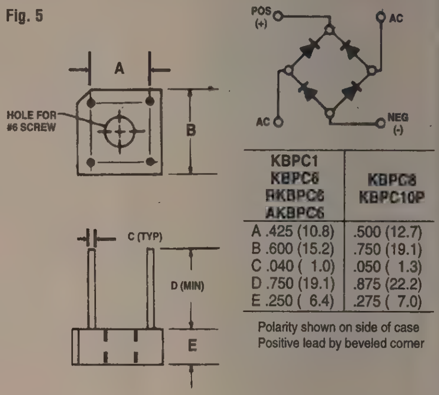


Fig. 5



	KBPC1 KBPC6 RKBPC6 AKBPC6	KBPC8 KBPC10P
A	.425 (10.8)	.500 (12.7)
B	.600 (15.2)	.750 (19.1)
C	.040 (1.0)	.050 (1.3)
D	.750 (19.1)	.875 (22.2)
E	.250 (6.4)	.275 (7.0)

Polarity shown on side of case
Positive lead by beveled corner

Fig. 6

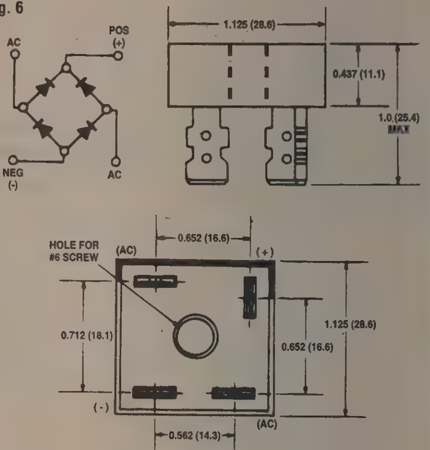


Fig. 7

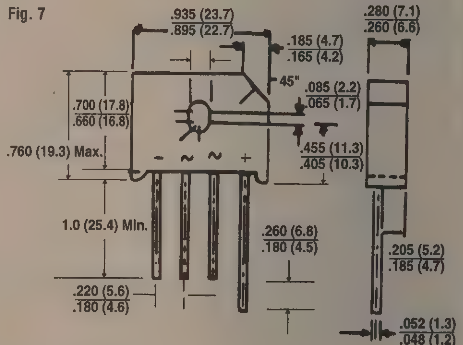
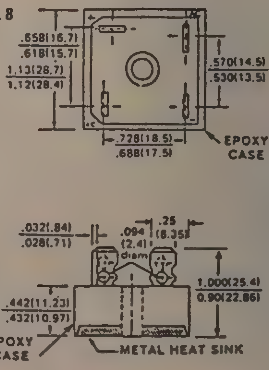


Fig. 8

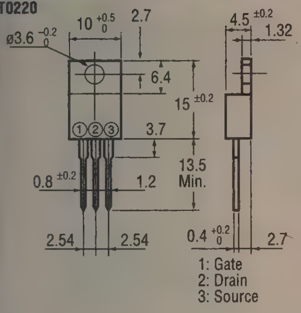


Mfr.'s Type	V_{RM} V_{RRM} V_{RWM}	Vr (RMS)	I_{FSM}	Io	T_{RR} nSec	V_{FM}	I_{RM} T_A = 100°C †T_c = 100°C	Figure
W005M	50 V	35 V	40 A	1.5 A @ T_a = 25°C	—	1.0 V	1.0 mA	2
W01M	100 V	70 V	40 A	1.5 A @ T_a = 25°C	—	1.0 V	1.0 mA	2
RW01M	100 V	70 V	40 A	1.5 A @ T_a = 50°C	200	1.3 V	1.0 mA	2
W02M	200 V	140 V	40 A	1.5 A @ T_a = 25°C	—	1.0 V	1.0 mA	2
RW02M	200 V	140 V	40 A	1.5 A @ T_a = 50°C	200	1.3 V	1.0 mA	2
W04M	400 V	280 V	40 A	1.5 A @ T_a = 25°C	—	1.0 V	1.0 mA	2
RW04M	400 V	280 V	40 A	1.5 A @ T_a = 50°C	200	1.3 V	1.0 mA	2
KBP01	100 V	70 V	40 A	1.5 A @ T_a = 25°C	—	1.0 V	1.0 mA	4
KBP04	400 V	280 V	40 A	1.5 A @ T_a = 25°C	—	1.0 V	1.0 mA	4
KBL01	100 V	70 V	200 A	4.0 A @ T_a = 25°C	—	1.2 V	1.0 mA	3
KBL04	400 V	280 V	200 A	4.0 A @ T_a = 25°C	—	1.2 V	1.0 mA	3
KBL08	800 V	560 V	200 A	4.0 A @ T_a = 25°C	—	1.2 V	1.0 mA	3
KBPC6005	50 V	35 V	125 A	6.0 A @ T_c = 50°C	—	1.1 V	1.0 mA	5
RKBPC6005	50 V	35 V	125 A	6.0 A @ T_c = 50°C	200	1.3 V	1.0 mA	5
RKBPC601	100 V	70 V	125 A	6.0 A @ T_c = 50°C	200	1.3 V	1.0 mA	5
KBPC602	200 V	140 V	125 A	6.0 A @ T_c = 50°C	—	1.1 V	1.0 mA	5
RKBPC602	200 V	140 V	125 A	6.0 A @ T_c = 50°C	200	1.3 V	1.0 mA	5
KBPC604	400 V	280 V	125 A	6.0 A @ T_c = 50°C	—	1.1 V	1.0 mA	5
KBPC606	600 V	420 V	125 A	6.0 A @ T_c = 50°C	—	1.1 V	1.0 mA	5
RKBPC801	100 V	70 V	125 A	8.0 A @ T_c = 50°C	200	1.3 V	1.0 mA	5
RKBPC802	200 V	140 V	125 A	8.0 A @ T_c = 50°C	200	1.3 V	1.0 mA	5
RKBPC804	400 V	280 V	125 A	8.0 A @ T_c = 50°C	200	1.3 V	1.0 mA	5
KBPC1001P	100 V	70 V	150 A	10.0 A @ T_c = 50°C	—	1.1 V	1.0 mA	5
KBPC1002P	200 V	140 V	150 A	10.0 A @ T_c = 50°C	—	1.1 V	1.0 mA	5
KBPC1004P	400 V	280 V	150 A	10.0 A @ T_c = 50°C	—	1.1 V	1.0 mA	5
KBPC1008P	800 V	560 V	150 A	10.0 A @ T_c = 50°C	—	1.1 V	1.0 mA	5
KBPC1010P	1000 V	700 V	150 A	10.0 A @ T_c = 50°C	—	1.1 V	1.0 mA	5
KBPC2501	100 V	70 V	300 A	25.0 A @ T_c = 55°C	—	1.2 V	1.0 mA	6
KBPC2502	200 V	140 V	300 A	25.0 A @ T_c = 55°C	—	1.2 V	1.0 mA	6
KBPC2504	400 V	280 V	300 A	25.0 A @ T_c = 55°C	—	1.2 V	1.0 mA	6
KBPC2506	600 V	420 V	300 A	25.0 A @ T_c = 55°C	—	1.2 V	1.0 mA	6
KBPC2508	800 V	560 V	300 A	25.0 A @ T_c = 55°C	—	1.2 V	1.0 mA	6
KBPC35005	50 V	35 V	400 A	35.0 A @ T_c = 55°C	—	1.2 V	1.0 mA	6
KBPC3501	100 V	70 V	400 A	35.0 A @ T_c = 55°C	—	1.2 V	1.0 mA	6
KBPC3502	200 V	140 V	400 A	35.0 A @ T_c = 55°C	—	1.2 V	1.0 mA	6
RKBPC3502	200 V	140 V	400 A	35.0 A @ T_c = 55°C	200	1.3 V	1.0 mA	6
KBPC3504	400 V	280 V	400 A	35.0 A @ T_c = 55°C	—	1.2 V	1.0 mA	6
RKBPC3504	400 V	280 V	400 A	35.0 A @ T_c = 55°C	200	1.3 V	1.0 mA	6
KBPC3506	600 V	420 V	400 A	35.0 A @ T_c = 55°C	—	1.2 V	1.0 mA	6
RKBPC3506	600 V	420 V	400 A	35.0 A @ T_c = 55°C	300	1.2 V	1.0 mA	6
KBPC3508	800 V	560 V	400 A	35.0 A @ T_c = 55°C	—	1.2 V	1.0 mA	6
KBPC3510	1000 V	700 V	400 A	35.0 A @ T_c = 55°C	—	1.2 V	1.0 mA	6
KBU402	200 V	140 V	200 A	4.0 A @ T_a = 65°C	—	1.0 V	1.0 mA†	7
KBU404	400 V	280 V	200 A	4.0 A @ T_a = 65°C	—	1.0 V	1.0 mA†	7
KBU406	600 V	420 V	200 A	4.0 A @ T_a = 65°C	—	1.0 V	1.0 mA†	7
KBU410	1000 V	700 V	200 A	4.0 A @ T_a = 65°C	—	1.0 V	1.0 mA†	7
KBU602	200 V	140 V	250 A	6.0 A @ T_a = 65°C	—	1.0 V	1.0 mA†	7
KBU604	400 V	280 V	250 A	6.0 A @ T_a = 65°C	—	1.0 V	1.0 mA†	7
KBU606	600 V	420 V	250 A	6.0 A @ T_a = 65°C	—	1.0 V	1.0 mA†	7
KBU610	1000 V	700 V	250 A	6.0 A @ T_a = 65°C	—	1.0 V	1.0 mA†	7
KBU1002	200 V	140 V	300 A	10.0 A @ T_a = 65°C	—	1.0 V	1.0 mA†	7
KBU1004	400 V	280 V	300 A	10.0 A @ T_a = 65°C	—	1.0 V	1.0 mA†	7
KBU1006	600 V	420 V	300 A	10.0 A @ T_a = 65°C	—	1.0 V	1.0 mA†	7
KBU1010	1000 V	700 V	300 A	10.0 A @ T_a = 65°C	—	1.0 V	1.0 mA†	7
KBU8005	50 V	35 V	300 A	8.0 A @ T_a = 65°C	—	1.0 V	1.0 mA	7
KBU801	100 V	70 V	300 A	8.0 A @ T_a = 65°C	—	1.0 V	1.0 mA	7
KBU802	200 V	140 V	300 A	8.0 A @ T_a = 65°C	—	1.0 V	1.0 mA	7
KBU804	400 V	280 V	300 A	8.0 A @ T_a = 65°C	—	1.0 V	1.0 mA	7
KBU806	600 V	420 V	300 A	8.0 A @ T_a = 65°C	—	1.0 V	1.0 mA	7
KBU808	800 V	560 V	300 A	8.0 A @ T_a = 65°C	—	1.0 V	1.0 mA	7
KBU810	1000 V	700 V	300 A	8.0 A @ T_a = 65°C	—	1.0 V	1.0 mA	7
MP3502*	200 V	140 V	400 A	35.0 A @ T_c = 55°C	—	1.1 V	500.0 mA	8
MP3504*	400 V	280 V	400 A	35.0 A @ T_c = 55°C	—	1.1 V	500.0 mA	8
MP3506*	600 V	420 V	400 A	35.0 A @ T_c = 55°C	—	1.1 V	500.0 mA	8
MP3508*	800 V	560 V	400 A	35.0 A @ T_c = 55°C	—	1.1 V	500.0 mA	8
MP3510*	1000 V	700 V	400 A	35.0 A @ T_c = 55°C	—	1.1 V	500.0 mA	8

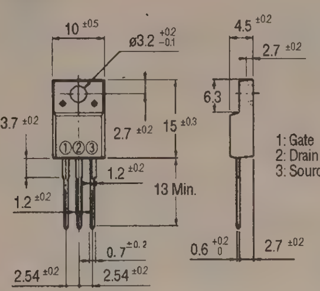
T_{STG} = –55 to +150°C. Recovery Test Conditions — I_F = 0.5 A, I_R = –1.0 A, I_{RR} = –.25 A. T_j = –55 to +125°C. *Molded plastic case with heatsink internally mounted in bridge encapsulation. Wire leads (0.04 dia.) available on fig. 6 and fig. 8 devices by adding "W" to the end of the part number.

N-Channel Silicon Power MOS-FET

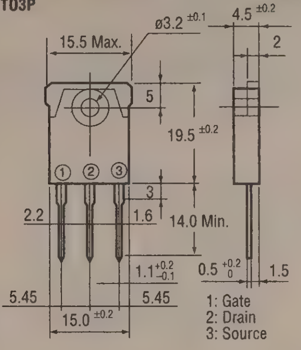
T0220



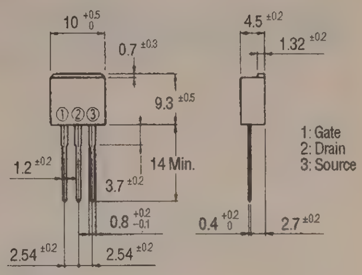
T0220F15



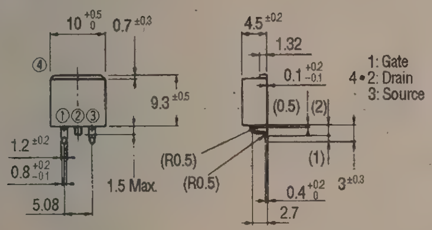
T03P



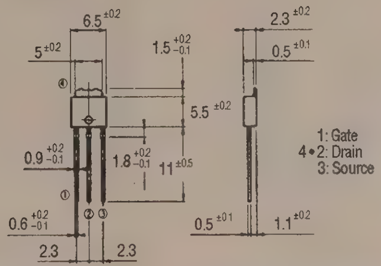
T-PACK L



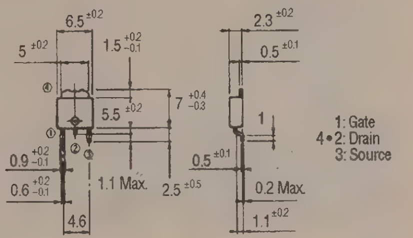
T-PACK S



K-PACK L



K-PACK S



- ► High Speed Switching
- ► Low On-Resistance, Low Driving Power
- ► F-I Series = Low RDS(ON)
- ► F-II Series = VGS ±30 V, Reduced Turn Off Time
- ► FAP-II Series = High Avalanche Ruggedness
- ► F-III Series = Logic Level, High g_{fs}
- ► FAP-III = Logic Level, High Avalanche Ruggedness
- ► F-V = FREDFET

Mfr.'s Type	Series	Maximum Ratings			Characteristics (Max.)					Package
		V_{DSS} (V)	I_D (A)	P_D (W)	$R_{DS(ON)}$ (Ω)	C_{iss} (pf)	C_{oss} (pf)	t_{on} (ns)	t_{off} (ns)	
2SK905	F-I	50	45.0	125	0.03	3000	1500	160	550	T03P
2SK906	F-I	100	32.0	125	0.06	3000	800	120	470	T03P
2SK900	F-I	250	12.0	80	0.30	1800	300	75	260	T0220
2SK902	F-I	250	30.0	150	0.10	3900	900	200	1000	T03P
2SK725	F-I	500	15.0	125	0.38	4000	500	130	440	T03P
2SK899	F-I	500	18.0	125	0.33	4000	500	130	440	T03P
2SK727-01	FAP-II	900	5.0	125	2.50	2400	240	110	420	T03P
2SK1017-01	F-II	450	20.0	150	0.35	3300	480	375	740	T03P
2SK952	F-II	800	2.5	45	7.00	500	90	90	170	T0220
2SK1081-01	FAP-II	800	7.0	125	2.20	1800	210	225	380	T03P
2SK956-01	FAP-II	800	9.0	150	1.50	2100	300	425	690	T03P
2SK1082-01	FAP-II	900	6.0	125	2.80	1800	210	225	380	T03P
2SK962-01	FAP-II	900	8.0	150	2.00	2100	300	425	690	T03P
2SK1010-01	FAP-II	500	6.0	80	1.60	1000	150	110	200	T0220
2SK1102-01MR	FAP-II	500	10.0	50	0.90	1800	240	165	360	T0220F15
2SK1510-01L	FAP-II	900	3.5	60	5.50	1200	120	145	255	T-PACK L
2SK1510-01S	FAP-II	900	3.5	60	5.50	1200	120	145	255	T-PACK S
2SK1820-01L	FAP-II	500	6.0	80	1.60	1000	150	110	200	T-PACK L
2SK1820-01S	FAP-II	500	6.0	80	1.60	1000	150	110	200	T-PACK S
2SK2080-01MR	FAP-II	500	15.0	80	0.55	2700	410	260	500	T0220F15

Mfr.'s Type	Series	Ratings			Characteristics						Package
		V_{DSS} (V)	I_D (A)	P_D (W)	$R_{DS(ON)}$ (Ω) (Max.)		C_{iss} (pf)	C_{oss} (pf)	t_{on} (ns)	t_{off} (ns)	
					VGS=4V	VGS=10V					
2SK1505MR	F-III	30	35	40	0.037	0.022	2630	1200	238	720	T0220F15
2SK1083MR	F-III	60	8	20	0.350	0.220	450	170	55	105	T0220F15
2SK1089	F-III	60	35	80	0.056	0.035	2700	930	99	760	T03P
2SK1508	F-III	60	35	60	0.056	0.035	2700	930	9	530	T0220
2SK1389	F-III	60	50	125	0.040	0.025	3900	1200	230	850	T03P
2SK1506	F-III	120	50	150	0.045	0.030	7500	1380	345	2025	T03P
2SK2018-01L	FAP-III	60	10	20	0.160	0.100	750	300	45	225	K-PACK L
2SK2018-01S	FAP-III	60	10	20	0.160	0.100	750	300	45	225	K-PACK S
2SJ314-01L	FAP-III	–60	–5	20	0.480	0.300	750	300	53	270	K-PACK L
2SJ314-01S	FAP-III	–60	–5	20	0.480	0.300	750	300	53	270	K-PACK S
2SK2248-01L	FAP-III	30	35	60	0.037	0.022	2630	1200	188	720	K-PACK L
2SK2248-01S	FAP-III	30	35	60	0.037	0.022	2630	1200	188	720	K-PACK S
2SK2226-01L	FAP-III	150	20	80	0.100	0.080	3450	500	40	1150	T-PACK L
2SK2226-01S	FAP-III	150	20	80	0.100	0.080	3450	500	40	1150	T-PACK S

Mfr.'s Type	Series	Maximum Ratings			Characteristics (Max.)						Package
		V_{DSS} (V)	I_D (A)	P_D (W)	$R_{DS(ON)}$ (Ω)	C_{iss} (pf)	C_{oss} (pf)	t_{on} (ns)	t_{off} (ns)	trr (ns)	
2SK1818MR	F-V	250	20	50	0.25	1600	360	125	450	150	T0220F15

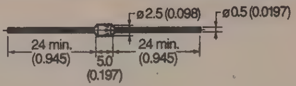
X-Ray, Microwave and Power Supply Diodes

Mfr.'s Type	V_{RRM} (KV)	I_o (mA)	VF (V)	T_{rr} (µsec)	Pkg. L (In.)	Pkg. Dia. (In.)	Wire Dia. (In.)
ESJC01-12B	12.0	350	12.0	—	0.866	0.295	0.047*
ESJC30-08	7.2	300	16.0	0.3	0.860	0.290	0.047
ESJC07-09B	9.0	450 (in oil)	10 V @ 450 mA	—	0.590	0.177	0.032
ESJC07-12B	12.0	400 (in oil)	12 V @ 400 mA	—	0.590	0.177	0.032

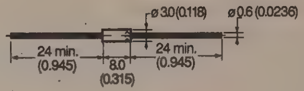
*Ring terminal on cathode, fast-on terminal on anode.

Fast Recovery High Voltage Silicon Rectifiers

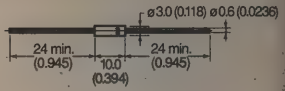
CS57-04



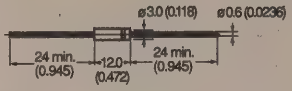
CS54-08



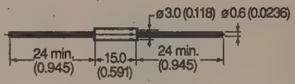
CS52-10
CS52-12
CS52-14



CS53-20



CS56-24



Mfr.'s Type†	Repetitive Peak Reverse Voltage V_{RRM}	Average Forward Current I_o*	Non-Repetitive Peak Surge Current I_{FSM}**	Maximum Forward Voltage Drop (at 10 mA, T_a = 25°C) V_{FM}	Maximum Reverse Current Repetitive (at VRRM, T_a = 25°C) I_{RRM}
	kV	mA	A	Volts	µA
CS57-04	4	25	1.0	12.5	1
CS54-08	8	25	1.0	25.0	1
CS52-10	10	10	0.5	30.0	1
CS52-12	12	10	0.5	37.5	1
CS52-14	14	10	0.5	42.5	1
CS53-20	20	10	0.5	62.5	1
CS56-24	24	10	0.5	75.0	1

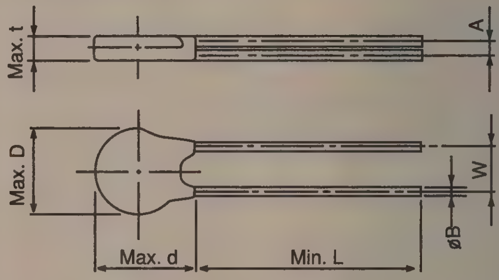
Notes: *Single phase; half sine wave at ambient temperature 25°C. **½ cycle, 50 Hz at full load. **†Epoxy Package. Reverse Recovery Time:** T_a = 25°C, I_F = 2 mA, I_R = 1 mA, 100 nsec max. **Maximum Junction Capacitance:** V = 0, T_a = 25°C, @ 1 MHz, 2 pF. **Storage and Operating Junction Temperature, T_j:** –65°C to +150°C.

Z-Trap Metal Oxide Varistors

Features

- ► **Excellent Clamping Characteristics**
- ► **High Discharge Current Capability — Up to 4000 Amps**
- ► **Fast Response Time — Under 50 Nanoseconds**
- ► **Wide Operating Temperature Range**
- ► **Eliminate Follow-On Current**
- ► **Improve Product Safety**
- ► **Protect Circuit Insulation and Improve System Reliability**
- ► **Low Installation Cost**
- ► **UL Recognized (UL1414, UL1449)**
- ► **Lead Wire: High Temperature Solder Plated Mild Copper Wire**
- ► **Molded Material: Flame Resistant Epoxy Resin (UL, 94V0 Equivalent)**

Dimensions mm



Dimensions, MM	5 mm	7 mm	10 mm	14 mm	20 mm
Max "D"	7.5	9.0	14.0	17.5	24.0
Max "d"	10.0	12.0	17.0	21.0	28.0
Min "L"	35.0	35.0	35.0	35.0	30.0
W (± 1)	5.0	5.0	7.5	7.5	10.0
øB	0.6	0.6	0.8	0.8	1.0

Mfr.'s Type	Chip Element Size	Maximum Ratings					Characteristics					Typical Capacitance
		Applied Voltage[1]		Transient			Nominal Varistor Voltage[3]			Max Clamping[4] Voltage @ Test Current (8/20 µs)		
		RMS 50/60 Hz (25°C)	DC (25°C)	Energy[2]	Average Power Dissipation	Peak Current (8/20 µs)	Vnom (Volts)	Tolerance				
	Dia. (mm)	Vacm (Volts)	Vdcm (Volts)	Wtm (Joules)	Ptam (Watts)	Itm (Amps)		Min. (Volts)	Max. (Volts)	Vc (Volts)	Ip (Amps)	f = 1 kHz (pf)
ENC220D-05B	5	14	18	0.40	0.01	125	22	20	24	48	1.0	1200
ENC220D-20B	20	14	18	13.00	0.20	2000	22	20	24	43	20.0	22000
ENC330D-07B	7	20	26	1.20	0.02	250	33	30	36	65	2.5	2200
ENC470D-07B	7	30	38	1.80	0.02	250	47	42	52	93	2.5	1400
ENC470D-20B	20	30	38	30.00	0.20	2000	47	42	52	93	20.0	11000
ENC560D-05B	5	35	45	1.00	0.01	125	56	50	62	123	1.0	600
ENC680D-07B	7	40	56	2.50	0.02	250	68	61	75	135	2.5	1000
ENC680D-20B	20	40	56	40.00	0.20	2000	68	61	75	135	20.0	8000
ENC820D-07A	7	50	65	3.50	0.25	600	82	74	90	135	10.0	800
ENC820D-20A*	20	50	65	27.00	1.00	4000	82	74	90	135	100.0	6000
ENC151D-20A*	20	95	125	50.00	1.00	4000	150	135	165	250	100.0	4000
ENC201D-05A*	5	130	170	4.00	0.10	250	200	185	225	355	5.0	200
ENC201D-07A*	7	130	170	10.00	0.25	600	200	185	225	340	10.0	400
ENC201D-10A*	10	130	170	20.00	0.40	1250	200	185	225	340	25.0	800
ENC201D-14A*	14	130	170	35.00	0.60	2500	200	185	225	340	50.0	1600
ENC201D-20A*	20	130	170	70.00	1.00	4000	200	185	225	340	100.0	3200
ENC221D-10A*	10	140	180	23.00	0.40	1250	220	198	242	360	25.0	700
ENC221D-14A*	14	140	180	40.00	0.60	2500	220	198	242	360	50.0	1400
ENC221D-20A*	20	140	180	75.00	1.00	4000	220	198	242	360	100.0	2800
ENC241D-20A*	20	150	200	80.00	1.00	4000	240	216	264	395	100.0	2600
ENC361D-10A*	10	230	300	35.00	0.40	1250	360	324	396	595	25.0	250
ENC361D-20A*	20	230	300	120.00	1.00	4000	360	324	396	595	100.0	2000
ENC391D-07A*	7	250	320	17.00	0.25	600	390	351	429	650	10.0	220
ENC391D-20A*	20	250	320	130.00	1.00	4000	390	351	429	650	100.0	1800
ENC431D-14A*	14	275	350	75.00	0.60	2500	430	387	473	710	50.0	800
ENC471D-20A*	20	300	385	150.00	1.00	4000	470	423	517	775	100.0	1400
ENC621D-20A*	20	385	505	150.00	1.00	4000	620	558	682	1025	100.0	1100
ENC681D-14A*	14	420	560	90.00	0.60	2500	680	612	748	1120	50.0	500
ENC681D-20A*	20	420	560	160.00	1.00	4000	680	612	748	1120	100.0	1000
ENC102D-10A*	10	625	825	65.00	0.40	1250	1000	900	1100	1650	25.0	180
ENC102D-20A*	20	625	825	230.00	1.00	4000	1000	900	1100	1650	100.0	700

*Indicates UL listed.

Notes: [1]The waveform of the maximum DC applied voltage is flat. When a ripple voltage as from a rectifier source is applied, make sure that the peak voltage is within the Vdcm rating.
The AC applied voltage (50/60 Hz) is sine waveform.
When waveform distortion is extensive, make sure that the peak voltage is less than √2 times the Vacm rating.

[2]**Energy:** Wtm.
Transient energy ratings are given in the Wtm column in Joules (watt-second). The rating is the maximum allowable energy of a single 2 ms square-waveform impulse current continuously applied. Energy ratings are based on a shift of Vnom of less than ±10% of the initial value.

[3]**Nominal Varistor Voltage:** Vnom.
Indicates the varistor terminal voltage measured with 1 mA DC applied.

[4]**Maximum Clamping Voltage: Vc.**
Indicates the peak terminal voltage.

Operating Ambient Temperature: –40°C to +85°C.
Storage Temperature: –40°C to +125°C.

Prism™ Chipset, Microprocessors, Peripherals, and Data Communications

Harris Semiconductor brings full design support to our Internet World Wide Web site. You can access everything from technical literature on our products, to downloadable design software, to updates on recently and soon to be introduced products. **http: / / www.semi.harris.com**

Harris AnswerFax®: (407) 724-7800

AnswerFax® is Harris' new automated facsimile response system. AnswerFax® allows users access to data sheets and application notes on the latest Harris Semiconductor products, 24 hours a day and 7 days a week.

To access AnswerFax® from any touch-tone phone: Call (407) 724-7800 and touch-tone your way through the simple instructions. Then enter the AnswerFax® order numbers from the selection guide and you'll have the information you requested at your facsimile machine in minutes.

Harris Application Hotline: 1-800-442-7747

Call the Applications Hotline to obtain technical assistance on designing in Harris semiconductors.

Harris Semiconductor Product Selection Guide

This product selection guide offers key product information on all Harris Semiconductor Devices. Sectioned (Analog, Data Acquisition, Digital, Application Specific, Power, Hi-Rel and Rad-Hard, ASIC) for easy use and includes cross references and alphanumeric part number index. To obtain you copy, simply fax you name and mailing address to: Harris Fulfillment, FAX# (610) 265-2520, Attn: Laurie Malantonio. Request Publication Number: PSG201.23.

Prism™ 2.4 GHz Radio Chipset

— NEW —

Features
- ► **IEEE802.11 (Draft) Compliance**
- ► **Provides Complete Antenna-to-Bits Solution**
- ► **Low Voltage Operation**
- ► **2.4 GHz to 2.5 GHz Operation**
- ► **Programmable Data Rates from 256 Kbps up to 4 Mbps**

Benefits
- ► **Interoperability**
- ► **Reduced Design Time/Development Costs**
- ► **Extended Battery Life**
- ► **Free Air Time, Unlicensed Band**
- ► **Flexible Data Rate Transmission**

Features
- ► **10 MHz to 400 MHz IF Operation**
- ► **DBSK and/or DQPSK Modulation**
- ► **Dual Antenna Diversity Option**
- ► **Programmable 16 PN Code**
- ► **Low Profile Surface Mount Packaging**

Benefits
- ► **Wide Choice of IF Bandwidth**
- ► **Quick Synchronization, Efficient Modulation**
- ► **Reduces Multipath Interference**
- ► **Higher Processing Gain**
- ► **Meets PCMCIA Form Factor**

The Harris PRISM™ chipset is a highly integrated solution for RF modems employing Direct Sequence Spread Spectrum (DSSS) signaling. The RF, IF and baseband functions are highly integrated for maximizing board space, designed and targeted toward IEEE802.11 compatibility , and packaged to allow for PCMCIA type II form factor.

Mfr.'s Type	Description	Package Type	Doc. #
HFA3424IB	Low Noise Amplifier	8 Lead	FN4131
HFA3524IA	2.5 GHz / 600 MHz Dual Frequency Synthesizer	20 Lead	FN4062
HFA3624IA	Combined LNA / Mixer	28 Lead	FN4066
HFA3724IN	Quadrature Modulator	80 Lead	FN4067
HSP3824VI	DSSS Baseband Process	48 Lead	FN4064
HFA3925IA	RF Power Amplifier	28 Lead	FN4132

Evaluation Boards

Mfr.'s Type	Description
HFA3424EVAL	Low Noise Amplifier
HFA3524EVAL	2.5 GHz / 600 MHz Dual Frequency Synthesizer
HFA3624EVAL	Combined LNA / Mixer and Upconverter / Preamplifier
HFA3724EVAL	Quadrature Modulator / Demodulator
HSP3824EVAL	DSSS Baseband Processor
HFA3925EVAL	RF Power Amplifier
PRISM1KIT-EVAL	PRISM Evaluation Kit
—	—

Application Notes Available from Harris...Call 1-800-442-7747
AN9614 Using the PRISM™ Chipset for Low Data Rate Applications
AN9615 Using the HSP3824 Evaluation Board and Associated Software
AD9616 Programming the HSP3824
AD9617 Hardware/Software Interface Description for PRISM™ Radio Design
AD9618 Using the HFA3624 Evaluation Board
AD9622 Using the HFA3724 Evaluation Board
AD9623 Packet Error Rate Measurements Using the PRISM™ Chipset
AD9624 PRISM DSS Reference Radio Description

CDP18xx Microprocessors, 8 Bit Microprocessors with 64 K Memory Addressing

16 × 16 matrix of registers for use as multiple program counters, data pointers or data registers. Single phase clock; optional on chip crystal controlled oscillator. Flexible programmed I/O mode. 8 bit parallel organization with bidirectional data bus and multiplexed address bus.

Mfr.'s Type	Operating Frequency (MHz)	Operating Voltage (V)	Package Type	Temperature Range (°C)	AnswerFax® (Doc. #)
CDP1802ACE	3.2	5.0	40 Lead PDIP	–40 to +85	1305
CDP1802BCE	5.0	5.0	40 Lead PDIP	–40 to +85	1305
CDP1802CE	5.0	5.0	40 Lead PDIP	–40 to +85	1305
CDP1805ACE	5.0	5.0	40 Lead PDIP	–40 to +85	1370
CDP1806ACE	5.0	5.0	40 Lead PDIP	–40 to +85	1370
—	—	—	—	—	—

Microprocessor Peripherals (82Cxx)

82C54, CMOS Programmable Interval Timer

Fully compatible with NMOS 8254, enhanced version of NMOS 8253. Three independent 16 bit counters. Six programmable counter modes. Binary or BCD counting. Status read back command. **Static CMOS Design For Low Power:** ICCSB = 10 µA, ICCOP = 10 mA at 8 MHz.

Mfr.'s Type	Operating Frequency (MHz)	Operating Voltage (V)	Package Type	Temperature Range (°C)	AnswerFax® (Doc. #)
CP82C54	8.0	5.0	24 Lead PDIP	0 to +70	2970
CP82C54-12	12.5	5.0	24 Lead PDIP	0 to +70	2970
CS82C54	8.0	5.0	28 Lead PLCC	0 to +70	2970
CS82C54-12	12.5	5.0	28 Lead PLCC	0 to +70	2970
IP82C54	8.0	5.0	24 Lead PDIP	–40 to +85	2970
IP82C54-12	12.5	5.0	24 Lead PDIP	–40 to +85	2970
IS82C54	8.0	5.0	28 Lead PLCC	–40 to +85	2970
IS82C54-12	12.5	5.0	28 Lead PLCC	–40 to +85	2970

82C55A, CMOS Programmable Peripheral Interface

Fully compatible with NMOS 8255A. 24 programmable I/O pins. High speed, no wait state operation with 5 MHz and 8 MHz 80C86 and 80C88. Direct bit set/reset compatibility. Enhanced control word read capability. 2.5 mA drive capability on all I/O ports. **Static CMOS Design For Low Power:** ICCSB = 10 µA. Fully TTL compatible.

CP82C55A	8.0	5.0	40 Lead PDIP	0 to +70	2969
CS82C55A	8.0	5.0	44 Lead PLCC	0 to +70	2969
IP82C55A	8.0	5.0	40 Lead PDIP	–40 to +85	2969
IS82C55A	8.0	5.0	44 Lead PLCC	–40 to +85	2969

82C59A, CMOS Priority Interrupt Controller

Fully compatible with the NMOS 8259A. Eight level priority controller, expandable to 64 levels. Programmable interrupt modes, individual request mask capability. **Static CMOS Design For Low Power Operation:** ICCSB = 20 µA max., ICCOP = 1 mA/MHz max. Fully TTL compatible.

CP82C59A	8.0	5.0	28 Lead PDIP	0 to +70	2784
CP82C59A-12	12.5	5.0	28 Lead PDIP	0 to +70	2784
CS82C59A	8.0	5.0	28 Lead PLCC	0 to +70	2784
CS82C59A-12	12.5	5.0	28 Lead PLCC	0 to +70	2784
IP82C59A	8.0	5.0	28 Lead PDIP	–40 to +85	2784
IP82C59A-12	12.5	5.0	28 Lead PDIP	–40 to +85	2784
IS82C59A	8.0	5.0	28 Lead PLCC	–40 to +85	2784
IS82C59A-12	12.5	5.0	28 Lead PLCC	–40 to +85	2784

82C84A, CMOS Clock Generator Driver

Fully compatible with the NMOS 8284A. Generates the system clock for CMOS or NMOS microprocessors.Up to 25 MHz operation. Uses a parallel mode crystal circuit or external frequency source. Provides read synchronization. Generates system rest output form schmitt trigger input. TTL compatible inputs/outputs. Very low power consumption.

CP82C84A	25	5.0	18 Lead PDIP	0 to +70	2974
—	—	—	—	—	—

Data Communications

HS-3182, ARNIC 429 Bus Interface Line Driver Circuit

TTL and CMOS compatible inputs. Adjustable rise and fall times via two external capacitors. Programmable output differential voltage via VREF input. Operates at data rates up to 100 KBits/s. Output short circuit proof and contains overvoltage protection. Requires 3 power supplies.

Mfr.'s Type	Operating Frequency (MHz)	Operating Voltage (V)	Package Type	Temperature Range (°C)	AnswerFax® (Doc. #)
HS1-3182-8	—	+15, –15, +5	16 Lead CDIP	–55 to +125	2963
HS4-3182-8	—	+15, –15, +5	28 Lead LCC	–55 to +125	2963

Data Communications (Continued)

HS-3282, CMOS ARNIC Bus Interface Circuit

ARNIC Specification 429 compatible. Data rates of 100 KBits or 12 KBits. Separate receiver and transmitter section. Dual independent receivers, connecting directly to ARNIC bus. Serial to parallel receiver conversion. Parallel to serial transmitter conversion. Word lengths of 25 or 32 bits. Parity status of received data. Generate parity of transmitted data. Automatic word gap timer. Single 5 volt supply.

Mfr.'s Type	Operating Frequency (MHz)	Operating Voltage (V)	Package Type	Temperature Range (°C)	AnswerFax® (Doc. #)
HS1-3282-8	—	5.0	40 Lead CDIP	–55 to +125	2964
HS4-3282-8	—	5.0	44 Lead LCC	–55 to +125	2964

HD-4702, CMOS Programmable Bit Rate Generator

Provides 13 commonly used bit rates. Uses a 2.4576 MHz crystal/input for standard frequency Output (16 times bit rate). Conforms to EIA RS-404. One HD-4702 controls up to eight transmission channels. Initialization circuit facilitates diagnostic fault isolation. On chip input pull-up circuit.

Mfr.'s Type	Operating Frequency (MHz)	Operating Voltage (V)	Package Type	Temperature Range (°C)	AnswerFax® (Doc. #)
HD1-4702-9	—	5.0	16 Lead CDIP	–40 to +85	2954
HD3-4702-9	—	5.0	16 Lead PDIP	–40 to +85	2954
HD4-4702-9	—	5.0	18 Lead LCC	–40 to +85	2954
—	—	—	—	—	—

CDP6402, CMOS Universal Asynchronous Receiver/Transmitter (UART)

Low Power CMOS Circuitry: 7.5 mW (typ.) at 3.2 MHz (max freq.) at VDD = 5V. Baud Rate: DC to 200 KBits/s (max.) at 5 V, DC to 400 KBits/s (max.) at 10 V. Automatic data formatting and status generation. Fully programmable with externally selectable word length (5-8 bits), parity inhibit, even/odd parity, and 1, 1½, or 2 stop bits. Replaces industry type IM6402.

Mfr.'s Type	Operating Frequency (MHz)	Operating Voltage (V)	Package Type	Temperature Range (°C)	AnswerFax® (Doc. #)
CDP6402CE	3.20	5.0	40 Lead PDIP	–40 to +85	1328
CDP6402E	3.20	10.0	40 Lead PDIP	–40 to +85	1328

HD-6402, CMOS Universal Asynchronous Receiver/Transmitter (UART)

Low power CMOS design. Programmable word length, stop bits, and parity. Automatic data formatting and status generation. Compatible with industry standard UARTs. Single 5 V power supply. CMOS/TTL Compatible inputs.

Mfr.'s Type	Operating Frequency (MHz)	Operating Voltage (V)	Package Type	Temperature Range (°C)	AnswerFax® (Doc. #)
HD1-6402B-9	8.00	5.0	40 Lead CDIP	–40 to +85	2956
HD1-6402R-9	2.00	5.0	40 Lead CDIP	–40 to +85	2956
HD3-6402B-9	8.00	5.0	40 Lead PDIP	–40 to +85	2956
HD3-6402C-9	1.00	5.0	40 Lead PDIP	–40 to +85	2956
HD3-6402R-9	2.00	5.0	40 Lead PDIP	–40 to +85	2956
—	—	—	—	—	—

HD-6408, CMOS Asynchronous Serial Manchester Adapter (ASMA)

Low bit error rate. **Data Rate:** 1 MBits/s. Sync identification and lock-in. Clock recovery. Manchester II encoder, decoder. Separate encode and decode. **Low Operating Power:** 50 mW at 5 V. Single power supply.

Mfr.'s Type	Operating Frequency (MHz)	Operating Voltage (V)	Package Type	Temperature Range (°C)	AnswerFax® (Doc. #)
HD1-6408-9	1.25	5.0	24 Lead CDIP	–40 to +85	2952
HD3-6408-9	1.25	5.0	24 Lead PDIP	–40 to +85	2952

HD-6409, CMOS Manchester Encoder/Decoder

Converter or repeater mode. Independent manchester encoder and decoder operation. Static 1 MBits/s data rate guaranteed. Low bit error rate. Digital PLL clock recovery. On chip oscillator. **Low Operating Power:** 50 mW (typ.) at 5 V.

Mfr.'s Type	Operating Frequency (MHz)	Operating Voltage (V)	Package Type	Temperature Range (°C)	AnswerFax® (Doc. #)
HD3-6409-9	1.00	5.0	20 Lead PDIP	–40 to +85	2951
—	—	—	—	—	—

DSP Filters

Mfr.'s Type	Description	Data (Bits)	Clock Speed (MHz)	Max. Atten. (dB)	TAPS	Coeff. (Bits)	Decim. Length	Package	AnswerFax® (Doc. #)
HSP43124SC-45	Serial Filter	24	45	140	up to 256	32	1 to 256	28 SOIC	3555
HSP43168JC-33	Dual FIR Filter	10	33	60	16	10 or 20	1 to 16	84 PLCC	3177
HSP43168JC-40	Dual FIR Filter	10	40	60	16	10 or 20	1 to 16	84 PLCC	3177
HSP43168JC-45	Dual FIR Filter	10	45	60	16	10 or 20	1 to 16	84 PLCC	3177
HSP43216JC-52	Half Band Filter	16	52	90	67	20	—	84 PLCC	3365
HSP43220JC-25	Decimating Filter	16	25	96	512	20	up to 16,384	84 PLCC	2486
HSP43220JC-15	Decimating Filter	16	15	96	512	20	up to 16,384	84 PLCC	2486
HSP43891JC-20	Video FIR	8	20	54	9	9	1 to 4	84 PLCC	2785

Digital Signal Synthesis

Mfr.'s Type	Description	Size (Bits)	Clock Speed (MHz)	Dynamic Range (dBc)	Output (Bits)	Modulation Techniques	Res. at Max. (Hz)	Package	AnswerFax® (Doc. #)
HSP45102PC-40	Oscillator	12	40	69	12 Sin	QPSK, FSK	0.012	28 PDIP	2810
HSP45102PC-33	Oscillator	12	33	69	12 Sin	QPSK, FSK	0.012	28 PDIP	2810
HSP45106JC-33	Oscillator	16	33	90	16 Sin/Cos	FM, PSK, FSK	0.010	84 PLCC	2809

Digital Imaging Products

Mfr.'s Type	Description	Data (Bits)	Clock Speed (MHz)	Frame or Kernel Size (Bits)	Output	Package	AnswerFax® (Doc. #)
HSP48212JC-40	Video Mixer	12	40	—	13 Bit	68 PLCC	3627
HSP48410JC-33	Histogrammer	10	33	4 k × 4 k	24 Bit	84 PLCC	3185
HSP9501JC-25	Data Buffer	10	25	—	10 Bit	44 PLCC	2786

High Speed Data Converters

Analog to Digital Converters

Mfr.'s Type	Features	Resolution (bits)	Conversion Rate Min. (MSPS)	Input Bandwidth (MHz)	INL (LSB)	DNL (LSB)	SINAD @ fin (dB)	Power Dissipation (mW)	Logic Type	Supply Voltage (V)	AnswerFax® (Doc. #)
HI3304JIP	Low Power Flash A/D	4	25	40	—	—	22.8 @ 5.00 MHz	25	TTL	5	4137
HI3306JIP/15	Low Power Flash A/D	6	15	30	—	—	33.4 @ 5.00 MHz	70	TTL	5	4136
HI1172JCP	Very Low Power, with V-Ref	6	20	18	—	—	—	40	TTL	5	4102
HI1826JCQ	Flash with 36dB SNR	6	140	200	—	—	—	225	ECL	–5	4107
HI1866JCQ	1:2 De-MUX, TTL I/O	6	140	110	—	—	—	325	TTL/ECL	5/–5	4108
HI3318JIP	Rugged 8 Bit A/D	8	15	5	—	—	35.0 @ 4.00 MHz	150	TTL	5	4135
HI2300JCQ	Low Power, DC Restore, V-Ref	8	18	18	—	—	—	18	TTL	3.3	4103
HI2301JCQ	Low Power, DC Restore, V-Ref, Int. Amp	8	30	20	—	—	—	120	TTL	5/3.3	4104
HI5714/4CB	Low Power, High Speed, TTL I/O	8	40	18	—	—	47.8 @ 4.43 MHz	325	TTL	5	3973
HI2302JCQ	Low Power, DC Restore, V-Ref	8	50	100	—	—	—	125	TTL	5/3.3	4105
HI5714/6CB	Low Power, High Speed, TTL I/O	8	60	18	—	—	47.8 @ 4.43 MHz	325	TTL	5	3973
HI1386JCP	Wideband Flash A/D	8	75	150 (min.)	0.3	0.3	41.0 @ 19.00 MHz	580	ECL	–5.2	3583
HI5714/7CB	Low Power, High Speed, TTL I/O	8	75	18	—	—	46.3 @ 4.43 MHz	325	TTL	5	3973
HI3026JCQ	Low Power, 1:2 De-MUX, TTL I/O	8	120	200	—	—	—	640	TTL/ECL	5/–5	4109
HI1396JCP	Wideband Flash A/D	8	125	200 (min.)	0.3	0.3	40.0 @ 32.00 MHz	870	ECL	–5.2	3576
HI1166AIL	Low Power, Wideband Flash A/D	8	250	250	0.3	0.3	37.0 @ 60.00 MHz	1400	ECL	–5.2	3579
HI1276AIL	Wideband Flash A/D	8	500	300 (min.)	0.3	0.3	37.0 @ 100.00 MHz	2800	ECL	–5.2	3578
HI5710AJCQ	Low Power, Power Down	10	20	100	—	—	54.0 @ 3.00 MHz	140	CMOS/TTL	5/3.3	3921
HI5702KCB	Low Power, High Accuracy, Wide BW	10	40	250	1.0	0.5	55.0 @ 10.00 MHz	550	TTL	5	3745
HI5703KCB	Lower Power, High Accuracy	10	40	250	1.0	0.5	56.0 @ 10.00 MHz	400	TTL	1.52	3950
HI5800KCD	12 Bit A/D Conversion System	12	3	20	0.7	0.4	68.0 @ 1.00 MHz	1800	CMOS/TTL	±5.0	2938
HI5804KCB	Low Power, V-Ref	12	5	100	—	—	64.0 @ 1.00 MHz	300	CMOS/TTL	5/3.0	4026
HI5805KCB	Low Power, High Performance, V-Ref	12	5	100	—	—	68.0 @ 1.00 MHz	300	CMOS/TTL	5/3.0	3984

High Speed Data Converters (Continued)

Digital to Analog Converters

Mfr.'s Type	Features	Resolution (bits)	Update Rate (MHz)	Glitch Area (pV-s)	INL (LSB)	DNL (LSB)	Settling Time (ns)	Power Dissipation (mW)	Logic Type	Supply Voltage (V)	AnswerFax® (Doc. #)
HI2304JCQ	8 Bit Video DAC, 3-Chn., 3.3V	8	20	150.0	2.50	0.50	—	50	TTL	3.3	4116
HI1106JCP	8 Bit Video DAC, 1-Chn.	8	35	30.0	0.50	0.50	—	200	TTL	5.0	4113
HI1260JCQ	8 Bit Video DAC, 3-Chn.	8	35	—	1.00	0.50	—	360	TTL	5.0	4112
HI20206JCP	8 Bit Video DAC, 3-Chn.	8	35	—	1.00	0.50	—	360	TTL	5.0	4111
HI1171JCB	8 Bit Video DAC with Current Output	8	40	30.0	1.30	0.25	10.0	65	TTL	5.0	3662
HI1177JCQ	8 Bit Video DAC, 2-Chn.	8	40	30.0	0.50	0.30	—	160	TTL	5.0	4114
HI1178JCQ	8 Bit Video DAC, 3-Chn.	8	40	30.0	0.50	0.30	—	240	TTL	5.0	4115
CA3338AE	8 Bit Video DAC with Voltage Output	8	50	150.0	0.75	0.50	20.0	100	TTL/CMOS	5.0	1850
HI3338KIP	8 Bit Video DAC with Voltage Output	8	50	150.0	0.75	0.50	20.0	100	TTL/CMOS	5.0	4137
HI20203JCP	8 Bit Version of H120201	8	160	15.0	0.50	0.50	4.3	420	ECL	–5.2	3581
HI2307JCQ	10 Bit Video DAC, 3-Chn.	10	50	100.0	2.00	0.50	—	300	TTL	5.0	4117
HI2309JCQ	10 Bit Video DAC, 3-Chn.	10	50	50.0	2.00	0.50	—	300	TTL	5.0	4118
HI3050JCQ	Triple Video DAC	10	50	50.0	2.00	0.50	10.0	500	TTL	5.0	3936
HI2315JCQ	10 Bit Low Glitch Video DAC	10	80	30.0	1.50	0.50	—	150	TTL	5.0	4119
HI5780JCQ	10 Bit Low Power DAC	10	80	40.0	2.00	0.50	6.0	100	CMOS/TTL	5.0	4024
HI5721BIP	10 Bit Communications DAC	10	125	1.5	1.50	0.50	4.5	700	CMOS/TTL	5.0/–5.2	3949
HI20201JCP	Voltage Output, Analog Multiplying Function	10	160	15.0	1.00	0.50	5.2	420	ECL	–5.2	3581
HI57315BIP	12 Bit Communications DAC	12	100	3.0	1.50	1.00	20.0	650	CMOS/TTL	5.0/–5.2	4070
HI5731BIP	12 Bit Communications DAC	12	100	3.0	1.50	1.00	20.0	650	CMOS/TTL	5.0/–5.2	4070
HI5741BIP	14 Bit Communications DAC	14	100	7.5	1.50	1.00	25.0	700	CMOS/TTL	5.0/–5.2	4071

Analog to Digital Converters with Display Outputs

3 Digit with LED Drivers

Mfr.'s Type	Features	Display Type	Display Drive	Conversion Type	Conversion Time (µs)	Technology	Range Min.	Linearity Counts	No. of Leads	AnswerFax® (Doc. #)
CA3162E	BCD to 7 Segment Converter, 2 Chip Set Makes a Complete DPM	BCD	Common Anode	Integrating	10,250	Bipolar-JI	+999 mV to –99 mV	±1	16	1080

3½ Digit with LED/LCD Drivers

ICL7106CPL	Low Noise, Low Power, True Differential Input and Reference	LCD	Direct Drive	Auto-Zero Integrating	333 Typ.	CMOS-JI	±0.2 V	±1	40	3082
ICL7107CPL	Low Noise, Low Power, True Differential Input and Reference	LED	Direct Drive	Auto-Zero Integrating	333 Typ.	CMOS-JI	±0.2 V	±1	40	3082
ICL7117CPL	Display Hold Version of the ICL7107	LED	Direct Drive	Auto-Zero Integrating	333 Typ.	CMOS-JI	±0.2 V	±1	40	3083
ICL7136CPL	Overrange Recovery Version of the ICL7106	LCD	Direct Drive	Auto-Zero Integrating	333 Typ.	CMOS-JI	±0.2 V	±1	40	3086
ICL7137CPL	Overrange Recovery Version of the ICL7107	LED	Direct Drive	Auto-Zero Integrating	333 Typ.	CMOS-JI	±0.2 V	±1	40	3086

Sample and Hold Amplifiers

Mfr.'s Type			Description	Acquisition Time (to 0.01%)	Droop Rate (µV/µS)	Hold Step Error (mV)	Hold Mode Settling Time (ns to ±1 mV)	Aperture Uncertainty (ps)	Gain Bandwidth Product (MHz)	Input Offset Voltage (mV Max.)	Supply Voltage (±VDC)	Supply Current (mA/Amp)	No. of Leads	AnswerFax® (Doc. #)
CDIP Package	PDIP Package	SOIC Package												
HA1-2425-5	HA3-2425-5	HA9P2425-5	3.2 µs Acquisition Time Sample and Hold Amplifier	3200	—	10.0	860	5000	2.5	6.0	15.0	3	14	2856
HA1-5320-5	HA3-5320-5	HA9P5320-5	1.0 µs Precision Monolithic Sample and Hold Amplifier	1000	0.08	1.0	165	300	2.0	1.5	13.5 to 20	11	14	2857
HA1-5330-5	HA3-5330-5	—	650 ns Precision Monolithic Sample and Hold Amplifier	650	0.01	0.5	100	100	4.5	1.5	13.5 to 20	18	14	2858
HA1-5340-9	HA3-5340-5	HA9P5340-5	Low Distortion Sample and Hold Amplifier	700	0.10	15.0	200	200	10.0	1.5	13.5 to 20	19	14	2859
—	HA5351IP	HA5351IB	70 ns Acquisition Time Sample and Hold Amplifier	64	0.30	10.0	50	10	40.0	2.0	4.5 to 5.5	20	8	3690
—	HA5352IP	HA5352IB	Dual 70 ns Acquisition Time Sample and Hold Amplifier	64	0.30	10.0	50	10	40.0	2.0	4.5 to 5.5	20	14	3394

Display Drivers

Mfr.'s Type	Description	No. of Digits	No. of Decimal Points	Display Type	Font	Interface	Cycle Time (ns)	Package Type	AnswerFax® (Doc. #)
CA3161E	BCD to 7 Segment Decoder/Driver	1	0	LED Common Anode Non-MUX	Code B	MUX BCD	2600	16 Lead PDIP	1079
ICM7211AIPL	7 Segment Non-MUX LCD Display Outputs with Backplane Driver	4	0	LCD Direct Drive	Code B	MUX BCD	1000	40 Lead PDIP	3158
ICM7211AMIPL	7 Segment Non-MUX LCD Display Outputs with Backplane Driver	4	0	LCD Direct Drive	Code B	Random Access	200	40 Lead PDIP	3158
ICM7212AMIPL	7 Segment Non-MUX LED Display Driver	4	0	LED Common Anode Non-MUX	Code B	Random Access	200	40 Lead PDIP	3158
ICM7228AIPI	8-Digit µProcessor Compatible LED Display Decoder Driver	8	8	LED Common Anode MUX	HEX/Code B	Bit Parallel, Digit Serial	550	28 Lead PDIP	3160
ICM7243BIPL	8-Character µProcessor Compatible LED Display Decoder Driver	8*	8	LED Common Cathode MUX	ASCII	Random Access/Bit Parallel, Digit Serial	250	40 Lead PDIP	3162

*AlphaNumeric.

Interface

Transceivers

1 µF, RS-232 Transceivers

Mfr.'s Type		Power Supply (V)	No. of RS-232 Drivers	No. of RS-232 Receivers	No. of External 1.0 µF Capacitors	Low Power Shutdown	Tri-State	No. of Leads	AnswerFax® (Doc. #)
PDIP Package	SOIC Package								
HIN232CP	HIN232CB*	+5.0	2	2	4	No	No	16	3138
HIN236CP	HIN236CB	+5.0	4	3	4	Yes	Yes	24	3138
HIN239CP	HIN239CB	+5.0 and +7.5 to 13.2	3	5	2	No	Yes	24	3138
—	HIN241CB	+5.0	4	5	4	Yes	Yes	28	3138

*Wide Body SOIC.

Multiplexers

Mfr.'s Type	Device Type*	$R_{DS(ON)}$ (Ω Max.)	V_{AH} Min. (V)	V_{AL} Max. (V)	I_{DOFF} Typ. (±nA)	T_{ON} Typ. (ns)	T_{OFF} Typ. (ns)	Features	AnswerFax® (Doc. #)
DG408DJ	Single 8 Channel Mux	40	2.4	0.8	1	115	105	Low $R_{DS(ON)}$	3283

Mfr.'s Type	Device Type*	$R_{DS(ON)}$ (Ω Max.)	V_{AH} Min. (V)	V_{AL} Max. (V)	I_{DOFF} Typ. (±nA)	T_{ON} Typ. (ns)	T_{OFF} Typ. (ns)	Features	AnswerFax® (Doc. #)
DG409DJ	Dual 4 Channel Mux	40	2.4	0.8	1	115	105	Low $R_{DS(ON)}$	3283

***Technology:** 44 V CMOS-JI.

Interface (Continued)

Switches

Mfr.'s Type	Device Type*	$R_{DS(ON)}$ (Ω Max.)	Switch "ON" (V)	Switch "OFF" (V)	I_{SOFF} Typ. (±nA)	T_{ON} Typ. (ns)	T_{OFF} Typ. (ns)	Features	AnswerFax® (Doc. #)
DG401DJ	Dual Single Pole Single Throw	45	2.4	0.8	–0.01	100	60	Very Low $R_{DS(ON)}$	3284
DG403DJ	Dual Single Pole Double Throw	45	2.4	0.8	–0.01	100	60	Very Low $R_{DS(ON)}$	3284
DG405DJ	Dual Double Pole Single Throw	45	2.4	0.8	–0.01	100	60	Very Low $R_{DS(ON)}$	3284
DG411DJ	Quad Single Pole Single Throw	35	2.4	0.8	–0.10	110	100	Very Low $R_{DS(ON)}$	3282
DG412DJ	Quad Single Pole Single Throw	35	0.8	2.4	–0.10	110	100	Very Low $R_{DS(ON)}$	3282

Mfr.'s Type	Device Type*	$R_{DS(ON)}$ (Ω Max.)	Switch "ON" (V)	Switch "OFF" (V)	I_{SOFF} Typ. (±nA)	T_{ON} Typ. (ns)	T_{OFF} Typ. (ns)	Features	AnswerFax® (Doc. #)
DG413DJ	Quad Single Pole Single Throw	35	2.4	0.8	–0.10	110	100	Very Low $R_{DS(ON)}$	3282
DG441DJ	Quad Single Pole Single Throw	85	0.8	2.4	0.01	150	90	Low $R_{DS(ON)}$	3281
DG442DJ	Quad Single Pole Single Throw	85	2.4	0.8	0.01	150	110	Low $R_{DS(ON)}$	3281
DG444DJ	Quad Single Pole Single Throw	85	0.8	2.4	0.01	150	90	Low $R_{DS(ON)}$	3586
DG445DJ	Quad Single Pole Single Throw	85	2.4	0.8	0.01	150	110	Low $R_{DS(ON)}$	3586

*Technology: 44 V CMOS-JI.

Low Side Switches

Bipolar Types

Mfr.'s Type	Description	Max. Output Voltage No Load (V)	Max. Rated DC Load Current (A)	Max. V_{SAT} Output Voltage	Max. Load Switching V_{CESUS} or V_{CLAMP} Limited (V)	Output Current Limiting and/or Shutdown Protection (A)	Output Thermal Limiting and/or Shutdown Protection (Temperature T_J)	Thermal Shutdown Hysteresis	Fault Indicator Flag	Diagnostic Feedback	Temperature Range (°C)	Package Type	AnswerFax® (Doc. #)
CA3242E	Quad-Gated Inverting Power Driver for Interfacing Low-Level Logic to High Current Load	50	0.6	0.8 V at 0.6 A	35	1.4†	No	No	No	No	–40 to +105	16 Lead DIP	1561
CA3262E	Quad-Gated Inverting Power Drivers	60	0.7	0.6 V at 0.6 A	40	1.6	+150°C	No	No	No	–40 to +85	16 Lead DIP	1836
CA3262AE	Quad-Gated Inverting Power Drivers	60	0.7	0.5 V at 0.6 A	40	1.3	+155°C	No	No	No	–40 to +125	16 Lead DIP	1836
CA3292AQ	Quad-Gated Inverting Power Drivers with Fault Mode Diagnostic Flag Output	32 Typ.*	0.6	0.4 V at 0.5 A	28	1.2	+165°C	+15°C	Yes	No	–40 to +125	28 Lead PLCC	2223

MOSFET Types

Mfr.'s Type	Description	Max. Output Voltage No Load (V)	Max. Rated DC Load Current (A)	Max. R_{ON} Output Voltage	Max. Load Switching V_{CESUS} or V_{CLAMP} Limited (V)	Output Current Limiting and/or Shutdown Protection (A)	Output Thermal Limiting and/or Shutdown Protection (Temperature T_J)	Thermal Shutdown Hysteresis	Fault Indicator Flag	Diagnostic Feedback	Temperature Range (°C)	Package Type	AnswerFax® (Doc. #)
HIP0081AS1	Quad Inverting Power Driver with Serial Diagnostic Interface	80 Typ.*	2	0.50 Ω at 1.0 A	73	3.5†	+150°C	+15°C	Yes	Yes	–40 to +125	15 Lead SIP	3018

*Clamp. †Latches Off.

High Side Switches

Protected Power Switches Recommended for Solenoid, Relay, Lamp and Motor Applications

Mfr.'s Type	Description	Function	Max. Supply (V)	DC Supply Range (V)	Peak Max. Current (A)	DC Max. Current (A)	Package Type	AnswerFax® (Doc. #)
HIP1030AS	1A High Side Driver with Overload Protection	Single Power	35	4.5 to 25	2.5	1.1	5 Lead TS-001AA	2788

MOSFET Types Recommended for SMPS, FET Drivers and Motor Control Applications

Mfr.'s Type	Description	Function	Max Supply (V)	DC Supply Range (V)	Peak Max. Current (A)	Max. Frequency	Package Type	AnswerFax® (Doc. #)
ICL7667CPA	Dual Power MOSFET Driver	Dual Power	15	4.5 to 15	1.5 (Pulsed Gate)	200 KHz	8 Lead PDIP	2853

Half Bridge MOSFET Drivers

Mfr.'s Type	Description	Max. Bus Voltage (V_{DC})	Recommended Supply Voltage (V_{DC})	Max. Pulsed Gate Current (A)	Max. PWM Frequency (KHz)	Shoot Thru Protection	Temperature Range (°C)	Package Type	AnswerFax® (Doc. #)
HIP2030IM	P-Channel 30 V MCT/IGBT Gate Driver for Motor Control	30	8.0 to 15.0	6.0	180	Yes	–40 to +85	28 Lead PDIP	3691
HIP2100IB	N-Channel Half Bridge for Telecompower	116	9.0 to 16.5	0.2	1000	—	–40 to +85	8 Lead SOIC	4022
HIP2500IP	N-Channel Half Bridge for Motor Control	500	10.0 to 15.0	2.0	400	No	–40 to +85	14 Lead PDIP	2801
HIP5500IP	N-Channel Half Bridge for SMPS	500	10.0 to 15.0	2.3	300	Yes	–40 to +85	20 Lead PDIP	3210
SP600	N-Channel Half Bridge for Motor Control	500	14.5 to 16.5	0.5	20	Yes	–40 to +85	22 Lead PDIP	2428
SP601	N-Channel Half Bridge for Motor Control	500	14.5 to 16.5	0.5	20	Yes	–40 to +85	22 Lead PDIP	2428

Full Bridge Drivers

Mfr.'s Type	Description	Peak Output Current Each Drive	Supply Voltage Bias/Bus (V)	No Load Maintenance Supply Current (mA)	Temperature Range (°C)	Package Type	AnswerFax® (Doc. #)
CA3275E	Dual Full Bridge Driver for Instrumentation	150.00 mA	8.0 to 16.0	20.0	–40 to +85	14 Lead PDIP	2159
HIP4080IP	FET Driver with Comparator, High Performance for Class D Amps, Voice Coils, and Motor Control	2.50 A	Bias: 8.0 to 16.0 Bus: 1.0 to 80.0	18.0	–40 to +85	20 Lead PDIP	3178
HIP4080AIP	FET Driver with Comparator, Under Voltage, for Class D Amps,Voice Coils, and Motor Control	2.50 A	Bias: 9.5 to 16.0 Bus: 1.0 to 80.0	18.5	–40 to +85	20 Lead PDIP	3658
HIP4081AIP	FET Driver with Under Voltage, High Performance for DC-DC Converters, UPS and Motor Control	2.50 A	Bias: 9.5 to 16.0 Bus: 1.0 to 80.0	16.5	–40 to +85	20 Lead PDIP	3659
HIP4082IB	FET Driver with Under Voltage Independent FET Control	1.25 A	Bias: 9.5 to 16.0 Bus: 1.0 to 80.0	6.5	–40 to +85	16 Lead SOIC	3676
HIP4082IP	FET Driver with Under Voltage Independent FET Control	1.25 A	Bias: 9.5 to 16.0 Bus: 1.0 to 80.0	6.5	–40 to +85	16 Lead PDIP	3676

AC to DC Converters

Mfr.'s Type	Description	AC Input Voltage At 50-60 Hz and 400 Hz (VAC)	Max. DC Supply Voltage (V)	Max. Output Current (mA)	Sensor Range (RX) (KΩ)	Temperature Range (°C)	Package Type	AnswerFax® (Doc. #)
CA3059	Zero Voltage Switch Ac Power Control System on a Chip	24,120, 208/230, 277	14	124	2 to 100	–55 to +125	14 Lead PDIP	490
CA3079	Zero Voltage Switch Ac Power Control System on a Chip	24,120, 208/230, 277	10	124	2 to 50	–55 to +125	14 Lead PDIP	490
HV3-2405E-5	World-Wide Single Chip Power Supply, UL Recognized E130808	15 to 275	Output 5 to 24	50	—	0 to +75	8 Lead PDIP	2487

Protection Circuits

Mfr.'s Type	Description	Supply Voltage Range (V)	Over Voltage Turn-On Threshold (V)	Temperature Range (°C)	Package Type	AnswerFax® (Doc. #)
SP720AB	Electronic Protection Array for ESD and Overvoltage Protection	4.5 to 30	$+V_{BE}$ Above V_{CC} or $-V_{BE}$ Below GND	–40 to +105	16 Lead SOIC	2791
SP720AP	Electronic Protection Array for ESD and Overvoltage Protection	4.5 to 30	$+V_{BE}$ Above V_{CC} or $-V_{BE}$ Below GND	–40 to +105	16 Lead PDIP	2791
SP721AB	Electronic Protection Array for ESD and Overvoltage Protection	4.5 to 30	$+V_{BE}$ Above V_{CC} or $-V_{BE}$ Below GND	–40 to +105	8 Lead SOIC	3590
SP721AP	Electronic Protection Array for ESD and Overvoltage Protection	4.5 to 30	$+V_{BE}$ Above V_{CC} or $-V_{BE}$ Below GND	–40 to +105	8 Lead PDIP	3590
SP723AB	Electronic Protection Array for ESD and Overvoltage Protection	2.0 to 30	$+V_{BE}$ Above V_{CC} or $-V_{BE}$ Below GND	–40 to +105	8 Lead SOIC	4145
SP723AP	Electronic Protection Array for ESD and Overvoltage Protection	2.0 to 30	$+V_{BE}$ Above V_{CC} or $-V_{BE}$ Below GND	–40 to +105	8 Lead PDIP	4145

Power Supply Circuits

Mfr.'s Type	Description	Input Voltage Range (V)	Output Voltage Range (V)	Maximum Output Current	Switching Frequency (KHz)	Quiescent Current	Temperature Range (°C)	Package Type	AnswerFax® (Doc. #)
CA723E	Linear Voltage Regulator	9.5 to 40	2.0 to 37	150 mA	—	3.5 mA	–55 to +125	14 Lead PDIP	788
CA723T	Linear Voltage Regulator	9.5 to 40	2.0 to 37	150 mA	—	3.5 mA	–55 to +125	10 Lead Metal Can	788
CA723CE	Linear Voltage Regulator	9.5 to 40	2.0 to 37	150 mA	—	3.5 mA	0 to +70	14 Lead PDIP	788
CA723CT	Linear Voltage Regulator	9.5 to 40	2.0 to 37	150 mA	—	3.5 mA	0 to +70	10 Lead Metal Can	788
CA1524E	Pulse Width Modulator	8.0 to 40	4.8 to 5.2*	100 mA	1 to 300	10.0 mA	–55 to +125	16 Lead PDIP	1239
CA2524E	Pulse Width Modulator	8.0 to 40	4.8 to 5.2*	100 mA	1 to 300	10.0 mA	0 to +70	16 Lead PDIP	1239
CA3524E	Pulse Width Modulator	8.0 to 40	4.6 to 5.4*	100 mA	1 to 300	10.0 mA	0 to +70	16 Lead PDIP	1239
HIP5600IS	Thermally Protected High Voltage Linear Regulator	50.0 to 400	1.2 to 350	30 mA	—	65.0 µA	–40 to +100	3 Lead PSIP	3270
ICL7660ACBA	Voltage Converter	1.5 to 12	–1.5 to 18.6	—	10	165.0 µA	0 to +70	8 Lead SOIC	3072
ICL7660ACPA	Voltage Converter	1.5 to 12	–1.5 to 18.6	—	10	165.0 µA	0 to +70	8 Lead PDIP	3072
ICL7660SCPA	Super Voltage Converter (Charge Pump Type)	1.5 to 12	–1.5 to ±22.8	45 mA	10 to 35	180.0 µA	0 to +70	8 Lead PDIP	3179
ICL7660SIPA	Super Voltage Converter (Charge Pump Type)	1.5 to 12	–1.5 to ±22.8	45 mA	10 to 35	180.0 µA	–40 to +85	8 Lead PDIP	3179
ICL7662CPA	Voltage Converter (Charge Pump Type)	4.5 to 20	–4.5 to ±38.8	90 mA	10	200.0 µA	0 to +70	8 Lead PDIP	3181
ICL7662MTV	Voltage Converter (Charge Pump Type)	4.5 to 20	–4.5 to ±38.8	90 mA	10	250.0 µA	–55 to +125	8 Lead Metal Can	3181
ICL7663SCPA	Linear Voltage Regulator	1.6 to 16	1.3 to 16	†	—	12.0 µA	0 to +70	8 Lead PDIP	3180

***Reference Voltages:** Output voltage limited by external device. †40 mA — V_{OUT2}; R_{ON} — 100 — V_{OUT2}.

Voltage Monitoring Circuits

Mfr.'s Type	Description	Voltage Range (V)	Quiescent Current (µA)	Output Current (mA)	Input Trip Voltage (V)	Temperature Range (°C)	Package Type	AnswerFax® (Doc. #)
ICL7665SACPA	CMOS Micropower Over/Under Voltage Detector	1.8 to 16	10	2	1.30 ±8%	0 to +70	8 Lead PDIP	3182
ICL7665SAIPA	CMOS Micropower Over/Under Voltage Detector	1.8 to 16	10	2	1.30 ±2%	–40 to +85	8 Lead CDIP	3182
ICL7665SCPA	CMOS Micropower Over/Under Voltage Detector	1.8 to 16	10	2	1.30 ±8%	0 to +70	8 Lead PDIP	3182
ICL7665SIPA	CMOS Micropower Over/Under Voltage Detector	1.8 to 16	10	2	1.30 ±2%	–40 to +85	8 Lead CDIP	3182
ICL7673CBA	Automatic Battery Back-Up Switch	2.5 to 15	5	38	50.00 mV*	0 to +70	8 Lead SOIC	3183
ICL7673CPA	Automatic Battery Back-Up Switch	2.5 to 15	5	38	50.00 mV*	0 to +70	8 Lead PDIP	3183
ICL8211CBA	Programmable Voltage Detectors	1.8 to 30	350	3	1.15 –6%	0 to +70	8 Lead SOIC	3184
ICL8211CPA	Programmable Voltage Detectors	1.8 to 30	350	3	1.15 –6%	0 to +70	8 Lead PDIP	3184
ICL8212CBA	Programmable Voltage Detectors	1.8 to 30	350	9	1.15 –13%	0 to +70	8 Lead SOIC	3184
ICL8212CPA	Programmable Voltage Detectors	1.8 to 30	350	9	1.15 –13%	0 to +70	8 Lead PDIP	3184

*Primary to Back-Up Source Voltage Differential.

HIP2030EVAL
Isolated MCT/IGBT Gate Driver Evaluation Board

The Harris HIP2030EVAL is a printed circuit board developed to help evaluate the performance of the HIP2030 in power switching circuits. The component layout of the HIP2030EVAL circuit enable the user to conveniently utilize either photocoupled or fiber-optic receivers. In addition, the PCB layout has provisions for "on board prototyping" and special function components.

The HIP2030 is a medium voltage integrated circuit capable of driving large capacitive loads at high voltages slew rates. This device is optimized for driving 60 nF of MOS gate capacitance at 30 Vp-p in less than 200 ns. The half bridge gate driver is ideal for driving MOS Controlled Thyristor and IGBT modules.

HIP2030EVAL. AnswerFax® Doc. # 3918

HSP50016-EV
DDC Evaluation Platform

The HSP50016-EV is the evaluation board for the HSP50016 Digital Down Converter (DDC). It provides a mechanism for rapid evaluation and prototyping. The HSP50016-EV consists of a series of busses which provide input, output, and control to the DDC. These busses are brought out through dual 96 Pin connectors to support daisy chaining HSP50016-EVs with other Harris evaluation boards for multichip prototyping and evaluation.

The HSP50016-EV was built into a 3U Euro-Card form factor with dual 96-pin Input/Output connectors. The I/O connectors conform to the VME J2/P2 connector standard.

HSP50016-EV. AnswerFax® Doc. # 3637

HIP5600 Evaluation Boards

The HIP5600IS used on the HIP5600 evaluation boards is an adjustable 3-terminal positive linear voltage regulator. Protection within the HIP5600 is provided by the on chip thermal shutdown and output current limiting circuitry. Evaluation boards are fused to protect board when improperly connected.

HIP5600EVAL1
High Voltage DC to DC Evaluation Board

- **Operates from 50 VDC to 400 VDC**
- **Adjustable Output Voltage 1.2 VDC to V_{IN} — 50 VDC**
- **Output Current to 10 mA at 400 VDC Input**

HIP5600EVAL1. AnswerFax® Doc. # 3747

HIP5600EVAL2
High Voltage AC to DC Evaluation Board

- **Operates from 80 VRMS to 132 VRMS**
- **Adjustable Output Voltage 1.2 VDC to V_{IN} — 50 VDC**
- **Output Current to 10 mA at 400 VDC Input**

HIP5600EVAL2. AnswerFax® Doc. # 3748

HIP5600EVAL3
High Voltage AC to DC Evaluation Board

- **Operates from 80 VRMS to 320 VRMS**
- **Adjustable Output Voltage 1.2 VDC to V_{IN} — 50 VDC**
- **Output Current to 10 mA at 400 VDC Input**

HIP5600EVAL3. AnswerFax® Doc. # 3749

Comparators

Single

Mfr.'s Type	Description	V_{IO} Max. (mV)	I_I Max. (nA)	I_+ Max. (mA)	Max. V+, V–	A_{OL} Min. (dB)	Response Time	Package Type	AnswerFax® (Doc. #)
CA3098E	Programmable Schmitt Trigger with Memory, Dual Input Precision Level Detectors	15	100	0.8	±8	—	900 ns	8 Lead PDIP	896

Dual

Mfr.'s Type	Description	V_{IO} Max. (mV)	I_I Max. (nA)	I_+ Max. (mA)	Max. V+, V–	A_{OL} Min. (dB)	Response Time	Package Type	AnswerFax® (Doc. #)
CA3290E	BiMOS Dual Voltage Comparator with MOSFET Input/Bipolar Output	20	50 pA	3.0	±18	88	t_R=1.2 µs, t_R=200 ns	8 Lead PDIP	1049
CA3290AE	BiMOS Dual Voltage Comparator with MOSFET Input/Bipolar Output	10	40 pA	3.0	±18	88	t_R=1.2 µs, t_R=200 ns	8 Lead PDIP	1049

Quad

Mfr.'s Type	Description	V_{IO} Max. (mV)	I_I Max. (nA)	I_+ Max. (mA)	Max. V+, V–	A_{OL} Min. (dB)	Response Time	Package Type	AnswerFax® (Doc. #)
CA139E	Quad Voltage Comparator	5	100	8.0	±18	—	t_R=1.3 µs, t_R=750 ns	14 Lead PDIP	795
CA239E	Quad Voltage Comparator	5	250	2.0	±18	—	t_R=1.3 µs, t_R=750 ns	14 Lead PDIP	795
CA339E	Quad Voltage Comparator	5	250	2.0	±18	94	t_R=1.3 µs, t_R=750 ns	14 Lead PDIP	795

Comparators (Continued)

Precision Quad

Mfr.'s Type	Description	V_{IO} Max. (mV)	I_{IO} Max. (nA)	Response Time (ns)	Package Type	AnswerFax® (Doc. #)
HA1-4900-2	Precision Quad Comparator, Single or Dual Supply. Separate Analog and Logic Supplies	2	10	130	16 Lead CDIP	2855
HA1-4902-2	Precision Quad Comparator, Single or Dual Supply. Separate Analog and Logic Supplies	2	10	130	16 Lead CDIP	2855
HA1-4905-5	Precision Quad Comparator, Single or Dual Supply. Separate Analog and Logic Supplies	4	25	130	16 Lead CDIP	2855

High Performance Buffers

Single

Mfr.'s Type		Description	–3 dB Bandwidth @ Min. A_{CL} (MHz)	Slew Rate (V/µs)	Settling Time (ns to %)	Input Offset Voltage (mV)	Bias Current (µA)	Output Current (mA/Amp)	Supply Range ($\pm V_{DC}$)	Supply Current (mA/Amp)	AnswerFax® (Doc. #)
PDIP	SOIC										
HFA1112IP	—	850 MHz Programmable Gain (+2, ±1)	850	2050	11-0.10	8	25.0	60	4.5 to 5.5	21.0	2992
HFA1113IP	HFA1113IB	850 MHz Programmable Gain and Output Limiting	850	2020	11-0.10	8	25.0	60	4.5 to 5.5	21.0	1342
HFA1114IP	—	850 MHz Programmable Gain and Summing Node	850	2400	11-0.10	8	25.0	60	4.5 to 5.5	21.0	3151
HFA1110IP	—	750 MHz Unity Gain	750	1300	11-0.10	8	10.0	60	4.5 to 5.5	21.0	2944
HFA1115IP	—	350 MHz Programmable Gain and Output Limiting	350	1100	12-0.10	2	6.0	60	4.5 to 5.5	6.9	3606
HA3-5033-5	—	250 MHz Video Buffer	250	1100	50-0.10	5	20.0	100	5.0 to 16.0	21.0	2924
HA3-5002-5	HA9P5002-5	110 MHz High Output Current	110	1300	50-0.10	5	2.0	220	6.0 to 16.0	8.3	2921

Dual

PDIP	SOIC	Description	–3 dB Bandwidth @ Min. A_{CL} (MHz)	Slew Rate (V/µs)	Settling Time (ns to %)	Input Offset Voltage (mV)	Bias Current (µA)	Output Current (mA/Amp)	Supply Range ($\pm V_{DC}$)	Supply Current (mA/Amp)	AnswerFax® (Doc. #)
HFA1212IP	HFA1212IB	Dual 350 MHz Programmable Gain (+2, ±1)	350	1100	12-0.10	2	6.0	60	4.5 to 5.5	5.9	3607

Quad

PDIP	SOIC	Description	–3 dB Bandwidth @ Min. A_{CL} (MHz)	Slew Rate (V/µs)	Settling Time (ns to %)	Input Offset Voltage (mV)	Bias Current (µA)	Output Current (mA/Amp)	Supply Range ($\pm V_{DC}$)	Supply Current (mA/Amp)	AnswerFax® (Doc. #)
HFA1412IP	HFA1412IB	Quad 350 MHz Programmable Gain (+2, ±1)	350	1100	12-0.10	2	6.0	60	4.5 to 5.5	5.9	3607

High Performance Op-Amps

Single

Mfr.'s Type		Description*	–3 dB Bandwidth @ Min. A_{CL} (MHz)	Slew Rate (V/µs)	Settling Time (ns to %)	Input Offset Voltage (mV)	Bias Current (µA)	Output Current (mA/Amp)	Supply Range ($\pm V_{DC}$)	Supply Current (mA/Amp)	AnswerFax® (Doc. #)
PDIP	SOIC										
HFA1100IP	HFA1100IB	850 MHz CFB	850	2300	11-0.10	2.0	12.0	65	4.5 to 5.5	21.0	2945
HFA1120IP	—	850 MHz CFB with Balance Adjust	850	2300	11-0.10	2.0	12.0	65	4.5 to 5.5	21.0	2945
HFA1130IP	HFA1130IB	850 MHz CFB with Output Limiting	850	2300	11-0.10	2.0	12.0	65	4.5 to 5.5	21.0	3369
—	HFA1105IB	350 MHz CFB	350	1100	12-0.10	2.0	6.0	60	4.5 to 5.5	5.9	3395
HFA1135IP	HFA1135IB	350 MHz CFB with Output Limiting	350	1100	12-0.10	2.0	6.0	60	4.5 to 5.5	5.9	3653
CA3450E	—	185 MHz VFB Video Line Driver (A_{CL}=1)	185	160	35-0.10	8.0	0.1	100	6.0 to 14.5	30.0	1732
HA3-5020-5	HA9P5020-5	100 MHz CFB Video Op-Amp	100	800	90-0.10	2.0	3.0	65	5.0 to 15.0	7.5	2845
HA3-2842-5	—	80 MHz VFB High Output Current Video Op-Amp	80	400	100-0.10	1.0	5.0	100	6.5 to 15.0	14.0	2766
HA3-2841-5	HA9P2841-5	50 MHz VFB Fast Settling Video Op-Amp	50	240	90-0.10	1.0	5.0	30	6.5 to 15.0	10.0	2843
HA3-2850-5	—	470 MHz VFB Low Power, Wide Band (A_{CL}=+10)	470	340	200-0.10	0.6	5.0	20	6.0 to 15.0	7.5	2844
HA3-2544-5	HA9P2544-5	45 MHz VFB Video Op-Amp	45	150	120-0.10	6.0	7.0	35	5.0 to 15.0	10.0	2900

Dual

PDIP	SOIC	Description*	–3 dB Bandwidth @ Min. A_{CL} (MHz)	Slew Rate (V/µs)	Settling Time (ns to %)	Input Offset Voltage (mV)	Bias Current (µA)	Output Current (mA/Amp)	Supply Range ($\pm V_{DC}$)	Supply Current (mA/Amp)	AnswerFax® (Doc. #)
HFA1205IP	—	350 MHz Current Feedback	350	1100	12-0.10	2.0	6.0	60	4.5 to 5.5	5.9	3605
HFA1245IP	HFA1245IB	350 MHz Current Feedback with Disable/Enable	350	1100	12-0.10	2.0	6.0	60	4.5 to 5.5	5.9	3682
HA5022IP	HA5022IB	100 MHz Current Feedback with Disable/Enable	100	475	130-0.10	0.8	3.0	20	5.0 to 15.0	7.5	3392
HA5023IP	HA5023IB	100 MHz Current Feedback	100	475	130-0.10	0.8	3.0	20	5.0 to 15.0	7.5	3393

Triple

PDIP	SOIC	Description*	–3 dB Bandwidth @ Min. A_{CL} (MHz)	Slew Rate (V/µs)	Settling Time (ns to %)	Input Offset Voltage (mV)	Bias Current (µA)	Output Current (mA/Amp)	Supply Range ($\pm V_{DC}$)	Supply Current (mA/Amp)	AnswerFax® (Doc. #)
HA5013IP	HA5013IB	125 MHz Current Feedback Video Op-Amp	125	475	130-0.10	0.8	3.0	20	5.0 to 15.0	7.5	3654

Quad

PDIP	SOIC	Description*	–3 dB Bandwidth @ Min. A_{CL} (MHz)	Slew Rate (V/µs)	Settling Time (ns to %)	Input Offset Voltage (mV)	Bias Current (µA)	Output Current (mA/Amp)	Supply Range ($\pm V_{DC}$)	Supply Current (mA/Amp)	AnswerFax® (Doc. #)
HA5024IP	—	125 MHz Current Feedback with Disable/Enable	125	475	130-0.10	0.8	3.0	20	5.0 to 15.0	7.5	3550
HA5025IP	HA5025IB	125 MHz Current Feedback	125	475	130-0.10	0.8	3.0	20	5.0 to 15.0	7.5	3591
HA3-2444-5	HA9P2444-5	45 MHz Selectable 4 Channel Video Op-Amp	45	160	120-0.10	4.0	9.0	40	15.0 to 20.0	20.0	2490

*Architecture: CFB = Current Feedback; VFB = Voltage Feedback.

General Purpose Op-Amps

Single

Mfr.'s Type		Description	Minimum Stable Gain	GBWP (MHz)	Slew Rate (V/µs)	Offset Voltage (mV)	Bias Current (µA)	Maximum Supply Voltage (±V)	Supply Current (mA/Amp)	No. of Leads	AnswerFax® (Doc. #)
DIP	SOIC										
CA3100E	—	Wideband Op-Amp	1	38.0	70.0	1.0	0.700	18.0	8.50	8	625
CA3130AE	—	BiMOS Op-Amp with MOSFET Input/CMOS Output	1	15.0	30.0	2.0	5.000 pA	8.0	2.00	8	817
CA3130E	—	BiMOS Op-Amp with MOSFET Input/CMOS Output	1	15.0	30.0	8.0	5.000 pA	8.0	2.00	8	817
CA5130AE	—	BiMOS Microprocessor Op-Amp with MOSFET Input/CMOS Output	1	15.0	30.0	2.0	5.000 pA	8.0	2.00	8	1923
CA5130E	—	BiMOS Microprocessor Op-Amp with MOSFET Input/CMOS Output	1	15.0	30.0	8.0	5.000 pA	8.0	2.00	8	1923
CA3140AE	CA3140AM	BiMOS Op-Amp with MOSFET Input/Bipolar Output	1	4.5	9.0	2.0	10.000 pA	18.0	4.00	8	975
CA3140E	CA3140M	BiMOS Op-Amp with MOSFET Input/Bipolar Output	1	4.5	9.0	5.0	10.000 pA	18.0	4.00	8	975
HA7-2645-5	—	High Voltage Op-Amp	1	4.0	5.0	2.0	0.012	50.0	3.20	8	2904
CA3160AE	—	BiMOS Op-Amp with MOSFET Input/CMOS Output	1	4.0	10.0	2.0	5.000 pA	8.0	2.00	8	976
CA3160E	—	BiMOS Op-Amp with MOSFET Input/CMOS Output	1	4.0	10.0	6.0	5.000 pA	8.0	2.00	8	976
CA3080E	CA3080M	Operational Transconductance Amplifier (OTA)	1	2.0	75.0	0.4	2.000	18.0	1.00	8	475
CA741E	—	High Gain	1	1.0	0.5	1.0	0.080	22.0	1.70	8	531
HA3-2525-5	HA9P2525-5	Uncompensated High Slew Rate Op-Amp	3	20.0	120.0	5.0	0.125	20.0	4.00	8	2894
HA3-2625-5	HA9P2625-5	Very Wideband, Uncompensated Op-Amp	5	100.0	35.0	3.0	0.005	22.5	3.00	8	2903

Dual

DIP	SOIC	Description	Minimum Stable Gain	GBWP (MHz)	Slew Rate (V/µs)	Offset Voltage (mV)	Bias Current (µA)	Maximum Supply Voltage (±V)	Supply Current (mA/Amp)	No. of Leads	AnswerFax® (Doc. #)
CA3280E	—	Dual Variable Op-Amp	1	9.0	125.0	0.7	1.800	18.0	2.00	16	1174

General Purpose Op-Amps (Continued)

Dual (Continued)

Mfr.'s Type		Description	Minimum Stable Gain	GBWP (MHz)	Slew Rate (V/µs)	Offset Voltage (mV)	Bias Current (µA)	Maximum Supply Voltage (±V)	Supply Current (mA/Amp)	No. of Leads	AnswerFax® (Doc. #)
DIP	SOIC										
HA3-5102-5	—	Low Noise, High Performance Op-Amp	1	8.0	3.0	0.5	0.130	20.0	1.50	8	2925
CA3240AE	—	Dual BiMOS Op-Amp with MOSFET Input/Bipolar Output	1	4.5	9.0	2.0	10.000 pA	18.0	4.00	8	1050
CA3240E	—	Dual BiMOS Op-Amp with MOSFET Input/Bipolar Output	1	4.5	9.0	5.0	10.000 pA	18.0	4.00	8	1050
—	CA5260AM	BiMOS Microprocessor Op-Amp with MOSFET Input/CMOS Output	1	3.0	5.0	2.0	5.000 pA	8.0	0.60	8	1929
CA5260E	CA5260M	BiMOS Microprocessor Op-Amp with MOSFET Input/CMOS Output	1	3.0	5.0	6.0	5.000 pA	8.0	0.60	8	1929
CA1458E	—	High Gain	1	1.0	0.5	1.0	0.080	22.0	1.70	8	531

Quad

DIP	SOIC	Description	Minimum Stable Gain	GBWP (MHz)	Slew Rate (V/µs)	Offset Voltage (mV)	Bias Current (µA)	Maximum Supply Voltage (±V)	Supply Current (mA/Amp)	No. of Leads	AnswerFax® (Doc. #)
HA3-5104-5	HA9P5104-5	Low Noise, High Performance Op-Amp	1	8.0	3.0	0.5	0.130	20.0	1.25	14	2925
HA3-5114-5	—	Low Noise, High Performance Op-Amp	10	60.0	20.0	0.5	0.130	20.0	1.25	14	2925

Differential Amplifiers

Mfr.'s Type	Description	Frequency Range, DC to (MHz)	A (dB)	BW (3 dB Point) (GHz)	1/F NF (dB)	AGC Range (dB)Type	Package (Doc. #)	AnswerFax®
CA3028AE	Balanced Differential Cascade Amplifier with Controlled Constant Current Source	120	40*	—	7.2	62.0	8 Lead PDIP	382
CA3102E	Dual High Frequency Differential Amplifier for Low Power Applications	500	22	1.35	1.5	7.5	14 Lead PDIP	611

*GP Min. at 100 MHz; Cascade=16 dB; Differential=14 dB.

Transistor Arrays

Mfr.'s Type	Description	$V_{(BR)CEO}$ Min. (V)	$V_{(BR)CBO}$ Min. (V)	h_{FE} Min.	I_C Max. (mA)	Package Type	AnswerFax® (Doc. #)
CA3046	3 Transistors Plus a Differential Pair, fT > 300 MHz, 2 Matched Pairs ±5 mV	15	20	40	50	14 Lead PDIP	341
CA3081	7 Common Emitter General Purpose NPN High Current Transistors	16	20	40	100	16 Lead PDIP	480
CA3082	7 Common Collector General Purpose NPN High Current Transistors	16	20	40	100	16 Lead PDIP	480
CA3083	5 Independent NPN Transistors. Q1 and Q2 Matched; II0 (at 1 mA) 2.5 µA Max.	15	20	40	100	16 Lead PDIP	481
CA3086	3 Isolated NPN Transistors Plus a Differential Pair. fT>500 MHz Typ. from DC to 120 MHz	15	20	40	50	14 Lead PDIP	483
CA3127E	5 Independent High Frequency NPN Transistors. fT>1 GHz from DC to 500 MHz	15	20	40	20	16 Lead PDIP	662
CA3146E	3 Transistors Plus a Differential Pair, fT > 500 MHz Typ. Operation from DC to 120 MHz	30	40	40	75	14 Lead PDIP	532
CA3146AE	3 Transistors Plus a Differential Pair, fT > 500 MHz Typ. Operation from DC to 120 MHz	40	50	40	75	14 Lead PDIP	532
CA3183E	5 High Current/High Voltage NPN Transistors. Q1 and Q2 Matched at 1 mA	30	40	40	75	16 Lead PDIP	532
CA3183AE	5 High Current/High Voltage NPN Transistors. Q1 and Q2 Matched at 1 mA	40	50	40	75	16 Lead PDIP	532
CA3227E	5 Independent NPN Transistors, fT > 3 GHz Typ. Operation from DC to 1.5 GHz	8	12	40	20	16 Lead PDIP	1345
CA3246E	3 Independent NPN Transistors Plus a Differential Pair, fT > 3 GHz Typ. Operation from DC to 1.5 GHz	8	12	40	20	14 Lead PDIP	1345

Mfr.'s Type	Description	$V_{(BR)CEO}$ Min. (V) NPN/PNP	$V_{(BR)CBO}$ Min. (V) NPN/PNP	h_{FE} Min. NPN/PNP	I_C Max. (mA) NPN/PNP	Package Type	AnswerFax® (Doc. #)
CA3096E	5 Independent Transistors, 3 NPN and 2 PNP	35/–40	45/–40	150/20	50/–10	16 Lead PDIP	595
CA3096AE	5 Independent Transistors, 3 NPN and 2 PNP	35/–40	45/–40	150/20	50/–10	16 Lead PDIP	595
CA3096CE	5 Independent Transistors, 3 NPN and 2 PNP	24/–24	30/–24	100/15	50/–10	16 Lead PDIP	595
HFA3046B	3, 8 GHz NPN Transistors Plus an NPN differential Pair, Vio = 5 mV Max.	8	12	40	40	14 Lead SOIC	3076
HFA3096B	3, 8 GHz NPN Transistors Plus 2, 5.5 GHz PNP Transistors, NF = 3.5 dB at 1 GHz	8	12/10	40/25	10	16 Lead SOIC	3076
HFA3127B	5 Independent 8 GHz NPN Transistors, NF = 3.5 dB at 1 GHz	8	12	40	40	16 Lead SOIC	3076
HFA3128B	5 Independent 5.5 GHz PNP Transistors, NF = 3.5 dB at 1 GHz	8	10	25	40	16 Lead SOIC	3076

Diode Array

Mfr.'s Type	Description	$V_{(BR)R}$ Min. (V)	I_R Max. (µA)	C_D Typ. (pF)	V_{F1}-V_{F2} Max. (mV)	Package Type	AnswerFax® (Doc. #)
CA3039	6 Individual Ultra-Fast Low Capacitance Matched Diodes	5	0.1	0.65	5 (IF=1 mA)	12 Lead TO-5	343

Timers/Oscillators

Mfr.'s Type	Description	Max. Output Frequency (Astable)	Power Supply Requirement	Package Type	AnswerFax® (Doc. #)
CA555E	Timer for Time Delays and Oscillator Applications	10 KHz (Typ.)	+4.5 V to +18 V @ 15 mA	8 Lead PDIP	834
CA555T	Timer for Time Delays and Oscillator Applications	10 KHz (Typ.)	+4.5 V to +18 V @ 15 mA	8 Lead TO-5	834
LM555CN	Timer for Time Delays and Oscillator Applications	10 KHz (Typ.)	+4.5 V to +18 V @ 15 mA	8 Lead PDIP	834
ICM7555IBA	Low Power CMOS Equivalent of Industry Standard 555. 80 µA Supply Current.	1 MHz (Typ.)	+2.0 V to +18 V @ 300 µA	8 Lead SOIC	2867
ICM7555IPA	Low Power CMOS Equivalent of Industry Standard 555. 80 µA Supply Current.	1 MHz (Typ.)	+2.0 V to +18 V @ 300 µA	8 Lead PDIP	2867
ICM7555MTV	Low Power CMOS Equivalent of Industry Standard 555. 80 µA Supply Current.	1 MHz (Typ.)	+2.0 V to +18 V @ 300 µA	8 Lead TO-99	2867
ICM7556IPD	Dual ICM7555, Low Power CMOS Equivalent of Industry Standard 556.	1 MHz (Typ.)	+2.0 V to +18 V @ 300 µA	14 Lead PDIP	2867
ICM7242IPA	Long Range Fixed Timer. RC Oscillator +8 Bit Counter. Fixed 256 Count. Cascadable.	2 MHz (Typ.)	+2.0 V to +16 V @ 800 µA	8 Lead PDIP	2866
HA7210IB	32.768 KHz Micropower Clock Oscillator. Externally Programmed to Operate 10 KHz to 10 MHz	10 MHz	+2.0 V to +7 V @ 5 µA	8 Lead SOIC	3389
HA7210IP	32.768 KHz Micropower Clock Oscillator. Externally Programmed to Operate 10 KHz to 10 MHz	10 MHz	+2.0 V to +7 V @ 5 µA	8 Lead PDIP	3389

CMOS Logic

HC and HCT

Mfr.'s Type				Description	No. of Leads	AnswerFax® (Doc. #)
HC		HCT				
DIP Package	SOIC Package	DIP Package	SOIC Package			
CD74HC00E	CD74HC00M	CD74HCT00E	CD74HCT00M	Quad 2-Input NAND Gate	14	1464
CD74HC02E	CD74HC02M	CD74HCT02E	CD74HCT02M	Quad 2-Input NOR Gate	14	1647
CD74HC03E	CD74HC03M	CD74HCT03E	CD74HCT03M	Quad 2-Input NAND Gate with Open Drain	14	1832

CMOS Logic (Continued)

HC and HCT (Continued)

Mfr.'s Type				Description	No. of Leads	AnswerFax® (Doc. #)
HC		HCT				
DIP Package	SOIC Package	DIP Package	SOIC Package			
CD74HC04E	CD74HC04M	CD74HCT04E	CD74HCT04M	Hex Inverter/Buffer	14	1471
CD74HC08E	CD74HC08M	CD74HCT08E	CD74HCT08M	Quad 2-Input AND Gate	14	1549
CD74HC10E	CD74HC10M	CD74HCT10E	CD74HCT10M	Triple 3-Input NAND Gate	14	1551
CD74HC11E	CD74HC11M	CD74HCT11E	CD74HCT11M	Triple 3-Input AND Gate	14	1475
CD74HC14E	CD74HC14M	CD74HCT14E	CD74HCT14M	Hex Inverting Schmitt Trigger	14	1781
CD74HC20E	CD74HC20M	CD74HCT20E	CD74HCT20M	Dual 4-Input NAND Gate	14	1601
CD74HC21E	CD74HC21M	CD74HCT21E	CD74HCT21M	Dual 4-Input AND Gate	14	1782
CD74HC27E	CD74HC27M	CD74HCT27E	CD74HCT27M	Triple 3-Input NOR Gate	14	1648
CD74HC30E	CD74HC30M	CD74HCT30E	CD74HCT30M	8-Input NAND Gate	14	1652
CD74HC32E	CD74HC32M	CD74HCT32E	CD74HCT32M	Quad 2-Input OR Gate	14	1643
CD74HC42E	CD74HC42M	CD74HCT42E	CD74HCT42M	BCD-to-Decimal Decoder (1-to-10)	16	1689
CD74HC73E	CD74HC73M	CD74HCT73E	CD74HCT73M	Dual J-K Flip-Flop with Reset	14	1721
CD74HC74E	CD74HC74M	CD74HCT74E	CD74HCT74M	Dual D Flip-Flop with Set and Reset	14	1476
CD74HC75E	CD74HC75M	CD74HCT75E	CD74HCT75M	Dual 2-Bit Bistable Transparent Latch	16	1666
CD74HC85E	CD74HC85M	CD74HCT85E	CD74HCT85M	4-Bit Magnitude Comparator	16	1770
CD74HC86E	CD74HC86M	CD74HCT86E	CD74HCT86M	Quad 2-Input EXCLUSIVE-OR Gate	14	1644
CD74HC93E	CD74HC93M	CD74HCT93E	CD74HCT93M	4-Bit Binary Ripple Counter	14	1849
CD74HC107E	CD74HC107M	CD74HCT107E	CD74HCT107M	Dual J-K Flip-Flop with Reset	14	1722
CD74HC109E	CD74HC109M	CD74HCT109E	CD74HCT109M	Dual J-K Flip-Flop with Set and Reset	16	1667
CD74HC112E	CD74HC112M	CD74HCT112E	CD74HCT112M	Dual J-K Flip-Flop with Set and Reset	16	1843
CD74HC123E	CD74HC123M	CD74HCT123E	CD74HCT123M	Dual Retriggerable Monostable Multivibrator with Reset	16	1708
CD74HC125E	CD74HC125M	CD74HCT125E	CD74HCT125M	Quad 3-State Buffer	14	1771
CD74HC126E	CD74HC126M	CD74HCT126E	CD74HCT126M	Quad 3-State Buffer	14	1772
CD74HC132E	CD74HC132M	CD74HCT132E	CD74HCT132M	Quad 2-Input NAND Schmitt Trigger	14	1649
CD74HC137E	CD74HC137M	CD74HCT137E	CD74HCT137M	3-to-8-Line Decoder with Latch, Inverting	16	1886
CD74HC138E	CD74HC138M	CD74HCT138E	CD74HCT138M	3-to-8-Line Decoder/Demultiplexer, Inverting	16	1477
CD74HC139E	CD74HC139M	CD74HCT139E	CD74HCT139M	Dual 2-to-4-Line Decoder/Demultiplexer	16	1545
CD74HC147E	CD74HC147M	CD74HCT147E	CD74HCT147M	10-to-4-Line Priority Encoder	16	1773
CD74HC151E	CD74HC151M	CD74HCT151E	CD74HCT151M	8-Input Multiplexer	16	1645
CD74HC153E	CD74HC153M	CD74HCT153E	CD74HCT153M	Dual 4-Input Multiplexer	16	1774
CD74HC154E	CD74HC154M	CD74HCT154E	CD74HCT154M	4-to-16-Line Decoder/Demultiplexer	24	1657
CD74HC157E	CD74HC157M	CD74HCT157E	CD74HCT157M	Quad 2-Input Multiplexer	16	1642
CD74HC158E	CD74HC158M	CD74HCT158E	CD74HCT158M	Quad 2-Input Multiplexer, Inverting	16	1642
CD74HC160E	CD74HC160M	CD74HCT160E	CD74HCT160M	Synchronous BCD Decade Counter, Asynchronous Reset	16	1550
CD74HC161E	CD74HC161M	CD74HCT161E	CD74HCT161M	Synchronous 4-Bit Binary Counter, Asynchronous Reset	16	1550
CD74HC162E	CD74HC162M	CD74HCT162E	CD74HCT162M	Synchronous BCD Decade Counter, Synchronous Reset	16	1550
CD74HC163E	CD74HC163M	CD74HCT163E	CD74HCT163M	Synchronous 4-Bit Binary Counter, Synchronous Reset	16	1550
CD74HC164E	CD74HC164M	CD74HCT164E	CD74HCT164M	8-Bit Serial-In/Parallel-Out Shift Register	14	1658
CD74HC165E	CD74HC165M	CD74HCT165E	CD74HCT165M	8-Bit Parallel-In/Serial-Out Shift Register	16	1672
CD74HC166E	CD74HC166M	CD74HCT166E	CD74HCT166M	8-Bit Parallel-In/Serial-Out Shift Register	16	1501
CD74HC173E	CD74HC173M	CD74HCT173E	CD74HCT173M	Quad D Flip-Flop, Three-State	16	1641
CD74HC174E	CD74HC174M	CD74HCT174E	CD74HCT174M	Hex D-Type Flip-Flop with Reset	16	1608
CD74HC175E	CD74HC175M	CD74HCT175E	CD74HCT175M	Quad D-Type Flip-Flop with Reset	16	1474
CD74HC181E	—	CD74HCT181E	—	4-Bit Arithmetic Logic Unit	24	1829
CD74HC190E	CD74HC190M	CD74HCT190E	CD74HCT190M	Presettable Synchronous BCD Decade Up/Down Counter	16	1662
CD74HC191E	CD74HC191M	CD74HCT191E	CD74HCT191M	Synchronous 4-Bit Binary Up/Down Counter	16	1662
CD74HC192E	CD74HC192M	CD74HCT192E	CD74HCT192M	Synchronous BCD Decade Up/Down Counter	16	1674
CD74HC193E	CD74HC193M	CD74HCT193E	CD74HCT193M	Synchronous 4-Bit Binary Up/Down Counter	16	1674
CD74HC194E	CD74HC194M	CD74HCT194E	CD74HCT194M	4-Bit Bidirectional Universal Shift Register	16	1668
CD74HC195E	CD74HC195M	CD74HCT195E	CD74HCT195M	4-Bit Parallel Access Shift Register	16	1482
CD74HC221E	CD74HC221M	CD74HCT221E	CD74HCT221M	Dual Monostable Multivibrator with Reset	16	1670
CD74HC237E	CD74HC237M	CD74HCT237E	CD74HCT237M	3-to-8-Line Decoder/Demultiplexer with Address Latches	16	1886
CD74HC238E	CD74HC238M	CD74HCT238E	CD74HCT238M	3-to-8-Line Decoder/Demultiplexer	16	1477
CD74HC240E	CD74HC240M	CD74HCT240E	CD74HCT240M	Octal Buffer Line Driver, Three-State, Inverting	20	1656
CD74HC241E	CD74HC241M	CD74HCT241E	CD74HCT241M	Octal Buffer Line Driver, Three-State	20	1656
CD74HC242E	CD74HC242M	CD74HCT242E	CD74HCT242M	Quad-Bus Transceiver, Three-State, Inverting	14	1488
CD74HC243E	CD74HC243M	CD74HCT243E	CD74HCT243M	Quad-Bus Transceiver, Three-State	14	1488
CD74HC244E	CD74HC244M	CD74HCT244E	CD74HCT244M	Octal-Buffer Line Driver, Three-State	20	1656
CD74HC245E	CD74HC245M	CD74HCT245E	CD74HCT245M	Octal-Bus Transceiver, Three-State	20	1651
CD74HC251E	CD74HC251M	CD74HCT251E	CD74HCT251M	8-Input Multiplexer, Three-State	16	1489
CD74HC253E	CD74HC253M	CD74HCT253E	CD74HCT253M	Dual 4-Input Multiplexer, Three-State	16	1673
CD74HC257E	CD74HC257M	CD74HCT257E	CD74HCT257M	Quad 2-Input Multiplexer, Three-State; Non-Inverting Outputs	16	1650
CD74HC258E	CD74HC258M	CD74HCT258E	CD74HCT258M	Quad 2-Input Multiplexer, Three-State; Inverting Outputs	16	1775
CD74HC259E	CD74HC259M	CD74HCT259E	CD74HCT259M	8-Bit Addressable Latch	16	1727
CD74HC273E	CD74HC273M	CD74HCT273E	CD74HCT273M	Octal D-Type Flip-Flop with Reset	20	1479
CD74HC280E	CD74HC280M	CD74HCT280E	CD74HCT280M	9-Bit Odd/Even Parity Generator/Checker	14	1669
CD74HC283E	CD74HC283M	CD74HCT283E	CD74HCT283M	4-Bit Adder with Fast Carry	16	1848
CD74HC297E	—	CD74HCT297E	—	Digital Phase-Locker Loop Filter	16	1852
CD74HC299E	CD74HC299M	CD74HCT299E	CD74HCT299M	8-Bit Universal Shift Register Three-State	20	1485
CD74HC354E	—	CD74HCT354E	—	8-Input Multiplexer/Register, Three-State	20	1690
CD74HC356E	—	CD74HCT356E	—	8-Input Multiplexer/Register, Three-State	20	1690
CD74HC365E	CD74HC365M	CD74HCT365E	CD74HCT365M	Hex Buffer/Line Driver, Three-State	16	1539
CD74HC366E	CD74HC366M	CD74HCT366E	CD74HCT366M	Hex Buffer/Line Driver, Three-State, Inverting	16	1539
CD74HC367E	CD74HC367M	CD74HCT367E	CD74HCT367M	Hex Buffer/Line Driver, Three-State	16	1538
CD74HC368E	CD74HC368M	CD74HCT368E	CD74HCT368M	Hex Buffer/Line Driver, Three-State, Inverting	16	1538
CD74HC373E	CD74HC373M	CD74HCT373E	CD74HCT373M	Octal Transparent Latch, Three-State	20	1679
CD74HC374E	CD74HC374M	CD74HCT374E	CD74HCT374M	Octal D Flip-Flop, Three-State	20	1663
CD74HC377E	CD74HC377M	CD74HCT377E	CD74HCT377M	Octal D-Type Flip-Flop with Data Enable	20	1675
CD74HC390E	CD74HC390M	CD74HCT390E	CD74HCT390M	Dual Decade Ripple Counter	16	1838
CD74HC393E	CD74HC393M	CD74HCT393E	CD74HCT393M	Dual 4-Bit Binary Ripple Counter	14	1653
CD74HC423E	CD74HC423M	CD74HCT423E	CD74HCT423M	Dual Retriggerable Monostable Multivibrator with Reset	16	1708
CD74HC533E	—	CD74HCT533E	—	Octal Transparent Latch, Three-State; Inverting	20	1599
CD74HC534E	CD74HC534M	CD74HCT534E	CD74HCT534M	Octal D Flip-Flop, Three-State, Inverting	20	1640
CD74HC540E	CD74HC540M	CD74HCT540E	CD74HCT540M	Octal Buffer Line Driver, Three-State, Inverting	20	1659
CD74HC541E	CD74HC541M	CD74HCT541E	CD74HCT541M	Octal Buffer Line Driver, Three-State	20	1659
CD74HC563E	CD74HC563M	CD74HCT563E	CD74HCT563M	Octal Transparent Latch, Three-State, Inverting	20	1599
CD74HC564E	CD74HC564M	CD74HCT564E	CD74HCT564M	Octal D Flip-Flop,.Three-State, Inverting	20	1640
CD74HC573E	CD74HC573M	CD74HCT573E	CD74HCT573M	Octal Transparent Latch, Three-State	20	1679
CD74HC574E	CD74HC574M	CD74HCT574E	CD74HCT574M	Octal D Flip-Flop, Three-State	20	1663
CD74HC583E	—	CD74HCT583E	—	4-Bit BCD Full Adder with Fast Carry	16	1828
CD74HC597E	CD74HC597M	CD74HCT597E	CD74HCT597M	8-Bit Shift Register with Input Storage	16	1915
CD74HC640E	CD74HC640M	CD74HCT640E	CD74HCT640M	Octal Bus Transceiver, Three-State, Inverting	20	1677
CD74HC643E	—	CD74HCT643E	—	Octal Bus Transceiver, Three-State, True/Inverting	20	1677
CD74HC646E	CD74HC646M	CD74HCT646E	CD74HCT646M	Octal Bus Transceiver/Register, Three-State	24	1664
CD74HC648E	CD74HC648M	CD74HCT648E	CD74HCT648M	Octal Bus Transceiver/Register, Three-State, Inverting	24	1664
CD74HC651E	CD74HC651M	CD74HCT651E	CD74HCT651M	Octal Bus Transceiver/Register, Three-State, Inverting	24	2229
CD74HC652E	CD74HC652M	CD74HCT652E	CD74HCT652M	Octal Bus Transceiver/Register, Three-State, Non-Inverting	24	2229
CD74HC670E	CD74HC670M	CD74HCT670E	CD74HCT670M	4 x 4 Register File, Three-State	16	1660
CD74HC688E	CD74HC688M	CD74HCT688E	CD74HCT688M	8-Bit Magnitude Comparator	20	1646
CD74HC4002E	CD74HC4002M	CD74HCT4002E	CD74HCT4002M	Dual 4-Input NOR Gate	14	1776
CD74HC4015E	CD74HC4015M	CD74HCT4015E	CD74HCT4015M	Dual 4-Stage Static Shift Register	16	1678
CD74HC4016E	—	CD74HCT4016E	—	Quad Bilateral Switch	14	1917

CMOS Logic (Continued)

HC and HCT (Continued)

Mfr.'s Type				Description	No. of Leads	AnswerFax® (Doc. #)
HC		HCT				
DIP Package	SOIC Package	DIP Package	SOIC Package			
CD74HC4017E	CD74HC4017M	CD74HCT4017E	CD74HCT4017M	Decade Counter/Divider with 10 Decoded Outputs	16	1639
CD74HC4020E	CD74HC4020M	CD74HCT4020E	CD74HCT4020M	14-Stage Binary Ripple Counter	16	1484
CD74HC4024E	CD74HC4024M	CD74HCT4024E	CD74HCT4024M	7-Stage Binary Ripple Counter	16	1638
CD74HC4040E	CD74HC4040M	CD74HCT4040E	CD74HCT4040M	12-Bit Binary Counter	16	1483
CD74HC4046AE	CD74HC4046AM	CD74HCT4046AE	CD74HCT4046AM	Phase-Locked Loop with VCO	16	1854
CD74HC4049E	CD74HC4049M	—	—	Hex Inverting High-to-Low Level Shifter	16	1543
CD74HC4050E	CD74HC4050M	—	—	Hex High-to-Low Level Shifter	16	1543
CD74HC4051E	CD74HC4051M	CD74HCT4051E	CD74HCT4051M	8-Channel Analog Multiplexer/Demultiplexer	16	1676
CD74HC4052E	CD74HC4052M	CD74HCT4052E	CD74HCT4052M	Dual 4-Channel Analog Multiplexer/Demultiplexer	16	1676
CD74HC4053E	CD74HC4053M	CD74HCT4053E	CD74HCT4053M	Triple 2-Channel Analog Multiplexer/Demultiplexer	16	1676
CD74HC4059E	CD74HC4059M	CD74HCT4059E	CD74HCT4059M	Programmable Divide by "N" Counter	24	1853
CD74HC4060E	CD74HC4060M	CD74HCT4060E	CD74HCT4060M	14-Stage Binary Counter with Oscillator	16	1654
CD74HC4066E	CD74HC4066M	CD74HCT4066E	CD74HCT4066M	Quad Bilateral Switch	14	1777
CD74HC4067E	CD74HC4067M	CD74HCT4067E	CD74HCT4067M	16-Channel Analog Multiplexer/Demultiplexer	24	1783
CD74HC4075E	CD74HC4075M	CD74HCT4075E	CD74HCT4075M	Triple 3-Input OR Gate	14	1778
CD74HC4094E	CD74HC4094M	CD74HCT4094E	CD74HCT4094M	8-Stage Shift-and-Store Bus Register	16	1779
CD74HC4316E	CD74HC4316M	CD74HCT4316E	CD74HCT4316M	Quad Analog Switch	16	1916
CD74HC4351E	CD74HC4351M	CD74HCT4351E	CD74HCT4351M	Analog MUX with Latch	20	2145
CD74HC4352E	CD74HC4352M	CD74HCT4352E	CD74HCT4352M	Analog MUX with Latch	20	2145
CD74HC4353E	—	CD74HCT4353E	—	Analog MUX with Latch	20	2145
CD74HC4510E	CD74HC4510M	CD74HCT4510E	CD74HCT4510M	Up/Down Counter, BCD	16	1823
CD74HC4511E	CD74HC4511M	CD74HCT4511E	CD74HCT4511M	BCD-to-7-Segment Latch/Decoder/Driver	16	1786
CD74HC4514E	CD74HC4514M	CD74HCT4514E	CD74HCT4514M	4-to-16-Line Decoder/Demultiplexer with Input Latch	24	1597
CD74HC4515E	CD74HC4515M	CD74HCT4515E	CD74HCT4515M	4-to-16-Line Decoder with Input Latches	24	1597
CD74HC4516E	CD74HC4516M	CD74HCT4516E	CD74HCT4516M	Up/Down Counter, Binary	16	1823
CD74HC4518E	CD74HC4518M	CD74HCT4518E	CD74HCT4518M	Dual Synchronous BCD Counter	16	1665
CD74HC4520E	CD74HC4520M	CD74HCT4520E	CD74HCT4520M	Dual 4-Bit Synchronous Binary Counter	16	1665
CD74HC4538E	CD74HC4538M	CD74HCT4538E	CD74HCT4538M	Dual Precision Monostable Multivibrator	16	1671
CD74HC4543E	—	CD74HCT4543E	—	BCD-to-7-Segment Latch Decoder/Driver for LCDs	16	1822
CD74HC7030E	—	CD74HCT7030E	—	9-Bit × 64 Word FIFO Register, Three-State	28	2122
CD74HC7046AE	CD74HC7046AM	CD74HCT7046AE	CD74HCT7046AM	Phase-Locked Loop with In-Lock Detection	16	1920
CD74HC7266E	CD74HC7267M	—	—	Quad EXCLUSIVE-NOR Gate	14	1780
CD74HC40102E	CD74HC40102M	CD74HCT40102E	CD74HCT40102M	8-Bit Synchronous BCD Down Counter	16	1596
CD74HC40103E	CD74HC40103M	CD74HCT40103E	CD74HCT40103M	8-Bit Binary Down Counter	16	1596
—	CD74HC40104M	—	CD74HCT40104M	4-Bit Bidirectional Universal Shift Register, Three-State	16	1661
CD74HC40105E	CD74HC40105M	CD74HCT40105E	CD74HCT40105M	4 Bits × 16 Words FIFO Register	16	1834

AC and ACT

Mfr.'s Type				Description	No. of Leads	AnswerFax® (Doc. #)
AC		ACT				
DIP Package	SOIC Package	DIP Package	SOIC Package			
CD74AC00E	CD74AC00M	CD74ACT00E	CD74ACT00M	Quad 2-Input NAND Gate	14	1855
CD74AC02E	CD74AC02M	CD74ACT02E	CD74ACT02M	Quad 2-Input NOR Gate	14	1978
CD74AC04E	CD74AC04M	CD74ACT04E	CD74ACT04M	Hex Inverter/Buffer	14	1945
CD74AC05E	CD74AC05M	CD74ACT05E	CD74ACT05M	Hex Inverter/Buffer with Open-Drain Outputs	14	1945
CD74AC08E	CD74AC08M	CD74ACT08E	CD74ACT08M	Quad 2-Input AND Gate	14	1950
CD74AC10E	CD74AC10M	CD74ACT10E	CD74ACT10M	Triple 3-Input NAND Gate	14	1977
CD74AC14E	CD74AC14M	CD74ACT14E	CD74ACT14M	Hex Inverting Schmitt Trigger	14	1984
CD74AC20E	CD74AC20M	CD74ACT20E	CD74ACT20M	Dual 4-Input NAND Gate	14	1976
CD74AC32E	CD74AC32M	CD74ACT32E	CD74ACT32M	Quad 2-Input OR Gate	14	1951
CD74AC74E	CD74AC74M	CD74ACT74E	CD74ACT74M	Dual D Flip-Flop with Set and Reset	14	1881
CD74AC86E	CD74AC86M	CD74ACT86E	CD74ACT86M	Quad 2-Input Exclusive-OR Gate	14	1952
CD74AC109E	CD74AC109M	CD74ACT109E	CD74ACT109M	Dual J-K Flip-Flop with Set and Reset	16	1967
CD74AC112E	CD74AC112M	CD74ACT112E	CD74ACT112M	Dual J-K Flip-Flop with Set and Reset	16	1967
CD74AC138E	CD74AC138M	CD74ACT138E	CD74ACT138M	3-to-8-Line Decoder/Demultiplexer, Inverting	16	1909
CD74AC139E	CD74AC139M	CD74ACT139E	CD74ACT139M	Dual 2-to-4-Line Decoder/Demultiplexer	16	1953
CD74AC151E	CD74AC151M	CD74ACT151E	CD74ACT151M	8-Input Multiplexer	16	1980
CD74AC153E	CD74AC153M	CD74ACT153E	CD74ACT153M	Dual 4-Input Multiplexer	16	1966
CD74AC157E	CD74AC157M	CD74ACT157E	CD74ACT157M	Quad 2-Input Multiplexer	16	1910
CD74AC158E	CD74AC158M	CD74ACT158E	CD74ACT158M	Quad 2-Input Multiplexer, Inverting	16	1910
CD74AC161E	CD74AC161M	CD74ACT161E	CD74ACT161M	Synchronous 4-Bit Binary Counter, Asynchronous Reset	16	1959
CD74AC163E	CD74AC163M	CD74ACT163E	CD74ACT163M	Synchronous 4-Bit Binary Counter, Synchronous Reset	16	1959
CD74AC164E	CD74AC164M	CD74ACT164E	CD74ACT164M	8-Bit Serial-In/Parallel-Out Shift Register	14	1954
CD74AC174E	CD74AC174M	CD74ACT174E	CD74ACT174M	Hex D-Type Flip-Flop with Reset	16	1973
CD74AC175E	CD74AC175M	CD74ACT175E	CD74ACT175M	Quad D-Type Flip-Flop with Reset	16	1964
CD74AC191E	CD74AC191M	CD74ACT191E	CD74ACT191M	Synchronous 4-Bit Binary Up/Down Counter	16	1911
CD74AC193E	CD74AC193M	CD74ACT193E	CD74ACT193M	Synchronous 4-Bit Binary Up/Down Counter	16	1947
CD74AC238E	CD74AC238M	CD74ACT238E	CD74ACT238M	3-to-8-Line Decoder/Demultiplexer	16	1909
CD74AC240E	CD74AC240M	CD74ACT240E	CD74ACT240M	Octal Buffer/Line Driver, Three-State, Inverting	20	1856
CD74AC241E	CD74AC241M	CD74ACT241E	CD74ACT241M	Octal Buffer/Line Driver, Three-State	20	1856
CD74AC244E	CD74AC244M	CD74ACT244E	CD74ACT244M	Octal-Buffer/Line Driver, Three-State	20	1856
CD74AC245E	CD74AC245M	CD74ACT245E	CD74ACT245M	Octal-Bus Transceiver, Three-State	20	1907
CD74AC251E	—	CD74ACT251E	—	8-Input Multiplexer, Three-State	16	1981
CD74AC253E	CD74AC253M	CD74ACT253E	CD74ACT253M	Dual 4-Input Multiplexer, Three-State	16	1985
CD74AC257E	CD74AC257M	CD74ACT257E	CD74ACT257M	Quad 2-Input Multiplexer, Three-State	16	1955
CD74AC258E	CD74AC258M	CD74ACT258E	CD74ACT258M	Quad 2-Input Multiplexer, Three-State	16	1955
CD74AC273E	CD74AC273M	CD74ACT273E	CD74ACT273M	Octal D-Type Flip-Flop with Reset	20	1979
CD74AC280E	CD74AC280M	CD74ACT280E	CD74ACT280M	8-Bit Odd/Even Parity Generator/Checker	14	1957
CD74AC283E	CD74AC283M	CD74ACT283E	CD74ACT283M	4-Bit Full Adder with Fast Carry	16	1912
—	CD74AC297M	—	CD74ACT297M	Digital Phase-Locked Loop	16	2195
CD74AC299E	CD74AC299M	CD74ACT299E	CD74ACT299M	8-Bit Universal Shift Register, Three-State	20	1958
CD74AC323E	—	CD74ACT323E	—	8-Bit Universal Shift Register, Three-State,	20	1958
CD74AC373E	CD74AC373M	CD74ACT373E	CD74ACT373M	Octal Transparent Latch, Three-State	20	1882
CD74AC374E	CD74AC374M	CD74ACT374E	CD74ACT374M	Octal D Flip-Flop, Three-State	20	1883
CD74AC533E	CD74AC533M	CD74ACT533E	CD74ACT533M	Octal Transparent Latch, Three-State, Inverting	20	1882
CD74AC534E	CD74AC534M	CD74ACT534E	CD74ACT534M	Octal D Flip-Flop, Three-State, Inverting	20	1883
CD74AC540E	CD74AC540M	CD74ACT540E	CD74ACT540M	Octal Buffer/Line Driver, Three-State, Inverting	20	1857
CD74AC541E	CD74AC541M	CD74ACT541E	CD74ACT541M	Octal Buffer/Line Driver, Three-State	20	1857
CD74AC563E	CD74AC563M	CD74ACT563E	CD74ACT563M	Octal Inverting Transparent Latch, Three-State	20	1956
CD74AC564E	CD74AC564M	CD74ACT564E	CD74ACT564M	Octal D-Type Flip-Flop, Three-State, Inverting	20	1948
CD74AC573E	CD74AC573M	CD74ACT573E	CD74ACT573M	Octal Transparent Latch, Three-State	20	1956
CD74AC574E	CD74AC574M	CD74ACT574E	CD74ACT574M	Octal D-Type Flip-Flop, Three-State	20	1948
CD74AC623E	CD74AC623M	CD74ACT623E	CD74ACT623M	Octal-Bus Transceiver, Three-State, Non-Inverting	20	1968
CD74AC646E	CD74AC646M	CD74ACT646E	CD74ACT646M	Octal-Bus Transceiver/Register, Three-State	24	1970
—	CD74AC647M	—	CD74ACT647M	Octal-Bus Transceiver/Register with Open Drain,Non-Inverting	24	1982
CD74AC648E	CD74AC648M	CD74ACT648E	CD74ACT648M	Octal Bus Transceiver/Register, Three-State, Inverting	24	1970
CD74AC651E	CD74AC651M	CD74ACT651E	CD74ACT651M	Octal-Bus Transceiver/Register, Three-State, Inverting	24	1974
CD74AC652E	CD74AC652M	CD74ACT652E	CD74ACT652M	Octal-Bus, Transceiver/Register, Three-State, Non-Inverting	24	1974

CMOS Logic (Continued)

AC and ACT (Continued)

Mfr.'s Type				Description	No. of Leads	AnswerFax® (Doc. #)
AC		ACT				
DIP Package	SOIC Package	DIP Package	SOIC Package			
—	CD74AC653M	—	CD74ACT653M	Octal-Bus Transceiver/Register; Open-Drain (A-Side); Three-State (B Side); Inverting	24	1975
CD74AC654E	CD74AC654M	CD74ACT654E	CD74ACT654M	Octal-Bus Transceiver/Register; Open-Drain (A-Side); Three-State (B Side); Non-Inverting	24	1975
CD74AC7060E	CD74AC7060M	CD74ACT7060E	CD74ACT7060M	14-Stage Binary Counter with Oscillator	20	2062
CD74AC7623E	CD74AC7623M	CD74ACT7623E	CD74ACT7623M	Octal-Bus Transceiver/Register; Open-Drain (A-Side); Three-State (B Side); Non-Inverting	20	1969

CD4000

Mfr.'s Type	Description	No. of Leads	AnswerFax® (Doc. #)
DIP			
CD4001BE	CMOS NOR Gate	14	985
CD4001UBE	CMOS Quad 2-Input NOR Gate	14	945
CD4002BE	CMOS NOR Gate	14	985
CD4006BE	CMOS 18-Stage Static Shift Register	14	1033
CD4007UBE	CMOS Dual Complementary Pair Plus Inverter	14	977
CD4008BE	CMOS 4-Bit Full Adder	16	951
CD4009UBE	CMOS Hex Buffer/Converter	16	940
CD4010BE	CMOS Hex Buffer/Converter	16	940
CD4011BE	CMOS NAND Gate	14	3718
CD4011UBE	CMOS Quad 2-Input NAND Gate	14	947
CD4012BE	CMOS NAND Gate	14	3718
CD4013BE	CMOS Dual D-Type Flip-Flop	14	936
CD4014BE	CMOS 8-Stage Static Shift Register	16	1043
CD4015BE	CMOS Dual 4-Stage Static Shift Register	16	1024
CD4016BE	CMOS Quad Bilateral Switch	14	953
CD4017BE	CMOS Counter/Divider	16	1113
CD4018BE	CMOS Presettable Divide-By-N Counter	16	1034
CD4019BE	CMOS Quad AND/OR Select Gate	16	1045
CD4020BE	CMOS Ripple-Carry Binary Counter/Divider (14 Stage)	16	1063
CD4021BE	CMOS 8-Stage Static Shift Register	16	1043
CD4022BE	CMOS Counter/Divider	16	1113
CD4023BE	CMOS NAND Gate	14	3718
CD4024BE	CMOS Ripple-Carry Binary Counter/Divider (7 Stage)	14	1063
CD4025BE	CMOS NOR Gate	14	985
CD4026BE	CMOS Decade Counter/Divider	16	1118
CD4027BE	CMOS Dual J-K Master-Slave Flip-Flop	16	942
CD4028BE	CMOS BCD-to-Decimal Decoder	16	1016
CD4029BE	CMOS Presettable Up/Down Counter	16	1028
CD4030BE	CMOS Quad Exclusive-OR Gate	14	1055
CD4031BE	CMOS 64-Stage Static Shift Register	16	1073
CD4033BE	CMOS Decade Counter/Divider	16	1118
CD4034BE	CMOS 8-Stage Static Bidirectional Parallel/Serial Input/Output Bus Register	24	1062
CD4035BE	CMOS 4-Stage Parallel-In/Parallel-Out Shift Register	16	1101
CD4040BE	CMOS Ripple-Carry Binary Counter/Divider (12 Stage)	16	1063
CD4041UBE	CMOS Quad True/Complement Buffer	14	934
CD4042BE	CMOS Quad Clocked D Latch	16	954
CD4043BE	CMOS Quad Three-State R/S Latch	16	956
CD4044BE	CMOS Quad Three-State R/S Latch	16	956
CD4045BE	CMOS 21-Stage Counter	16	1119
CD4046BE	CMOS Micropower Phase-Locked Loop	16	1099
CD4047BE	CMOS Low-Power Monostable/Astable Multivibrator	14	1123
CD4048BE	CMOS Multifunction Expandable 8-Input Gate	16	1124
CD4049UBE	CMOS Hex Buffer/Converter	16	926
CD4050BE	CMOS Hex Buffer/Converter	16	926
CD4051BE	CMOS Analog Multiplexer/Demultiplexer	16	902
CD4052BE	CMOS Analog Multiplexer/Demultiplexer	16	902
CD4053BE	CMOS Analog Multiplexer/Demultiplexer	16	902
CD4054BE	CMOS Liquid-Crystal Display Driver	16	634
CD4055BE	CMOS Liquid-Crystal Display Driver	16	634
CD4056BE	CMOS Liquid-Crystal Display Driver	16	634
CD4059AE	CMOS Programmable Divide-By-N Counter	24	898
CD4060BE	CMOS 14-Stage Ripple-Carry Binary Counter/Divider and Oscillator	16	1120
CD4063BE	CMOS 4-Bit Magnitude Comparator	16	805
CD4066BE	CMOS Quad Bilateral Switch	14	1114
CD4067BE	CMOS Analog Multiplexer/Demultiplexer	24	3719
CD4068BE	CMOS 8-Input NAND/AND Gate	14	809
CD4069UBE	CMOS Hex Inverter	14	804
CD4070BE	CMOS Quad Exclusive-OR Gate	14	910
CD4071BE	CMOS OR Gate	14	807
CD4072BE	CMOS OR Gate	14	807
CD4073BE	CMOS AND Gate	14	806
CD4075BE	CMOS OR Gate	14	807
CD4076BE	CMOS 4-Bit D-Type Register	16	903
CD4077BE	CMOS Quad Exclusive-NOR Gate	14	910
CD4078BE	CMOS 8-Input NOR/OR Gate	14	810
CD4081BE	CMOS AND Gate	14	806
CD4082BE	CMOS AND Gate	14	806
CD4085BE	CMOS Dual 2-Wide AND-OR-INVERT Gate	14	811
CD4086BE	CMOS Expandable 4-Wide 2-Input AND-OR-INVERT Gate	14	812
CD4089BE	CMOS Binary Rate Multiplier	16	1003
CD4093BE	CMOS Quad 2-Input NAND Schmitt Trigger	14	836
CD4094BE	CMOS 8-Stage Shift-and-Store Bus Register	16	3707
CD4095BE	CMOS Gated J-K Master-Slave Flip-Flop	14	879
CD4096BE	CMOS Gated J-K Master-Slave Flip-Flop	14	879
CD4097BE	CMOS Analog Multiplexer/Demultiplexer	24	3719
CD4098BE	CMOS Dual Monostable Multivibrator	16	979
CD4099BE	CMOS 8-Bit Addressable Latch	16	948
CD4502BE	CMOS Strobed Hex Inverter/Buffer	16	1002
CD4503BE	CMOS Hex Buffer	16	1224
CD4504BE	CMOS Hex Voltage-Level Shifter for TTL-to-CMOS or CMOS-to-CMOS Operation	16	1846
CD4508BE	CMOS Dual 4-Bit Latch	24	1009
CD4510BE	CMOS Presettable Up/Down Counter	16	899
CD4511BE	CMOS BCD-to-7-Segment Latch Decoder Driver	16	901
CD4512BE	CMOS 8-Channel Data Selector	16	1032
CD4514BE	CMOS 4-Bit Latch/4-to-16-Line Decoder	24	3721
CD4515BE	CMOS 4-Bit Latch/4-to-16-Line Decoder	24	3721
CD4516BE	CMOS Presettable Up/Down Counter	16	899
CD4517BE	CMOS Dual 64-Stage Static Shift Register	16	1148
CD4518BE	CMOS Dual Up Counter	16	808
CD4519BE	CMOS 4-Bit AND/OR Selector, Quad 2-Channel Data Selector, or Quad Exclusive NOR Gate	16	1723
CD4520BE	CMOS Dual Up Counter	16	808
CD4521BE	CMOS 24-Stage Frequency Divider	16	1735
CD4522BE	CMOS Programmable BCD Divide-By-N Counter	16.	1710
CD4527BE	CMOS BCD Rate Multiplier	16	1006
CD4529BE	CMOS Dual 4-Channel Analog Data Selector	16	1720
CD4532BE	CMOS 8-Bit Priority Encoder	16	876
CD4536BE	CMOS Programmable Timer	16	1186
CD4541BE	CMOS Programmable Timer	14	1378
CD4543BE	CMOS BCD-to-7-Segment Latch/Decoder/Driver for Liquid-Crystal Display	16	1327
CD4555BE	CMOS Dual Binary-to-1-to-4 Decoder/Demultiplexer	16	858
CD4556BE	CMOS Dual Binary-to-1-to-4 Decoder/Demultiplexer	16	858
CD4560BE	CMOS NBCD Adder	16	1711
CD4566BE	CMOS Industrial Time-Based Generator	16	1728
CD4572UBE	CMOS Hex Gate	16	1704
CD4585BE	CMOS 4-Bit Magnitude Comparator	16	1146
CD4724BE	CMOS 8-Bit Addressable Latch	16	1111
CD7211E	CMOS 4-Digit LCD Decoder/Driver	40	1725
CD7211AE	CMOS 4-Digit LCD Decoder/Driver	40	1725
CD7211AME	CMOS 4-Digit LCD Decoder/Driver	40	1726
CD7211ME	CMOS 4-Digit LCD Decoder/Driver	40	1726
CD14538BE	CMOS Dual Precision Monostable Multivibrator	16	3737
CD22402E	CMOS LSI Sync Generator	24	1686
CD22777E	CMOS 32kHz Quartz Analog Clock Circuit	8	1869
CD40100BE	CMOS 32-Stage Static Left/Right Shift Register	16	980
CD40102BE	CMOS 8-Stage Presettable Synchronous Down Counter	16	984
CD40103BE	CMOS 8-Stage Presettable Synchronous Down Counter	16	984
CD40105BE	CMOS FIFO Register	16	1044
CD40106BE	CMOS Hex Schmitt Trigger	14	1017
CD40107BE	CMOS Dual 2-Input NAND Buffer/Driver	8, 14	1015
CD40109BE	CMOS Quad Low-to-High Voltage Level Shifter	16	3722
CD40110BE	CMOS Decade Up-Down Counter/Latch/Display Driver	16	1125
CD40116E	CMOS High Speed 8-Bit Bidirectional CMOS/TTL Interfaced Level Converter	22	1234
CD40117BE	Programmable Dual 4-Bit Terminator	14	1333
CD40147BE	10-Line to 4-Line BCD Priority Encoder	16	1117
CD40160BE	CMOS Synchronous Programmable 4-Bit Counter	16	1047
CD40161BE	CMOS Synchronous Programmable 4-Bit Counter	16	1047
CD40163BE	CMOS Synchronous Programmable 4-Bit Counter	16	1047
CD40174BE	CMOS Hex D-Type Flip-Flop	16	1031
CD40175BE	CMOS Quad D-Type Flip-Flop	16	1326
CD40192BE	CMOS Presettable Up/Down Counter (Dual Clock with Reset)	16	993
CD40193BE	CMOS Presettable Up/Down Counter (Dual Clock with Reset)	16	993
CD40194BE	CMOS 4-Bit Bidirectional Universal Shift Register	16	1220
CD40257BE	CMOS Quad 2-Line-to-1-Line Data Selector/Multiplexer	16	982
—	—	—	—

FCT

Mfr.'s Type		Description	No. of Leads	AnswerFax® (Doc. #)
DIP Package	SOIC Package			
CD74FCT240E	CD74FCT240M	Octal Buffer/Line Driver, Three-State, Inverting	20	2227
CD74FCT241E	CD74FCT241M	Octal Buffer/Line Driver, Three-State	20	2227
CD74FCT244E	CD74FCT244M	Octal Buffer/Line Driver, Three-State	20	2227
CD74FCT245E	CD74FCT245M	Octal-Bus Transceiver, Three-State	20	2301
CD74FCT273E	CD74FCT273M	Octal D Flip-Flop with Reset	20	2303
CD74FCT373E	CD74FCT373M	Octal Transparent Latch, Three-State	20	2230
CD74FCT374E	CD74FCT374M	Octal D-Type Flip-Flop, Three-State	20	2305
—	CD74FCT533M	Octal Transparent Latch, Three-State, Inverting	20	2230
CD74FCT740E	CD74FCT540M	Octal Buffer/Line Driver, Three-State, Inverting	20	2383
CD74FCT741E	CD74FCT541M	Octal Buffer/Line Driver, Three-State	20	2383
CD74FCT743E	CD74FCT543M	Octal Register/Transceiver, Three-State	24	2399
CD74FCT564E	CD74FCT564M	Octal D-Type Flip-Flop, Three-State, Inverting	20	2295
CD74FCT573E	CD74FCT573M	Octal Transparent Latch, Three-State	20	2304
CD74FCT574E	CD74FCT574M	Octal D-Type Flip-Flop, Three-State	20	2295
—	CD74FCT623M	Octal Bus Transceiver, Three-State	20	2302
CD74FCT646E	CD74FCT646M	Octal Bus Transceiver/Register, Three-State	24	2393
CD74FCT651E	CD74FCT651M	Octal Bus Transceiver/Register, Three-State, Inverting	24	2394
CD74FCT652E	CD74FCT652M	Octal Bus Transceiver/Register, Three-State	24	2394
CD74FCT653E	CD74FCT653M	Octal Bus Transceiver/Register, Open-Drain (A Side), Three-State (B Side), Inverting	24	2403
CD74FCT674E	CD74FCT654M	Octal Bus Transceiver/Register, Open-Drain (A Side), Three-State (B Side)	24	2403
CD74FCT821AE	CD74FCT821AM	10-Bit D-Type Flip-Flop, Three-State	24	2390
CD74FCT822AE	—	10-Bit D-Type Flip-Flop, Three-State, Inverting	24	2390
CD74FCT823AE	—	9-Bit D-Type Flip-Flop, Three-State	24	2389
CD74FCT824AE	—	9-Bit D-Type Flip-Flop, Three-State, Inverting	24	2389
CD74FCT841AE	CD74FCT841AM	10-Bit Transparent Latch, Three-State	24	2397
—	CD74FCT842AM	10-Bit Transparent Latch, Three-State, Inverting	24	2397
CD74FCT843AE	CD74FCT843AM	9-Bit Transparent Latch, Three-State	24	2396
CD74FCT844AE	—	9-Bit Transparent Latch, Three-State, Inverting	24	2396
—	CD74FCT861AM	10-Bit Bus Transceiver, Three-State	24	2392
—	CD74FCT863AM	9-Bit Bus Transceiver, Three-State	24	2391
—	CD74FCT2952AM	Octal Register/Transceiver, Three-State	24	2400
—	CD74FCT7623M	Octal Bus Transceiver, Three-State (B Side), Open-Drain (A Side)	20	2358
—	—	—	—	—

FCT and LPT Technology, IGBTs, and Rectifiers

8-Bit FCT (Fast CMOS Technology) — NEW —

Mfr.'s Type		Description	No. of Leads	AnswerFax® (Doc. #)
SOIC Package	QSOP Package			
CD74FCT138ATM	—	Inverting 1-of-8 Decode — A**	16	4158
CD74FCT157ATM	CD74FCT157ATQM	Quad 2-Input Multiplexer — A**	16	4166
CD74FCT2244ATM	CD74FCT2244ATQM	Octal Buffer/Line Driver — A**	20	4167
CD74FCT2244CTM	CD74FCT2244CTQM	Octal Buffer/Line Driver — C**	20	4167
CD74FCT2245ATM	CD74FCT2245ATQM	Octal Bidirectional Transceiver — A**	20	4168
CD74FCT2245CTM	CD74FCT2245CTQM	Octal Bidirectional Transceiver — C**	20	4168
CD74FCT2374ATM	CD74FCT2374ATQM	Octal D Register (3-State) — A**	20	4171
CD74FCT241ATM	CD74FCT241ATQM	Octal Buffer/Line Driver — A**	20	2227
—	CD74FCT244ATQM	Octal Buffer/Line Driver — A**	20	2227
CD74FCT244CTM	CD74FCT244CTQM	Octal Buffer/Line Driver — C**	20	2227
—	CD74FCT245ATQM	Octal Bidirectional Transceiver — A**	20	2301
CD74FCT245CTM	CD74FCT245CTQM	Octal Bidirectional Transceiver — C**	20	2301
CD74FCT2574ATM	CD74FCT2574ATQM	Octal Transparent Latch with 3-State — A**	20	4171
—	CD74FCT2574CTQM	Octal Transparent Latch with 3-State — C**	20	4171
CD74FCT2646ATM	CD74FCT2646ATQM	Octal Bidirectional Transceiver — A**	24	4175
—	CD74FCT373ATQM	Octal Transparent Latch — A**	20	4175
—	CD74FCT373CTQM	Octal Transparent Latch — C**	20	2230
—	CD74FCT374ATQM	Octal D Register (3-State) — A**	20	2305
—	CD74FCT374CTQM	Octal D Register (3-State) — C**	20	2305
CD74FCT541ATM	CD74FCT541ATQM	Non-Inverting Octal Buffer/Line Driver — A**	20	2383
—	CD74FCT543ATQM	Octal Latched Transceiver — A**	20	2399
—	CD74FCT543CTQM	Octal Latched Transceiver — C**	20	2399
—	CD74FCT573ATQM	Octal Transparent Latch with 3-State — A**	20	2304
—	CD74FCT573CTQM	Octal Transparent Latch with 3-State — C**	20	2304
—	CD74FCT574ATQM	Octal D Register (3-State) — A**	20	2295
—	CD74FCT574CTQM	Octal D Register (3-State) — C**	20	2295
—	CD74FCT646ATQM	Octal Bidirectional Transceiver — A**	24	2393
CD74FCT827ATM	CD74FCT827ATQM	10-Bit Buffer — A**	24	4179
CD74FCT827CTM	CD74FCT827CTQM	10-Bit Buffer — C**	24	4179

**Speed grade.

8-Bit 3 Volt LPT (Low Power Technology) — NEW —

Mfr.'s Type		Description	No. of Leads	AnswerFax® (Doc. #)
SOIC Package	QSOP Package			
CD74LPT244AM	CD74LPT244AQM	Octal Buffer/Line Driver — A Speed Grade	20	4197
CD74LPT245AM	CD74LPT245AQM	Octal Bidirectional Transceiver — A Speed Grade	20	4198
CD74LPT373AM	CD74LPT373AQM	Octal Transparent Latch — A Speed Grade	20	4199
CD74LPT541AM	CD74LPT541AQM	Non-Inverting Octal Buffer/Liner Driver — A Speed Grade	20	4200
CD74LPT573AM	CD74LPT573AQM	Octal Transparent Latch with 3-State — A Speed Grade	20	4201

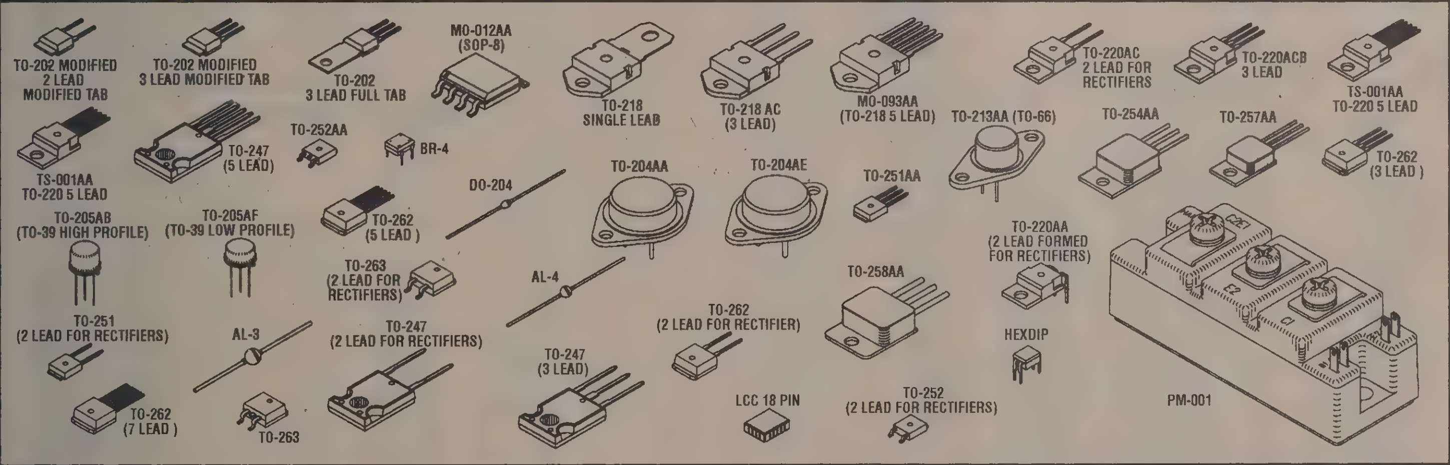
16-Bit FCT (Fast CMOS Technology) — NEW —

Mfr.'s Type		Description	No. of Leads	AnswerFax® (Doc. #)
SSOP Package	TSSOP Package			
CD74FCT162244ATSM	CD74FCT162244ATMT	16-Bit Buffer/Line Driver — A**	48	4181
CD74FCT162244CTSM	—	16-Bit Buffer/Line Driver — C**	48	4181
CD74FCT162245ATSM	—	16-Bit Bidirectional Transceiver — A**	48	4217
CD74FCT162373ATSM	CD74FCT162373ATMT	16-Bit Transparent Latch — A**	48	4182
CD74FCT162374ATSM	—	16-Bit Register — A**	48	4183
CD74FCT162374CTSM	—	16-Bit Register — C**	48	4183
CD74FCT16244ATSM	CD74FCT16244ATMT	16-Bit Buffer/Line Driver — A**	48	4181
CD74FCT16244CTSM	CD74FCT16244CTMT	16-Bit Buffer/Line Driver — C**	48	4181
CD74FCT16245ATSM	CD74FCT16245ATMT	16-Bit Bidirectional Transceiver — A**	48	4217
CD74FCT16245CTSM	CD74FCT16245CTMT	16-Bit Bidirectional Transceiver — A**	48	4217
CD74FCT162646ATSM	—	16-Bit Registered Transceiver — A**	48	4188
CD74FCT162827ATSM	—	20-Bit Buffer — A**	48	4190
CD74FCT16373ATSM	CD74FCT16373ATMT	16-Bit Transparent Latch — A**	48	4182
CD74FCT16373CTSM	—	16-Bit Transparent Latch — C**	48	4182
CD74FCT16374ATSM	CD74FCT16374ATMT	16-Bit Octal Register — A**	48	4183
CD74FCT16374CTSM	CD74FCT16374CTMT	16-Bit Octal Register — C**	48	4183
CD74FCT16646ATSM	CD74FCT16646ATMT	16-Bit Registered Transceiver — A**	56	4188
CD74FCT16646CTSM	—	16-Bit Registered Transceiver — C**	56	4188
CD74FCT16827ATSM	CD74FCT16827ATMT	20-Bit Buffer — A**	56	4190
CD74FCT16952ATSM	CD74FCT16952ATMT	16-Bit Non-Inv. Reg. Transceiver — A**	56	*

*Not available at time of pricing. **Speed grade.

16-Bit 3 Volt LPT (Low Power Technology) — NEW —

Mfr.'s Type		Description	No. of Leads	AnswerFax® (Doc. #)
SSOP Package	TSSOP Package			
CD74LPT16240ASM	CD74LPT16240AMT	16-Bit Buffer/Line Driver — A Speed Grade	48	4215
CD74LPT16244ASM	CD74LPT16244AMT	16-Bit Buffer/Line Driver — A Speed Grade	48	4216
CD74LPT16245ASM	CD74LPT16245AMT	16-Bit Bidirectional Transceiver — A Speed Grade	48	4205
CD74LPT16373ASM	CD74LPT16373AMT	16-Bit Transparent Latch — A Speed Grade	48	4206
CD74LPT16374ASM	CD74LPT16374AMT	16-Bit Register — A Speed Grade	48	4207
CD74LPT16827ASM	CD74LPT16827AMT	20-Bit Buffer — A Speed Grade	56	4212
CD74LPT16952ASM	CD74LPT16952AMT	16-Bit Non-Inv. Reg. Transceiver — A Speed Grade	56	4213



IGBTs

IGBTs

Mfr.'s Type	Maximum Ratings				Package Type
	BV_{CES} (V)	I_{C90} (A)	I_{CM} (A)	t_F (μS)	
HGTD6N40E1	400	6.00	7.50	1.00	TO-251AA
HGTD6N50E1S	500	6.00	7.50	1.00	TO-251AA
HGTP10N50C1	500	10.00	17.50	0.50	TO-220AB
HGTP15N50C1	500	15.00	35.00	0.50	TO-220AB
HGTP12N60D1	600	12.00	48.00	0.60	TO-220AB
HGTP20N60B3	600	20.00	160.00	0.20	TO-220AB
HGTG20N100D2	1000	20.00	100.00	0.68	TO-247

IGBTs with an Integral Reverse Diode

HGTP6N50E1D	500	6.00	7.50	1.00	TO-220AB
HGTP10N50E1D	500	10.00	17.50	1.00	TO-220AB
HGTH20N50C1D	500	20.00	35.00	0.50	TO-218AC
HGTG20N50C1D	500	20.00	35.00	0.50	TO-247
HGTG24N60D1D	600	20.00	160.00	0.20	TO-247

IGBTs
UFS Series

Mfr.'s Type	Ratings			Package Type
	BV_{CES} (V)	I_{C110} (A)	t_F (μs)	
HGTD3N60C3	600	3.0	0.275	TO-251
HGTP3N60C3D	600	3.0	0.275	TO-220
HGTD7N60C3	600	7.0	0.275	TO-251
HGTP7N60C3D	600	7.0	0.275	TO-220
HGTG12N60C3	600	12.0	0.275	TO-247
HGTP12N60C3D	600	12.0	0.275	TO-220
HGTG20N60B3	600	20.0	0.200	TO-247
HGTG20N60B3D	600	20.0	0.200	TO-247
HGTG20N60C3R	600	20.0	0.400	TO-247
HGTP20N60B3	600	20.0	0.200	TO-220
HGTG30N60C3	600	30.0	0.275	TO-247
HGTG30N60C3D	600	30.0	0.275	TO-247
HGTG40N60B3	600	40.0	0.200	TO-247

Hyper-Fast Recovery Rectifiers

Mfr.'s Type	Ratings		Package Type
	V_{RRM} (V)	$I_{F(AVG)}$ (A)	
RHRD440	400	4.0	TO-251
RHRP1540	400	15.0	TO-220
RHRP3040	400	30.0	TO-220
RHRD450	500	4.0	TO-251
RHRD650	500	6.0	TO-251
RHRP1550	500	15.0	TO-220
RHRD460	600	4.0	TO-251
RHRD660	600	6.0	TO-251
RHRP1560	600	15.0	TO-220AC
RHRP3060	600	30.0	TO-220
RHRG7560	600	75.0	TO-247
RHRU10060	600	100.0	TO-218†
RHRU15060	600	150.0	TO-218†
RHRP3090	900	30.0	TO-220
RHRG7590	900	75.0	TO-247
RHRU150100	1000	150.0	TO-218
RHRU100120	1200	100.0	TO-218
RHRU150120	1200	150.0	TO-218

†Single Lead.

Ultra-Fast Recovery Rectifiers

Mfr.'s Type	Ratings		Package Type
	V_{RRM} (V)	$I_{F(AVG)}$ (A)	
MUR810	100	8	TO-220AC
MUR1510	100	15	TO-220AC
MUR1515	150	15	TO-220AC
RURD420	200	4	TO-251
MUR1620CT	200	8 × 2	TO-220AB
MUR1520	200	15	TO-220AC
MUR3020PT	200	15 × 2	TO-218AC
RURG1520CC	200	15 × 2	TO-247
RURH3020CC	200	30 × 2	TO-218AC
MUR840	400	8	TO-220AC
RURU5040	400	50	TO-218†
RURU8040	400	80	TO-218†
RURD460	600	4	TO-251
RURP860	600	8	TO-220AC
RURP1560	600	15	TO-220AC
RURP3060	600	30	TO-220AC
RURU8060	600	80	TO-218†
RURU10060	600	100	TO-218†
RURU15060	600	150	TO-218†
RURG5080	800	50	TO-247*
RURU80100	1000	80	TO-218†
RURU150100	1000	150	TO-218†
RURP8120	1200	8	TO-220AC
RURP15120	1200	15	TO-220AC
RURG30120	1200	30	TO-247*
RURP30120	1200	30	TO-220AC
RURU75120	1200	75	TO-218†

*2-Lead. †Single Lead.

JEDEC MOSFETs

P-Channel, QPL Approved

Mfr.'s Type	Maximum Ratings			Package Type
	BV_{DSS} (V)	I_{DS} (A)	$R_{DS(ON)}$ (Ω)	
2N6895	100	1.2	3.650	TO-205AF
2N6849	100	6.5	0.300	TO-205AF

Logic Level MOSFETs

N-Channel

Mfr.'s Type	Maximum Ratings			Package Type
	BV_{DSS} (V)	I_{DS} (A)	$R_{DS(ON)}$ (Ω)	
RFD16N03L	30	16.0	0.022	TO-251AA
RFD16N03LSM	30	16.0	0.022	TO-252AA
RFL2N05L	50	2.0	0.950	TO-205AF
RFP4N05L	50	4.0	0.800	TO-220AB
RFD14N05L	50	14.0	0.100	TO-251AA
RFD14N05LSM	50	14.0	0.100	TO-252AA
RFP14N05L	50	14.0	0.100	TO-220AB
RFP15N05L	50	15.0	0.140	TO-220AB
RFD16N05L	50	16.0	0.047	TO-251AA
RFD16N05LSM	50	16.0	0.047	TO-252AA
RFP25N05L	50	25.0	0.047	TO-220AB
RFP50N05L	50	50.0	0.022	TO-220AB
RFD4N06L	60	4.0	0.600	TO-251AA
RFD4N06LSM	60	4.0	0.600	TO-252AA
RFP4N06L	60	4.0	0.800	TO-220AB
RFD12N06RLE	60	12.0	0.135	TO-251AA
RFD12N06RLESM	60	12.0	0.135	TO-252AA
RFD3055LE	60	12.0	0.150	TO-251AA
RFD3055LESM	60	12.0	0.150	TO-252AA
RFD14N06L	60	14.0	0.100	TO-251AA
RFD14N06LSM	60	14.0	0.100	TO-252AA
RFD15N06LE	60	15.0	0.065	TO-251AA
RFD15N06LESM	60	15.0	0.065	TO-252AA
RFD16N06LE	60	16.0	0.047	TO-251AA
RFD16N06LESM	60	16.0	0.047	TO-252AA
RFP17N06L	60	17.0	0.100	TO-220AB
RFP25N06L	60	25.0	0.085	TO-220AB
RFL1N08L	80	1.0	1.200	TO-205AF
RFP2N08L	80	2.0	1.050	TO-220AB
RFD3N08L	80	3.0	0.800	TO-251AA
RFD3N08LSM	80	3.0	0.800	TO-252AA
RFP12N08L	80	12.0	0.200	TO-220AB
RFL1N10L	100	1.0	1.200	TO-205AF
RFP2N10L	100	2.0	1.050	TO-220AB
RFD7N10LE	100	7.0	0.300	TO-251AA
RFD7N10LESM	100	7.0	0.300	TO-251AA
RFP12N10L	100	12.0	0.200	TO-220AB
RFL1N12L	120	1.0	1.900	TO-205AF
RFP2N12L	120	2.0	1.750	TO-220AB
RFP10N12L	120	10.0	0.300	TO-220AB
RFL1N15L	150	1.0	1.900	TO-205AF
RFP10N15L	150	10.0	0.300	TO-220AB
RFL1N18L	180	1.0	3.650	TO-205AF
RFP2N18L	180	2.0	3.500	TO-220AB
RFP8N18L	180	8.0	0.500	TO-220AB
RFP2N20L	200	2.0	3.500	TO-220AB
RFP8N20L	200	8.0	0.500	TO-220AB

Standard and Fast Recovery Rectifiers

Mfr.'s Type	Ratings			Package Type
	V_{RRM} (V)	$I_{F(AVG)}$ (A)	t_{RR} (µs)	
A14F	50	1.0	5/6	DO-204
A15F	50	3.0	5	AL-3
A14A	100	1.0	5/6	DO-204
A15A	100	3.0	5	AL-3
1N4245	200	1.0	5	DO-204
1N5624	200	3.0	5	AL-3
1N5625	400	3.0	5	AL-3
1N5626	600	3.0	5	AL-3
DB1N	800	1.0	—	BR-4
A14P	1000	1.0	5/6	DO-204

MOSFETs

N-Channel

Mfr.'s Type	Maximum Ratings				Package Type
	BV_{DSS} (V)	I_{DS} (A)	$R_{DS(ON)}$ @ 5 V (Ω)	$R_{DS(ON)}$ @ 10 V (Ω)	
RF1K49090†	12	3.5	0.050	—	SO-8
RF1K49156	30	6.3	0.030	—	SO-8
RF1K49157	30	6.3	—	0.030	SO-8
RF1S45N03L‡	30	45.0	0.022	—	TO-262
RF1S45N03LSM‡	30	45.0	0.022	—	TO-263
RF1S70N03‡	30	70.0	—	0.010	TO-262
RF1S70N03SM‡	30	70.0	—	0.010	TO-263
RF1K49086†	30	3.5	0.135	0.060	SO-8
RF1K49088†	30	3.5	0.060	—	SO-8
RLD03N06CLE‡	60	0.3*	6.000	—	TO-251
RLD03N06CLESM‡	60	0.3*	6.000	—	TO-252
RLP03N06CLE‡	60	0.3*	6.000	—	TO-220
RF1K49154	60	2.0	0.150	—	SO-8
RF1S23N06LE	60	23.0	0.065	—	TO-262
RF1S23N06LESM	60	23.0	0.065	—	TO-263
RF1S25N06	60	25.0	—	0.047	TO-262
RF1S25N06SM	60	25.0	—	0.047	TO-263
RF1S30N06LE	60	30.0	0.047	—	TO-262
RF1S30N06LESM	60	30.0	0.047	—	TO-263
RF1S45N06	60	45.0	—	0.028	TO-262
RF1S50N06‡	60	50.0	—	0.022	TO-262
RF1S50N06SM‡	60	50.0	—	0.022	TO-263
RF1S70N06‡	60	70.0	—	0.014	TO-262
RF1S70N06SM‡	60	70.0	—	0.014	TO-263
RF1S540SM	100	0.3	—	0.077	TO-263
IRF510	100	5.6	—	0.540	TO-220AB
IRF520	100	9.2	—	0.270	TO-220AB
IRF530	100	14.0	—	0.160	TO-220AB
RF1S530	100	14.0	—	0.160	TO-262
RF1S530SM	100	14.0	—	0.160	TO-263
IRF540	100	28.0	—	0.077	TO-220AB
RF1S540	100	28.0	—	0.077	TO-262
RF1S40N10	100	40.0	—	0.040	TO-262
RF1S40N10SM	100	40.0	—	0.040	TO-263
IRF610	200	3.3	—	1.500	TO-220AB
IRF630	200	9.0	—	0.400	TO-220AB
RF1S630	200	9.0	—	0.400	TO-262
RF1S630SM	200	9.0	—	0.400	TO-263
IRF640	200	18.0	—	0.180	TO-220AB
RF1S640	200	18.0	—	0.180	TO-262
RF1S640SM	200	18.0	—	0.180	TO-263
IRF723	350	2.8	—	2.500	TO-220AB
IRF720	400	3.3	—	1.800	TO-220AB
IRF730	400	5.5	—	1.000	TO-220AB
IRF740	400	10.0	—	0.550	TO-220AB
IRF820	500	2.5	—	3.000	TO-220AB
IRF840	500	8.0	—	0.850	TO-220AB

P-Channel

RF1K49092	12	2.5	0.050	—	SO-8
RF1K49093†	12	2.5	0.130	—	SOP-8
RF1S60P03‡	30	60.0	—	0.027	TO-262
RF1S60P03SM‡	30	60.0	—	0.027	TO-263
RF1S30P05‡	50	30.0	—	0.065	TO-262
RF1S30P05SM‡	50	30.0	—	0.065	TO-263
IRF9531	60	12.0	—	0.300	TO-220AB
IRF9541	60	19.0	—	0.200	TO-220AB
RF1S30P06	60	30.0	—	0.075	TO-262
RF1S30P06SM	60	30.0	—	0.075	TO-263
RF1S60P06‡	60	30.0	—	0.075	TO-262
IRF9520	100	6.0	—	0.600	TO-220AB
IRF9532	100	10.0	—	0.400	TO-220AB
IRF9530	100	12.0	—	0.300	TO-220AB
RF1S9530	100	12.0	—	0.300	TO-262
RF1S9530SM	100	12.0	—	0.300	TO-263
IRF9540	100	19.0	—	0.200	TO-220AB
RF1S9540	100	19.0	—	0.200	TO-262
RF1S9540SM	100	19.0	—	0.200	TO-263
RF1S9630	200	6.5	—	0.800	TO-262
RF1S9630SM	200	6.5	—	0.800	TO-263
RF1S9640	200	11.0	—	0.500	TO-262
RF1S9640SM	200	11.0	—	0.500	TO-263

*I-Limit/V-Clamp. †Dual Configuration. ‡Single Configuration.

BUZ and RF Series MOSFETs

N-Channel

Mfr.'s Type	Maximum Ratings			Package Type
	BV_{DSS} (V)	I_{DS} (A)	$R_{DS(ON)}$ (Ω)	
BUZ71A	50	13.0	0.120	TO-220AB
RFP4N05	50	13.0	0.120	TO-220AB
BUZ71	50	14.0	0.100	TO-220AB
RFP15N05	50	15.0	0.140	TO-220AB
BUZ11	50	30.0	0.040	TO-220AB
RFP15N06	60	15.0	0.140	TO-220AB
RFP25N06	60	25.0	0.070	TO-220AB
RFL1N08	80	1.0	1.200	TO-205AF
RFP2N08	80	2.0	1.050	TO-220AB
RFP12N08	80	12.0	0.200	TO-220AB
RFP18N08	80	18.0	0.100	TO-220AB
RFL1N10	100	1.0	1.200	TO-205AF
RFP2N10	100	2.0	1.050	TO-220AB
RFP12N10	100	12.0	0.200	TO-220AB
RFP18N10	100	18.0	0.100	TO-220AB
RFP2N12	120	2.0	1.750	TO-220AB
RFL4N12	120	4.0	0.400	TO-205AF
RFP10N12	120	10.0	0.300	TO-220AB
RFL1N15	150	1.0	1.900	TO-205AF
RFP2N15	150	2.0	1.750	TO-220AB
RFP10N15	150	10.0	0.300	TO-220AB
RFP15N15	150	15.0	0.150	TO-220AB
RFM12N20	200	12.0	0.250	TO-204
RFP12N20	200	12.0	0.250	TO-220AB
RFK25N20	200	25.0	0.150	TO-204
RFK25N20	200	25.0	0.150	TO-218AC
RFP7N40	400	7.0	0.750	TO-220AB
RFM3N45	450	3.0	3.000	TO-204
RFP3N45	450	3.0	3.000	TO-220AB
BUZ41A	500	4.5	1.500	TO-220AB
BUZ45	500	9.6	0.600	TO-204

P-Channel

RFL1P08	80	1.0	3.650	TO-205AF
RFP2P08	80	2.0	3.500	TO-220AB
RFP6P08	80	6.0	0.600	TO-220AB
RFP8P08	80	8.0	0.400	TO-220AB
RFM12P08	80	12.0	0.300	TO-204
RFP12P08	80	12.0	0.300	TO-220AB
RFH25P08	80	25.0	0.150	TO-218AC
RFP2P10	100	2.0	3.500	TO-220AB
RFP6P10	100	6.0	0.600	TO-220AB
RFM8P10	100	8.0	0.400	TO-204
RFP8P10	100	8.0	0.400	TO-220AB
RFP12P10	100	12.0	0.300	TO-220AB
RFH25P10	100	25.0	0.150	TO-218AC
RFM10P12	120	10.0	0.500	TO-204
RFM10P15	150	10.0	0.500	TO-204

MEGAFET MOSFETs

N-Channel

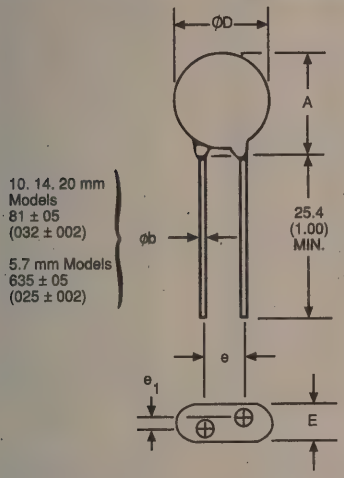
Mfr.'s Type	Maximum Ratings			Package Type
	BV_{DSS} (V)	I_{DS} (A)	$R_{DS(ON)}$ (Ω)	
RFP70N03	30	70.0	0.010	TO-220AB
RFD14N05	50	14.0	0.100	TO-251AA
RFD14N05SM	50	14.0	0.100	TO-252AA
RFP14N05	50	14.0	0.100	TO-220AB
RFD16N05	50	16.0	0.047	TO-251AA
RFD16N05SM	50	16.0	0.047	TO-252AA
RFP25N05	50	25.0	0.047	TO-220AB
RFP50N05	50	50.0	0.022	TO-220AB
RFG75N05E	50	75.0	0.008	TO-247
RFH75N05E	50	75.0	0.008	TO-218
RFD3055	60	12.0	0.150	TO-251AA
RFD3055SM	60	12.0	0.150	TO-252AA
RFD14N06SM	60	14.0	0.100	TO-252AA
RFD14N06	60	14.0	0.100	TO-251AA
RFD16N06	60	16.0	0.047	TO-251AA
RFD16N06SM	60	16.0	0.047	TO-252AA
RFG45N06	60	45.0	0.028	TO-247
RFP45N06	60	45.0	0.028	TO-220AB
RFP50N06	60	50.0	0.022	TO-220AB
RFG70N06	60	70.0	0.014	TO-247
RFP70N06	60	70.0	0.014	TO-220AB
RFP40N10	100	40.0	0.040	TO-220AB

P-Channel

RFD8P05	50	8.0	0.300	TO-251AA
RFD8P05SM	50	8.0	0.300	TO-252AA
RFP8P05	50	8.0	0.300	TO-220AB
RFD15P05	50	15.0	0.150	TO-251AA
RFD15P05SM	50	15.0	0.150	TO-252AA
RFP15P05	50	15.0	0.150	TO-220AB
RFP30P05	50	30.0	0.065	TO-220AB
RFG60P05E	50	60.0	0.026	TO-247
RFD8P06E	60	8.0	0.300	TO-251AA
RFD8P06ESM	60	8.0	0.300	TO-252AA
RFD15P06	60	15.0	0.150	TO-251AA
RFD15P06SM	60	15.0	0.150	TO-252AA
RFP30P06	60	30.0	0.074	TO-220AB
RFG60P06E	60	60.0	0.030	TO-247

Varistor Product Family Selection Guide

Peak Pulse Current (Amps)	Energy (Joules)	Maximum Steady-State Applied Voltage	Disc Sizes/Packages
		Volts AC RMS: 4 10 25 130 150 250 264 275 460 660 750 1000 6000	
		Volts DC: 3.5 14 35 175 200 330 365 369 615 850 970 1200 7000	
25-4500	0.1-35	ZA Series	5, 7, 10, 14, 20 mm
150-1000	0.2-25	ML Series	5 × 8, 1206, 1210, 1812
1200-9000	11-360	"C" III, LA Series	7, 10, 14, 20 mm


ØD
A
10. 14. 20 mm Models 81 ± 05 (032 ± 002)
5.7 mm Models 635 ± 05 (025 ± 002)
øb
25.4 (1.00) MIN.
e
e1
E

Dimensions: mm (in.)

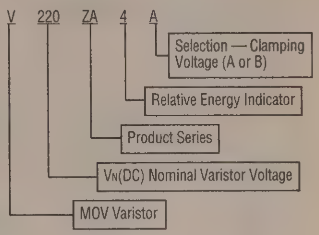
Symbol	Varistor Model Size				
	5 mm	7 mm	10 mm	14 mm	20 mm
A (Max.)†	10.0 (0.394)	11.7 (0.461)	16.0 (0.630)	18.9 (0.744)	25.5 (1.01)
øD (Max.)	7.0 (0.296)	8.7 (0.343)	12.5 (0.492)	16.4 (0.646)	22.5 (0.886)
e + 1 mm (.039)	5.0 (0.197)	5.0 (0.197)	7.5 (0.296)	7.5 (0.296)	7.5 (0.296)
Typ. Weight (g)	0.4	0.5	1.2	2	3

†For Models V420LA-V1000LA. A (max.) for 10, 14, 20 mm is 17.0 (.669), 20.0 (.787), 28.0 (1.10) respectively.

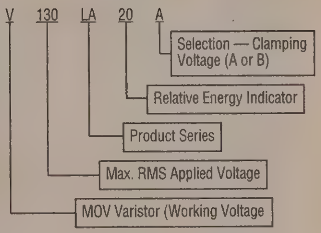
ZA and LA Series

Symbol	Varistor Model			
	V8ZA-V56ZA V120ZA-V180ZA	V66ZA-V100ZA V130LA-V320LA	V420LA V660LA	V1000LA
e1 ±1 mm (.039)	2.0 (.079)	2.5 (.098)	—	—
e1 ±1.5 mm (.059)	—	—	4.0 (.157)	7.3(.287)
E (Max.)	5.0 (.197)	5.6 (.220)	7.3 (.287)	10.8(.425)

ZA Series


V
220
ZA
4
A
Selection — Clamping Voltage (A or B)
Relative Energy Indicator
Product Series
VN(DC) Nominal Varistor Voltage
MOV Varistor

LA Series


V
130
LA
20
A
Selection — Clamping Voltage (A or B)
Relative Energy Indicator
Product Series
Max. RMS Applied Voltage
MOV Varistor (Working Voltage

ML Series. Operating Ambient Temperature (without Derating): –55° to +125°C. **Storage Temperature:** –55° to +150°C. **HiPot Encapsulation:** NA. **Voltage Temperature Coefficient (Vc at Specified Test Current):** <.01%/°C. **Insulation Resistance (MΩ):** NA.

LA, ZA Series. Operating Ambient Temperature (without Derating): –55° to +85°C. **Storage Temperature:** –55° to +125°C. **HiPot Encapsulation:** 2500. **Voltage Temperature Coefficient (Vc at Specified Test Current):** <.01%/°C. **Insulation Resistance (MΩ):** >1000.

ZA Series

- **Average Power Dissipation of Transients Not to Exceed 0.2 W, 0.25 W, 0.4 W, 0.6 W, or 1 W for Model Sizes 5 mm, 7 mm, 10 mm, 14 mm, and 20 mm Respectively**
- **ZA Series Varistors Are Listed Under UL File No. E135010 as a UL Recognized Component**

Mfr.'s Type	Model Size Disc Dia. (mm)	Device Marking	Maximum Rating (85°C)				Characteristics (25°C)				
			Continuous		Transient		Varistor Voltage @ 1 mA DC Test Current		Maximum Clamping Voltage 8 × 20 µs		Typical Capacitance
			RMS Volts	DC Volts	Energy 10 × 1000 µs	Peak Current 8 × 20 µs					
			$V_{M(AC)}$	$V_{M(DC)}$	W_{TM}	I_{TM}	V_{NOM} Min.	V_{NOM} Max.	V_C	I_{PK}	f=1 MHz
			Volts	Volts	Joules	Amps	Volts	Volts	Volts	Amps	Picofarads
V8ZA05	5	Z08	4	5.5	0.10	50	6.0	11.0	30	1.0	1400
V8ZA1	7	08Z1	4	5.5	0.40	100	6.0	11.0	22	2.5	3000
V8ZA2	10	08Z2	4	5.5	0.80	250	6.0	11.0	20	5.0	7500
V12ZA05	5	Z12	6	8.0	0.14	50	9.0	16.0	37	1.0	1200
V12ZA1	7	12Z1	6	8.0	0.60	100	9.0	16.0	34	2.5	2500
V12ZA2	10	12Z2	6	8.0	1.20	250	9.0	16.0	30	5.0	6000
V18ZA05	5	Z18	10	14.0	0.17	100	14.4	21.6	36	1.0	1000
V18ZA1	7	18Z1	10	14.0	0.80	250	14.4	21.6	36	2.5	2000
V18ZA2	10	18Z2	10	14.0	1.50	500	14.4	21.6	36	5.0	5000
V18ZA3	14	18Z3	10	14.0	3.50	1000	14.4	21.6	36	10.0	11000
V18ZA40	20	18Z40	10	14.0	80.00[1]	2000	14.4[2]	21.6	37	20.0	22000
V22ZA05	5	Z22	14	18.0	0.20	100	18.7	26.0	43	1.0	800
V22ZA1	7	22Z1	14	18.0	0.90	250	18.7	26.0	43	2.5	1600
V22ZA2	10	22Z2	14	18.0	2.00	500	18.7	26.0	43	5.0	4000
V22ZA3	14	22Z3	14	18.0	4.00	1000	18.7	26.0	43	10.0	9000
V24ZA50	20	24Z50	14	18.0[3]	100.00[1]	2000	19.2[2]	26.0	43	20.0	15000
V27ZA05	5	Z327	17	22.0	0.25	100	23.0	31.1	53	1.0	600
V27ZA1	7	27Z1	17	22.0	1.00	250	23.0	31.1	53	2.5	1300
V27ZA2	10	27Z2	17	22.0	2.50	500	23.0	31.1	53	5.0	3000
V27ZA4	14	27Z4	17	22.0	5.00	1000	23.0	31.1	53	10.0	7000
V27ZA60	20	27Z60	17	22.0	120.00[1]	2000	23.0[2]	31.1	50	20.0	13000
V33ZA05	5	Z33	20	26.0	0.30	100	29.5	38.0	65	1.0	500
V33ZA1	7	33Z1	20	26.0	1.20	250	29.5	36.5	65	2.5	1100
V33ZA2	10	33Z2	20	26.0	3.00	500	29.5	36.5	65	5.0	2700
V33ZA5	14	33Z5	20	26.0	6.00	1000	29.5	36.5	65	10.0	6000
V33ZA70	20	33Z70	21	27.0	150.00[1]	2000	29.5[2]	36.5	58	20.0	13000
V36ZA80	20	36Z80	23	31.0	160.00[1]	2000	32.0[2]	40.0	63	20.0	12000
V39ZA05	5	Z39	25	31.0	0.30	100	35.0	46.0	79	1.0	500
V39ZA1	7	39Z1	25	31.0	1.20	250	35.0	43.0	79	2.5	1100
V39ZA3	10	39Z3	25	31.0	3.00	500	35.0	43.0	76	5.0	2700
V39ZA6	14	39Z6	25	31.0	6.00	1000	35.0	43.0	76	10.0	6000
V47ZA05	5	Z47	30	38.0	0.40	100	42.0	55.0	93	1.0	400
V47ZA1	7	47Z1	30	38.0	1.80	250	42.0	52.0	93	2.5	800
V47ZA3	10	47Z3	30	38.0	4.50	500	42.0	52.0	93	5.0	2000
V47ZA7	14	47Z7	30	38.0	8.80	1000	42.0	52.0	93	10.0	4500
V56ZA05	5	Z56	35	45.0	0.50	100	50.0	66.0	110	1.0	360
V56ZA2	7	56Z2	35	45.0	2.30	250	50.0	62.0	110	2.5	700
V56ZA3	10	56Z3	35	45.0	5.50	500	50.0	62.0	110	5.0	1800
V56ZA8	14	56Z8	35	45.0	10.00	1000	50.0	62.0	110	10.0	3900
V68ZA05	5	Z68	40	45.0	0.60	100	61.0	80.0	135	1.0	300

NOTES: [1] Energy rating for impulse duration of 30 ms minimum to one half of peak current. [2] 10 mA DC test current. [3] Also rated to withstand 24 V for five minutes.

ZA Series (Continued)

Mfr.'s Type	Model Size Disc Dia. (mm)	Device Marking	Maximum Rating (85°C)				Characteristics (25°C)				
			Continuous		Transient		Varistor Voltage @ 1 mA DC Test Current		Maximum Clamping Voltage 8 × 20 µs		Typical Capacitance
			RMS Volts	DC Volts	Energy 10 × 1000 µs	Peak Current 8 × 20 µs					
			$V_{M(AC)}$	$V_{M(DC)}$	W_{TM}	I_{TM}	V_{NOM} Min.	V_{NOM} Max.	V_C	I_{PK}	f=1 MHz
			Volts	Volts	Joules	Amps	Volts	Volts	Volts	Amps	Picofarads
V68ZA2	7	68Z2	40	45.0	3.00	250	61.0	75.0	135	2.5	600
V68ZA3	10	68Z3	40	68.0	6.50	500	61.0	75.0	135	5.0	1500
V68ZA10	14	68Z10	40	68.0	13.00	1000	61.0	75.0	135	10.0	3300
V82ZA05	5	Z82	50	82.0	2.00	400	73.0	97.0	135	5.0	240
V82ZA2	7	82Z2	50	82.0	4.00	1200	73.0	91.0	135	10.0	500
V82ZA4	10	82Z4	50	82.0	8.00	2500	73.0	91.0	135	25.0	1100
V82ZA12	14	82Z12	50	82.0	15.00	4500	73.0	91.0	145	50.0	2500
V100ZA05	5	Z100	60	100.0	2.50	400	90.0	117.0	165	5.0	180
V100ZA3	7	100Z	60	100.0	5.00	1200	90.0	110.0	165	10.0	400
V100ZA4	10	100Z4	60	100.0	10.00	2500	90.0	110.0	165	25.0	900
V100ZA15	14	100Z15	60	100.0	20.00	4500	90.0	110.0	175	50.0	2000
V120ZA05	5	Z120	75	26.0	3.00	400	108.0	138.0	205	5.0	140
V120ZA1	7	120Z	75	26.0	6.00	1200	108.0	132.0	205	10.0	300
V120ZA4	10	120Z4	75	26.0	12.00	2500	108.0	132.0	200	25.0	750
V120ZA6	14	120Z6	75	26.0	22.00	4500	108.0	132.0	210	50.0	1700
V150ZA05	5	Z150	92	127.0	4.00	400	135.0	173.0	250	5.0	120
V150ZA1	7	Z051	95	127.0	8.00	1200	135.0	165.0	250	10.0	250
V150ZA4	10	150Z4	95	127.0	15.00	2500	135.0	165.0	250	25.0	600
V150ZA8	14	150Z8	95	127.0	20.00	4500	135.0	165.0	250	50.0	1400
V180ZA05	5	Z180	110	153.0	5.00	400	162.0	207.0	295	5.0	100
V180ZA1	7	180Z	115	153.0	10.00	1200	162.0	198.0	300	10.0	200
V180ZA5	10	180Z5	115	153.0	18.00	2500	162.0	198.0	300	25.0	500
V180ZA10	14	180Z10	115	153.0	35.00	4500	162.0	198.0	300	50.0	1100
V220ZA05	5	Z220	140	180.0	6.00	400	198.0	253.0	360	5.0	90
V270ZA05	5	Z270	175	225.0	7.50	400	243.0	311.0	455	5.0	70
V330ZA05	5	Z330	210	275.0	9.00	400	297.0	380.0	540	5.0	60
V390ZA05	5	Z390	250	330.0	10.00	400	351.0	449.0	650	5.0	50
V430ZA05	5	Z430	275	369.0	11.00	400	387.0	495.0	710	5.0	45

LA Series

- ► LA Series Varistors Are Listed Under UL File No. E75961 and E56529 as a UL Recognized Component
- ► LA Series Varistors Are Listed Under CSA File No. LR91788 as a CSA Recognized Component
- ► Average Power Dissipation of Transients Not to Exceed 0.25 W, 0.4 W, 0.6 W or 1 W for Model Sizes 7 mm, 10 mm, 14 mm, and 20 mm Respectively

Mfr.'s Type	Model Size Disc Dia. (mm)	Device Marking	Maximum Rating (85°C)				Characteristics (25°C)				
			Continuous		Transient		Varistor Voltage @ 1 mA DC Test Current		Maximum Clamping Voltage 8 × 20 µs		Typical Capacitance
			RMS Volts	DC Volts	Energy 10 × 1000 µs	Peak Current 8 × 20 µs					
			$V_{M(AC)}$	$V_{M(DC)}$	W_{TM}	I_{TM}	V_{NOM} Min.	V_{NOM} Max.	V_C	I_{PK}	f=1 MHz
			Volts	Volts	Joules	Amps	Volts	Volts	Volts	Amps	Picofarads
V130LA1	7	1301	130	175	11	1200	184	255	390	10	180
V130LA2	7	1302	130	175	11	1200	184	228	340	10	180
V130LA5	10	1305	130	175	20	2500	184	228	340	25	450
V130LA10A	14	130L10	130	175	38	4500	184	228	340	50	1000
V130LA20A	20	130L20	130	175	70	6500	184	228	340	100	1900
V130LA20B	20	130L20B	130	175	70	6500	184	220	325	100	1900
V140LA2	7	1402	140	180	12	1200	198	242	360	10	160
V140LA5	10	1405	140	180	22	2500	198	242	360	25	400
V140LA10A	14	140L10	140	180	42	4500	198	242	360	50	900
V150LA1	7	1501	150	200	13	1200	212	284	430	10	150
V150LA2	7	1502	150	200	13	1200	212	268	395	10	150
V150LA5	10	1505	150	200	25	2500	212	268	395	25	360
V150LA10A	14	150L10	150	200	45	4500	212	268	395	50	800
V150LA20A	20	150L20	150	200	80	6500	212	268	395	100	1600
V150LA20B	20	150L20B	150	200	80	6500	212	243	360	100	1600
V175LA2	7	1752	175	225	15	1200	247	303	455	10	130
V175LA5	10	1755	175	225	30	2500	247	303	455	25	350
V175LA10A	14	175L10	175	225	55	4500	247	303	455	50	700
V230LA4	7	2304	230	300	20	1200	324	396	595	10	100
V230LA10	10	230L	230	300	35	2500	324	396	595	25	250
V320LA20A	14	230L20	230	300	70	4500	324	396	595	50	550
V250LA2	7	2502	250	330	21	1200	354	473	730	10	90
V250LA4	7	2504	250	330	21	1200	354	429	650	10	90
V250LA10	10	250L	250	330	40	2500	354	429	650	25	220
V250LA20A	14	250L20	250	330	72	4500	354	429	650	50	500
V250LA40A	20	250L40	250	330	130	6500	354	429	650	100	1000
V250LA40B	20	250L40B	250	330	130	6500	354	413	620	100	1000
V275LA2	7	2752	275	369	23	1200	389	515	775	10	80
V275LA4	7	2754	275	369	23	1200	389	473	710	10	80
V275LA10	10	275L	275	369	45	2500	389	473	710	25	200
V275LA20A	14	275L20	275	369	75	4500	389	473	710	50	450
V275LA40A	20	275L40	275	369	140	6500	389	473	710	100	900
V275LA40B	20	275L40B	275	369	140	6500	389	453	680	100	900
V300LA2	7	3002	300	405	25	1200	420	565	870	10	70
V300LA4	7	3004	300	405	25	1200	420	517	775	10	70
V320LA20A	14	320L20	320	420	80	4500	462	565	850	50	380
V320LA40B	20	320L40	320	420	150	6500	462	540	810	100	750
V420LA10	10	420L	420	560	55	2500	610	748	1120	25	140
V420LA20A	14	420L20	420	560	90	4500	610	748	1120	50	300
V420LA40B	20	420L40	420	560	160	6500	610	720	1060	100	600
V480LA40A	14	480L40	480	640	105	4500	670	825	1240	50	270
V480LA80B	20	480L80	480	640	180	6500	670	790	1160	100	550
V510LA40A	14	510L40	510	675	110	4500	735	910	1350	50	250
V510LA80B	20	510L80	510	675	190	6500	735	860	1280	100	500
V575LA40A	14	575L40	575	730	120	4500	805	1000	1500	50	220
V575LA80B	20	575L80	575	730	220	6500	805	960	1410	100	450
V660LA50A	14	660L50	660	850	140	4500	940	1210	1820	50	200
V660LA100B	20	660L100	660	850	250	6500	940	1100	1650	100	400
V1000LA80A	14	1000L80	1000	1200	220	4500	1425	1800	2700	50	130
V1000LA160B	20	1000L160	1000	1200	360	6500	1425	1600	2420	100	250

"C" III Series

Radial Lead Metal-Oxide Varistors for the TVSS Environment

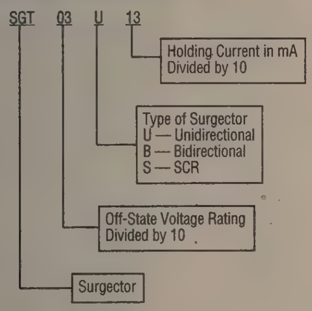
- ► **Recognized as "Transient Voltage Surge Suppressors" to UL 1449; File #E75961**
- ► **Recognized as "Transient Voltage Surge Suppressors" to CSA C22.2, No. 1; File #LR91788**
- ► **High Energy Absorption Capability W_{TM}: 45 J to 240 J (2 ms)**
- ► **High Peak Pulse Current Capability I_{TM}: 6000 A to 9000 A (8/20 µs)**
- ► **Wide Operating Voltage Range $V_{M(AC)RMS}$: 130 V to 300 V**
- ► **Available in Tape and Reel for Automatic Insertion; Also Available Crimped and/or Trimmed**

The expanded version of the LA series of metal-oxide varistors, designation "C" III series, consists of AC line voltage rated MOVs with extremely high current and energy handling capabilities. This new "C" III series of MOVs were primarily designed for the transient voltage surge suppressor (TVSS) environment. They provide the increased level of protection now deemed to be necessary for the transients expected in this environment. The occurrence of high voltage transients in the AC power network can be detrimental to the associated line equipment. Such transient occurrences may cause product failure and the subsequent faulty operation of the electrical systems. This new expanded version of the Harris 20 mm LA series of metal oxide varistors is also available with 10 mm lead spacing, in tape and reel and in a variety of distinctive crimped and trimmed offerings.

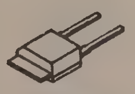
Mfr.'s Type	Model Size Disc Dia. (mm)	Device Marking	Maximum Rating (85°C)				Characteristics (25°C)					
			Continuous	Transient*			Varistor Voltage @ 1 mA DC Test Current		Maximum Clamping Voltage 8 × 20 µs		Duty Cycle Surge Rating	
			RMS Volts	Withstanding Energy (2 ms)	Peak Current 8 × 20 µs							
			$V_{M(AC)}$	W_{TM} (Ω)	I_{TM1} 1 Pulse	I_{TM2} 2 Pulses	V_{NOM} Min.	V_{NOM} Max.	V_C	I_{PK}	3 KA (8 × 20 µs)	750 A (8 × 20 µs)
			Volts	Joules	Amps	Amps	Volts	Volts	Volts	Amps	# Pulses	# Pulses
V130LA10C	14	130L10C	130	45	6000	5000	184	228	340	50	10	80
V130LA20C	20	130L20C	130	90	9000	7000	184	228	340	100	20	120
V130LA20CX325	20	130LA20CX325	130	90	9000	7000	184	220	325	100	20	120
V140LA10C	14	140L10C	140	50	6000	5000	198	242	360	50	10	80
V140LA20C	20	140L20C	140	100	9000	7000	198	242	360	100	20	120
V140LA20CX340	20	140L20CX340	140	100	9000	7000	198	230	340	100	20	120
V150LA10C	14	150L10C	150	55	6000	5000	212	268	395	50	10	80
V150LA20C	20	150L20C	150	110	9000	7000	212	268	395	100	20	120
V150LA20CX360	20	150L20CX360	150	110	9000	7000	212	243	360	100	20	120
V175LA20CX425	20	175L20CX425	175	120	9000	7000	247	285	425	100	20	120
V230LA20C	14	230L20C	230	80	6000	5000	324	396	595	50	10	80
V230LA40C	20	230L40C	230	160	9000	7000	324	396	595	100	20	120
V230LA40CX570	20	230L40X570	230	160	9000	7000	324	384	570	100	20	120
V250LA20C	14	250L20C	250	100	6000	5000	354	429	650	50	10	80
V250LA40C	20	250L40C	250	200	9000	7000	354	429	650	100	20	120
V250LA40CX620	20	250L40CX620	250	200	9000	7000	354	413	620	100	20	120
V275LA40CX680	20	275L40CX680	275	220	9000	7000	389	453	680	100	20	120
V300LA20C	14	300L20C	300	120	6000	5000	400	540	775	50	10	80
V300LA40C	20	300L40C	300	240	9000	7000	400	540	775	100	20	120
V300LA40CX745	20	300L40CX745	300	240	9000	7000	400	520	745	100	20	120

***Note:** Average power dissipation of transients not to exceed 0.6 W and 1 W for model sizes 14 mm and 20 mm, respectively.

Surgector Products



PACKAGE A



PACKAGE B

- ► **High Input Impedance Until Breakdown (i.e., Low Leakage)**
- ► **Repeatable Breakdown/Threshold Voltage**
- ► **High Surge Current Handling Capability**
- ► **Withstand and Respond to Rapidly Recurring Surges**
- ► **Fast Recover to High Impedance State (Turn Off)**
- ► **Dual Polarity Protection**
- ► **No Degradation of Essential Characteristics with Use**
- ► **Zener (Avalanche) Diode and SCR-Type THyristor**
- ► **Zener Provides Continuous Low Voltage Protection**
- ► **Thyristor Provides Instantaneous Protection Against Fast Rising Transients**

Provide transient protection for central office equipment, repeaters, supervisory equipment, line concentrator, switchgear equipment, receivers, data transmission, headsets, handsets, modem, EPABX, PABX, PBX, and PCM. Two bidirectional Surgector devices are placed between the tip and ring lines just after lines enter the telephone to protect delicate telecommunications equipment.

Mfr.'s Type	Function	V_Z Min. (V)	V_{BO} Max. (100 V/µs)	I_{TSM} (1 × 2 µs)	I_{TSM} (10 × 1000 µs)	I_H (mA)	Package Style
SGT27S10[1,2]	Var Clamp	270	[1]	300	100	>100	A
SGT27S23[1]	Var Clamp	270	[1]	300	100	>230	A
SGT03U13[2]	Unidirectional	30	<50	300	100	>130	B
SGT06U13[2]	Unidirectional	60	<85	300	100	>130	B
SGT23U13[2]	Unidirectional	230	<275	300	100	>130	B
SGT21B13	Bidirectional	210	270	300	100	>130	B
SGT23B13	Bidirectional	230	290	300	100	>130	B
SGT27B13	Bidirectional	270	345	300	100	>130	B
SGT27B13A[2]	Bidirectional	270	360	300	100	>130	B
SGT27B27[2]	Bidirectional	270	345	600	200	>270	B
SGT27B27A	Bidirectional	270	360	600	200	>270	B

NOTES: [1] Dependent on trigger circuit. [2] Devices UL recognized to 497B — File Number E135010.

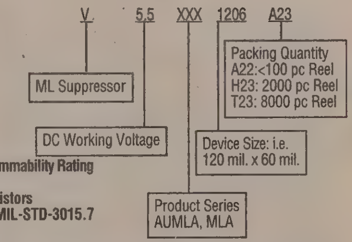
ML Series

Features

- ► **Leadless Chip Form – "Zero" Lead Inductance**
- ► **Multilayer Construction Technology**
- ► **–55°C to +125°C Operating Temperature Range**
- ► **Wide Operating Voltage Range $V_{M(DC)}$ = 3.5 V to 68 V**
- ► **Broad Range of Energy Handling Capabilities**
- ► **Low Profile, Compact Industry Standard Chip Sizes**
- ► **Inherent Bidirectional Clamping**
- ► **Low Capacitance Models Available**
- ► **No Plastic or Epoxy Packaging Assures Better than 94V-0 Flammability Rating**

Applications

- ► **On-Board Transient Voltage Protection for ICs and Transistors**
- ► **ESD Protection for Components Sensitive to EIC 801-2, MIL-STD-3015.7**
- ► **Replace Larger Surface Mount Zener Diodes**



ML Series transient surge suppressors are designed to protect sensitive electronic devises from destruction by high voltage transients. These suppressors are designed to fail short when overstressed and protect the associated equipment. The ML suppressor is manufactured from semiconducting ceramics which offer rugged protection, excellent transient energy absorption and increased internal heat dissipation. The devises are in chip form, eliminating lead inductance and assuring fast speed of response to transient surges. These transient suppression devices have significantly smaller footprints and lower profiles than traditional TVS diodes or radial MOVs (metal oxide varistors), thus allowing designers to reduce size and weight while increasing system reliability.

Mfr.'s Type	Maximum Rating (125°C)					Characteristics (25°C)		
	Maximum Continuous Working Voltage		Maximum Nonrepetitive Surge Current (8/20 µs)	Maximum Nonrepetitive Surge Energy (10/1000 µs)	Max. Clamping Voltage at 10 A or as noted (8/20 µs)	Nom. Voltage @ 1 mA D<Test Current		Typical Capacitance @ f =1 MHz
	$V_{M(DC)}$	V_M (AC)	I_{TM}	W_{TM}	V_C	$V_{N(DC)}$ Min.	$V_{N(DC)}$ Max.	C
	Volts	Volts	Amps	Joules	Volts	Volts	Volts	(pF)
V3.5MLA0805A23	3.5	2.5	120	0.3	10 at 5 A	3.7	5.5	2750
V3.5MLA0805LA23	3.5	2.5	40	0.1	10 at 2 A	3.7	5.5	1200
V3.5MLA1206A23	3.5	2.5	100	0.3	14	5.0	7.0	6000
V5.5MLA0805A23	5.5	4.0	120	0.3	15.5 at 5 A	7.1	9.3	2500
V5.5MLA0805LA23	5.5	4.0	40	0.1	15.5 at 2 A	7.1	9.3	1100
V5.5MLA1206A23	5.5	4.0	150	0.4	15.5	7.1	8.7	4500
V14MLA0805A23	14.0	10.0	120	0.3	30 at 5 A	15.9	20.3	1200
V14MLA0805LA23	14.0	10.0	40	0.1	30 at 2 A	15.9	20.3	450
V14MLA1206A23	14.0	10.0	150	0.4	30	16.4	20.0	2100
V18MLA0805A23	18.0	14.0	120	0.3	40 at 5 A	22.5	28.0	650
V18MLA0805LA23	18.0	14.0	40	0.1	40 at 2 A	22.5	28.0	350
V18MLA1206A23	18.0	14.0	150	0.4	40	22.0	27.0	1700
V18MLA1210A23	18.0	14.0	250	0.8	40	22.0	27.0	1900
V26MLA1206A23	26.0	20.0	150	0.6	56	29.5	38.5	800
V26MLA1210A23	26.0	20.0	250	1.2	54	29.5	38.5	1000
V33MLA1206A23	33.0	26.0	180	0.8	72	38.0	45.0	500
V42MLA1206A23	42.0	30.0	180	0.8	86	46.0	56.0	450
V56MLA1206A23	56.0	40.0	180	1.0	110	61.0	76.0	350
V68MLA1206A23	68.0	50.0	180	1.0	130	76.0	90.0	150

Notes: L suffix is a low capacitance and energy version. Typical leakage at +25 °C < 50 µA, maximum Leakage 100 µA. Average power dissipation of transients for 0805, 1206 and 1210 sizes not to exceed 0.10 W, 0.10 W and 0.15 W, respectively. Devices specifically characterized for automotive applications also available. (See AUML Series).

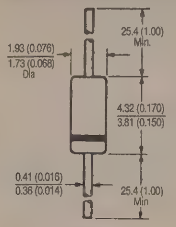


Fig. 1

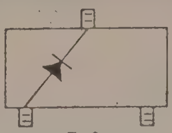


Fig. 2

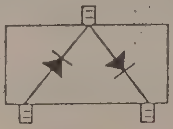


Fig. 3

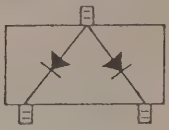


Fig. 4

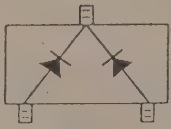


Fig. 5

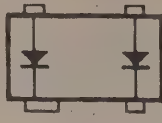


Fig. 6

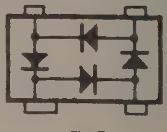


Fig. 7

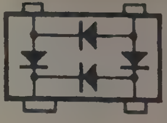


Fig. 8

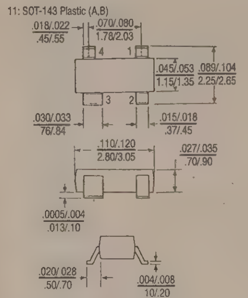


Fig. 9

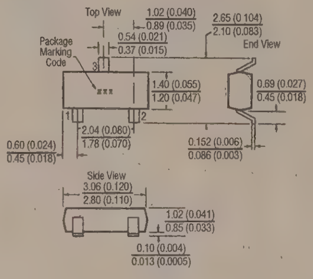


Fig. 10

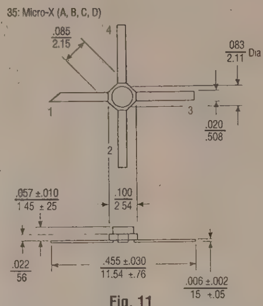


Fig. 11

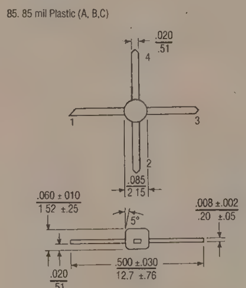


Fig. 12

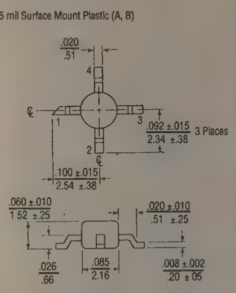


Fig. 13

Diodes

Surface Mount Pin Diodes

Mfr.'s Type		Fig.	Min. V_{BR} (V) @ 10 μA	Max. C_T (pF) @ V_R = 50 V †V_R = 20 V ‡V_R = 5 V	Max. R_S (Ω) f = 100 MHz †I_F = 10 mA ‡I_F = 5 mA	Typical Lifetime t (ns) I_F = 50 mA, I_R = 250 mA †I_F = 10 mA, I_R = 6 mA	EACH
Bulk	Tape and Reel						
5082-3080	—	1	100	0.40	2.5	1300	**2.02**
HSMP-3800#L30	HSMP-3800#L31	2	100	0.40	2.5	2500	**.90**
HSMP-3802#L30	HSMP-3802#L31	3	100	0.40	2.5	2500	**1.35**
HSMP-3804#L30	HSMP-3804#L31	5	100	0.40	2.5	2500	**1.35**
5082-3081	—	1	100	8.40	3.5	2500	**2.19**
HSMP-3810#L30	HSMP-3810#L31	2	100	0.35	4.0	1500	**.51**
HSMP-3812#L30	HSMP-3812#L31	3	100	0.35	4.0	1500	**.77**
HSMP-3813#L30	HSMP-3813#L31	4	100	0.35	4.0	1500	**.77**
HSMP-3814#L30	HSMP-3814#L31	5	100	0.35	4.0	1500	**.77**
HSMP-3820#L30	HSMP-3820#L31	2	35	1.00†	0.6†	70†	**.45**
HSMP-3822#L30	HSMP-3822#L31	3	35	1.00†	0.6†	70†	**.77**
HSMP-3823#L30	HSMP-3823#L31	4	35	1.00†	0.6†	70†	**.77**
HSMP-3824#L30	HSMP-3824#L31	5	35	1.00†	0.6†	70†	**.77**
5082-3077	—	1	200	0.30	1.5	100	**3.58**
HSMP-3830#L30	HSMP-3830#L31	2	200	0.30	1.5	500	**1.85**
HSMP-3832#L30	HSMP-3832#L31	3	200	0.30	1.5	500	**2.78**
HSMP-3833#L30	HSMP-3833#L31	4	200	0.30	1.5	500	**2.78**
HSMP-3834#L30	HSMP-3834#L31	5	200	0.30	1.5	500	**2.78**
HSMP-3880#L30	HSMP-3880#L31	2	100	0.40	6.5‡	2500	**2.60**
HSMP-3890#L30	HSMP-3890#L31	2	50	0.30‡	2.5‡	200	**.44**
HSMP-3892#L30	HSMP-3892#L31	3	50	0.30‡	2.5‡	200	**.62**
HSMP-3893#L30	HSMP-3893#L31	4	50	0.30‡	2.5‡	200	**.62**
HSMP-3894#L30	HSMP-3894#L31	5	50	0.30‡	2.5‡	200	**.62**
HSMP-3895#L30	HSMP-3895#L31	6	50	0.30‡	2.5‡	200	**1.00**

Surface Mount RF Schottky Barrier Diodes

Mfr.'s Type		Fig.	Min. V_{BR} (V) @ 10 μA †I_R = 100 μA	Max. C_T (pF) @ V_R = 0 V	Max. V_F @ 1 mA (mV) f = 100 MHz †I_F = 10 mA ‡I_F = 5 mA	EACH
Bulk	Tape and Reel					
5082-2800	—	1	70	2.0	410	**.68**
HSMS-2800#L30	HSMS-2800#L31	2	70	2.0	410	**.35**

Surface Mount RF Schottky Barrier Diodes (continued)

Mfr.'s Type		Fig.	Min. V_{BR} (V) @ 10 μA †I_R = 100 μA	Max. C_T (pF) @ V_R = 0 V	Max. V_F @ 1 mA (mV) f = 100 MHz †I_F = 10 mA ‡I_F = 5 mA	EACH
Bulk	Tape and Reel					
HSMS-2802#L30	HSMS-2802#L31	3	70	2.0	410	**.50**
HSMS-2803#L30	HSMS-2803#L31	4	70	2.0	410	**.50**
HSMS-2804#L30	HSMS-2804#L31	5	70	2.0	410	**.50**
HSMS-2805#L30	HSMS-2805#L31	6	70	2.0	410	**.50**
HSMS-2807#L30	HSMS-2807#L31	7	70	2.0	410	**.98**
HSMS-2808#L30	HSMS-2808#L31	8	70	2.0	410	**.98**
5082-2810	—	1	20	1.2	410	**1.79**
HSMS-2810#L30	HSMS-2810#L31	2	20	1.2	410	**.44**
HSMS-2812#L30	HSMS-2812#L31	3	20	1.2	410	**.66**
HSMS-2813#L30	HSMS-2813#L31	4	20	1.2	410	**.66**
HSMS-2814#L30	HSMS-2814#L31	5	20	1.2	410	**.66**
HSMS-2815#L30	HSMS-2815#L31	6	20	1.2	410	**.66**
HSMS-2817#L30	HSMS-2817#L31	7	20	1.2	410	**1.23**
HSMS-2818#L30	HSMS-2818#L31	8	20	1.2	410	**1.23**
5082-2835	—	1	—	—	480	**.58**
HSMS-2820#L30	HSMS-2820#L31	2	8†	1.0	340	**.35**
HSMS-2822#L30	HSMS-2822#L31	3	8†	1.0	340	**.50**
HSMS-2823#L30	HSMS-2823#L31	4	8†	1.0	340	**.50**
HSMS-2824#L30	HSMS-2824#L31	5	8†	1.0	340	**.50**
HSMS-2825#L30	HSMS-2825#L31	6	8†	1.0	340	**.50**
HSMS-2827#L30	HSMS-2827#L31	7	8†	1.0	340	**.98**
HSMS-2828#L30	HSMS-2828#L31	8	8†	1.0	340	**.98**

Surface Mount High Performance Schottky Diodes

DC Electrical Specifications: T_A = +25°C, single diode.

Mfr.'s Type		Fig.	Max. Forward Voltage V_F (mV) IF = 1.0 mA	Min. Breakdown Voltage V_{BR} (V) I_R = 10 μA	Typ. C_T (pF) @ VR = −0.5 to −1.0 V f = 1 MHz	EACH
Bulk	Tape and Reel					
HSMS-2850#L30	HSMS-2850#L31	2	150	250	0.30	**.95**
HSMS-2852#L30	HSMS-2852#L31	3	150	250	0.30	**1.10**
HSMS-2855#L30	HSMS-2855#L31	6	150	250	0.30	**1.10**
HSMS-2860#L30	HSMS-2860#L31	2	250	350	0.25	**.47**
HSMS-2862#L30	HSMS-2862#L31	3	250	350	0.25	**.69**
HSMS-2863#L30	HSMS-2863#L31	4	250	350	0.25	**.69**
HSMS-2864#L30	HSMS-2864#L31	5	250	350	0.25	**.69**

Transistors

Low Noise Transistors

Mfr.'s Type		Fig.	NF @ GHz (dB)	P1dB (dBm)	Ga 1 @ GHz (dB)	Package	EACH
Bulk	Tape and Reel						
AT-31011-BLK	AT-31011-TRI	9	0.9	+9.0	13.0	SOT-143 SM Plastic	**.39**
AT-31033-BLK	AT-31033-TRI	10	0.9	+9.0	11.0	SOT-23 SM Plastic	**.39**
AT-32011-BLK	AT-32011-TRI	9	1.0	+13.0	14.0	SOT-143 SM Plastic	**.40**
AT-32033-BLK	AT-32033-TRI	10	1.0	+13.0	12.5	SOT-23 SM Plastic	**.39**
AT-41511-BLK	AT-41511-TRI	9	1.0	+14.5	15.5	SOT-143 SM Plastic	**.33**
AT-41533-BLK	AT-41533-TRI	10	1.0	+14.5	14.5	SOT-23 SM Plastic	**.30**
AT-41435-BLK	—	11	1.3	+19.0	18.5	Micro-X Ceramic	**5.42**
AT-41485-BLK	—	12	1.4	+18.5	18.5	85 mil Plastic	**1.50**

Low Noise Transistors (continued)

Mfr.'s Type		Fig.	NF @ GHz (dB)	P1dB (dBm)	Ga 1 @ GHz (dB)	Package	EACH
Bulk	Tape and Reel						
AT-41411-BLK	AT-41411-TRI	9	1.4	+17.0	18.0	SOT-143 SM Plastic	**1.10**
AT-41486-BLK	AT-41486-TRI	13	1.4	+18.0	18.0	85 mil SM Plastic	**1.35**

Medium Power and General Purpose Transistors

AT-01635	—	11	3.0	+22.0	12.0	Micro-X Ceramic	**3.92**
AT-42035	—	11	1.9	+21.0	17.0	Micro-X Ceramic	**4.83**
AT-42085	—	12	1.4	+20.5	17.0	85 mil Plastic	**1.33**
AT-42086-BLK	AT-42086-TRI	13	1.4	+20.5	17.0	85 mil SM Plastic	**1.33**

MCS® 251, MCS® 151 and MCS® 51 Microcontrollers

Intel's 8-bit MCS 251, MCS 151 and MCS 51 Microcontrollers have become an industry standard for embedded control. The architecture is optimized for control oriented applications.

MCS® 251 Microcontrollers — NEW —

Mfr.'s Type				EPROM (Bytes)	Register Ram (Bytes)	No. of Timers/ Counters	No. of Serial Ports	No. of I/O Pins	Operating Frequency (MHz)	Temperature Range (°C)	Key Features
40 Lead CERDIP	44 Lead PLCC	40 Lead PDIP	44 Lead QFP								
—	N83C251SA-16	P83C251SA-16	—	8 K ROM	1 K	3	1	32	16.0	0 to +70	High Performance MCS 251 Arch., PCA, H/W WDT
—	N87C251SA-16	P87C251SA-16	—	8 K OTPROM	1 K	3	1	32	16.0	0 to +70	High Performance MCS 251 Arch., PCA, H/W WDT
—	N80C251SB-16	P80C251SB-16	—	ROMLess	1 K	3	1	32	16.0	0 to +70	High Performance MCS 251 Arch., PCA, H/W WDT
—	N83C251SB-16	P83C251SB-16	—	16 K ROM	1 K	3	1	32	16.0	0 to +70	High Performance MCS 251 Arch., PCA, H/W WDT
—	N87C251SB-16	P87C251SB-16	—	16 K OTPROM	1 K	3	1	32	16.0	0 to +70	High Performance MCS 251 Arch., PCA, H/W WDT
—	N83C251SP-16	P83C251SP-16	—	8 K ROM	512	3	1	32	16.0	0 to +70	High Performance MCS 251 Arch., PCA, H/W WDT
—	N87C251SP-16	P87C251SP-16	—	8 K OTPROM	512	3	1	32	16.0	0 to +70	High Performance MCS 251 Arch., PCA, H/W WDT
—	N80C251SQ-16	P80C251SQ-16	—	ROMLess	512	3	1	32	16.0	0 to +70	High Performance MCS 251 Arch., PCA, H/W WDT
—	N83C251SQ-16	P83C251SQ-16	—	16 K ROM	512	3	1	32	16.0	0 to +70	High Performance MCS 251 Arch., PCA, H/W WDT
—	N87C251SQ-16	P87C251SQ-16	—	16 K OTPROM	512	3	1	32	16.0	0 to +70	High Performance MCS 251 Arch., PCA, H/W WDT
—	TN83C251SA-16	TP83C251SA-16	—	8 K ROM	1 K	3	1	32	16.0	–40 to +8	High Performance MCS 251 Arch., PCA, H/W WDT
—	TN87C251SA-16	TP87C251SA-16	—	8 K OTPROM	1 K	3	1	32	16.0	–40 to +85	High Performance MCS 251 Arch., PCA, H/W WDT
—	TN80C251SB-16	TP80C251SB-16	—	ROMLess	1 K	3	1	32	16.0	–40 to +85	High Performance MCS 251 Arch., PCA, H/W WDT
—	TN83C251SB-16	TP83C251SB-16	—	16 K ROM	1 K	3	1	32	16.0	–40 to +85	High Performance MCS 251 Arch., PCA, H/W WDT
—	TN87C251SB-16	TP87C251SB-16	—	16 K OTPROM	1 K	3	1	32	16.0	–40 to +85	High Performance MCS 251 Arch., PCA, H/W WDT
—	TN83C251SP-16	TP83C251SP-16	—	8 K ROM	512	3	1	32	16.0	–40 to +85	High Performance MCS 251 Arch., PCA, H/W WDT
—	TN87C251SP-16	TP87C251SP-16	—	8 K OTPROM	512	3	1	32	16.0	–40 to +85	High Performance MCS 251 Arch., PCA, H/W WDT
—	TN80C251SQ-16	TP80C251SQ-16	—	ROMLess	512	3	1	32	16.0	–40 to +85	High Performance MCS 251 Arch., PCA, H/W WDT
—	TN83C251SQ-16	TP83C251SQ-16	—	16 K ROM	512	3	1	32	16.0	–40 to +85	High Performance MCS 251 Arch., PCA, H/W WDT
—	TN87C251SQ-16	TP87C251SQ-16	—	16 K OTPROM	512	3	1	32	16.0	–40 to +85	High Performance MCS 251 Arch., PCA, H/W WDT

MCS® 151 Microcontrollers — NEW —

—	N80C151SB-16	P80C151SB-16	—	ROMLess	256	3	1	32	16.0	0 to +70	High Performance MCS 151 Arch., PCA, H/W WDT
—	N83C151SB-16	P83C151SB-16	—	16 K ROM	256	3	1	32	16.0	0 to +70	High Performance MCS 151 Arch., PCA, H/W WDT
—	N87C151SB-16	P87C151SB-16	—	16 K OTPROM	256	3	1	32	16.0	0 to +70	High Performance MCS 151 Arch., PCA, H/W WDT
—	N83C151SA-16	P83C151SA-16	—	8 K ROM	256	3	1	32	16.0	0 to +70	High Performance MCS 151 Arch., PCA, H/W WDT
—	N87C151SA-16	P87C151SA-16	—	8 K OTPROM	256	3	1	32	16.0	0 to +70	High Performance MCS 151 Arch., PCA, H/W WDT
—	TN80C151SB-16	TP80C151SB-16	—	ROMLess	256	3	1	32	16.0	–40 to +85	High Performance MCS 151 Arch., PCA, H/W WDT
—	TN83C151SB-16	TP83C151SB-16	—	16 K ROM	256	3	1	32	16.0	–40 to +85	High Performance MCS 151 Arch., PCA, H/W WDT
—	TN87C151SB-16	TP87C151SB-16	—	16 K OTPROM	256	3	1	32	16.0	–40 to +85	High Performance MCS 151 Arch., PCA, H/W WDT
—	TN83C151SA-16	TP83C151SA-16	—	8 K ROM	256	3	1	32	16.0	–40 to +85	High Performance MCS 151 Arch., PCA, H/W WDT
—	TN87C151SA-16	TP87C151SA-16	—	8 K OTPROM	256	3	1	32	16.0	–40 to +85	High Performance MCS 151 Arch., PCA, H/W WDT

MCS® 51 Classic Microcontrollers

D80C31BH	N80C31BH	P80C31BH	S80C31BH	ROMLess	128	2	1	32	3.5 to 12	0 to +70	Power Save Modes
D80C31BH-1	N80C31BH-1	P80C31BH-1	S80C31BH-1	ROMLess	128	2	1	32	3.5 to 16	0 to +70	Power Save Modes
—	N80C31BH-24	P80C31BH-24	S80C31BH-24	ROMLess	128	2	1	32	3.5 to 24	0 to +70	Power Save Modes
—	N80C31BH-33	P80C31BH-33	S80C31BH-33	ROMLess	128	2	1	32	3.5 to 33	0 to +70	Power Save Modes
TD80C31BH	TN80C31BH	TP80C31BH	TS80C31BH	ROMLess	128	2	1	32	3.5 to 12	–40 to +85	Power Save Modes
—	TN80C31BH-1	TP80C31BH-1	TS80C31BH-1	ROMLess	128	2	1	32	3.5 to 16	–40 to +85	Power Save Modes
D87C51	N87C51	P87C51	S87C51	4 K EPROM	128	2	1	32	3.5 to 12	0 to +70	Three Level Memory Lock
D87C51-1	N87C51-1	P87C51-1	S87C51-1	4 K EPROM	128	2	1	32	3.5 to 16	0 to +70	Three Level Memory Lock
D87C51-20	N87C51-20	P87C51-20	S87C51-20	4 K EPROM	128	2	1	32	3.5 to 20	0 to +70	Three Level Memory Lock
TD87C51	TN87C51	TP87C51	—	4 K EPROM	128	2	1	32	3.5 to 12	–40 to +85	Three Level Memory Lock
—	TN87C51-1	TP87C51-1	—	4 K EPROM	128	2	1	32	3.5 to 16	–40 to +85	Three Level Memory Lock
TD87C51-20	—	—	—	4 K EPROM	128	2	1	32	3.5 to 20	–40 to +85	Three Level Memory Lock
—	N80C32	P80C32	S80C32	ROMLess	256	3	1	32	3.5 to 12	0 to +70	Up-Down Timer/Counter
—	N80C32-1	P80C32-1	S80C32-1	ROMLess	256	3	1	32	3.5 to 16	0 to +70	Up-Down Timer/Counter
—	N80C32-20	P80C32-20	—	ROMLess	256	3	1	32	3.5 to 20	0 to +70	Up-Down Timer/Counter
—	N80C32-24	P80C32-24	S80C32-24	ROMLess	256	3	1	32	3.5 to 24	0 to +70	Up-Down Timer/Counter
—	N80C32-33	P80C32-33	S80C32-33	ROMLess	256	3	1	32	3.5 to 33	0 to +70	Up-Down Timer/Counter
—	TN80C32	TP80C32	TS80C32	ROMLess	256	3	1	32	3.5 to 12	–40 to +85	Up-Down Timer/Counter
—	TN80C32-1	—	TS80C32-1	ROMLess	256	3	1	32	3.5 to 16	–40 to +85	Up-Down Timer/Counter
D87C52	N87C52	P87C52	S87C52	8K EPROM	256	3	1	32	3.5 to 12	0 to +70	Up-Down Timer/Counter
D87C52-1	N87C52-1	P87C52-1	S87C52-1	8 K EPROM	256	3	1	32	3.5 to 16	0 to +70	Up-Down Timer/Counter
D87C52-20	N87C52-20	P87C52-20	S87C52-20	8 K EPROM	256	3	1	32	3.5 to 20	0 to +70	Up-Down Timer/Counter
—	N87C52-24	P87C52-24	S87C52-24	8 K EPROM	256	3	1	32	3.5 to 24	0 to +70	Up-Down Timer/Counter
—	N87C52-33	P87C52-33	S87C52-33	8 K EPROM	256	3	1	32	3.5 to 33	0 to +70	Up-Down Timer/Counter
TD87C52	TN87C52	—	—	8 K EPROM	256	3	1	32	3.5 to 12	–40 to +85	Up-Down Timer/Counter
—	TN87C52-1	—	—	8 K EPROM	256	3	1	32	3.5 to 16	–40 to +85	Up-Down Timer/Counter
D87C54	N87C54	P87C54	S87C54	16 K EPROM	256	3	1	32	3.5 to 12	0 to +70	Up-Down Timer/Counter
D87C54-1	N87C54-1	P87C54-1	S87C54-1	16 K EPROM	256	3	1	32	3.5 to 16	0 to +70	Up-Down Timer/Counter
D87C54-20	N87C54-20	P87C54-20	S87C54-20	16 K EPROM	256	3	1	32	3.5 to 20	0 to +70	Up-Down Timer/Counter
—	N87C512-24	P87C54-24	S87C54-24	16 K EPROM	256	3	1	32	3.5 to 24	0 to +70	Up-Down Timer/Counter
—	N87C54-33	P87C54-33	S87C54-33	16 K EPROM	256	3	1	32	3.5 to 33	0 to +70	Up-Down Timer/Counter
TD87C54	TN87C54	TP87C54	—	16 K EPROM	256	3	1	32	3.5 to 12	–40 to +85	Up-Down Timer/Counter
TD87C54-1	—	TP87C54-1	—	16 K EPROM	256	3	1	32	3.5 to 16	–40 to +85	Up-Down Timer/Counter
D87C58	N87C58	P87C58	S87C58	32 K EPROM	256	3	1	32	3.5 to 12	0 to +70	Up-Down Timer/Counter
D87C58-1	N87C58-1	P87C58-1	S87C58-1	32 K EPROM	256	3	1	32	3.5 to 16	0 to +70	Up-Down Timer/Counter
D87C58-20	N87C58-20	P87C58-20	S87C58-20	32 K EPROM	256	3	1	32	3.5 to 20	0 to +70	Up-Down Timer/Counter
—	N87C58-24	P87C58-24	S87C58-24	32 K EPROM	256	3	1	32	3.5 to 24	0 to +70	Up-Down Timer/Counter
—	N87C58-33	P87C58-33	S87C58-33	32 K EPROM	256	3	1	32	3.5 to 33	0 to +70	Up-Down Timer/Counter
—	TN87C58	—	—	32 K EPROM	256	3	1	32	3.5 to 12	–40 to +85	Up-Down Timer/Counter
—	N80C51FA	P80C51FA	S80C51FA	ROMLess	256	3	1	32	3.5 to 12	0 to +70	Programmable Counter Array (PCA), Prog. Clock Out
—	N80C51FA-1	P80C51FA-1	S80C51FA-1	ROMLess	256	3	1	32	3.5 to 16	0 to +70	Programmable Counter Array (PCA), Prog. Clock Out
—	N80C51FA-24	P80C51FA-24	S80C51FA-24	ROMLess	256	3	1	32	3.5 to 24	0 to +70	Programmable Counter Array (PCA), Prog. Clock Out
—	N80C51FA-33	P80C51FA-33	S80C51FA-33	ROMLess	256	3	1	32	3.5 to 33	0 to +70	Programmable Counter Array (PCA), Prog. Clock Out
TD80C51FA	TN80C51FA	TP80C51FA	TS80C51FA	ROMLess	256	3	1	32	3.5 to 12	–40 to +85	Programmable Counter Array (PCA), Prog. Clock Out
TD80C51FA-1	TN80C51FA-1	TP80C51FA-1	TS80C51FA-1	ROMLess	256	3	1	32	3.5 to 16	–40 to +85	Programmable Counter Array (PCA), Prog. Clock Out
D87C51FA	N87C51FA	P87C51FA	S87C51FA	8 K EPROM	256	3	1	32	3.5 to 12	0 to +70	Programmable Counter Array (PCA), Prog. Clock Out
D87C51FA-1	N87C51FA-1	P87C51FA-1	S87C51FA-1	8 K EPROM	256	3	1	32	3.5 to 16	0 to +70	Programmable Counter Array (PCA), Prog. Clock Out
D87C51FA-20	N87C51FA-20	P87C51FA-20	S87C51FA-20	8 K EPROM	256	3	1	32	3.5 to 20	0 to +70	Programmable Counter Array (PCA), Prog. Clock Out
—	N87C51FA-24	P87C51FA-24	S87C51FA-24	8 K EPROM	256	3	1	32	3.5 to 24	0 to +70	Programmable Counter Array (PCA), Prog. Clock Out
—	N87C51FA-33	P87C51FA-33	S87C51FA-33	8 K EPROM	256	3	1	32	3.5 to 33	0 to +70	Programmable Counter Array (PCA), Prog. Clock Out
TD87C51FA	TN87C51FA	TP87C51FA	TS87C51FA	8 K EPROM	256	3	1	32	3.5 to 12	–40 to +85	Programmable Counter Array (PCA), Prog. Clock Out
TD87C51FA-1	TN87C51FA-1	TP87C51FA-1	TS87C51FA-1	8 K EPROM	256	3	1	32	3.5 to 16	–40 to +85	Programmable Counter Array (PCA), Prog. Clock Out
D87C51FB	N87C51FB	P87C51FB	S87C51FB	16 K EPROM	256	3	1	32	3.5 to 12	0 to +70	Programmable Counter Array (PCA), Prog. Clock Out
D87C51FB-1	N87C51FB-1	P87C51FB-1	S87C51FB-1	16 K EPROM	256	3	1	32	3.5 to 16	0 to +70	Programmable Counter Array (PCA), Prog. Clock Out
D87C51FB-20	N87C51FB-20	P87C51FB-20	S87C51FB-20	16 K EPROM	256	3	1	32	0.5 to 20	0 to +70	Programmable Counter Array (PCA), Prog. Clock Out
—	N87C51FB-24	P87C51FB-24	S87C51FB-24	16 K EPROM	256	3	1	32	3.5 to 24	0 to +70	Programmable Counter Array (PCA), Prog. Clock Out
—	N87C51FB-33	P87C51FB-33	S87C51FB-33	16 K EPROM	256	3	1	32	3.5 to 33	0 to +70	Programmable Counter Array (PCA), Prog. Clock Out

MCS® 251, MCS® 151, and MCS® 51 Microcontrollers (Continued)

Intel's 8-bit MCS 251, MCS 151, and MCS 51 Microcontrollers have become an industry standard for embedded control. The architecture is optimized for control oriented applications.

MCS® 51 Microcontrollers Classic (Continued)

Mfr.'s Type				EPROM (Bytes)	Register Ram (Bytes)	No. of Timers/ Counters	No. of Serial Ports	No. of I/O Pins	Operating Frequency (MHz)	Temperature Range (°C)	Key Features
40 Lead CERDIP	44 Lead PLCC	40 Lead PDIP	44 Lead QFP								
TD87C51FB	TN87C51FB	TP87C51FB	—	16 K EPROM	256	3	1	32	3.5 to 12	–40 to +85	Programmable Counter Array (PCA), Prog. Clock out
TD87C51FB-1	TN87C51FB-1	TP87C51FB-1	TS87C51FB-1	16 K EPROM	256	3	1	32	3.5 to 16	–40 to +85	Programmable Counter Array (PCA), Prog. Clock out
D87C51FC	N87C51FC	P87C51FC	S87C51FC	32 K EPROM	256	3	1	32	3.5 to 12	0 to +70	Programmable Counter Array (PCA), Prog. Clock out
D87C51FC-1	N87C51FC-1	P87C51FC-1	S87C51FC-1	32 K EPROM	256	3	1	32	3.5 to 16	0 to +70	Programmable Counter Array (PCA), Prog. Clock out
D87C51FC-20	N87C51FC-20	P87C51FC-20	S87C51FC-20	32 K EPROM	256	3	1	32	3.5 to 20	0 to +70	Programmable Counter Array (PCA), Prog. Clock out
—	N87C51FC-24	P87C51FC-24	S87C51FC-24	32 K EPROM	256	3	1	32	3.5 to 24	0 to +70	Programmable Counter Array (PCA), Prog. Clock out
—	N87C51FC-33	P87C51FC-33	S87C51FC-33	32 K EPROM	256	3	1	32	3.5 to 33	0 to +70	Programmable Counter Array (PCA), Prog. Clock out
TD87C51FC	TN87C51FC	TP87C51FC	TS87C51FC	32 K EPROM	256	3	1	32	3.5 to 12	–40 to +85	Programmable Counter Array (PCA), Prog. Clock out
TD87C51FC-1	TN87C51FC-1	TP87C51FC-1	—	32 K EPROM	256	3	1	32	3.5 to 16	–40 to +85	Programmable Counter Array (PCA), Prog. Clock out

MCS® 51 Microcontrollers Low Voltage

—	N87L52	—	S87L52	8 K OTP	256	3	1	32	12.0	0 to +70	Low Voltage, Up-Down Timer/Counter
—	N87L52-1	—	S87L52-1	8 K OTP	256	3	1	32	16.0	0 to +70	Low Voltage, Up-Down Timer/Counter
—	N87L52-20	—	S87L52-20	8 K OTP	256	3	1	32	20.0	0 to +70	Low Voltage, Up-Down Timer/Counter
—	N87L54	—	S87L54	16 K OTP	256	3	1	32	12.0	0 to +70	Low Voltage, Up-Down Timer/Counter
—	—	—	TS87L54	16 K OTP	256	3	1	32.	12.0	–40 to +85	Low Voltage, Up-Down Timer/Counter
—	N87L54-1	—	S87L54-1	16 K OTP	256	3	1	32	16.0	0 to +70	Low Voltage, Up-Down Timer/Counter
—	N87L54-20	—	S87L54-20	16 K OTP	256	3	1	32	20.0	0 to +70	Low Voltage, Up-Down Timer/Counter
—	N87L58	—	S87L58	32 K OTP	256	3	1	32	12.0	0 to +70	Low Voltage, Up-Down Timer/Counter
—	N87L58-1	—	S87L58-1	32 K OTP	256	3	1	32	16.0	0 to +70	Low Voltage, Up-Down Timer/Counter
—	N87L58-20	—	S87L58-20	32 K OTP	256	3	1	32	20.0	0 to +70	Low Voltage, Up-Down Timer/Counter
—	N80L51FA	—	S80L51FA	ROMLess	256	3	1	32	12.0	0 to +70	Low Voltage, Up-Down Timer/Counter
—	N80L51FA-1	—	S80L51FA-1	ROMLess	256	3	1	32	16.0	0 to +70	Low Voltage, Up-Down Timer/Counter
—	N80L51FA-20	—	S80L51FA-20	ROMLess	256	3	1	32	20.0	0 to +70	Low Voltage, Up-Down Timer/Counter
—	N87L51FA	—	S87L51FA	8 K OTP	256	3	1	32	12.0	0 to +70	Low Voltage, PCA, Prog. Clock out
—	N87L51FA-1	—	S87L51FA-1	8 K OTP	256	3	1	32	16.0	0 to +70	Low Voltage, PCA, Prog. Clock out
—	N87L51FA-20	—	S87L51FA-20	8 K OTP	256	3	1	32	20.0	0 to +70	Low Voltage, PCA, Prog. Clock out
—	N87L51FB	—	S87L51FB	16 K OTP	256	3	1	32	12.0	0 to +70	Low Voltage, PCA, Prog. Clock out
—	TN87L51FB	—	TS87L51FB	16 K OTP	256	3	1	32	12.0	–40 to +85	Low Voltage, PCA, Prog. Clock out
—	N87L51FB-1	—	S87L51FB-1	16 K OTP	256	3	1	32	16.0	0 to +70	Low Voltage, PCA, Prog. Clock out
—	N87L51FB-20	—	S87L51FB-20	16 K OTP	256	3	1	32	20.0	0 to +70	Low Voltage, PCA, Prog. Clock out
—	N87L51FC	—	S87L51FC	32 K OTP	256	3	1	32	12.0	0 to +70	Low Voltage, PCA, Prog. Clock out
—	N87L51FC-1	—	S87L51FC-1	32 K OTP	256	3	1	32	16.0	0 to +70	Low Voltage, PCA, Prog. Clock out
—	N87L51FC-20	—	S87L51FC-20	32 K OTP	256	3	1	32	20.0	0 to +70	Low Voltage, PCA, Prog. Clock out

MCS® 51 Microcontrollers Expanded RAM

—	N80C51RA	—	—	ROMLess	512	3	1	32	12.0	0 to +70	Expanded,RAM, PCA , Prog. Clock Out, H/W WDT
—	N80C51RA-1	—	—	ROMLess	512	3	1	32	16.0	0 to +70	Expanded,RAM, PCA , Prog. Clock Out, H/W WDT
—	N80C51RA-20	—	—	ROMLess	512	3	1	32	20.0	0 to +70	Expanded,RAM, PCA , Prog. Clock Out, H/W WDT
—	N80C51RA-24	—	—	ROMLess	512	3	1	32	24.0	0 to +70	Expanded,RAM, PCA , Prog. Clock Out, H/W WDT
—	N87C51RA	—	—	8 K OTP	512	3	1	32	12.0	0 to +70	Expanded RAM, PCA , Prog. Clock Out, H/W WDT
—	N87C51RA-1	—	—	8 K OTP	512	3	1	32	16.0	0 to +70	Expanded RAM, PCA , Prog. Clock Out, H/W WDT
—	N87C51RA-20	—	—	8 K OTP	512	3	1	32	20.0	0 to +70	Expanded RAM, PCA , Prog. Clock Out, H/W WDT
—	N87C51RA-24	—	—	8 K OTP	512	3	1	32	24.0	0 to +70	Expanded RAM, PCA , Prog. Clock Out, H/W WDT
—	N87C51RB	—	—	16 K OTP	512	3	1	32	12.0	0 to +70	Expanded RAM, PCA , Prog. Clock Out, H/W WDT
—	N87C51RB-1	—	—	16 K OTP	512	3	1	32	16.0	0 to +70	Expanded RAM, PCA , Prog. Clock Out, H/W WDT
—	N87C51RB-20	—	—	16 K OTP	512	3	1	32	20.0	0 to +70	Expanded RAM, PCA , Prog. Clock Out, H/W WDT
—	N87C51RB-24	—	—	16 K OTP	512	3	1	32	24.0	0 to +70	Expanded RAM, PCA , Prog. Clock Out, H/W WDT
—	N87C51RC	—	—	32 K OTP	512	3	1	32	12.0	0 to +70	Expanded RAM, PCA , Prog. Clock Out, H/W WDT
—	N87C51RC-1	—	—	32 K OTP	512	3	1	32	16.0	0 to +70	Expanded RAM, PCA , Prog. Clock Out, H/W WDT
—	N87C51RC-20	—	—	32 K OTP	512	3	1	32	20.0	0 to +70	Expanded RAM, PCA , Prog. Clock Out, H/W WDT
—	N87C51RC-24	—	—	32 K OTP	512	3	1	32	24.0	0 to +70	Expanded RAM, PCA , Prog. Clock Out, H/W WDT

MCS 51 Microcontrollers Application Specific

—	N80C51GB	—	—	ROMLESS	256	3	1+SEP	48	12.0	0 to +70	8 Channel 8-bit A/D, 2 PCA, 6 I/O Ports
—	N80C51GB-1	—	—	ROMLESS	256	3	1+SEP	48	16.0	0 to +70	8 Channel 8-bit A/D, 2 PCA, 6 I/O Ports
—	TN80C51GB	—	—	ROMLESS	256	3	1+SEP	48	12.0	–40 to +85	8 Channel 8-bit A/D, 2 PCA, 6 I/O Ports
—	TN80C51GB-1	—	—	ROMLESS	256	3	1+SEP	48	16.0	–40 to +85	8 Channel 8-bit A/D, 2 PCA, 6 I/O Ports
—	N87C51GB	—	—	8 K OTP	256	3	1+SEP	48	12.0	0 to +70	8 Channel 8-bit A/D, 2 PCA, 6 I/O Ports
—	N87C51GB-1	—	—	8 K OTP	256	3	1+SEP	48	16.0	0 to +70	8 Channel 8-bit A/D, 2 PCA, 6 I/O Ports
—	TN87C51GB	—	—	8 K OTP	256	3	1+SEP	48	12.0	–40 to +85	8 Channel 8-bit A/D, 2 PCA, 6 I/O Ports
—	TN87C51GB-1	—	—	8 K OTP	256	3	1+SEP	48	16.0	0 to +85	8 Channel 8-bit A/D, 2 PCA, 6 I/O Ports
—	N80C152JA	P80C152JA	—	ROMLESS	256	2	1	40	12.0	0 to +70	Multi-Protocol Serial Communication, Power Save Modes
—	N80C152JA-1	P80C152JA-1	—	ROMLESS	256	2	1	40	16.5	0 to +70	Multi-Protocol Serial Communication, Power Save Modes
—	N80C152JB	—	—	ROMLESS	256	2	1	56	12.0	0 to +70	Multi-Protocol Serial Communication, Power Save Modes
—	N80C152JB-1	—	—	ROMLESS	256	2	1	56	16.5	0 to +70	Multi-Protocol Serial Communication, Power Save Modes
—	N80C152JC	P80C152JC	—	ROMLESS	256	2	1	40	12.0	0 to +70	Multi-Protocol Serial Communication, Power Save Modes
—	N80C152JC-1	P80C152JC-1	—	ROMLESS	256	2	1	40	16.5	0 to +70	Multi-Protocol Serial Communication, Power Save Modes
—	N80C152JD	—	—	ROMLESS	256	2	1	56	12.0	0 to +70	Multi-Protocol Serial Communication, Power Save Modes
—	N80C152JD-1	—	—	ROMLESS	256	2	1	56	16.5	0 to +70	Multi-Protocol Serial Communication, Power Save Modes
—	—	P83C51KB	—	4 K ROM	128	1	0	24	4-6	0 to +70	Integrated Keyboard Microcontroller

Mfr.'s Type		EPROM (Bytes)	Register Ram (Bytes)	No. of Timers/ Counters	No. of Serial Ports	No. of I/O Pins	Operating Frequency (MHz)	Temperature Range (°C)	Key Features
100 Lead PQFP	100 Lead SQFP								
KU80C51SLAH	SB80C51SLAH	ROMLess	256	2	1	24	16	0 to +70	Keyboard Controller, Power Save Modes
KU87C51SLAH	SB87C51SLAH	16 K OTP	256	2	1	24	16	0 to +70	Keyboard Controller, Power Save Modes
—	SB80C51SLAL	ROMLess	256	2	1	24	16	0 to +70	Low voltage, 4 Channel 8-bit A/D, Power Save Modes
—	SB87C51SLAL	16 K OTP	256	2	1	24	16	0 to +70	Low voltage, 4 Channel 8-bit A/D, Power Save Modes

For immediate help with technical questions or access to selected applications, please call the Lattice Applications Hotline.
- ► **GAL Products: 1-800-FASTGAL (1-800-327-8425), FAX (503) 681-3037**
- ► **ispLSI and pLSI Products: 1-800-Lattice (1-800-528-8423), FAX (408) 944-8450**

Lattice Electronic Bulletin Board.
- ► **GAL Products: (503) 693-0215**
- ► **ispLSI and pLSI Products: (408) 980-9814**

Generic Gate Array Logic

GAL16V8 and GAL20V8, High Performance E2CMOS PLD Generic Array Logic™

Performance ranges from the industries fastest at 5 ns Tpd to the popular 25 ns versions. Low power consumption with Low Power versions rated at 75 mA typical and Quarter power versions rated at 45 mA typical. Eight powerful Output Logic Macrocells (OLMCs) with eight Product Terms each. **VCC:** 5 V ±5%. **Temperature Range:** 0 to +75°C.

Mfr.'s Type				Tpd (ns)	Tsu (ns)	Tco (ns)	Frequency MHz (Max.)	Icc (mA)	Quarter Power	No. of Leads
PLCC	PDIP	PLCC	PDIP							
—	—	GAL16V8C-5LJ	GAL16V8C-5LP	5.0	3.0	4.0	166.0	115	Low	20
GAL16V8B-7LJ	GAL16V8B-7LP	GAL16V8C-7LJ	GAL16V8C-7LP	7.5	7.0	5.0	100.0	115	Low	20
GAL16V8B-10LJ	GAL16V8B-10LP	—	—	10.0	10.0	7.0	62.5	115	Low	20
GAL16V8B-15LJ	GAL16V8B-15LP	—	—	15.0	12.0	10.0	62.5	90	Low	20
GAL16V8B-15QJ	GAL16V8B-15QP	—	—	15.0	12.0	10.0	62.5	55	Quarter	20
GAL16V8B-25LJ	GAL16V8B-25LP	—	—	25.0	15.0	12.0	41.6	90	Low	20
GAL16V8B-25QJ	GAL16V8B-25QP	—	—	25.0	15.0	12.0	41.6	55	Quarter	20
—	—	GAL20V8C-5LJ	—	5.0	3.0	4.0	166.0	115	Low	28
GAL20V8B-7LJ	GAL20V8B-7LP	GAL20V8C-7LJ	—	7.5	7.0	5.0	100.0	115	Low	28/24
GAL20V8B-10LJ	GAL20V8B-10LP	GAL20V8C-10LJ	—	10.0	10.0	7.0	62.5	115	Low	28/24
GAL20V8B-15LJ	GAL20V8B-15LP	—	—	15.0	12.0	10.0	62.5	90	Low	28/24
GAL20V8B-15QJ	GAL20V8B-15QP	—	—	15.0	12.0	10.0	62.5	55	Quarter	28/24
GAL20V8B-25LJ	GAL20V8B-25LP	—	—	25.0	15.0	12.0	41.7	90	Low	28/24
GAL20V8B-25QJ	GAL20V8B-25QP	—	—	25.0	15.0	12.0	41.7	55	Quarter	28/24

GAL16VP8B and GAL20VP8B, High Speed E2CMOS PLD Generic Logic Array™

High output drive versions of the GAL16V8 and GAL20V8. **IOL:** 64 mA vs. standard 24 mA. Combines GAL architecture with high drive of 74XX244 buffer families. Fast 15 ns/80 MHz performance. **VCC:** 5 V ±5%. **Temperature Range:** 0 to +75°C.

GAL16VP8B-15LJ	GAL16VP8B-15LP	—	—	15.0	8.0	10.0	80.0	115	Low	20
GAL16VP8B-25LJ	GAL16VP8B-25LP	—	—	25.0	10.0	15.0	50.0	115	Low	20
GAL20VP8B-15LJ	GAL20VP8B-15LP	—	—	15.0	8.0	10.0	80.0	115	Low	28/24
GAL20VP8B-25LJ	GAL20VP8B-25LP	—	—	25.0	10.0	15.0	50.0	115	Low	28/24

GAL22V10, High Performance E2CMOS PLD Generic Array Logic™

Available in industry leading 5 ns/200 MHz versions through 25 ns versions. Low power consumption with Low Power versions at 90 mA and Quarter Power versions at 45 mA typical. 10 OLMCs with variable Product Terms per OLMC ranging from 8 to 16 for increased logic capability. **VCC:** 5 V ±5%. **Temperature Range:** 0 to +75°C.

—	GAL22V10C-5LJ	—	—	5.0	3.0	4.0	200.0	150	Low	28
—	GAL22V10B-7LP	GAL22V10C-7LJ	—	7.5	4.5/5.0	4.5	166.0	140	Low	28/24
—	GAL22V10B-10LP	GAL22V10C-10LJ	—	10.0	7.0	7.0	105.0	130	Low	28/24
GAL22V10B-15LJ	GAL22V10B-15LP	—	—	15.0	10.0	8.0	83.3	130	Low	28/24
GAL22V10B-15QJ	GAL22V10B-15QP	—	—	15.0	10.0	8.0	83.3	55	Quarter	28/24
GAL22V10B-25LJ	GAL22V10B-25LP	—	—	25.0	15.0	15.0	38.5	90	Low	28/24
GAL22V10B-25QJ	GAL22V10B-25QP	—	—	25.0	15.0	15.0	38.5	55	Quarter	28/24

ispGAL22V10C, In-System Programmable E2CMOS PLD Generic Gate Array Logic™

Offers in-system programmability. Popular GAL22V10 architecture. Same 28-pin PLCC as the GAL22V10. Fast 7.5 ns/111 MHz performance. Unprecedented design and manufacturing flexibility. **VCC:** 5 V ±5%. **Temperature Range:** 0 to +75°C.

—	—	ispGAL22V10C-7LJ	—	7.5	6.5	5.0	111.0	140	Low	28
—	—	ispGAL22V10C-10LJ	—	10.0	7.0	7.0	105.0	140	Low	28
—	—	ispGAL22V10C-15LJ	—	15.0	10.0	8.0	83.3	140	Low	28

GAL18V10B, High Performance E2CMOS PLD Generic Array Logic™

20-pin space saving subset of the popular GAL22V10. Eight to 10 Product Terms per OLMC. Ideal for printed circuit board area constrained designs. This is the only 20-pin PLD on the market. **VCC:** 5 V ±5%. **Temperature Range:** 0 to +75°C.

GAL18V10B-15LJ	GAL18V10B-15LP	—	—	15.0	10.0	10.0	62.5	115	Low	20
GAL18V10B-20LJ	GAL18V10B-20LP	—	—	20.0	12.0	12.0	62.5	115	Low	20

GAL26CV12, High Performance E2CMOS PLD Generic Array Logic™

Expanded logic density in a 28-pin DIP/PLCC. 28-pin superset of the popular GAL22V10. World's fastest 28-pin PLD at 7.5 ns. 26 inputs and 12 outputs. Flexible 22V10 OLMC. Fully utilized 28-pin PLCC package gives added functionality over the 22V10 at no space premium. **VCC:** 5 V ±5%. **Temperature Range:** 0 to +75°C.

—	—	GAL26CV12C-7LJ	GAL26CV12C-7LP	7.5	6.0	4.5	142.8	130	Low	28
GAL26CV12B-10LJ	GAL26CV12B-10LP	GAL26CV12C-10LJ	GAL26CV12C-10LP	10.0	8.0	8.0	105.0	130	Low	28
GAL26CV12B-15LJ	GAL26CV12B-15LP	GAL26CV12C-15LJ	GAL26CV12C-15LP	15.0	10.0	8.0	83.3	130	Low	28
GAL26CV12B-20LJ	GAL26CV12B-20LP	—	—	20.0	12.0	12.0	62.5	130	Low	28

GAL20RA10, High Speed Asynchronous E2CMOS PLD Generic Logic Array™

Performance ranges from 10 ns Tpd to 20 ns versions. Faster and lower power than bipolar PALs. Low power consumption with Low Power versions rated at 75 mA typical. Ten powerful Output Logic Macrocells (OLMCs) with independent product term clocks. Ten independently programmable clocks. **VCC:** 5 V ±5%. **Temperature Range:** 0 to +75°C.

GAL20RA10B-7LJ	—	—	—	7.5	3.0	9.0	83.3	100	Low	28
GAL20RA10B-10LJ	GAL20RA10B-10LP	—	—	10.0	4.0	11.0	71.4	100	Low	28/24
GAL20RA10B-15LJ	GAL20RA10B-15LP	—	—	15.0	7.0	15.0	50.0	100	Low	28/24
GAL20RA10B-20LJ	GAL20RA10B-20LP	—	—	20.0	10.0	20.0	41.7	100	Low	28/24
GAL20RA10B-30LJ	GAL20RA10B-30LP	—	—	30.0	20.0	30.0	25.0	100	Low	28/24

GAL20XV10, High Speed E2CMOS PLD Generic Logic Array™

Utilizes powerful XOR function for efficient implementation of arithmetic functions. 10 ns/100 MHz performance significantly outperforms bipolar PALs. Perfect for fast counters,decoders, comparators, video, multimedia, and graphics applications. **Replaces:** PAL20L10, 20X10, 20X8, 20X4, and 20L10. **VCC:** 5 V ±5%. **Temperature Range:** 0 to +75°C.

GAL20XV10B-10LJ	GAL20XV10B-10LP	—	—	10.0	6.0	7.0	100.0	90	Low	28/24
GAL20XV10B-15LJ	GAL20XV10B-15LP	—	—	15.0	6.0	7.0	83.3	90	Low	28/24
GAL20XV10B-20LJ	GAL20XV10B-20LP	—	—	20.0	10.0	10.0	71.4	90	Low	28/24

GAL6001 and GAL6002, High Performance E2CMOS FPLA Generic Array Logic™

The logic density of an FPLA architecture, unprecedented in a 24/28-pin DIP/PLCC. Functional equivalent of 2 GAL22V10s. **38 Macrocells:** 10 Input, 10 Output, 10 I/O, and 8 Buried Logic. 15 ns/75 MHz performance. Ideal for register intensive applications. The GAL6002 has Active Pull-Ups on all pins. **VCC:** 5 V ±5%. **Temperature Range:** 0 to +75°C.

Mfr.'s Type		Tpd (ns)	Fclk (MHz)	Icc (mA)	Low/Quarter Power	No. of Leads
PLCC	PDIP					
GAL6001B-30LJ	GAL6001B-30LP	30	27	150	Low	28/24
GAL6002B-15LJ	GAL6002B-15LP	15	75	135	Low	28/24
GAL6002B-20LJ	GAL6002B-20LP	20	60	135	Low	28/24

High Density Programmable Logic

The Lattice programmable Large Scale Integration (pLSI)® and in-system programmable Large Scale Integration (ispLSI)® families are the logical choice for your next design project. They're the first programmable logic devices to combine the performance and ease of use of PLDs with the density and flexibility of FPGAs. And at 135 MHz system speed, and up to 14000 PLD gates, they're the worlds fastest and highest density programmable logic devices!

pLSI and ispLSI1000: The Premier High Density Family

Mfr.'s Type				Density (PLD Gates)	Operating Frequency Fmax (MHz)	Speed Tpd (ns)	Icc (mA)	No. of Macrocells	No. of Registers	No. of Inputs and I/Os	No. of Leads
pLSI		ispLSI									
PLCC	QFP	PLCC	QFP								
pLSI1016-60LJ	pLSI1016-60LT*	ispLSI1016-60LJ	ispLSI1016-60LT*	2000	60	20.0	150	64	96	36	44
pLSI1016-80LJ	pLSI1016-80LT*	ispLSI1016-80LJ	ispLSI1016-80LT*	2000	80	15.0	150	64	96	36	44
pLSI1016-90LJ	pLSI1016-90LT*	ispLSI1016-90LJ	ispLSI1016-90LT*	2000	90	12.0	150	64	96	36	44
pLSI1016-110LJ	—	ispLSI1016-110LJ	—	2000	111	10.0	150	64	96	36	44
pLSI1016E-100LJ	—	ispLSI1016E-100LJ	ispLSI1016E-100LT44*	2000	100	10.0	90	64	96	36	44
pLSI1016E-125LJ	—	ispLSI1016E-125LJ	ispLSI1016E-125LT44*	2000	125	7.5	90	64	96	36	44
pLSI1024-60LJ	—	ispLSI1024-60LJ	—	4000	60	20.0	190	96	144	54	68
pLSI1024-80LJ	—	ispLSI1024-80LJ	—	4000	80	15.0	190	96	144	54	68
pLSI1024-90LJ	—	ispLSI1024-90LJ	—	4000	90	12.0	190	96	144	54	68
pLSI1032-60LJ	pLSI1032-60LT*	ispLSI1032-60LJ	ispLSI1032-60LT*	6000	60	20.0	190	128	192	72	84/100
pLSI1032-80LJ	pLSI1032-80LT*	ispLSI1032-80LJ	ispLSI1032-80LT*	6000	80	15.0	190	128	192	72	84/100
pLSI1032-90LJ	pLSI1032-90LT*	ispLSI1032-90LJ	ispLSI1032-90LT*	6000	90	12.0	190	128	192	72	84/100
pLSI103E-70LJ	—	ispLSI103E-70LJ	ispLSI103E-70LT*	6000	70	15.0	190	128	192	72	84/100
pLSI103E-80LJ	—	ispLSI103E-80LJ	ispLSI103E-80LT*	6000	80	12.0	190	128	192	72	84/100
pLSI103E-90LJ	—	ispLSI103E-90LJ	ispLSI103E-90LT*	6000	90	10.0	190	128	192	72	84/100
—	pLSI1048-50LQ†	—	ispLSI1048-50LQ†	8000	50	24.0	235	192	288	106	120
—	pLSI1048-70LQ†	—	ispLSI1048-70LQ†	8000	70	18.0	235	192	288	106	120
—	pLSI1048-80LQ†	—	ispLSI1048-80LQ†	8000	80	15.0	235	192	288	106	120
—	pLSI1048C-50LQ†	—	ispLSI1048C-50LQ†	8000	50	22.0	235	192	288	108	128
—	pLSI1048C-70LQ†	—	ispLSI1048C-70LQ†	8000	70	16.0	235	192	288	108	128
—	pLSI1048E-50LQ†	—	ispLSI1048E-50LQ†	8000	50	20.0	175	192	288	108	128
—	pLSI1048E-70LQ†	—	ispLSI1048E-70LQ†	8000	70	15.0	175	192	288	108	128
—	pLSI1048E-90LQ†	—	ispLSI1048E-90LQ†	8000	90	10.0	175	192	288	108	128

pLSI and ispLSI2000 — Unparalleled System Performance

pLSI2032-80LJ	pLSI2032-80LT*	ispLSI2032-80LJ	ispLSI2032-80LT*	1000	84	15.0	120	32	32	34	44
pLSI2032-110LJ	pLSI2032-110LT*	ispLSI2032-110LJ	ispLSI2032-110LT*	1000	111	10.0	120	32	32	34	44
pLSI2032-135LJ	pLSI2032-135LT*	ispLSI2032-135LJ	ispLSI2032-135LT*	1000	137	7.5	120	32	32	34	44
pLSI2032-150LJ	—	ispLSI2032-150LJ	—	1000	154	5.5	150	32	32	34	44
pLSI2032LV-60LJ	—	ispLSI2032LV-60LJ	ispLSI2032LV-60LT44**	1000	60	15.0	60	32	32	34	44
pLSI2032LV-80LJ	—	ispLSI2032LV-80LJ	ispLSI2032LV-80LT44**	1000	80	10.0	60	32	32	34	44
pLSI2064-80LJ	—	ispLSI2064-80LJ	ispLSI2064-80LT*	2000	81	15.0	175	64	64	68	84
pLSI2064-100LJ	—	ispLSI2064-100LJ	ispLSI2064-100LT*	2000	100	10.0	175	64	64	68	84
pLSI2064-125LJ	—	ispLSI2064-125LJ	ispLSI2064-125LT*	2000	125	7.5	175	64	64	68	84
—	pLSI2096-80LQ†	—	ispLSI2096-80LQ†	4000	80	15.0	150	96	96	102	128
—	—	—	ispLSI2096-80LT**	4000	80	15.0	150	96	96	102	128
—	pLSI2096-100LQ†	—	ispLSI2096-100LQ†	4000	100	10.0	150	96	96	102	128
—	—	—	ispLSI2096-100LT**	4000	100	10.0	150	96	96	102	128
—	pLSI2096-125LQ†	—	ispLSI2096-125LQ†	4000	125	7.5	150	96	96	102	128
—	—	—	ispLSI2096-125LT**	4000	125	7.5	150	96	96	102	128
—	pLSI2128-80LM**	—	ispLSI2128-80LM**	6000	81	15.0	165	128	128	136	160
—	—	—	ispLSI2128-80LT*	6000	81	15.0	165	128	128	136	160
—	pLSI2128-100LM**	—	ispLSI2128-100LM**	6000	100	10.0	165	128	128	136	160
—	—	—	ispLSI2128-100LT*	6000	100	10.0	165	128	128	136	160

pLSI and ispLSI3000 — Density with Performance

—	pLSI3192-70LM**	—	ispLSI3192-70LM**	8000	70	15.0	320	192	384	192	240
—	pLSI3192-100LM**	—	ispLSI3192-100LM**	8000	100	10.0	320	192	384	192	240
—	pLSI3256-50LM**	—	ispLSI3256-50LM**	11000	57	20.0	270	256	384	128	160
—	pLSI3256-70LM**	—	ispLSI3256-70LM**	11000	77	15.0	270	256	384	128	160

*Thin Quad Flat Pack. †Plastic Quad Flat Pack. **Metal Quad Flat Pack.

isp-SK2 — isp™ Starter Kit

The isp Starter Kit is designed to make Lattice's innovative in-system programmable device technology available in a single, complete package. The ispStarter Kit contains all the software, hardware, device samples, and information needed to begin designing with Lattice isp products. The ispLSI devices are the fastest High Density Programmable Logic devices in the industry, at 154 MHz, as certified by PREP™ Benchmarks: LSC's 7.5 ns ispGAL22V10 device has all the advantages of In-System Programmability and maintains the familiar 22V10 architecture and 28-pin PLCC pinout. The ispGDS is a unique family of devices that offers the ability to configure its programmable switch matrix to connect signals arbitrarily between two banks of I/O pins or to force pins to fixed high or low logic states:

Features
- **Easy To Use Kit Contains Everything Needed for In-System Programmable™ Device Design-In**
- **Supports Lattice's ispLSI 1016/E and 2032 Devices — The Industry's Fastest High Density Programmable Devices at Up to 154 MHz**
- **Supports Industry Standard 22V10 Architecture Coupled with LSC's Innovative In-System Programmable Design Capability**
- **Supports ISP Generic Digital Switch for Applications such as Software Driven Hardware Configuration and Multiple DIP Switch Replacement**
- **E²CMOS Technology**

Software
- **ispStarter™ Design Development System for ispLSI 1016/E and 2032 Device Design**
- **ipsGDS™ (Generic Digital Switch) Compiler and Download Software**
- **ispCODE™ ANSI C Source Programming Routines**
- **ISP Daisy Chain Download Software**
- **Lattice Semiconductor Corporation (LSC) Data Book**
- **LSC ISP Manual**

Samples
- **ispLSI2032-80lj Device In 44 Lead PLCC**
- **ispGAL22V10B-15LJ Device In 28 Lead PLCC**
- **ispGDS14-7LJ Device In 20 Lead PLCC**

Hardware
- **ispDOWNLOAD™ Cable**

Order Part number isp-SK2.

isp Synario System — NEW —

The Lattice Semiconductor ISP Synario System contains everything needed to design and program with Lattice Semiconductor ispLSI and GAL devices. The full version of Data I/O's Synario Entry tools for schematic capture and ABEL-HDL language logic design, a functional simulator and Data I/O's PRoject Navigator for easy design and logic debugging are included. The ISP Synario System supports high density design for Lattice Semiconductor's ispLSI and pLSI 1016, 1024, 2032, 2064 and 2096 devices. The tools included also support the full range of Lattice Semiconductor's industry standard ispGAL and GAL devices, including the ispGAL22V10, GAL16V8, GAL20V8 and GAL6001 devices, and others. In addition, the ISP Synario System includes device samples of the ispLSI 2032, ispGAL22V10 and ispGDS™, as well as an ispDOWNLOAD™ Cable to download designs to the PC board.

Features
- **Easy-to-Use Kit Contains Everything Needed for In-System Programmable™ Device Design-In**
- **Data I/O Synario-Entry Software — Schematic Entry; ABLE HDL Entry; Functional Simulator with Waveform Viewer; Synario Project Navigator**
- **Supports LSC's ispLSI 1016, 1024, 2032, 2064, 2096 Devices — The Industry's Fastest High Density Programmable Devices at Up to 154 MHz**
- **Supports all Lattice Semiconductor GAL Architectures Including the ispGAL22V10**
- **Supports ISP Generic Digital Switch for Applications Such as Software Driven Hardware Configuration and Multiple DIP Switch Replacement**
- **Keyless for Easy Portability**

Software
- **Data I/O's Synario Entry and Functional Simulation Software**
- **pDS+™ Synario Fitter for ispLSI and pLSI Devices**
- **ispGDS™ (Generic Digital Switch) Compiler Software**
- **ISP™ Programming Software**

Samples
- **ispLSI 2032 Device in 44-Pin PLCC Package**
- **ispGAL22V10 Device in 28-Pin PLCC Package**
- **ispGDS14 Device in 20-Pin PLCC Package**

Hardware
- **ispDOWNLOAD™ Cable**

Order Part Number isp-SYN.

Interface Products

Maxim's RS-232 and RS-485 transceivers are designed for communication interfaces where ±12 V supplies are not available. For our RS-232 devices, on board charge pumps convert the +3 V or ±5 V input to the ±10 V needed for RS-232 levels. For our RS-485 devices, Maxim uses a proprietary low dropout output stage to provide output voltages of 2 V into 110 ohms from either 3 V or 5 V. Maxim has also upgraded the original MAX232 and MAX485 solutions, providing ±15 KV ESD protection, +3 V and +5 V interoperability, Isolation and Autoshutdown. Maxim continues to provide value added solutions that offer the highest performance and quality. For samples or literature call Maxim at 1-800-998-8800.

+5 V RS-232 Transceivers with 0.1 µF External Capacitors

Mfr.'s Type			Power Supply Voltage (V)	Supply Current (mA)	No. of RS-232 Drivers	No. of RS-232 Receivers	No. of External 0.1 µF Capacitors	Low Power Shutdown/ Three-State	True RS-232	Data Rate (kbps)	No. of Leads
PDIP	150 mil SOIC	300 mil SOIC									
MAX201CPD	—	—	+5, +9, and +13.2	400 µA	2	2	2	No/No	Yes	120	14
MAX202CPE	MAX202CSE	—	+5	5	2	2	4	No/No	Yes	64	16
MAX206CNG*	—	—	+5	7	4	3	4	Yes/Yes	Yes	120	24
—	MAX211CAI**	MAX211CWI	+5	7	4	5	4	Yes/Yes	Yes	120	28
MAX222CPN	—	—	+5	4	2	2	4	Yes	Yes	200	18
MAX232ACPE	MAX232ACSE	MAX232ACWE	+5	4	2	2	4	No	Yes	200	16
MAX242CPN	—	MAX242CWN	+5	4	2	2	4	Yes	Yes	200	18

*Narrow Plastic DIP. **SSOP (Shrink Small Outline Package).

+5 V RS-232 Transceivers with 1 µF External Capacitors

Mfr.'s Type			Power Supply Voltage (V)	Supply Current (mA)	No. of RS-232 Drivers	No. of RS-232 Receivers	No. of External 1 µF Capacitors	Shutdown and Three-State	True RS-232	Data Rate (kbps)	No. of Leads
PDIP	150 mil SOIC	300 mil SOIC									
MAX230CPP	—	—	+5	7	5	0	4	Yes	Yes	120	20
MAX231CPD	—	—	+5, +7.5, and +13.2	400 µA	2	2	2	No	Yes	120	14
MAX232CPE	MAX232CSE	MAX232CWE	+5	5	2	2	4	No	Yes	120	16
MAX233CPP	—	—	+5	5	2	2	0	No	Yes	120	20
MAX233ACPP	—	MAX233ACWP	+5	4	2	2	0	No	Yes	200	20
MAX234CPE	—	—	+5	7	4	0	4	No	Yes	120	16
MAX235CPG	—	—	+5	7	5	5	0	Yes	Yes	120	24
MAX236CNG*	—	—	+5	7	4	3	4	Yes	Yes	120	24
MAX237CNG*	—	—	+5	7	5	3	4	No	Yes	120	24
MAX238CNG*	—	—	+5	7	4	4	4	No	Yes	120	24
MAX239CNG*	—	MAX239CWG	+5, +7.5, and +13.2	7	3	5	2	No	Yes	120	24
—	MAX240CMH†	—	+5	7	5	5	4	Yes.	Yes	120	44
—	—	MAX241CWI	+5	7	4	5	4	Yes	Yes	120	28

*Narrow Plastic DIP. †PQFP (Plastic Quad Flat Pack).

RS-232 Isolation Products

Mfr.'s Type	Power Supply Voltage (V)	Supply Current (mA)	No. of RS-232 Drivers	No. of RS-232 Receivers	No. of External Capacitors	Shutdown and Three-State	True RS-232	Data Rate (kbps)	No. of Leads
PDIP									
MAX250CPD	+5	100 µA	2	2	—	Yes	Yes	120	14
MAX251CPD	+5	100 µA	2	2	—	Yes	Yes	120	14

High ESD RS-232 Products, Rated at ±15 kV

Mfr.'s Type			Power Supply Voltage (V)	Supply Current (mA)	No. of RS-232 Drivers	No. of RS-232 Receivers	No. of External Capacitors (µF)	Shutdown and Three-State	True RS-232	Data Rate (kbps)	No. of Leads
PDIP	150 mil SOIC	300 mil SOIC									
MAX202ECPE	MAX202ECSE	—	+5	8	2	2	4 × 0.1	Yes	Yes	120	16
MAX232ECPE	—	—	+5	5	2	2	4 × 1.0	Yes	Yes	120	16
MAX203ECPP	—	MAX203ECWP	+5	8	2	2	None	No	Yes	120	20
MAX1488ECPD	MAX1488ECSD	—	+5, ±12	85 µA	4	0	None	No	Yes	120	14
MAX1489ECPD	MAX1489ECSD	—	+5, ±12	350 µA	0	4	None	No	Yes	120	14

+5 V RS-485/RS-422 Products

Mfr.'s Type		Power Supply Voltage (V)	Supply Current (µA)	Shutdown Supply Current (µA)	No. of RS-485 Drivers	No. of RS-485 Receivers	No. of RX/TX on Bus	Duplex	Data Rate (Mbps)	No. of Leads
PDIP	150 mil SOIC									
MAX481CPA	—	+5	500	1.0	1	1	32	Half	2.50	8
MAX483CPA	MAX483CSA	+5	350	1.0	1	1	32	Half	0.25	8
MAX485CPA	MAX485CSA	+5	500	300.0	1	1	32	Half	2.50	8
MAX487CPA	—	+5	250	1.0	1	1	128	Half	0.25	8
MAX488CPA	MAX488CSA	+5	350	—	1	1	32	Full	0.25	8
MAX490CPA	—	+5	500	—	1	1	32	Full	2.50	8
MAX491CPD	—	+5	500	300.0	1	1	32	Full	2.50	14
MAX1482CPD	MAX1482CSD	+5	20	0.1	1	1	256	Full	0.25	14
MAX1483CPA	MAX1483CSA	+5	20	0.1	1	1	256	Half	0.25	8

RS-485 Isolation Products

Mfr.'s Type		Power Supply Voltage (V)	Supply Current (mA)	Shutdown Supply Current (µA)	Isolation Voltage (V)	No. of RS-485 Drivers	No. of RS-485 Receivers	Full Duplex	Data Rate (Mbps)	No. of Leads
PDIP	150 mil SOIC									
MAX1480ACPI	—	+5	10	1	1500	1	1	No	2.50	28
MAX1480BCPI	—	+5	10	1	1500	1	1	No	0.25	28

High ESD RS-485 Products, Rated at ±15 kV

Mfr.'s Type		Power Supply Voltage (V)	Supply Current (µA)	Shutdown Supply Current (µA)	No. of RS-485 Drivers	No. of RS-485 Receivers	No. of RX/TX on Bus	Duplex	Data Rate (Mbps)	No. of Leads
PDIP	150 mil SOIC									
MAX1487ECPA	MAX1487ECSA	+5	250	300	1	1	128	Half	2.50	8
MAX481ECPA	MAX481ECSA	+5	500	1	1	1	32	Half	2.50	8
MAX483ECPA	MAX483ECSA	+5	350	1	1	1	32	Half	0.25	8
MAX485ECPA	MAX485ECSA	+5	500	300	1	1	32	Half	2.50	8
MAX487ECPA	MAX487ECSA	+5	250	1	1	1	128	Half	0.25	8
MAX488ECPA	MAX488ECSA	+5	350	—	1	1	32	Full	0.25	8
MAX489ECPD	MAX489ECSD	+5	350	1	1	1	32	Full	0.25	14
MAX490ECPA	MAX490ECSA	+5	500	—	1	1	32	Full	2.50	8
MAX491ECPD	MAX491ECSD	+5	500	300	1	1	32	Full	2.50	14

Analog-to-Digital Converters

Maxim offers a wide range of analog-to-digital converters that provide benefits in many applications, including instrumentation, industrial, medical and telecommunications. The resolutions range from 8-bits to 18-bits, and the speeds range from DC to 500 MHz. Each device has features that add value, such as high-accuracy, a high level of integration, low-power, shutdown, a serial interface, etc. Evaluation kits are also available for most of these ADCs.

Mfr.'s Type	Resolution (Bits)	Speed (ksps)	Interface	Input Channels	Features
MAX148BCAP	10	133.00	Serial	8	2.7 V-5.25 V, <1 mA supply current, 1 µA shutdown, SSOP
MAX148BCPP	10	133.00	Serial	8	2.7 V-5.25 V, <1 mA supply current, 1 µA shutdown, DIP
MAX192ACPP	10	133.00	Serial	8	Low power, low cost, available in small (SSOP) package
MAX192BCAP	10	133.00	Serial	8	Low power 10-bit ADC "B" grade, SSOP
MAX192BCPP	10	133.00	Serial	8	Low power 10-bit ADC "B" grade, DIP
MAX147BCAP	12	133.00	Serial	8	2.7 V-5.25 V, <1 mA supply current, 1 µA shutdown, SSOP
MAX147BCPP	12	133.00	Serial	8	2.7 V-5.25 V, <1 mA supply current, 1 µA shutdown, DIP
MAX180ACPL	12	100.00	µP/8 or 12	8	Complete data acquisition system
MAX186DCAP	12	133.00	Serial	8	Low power (7 mW) with 10 µA power-down, internal reference, relaxed performance grade, SSOP
MAX186DCPP	12	133.00	Serial	8	Low power (7 mW) with 10 µA power-down, internal reference, relaxed performance grade, DIP
MAX187ACPA	12	75.00	Serial	1	7 mW, 8-pin package
MAX196BCAI	12	100.00	µP/12	8	Range-switching provides 14-bits effective dynamic range, fault-protected inputs, SSOP
MAX196BCNI	12	100.00	µP/12	8	Range-switching provides 14-bits effective dynamic range, fault-protected inputs, DIP
MAX111BCWE	14	0.05	Serial	2	Sigma-Delta, no external components, single +5 V supply, SOIC package
MAX132CNG	18	0.10	Serial	1	Integrating ADC, <1 mW, 3 LSBs used for averaging

The parts listed above are the plastic DIP package devices, unless otherwise specified, but the devices are also available in surface mount (SO) CERDIP, and some are available in a shrink-small outline (SSOP). Many are available in more than 1 performance grade.

Digital-to-Analog Converters

Maxim's digital-to-analog converters provide the required performance with minimum power usage. The DACs range from low-power devices (less than 1 µA supply current) to high-speed (4 ns settling time) and high-integration (eight 13-bit DACs in a single package) devices. The resolutions range from 8-bits to 16-bits.

Mfr.'s Type	Resolution	Settling Time (µs)	Interface	Output Type	Reference*	Features
MAX506ACPP	8	6	µP/8	MDAC	Voltage	Quad, rail-to-rail outputs, single reference input
MAX512CPD	8	60	Serial	MDAC	Voltage	Triple, +5 V supply, low power with shutdown
MAX517BCSA	8	6	Serial (2-wire)	ext	Voltage	Single +5 V DAC with 2-wire interface, 8-pin SO package
MAX518BCSA	8	6	Serial (2-wire)	V_{REF}=V_{DD}	Voltage	Dual +5 V DAC with 2-wire interface in 8-pin SO package
MAX520BCPE	8	6	Serial (2-wire)	ext	Voltage	Quad, +5 V DAC with 2-wire interface, 4 µA supply current, DIP
MAX520BCWE	8	6	Serial (2-wire)	ext	Voltage	Quad, +5 V DAC with 2-wire interface, 4 µA supply current, SO
MAX522CPA	8	70	Serial	ext	Voltage	Two V_{OUT} DACs in 8-pin DIP package, single 2.7 V to 5.5 V supply
MAX522CSA	8	70	Serial	ext	Voltage	Two V_{OUT} DACs in 8-pin SO package, single 2.7 V to 5.5 V supply
MAX528CPP	8	5	Serial	ext	Voltage	µP-selected buffered and unbuffered output
MAX504CSD	10	25	Serial	int/MDAC	Voltage	Serial version of MAX503, SO package
MAX514ACNG	12	1	Serial	MDAC	Current	Quad, current output
MAX532ACPE	12	4	Serial	MDAC	Voltage	Dual DAC, ±15 V supplies, 16-pin SO
MAX543ACPA	12	1	Serial	MDAC	Current	8-pin DIP/SO

*MDAC=4-quadrant multiplying capacity. The parts listed above are the plastic DIP package devices, unless otherwise specified, but the devices are also available in surface mount (SO) CERDIP and some are available in a shrink-small outline (SSOP). Many are available in more than 1 performance grade.

Switches

Mfr.'s Type	Device Type	$R_{DS(ON)}$ (W) Max.	Switch "ON" (V)	Switch "OFF" (V)	Technology	I_{OFF} Typ. (±nA)	T_{ON} Typ. (nS)	T_{OFF} Typ. (nS)	Features
DG411DJ	Quad Single Pole Single Throw	35	2.4	0.8	44 V CMOS	0.01	110	100	Very Low $R_{DS(ON)}$, Low QJ
DG441DJ	Quad Single Pole Single Throw	85	0.8	2.4	44 V CMOS	0.01	150	90	Low $R_{DS(ON)}$, Low QJ
DG444DJ	Quad Single Pole Single Throw	85	0.8	2.4	44 V CMOS	0.01	150	90	Low $R_{DS(ON)}$, Low QJ
DG445DY	Quad Single Pole Single Throw	85	2.4	0.8	44 V CMOS	0.01	150	110	Low $R_{DS(ON)}$, Low QJ
MAX391CSE	Quad Single Pole Single Throw	35	0.8	2.4	17 V LVCMOS	0.01	65	35	Low Voltage +2.7 V or ±5 V
MAX393CPE	Quad Single Pole Single Throw	35	—	—	17 V LVCMOS	0.01	65	35	Low Voltage +2.7 V or ±5 V
MAX333ACPP	Quad Single Pole Double Throw	45	2.4	0.8	44 V CMOS	1.00	175	145	Low $R_{DS(ON)}$, Low QJ
MAX394CPP	Quad Single Pole Double Throw	35	2.4	0.8	17 V LVCMOS	0.10	130	75	Low Voltage 3 V, 5 V, ±5 V
MAX395CNG	Serial 8 Channel	100	2.4	0.8	17 V LVCMOS	0.10	400	400	Serial Controlled
MAX4066CPD	Quad Single Pole Single Throw	55	2.4	0.8	17 V LVCMOS	1.00	100	75	Low Voltage 3 V, 5 V

Multiplexers

Mfr.'s Type	Device Type	$R_{DS(ON)}$ (W) Max.	V_{AH} Min. (V)	V_{AL} Max. (V)	Technology	I_{OFF} Typ. (nA)	T_{ON} Typ. (nS)	T_{OFF} Typ. (nS)	Features
DG406DJ	Single 1 × 16	100	2.4	0.8	44 V CMOS	—	—	—	Low $R_{DS(ON)}$, Low Qj
DG407DJ	Dual 2 × 16	100	2.4	0.8	44 V CMOS	—	—	—	Low $R_{DS(ON)}$, Low Qj
DG409DJ	Dual 2 × 8	100	2.4	0.8	44 V CMOS	—	—	—	Low $R_{DS(ON)}$, Low Qj
MAX338CPE	Single 1 × 8	400	2.4	0.8	44 V CMOS	0.02	500	500	Very Low Leakage
MAX339CPE	Dual 2 × 4	400	2.4	0.8	44 V CMOS	0.02	500	500	Very Low Leakage
MAX354CPE	Single 1 × 8	350	2.4	0.8	44 V CMOS	0.50	250	200	±35 V; Fault Protected
MAX355CPE	Dual 2 × 4	350	2.4	0.8	44 V CMOS	0.50	250	200	±35 V; Fault Protected
MAX349CPN	Single 1 × 8	100	2.4	0.8	17 V LVCMOS	0.10	275	150	Serial Controlled
MAX350CPN	Dual 2 × 4	100	2.4	0.8	17 V LVCMOS	0.10	275	150	Serial Controlled
MAX4051CPE	Single 1 × 8	100	2.4	0.8	17 V LVCMOS	1.00	175	150	Low Voltage 3 V, 5 V, ±5
MAX4052CPE	Dual 2 × 4	100	2.4	0.8	17 V LVCMOS	1.00	175	150	Low Voltage 3 V, 5 V, ±5
MAX4053CPE	Triple 1 × 2	100	2.4	0.8	17 V LVCMOS	1.00	175	150	Low Voltage 3 V, 5 V, ±5

µP Supervisory Circuits in PDIP and SOIC Packages

Maxim has the largest µProcessor Supervisory family available — over 50 unique ICs. These products signal a µProcessor or µController when the power is on and holds the µProcessor or µController in reset when the power is low. Other functions include watchdog timing, chip enable gating, battery back-up switches, and manual reset.

Mfr.'s Type			Reset Trip Threshold Min./Max. (V)	Minimum Reset Pulse Width (ms)	Active Low Reset	Active High Reset	RESET Valid to V_{CC} = 1 V	Nominal Watchdog Timeout Period (Sec.)	Separate Watchdog Output	Backup Battery Switch	V_{CC} to V_{OUT} On Resistance Max. (Ω)	V_{BATT} to V_{OUT} On Resistance Max. (Ω)	CE Write Protect	Power Fail Comparator	Manual Reset Input	Low Line Output	ISUPPLY Operating Mode Max. mA/(Typ.)	ISUPPLY Backup Mode Max. µA/(Typ.)	No. of Leads
PDIP	150 mil SOIC	300 mil SOIC																	
MAX1232CPA	MAX1232CSA	—	4.37/4.62	250	√	√	√	0.15/0.6/1.2	—	—	—	—	—	—	√	—	0.20(0.050)	—	8/16
MAX690ACPA	—	—	4.65/4.40	140	√	—	√	1.60	—	√	10.0	400	—	√	—	—	0.35(0.200)	5.0(0.05)	8
MAX692ACPA	—	—	4.65/4.40	140	√	—	√	1.60	—	√	10.0	400	—	√	—	—	0.35(0.200)	5.0(0.05)	8
MAX691ACPE*	—	—	4.65/4.40	140/Adj.	√	√	√	1.60/Adj.	√	√	1.2	25	√[1]	√	—	—	0.10(0.035)	5.0(0.04)	16
MAX696CPE*	—	—	Adj.	35/Adj.	√	√	—	1.60/Adj.	√	√	—	—	—	√	—	—	—	—	16
—	—	MAX697CWE	Adj.	35/Adj.	√	√	—	1.60/Adj.	√	—	—	—	√	√	—	—	—	—	16
MAX700CPA	MAX700CSA	—	4.67/Adj.	200	√	√	—	—	—	—	—	—	—	—	√	—	0.20(0.100)	—	8
MAX703CPA	—	—	4.65/4.40	140	√	—	√	—	—	√	10.0	400	—	√	√	—	0.35(0.200)	5.0(0.05)	8

*Battery on output. [1]10 ns. [2]±2%.

µP Supervisory Circuits in PDIP and SOIC Packages — Continued

Mfr.'s Type			Reset Trip Threshold Min./Max. (V)	Minimum Reset Pulse Width (ms)	Active Low Reset	Active High Reset	RESET Valid to Vcc = 1 V	Nominal Watchdog Timeout Period (Sec.)	Separate Watchdog Output	Backup Battery Switch	Vcc to VOUT On Resistance Max. (Ω)	VBATT to VOUT On Resistance Max. (Ω)	CE Write Protect	Power Fail Comparator	Manual Reset Input	Low Line Output	ISUPPLY Operating Mode Max. mA/(Typ.)	ISUPPLY Backup Mode Max. µA/(Typ.)	No. of Leads
PDIP	150 mil SOIC	300 mil SOIC																	
MAX705CPA	MAX705CSA	—	4.65/4.40	140	√	—	√	1.60	√	—	—	—	—	√	√	—	0.35(0.200)	—	8
MAX706CPA	—	—	4.65/4.40	140	√	—	√	1.60	√	—	—	—	—	√	√	—	0.35(0.200)	—	8
—	MAX706TCSA	—	3.00/3.15	140	√	—	√	1.60	√	—	—	—	—	√	√	—	0.35(0.200)	—	8
—	MAX707CSA	—	4.65/4.40	140	√	√	√	—	—	—	—	—	—	√	√	—	0.35(0.200)	—	8
MAX708CPA	MAX708CSA	—	4.65/4.40	140	√	√	√	—	—	—	—	—	—	√	√	—	0.35(0.200)	—	8
—	MAX708TCSA	—	3.00/3.15	140	√	√	√	—	—	—	—	—	—	√	√	—	0.35(0.200)	—	8
MAX791CPE*	—	—	4.65	140	√	√	√	1.00	√	√	1.2	25	√[1]	√	√	√	0.15(0.060)	5.0(0.04)	16
MAX805LCPA	—	—	4.50/4.75	140		√	√	1.60	—	√	10.0	400	—	√	—	—	0.35(0.200)	5.0(0.05)	8
MAX813LCPA	MAX813LCSA	—	4.50/4.75	140	√	√	√	1.60	√	—	—	TBD	—	√[2]	√	—	0.35(0.200)	—	8

*Battery on output. [1]10 ns. [2]±2%.

5 V and 12 V Flash Memory Programming Supplies

Maxim makes the world's smallest 5 V and 12 V flash memory programming supplies, fitting in spaces as small as 0.1 in2. Their small size, low supply currents, low input voltage ranges, and high efficiency permit use in applications ranging from host machines to solid state disk drives to PCMCIA applications and memory cards. Flash-memory power supplies are commonly specified in multiples of 30 mA — the worst-case IPP current drawn by a typical byte-wide flash EEPROM chip during its erase cycle.

Mfr.'s Type	Min. VIN (V)	IOUT (mA)	Package	Comments
MAX619CSA	2.00	50	8 SOIC	Uses only 4 capacitors, small size, 12 V out
MAX606EUA	2.80	140	8 µMAX	1 MHz, very small size, 1.1 mm high
MAX662ACSA	4.75	40	8 SOIC	Uses only 4 capacitors, small size, 12 V out
MAX761CSA	4.75	225	8 SOIC	200 µA supply current, 1 µA shutdown
MAX782CBX	5.50	150	36 SSOP	3-output Pentium supply with dual PCMCIA slots
MAX607ESA	3.00	70	8 SOIC	Lower IQ than MAX606

Charge-Pumps: Voltage Converters without Inductors

Maxim's charge-pump devices use only capacitors to boost or invert input voltages to useful output voltages. These small circuits save space and cost over inductor-based solutions. They are also free of EMI noise. They provide convenient and economical circuits to bias small LCD panels, boost low voltages in back-up circuits, bias GaAsFET power amplifiers in RF applications, and program flash memories. Their outputs are either regulated or unregulated.

Mfr.'s Type	VIN Range (V)	VOUT (V)	IOUT (mA)	Package	Comments
MAX1044CSA	1.5 to 10	–VIN or 2 VIN	20	8 SOIC	60 kHz osc. boost mode
MAX660CSA	1.5 to 5.5	–VIN or 2 VIN	100	8 SOIC	6.5 ohm output impedance
MAX860CUA	1.5 to 5.5	–VIN or 2 VIN	50	8 µMAX	1.11 mm high, 130 kHz switch freq.
MAX861CSA	1.5 to 5.5	–VIN or 2 VIN	50	8 SOIC	250 kHz switch freq.
MAX680CSA	2.0 to 6	–2 VIN and 2 VIN	10	8 SOIC	Dual-output
MAX662ACSA	4.5 to 5.5	12	45	8 SOIC	Flash memory programmer
MAX850CSA	4.5 to 10	–4.1 or Adjust.	5	8 SOIC	GaAsFET bias
MAX864EEE	1.75 to 6	–2 VIN and 2 VIN	20	16 QSOP	Dual-output, shutdown, selectable fosc.
MAX865EUA	1.5 to 6	–2 VIN and 2 VIN	20	8 µMAX	Very small package
MAX828EUK	1.5 to 5.5	–VIN	25	5 SOT23	Better than ICL 7660
MAX829EUK	1.5 to 5.5	–VIN	25	5 SOT23	Better than ICL 7660

Battery Chargers

Maxim's battery-charging products provide convenient, economical ways to charge and monitor Nickel Metal Hydride (NiMH), Nickel Cadmium (NiCd), and Lithium Ion (Li+) cells. Product offerings include intelligent chargers with built-in termination algorithms, current-sources that can be used in conjunction with microprocessors, and monolithic charge counters for measuring energy flow into and out of batteries.

Mfr.'s Type	Function	Package	Description
MAX2003CPE	Intell. Charger	16 PDIP	3 A switch-mode charger; 5 term. methods: temp. slope, volt slope, max. volt, max. temp., max time
MAX2003ACPE	Intell. Charger	16 PDIP	3 A switch-mode charger; 5 term. methods: temp. slope, volt slope, max. volt, max. temp., max time, includes pulse-trickle charging
MAX2003ACSE	Intell. Charger	16 N SOIC	3 A switch-mode charger; 5 term. methods: temp. slope, volt slope, max. volt, max. temp., max time, includes pulse-trickle charging

LCD Power Supplies

Maxim makes compact, high-efficiency LCD bias supplies for every size screen — from low-cost single-line pager displays to the newest TFT color screens used in notebook computers. Maxim offers both digital and potentiometer adjustable supplies for both positive and negative voltage screens. Choose from higher-power switch mode devices for large screens or low-power charge-pump based circuits for smaller pager-size displays.

Mfr.'s Type	VIN Range (V)	VOUT (V)	Type	Package	Comments
MAX860CUA	1.5 to 5.5	–VIN or 2 VIN	Small LCD	8 µMAX	No inductors, 1.11 mm high, 4.7 µF caps
MAX1044CSA	1.5 to 10	–VIN or 2 VIN	Small LCD	8 SOIC	No inductors, 60 kHz osc. boost pin
MAX608ESA	1.8 to 16.5	Adjust. Positive	Pos. LCD	8 SOIC	Drives ext. N ch., high efficiency
MAX828EUK	1.5 to 5.5	–VIN	Small LCD	5 SOT23	No inductors, very small
MAX829 EUK	1.5 to 5.5	–VIN	Small LCD	5 SOT23	No inductors, very small

Low-Voltage Boost Converters

Maxim's step-up DC-DC converters provide the best combination of low quiescent current, high efficiency, and small size. They are the perfect choice for battery powered applications. Maxim offers a broad range of low-voltage step-up DC-DC converters that operate from single-battery-cell inputs (0.9 V start-up) to regulated 3.3 V system supply inputs. They are used to generate main system supplies, 5 V flash supplies, or low-current back-up supplies. They can also be used as local 5 V supplies in otherwise 5 V-only systems.

Mfr.'s Type	VIN (Min.) (V)	VOUT (V)	IOUT (mA)	Package	Comments
MAX756CSA	1.8	3.3 or 5	250	8 SOIC	High efficiency and low supply current
MAX757CSA	1.8	Adj.	250	8 SOIC	High efficiency and low supply current
MAX608ESA	1.8	5 V or Adj.	1000	8 SOIC	Drives ext. N ch., 0.65 mA supply current

Low Dropout Linear Regulators

Maxim's linear regulators combine low-dropout voltages with very low quiescent currents to give longer battery life. Maxim's MAX603 and MAX882 families save space and permit wide operating ranges by using special high-power packaging that has the same form factor as a standard 8-lead SOIC. They also maintain extremely low supply currents (even at high output currents) because they use P-channel MOSFET pass transistors. Unlike PNP regulators, these CMOS devices do not draw large base currents (especially in dropout) and permit longer battery life. The MAX8863/4 come in ultra-small 5-lead SOT23 packages and feature low-noise outputs for wireless applications.

Mfr.'s Type	VIN (Max.) (V)	VOUT (V)	Dropout Voltage (mV)	Package	Package PDISS (Watts)	Quiescent Current (µA)	Comments
MAX663CSA	16.5	5.0 or adj.	900 at 40 mA	8 SOIC	0.47	6	—
MAX666CSA	16.5	5.0 or adj.	900 at 40 mA	8 SOIC	0.47	6	Low-Batt. Detector
MAX667CSA	16.5	5.0 or adj.	150 at 200 mA	8 SOIC	0.47	20	Low-Batt. Detector
MAX8863XEUK*	5.5	T=3.15, S=2.84, R=2.80	110 mV at 100 mA	5 SOT23	0.57	68	P ch. pass transistor, low noise
MAX8864XEUK*	5.5	T=3.15, S=2.84, R=2.80	110 mV at 100 mA	5 SOT23	0.57	68	P ch. pass transistor, low noise, disch. cost shutdown
MAX8865XEUA*	5.5	T=3.15, S=2.84, R=2.80	110 mV at 100 mA	8 µMAX	0.33	105	Dual output, like two MAX8863
MAX8866XEUA*	5.5	T=3.15, S=2.84, R=2.80	110 mV at 100 mA	8 µMAX	0.33	105	Dual output, like two MAX8864

*Replace X in Mfr.'s Type with R, S or T for VOUT desired. See VOUT column for differences.

Op Amps

Mfr.'s Type		No. of Amplifiers	VOS (mV) Max.	TCVOS (µV/°C) Max.	IBIAS (nA) Max.	Unity GBW (MHz)	Supply Voltage (V)	Supply Current/Amp (mA) Max.	No. of Leads
PDIP	SOIC								
MAX400CPA	MAX400CSA	1	10.0 to 15.0 µV	0.3	2	0.4	±3 to ±18	4.0	8
MAX406ACPA	MAX406ACSA	1	0.5 to 4.0	10.0	10 pA	8.0 to 40.0 kHz	2.5 to 10	1.2 µA	8
MAX412CPA	MAX412CSA	2	250.0 µV	1.0 typ.	150	28.0	±2.4 to ±5.25	2.7	8
MAX471CPA	MAX471CSA	1	—	—	—	—	3 to 36	100.0 µA	8
MAX472CPA	MAX472CSA	1	60.0 µV	—	—	—	3 to 36	100.0 µA	8
MAX474CPA	MAX474CSA*	2	2.0	2.0 typ.	150	10.0	2.7 to 5.25	3.0	8
MAX478CPA	MAX478CSA	2	70.0 to 250.0 µV	4.5	6	60.0 kHz	2.2 to 36, ±1.1 to ±18	17.0 µA	8

*µMAX also available.

Op Amps — Continued

Mfr.'s Type		No. of Amplifiers	V_{OS} (mV) Max.	TCV_{OS} (µV/°C) Max.	I_{BIAS} (nA) Max.	Unity GBW (MHz)	Supply Voltage (V)	Supply Current/Amp (mA) Max.	No. of Leads
PDIP	SOIC								
MAX480CPA	MAX480CSA	1	70.0 µV	1.5	3	20.0 kHz	1.6 to 36, ±0.8 to ±18	15.0 µA	8
MAX495CPA	MAX495CSA*	1	500.0 µV	2.0 typ.	60	500.0 kHz	2.7 to +6, ±1.35 to ±3	150.0 µA	8

*µMAX also available.

High Speed Video Amplifiers

Mfr.'s Type		No. of Amplifiers	Small Signal −3dB Bandwidth (MHz)	Slew Rate (V/µS)	V_{OS} (mV) Max.	Output Current (mA) Min.	Supply Voltage (V)	I_{BIAS} (µA) Max.	DP°/ DG%
PDIP	SOIC								
MAX436CPD	MAX436CSD	1	200	800	3	10	±5	3	—
MAX477EPA	MAX477ESA*	1	300	1100	2	70	±5	3	0.01/0.01
—	MAX4100ESA*	1	500	250	8	65	±5	9	0.04/0.06
—	MAX4101ESA	1	200	250	8	65	±5	9	0.04/0.07
—	MAX4102ESA	1	250	350	8	65	±5	9	0.002/0.002
—	MAX4103ESA	1	180	350	8	65	±5	9	0.003/0.008
—	MAX4106ESA	1	350	275	3	65	±5	26	0.02/0.04
—	MAX4107ESA	1	300	500	3	65	±5	26	0.03/0.03
—	MAX4108ESA	1	400	1200	8	65	±5	25	0.002/0.002
—	MAX4109ESA	1	225	1200	8	65	±5	25	0.002/0.008
—	MAX4112ESA*	1	500	1200	8	65	±5	20	0.03/0.02
—	MAX4113ESA	1	275	1800	8	65	±5	20	0.04/0.02

*µMAX also available.

High Speed Video Buffers

Mfr.'s Type		No. of Buffers	Small Signal −3dB Bandwidth (MHz)	Slew Rate (V/µS)	V_{OS} (mV) Max.	Output Current (mA) Min.	Supply Voltage (V)	I_{BIAS} (µA) Max.	DP°/ DG%
PDIP	SOIC								
MAX470CPE	MAX470CWE	4	90	300	10.00	20	±5	±3	0.14/0.12
MAX4178EPA	MAX4178ESA*	1	330	1300	2.00	70	±3	±5	0.01/0.04
MAX4278EPA	MAX4278ESA*	1	310	1600	2.00	70	±3	±5	0.01/0.04
MAX496CPE	MAX496CSE	4	375	1600	3.00	66	±5	±5	0.01/0.01
MAX497CPE	MAX497CSE	4	275	1500	3.00	66	±5	±5	0.01/0.01

*µMAX also available.

Comparators

High Speed Comparators

Mfr.'s Type			No. of Comparators	Single Supply	Supply Current Per Comparator (mA)	Internal Precision Reference	Internal Hysteresis	Comparator Output
PDIP	SOIC	µMAX						
MAX901BCPE	MAX901BCSE	—	4	+5 to 10 V	2.50 (Icc)	None	No	TTL
MAX903CPA	MAX903CSA	—	1	+5 to 10 V	2.50 (Icc)	None	No	TTL
MAX907CPA	MAX907CSA	—	2	+5 V	0.70	None	Yes	TTL
MAX908CPD	MAX908CSD	—	4	+5 V	0.70	None	Yes	TTL
MAX913CPA	MAX913CSA	—	1	+5 V	6.00	None	No	TTL
MAX941CPA	MAX941CSA	MAX941CUA	1	+2.7 to 6 V	0.38	None	Yes	CMOS/TTL
MAX942CPA	MAX942CSA	MAX942CUA	2	+2.7 to 6 V	0.35	None	Yes	CMOS/TTL
MAX944CPD	MAX944CSD	—	4	+2.7 to 6 V	0.35	None	Yes	CMOS/TTL

Micropower Comparators and Reference ICs

PDIP	SOIC	µMAX	No. of Comparators	Single Supply	Supply Current Per Comparator (mA)	Internal Precision Reference	Internal Hysteresis	Comparator Output
MAX921CPA	MAX921CSA	MAX921CUA	1 + Ref.	2.5 to 11 V	2.50 µA Total Current	1%	Yes	CMOS/TTL
MAX922CPA	MAX922CSA	MAX922CUA	2	2.5 to 11 V	2.50 µA Total Current	None	No	CMOS/TTL
MAX923CPA	MAX923CSA	MAX923CUA	2 + Ref.	2.5 to 11 V	3.10 µA Total Current	1%	Yes	CMOS/TTL
MAX924CPE	MAX924CSE	—	4 + Ref.	2.5 to 11 V	5.50 µA Total Current	1%	No	CMOS/TTL
MAX931CPA	MAX931CSA	MAX931CUA	1 + Ref.	2.5 to 11 V	2.50 µA Total Current	2%	Yes	CMOS/TTL
MAX932CPA	MAX932CSA	MAX932CUA	2 + Ref.	2.5 to 11 V	3.10 µA Total Current	2%	Yes	CMOS/TTL
MAX933CPA	MAX933CSA	MAX933CUA	2 + Ref.	2.5 to 11 V	3.10 µA Total Current	2%	Yes	CMOS/TTL
MAX934CPE	MAX934CSA	—	4 + Ref.	2.5 to 11 V	5.50 µA Total Current	2%	No	CMOS/TTL
MAX971CPA	MAX971CSA	MAX971EUA	1 + Ref.	2.5 to 11 V	2.50 µA Total Current	1%	Yes	Open-Drain
MAX972CPA	MAX972CSA	MAX972EUA	2	2.5 to 11 V	2.50 µA Total Current	None	No	Open-Drain
MAX973CPA	MAX973CSA	MAX973EUA	2 + Ref.	2.5 to 11 V	3.10 µA Total Current	1%	Yes	Open-Drain
MAX974CPE	MAX974CSE	—	4 + Ref.	2.5 to 11 V	5.50 µA Total Current	1%	No	Open-Drain
MAX981CPA	MAX981CSA	MAX981EUA	1 + Ref.	2.5 to 11 V	2.50 µA Total Current	2%	Yes	Open-Drain
MAX982CPA	MAX982CSA	MAX982EUA	2 + Ref.	2.5 to 11 V	3.10 µA Total Current	2%	Yes	Open-Drain
MAX983CPA	MAX983CSA	MAX983EUA	2 + Ref.	2.5 to 11 V	3.10 µA Total Current	2%	Yes	Open-Drain
MAX984CPE	MAX984CSE	—	4 + Ref.	2.5 to 11 V	5.50 µA Total Current	2%	No	Open-Drain

Video Multiplexers/ Amplifiers/Crosspoint ICs

Mfr.'s Type		No. of Mux. Channels	Small Signal −3dB Bandwidth (MHz)	Slew Rate (V/µS)	V_{OS} (mV) Max.	Supply Voltage (V)	I_{BIAS} (µA) Max.	DP°/ DG%
PDIP	SOIC							
MAX442CPA	MAX442CSA	2	140	250	7	±5 V	±2	0.09/0.07
MAX453CPA	MAX453CSA	2	50	300	5	±5 V	10*	1.20/0.50
MAX454CPD	MAX454CSD	4	50	300	5	±5 V	10*	1.20/0.50
—	MAX4111CSA	1	330	700	10	±5 V	±4	0.01/0.01
—	MAX4121CSA	2	330	700	10	±5 V	±4	0.01/0.01
—	MAX4221CSE	Dual 2	330	700	10	±5 V	±4	0.01/0.01
—	MAX4141CSD	4	330	700	10	±5 V	±4	0.01/0.01

*nA.

RGB Video Switches

Mfr.'s Type		Unity GBW (MHz)	Slew Rate (V/µS)	Switching Time (ns)	No. of Inputs	No. of Outputs	Buffer Amp Gain	Output Current Min. (mA)	No. of Pins
PDIP	SOIC								
MAX498CNI	MAX498CWI	310	1250	5	8	4	2	75	28
MAX499CNG	MAX499CWG	310	1250	5	6	3	2	75	24

DRAMs

256 K × 4 DRAM

Mfr.'s Type	Description	Speed (ns)	Package Style	Icc Max. (mA)	Iccsb Max. (mA)
V53C104DK60	Fast Page Mode, Low Power DRAM	60	26/20 Lead SOJ	90	0.05
V53C104DK70	Fast Page Mode, Low Power DRAM	70	26/20 Lead SOJ	90	0.05
V53C104FK60L	Fast Page Mode, Low Power DRAM	60	26/20 Lead SOJ	90	0.05
V53C104FK70	Fast Page Mode, Low Power DRAM	70	26/20 Lead SOJ	80	0.05
V53C104FP60L	Fast Page Mode, Low Power DRAM	60	20 Lead PDIP	90	0.05
V53C104FP70	Fast Page Mode, Low Power DRAM	70	20 Lead PDIP	80	0.05

1 Meg × 4 DRAM

V53C404HK40	High Performance, Low Power CMOS DRAM	40	26 Lead SOJ	200	4.00
V53C404HK45	High Performance, Low Power CMOS DRAM	45	26 Lead SOJ	190	4.00
V53C404HK60	High Performance, Low Power CMOS DRAM	60	26 Lead SOJ	180	4.00
V53C408HK40	High Performance, Low Power CMOS DRAM	40	26 Lead SOJ	200	4.00
V53C408HK45	High Performance, Low Power CMOS DRAM	45	26 Lead SOJ	190	4.00
V53C408HK60	High Performance, Low Power CMOS DRAM	60	26 Lead SOJ	180	4.00

256 K × 8 DRAM

V53C8256HK45	Fast Page Mode, Low Power, High Speed DRAM	45	26/24 Lead SOJ	160	2.50
V53C8256HP45	Fast Page Mode, Low Power, High Speed DRAM	45	24 Lead PDIP	160	2.50
V53C8257HK45	Fast Page Mode, Low Power, High Speed Burst Mode DRAM	45	26/24 Lead SOJ	160	2.50
V53C8257HP45	Fast Page Mode, Low Power, High Speed Burst Mode DRAM	45	24 Lead PDIP	160	2.50
V53C8258HK45	Page Mode EDO, Ultra High Speed DRAM	45	26/24 Lead SOJ	160	2.50
V53C8258HP45	Page Mode EDO, Ultra High Speed DRAM	45	24 Lead PDIP	160	2.50

64 K × 16 DRAM

V53C664HK50	Fast Page Mode, Upper/Lower Byte Control DRAM	50	40 Lead SOJ	140	1.00
V53C664HK55	Fast Page Mode, Upper/Lower Byte Control DRAM	55	40 Lead SOJ	130	1.00

256 K × 16 DRAM

V53C16258HK50	Page Mode with EDO, High Speed DRAM	50	40 Lead SOJ	190	2.00

SIMM DRAM Modules

Mfr.'s Type	Description	Speed (ns)	Package Style	Icc Max. (mA)	Iccsb Max. (mA)
V104J8S70	256 K × 8 (2 chips per module)	70	SIMM	130	2
V100J8S60	1 Meg × 8 (8 chips per module)	60	SIMM	480	8
V100J8S70	1 Meg × 8 (8 chips per module)	70	SIMM	480	8
V404J8S70	1 Meg × 8 (2 chips per module)	70	SIMM	140	2
V100J9S60	1 Meg × 9 (9 chips per module)	60	SIMM	540	9
V100J9S70	1 Meg × 9 (9 chips per module)	70	SIMM	540	9
V404J9S70	1 Meg × 9 (3 chips per module)	70	SIMM	160	4
V404J36S70	1 Meg × 36 (12 chips per module)	70	SIMM	900	12
V404J236S70	2 Meg × 36 (24 chips per module)	70	SIMM	3240	40

Video RAMs

128 K × 8 VRAM

Mfr.'s Type	Description	Speed (ns)	Package Style	Icc Max. (mA)	Iccsb Max. (mA)
V52C8126K80	Multiport VRAM, 256K × 4 DRAM, 512 × 4 SAM	80	40 Lead SOJ	115	7
V52C8126Z80	Multiport VRAM, 256K × 4 DRAM, 512 × 4 SAM	80	40 Lead ZIP	115	7
V52C8128K80	Multiport VRAM, 128K × 8 DRAM, 256 × 8 SAM	80	40 Lead SOJ	115	7

256 K × 8 VRAM

V52C8256K60	Hyper Page Mode, High Speed, Dual Port Memory	60	40 Lead SOJ	140	8
V52C8258K60	Fast Page Mode, High Speed, Dual Port Memory	60	40 Lead SOJ	140	8

Standard SRAMs

8 K × 8 SRAM

Mfr.'s Type	Description	Speed (ns)	Package Style	Icc Max. (mA)	Iccsb Max. (mA)
MS6264L-70FC	CMOS Static Ram	70	28 Lead, 330 mil SOIC	85	0.100
MS6264L-70PC	CMOS Static Ram	70	28 Lead, 600 mil PDIP	85	0.100
MS6264L-10FC	CMOS Static Ram	100	28 Lead, 330 mil SOIC	85	0.100
MS6264L-10PC	CMOS Static Ram	100	28 Lead, 600 mil PDIP	85	0.100
MS6265-10FC	CMOS Static Ram, Ultra Low Data Retention Current	100	28 Lead, 330 mil SOIC	40	0.001
MS6265-10NC	CMOS Static Ram, Ultra Low Data Retention Current	100	28 Lead, 300 mil PDIP	40	0.001
MS6265-10PC	CMOS Static Ram, Ultra Low Data Retention Current	100	28 Lead, 600 mil PDIP	40	0.001

32 K × 8 SRAM

MS62256CLL-70FC	CMOS Static Ram, Low Low Power	70	28 Lead, 330 mil SOG	80	0.020
MS62256CLL-70PC	CMOS Static Ram, Low Low Power	70	28 Lead, 600 mil PDIP	80	0.020
MS62256L-10FC	CMOS Static Ram	100	28 Lead, 330 mil SOG	70	0.100
MS62256L-10PC	CMOS Static Ram	100	28 Lead, 600 mil PDIP	70	0.100

High Speed SRAMs

256 K × 4 SRAM

Mfr.'s Type	Description	Speed (ns)	Package Style	Icc Max. (mA)	Iccsb Max. (mA)
MS621002A-20KC	CMOS Static Ram	20	28 Lead, 400 mil SOJ	130	1
MS621002A-25KC	CMOS Static Ram	25	28 Lead, 400 mil SOJ	130	1
MS621002A-35KC	CMOS Static Ram	35	28 Lead, 400 mil SOJ	130	1

8 K × 8 SRAM

MS6264H-20RC	High Speed CMOS Static Ram	20	28 Lead, 300 mil SOJ	180	3

32 K × 8 SRAM

MS62256H-15RC	High Speed CMOS Static Ram	15	28 Lead, 300 mil SOJ	200	2
MS62256H-20NC	High Speed CMOS Static Ram	20	28 Lead, 300 mil PDIP	200	2
MS62256H-20RC	High Speed CMOS Static Ram	20	28 Lead, 300 mil SOJ	200	2

128 K × 8 SRAM

MS621007A-20KC	CMOS Static Ram	20	32 Lead, 400 mil SOJ	150	2
MS621007A-25KC	CMOS Static Ram	25	32 Lead, 400 mil SOJ	150	2
MS621007A-35KC	CMOS Static Ram	35	32 Lead, 400 mil SOJ	150	2

FIFOs

256 K × 9 FIFO

Mfr.'s Type	Description	Speed (ns)	Package Style	Icc Max. (mA)	Iccsb Max. (mA)
MS7200L-25FC	CMOS FIFOs	25	28 Lead, 330 mil SOIC	125	0.5
MS7200L-25JC	CMOS FIFOs	25	32 Lead, PLCC	125	0.5
MS7200L-35FC	CMOS FIFOs	35	28 Lead, 330 mil SOIC	125	0.5
MS7200L-35JC	CMOS FIFOs	35	32 Lead, PLCC	125	0.5
MS7200L-50FC	CMOS FIFOs	50	28 Lead, 330 mil SOIC	125	0.5
MS7200L-50JC	CMOS FIFOs	50	32 Lead, PLCC	125	0.5
MS7200L-50NC	CMOS FIFOs	50	28 Lead, 300 mil PDIP	125	0.5
MS7200L-80FC	CMOS FIFOs	80	28 Lead, 330 mil SOIC	125	0.5
MS7200L-80JC	CMOS FIFOs	80	32 Lead, PLCC	125	0.5
MS7200L-80NC	CMOS FIFOs	80	28 Lead, 300 mil PDIP	125	0.5
MS7200L-80PC	CMOS FIFOs	80	28 Lead, 600 mil PDIP	125	0.5

512 K × 9 FIFO

MS7201AL-25FC	CMOS FIFOs	25	28 Lead, 330 mil SOIC	125	0.5
MS7201AL-25JC	CMOS FIFOs	25	32 Lead, PLCC	125	0.5
MS7201AL-25PC	CMOS FIFOs	25	28 Lead, 600 mil PDIP	125	0.5
MS7201AL-35FC	CMOS FIFOs	35	28 Lead, 330 mil SOIC	125	0.5
MS7201AL-35JC	CMOS FIFOs	35	32 Lead, PLCC	125	0.5
MS7201AL-35NC	CMOS FIFOs	35	28 Lead, 300 mil PDIP	125	0.5
MS7201AL-35PC	CMOS FIFOs	35	28 Lead, 600 mil PDIP	125	0.5
MS7201AL-50FC	CMOS FIFOs	50	28 Lead, 330 mil SOIC	125	0.5
MS7201AL-50JC	CMOS FIFOs	50	32 Lead, PLCC	125	0.5
MS7201AL-80FC	CMOS FIFOs	80	28 Lead, 330 mil SOIC	125	0.5
MS7201AL-80JC	CMOS FIFOs	80	32 Lead, PLCC	125	0.5

1 K × 9 FIFO

MS7202AL-25FC	CMOS FIFOs	25	28 Lead, 330 mil SOIC	80	0.5
MS7202AL-25JC	CMOS FIFOs	25	32 Lead, PLCC	80	0.5
MS7202AL-35FC	CMOS FIFOs	35	28 Lead, 330 mil SOIC	80	0.5
MS7202AL-35JC	CMOS FIFOs	35	32 Lead, PLCC	80	0.5
MS7202AL-35PC	CMOS FIFOs	35	28 Lead, 600 mil PDIP	80	0.5
MS7202AL-50FC	CMOS FIFOs	50	28 Lead, 330 mil SOIC	80	0.5
MS7202AL-50JC	CMOS FIFOs	50	32 Lead, PLCC	80	0.5
MS7202AL-50PC	CMOS FIFOs	50	28 Lead, 600 mil PDIP	80	0.5
MS7202AL-80FC	CMOS FIFOs	80	28 Lead, 330 mil SOIC	80	0.5
MS7202AL-80JC	CMOS FIFOs	80	32 Lead, PLCC	80	0.5

2 K × 9 FIFO

MS7203L-25NC	CMOS FIFOs	25	28 Lead, 300 mil PDIP	125	2.0
MS7203L-25PC	CMOS FIFOs	25	28 Lead, 600 mil PDIP	125	2.0
MS7203L-35FC	CMOS FIFOs	35	28 Lead, 330 mil SOIC	125	2.0
MS7203L-35NC	CMOS FIFOs	35	28 Lead, 300 mil PDIP	125	2.0
MS7203L-35PC	CMOS FIFOs	35	28 Lead, 600 mil PDIP	125	2.0
MS7203L-50FC	CMOS FIFOs	50	28 Lead, 330 mil SOIC	125	2.0
MS7203L-50PC	CMOS FIFOs	50	28 Lead, 600 mil PDIP	125	2.0
MS7203L-80FC	CMOS FIFOs	80	28 Lead, 330 mil SOIC	125	2.0
MS7203L-80PC	CMOS FIFOs	80	28 Lead, 600 mil PDIP	125	2.0

4 K × 9 FIFO

MS7204L-35FC	CMOS FIFOs	35	28 Lead, 330 mil SOIC	125	2.0
MS7204L-35PC	CMOS FIFOs	35	28 Lead, 600 mil PDIP	125	2.0
MS7204L-50FC	CMOS FIFOs	50	28 Lead, 330 mil SOIC	125	2.0
MS7204L-50PC	CMOS FIFOs	50	28 Lead, 600 mil PDIP	125	2.0
MS7204L-80FC	CMOS FIFOs	80	28 Lead, 330 mil SOIC	125	2.0
MS7204L-80PC	CMOS FIFOs	80	28 Lead, 600 mil PDIP	125	2.0

Data Books

RF Device Data Rev. 6 Q1/95

The RF Device Data book presents technical information on Motorola's RF products. The RF portfolio includes bipolar, LDMOS, MOSFET RF Power, RF Integrated Circuits, and gallium arsenide chip technologies. This publication also includes a cross reference, selector guide information, case dimensions, and a list of devices not recommended for new design.
504-9800. DL110/D

Bipolar Power Transistor Data Rev. 6 Q2/92

Motorola produces more than 1100 off-the-shelf power transistors covering a very wide range of applications. Their electrical, thermal and mechanical characteristics are presented here in the form of data sheets, with a competitor cross-reference and a selector guide showing devices by package, produce category and major application.
504-9801. DL111/D

Optoelectronics Device Data Rev. 4 Q3/93

In the optoelectronics field, Motorola has concentrated on infrared GaAs and GaAlAs emitters, silicon detectors, high-technology optocouplers/isolators, and an innovative approach to fiber optics. This data book contains up-to-date information on the complete product line. A selector guide and industry cross-reference follow a general introduction and quality/reliability data. Data sheets are grouped in sections covering Discrete Emitters/Detectors, Fiber Optic Components, Optoisolators/Optocouplers, Slotted Optical Switches and Opto Chips. Includes 82 pages of application notes.
504-9802. DL118/D

FAST and LS TTL Data Rev. 5 Q2/92

Low Power Schottky (LS TTL) has become the industry-standard logic in recent years, replacing the original 7400 TTL with lower power and higher operating speeds. In addition to producing the standard LS TTL circuits, Motorola also offers the FAST™ Schottky TTL family. Complete specifications for both LS and FAST families are provided here in data sheet form. Functional selector guide provides an overview of the principal characteristics of the two families.
504-9803. DL121/D

MECL Device Data Rev. 5 Q1/93

Presents full technical data for Motorola's monolithic Emitter Coupled Logic families, including MECL 10H, MECL 10K and MECL III, plus MECL memories and Phase-Locked Loop products. MECL offers very high speeds — with propagating delays down to 1.0 ns — for use in computer systems, high-performance ATE and process control systems, signal processors and navigation systems. The families also offer other advantages which combine to reduce package count and simplify system design. This book includes a technical introduction to MECL and a detailed discussion of system design considerations.
504-9804. DL122/D

Small-Signal Transistors, FETs and Diodes Rev. 5 Q4/94

Presents technical information for the several families that make up Motorola's small-signal semiconductor produce range, including bipolars, FETs and diodes. Complete device specifications and typical performance curves are given on individual data sheets, which are grouped by families and by their metal can and plastic/surface mount packages. A selector guide provides a quick comparison of performance characteristics. Additional sections describe package outline drawings and tape and reel specifications, and clarify the Hi-Rel processing and testing procedures.
504-9805. DL126/D

Linear/Interface Integrated Circuits (2 Volume Set) Rev. 4 Q3/93

Presents detailed technical information in the form of data sheets on Motorola's broad range of linear and interface ICs. Products are divided into 10 sections, including Amplifiers and Comparators, Power Supply Circuits, Motor Control, Voltage References, Data Conversion, Interface Circuits, Communications, Consumer and Automotive. Each section includes its own comprehensive selector guide, while an industry cross-reference lists over 3000 products with their Motorola direct or similar replacements. Full mechanical data is provided, plus a listing of device availability for surface mount.
504-9806. DL128/D

High Speed CMOS Logic Data Rev. 5 Q2/93

For many years, CMOs devices have been used in applications where low power consumption, wide power supply range and high noise immunity are the important factors. For higher speed applications, designers were forced to sacrifice the CMOS benefits and choose families such as LS TTL. Motorola's High Speed CMOS family is fast enough for such applications, while retaining the CMOS features. The HSCMOS Data Book includes a selector guide by function, a discussion of design and handling considerations, and full electrical and performance data in the form of data sheets.
504-9807. DL129/D

CMOS Logic Data Rev. 3 Q4/91

Presents technical data for Motorola's broad line of Metal-Gate CMOS Logic ICs. Complete specifications are provided in the form of data sheets. In addition, a produce selector guide and a handling and design guidelines chapter are included for further information. Includes data on all the logic circuits from the MC14000 series.
504-9808. DL131/D

TMOS Power MOSFET Transistor Data Rev. 6 Q2/96

Power MOSFETs offer unique characteristics and capabilities that are not available with bipolar power transistors. They have high switching speeds, simpler gate drive requirements, reduced need for snubber circuits, and low ON-voltages. This book provides a comprehensive selector guide by package, and full data on all Motorola's TMOS® Power MOSFETs in the form of data sheets. It contains more than 200 pages of theory and applications information in 15 chapters, including Gate Drive Requirements, Paralleling and Characterization, plus a number of specific designs.
504-9809. DL135/D

Communications Device Data Rev. 3 Q4/93

Motorola is a major supplier of semiconductors to communications equipment manufacturers worldwide. This book includes complete specifications for a wide variety of devices designed for this market, in the form of over 1300 pages of data sheets. A selector guide is included to simplify the task of choosing appropriate devices for a system. Applications information, handling and design guidelines, and quality and reliability overviews provide additional support for users of these circuits.
504-9810. DL136/D

Thyristor Device Data Rev. 5 Q3/93

Thyristors are extremely useful across a broad range of control applications. Compared to a mechanical switch, a thyristor has a long service life and fast switching times; its regenerative action and low ON-resistance allow it to be used to control AC loads as well as for simple switching tasks. Thyristor Device Data presents data sheet information plus a comprehensive selector guide and industry cross-reference on Motorola's thyristor families, including SCRs, Triacs, TGTOs and trigger devices. It includes 252 pages of theory and applications information.
504-9811. DL137/D

FACT Data Rev. 3 Q4/93

FACT utilizes a sub 2 micron silicon gate CMOs process to attain speeds similar to that of Advanced Low Power Schottky while retaining the advantages of CMOS logic, namely, ultra lower power and high noise immunity. As an added benefit, FACT offers the system designer superior line driving characteristics and excellent ESD and latchup immunity. This data book describes Motorola's produce line with device specifications and a selector guide, plus over 30 pages of design considerations and comparisons with previous technologies.
504-9812. DL138/D

ECLinPS Device Data Rev. 2 Q1/94

This data book contains device specifications in the form of data sheets for Motorola's ECLinPS advanced Emitter Coupled Logic family. ECLinPS (ECL in picoseconds) was developed in response to demand for an even higher performance logic family of standard logic functions, especially for the computer, ATE, instrumentation and communications industries. ECLinPS offers a maximum signal gate delay of 500 ps including package delay, and a flip-flop toggle frequency up to 800 MHz. Each function is available with either MECL 10H or 100K compatibility.
504-9813. DL140/D

ECLinPS Lite Rev. 2

ECLinPS Lite™ is a family of single, essential logic primitives — gates, muxes, flops, etc. — housed in a space-efficient, cost-effective standard package, the 8-lead SOIC. Packaged gates switch in 250 ps type., with flops toggling at over 2 GHz. Being a single gate family, ECLinPS Lite offers better AC specs and higher skews than even the ECLinPS™ family. At the same time the family provides superior isolation over multiple gate logic. Its small package size makes it ideal for pin cards and other applications that require density, but not at the expense of signal integrity. This book contains device specifications in the form of data sheets as well as applications information for Motorola's ECLinPS Lite family.
504-9814. BR1330/D

Commercial Plus and Mil/Aero Applications Memory Products Q2/93

This book presents technical data for a broad line of Motorola (Commercial Plus and Mil/Aero Applications) Memory products. Complete specifications for the individual circuits are provided in the form of data sheets.
504-9815. DL144/D

TVS/Zener Device Data Rev. 1 Q2/94

Presents technical data for Motorola Transient Voltage Suppressors and Zener Diodes. Complete specifications for the individual devices are provided in the form of data sheets. A comprehensive selector guide and industry cross-reference are included to simplify the task of choosing the best of components required for a specific application. For the first time, this data book includes theory and applications information in addition to the actual product-specific data. The actual layout has been revised to be more user friendly with sections on the three major categories of Zener Diodes — Regulation, Temperature Compensation, and Transient Voltage Protection.
504-9816. DL150/D

Rectifier Device Data Rev. 2 Q1/95

This book presents technical data for Motorola's broad line of rectifiers. Complete specifications are provided in the form of data sheets, and accompanying selection guides provide a quick comparison of characteristics to simplify the task of choosing the best device for a circuit. Continuing investment in research and development for discrete products has led to a rectifier manufacturing facility that matches the precision and versatility of the most advanced integrated circuits. As a result, Motorola's silicon rectifiers span all applications categories with quality levels capable of passing the most stringent environment tests — including those for automotive under-hood applications.
504-9817. DL151/D

Dynamic RAM Data Rev. 1 Q3/94

Motorola offers a broad range of reliable dynamic RAMs and DRAM modules for virtually any digital data processing system application. Complete specifications for the individual circuits are provided in the form of data sheets. A selector guide and a cross-reference are included.
504-9820. DL155/D

FAST Static RAM BiCMOS, CMOS and Module Data Rev. 2 Q1/95

Motorola offers a broad range of fast SRAMs for virtually any digital data processing system application. This data book contains complete specifications for individual FSRAM circuits in data sheet form, as well as an explanation of Motorola's reliability and quality program and an application's section.
504-9821. DL156/D

Pressure Sensor Device Data Rev. 1 Q1/94

Motorola is pleased to introduce their first Pressure Sensor Data Book. This data book provides technical information on Motorola's Pressure and Temperature Sensor products. Specifications are provided in the form of data sheets for individual devices and application notes describe interface circuitry to assist the end user. Additional sections provide reliability information, advanced new product information, package outline drawings, and information on sensor evaluation boards.
504-9822. DL200/D

FPGA Data Fields Programmable Gate Arrays

This data book discusses implementing your design with the Motorola MPA1000 family of FPGAs. These series of high performance, high density, reconfigurable arrays and high quality software meet the multiple demands of ever shrinking development cycles, system emulation, early prototyping and applications that exploit field reconfiguration to competitive advantage.
504-9823. DL201/D

8-Bit MCU Application Manual Rev. 1

This manual is a compilation of Application Notes, Article Reprints and other applications literature relating to Motorola's range of 8-bit Microcomputer Units (MCUs). Specific data on all Motorola products, including the 8-Bit MCU devices mentioned in this manual, can be obtained from Allied.
504-9824. DL408/D

16/32-Bit Applications Manual Rev. 1

This manual is a compilation of Application Notes, Article Reprints and other applications literature relating to Motorola's range of 16- and 32-bit microprocessors and peripherals. Specific data on all Motorola products, including the power devices mentioned in this manual, can be obtained from Allied.
504-9825. DL409/D

Power Applications Manual Rev. 1

This manual is a compilation of 60 Application Notes, Article Reprints and other applications literature relating to Motorola's range of power semiconductors. A Device Cross-Referenced indicates where specific components are featured in applications documents in the manual; in addition to the index, an abstract of each document is provided as an aid to the location of particular topics.
504-9826. DL410/D

Communications Applications Manual Rev. 1

This manual is a compilation of 44 Application Notes, Article Reprints and other applications literature relating to Motorola's semiconductors for Communications and related applications. A Device Cross-Reference indicates where specific components are featured in applications documents in the manual, and an abstract of each document is provided in addition to the index. Topics range from Speakerphones and Key Systems to FM Receivers, from Fiber Optics to DSP, from RS232 to MAP and ISDN.
504-9827. DL411/D

Industrial Control Applications Manual Rev. 1

This manual is a compilation of 42 Application Notes, Article Reprints and other applications literature relating to Motorola's semiconductors for Industrial Control Applications. A Device Cross-Reference indicates where specific components are featured in applications documents in the manual, and an abstract of each document is provided in addition to the index. Topics include temperature and pressure measurement, A/D conversion for industrial applications, motor control and industrial interfacing.
504-9828. DL412/D

Radio, RF and Video Applications Manual Rev. 1

This manual is a compilation of 37 Application Notes, Article Reprints and other applications literature relating to Motorola's semiconductors for Radio, RF and Video applications. A Device Cross-Reference indicates where specific components are featured in applications documents in the manual, and an abstract of each document is provided in addition to the index. Topics include RF amplifier designs, the application of Motorola's TV ICs, designing for very high speed logic, and PLL fundamentals.
504-9829. DL413/D

FET Applications Manual

This manual is a compilation of 34 applications documents concerned with Motorola's FETs for small signal, audio and power applications. A Device Cross-Reference indicates where specific components are featured in applications documents in the manual, and an abstract of each document is provided in addition to the index. Topics include MOSFET/bipolar comparisons, the application of MOSFETs in motor control and switching power supplies, driving MOSFETs from logic and other sources, and audio and VHF MOSFET-based amplifiers.
504-9830. DL414/D

DSP56100, Digital Signal Processor Family Manual Q3/93

The DSP56100 Family Manual provides a description of the components that are common to all DSP56100 family processors and includes a detailed description of the basic DSP56100 family instruction set.
504-9831. DSP56100FM/AD

Timing Solutions Rev. 4

With frequencies regularly reaching 33 MHz and approaching 40-50 MHz in today's CISC and RISC microprocessor systems, well controlled and precise clock signals are required to maintain a synchronous system. Many microprocessors also require input clock duty cycles very close to 50%. These stringent timing requirements mandate the use of specially designed, low skew clock distribution circuits or clock drivers. This book contains device specifications in the form of data sheets as well as applications information for Motorola's low skew timing circuits.
504-9832. BR1333/D

Hipercomm Rev. 1

This book contains device specifications in the form of data sheets as well as applications information for Motorola's high performance frequency control products. Motorola's portfolio of state-of-the-art low power prescaler includes over 40 different combinations of frequency, divide ratio and power to meet the needs of most designs. Information is also included about Motorola's integrated single chip synthesizers which provide significant savings in power dissipation, Making them ideal for hand-held, battery-operated applications. Of course, the world of RF does not depend on prescalers and synthesizers alone. Motorola's current and future efforts include integrated communication VCOs, as well as higher levels of integration for the transmit and receive sections of various wireless applications.
504-9833. BR1334/D

For technical assistance on Motorola's complete line of Semiconductor Devices, call the Motorola Applications Hotline: (800) 521-6274. Visit Motorola's Design.Net Web Site at http://design-net.com.

To obtain the latest data sheets on Motorola Semiconductor Devices, call Motorola's Automated Design-Net FAX Service: (602) 244-6609.

Digital Signal Processing

For technical assistance on Motorola Digital Signal Processing products, call the DSP Applications Hotline: (512) 891-3230.

DSP Development Tools

DSP56100 Software

Mfr.'s Type	Description
DSP56100CLASA	DSP56100 Family Simulator/Assembler/Linker/Library for IBM PC™

DSP56000 Software

Mfr.'s Type	Description
DSP56000CLASA	DSP56000 Family Simulator/Assembler/Linker/Library for IBM PC™
DSP56000CLASF	DSP56000 Family Simulator/Assembler/Linker/Library for SUN-4™
DSP56KCCA	DSP56000 Family C Compiler for IBM PC™
DSP56KCCF	DSP56000 Family C Compiler for SUN-4™
DSP56KCCH	DSP56000 Family C Compiler for Hewlett-Packard Series 700

DSP56100 Hardware

Mfr.'s Type	Description
DSP56156ADSA	DSP56156 Development System for IBM PC™
DSP56156ADSF	DSP56156 Development System for SUN-4™
DSP56156ADM	ADM Board for DSP56156
DSP56166ADSA	DSP56166 Development System for IBM PC™
DSP56166ADM	ADM Board for DSP56166

DSP56000 Hardware

Mfr.'s Type	Description
DSP56KT2A	DSP56000/1 Development Software for IBM PC™
DSP56KT2F	DSP56000/1 Development Software for SUN-4™
DSP56002ADSA	DSP56002 Development System for IBM PC™
DSP56002ADSF	DSP56002 Development System for SUN-4™
DSP56004ADSA	DSP56004 Development System for IBM PC™
DSP56002ADM	ADM Board for DSP56002
DSP56004ADM	ADM Board for DSP56004

DSP56002EVM Evaluation Module

The DSP56002EVM Evaluation Module (EVM) is a low-cost platform designed to familiarize the user with Motorola's DSP56002 Digital Signal Processor (DSP). The 24-bit precision of the DSP combined with the on-board 32 K words of external SRAM and stereo CD-quality audio codec makes the EVM ideal for implementing and demonstrating many audio processing algorithms as well as for learning the architecture and instruction set of the DSP56002 processor. The user need only supply a 7-9 volt calculator-style power supply and an RS-232 serial cable.

The DSP56002EVM comes with Motorola's DSP56000 cross assembler and Domain Technologies' debug software with windowed user interface. The software runs under MS-DOS on an IBM PC-compatible computer (–386 class or higher) and communicates with the EVM over an RS-232 serial port.

Hardware. Fully assembled and tested printed circuit board containing:

- ► 24-Bit DSP56002 Digital Signal Processor Operating at 40 MHz
- ► Up to 20 Million Instructions Per Second (MIPS) — 50 ns Instruction Cycle at 40 MHz
- ► Up to 120 Million Operations Per Second (MOPS) at 40 MHz
- ► Executes A 1024-Point Complex Fast Fourier Transform (FFT) in 59,898 Clocks
- ► Four 24-Bit Internal Data Buses and Three 16-Bit internal Address Buses for Simultaneous Accesses to One Program and Two Data Memories
- ► 512 × 24-Bit On-Chip Program RAM with Bootstrap ROM
- ► Two 256 × 24-Bit On-Chip Data RAMs
- ► Two 256 × 24-Bit On-Chip Data ROMs Containing Sine, A-Law and μ-Law Tables
- ► External Memory Expansion with 16-Bit Address and 24-Bit Address and 24-Bit Data Buses
- ► Byte-Wide Host Interface (HI) with Direct Memory Access Support
- ► Synchronous Serial Interface (SSI) to Communicate with Codecs and Synchronous Serial Devices
- ► Serial Communication Interface (SCI) for Full-Duplex Asynchronous Communications
- ► 24-Bit Timer/Event Counter also Generates and Measures Digital Waveforms
- ► On-Chip Emulation (OnCE™) Port for Unobtrusive, Processor Speed-independent Debugging
- ► Software-Programmable, Phase-Locked Loop-based (PLL) Frequency Synthesizer
- ► 32 K × 24-Bit Zero-Wait-State External Static RAM for Expansion Memory
- ► Option for 32 K × 8 Bits of Flash EEPROM for Program Bootstrapping and Stand-alone Operation
- ► Crystal Semiconductor's CS4215 Stereo CD-Quality Sigma-Delta Analog-to-Digital and Digital-to-Analog Converter for High Quality Audio
- ► 24.576 MHz Crystal for Audio Sampling Rates Of 48, 32, 16, 9.6, Or 8 KHz
- ► 16-Bit Linear, 8-Bit μ-Law, 8-Bit A-Law, and 8-Bit Linear Data Formats
- ► Option for other Crystals/Frequencies for other Sample Rates, Such As 44.1 KHz
- ► MC7805ACT Voltage Regulator
- ► RS-232 Interface to OnCE™ Controller and Serial Communications Interface (SCI)
- ► Option for A Second RS-232 Connector for Access to The DSP56002 Processor's Serial Communications Port (SCI)
- ► MC68HC705K1 Microcontroller Performing RS-232-to-OnCE™ Command Conversion
- ► MC33078 Pre-Amp for Analog Buffering
- ► Strip Connectors for External Access to the DSP56002's Memory Expansion, Host Interface, and Serial Communications Ports
- ► Jacks for Stereo Inputs, Outputs, and Headphones
- ► 2.1 mm Jack and Two Screw Terminals for Power Connection
- ► Documentation for The DSP56002, CS4215, Assembler, and Debugger, Plus Board Schematics

Software

- ► Motorola's DSP5600x Cross Assembler
- ► DSP56002 Binary Code From Source Code Using Labels, Line Numbers, Definitions, and Titles Incorporating the Architecture's Complete Instruction Set and Addressing Modes, Memory Spaces, and Parallel Data Transfers
- ► Macros, Expression Evaluation, and Functions for Strings, Data Conversion, and Transcendentals
- ► Reports for Cross-References, Instruction Cycle Count, and Memory use
- ► Extensive Error Checking and Reporting
- ► Domain Technologies' Debug Software with Windowed User Interface
- ► Symbolic Debugging
- ► Four Independent Windows for Data, Disassembly, DSP Register, and Commands
- ► Data and Registers Displayed as Fractions, Decimals, or Hexadecimals
- ► Symbolic Addressing and Animated ASCII Graphical Display of Memory Segments
- ► Up to 8 Simultaneous Breakpoints
- ► Built-in Assembler and Disassembler
- ► Installation Instructions and User Notes on Disk
- ► Demo Software Showing the Advantages of 24-Bits Over 16-Bits in Audio Processing
- ► Self-Test Files — Executable and Source Code

Requirements. The user must have the following:

- ► Power Supply (7-9 VAC or DC, 700 mA)
- ► RS-232 Cable with DB-9 Connectors
- ► IBM PC-Compatible Computer (–386 Class or Higher) Running MS-DOS with a Serial Port Capable of Operation at 19,200 Baud

Options. The EVM easily accommodates the following user additions:

- ► 32 K × 8-Bit Flash EEPROM for Program Bootstrapping and Stand-Alone Operation
- ► A Second Crystal for Other Sample Rates, Such as 44.1 KHz
- ► A Second RS-232 Connector to Access the DSP56002's Serial Communications Port (SCI)

Universal Hardware

Mfr.'s Type	Description
DSPPCHOST	PC Compatible Host Board and Interface Software
DSPMACHOST	Macintosh II™ Host Board and Interface Software
DSPSUN4HOST	SUN-4™ Host Board and Interface Software
DSPCOMMAND	16-, 24-, 32-Bit Command Converter Board

DSP Product

DSP56100 Family General-Purpose 16-Bit Fixed Point

Ideal for high end speech coding, telecommunications and control applications. The DSP56166 combines the high speed core with 8 K bytes RAM, two serial ports, and one parallel port, codec, phase-locked loop (PLL) and On-Chip Emulation (OnCE™).

Mfr.'s Type	Speed (MHz)	Program ROM/RAM	Data ROM/RAM	Package Type	Peripherals	Comments
XC56156FE60	60	64/2048	0/2048	112 Lead CQFP	SSI × 2, Host, Timer	Codec, OnCE™ and PLL
XC56166FE60	60	64/2048	0/4096	112 Lead CQFP	RSSI × 2, Host, Timer	Codec, OnCE™ and PLL

DSP56002, HCMOS Low Power 24-Bit DSP

With its triple Harvard architecture of seven internal buses and three parallel execution units — Data ALU, Address Generation Unit (AGU) and Program Controller — has set the standard for high end DSP devices. These products are used extensively in telecommunications, control and audio. the DSP56000 family's unique 24-bit architecture has made these products the industry standard for CD-quality sound. The DSP56002 provides clock speeds up to 66 MHz, a phase locked loop (PLL) and an On-Chip Emulation (OnCE™). The DSP56L002 is a low voltage implementation of the DSP56002. Its 3.3 V operation effectively extends the battery life of portable applications up to three times longer than 5 V systems.

Mfr.'s Type	Speed (MHz)	Program ROM/RAM	Data ROM/RAM	Package Type	Peripherals	Comments
DSP56002RC40	40	64/512	2 × 256/2 × 256	132 Lead PGA	Host, SSI, SCI, Timer	OnCE™ and PLL
DSP56002FC40	40	64/512	2 × 256/2 × 256	132 Lead PQFP	Host, SSI, SCI, Timer	OnCE™ and PLL
DSP56002FC66	66	64/512	2 × 256/2 × 256	132 Lead PQFP	Host, SSI, SCI, Timer	OnCE™ and PLL
DSP56002PV40	40	64/512	2 × 256/2 × 256	144 Lead TQFP	Host, SSI, SCI, Timer	OnCE™ and PLL
DSP56002PV66	66	64/512	2 × 256/2 × 256	144 Lead TQFP	Host, SSI, SCI, Timer	OnCE™ and PLL
DSP56L002FC40	40	64/512	2 × 256/2 × 256	132 Lead PQFP	Host, SSI, SCI, Timer	OnCE™ and PLL*

*3.3 Volt.

DSP56004, HCMOS Low Power 24-Bit DSP

The DSP56004 contains audio peripherals specially designed for consumer and automotive audio applications. The Serial Audio Interface (SAI) provides two stereo inputs and three stereo outputs with I2S Sony or Matsushita formats. The External Memory Interface (EMI) supports a byte-wide data port to DRAM or SRAM. The Serial Host Interface (SHI) provides a low cost microcontroller interface using SPI or I2C.

Mfr.'s Type	Speed (MHz)	Program ROM/RAM	Data ROM/RAM	Package Type	Peripherals	Comments
DSP56004FJ50	50	64/512	2 × 256/2 × 256	80 Lead PQFP	SAI, SHI, EMI	OnCE™ and PLL

DSP56005, HCMOS Low Power 24-Bit DSP with Five PWMs and WDT

Mfr.'s Type	Speed (MHz)	Program ROM/RAM	Data ROM/RAM	Package Type	Peripherals	Comments
XC56005PV50	50	96/4608	2 × 256/2 × 256	144 Lead TQFP	Host, SSI, SCI, Timer	OnCE™, PLL, 5 × PWM, WDT

DSP Peripherals

Mfr.'s Type	Description	Package Type
DSP56ADC16S	16-Bit Sigma-Delta Analog to Digital Converter	20 Lead CERDIP

OnCE™=On Chip Emulator. OnCE™ is a Trademark of Motorola. PLL= Phase Locked Loop. PWM=Pulsewidth Modulator. WDT=Watchdog Timer.SSI=Synchronous Serial Interface. SCI=Serial Communication Interface.

Motorola M68000 Family Upward Compatible 16-/32-Bit Microprocessors

MC68HC000, 16-/32-Bit HCMOS Micropower Microprocessor

Completely pin and timing compatible and gives all the functions and performance of the MC68000 at one-tenth the operating power requirements, 0.175 watts. It is designed for large multiprocessing systems and realtime applications with vectored interrupts, seven priority levels and a 16 megabyte addressing space. It offers mainframe-like performance, supporting high-level languages and sophisticated operating systems.

Mfr.'s Type		Operating Frequency (MHz)	MIPS	MFLOPS	Address Range (Bytes)	Data Bus (Bit)	Instruction Cache (Bytes)	Data Cache (Bytes)	Burst Mode	General Purpose Registers	Address Modes	On-Chip MMU	Floating Point Solution
68 Lead PLCC	64 Lead PDIP												
MC68HC000FN8	MC68HC000P8	8	1.6	—	16 M	16	N/A	N/A	N/A	16	14	No	68881
MC68HC000FN10	MC68HC000P10	10	1.6	—	16 M	16	N/A	N/A	N/A	16	14	No	68881
MC68HC000FN12	MC68HC000P12	12	1.6	—	16 M	16	N/A	N/A	N/A	16	14	No	68881
MC68HC000FN16	MC68HC000P16	16	1.6	—	16 M	16	N/A	N/A	N/A	16	14	No	68881
MC68HC000FN20	—	20	1.6	—	16 M	16	N/A	N/A	N/A	16	14	No	68881

Motorola M68000 Family Upward Compatible 16-/32-Bit Microprocessors (Continued)

MC68020, 32-Bit HCMOS Microprocessor

The 020 has a full 32-bit internal and 32-bit external, regular, symmetrical architecture. It offers all the functionality of the M68000 Family MPUs and maintains software user-code compatibility. The unique on-chip instruction cache helps provide burst-mode operation to 12.5 MIPS. The 020 is the proven leader in high performance systems in office automation, engineering workstations, fault tolerant computers, parallel processors, telephone switching systems, and intelligent controllers.

Mfr.'s Type		Operating Frequency (MHz)	MIPS	MFLOPS	Address Range (Bytes)	Data Bus (Bit)	Instruction Cache (Bytes)	Data Cache (Bytes)	Burst Mode	General Purpose Registers	Address Modes	On-Chip MMU	Floating Point Solution
114 Lead PGA (Gold Lead)	114 Lead PPGA												
MC68020RC16E	MC68020RP16E	16	5.5	0.25	4 G	32	256	N/A	N/A	16	18	No	68882
MC68020RC20E	MC68020RP20E	20	5.5	0.25	4 G	32	256	N/A	N/A	16	18	No	68882
MC68020RC25E	MC68020RP25E	25	5.5	0.25	4 G	32	256	N/A	N/A	16	18	No	68882
MC68020RC33E	—	33	5.5	0.25	4 G	32	256	N/A	N/A	16	18	No	68882

MC68030, Second Generation 32-Bit HCMOS Microprocessor

The 030 contains two independent 32-bit address buses and two 32-bit data buses which allows the the CPU, caches, MMU, and the bus controller to operate in parallel. This makes it possible for the 030 to simultaneously access an instruction from the instruction cache, data from the data cache and instruction/data from external memory. Performance is further enhanced by on-chip 256 byte instruction and data caches, on-chip MMU, and enhanced bus controller.

Mfr.'s Type		Operating Frequency (MHz)	MIPS	MFLOPS	Address Range (Bytes)	Data Bus (Bit)	Instruction Cache (Bytes)	Data Cache (Bytes)	Burst Mode	General Purpose Registers	Address Modes	On-Chip MMU	Floating Point Solution
132 Lead CQFP (Gull Wing)	128 Lead PGA (Gold Lead)												
MC68030FE16C	MC68030RC16C	16	12	0.5	4 G	32	256	256	16 Byte R	16	18	Yes	68882
MC68030FE20C	MC68030RC20C	20	12	0.5	4 G	32	256	256	16 Byte R	16	18	Yes	68882
MC68030FE25C	MC68030RC25C	25	12	0.5	4 G	32	256	256	16 Byte R	16	18	Yes	68882
MC68030FE33C	MC68030RC33C	33	12	0.5	4 G	32	256	256	16 Byte R	16	18	Yes	68882
—	MC68030RC40C	40	12	0.5	4 G	32	256	256	16 Byte R	16	18	Yes	68882
—	MC68030RC50C	50	12	0.5	4 G	32	256	256	16 Byte R	16	18	Yes	68882

MC68040, Third Generation 32-Bit HCMOS Microprocessor

The 040 is a virtual memory microprocessor employing multiple, concurrent execution units and a highly integrated architecture. On a single chip, the 040 integrates a MC68030 compatible integer unit, an IEEE 754 compatible floating point unit (FPU) and fully independent instruction and data demand-paged memory units (MMUs), including independent 4 K-byte instruction and data caches. A high degree of parallelism is achieved through use of multiple independent execution pipelines, multiple internal buses, and a full Harvard architecture, including separate physical caches for instruction and data accesses. The 040 also directly supports cache coherency in multimaster applications with dedicated on-chip bus snooping logic.

Mfr.'s Type		Operating Frequency (MHz)	MIPS	MFLOPS	Address Range (Bytes)	Data Bus (Bit)	Instruction Cache (Bytes)	Data Cache (Bytes)	Burst Mode	General Purpose Registers	Address Modes	On-Chip MMU	Floating Point Solution
184 Lead CQFP (Gull Wing)	179 Lead PGA (Gold Lead)												
MC68040FE25	MC68040RC25	25	35	3.5	4 G	32	4 K	4 K	16 Byte R/W	16	18	Yes*	On-Chip
MC68040FE33	MC68040RC33	33	35	3.5	4 G	32	4 K	4 K	16 Byte R/W	16	18	Yes*	On-Chip
MC68040FE40	MC68040RC40	40	35	3.5	4 G	32	4 K	4 K	16 Byte R/W	16	18	Yes*	On-Chip

*Separate Instruction/Data.

MC68LC040

The MC68LC040 is a compatible integer unit and MMU. It is the ideal solution for cost sensitive computer or sophisticated embedded applications.

MC68LC040FE20	MC68LC040RC20	20	22	N/A	4 G	32	4 K	4 K	16 Byte R/W	16	18	Yes	No
MC68LC040FE25	MC68LC040RC25	25	27	N/A	4 G	32	4 K	4 K	16 Byte R/W	16	18	Yes	No
MC68LC040FE33	MC68LC040RC33	33	36	N/A	4 G	32	4 K	4 K	16 Byte R/W	16	18	Yes	No

MC68882, Enhanced Floating Point Coprocessor

The MC68882 is pin-to-pin hardware and software compatible with the MC68881 Floating Point Coprocessor and implements a variety of performance enhancements including dual-ported registers and an advanced pipeline. Additional enhancements allows execution of multiple instructions in parallel for 2-4 times the Floating Point performance of the MC68881.

Mfr.'s Type		Operating Frequency (MHz)
68 Lead PLCC	68 Lead PGA (Gold Lead)	
MC68882FN16A	MC68882RC16A	16
MC68882FN20A	MC68882RC20A	20

Mfr.'s Type		Operating Frequency (MHz)
184 Lead CQFP (Gull Wing)	179 Lead PGA (Gold Lead)	
MC68882FN25A	MC68882RC25A	25
MC68882FN33A	MC68882RC33A	33

Mfr.'s Type		Operating Frequency (MHz)
184 Lead CQFP (Gull Wing)	179 Lead PGA (Gold Lead)	
MC68882FN40A	MC68882RC40A	40
—	MC68882RC50A	50

High Performance 68K Embedded Controllers

For technical assistance on Motorola's High Performance 68K Embedded Controllers call the High Performance Embedded Systems Phone Helpline: (512) 891-4524.

MC68EC000, 8-/16-/32-Bit HCMOS Embedded Controller

Low cost embedded control MPU with 8-/16-bit selectable data bus. The EC000 has a flexible data bus that can operate in either 8- or 16-bit modes and a 24-bit address bus that provides 16 Mbytes of memory addressing capability. The EC000 represents the lowest cost entry point to any 32-bit architecture.

Mfr.'s Type		Operating Frequency (MHz)	MIPS	Address Range (Bytes)	Instruction Cache (Bytes)	Data Cache (Bytes)	Burst Fill Caches (Bytes)	General Purpose Registers	Address Modes	Floating Point Hardware
68 Lead PLCC	64 Lead PQFP (14 × 14 mm)									
MC68EC000FN8	MC68EC000FU8	8	2.5	16 M	N/A	N/A	N/A	16	14	68882
MC68EC000FN10	MC68EC000FU10	10	2.5	16 M	N/A	N/A	N/A	16	14	68882
MC68EC000FN12	MC68EC000FU12	12	2.5	16 M	N/A	N/A	N/A	16	14	68882
MC68EC000FN16	MC68EC000FU16	16	2.5	16 M	N/A	N/A	N/A	16	14	68882
MC68EC000FN20	MC68EC000FU20	20	2.5	16 M	N/A	N/A	N/A	16	14	68882

MC68EC020, 32-Bit Embedded Controller

The EC020, with a complete 32-bit internal implementation, has a 32-bit data bus and an on-chip instruction cache to provide dramatically increased performance over 8- and 16-bit microprocessors. Upward migration to the EC020 is made simple with dynamic bus sizing, allowing 8-, 16-, and 32-bit peripherals to communicate with the microprocessor.

Mfr.'s Type		Operating Frequency (MHz)	MIPS	Address Range (Bytes)	Instruction Cache (Bytes)	Data Cache (Bytes)	Burst Fill Caches (Bytes)	General Purpose Registers	Address Modes	Floating Point Hardware
100 Lead PQFP	100 Lead PPGA									
MC68EC020FG16	MC68EC020RP16	16	6.5	16 M	256	N/A	N/A	16	18	68882
MC68EC020FG25	MC68EC020RP25	25	6.5	16 M	256	N/A	N/A	16	18	68882

MC68EC030, 32-Bit Enhanced Embedded Controller

32-bit MPU for embedded applications. On-chip 256 byte instruction and data cache provide high speed access for control routines and data. The EC030 utilizes a low cost DRAM bus interface and a burst mode bus interface is provided for efficient DRAM access. Dynamic bus sizing is available for interfacing to 8-, 16-, and 32-bit devices.

Mfr.'s Type		Operating Frequency (MHz)	MIPS	Address Range (Bytes)	Instruction Cache (Bytes)	Data Cache (Bytes)	Burst Fill Caches (Bytes)	General Purpose Registers	Address Modes	Floating Point Hardware
132 Lead CQFP (Gull Wing)	124 Lead PPGA									
MC68EC030FE25C	MC68EC030RP25C	25	10.7	4 G	256	256	16	16	18	68882
MC68EC030FE40C	MC68EC030RP40C	40	10.7	4 G	256	256	16	16	18	68882

High Performance 68K Embedded Controllers (Continued)

MC68EC040, 32-Bit High Performance Embedded Controller

High performance 32-bit MPU with on-chip instruction and data cache provides high speed access for control routines and data. The EC040 utilizes a low cost DRAM bus interface and also supports multimaster/multiprocessor systems with bus snooping.

Mfr.'s Type		Operating Frequency (MHz)	MIPS	Address Range (Bytes)	Instruction Cache (Bytes)	Data Cache (Bytes)	Burst Fill Caches (Bytes)	General Purpose Registers	Address Modes	Floating Point Hardware
184 Lead CQFP (Gull Wing)	179 Lead PGA (Gold Lead)									
MC68EC040FE20	MC68EC040RC20	20	22	4 G	4 K	4 K	16	16	18	68040
MC68EC040FE25	MC68EC040RC25	25	27	4 G	4 K	4 K	16	16	18	68040
MC68EC040FE33	MC68EC040RC33	33	36	4 G	4 K	4 K	16	16	18	68040

High Performance 68K Integrated Processors

MC68306, Integrated 68EC00 Processor

The 68306 includes a 68EC000 core processor, a 68681 Dual Universal Asynchronous Receiver Transmitter (DUART), system integration functions and a DRAM controller. The on-chip DRAM controller gives the 68306 the simplest interface to DRAM based designs. The DRAM controller easily accommodates 64 Mbytes of memory. The 68306 saves time in the design cycle by providing valuable 68000 system components in one chip.

Mfr.'s Type		Operating Frequency (MHz)	Core Processor	DMA	Serial Processor	Time Processor Unit	Flash EEPROM	Serial I/O	Timers	A/D Converter	SRAM	DRAM Controller	Glue Logic (SIM)
132 Lead PQ (Gull Wing)	144 Lead TQFP												
MC68306FC16	MC68306PV16	16	68EC000	N/A	N/A	N/A	N/A	Yes	N/A	N/A	N/A	Yes	Yes

MC68340, Integrated Multiprotocol Processor with DMA

The 68340 features a CPU32 core and a high speed two channel, 32-bit Direct Memory Access (DMA) controller that eliminates the usual bus arbitration and synchronization delays, maximizing data throughout (25-Mbytes per second on a 16-bit bus. It also contains a SIM, a 68681/2681 compatible DUART, two identical counters/timers each with a 16-bit counter and an 8-bit prescaler with 80 ns resolution.

Mfr.'s Type		Operating Frequency (MHz)	Core Processor	DMA	Serial Processor	Time Processor Unit	Flash EEPROM	Serial I/O	Timers	A/D Converter	SRAM	DRAM Controller	Glue Logic (SIM)
144 Lead CQFP (Gull Wing)	144 Lead TQFP												
MC68340FE16E	MC68340PV16C	16	CPU32	Yes	N/A	N/A	N/A	Yes	2	N/A	N/A	N/A	Yes
MC68340FE25E	MC68340PV25C	25	CPU32	Yes	N/A	N/A	N/A	Yes	2	N/A	N/A	N/A	Yes
MC68340FE16VE*	—	25	CPU32	Yes	N/A	N/A	N/A	Yes	2	N/A	N/A	N/A	Yes

*3.3 Volt Version.

MC68349, Dragon 1 High Performance Integrated Processor

The 68439 consists of a high performance CPU30 processor (CPU32) 32-bit execution unit, 32-bit data bus, instruction cache, quad data memory module, 32-bit dual DMA controllers and two serial channels.

Mfr.'s Type	Operating Frequency (MHz)	Core Processor	DMA	Serial Processor	Time Processor Unit	Flash EEPROM	Serial I/O	Timers	A/D Converter	SRAM	DRAM Controller	Glue Logic (SIM)
160 Lead PFP (28 × 28 mm)												
MC68349FT16A	16	CPU32+	Yes	N/A	N/A	N/A	Yes	N/A	N/A	N/A	N/A	Yes
MC68349FT25A	25	CPU32+	Yes	N/A	N/A	N/A	Yes	N/A	N/A	N/A	N/A	Yes

High Performance 68K Integrated Data Communication Processors

For technical assistance on Motorola's High Performance 68K Integrated Data Communication Processors, call the Data Communications Phone Helpline: (512) 891-3417.

MC68302, Integrated Multiprotocol Processor

The 68302 is a three channel communications device that may be configured to support a number of popular industry interfaces, including those for the Integrated Services Digital Network (ISDN) basic rate and terminal adapter applications. Through a combination of architectural and programmable features concurrent operation of different protocols (HDLC/SDLC, UART, BISYNC, DDCMP, or transparent modes) can easily be achieved. The 68302 contains on-chip DMA, RAM, timers, I/O, chip select and a wait state interrupt controller.

Mfr.'s Type		Operating Frequency (MHz)	Core Processor	DMA	Serial Processor	Time Processor Unit	Flash EEPROM	Serial I/O	Timers	A/D Converter	SRAM	DRAM Controller	Glue Logic (SIM)
132 Lead PQ (Gull Wing)	132 Lead PGA (Gold Lead)												
MC68302FC16C	MC68302RC16C	16	68000	Yes	Yes	N/A	N/A	Yes	1	N/A	1 K	N/A	Yes
MC68302FC20C	MC68302RC20C	20	68000	Yes	Yes	N/A	N/A	Yes	1	N/A	1 K	N/A	Yes
MC68302FC25C	MC68302RC25C	25	68000	Yes	Yes	N/A	N/A	Yes	1	N/A	1 K	N/A	Yes

MC68360, QUICC QUad Integrated Communications Controller

Mfr.'s Type		Operating Frequency (MHz)	Core Processor	DMA	Serial Processor	Time Processor Unit	Flash EEPROM	Serial I/O	Timers	A/D Converter	SRAM	DRAM Controller	Glue Logic (SIM)
241 Lead CQFP (Gull Wing)	241 Lead PGA (Gold Lead)												
MC68360FE25C	MC68360RC25C	25	CPU32+	Yes	Yes	N/A	N/A	No	4	N/A	N/A	Yes	Yes
MC68EN360FE25C*	MC68EN360RC25C*	25	CPU32+	Yes	Yes	N/A	N/A	No	4	N/A	N/A	Yes	Yes

*Two SCCs supports Ethernet on "EN" version.

One-Time Programmable (OTP) Microcontrollers

MC68HC705B5

Mfr.'s Type				ROM (Bytes)	RAM (Bytes)	EEPROM (Bytes)	Timer	Serial	A/D	PWM	I/O	COP	Comments	Temperature Range (°C)	No. of Leads
Shrink DIP	QFP	PLCC	PDIP												
MC68HC705B5CB	—	MC68HC705B5CFN	—	6 K	176	N/A	16-Bit: (2 IC, 2 OC)	SCI	8-Ch. (8-Bit)	2-Ch. (8-Bit)	24 I/O, 8 I, 2 O	Yes	Programmable Pulldowns (16 pins) EPROM with Protect	–40 to +85	56/52

MC68HC705B16

—	MC68HC705B16CFU	MC68HC705B16CFN	—	15.0 K	352	255	16-Bit: (2 IC, 2 OC)	SCI	8-Ch. (8-Bit)	2-Ch. (8-Bit)	32 I/O, 2 O	Yes	On-Chip Charge Pump EEPROM Write Protect	–40 to +85	64/52

MC68HC705C8A

MC68HC705C8ACB	MC68HC705C8ACFB*	MC68HC705C8ACFN	MC68HC705C8ACP	8.0 K	304	N/A	16-Bit (1 IC, 1 OC)	SPI, SCI	N/A	N/A	24 I/O, 7 I	Yes	Mask Option Pullups (8 Pins) KBI ,(8 Pins), 1 High Current Pin (20 mA Sink)	–40 to +85	42/44/44/40

*QFP (10 × 10) Package. PWM=Pulse Width Modulation. I/O=Bidirectional Input and Output Port Pins. COP=Computer Operating Properly (Watch Dog Timer). IC=Input Capture. OC=Output Compare. MFT=Multi Function Timer. RTC=Real Time Clock. RTI= Real Time Interrupt. SCI=Serial Communications Interface. SPI=Serial Peripheral Interface. SIOP=Simple Serial I/O Port. I=Input Only Port Pins. O=Output Only Port Pins. KBI=Keyboard Interrupt.

One-Time Programmable (OTP) Microcontrollers (Continued)

Mfr.'s Type				ROM (Bytes)	RAM (Bytes)	EEPROM (Bytes)	Timer	Serial	A/D	PWM	I/O	COP	Comments	Temperature Range (°C)	No. of Leads
Shrink DIP	QFP	PLCC	PDIP												
XC68HC705C9															
—	—	XC68HC705C9CFN	XC68HC705C9CP	16.0 K	352	N/A	16-Bit (1 IC, 1 OC)	SPI, SCI	N/A	N/A	31 I/O	Yes	—	–40 to +85	44/40
MC68HC705E1															
MC68HC705E1DW**	—	—	MC68HC705E1P	4.0 K	368	N/A	MFT, RTC, RTI	N/A	N/A	N/A	20 I/O	Yes	32 KHz Phase Locked Loop Synthesizer	0 to +70	28/28
MC68HC705J2															
MC68HC705J2CDW**	—	—	MC68HC705J2CP	2.0 K	112	N/A	MFT, RTI	N/A	N/A	N/A	14 I/O	Yes	—	–40 to +85	20/20
MC68HC705K1															
MC68HC705K1CDW**	—	—	MC68HC705K1CP	2.0 K	112	N/A	MFT, RTI	N/A	N/A	N/A	10 I/O	Yes	4 Hi Current Pins (8 mA Sink), PEP (64 Bits), Programmable Pulldowns (10 Pins)	–40 to +85	16/16
MC68HC705L5†															
—	MC68HC705L5FU	—	—	8.0 K	256	N/A	16-Bit: (1 IC, 1 OC), RTI, 8-Bit: (1 IC, 1 OC)	SIOP	N/A	N/A	14 I/O, 10 I, 15 O	No	KBI (8 Pins), Dual Oscillators, 8 High, Current Pins (10 mA Sink) Programmable Pullups (24 Pins), Open Drain (31 pins)	0 to +70	80
MC68HC705P6															
MC68HC705P6CDW**	—	—	MC68HC705P6CP	4.5 K	176	N/A	16-Bit: (1 IC, 1 OC)	SIOP	4-Ch. (8-Bit)	N/A	20 I/O, 1 I	Yes	—	–40 to +85	28/28
MC68HC705P9															
MC68HC705P9CDW**	—	—	MC68HC705P9CP	2.0 K	128	N/A	16-Bit: (1 IC, 1 OC)	SIOP	4-Ch. (8-Bit)	N/A	20 I/O, 1 I	Yes	—	–40 to +85	28/28

*QFP (10 × 10) Package. **Wide SOIC Package. †156 Segment LCD: (1-4 × 27-39) display drive. PWM=Pulse Width Modulation. I/O=Bidirectional Input and Output Port Pins. COP=Computer Operating Properly (Watch Dog Timer). IC=Input Capture. OC=Output Compare. MFT=Multi Function Timer. RTC=Real Time Clock. RTI= Real Time Interrupt. SCI=Serial Communications Interface. SPI=Serial Peripheral Interface. SIOP=Simple Serial I/O Port. I=Input Only Port Pins. O=Output Only Port Pins. KBI=Keyboard Interrupt.

Advanced HCMOS Microcontrollers

68HC11A and 68L11A, 8-Bit

Mfr.'s Type			ROM (Bytes)	RAM (Bytes)	EEPROM (Bytes)	Timer	Serial	A/D	I/O	Bus Speed (MHz)	Bus Types	Operating Voltage (V)	Comments	Temperature Range (°C)	No. of Leads
QFP	PLCC	PDIP													
— —	MC68HC11A0FN MC68HC11A1FN	MC68HC11A0P MC68HC11A1P	0	256	0 512	16-Bit: 3 IC, 5 OC, RTI, WDOG, Pulse Accumulator	SPI, SCI	Yes	22	0 to 2.0	Mux	4.5 to 5.5	68HC24 PRU, Mux Bus	0 to +70	52/48 52/48
— —	MC68L11A0FN2 MC68L11A1FN2	— —			0 512							3.0 to 5.5	Low Power, 68HC24 PRU, Mux Bus	0 to +70	52 52
68HC11D, 8-Bit															
MC68HC11D0FB	MC68HC11D0FN	MC68HC11D0P	192	0	14	16-Bit: 3 or 4 IC , 4 or 5 OC, RTI, WDOG, Pulse Accumulator	SPI, SCI	No	14	0 to 2.0	Mux	4.5 to 5.5	Mux Bus	0 to +70	44/44/40
68HC11E and 68L11E, 8-Bit															
— —	MC68HC11E0FN MC68HC11E1FN	— —	0	512	0 512	16-Bit: 3 or 4 IC , 4 or 5 OC, RTI, WDOG, Pulse Accumulator	SPI, SCI	Yes	22	0 to 2.0	Mux	4.5 to 5.5	68HC24 PRU, Mux Bus, 4 EEPROM Block Protects	0 to +70 0 to +70	52 52
— —	MC68L11E0FN2 MC68L11E1FN2	— —			0 512							3.0 to 5.5	Low Power 68HC11	0 to +70 0 to +70	52 52
68HC11F and 68L11F, 8-Bit															
—	MC68HC11F1CFN3	—	0	1 K	512	16-Bit: 3 or 4 IC , 4 or 5 OC, RTI, WDOG, Pulse Accumulator	SPI, SCI	Yes	30	0 to 3.0	Non-Mux	4.5 to 5.5	Non-Mux Bus Chip Selects, 4 EEPROM Block Protects	–40 to +85	68
68HC11K, 8-Bit															
—	MC68HC11K1CFN3	—	0	768	640	16-Bit: 3 or 4 IC, 4 or 5 OC, 4 PWM, RTI, WDOG, Pulse Accumulator	SPI, SCI+	Yes	37	0 to 3.0	Non-Mux	4.5 to 5.5	Non-Mux Bus Chip Selects, 5 EEPROM Block Protects	–40 to +85	84
68HC11L, 8-Bit															
—	MC68HC11L1CFN2	—	0	512	512	16-Bit: 3 or 4 IC , 4 or 5 OC, RTI, WDOG, Pulse Accumulator	SPI, SCI	Yes	30	0 to 2.0	Mux	4.5 to 5.5	68HC24 PRU, Mux Bus, 4 EEPROM Block Protects	–40 to +85	68

68HC711D, One Time Programmable 8-Bit

Mfr.'s Type			EPROM (Bytes)	RAM (Bytes)	EEPROM (Bytes)	Timer	Serial	A/D	I/O	Bus Speed (MHz)	Bus Types	Operating Voltage (V)	Comments	Temperature Range (°C)	No. of Leads
44 Lead QFP	44 Lead PLCC	40 Lead PDIP													
MC68HC711D3CFB2	MC68HC711D3CFN2	MC68HC711D3CP2	4 K	192	0	16-Bit: 3 or 4 IC , 4 or 5 OC, RTI, WDOG, Pulse Accumulator	SPI, SCI	No	32	0 to 2.0	Mux	4.5 to 5.5	Mux Bus	–40 to +85	44/44/40

IC=Input Capture. OC=Output Capture. RTI=Real Time Interrupt. PRU=Port Replacement Unit. SCI=Serial Communication Interface. SCI+=Enhanced SCI. SPI=Serial Peripheral Interface. A/D= Analog to Digital Converter. WDOG=Watchdog Timer.OC=Output Capture.

Advanced HCMOS Microcontrollers (Continued)

68HC711E, One Time Programmable 8-Bit

Mfr.'s Type			EPROM (Bytes)	RAM (Bytes)	EEPROM (Bytes)	Timer	Serial	A/D	I/O	Bus Speed (MHz)	Bus Types	Operating Voltage (V)	Comments	Temperature Range (°C)	No. of Leads
44 Lead QFP	44 Lead PLCC	40 Lead PDIP													
—	MC68HC711E9CFN2	—	12 K	512	512	16-Bit: 3 or 4 IC , 4 or 5 OC, RTI, WDOG, Pulse Accumulator	SPI, SCI	Yes	38	0 to 2.0	Mux	4.5 to 5.5	68HC24 PRU, Mux Bus, 4 EEPROM Block Protects	–40 to +85	52

68HC711L, One Time Programmable 8-Bit

—	MC68HC711L6CFN2	—	16 K	512	512	16-Bit: 3 or 4 IC , 4 or 5 OC, RTI, WDOG, Pulse Accumulator	SPI, SCI	Yes	46	0 to 2.0	Mux	4.5 to 5.5	68HC24 PRU, Mux Bus, 4 EEPROM Block Protects	–40 to +85	68

68HC811E and 68SEC811E, 8-Bit

—	MC68HC811E2FN	MC68HC811E2P	0	256	2 K	16-Bit: 3 or 4 IC , 4 or 5 OC, RTI, WDOG, Pulse Accumulator	SPI, SCI	Yes	38	0 to 2.0	Mux	4.5 to 5.5	68HC24 PRU, Mux Bus, 4 EEPROM Block Protects	0 to +70	52/48
—	MC68SEC811E2FN	MC68SEC811E2P											Secured, 68HC24 PRU, Mux Bus, 4 EEPROM Block Protects	0 to +70	52/48

IC=Input Capture. OC=Output Capture. RTI=Real Time Interrupt. PRU=Port Replacement Unit. SCI=Serial Communication Interface. SCI+=Enhanced SCI. SPI=Serial Peripheral Interface. A/D= Analog to Digital Converter.WDOG=Watchdog Timer.OC=Output Capture.

68HC16Z, 16-Bit Advanced Microcontrollers

Mfr.'s Type	ROM (Bytes)	RAM (Bytes)	EEPROM (Bytes)	Timer	Serial	ADC	I/O	Clock Speed (MHz)	Modes	Operating Voltage (V)	Comments	Temperature Range (°C)	No. of Leads
PQFP													
MC68HC16Z1CFC16	0	1 K	0	3 or 4 IC, 4 or 5 OC, 2 PWM, PIT, WDOG	QSPI, SCI	10-Bit	46	0 to 16.78	External Bus, Background Debug	4.5 to 5.5	External Bus, 9 Chip Selects, Synthesized Clock, 68HC33 PRU	–40 to +85	132

68331 and 68332, 32-Bit Advanced Microcontrollers

MC68331CFC16	0	0	0	3 or 4 IC, 4 or 5 OC, 2 PWM, PIT, WDOG	QSPI, SCI	No	43	0 to 20.97	External Bus, Background Debug	4.5 to 5.5	External Bus, 12 Chip Selects, Synthesized Clock	–40 to +85	132
MC68332ACFC16	0	2 K	0	16 Channel Programmable TPU, PIT, WDOG	QSPI, SCI	No	47	0 to 20.97	External Bus, Background Debug	4.5 to 5.5	External Bus, 12 Chip Selects, Synthesized Clock	–40 to +85	132

ADC=8/10-Bit Analog to Digital Converter Module. PIT=Programmable Interrupt Timer.IC=Input Capture. OC=Output Capture. PWM=Pulse Width Modulation. SCI=Serial Communication Interface.TPU=Time Processing Unit. DMA=Direct Memory Access. QSPI=Queued SPI. WDOG=Watchdog Timer.

MC14000: Metal Gate CMOS Logic Integrated Circuits

Mfr.'s Type		Description	No. of Leads
PDIP	SOIC		
MC14001BCP	MC14001BD	Quad 2-Input NOR Gate	14
—	MC14001UBD	Quad 2-Input NOR Gate, Inverting/Non-Buffered	14
MC14002BCP	—	Dual 4-Input NOR Gate	—
MC14006BCP	—	18-Bit Static Shift Register	14
MC14007UBCP	MC14007UBD	Dual Complementary Pair Plus Inverter	14
MC14008BCP	—	4-Bit Full Adder	16
MC14011BCP	MC1411BD	Quad 2-Input NAND Gate	14
MC14011UBCP	MC14011UBD	Quad 2-Input NAND Gate, Inverting/Non-Buffered	14
MC14012BCP	—	Dual 4-Input NAND Gate	14
MC14013BCP	MC14013BD	Dual Type D Flip-Flop	14
MC14014BCP	—	8-Bit Static Shift Register, Synchronous Parallel Input/Serial Output	16
MC14015BCP	MC14015BD	Dual 4-Bit Static Shift Register, Serial Input/Parallel Output	16
MC14016BCP	MC14016BD	Quad Analog Switch/Quad Multiplexer	14
MC14017BCP	MC14017BD	5-Stage Johnson Decade Counter with Code Converter, Divide by N	16
MC14018BCP	—	Presettable/Resettable Divide By N Johnson Counter	16
MC14020BCP	MC14020BD	14-Bit Binary Counter	16
MC14021BCP	MC14021BD	8-Bit Static Shift Register, Asynchronous Parallel Input/Serial Output	16
MC14022BCP	—	4-Stage Johnson Octal Counter	16
MC14023BCP	MC14023BD	Triple 3-Input NAND Gate	14
MC14024BCP	MC14024BD	7-Stage Ripple Counter	14
MC14025BCP	—	Triple 3-Input NOR Gate	14
MC14027BCP	MC14027BD	Dual J-K Flip-Flop	16
MC14028BCP	MC14028BD	BCD to Decimal Decoder, Binary To Octal Decoder	16
MC14029BCP	—	Binary/Decade Up/Down Counter	16
MC14035BCP	—	4-Bit Parallel-In/Parallel-Out Shift Register	16
MC14040BCP	MC14040BD	12-Bit Binary Counter	16
MC14042BCP	—	Quad Transparent Latch	16
MC14043BCP	MC14043BD	Quad NOR R-S Latch	16
MC14044BCP	—	Quad NAND R-S Latch	16
MC14046BCP	MC14046BDW	Phase Locked Loop	16
MC14049BCP	MC14049BD	Hex Inverter/Buffer	16
MC14049UBCP	MC14049UBD	Hex Inverter/Buffer	16
MC14050BCP	MC14050BD	Hex Non-Inverting Buffer	16
MC14051BCP	MC14051BD	8-Channel Analog Multiplexer/Demultiplexer	16
MC14052BCP	MC14052BD	Dual 4-Channel Analog Multiplexer/Demultiplexer	16
MC14053BCP	MC14053BD	Triple 2-Channel Analog Multiplexer/Demultiplexer	16
MC14060BCP	MC14060BD	14-Bit Binary Ripple Counter and Oscillator	16
MC14066BCP	MC14066BD	Quad Analog Switch/Quad Multiplexer	14
MC14067BCP	—	16-Channel Analog Multiplexer/Demultiplexer	24
MC14068BCP	—	8-Input NAND Gate	14
MC14069UBCP	MC14069UBD	Hex Inverter	14
MC14070BCP	MC14070BD	Quad Exclusive OR Gate	14
MC14071BCP	MC14071BD	Quad 2-Input OR Gate	14
MC14072BCP	—	Dual 4-Input OR Gate	14
MC14073BCP	—	Triple 3-Input AND Gate	14
MC14075BCP	—	Triple 3-Input OR Gate	14
MC14076BCP	—	4-Bit D-Type Register with Three-State Outputs	16
MC14077BCP	—	Quad Exclusive NOR Gate	14
MC14078BCP	—	8-Input NOR Gate	14
MC14081BCP	MC14081BD	Quad 2-Input AND Gate	14
MC14082BCP	—	Dual 4-Input AND Gate	14
MC14093BCP	MC14093BD	Quad 2-Input NAND Schmitt Trigger	14
MC14094BCP	MC14094BD	8-Bit Shift/Store Register With Three-State Outputs	16
MC14099BCP	MC14099BDW	8-Bit Addressable Latch	16

Mfr.'s Type		Description	No. of Leads
PDIP	SOIC		
MC14106BCP	MC14106BD	Hex Schmitt Trigger	14
MC14161BCP	—	Synchronous Presettable 4-Bit Binary Counter	16
MC14174BCP	—	Hex D-Type Flip-Flop	16
MC14175BCP	—	Quad D-Type Flip-Flop	16
MC14490P	MC14490DW	Hex Contact Bounce Eliminator	16
MC14500BCP	—	1-Bit Industrial Control Unit	16
MC14502BCP	—	Strobed Hex Inverter/Buffer	16
MC14503BCP	MC14503BD	Hex Non-Inverting Three-State Buffer	16
MC14504BCP	MC14504BD	Hex Level Shifter For TTL To CMOS Or CMOS To CMOS	16
MC14508BCP	—	Dual 4-Bit Latch	24
MC14510BCP	—	BCD Up/Down Counter	16
MC14511BCP	—	BCD To Seven Segment Latch/Decoder/Driver	16
MC14512BCP	—	8-Channel Data Selector	16
MC14513BCP	—	BCD To Seven Segment Latch/Decoder/Driver With Ripple Blanking	18
MC14514BCP	—	4-Bit Transparent Latch/4 To 16 Line Decoder, Active High Output	24
MC14515BCP	—	4-Bit Transparent Latch/4 To 16 Line Decoder, Active Low Output	24
MC14516BCP	—	Binary Up/Down Counter	16
MC14517BCP	MC14517BDW	Dual 64-Bit Static Shift Register	16
MC14518BCP	—	Dual BCD Up Counter	16
MC14519BCP	—	4-Bit AND/OR Selector	16
MC14520BCP	—	Dual Binary Up Counter	16
MC14521BCP	MC14521BD	24-Stage Frequency Divider	16
MC14522BCP	—	Presettable 4-Bit BCD Down Counter	16
MC14526BCP	—	Presettable 4-Bit Binary Down Counter	16
MC14527BCP	—	BCD Rate Multiplier	16
MC14528BCP	—	Dual Monostable Multivibrator	16
MC14529BCP	MC14529BD	Dual 4-Channel Analog Data Selector	16
MC14532BCP	—	8-Bit Priority Encoder	16
MC14534BCP	—	5 Cascaded BCD Counters	24
MC14536BCP	MC14536BDW	Programmable Timer, 24 Stage Binary Ripple Counter	16
MC14538BCP	MC14538BDW	Dual Precision Retriggerable/Resettable Monostable Multivibrator	16
MC14539BCP	—	Dual 4-Channel Data Selector/Multiplexer	16
MC14541BCP	MC14541BD	Programmable 16 Stage Timer with Oscillator	16
MC14543BCP	MC14543BD	BCD To Seven Segment Latch/Decoder/Driver For LCDs	16
MC14544BCP	—	BCD To Seven Segment Latch/Decoder/Driver For LCDs With Ripple Blanking	18
MC14547BCP	—	High Current BCD To Seven Segment Decoder/Driver	16
MC14549BCP	—	8-Bit Successive Approximation Register, Cascadeable	16
MC14551BCP	MC14551BD	Quad 2-Channel Analog Multiplexer/Demultiplexer	16
MC14553BCP	—	Synchronous 3-Digit BCD Counter	16
MC14555BCP	—	Dual Binary To 1 Of 4 Decoder/Demultiplexer, Active High Outputs	16
MC14556BCP	—	Dual Binary To 1 Of 4 Decoder/Demultiplexer, Active Low Outputs	16
MC14557BCP	MC14557BDW	1 To 64-Bit Variable Length Shift Register	16
MC14559BCP	—	8-Bit Successive Approximation Register With Feed Forward	16
MC14560BCP	—	Dual 4-Bit NBCD Adder	16
MC14562BCP	—	128-Bit Static Shift Register	14
MC14566BCP	—	Industrial Time Based Generator	16
MC14568BCP	—	Phase Comparator and 4-Bit Presettable Up Binary Counter	16
MC14569BCP	—	Programmable Divide By N Dual 4-Bit Binary/BCD Down Counter	16
MC14572UBCP	—	Quad Inverter, 2-Input NOR Gate, 2-Input NAND Gate	16
MC14583BCP	—	Dual Schmitt Trigger	16
MC14584BCP	MC14584BD	Hex Schmitt Trigger	14
MC14585BCP	—	4-Bit Magnitude Comparator	16
MC14599BCP	—	8-Bit Addressable D Latch	18

MC74ACT and MC74ACT: FACT, Very High Speed, Low Power Advanced CMOS Logic Integrated Circuits

Mfr.'s Type				Description	No. of Leads
MC74AC		MC74ACT			
PDIP	SOIC	PDIP	SOIC		
MC74AC00N	MC74AC00D	MC74ACT00N	MC74ACT00D	Quad 2-Input NAND Gate	14
MC74AC02N	MC74AC02D	MC74ACT02N	—	Quad 2-Input NOR Gate	14
MC74AC04N	MC74AC04D	MC74ACT04N	MC74ACT04D	Hex Inverter	14
MC74AC05N	MC74AC05D	MC74ACT05N	MC74ACT05D	Hex Inverter with Open-Drain Outputs	14
MC74AC08N	MC74AC08D	MC74ACT08N	MC74ACT08D	Quad 2-Input AND Gate	14
—	—	MC74ACT109N	MC74ACT109D	Dual JK Positive Edge Triggered Flip-Flop	16
MC74AC112N	MC74AC112D	MC74ACT112N	MC74ACT112D	Dual JK Negative Edge Triggered Flip-Flop	16
MC74AC113N	MC74AC113D	MC74ACT113N	MC74ACT113D	Dual JK Negative Edge Triggered Flip-Flop	14
MC74AC125N	MC74AC125D	MC74ACT125N	MC74ACT125D	Quad Buffer with Three-State Outputs	14
—	—	—	MC74ACT132D	Quad 2-Input NAND Schmitt Trigger	14
MC74AC138N	MC74AC138D	MC74ACT138N	MC74ACT138D	1-of-8 Decoder/Demultiplexer	16
MC74AC139N	MC74AC139D	—	MC74ACT139D	Dual 1-of-4 Decoder/Demultiplexer	16
MC74AC14N	MC74AC14D	MC74ACT14N	MC74ACT14D	Hex Inverter Schmitt Trigger	14
MC74AC151N	MC74AC151D	MC74ACT151N	MC74ACT151D	1-of-8 Decoder/Demultiplexer	16
—	—	—	MC74ACT153D	Dual 4-Input Multiplexer	16
MC74AC157N	MC74AC157D	MC74ACT157N	MC74ACT157D	Quad 2-Input Multiplexer	16
—	—	MC74ACT158N	MC74ACT158D	Quad 2-Input Multiplexer	16
MC74AC160N	MC74AC160D	—	—	Synchronous Presettable BCD Decade Counter	16
MC74AC161N	MC74AC161D	MC74ACT161N	MC74ACT161D	Synchronous Presettable Binary Counter	16
MC74AC163N	MC74AC163D	MC74ACT163N	MC74ACT163D	Synchronous Presettable Binary Counter	16
MC74AC174N	MC74AC174D	MC74ACT174N	MC74ACT174D	Hex D Flip-Flop With Master Reset	16
MC74AC175N	MC74AC175D	MC74ACT175N	MC74ACT175D	Quad D Flip-Flop With Master Reset	16
MC74AC20N	MC74AC20D	—	—	Dual 4-Input NAND Gate	14
MC74AC240N	—	MC74ACT240N	MC74ACT240DW	Octal Buffer/Line Driver With Three-State Outputs	20
MC74AC241N	MC74AC241DW	—	—	Octal Buffer/Line Driver With Three-State Outputs	20
MC74AC244N	MC74AC244DW	MC74ACT244N	MC74ACT244DW	Octal Buffer/Line Driver With Three-State Outputs	20
MC74AC245N	MC74AC245DW	MC74ACT245N	MC74ACT245DW	Octal Bidirectional Transceiver With Three-State Outputs	20
MC74AC251N	MC74AC251D	—	MC74ACT251D	8-Input Multiplexer with Three-State Outputs	16
—	—	—	MC74ACT253D	Dual 4-Input Multiplexer With Three-State Outputs	16
—	—	MC74ACT257N	MC74ACT257D	Quad 2-Input Multiplexer With Three-State Outputs	16
—	—	—	MC74ACT258D	Quad 2-Input Multiplexer With Three-State Outputs	16
MC74AC273N	MC74AC273DW	MC74ACT273N	MC74ACT273DW	Octal D Flip-Flop	20
—	—	MC74ACT299N	MC74ACT299DW	8-Input Universal Shift/Storage Register With Common Parallel I/O Pins	20
—	—	MC74ACT323N	MC74ACT323DW	8-Input Universal Shift/Storage Register With Synchronous Reset and Common I/O Pins	20
MC74AC32N	MC74AC32D	MC74ACT32N	MC74ACT32D	Quad 2-Input OR Gate	14
MC74AC373N	MC74AC373DW	MC74ACT373N	MC74ACT373DW	Octal Transparent Latch With Three-State Outputs	20
MC74AC374N	MC74AC374DW	—	MC74ACT374DW	Octal D-Type Flip-Flop With Three-State Outputs	20
—	—	MC74ACT377N	MC74ACT377DW	Octal D-Type Flip-Flip With Clock Enable	20
—	—	—	MC74ACT378D	Parallel D Register With Enable	16
MC74AC4040N	—	—	—	12-Stage Binary Ripple Counter	16
—	MC74AC533DW	MC74ACT533N	MC74ACT533DW	Octal Transparent Latch with Three-State Outputs	20
MC74AC534N	MC74AC534DW	—	—	Octal D-Type Flip-Flop With Three-State Outputs	20
MC74AC540N	—	MC74ACT540N	MC74ACT540DW	Octal Buffer/Line Driver With Three-State Outputs	20
MC74AC541N	MC74AC541DW	MC74ACT541N	MC74ACT541DW	Octal Buffer/Line Driver With Three-State Outputs, Non-Inverting	20
MC74AC573N	MC74AC573DW	MC74ACT573N	MC74ACT573DW	Octal D-Type Latch With Three-State Outputs	20
MC74AC574N	MC74AC574DW	MC74ACT574N	MC74ACT574DW	Octal D-Type Flip-Flop With Three-State Outputs	20
—	—	MC74ACT640N	—	Octal Bidirectional Transceiver With Three-State Outputs	20
—	—	MC74ACT643N	—	Octal Bidirectional Transceiver With Three-State Outputs	20
—	—	MC74ACT646N	MC74ACT646DW	Octal Transceiver/Register With Three-State Outputs, Non-Inverting	24
MC74AC652N	MC74AC652DW	MC74ACT652N	MC74ACT652DW	Octal Transceiver/Register With Three-State Outputs, Non-Inverting	24
MC74AC74N	MC74AC74D	MC74ACT74N	MC74ACT74D	Dual D-Type Positive Edge Triggered Flip-Flop	14
MC74AC86N	MC74AC86D	MC74ACT86N	MC74ACT86D	Quad 2-Input Exclusive OR Gate	14

MC74F: FAST Schottky TTL Logic Integrated Circuits

Mfr.'s Type		Description	No. of Leads
PDIP	SOIC		
MC74F00N	MC74F00D	Quad 2-Input NAND Gate	14
MC74F02N	MC74F02D	Quad 2-Input NOR Gate	14
MC74F04N	MC74F04D	Hex Inverter	14
MC74F08N	MC74F08D	Quad 2-Input AND Gate	14
MC74F109N	MC74F109D	Dual JK Positive Edge Triggered Flip-Flop	16
MC74F10N	MC74F10D	Triple 3-Input NAND Gate	14
MC74F112N	MC74F112D	Dual JK Negative Edge Triggered Flip-Flop	16
MC74F11N	MC74F11D	Triple 3-Input AND Gate	14
MC74F1245N	—	Octal Bidirectional Transceiver With Three-State Inputs/Outputs	20
MC74F125N	MC74F125D	Three-State Quad Buffer, Enable Low	14
MC74F126N	MC74F126D	Three-State Quad Buffer, Enable High	14
MC74F132N	—	Quad 2-Input NAND Schmitt Trigger	14
MC74F138N	MC74F138D	1 Of 8 Decoder/Demultiplexer	16
MC74F139N	MC74F139D	Dual 1 Of 4 Decoder	16
MC74F148N	MC74F148D	8-Line to 3-Line Priority Encoder	16
MC74F14N	MC74F14D	Hex 2-Input Schmitt Trigger Inverter	14
MC74F151N	MC74F151D	8-Input Multiplexer	16
MC74F153N	MC74F153D	Dual 4-Input Multiplexer	16
MC74F157AN	MC74F157AD	Quad 2-input Multiplexer	16
MC74F158AN	MC74F158AD	Quad 2-Input Multiplexer	16
MC74F160AN	—	Synchronous Presettable BCD Decade Counter	16
MC74F161AN	MC74F161AD	Synchronous Presettable 4-Bit Binary Counter	16
MC74F163AN	MC74F163AD	Synchronous Presettable 4-Bit Binary Counter	16
MC74F164N	MC74F164D	8-Bit Serial-In, Parallel-Out Shift Register	14
MC74F169N	MC74F169D	4-Stage Synchronous Bidirectional Modulo-16 Binary Counter	16
MC74F174N	MC74F174D	Hex D Flip-Flop With Master Reset	16
MC74F175N	MC74F175D	Quad D Flip-Flop	16
MC74F194N	MC74F194D	4-Bit Bidirectional Universal Shift Register	16
MC74F20N	MC74F20D	Dual 4-Input NAND Gate	14
MC74F21N	MC74F21D	Dual 4-Input AND Gate	14
MC74F240N	MC74F240DW	Octal Inverting Buffer/Line Driver With Three-State Outputs	20
MC74F241N	MC74F241DW	Octal Buffer/Line Driver With Three-State Outputs	20
—	MC74F243D	Quad Bus Transceiver With Three-State Outputs	14
MC74F244N	MC74F244DW	Octal Buffer/Line Driver With Three-State Outputs, Enable Low	20
MC74F245N	MC74F245DW	Octal Bidirectional Transceiver With Three-State Inputs/Outputs	20
MC74F251N	MC74F251D	8-Input Multiplexer With Three-State Outputs	16
MC74F253N	MC74F253D	Dual 4-Input Multiplexer With Three-State Outputs	16
MC74F257AN	MC74F257AD	Quad 2-Input Multiplexer With Three-State Outputs	16
MC74F258AN	MC74F258AD	Quad 2-Input Multiplexer With Three-State Outputs, Inverting	16
MC74F259N	MC74F259D	8-Bit Addressable Latch	16

Mfr.'s Type		Description	No. of Leads
PDIP	SOIC		
MC74F269N	MC74F269DW	8-Bit Bidirectional Binary Counter	24
MC74F280N	MC74F280D	9-Bit Parity Generator/Checker	14
MC74F283N	MC74F283D	4-Bit Binary Full Adder with Fast Carry	16
—	MC74F299DW	8-Input Universal Shift Register with Common Parallel I/O Pins	20
MC74F32N	MC74F32D	Quad 2-Input OR Gate	14
MC74F350N	—	4-Bit Shifter with Three-State Outputs	16
—	MC74F365D	Hex Buffer/Driver Gate Enable Non-inverting, Three-State	16
MC74F367N	MC74F367D	Hex Buffer/Driver 4-Bit Plus 2-Bit Non-Inverting, Three-State	16
MC74F373N	MC74F373DW	Octal Transparent Latch with Three-State Outputs	20
MC74F374N	MC74F374DW	Octal D-Type Flip-Flop with Three-State Outputs	20
MC74F377N	MC74F377DW	Octal D-Type Flip-Flop with Enable	20
MC74F378N	MC74F378D	Parallel D Register with Enable	16
MC74F379N	—	Quad Parallel Register	16
MC74F38N	MC74F38D	Quad 2-Input NAND Buffer, Open Collector	14
MC74F399N	MC74F399D	Quad 2-Port Register	16
MC74F51N	—	Dual 2-Wide 2-input, 2-Wide 3-Input AND-OR-Invert Gate	14
MC74F521N	MC74F521DW	8-Bit Identity Comparator	20
MC74F533N	MC74F533DW	Octal Transparent Latch with Three-State Outputs	20
MC74F534N	—	Octal D-Type Flip-Flop with Three-State Outputs	20
MC74F543N	MC74F543DW	Octal Registered Transceiver, Non-inverting, Three-State	24
MC74F544N	MC74F544DW	Octal Registered Transceiver, Inverting, Three-State	24
—	MC74F568DW	Synchronous 4-bit Bidirectional BCD Decade Counter with Three-State Outputs	20
—	—		
MC74F569N	MC74F569DW	Synchronous 4-Bit Bidirectional Binary Counter with Three-State Outputs	20
MC74F574N	MC74F574DW	Octal D-Type Flip-Flop with Three-State Outputs	20
MC74F579N	MC74F579DW	8-Bit Bidirectional Binary Counter, Three-State	20
—	MC74F620DW	Octal Bus Transceiver with Three-State Outputs, Inverting	20
MC74F623N	—	Octal Bus Transceiver with Three-State Outputs, Non-Inverting	20
MC74F640N	—	Octal Bus Transceiver, Inverting with Three-State Outputs	20
MC74F646N	MC74F646DW	Octal Transceiver/Register with Three-State Outputs	24
MC74F64N	—	4-2-3-2-Input AND-OR-Invert Gate	14
MC74F657AN	MC74F657ADW	Octal Bidirectional Transceiver with 8-Bit Parity Generator Checker	24
MC74F74N	MC74F74D	Dual D-Type Positive Edge Triggered Flip-Flop	14
MC74F779N	MC74F779D	8-Bit Bidirectional Binary Counter, Three-State	16
MC74F803N	MC74F803D	Clock Driver Quad D-Type Flip-Flop with Matched Propagation Delays	14
MC74F823N	MC74F823DW	9-Bit D-Type Positive Edge Triggered Flip-Flop	24
MC74F827N	MC74F827DW	10-bit Buffer/Line Driver with Three-State Outputs, Enable Low	24
MC74F85N	MC74F85D	4-Bit Magnitude Comparator	16
MC74F86N	MC74F86D	Quad 2-Input Exclusive OR Gate	14
—	—	—	—

Call Your Nearest Allied Location (1-800-433-5700) For Pricing And Availability

MC74HC and MC74HCT: High Speed and High Speed-TTL Compatible CMOS Logic Integrated Circuits

Mfr.'s Type				Description	No. of Leads
MC74HC		MC74HCT			
PDIP	SOIC	PDIP	SOIC		
MC74HC00AN	MC74HC00AD	MC74HCT00AN	MC74HCT00AD	Quad 2-Input NAND Gate	14
MC74HC02AN	MC74HC02AD	—	—	Quad 2-Input NOR Gate	14
MC74HC03AN	MC74HC03AD	—	—	Quad 2-Input NAND Gate With Open Drain Outputs	14
MC74HC04AN	MC74HC04AD	MC74HCT04AN	MC74HCT04AD	Hex Inverter	14
MC74HCU04N	MC74HCU04D	—	—	Hex Unbuffered Inverter	14
MC74HC08AN	MC74HC08AD	MC74HCT08AN	—	Quad 2-Input AND Gate	14
MC74HC107N	MC74HC107D	—	—	Dual JK Flip-Flop With Reset	14
MC74HC109N	MC74HC109D	—	—	Dual JK Flip-Flop With Set and Reset	16
MC74HC10N	MC74HC10D	—	—	Triple 3-Input NAND Gate	14
MC74HC112N	MC74HC112D	—	—	Dual JK Flip-Flop With Set and Reset	16
MC74HC11N	MC74HC11D	—	—	Triple 3-Input AND Gate	14
MC74HC125AN	MC74HC125AD	—	—	Quad Three-State Non-Inverting Buffer, Active Low Enable	14
MC74HC126AN	MC74HC126AD	—	—	Quad Three-State Non-Inverting Buffer, Active High Enable	14
MC74HC132AN	MC74HC132AD	—	—	Quad 2-Input NAND Gate With Schmitt Trigger Inputs	14
MC74HC133N	—	—	—	13-Input NAND Gate	16
MC74HC137N	MC74HC137D	—	—	1 Of 8 Decoder/Demultiplexer With Address Latch	16
MC74HC138AN	MC74HC138AD	MC74HCT138AN	MC74HCT138AD	1 Of 8 Decoder/Demultiplexer	16
MC74HC139AN	MC74HC139AD	—	—	Dual 1 Of 4 Decoder/Demultiplexer	16
MC74HC147N	MC74HC147D	—	—	Decimal To BCD Encoder	16
MC74HC14AN	MC74HC14AD	MC74HCT14AN	MC74HCT14AD	Hex Schmitt Trigger Inverter	14
MC74HC151N	—	—	—	8-Input Data Selector/Multiplexer	16
MC74HC153N	MC74HC153D	—	—	Dual 4-Input Data Selector/Multiplexer	16
MC74HC154N	MC74HC154DW	—	—	1 of 16 Decoder/Demultiplexer	24
MC74HC157AN	MC74HC157AD	MC74HCT157AN	—	Quad 2-Input Data Selectors/Multiplexers	16
MC74HC160N	—	—	—	Asynchronous Presettable BCD Counter	16
MC74HC161AN	MC74HC161AD	MC74HCT161AN	—	Asynchronous Presettable Binary Counter	16
MC74HC163AN	MC74HC163AD	MC74HCT163AN	—	Synchronous Presettable Binary Counter	16
—	MC74HC164D	—	—	8-Bit Serial-Input/Parallel-Output Shift Register	14
MC74HC165N	MC74HC165D	—	—	8-Bit Serial or Parallel-Input Serial-Output Shift Register	16
MC74HC173N	MC74HC173D	—	—	Quad Three-State D Type Flip-Flop With Common Clock and Reset	16
MC74HC174AN	MC74HC174AD	MC74HCT174AN	MC74HCT174AD	Hex D Type Flip-Flop With Common Clock and Reset	16
MC74HC175N	MC74HC175D	—	—	Quad D Type Flip-Flop With Common Clock and Reset	16
MC74HC194N	—	—	—	4-Bit Bidirectional Universal Shift Register	16
MC74HC195N	—	—	—	4-Bit Universal Shift Register	16
MC74HC20N	—	—	—	Dual 4-Input NAND Gate	14
MC74HC237N	—	—	—	1 Of 8 Decoder/Demultiplexer With Address Latch	16
MC74HC240AN	MC74HC240ADW	MC74HCT240AN	MC74HCT240ADW	Octal Three-State Inverting Buffer/Line Driver	20
MC74HC241AN	MC74HC241ADW	—	—	Octal Three-State Non-Inverting Buffer/Line Driver/Line Receiver	20
MC74HC242N	—	—	—	Quad Three-State Bus Transceiver	14
MC74HC244AN	MC74HC244ADW	MC74HCT244AN	MC74HCT244ADW	Octal Three-State Non-Inverting Buffer/Line Driver/Line Receiver	20
MC74HC245AN	MC74HC245ADW	MC74HCT245AN	MC74HCT245ADW	Octal Three-State Non-Inverting Bus Transceiver	20
MC74HC251N	MC74HC251D	—	—	8-Input Data Selector/Multiplexer With Three-State Outputs	16
MC74HC253N	MC74HC253D	—	—	Dual 4-Input Data Selector/Multiplexer With Three-State Outputs	16
MC74HC257N	MC74HC257D	—	—	Quad 2-Input Data Selector/Multiplexer With Three-State Outputs	16
MC74HC259N	MC74HC259D	—	—	8-Bit Addressable Latch/1 Of 8 Decoder	16
MC74HC273AN	MC74HC273ADW	MC74HCT273AN	MC74HCT273ADW	Octal D Type Flip-Flop With Common Clock and Reset	20
MC74HC27N	—	—	—	Triple 3-Input NOR Gate	14
MC74HC280N	MC74HC280D	—	—	9-Bit Odd/Even Parity Generator/Checker	14
MC74HC299N	MC74HC299DW	—	—	8-Bit Bidirectional Universal Shift Register With Parallel I/O	20
MC74HC30N	MC74HC30D	—	—	8-Input NAND Gate	14
MC74HC32AN	MC74HC32AD	MC74HCT32AN	MC74HCT32AD	Quad 2-Input OR Gate	14
MC74HC354N	—	—	—	8-Input Data Selector/Multiplexer With Data and Address Latches and Three-State Outputs	20
MC74HC365N	—	—	—	Hex Three-State Non-Inverting Buffer With Common Enable	16
MC74HC367N	—	—	—	Hex Three-State Non-Inverting Buffer With Separate 2-Bit and 4-Bit Sections	16
MC74HC368N	—	—	—	Hex Three-State Inverting Buffer With Separate 2-Bit and 4-Bit Sections	16
MC74HC373AN	MC74HC373ADW	MC74HCT373AN	MC74HCT373ADW	Octal Three-State Non-Inverting Transparent Latch	20
MC74HC374AN	MC74HC374ADW	MC74HCT374AN	MC74HCT374ADW	Octal Three-State Non-Inverting D Type Flip-Flop	20
MC74HC390N	MC74HC390D	—	—	Dual 4-Stage Binary Ripple Counter With Divide By 2 and Divide By 5 Sections	16
MC74HC393N	MC74HC393D	—	—	Dual 4-Stage Binary Ripple Counter	14
MC74HC4002N	MC74HC4002D	—	—	Dual 4-Input NOR Gate	14
MC74HC4017N	MC74HC4017D	—	—	Decade Counter	16
MC74HC4020AN	MC74HC4020AD	—	—	14-Stage Binary Ripple Counter	16
MC74HC4024N	MC74HC4024D	—	—	7-Stage Binary Ripple Counter	14
MC74HC4040AN	MC74HC4040AD	—	—	12-Stage Binary Ripple Counter	16
MC74HC4046AN	MC74HC4046AD	—	—	Phase Locked Loop	16
MC74HC4049N	MC74HC4049D	—	—	Hex Inverting Buffer	16
MC74HC4050N	MC74HC4050D	—	—	Hex Buffer	16
MC74HC4051N	MC74HC4051DW	—	—	8-Channel Single-Ended Break-before-Make Analog Multiplexer/Demultiplexer	16
MC74HC4052N	MC74HC4052DW	—	—	4-Channel Differential Break-before-Make Analog Multiplexer/Demultiplexer	16
MC74HC4053N	MC74HC4053DW	—	—	Triple 2-Channel Single-Ended Break-before-Make Analog Multiplexer/Demultiplexer	16
MC74HC4060AN	MC74HC4060AD	—	—	14-Stage Binary Ripple Counter With Oscillator	16
MC74HC4066N	MC74HC4066D	—	—	Quad Analog Switch/Multiplexer/Demultiplexer	14
MC74HC4075N	MC74HC4075D	—	—	Triple 3-Input OR Gate	14
MC74HC4078N	MC74HC4078D	—	—	8-Input NOR/OR Gate	14
MC74HC42N	—	—	—	1 of 10 Decoder	16
MC74HC4316N	MC74HC4316D	—	—	Quad Analog Switch/Multiplexer/Demultiplexer With Separate Analog and Digital Power Supplies	16
MC74HC4351N	—	—	—	8-Channel Single-Ended Break-before-Make Analog Multiplexer/Demultiplexer with Address Latch	20
MC74HC4511N	—	—	—	BCD To Seven Segment Latch/Decoder/Display Driver	16
MC74HC4514N	—	—	—	1 Of 16 Decoder/Demultiplexer With Address Latch	24
MC74HC4538AN	MC74HC4538AD	—	—	Dual Precision Monostable Multivibrator, Retriggerable/Resettable	16
MC74HC51N	—	—	—	2-Wide, 2-Input/2-Wide, 3-Input AND-NOR Gates	14
MC74HC534AN	—	—	—	Octal Three-State Inverting D Type Flip-Flop	20
MC74HC540AN	MC74HC540ADW	—	—	Octal Three-State Inverting Buffer/Line Driver/Line Receiver	20
MC74HC541AN	MC74HC541ADW	MC74HCT541AN	MC74HCT541ADW	Octal Three-State Non-Inverting Buffer/Line Driver/Line Receiver	20
MC74HC563N	—	—	—	Octal Three-State Inverting Transparent Latch	20
MC74HC564N	—	—	—	Octal Three-State Inverting D Type Flip-Flop	20
MC74HC573AN	MC74HC573ADW	MC74HCT573AN	MC74HCT573ADW	Octal Three-State Non-Inverting Transparent Latch	20
MC74HC574AN	MC74HC574ADW	MC74HCT574AN	MC74HCT574ADW	Octal Three-State Non-Inverting D Type Flip-Flop	20
MC74HC589N	—	—	—	8-bit Serial Or Parallel-Input/Serial-Output Shift Register With Three-State Output	16
MC74HC58N	—	—	—	2-Wide, 2-Input/2-Wide, 3-Input AND-OR Gates	14
MC74HC595AN	MC74HC595AD	—	—	8-Bit Serial-Input/Serial Or Parallel-Output Shift Register With Latched Three-State Outputs	16
MC74HC597N	MC74HC597D	—	—	8-Bit Serial or Parallel-Input/Serial-Output Shift Register With Input Latch	16
MC74HC646N	—	—	—	Octal Three-State Bus Transceiver and D Type Flip-Flop, Non-Inverting Outputs	24
MC74HC688N	MC74HC688DW	—	—	8-Bit Equality Comparator	20
MC74HC7266N	—	—	—	Quad 2-Input Exclusive NOR Gate	14
MC74HC73N	—	—	—	Dual JK Flip-Flop with Reset	14
MC74HC74AN	MC74HC74AD	MC74HCT74AN	MC74HCT74AD	Dual D Type Flip-Flop with Set and Reset	14
MC74HC75N	—	—	—	Dual 2-Bit Transparent Latch	16
MC74HC85N	—	—	—	4-Bit Magnitude Comparator	16
MC74HC86N	MC74HC86D	—	—	Quad 2-Input Exclusive OR Gate	14

SN74LS: Low Power Schottky TTL Logic Integrated Circuits

Mfr.'s Type		Description	No. of Leads
PDIP	SOIC		
SN74LS00N	SN74LS00D	Quad 2-Input NAND Gate	14
SN74LS01N	—	Quad 2-Input NAND Gate With Open Collector Outputs	14
SN74LS02N	SN74LS02D	Quad 2-Input NOR Gate	14
SN74LS03N	—	Quad 2-Input NAND Gate With Open Collector Outputs	14
SN74LS04N	SN74LS04D	Hex Inverter	14
SN74LS05N	SN74LS05D	Hex Inverter With Open Collector Outputs	14
SN74LS08N	SN74LS08D	Quad 2-Input AND Gate	14
SN74LS09N	SN74LS09D	Quad 2-Input AND Gate With Open Collector Outputs	14
SN74LS107AN	—	Dual JK Negative Edge-Triggered Flip-Flop	14
SN74LS109AN	—	Dual JK Positive Edge-Triggered Flip-Flop	16
SN74LS10N	SN74LS10D	Triple 3-Input NAND Gate	14
SN74LS112AN	—	Dual JK Negative Edge-Triggered Flip-Flop	16
SN74LS113AN	—	Dual JK Negative Edge-Triggered Flip-Flop	14
SN74LS11N	—	Triple 3-Input AND Gate	14
SN74LS122N	—	Retriggerable Monostable Multivibrator, One Shot	14
SN74LS123N	SN74LS123D	Dual Retriggerable Monostable Multivibrator, One Shot	16
SN74LS125AN	SN74LS125AD	Quad Three-State Buffer, Enable Low	14
SN74LS126AN	SN74LS126AD	Quad Three-State Buffer, Enable High	14
SN74LS12N	—	Triple 3-Input NAND Gate	14
SN74LS132N	SN74LS132D	Quad 2-Input Schmitt Trigger NAND Gate	14
SN74LS133N	—	13-Input NAND Gate	16
SN74LS136N	—	Quad 2-Input Exclusive OR Gate With Open Collector Outputs	14
SN74LS137N	—	3-Line To 8-Line Decoders/Demultiplexers With Address Latches	16
SN74LS138N	SN74LS138D	1 Of 8 Decoder/Demultiplexer	16
SN74LS139N	—	Dual 1 Of 4 Decoder/Demultiplexer	16
SN74LS13N	—	Dual NAND Gate Schmitt Trigger	14
SN74LS145N	—	1 of 10 Decoder/Driver With Open Collector Outputs	16
SN74LS147N	—	10-Line To 4-Line Priority Encoder	16
SN74LS148N	SN74LS148D	8-Line To 3-Line Priority Encoder	16
SN74LS14N	SN74LS14D	Hex Schmitt Trigger Inverter	14
SN74LS151N	—	8-Input Multiplexer	16
SN74LS153N	—	Dual 4-Input Multiplexer	16
SN74LS155N	—	Dual 1 Of 4 Decoder/Demultiplexer	16
SN74LS156N	SN74LS156D	Dual 1 Of 4 Decoder/Demultiplexer With Open Collector Outputs	16
SN74LS157N	SN74LS157D	Quad 2-Input Multiplexer	16
SN74LS158N	—	Quad 2-Input Multiplexer, Inverting	16
SN74LS15N	—	Triple 3-Input AND Gate	14
SN74LS160AN	—	Synchronous Presettable BCD Decade Up Only Counter, Asynchronous Reset	16
SN74LS161AN	—	Synchronous Presettable 4-Bit Binary Up Only Counter, Asynchronous Reset	16
SN74LS163AN	—	Synchronous Presettable 4-Bit Binary Up Only Counter, Synchronous Reset	16
SN74LS164N	SN74LS164D	Serial-In Parallel-Out Shift Register	14
SN74LS165N	SN74LS165D	8-Bit Parallel-To-Serial Shift Register	16
SN74LS166N	SN74LS166D	8-Bit Shift Register	16
SN74LS169N	—	Synchronous Presettable Bidirectional 4-Bit Binary Counter	16
SN74LS173AN	—	4-Bit D Type Register With Three-State Outputs	16
SN74LS174N	SN74LS174D	Hex D Type Flip-Flop	16
SN74LS175N	SN74LS175D	Quad D Type Flip-Flop	16
SN74LS191N	—	Synchronous Presettable 4-Bit Binary Up/Down Counter	16
SN74LS192N	—	Dual Synchronous Presettable BCD/Decade Up/Down Counter	16
SN74LS193N	—	Dual Synchronous Presettable 4-Bit Binary Up/Down Counter	16
SN74LS195AN	—	Universal 4-Bit Shift Register	16
SN74LS197N	—	4-Stage Presettable Ripple Counter	14
SN74LS20N	—	Dual 4-Input NAND Gate	14
SN74LS21N	—	Dual 4-Input AND Gate	14
SN74LS221N	SN74LS221D	Dual Monostable Multivibrators With Schmitt Trigger Inputs	16
SN74LS240N	SN74LS240DW	Dual 4-Bit Inverting Buffer/Driver, Enable Low, Three-State Outputs	20
SN74LS241N	—	Dual 4-Bit Buffer/Driver With Three-State Outputs	20
SN74LS242N	—	Quad Bus Transceiver, Inverting	14
SN74LS243N	SN74LS243D	Quad Bus Transceiver	14
SN74LS244N	SN74LS244DW	Dual 4-Bit Buffer/Driver, Enable Low, Three-State Outputs	14
SN74LS245N	SN74LS245DW	Octal Bus Transceiver	20
SN74LS247N	SN74LS247D	BCD To Seven Segment Decoder/Driver With Open Collector Outputs	16
SN74LS251N	—	8-Input Multiplexer With Three-State Outputs	16
SN74LS253N	—	Dual 4-Input Multiplexer With Three-State Outputs	16
SN74LS256N	—	Dual 4-Bit Addressable Latch	16
SN74LS257BN	SN74LS257BD	Quad 2-Input Multiplexer With Three-State Outputs, Non-Inverting	16
SN74LS258BN	SN74LS258BD	Quad 2-Input Multiplexer With Three-State Outputs, Inverting	16
SN74LS259N	SN74LS259D	8-Bit Addressable Latch	16
SN74LS260N	—	Dual 5-Input NOR Gate	14
SN74LS266N	—	Quad 2-Input Exclusive NOR Gate	14
SN74LS26N	—	Quad 2-Input NAND Buffer	14
SN74LS273N	SN74LS273DW	Octal D Type Flip-Flop With Clear	20
SN74LS279N	—	Quad Set-Reset Latch	16
SN74LS27N	—	Triple 3-Input NOR Gate	14
SN74LS280N	—	9-Bit Odd/Even Parity Generators/Checkers	14
SN74LS283N	—	4-Bit Binary Full Adder With Fast Carry	16
SN74LS290N	—	Decade Up Only Ripple Counter	14
SN74LS293N	—	4-Bit Binary Up Only Ripple Counter	14
SN74LS298N	—	Quad 2-Input Multiplexer With Storage	16
SN74LS299N	SN74LS299DW	8-Bit Shift/Storage Register With Three-State Outputs	20
SN74LS30N	SN74LS30D	8-Input NAND Gate	14
SN74LS322AN	—	8-Bit Shift Registers With Sign Extend	20
SN74LS32N	SN74LS32D	Quad 2-Input OR Gate	14
SN74LS33N	SN74LS33D	Quad 2-Input NOR Buffer With Open Collector Outputs	14
SN74LS348N	—	8-Bit Priority Encoder With Three-State Outputs	16
SN74LS365AN	SN74LS365AD	Hex Three-State Buffer With Common 2-Input NOR Enable	16
SN74LS366AN	—	Hex Three-State Inverter Buffer With Common 2-Input NOR Enable	16
SN74LS367AN	SN74LS367AD	Hex Three-State Buffer With Separate 2-Bit and 4-Bit Sections	16
SN74LS368AN	—	Hex Three-State Inverter Buffer With Separate 2-Bit and 4-Bit Sections	16
SN74LS373N	SN74LS373DW	Octal Transparent Latch With Three-State Outputs	20
SN74LS374N	SN74LS374DW	Octal D Type Flip-Flop With Three-State Outputs	20
SN74LS375N	—	4-Bit D Latch	16
SN74LS377N	—	Octal D Type Flip-Flop With Enable	20
SN74LS378N	—	Hex D Type Flip-Flop With Enable	16
SN74LS37N	—	Quad 2-Input NAND Buffer	14
SN74LS38N	—	Quad 2-Input NAND Buffer With Open Collector Outputs	14
SN74LS390N	—	Dual Decade Ripple Counter	16
SN74LS393N	SN74LS393D	Dual 4-Stage Binary Ripple Counter	14
SN74LS399N	—	Quad 2-Port Register	16
SN74LS42N	—	1 Of 10 Decoder	16
SN74LS47N	—	BCD To Seven Segment Decoder/Driver	16
SN74LS48N	—	BCD To Seven Segment Decoder	16
SN74LS490N	—	Dual Decade Counter	16
SN74LS51N	—	Dual 2-Wide 2-Input/3-Input AND-OR-Invert Gate	14
SN74LS540N	—	Octal Inverting Buffer/Line Driver With Three-State Outputs	20
SN74LS541N	SN74LS541DW	Octal Buffer/Line Driver With Three-State Outputs	20
SN74LS569AN	—	4-Bit Up/Down Counter With Three-State Outputs	20
SN74LS623N	—	Octal Bus Transceiver With Three-State Outputs	20
SN74LS640N	SN74LS640DW	Octal Inverting Bus Transceiver With Three-State Outputs	20
SN74LS641N	—	Octal Bus Transceiver With Open Collector Outputs	20
SN74LS642N	—	Octal Inverting Bus Transceiver With Open Collector Outputs	20
SN74LS645N	—	Octal Bus Transceiver With Three-State Outputs	20
SN74LS669N	—	Synchronous 4-Bit Up/Down Counter	16
SN74LS670N	SN74LS670D	4 × 4 Register File with Three-State Outputs	16
SN74LS682N	SN74LS682DW	8-Bit Magnitude Comparator	20
SN74LS684N	—	8-Bit Magnitude Comparator	20
SN74LS688N	SN74LS688DW	8-Bit Magnitude Comparator	20
SN74LS73AN	—	Dual JK Negative Edge Triggered Flip-Flop	14
SN74LS74AN	SN74LS74AD	Dual D Type Positive Edge Triggered Flip-Flop	14
SN74LS75N	—	4-Bit D Latch	16
SN74LS76AN	—	Dual JK Negative Edge Triggered Flip-Flop With Set and Clear	16
SN74LS795N	—	Octal Buffer/Driver, Enable High, Three-State Outputs	20
SN74LS85N	SN74LS85D	4-Bit Magnitude Comparator	16
SN74LS86N	SN74LS86D	Quad 2-Input Exclusive OR Gate	14
SN74LS90N	—	Decade Ripple Counter	14
SN74LS92N	—	Divide By 12 Ripple Counter	14
SN74LS93N	—	4-Bit Binary Ripple Counter	14
SN74LS95BN	—	4-Bit Shift Register	14
—	—	—	—

MC10E and MC100E: ECLinPS 10K and 100K Emitter Coupled Logic in Picoseconds Integrated Circuits

Mfr.'s Type		Description	No. of Leads
MC10E	MC100E		
PLCC	PLCC		
MC10E016FN	MC100E016FN	8-Bit Synchronous Binary Up Counter	28
MC10E101FN	MC100E101FN	Quad 4-Input OR/NOR Gate	28
MC10E104FN	MC100E104FN	Quint 2-Input AND/NAND Gate	28
MC10E107FN	MC100E107FN	Quint 2-Input XOR/XNOR Gate	28
MC10E111FN	MC100E111FN	1:9 Differential Clock Driver	28
MC10E112FN	MC100E112FN	Quad OR/NOR Driver	28
MC10E116FN	MC100E116FN	Quint Differential Line Receiver	28
—	MC100E122FN	9-Bit Buffer	28
MC10E131FN	MC100E131FN	4-Bit D Flip-Flop	28
MC10E136FN	—	6-Bit Universal Up/Down Counter	28
MC10E141FN	MC100E141FN	8-Bit Shift Register	28
MC10E142FN	MC100E142FN	9-Bit Shift Register	28
MC10E143FN	MC100E143FN	9-Bit Hold Register	28
MC10E151FN	MC100E151FN	6-Bit D Register	28
—	MC100E156FN	3-Bit 4:1 Mux-Latch	28
MC10E158FN	MC100E158FN	5-Bit 2:1 Multiplexer	28
—	MC100E163FN	2-Bit 8:1 Multiplexer	28
MC10E164FN	—	16:1 Multiplexer	28
MC10E1651FN	—	Dual ECL Output Comparator with Latch	20
MC10E166FN	—	9-Bit Magnitude Comparator	28
—	MC100E167FN	6-Bit 2:1 Mux-Register	28
MC10E171FN	—	3-Bit 4:1 Multiplexer	28
MC10E195FN	MC100E195FN	Programmable Delay Chip	28
MC10E416FN	MC100E416FN	Quint Differential Line Receiver	28
MC10E431FN	—	3-Bit Differential Flip-Flop	28
—	MC100E445FN	4-Bit Serial/Parallel Converter	28
—	MC100E452FN	5-Bit Differential Register	28
MC10E457FN	MC100E457FN	Triple Differential 2:1 Multiplexer	28

MC10EL and MC100EL: ECLinPS Lite 10K and 100K Emitter Coupled Logic in Picoseconds Integrated Circuits

Mfr.'s Type		Description	No. of Leads
MC10E	MC100E		
SOIC	SOIC		
MC10EL01D	MC100EL01D	4-Input OR/NOR	8
MC10EL04D	MC100EL04D	2-Input AND/NAND	8

MC10EL and MC100EL: ECLinPS Lite 10K and 100K Emitter Coupled Logic in Picoseconds Integrated Circuits

Mfr.'s Type		Description	No. of Leads
MC10E	MC100E		
SOIC	SOIC		
MC10EL05D	MC100EL05D	2-Input Differential	8
MC10EL07D	MC100EL07D	2-Input XOR/XNOR	8
MC10EL11D	MC100EL11D	1:2 Differential Fanout Buffer	8
MC10EL12D	MC100EL12D	Low Impedance Driver	8
MC10EL15D	MC100EL15D	1:4 Clock Distribution Chip	8
MC10EL16D	MC100EL16D	Differential Receiver	8
MC10EL31D	MC100EL31D	D Flip-Flop With Set and Reset	8
MC10EL32D	MC100EL32D	Differential Divide-By-2 Prescaler	8

Mfr.'s Type		Description	No. of Leads
MC10E	MC100E		
SOIC	SOIC		
MC10EL33D	MC100EL33D	Differential Divide-By-4 Prescaler	8
MC10EL34D	MC100EL34D	Divide by 2, Divide By 4, Divide by 8 Clock Generator Chip	8
MC10EL35D	MC100EL35D	JK Flip-Flop	8
MC10EL51D	MC100EL51D	Differential Clock D Flip-Flop	8
MC10EL52D	MC100EL52D	Differential Data and Clock D Flip-Flop	8
MC10EL57D	MC100EL57D	4:1 Differential Multiplexer	8
MC10EL58D	MC100EL58D	2:1 Multiplexer	8
MC10EL89D	—	Coaxial Cable Driver	8

MC10ELT and MC100ELT: ECLinPS Lite Translators 10K and 100K Emitter Coupled Logic in Picoseconds Integrated Circuits

Mfr.'s Type		Description	No. of Leads
MC10ELT	MC100ELT		
SOIC	SOIC		
—	MC100ELT21D	Differential PECL To TTL Translator	8
MC10ELT22D	MC100ELT22D	Dual TTL To Differential PECL Translator	8

Mfr.'s Type		Description	No. of Leads
MC10ELT	MC100ELT		
SOIC	SOIC		
—	MC100ELT23D	Dual Differential PECL-to-TTL Translator	8
MC10ELT25D	MC100ELT25D	Dual Differential ECL-to-TTL Translator	8

MC10H: MECL 10H Monolithic Emitter-Coupled Logic Integrated Circuits

Mfr.'s Type		Description	No. of Leads
PDIP	PLCC		
MC10H016P	MC10H016FN	4-Bit Binary Counter	16/20
MC10H101P	MC10H101FN	Quad OR/NOR Gate	16/20
MC10H102P	MC10H102FN	Quad 2-Input NOR Gate	16/20
MC10H103P	MC10H103FN	Quad 2-Input OR Gate	16/20
MC10H104P	MC10H104FN	Quad 2-Input AND Gate	16/20
MC10H105P	MC10H105FN	Triple 2-3-2-Input OR/NOR Gate	16/20
MC10H107P	MC10H107FN	Triple 2-Input Exclusive OR/Exclusive NOR	16/20
MC10H109P	MC10H109FN	Dual 4-5-Input OR/NOR Gate	16/20
MC10H113P	MC10H113FN	Quad Exclusive OR Gate	16/20
MC10H115P	MC10H115FN	Quad Line Receiver	16/20
MC10H116P	MC10H116FN	Triple Line Receiver	16/20
MC10H117P	MC10H117FN	Dual 2-Wide 2-3-Input OR-AND/OR-AND-INVERT Gate	16/20
MC10H123P	MC10H123FN	Triple 4-3-3-Input Bus Driver	16/20
MC10H124P	MC10H124FN	Quad TTL-to-MECL Translator with TTL Strobe Input	16/20
MC10H125P	MC10H125FN	Quad MECL-to-TTL Translator	16/20
MC10H131P	MC10H131FN	Dual Type D Master-Slave Flip-Flop	16/20
MC10H135P	MC10H135FN	Dual J-K Master Slave Flip-Flop	16/20
MC10H136P	MC10H136FN	Universal Hexadecimal Counter	16/20
MC10H141P	MC10H141FN	4-Bit Universal Shift Register	16/20
MC10H158P	MC10H158FN	Quad 2-Input Multiplexer (Non-Inverting)	16/20
MC10H164P	MC10H164FN	8-Line Multiplexer	16/20

Mfr.'s Type		Description	No. of Leads
PDIP	PLCC		
MC10H174P	MC10H174FN	Dual 4 To 1 Multiplexer	16/20
MC10H176P	MC10H176FN	Hex D Master-Slave Flip-Flop	16/20
MC10H186P	—	Hex D Master-Slave Flip-Flop with Reset	16
MC10H188P	MC10H188FN	Hex Buffer With Enable	16/20
MC10H189P	—	Hex Inverter With Enable	16
MC10H210P	—	Dual 3-Input 3-Output OR Gate	16
MC10H350P	MC10H350FN	PECL To TTL Translator (+5 Vdc Power Supply Only)	16/20
MC10H351P	MC10H351FN	Quad TTL/NMOS To PECL Translator	20/20
MC10H424P	MC10H424FN	Quad TTL To ECL Translator With An ECL Strobe	16/20
—	MC10H600FN	9-Bit TTL/ECL Translator	28
—	MC10H601FN	9-Bit ECL/TTL Translator	28
—	MC10H602FN	9-Bit Latch TTL/ECL Translator	28
—	MC10H603FN	9-Bit Latch ECL/TTL Translator	28
—	MC10H604FN	Registered Hex TTL/ECL Translator	28
—	MC10H605FN	Registered Hex ECL/TTL Translator	28
—	MC10H607FN	Registered Hex PECL/TTL Translator	28
—	MC10H640FN	68030/040 PECL/TTL Clock Driver	28
—	MC10H641FN	Single Supply PECL/TTL 1:9 Clock Distribution Chip	28
—	MC10H643FN	Dual Supply ECL/TTL 1:8 Clock Driver	28
—	MC10H645FN	1:9 TTL Clock Driver	28
—	MC10H680FN	4-Bit Differential ECL Bus/TTL Transceiver	28

MC100H: MECL 10H Monolithic Emitter-Coupled Logic Integrated Circuits

Mfr.'s Type	Description	No. of Leads
PLCC		
MC100H600FN	9-Bit TTL/ECL Translator	28
MC100H602FN	9-Bit Latch TTL/ECL Translator	28
MC100H640FN	68030/040 PECL/TTL Clock Driver	28

Mfr.'s Type	Description	No. of Leads
PLCC		
MC100H641FN	Single Supply PECL/TTL 1:9 Clock Distribution Chip	28
MC100H643FN	Dual Supply ECL/TTL 1:8 Clock Driver	28
—	—	—

MC10: MECL 10K Monolithic Emitter-Coupled Logic Integrated Circuits

Mfr.'s Type		Description	No. of Leads
PDIP	PLCC		
MC10101P	—	MECL Quad OR/NOR Gate	16
MC10102P	MC10102FN	MECL Quad 2-Input NOR Gate	16/20
MC10103P	—	MECL Quad 2-Input OR Gate	16
MC10104P	—	MECL Quad 2-Input AND Gate	16
MC10105P	—	MECL Triple 2-3-2-Input OR/NOR Gate	16
MC10107P	—	MECL Triple 2-Input Exclusive OR/Exclusive NOR	16
MC10109P	—	MECL Dual 4-5-Input OR/NOR Gate	16
MC10113P	—	MECL Quad Exclusive OR Gate	16
MC10114P	MC10114FN	MECL Triple Line Receiver	16/20
MC10115P	MC10115FN	MECL Quad Line Receiver	16/20
MC10116P	MC10116FN	MECL Triple Line Receiver	16/20
MC10123P	—	MECL Triple 4-3-3-Input Bus Driver	16
MC10124P	MC10124FN	MECL Quad TTL To MECL Translator	16/20
MC10125P	MC10125FN	MECL Quad MECL To TTL Translator	16/20
MC10131P	MC10131FN	MECL Dual Type D Master-Slave Flip-Flop	16/20

Mfr.'s Type		Description	No. of Leads
PDIP	PLCC		
MC10135P	—	MECL Dual J-K Master-Slave Flip-Flop	16
MC10136P	MC10136FN	MECL Universal Hexadecimal Counter	16/20
MC10137P	—	MECL Universal Decade Counter	16
MC10138P	—	MECL Bi-Quinary Counter	16
MC10158P	—	MECL Quad 2-Input Multiplexer (Non-Inverting)	16
MC10161P	—	MECL Binary To 1-8 Decoder (Low)	16
MC10164P	—	MECL 8-Line Multiplexer	16
MC10174P	—	MECL Dual 4 To 1 Multiplexer	16
MC10176P	—	MECL Hex D Master-Slave Flip-Flop	16
MC10178P	—	MECL Binary Counter	16
MC10188P	—	MECL Hex Buffer With Enable	16
MC10192P	MC10192FN	MECL Quad Bus Driver	16/20
MC10198P	MC10198FN	MECL Monostable Multivibrator	16/20
MC10216P	MC10216FN	MECL High Speed Triple Line Receiver	16/20
MC10231P	—	MECL High Speed Dual Type D Master-Slave Flip-Flop	16

MC16: MECL Monolithic Emitter Coupled Logic Integrated Circuits

Mfr.'s Type		Description	No. of Leads
PDIP	SOIC		
MC1648P	MC1648D	Voltage Controlled Oscillator	14/8

Mfr.'s Type		Description	No. of Leads
PDIP	SOIC		
MC1658P	MC1658D	Voltage Controlled Multivibrator	16

Phase-Locked Loop Integrated Circuits

MC12: MECL Phase-Locked Loop Integrated Circuits

Mfr.'s Type			Description	No. of Leads
PDIP	SOIC	PLCC		
MC12002P	—	—	Double Balanced Analog Mixer	14
MC12009P	—	MC12009FN	Dual Modulus Prescaler, Divide By 5/6	16/20
MC12011P	—	MC12011FN	Dual Modulus Prescaler, Divide By 8/9	16/20
MC12013P	MC12013D	MC12013FN	Dual Modulus Prescaler, Divide By 10/11	16/20
MC12015P	MC12015D	—	225 MHz Dual Modulus Prescaler, Divide By 32/33	8
MC12016P	MC12016D	—	225 MHz Dual Modulus Prescaler, Divide By 40/41	8
MC12017P	MC12017D	—	225 MHz Dual Modulus Prescaler, Divide By 64/65	8
MC12018P	—	—	520 MHz Dual Modulus Prescaler, Divide By 128/129	8
MC12019P	MC12019D	—	225 MHz Dual Modulus Prescaler, Divide By 20/21	8
MC12022AP	MC12022AD	—	1.1 GHz Dual Modulus Prescaler, Divide By 64/65 or 128/129	8
MC12028AP	MC12028AD	—	1.1 GHz Dual Modulus Prescaler, Divide By 32/33 or 64/65	8
—	MC12034AD	—	2.0 GHz Dual Modulus Prescaler, Divide By 32/33 or 64/65	8
MC12040P	—	MC12040FN	Phase-Frequency Detector	14/20
—	MCH12140D	—	Phase-Frequency Detector	8
—	MCK12140D	—	Phase-Frequency Detector	8
MC12061P	—	—	Crystal Oscillator	16
MC12073P	—	—	1.1 GHz Prescaler, Divide By 64	8
MC12079P	MC12079D	—	Differential Input/ECL Output Prescaler, Divide By 64/128/256	8

TTL Phase-Locked Loop Integrated Circuits

Mfr.'s Type			Description	No. of Leads
PDIP	SOIC	PLCC		
MC4018P	—	—	Presettable 4-Bit Binary Up Only Ripple Counter	16
MC4024P	—	—	Dual Voltage Controlled Multivibrator	14
MC4044P	MC4044D	—	Phase Frequency Controller	14

CMOS Clock Drivers and Phase-Locked Loop Clock Drivers

MC88913N	MC88913D	—	Low Skew CMOS Clock Driver	14
MC88914N	MC88914D	—	Low Skew CMOS Clock Driver With Reset	14
—	—	MC88915FN55	55 MHz Low Skew CMOS PLL Clock Driver	28
—	—	MC88915FN70	70 MHz Low Skew CMOS PLL Clock Driver	28
—	—	MC88915TFN100	100 MHz Low Skew CMOS PLL Clock Driver, Three-State	28
—	—	MC88915TFN133	133 MHz Low Skew CMOS PLL Clock Driver, Three-State	28
—	—	MC88915TFN160	160 MHz Low Skew CMOS PLL Clock Driver, Three-State	28
—	—	MC88915TFN55	55 MHz Low Skew CMOS PLL Clock Driver, Three-State	28
—	—	MC88915TFN70	70 MHz Low Skew CMOS PLL Clock Driver, Three-State	28
—	MC88916DW70	—	70 MHz Low Skew CMOS PLL Clock Driver With Processor Reset	20
—	MC88916DW80	—	80 MHz Low Skew CMOS PLL Clock Driver With Processor Reset	20
—	MC88920DW	—	50 MHz Low Skew CMOS PLL Clock Driver With Power-Up/Down	20
—	MC88921DW	—	66 MHz Low Skew CMOS PLL Clock Driver With Power-Up/Down	20

Phase-Locked Loop Frequency Synthesizers

Mfr.'s Type		Description	Frequency (MHz)	Supply Voltage (V)	Nominal Supply Current (mA)	Phase Detector	Standby	Interface	No. of Leads
PDIP	SOG								
MC145106P	MC145106DW	PLL Frequency Synthesizer	4 @ 5 V	4.5 to 12.0	6.0 @ 5 V	Single-Ended Three-State	No	Parallel	18/20
MC145151P2	MC145151DW2	Parallel Input PLL Synthesizer	20 @ 5 V	3.0 to 9.0	7.5 @ 5 V	Single-Ended Three-State, Double-Ended	No	Parallel Input, Single Modulus	28
MC145152P2	MC145152DW2	Parallel Input PLL Synthesizer	20 @ 5 V	3.0 to 9.0	7.5 @ 5 V	Double-Ended	No	Parallel Input, Dual Modulus	28
MC145155P2	—	Serial Input PLL Synthesizer	20 @ 5 V	3.0 to 9.0	7.5 @ 5 V	Single-Ended Three-State, Double-Ended	No	Serial Input, Single Modulus	18
MC145156P2	MC145156DW2	Serial Input PLL Synthesizer	20 @ 5 V	3.0 to 9.0	7.5 @ 5 V	Single-Ended Three-State, Double-Ended	No	Serial Input, Dual Modulus	20
MC145157P2	MC145157DW2	Serial Input PLL Synthesizer	20 @ 5 V	3.0 to 9.0	7.5 @ 5 V	Single-Ended Three-State, Double-Ended	No	Serial Input, Single Modulus	16
MC145158P2	MC145158DW2	Serial Input PLL Synthesizer	20 @ 5 V	3.0 to 9.0	7.5 @ 5 V	Single-Ended Three-State, Double-Ended	No	Serial Input, Dual Modulus	16
MC145162P	MC145162D	Universal Programmable Dual PLL Synthesizer for Cordless Phones	60 @ 3 V	2.5 to 5.5	3.0 @ 3 V	Two Single-Ended Three-State	Yes	Serial	16
—	MC145191F	1.1 GHz PLL Frequency Synthesizer, Includes 64/65 Prescalers	1100 @ 5 V	4.5 to 5.5	7.0 @ 5 V	Current Source/Sink, Double-Ended	Yes	Serial	20

ISDN: Integrated Services Digital Network Integrated Circuits

MC14LC5472, ISDN U-Interface

ANSI T1.601 compliant, pin selectable LT or NT operation, industry standard IDL interface, slave-slave timing mode, control and status provided through four wire serial control port.

Mfr.'s Type	Function	Package Type
MC14LC5472FU	Line Cards, NT1s, Pair Gain, ISDN Compatible Bridge Routers, ISDN Terminals	68 Lead CQFP

MC145474 and MC145475, ISDN S/T Interface Transceiver

Conforms to CCITT I.430 and ANSI T1.605, pin selectable NT and TE modes, Interchip Data Link (IDL), serial control port (SCP), full multiframing capabilities, S/T and IDL loopbacks.

MC145474P	Network Termination (NT1), PC Based and Standalone ISDN Terminal Adapters, ISDN Telephone, ISDN Video Phone	22 Lead PDIP
MC145475DW	Network Termination (NT1), PC Based and Standalone ISDN Terminal Adapters, ISDN Telephone, ISDN Video Phone, Supports Optional NT1 Star Mode	28 Lead SOG

Remote Control Integrated Circuits

Mfr.'s Type		Function	Number of Address Lines	Maximum No. of Address Codes	Number of Data Bits	Operation	No. of Leads
PDIP	SOG						
MC145026P	MC145026D	Encoder	Depends On Decoder	Depends On Decoder	Depends On Decoder	Simplex	16
MC145027P	MC145027DW	Decoder	5	243	4	Simplex	16
MC145028P	MC145028DW	Decoder	9	19683	0	Simplex	16

Line Receivers — EIA Standard

Mfr.'s Type		Single Ended or Differential	Type of Output	tprop Delay Time Max. (ns)	Party Line Operation	Strobe or Enable	Power Supplies (V)	Receivers Per Package	Companion Drivers	Comments	No. of Leads
PDIP	SOIC										
MC14C89BP	—	Single Ended	Totem Pole	4000	—	—	+5.0	4	MC14C88B	EIA-232-D/EIA-562	14
MC1489AP	MC1489AD	Single Ended	Resistor Pull-Up	85	—	—	+5.0	4	MC1488	EIA-232-D	14
MC1489P	MC1489D	Single Ended	Resistor Pull-Up	85	—	—	+5.0	4	MC1488	EIA-232-D	14
AM26LS32PC	MC26LS32D	Single Ended, Differential	Totem Pole, Three-State	30	Yes	Yes	+5.0	4	AM26LS31	EIA 422/423	16
MC3486P	MC3486D	Single Ended, Differential	Totem Pole	30	Yes	Yes	+5.0	4	MC3487	EIA 422/423	16
SN75173N	—	Single Ended, Differential	Totem Pole, Three-State	35	Yes	Yes	+5.0	4	SN75172	EIA 422/423/485	16
SN75175N	—	Single Ended, Differential	Totem Pole, Three-State	35	Yes	Yes	+5.0	4	SN75172	EIA 422/423/485	16

Line Drivers

EIA Standard

Mfr.'s Type		Output Current Capability (mA)	Single Ended or Differential	tprop Delay Time Max. (ns)	Party Line Operation	Strobe or Enable	Power Supplies (V)	Receivers Per Package	Companion Drivers	Comments	No. of Leads
PDIP	SOIC										
MC75174BP	—	85	Differential	35	Yes	Yes	+5.0	4	SN75175	EIA-485	16

Call Your Nearest Allied Location (1-800-433-5700) For Pricing And Availability

Line Drivers

EIA Standard

Mfr.'s Type		Output Current Capability (mA)	Single Ended or Differential	tprop Delay Time Max. (ns)	Party Line Operation	Strobe or Enable	Power Supplies (V)	Receivers Per Package	Companion Drivers	Comments	No. of Leads
PDIP	SOIC										
MC3487P	MC3487D	48	Differential	20	Yes	Yes	+5.0	4	MC3486	EIA-422 with Three-State Outputs	16
AM26LS31PC	MC26LS31D	48	Differential	20	Yes	Yes	+5.0	4	AM26LS32	EIA-422 with Three-State Outputs	16
MC3488AP1	MC3488AD	20	Single Ended	20	—	—	±12.0	2	MC3486	EIA-423/232-D	8
MC14C88BP	MC14C88BD	15	Single Ended	3500	—	—	±7.0 to ±12	4	MC14C89B	EIA-232-D/EIA-562	14
MC1488P	MC1488D	10	Single Ended	350	—	—	±9.0 to ±12	4	MC1489	EIA-232-D	14
AM26LS30PC	MC26LS30D	60	Single Ended, Differential	300	—	422 Yes, 423 No	±5.0	2 (422), 4 (423)	AM26LS32	Ela-422, EIA-423 Switchable	16

Line Transceiver

Mfr.'s Type		Driver Propagation Delay Max. (ns)	Receiver Propagation Delay Max. (ns)	Driver/Receiver Enable	Party Line Operation	Power Supplies (V)	Drivers per Package	Receivers per Drivers	EIA Standard	No. of Leads
PDIP	SOIC									
MC34050P	MC34050D	20	30	Driver and Receiver	Yes	+5.0	2	2	EIA-422	16
MC34051P	MC34051D	20	30	Driver	Yes	+5.0	2	2	EIA-422	16

EIA-232-E and CCITT V.28 CMOS Drivers/Receivers

Mfr.'s Type		No of Drivers	No of Receivers	Power Supplies (V)	Features	No. of Leads
PDIP	SOG					
MC145403P	MC145403DW	3	5	±5.0 to ±12	EIA-232-E and CCITT V.28 (Formerly RS-232-D)	20
MC145404P	MC145404DW	4	4	±5.0 to ±12	EIA-232-E and CCITT V.28 (Formerly RS-232-D)	20
MC145406P	MC145406DW	3	3	±5.0 to ±12	EIA-232-E and CCITT V.28 (Formerly RS-232-D)	16
MC145407P	MC145407DW	3	3	5.0	EIA-232-E and CCITT V.28 (Formerly RS-232-D), +5 V to ±10 V Charge Pump Architecture	20

Peripheral Drivers

Mfr.'s Type	Output Current Capability (mA)	Input Capability	Propagation Delay Time Max. (us)	Output Clamp Diode	Off State Voltage Max. (V)	Drivers Per Package	Logic Function	Package Type
ULN2803A	500	TTL, CMOS	1	Yes	50	8	Invert	18 Lead PDIP
ULN2804A	500	6 V to 15 V MOS	1	Yes	50	8	Invert	18 Lead PDIP
ULN2003A	500	TTL, +5 V CMOS	1	Yes	50	7	Invert	16 Lead PDIP
ULN2004A	500	8 V to 18 V MOS	1	Yes	50	7	Invert	16 Lead PDIP

CMOS Display Drivers

Mfr.'s Type	Function	Display Type	Input Format	Drive Capability Per Package	On-Chip Latch	Display Control	Segment Drive Current	Package Type
MC14543BCP	BCD-to-7 Segment Latch/Decoder/Driver	LCD, Direct Drive	Parallel BCD	7 Segments	Yes	Blank	Approx. 1.0 mA	16 Lead PDIP
MC14544BCP	BCD-to-7 Segment Latch/Decoder/Driver	LCD, Direct Drive	Parallel BCD	7 Segments	Yes	Blank, Ripple Blank	Approx. 1.0 mA	18 Lead PDIP
MC145453P	33-Segment, Non-Multiplexed	LCD, Direct Drive	Serial Binary (Compatible with SPI on CMOS MCUs)	33 Segments or Dots	Yes	—	20 μA	40 Lead PDIP
MC145453FN	33-Segment, Non-Multiplexed	LCD, Direct Drive	Serial Binary (Compatible with SPI on CMOS MCUs)	33 Segments or Dots	Yes	—	20 μA	40 Lead PLCC
MC145000P	48-Segment Serial Input Multiplexed LCD Driver (Master)	Muxed LCD (1/4 Mux)	Serial Binary (Compatible with SPI on CMOS MCUs)	48 Segments or Dots	Yes	—	Approx. 200 μA	24 Lead PDIP
MC14511BCP	BCD-to-7 Segment Latch/Decoder/Driver	LED, Incandescent, Fluorescent*	Parallel BCD	7 Segments	Yes	Blank, Lamp Test	25 mA	16 Lead PDIP
MC14513BCP	BCD-to-7 Segment Latch/Decoder/Driver	LED, Incandescent, Fluorescent*	Parallel BCD	7 Segments	Yes	Blank, Ripple Blank, Lamp Test	25 mA	18 Lead PDIP
MC14547BCP	High Current BCD-to-7 Segment Decoder/DriverFluorescent*	LED, Incandescent,	Parallel BCD	7 Segments	No	Blank	65 mA	18 Lead PDIP
MC14499P	4-Digit 7 Segment LED Display Decoder/DriverWith SPI On CMOS MCUs)	Muxed LED (1/4 Mux)	Serial Binary (Compatible	4 Digits + Decimals	Yes	Oscillator (Scanner)	50 mA (Peak)	18 Lead PDIP
MC14489P	Multi-Character LED Display Lamp Driver	Muxed LED (1/5 Mux)	Serial Binary (Compatible with SPI on CMOS MCUs)	5 Characters + Decimals or 25 Lamps	Yes	Oscillator (Scanner), Low Power Mode, Dimming	0 to 35 mA (Peak) Adjustable	20 Lead PDIP
MC14489DW	Multi-Character LED Display Lamp Driver	Muxed LED (1/5 Mux)	Serial Binary (Compatible with SPI on CMOS MCUs)	5 Characters + Decimals or 25 Lamps	Yes	Oscillator (Scanner), Low Power Mode, Dimming	0 to 35 mA (Peak)	20 Lead SOG
MC14495P1	Hexadecimal-to-7 Segment Latch/Decoder ROM/Driver	LED Direct Drive	Parallel Hex	7 Segments +A Thru F Indicator	Yes	—	10 mA**	14 Lead PDIP

*Absolute maximum working voltage=18 V. **On-chip current limiting resistor.

RF Communications

Wideband (FM/FSK) IFs

Mfr.'s Type		Vcc (V)	Icc (mA)	Sensitivity Typ. (μV)	IF (MHz)	Mute	RSSI	Max. Data Rate	Notes	No. of Leads
PDIP	SOIC									
MC13055P	MC13055D	3 to 12	25	20	40	Yes	Yes	2.0 Mb	Wideband Data IF	16
—	MC13155D	3 to 6	10	100	70	—	Yes	12.0 Mb	Video Speed IF	16

Wideband Single Conversion Receivers — VHF

Mfr.'s Type		Vcc (V)	Icc (mA)	Sensitivity Typ. (μV)	RF Input (MHz)	IF (MHz)	Mute	RSSI	Max. Data Rate	Notes	No. of Leads
PDIP	SOIC										
MC3356P	MC3356DW	3 to 9	25	30	200	10.7	Yes	Yes	500 Kb	Includes Front End Mixer/L.O.	20
—	MC13156DW	2 to 7	3	2	200	21.4	—	Yes	500 Kb	CT-2 FM/Demodulator	24

RF Communications (Continued)

Narrowband Single Conversion Receivers — VHF

Mfr.'s Type		Vcc (V)	Icc (mA)	12 dB SINAD Sensitivity Typ. (µV)	RF Input (MHz)	IF (KHz)	Mute	RSSI	Max. Data Rate	Notes	No. of Leads
PDIP	SOIC										
MC3359P	—	4 to 9	7	2	45	455	Yes	—	>4.8 Kb	Scan Output Option	18/20
—	MC3367DW	1 to 5	6	1	75	455	Yes	—	1.2 Kb	1 Cell Operation	28
—	MC3371D	2 to 8	6	1	60	455	Yes	Yes	>4.8 Kb	RSSI	16
—	MC3372D	2 to 8	6	1	60	455	Yes	Yes	>4.8 Kb	RSSI, Ceramic Quad Detect./Resonator	16

Narrowband Dual Conversion Receivers — FM/FSK — VHF

Mfr.'s Type		Vcc (V)	Icc (mA)	12 dB SINAD Sensitivity Typ. (µV)	RF Input (MHz)	IF1 (MHz)	IF2 (Limiter In) (KHz)	Mute	RSSI	Max. Data Rate	Notes	No. of Leads
PDIP	SOIC											
MC3362P	—	2 to 7	3.0	0.7	180	10.7	455	—	Yes	>4.8 Kb	Includes Buffered VCO Output	24
—	MC3363DW	2 to 7	4.0	0.4	180	10.7	455	Yes	Yes	>4.8 Kb	Includes RF Amp/Mute	28
—	MC3335DW	2 to 7	4.0	0.7	180	10.7	455	Yes	Yes	>4.8 Kb	Low Cost Version	20
—	MC13135DW	2 to 7	3.5	0.7	200	10.7	455	—	Yes	>50 Kb	Voltage Buffered RSSI	24
—	MC13136DW	2 to 7	3.5	0.7	200	10.7	455	—	Yes	>50 Kb	High Level IF Resonator Drive	24

Transmitters — AM/FM/FSK

Mfr.'s Type		Vcc (V)	Icc (mA)	Pout (dBm)	Max. RF Frequency Out	Max. Mod. Frequency	Notes	No. of Leads
PDIP	SOIC							
MC2833P	MC2833D	3 to 8	5	–30	50	50 KHz	FM Transmitter. Includes Low Battery Checker and Tone Oscillator	16
—	MC13175D	2 to 5	40	8	500	5 MHz	AM/FM Transmitter. Single Frequency PLL fout = 8 × fref	16
—	MC13176D	2 to 5	40	8	1 GHz	5 MHz	AM/FM Transmitter. Single Frequency PLL fout = 32 × fref	16

Balanced Modulator/Demodulator

Mfr.'s Type		Vcc (V)	Icc (mA)	Carrier Suppression	Common Mode Rejection	Function	No. of Leads
PDIP	SOIC						
MC1496P	MC1496D	5 to 30	10	65 dB typ. @ 0.5 MHz 50 dB typ. @ 10.0 MHz	85 dB typ.	Carrier Balance >50 dB, General Purpose Balanced Modulator/Demodulator For AM, SSB and FM Detection.	14

Video Integrated Circuits

Encoders

Mfr.'s Type			Function	Features	No. of Leads
PDIP	SOIC	PLCC			
MC1377P	MC1377DW	—	RGB To PAL/NTSC Encoder	RGB and Sync Inputs, Composite Video Out; PAL/NTSC Selectable	20
MC13077P	—	—	Advanced RGB To PAL/NTSC Encoder	RGB and Sync Inputs, Composite Video and S-VHS Out; PAL/NTSC Selectable; Subcarrier From Crystal or External Source	20

Video Capture Chip Sets

—	—	MC44011FN	Chroma 4 Multistandard Decoder	PAL/NTSC/S-VHS Input, RGB/YUV Outputs; Horizontal and Vertical Timing Outputs; All Digital Internal Filters, No External Tanks; µP and Crystal Controlled.	44
MC44140P	—	—	PAL Digital Delay Line	For PAL Applications Of The MC44011 and MC44001	16
—	MC44145D	—	Pixel Clock PLL/Sync Separator	PAL/NTSC Sync Separator With Vertical and Composite Sync Output, 6 To 40 MHz Pixel Clock PLL	20

Deflection

MC1391P	—	—	Horizontal Processor	Linear Balanced Phase Detector, Oscillator and Predriver, Adjustable DC Loop Gain and Duty Cycle	8

IF Circuits

MC44301P	MC44301DW	—	Advanced Video IF	Complete Video/Audio IF System For High Performance Analog TV Receivers	24
MC1350P	MC1350D	—	IF Amplifier	1st and 2nd Video IF Amplifiers, 50 dB Gain @ 45 MHz, 60 dB ADC Range	8

Modulators

MC1374P	—	—	Color TV Modulator With Sound	RF Oscillator/Modulator, and FM Sound Oscillator/Modulator	14

Sound

MC1357P	—	—	Sound IF Detector	Interchangeable With ULN2111A	14

Miscellaneous Video Circuits

MC1378P	—	MC1378FN	Video Overlay Synchronizer	Complete Color TV Video Overlay Synchronizer, Remote Or Local System Control	40/44
MC44144P	—	—	Subcarrier Reference Generator	Provides Continuous Subcarrier Sine Wave and 4x Subcarrier, Locked To Incoming Burst	8

Data Conversion

Analog to Digital Converters

CMOS

Mfr.'s Type		Resolution (Bits)	Nonlinearity Max.	Conversion Time/Rate	Input Voltage Range (V)	Supplies (V)	Comments	No. of Leads
PDIP	SOIC							
MC145040P	—	8	±1/2 LSB	10 µs	0 To VDD	+5.0 ±10%	Requires External Clock, 11 Channel MUX	20
MC145041P	—	8	±1/2 LSB	20 µs	0 To VDD	+5.0 ±10%	Includes Internal Clock, 11 Channel MUX	20
—	—	Triple 8	1.00 LSB	15 MHz	1.6 to 4.6	+5.0 ±10%	3 Separate Video Channels	44
MC145050P	—	10	±1.00 LSB	21 µs	0 To VDD	+5.0 ±10%	Requires External Clock, 11 Channel MUX	20
MC145051P	MC145051DW	10	±1.00 LSB	44 µs	0 To VDD	+5.0 ±10%	Includes Internal Clock, 11 Channel MUX	20
MC145053P	MC145053D	10	±1.00 LSB	44 µs	0 To VDD	+5.0 ±10%	Includes Internal Clock, 5 Channel MUX	14

Call Your Nearest Allied Location (1-800-433-5700) For Pricing And Availability

Data Conversion (Continued)

Analog to Digital Converters (Continued)

CMOS (Continued)

Mfr.'s Type		Resolution (Bits)	Nonlinearity Max.	Conversion Time/Rate	Input Voltage Range (V)	Supplies (V)	Comments	No. of Leads
PDIP	SOIC							
MC14443P	—	8-10	±0.50% Full Scale	300 µs	Variable With Supply	+5.0 to +18	µP Compatible, Single Slope, 6-Channel MUX	16
MC14433P	—	3½ Digit	±0.05% ±1 Count	40 ms	±2.0, ±200 mV	+5.0 to +8, −2.8 to −8.0	Dual Slope	24

Bipolar

Mfr.'s Type		Resolution (Bits)	Nonlinearity Max.	Conversion Time/Rate	Input Voltage Range (V)	Supplies (V)	Comments	No. of Leads
MC10319P	MC10319DW	8	±1.00 LSB	40 ns	0 to 2.0 Vpp Max.	+5.0 and −3.0 to −6.0	Video Speed Flash Converter, Internal Gray Code, TTL Outputs	20

Digital to Analog Converter

CMOS

Mfr.'s Type		Resolution (Bits)	Accuracy @ 25 °C Max.	Max Settling Time (±1/2 LSB)	Supplies (V)	Comments	No. of Leads
PDIP	SOIC						
MC144110P	MC144110DW	6	—	—	+5.0 to +18	Serial Input, Hex DAC, 6 Outputs	18/20
MC144111P	MC144111DW	6	—	—	+5.0 to +18	Serial Input, Quad DAC, 4 Outputs	14/16

Operational Amplifiers

Single Operational Amplifiers

Noncompensated, Commercial Temperature Range (0 to 70 °C)

Mfr.'s Type	I_{IB} (µA) Max.	V_{IO} (mV) Max.	T_{CVIO} (µV/°C) Typ.	I_{IO} (nA) Max.	Avol (V/mV) Min.	Bandwidth (A_V=1) (MHz) Typ.	Slew Rate (A_V=1) (V/µs) Typ.	Supply Voltage (V) Min/Max	Description	Package Type
LM308AN	7.000	0.5	5	1.00	80.0	1.0	0.3	±3.0 /±18	Precision	8 Lead PDIP

Internally Compensated, Commercial Temperature Range (0 to 70 °C)

Mfr.'s Type	I_{IB} (µA) Max.	V_{IO} (mV) Max.	T_{CVIO} (µV/°C) Typ.	I_{IO} (nA) Max.	Avol (V/mV) Min.	Bandwidth (A_V=1) (MHz) Typ.	Slew Rate (A_V=1) (V/µs) Typ.	Supply Voltage (V) Min/Max	Description	Package Type
LF351N	200.000 pA	10.0	10	100.00 pA	25.0	4.0	13.0	±5.0/±18	JFET Input	8 Lead PDIP
MC1776CP1	0.003	6.0	15	3.00	100.0	1.0	0.2	±1.2/±18	µPower, Programmable	8 Lead PDIP
MC3476P1	0.050	6.0	15	25.00	50.0	1.0	0.2	±1.5/±18	Low Cost	8 Lead PDIP
MC34071P	0.500	5.0	10	75.00	25.0	4.5	10.0	+3.0/+44	High Performance	8 Lead PDIP
MC34181P	0.100 nA	2.0	10	0.05	25.0	4.0	10.0	±2.5/±18	Low Power JFET Input	8 Lead PDIP

Internally Compensated, Automotive Temperature Range (−40 to +85 °C)

Mfr.'s Type	I_{IB} (µA) Max.	V_{IO} (mV) Max.	T_{CVIO} (µV/°C) Typ.	I_{IO} (nA) Max.	Avol (V/mV) Min.	Bandwidth (A_V=1) (MHz) Typ.	Slew Rate (A_V=1) (V/µs) Typ.	Supply Voltage (V) Min/Max	Description	Package Type
MC33071P	0.500	5.0	10	75.00	25.0	4.5	10.0	+3.0/+44	High Performance	8 Lead PDIP
MC33071AP	500.000 nA	3.0	10	50.00	50.0	4.5	10.0	+3.0/+44	Single Supply	8 Lead PDIP
MC33171P	0.100	4.5	10	20.00	50.0	1.8	2.1	+3.0/+44	Low Power Single Supply	8 Lead PDIP

Dual Operational Amplifiers

Internally Compensated, Commercial Temperature Range (0 to 70 °C)

Mfr.'s Type	I_{IB} (µA) Max.	V_{IO} (mV) Max.	T_{CVIO} (µV/°C) Typ.	I_{IO} (nA) Max.	Avol (V/mV) Min.	Bandwidth (A_V=1) (MHz) Typ.	Slew Rate (A_V=1) (V/µs) Typ.	Supply Voltage (V) Min/Max	Description	Package Type
LF353N	200.000 pA	10.0	10	100.00 pA	25.0	4.0	13.0	±5.0/±18	JFET Input	8 Lead PDIP
LF412CN	200.000 pA	3.0	10	100.00 pA	25.0	4.0	13.0	+5.0/±18	JFET Input, Low Offset, Low Drift	8 Lead PDIP
LM358N	25.000	6.0	7	50.00	25.0	1.0	0.6	±1.5/±18 (Split Supplies), +3.0 / +36 (Single Supply)	Low Power Consumption	8 Lead PDIP
MC1458P1	0.500	6.0	10	200.00	20.0	1.1	0.8	±3.0/±18	Dual MC1741	8 Lead PDIP
MC1458CP1	0.700	10.0	10	300.00	20.0	1.1	0.8	±3.0/±18	General Purpose	8 Lead PDIP
MC3458P1	0.500	10.0	7	50.00	20.0	1.0	0.6	±1.5/±18 (Split Supplies), +3.0 / +36 (Single Supply)	Low Crossover Distortion	8 Lead PDIP
MC4558CP1	0.500	6.0	10	200.00	20.0	2.8	1.6	±3.0/±18	High Frequency	8 Lead PDIP
MC34072P	0.500	5.0	10	75.00	25.0	4.5	10.0	+3.0/+44	High Performance, Single Supply	8 Lead PDIP
MC34072AP	500.000 nA	3.0	10	50.00	50.0	4.5	10.0	+3.0/+44	High Performance, Single Supply	8 Lead PDIP
MC34082P	200.000 pA	3.0	10	100.00 pA	25.0	8.0	30.0	±5.0/±22	High Speed JFET Input	8 Lead PDIP
MC34182P	0.100 nA	3.0	10	0.05	25.0	4.0	10.0	±2.5/±18	Low Power JFET Input	8 Lead PDIP
TL062CP	200.000 pA	15.0	10	200.00 pA	4.0	2.0	6.0	±2.5/±18	Low Power JFET Input	8 Lead PDIP
TL082ACP	200.000 pA	6.0	10	100.00 pA	50.0	4.0	13.0	±5.0/±18	JFET Input	8 Lead PDIP
TL082CP	400.000 pA	15.0	10	200.00 pA	25.0	4.0	13.0	±5.0/±18	JFET Input	8 Lead PDIP

Internally Compensated, Industrial Temperature Range (−25 to +85 °C)

Mfr.'s Type	I_{IB} (µA) Max.	V_{IO} (mV) Max.	T_{CVIO} (µV/°C) Typ.	I_{IO} (nA) Max.	Avol (V/mV) Min.	Bandwidth (A_V=1) (MHz) Typ.	Slew Rate (A_V=1) (V/µs) Typ.	Supply Voltage (V) Min/Max	Description	Package Type
LM258N	0.150	5	10	30.00	50.0	1.0	0.6	±1.5/ ±18 (Split Supplies), +3.0/+36 (Single Supply)	Split or Single Supply Op Amp	8 Lead PDIP

Internally Compensated, Automotive Temperature Range (−40 to +85 °C)

Mfr.'s Type	I_{IB} (µA) Max.	V_{IO} (mV) Max.	T_{CVIO} (µV/°C) Typ.	I_{IO} (nA) Max.	Avol (V/mV) Min.	Bandwidth (A_V=1) (MHz) Typ.	Slew Rate (A_V=1) (V/µs) Typ.	Supply Voltage (V) Min/Max	Description	Package Type
LM2904N	0.250	7.0	7	50.00	100 Typ.	1.0	6.0	±1.5/±13 (Split Supplies), +3.0/+26 (Single Supply)	Split or Single Supply Op Amp	8 Lead PDIP
MC3358P1	5.000	8.0	10	75.00	20.0	10.0	0.6	±1.5/±18 (Split Supplies), +3.0/+36 (Single Supply)	Split or Single Supply Op Amp	8 Lead PDIP
MC33072P	0.500	5.0	10	75.00	25.0	4.5	10.0	+3.0/+44	High Performance, Single Supply	8 Lead PDIP
MC33072AP	500.000 nA	3.0	10	50.00	50.0	4.5	10.0	+3.0/+44	High Performance, Single Supply	8 Lead PDIP
MC33077P	1.000	1.0	2	180.00	150.0	37.0	11.0	±2.5/±18	Low Noise	8 Lead PDIP
MC33078P	750.000 nA	2.0	2	150.00	31.6	16.0	7.0	±5.0/±18	Low Noise	8 Lead PDIP
MC33172P	0.100	4.5	10	20.00	50.0	1.8	2.1	+3.0/+44	Low Power, Single Supply	8 Lead PDIP
MC33178P	0.500	3.0	2	50.00	50.0	5.0	2.0	±2.0/±18	High Output Current	8 Lead PDIP
MC33182P	0.100 nA	3.0	10	0.05	25.0	4.0	10.0	±2.5/±18	Low Power JFET Input	8 Lead PDIP

Internally Compensated, Extended Automotive Temperature Range (−40 to +105°C)

Mfr.'s Type	I_{IB} (µA) Max.	V_{IO} (mV) Max.	T_{CVIO} (µV/°C) Typ.	I_{IO} (nA) Max.	Avol (V/mV) Min.	Bandwidth (A_V=1) (MHz) Typ.	Slew Rate (A_V=1) (V/µs) Typ.	Supply Voltage (V) Min/Max	Description	Package Type
MC33202P	200.000 nA	6.0	2	50.00	50.0	2.2	1.0	+1.8/+12	Low V Rail to Rail	8 Lead PDIP
MC33202D	200.000 nA	6.0	2	50.00	50.0	2.2	1.0	+1.8/+12	Low V Rail to Rail	8 Lead SOIC

Internally Compensated, Extended Automotive Temperature Range (−40 to +125°C)

Mfr.'s Type	I_{IB} (µA) Max.	V_{IO} (mV) Max.	T_{CVIO} (µV/°C) Typ.	I_{IO} (nA) Max.	Avol (V/mV) Min.	Bandwidth (A_V=1) (MHz) Typ.	Slew Rate (A_V=1) (V/µs) Typ.	Supply Voltage (V) Min/Max	Description	Package Type
TCA0372DP1	500 nA	15.0	20	50.00	30.0	1.1	1.4	+5.0/+36	Power Op Amp, Single Supply	8 Lead PDIP

Quad Operational Amplifiers

Internally Compensated, Commercial Temperature Range (0 to 70 °C)

Mfr.'s Type	I_{IB} (µA) Max.	V_{IO} (mV) Max.	T_{CVIO} (µV/°C) Typ.	I_{IO} (nA) Max.	Avol (V/mV) Min.	Bandwidth (A_V=1) (MHz) Typ.	Slew Rate (A_V=1) (V/µs) Typ.	Supply Voltage (V) Min/Max	Description	Package Type
LF347N	200.000 pA	10.0	10	100.00 pA	25.0	4.0	13.0	±5.0/±18	JFET Input	14 Lead PDIP
LM324N	0.250	6.0	7	50.00	25.0	1.0	0.6	±1.5/±16 (Split Supplies), +3.0/+32 (Single Supply)	Low Power Consumption	14 Lead PDIP
MC3403P	0.500	10.0	7	50.00	20.0	1.0	0.6	±1.5/±18 (Split Supplies), +3.0/+36 (Single Supply)	No Crossover Distortion	14 Lead PDIP
MC4741CP	0.500	6.0	15	200.00	20.0	1.0	0.5	±3.0/±18	Quad MC1741	14 Lead PDIP

Operational Amplifiers (Continued)

Quad Operational Amplifiers (Continued)

Internally Compensated, Commercial Temperature Range (0 to 70 °C)

Mfr.'s Type	I_{IB} (µA) Max.	V_{IO} (mV) Max.	TC_{VIO} (µV/°C) Typ.	I_{IO} (nA) Max.	A_{vol} (V/mV) Min.	Bandwidth (A_V=1) (MHz) Typ.	Slew Rate (A_V=1) (V/µs) Typ.	Supply Voltage (V) Min./Max.	Description	Package Type
MC34004P	200.000 pA	10.0	10	100.00 pA	25.0	4.0	13.0	±5.0/±18	JFET Input	14 Lead PDIP
MC34004BP	200.000 pA	5.0	10	100.00 pA	50.0	4.0	13.0	±5.0/±18	JFET Input	14 Lead PDIP
MC34074P	0.500	5.0	10	75.00	25.0	4.5	10.0	+3.0/+44	High Performance, Single Supply	14 Lead PDIP
MC34074AP	500.000 nA	3.0	10	50.00	50.0	4.5	10.0	+3.0/+44	High Performance, Single Supply	14 Lead PDIP
MC34084P	200.000 pA	12.0	10	100.00 pA	25.0	8.0	30.0	±5.0/±22	High Speed JFET Input	14 Lead PDIP
MC34184P	0.100 nA	10.0	10	0.05	25.0	4.0	10.0	±2.5/±18	Low Power JFET Input	14 Lead PDIP
TL074CN	200.000 pA	10.0	10	50.00 pA	25.0	4.0	13.0	±5.0/±18	Low Noise JFET Input	14 Lead PDIP
TL084ACN	200.000 pA	6.0	10	100.00 pA	50.0	4.0	13.0	±5.0/±18	JFET Input	14 Lead PDIP
TL084CN	400.000 pA	15.0	10	200.00 pA	25.0	4.0	13.0	±5.0/±18	JFET Input	14 Lead PDIP

Internally Compensated, Automotive Temperature Range (–40 to +85°C)

LM2902N	0.500	10.0	—	50.00	—	1.0	0.6	±1.5/±13 (Split Supplies), +3.0/+26 (Single Supply)	Differential Low Power	14 Lead PDIP
MC3303P	0.500	8.0	10	75.00	20.0	1.0	0.6	±1.5/±18 (Split Supplies), +3.0/+36 (Single Supply)	Differential, General Purpose	14 Lead PDIP
MC33074P	0.500	4.5	10	75.00	25.0	4.5	10.0	+3.0/+44	High Performance, Single Supply	14 Lead PDIP
MC33074AP	500.000 nA	3.0	10	50.00	50.0	4.5	10.0	+3.0/+44	High Performance, Single Supply	14 Lead PDIP
MC33079P	750.000 nA	2.5	2	150.00	31.6	9.0	7.0	±5.0/±18	Low Noise	14 Lead PDIP
MC33174P	0.100	4.5	10	20.00	50.0	1.8	2.1	+3.0/+44	Low Power, Single Supply	14 Lead PDIP
MC33179P	0.500	3.0	2	50.00	50.0	5.0	2.0	±2.0/±18	High Output Current	14 Lead PDIP
MC33284P	100.000 pA	2.0	5	50.00 pA	50.0	30.0	12.0	±2.5/±18	Low Input Offset JFET	14 Lead PDIP

Internally Compensated, High Frequency Operational Amplifier

Mfr.'s Type		AV (dB)	Bandwidth @ MHz	V_{CC}/V_{EE} (Vdc)		Temperature Range (°C)	No. of Leads
PDIP	SOIC	Typ.		Min	Max		
MC1350P	MC1350D	50	45	+6.0	+18	0 to 70	8
MC1490P	—	50 45 35	10 60 100	+6.0	+18	–40 to +85	8

Miscellaneous Operational Amplifiers

Bipolar

Mfr.'s Type	Function	I_{IB} (µA) Max.	V_{IO} (mV) Max.	I_{IO} (nA) Max.	A_{vol} (V/mV) Min.	Response (µs) Typ.	Supply Voltage (V)		No. of Leads
							Single	Dual	
MC3405P	Dual Op-Amp and Dual Voltage Comparator	0.5	10	50	20	1.3	3.0 to 36	±1.5 to ±18	14 Lead PDIP

CMOS

Mfr.'s Type		Function	Quantity Per Package	Single Supply Voltage Range (V)	Dual Supply Voltage Range (V)	Frequency Range (MHz)	No. of Leads
PDIP	SOIC						
MC14573P	MC14573D	Quad Programmable Op-Amp	4	3.0 to 15	±1.5 to ±7.5	DC to 1.0	16
MC14577CP	—	Dual Video Op-Amp	2	5.0 to 12	±2.5 to ±6.0	Up to 10.0	8
MC14575P	MC14575D	Dual Programmable Op-Amp Dual Programmable Comparator	2 and 2	3.0 to 15	±1.5 to ±7.5	DC to 1.0	16

Comparators

Single

Bipolar

Mfr.'s Type PDIP	I_{IB} (µA) Max.	V_{IO} (mV) Max.	I_{IO} (µA) Max.	A_V (V/V) Min.	I_{IO} (mA) Min.	Response Time (ns)	Supply Voltage (V)	Description	Temperature Range (°C)	No. of Leads
LM311N	0.25	7.5	0.05	200 K	8	200	+15, –15	With Strobe, Will Operate from Single Supply	0 to +70	8

Dual

Bipolar

LM393N	0.25	5.0	0.05	200 K	6	1300	±1.5 to ±18 or +3.0 to +36	Designed for Single or Split Supply Operation, Input	0 to +70	8
LM393AN	0.25	2.0	0.05	200 K	6	1300	±1.5 to ±18 or +3.0 to +36	Common Mode Includes Ground (Negative Supply)	0 to +70	8
LM2903N	0.25	7.0	0.05	200 K	6	1500	±1.5 to ±18 or +3.0 to +36	Common Mode Includes Ground (Negative Supply)	–40 to +85	8

Quad

Bipolar

LM239AN	0.250	2	0.0500	200.0 K	6	1300	±1.5 to ±18 or +3.0 to +36	Designed For Single Or Split Supply Operation, Input Common Mode Includes Ground (Negative Supply)	–25 to +85	14
LM339AN	0.250	2	0.0500	200.0 K					0 to +70	14
LM2901N	0.250	7	0.0500	100.0 K					–40 to +85	14
MC3302P	0.500	20	0.5000	30.0 K					–40 to +85	14
MC3430P	40.000	6	1.0000 Typ.	1.2 K	16	33	+5, –5	High Speed Comparator/Sense Amplifier	0 to +70	16

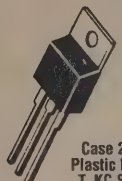
CMOS

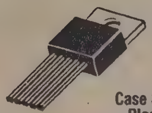
MC14575P	0.001	30	0.0001	2.0 K	3	1000	±1.5 to ±7.5 or +3.0 to +36	Externally Programmable Power Dissipation With 1 Or 2 Resistors	–40 to +85	16

Call Your Nearest Allied Location (1-800-433-5700) For Pricing And Availability

Voltage Regulators

Case 29
Plastic
P, Z Suffix


Case 221A
Plastic Power
T, KC Suffix


Case 314D
Plastic
T Suffix

Case 369A
Plastic
DT Suffix

Case 751
Plastic
D Suffix

Linear Voltage Regulators

Fixed Output

Mfr.'s Type								Vout (V)	Tol.* (V)	Io (mA) Max.	Vin (V) Min./Max.	Regline (mV)	Regload (mV)	ΔVo/ΔT (mV/°C) Typ.
Positive Regulator				Negative Regulator										
Case 29/TO-92	Case 221A	Case 369A	Case 751/SO-8	Case 29/TO-92	Case 221A	Case 369A	Case 751/SO-8							
LM2931Z-5.0	LM2931T-5.0	—	—	—	—	—	—	5.0	±0.50	100	5.6/40	30	50	1.00
MC78L05CP	—	—	—	MC79L05CP	—	—	—	5.0	±0.50	100	6.7/30	200	60	1.00
LM2931AZ-5.0	LM2931AT-5.0	—	—	—	—	—	—	5.0	±0.25	100	5.6/40	30	50	1.00
MC78L05ACP	—	—	MC78L05ACD	MC79L05ACP	—	—	MC79L05ACD	5.0	±0.25	100	6.7/30	150	60	1.00
—	MC78M05CT	MC78M05CDT	—	—	MC79M05CT	MC79M05CDT	—	5.0	±0.25	500	7.0/35	100	100	1.00
—	MCT7805CT	—	—	—	—	—	—	5.0	±0.25	1500	7.0/35	100	100	1.00
—	MC7805CT	—	—	—	MC7905CT	—	—	5.0	±0.25	1500	7.0/35	100	100	1.00
—	MC7805ACT	—	—	—	MC7905ACT	—	—	5.0	±0.20	1500	7.5/35	10	100	0.60
—	LM340T-5.0	—	—	—	—	—	—	5.0	±0.25	1500	7.0/35	50	50	0.60
—	LM340AT-5.0	—	—	—	—	—	—	5.0	±0.20	1500	7.0/35	10	25	0.60
—	TL780-05CKC	—	—	—	—	—	—	5.0	±0.10	1500	7.0/35	5	25	0.06
—	MC78T05CT	—	—	—	—	—	—	5.0	±0.25	3000	7.3/35	25	30	0.10
—	MC78T05ACT	—	—	—	—	—	—	5.0	±0.20	3000	7.3/35	10	25	0.10
—	LM323AT	—	—	—	—	—	—	5.0	±0.20	3000	7.5/20	15	50	0.10
—	MC78M06CT	—	—	—	—	—	—	6.0	±0.30	500	8.0/35	100	120	1.00
—	MCT7806CT	—	—	—	—	—	—	6.0	±0.30	1500	8.0/35	120	120	0.70
—	MC7806CT	—	—	—	MC7906CT	—	—	6.0	±0.30	1500	8.0/35	120	120	0.70
MC78L08ACP	—	—	—	—	—	—	—	8.0	±0.80	100	9.7/30	175	80	—
—	MC78M08CT	MC78M08CDT	—	—	—	—	—	8.0	±0.40	500	10.0/35	100	160	1.00
—	MCT7808BT	—	—	—	—	—	—	8.0	±0.40	1500	11.5/35	160	160	1.00
—	MCT7808CT	—	—	—	—	—	—	8.0	±0.40	1500	10.5/35	160	160	1.00
—	MC7808CT	—	—	—	MC7908CT	—	—	8.0	±0.40	1500	10.5/35	160	160	1.00
—	MC78T08CT	—	—	—	—	—	—	8.0	±0.40	3000	10.4/35	35	30	0.16
MC78L12CP	—	—	—	—	—	—	—	12.0	±1.20	100	13.7/35	250	100	—
MC78L12ACP	—	—	MC78L12ACD	MC79L12ACP	—	—	MC79L12ACD	12.0	±0.60	100	13.7/35	250	100	—
—	MC78M12CT	MC78M12CDT	—	—	—	—	—	12.0	±0.60	500	14.0/35	100	240	1.00
—	MCT7812BT	—	—	—	—	—	—	12.0	±0.60	1500	15.5/35	240	240	1.50
—	MCT7812CT	—	—	—	—	—	—	12.0	±0.60	1500	14.5/35	240	240	1.50
—	MC7812CT	—	—	—	MC7912CT	—	—	12.0	±0.60	1500	14.5/35	240	240	1.50
—	MC7812ACT	—	—	—	—	—	—	12.0	±0.50	1500	14.8/35	18	100	1.50
—	LM340T-12	—	—	—	—	—	—	12.0	±0.60	1500	14.5/35	120	120	1.50
—	LM340AT-12	—	—	—	—	—	—	12.0	±0.50	1500	14.5/35	18	32	1.50
—	TL780-12CKC	—	—	—	—	—	—	12.0	±0.24	1500	14.5/35	5	35	0.20
—	MC78T12CT	—	—	—	—	—	—	12.0	±0.60	3000	14.5/35	45	30	0.20
—	MC78T12ACT	—	—	—	—	—	—	12.0	±0.50	3000	14.5/35	18	25	0.20
MC78L15ACP	—	—	—	MC79L15ACP	—	—	—	15.0	±0.75	100	16.7/35	300	150	—
—	MC78M15CT	MC78M15CDT	—	—	—	—	—	15.0	±0.75	500	17.0/35	100	300	1.00
—	MCT7815BT	—	—	—	—	—	—	15.0	±0.75	1500	18.5/35	300	300	1.80
—	MC7815BT	—	—	—	—	—	—	15.0	±0.75	1500	18.5/35	300	300	1.80
—	MCT7815CT	—	—	—	—	—	—	15.0	±0.75	1500	17.5/35	300	300	1.80
—	MC7815CT	—	—	—	MC7915CT	—	—	15.0	±0.75	1500	17.5/35	300	300	1.80
—	MC7815ACT	—	—	—	MC7915ACT	—	—	15.0	±0.60	1500	17.9/35	22	100	1.80
—	LM340T—15	—	—	—	—	—	—	15.0	±0.75	1500	17.5/35	150	150	1.80
—	LM340AT-15	—	—	—	—	—	—	15.0	±0.60	1500	17.5/35	22	35	1.80
—	TL780-15CKC	—	—	—	—	—	—	15.0	±0.30	1500	17.5/35	15	60	0.20
—	MC78T15CT	—	—	—	—	—	—	15.0	±0.75	3000	17.5/40	55	30	0.30
MC78L18ACP	—	—	—	—	—	—	—	18.0	±0.90	100	19.7/35	325	170	—
—	MC7818CT	—	—	—	MC7918CT	—	—	18.0	±0.70	1500	21.0/35	360	360	2.30
—	MC78M20CT	—	—	—	—	—	—	20.0	±1.00	500	22.0/40	10	400	1.10
MC78L24ACP	—	—	—	—	—	—	—	24.0	±1.20	100	25.7/40	300	200	—
—	MC78M24CT	—	—	—	—	—	—	24.0	±1.20	500	26.0/40	100	480	1.20
—	MCT7824BT	—	—	—	—	—	—	24.0	±1.20	1500	28.0/40	480	480	3.00
—	MC7824BT	—	—	—	—	—	—	24.0	±1.20	1500	28.0/40	480	480	3.00
—	MCT7824CT	—	—	—	—	—	—	24.0	±1.20	1500	27.0/40	480	480	3.00
—	MC7824CT	—	—	—	MC7924CT	—	—	24.0	±1.20	1500	27.0/40	480	480	3.00

Adjustable Positive Output Regulators

Mfr.'s Type	Io (mA) Max.	Vout (V)		Vin (V)		Vin - Vout Differential (V) Min.	PD (W) Max.		Regulation % Vout @ TA=25°C Max.		Tc Vout Typ. (%/°C)	TJ (°C) Max.	Package Type
		Max.	Min.	Min.	Min.		TA=25°C	TC=25°C	Line	Load			
LM317LZ	100	1.2	37	5.00	40	3.0	Internally Limited		0.04	0.5	0.0060	125	Case 29
LM2931CT	100	3.0	24	3.16	40	0.6	Internally Limited		0.15	1.0	—	125	Case 314D
MC1723CP	150	2.0	37	9.50	40	3.0	1.25	—	0.10	0.3	0.0030	150	14 Lead PDIP
LM317MT	500	1.2	37	5.00	40	3.0	1.50	—	0.10	0.3	0.0020	175	Case 221A
LM317T	1500	1.2	37	5.00	40	3.0	Internally Limited		0.04	0.5	0.0060	125	Case 221A
LM350T	3000	1.2	33	5.00	36	3.0	Internally Limited		0.03	0.5	0.0080	125	Case 221A

Adjustable Negative Output Regulators

LM337MT	500	−1.2	−37	5.00	4	3.0	Internally Limited		0.04	1.0	0.0048	125	Case 221A
LM337T	1500	−1.2	−37	5.00	4	3.0	Internally Limited		0.04	1.0	0.0048	125	Case 221A

Microprocessor Voltage Regulator/Supervisory Circuit

Mfr'.'s Type	V_{out} (V)		I_O (mA) Max.	V_{in} (V)		Reg_{line} (mV) Max.	Reg_{load} (mV) Max.	T_A (°C)	Package Type
	Min.	Max.		Min.	Max.				
MC34160P	4.75	5.25	100	7	40	40	50	0 to +70	16 Lead PDIP
MC33160P	4.75	5.25	100	7	40	40	50	40 to +85	16 Lead PDIP

Switching Regulator Control Circuits

Single Ended Controllers

Mfr.'s Type		I_O (mA) Max.	Minimum Operating Voltage Range (V)	Operating Mode	Reference (V)	Maximum Useful Oscillator Frequency (KHz)	T_A (°C)	No. of Leads
PDIP	SOIC							
MC34060AP	MC34060AD	500[1]	7.0 to 40	Voltage	5.0 0±1.5%	200	0 to +70	14
MC33060AP	MC33060AD	500[1]	7.0 to 40	Voltage	5.00 ±1.5%	200	–40 to +85	14
MC34129P	MC34129D	1000[2]	4.2 to 12	Current	1.25 ±2.0%	300	0 to +70	14
MC33129P	MC33129D	1000[2]	4.2 to 12	Current	1.25 ±2.0%	300	–40 to +85	14
UC3842AN	—	1000[2]	11.5 to 30	Current	5.00 ±2.0%	500[4]	0 to +70	8
UC2842AN	—	1000[2]	11.0 to 30	Current	5.00 ±2.0%	500[4]	–25 to +85	8
UC3843AN	UC3843AD	1000[2]	8.2 to 30	Current	5.00 ±2.0%	500[4]	0 to +70	8
UC2843AN	—	1000[2]	8.2 to 30	Current	5.00 ±1.0%	500[4]	–25 to +85	8
UC3844N	—	1000[2]	11.5 to 30	Current	5.00 ±2.0%	500[5]	0 to +70	8
UC2844N	—	1000[2]	11.0 to 30	Current	5.00 ±1.0%	500[5]	–25 to +85	8
UC3845N	—	1000[2]	8.2 to 30	Current	5.00 ±2.0%	500[5]	0 to +70	8
UC2845N	—	1000[2]	8.2 to 30	Current	5.00 ±1.0%	500[5]	–25 to +85	8
MC44602P2	—	1000[3]	11.0 to 18	Current	5.00 ±6.0%	500[5]	–25 to +85	16

Single Ended Controllers with On-Chip Power Switch

PDIP	SOIC	I_O (mA) Max.	Minimum Operating Voltage Range (V)	Operating Mode	Reference (V)	Maximum Useful Oscillator Frequency (KHz)	T_A (°C)	No. of Leads
µA78S40PC	—	1500[7]	2.5 to 40	Voltage	1.25 ±5.2%	100	0 to +70	16
MC34063AP1	MC34063AD	1500[7]	2.5 to 40	Voltage	1.25 ±2.0%	100	0 to +70	8
MC33063AP1	MC33063AD	1500[7]	2.5 to 40	Voltage	1.25 ±2.0%	100	–40 to +85	8
MC34165P	—	1500[7]	3.0 to 65	Voltage	1.25 ±2.0%[9]	100	0 to +70	16
MC34163P	—	3400[7]	2.5 to 40	Voltage	1.25 ±2.0%[9]	100	0 to +70	16
MC34166T[6]	—	3400[8]	7.5 to 40	Voltage	5.05 ±2.0%	72 ±12%[10]	0 to +70	5
MC33166T[6]	—	3400[8]	7.5 to 40	Voltage	5.05 ±2.0%	72 ±12%[10]	–40 to +85	5
MC34167T[6]	—	5500[8]	7.5 to 40	Voltage	5.05 ±2.0%	72 ±12%[10]	0 to +70	5

Double Ended Controllers

PDIP	SOIC	I_O (mA) Max.	Minimum Operating Voltage Range (V)	Operating Mode	Reference (V)	Maximum Useful Oscillator Frequency (KHz)	T_A (°C)	No. of Leads
TL494CN	—	500[1]	7.0 to 40	Voltage	5.00 ±5.0%	200	0 to +70	16
SG3525AN	—	±500[2]	8.0 to 40	Voltage	5.10 ±2.0%	400	0 to +70	16

[1] Uncommitted Drive Output. [2] Totem Pole MOSFET Drive Output. [3] 1000 Source, 1500 Sink; Split Totem Pole Bipolar Drive Output. [4] Guaranteed at 250. [5] 50% Duty Cycle Limit. [6] Case Style is 314D. [7] Uncommitted Power Switch. [8] Dedicated Power Switch. [9] Dual References, 1.25 ±2.0% and 5.05 ±3.0%. [10] Internally Fixed.

11

Power Factor Controllers

Mfr.'s Type	I_O (mA) Max.	Minimum Operating Voltage Range (V)	Operating Mode	Reference (V)	Features	T_A (°C)	No. of Leads
MC34261P	±500*	9.0 To 30	Current	±2.5	Undervoltage Lockout, Internal Start-Up Timer	0 to +70	8
MC34262P	±500*	9.0 To 30	Current	±2.5	Overvoltage Comparator, Undervoltage Lockout, Internal Start-Up Timer	0 to +70	8

*Totem Pole MOSFET Drive Outputs.

Under Voltage Sense/Reset Controllers

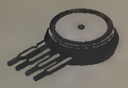
Mfr.'s Type		Standard Power Supply Supported (V)	Typical Threshold Voltage (V)	Typical Hysteresis Voltage (V)	Minimum Output Sink Current (mA)	Power Supply Input Voltage Range (V)	Maximum Quiescent Input Current	T_A (°C)
Case 29/TO-92	Case 751/SO-8							
MC34064P-5	MC34064D-5	5.0 ±5%	4.6	0.02	10	1.0 to 10	500 µA @ V_{in}=5.0 V	0 to +70
MC33064P-5	MC33064D-5	5.0 ±5%	4.6	0.02	10	1.0 to 10	500 µA @ V_{in}=5.0 V	–40 to +85
MC34164P-5	MC34164D-5	5.0 ±10%	4.3	0.09	7	1.0 to 12	20 µA @ V_{in}=5.0 V	0 to +70
MC33164P-5	MC33164D-5	5.0 ±10%	4.3	0.09	7	1.0 to 12	20 µA @ V_{in}=5.0 V	–40 to +85
MC34164P-3	MC34164D-3	3.0 ±5%	2.7	0.06	6	1.0 to 12	15 µA @ V_{in}=3.0 V	0 to +70
MC33164P-3	MC33164D-3	3.0 ±5%	2.7	0.06	6	1.0 to 12	15 µA @ V_{in}=3.0 V	–40 to +85

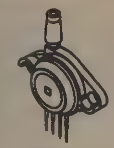
Precision Low Voltage References

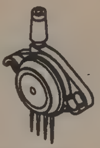
Mfr.'s Type			Vout (V) Typ.	IO (mA) Max.	Vout/T (ppm/°C) Max.	Regline (mV) Max.	Regload (mV) Max.	Temperature Range (°C)
Case 29/TO-92	Case 751/SO-8	8 Lead PDIP						
LM385BZ-1.2	—	—	1.235 ±12 mV	20	80 Typ.	Note 1	1*	0 to +70
LM385Z-1.2	—	—	1.235 ±25 mV	20	80 Typ.	Note 1	1*	0 to +70
LM285Z-1.2	—	—	1.235 ±25 mV	20	80 Typ.	Note 1	1*	–40 to +85
LM385BZ-2.5	—	—	2.500 ±38 mV	20	80 Typ.	Note 1	2*	0 to +70
LM385Z-2.5	—	—	2.500 ±75 mV	20	80 Typ.	Note 1	2*	0 to +70
LM285Z-2.5	—	—	2.500 ±75 mV	20	80 Typ.	Note 1	2*	–40 to +85
—	MC1403D	—	2.500 ±25 mV	10	40	Note 2	10**	0 to +70
TL431CLP	TL431CD	TL431CP	2.500 to 37	100	50 Typ.	Note 3	Note 3	0 to +70
TL431ACLP	TL431ACD	TL431ACP	2.500 to 37	100	50 Typ.	Note 3	Note 3	0 to +70

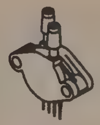
Note 1: Micropower Reference Diode Dynamic Impedance (z) < 1.0 Ohm at IR = 100 µA. Note 2: 4.5 V < Vin <15 V / 15 V < Vin < 40 V. Note 3: Shunt Reference Dynamic Impedance (z) < 0.5 Ohm. *10 µA < IR < 1.0mA. **20 µA < IR < 1.0 mA. **0 mA < IL < 10 mA.

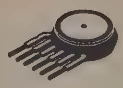
MPX Pressure Sensors

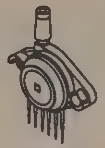

Basic Element
Case 344
A/D Suffix

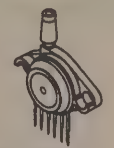

Gauge Port
Case 350-03
AP/GP Suffix

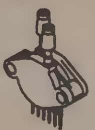

Gauge Vacuum Port
Case 350-04
GVP Suffix

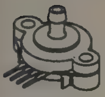

Dual Port
Case 352
DP Suffix

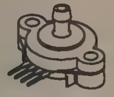

Basic Element
Case 867
A/D Suffix

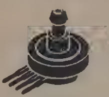

Gauge Port
Case 867B
AP/GP Suffix

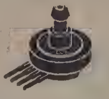

Gauge Vacuum Port
Case 867D
GVP Suffix

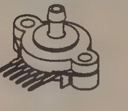

Dual Port
Case 867C
DP Suffix

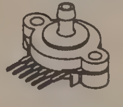

Axial Port
Case 371C
ASX/GSX Suffix

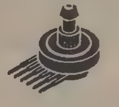

Axial Vacuum Port
Case 371D
GVSX Suffix

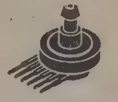

Stovepipe Port
Case 371-05
AS/GS Suffix

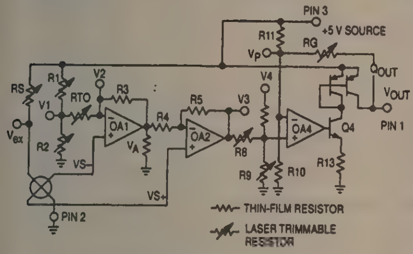

Stovepipe Vacuum Port
Case 371-06
GVS Suffix


Axial Port
Case 867F
ASX/GSX Suffix


Axial Vacuum Port
Case 867G
GVSX Suffix


Stovepipe Port
Case 867E
AS/GS Suffix


Stovepipe Vacuum Port
Case 867A
GVS Suffix



Fully Integrated Pressure Sensor

The performance of Motorola's MPX series of pressure sensors is based on its patented strain gauge design. Unlike the more conventional pressure sensors which utilize four closely matched resistors in a Wheatstone bridge configuration, the MPX series uses only a single piezoresistive element ion implanted on an etched silicon diaphragm to sense the stress induced on the diaphragm by an external pressure. The extremely linear output is an analog voltage that is proportional to pressure input and ratiometric with supply voltage. High sensitivity and excellent long-term repeatability make these units suitable for the most demanding applications.

Motorola pressure sensors support three types of pressure measurements: Absolute Pressure, Differential Pressure and Gauge Pressure.

Absolute Pressure Sensors measure an external pressure relative to a zero-pressure reference (vacuum) sealed inside the reference chamber of the die during manufacture. This corresponds to a deflection of the diaphragm equal to approximately 15 PSI (one atmosphere), generating a quiescent full-scale output for the MPX100A (15 PSI) sensor, and a half-scale output for the MPX200A (30 PSI) device. Measurement of external pressure is accomplished by applying a relative negative pressure to the "Pressure" side of the sensor.

Differential Pressure Sensors measure the difference between pressures applied simultaneously to opposite sides of the diaphragm. A positive pressure applied to the "Pressure" side generates the same (positive) output as an equal negative pressure applied to the "Vacuum" side.

Gauge pressure readings are a special case of differential measurements in which the pressure applied to the Pressure side is measured against the ambient atmospheric pressure applied to the Vacuum side through the vent hole in the chip of the differential pressure sensor elements.

To make the designer's job even easier, Motorola's integrated devices carry sensor technology one step further. Besides the on-chip temperature compensation and calibration offered currently on the MPX2000 series, amplifier signal conditioning has been integrated on-chip in the MPX5000 series to allow interface directly to any microcomputer with an on-board A/D converter.

The signal conditioning is accomplished by means of a four-stage amplification network, incorporating linear bipolar processing, thin-film metalization techniques,and interactive laser trimming to provide the state-of-the-art in sensor technology.

Motorola designates the two sides of the pressure sensor as the Pressure (top) side and the Vacuum Pressure (back) side. The Pressure side is the side containing silicone gel which protects the die from harsh media. The Motorola MPX pressure sensor is designed to operate with positive differential pressure applied (i.e., top side pressure is greater than or equal to back side pressure). The Pressure side may be identified by using the tables below. Note: Stainless steel cap is not installed on devices with a port attached to the pressure (gel) side.

MPX10/50/100/200/700 Series (Uncompensated)

Mfr.'s Type	Pressure Range (PSI)	Device Type	Measurement Type	Package Type	Positive Pressure Side Identifier	Pressure Range (kPa/PSI) Max.	Over Pressure (kPa)	Offset (mV) Typ.	Full Scale Span (mV) Typ.	Sensitivity (mV/kPa) Typ.	Linearity % of FSS* Min.	Linearity % of FSS* Max.	Temperature Coefficient of Span (%/°C) Typ.	Input Impedance (Ω) Typ.
MPX10GP	0-1.5	4-Pin Ported Element	Gauge	Case 350-03	Side With Port Attached	10/45.0	100	20	35	3.500	–1.00	1.00	–0.19	475
MPX50GP	0-7.3	4-Pin Ported Element	Gauge	Case 350-03	Side With Port Attached	50/7.3	200	20	60	1.200	–0.10	0.10	–0.19	475
MPX100A	0-14.5	4-Pin Basic Element	Absolute	Case 344	Stainless Steel Cap	100/14.5	200	20	60	0.600	–0.10	0.10	–0.19	475
MPX100AP	0-14.5	4-Pin Ported Element	Absolute Port	Case 350-03	Side With Port Attached	100/14.5	200	20	60	0.600	–0.10	0.10	–0.19	475
MPX100AS	0-14.5	4-Pin Ported Element	Absolute Stove Pipe	Case 371-05	Side With Port Attached	100/14.5	200	20	60	0.600	–0.10	0.10	–0.19	475
MPX100GP	0-14.5	4-Pin Ported Element	Gauge	Case 350-03	Side With Port Attached	100/14.5	200	20	60	0.600	–0.10	0.10	–0.19	475
MPX100GVP	0-14.5	4-Pin Ported Element	Gauge Vacuum	Case 350-04	Stainless Steel Cap	100/14.5	200	20	60	0.600	–0.10	0.10	–0.19	475
MPX200A	0-29.0	4-Pin Basic Element	Absolute	Case 344	Stainless Steel Cap	200/29.0	400	20	60	0.300	–0.25	0.25	–0.19	475
MPX200D	0-29.0	4-Pin Basic Element	Differential	Case 344	Stainless Steel Cap	200/29.0	400	20	60	0.300	–0.25	0.25	–0.19	475
MPX200AP	0-29.0	4-Pin Ported Element	Absolute Port	Case 350-03	Side With Port Attached	200/29.0	400	20	60	0.300	–0.25	0.25	–0.19	475
MPX200GP	0-29.0	4-Pin Ported Element	Gauge	Case 350-03	Side With Port Attached	200/29.0	400	20	60	0.300	–0.25	0.25	–0.19	475
MPX700D	0-100.0	4-Pin Basic Element	Differential	Case 344	Stainless Steel Cap	700/100.0	2100	20	60	0.086	–0.50	0.50	–0.18	475
MPX700AP	0-100.0	4-Pin Ported Element	Absolute Port	Case 350-03	Side With Port Attached	700/100.0	2100	20	60	0.086	–0.50	0.50	–0.18	475
MPX700DP	0-100.0	4-Pin Ported Element	Differential Port	Case 352	Side With Part Marking	700/100.0	2100	20	60	0.086	–0.50	0.50	–0.18	475
MPX700GP	0-100.0	4-Pin Ported Element	Gauge	Case 350-03	Side With Port Attached	700/100.0	2100	20	60	0.086	–0.50	0.50	–0.18	475

MPX2000/2100/2200 Series (Temperature Compensated and Calibrated On-Chip)

Mfr.'s Type	Pressure Range (PSI)	Device Type	Measurement Type	Package Type	Positive Pressure Side Identifier	Pressure Range (kPa/PSI) Max.	Over Pressure (kPa)	Offset (mV) Typ.	Full Scale Span (mV) Typ.	Sensitivity (mV/kPa) Typ.	Linearity % of FSS* Min.	Linearity % of FSS* Max.	Temperature Coefficient of Span (%/°C) Typ.	Input Impedance (Ω) Typ.
MPX2010D	0-1.5	4-Basic Element	Differential	Case 344	Stainless Steel Cap	10/1.45	75	±0.05	25	2.5	–1.00	1.00	+/-0.5	1800
MPX2010DP	0-1.5	4-Pin Ported Element	Differential Port	Case 352	Side With Part Marking	10/1.45	75	±0.05	25	2.5	–1.00	1.00	+/-0.5	1800
MPX2010GP	0-1.5	4-Pin Ported Element	Gauge	Case 350-03	Side With Port Attached	10/1.45	75	±0.05	25	2.5	–1.00	1.00	+/-0.5	1800
MPX2010GS	0-1.5	4-Pin Ported Element	Gauge Stovepipe	Case 371-05	Stainless Steel Cap	10/1.45	75	±0.05	25	2.5	–1.00	1.00	+/-0.5	1800
MPX2010GSX	0-1.5	4-Pin Ported Element	Gauge Axial	Case 371C	Side With Port Attached	10/1.45	75	±0.05	25	2.5	–1.00	1.00	+/-0.5	1800
MPX2050DP	0-7.3	4-Pin Ported Element	Differential Port	Case 352	Side With Part Marking	50/7.30	200	±0.05	40	0.8	–0.25	0.25	+/-0.5	1800
MPX2050GP	0-7.3	4-Pin Ported Element	Gauge	Case 350-03	Side With Port Attached	50/7.30	200	±0.05	40	0.8	–0.25	0.25	+/-0.5	1800
MPX2050GVP	0-7.3	4-Pin Ported Element	Gauge Vacuum	Case 350-04	Stainless Steel Cap	50/7.30	200	±0.05	40	0.8	–0.25	0.25	+/-0.5	1800
MPX2050GSX	0-7.3	4-Pin Ported Element	Gauge Axial	Case 371C	Side With Port Attached	50/7.30	200	±0.05	40	0.8	–0.25	0.25	+/-0.5	1800
MPX2052D	0-7.3	4-Basic Element	Differential	Case 344	Stainless Steel Cap	50/7.30	200	±0.10	40	0.8	–0.25	0.25	+/-0.5	1800
MPX2052DP	0-7.3	4-Pin Ported Element	Differential Port	Case 352	Side With Part Marking	50/7.30	200	±0.10	40	0.8	–0.25	0.25	+/-0.5	1800
MPX2100DP	0-1.5	4-Pin Ported Element	Differential Port	Case 352	Side With Part Marking	100/14.50	400	±0.05	40	0.4	–0.25	0.25	+/-0.5	1800
MPX2100GP	0-1.5	4-Pin Ported Element	Gauge	Case 350-03	Side With Port Attached	100/14.50	400	±0.05	40	0.4	–0.25	0.25	+/-0.5	1800
MPX2100GVP	0-1.5	4-Pin Ported Element	Gauge Vacuum	Case 350-04	Stainless Steel Cap	100/14.50	400	±0.05	40	0.4	–0.25	0.25	+/-0.5	1800
MPX2100GVSX	0-1.5	4-Pin Ported Element	Gauge Vacuum Axial	Case 371D	Stainless Steel Cap	100/14.50	400	±0.05	40	0.4	–0.25	0.25	+/-0.5	1800
MPX2200DP	0-7.3	4-Pin Ported Element	Differential Port	Case 352	Side With Part Marking	200/29.00	400	±0.05	40	0.2	–0.25	0.25	+/-0.5	1800
MPX2200GP	0-7.3	4-Pin Ported Element	Gauge	Case 350-03	Side With Port Attached	200/29.00	400	±0.05	40	0.2	–0.25	0.25	+/-0.5	1800

MPX7000/7100/7200 Series (Temperature Compensated and Calibrated On-Chip)

Mfr.'s Type	Pressure Range (PSI)	Device Type	Measurement Type	Package Type	Positive Pressure Side Identifier	Pressure Range (kPa/PSI) Max.	Over Pressure (kPa)	Offset (mV) Typ.	Full Scale Span (mV) Typ.	Sensitivity (mV/kPa) Typ.	Linearity % of FSS* Min.	Linearity % of FSS* Max.	Temperature Coefficient of Span (%/°C) Typ.	Input Impedance (Ω) Typ.
MPX7050D	0-7.3	4-Pin Basic Element	Differential	Case 344	Stainless Steel Cap	50/7.3	400	±0.10	40	0.8	–2.5	0.25	+/-0.5	10K
MPX7050GP	0-7.3	4-Pin Ported Element	Gauge	Case 350-03	Side With Port Attached	50/7.3	400	±0.10	40	0.8	–2.5	0.25	+/-0.5	10K
MPX7100D	0-14.5	4-Pin Basic Element	Differential	Case 344	Stainless Steel Cap	100/14.5	400	±0.10	40	0.2	–2.5	0.25	+/-0.5	10K
MPX7200A	0-29.0	4-Pin Basic Element	Absolute	Case 344	Stainless Steel Cap	200/29	400	±0.10	40	0.2	–2.5	0.25	+/-0.5	10K

*Based on end point straight line fit method. Best fit straight line linearity error is approximately 1/2 of listed value.

MPX4000 Series (Signal Conditioned On-Chip)

Mfr.'s Type	Pressure Range (kPa)	Device Type	Measurement Type	Package Type	Positive Pressure Side Identifier	Pressure Range (kPa/PSI) Max.	Voltage Source (V)	Full Scale Span (V) Typ.	Sensitivity (mV/kPa) Typ.	Accuracy (0 to +85°C)
MPX4100A	20-105	6-Pin Basic Element	Absolute	Case 867	Stainless Steel Cap	105/15.5	5.1	4.59	54	1.50%
MPX4100AP	20-105	6-Pin Ported Element	Absolute Port	Case 867B	Side With Port Attached	105/15.5	5.1	4.59	54	1.50%
MPX4101A	15-102	6-Pin Basic Element	Absolute	Case 867	Stainless Steel Cap	102/15.2	5.1	4.70	54	1.50%

MPX Pressure Sensors (Continued)

MPX4000 Series (Signal Conditioned On-Chip) (Continued)

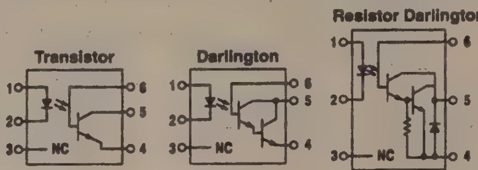
Mfr.'s Type	Pressure Range (kPa)	Device Type	Measurement Type	Package Type	Positive Pressure Side Identifier	Pressure Range (kPa/PSI) Max.	Voltage Source (V)	Full Scale Span (V) Typ.	Sensitivity (mV/kPa) Typ.	Accuracy (0 to +85°C)
MPX4115A	20-115	6-Pin Basic Element	Absolute	Case 867	Stainless Steel Cap	115/17	5.1	4.59	54	1.50%
MPX4115AP	20-115	6-Pin Ported Element	Absolute Port	Case 867B	Side With Port Attached	115/17	5.1	4.59	54	1.50%
MPX4115ASX	20-115	6-Pin Ported Element	Absolute Axial	Case 867F	Side With Port Attached	115/17	5.1	4.59	54	1.50%
MPX4250A	20-250	6-Pin Basic Element	Absolute	Case 867	Stainless Steel Cap	250/35	5.1	4.69	58	1.50%
MPX4250AP	20-250	6-Pin Ported Element	Absolute Port	Case 867B	Side With Port Attached	250/35	5.1	4.69	58	1.50%
MPX4250ASX	20-250	6-Pin Ported Element	Absolute Axial	Case 867F	Side With Port Attached	250/35	5.1	4.69	58	1.50%

MPX5000 Series (Signal Conditioned On-Chip)

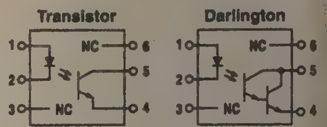
Mfr.'s Type	Pressure Range (PSI)	Device Type	Measurement Type	Package Type	Positive Pressure Side Identifier	Pressure Range (kPa/PSI) Max.	Voltage Source (V)	Full Scale Span (V) Typ.	Sensitivity (mV/kPa) Typ.	Accuracy (0 to +85°C)
MPX5050D	0-7.3	6-Pin Basic Element	Differential	Case 867	Stainless Steel Cap	50/7.3	5	4.7	90	2.50%
MPX5050DP	0-7.3	6-Pin Ported Element	Differential Port	Case 867C	Side With Part Marking	50/7.3	5	4.7	90	2.50%
MPX5050GP	0-7.3	6-Pin Ported Element	Gauge	Case 867B	Side With Port Attached	50/7.3	5	4.7	90	2.50%
MPX5050GVP	0-7.3	6-Pin Ported Element	Gauge Vacuum	Case 867D	Stainless Steel Cap	50/7.3	5	4.7	90	2.50%
MPX5050GVS	0-7.3	6-Pin Ported Element	Gauge Vacuum Stovepipe	Case 867A	Stainless Steel Cap	50/7.3	5	4.7	90	2.50%
MPX5050GSX	0-7.3	6-Pin Ported Element	Gauge Axial	Case 867F	Side With Port Attached	50/7.3	5	4.7	90	2.50%
MPX5100D	0-14.5	6-Pin Basic Element	Differential	Case 867	Stainless Steel Cap	100/14.5	5	4.5	45	2.50%
MPX5100DP	0-14.5	6-Pin Ported Element	Differential Port	Case 867C	Side With Part Marking	100/14.5	5	4.5	45	2.50%
MPX5100GP	0-14.5	6-Pin Ported Element	Gauge	Case 867B	Side With Port Attached	100/14.5	5	4.5	45	2.50%
MPX5100GS	0-14.5	6-Pin Ported Element	Gauge Stovepipe	Case 867E	Side With Port Attached	100/14.5	5	4.5	45	2.50%
MPX5100GVSX	0-14.5	6-Pin Ported Element	Gauge Vacuum Axial	Case 867G	Stainless Steel Cap	100/14.5	5	4.5	45	2.50%
MPX5100A	2.5-17	6-Pin Basic Element	Absolute	Case 867	Stainless Steel Cap	115/17	5	4.5	45	2.50%
MPX5100AP	2.5-17	6-Pin Ported Element	Absolute Port	Case 867B	Side With Port Attached	115/17	5	4.5	45	2.50%
MPX5100ASX	2.5-17	6-Pin Ported Element	Absolute Axial	Case 867F	Side With Port Attached	115/17	5	4.5	45	2.50%

Optoisolators

CASE 730A

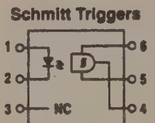


Style 1

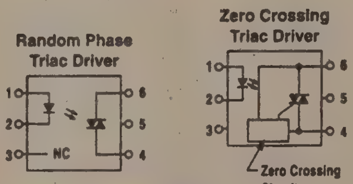


Style 3

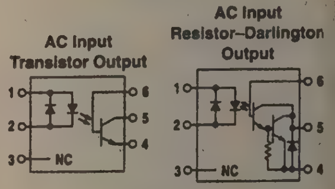
An optoisolator consists of a gallium arsenide infrared emitting diode, IRED, optically coupled to a monolithic silicon photodetector in a wide array of standard devices and encourages the use of special designs and selections for special applications. All Motorola optoisolators have V_{ISO} rating of 7500 Vac(pk), exceeding all other industry standard ratings.



Style 5



Style 6


AC Input Transistor Output
AC Input Resistor–Darlington Output
1
2
3
NC
4
5
6
Style 8

Transistor Output

Pinout: 1 — Anode, 2 — Cathode, 3 — N.C., 4 —Emitter, 5 Collector, 6 — Base (Style1)

Mfr.'s Type	Current Transfer Ratio (CTR)			$V_{CE(sat)}$			t_r/t_f or t_{on}/t_{off} Typ					$V_{(BR)CEO}$ (V) Min.	V_F	
	(%) Min	@ I_F (mA)	V_{CE} (V)	(V) Max.	@ I_F (mA)	I_C (mA)	(μs)	@ I_C (mA)	V_{CC} (V)	R_L (Ω)	I_F (mA)		(V) Max.	@ I_F (mA)
TIL111	8	16	0.40	0.4	16	2.0	5.0/5.0	2.0	10	100	—	30	1.40	16
4N27	10	10	10.00	0.5	50	2.0	1.2/1.3	10.0	10	100	—	30	1.50	10
4N28	10	10	10.00	0.5	50	2.0	1.2/1.3	10.0	10	100	—	30	1.50	10
4N38A	10	10	10.00	1.0	20	4.0	1.6/2.2	10.0	10	100	—	80	1.50	10
4N25	20	10	10.00	0.5	50	2.0	1.2/1.3	10.0	10	100	—	30	1.50	10
4N26	20	10	10.00	0.5	50	2.0	1.2/1.3	10.0	10	100	—	30	1.50	10
H11A3	20	10	10.00	0.4	10	0.5	1.2/1.3	2.0	10	100	—	30	1.50	10
MCT2	20	10	10.00	0.4	16	2.0	1.2/1.3	—	5	2K	15	30	1.50	20
MCT2E	20	10	10.00	0.4	16	2.0	1.2/1.3	2.0	10	100	—	30	1.50	20
CNY17-1	40-80	10	5.00	0.4	10	2.5	1.6/2.3	—	5	75	10	70	1.65	60
MOC8100	50	1	5.00	0.5	1	0.1	3.8/5.6	2.0	10	100	—	30	1.40	1
TIL117	50	10	10.00	0.4	10	0.5	5.0/5.0	2.0	10	100	—	30	1.40	16
4N35	100	10	10.00	0.3	10	0.5	3.2/4.7	2.0	10	100	—	30	1.50	10
4N36	100	10	10.00	0.3	10	0.5	3.2/4.7	2.0	10	100	—	30	1.50	10
4N37	100	10	10.00	0.3	10	0.5	3.2/4.7	2.0	10	100	—	30	1.50	10
CNY17-3	100-200	10	5.00	0.4	10	2.5	1.6/2.3	—	5	75	10	70	1.65	60
H11AV1	100-300	10	10.00	0.4	20	2.0	5.0*/4.0*	2.0	10	100	—	70	1.50	10

Transistor Output with No Base Connection

Pinout: 1 — Anode, 2 — Cathode, 3 — N.C., 4 — Emitter, 5— Collector, 6 — Base (Style 3)

MOC8102	73-117	10	10.00	0.4	5	0.5	3.2/4.7	2.0	10	100	—	30	1.50	10
MOC8104	160-256	10	10.00	0.4	5	0.5	3.2/4.7	2.0	10	100	—	30	1.50	10
MOC8111	20	10	10.00	0.4	10	0.5	3.2/4.7	2.0	10	100	—	30	1.50	10
MOC8112	50	10	10.00	0.4	10	0.5	3.2/4.7	2.0	10	100	—	30	1.50	10
MOC8113	100	10	10.00	0.4	10	0.5	3.2/4.7	2.0	10	100	—	30	1.50	10

AC Input — Transistor Output

Pinout: 1 — Anode/LED 2 Cathode, 2 — LED 1 Cathode/LED 2 Anode, 3 — N.C., 4 — Emitter, 5 — Collector, 6 — Base (Style 8)

H11AA1	20	±10	10.00	0.4	±10	0.5	—	—	—	—	—	30	1.50	±10
H11AA2	10	±10	10.00	0.4	±10	0.5	—	—	—	—	—	30	1.80	±10
H11AA3	50	±10	10.00	0.4	±10	0.5	—	—	—	—	—	30	1.50	±10
H11AA4	100	±10	10.00	0.4	±10	0.5	—	—	—	—	—	30	1.50	±10

Darlington Output

Pinout: 1 — Anode, 2 — Cathode, 3 — N.C., 4 — Emitter, 5 —Collector, 6 — Base (Style 1)

Mfr.'s Type	Current Transfer Ratio (CTR)			$V_{CE(sat)}$			t_r/t_f or t_{on}/t_{off} Typ					$V_{(BR)CEO}$ (V) Min.	V_F	
	(%) Min	@ I_F (mA)	V_{CE} (V)	(V) Max.	@ I_F (mA)	I_C (mA)	(μs)	@ I_C (mA)	V_{CC} (V)	R_L (Ω)	I_F (mA)		(V) Max.	@ I_F (mA)
4N29A	100	10	10.00	1.0	8	2.0	0.6*/17.0*	50.0	10	—	200	30	1.50	10
4N30	100	10	10.00	1.0	8	2.0	1.6*/17.0*	50.0	10	—	200	30	1.50	10
TIL113	300	10	1.25	1.0	50	125.0	300.0	125.0	15	100	—	30	1.50	10
4N32	500	10	10.00	1.0	8	2.0	0.6*/45.0*	50.0	10	—	200	30	1.50	10
4N33	500	10	10.00	1.0	8	2.0	0.6*/45.0*	50.0	10	—	200	30	1.50	10
H11B1	500	1	5.00	1.0	1	1.0	1.0/2.0	10.0	10	100	—	25	1.50	10
MOC8080	500	10	5.00	1.0	1	1.0	1.0/2.0	—	10	100	5	55	1.50	10

Darlington Output with No Base Connection

Pinout: 1 — Anode, 2 — Cathode, 3 — N.C., 4 — Emitter, 5 —Collector, 6 — N.C. (Style 3)

MOC8030	300	10	1.50	—	—	—	1.0/2.0	—	50	100	10	80	2.00	10
MOC8020	500	10	5.00	—	—	—	1.0/2.0	—	50	100	10	50	2.00	10
MOC8050	500	10	1.50	—	—	—	1.0/2.0	—	50	100	10	80	2.00	10
MOC8021	1000	10	5.00	—	—	—	1.0/2.0	—	50	100	10	50	2.00	10

Resistor Darlington Output

Pinout: 1 — Anode, 2 — Cathode, 3 — N.C., 4 — Emitter, 5 —Collector, 6 — Base (Style 1)

H11G1	1000	10	1.00	1.0	1	1	5.0*/100.0*	—	5	100	10	100	1.50	10
H11G2	1000	10	1.00	1.0	1	1	5.0*/100.0*	—	5	100	10	80	1.50	10
H11G3	200	1	5.00	1.2	50	20	5.0*/100.0*	—	5	100	10	55	1.50	10

High Voltage Transistor Output

Pinout: 1 — Anode, 2 — Cathode, 3 — N.C., 4 — Emitter, 5— Collector, 6 — Base (Style 1)

MOC8204	20	10	10.0	0.4	10	0.5	5.0*/5.0*	2.0	10	100		400	1.50	10
H11D1	20	10	10.0	0.4	10	0.5	5.0*/5.0*	2.0	10	100		300	1.50	10
H11D2	20	10	10.0	0.4	10	0.5	5.0*/5.0*	2.0	10	100		300	1.50	10

*t_{on}/t_{off}.

Optoisolators (Continued)

Triac Driver Output

Pinout: 1 — Anode, 2 — Cathode, 3 — N.C., 4 — Main Terminal, 5— Substrate, 6 — Main Terminal (Style 6)

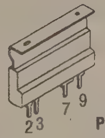
Mfr.'s Type	Peak Blocking Voltage (V) Min.	LED Trigger Current — I_{FT} (V_{TM}=3 V) (mA) Max.	Zero Crossing Inhibit Voltage (at rated I_{FT}) (V) Max.	Operating Voltage (Vac)	dv/dt (V/µs) Typ.
MOC3009	250	30	—	125	10
MOC3010	250	15	—	125	10
MOC3011	250	10	—	125	10
MOC3012	250	5	—	125	10
MOC3020	400	30	—	125/280	10
MOC3021	400	15	—	125/280	10
MOC3022	400	10	—	125/280	10
MOC3023	400	5	—	125/280	10
MOC3031	250	15	20	125	2000
MOC3032	250	10	20	125	2000
MOC3033	250	5	20	125	2000
MOC3041	400	15	20	125/280	2000
MOC3042	400	10	20	125/280	2000
MOC3043	400	5	20	125/280	2000
MOC3051	600	15	—	125/280	2000
MOC3052	600	10	—	125/280	2000
MOC3061	600	15	20	125/280	1500
MOC3062	600	10	20	125/280	1500
MOC3063	600	5	20	125/280	1500
MOC3081	800	15	20	125/280/320	1500
MOC3082	800	10	20	125/280/320	1500
MOC3163	600	5	15	125/280	1000

Schmitt Trigger Output

Pinout: 1 — Anode, 2 — Cathode, 3 — N.C., 4 — Output, 5 —Ground, 6 — V_{CC} (Style 5)

Mfr.'s Type	Threshold Current On (mA) Max.	Threshold Current Off (mA) Min.	$I_{F(off)}/I_{F(on)}$		V_{CC} (V)		tr, tf (µs) Typ.
			Min.	Max.	Min.	Max.	
H11L1	1.6	0.3	0.5	0.9	3	16	0.1
H11L2	10.0	0.3	0.5	0.9	3	16	0.1
MOC5007	1.6	0.3	0.5	0.9	3	16	0.1
MOC5008	4.0	0.3	0.5	0.9	3	16	0.1
MOC5009	10.0	0.3	0.5	0.9	3	16	0.1

POWER OPTO™ Isolator 2 Amp Zero — Cross Triac Output



Case 417
Plastic Package

Pinout: (1,4,5,6,8 No Pin), 2 — LED Cathode, 3 — LED Anode, 7 — Main Terminal, 9 —Main Terminal

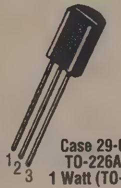
Mfr.'s Type	Peak Blocking Voltage (V) Min.	LED Trigger Current I_{FT} (V_{TM}=2 V) (mA) Max.	On State Voltage V_{TM} (Rated I_{FT} I_{TM}=2 A) (V) Max.	Zero Crossing Inhibit Voltage (I_F=Rated I_{FT}) (V) Max.	Operating Voltage Vac rms (V)	dv/dt (static) (V_{IN}=200 V) (V/µs) Min.
MOC2A60-5	600	5	1.3	10	125/280	400
MOC2A60-10	600	10	1.3	10	125/280	400

No Suffix=Style 2 (Standard Heat Tab).

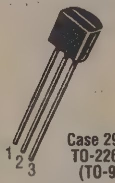
Bipolar Transistors

Plastic-Encapsulated Transistors

Motorola's Small Signal TO-226 plastic transistors encompass hundreds of devices with a wide variety of characteristics for general-purpose, amplifier and switching applications. The popular high-volume package combines proven reliability, performance, economy and convenience to provide the perfect solution for industrial and consumer design problems. All devices are laser marked for ease of identification and shipped in antistatic containers, as part of Motorola's ongoing practice of maintaining the highest standards of quality and reliability.



Case 29-05
TO-226AE
1 Watt (TO-92)



Case 29-04
TO-226AA
(TO-92)

1=Emitter; 2=Base; 3=Collector

Plastic-Encapsulated General-Purpose Transistors (Case 29-04 — TO-226AA (TO-92))
These general-purpose transistors are designed for small-signal amplification from dc to low ratio frequencies. They are also useful as oscillators and general-purpose switches. Complementary devices shown where available.

Mfr.'s Type		$V_{(BR)CEO}$ (V) Min.	f_T @ I_C		I_C (mA) Max.	h_{FE} @ I_C			NF dB Max.	Style
NPN	PNP		(MHz) Min.	(mA)		Min.	Max.	(mA)		
MPS8099	MPS8599	80	150	10	500	100	300	1.0	—	1
MPSA06	MPSA56	80	100	10	500	100	—	100.0	—	1
—	MPS2907A	60	200	50	600	100	300	150.0	—	1
MPS2222A	—	40	300	20	600	100	300	150.0	—	1
2N4401	2N4403	40	200	20	600	100	300	150.0	—	1
MPS6602	MPS6652	40	100	50	1000	50	—	500.0	—	1
2N3904	2N3906	40	250	10	200	100	300	10.0	5.0	1

Plastic-Encapsulated General Purpose Transistors (Case 29-05 — TO-226AE (1-Watt TO-92))

Mfr.'s Type		$V_{(BR)CEO}$ (V) Min.	f_T @ I_C		I_C (A) Max.	h_{FE} @ I_C			$V_{CE(sat)}$ @ I_C and I_B			Style
NPN	PNP		(MHz) Min.	(mA)		Min.	Max.	(mA)	(V) Max.	(mA)	(mA)	
MPSW06	—	80	50	200	0.5	80	—	50	0.4	250	10	1

Plastic-Encapsulated Low-Noise and Good h_{FE} Linearity (Case 29-04 — TO-226AA (TO-92))
These devices are designed to use on applications where good h_{FE} linearity and low-noise characteristics are required: Instrumentation, hi-fi preamplifier.

Mfr.'s Type		$V_{(BR)CEO}$ (V)	h_{FE} @ I_C			V_T[4] (mV) Typ.	NF[5] dB Max.	f_T (MHz) Typ.	Style
NPN	PNP		Min.	Max.	(mA)				
—	2N5087	50	250	800	0.1	—	2.0	40[2]	1
MPSA18	—	45	500	—	1.0	6.5[1]	—	160	1
MPS6521		25	300	600	2.0	—	3.0	—	1

[1] Typical. [2] Min. [4] V_T: Total input noise voltage (see BC413/BC414 and BC415/BC416 data sheets) at R_S=2.0 KΩ, I_C=200 µA, V_{CE}=5.0 Volts. [5] N_F: Noise figure at R_S=2.0 KΩ, I_C=200 µA, V_{CE}=5.0 Volts, f=30 Hz to 15 KHz.

Plastic-Encapsulated Darlington Transistors (Case 29-05 — TO-226AE (1-Watt TO-92))
Darlington amplifiers are cascade transistors used in applications requiring very high-gain and input impedance. These devices have monolithic construction.

Mfr.'s Type		$V_{(BR)CEO}$ (V)	f_T @ I_C		I_C Max.	h_{FE} @ I_C			$V_{CE(sat)}$ @ I_C and I_B			Style
NPN	PNP		(MHz) Min.	(mA)		Min.	Max.	(mA)	(V) Max.	(mA)	(mA)	
MPSW45A	—	50	100	200	1000	25 K	150 K	200	1.5	1000	2.0	1

Plastic-Encapsulated Darlington Transistors (Case 29-04 — TO-226AA (TO-92))

MPSA29	—	100	125	10	500	10 K	—	100	1.5	100	0.1	1
MPSA14	MPSA64	30	125	10	500	20 K	—	100	1.5	100	0.1	1

Plastic-Encapsulated High-Current Transistors (Case 29-05 — TO-226AE (1-Watt TO-92))
The following table is a listing of devices that are capable of handling a higher current range for small-signal transistors.

Mfr.'s Type		$V_{(BR)CEO}$ (V) Min.	f_T @ I_C		I_C (mA) Max.	h_{FE} @ I_C			$V_{CE(sat)}$ @ I_C and I_B			Style
NPN	PNP		(MHz) Min.	(mA)		Min.	Max.	(mA)	(V) Max.	(mA)	(mA)	
MPSW01A	MPSW51A	40	50	50	1000	50	—	1000	0.5/0.7	1000	100	1

Plastic-Encapsulated High-Current Transistors (Case 29-04 — TO-226AA (TO-92))

MPS651	MPS751	60	75	50	2000	75	—	1000	0.5	2000	200	1

Plastic-Encapsulated High-Voltage Amplifier Transistors (Case 29-05 — TO-226AE (1-Watt TO-92) — NPN)
These high-voltage transistors are designed for driving neon bulbs and indicator tubes, for direct line operation, and for other applications requiring high-voltage capability at relatively low collector current. These devices are listed in order of decreasing breakdown voltage ($V_{(BR)CEO}$).

Mfr.'s Type	$V_{(BR)CEO}$ (V) Min.	I_C (A) Max.	h_{FE} @ I_C		$V_{CE(sat)}$ @ I_C and I_B			f_T @ I_C		Style
			Min.	(mA)	(V) Max.	(mA)	(mA)	(MHz) Min.	(mA)	
MPSW42	300	0.5	40	30	0.50	20	2.0	50	10	1

Plastic-Encapsulated High-Voltage Amplifier Transistors (Case 29-05— TO-226AE (1-watt TO-92) — PNP)

MPSW92	300	0.5	25	30	0.50	20	2.0	50	10	1

Plastic-Encapsulated High-Voltage Amplifier Transistors (Case 29-04 — TO-226AA (TO-92) — NPN)

MPSA44	400	0.3	40	100	0.75	50	5.0	—	—	1
2N6517	350	0.5	30	30	0.30	10	1.0	40	10	1
MPSA42	300	0.5	40	10	0.50	20	2.0	50	10	1
2N5551	160	0.6	80	10	0.15	10	1.0	100	10	1

Plastic-Encapsulated High-Voltage Amplifier Transistors (Case 29-04 — TO-226AA (TO-92) — PNP)

2N6520	350	0.5	30	30	0.30	10	1.0	40	10	1
MPSA92	300	0.5	40	10	0.50	20	2.0	50	10	1
2N5401	150	0.6	60	10	0.20	10	1.0	100	10	1

Plastic-Encapsulated RF Transistors (Case 29-04 — TO-226AA (TO-92) — NPN)
The RF transistors are designed for small-signal amplification from RF to VHF/UHF frequencies. They are also used as mixers and oscillators in the same frequency ranges.

Mfr.'s Type	$V_{(BR)CEO}$ (V) Min.	I_C (mA) Max.	h_{FE} @ I_C			f_T (MHz) Typ.	CRE/CRB (pF) Max.	NF dB Max.	f (MHz)	Style
			Min.	(mA)	V_{CE} (V)					
MPSH11	25	—	60	4.0	10.0	650[1]	0.90	—	—	2
MPSH10	25	—	60	4.0	10.0	650[1]	0.65	—	—	2
MPSH17	15	—	25	5.0	10.0	800[1]	0.90	6.0[2]	200	2
MPS918	15	50	20	8.0	10.0	600[1]	1.70	6.0[2]	60	1
MPS5179	12	50	25	3.0	1.0	2000[2]	—	5.0[2]	200	1

Plastic-Encapsulated RF Transistors (Case 29-04— TO-226AA (TO-92) — PNP)

MPSH81	20	50	60	5.0	10.0	600[1]	0.85	—	—	2

[1] Min. [2] Max.

Plastic-Encapsulated High-Speed Saturated Switching Transistors (Case 29-04 — TO-226AA (TO-92) — NPN)

Mfr.'s Type	t_{on} and t_{off} @ I_C			$V_{(BR)CEO}$ (V) Min.	h_{FE} @ I_C		$V_{CE(sat)}$ @ I_C and I_B			f_T @ I_C		Style
	(ns) Max.	(ns) Max.	(mA)		Min.	(mA)	(V) Max.	(mA)	(mA)	(MHz) Min.	(mA)	
MPS3646	18	28	300	15	30	30	0.2	30	3.0	350	30	1
MPS2369A	12	18	10	15	40	10	0.2	10	1.0	—	—	1

Bipolar Transistors (Continued)

Plastic-Encapsulated Transistors (Continued)

Plastic-Encapsulated Choppers (Case 29-04 — TO-226AA (TO-92) — NPN)

Mfr.'s Type	$V_{(BR)CEO}$ (V) Min.	I_C (A)[1] Max.	h_{FE} @ I_C		$V_{CE(sat)}$ @ I_C and I_B			f_T @ I_C		Style
			Min.	(mA)	(V) Max.	(mA)	(mA)	(MHz) Min.	(mA)	
MPSA17	15	100	200	5.0	0.25	10	1.0	80	5.0	1

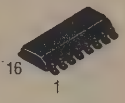
Plastic-Encapsulated Choppers (Case 29-04 — TO-226AA (TO-92) — PNP)

MPS404A	–25	–150	30	–12.0	–0.20	–24	1.0	—	—	1

[1] Typical.

Plastic-Encapsulated Multiple Transistors

Case 646
(TO-116)
Style 1


Case 751B
SO-16
Style 4

The Manufacturing trend has been toward printed circuit board design with requirements for smaller packages with more functions. In the case of discrete components the use of the multiple device package helps to reduce board space requirements and assembly costs.

Many of the most popular devices are offered in the standard plastic DIP and surface mount IC packages. This includes small-signal NPN and PNP bipolar transistors, N-channel and P-channel FETs, as well as diode arrays.

Plastic-Encapsulated Multiple Transistors — Quad (Case 646—TO-116)
The Following table is a listing of the most popular multiple devices available in the plastic DIP package. These devices are available in NPN,PNP, and NPN/PNP configurations.

Mfr.'s Type	ID	P_D Watts One Die Only	V_{CEO} (V)	I_C (A) Max.	h_{FE} Min.	@ I_C (mA)	f_T (MHz) Min.	C_{ob} (pF) Max.	t_{on} (ns) Max.	t_{off} (ns) Max.	V_{CE} (sat) (V) Max.	@ I_C/I_B	I_C (mA)
MPQ2222A	NA	0.65	40	0.5	100	150	200	8.0	35.0[1]	285[1]	0.30	10	150
MPQ2369	NS	0.50	15	0.5	40	10	450	4.0	9.0[1]	15[1]	0.25	10	10
MPQ2907A	PA	0.65	60	0.6	100	150	200	8.0	45.0[1]	180[1]	0.40	10	150
MPQ3904	NG	0.50	40	0.2	75	10	250	4.0	37.0[1]	136[1]	0.20	10	10
MPQ3906	PG	0.50	40	0.2	75	10	200	4.5	43.0[1]	155[1]	0.25	10	10
MPQ6700	CA	0.50	40	0.2	70	10	200	4.5	—	—	0.25	10	10

[1] Typical.

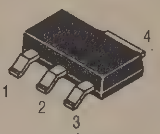
Plastic-Encapsulated Multiple Transistors — Quad Surface Mount (Case 751B-SO-16)
The Following table is a listing of the most popular multiple devices available in the plastic SOIC surface mount package. These devices are available in NPN, PNP, and NPN/PNP configurations.

Mfr.'s Type	$V_{(BR)CEO}$	$V_{(BR)CBO}$	h_{FE} @ I_C		f_T @ I_C	
			Min.	(mA)	(MHz) Min.	(mA)
MMPQ2222A	40	75	40	500.0	200	20.0
MMPQ2369	15	40	20	100.0	450	10.0
MMPQ2907A	50	60	50	500.0	200	50.0
MMPQ3467	40	40	20	500.0	125	50.0
MMPQ3904	40	60	75	10.0	250	10.0
MMPQ3906	40	40	75	10.0	200	10.0
MMPQ6700[1]	40	40	70	10.0	200	10.0

[1] NPN/PNP.

Plastic-Encapsulated Surface Mount Transistors

Case 318-07
TO-236AB
SOT-23


Case 318E
SOT-223

Case 318D
SC-59

Case 419
SC-70/SOT-323

This section of the selector guide lists the small-signal plastic devices that are available for surface mount applications. These devices are encapsulated with the latest state-of -the-art mold compounds that enhance reliability and exhibit excellent performance in high temperature and high humidity environments. This package offers higher power dissipation capability for small-signal applications.

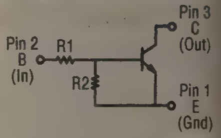
Plastic-Encapsulated Surface Mount General-Purpose Transistors
Pinout: 1— Base, 2 — Emitter, 3 — Collector (Case 318-07 — TO-236AB (SOT-23) —NPN)
The following tables are a listing of small-signal general-purpose transistors in the SOT-23 surface mount package. These devices are intended for small-signal amplification for DC, audio, and lower RF frequencies. They also have applications as oscillators and general-purpose, low voltage switches. Devices listed in order of descending breakdown voltage.

Mfr.'s Type	Marking	$V_{(BR)CEO}$	h_{FE} @ I_C			f_T (MHz) Min.
			Min.	Max.	(mA)	
BC846ALT1	1A	65	110	220	2.0	100
BC846BLT1	1B	65	200	450	2.0	100
BC847BLT1	1F	45	200	450	2.0	100
BC847CLT1	1G	45	420	800	2.0	100
MMBT2222ALT1	1P	40	100	300	150.0	200
MMBT3904LT1	1AM	40	100	300	10.0	200
MMBT4401LT1	2X	40	100	300	150.0	250
BC848BLT1	1K	30	200	450	2.0	100

Plastic-Encapsulated Surface Mount General-Purpose Transistors
Pinout: 1— Base, 2 — Emitter, 3 — Collector (Case 318-07 — TO-236AB (SOT-23) —NPN)

BC856BLT1	3B	65	220	475	2.0	100
MMBT2907ALT1	2F	60	100	300	150.0	200

Plastic-Encapsulated Surface Mount Bias Resistor Transistors for General Purpose Applications (Case 318D — SC-59)



These devices include bias resistors on the semiconductor chip with the transistor. See the BRT diagram for orientation of resistors.

Mfr.'s Type		Marking		$V_{(BR)CEO}$ (V) Min.	h_{FE} @ I_C		IC (mA) Max.	R_1 Ohm	R_2 Ohm
NPN	PNP	NPN	PNP		Min.	(mA)			
MUN2211T1	MUN2111T1	8A	6A	50	35	5.0	100	10 K	10 K
MUN2212T1	—	8B	6B	50	60	5.0	100	22 K	22 K
MUN2213T1	—	8C	6C	50	80	5.0	100	47 K	47 K

Plastic-Encapsulated Surface Mount Switching Transistors
Pinout: 1— Base, 2 — Emitter, 3 — Collector (Case 318-07 — TO-236AB (SOT-23) — NPN)
The following tables are a listing of devices intended for high-speed, low saturation voltage, switching applications. These devices have very fast switching times and low output capacitance for optimized switching performance.

Mfr.'s Type	Marking	Switch. Time (ns)		$V_{(BR)CEO}$	h_{FE} @ I_C			fT (MHz) Min.
		t_{on}	t_{off}		Min.	Max.	(mA)	
MMBT2369LT1	M1J	12	18	15	20	—	100	—

Plastic-Encapsulated Surface Mount Switching Transistors
Pinout: 1— Base, 2 — Emitter, 3 — Collector (Case 318-07 — TO-236AB (SOT-23) — PNP)

MMBT3640LT1	2J	25	35	12	20	—	50	500

Plastic-Encapsulated Surface Mount VHF/UHF Amplifiers, Mixers, Oscillators
Pinout: 1— Base, 2 — Emitter, 3 — Collector (Case 318-07 — TO-236AB (SOT-23) — NPN)
The following table is a listing of devices intended for small-signal RF amplifier applications to VHF/UHF frequencies. These devices may also be used as VHF/UHF oscillators and mixers.

Mfr.'s Type	Marking	$V_{(BR)CEO}$	C_{cb}[1] pF Max.	f_T @ I_C	
				(GHz) Min.	(mA)
MMBTH10LT1	3EM	25	0.7	0.65	4.0

Plastic-Encapsulated Surface Mount VHF/UHF Amplifiers, Mixers, Oscillators
Pinout: 1— Base, 2 — Emitter, 3 — Collector (Case 318-07 — TO-236AB (SOT-23) — PNP)

MMBTH81LT1	3D	20	0.85	0.6	5.0
MMBTH69LT1	M3J	15	0.35[1]	2.0	10.0

[1] C_{re}.

Plastic-Encapsulated Surface Mount Choppers
Pinout: 1— Base, 2 — Emitter, 3 — Collector (Case 318-07 — TO-236AB (SOT-23) — PNP)
The following table is a listing of small-signal devices intended for chopper applications where a higher than normal $V_{(BR)CEO}$ is required in the circuit application.

Mfr.'s Type	Marking	$V_{(BR)CEO}$	$V_{(BR)EBO}$	h_{FE} @ I_C		
				Min.	Max.	(mA)
MMBT404ALT1	2N	35	25	30	400	12

Plastic-Encapsulated Surface Mount Darlingtons
Pinout: 1— Base, 2 — Emitter, 3 — Collector (Case 318-07 — TO-236AB (SOT-23) —NPN)
The following table is a listing of small-signal devices that have very high h_{FE} and input impedance characteristics. These devices utilize monolithic, cascade transistor construction. Devices are listed in order of descending h_{FE}.

Mfr.'s Type	Marking	$V_{(BR)CES}$	$V_{CE(sat)}$ (V) Max.	h_{FE} @ I_C		
				Min.	Max.	(mA)
MMBTA14LT1	1N	30	1.5	20 K	—	100

Plastic-Encapsulated Surface Mount Low-Noise Transistors
Pinout: 1— Base, 2 — Emitter, 3 — Collector (Case 318-07 — TO-236AB (SOT-23) — NPN)
The following table is a listing of small-signal devices intended for low noise applications in the audio range. These devices exhibit good linearity and are candidates for hi-fi and instrumentation equipment. Devices are listed in order of descending NF.

Mfr.'s Type	Marking	NF dB Typ.	$V_{(BR)CEO}$	h_{FE} @ I_C			f_T (MHz) Min.
				Min.	Max.	(mA)	
MMBT5089LT1	1R	2.0[1]	25	400	—	10	50

Plastic-Encapsulated Surface Mount Low-Noise Transistors
Pinout: 1— Base, 2 — Emitter, 3 — Collector (Case 318-07 — TO-236AB (SOT-23) — PNP)

MMBT5087LT1	2Q	2.0[1]	50	250	—	10	40

[1] Max.

Plastic-Encapsulated Surface Mount High-Voltage Transistors
Pinout: 1— Base, 2 — Emitter, 3 — Collector (Case 318-07 — TO-236AB (SOT-23) — NPN)
The following table is a listing of small-signal high-voltage devices designed for direct line operation requiring high voltage breakdown and relatively low current capability. Devices are listed in order of descending breakdown voltage.

Mfr.'s Type	Marking	$V_{(BR)CEO}$	h_{FE} @ I_C			f_T (MHz) Min.
			Min.	Max.	(mA)	
MMBT6517LT1	1Z	350	15	—	100	40
MMBTA42LT1	1D	300	40	—	30	50
MMBT5551LT1	G1	160	30	—	50	100

Plastic-Encapsulated Surface Mount High-Voltage Transistors
Pinout: 1— Base, 2 — Emitter, 3 — Collector (Case 318-07 — TO-236AB (SOT-23) — PNP)

MMBT5401LT1	2L	150	50	—	50	100

Plastic-Encapsulated Surface Mount Drivers
Pinout: 1— Base, 2 — Collector, 3 — Emitter (Case 318-07 — TO-236AB (SOT-23) — NPN)
The following is a listing of small-signal devices intended for medium voltage driver applications at fairly high current levels.

MMBTA06LT1	1GM	80	100	—	100	100

Bipolar Transistors (Continued)

Plastic-Encapsulated Surface Mount Transistors (Continued)

Plastic-Encapsulated Surface Mount Drivers
Pinout: 1— Base, 2 —Emitter, 3 — Collector, (Case 318-07 — TO-236AB (SOT-23) — PNP)

Mfr.'s Type	Marking	$V_{(BR)CEO}$	h_{FE} @ I_C			f_T (MHz) Min.
			Min.	Max.	(mA)	
MMBTA56LT1	2GM	80	100	—	100	50

Plastic-Encapsulated Surface Mount General-Purpose Amplifiers
Pinout: 1— Base, 2 — Collector, 3 — Emitter, 4 — Collector (Case 318E — SOT-223) —NPN

Mfr.'s Type	Marking	$V_{(BR)CEO}$	h_{FE} @ I_C		
			Min.	Max.	mA
BCP56T1	BH	80	40	250	150

Plastic-Encapsulated General-Purpose Amplifiers
Pinout: 1— Gate, 2 — Drain, 3 — Source, 4 — Drain (Case 318E — SOT-223) — PNP

BCP53T1	AH	80	40	25	150

Plastic-Encapsulated Surface Mount Switching Transistors
Pinout: 1— Base, 2 — Collector, 3 — Emitter, 4 — Collector (Case 318E — SOT-223) —NPN

Mfr.'s Type	Marking	t_{on}	t_{off}	$V_{(BR)CEO}$	h_{FE}		f_T	
					Min.	Max.	@ I_C (mA)	Min. (Mhz)
PZT2222AT1	P1F	35	285	40	100	300	20	300

Plastic-Encapsulated Surface Mount Switching Transistors
Pinout: 1— Base, 2 — Collector, 3 — Emitter, 4 — Collector (Case 318E — SOT-223) —NPN

PZT2907AT1	P2F	45	100	60	100	300	50	200

Plastic-Encapsulated Surface Mount Darlingtons
Pinout: 1— Base, 2 — Collector, 3 —Emitter, 4 — Collector (Case 318E — SOT-223) — NPN

Mfr.'s Type	Marking	$V_{(BR)CER}$	$V_{CE(sat)}$ Max. (V)	h_{FE}		@ I_C (mA)
				Min.	Max.	
BSP52T1	AS3	80	1.3	2000	—	500
PZTA14T1	P1N	30	1.5	20 K	—	100

Plastic-Encapsulated Surface Mount Darlingtons
Pinout: 1— Base, 2 — Collector, 3 —Emitter, 4 — Collector (Case 318E — SOT-223) — PNP

PZTA64T1	P2V	30	1.5	20 K	—	100

Plastic-Encapsulated Surface Mount High-Voltage Transistors
Pinout: 1— Base, 2 — Collector, 3 — Emitter, 4 — Collector (Case 318E — SOT-223) — NPN

Mfr.'s Type	Marking	$V_{(BR)CEO}$	h_{FE}		f_T	
			Min.	Max.	@ I_C (mA)	Min. (MHz)
PZTA42T1	P1D	300	40	—	10	50

Plastic-Encapsulated Surface Mount High-Voltage Transistors
Pinout: 1— Base, 2 — Collector, 3 — Emitter, 4 — Collector (Case 318E — SOT-223) — PNP

PZTA92T1	P2D	300	40	—	10	50
BSP16T1	BSP16	300	30	150	10	15

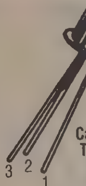
Plastic-Encapsulated Surface Mount High Current Transistors
Pinout: 1— Base, 2 — Collector, 3 — Emitter, 4 — Collector (Case 318E — SOT-223) — NPN

Mfr.'s Type	Marking	$V_{(BR)CEO}$	$V_{CE(sat)}$ (V)	h_{FE} @ I_C		
				Min.	Max.	(mA)
PZT651T1	651	60	0.5	75	—	1000
BCP68T1	CA	20	0.5	60	—	1000

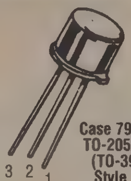
Plastic-Encapsulated Surface Mount High Current Transistors
Pinout: 1— Base, 2 — Collector, 3 — Emitter, 4 — Collector (Case 318E — SOT-223) — PNP

PZT751T1	ZT751	60	0.5	75	—	1000
BCP69T1	CE	20	0.5	60	—	1000

Metal-Can Transistors



Case 22-03
TO-206AA
(TO-18)
Style 1



Case 79-04
TO-205AD
(TO-39)
Style 1

Metal-can packages are intended for use in industrial applications where harsh environmental conditions are encountered. These packages enhance reliability of the end products due to their resistance to varying humidity and extreme temperature ranges.

Metal-Can General-Purpose Transistors (Case 22-03 — TO-206AA (TO-18) — NPN)
These Transistors are designed for DC to VHF amplifier applications, general-purpose switching applications,and complementary circuitry. Devices are listed in decreasing order of $V_{(BR)CEO}$ within each package group.

Mfr.'s Type	$V_{(BR)CEO}$ (V) Min.	f_T @ I_C		I_C (mA) Max.	h_{FE} @ I_C		
		(MHz) Min.	(mA)		Min.	Max.	(mA)
2N3700	80	80	50	1000	50	—	500
2N2222A	40	300	20	800	100	300	150

Metal-Can General-Purpose Transistors (Case 22-03 — TO-206AA (TO-18) — PNP)

2N2907A	60	200	50	600	100	300	150
2N3251A	60	300	10	200	100	300	10

Metal-Can General-Purpose Transistors (Case 79-04 — TO-205AD (TO-39) — NPN)

2N3019	80	100	50	1000	100	300	150
2N2219A	40	300	20	800	100	300	150

Metal-Can General-Purpose Transistors (Case 79-04 — TO-205AD (TO-39) — PNP)

2N2905A	60	200	50	600	100	300	150

Metal-Can High-Gain/Low-Noise Transistors (Case 22-03 — TO-206AA (TO-18) — NPN)
These transistors are characterized for high-gain and low-noise applications. Devices are listed in decreasing order of NF.

Mfr.'s Type	NF Wideband dB Typ. Max.	$V_{(BR)CEO}$ (V) Min.	I_C (mA) Max.	h_{FE} @ I_C			f_T @ I_C	
				Min.	Max.	(mA)	(MHz) Min.	(mA)
2N2484	8.0[1]	60	50	100	500	10.0	15	0.05

Metal-Can High-Gain/Low-Noise Transistors (Case 22-03 — TO-206AA (TO-18) — PNP)

2N3964	4.0	45	200	250	600	1.0[2]	50	0.50
2N3799	2.5	60	50	300	900	500.0	30	0.50

[1] Typical. [2] T_A=25°C.

Metal-Can High-Voltage/High Current Transistors (Case 22-03 — TO-206AA (TO-18) — NPN)
The following table lists Motorola standard devices that have high collector-emitter breakdown voltage. Devices are listed in decreasing order of $V_{(BR)CEO}$ within each package type.

Mfr.'s Type	$V_{(BR)CEO}$ (V) Min.	I_C (mA) Max.	h_{FE} @ I_C		$V_{CE(sat)}$ @ I_C and I_B			f_T @ I_C	
			Min.	(mA)	(V) Max.	(mA)	(mA)	(MHz) Min.	(mA)
2N6431	300	50	50	30	0.5	20	2.0	50	10

Metal-Can Switching Transistors (Case 22-03 — TO-206AA (TO-18) — NPN)
The following devices are intended for use in general-purpose switching and amplifier applications. Within each package group shown, the devices are listed in order of decreasing turn-on time (t_{on}).

Mfr.'s Type	t_{on} and t_{off} @ I_C			$V_{(BR)CEO}$ (V) Min.	I_C (mA) Max.	h_{FE} @ I_C		$V_{CE(sat)}$ @ I_C and I_B			f_T (MHz) Min.	I_C (mA)
	(ns) Max.	(ns) Max.	(mA)			Min.	(mA)	(V) Max.	(mA)	(mA)		
2N2369A	12	18	10	15	200	40	10	0.20	10	1.0	500	10

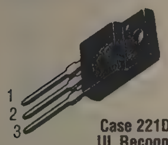
Metal-Can Switching Transistors (Case 22-03 — TO-206AA (TO-18) — PNP)

2N3546	40	30	50	12	200	25	50	0.25	50	5.0	700	10

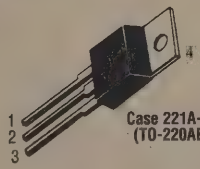
Metal-Can Switching Transistors (Case 79-04 — TO-205AD (TO-39) — PNP)

2N3467	40	90	500	40	1000	40	500	0.50	500	50.0	175	50

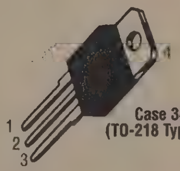
Bipolar Power Transistors



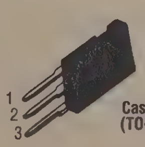
Case 221D-02
UL Recognized
File E69369



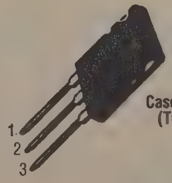
Case 221A-06
(TO-220AB)



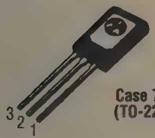
Case 340D-01
(TO-218 Type, SOT-93)



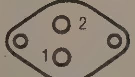
Case 340F-03
(TO-247 Type)

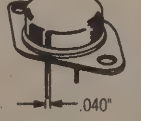


Case 340G-01
(TO-3PBL)

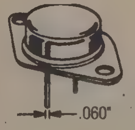


Case 77-07
(TO-225AA)

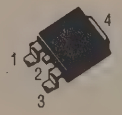




Case 1-07
TO-204AA



Case 197A-03
TO-204AE



Case 369A-10

Bipolar Power Transistors (Continued)

Plastic (Isolated TO-220 Type)
Pin: 1 — Base, 2 — Collector, 3 — Emitter (Style 2, Case 221D-02)

Mfr.'s Type		I_CCont (A) Max.	$V_{CEO(sus)}$ (V) Min.	V_{CES} (V) Min.	h_{FE} Min./Max.	@ I_C (A)	Resistive Switching			f_T (MHz) Min.	P_D (Case) Watts @ 25°C
NPN	PNP						t_s (µs) Max.	t_f (µs) Max.	@ I_C (A)		
MJF47	—	1	250	—	30/150	0.3	2.0 Typ.	0.17 Typ.	0.3	10	28
MJF31C	—	3	100	—	10 Min.	1.0	0.6	0.30	1.0	3	28
MJF122[2]	MJF127[2]	5	100	—	2000 Min.	3.0	1.5 Typ.	1.50 Typ.	3.0	4[1]	28
MJF16002	—	5	450	1000	5 Min.	5.0	3.0	0.30	3.0	—	40
MJF18004	—	5	450	1000	14/36	1.0	3.0[3]	0.30[3]	2.5	12 Typ.	25
MJF15030	—	8	150	—	40 Min.	3.0	1.0 Typ.	0.15 Typ.	3.0	30	35
MJF18006	—	8	450	1000	14/36	1.5	1.5 Typ.[3]	0.1 Typ.[3]	3.0	12 Typ.	40
MJF3055	MJF2955	10	60	—	20/100	4.0	—	—	—	2	40
MJF44H11	MJF45H11	10	80	—	40/100	4.0	0.5 Typ.	0.14 Typ.	5.0	40	35
MJF6388[2]	MJF6668[2]	10	100	—	3 K/20 K	3.0	1.5 Typ.	1.50 Typ.	—	20[1]	40
MJF18008	—	10	450	1000	16/36	2.0	3.0 Typ.[3]	0.12 Typ.[3]	4.0	12 Typ.	45

[1] $|h_{fe}|$ @ MHz. [2] Darlington. [3] Switching tests performed with special application simulator circuit. See data sheet for details.

Plastic TO-220
Pin: 1 — Base, 2 — Collector, 3 — Emitter, 4 — Collector (Style 1, Case 221A-06)

Mfr.'s Type		I_CCont (A) Max.	$V_{CEO(sus)}$[5] (V) Min.	h_{FE} Min./Max.	@ I_C (A)	Resistive Switching			f_T (MHz) Min.	P_D (Case) Watts @ 25°C
NPN	PNP					t_s (µs) Max.	t_f (µs) Max.	@ I_C (A)		
TIP29B	TIP30B	1	80	15/75	1.0	0.6 Typ.	0.30 Typ.	1.0	3.0	30
TIP29C	TIP30C	1	100	15/75	1.0	0.6 Typ.	0.30 Typ.	1.0	3.0	30
TIP47	—	1	250	30/150	0.3	2.0 Typ.	0.18 Typ.	0.3	10.0	40
TIP48	—	1	300	30/150	0.3	2.0 Typ.	0.18 Typ.	0.3	10.0	40
TIP49	MJE5731	1	350	30/150	0.3	2.0 Typ.	0.18 Typ.	0.3	10.0	40
TIP50	—	1	400	30/150	0.3	2.0 Typ.	0.18 Typ.	0.3	10.0	40
TIP110[2]	TIP115[2]	2	60	500 Min.	2.0	1.7 Typ.	1.30 Typ.	2.0	25.0[1]	50
TIP111[2]	—	2	80	500 Min.	2.0	1.7 Typ.	1.30 Typ.	2.0	25.0[1]	50
TIP112[2,4]	TIP117[2,4]	—	100	500 Min.	2.0	1.7 Typ.	1.30 Typ.	2.0	25.0[1]	50
BUX85	—	2	450/1000	30	0.1	3.5	1.40	1.0	4.0	50
MJE1320	—	2	900/1800	3 Min.	1.0	4.0 Typ.	0.80 Typ.	1.0	—	80
TIP31A	TIP32A	3	60	25 Min.	1.0	0.6 Typ.	0.30 Typ.	1.0	3.0	40
TIP31B	TIP32B	3	80	25 Min.	1.0	0.6 Typ.	0.30 Typ.	1.0	3.0	40
TIP31C[4]	TIP32C[4]	3	100	25 Min.	1.0	0.6 Typ.	0.30 Typ.	1.0	3.0	40
—	MJE9780	3	150	50/200	0.5	—	—	—	5.0 Typ.	40
MJE13005	—	4	400/700	6/30	3.0	3.0	0.70	3.0	4.0	60
TIP120[2]	TIP125[2]	5	60	1 K Min.	3.0	1.5 Typ.	1.50 Typ.	3.0	4.0[1]	65
TIP121[2]	TIP126[2]	5	80	1 K Min.	3.0	1.5 Typ.	1.50 Typ.	3.0	4.0[1]	65
TIP122[2,4]	TIP127[2,4]	5	100	1 K Min.	3.0	1.5 Typ.	1.50 Typ.	4.0	4.0[1]	75
2N6497	—	5	250	10/75	2.5	1.8	0.80	2.5	5.0	80
MJE18204	—	5	450/1000	14/36	1.0	3.0	0.50	2.5	12.0	100
TIP41A	TIP42A	6	60	15/75	3.0	0.4 Typ.	0.15 Typ.	3.0	3.0	65
TIP41B	TIP42B	6	80	15/75	3.0	0.4 Typ.	0.15 typ	3.0	3.0	65
TIP41C	TIP42C	6	100	15/75	3.0	0.4 Typ.	0.15 Typ.	3.0	3.0	65
2N6288	2N6111	7	30	30/150	3.0	0.4 Typ.	0.15 Typ.	3.0	4.0	40
—	2N6109	7	50	30/150	2.5	0.4 Typ.	0.15 Typ.	3.0	4.0	40
2N6292	2N6107	7	70	30/150	2.5	0.4 Typ.	0.15 Typ.	3.0	4.0	40
2N6043[2]	2N6040[2]	8	80	1 K/10 K	4.0	1.5 Typ.	1.50 Typ.	3.0	4.0[1]	75
TIP100[2]	TIP105[2]	8	60	1 K/20 K	3.0	1.5 Typ.	1.50 Typ.	3.0	4.0[1]	80
2N6044[2]	2N6041[2]	8	60	1 K/10 K	4.0	1.5 Typ.	1.50 Typ.	3.0	4.0[1]	75
TIP101[2]	TIP106[2]	8	80	1 K/20 K	3.0	1.5 Typ.	1.50 Typ.	3.0	4.0[1]	75
2N6045[2]	2N6042[2]	8	100	1 K/10 K	3.0	1.5 Typ.	1.50 Typ.	3.0	4.0[1]	75
TIP102[2]	TIP107[2]	8	100	1 K/20 K	3.0	1.5 Typ.	1.50 Typ.	3.0	4.0[1]	80
MJE15028	MJE15029	8	120	20 Min.	4.0	—	—	—	30.0	50
MJE15030	MJE15031	8	150	20 Min.	4.0	—	—	—	30.0	50
MJE5740[2]	—	8	300/600	200 Min.	4.0	8.0 Typ.	2.00 Typ.	6.0	4.0	80
—	MJE5850	8	300/600	15 Min.	2.0	2.0	0.50	4.0	—	80
—	MJE5851	8	350	15 Min.	2.0	2.0	0.50	4.0	—	80
MJE5742[2]	—	8	400/700	200 Min.	4.0	8.0 Typ.	2.00 Typ.	6.0	12.0 Typ.	80
MJE13007[4]	—	8	400/700	5/30	5.0	3.0	0.70	5.0	12.0 Typ.	80
—	MJE5852[4]	8	400/700	15 Min.	2.0	2.0	0.50	4.0	12.0 Typ.	80
D44H8	D45H8	10	60	40 Min.	4.0	—	—	—	—	50
MJE3055T	MJE2955T	10	60	20/70	4.0	—	—	—	—	75
2N6387[2]	2N6667[2]	10	60	1K/20 K	5.0	—	—	—	20.0[1]	65
D44H10	—	10	80	20 Min.	4.0	0.5 Typ.	0.14 Typ.	5.0	50.0 Typ.	50
D44H11[4]	D45H11[4]	10	80	40 Min.	4.0	0.5 Typ.	0.14 Typ.	5.0	50.0 Typ.	50
2N6487	2N6490	15	60	20/150	5.0	0.6 Typ.	0.30 Typ.	5.0	5.0	75
2N6488	2N6491	15	80	20/150	5.0	0.6 Typ.	0.30 Typ.	5.0	5.0	75
D44VH10	D45VH10	15	80	20 Min.	4.0	0.5	0.09	8.0	50.0 Typ.	83

Plastic TO-218 Type Pin: 1 — Base, 2 — Collector, 3 — Emitter, 4 — Collector (Style 1, Case 340D-01 (TO-218 Type, SOT-93))

TIP140[2]	TIP145[2]	10	60	500 Min.	10.0	2.5 Typ.	2.50 Typ.	5.0	4.0[1]	125
TIP141[2]	TIP146[2]	10	80	500 Min.	10.0	2.5 Typ.	2.50 Typ.	5.0	4.0[1]	125
TIP33C	—	10	100	20 Min.	3.0	—	—	—	3.0	80
TIP142[2]	TIP147[2]	10	100	500 Min.	10.0	2.5 Typ.	2.50 Typ.	5.0	4.0[1]	125
BU323AP[2]	—	10	250	150 Min.	6.0	15.0	15.00	6.0	—	125
MJH10012[2]	—	10	400	100/2 K	6.0	15.0	15.00	6.0	—	118
TIP3055	TIP2955	15	60	5 Min.	10.0	—	—	—	2.5	80
MJH11020[2]	MJH11019[2]	15	200	400/15 K	10.0	—	—	—	3.0[1]	150
MJH11022[2]	MJH11021[2]	15	250	400/15 K	10.0	—	—	—	3.0[1]	150
BUV48A	—	15	450	8 Min.	8.0	2.0	0.40	10.0	—	150
MJE4343	MJE4353	16	160	15 Min.	8.0	1.2 Typ.	1.20 Typ.	8.0	1.0	125
MJH6284[2]	MJH6287[2]	20	100	750/18 K	10.0	—	—	—	4.0[1]	125
—	TIP36A	25	60	10/75	15.0	0.6 Typ.	0.30 Typ.	10.0	3.0	125
TIP35C	TIP36C	25	100	10/75	15.0	0.6 Typ.	0.30 Typ.	10.0	3.0	125

[1] $|h_{fe}|$ @ MHz. [2] Darlington. [3] Switching tests performed with special application simulator circuit. See data sheet for details. [4] Available as preferred chip. [5] When 2 voltages are given, the format is $V_{CEO(sus)}/V_{CES}$.

Plastic TO-247 Type
Pin: 1 — Base, 2 — Collector, 3 — Emitter, 4 — Collector (Case 340F-03)

Mfr.'s Type	I_CCont (A) Max.	$V_{CEO(sus)}$ (V) Min.	V_{CES} (V) Min.	h_{FE} Min./Max.	@ I_C (A)	Resistive Switching			f_T (MHz) Min.	P_D (Case) Watts @ 25°C
NPN						t_s (µs) Max.	t_f (µs) Max.	@ I_C (A)		
MJW16212	10	650	1500	4/10	10.0	4.00[1]	0.50[1]	5.5	—	150
MJW16018	10	800	1500	4 Min.	5.0	4.50 Typ.	0.20 Typ.	5.0	3.0 Typ.	150
MJW16206	12	500	1200	5/13	10.0	2.25	0.25	6.5	3.0 Typ.	150
MJW16210	15	500	1000	5/13	15.0	3.00	0.24[2]	8.5[2]	2.5 Typ.	150

[1] Switching tests performed with special application simulator circuit: See data sheet for details. [2] Tested in applications simulator: See data sheet.

Plastic TO-3PBL
Pin: 1 — Base, 2 — Collector, 3 — Emitter, 4 — Collector (Style 2, Case 340G-01)

Mfr.'s Type		I_CCont (A) Max.	$V_{CEO(sus)}$[5] (V) Min.	h_{FE} Min./Max.	@ I_C (A)	Resistive Switching			f_T (MHz) Min.	P_D (Case) Watts @ 25°C
NPN	PNP					t_s (µs) Max.	t_f (µs) Max.	@ I_C (A)		
MJL3281A	MJL1302A	15.0	200	60/175	7.00	—	—	—	30 Typ.	200
MJL21194	MJL21193	16.0	250	25/75	8.00	—	—	—	4 Min.	200

Plastic TO-225 Type (Formerly TO-126 Type)
Pin: 1 — Emitter, 2 — Collector, 3 — Base (Style 1, Case 77-07 (TO-225AA))
Pin: 1 — Base, 2 — Collector, 3 — Emitter (Style 3, Case 77-07 (TO-225AA))

MJE3439	—	0.3	350	40/160	0.02	—	—	—	15	15.0
MJE344	—	0.5	200	30/300	0.05	—	—	—	15	20.8
2N5655	—	0.5	250	30/250	0.10	3.50 Typ.	0.240 Typ.	0.1	10	200.0
MJE340[3]	MJE350[3]	0.5	300	30/240	0.05	—	—	—	—	20.8
2N5657	—	0.5	350	30/250	0.10	3.50 Typ.	0.240 Typ.	0.1	10	20.0
2N4921	2N4918	1.0	40	20/100	0.50	0.60 Typ.	0.300 Typ.	0.5	3	30.0
2N4922	2N4919	1.0	60	20/100	0.50	0.60 Typ.	0.300 Typ.	0.5	3	30.0
2N4923	2N4920	1.0	80	20/100	0.50	0.60 Typ.	0.300 Typ.	0.5	3	30.0
MJE13003[3,4]	—	1.5	400	5/25	1.00	4.00	0.700	1.0	5	40.0
MJE181	MJE171	3.0	60	50/250	0.10	0.60 Typ.	0.120 Typ.	0.1	50	2.5
MJE270[2,4]	MJE271[2,4]	2.0	100	1.5 K Min.	0.12	—	—	—	6	15.0
MJE182[3]	MJE172[3]	3.0	80	50/250	0.10	0.60 Typ.	0.120 Typ.	0.1	50	12.5
MJE521	MJE371	4.0	40	40 Min.	1.00	—	—	—	—	40.0
2N5191	2N5194	4.0	60	25/100	1.50	0.40 Typ.	0.400 Typ.	0.5	2	40.0
MJE800[2]	MJE700[2]	4.0	60	750 Min.	1.50	—	—	—	1[1]	40.0
2N6038[2]	2N6035[2]	4.0	60	750/18 K	2.00	1.70 Typ.	1.200 Typ.	2.0	25	40.0
2N5192	2N5195	4.0	80	25/100	1.50	0.40 Typ.	0.400 Typ.	1.5	2	40.0
MJE802[2]	MJE702[2]	4.0	80	750 Min.	1.50	—	—	—	1[1]	40.0
MJE803[2]	MJE703[2]	4.0	80	750 Min.	2.00	—	—	—	1[1]	40.0
2N6039[2,3]	2N6036[2,6]	4.0	80	750/18 K	2.00	1.70 Typ.	1.200 Typ.	2.0	25	40.0
MJE243	MJE253	4.0	100	40/120	0.20	0.15 Typ.	0.070 Typ.	2.0	40	15.0
MJE200[3]	MJE210[3]	5.0	25	45/180	2.00	0.13 Typ.	0.035 Typ.	2.0	65	15.0

DPAK — Surface Mount Power Package
Pin: 1 — Base, 2 — Collector, 3 — Emitter, 4 — Collector (Style 1, Case 39A-10[7])

—	MJD350	0.5	300	30/240	0.05	—	—	—	—	15.0
MJD47	—	1.0	250	30/150	0.30	2.00	0.200	0.3	10.0	15.0
MJD50	—	1.0	400	30/150	0.30	2.00	0.200	0.3	10.0	20.0
MJD112[2]	MJD117[2]	2.0	100	1000 Min.	2.00	1.70	1.300	2.0	25.0[1]	20.0
MJD31	MJD32	3.0	40	10 Min.	1.00	0.60	0.300	1.0	3.0	15.0
MJD31C	—	3.0	100	10 Min.	1.00	0.60	0.300	1.0	3.0	15.0
MJD243	—	4.0	100	40/180	0.20	0.16	0.040	1.0	40.0	12.5
—	MJD210	5.0	25	45/180	2.00	0.15	0.040	2.0	65.0	12.5
MJD44H11	MJD45H11	8.0	80	40 Min.	4.00	0.50	0.140	5.0	50.0 Typ.	20.0
—	MJD127[2]	8.0	100	1 K/12 K	4.00	1.50	2.000	4.0	4.0[1]	20.0
MJD3055	MJD2955	10.0	60	20/100	4.00	1.50	1.500	3.0	2.0	20.0

Metal TO-204 (Formerly TO-3), TO-204AE, Pin: 1 — Base, 2 — Emitter, 3 — Collector (Style 1, TO-204AA Case 1-07, TO-204AE Case 197A-03)

MJ15020	MJ15021	4.0	250	30 Min.	1.00	—	—	—	20.0	150.0
MJ1000[2]	—	8.0	60	1 K Min.	3.00	—	—	—	—	90.0
2N6055[2]	—	8.0	60	750/18 K	4.00	1.50 Typ.	1.500 Typ.	4.0	4.0[1]	100.0
2N3715	2N3791	10.0	60	30 Min.	3.00	0.30 Typ.	0.400 Typ.	5.0	4.0	150.0
MJ3000[2]	MJ2500[2]	10.0	60	1 K Min.	5.00	—	—	—	—	150.0
2N3716[3]	2N3792[3]	10.0	80	30 Min.	3.00	0.30 Typ.	0.400 Typ.	5.0	4.0	150.0
2N3442	—	10.0	140	20/70	4.00	—	—	—	—	117.0
MJ410	—	10.0	200	30/90	1.00	—	—	—	2.5	100.0
MJ15011	—	10.0	250	20/100	2.00	—	—	—	—	200.0
MJ413	—	10.0	325	20/80	0.50	—	—	—	2.5	125.0
MJ423	—	10.0	325	30/90	1.00	—	—	—	2.5	125.0
MJ10012[2]	—	10.0	400	100/2 K	6.00	15.00	15.000	6.0	—	175.0
2N6057[2]	2N6050[2]	12.0	60	750/18 K	6.00	1.60 Typ.	1.500 Typ.	6.0	4.0[1]	150.0
2N6058[2]	2N6051[2]	12.0	80	750/18 K	6.00	1.60 Typ.	1.500 Typ.	6.0	4.0[1]	150.0
2N6059[2,3]	2N6052[2,3]	12.0	100	750/18 K	6.00	1.60 Typ.	1.500 Typ.	6.0	4.0[1]	150.0
2N3055[3]	MJ2955[3]	15.0	60	20/70	4.00	0.70 Typ.	0.300 Typ.	4.0	2.5	115.0
2N3055A	—	15.0	60	20/70	4.00	—	—	—	0.8	115.0
2N6576[2]	—	15.0	60	2 K/20/K	4.00	2.00	7.000	10.0	10.0-200[1]	120.0
2N5881	2N5879	15.0	60	20/100	6.00	1.00	0.800	6.0	4.0	160.0
2N5882[3]	2N5880[3]	15.0	80	20/100	6.00	1.00	0.800	6.0	4.0	160.0
MJ15015[3]	MJ15016	15.0	120	20/70	4.00	0.70 Typ.	0.300 Typ.	4.0	1.0	180.0
2N6578[2]	—	15.0	120	2 K/20 K	4.00	2.00	7.000	10.0	10.0-200[1]	120.0
MJ15001	MJ15002	15.0	140	25/150	4.00	—	—	—	2.0	200.0
MJ11020[2]	—	15.0	200	100 Min.	15.00	—	—	—	3.0[1]	175.0
—	MJ11019[2,3]	15.0	250	100 Min.	15.00	—	—	—	3.0[1]	175.0
—	MJ11021[2]	15.0	300	6/30	10.00	4.00	0.700	10.0	6.0-24	175.0
2N6251	—	15.0	300	6/50	10.00	3.50	1.000	10.0	2.5	175.0
2N6547	—	15.0	400/850	6/30	10.00	4.00	0.700	10.0	6.0-24	175.0
MJ16010	—	15.0	450/850	5 Min.	15.00	1.20 Typ.	0.200 Typ.	10.0	—	175.0
MJ16012	—	15.0	450/850	7 Min.	15.00	0.90 Typ.	0.150 Typ.	10.0	—	175.0
—	2N6030	16.0	120	20/80	8.00	1.20 Typ.	1.200 Typ.	8.0	1.0	200.0
2N3773[3]	2N6609	16.0	140	15/60	8.00	1.10 Typ.	1.500 Typ.	8.0	4.0	150.0

[1] $|h_{fe}|$ @ MHz. [2] Darlington. [3] Available as preferred chip. [5] When 2 voltages are given, the format is $V_{CEO(sus)}/V_{CES}$. [4] Case 77 (Style 3). [6] Case 369A-10 may be ordered tape and reeled by adding a "T4" suffix; 2500 units/reel. [7] Case 197A-03 (TO-204AE).

Bipolar Power Transistors (Continued)

Metal TO-204 (Formerly TO-3), TO-204AE (Continued)
Pin: 1 — Base, 2 — Collector, 3 — Emitter (Style 1, TO-204AA Case 1-07, TO-204AE Case 197A-03)

Mfr.'s Type NPN	Mfr.'s Type PNP	I_CCont (A) Max.	$V_{CEO(sus)}$[5] (V) Min.	h_{FE} Min./Max.	@ I_C (A)	Resistive Switching t_s (μs) Max.	Resistive Switching t_f (μs) Max.	Resistive Switching @ I_C (A)	f_T (MHz) Min.	P_D (Case) (W) @ 25°C
—	2N6031[3]	16	140	15/60	8.0	1.2 Typ.	1.20 Typ.	8	1	200
MJ15022	MJ15023	16	200	15/60	8.0	—	—	—	5	250
MJ15024	MJ15025	16	250	15/60	8.0	—	—	—	5	250
2N3772	—	20	60	15/60	10.0	—	—	—	5	250
2N6282[2]	2N6285[2]	20	60	750/18 K	10.0	2.5 Typ.	2.50 Typ.	10	4[1]	160
2N5039	—	20	75	20/100	10.0	1.5	0.50	10	60	140
2N6283[2]	2N6286[2]	20	80	750/18 K	10.0	2.5 Typ.	2.50 Typ.	10	4[1]	160
2N5038[3]	—	20	90	20/100	12.0	1.5	0.50	12	60	140
2N6284[2,3]	2N6287[2,3]	20	100	750/18 K	10.0	2.5 Typ.	2.50 Typ.	10	4[1]	160
MJ15003[3]	MJ15004[3]	20	140	25/150	5.0	—	—	—	2	250
MJ10000[2]	—	20	350	40/400	10.0	3.0	1.80	10	10[1]	175
MJ10005[2]	—	20	400	40/400	10.0	1.5	0.50	10	10[1]	175
MJ13333	—	20	400	10/60	5.0	4.0	0.70	10	—	175
MJ10009[2]	—	20	500	30/300	10.0	2.0	0.60	10	8[1]	175
2N5885	2N5883	25	60	20/100	10.0	1.0	0.80	10	4	200
2N5886[3]	2N5884[3]	25	80	20/100	10.0	1.0	0.80	10	4	200
2N6338	—	25	100	30/120	10.0	1.0	0.25	10	40	200
2N6341	—	25	150	30/120	10.0	1.0	0.25	10	40	200
2N3771	—	30	40	15/60	15.0	—	—	—	2	150
—	2N4398	30	40	15/60	15.0	2.0	1.00	10	2	200
2N5302	2N4399	30	60	15/60	15.0	2.0	1.00	10	2	200
MJ11012[2]	—	30	60	1 K Min.	20.0	—	—	—	4[1]	200
MJ11014[2]	MJ11013[2]	30	90	1 K Min.	20.0	—	—	—	4[1]	200
MJ802	MJ4502	30	100	25/100	7.5	—	—	—	2	200
MJ11016[2,3]	MJ11015[2,3]	30	120	1 K Min.	20.0	—	—	—	4[1]	200
MJ10022[2,7]	—	40	350	50/600	10.0	2.5	0.90	20	—	250
MJ10023[2,7]	—	40	400	50/600	10.0	2.5	0.90	20	—	250
2N5685[7]	—	50	60	15/60	25.0	0.5 Typ.	0.30 Typ.	25	2	300
2N5686[7]	2N5684[7]	50	80	15/60	25.0	0.5 Typ.	0.30 Typ.	25	2	300
MJ11030[2,7]	MJ11031[2,7]	50	90	400 Min.	50.0	—	—	—	—	300
2N6275[7]	2N6379[7]	50	120	30/120	20.0	0.8	0.25	20	30	250
MJ11032[2,7]	MJ11033[2,7]	50	120	400 Min.	50.0	—	—	—	—	300
MJ10015[2,7]	—	50	400	10 Min.	40.0	2.5	1.00	20	—	250
MJ10016[2,7]	—	50	500	10 Min.	40.0	2.5	1.00	20	—	250
—	MJ14001[7]	60	60	15/100	50.0	—	—	—	—	300
MJ14002[7]	MJ14003[7]	60	80	15/100	50.0	—	—	—	—	300
MJ10020[2,7]	—	60	200	75 Min.	15.0	3.5	0.50	30	—	250
MJ10021[2,7]	—	60	250	75 Min.	15.0	3.5	0.50	30	—	250

[1] $|h_{fe}|$ @ MHz. [2] Darlington. [3] Available as preferred chip. [4] Case 77, (Style 3). [5] When 2 voltages are given, the format is $V_{CEO(sus)}/V_{CES}$. [6] Case 369A-10 may be ordered tape and reeled by adding a "T4" suffix; 2500 units/reel. [7] Case 197A-03 (TO-204AE).

Field Effect Transistors

JFETs

JFETs operate in the depletion mode. They are available in both P- and N-channel and are offered in both Through-hole and Surface Mount Packages. Applications include general-purpose amplified, switches and choppers, and RF amplifiers and mixers. These devices are economical and very rugged. The drain and source are interchangeable on many typical FETs.

Case 29-04
TO-226AA
(TO-92)

JFET Low-Frequency/Low-Noise (Case 29-04 — TO-226AA (TO-92) — N-Channel)
The following table is a listing of small-signal JFETs intended for low-noise applications in the audio range. These devices exhibit good linearity and are candidates for hi-fi and instrumentation equipment.

Mfr.'s Type	$R_e Y_{fs}$ @ f mmho Min.	$R_e Y_{fs}$ @ f (kHz)	$R_e Y_{os}$ @ f μmho Max.	$R_e Y_{os}$ @ f (kHz)	C_{iss} (pF) Max.	C_{rss} (pF) Min.	$V_{(BR)GSS}$ $V_{(BR)GDO}$ (V) Min.	$V_{GS(off)}$ (V) Min.	$V_{GS(off)}$ (V) Max.	I_{DSS} (mA) Min.	I_{DSS} (mA) Max.	Style
2N5458	1.5	1.0	50	1.0	7.0	3.0	25	1.00	7.0	2.0	9.0	5
2N5457	1.0	1.0	50	1.0	7.0	3.0	25	0.50	6.0	1.0	5.0	5
2N5459	2.0	1.0	50	1.0	7.0	3.0	25	2.00	8.0	4.0	16.0	5

JFET Low-Frequency/Low-Noise (Case 29-04 — TO-226AA (TO-92) — P-Channel)

Mfr.'s Type	$R_e Y_{fs}$ @ f mmho Min.	$R_e Y_{fs}$ @ f (kHz)	$R_e Y_{os}$ @ f μmho Max.	$R_e Y_{os}$ @ f (kHz)	C_{iss} (pF) Max.	C_{rss} (pF) Min.	$V_{(BR)GSS}$ $V_{(BR)GDO}$ (V) Min.	$V_{GS(off)}$ (V) Min.	$V_{GS(off)}$ (V) Max.	I_{DSS} (mA) Min.	I_{DSS} (mA) Max.	Style
2N5460	1.0	1.0	75	1.0	7.0	2.0	40	0.75	6.0	1.0	5.0	7
2N5461	1.5	1.0	75	1.0	7.0	2.0	40	1.00	7.5	2.0	9.0	7
2N5462	2.0	1.0	75	1.0	7.0	2.0	40	1.80	9.0	4.0	16.0	7

JFET High-Frequency Amplifiers (Case 29-04 — TO-226AA (TO-92) — N-Channel)
The following is a listing of small signal JFETs that are intended for hi-frequency applications. These are candidates for VHF/UHF oscillators, mixers and front-end amplifiers.

Mfr.'s Type	$R_e Y_{fs}$ @ f mmho Min.	$R_e Y_{fs}$ @ f (MHz)	$R_e Y_{os}$ @ f μmho Max.	$R_e Y_{os}$ @ f (MHz)	C_{iss} (pF) Max.	C_{rss} (pF) Min.	$V_{(BR)GSS}$ $V_{(BR)GDO}$ (V) Min.	NF @ RG=1 K dB Max.	NF @ RG=1 K f (MHz)	$V_{GS(off)}$ (V) Min.	$V_{GS(off)}$ (V) Max.	I_{DSS} (mA) Min.	I_{DSS} (mA) Max.	Style
2N5484	2.5	100	75	100	5.0	1.0	3.0	100	25	0.3	3.0	1.0	5.0	5
2N5485	3.0	400	100	400	5.0	1.0	4.0	400	25	0.5	4.0	4.0	10.0	5
2N5486	3.5	400	100	400	5.0	1.0	4.0	400	25	2.0	6.0	8.0	20.0	5
J309	12[1]	100	250[1]	100	7.5	2.5	1.5[1]	100	25	1.0	4.0	12	30.0	5
J310	12[1]	100	250[1]	100	7.5	2.5	1.5[1]	100	25	2.0	6.5	24	60.0	5

[1] Typical.

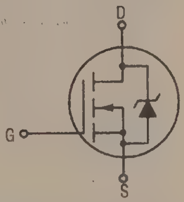
Field Effect Transistors

TMOS MOSFETs

TMOS®

Case 29-05
TO-226AE
1 Watt (TO-92)

Case 29-04
TO-226AA
(TO-92)



TMOS Switches and Choppers (Case 29-05 — TO-226AE (1-WATT TO-92) — N-Channel)
The following is a listing of small-signal TMOS devices that are intended for switching and chopper applications. These devices offer low $R_{DS(on)}$ characteristics.

Mfr.'s Type	$R_{DS(on)}$ @ ID Ω Max.	$R_{DS(on)}$ @ ID (A)	$V_{GS(th)}$ (V) Min.	$V_{GS(th)}$ (V) Max.	$V_{(BR)DSS}$ (V) Min.	C_{iss} (pF) Max.	C_{rss} (pF) Max.	t_{on} (ns) Max.	t_{off} (ns) Max.	Style
MPF960	1.7	1.00	1.0	3.5	60	70[1]	20.0[1]	15.0	15.0	22
MPF6659	1.8	1.00	0.8	2.0	35	30[1]	4.0[1]	5.0	5.0	22
MPF6660	3.0	1.00	0.8	2.0	60	30[1]	4.0[1]	5.0	5.0	22
MPF6661	4.0	1.00	0.8	2.0	90	30[1]	4.0[1]	5.0	5.0	22
MPF910	5.0	0.50	0.3	2.5	60	—	—	—	—	22
VN10LM	5.0	0.50	0.8	2.5	60	60	5.0	10.0	10.0	22

TMOS Switches and Choppers (Case 29-04 — TO-226AA (TO-92) — N-Channel)

Mfr.'s Type	$R_{DS(on)}$ @ ID Ω Max.	$R_{DS(on)}$ @ ID (A)	$V_{GS(th)}$ (V) Min.	$V_{GS(th)}$ (V) Max.	$V_{(BR)DSS}$ (V) Min.	C_{iss} (pF) Max.	C_{rss} (pF) Max.	t_{on} (ns) Max.	t_{off} (ns) Max.	Style
2N7000	5.0	0.50	0.8	3.0	60	60	5.0	10.0	10.0	22
BS170	5.0	0.20	0.8	3.0	60	25[1]	3.0[1]	10.0	10.0	30
VN2406L	6.0	0.50	0.8	2.0	240	125	20.0	8.0	23.0	22
BS107A	6.4	0.25	1.0	3.0	200	60[1]	6.0[1]	15.0	15.0	30
VN2222LL	7.5	0.50	0.6	2.5	60	60	5.0	10.0	10.0	22
BS107	14.0	0.20	1.0	3.0	200	60[1]	6.0[1]	15.0	15.0	30

[1] Typical.

Field Effect Transistors

Surface Mount FETs

Case 318-07
TO-236AB
SOT-23

Case 318E
SOT-223

This section contains the FET plastic packages available for surface mount applications. Most of these devices are the most popular metal-can and insertion type parts carried over to the new surface mount packages.

Surface Mount RF JFETs
Pinout: 1 — Drain, 2 — Source, 3 — Gate (Case 318-07 — TO-236AB (SOT-23) — N-Channel)
The following is a list of surface mount FETs which are intended for VHF/UHF RF amplifier applications.

Mfr.'s Type	Marking	NF dB Typ.	NF f (MHz)	Y_{fs} @ V_{DS} mmhos Min.	Y_{fs} @ V_{DS} mmhos Max.	Y_{fs} @ V_{DS} (V)	$V_{(BR)GSS}$	Style
MMBFJ309LT1	6U	1.5	450	10.0	20.0	10	25	10
MMBFJ310LT1	6T	1.5	450	8.0	18.0	10	25	10
MMBFU310LT1	M6C	1.5	450	10.0	18.0	10	25	10
MMBF4416LT1	M6A	2.0[1]	100	4.5	7.5	15	30	10
MMBF5484LT1	M6B	2.0	100	3.0	6.0	15	25	10

[1] Max.

Surface Mount General-Purpose JFETs
Pinout: 1 — Drain, 2 — Source, 3 — Gate (Case 318-07 — TO-236AB (SOT-23) —N-Channel)
The following table is a listing of surface mount small-signal general purpose FETs. These devices are intended for small-signal amplification for DC, audio. and lower RF frequencies. They also have applications as oscillators and general-purpose, low-voltage switches.

Mfr.'s Type	Marking	$V_{(BR)GSS}$	Y_{fs} @ V_{DS} mmhos Min.	Y_{fs} @ V_{DS} mmhos Max.	Y_{fs} @ V_{DS} (V)	I_{DSS} (mA) Min.	I_{DSS} (mA) Max.	Style
MMBF5459LT1	6L	25	2.0	6.0	15	4.0	16	10

Surface Mount General-Purpose JFETs
Pinout: 1 — Drain, 2 — Source, 3 — Gate (Case 318-07 — TO-236AB (SOT-23)) —P-Channel

Mfr.'s Type	Marking	$V_{(BR)GSS}$	Y_{fs} @ V_{DS} mmhos Min.	Y_{fs} @ V_{DS} mmhos Max.	Y_{fs} @ V_{DS} (V)	I_{DSS} (mA) Min.	I_{DSS} (mA) Max.	Style
MMBF5460LT1	M6E	40	1.0	4.0	15	1.0	5.0	10

Surface Mount Choppers/Switches JFETs
Pinout: 1 — Drain, 2 — Source, 3 — Gate (Case 318-07 — TO-236AB (SOT-23)) —N-Channel
The following is a listing of small-signal surface mount JFET devices intended for switching and chopper applications.

Mfr.'s Type	Marking	$R_{DS(on)}$ (Ω) Max.	t_{off} ns Max.	$V_{(BR)GSS}$	$V_{GS(off)}$ (V) Min.	$V_{GS(off)}$ (V) Max.	I_{DSS} (mA) Min.	I_{DSS} (mA) Max.	Style
MMBF4393LT1	6G	100	50	30	0.5	3.0	5.0	30	10

Surface Mount Choppers/Switches JFETs
Pinout: 1 — Drain, 2 — Source, 3 — Gate (Case 318-07 — TO-236AB (SOT-23) —P-Channel)

Mfr.'s Type	Marking	$R_{DS(on)}$ (Ω) Max.	t_{off} ns Max.	$V_{(BR)GSS}$	$V_{GS(off)}$ (V) Min.	$V_{GS(off)}$ (V) Max.	I_{DSS} (mA) Min.	I_{DSS} (mA) Max.	Style
MMBFJ175LT1	6W	125	—	–30	3.0	6.0	7.0	60	10
MMBFJ177LT1	6Y	300	—	–30	0.8	2.5	1.5	20	10

Field Effect Transistors (Continued)

Surface Mount FETs (Continued)

TMOS FETs
Pinout: 1 — Gate, 2 — Source, 3 — Drain (Case 318-07 — TO-236AB (SOT-23) — N-Channel)
The following is a listing of small-signal surface mount TMOS FETs which exhibit low $R_{DS(on)}$ characteristics.

Mfr.'s Type	Marking	$R_{DS(on)}$ @ I_D (Ω)	(mA)	V_{DSS}	$V_{GS(th)}$ (V) Min.	(V) Max.	Switching Time t_{on} (ns)	t_{off} (ns)	Style
BSS123LT1	SA	6.0	100	100	0.8	2.8	20	40	21

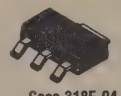
TMOS FETs
Pinout: 1 — Gate, 2 — Source, 3 — Drain (Case 318-07 — TO-236AB (SOT-23)) —N-Channel (Continued)

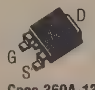
2N7002LT1	702	7.5	500	60	1.0	2.5	20	20	21

TMOS FETs
Pinout: 1 — Gate, 2 — Drain, 3 — Source, 4 — Drain (Case 318E (SOT-223)) —N-Channel
The following is a listing of small-signal surface mount TMOS FETs which exhibit low $R_{DS(on)}$ characteristics.

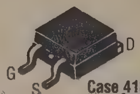
Mfr.'s Type	Marking	$R_{DS(on)}$ (Ω)	(mA)	V_{DSS}	$V_{GS(th)}$ (V) Min.	(V) Max.	Switching Time t_{on} (ns)	t_{off} (ns)	Style
MMFT960T1	FT960	1.7	1000	60	1.0	3.5	15.0	15.0	3
MMFT6661T1	T6661	4.0	1000	90	0.8	2.0	5.0	5.0	3
MMFT2406T1	T2406	10.0	200	240	0.8	2.0	—	—	3
MMFT107T1	FT107	14.0	200	200	1.0	3.0	15.0	15.0	3

Power TMOS® MOSFETs

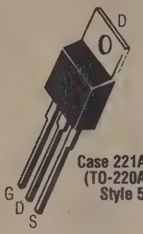

Case 318E-04
SOT-223
Style 3



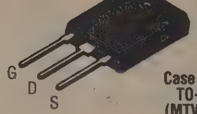
Case 369A-13
DPAK
Style 2



Case 418B-02
D²PAK
Style 2



Case 221A-06
(TO-220AB)
Style 5



Case 340F-03
TO-247AE
(MTW Prefix)
Style 1

Case 751-05
SO-8
Style 11

SOT-223 Medium Power MOSFETs

SOT-233 Medium Power TMOS FETs — N-Channel

Mfr.'s Type[5]	$V_{(BR)DSS}$ (V) Min.	$R_{DS(on)}$ (Ω) Max. @	I_D (A)	I_D (Cont.) (A)	P_D[1] (W) Max.	Applications
MMFT1N10ET1	100	0.30	0.5.	1.0	0.8[3]	dc-dc Converters, Power Supplies, Motor Controls, Disk Drives
MMFT3055ELT1[2]	60	0.18	0.75	1.5	0.8[3]	dc-dc Converters, Power Supplies, Motor Controls, Disk Drives
MMFT3055ET1	60	0.15	0.85	1.7	0.8[3]	dc-dc Converters, Power Supplies, Motor Controls, Disk Drives
MMFT2N02ELT1[2]	20	0.15	1.00	2.0	0.8[3]	dc-dc Converters, Power Supplies, Motor Controls, Disk Drives

SOT-233 Medium Power TMOS FETs — P-Channel

MMFT2955ET1	60	0.30	0.60	1.2	0.8[3]	dc-dc Converters, Power Supplies, Motor Controls, Disk Drives

[1] TC=25°C. [2] Indicates Logic Level. [3] Power rating when mounted on and FR-4 glass epoxy printed circuit board with the minimum recommended footprint. [4] Available in tape and reel only — T1 suffix=1000/reel, T3 Suffix=4000/reel.

DPAK

DPAK — N-Channel

Mfr.'s Type[4]	$V_{(BR)DSS}$ (V) Min.	$R_{DS(on)}$ (Ω) Max. @	IB (A)	P_D[1] (Cont.) (A)	(W) Max.
MTD2N50E	500	3.6000	1.00	2.0	1.75[3]
MTD9N10E	100	0.2500	4.50	9.0	1.75[3]
MTD3055E	60	0.1500	4.00	8.0	1.75[3]
MTD8N06E	60	0.1200	4.00	8.0	1.75[3]
MTD20N03HDL[2]	30	0.0350	10.00	20.0	1.75[3]

DPAK — P-Channel

MTD5P06E	60	0.5500	2.50.	5.0	1.75[3]
MTD2955E	60	0.3000	6.00	12.0	1.75[3]
MTD20P03HDL[2]	30	0.0990	10.00	19.0	1.75[3]

D²PAK

D²PAK — N-Channel

MTB1N100E	1000	9.0000	0.50	1.0	2.50[3]
MTB3N100E	1000	4.0000	1.50	3.0	2.50[3]
MTB4N80E	800	3.0000	2.00	4.0	2.50[3]
MTB6N60E	600	1.2000	3.00	6.0	2.50[3]
MTB8N50E	500	0.8000	4.00	8.0	2.50[3]
MTB10N40E	400	0.5500	5.00	10.0	2.50[3]
MTB16N25E	250	0.2500	8.00	16.0	2.50[3]
MTB20N20E	200	0.1600	10.00	20.0	2.50[3]
MTB33N10E	100	0.0600	16.50	33.0	2.50[3]
MTB30N06EL[2]	60	0.0500	15.00	30.0	2.50[3]
MTB36N06E	60	0.0400	18.00	36.0	2.50[3]

D²PAK — N-Channel (Continued)

Mfr.'s Type	$V_{(BR)DSS}$ (V) Min.	$R_{DS(on)}$ (Ω) Max. @	I_D (A)	I_D (Cont.) (A)	P_D[1] (W) Max.
MTB50N06E	60	0.0250	25.00	50.0	2.50[3]
MTB60N06HD	60	0.0140	30.00	60.0	2.50[3]
MTB75N06HD	60	0.0100	37.50	75.0	2.50[3]
MTB75N05HD	50	0.0095	37.50	75.0	2.50[3]
MTB75N03HDL[2]	30	0.0075	37.50	75.0	2.50[3]

TO-220AB

TO-220AB —N-Channel

MTP1N100E	1000	9.0000	0.50	1.0	75.00
MTP3N100E	1000	4.0000	1.50	3.0	125.00
MTP4N80E	800	3.0000	2.00	4.0	125.00
MTP1N60E	600	8.0000	0.50	1.0	50.00
MTP2N60E	600	3.8000	1.00	2.0	50.00
MTP3N60E	600	2.2000	1.50	3.0	75.00
MTP6N60E	600	1.2000	3.00	6.0	125.00
MTP1N50E	500	5.0000	0.50	1.0	50.00
MTP2N50E	500	3.6000	1.00	2.0	75.00
MTP3N50E	500	3.0000	1.50	3.0	50.00
MTP8N50E	500	0.8000	4.00	8.0	125.00
MTP2N40E	400	3.5000	1.00	2.0	50.00
MTP4N40E	400	1.8000	2.00	4.0	50.00
MTP5N40E	400	1.0000	2.50	5.0	75.00
MTP10N40E	400	0.5500	5.00	10.0	125.00
MPT16N25E	250	0.2500	8.00	16.0	125.00
MTP20N20E	200	0.1600	10.00	20.0	125.00
MPT10N10E	100	0.2500	5.00	10.0	75.00
MTP12N10E	100	0.1600	6.00	12.0	75.00
MTP33N10E	100	0.0600	16.50	33.0	150.00

TO-220AB — N-Channel (Continued)

Mfr.'s Type	$V_{(BR)DSS}$ (V) Min.	$R_{DS(on)}$ (Ω) Max. @	I_D (A)	I_D (Cont.) (A)	P_D[1] (W) Max.
MTP60N06HD	60	0.0140	30.00	60.0	150.00
MTP75N06HD	60	0.0100	37.50	75.0	150.00
MTP15N05EL[2]	50	0.1000	7.50	15.0	75.00
MTP50N05E	50	0.0280	25.00	50.0	150.00
MTP50N05EL	50	0.0320	25.00	50.0	150.00
MTP75N05HD	50	0.0095	37.50	75.0	150.00
MTP75N03HDL[2]	30	0.0075	37.50	75.0	150.00

TO-220AB — P-Channel

MTP2P50E	500	6.0000	1.00	2.0	75.00
MTP6P20E	200	1.0000	3.00	6.0	75.00
MTP12P10	100	0.3000	6.00	12.0	88.00
MTP2955E	60	0.3000	6.00	12.0	75.00
MTP23P06	60	0.1200	11.50	23.0	125.00
MTP50P03HDL[2]	30	0.0250	25.00	50.0	150.00

TO-247 Isolated Mounting Hole

TO-247 — N-Channel

MTW6N100E	1000	1.5000	3.00	6.0	180.00
MTW10N100E	1000	1.3000	5.00	10.0	250.00
MTW7N80E	800	1.0000	3.50	7.0	180.00
MTW8N60E	600	0.5000	4.00	8.0	180.00
MTW14N50E	500	0.3200	7.00	14.0	180.00
MTW20N50E	500	0.2400	10.00	20.0	250.00
MTW16N40E	400	0.3000	8.00	16.0	180.00
MTW24N40E	400	0.1600	12.00	24.0	250.00
MTW32N25E	250	0.1000	16.00	32.0	250.00
MTW32N20E	200	0.0750	16.00	32.0	180.00
MTW35N15E	150	0.0650	17.50	35.0	180.00
MTW45N10E	100	0.0350	22.50	45.0	180.00

TMOS V

TMOS V — DPAK

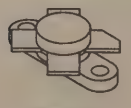
MTD3055V	60	0.1500	6.00	12.0	1.75[3]
MTD15N06V	60	.0.1200	7.50	15.0	1.75[3]

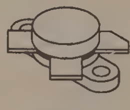
TMOS V —TO-220AB

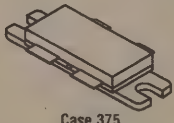
MTP3055V	60	0.1500	6.00	12.0	40.00
MTP15N06V	60	0.1200	7.50	15.0	53.00
MTP36N06V	60	0.0400	16.00	32.0	88.00
MTP50N06V	60	0.0280	22.50	42.0	107.00

[1] TC=25°C. [2] Indicates Logic Level. [3] Power rating when mounted on and FR-4 glass epoxy printed circuit board with the minimum recommended footprint. [4] Available in tape and reel — add T4 suffix to Part Number. [5] ESD protected to 4 KV.

RF Power MOSFET


Case 211-07
Style 1, 2
(.380" Flange)

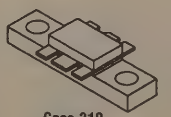

Case 211-11
Style 1, 2
(.500" Flange)


Case 375
Style 2

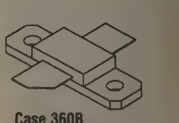
Case 249
Style 1
(.280" Pill)

Case 412
Style 1

Case 430
Style 2


Case 319
Style 1, 2, 3
(CS-12)

Case 316-01
Style 1, 2
(.500" CQ)


Case 360B
Style 1

Motorola RF Power MOSFETs are constructed using a planar process to enhance manufacturing repeatability. They are N-Channel field effect transistors with an oxide insulated gate which controls vertical current flow. Compared with bipolar transistors, RF Power FETs exhibit higher gain, higher input impedance, enhanced thermal stability and lower noise. The FETs listed in this section are specified for operation in RF Power Amplifiers and are grouped by frequency range of operation and type of application. Arrangement within each group is first by order of voltage then by increasing output power.

RF Power MOSFET (Continued)

To 150 MHz HF/SSB

V_{DD}=50 Volts, Class AB
For military and commercial HF/SSB fixed, mobile and marine transmitters.

Mfr.'s Type	P_{out} Output Power (W)	P_{in} Input Power Typ. (W)	G_{ps} Typ. Gain dB @ 30 MHz	Typical IMD		ØJC °C/W	Package Style
				d_3 dB	d_{11} dB		
MRF148	30	0.5	18	–35	–60	1.5	211-07/2

Mfr.'s Type	P_{out} Output Power (W)	P_{in} Input Power Typ. (W)	G_{ps} Typ. Gain dB @ 30 MHz	Typical IMD		ØJC °C/W	Package Style
				d_3 dB	d_{11} dB		
MRF150	150	2.9	17	–32	–60	0.6	211-11/2

To 225 MHz VHF AM/FM

V_{DD}=28 Volts, Class AB
For VHF military and commercial aircraft radio transmitters.

Mfr.'s Type	P_{out} Output Power (W)	P_{in} Input Power Typ. (W)	G_{ps} (Typ)/Freq. dB/MHz	η Efficiency Typ. %	ØJC °C/W	Package Style
MRF134	5	0.2	14.0/150	55	10.00	211-07/2
MRF174	125	8.3	11.8/150	60	0.65	211-11/2
MRF141G	300	30.0	10.0/175	55	0.35	375/2

V_{DD}=50 Volts, Class AB

MRF151G	300	7.5	16.0/175	55	0.35	375/2

To 500 MHz VHF/UHF AM/FM

V_{DD}=28 Volts, Class AB

MRF160	4	0.08	17/400	50	7.2	249/3
MRF166W	40	2.00	13/400	50	1.0	412/1

To 520 MHz

For broadband VHF and UHF commercial and industrial applications. The high gain and broadband performance of these devices make them ideal for large-signal, common-source amplifier applications in 12.5 volt mobile and base station operation.

V_{CC}=7.5 Volts, Class AB

Mfr.'s Type	P_{out} Output Power (W)	P_{in}(Max) Input Power (W)	G_{PE} (Min.)/Freq. Power Gain dB/MHz	ØJC °C/W	Package Style
MRF5003	3	0.336	10.5/512	14.0	430/2

V_{CC}=12.5 Volts, Class AB

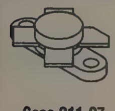
MRF5015	15	1.300	11.5/512	3.5	319/3
MRF5035	35	4.700	7.5/512	1.8	316-01/3

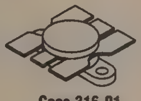
To 1.0 GHz

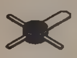
V_{DD}=28 Volts, Class AB
For HF/VHF/UHF military and commercial radio transmitters.

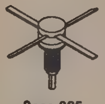
Mfr.'s Type	P_{out} Output Power (W)	P_{in} Input Power Typ. (W)	G_{ps} (Typ)/Freq. dB/MHz	η Efficiency Typ. %	ØJC °C/W	Package Style
MRF182	30	1.5	13/1000	55	1.50	360B/1
MRF183	45	2.8	12/1000	55	1.25	360B/1

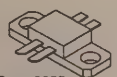
RF Power Bipolar Transistors

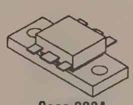

Case 211-07
Style 1, 2
(.380" Flange)

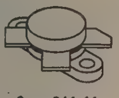

Case 316-01
Style 1, 2
(.500" CQ)

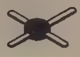

Case 317D
Style 2

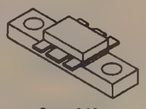

Case 305
Style 1
(.204" Stud)

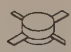

Case 395B
Style 1

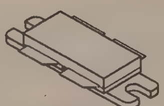

Case 333A
Style 1, 2
(MAAC PAC)

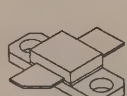

Case 211-11
Style 1, 2
(.500" Flange)


Case 317
Style 1, 2
(Macro-X)


Case 319
Style 1, 2, 3
(CS-12)


Case 305D
Style 1


Case 375A
Style 1


Case 395C
Style 1

Motorola's broad line of bipolar RF power transistors are characterized for operation in RF power amplifiers. Typical applications are in military and commercial landmobile, avionics and marine radio transmitters. Groupings are by frequency band and type of application. Within each group, the arrangement of devices is by major supply voltage rating, then in the order of increasing output power. All devices are NPN polarity except where otherwise noted.

HF Transistors

14-30 MHz, CB/Amateur Band
V_{CC}=12.5 or 13.6 Volts, Class AB
For economical, high volume use in CW, AM and SSB applications.

Mfr.'s Type	P_{out} Output Power (W)	P_{in} (Max) Input Power (W)	G_{PE} (Min.) Gain* dB	ØJC °C/W	Package Style
MRF455	60	3	13	1.0	211-07/1
MRF454	80	5	12	0.7	211-11/1

VHF Transistors

136-174 MHz High Band
V_{CC}=12.5 Volts
For VHF FM High-Band

MRF247†	75	15	7	0.7	316-01/1

*Gain: HF Transistors — @ 30 MHz; VHF Transistors — @ 175 MHZ. Internal Impedance Matched.

UHF Transistors

470-512 MHz Band
V_{CC}=12.5 Volts, Class C

Mfr.'s Type	P_{out} Output Power (W)	P_{in} (Max) Input Power (W)	G_{PE} (Min.)/Freq. Power Gain dB/MHz	ØJC °C/W	Package Style
MRF581*	0.6	0.03	13/500	40	317/2

*Small signal gain. Pout is Typical.

900 MHz Transistors

870-960 MHz Band
V_{CC}=12.5 Volts — Class C — Si Bipolar
For 900 MHz mobile radio band, type MRF847 offers superior gain and ruggedness, using the unique CS-12 package which minimizes common element impedance, and thus maximizes gain and stability. Devices are listed for mobile and base station applications.

MRF581*	0.6	0.06	10.0(Typ.)/870	40	317/2
MRF557*	1.5	0.23	8.0/870	25	317D/2
MRF847**	45.0	16.00	4.5/870	1	319/1

*Common Emitter Configuration. **Internal Impedance Matched, Common Base Configuration.

870-960 MHz Band (Continued)
VCC = 24 Volts - Si Bipolar

Mfr.'s Type	P_{out} Output Power (W)	Class	P_{in} (Max) Input Power (W)	G_p (Min.)/Freq. Power Gain dB/MHz	ØJC °C/W	Package Style
MRF857	2.1 (CW)	A	0.40	12.5/900	8.40	305/1
MRF857S	2.1 (CW)	A	0.40	12.5/900	8.40	305D/1
MRF858	3.6 (CW)	A	0.85	11.0/900	6.90	319/2
MRF860	13.7 (CW)	A	3.25	11.0/900	1.90	395B/1
MRF861	27.0 (CW)	A	8.00	9.5/900	0.92	375A/1
MRF862	36.0 (CW)	A	13.60	9.0/900	0.75	375A/1
MRF898*	60.0	C	12.00	7.9	1.00	333A/1

*Internal Impedance Matched.

1.5 GHz Transistors

1400-1640 MHz Band
V_{CC}=28 Volts

MRF16006	6.0	C	1.09	7.4/1600	6.80	395C/2

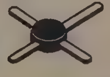
V_{CC}=26 Volts

MRF15030	30.0	A, AB	3.10	9.0/1490	1.40	395C/1

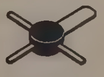
RF Small Signal Transistors

In small signal RF applications, the package style is often determined by the end application or circuit construction technique. To aid the circuit designer in device selection, the Motorola broad range of RF small signal amplifier transistors is organized by package type. These devices are NPN polarity unless otherwise designated.

Case 318A
Style 1
Low Profile
(SOT-143)


Case 317
Style 2
(Macro-X)

Case 318-07
Style 6
(SOT-23)


Case 317D
Style 2, 3
(Power Macro)

Case 317/2 — MACRO-X

Mfr.'s Type	Gain-Bandwidth @		NF @ f		Gain @ f		Maximum Ratings		
	fT Typ. (GHz)	IC (mA)	Typ. dB	(MHz)	Typ. dB	(MHz)	$V_{(BR)CEO}$ (V)	I_C (mA)	P_T (mW)
MRF901	4.5	30	2.0	1000	12.0	1000	15	30	375
MRF581	5.0	200	2.0	500	15.5	500	18	200	2500

Case 317D/2

MRF557	—	—	—	—	9.0	870	16	400	3000

RF Small Signal Transistors (Continued)

Case 318A/1 — SOT-143

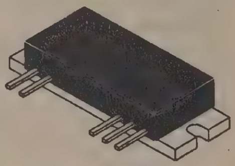
Mfr.'s Type	Gain-Bandwidth @		NF @ f		Gain @ f		Maximum Ratings		
	fT Typ. (GHz)	IC (mA)	Typ. dB	(MHz)	Typ. dB	(MHz)	$V_{(BR)CEO}$ (V)	I_C (mA)	P_T (mW)
MRF5711LT1*	8.0	–70	1.6	1000	13.5	1000	10	70	333

Case 318-07/6 — SOT-23

Mfr.'s Type	Gain-Bandwidth @		NF @ f		Gain @ f		Maximum Ratings		
	fT Typ. (GHz)	IC (mA)	Typ. dB	(MHz)	Typ. dB	(MHz)	$V_{(BR)CEO}$ (V)	I_C (mA)	P_T (mW)
MMBR901LT1*	4.0	30	1.9	1000	12.0	1000	15	30	296
MMBR5179LT1*	1.4	50	4.5	200	15.0	200	12	50	375

*Tape and reel packaging option suffix T1=3,000 units per reel.

RF Amplifiers



Case 301AB-01
Style 1

High Power

Complete amplifiers with 50 ohm in/out impedances are available for a variety of applications including land mobile radios, base stations, TV transmitters and other uses requiring large-signal amplification, both linear and Class C.

Land Mobile/Portable

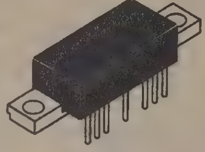
The advantages of small size, reproducibility and overall lower cost become more pronounced with increasing frequency of operation. These amplifiers offer a wide range in power levels and gain, with guaranteed performance specifications for bandwidth, stability and ruggedness.

UHF, Linear
880-960 MHz (for GSM) — Class AB (Silicon Bipolar Die)

Mfr.'s Type	P_{out} Output Power (W)	P_{in} Input Power (W)	f Frequency (MHz)	G_p Power Gain, Min. dB	V_{CC} Supply Voltage (V)	Package Style
MHW913	14	0.1	880-915	21.5	12.5	301AB/1

Low Power

The following categories describe a wide range of complete amplifier assemblies both hybrid and monolithic for use in CATV distribution systems, instrumentation, communications and military equipment. A variety of power levels and frequencies of operation is offered for many applications



Case 714G
Style 1

CATV Distribution

Motorola Hybrids are manufactured using fourth generation technology which has set new standards for CATV system performance and reliability. These hybrids have been optimized to provide premium performance in all CATV systems up to 152 channels.

40-860 MHz Hybrids, V_{CC}=24 Vdc, Class A
Conventional Hybrids

Mfr.'s Type	Hybrid Gain (Nom.) dB	Channel Loading Capacity	Maximum Distortion Specifications						Noise Figure Typ. dB		Package Style
			Output Level dBmV	2nd Order Test dB	Composite Triple Beat dB		Cross Modulation dB		@ 750 (MHz)	@ 860 (MHz)	
					110 CH	128 CH	110 CH	128 CH			
MHW7142	14	110	+40	–60	–62	—	–66	—	—	7.5*	714/1
MHW8142	14	128	+38	–60	—	–61	—	–66	—	8.0*	714/1

*Maximum.

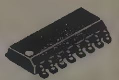
40/1000 MHz Hybrids, V_{CC}=24 Vdc, Class A
Conventional Hybrids

Mfr.'s Type	Hybrid Gain (Nom.) dB	Channel Loading Capacity	Maximum Distortion Specifications						Noise Figure @ 860 MHz dB	Package Style
			Output Level dBmV	2nd Order Test dB	Cross Modulation dB		Composite Triple Beat dB			
					128 CH	152 CH	128 CH	152 CH	Typ.	
MHW9142	14	152	+38	–59*	—	–63	—	–59	8.5**	714/1

*Composite 2nd Order; V_{out}=+38 dBmV/ch. **Maximum.

RF Monolithic Integrated Circuits

Case 751
(SO-8)



Case 751B
(SO-16)

To 1.8 GHz

For DECT and JPHP, the MRFIC1801 through MRFIC1804 device series offers complete transmit and receive functions, less Lo and filters, for typical 1.8 GHz cordless telephone. The chip set is also applicable in other 1.9 GHz and 2.4 GHz personal communications systems.

Antenna Switch — SO-8

Mfr.'s Type	Operating Freq. Range (GHz)	Supply Volt. Range (Vdc)	Supply Current TX Mode (µA) Typ.	Leakage Current (µA) Typ.	Insertion Loss TX Mode dB Typ.	P_{in}, 1 dB Compression dBm Typ.	Package Style
MRFIC1801	1.5-2.5	2.7-5.5	300	45	0.6	29	751

Upconverter — SO-16

Mfr.'s Type	RF Output Freq. Range (GHz)	Supply Volt. Range (Vdc)	Supply Current TX Mode (mA) Typ.	Conversion Gain dB Typ.	Recommended IF Input (MHz) Typ.	P_{out}, 1 dB Compression dBm Typ.	Package Style
MRFIC1803	1.7-2.5	2.7-3.3	28	10	70-325	–2	751B

Amplifier and Downmixer — SO-16

Mfr.'s Type	IF Output Freq. Range (MHz)	Supply Volt. Range (Vdc)	Supply Current RX Mode (mA) Typ.	Mixer Conv. Gain dB Typ.	LNA Gain dB Typ.	LNA Noise Fig. dB Typ.	Package Style
MRFIC1804	70-325	2.7-3.3	7	4	14	2.3	751B

To 2.4 GHz

The MRFIC2401 through MRFIC2104 devices were designed for use in the 2.4-2.5 GHz Industrial-Scientific-Medical (ISM) band. This chip set may also be used from 2.0-3.0 GHz applications in telemetry and Multichannel Multipoint Distribution System (MMDS) wireless cable TV systems.

Downconverter — SO-16

Mfr.'s Type	RF Freq. Range (MHz)	IF Freq. Range (MHz)	Supply Volt. Range (Vdc)	Supply Current (mA) Typ.	Conv. Gain dB Typ.	Isolation Lo to RF, Lo to IF dB Typ.	Package Style
MRFIC2401	2400-2500	100-350	4.75-5.25	9.5	21	20	751B

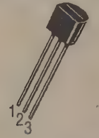
Integrated Power Amplifier — SO-16, Class B

Mfr.'s Type	Freq. Range (MHz)	Supply Volt. Range (Vdc)	Supply Current (mA) Typ.	Small Signal Gain dB Typ.	Power Control Range dB Typ.	P_{out}, 1dB Compression dBm Typ.	Package Style
MRFIC2403	2200-2700	4.75-5.25	95	23	20	19	751B

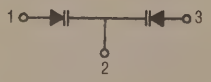
Integrated Exciter Amplifier — SO-8, Class A

Mfr.'s Type	Freq. Range (MHz)	Supply Volt. Range (Vdc)	Supply Current (mA) Typ.	Small Signal Gain dB Typ.	Noise Figure dB Typ.	P_{out}, 1dB Compression dBm Typ.	Package Style
MRFIC2404	2000-3000	4.75-5.25	9	17	4.3	5	751

Abrupt Junction Tuning Diodes

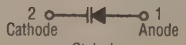


Case 29-04
TO-226AA
(TO-92)

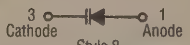


Style 15

Case 182
TO-226AC
(TO-92)

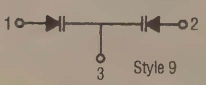


Style 1



Style 8

Case 318-07
TO-236AB
SOT-23



Style 9

Motorola supplies voltage-variable capacitance diodes serving the entire range of frequencies from HF through UHF. Used in RF receivers and transmitters, they have a variety of applications.

Two families of devices are available: Abrupt Junction and Hyper Abrupt Junction. The Abrupt Junction family includes devices suitable for virtually all tuned-circuit and narrow-range tuning applications throughout the spectrum.

General Purpose Plastic abrupt Tuning Diodes Capacitance Ratio @ 2.0 Volts/30 Volts
Case 182 — TO-226AC (TO-92) — 2-Lead

The following is a listing of plastic package, general-purpose, abrupt tuning diodes. These devices exhibit high Q characteristics.

Mfr.'s Type	C_T @ V_R=4.0 V,1.0 MHz			$V_{R(BR)R}$ (V)	Cap. Ratio C4/C30 Min.	Q 4.0 V, 50 MHz Typ.
	(pF) Min.	(pF) Nominal	(pF) Max.			
MV2101	6.1	6.8	7.5	30	2.5	400
MV2108	24.3	27.0	29.7	30	2.5	250
MV2109	29.7	33.0	36.3	30	2.5	200
MV2111	42.3	47.0	51.7	30	2.5	150
MV2115	90.0	100.0	110.0	30	2.6	100

Abrupt Tuning Diodes for FM Radio — Dual
Case 29-04 — TO-226AA (TO-92)

The following is a listing of abrupt tuning diodes that are available as dual units in a single package.

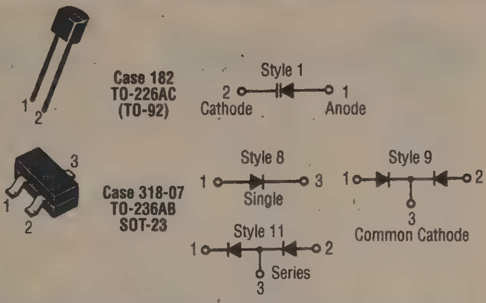
Mfr.'s Type	C_T @ V_R[2]			Cap Ratio C3/C30 Min.	Q 3.0 V, 50 MHz Min.	$V_{R(BR)R}$ (V)	Device Marking	Style
	(pF) Min.	(pF) Max.	(V)					
MV104	37	42	3.0	2.5	100	32	—	15

Abrupt Tuning Diodes for FM Radio — Dual
Case 318-07 — TO-236 AB (SOT-23)

MMBV432LT1	43	48.1	2.0	1.5[1]	100	14	M4B	9

[1] C2/C8. [2] Each Diode.

Hot-Carrier (Schottky) Diodes



Hot-Carrier diodes are ideal for VHF and UHF mixer and detector applications as well as many higher frequency applications. They provide stable electrical characteristics by eliminating the point-contact diode presently used in many applications

Hot-Carrier (Schottky) Diodes

Case 182 — TO-226AC (TO-92)
The following is a listing of hot carrier (Schottky) diodes that exhibit low forward voltage drop for improved circuit efficiency.

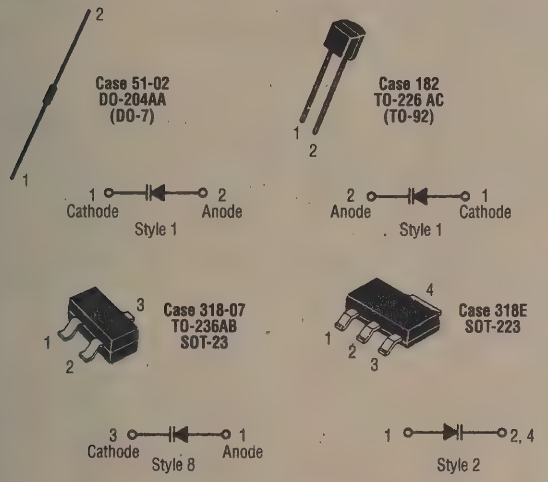
Mfr.'s Type	$V_{(BR)R}$ (V)	C_T @ V_R (pF) Max.	V_F @ 10 mA (V) Max.	I_R @ V_R (nA) Max.	Minority Lifetime (ps) Typ.	Device Marking	Style
MBD701	70.0	1.0 @ 20 V	1.0	200 @ 35.0 V	15	—	1
MBD301	30.0	1.5 @ 15 V	0.6	200 @ 25.0 V	15	—	1
MBD101	7.0	1.0 @ 0 V	0.6	250 @ 3.0 V	—	—	1

Case 318-07 — TO-236AB (SOT-23)

Mfr.'s Type	$V_{(BR)R}$ (V)	C_T @ V_R (pF) Max.	V_F @ 10 mA (V) Max.	I_R @ V_R (nA) Max.	Minority Lifetime (ps) Typ.	Device Marking	Style
MMBD701LT1	70.0	1.0 @ 20 V	1.0	200 @ 35.0 V	15	5H	8
MMBD301LT1	30.0	1.5 @ 15 V	0.6	200 @ 25.0 V	15	4T	8
MMBD101LT1	7.0	1.0 @ 0 V	0.6	250 @ 3.0 V	—	4M	8
MMBD352LT1[1]	7.0	1.0 @ 0 V	0.6	250 @ 3.0 V	—	M5G	11

[1] Dual diodes.

Hyper Abrupt Junction Tuning Diodes



Tuning Diodes — Hyper-Abrupt Junction

The Hyper-Abrupt family exhibits higher capacitance, and a much larger capacitance ratio. It is particularly well suited for wider-range application such as AM/FM radio and TV tuning.

Hyper-Abrupt Tuning Diodes For Telecommunications — Single
Case 182 — TO-226AC (TO-92)
The following is a listing of hyper-abrupt tuning diodes intended for high frequency, FM radio, and TV tuner applications.

Mfr.'s Type	C_T @ V_R (f=1.0 MHz)			Cap. Ratio @ V_R			Q		$V_{(BR)R}$ (V)	Device Marking	Case Style
	(pF) Min.	(pF) Max.	(V)	Min.	Max.	(V)	3.0 V Min.	50 MHz Max.			
MV209	26.0	32.0	3.0	5.0	6.5	3/25	200	—	30	—	1

Hyper-Abrupt Tuning Diodes For Telecommunications — Single
Case 318-07 — TO-236AB (SOT-23)

Mfr.'s Type	C_T (pF) Min.	C_T (pF) Max.	(V)	Cap. Ratio Min.	Cap. Ratio Max.	(V)	Q 3.0 V Min.	Q 50 MHz Max.	$V_{(BR)R}$ (V)	Device Marking	Case Style
MMBV105GLT1	1.8	2.8	25.0	4.0	6.0	3/25	200	—	30	M4E	8
MMBV109LT1	26.0	32.0	3.0	5.0	6.5	3/25	200	—	30	M4A	8
MMBV409LT1	26.0	32.0	3.0	1.5	2.0	3/8	200	—	20	X5	8
MMBV3102LT1	20.0	25.0	3.0	4.5	—	3/25	200	—	30	M4C	8

Hyper-Abrupt Tuning Diodes For Communications — Dual
Case 318-07 — TO-236AB (SOT-23)

Mfr.'s Type	C_T (pF) Min.	C_T (pF) Max.	(V)	Cap. Ratio Min.	Cap. Ratio Max.	(V)	Q 3.0 V Min.	Q 50 MHz Max.	$V_{(BR)R}$ (V)	Device Marking	Case Style
MMBV609LT1	26.0	32.0	3.0	1.8	2.4	3/8	250	—	20	5L	9

Hyper-Abrupt Tuning Diodes For Low Frequency Applications— Single
Case 182 — TO-226AC (TO-92)
The following is a listing of AM, hyper-abrupt tuning diodes that have a large capacity range and redesigned for low frequency circuit applications.

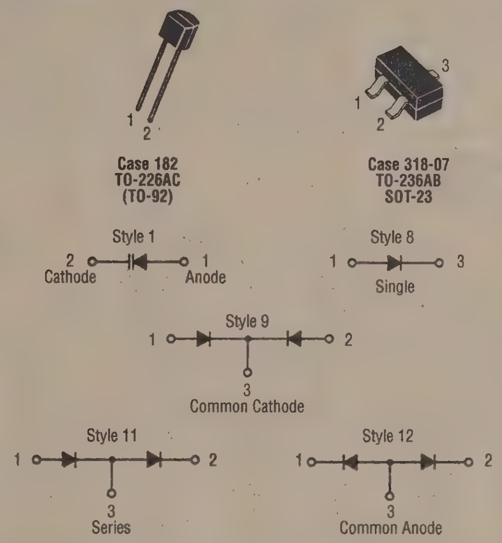
Mfr.'s Type	C_T @ 1.0 MHz			Cap. Ratio @ V_R		$V_{(BR)R}$ (V)	Style
	(pF) Min.	(pF) Max.	(V)	Min.	(V)		
MVAM108	440	560	1.0	15	1.0/8.0	12	1
MVAM109	400	520	1.0	12	1.0/9.0	15	1
MVAM115	440	560	1.0	15	1.0/15.0	18	1
MVAM125	440	560	1.0	15	1.0/25.0	28	1

Hyper-Abrupt High Capacitance Voltage Variable Diode — Surface Mount
Pinout: 1 — Anode, 2, 4 — Cathode, 3 — NC, (Case 318E — SOT-223)
The following are high capacitance voltage variable diodes intended for low frequency applications and circuits requiring large tuning capacitance.

Mfr.'s Type	$V_{(BR)R}$ (V)	I_R nA	C_T @ f=1.0 MHz		Cap. Ratio Min.	Q Min.	Style
			(pF) Min.	(pF) Max.			
MV7005T1	15	100	400	520	12[1]	150[3]	2
MV7404T1	12	100	96	144	10[2]	200[4]	2

[1] V_R=1.0 V/V_R=9.0 V. [2] V_R=2.0 V/V_R=10 V. [3] V_R=1.0 V, f=1.0 MHz. [4] V_R=2.0 V, f=1.0 MHz.

Switching Diodes



Small-signal switching diodes are intended for low current switching and steering applications. Hot-Carrier, PIN and general-purpose diodes allow a wide selection for specific application requirements.

PIN Switching Diodes

Case 182 — TO-226AC (TO-92)
The following PIN diodes are designed for VHF band switching and general-purpose low current switching applications.

Mfr.'s Type	$V_{(BR)R}$ (V) Min.	C_T @ V_R @ 1.0 MHz		IR @ V_R (nA) Max.	Series Resistance (Ω) Max.	Device Marking	Style
		(pF) Max.	(V)				
MPN3700	200	1.0	20	0.1 @ 150	1.00 @ 10 mA	—	1
MPN3404	20	2.0	15	0.1 @ 25 V	0.85 @ 10 mA	—	1

Case 318-07 — TO-236AB (SOT-23)

Mfr.'s Type	$V_{(BR)R}$ (V) Min.	C_T (pF) Max.	(V)	IR @ V_R (nA) Max.	Series Resistance (Ω) Max.	Device Marking	Style
MMBV3401LT1	35	1.0	20	0.1 @ 25 V	0.7 @ 10 mA	4D	8

General-Purpose Signal and Switching Diodes — Dual

Case 318-07 — TO-236AB (SOT-23)
The Following is a listing of small-signal switching diodes in surface mount packages. These diodes are intended for low current switching and signal steering applications.

Mfr.'s Type	Marking	$V_{(BR)R}$		I_R		V_F			C_T[1] Max. (pF)	t_{rr} Max. (ns)	Case Style
		@ I_{BR} (μA)	Min. (V)	Max. (μA)	@ V_R (V)	Min. (V)	Max. (V)	@ I_F (mA)			
MMBD7000LT1	M5C	100	100	0.300	50.0	0.75	1.1	100	1.5	4	11
BAV70LT1	A4	70	100	5.000	70.0	0.75	1.0	50	1.5	6	9
BAV99LT1	A7	70	100	2.500	70.0	—	1.0	50	1.5	4	11
BAW56LT1	A1	70	100	2.500	70.0	—	1.0	50	2.0	6	12
BAV170LT1	JX	70	100	0.005	70.0	—	1.0	10	2.0	3000	9
BAV199LT1	JY	70	100	0.005	70.0	—	1.0	10	2.0	3000	11
BAW156LT1	JZ	70	100	0.005	70.0	—	1.0	10	2.0	3000	12

Low-Leakage Medium Speed Switching Diodes — Single

Case 318-07 — TO-236AB (SOT-23)

Mfr.'s Type	Marking	@ I_{BR} (μA)	Min. (V)	Max. (μA)	@ V_R (V)	Min. (V)	Max. (V)	@ I_F (mA)	C_T[1] Max. (pF)	t_{rr} Max. (ns)	Case Style
BAS116LT1	JV	75	100	0.005	75.0	—	1.0	10	2.0	3000	8

Low-Leakage Medium Speed Switching Diodes — Single

Case 318-07 — TO-236AB (SOT-23)

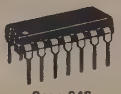
Mfr.'s Type	Marking	@ I_{BR} (μA)	Min. (V)	Max. (μA)	@ V_R (V)	Min. (V)	Max. (V)	@ I_F (mA)	C_T[1] Max. (pF)	t_{rr} Max. (ns)	Case Style
BAV170LT1	JX	70	100	0.005	70.0	—	1.0	10	2.0	3000	9
BAV199LT1	JY	70	100	0.005	70.0	—	1.0	10	2.0	3000	11
BAW156LT1	JZ	70	100	0.005	70.00	—	1.0	10	2.0	3000	12

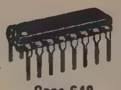
[1] VR=0 V, f=1.0 MHz.

Switching Diodes (Continued)

Multiple Switching Diodes

Multiple diode configurations utilize monolithic structures fabricated by the planar process. They are designed to satisfy fast switching requirements as in core driver and encoding/decoding applications where their monolithic configurations offer lower cost, higher reliability and space savings.


Case 646
Pin Dip
Plastic


Case 648
Pin Dip
Plastic

Case 751A
SO-14
Plastic

Case 751B
SO-16
Plastic

Diode Arrays Case 646 — TO-116

Mfr.'s Type	Function	Pin Connections Diagram Number
MAD130P	Dual 10 Diode Array	1
MAD1103P	16 Diode Array	3
MAD1107P	Dual 8 Diode Array	6
MAD1109P	7 Isolated Diode Array	8

Diode Arrays Case 648-08

MAD1108P	8 Isolated Diode Array	7

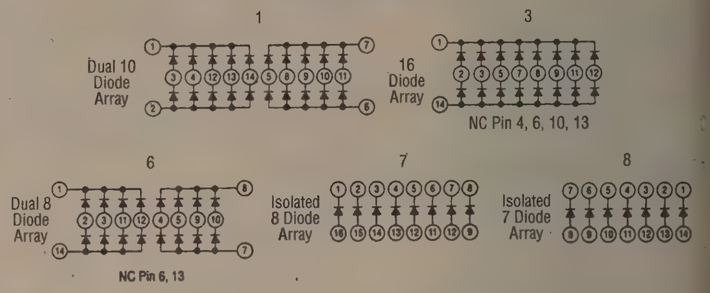
Diode Arrays Case 751A-SO-14

MMAD1103	16 Diode Array	3
MMAD1109	7 Isolated Diode Array	8

Diode Arrays Case 751B-SO-16

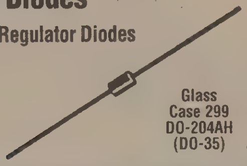
MMAD1108	8 Isolated Diode Array	7

Diode Array Diagrams

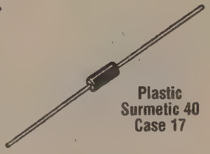


Zener Diodes

Voltage Regulator Diodes


Glass
Case 299
DO-204AH
(DO-35)

Glass
Case 59-03
(DO-41)


Plastic
Surmetic 40
Case 17

Axial Leaded for Through-Hole Designs (Cathode=Polarity Band)

Mfr.'s Type					Nominal Zener Breakdown Voltage (V)[1]
DO-204AH*			(DO-41)**	Case 17†	
500 mW[2]	500 mW Low Level[3]	500 mW[4]	1 Watt[5]	5 Watts[6]	
—	1N4678	—	—	—	1.8
—	—	1N5221B	—	—	2.4
—	1N4682	1N5223B	—	—	2.7
1N4372A	1N4683	—	—	—	3.0
1N746A	—	1N5226B	1N4728A	1N5333B	3.3
—	1N4686	1N5228B	1N4730A	1N5335B	3.9
1N749A	1N4687	1N5229B	1N4731A	1N5336B	4.3
1N750A	1N4688	1N5230B	1N4732A	1N5337B	4.7
1N751A	1N4689	1N5231B	1N4733A	1N5338B	5.1
1N752A	1N4690	1N5232B	1N4734A	1N5339B	5.6
—	—	1N5233B	—	1N5340B	6.0
1N753A	1N4691	1N5234B	1N4735A	1N5341B	6.2
1N754A	1N4692	1N5235B	1N4736A	1N5342B	6.8
—	1N4693	1N5236B	1N4737A	1N5343B	7.5
—	—	1N5237B	1N4738A	1N5344B	8.2
1N959B	—	—	—	—	8.2
—	—	1N5239B	1N4739A	1N5346B	9.1
1N758A	1N4697	1N5240B	1N4740A	1N5347B	10.0
1N961B	—	—	—	—	10.0
—	—	—	—	1N5348B	11.0
1N759A	—	1N5242B	1N4742A	1N5349B	12.0

Axial Leaded for Through-Hole Designs (Cathode=Polarity Band) (Continued)

Mfr.'s Type					Nominal Zener Breakdown Voltage (V)[1]
DO-204AH*			(DO-41)**	Case 17†	
500 mW[2]	500 mW Low Level[3]	500 mW[4]	1 Watt[5]	5 Watts[6]	
1N963B	—	—	—	—	12.0
—	—	—	1N4743A	1N5350B	13.0
—	—	—	—	1N5351B	14.0
1N965B	—	1N5245B	1N4744A	1N5352B	15.0
—	—	—	1N4745A	1N5353B	16.0
—	—	—	—	1N5354B	17.0
—	—	1N5248B	1N4746A	1N5355B	18.0
—	—	—	1N4747A	1N5357B	20.0
—	—	—	1N4748A	1N5358B	22.0
—	—	—	1N4749A	1N5359B	24.0
—	—	—	—	1N5360B	25.0
—	—	1N5254B	1N4750A	—	27.0
—	—	—	—	1N5362B	28
—	—	—	1N4751A	1N5363B	30
—	—	—	1N4752A	1N5364B	33
—	—	—	—	1N5365B	36
—	—	—	1N4754A	1N5366B	39
—	—	—	—	1N5367B	43
—	—	—	—	1N5368B	47
—	—	—	—	1N5369B	51
—	—	—	—	1N5370B	56
—	—	—	—	1N5371B	60
—	—	—	1N4759A	1N5372B	62
	—	—	1N4760A	—	68
—	—	—	1N4761A	1N5374B	75
—	—	—	—	1N5375B	82
—	—	—	—	1N5377B	91
—	—	1N5271B	1N4764A	1N5378B	100
—	—	—	—	1N5380B	120
—	—	1N5274B	—	—	130
—	—	1N5276B	—	1N5383B	150
—	—	1N5279B	—	1N5386B	180
—	—	1N5281B	—	1N5388B	200

[1] Zener Voltage is the key parameter for each device type. It is specified at a particular test current applied at either thermal equilibrium (T.E.) or pulse test condition. The voltage tolerance for the device types listed is, in general, ±5%; however, for some series, the voltage tolerance varies from device type to device type over a range of ±(5 to 8.5)%. Consult the complete data sheet to determine the exact test conditions and minimum/maximum limits for the zener voltage. Consult Application Note AN924 regarding measurement of Zener Voltage (pulse versus thermal equilibrium). Power Ratings represent the capability of the case size listed as supplied by Motorola. These ratings may be higher than the JEDEC registration and/or the same device types supplied by other manufacturers. **V_Z Test Conditions and Tolerances.** [2] **1N4370A/1N746A Series:** I_{ZT}=20 mA (T.E.) — A suffix=±5%; C suffix=±2%; D suffix=±1%. **1N957B Series:** I_{ZT} @ approximately 125 mW point (T.E.) — B suffix=±5%; C suffix=±2%; D suffix=±1%. [3] **1N4678 Series:** I_{ZT}=50 μA (T.E.) — No suffix=±5%; C suffix=±2%; D suffix=±1%. Also has delta V_Z parameter and limit. [4] **1N5221B-42B,1N5243B-81B**: I_{ZT}=20 mA (T.E), I_{ZT} @ approximately 125 mW point (T.E) — B suffix=±5%; C suffix=±2%; D suffix=±1%. [5] **1N4728A-64A:** I_{ZT} @ approximately 250 mW point (T.E.) — A suffix=±5%; C suffix=±2%; D suffix=±1%. [6] **1N5333B-88B:** I_{ZT} varies from 0.9 to 1.5 W point depending on type number (pulse) — B suffix=±5%; Also has delta V_Z parameter and limit. *Glass Case 299 — (DO-35). **Glass Case 59-03. †Plastic Surmetic 40.

Surface Mount Zener Diodes

Plastic
Case 318-07
TO-236AB

Plastic
Case 425
Style 1

Plastic
Case 403A
Cathode=Notch

Mfr.'s Type				Nominal Zener Breakdown Voltage (V)[1]
Case 318-07*	Case 425**		Case 403A†	
225 mW SOT-23[2]	500 mW Low Level SOD-123[3]	500 mW SOD-123[4]	3 Watt SMB[5]	
—	MMSZ4678T1	—	—	1.8
—	MMSZ4679T1	—	—	2.0
—	MMSZ4681T1	MMSZ5221BT1	—	2.4
—	—	MMSZ5222BT1	—	2.5
—	—	MMSZ5223BT1	—	2.7
MMBZ5226BLT1	MMSZ4684T1	—	1SMB5913BT3	3.3
MMBZ5228BLT1	MMSZ4686T1	—	1SMB5915BT3	3.9
MMBZ5229BLT1	—	—	—	4.3
MMBZ5230BLT1	MMSZ4688T1	MMSZ5230BT1	—	4.7
MMBZ5231BLT1	MMSZ4689T1	MMSZ5231BT1	1SMB5918BT3	5.1
MMBZ5232BLT1	MMSZ4690T1	MMSZ5232BT1	1SMB5919BT3	5.6
MMBZ5233BLT1	—	MMSZ5233BT1	—	6.0
MMBZ5234BLT1	MMSZ4691T1	MMSZ5234BT1	1SMB5920BT3	6.2
MMBZ5235BLT1	MMSZ4692T1	MMSZ5235BT1	1SMB5921BT3	6.8
MMBZ5236BLT1	—	—	—	7.5
MMBZ5237BLT1	MMSZ4694T1	—	—	8.2
MMBZ5239BLT1	—	—	—	9.1
MMBZ5240BLT1	—	MMSZ5240BT1	1SMB5925BT3	10.0

[1] Zener Voltage is the key parameter for each device type. It is specified at a particular test current applied at either thermal equilibrium (T.E.) or pulse test condition. The voltage tolerance for the device types listed is, in general ±5%; however, for some series, the voltage tolerance varies from device type to device type over a range of ±(5 to 8.5)%. Consult the complete data sheet to determine the exact test conditions and minimum/maximum limits for the zener voltage. Power Ratings represent the capability of the case size listed as supplied by Motorola. These ratings may be higher than the same device types supplied by other manufacturers. **V_Z Test Conditions and Tolerances.** [2] **MMBZ5221BL-42BLT1, MMBZ5243L-70BLT1:** I_{ZT}=20 mA, I_{ZT} @ approximately 125 mW point (pulse) — BL suffix=±5%. [3] **MMSZ4678T1 Series:** I_{ZT}=50 μA (T.E) — No suffix=±5%. [4] **MMSZ5221B-42BT1, MMSZ5343B-63BT1:** I_{ZT}=20 mA (T.E), IZT @ approximately 125 mW point (T.E.) — A suffix=±10%; B suffix=±5%. [5] **1SMB5913BT3 Series:** I_{ZT} @ approximately 375 mW point (T.E.) — BT3 suffix=±5%; T3 suffix designates tape and reel of 2500 units. *Plastic — TO-236AB. **Plastic — Style 1. †Plastic — Cathode=Notch. Note: T1 suffix indicates 3000 pieces tape and reel. T3 suffix indicates 2500 piece tape and reel.

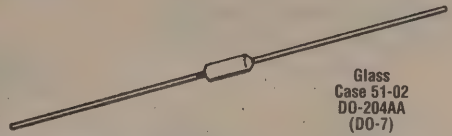
Zener Diodes (Continued)

Surface Mount Zener Diodes (Continued)

See previous page for footnotes.

Mfr.'s Type				Nominal Zener Breakdown Voltage (V)[1]
Case 318-07*	Case 425**		Case 403A†	
225 mW SOT-23[2]	500 mW Low Level SOD-123[3]	500 mW SOD-123[4]	3 Watt SMB[5]	
—	—	MMSZ5241BT1	—	11.0
MMBZ5242BLT1	MMSZ4699T1	MMSZ5242BT1	1SMB5927BT3	12.0
MMBZ5243BLT1	—	MMSZ5243BT1	1SMB5928BT3	13.0
—	MMSZ4701T1	—	—	14.0
MMBZ5245BLT1	—	—	1SMB5929BT3	15.0
MMBZ5246BLT1	—	MMSZ5246BT1	1SMB5930BT3	16.0
—	—	MMSZ5247BT1	—	17.0
MMBZ5248BLT1	—	MMSZ5248BT1	—	18.0
—	—	MMSZ5250BT1	1SMB5932BT3	20.0
—	—	—	1SMB5933BT3	22.0
—	—	—	1SMB5934BT3	24.0
MMBZ5254BLT1	—	—	1SMB5935BT3	27.0
—	—	—	1SMB5936BT3	30.0
—	—	MMSZ5257BT1	—	33.0
—	—	MMSZ5261BT1	—	47.0
—	—	MMSZ5262BT1	—	51.0
—	—	MMSZ5265BT1	—	62.0

Current Regulator Diodes

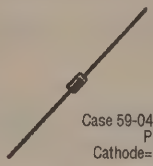

Glass
Case 51-02
DO-204AA
(DO-7)

Electrical Characteristics (T_A-25°C unless otherwise noted)
High impedance diodes whose "constant current source" characteristic complements the "constant voltage" of the zener line. Currents are available for 0.22 to 4.7 mA, with usable voltage range for a minimum limit of 1.0 to 2.5 Volts, up to a voltage compliance of 100 Volts, for the 1N5283 series.

Mfr.'s Type	Regulator Current I_P (mA) @ V_T=25 V			Minimum Dynamic Impedance @ V_T=25 V Z_T (MΩ)	Minimum Knee Impedance @ V_K=6.0 V Z_K (MΩ)	Maximum Limiting Voltage @ I_L=0.8 IP (Min.) V_L (V)
	Nom.	Min.	Max.			
1N5283	0.22	0.198	0.242	25.00	2.750	1.00
1N5287	0.33	0.297	0.363	6.600	1.350	1.00
1N5298	1.10	0.990	1.210	0.700	0.180	1.40
1N5305	2.00	1.800	2.200	0.395	0.061	1.85
1N5309	3.00	2.700	3.300	0.300	0.029	2.25
1N5314	4.70	4.230	5.170	0.235	0.012	2.90

TVS (Transient Voltage Suppressors)

Transient Voltage Suppressors are designed for applications requiring protection of voltage sensitive electronic devices in danger of destruction by high energy voltage transients. The purpose of this section is to present the families of Motorola Zeners that are specified with the key transient voltage suppressor parameters and limits, e.g., maximum clamping voltage at maximum surge current rating and working peak reverse (stand-off) voltage.


Case 59-04 (Mini Mosorb)
Plastic
Cathode=Polarity Band

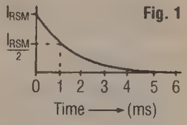


Fig. 1

Axial Leaded for Through-Hole Designs

Peak Power Dissipation* (500 Watts @ 1 ms Surge — Figure 1) Case 59-04 — Mini Mosorb
Electrical Characteristics (T_A = 25°C unless otherwise noted) V_F=3.5 V Max., I_F=35 A Pulse (except bidirectional devices)

Mfr.'s Type		Working Peak Reverse Voltage V_{RWM} (V)	Breakdown Voltage			Maximum Reverse Leakage @ V_{RWM} I_R (µA)	Maximum Reverse Surge Current I_{RSM} Figure 1 (A)	Maximum Reverse Voltage @ I_{RSM} (Clamping Voltage) V_{RSM} (V)
			V_{BR} (V)		@ I_T Pulse (mA)			
Unidirectional	Bidirectional**		Min.	Max.				
SA5.0A	—	5	6.40	7.00	10	600	54.3	9.2
SA6.0A	—	6	6.67	7.37	10	600	48.5	10.3
SA12A	SA12CA	12	13.30	14.70	1	1	25.1	19.9
SA13A	SA13CA	13	14.40	15.90	1	1	23.2	21.5
SA15A	SA15CA	15	16.70	18.50	1	1	20.6	24.4
SA20A	SA20CA	20	22.20	24.50	1	1	15.4	32.4
—	SA36CA	36	40.00	44.20	1	1	8.6	58.1

*Steady state power dissipation = 3 watt maximum rating. **For bidirectional devices use CA suffix. These devices have the cathode polarity band on each end.

Peak Power Dissipation*
(600 Watts @ 1 ms Surge — Fig. 1)
Case 17 — Surmetic 40

Electrical Characteristics (T_A=25°C unless otherwise noted) V_F=3.5 V Max., I_F=50 A Pulse (except bidirectional devices).

Case 17
Plastic
Cathode=Polarity Band

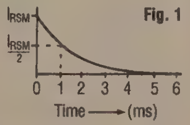


Fig. 1

Mfr.'s Type††		Working Peak Reverse Voltage V_{RWM} (V)	Breakdown Voltage†		Maximum Reverse Leakage @ V_{RWM} I_R (µA)	Maximum Reverse Surge Current I_{RSM} Figure 1 (A)	Maximum Reverse Voltage @ I_{RSM} (Clamping Voltage) V_{RSM} (V)
			V_{BR} (V)	@ I_T Pulse (mA)			
Unidirectional	Bidirectional**		Nom.				
P6KE6.8A	P6KE6.8CA	5.80	6.8	10	1000	57.0	10.5
P6KE7.5A	P6KE7.5CA	6.40	7.5	10	500	53.0	11.3
—	P6KE13CA	11.10	13.0	1	5	33.0	18.2
P6KE15A	P6KE15CA	12.80	15.0	1	5	28.0	21.2
P6KE18A	P6KE18CA	15.30	18.0	1	5	24.0	25.2
—	P6KE20CA	17.10	20.0	1	5	22.0	27.7
P6KE24A	—	20.50	24.0	1	5	18.0	33.2
P6KE30A	—	25.60	30.0	1	5	14.4	41.4
P6KE33A	P6KE33CA	28.20	33.0	1	5	13.2	45.7
P6KE36A	—	30.80	36.0	1	5	12.0	49.9
P6KE39A	—	33.30	39.0	1	5	11.2	53.9
P6KE110A	P6KE110CA	94.00	110.0	1	5	4.0	152.0

*Steady state power dissipation=5 watt maximum rating. **For bidirectional devices use CA suffix. These devices have the cathode polarity band on each end. †Breakdown voltage tolerance is ±5% for A suffix. ††UL recognition for classification of protectors (QVGV2) under UL standard for safety 497B and file #E116110 for entire series including CA suffixes.

Peak Power Dissipation* (1500 Watts @ 1 ms Surge — Fig. 1)
Case 41A — Mosorb

Electrical Characteristics (T_A=25°C unless otherwise noted) V_F=3.5 V Max., I_F=100 A Pulse (except bidirectional devices).

Case 41A
Plastic
Cathode=Polarity Band

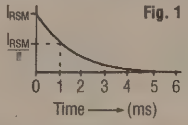


Fig. 1

Mfr.'s Type††			Working Peak Reverse Voltage V_{RWM} (V)	Breakdown Voltage†		Maximum Reverse Leakage @ V_{RWM} I_R (µA)	Maximum Reverse Surge Current I_{RSM} Figure 1 (A)	Maximum Reverse Voltage @ I_{RSM} (Clamping Voltage) V_{RSM} (V)
				V_{BR} (V)	@ I_T Pulse (mA)			
JEDEC	Unidirectional	Bidirectional**		Nom.				
1N6267A	1.5KE6.8A	1.5KE6.8CA	5.80	6.8	10	1000	143.0	10.5
—	1.5KE8.2A	1.5KE8.2CA	7.02	8.2	10	200	124.0	12.1
1N6271A	—	—	8.55	10.0	1	10	103.0	14.5
1N6273A	—	1.5KE12CA	10.20	12.0	1	5	90.0	16.7
1N6274A	—	1.5KE13CA	11.10	13.0	1	5	82.0	18.2
1N6275A	1.5KE15A	1.5KE15CA	12.80	15.0	1	5	71.0	21.2
1N6276A	1.5KE16A	—	13.60	16.0	1	5	67.0	22.5
1N6277A	1.5KE18A	1.5KE18CA	15.30	18.0	1	5	59.5	25.2
1N6278A	1.5KE20A	1.5KE20CA	17.10	20.0	1	5	54.0	27.7
—	1.5KE22A	1.5KE22CA	18.80	22.0	1	5	49.0	30.6
1N6280A	—	1.5KE24CA	20.50	24.0	1	5	45.0	33.2
1N6281A	—	—	23.10	27.0	1	5	40.0	37.5
1N6282A	1.5KE30A	—	25.60	30.0	1	5	36.0	41.4

*Steady state power dissipation=5 watts maximum rating. **For bidirectional devices use CA suffix. These devices have the cathode polarity band on each end. †Breakdown voltage tolerance is ±5% for A suffix. ††UL recognition for classification of protectors (QVGV2) under the UL standard for safety 497B file #E116110 for 1.5KE6.8A,CA thru 1.5KE250A,CA.

TVS (Transient Voltage Suppressors) (Continued)

Axial Leaded for Through-Hole Designs (Continued)

Peak Power Dissipation* (1500 Watts @ 1 ms Surge) (Continued)
Case 41A — Mosorb

Mfr.'s Type††			Working Peak Reverse Voltage V_{RWM} (V)	Breakdown Voltage†		Maximum Reverse Leakage @ V_{RWM} I_R (μA)	Maximum Reverse Surge Current I_{RSM} Figure 1 (A)	Maximum Reverse Voltage @ I_{RSM} (Clamping Voltage) V_{RSM} (V)
				V_{BR} (V)	@ I_T Pulse (mA)			
JEDEC	Unidirectional	Bidirectional**		Nom.				
1N6283A	1.5KE33A	—	28.20	33.0	1	5	33.0	45.7
1N6284A	1.5KE36A	1.5KE36CA	30.80	36.0	1	5	30.0	49.9
1N6285A	1.5KE39A	—	33.30	39.0	1	5	28.0	53.9
1N6286A	1.5KE43A	—	36.80	43.0	1	5	25.3	59.3
1N6287A	—	—	40.20	47.0	1	5	23.2	64.8
1N6288A	—	—	43.60	51.0	1	5	21.4	70.1
1N6289A	—	—	47.80	56.0	1	5	19.5	77.0
1N6290A	1.5KE62A	—	53.00	62.0	1	5	17.7	85.0
1N6291A	—	—	58.10	68.0	1	5	16.3	92.0
—	—	1.5KE75CA	64.10	75.0	1	5	14.6	103.0
—	—	1.5KE82CA	70.10	82.0	1	5	13.3	113.0
1N6294A	—	1.5KE91CA	77.80	91.0	1	5	12.0	125.0
1N6295A	—	—	85.50	100.0	1	5	11.0	137.0
—	1.5KE130A	1.5KE130CA	111.00	130.0	1	5	8.4	179.0
1N6299A	—	1.5KE150CA	128.00	150.0	1	5	7.2	207.0
1N6302A	—	—	154.00	180.0	1	5	6.1	246.0
1N6303A	1.5KE200A	—	171.00	200.0	1	5	4.5	274.0
—	1.5KE220A	1.5KE220CA	185.00	220.0	1	5	4.6	328.0
—	1.5KE250A	—	214.00	250.0	1	5	5.0	344.0

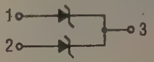
*Steady state power dissipation=5 watts maximum rating. **For bidirectional devices use CA suffix. These devices have the cathode polarity band on each end. †Breakdown voltage tolerance is ±5% for A suffix. ††UL recognition for classification of protectors (QVGV2) under the UL standard for safety 497B file #E116110 for 1.5KE6.8A,CA thru 1.5KE250A,CA.

Surface Mount

Peak Power Dissipation (40 Watts @ 1 ms Surge — Figure 1) Case 318-07 — Common Cathode
SOT-23 Dual Monolithic Common Cathode Bipolar Zener (For ESD Protection)
Electrical Characteristics (T_A=25°C unless otherwise noted). Bidirectional (Circuit tied to pins 1 and 2).

Pinout: Terminal 1 — Anode
Terminal 2 — Anode
Terminal 3 — Common Cathode

Case 318-07, Style 9
TO-236AB
Low Profile SOT-23
Plastic



Mfr.'s Type	Breakdown Voltage				Working Peak Reverse Voltage V_{RWM} (V)	Max. Reverse Leakage Current I_{RWM} I_R (nA)	Max. Reverse Surge Current I_{RSM} (A)	Max. Reverse Voltage @ I_{RMS} (Clamping Voltage) V_{RSM} (V)	Max. Temperature Coefficient of V_{BR} (mV/°C)
	V_{BR}[2] (V)			@ I_T (mA)					
	Min.	Nom.	Max.						
MMBZ15VDLT1[1]	14.3	15	15.8	1.0	12.8	100	1.9	21.2	12

[1]T1 Suffix designates tap and reel of 300 unit. [2]V_{BR} measured at pulse test current I_T at an ambient temperature of 25°C.

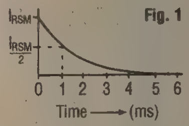


Fig. 1

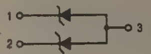
Peak Power Dissipation (24 Watts @ 1ms Surge —Figure 1) Case 318-07 — Common Anode
SOT-23 Dual Monolithic Common Cathode Anode Zener (For ESD Protection)
Electrical Characteristics (T_A=25°C unless otherwise noted). Unidirectional (Circuit tied to pins 1 and 3 or Pins 2 and 3) (V_F=0.9 V Max. @ I_F=10 mA.

Mfr.'s Type	Breakdown Voltage			@ I_T (mA)	Max. Reverse Leakage Current		Max. Zener Impedance[2]				Max. Reverse Surge Current I_{RSM}[4] (A)	Max. Reverse Voltage @ I_{RSM} (Clamping Voltage) V_{RSM}(V)	Max. Temperature Coefficient of V_{BR} (mV/°C)
	V_{BR}[1] (V)												
	Min.	Nom.	Max.		I_R (μA) @	V_R (V)	Z_{ZK} (Ω) @	I_{ZK} (mA)	Z_{ZT} (Ω) @	I_{ZT} (mA)			
MMBZ5V6ALT1[12]	5.32	5.6	5.88	20	5.0	3.0	11		1600	0.25	3.0	8.0	1.26

[1]T1 Suffix designates tap and reel of 300 unit. [2]V_{BR} measured at pulse test current I_T at an ambient temperature of 25°C. [3]Z_{ZT} and Z_{ZK} are measured by dividing the AC voltage drop across the device by the AC current supplied. The specified limits are I_Z(AC)=1.1 I_Z(DC), with AC frequency= 1 KHz. [4].

Pin 1. Cathode
2. Cathode
3. Common Anode

Case 318-07, Style 12
TO-236AB
Low Profile SOT-23
Plastic



1SMB Series, Surface Mount TVSs
Peak Power Dissipation (600 Watts @ 1 ms Surge) Case 403A

Plastic
Case 403A
Cathode=Notch

T3 suffix indicates 2500 pieces on tape and reel.

Mfr.'s Type	Working Peak Reverse Voltage V_{RWM} (V)	Breakdown Voltage*		Maximum Reverse Leakage @ V_{RWM} I_R (μA)	Maximum Reverse Surge Current I_{RSM} I_R (μA)	Maximum Reverse Voltage @ I_{RSM} (Clamping Voltage) V_{RSM} (V)
		V_{BR} (V)	@ I_T Pulse (mA)			
Unidirectional		Min.				
1SMB5.0AT3	5	6.40	10	800	65.2	9.2
1SMB6.0AT3	6	6.67	10	800	58.3	10.3
1SMB7.0AT3	7	7.78	10	200	50.0	12.0
1SMB10AT3	10	11.10	1	5	35.3	17.0
1SMB12AT3	12	13.30	1	5	30.2	19.9
1SMB13AT3	13	14.40	1	5	27.9	21.5
1SMB15AT3	15	16.70	1	5	24.0	24.4
1SMB17AT3	17	18.90	1	5	21.7	27.6
1SMB18AT3	18	20.00	1	5	20.5	29.2
1SMB20AT3	20	22.20	1	5	18.5	32.4
1SMB22AT3	22	24.40	1	5	16.9	35.5
1SMB28AT3	28	31.10	1	5	13.2	45.4
1SMB30AT3	30	33.30	1	5	12.4	48.4
1SMB33AT3	33	36.70	1	5	11.3	53.3
1SMB36AT3	36	40.00	1	5	10.3	58.1
1SMB40AT3	40	44.40	1	5	9.3	64.5
1SMB43AT3	43	47.80	1	5	8.6	69.4
1SMB48AT3	48	53.30	1	5	7.7	77.4
1SMB51AT3	51	56.70	1	5	7.3	82.4
1SMB85AT3	85	94.40	1	5	4.4	137.0
1SMB100AT3	100	111.00	1	5	3.7	162.0
1SMB130AT3	130	144.00	1	5	2.9	209.0
1SMB170AT3	170	189.00	1	5	2.2	275.0

P6SMB Series, Surface Mount TVSs
Peak Power Dissipation (600 Watts @ 1 ms Surge) Case 403A

Mfr.'s Type	Working Peak Reverse Voltage V_{RWM} (V)	Breakdown Voltage*		Maximum Reverse Leakage @ V_{RWM} I_R (μA)	Maximum Reverse Surge Current I_{RSM} I_R (μA)	Maximum Reverse Voltage @ I_{RSM} (Clamping Voltage) V_{RSM} (V)
		V_{BR} (V)	@ I_T Pulse (mA)			
Unidirectional		Min.				
P6SMB6.8AT3	5.8	6.80	10	1000	57.0	10.5
P6SMB12AT3	10.2	12.00	1	5	36.0	16.7
P6SMB13AT3	11.1	13.00	1	5	33.0	18.2
P6SMB15AT3	12.8	15.00	1	5	28.0	21.2
P6SMB18AT3	15.3	18.00	1	5	24.0	25.2
P6SMB22AT3	18.8	22.00	1	5	20.0	30.6
P6SMB27AT3	23.1	27.00	1	5	16.0	37.5
P6SMB33AT3	28.2	33.00	1	5	13.2	45.7
P6SMB36AT3	30.8	36.00	1	5	12.0	49.9
P6SMB51AT3	43.6	51.00	1	5	8.6	70.1
P6SMB62AT3	53.0	62.00	1	5	7.1	85.0
P6SMB68AT3	58.1	68.00	1	5	6.5	92.0

1.5SMC Series, Surface Mount TVSs
Peak Power Dissipation (1500 Watts @ 1 ms Surge) Case 403A
T3 suffix indicates 2500 pieces on Tape and Reel.

1.5SMC15AT3	12.8	15.00	1	5	71.0	21.2
1.5SMC27AT3	23.1	27.00	1	5	40.0	37.5
1.5SMC36AT3	30.8	36.00	1	5	30.0	49.9
1.5SMC51AT3	43.6	51.00	1	5	21.4	70.1

1SMC Series, Surface Mount TVSs

1SMC5.0AT3	5.0	6.40	10	1000	163.0	9.2
1SMC6.0AT3	6.0	6.67	10	1000	145.6	10.3
1SMC12AT3	12.0	13.30	1	5	75.3	19.9
1SMC13AT3	13.0	14.40	1	5	69.7	21.5
1SMC15AT3	15.0	16.70	1	5	61.5	24.4
1SMC26AT3	26.0	28.90	1	5	35.6	42.1
1SMC33AT3	33.0	36.70	1	5	28.1	53.3
1SMC40AT3	40.0	44.40	1	5	23.2	64.5

*Breakdown voltage tolerance is ±5% for A suffix.

Schottky Rectifiers

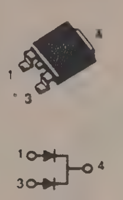
Surface Mount Schottky Rectifier Packages

SOD-123
Cathode = Band

SMB
Cathode = Notch

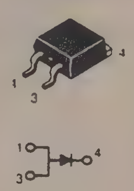
SMC
Cathode = Notch

DPAK



"CT" Suffix

D²PAK



Non-"CT" Suffix

Mfr.'s Type	V_{RRM} (V)	I_O[1] (A)	I_O Rating Condition	Max. V_F @ I_F T_C=25°C (V)	I_{FSM} (A)	T_J Max. (°C)	Max I_R[2] T_J=25°C (mA)	Max I_R[3] (mA)	Package Style
MBR0520LT1[5]	20	0.5	T_L=105°C	0.310 @ 0.1 A	5	125	0.075 @ 10 V	5 @ 10 V	SOD-123
MBR0530T1[5]	30	0.5	T_L=105°C	0.375 @ 0.1 A	5	125	0.020 @ 15 V	—	SOD-123
MBR0540T1[5]	40	0.5	T_L=110°C	0.530 @ 0.5 A	20	150	0.010 @ 20 V	—	SOD-123
MBRS130LT3[4]	30	1.0	T_L=120°C	0.395 @ 1.0 A	40	125	1.000	10	SMB
MBRS140T3[6]	40	1.0	T_L=115°C	0.600 @ 1.0 A	40	125	1.000	10	SMB
MBRS1100T3[4]	,100	1.0	T_L=120°C	0.750 @ 1.0 A	40	150	0.500	5	SMB
MBRS340T3[4]	40	3.0	T_L=100°C	0.525 @ 3.0 A	80	125	2.000	20	SMC
MBRS360T3[4]	60	3.0	T_L=100°C	0.740 @ 3.0 A	80	125	0.500	20	SMC
MBRD640CT	40	6.0	T_L=130°C	0.700 @ 3.0 A	75	150	0.100	15 @ 125°C	DPAK
MBRD660CT	60	6.0	T_C=130°C	0.700 @ 3.0 A	75	150	0.100	15 @ 125°C	DPAK
MBRD835L	35	8.0	T_C=100°C	0.400 @ 3.0 A, 0.51 @ 8.0 A	100	125	1.400	35	DPAK
MBRD1035CTL	35	10.0	T_C=90°C	0.490 @ 10 A	100	125	2.000	130 @ 125°C	DPAK
MBRB1545CT	45	15.0	T_C=105°C	0.840 @ 15 A	150	150	0.100	15 @ 125°C	D²PAK
MBRB20100CT	100	20.0	T_C=110°C	0.850 @ 10 A, 0.95 @ 20 A	150	150	0.100	6 @ 125°C	D²PAK
MBRB20200CT	200	20.0	T_C=125°C	1.000 @ 20 A	150	150	1.000	50 @ 125°C	D²PAK
MBRB2515L	15	25.0	T_C=90°C	0.450 @ 25 A	150	100	15.000	200 @ 70°C	D²PAK
MBRB2535CTL	35	25.0	T_C=110°C	0.470 @ 12.5 A, 0.55 @ 25 A	150	125	10.000	500 @ 125°C	D²PAK
MBRB2545CT	45	25.0	T_C=130°C	0.820 @ 30 A	150	150	0.200	40 @ 125°C	D²PAK
MBRB3030CT	30	30.0	T_C=115°C	0.510 @ 15 A, 0.62 @ 30 A	300	150	0.600	145 @ 150°C, 46 @ 10 V, 150°C	D²PAK
MBRB3030CTL	30	30.0	T_C=95°C	0.450 @ 15 A, 0.51 @ 30 A	150	125	2.000	195 @ 125°C, 75 @ 10 V, 125°C	D²PAK
MBRB4030	30	40.0	T_C=110°C	0.460 @ 20 A, 0.55 @ 40 A	300	150	0.350	150 @ 125°C	D²PAK

[1] I_O is total device current capability. [2] V_{RRM} unless noted. [3] V_{RMM}, T_J=100°C unless noted. [5] T1 Suffix=3000/reel, T3 suffix=10000/reel. [6] T3 suffix=2500/reel.

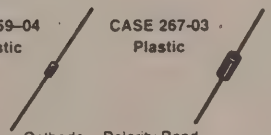
Axial Lead Schottky Rectifiers

Mfr.'s Type	V_{RRM} (V)	I_O (A)	I_O Rating Condition	Max. V_F @ I_F T_C=25°C (V)	I_{FSM} (A)	T_J Max. (°C)	Max I_R[2] T_J=25°C (mA)	Max I_R[3] T_L (mA)	Package Style
1N5817	20	1	T_A=55°C, $R_{øJA}$=80°C/W	0.450 @ 1.0 A	25	125	1.0	10	Case 59-04
1N5818	30	1	T_A=55°C, $R_{øJA}$=80°C/W	0.550 @ 1.0 A	25	125	1.0	10	Case 59-04
1N5819	40	1	T_A=55°C, $R_{øJA}$=80°C/W	0.600 @ 1.0 A	25	125	1.0	10	Case 59-04
MBR160	60	1	T_A=55°C, $R_{øJA}$=80°C/W	0.750 @ 1.0 A	25	150	0.5	5	Case 59-04
MBR1100	100	1	T_A=120°C, $R_{øJA}$=50°C/W	0.790 @ 1.0 A	50	150	0.5	5	Case 59-04
1N5820	20	3	T_A=76°C, $R_{øJA}$=28°C/W	0.457 @ 3.0 A	80	125	2.0	20	Case 267-03
1N5821	30	3	T_A=71°C, $R_{øJA}$=28°C/W	0.500 @ 3.0 A	80	125	2.0	20	Case 267-03
1N5822	40	3	T_A=61°C, $R_{øJA}$=28°C/W	0.525 @ 3.0 A	80	125	2.0	20	Case 267-03
MBR340	40	3	T_A=65°C, $R_{øJA}$=28°C/W	0.600 @ 3.0 A	80	150	0.6	20	Case 267-03
MBR360	60	3	T_A=65°C, $R_{øJA}$=28°C/W	0.740 @ 3.0 A	80	150	0.6	20	Case 267-03
MBR3100	100	3	T_A=100°C, $R_{øJA}$=28°C/W	0.790 @ 3.0 A	150	150	0.6	20	Case 267-03

[2] V_{RRM} unless noted. [3] V_{RMM}, T_J=100°C unless noted.

Case 59–04
Plastic

CASE 267-03
Plastic



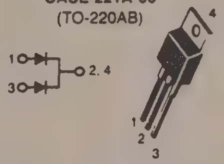
Cathode = Polarity Band

TO-220 Type Schottky Rectifiers

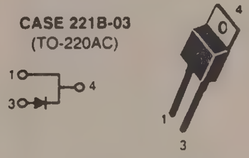
Mfr.'s Type	V_{RRM} (V)	I_O (A)	I_O Rating Condition	Max. V_F @ I_F T_C=25°C (V)	I_{FSM} (A)	T_J Max. (°C)	Max I_R[2] T_J=25°C (mA)	Max I_R[3] T_L (mA)	Package Style
MBR1545CT	45	15.0	T_C=105°C	0.84 @ 15 A	150	150	0.1	15@ 125°C	Case 221A-06
MBR2030CTL	30	20.0	T_C=137°C	0.52 @ 10 A, 0.58 @ 20 A	150	150	5.0	40	Case 221A-06
MBR2045CT	45	20.0	T_C=135°C	0.84 @ 20 A	150	150	0.1	15 @ 125°C	Case 221A-06
MBR2060CT	60	20.0	T_C=133°C	0.85 @ 10 A, 0.95 @ 20 A	150	150	0.1	6 @ 125°C	Case 221A-06
MBR20100CT	100	20.0	T_C=133°C	0.85 @ 10 A, 0.95 @ 20 A	150	150	1.1	6 @ 125°C	Case 221A-06
MBR20200CT	200	20.0	T_C=125°C	1.00 @ 20 A	150	150	1.0	50 @ 125°C	Case 221A-06
MBR2515L	15	25.0	T_C=90°C	0.45 @ 25 A	150	100	15.0	200 @ 70°C	Case 221A-06
MBR2535CTL	35	25.0	T_C=95°C	0.55 @ 25 A	150	125	5.0	500 @ 125°C	Case 221A-06
MBR2545CT	45	25.0	T_C=130°C	0.82 @ 30 A	150	150	0.2	40 @ 125°C	Case 221A-06
MBR3045ST	45	30.0	T_C=130°C	0.76 @ 30 A	150	150	0.2	40 @125°C	Case 221A-06
MBR745	45	7.5	T_C=105°C	0.84 @ 15 A	150	150	0.1	15 @ 125°C	Case 221B-03
MBR1045	45	10.0	T_C=135°C	0.84 @ 20 A	150	150	0.1	15 @ 125°C	Case 221B-03
MBR1060	60	10.0	T_C=133°C	0.80 @ 10 A	150	150	0.1	6 @ 125°C	Case 221B-03
MBR10100	100	10.0	T_C=133°C	0.80 @ 10 A	150	150	0.1	6 @ 125°C	Case 221B-03
MBR1645	45	16.0	T_C=125°C	0.63 @ 16 A	150	150	0.2	40 @ 125°C	Case 221B-03

[2] V_{RRM} unless noted. [3] V_{RMM}, T_J=100°C unless noted.

CASE 221A-06
(TO-220AB)



CASE 221B-03
(TO-220AC)

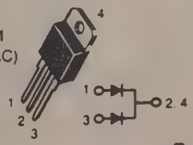


TO-218 Types and TO-247 Schottky Rectifiers

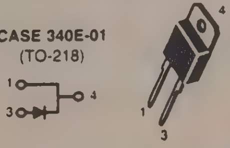
Mfr.'s Type	V_{RRM} (V)	I_O (A)	I_O Rating Condition	Max. V_F @ I_F T_C=25°C (V)	I_{FSM} (A)	T_J Max. (°C)	Max I_R[2] T_J=25°C (mA)	Max I_R[3] T_L (mA)	Package Style
MBR3045PT	45	30	T^c=105°C	0.76 @ 30 A	200	150	1.0	100 @ 125°C	Case 340D-01
MBR4045PT	45	40	T^c=125°C	0.70 @ 20 A, 0.80 @ 40 A	400	150	1.0	50	Case 340D-01
MBR6045PT	45	60	T^c=125°C	0.62 @ 30 A, 0.75 @ 60 A	500	150	1.0	50	Case 340D-01
MBR5025L	25	50	T^c=125°C	0.54 @ 30 A, 0.62 @ 50 A	300	150	0.5	60	Case 340E-01
MBR3045WT	45	30	T^c=105°C	0.76 @ 30 A	200	150	1.0	100 @ 125°C	Case 340F-03
MBR4045WT	45	40	T^c=125°C	0.70 @ 20 A, 0.80 @ 40 A	400	150	1.0	50	Case 340F-03
MBR6045WT	45	60	T^c=125°C	0.62 @ 30 A, 0.75 @ 60 A	500	150	1.0	50	Case 340F-03

[2] V_{RRM} unless noted. [3] V_{RMM}, T_J=100°C unless noted.

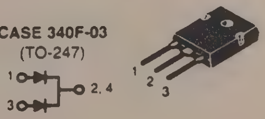
CASE
340D-01
TO-218AC)



CASE 340E-01
(TO-218)



CASE 340F-03
(TO-247)

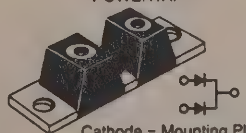


Power Tap II Schottky Rectifiers

Mfr.'s Type	V_{RRM} (V)	I_O (A)	I_O Rating Condition	Max. V_F @ I_F T_C=25°C (V)	I_{FSM} (A)	T_J Max. (°C)	Max I_R[2] T_J=25°C (mA)	Max I_R[3] T_L (mA)	Package Style
MBRP20030CTL	30	200	T_C=125°C	0.52 @ 100 A, 0.60 @ 200 A	1500	150	5.0	—	Case 357C-03
MBRP20045CT	45	200	T_C=125°C	0.78 @ 100 A	1500	175	0.5	50 @ 125°C	Case 375C-03
MBRP20060CT	60	200	T_C=125°C	0.80 @ 100 A	1500	175	0.5	50 @ 125°C	Case 375C-03
MBRP30045CT	45	300	T_C=120°C	0.70 @ 150 A, 0.82 @ 300 A	2500	175	0.8	75 @ 125°C	Case 375C-03
MBRP30060CT	60	300	T_C=120°C	0.79 @ 150 A, 0.89 @ 300 A	2500	175	0.8	75 @ 125°C	Case 375C-03
MBRP60035CTL	35	600	T_C=100°C	0.57 @ 300 A	4000	150	10.0	250	Case 375C-03

[1] I_O is total device current capability. [2] V_{RRM} unless noted. [3] V_{RMM}, T_J=100°C unless noted.

CASE 357C-03
POWERTAP™



Cathode = Mounting Plate
Anode = Terminal

Ultrafast Rectifiers

Surface Mount Ultrafast Rectifiers

Mfr.'s Type	V_{RRM} (V)	I_O[1] (A)	I_O Rating Condition	Max. t_{rr} (ns)	Max. V_F @ I_F T_C=25°C (V)	I_{FSM} (A)	T_J Max. (°C)	Max I_R[2] T_J=25°C (µA)	Max I_R[4] (mA) Package	Package Style
MURS120T3[8]	200	1	T_L=155°C	35	0.875 @ 1.0 A	40	175	2	50	SMB
MURS160T3[8]	600	1	T_L=150°C	75	1.250 @ 1.0 A	35	175	5	150	SMB
MURS320T3[8]	200	3	T_L=140°C	35	0.875 @ 3.0 A	75	175	5	15	SMC
MURS360T3[8]	600	3	T_L=130°C	75	1.250 @ 3.0 A	75	175	10	250	SMC
MURD620CT	200	6	T_L=145°C	35	1.000 @ 3.0 A	63	175	5	250 @ 125°C	DPAK
MURHB840CT	400	8	T_L=120°C	28	2.200 @ 4.0 A	100	175	10	500	D²PAK
MURB1620CT	200	16	T_L=150°C	35	0.975 @ 8.0 A	100	175	5	250	D²PAK
MURB1660CT	600	16	T_L=150°C	60	1.500 @ 8.0 A	100	175	10	500	D²PAK

[1] I_O is total device current capability. [2] V_{RRM} unless noted. [3] V_{RMM}, T_J=150°C unless noted. [8] T3 suffix=2500/reel.

Axial Lead Ultrafast Rectifiers

Mfr.'s Type	V_{RRM} (V)	I_O (A)	I_O Rating Condition	Max. t_{rr} (ns)	Max. V_F @ I_F T_C=25°C (V)	I_{FSM} (A)	T_J Max. (°C)	Max I_R[2] TJ=25°C (mA)	Max I_R[4] T_L (mA)	Package Style
MUR120	200	1	T_A=130°C, $R_{θJA}$=50°C/W	25	0.875 @ 1.0 A	35	175	2	50	Case 59-04
MUR140	400	1	T_A=120°C, $R_{θJA}$=50°C/W	50	1.250 @ 1.0 A	35	175	5	150	Case 59-04
MUR160	600	1	T_A=120°C, $R_{θJA}$=50°C/W	50	1.250 @ 1.0 A	35	175	5	150	Case 59-04
MUR1100E	1000	1	T_A=95°C, $R_{θJA}$=50°C/W	75	1.750 @ 1.0 A	35	175	10	600 @ 100°C	Case 59-04
MUR420	200	4	T_A=80°C, $R_{θJA}$=28°C/W	25	0.875 @ 3.0 A	125	175	5	150	Case 267-03
MUR440	400	4	T_A=40°C, $R_{θJA}$=28°C/W	50	1.250 @ 3.0 A	70	175	10	250	Case 267-03
MUR460	600	4	T_A=40°C, $R_{θJA}$=28°C/W	50	1.250 @ 3.0 A	70	175	10	250	Case 267-03
MUR4100E	1000	4	T_A=35°C, $R_{θJA}$=28°C/W	75	1.750 @ 3.0 A	70	175	25	900 @ 100°C	Case 267-03

[2] V_{RRM} unless noted. [4] V_{RMM}, T_J=150°C unless noted.

TO-220 Type Ultrafast Rectifiers

Mfr.'s Type	V_{RRM} (V)	I_O (A)	I_O Rating Condition	Max. t_{rr} (ns)	Max. V_F @ I_F T_C=25°C (V)	I_{FSM} (A)	T_J Max. (°C)	Max. I_R[2] T_J=25°C (mA)	Max. I_R[3] T_L (mA)	Package Style
MUR620CT	200	6	T_C=130°C	35	0.975 @ 3.0 A	75	175	5	250	Case 221A-06
MURH840CT	400	8	T_C=120°C	28	2.000 @ 4.0 A	100	175	10	500	Case 221A-06
MURH860CT	600	8	T_C=120°C	35	2.800 @ 4.0 A	100	175	10	500	Case 221A-06
MUR1620CT	200	16	T_C=150°C	35	0.975 @ 8.0 A	100	175	5	250	Case 221A-06
MUR1620CTR	200	16	T_C=160°C	85	1.200 @ 8.0 A	100	175	5	500	Case 221A-06
MUR1640CT	400	16	T_C=150°C	60	1.300 @ 8.0 A	100	175	10	250	Case 221A-06
MUR1660CT	600	16	T_C=150°C	60	1.500 @ 8.0 A	100	175	10	500	Case 221A-06
MUR820	200	8	T_C=150°C	35	0.975 @ 8.0 A	100	175	5	250	Case 221B-03
MUR840	400	8	T_C=150°C	50	1.300 @ 8.0 A	100	175	10	500	Case 221B-03
MUR860	600	8	T_C=150°C	50	1.500 @ 8.0 A	100	175	10	500	Case 221B-03
MUR8100E	1000	8	T_C=150°C	75	1.800 @ 8.0 A	100	175	25	500 @ 100°C	Case 221B-03
MUR10120E	1200	10	T_C=125°C	175	2.200 @ 6.5 A	100	125	100	1000 @ 125°C	Case 221B-03
MUR10150E	1500	10	T_C=125°C	175	2.400 @ 6.5 A	100	125	100	1000 @ 125°C	Case 221B-03
MUR1520	200	15	T_C=150°C	35	1.050 @ 15.0 A	200	175	10	500	Case 221B-03
MUR1540	400	15	T_C=150°C	60	1.250 @ 15.0 A	150	175	10	500	Case 221B-03
MUR1560	600	15	T_C=145°C	60	1.500 @ 15.0 A	150	175	10	1000	Case 221B-03

[2] V_{RRM} unless noted. [4] V_{RMM}, T_J=150°C unless noted.

TO-218 Types and TO-247 Ultrafast Rectifiers

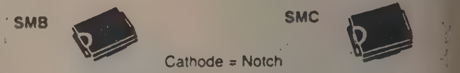
Mfr.'s Type	V_{RRM} (V)	I_O (A)	I_O Rating Condition	Max. t_{rr} (ns)	Max. V_F @ I_F T_C=25°C (V)	I_{FSM} (A)	T_J Max. (°C)	Max I_R[2] T_J=25°C (mA)	Max I_R[3] T_L (mA)	Package Style
MUR3060WT	600	30	T_C=145°C	60	1.70 @ 15 A	150	175	10	1.0	Case 340F-03
MUR3020PT	200	30	T_C=150°C	35	1.12 @ 15 A	200	175	10	0.5	Case 340D-01
MUR3040PT	400	30	T_C=150°C	60	1.12 @ 15 A	150	175	10	0.5	Case 340D-01
MUR3060PT	600	30	T_C=145°C	60	1.20 @ 15 A	150	175	10	1.0	Case 340D-01
MUR3080	800	30	T_C=70°C	110	1.90 @ 30 A	300	175	100	5.0 @ 100°C	Case 340E-01
MUR6040	400	60	T_C=70°C	100	1.50 @ 60 A	600	175	60	10.0 @ 100°C	Case 340E-01

[2] V_{RRM} unless noted. [4] V_{RMM}, T_J=150°C unless noted.

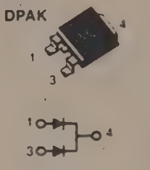
Power Tap II SOT-227B Ultrafast Rectifiers

Mfr.'s Type	V_{RRM} (V)	I_O[1] (A)	I_O Rating Condition	Max. t_{rr} (ns)	Max. V_F @ I_F T_C=25°C (V)	I_{FSM} (A)	T_J Max. (°C)	Max I_R[2] T_J=25°C (mA)	Max I_R[3] T_L (mA)	Package Style
MURP20020CT	200	200	T_C=130°C	50	1.00 @ 100 A	800	175	150	1.0 @ 125°C	Case 357C-03
MURP20040CT	400	200	T_C=100°C	50	1.30 @ 100 A	800	175	50	0.5 @ 125°C	Case 357C-03

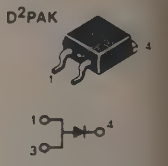
[1] I_O is total device current capability. [2] V_{RRM} unless noted. [4] V_{RMM}, T_J=150°C unless noted.



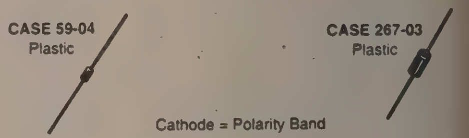
Cathode = Notch



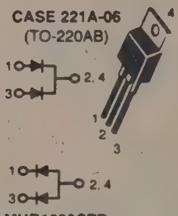
"CT" Suffix



Non-"CT" Suffix

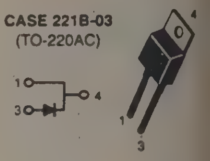


Cathode = Polarity Band

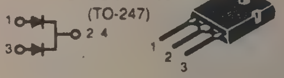


CASE 221A-06 (TO-220AB)

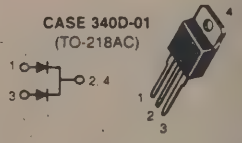
MUR1620CTR Only



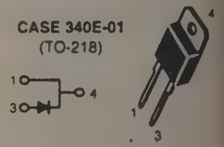
CASE 221B-03 (TO-220AC)



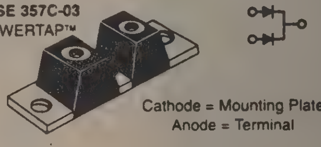
CASE 340F-03 (TO-247)



CASE 340D-01 (TO-218AC)

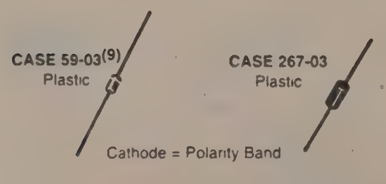


CASE 340E-01 (TO-218)

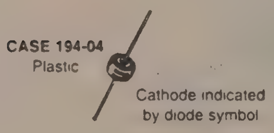

CASE 357C-03 POWERTAP™

Cathode = Mounting Plate
Anode = Terminal

Fast Recovery Rectifiers/General-Purpose Rectifiers



Cathode = Polarity Band



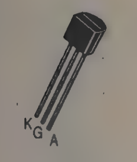
Cathode indicated by diode symbol

Fast Recovery Rectifiers/General Purpose Rectifiers

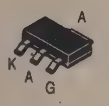
Mfr.'s Type	V_{RRM} (V)	I_O (A)	I_O Rating Condition	Max. V_F @ I_F T_C=25°C (V)	Max. t_{rr} (ns)	I_{FSM} (A)	T_J Max. (°C)	Max. I_R[2] T_J=25°C (µA)	Max. I_R[3] T_L (mA)	Package Style
1N4004	400	1	T_A=75°C	1.10 @ 1.00 A	—	30	150	10	50	Case 59-03[9]
1N4007	1000	1	T_A=75°C	1.10 @ 1.00 A	—	30	150	10	50	Case 59-03[9]
1N4935	200	1	T_A=75°C	1.20 @ 3.14 A, T_J=125°C	200	30	150	5	100	Case 59-03[9]
1N4937	600	1	T_A=75°C	1.20 @ 3.14 A, T_J=125°C	200	30	150	5	100	Case 59-03[9]
1N5404	400	3	T_L=105°C	1.20 @ 9.40 A	—	200	150	—	500 @ 80°C	Case 267-03
1N5406	600	3	T_L=105°C	1.20 @ 9.40 A	—	200	150	—	500 @ 80°C	Case 267-03
MR852	200	3	T_A=80°C[10]	1.25 @ 3.00 A	200	100	150	10	200 @ 80°C	Case 267-03
MR856	600	3	T_A=80°C[10]	1.25 @ 3.00 A	200	100	150	10	300 @ 80°C	Case 267-03
MR754	400	6	T_A=60°C, $R_{θJA}$=25°C/W	1.25 @ 100.0 A	—	400	175	25	1000	Case 194-04
MR760	1000	6	T_A=60°C, $R_{θJA}$=25°C/W	1.25 @ 100.0 A	—	400	175	25	1000	Case 194-04

[2] V_{RRM} unless noted. [3] V_{RMM}, T_J=100°C unless noted. [9] Package Size: 0.120" max. diameter by 0.260" length. [10] Must be derated for reverse power dissipation. See data sheet.

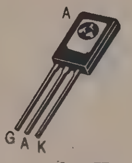
Silicon Controlled Rectifiers



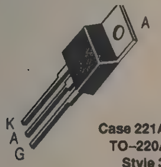
Case 29–04
TO–226AA (TO–92)
Style 10



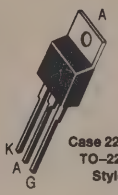
Case 318E
SOT–223 STYLE 10



Case 77
TO–225AA (TO–126)
Style 2



Case 221A–06
TO–220AB
Style 3



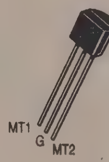
Case 221A–04
TO–220AB
Style 3

SCRs — General Purpose Plastic Packages 0.8 to 55 Amperes RMS, 25 to 800 Volts

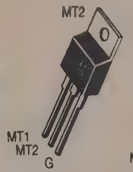
Mfr.'s Type	Package Style	On-State RMS Current	V_{DRM} V_{RRM} (V)	I_{TSM} (A) 60 Hz	I_{GT} (mA)	V_{GT} (V)
MCR102	Case 29-04	0.8 A, T_C=58°C	25	10	0.2	0.8
2N5060	Case 29-04	0.8 A, T_C=58°C	25	10	0.2	0.8
2N5061	Case 29-04	0.8 A, T_C=58°C	50	10	0.2	0.8
MCR106-2	Case 77	4.0 A, T_C=93°C	50	25	0.2	1.0
C106F	Case 77	4.0 A, T_C=30°C	50	20	0.2	0.8
MCR72-2	Case 221A-04	8.0 A, T_C=83°C	50	100	0.2	1.5
2N6504	Case 221A-04	25.0 A, T_C=85°C	50	300	40.0	1.5
MCR69-2	Case 221A-04	25.0 A, T_C=85°C	50	750[1]	30.0	1.5
MCR22-3	Case 29-04	1.5 A, T_C=50°C	100	15, 150[2]	0.2	0.8
2N6505	Case 221A-04	25.0 A, T_C=85°C	100	300	40.0	1.5
MCR69-3	Case 221A-04	25.0 A, T_C=85°C	100	750[1]	30.0	1.5
2N5064	Case 29-04	0.8 A, T_C=58°C	200	10	0.2	0.8
MCR106-4	Case 77	4.0 A, T_C=93°C	200	25	0.2	1.0
C106B	Case 77	4.0 A, T_C=30°C	200	20	0.2	0.8
MCR265-4	Case 221A-04	55.0 A, T_C=70°C	200	550	50.0	1.5
MCR100-6	Case 29-04	0.8 A, T_C=58°C	400	10	0.2	0.8
MCR22-6	Case 29-04	1.5 A, T_C=50°C	400	15, 150[2]	0.2	0.8
MCR106-6	Case 77	4.0 A, T_C=93°C	400	25	0.2	1.0
2N6240	Case 77	4.0 A, T_C=93°C	400	20	0.2	0.8
C106D	Case 77	4.0 A, T_C=30°C	400	20	0.2	0.8
MCR72-6	Case 221A-04	8.0 A, T_C=83°C	400	100	0.2	1.5
S2800D	Case 221A-04	10.0 A, T_C=75°C	400	100	15.0	1.5
2N6507	Case 221A-04	25.0 A, T_C=85°C	400	300	40.0	1.5
MCR69-6	Case 221A-04	25.0 A, T_C=85°C	400	750[1]	30.0	1.5
MCR265-6	Case 221A-04	55.0 A, T_C=70°C	400	550	50.0	1.5
MCR08MT1	Case 318E	0.8 A, T_C=80°C	600	10	0.2	0.8
MCR106-8	Case 77	4.0 A, T_C=93°C	600	25	0.2	1.0
C106M	Case 77	4.0 A, T_C=30°C	600	20	0.2	0.8
MCR72-8	Case 221A-04	8.0 A, T_C=83°C	600	100	0.2	1.5
2N6508	Case 221A-04	25.0 A, T_C=85°C	600	300	40.0	1.5
MCR8M	Case 221A-06	8.0 A, T_C=80°C	600	80	15.0	1.0
MCR8SM	Case 221A-06	8.0 A, T_C=80°C	600	80	0.2	1.0
S2800M	Case 221A-04	10.0 A, T_C=75°C	600	100	15.0	1.5
MCR12M	Case 221A-06	12.0 A, T_C=80°C	600	100	20.0	2.2
MCR16M	Case 221A-06	16.0 A, T_C=80°C	600	150	20.0	1.7
MCR264-8	Case 221A-04	40.0 A, T_C=80°C	600	400	50.0	1.5
MCR265-8	Case 221A-04	55.0 A, T_C=70°C	600	550	50.0	1.5
MCR8N	Case 221A-06	8.0 A, T_C=80°C	800	80	15.0	1.0
MCR8SN	Case 221A-06	8.0 A, T_C=80°C	800	80	0.2	1.0
MCR12N	Case 221A-06	12.0 A, T_C=80°C	800	100	20.0	2.2
MCR16N	Case 221A-06	16.0 A, T_C=80°C	800	150	20.0	1.7
2N6509	Case 221A-04	25.0 A, T_C=85°C	800	300	40.0	1.5
MCR264-10	Case 221A-04	40.0 A, T_C=80°C	800	400	50.0	1.5
MCR265-10	Case 221A-04	55.0 A, T_C=70°C	800	550	50.0	1.5

[1] Exponential decay 2 μs wide at 5 times constants, f=12 Hz. [2] Peak capacitor discharge current for tw=1 ms. tw is defined as five time constraints of an exponentially decaying current pulse.

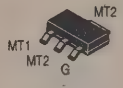
TRIACs



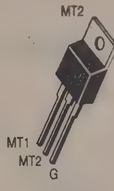
Case 29–04
TO–226AA (TO–92)
Style 12



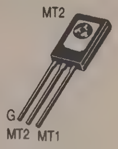
Case 221A–06
TO–220AB
Style 4



Case 318E
Style 11
SOT–223



Case 221A–04
TO–220AB
Style 4



Case 77
TO–225AA (TO–126)
Style 5

TRIACs — General Purpose Plastic Packages 0.6 to 40 Amperes RMS, 200 to 800 Volts

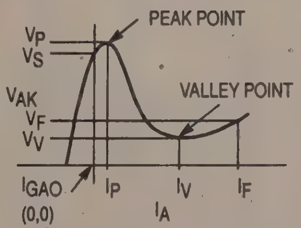
Mfr.'s Type	Package Style	On-State RMS Current	V_{DRM} (V)	I_{TSM} (A)	I_{GT} @ 25°C (mA)				V_{GT} @ 25°C (V)			
					MT2 (+) G(+)	MT2 (+) G(–)	MT2 (–) G(–)	MT2 (–) G(+)	MT2 (+) G(+)	MT2 (+) G(–)	MT2 (–) G(–)	MT2 (–) G(+)
MAC97A4	Case 29-04	0.6 A, T_C=50°C	200	8	5	5	5	7	2.0	2.0	2.0	2.5
T2322B	Case 77	2.5 A, T_C=70°C	200	25	10	10	10	10	2.2	2.2	2.2	2.2
2N6071**	Case 77	4.0 A, T_C=85°C	200	30	30	—	30	—	2.5	—	2.5	—
2N6071A**	Case 77	4.0 A, T_C=85°C	200	30	5	5	5	5	2.5	2.5	2.5	—
2N6071B**	Case 77	4.0 A, T_C=85°C	200	30	3	3	3	5	2.5	2.5	2.5	—
T2500B	Case 221A-04	6.0 A, T_C=80°C	200	60	25	60	25	60	2.5	2.5	2.5	2.5
MAC228A4	Case 221A-04	8.0 A, T_C=80°C	200	80	5	5	5	10[1]	2.0	2.0	2.0	2.5[1]
MAC224A4	Case 221A-04	40.0 A, T_C=75°C	200	350	50	50	50	75[1]	2.0	2.0	2.0	2.5[1]
MAC97-6	Case 29-04	0.6 A, T_C=50°C	400	8	10	10	10	10	2.0	2.0	2.0	2.5
MAC97A6	Case 29-04	0.6 A, T_C=50°C	400	8	5	5	5	7	2.0	2.0	2.0	2.5
T2322D	Case 77	2.5 A, T_C=70°C	400	25	10	10	10	10	2.2	2.2	2.2	2.2
2N6073**	Case 77	4.0 A, T_C=85°C	400	30	30	—	30	—	2.5	—	2.5	—
2N6073A**	Case 77	4.0 A, T_C=85°C	400	30	5	5	5	5	2.5	2.5	2.5	—
2N6073B**	Case 77	4.0 A, T_C=85°C	400	30	3	3	3	5	2.5	2.5	2.5	—
T2500D	Case 221A-04	6.0 A, T_C=80°C	400	60	25	60	25	60	2.5	2.5	2.5	2.5
MAC8D	Case 221A-06	8.0 A, T_C=80°C	400	80	35	35	35	—	1.5	1.5	1.5	—
MAC9D	Case 221A-06	8.0 A, T_C=80°C	400	80	50	50	50	—	1.5	1.5	1.5	—
2N6343	Case 221A-04	8.0 A, T_C=80°C	400	100	50	75[2]	50	75[2]	2.0	2.5[2]	2.5	2.5[2]
MAC228A6	Case 221A-04	8.0 A, T_C=80°C	400	80	5	5	5	10[1]	2.0	2.0	2.0	2.5[1]
T2800D	Case 221A-04	8.0 A, T_C=80°C	400	100	25	60	25	60	2.5	2.5	2.5	2.5
2N6347A	Case 221A-06	12.0 A, T_C=80°C	400	120	50	75	50	75	2.0	2.5	2.0	2.5
MAC15D	Case 221A-06	15.0 A, T_C=80°C	400	150	35	35	35	—	1.5	1.5	1.5	—
MAC15-6	Case 221A-04	15.0 A, T_C=90°C	400	150	50	50	50	75[1]	2.0	2.0	2.0	2.5[1]
MAC15A6	Case 221A-04	15.0 A, T_C=90°C	400	150	50	50	50	75[1]	2.0	2.0	2.0	2.5[1]
MAC223A6	Case 221A-04	25.0 A, T_C=80°C	400	250	50	50	50	75[1]	2.0	2.0	2.0	2.5[1]
MAC224A6	Case 221A-04	40.0 A, T_C=75°C	400	350	50	50	50	75[1]	2.0	2.0	2.0	2.5[1]
MAC97A8	Case 29-04	0.6 A, T_C=50°C	600	8	5	5	5	7	2.0	2.0	2.0	2.5
MAC08MT1*†	Case 318A	0.8 A, T_C=80°C	600	10	10	10	10	10	2.0	2.0	2.0	2.0
2N6075A**	Case 77	4.0 A, T_C=85°C	600	30	5	5	5	5	2.5	2.5	2.5	—
2N6075B**	Case 77	4.0 A, T_C=85°C	600	30	3	3	3	5	2.5	2.5	2.5	—
MAC8M	Case 221A-06	8.0 A, T_C=80°C	600	80	35	35	35	—	1.5	1.5	1.5	—
MAC9M	Case 221A-06	8.0 A, T_C=80°C	600	80	50	50	50	—	1.5	1.5	1.5	—
2N6344	Case 221A-04	8.0 A, T_C=80°C	600	100	50	75[2]	50	75[2]	2.0	2.5[2]	2.5	2.5[2]
T2800M	Case 221A-04	8.0 A, T_C=80°C	600	100	25	60	25	60	2.5	2.5	2.5	2.5
MAC228A8	Case 221A-04	8.0 A, T_C=80°C	600	80	5	5	5	10[1]	2.0	2.0	2.0	2.5[1]
MAC210A8	Case 221A-04	10.0 A, T_C=70°C	600	100	50	50	50	75[1]	2.0	2.0	2.0	2.5[1]
2N6348A	Case 221A-06	12.0 A, T_C=80°C	600	120	50	75	50	75	2.0	2.5	2.0	2.5
MAC12M	Case 221A-06	12.0 A, T_C=80°C	600	120	35	35	35	—	1.5	1.5	1.5	—
MAC15M	Case 221A-06	15.0 A, T_C=80°C	600	150	35	35	35	—	1.5	1.5	1.5	—
MAC15-8	Case 221A-04	15.0 A, T_C=90°C	600	150	50	50	50	75[1]	2.0	2.0	2.0	2.5[1]
MAC15A8	Case 221A-04	15.0 A, T_C=90°C	600	150	50	50	50	75[1]	2.0	2.0	2.0	2.5[1]
MAC16M	Case 221A-06	15.0 A, T_C=80°C	600	150	50	50	50	—	1.5	1.5	1.5	—
MAC223A8	Case 221A-04	25.0 A, T_C=80°C	600	250	50	50	50	75[1]	2.0	2.0	2.0	2.5[1]
MAC224A8	Case 221A-04	40.0 A, T_C=75°C	600	350	50	50	50	75[1]	2.0	2.0	2.0	2.5[1]
MAC8N	Case 221A-06	8.0 A, T_C=80°C	800	80	35	35	35	—	1.5	1.5	1.5	—
MAC9N	Case 221A-06	8.0 A, T_C=80°C	800	80	50	50	50	—	1.5	1.5	1.5	—
2N6349	Case 221A-04	8.0 A, T_C=80°C	800	100	50	75[2]	50	75[2]	2.0	2.5[2]	2.5	2.5[2]
MAC228A10	Case 221A-04	8.0 A, T_C=80°C	800	80	5	5	5	10[1]	2.0	2.0	2.0	2.5[1]
MAC210A10	Case 221A-04	10.0 A, T_C=70°C	800	100	50	50	50	75[1]	2.0	2.0	2.0	2.5[1]
2N6349A	Case 221A-06	12.0 A, T_C=80°C	800	120	50	75	50	75	2.0	2.5	2.0	2.5
MAC12N	Case 221A-06	12.0 A, T_C=80°C	800	120	35	35	35	—	1.5	1.5	1.5	—
MAC15N	Case 221A-06	15.0 A, T_C=80°C	800	150	35	35	35	—	1.5	1.5	1.5	—
MAC16N	Case 221A-06	15.0 A, T_C=80°C	800	150	50	50	50	—	1.5	1.5	1.5	—
MAC223A10	Case 221A-04	25.0 A, T_C=80°C	800	250	50	50	50	75[1]	2.0	2.0	2.0	2.5[1]
MAC224A10	Case 221A-04	4.0 A, T_C=75°C	800	350	50	50	50	75[1]	2.0	2.0	2.0	2.5[1]

[1] Applied to A-version only. Non- A-version is unspecified. [2] Denotes 2N6346-49 Series only. [3] Sensitive gate. [4] High performance. [5] High performance, sensitive gate. †VGT @ 28°C (V) = 0.8. *1000 piece tape and reel. ** VGT @ 25°C (V)=–40°C.

Thyristor Triggers

Programmable Unijunction Transistor — PUT

Similar to UJTs, except that I_V, I_P and intrinsic standoff voltage are programmable (adjustable) by means of external voltage divider. This stabilizes circuit performance for variations in device parameters. General operating frequency range is from 0.01 Hz to 10 kHz, making them suitable for long-duration timer circuits.

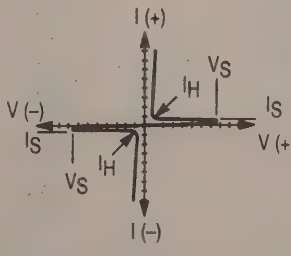


Plastic TO-92 (Case 29-04/16)

Mfr.'s Type	I_P		I_{GAO} @ 40 V nA Max.	I_V	
	R_G= 10 KΩ	R_G= 1 MΩ		R_G= 10 KΩ	R_G= 1 MΩ
	(μA) Max.			(μA) Min.	(μA) Max.
2N6027	5	2.00	10	70	50
2N6028	1	0.15	10	25	25

Silicon Bidirectional Switch (SBS)

The versatile trigger device exhibits highly symmetrical bidirectional switching characteristics which can be modified by means of a gate lead. Requires a gate trigger current of only 250 μAdc for triggering.



Mfr.'s Type	V_S (V)		I_S (μA) Max.	I_H (mA) Max.
	Min.	Max.		
MBS4991	6.0	10	500	1.50
MBS4992	7.5	9	120	0.50
MBS4993	7.5	9	250	0.75

11

High Speed Operational Amplifiers and Buffers

Specs at TA = 25°C and Vs = +5 V

Mfr.'s Type			Databook Reference	Slew Rate (V/µs) Typ.	GBW (MHz) Typ.	Vos (mV) Max.	Is (mA) Max.	No. of Leads	Temperature Range (°C)
SOIC	PLCC	PDIP							
—	LF351M	LF351N	Note 1	13	4	10.0	3.4	M08, N08	0 to +70
LF353H	LF353M	LF353N	Note 1	13	4	10.0	6.5	H08, M08, N08	0 to +70
—	—	LF411ACN	Note 1	15	4	0.5	2.8	N08	0 to +70
—	—	LF412ACN	Note 1	15	4	1.0	5.6	N08	0 to +70
LH0032G	—	—	Note 1	500	70	5.0	±20.0	G12	–55 to +125
LM318H	—	LM318N	Note 1	70	15	4.0	7.0	H08, M08, N08	0 to +70
—	LM359M	LM359N	Note 1	30	30	—	11.0	M14, N14	0 to +70
—	LM6361M	LM6361N	Note 1	300	50	7.0	6.8	N08	0 to +70
—	—	LM6162N	Note 1	300	100	5.0	6.8	N08	–55 to +125
—	—	LM6264N	Note 1	300	175	4.0	6.8	N08	–20 to +85
—	LM6364M	LM6364N	Note 1	300	175	4.0	6.8	M08, N08	0 to +70
—	LM6365M	LM6365N	Note 1	300	725	3.0	6.8	M08, N08	0 to +70
—	—	LM6181AIN	Note 1	2000	100	7.0	10.0	M16, N08	–20 to +85
—	LM6181IM	LM6181IN	Note 1	2000	100	7.0	10.0	M16, N08	–20 to +85
—	—	LM6218N	Note 1	140	17	3.0	3.5	M14, N08	–20 to +85
—	—	LM6218AN	Note 1	140	17	1.0	3.5	N08	–20 to +85
—	—	LM6321N	Note 1	800	50	100.0	20.0	N08	0 to +70

Package Code Key (Letter = Pkg Type, Number = # of pins). Note 1: 1995 Operational Amplifiers Databook.

Low Power Operational Amplifiers

Dual

Specs at TA = 25°C and Vs = +5 V

Mfr.'s Type	Databook Reference	Is (µA) Typ.	Vos (mV) Max.	IB (fA) Typ.	CMVR (V) Typ.	Output Swing (V) Typ. With RL = 100 kΩ Unless Otherwise Specified	GBW (MHz) Typ.	Supply Voltage		No. of Leads	Temperature Range (°C)
								Min. (V)	Max. (V)		
LMC662CN	Note 1	750	6	2	–0.4 to 3.1	0.10 to 4.87*	1.4	5	15	N08	–20 to +85

Quads

Mfr.'s Type	Databook Reference	Is (µA) Typ.	Vos (mV) Max.	IB (fA) Typ.	CMVR (V) Typ.	Output Swing (V) Typ. With RL = 100 kΩ Unless Otherwise Specified	GBW (MHz) Typ.	Supply Voltage Min. (V)	Supply Voltage Max. (V)	No. of Leads	Temperature Range (°C)
LMC660CM	Note 1	1500	6	2	–0.4 to 3.1	0.10 to 4.87*	1.4	5	15	M14	–20 to +85
LMC660CN	Note 1	1500.	6	2	–0.4 to 3.1	0.10 to 4.87*	1.4	5	15	N14	–20 to +85
LMC660AIM	Note 1	1500	3	2	–0.4 to 3.1	0.10 to 4.87*	1.4	5	15	M14	–20 to +85

*Typical Output Swing with RL = 2 kΩ. Note 1: 1995 Operational Amplifiers Databook.

General Purpose Operational Amplifiers

Specs at TA = 25°C and Vs = +5V

Mfr.'s Type			Databook Reference	Vos (mV) Max.	IB (nA) Max.	GBW (MHz) Typ.	Slew Rate (V/µs) Typ.	Supply Current (mA) Max.	Supply Voltage		No. of Leads	Temperature Range (°C)
Metal Can	SOIC	PDIP							Min. (V)	Max. (V)		
—	—	LF147J*	Note 1	5.0	0.200	4.000	13.00	11.00	±6.0	±22.0	J14	–55 to +125
LF156H	—	—	Note 1	5.0	0.100	5.000	12.00	7.00	±5.0	±22.0	H08	–55 to +125
LF356AH	—	—	Note 1	2.0	0.050	5.000	12.00	7.00	±5.0	±22.0	H08	0 to +70
LF356H	LF356M	LF356N	Note 1	5.0	0.100	5.000	12.00	7.00	±5.0	±22.0	H08, M08, N08	0 to +70
—	LF347M	LF347N	Note 1	10.0	0.200	4.000	13.00	11.00	±6.0	±18.0	M14, N14	0 to +70
—	LF355M	LF355N	Note 1	10.0	0.200	2.500	5.00	4.00	±5.0	±18.0	M08, N08	0 to +70
—	—	LF357N	Note 1	5.0	0.100	20.000	50.00	7.00	±5.0	±22.0	N08	0 to +70
—	—	LF411CN	Note 1	2.0	0.200	4.000	15.00	3.40	±6.0	±18.0	N08	0 to +70
—	—	LF411ACN	Note 1	0.5	0.200	4.000	15.00	2.80	±6.0	±22.0	N08	0 to +70
—	—	LF412CN	Note 1	3.0	0.200	4.000	15.00	6.50	±6.0	±18.0	N08	0 to +70
—	—	LF412ACN	Note 1	1.0	0.200	4.000	15.00	5.60	±6.0	±22.0	N08	0 to +70
—	—	LF441ACN	Note 1	0.5	0.050	1.000	1.00	0.20	±6.0	±22.0	N08	0 to +70
—	—	LF442ACN	Note 1	0.5	0.050	1.000	1.00	0.20	±6.0	±22.0	N08	0 to +70
—	—	LF444ACN	Note 1	5.0	50.000	1.000	1.00	0.80	±6.0	±22.0	N14	0 to +70
LH0042H	—	—	Note 1	20.0	0.025	1.000	3.00	3.50	±5.0	±22.0	H08	–55 to +125
LM10CH	—	LM10CN	Note 1	2.0	20.000	0.090	0.10	0.40	±0.6	±22.5	H08, N08	0 to +70
—	—	LM10CLN	Note 1	2.0	20.000	0.090	0.10	0.40	±0.6	±3.5	N08	0 to +70
LM201AH	—	—	Note 1	2.0	75.000	1.000	0.50	3.00	±3.0	±22.0	H08	–20 to +85
LM301AH	—	LM301AN	Note 1	2.0	75.000	1.000	0.50	3.00	±3.0	±22.0	H08, N08	0 to +70
LM108AH	—	—	Note 1	0.5	2.000	1.000	0.30	0.60	±2.0	±20.0	H08	–55 to +125
LM308AH	LM308AM	LM308AN	Note 1	0.5	7.000	1.000	0.30	0.60	±2.0	±18.0	H08, M08, N08	0 to +70
—	LM308M	LM308N	Note 1	7.5	7.000	1.000	0.30	0.80	±2.0	±18.0	M08, N08	0 to +70
—	—	LM124J*	Note 1	5.0	150.000	1.000	0.50	3.00	3.0	32.0	J14	–55 to +125
—	—	LM224J*	Note 1	5.0	150.000	1.000	0.50	3.00	3.0	32.0	J14	–20 to +85
—	LM324M	LM324N	Note 1	5.0	150.000	1.000	0.50	3.00	3.0	32.0	M14, N14	0 to +70
—	—	LM124AJ	Note 1	2.0	50.000	1.000	0.50	3.00	3.0	32.0	J14	–55 to +125
—	LM324AM	LM324AN	Note 1	2.0	50.000	1.000	0.50	3.00	3.0	32.0	M14, N14	0 to +70
LM343H	—	—	Note 1	5.0	20.000	1.000	2.50	4.00	±4.0	±40.0	H08	0 to +70
—	—	LM346N	Note 1	5.0	100.000	1.200	0.40	2.20	±1.5	±22.0	N16	0 to +70
—	—	LM148J*	Note 1	5.0	100.000	1.000	0.50	3.60	±5.0	±22.0	J14	–55 to +125
—	—	LM348N	Note 1	5.0	100.000	1.000	0.50	3.60	±5.0	±22.0	N14	0 to +70
LM158H	—	—	Note 1	5.0	150.000	1.000	0.50	2.00	3.0	32.0	H08	–55 to +125
—	LM358M	LM358N	Note 1	5.0	150.000	1.000	0.50	2.00	3.0	32.0	N08	0 to +70
—	—	LM358AN	Note 1	2.0	50.000	1.000	0.50	2.00	3.0	32.0	N08	0 to +70
—	—	LM307N	Note 1	2.0	100.000	1.000	0.50	3.00	±3.0	±22.0	N08	0 to +70
LM741CH	LM741CM	LM741CN	Note 1	5.0	500.000	1.000	0.50	2.80	±3.0	±22.0	H08, M08, N08	0 to +70
LM741H	—	—	Note 1	5.0	500.000	1.000	0.50	2.80	±3.0	±22.0	H08	–55 to +125
—	LM1458M	LM1458N	Note 1	5.0	500.000	—	—	5.00	±3.0	±22.0	M08, N08	–55 to +125
LM4250CH	—	LM4250CN	Note 1	5.0	50.000	0.200	0.20	0.10	±1.0	±18.0	H08, M08	0 to +70
—	LP324M	—	Note 1	2.0	4.000	0.100	0.05	0.13	3.0	32.0	M14	0 to +70

*CERDIP Package. Note 1: 1995 Operational Amplifiers Databook.

Buffers, Voltage Comparators, Audio Power and Audio Control Amps

National Semiconductor®

Buffers

Specs at T_A = 25°C and V_S = +5 V

Mfr.'s Type		Databook Reference	Key Features	Slew Rate (V/µs) Typ.	Bandwidth –3 dB (MHz)	Gain (A_V)	Output (V, mA)	Full Power BW (MHz @ V_{PP}, R_L)	No. of Leads	Temperature Range (°C)
Metal Can	PDIP									
LH0002CH	LH0002CN	Note 1	Medium Speed	200	30	0.9700	±10, ±100	3.0 @ 20, 1 K	H08, N10	0 to +70
LH0002H		Note 1	Medium Speed	200	30	0.9700	±10, ±100	3.0 @ 20, 1 K	H08	–55 to +125
LH0033CG	—	Note 1	FET Input, High Speed	1500	100	0.9800	±9, ±90	24.0 @ 20, 1 K	G12, J08	–20 to +85
LH0063CK*		Note 1	FET Input, Very Fast	2400	200	0.9300	±13, ±260	40.0 @ 20, 50	K08	–20 to +85
LM310H	LM310N	Note 1	Voltage Follower	30	20	0.9999	±10, ±10	0.5 @ 20, 10 K	H08, N08	0 to +70

*TO-3 Package. Note 1: 1995 Operational Amplifiers Databook.

Voltage Comparators

Mfr.'s Type			Databook Reference	Response Time (ns) Typ.	V_{OS} (mV) Max.	I_S (mA) Max.	I_B (nA) Max.	No. of Leads	Temperature Range (°C)
Metal Can	SOIC	PDIP							
LF311H	—	—	Note 1	200	10.0	7.500	0.15	H08	0 to +70
LM111H	—	LM111J-8	Note 1	200	7.5	7.500	250.00	H08, M08, N08	–55 to +125
LM311H	LM311M	LM311N	Note 1	200	7.5	7.500	250.00	H08, M08, N08	0 to +70
—	LM319M	LM319N	Note 1	80	8.0	12.500	1000.00	H10, J14, M14, N14	0 to +70
—	—	LM139J	Note 1	1300	5.0	2.500	250.00	J14, M14, N14	–55 to +125
—	LM339M	LM339N	Note 1	1300	5.0	2.500	250.00	J14, M14, N14	0 to +70
—	—	LM360N	Note 1	14	5.0	32.000	20,000.00	M08, N08	0 to +70
—	—	LM361N	Note 1	14	5.0	20.000	30,000.00	H10, J14, M14, N14	0 to +70
LM193H	—	—	Note 1	1300	5.0	2.500	250.00	H08, M08, N08	–55 to +125
—	LM393M	LM393N	Note 1	1300	5.0	2.500	250.00	H08, M08, N08	0 to +70
—	LM2901M	LM2901N	Note 1	1300	7.0	2.500	250,00	M14, N14	–20 to +85
—	LM2903M	LM2903N	Note 1	1500	7.0	2.500	250.00	M08, N08	–20 to +85
—	LM392M	LM392N	Note 1	1300	10.0	1.000	400.00	M08, N08	0 to +70
—	LM2924M	—	Note 1	1300	10.0	1.000	400.00	M08, N08	–20 to +85
—	—	LM613CN	Note 1	1500	5.0	1.000	35.00	E20, J16, M16, N16	0 to +70
—	LM613IWM	—	Note 1	1500	5.0	1.000	35.00	E20, J16, M16, N16	–20 to +85
—	LM615IM	—	Note 1	1500	5.0	0.600	35.00	J16, M16, N16	–20 to +85
—	—	LP311N	Note 1	1200	7.5	0.300	100.00	M08, N08	0 to +70
—	LP339M	LP339N	Note 1	8000	5.0	0.100	25.00	M14, N14	0 to +70
—	—	LP365N	Note 1	4000	6.0	0.275	75.00	M16, N16	0 to +70

Note 1: 1995 Operational Amplifiers Databook.

Audio Power Amps

Mfr.'s Type			Description	Databook Reference	Typical THD Rating (%)	THD Measurement Conditions	Supply Range	Single/Dual	No. of Leads	Temperature Range (°C)
TO-220	SOIC	PDIP								
—	—	LM380N	Audio Power Amplifier	Note 1	0.500	P_O = 4 W @ V_S = 22 V	10 V to 22 V	Single	N14	0 to +70
LM383T	—	—	7 Watt Audio Power Amp	Note 1	0.200	P_O = 2 W @ V_S = 14.4 V	5 V to 20 V	Single	T5	0 to +70
—	—	LM384N	5 Watt Power Audio Amp	Note 1	0.250	P_O = 4 W @ V_S = 22 V	12 V to 26 V	Single	N14	0 to +70
—	LM386M-1	LM386N-1	Low Voltage Audio Power Amp	Note 1	0.250	P_O = 0.125 W @ V_S = 6 V	4 V to 18 V	Single	M8, N8	0 to +70
—	—	LM386N-3	Low Voltage Audio Power Amp	Note 1	0.250	P_O = 0.125 W @ V_S = 6 V	4 V to 18 V	Single	N8	0 to +70
—	—	LM386N-4	Low Voltage Audio Power Amp	Note 1	0.250	P_O = 0.125 W @ V_S = 6 V	4 V to 18 V	Single	N8	0 to +70
—	—	LM388N-1	1.5 Watt Audio Power Amp	Note 1	0.100	P_O = 0.5 W @ V_S = 12 V	4 V to 12 V	Single	N14	0 to +70
—	—	LM831N	Low Voltage Audio Power Amp	Note 1	0.250	P_O = 0.05 W @ V_S = 3 V	1.8 V to 6 V	Dual	M16, N16	0 to +70
LM1875T	—	—	20 Watt Power Audio Amp	Note 1	0.020	P_O = 20 W @ V_S = ±25 V	16 V to 60 V	Single	T5	0 to +70
—	LM1877M-9	LM1877N-9	Dual Power Audio Amp	Note 1	0.055	P_O = 1 W @ V_S = 14 V	6 V to 24 V	Dual	M14, N14	0 to +70
—	—	LM2878P*	Dual 5 Watt Power Audio Amp	Note 1	0.140	P_O = 2 W @ V_S = 22 V	6 V to 32 V	Dual	P11	0 to +70
LM3875T	—	—	40 Watt Power Audio Amp	Note 1	0.060	P_O = 40 W @ V_S = ±35 V	20 V to 84 V	Single	T11	0 to +70
LM3876T	—	—	40 Watt Power Audio Amp (with mute)	Note 1	0.060	P_O = 40 W @ V_S = ±35 V	20 V to 84 V	Single	T11	0 to +70
LM3886T	—	—	60 Watt Power Audio Amp (with mute)	Note 1	0.030	P_O = 60 W @ V_S = ±28V	20 V to 84 V	Single	T11	0 to +70

*Single Inline Package. Note 1: 1995 Application Specific Analog Products Databook.

Audio Control/Noise Reduction/Pre-Amps

Mfr.'s Type		Description	Databook Reference	V_{CC} (V)	S/N (dB)	THD (%)	Separation (dB)	No. of Leads	Temperature Range (°C)
PLCC	PDIP								
—	LM1894N	Dynamic Noise Reduction System (DNRRM)	Note 1	4.5 to 18	—	—	—	N14	0 to +70
—	LMC1982CIN	Digital Controlled Stereo Tone/Volume Control	Note 1	6 to 12	95	0.0080	80	N28	–40 to +85
—	LMC1992CCN	Digital Controlled Stereo Tone/Volume Control	Note 1	6 to 12	105	0.0300	95	N28	0 to +70
LMC835V	LMC835N	Digital Controlled Graphic Equalizer	Note 1	5 to 16	114	0.0015	—	N28, V28	–40 to +85

Mfr.'s Type			Description	Databook Reference	Input Referred Noise Voltage (nV/µHz)	THD (%)	GBW (MHz)	Supply Range (V)	No. of Leads	Temperature Range (°C)
Metal Can	SOIC	PDIP								
—	—	LF347BN	Wide Bandwidth JFET	Note 2	20.0	0.02	4	±18	N14	0 to +70
—	LF351M	LF351N	Wide Bandwidth JFET	Note 2	25.0	0.02	4	±18	M8, N8	0 to +70
LF353H	LF353M	LF353N	Dual LF351	Note 2	16.0	0.02	4	±18	H8, M14, N14	0 to +70
—	—	LF444CN	Low Power JFET Quad	Note 2	35.0	0.02	1	±18	N14	0 to +70
—	LM833M	LM833N	Dual Audio Amplifier	Note 1	4.5	0.00	15	±18	M8, N8	–40 to +85
—	LM837M	LM837N	Quad Audio Amplifier	Note 1	4.5	0.00	25	±18	M14, N14	–40 to +85

The DNRRM system is licensed to National Semiconductor Corporation under U.S. Patent 3678416 and 3753159. Note 1: 1995 Application Specific Analog Products Databook. Note 2: 1995 Operational Amplifiers Databook .

Video Pre-Amps/CRT Drivers/Video Circuits

Mfr.'s Type		Description	Databook Reference	V_{CC} (V)	BW (MHz)	Gain (Typ.)	No. of Leads	Temperature Range (°C)
SOIC	PDIP							
LM1201M	LM1201N	Video Amplifier System	Note 1	12	200	4-10	M16, N16	0 to +70
—	LM1202N	230 MHz Video Amplifier System	Note 1	12	230	16-20	M20, N20	0 to +70
—	LM1203N	RGB Video Preamp	Note 1	12	70	4-10	N28	0 to +70
—	LM1203AN	150 MHz RGB Video Preamp	Note 1	12	150	4-10	N28	0 to +70
LM1204V*	—	150 MHz RGB Video Preamp	Note 1	12	150	1-10	V44	0 to +70
—	LM1205N	130 MHz RGB Video Preamp with Blanking	Note 1	12	135	4-10	N28	0 to +70
LM1881M	LM1881N	Video Sync Separator	Note 1	5 to 13	—	—	M8, N8	0 to +70

*PLCC Package. Note 1: Application Specific Analog Products Databook.

Analog To Digital Converters

8-Bit A/D Converters

Mfr.'s Type				Description	Databook Reference	V_{CC} (V)	Power Consumption (mW)	Accuracy ± (LSB)	Conversion Time (µs)	No. of Leads	Temperature Range (°C)
TO-220	SOIC	PDIP	PDIP								
—	—	ADC0801LCN	—	8-Bit µP Compatible ADC with Differential Input	Note 1	5	13	1/4	110.000	N20	0 to +70
—	—	ADC0803LCN	—	8-Bit µP Compatible ADC with Differential Input	Note 1	5	13	1/2	110.000	N20	0 to +70
ADC0804LCJ	ADC0804LCWM	ADC0804LCN	—	8-Bit µP Compatible ADC with Differential Input	Note 1	5	13	1/2	110.000	J20, M20, N20	0 to +70
ADC0808CCJ	—	ADC0808CCN	ADC0808CCV	8-Bit µP Compatible ADC with 8-Channel Multiplexer	Note 1	5	15	1/2	100.000	J28, N28, V28	0 to +70
—	—	ADC0809CCN	ADC0809CCV	8-Bit µP Convertible ADC with 8-Channel Multiplexer	Note 1	5	15	1	100.000	N28, V28	0 to +70
—	—	ADC0820CCN	—	8-Bit High Speed µP Compatible ADC with Track/Hold	Note 1	5	75	1	1.200	N20	0 to +70
—	ADC0831CCWM	ADC0831CCN	—	8-Bit Serial I/O ADC	Note 1	5	15	1	32.000	M14, N8	0 to +70
—	—	ADC0833CCN	—	8-Bit Serial I/O ADC with 4-Channel MUX	Note 1	5	23	1	32.000	N14	0 to +70
—	—	ADC0834CCN	—	8-Bit Serial I/O ADC with 4-Channel MUX	Note 1	5	15	1	32.000	N14	0 to +70
—	ADC0838CCWM	ADC0838CCN	—	8-Bit Serial I/O ADC with 8-Channel MUX	Note 1	5	15	1	32.000	M20, N20, V20	0 to +70
—	—	ADC0841CCN	—	8-Bit µP Compatible ADC	Note 1	5	15	1	40.000	N20	0 to +70
ADC0844CCJ	—	ADC0844CCN	—	8-Bit µP Compatible ADC with 4-Channel MUX	Note 1	5	15	1	40.000	J20, N20	0 to +70
—	—	ADC0848BCN	—	8-Bit µP Compatible ADC with 8-Channel MUX	Note 1	5	15	1/2	40.000	N24	0 to +70
—	—	ADC0848CCN	—	8-Bit µP Compatible ADC with 8-Channel MUX	Note 1	5	15	1	40.000	N24	0 to +70
—	—	ADC0851BIN	ADC0851BIV	8-Bit Analog Data Acquisition and Monitoring System	Note 1	5	50	1/2	18.000	N16, V20	–20 to +85
—	—	ADC08032CIN	—	8-Bit High-Speed Serial I/O ADC with 2-Channel MUX	Note 1	5	20	1/2	8.000	M14, N8	–20 to +85
—	ADC08034BIWM	ADC08034BIN	—	8-Bit High-Speed Serial I/O ADC with 4-Channel MUX	Note 1	5	20	1/2	8.000	M14, N14	–20 to +85
—	—	ADC08061BIN	—	500 ns ADC with S/H	Note 1	5	100	1/2	0.560	N20	–20 to +85
—	ADC08138BIWM	—	—	8-Bit High-Speed Serial I/O ADC with 8-Channel MUX	Note 1	5	20	1/2	8.000	M20	–20 to +85
—	ADC08234CIWM	—	—	8-Bit Serial ADC with MUX, Reference, and Track/Hold	Note 1	5	20	1/2	2.000	M14, N14	–20 to +85

10-Bit A/D Converters

ADC1001CCJ	—	—	—	10-Bit µP Compatible ADC	Note 1	5	32	1	200.000	N20	–40 to +85
ADC1001CCJ-1	—	—	—	10-Bit µP Compatible ADC	Note 1	5	32	1	200.000	N20	–40 to +85
ADC1005BCJ	—	—	—	10-Bit µP Compatible ADC	Note 1	5	130	1/2	50.000	N20, V20	–40 to +85
ADC1005CCJ-1	—	—	—	10-Bit µP Compatible ADC	Note 1	5	130	1	50.000	N20, V20	–40 to +85
	—	ADC1031CIN	—	10-Bit Serial I/O ADC with Analog Multiplexer and Track/Hold Function	Note 1	5	20	1/2	13.700	N8	–20 to +85
—	—	ADC1034CIN	—	10-Bit Serial I/O ADC with Analog Multiplexer and Track/Hold Function	Note 1	5	20	1/2	13.700	C16, M16, N16	–20 to +85
—	—	ADC1038CIN	—	10-Bit Serial I/O ADC with Analog Multiplexer and Track/Hold Function	Note 1	5	20	1/2	13.700	C20, M20, N20	–20 to +85
—	—	ADC10061CIN	—	10-Bit 600 ns ADC with Sample/Hold	Note 1	5	235	1	0.600	C20, M20, N20	–20 to +85
—	—	ADC10062CIN	—	10-Bit 600 ns ADC with Input Multiplexer and Sample/Hold	Note 1	5	235	1	0.600	C24, M24, N24	–20 to +85
—	—	ADC10154CIN	—	10-Bit ADC with 4-Channel MUX, Track/Hold and Ref.	Note 1	5, ±5	33*	0.6	4.400	C24, M24, N24	–20 to +85
—	ADC10158CIWM	ADC10158CIN	—	10-Bit ADC with 8-Channel MUX, Track/Hold and Ref.	Note 1	5, ±5	33*	0.6	4.400	C24, M24, N24	–20 to +85
—	ADC10664CIWM	ADC10664CIN	—	10-Bit 360 ns ADC with 4-Channel MUX and Sample/Hold	Note 1	5	235	1.5	0.466	C28, M28, N28	–20 to +85

*For unipolar operation. Note 1: 1995 Data Acquisition Databook.

Digital to Analog Converters

Mfr.'s Type			Description	Databook Reference	V_{CC} (V)	Power Consumption (mW)	Linearity (Max.) (%)	Settling Time (ns)	No. of Leads	Temperature Range (°C)
CERDIP	SOIC	PDIP								
DAC0800LCJ	—	DAC0800LCN	8-Bit DAC	Note 1	±(5 to 15)	500	0.19	100.0	J16, N16	0 to +7
—	—	DAC0801LCN	8-Bit DAC	Note 1	±(5 to 15)	500	0.39	100.0	N16	0 to +7
—	—	DAC0806LCN	8-Bit DAC	Note 1	±(5 to 15)	33	0.78	150.0	N16	0 to +7
—	—	DAC0808LCN	8-Bit DAC	Note 1	±(5 to 15)	33	0.19	150.0	M16, N16	0 to +7
DAC0830LCJ	—	DAC0830LCN	8-Bit µP Compatible, Double-Buffered DAC	Note 1	5 to 15	20	0.05	1.0 µs	J20, N20	0 to +7
DAC0832LCJ	DAC0832LCWM	DAC0832LCN	8-Bit µP Compatible-Buffered DAC	Note 1	5 to 15	20	0.20	1.0 µs	J20, M20, N20	0 to +7
—	DAC0854CIWM	DAC0854CIN	Quad 8-Bit Voltage-Output Serial DAC with Readback	Note 1	5	95	0.19	2.7 µs	J20, M20, N20	–20 to +85
—	—	DAC1006LCN	10-Bit µP Compatible, Double-Buffered DAC	Note 1	5 to 15	20	0.05	500.0	N20	0 to +7
—	—	DAC1007LCN	10-Bit µP Compatible, Double-Buffered DAC	Note 1	5 to 15	20	0.10	500.0	N20	0 to +7
—	—	DAC1020LCN	10-Bit Binary Multiplying DAC	Note 1	5 to 15	10	0.05	500.0	N16, V20	0 to +7
—	—	DAC1022LCN	10-Bit Binary Multiplying DAC	Note 1	5 to 15	10	0.20	500.0	N16	0 to +7
DAC1208LCJ	—	—	12-Bit µP Compatible, Double-Buffered DAC	Note 1	5 to 15	20	0.01	1.0 µs	J24	–40 to +85
DAC1218LCJ	—	—	12-Bit Multiplying DAC	Note 1	5 to 15	20	0.01	1.0 µs	J18	–40 to +85
DAC1230LCJ	—	—	12-Bit µP Compatible, Double-Buffered DAC	Note 1	5 to 15	20	0.01	1.0 µs	J20	–40 to +85
DAC1231LCJ	—	—	12-Bit µP Compatible, Double-Buffered DAC	Note 1	5 to 15	20	0.02	1.0 µs	J20	–40 to +85
DAC1232LCJ	—	—	12-Bit µP Compatible, Double-Buffered DAC	Note 1	5 to 15	20	0.05	1.0 µs	J20	–40 to +85
DAC1232LCJ-1	—	—	12-Bit µP Compatible, Double-Buffered DAC	Note 1	5 to 15	20	0.05	1.0 µs	J20	–40 to +85

Note 1: 1995 Data Acquisition Databook.

Voltage References

Mfr.'s Type				Description	Databook Reference	$V_{ref.}$ (V)	I_{Range}	Drift (ppm/°C)	V Tolerance (%)	No. of Leads	Temperature Range (°C)
Metal Can	SOIC	SOT-23	TO-92								
LM113H	—	—	—	Reference Diode	Note 1	1.20	500 µA to 20 mA	100	±5.0	H2	–55 to +125
LM136AH-2.5	—	—	—	Reference Diode	Note 1	2.50	400 µA to 10 mA	72	±1.0	H3/4	–55 to +125

Note 1: 1995 Data Acquisition Databook.

Call Your Nearest Allied Location (1-800-433-5700) For Pricing And Availability

Voltage References, Temperature Sensors and Power Converters

Voltage References

Mfr.'s Type				Description	Databook Reference	$V_{ref.}$ (V)	I_{Range}	Drift (ppm/°C)	V Tolerance (%)	No. of Leads	Temperature Range (°C)
Metal Can	SOIC	SOT-23	TO-92								
LM136H-2.5	—	—	—	Reference Diode	Note 1	2.50	400 µA to 10 mA	72	±2.0	H3/4	–55 to +125
LM185H-2.5	—	—	—	Micropower Voltage Reference Diode	Note 1	2.50	10 µA to 20 mA	30, 50, 150	±1.5	H2	–55 to +125
LM236AH-5.0	—	—	—	Reference Diode	Note 1	5.00	400 µA to 10 mA	72	±1.0	H3/4	–40 to +85
LM236H-2.5	—	—	—	Reference Diode	Note 1	2.50	400 µA to 10 mA	72	±2.0	H3/4	–40 to +85
—	—	—	LM285BXZ-2.5	Micropower Voltage Reference Diode	Note 1	2.50	10 µA to 20 mA	30	±1.0	Z3	–40 to +85
—	—	—	LM285BYZ-2.5	Micropower Voltage Reference Diode	Note 1	2.50	10 µA to 20 mA	50	±1.0	Z3	–40 to +85
—	LM285M-1.2	—	—	Micropower Voltage Reference Diode	Note 1	1.20	10 µA to 20 mA	150	±1.0	M8	–55 to +125
LM313H	—	—	—	Reference Diode	Note 1	1.20	500 µA to 20 mA	1100	±5.0	H2	–40 to +85
—	—	—	LM329BZ	Precision Reference	Note 1	6.90	600 µA to 15 mA	20	±5.0	Z3	0 to +70
—	—	—	LM329CZ	Precision Reference	Note 1	6.90	600 µA to 15 mA	50	±5.0	Z3	0 to +70
—	—	—	LM329DZ	Precision Reference	Note 1	6.90	600 µA to 15 mA	100	±5.0	Z3	0 to +70
—	LM336BM-2.5	—	LM336BZ-2.5	Reference Diode	Note 1	2.50	400 µA to 10 mA	54	±2.0	M8, Z3	0 to +70
—	LM336BM-5.0	—	LM336BZ-5.0	Reference Diode	Note 1	5.00	400 µA to 10 mA	54	±2.0	M8, Z3	0 to +70
—	—	—	LM336Z-2.5	Reference Diode	Note 1	2.50	400 µA to 10 mA	54	±4.0	Z3	0 to +70
—	LM336M-5.0	—	LM336Z-5.0	Reference Diode	Note 1	5.00	400 µA to 10 mA	54	±4.0	M8, Z3	0 to +70
—	—	—	LM385BZ-1.2	Micropower Voltage Reference Diode	Note 1	1.20	10 µA to 20 mA	150	±1.0	Z3	0 to +70
—	LM385BM-2.5	—	LM385BZ-2.5	Micropower Voltage Reference Diode	Note 1	2.50	10 µA to 20 mA	150	±1.0	M8, Z3	0 to +70
—	LM385M	—	LM385Z	Adjustable Micropower Voltage Reference	Note 1	1.24 to 5.3	10 µA to 20 mA	150	±1.0	M8, Z3	0 to +70
—	LM385M-1.2	—	LM385Z-1.2	Micropower Voltage Reference Diode	Note 1	1.20	10 µA to 20 mA	150	±1.0	M8, Z3	0 to +70
—	LM385M-2.5	—	LM385Z-2.5	Micropower Voltage Reference Diode	Note 1	2.50	10 µA to 20 mA	150	±1.0	M8, Z3	0 to +70
LM399H	—	—	—	Precision Reference	Note 1	7.00	500 µA to 15 mA	2, 5, 50	±5.0	H4	0 to +70
—	—	—	LM4040AIZ-10.0	Precision Micropower Shunt Voltage Reference	Note 1	10.00	60 µA to 15 mA	100	±0.1	Z3	–40 to +85
—	LM4040AIM-2.5	—	LM4040AIZ-2.5	Precision Micropower Shunt Voltage Reference	Note 1	2.50	60 µA to 15 mA	100	±0.1	M8, Z3	–40 to +85
—	—	—	LM4040AIZ-4.1	Precision Micropower Shunt Voltage Reference	Note 1	4.10	60 µA to 15 mA	100	±0.1	Z3	–40 to +85
—	LM4040AIM-5.0	LM4040AIM3-5.0	LM4040AIZ–5.0	Precision Micropower Shunt Voltage Reference	Note 1	5.00	60 µA to 15 mA	100	±0.1	M8, M3, Z3	–40 to +85
—	—	LM4040BIM3-5.0	LM4040BIZ-5.0	Precision Micropower Shunt Voltage Reference	Note 1	5.00	60 µA to 15 mA	100	±0.2	M8, M3, Z3	–40 to +85
—	—	LM4040BIM3-10.0	—	Precision Micropower Shunt Voltage Reference	Note 1	10.00	60 µA to 15 mA	100	±0.2	M3	–40 to +85
—	—	LM4040BIM3-2.5	LM4040BIZ-2.5	Precision Micropower Shunt Voltage Reference	Note 1	2.50	60 µA to 15 mA	100	±0.2	M3, Z3	–40 to +85
—	—	LM4040BIM3-4.1	—	Precision Micropower Shunt Voltage Reference	Note 1	4.10	60 µA to 15 mA	100	±0.2	M3	–40 to +85
—	—	—	LM4040CIZ-10.0	Precision Micropower Shunt Voltage Reference	Note 1	10.00	60 µA to 15 mA	100	±0.5	Z3	–40 to +85
—	—	LM4040CIM3-2.5	—	Precision Micropower Shunt Voltage Reference	Note 1	2.50	60 µA to 15 mA	100	±0.5	M3	–40 to +85
—	—	LM4040CIM3-4.1	—	Precision Micropower Shunt Voltage Reference	Note 1	4.10	60 µA to 15 mA	100	±0.5	M3	–40 to +85
—	—	LM4040CIM3-5.0	LM4040CIZ-5.0	Precision Micropower Shunt Voltage Reference	Note 1	5.00	60 µA to 15 mA	100	±0.5	M3, Z3	–40 to +85
—	—	LM4040DIM3-10.0	LM4040DIZ-10.0	Precision Micropower Shunt Voltage Reference	Note 1	10.00	60 µA to 15 mA	150	±1.0	M3, Z3	–40 to +85
—	LM4040DIM-2.5	LM4040DIM3-2.5	—	Precision Micropower Shunt Voltage Reference	Note 1	2.50	60 µA to 15 mA	150	±1.0	M8, M3	–40 to +85
—	—	LM4040DIM3-4.1	LM4040DIZ-4.1	Precision Micropower Shunt Voltage Reference	Note 1	4.10	60 µA to 15 mA	150	±1.0	M3, Z3	–40 to +85
—	LM4040DIM-5.0	—	LM4040DIZ-5.0	Precision Micropower Shunt Voltage Reference	Note 1	5.00	60 µA to 15 mA	150	±1.0	M8, Z3	–40 to +85

Note 1: 1995 Data Acquisition Databook.

Temperature Sensors

Mfr.'s Type			Description	Databook Reference	V_{CC} (V)	Accuracy*	Output Scale	No. of Leads	Temperature Range (°C)
Metal Can	SOIC	TO-92							
LM34CH	—	LM34CZ	Precision Fahrenheit Temperature Sensor	Note 1	5 to 30	±3°F	10 mV/°F	H3/4, Z3	–40° to 230°F
LM34CAH	—	LM34CAZ	Precision Fahrenheit Temperature Sensor	Note 1	5 to 30	±2°F	10 mv/°F	H3/4, Z3	–40° to 230°F
LM34DH	—	LM34DZ	Precision Fahrenheit Temperature Sensor	Note 1	5 to 30	±4°F	10 mV/°F	H3/4, Z3	32° to 212°F
LM35CH	—	LM35CZ	Precision Centigrade Temperature Sensor	Note 1	5 to 30	±1.5°C	10 mV/°F	H3/4, Z3	–40° to 110°C
—	—	LM35CAZ	Precision Centigrade Temperature Sensor	Note 1	5 to 30	±1°C	10 mV/°F	H3/4, Z3	–40° to 110°C
LM35DH	LM35DM	LM35DZ	Precision Centigrade Temperature Sensor	Note 1	4 to 10	±2°C	10 mV/°F	H3/4, Z3	0° to 100°C
LM135H	—	—	Precision Centigrade Temperature Sensor	Note 1	1 to 40	±1.3°C	10 mV/°K	H3/4, Z3	–55° to 150°C
LM135AH	—	—	Precision Centigrade Temperature Sensor	Note 1	1 to 40	±1.3°C	10 mV/°K	H3/4, Z3	–55° to 150°C
—	—	LM234Z-3	3-Terminal Adjustable Current Source	Note 1	5 to 40	±3°C	{{TFMV}}	H3/4, Z3	–25° to 100°C
LM235AH	—	—	3-Terminal Adjustable Current Source	Note 1	1 to 40	±1.3°C	10 mV/°K	H3/4, Z3	–40° to 125°C
LM334H	LM334M	LM334Z	3-Terminal Adjustable Current Source	Note 1	5 to 40	±3°C	{{TFMV}}	H3/4, Z3	0° to 70°C
LM335AH	—	LM335AZ	Precision Temperature Sensor	Note 1	1 to 40	±1.3°C	10 mV/°K	H3/4, Z3	–40° to 100°C
—	—	LM335Z	Precision Temperature Sensor	Note 1	1 to 40	±1.3°C	10 mV/°K	H3/4, Z3	–40° to 100°C

*Accuracy is measured over T(min) to T(max) uncalibrated. Note 1: 1995 Data Acquisition Databook.

Simple Switcher™ Power Converters

Mfr.'s Type			Current (A)	Databook Reference	Standard Operating Modes	Input Voltage (V)	Output Voltage (V)	Switching Frequency (kHz)	Efficiency (%)	No. of Leads	Temperature Range (T_J °C)
SOIC	PDIP	TO-220									
—	LM2574HVN-12	—	0.5	Note 1	Step-Down	4 to 60	12.0	52	77 to 88	N8	–40 to +125
LM2574HVM-5.0	LM2574HVN-5.0	—	0.5	Note 1	Step-Down	4 to 60	5.0	52	77 to 88	M14, N8	–40 to +125
—	LM2574HVN-ADJ	—	0.5	Note 1	Step-Down	4 to 60	1.23 to 57	52	77 to 88	N8	–40 to +125
—	LM2574N-15	—	0.5	Note 1	Step-Down	4 to 40	15.0	52	77 to 88	N8	–40 to +125
LM2574M-5.0	LM2574N-5.0	—	0.5	Note 1	Step-Down	4 to 40	5.0	52	77 to 88	M14, N8	–40 to +125
—	LM2574N-ADJ	—	0.5	Note 1	Step-Down	4 to 40	1.23 to 37	52	77 to 88	M14, N8	–40 to +125
—	—	LM2575HVT-12	1.0	Note 1	Step-Down	4 to 60	12.0	52	77 to 88	N16, T5	–40 to +125
—	LM2575HVN-15	LM2575HVT-15	1.0	Note 1	Step-Down	4 to 60	15.0	52	77 to 88	N16, T5	–40 to +125
LM2575HVM-5.0	LM2575HVN-5.0	LM2575HVT-5.0	1.0	Note 1	Step-Down	4 to 60	5.0	52	77 to 88	M24, N16, T5	–40 to +125
LM2575HVM-ADJ	—	LM2575HVT-ADJ	1.0	Note 1	Step-Down	4 to 60	1.23 to 57	52	77 to 88	M24, N16, T5	–40 to +125
—	—	LM2575T-12	1.0	Note 1	Step-Down	4 to 40	12.0	52	77 to 88	N16, T5	–40 to +125
—	—	LM2575T-15	1.0	Note 1	Step-Down	4 to 40	15.0	52	77 to 88	N16, T5	–40 to +125
LM2575M-5.0	LM2575N-5.0	LM2575T-5.0	1.0	Note 1	Step-Down	4 to 40	5.0	52	77 to 88	M24, N16, T5	–40 to +125
—	LM2575N-ADJ	LM2575T-ADJ	1.0	Note 1	Step-Down	4 to 40	1.23 to 37	52	77 to 88	M24, N16, T5	–40 to +125
—	—	LM2576HVT-12	3.0	Note 1	Step-Down	4 to 60	12.0	52	77 to 88	T5	–40 to +125
—	—	LM2576HVT-15	3.0	Note 1	Step-Down	4 to 60	15.0	52	77 to 88	T5	–40 to +125
—	—	LM2576HVT-5.0	3.0	Note 1	Step-Down	4 to 60	5.0	52	77 to 88	T5	–40 to +125
—	—	LM2576HVT-ADJ	3.0	Note 1	Step-Down	4 to 60	1.23 to 57	52	77 to 88	T5	–40 to +125
—	—	LM2576T-12	3.0	Note 1	Step-Down	4 to 40	12.0	52	77 to 88	T5	–40 to +125
—	—	LM2576T-5.0	3.0	Note 1	Step-Down	4 to 40	5.0	52	77 to 88	T5	–40 to +125
—	—	LM2576T-ADJ	3.0	Note 1	Step-Down	4 to 40	1.23 to 37	52	77 to 88	T5	–40 to +125
LM2577M-12	LM2577N-12	LM2577T-12	3.0	Note 1	Step-Up, Flyback	3.5 to 40	12.0	52	80	M24, N16, T5	–40 to +125
—	—	LM2577T-15	3.0	Note 1	Step-Up, Flyback	3.5 to 40	15.0	52	80	N16, T5	–40 to +125
LM2577M-ADJ	LM2577N-ADJ	LM2577T-ADJ	3.0	Note 1	Step-Up, Flyback	3.5 to 40	Adj.	52	80	M24, N16, T5	–40 to +125

Note 1: 1995 Power ICs Databook.

Switching Regulators

Mfr.'s Type			Output Current (A)	Databook Reference	Standard Operating Modes	Input Voltage (V)	Output Voltage (V)	Switching Frequency (kHz)	Efficiency (%)	No. of Leads	Temperature Range (T_J °C)
SOIC	PDIP	TO-3									
—	—	LH1605CK	5.00	Note 1	Step-Down	8 to 35	3 to 30	6 to 100	75	K8	–25 to +85
—	LM78S40CN	—	1.50	Note 1	Step-Up, Step-Down, Invert	2.5 to 50	Adjustable	0.1 to 100	75	N16	–40 to +125
LM2578AM	LM2578AN	—	0.75	Note 1	Step-Up, Step-Down, Flyback, Invert	2 to 40	Adjustable	0.001 to 100	—	M8, N8	–40 to +125
—	LM3578AN	—	0.75	Note 1	Step-Up, Step-Down, Flyback, Invert	2 to 40	Adjustable	0.001 to 100	—	N8	0 to +125
—	LM2524DN	—	0.20	Note 1	Step-Up, Step-Down, Flyback, Invert	55 to40	Adjustable	1 to 550	—	N16	–40 to +125
LM3524DM	—	—	0.20	Note 1	Step-Up, Step-Down; Flyback, Invert	5 to 40	Adjustable	1 to 350	—	M16	0 to +125
—	LMC7660IN	—	0.05	Note 1	Invert	1.5 to 10	–1.5 to –10	10	90	N8	–40 to +125

Note 1: 1995 Power ICs Databook.

Switched Capacitor Filters

Mfr.'s Type		Description	Databook Reference	Type	Max. Order	Frequency Range (kHz)	Q Accuracy (%)	No. of Leads	Temperature Range (°C)
SOIC	PDIP								
MF4CWM-100	MF4CN-100	4th Order Switched Capacitor Butterworth Low-Pass Filter	Note 1	Lowpass	4th	0.1 to –20	—	WM14, N8	0 to +70
—	MF4CN-50	4th Order Switched Capacitor Butterworth Low-Pass Filter	Note 1	Lowpass	4th	0.1 to –20	—	WM14, N8	0 to +70
MF5CWM	—	Universal Monolithic Switched Capacitor Filter	Note 1	Universal	2nd	0.1 to –30	±6	WM14	0 to +70
MF6CWM-50	MF6CN-50	6th Order Switched Capacitor Butterworth Low-Pass Filter	Note 1	Lowpass	6th	0.1 to –20	—	WM14, N14	0 to +70
—	MF10CCN	Universal Monolithic Dual Switched Capacitor Filter	Note 1	Universal	4th	0.1 to –30	±2	N20	0 to +70

Note 1: 1995 Data Acquisition Databook.

Sample/Hold and Voltage to Frequency Converters

Mfr.'s Type		Description	Databook Reference	Vcc (V)	Acquisition (ns)	Accuracy (%)	No. of Leads	Temperature Range (°C)
Metal Can	PDIP							
LF398H	LF398N	Monolithic Sample and Hold Circuit	Note 1	±(5 to 18)	4000	0.02	H8, N8	0 to +70
—	LF398AN	Monolithic Sample and Hold Circuit	Note 1	±(5 to 18)	4000	0.01	N8	0 to +70
—	LM231N	Precision Voltage-to-Frequency Converter	Note 1	—	—	—	N8	–20 to +85
—	LM331N	Precision Voltage-to-Frequency Converter	Note 1	—	—	—	N8	0 to +70

Note 1: 1995 Data Acquisition Databook.

Low Dropout Regulators

Mfr.'s Type				Output Current (A)	Databook Reference	Output Voltage (V)	Dropout Voltage* (V)	Typical Input Voltage (V)	Maximum Quiescent Current (mA)	Typical Polarity Protection (V)	Reverse Transient Protection (V)	No. of Leads	Temperature Range (°C)
SOIC	PDIP	TO-220	TO-92										
—	—	LM2940T-10.0	—	1.00	Note 1	10	0.50	26	10.000	–15	–1.20	T3	–40 to +150
—	—	LM2940T-12.0	—	1.00	Note 1	12	0.50	26	10.000	–15	–1.20	T3	–40 to +150
—	—	LM2940T-5.0	—	1.00	Note 1	5	0.50	26	10.000	–15	–1.20	T3	–40 to +150
—	—	LM2940T-8.0	—	1.00	Note 1	8	0.50	26	10.000	–15	–1.20	T3	–40 to +150
—	—	LM2940T-9.0	—	1.00	Note 1	9	0.50	26	10.000	–15	–1.20	T3	–40 to +150
—	—	LM2940CT-12	—	1.00	Note 1	12	0.50	26	10.000	–15	–1.00	T3	0 to +150
—	—	LM2940CT-15	—	1.00	Note 1	15	0.50	26	10.000	–15	–1.00	T3	0 to +150
—	—	LM2940CT-5.0	—	1.00	Note 1	5	0.50	26	10.000	–15	–1.00	T3	0 to +150
—	—	LM2941T	—	1.00	Note 1	Adj. (5 to 20)	0.50	26	10.000	–15	–1.20	T5	–40 to +150
—	—	LM2941CT	—	1.00	Note 1	Adj. (5 to 20)	0.50	26	10.000	–15	–1.00	T5	0 to +150
—	—	LM2990T-12	—	1.00	Note 1	–12	0.60	–26	1.000	–15	–1.00	T5	–40 to +125
—	—	LM2990T-15	—	1.00	Note 1	–15	0.60	–26	1.000	–15	–1.00	T5	–40 to +125
—	—	LM2990T-5.0	—	1.00	Note 1	–5	0.60	–26	1.000	–15	–1.00	T5	–40 to +125
—	—	LM2990T-5.2	—	1.00	Note 1	–5.2	0.60	–26	1.000	–15	–1.00	T5	–40 to +125
—	—	LM2991T	—	1.00	Note 1	Adj. (–2 to –25)	0.60	–26	1.000	–15	–1.00	T5	–40 to +125
—	—	LM2925T	—	0.75	Note 1	5	0.82	26	3.000	–15	–1.20	T5	–40 to +150
—	—	LM2935T	—	0.75	Note 1	Two 5V Outputs	0.82	26	3.000	–15	–1.20	T5	–40 to +150
—	—	LM2926T	—	0.50	Note 1	5	0.35	26	2.000	–18	–1.60	T5	–40 to +125
—	—	LM2937ET-12	—	0.50	Note 1	12	0.50	26	2.000	–15	–1.20	T3	–40 to +125
—	—	LM2937ET-15	—	0.50	Note 1	15	0.50	26	2.000	–15	–1.20	T3	–40 to +125
—	—	LM2937ET-5.0	—	0.50	Note 1	5	0.50	26	2.000	–15	–1.20	T3	–40 to +125
—	—	LM2937ET-8.0	—	0.50	Note 1	8	0.50	26	2.000	–15	–1.20	T3	–40 to +125
LP2953IM	LP2953IN	—	—	0.25	Note 1	Adj. (1.23 to 29)	0.47	30	0.130	–20	–1.20	M16, N14	–40 to +125
—	—	LP2954IT	—	0.25	Note 1	5	0.47	30	0.090	–20	S3, T3	M16, N14	–40 to +125
—	—	LM330T-5.0	—	0.15	Note 1	5	0.32	26	3.500	–12	–1.66	T3	0 to +125
—	—	LM2930T-5.0	—	0.15	Note 1	5	0.32	26	4.000	–6	–3.33	T3	–40 to +125
—	—	LM2930T-8.0	—	0.15	Note 1	8	0.32	26	4.000	–6	–3.33	T3	–40 to +125
LM2931M-5.0	—	LM2931T-5.0	LM2931Z-5.0	0.10	Note 1	5	0.30	24	0.400	–15	–1.20	M8, T3, Z3	–40 to +125
—	—	LM2931CT	—	0.10	Note 1	Adj. (3 to 29)	0.30	24	0.400	–15	–1.20	T5	–40 to +125
—	—	—	LP2950CZ-5.0	0.10	Note 1	5	0.38	30	0.075	–15	–1.20	Z3	–40 to +125
LP2951CM	LP2951CN	—	—	0.10	Note 1	Adj. (1.24 to 29)	0.38	30	0.075	–15	–1.20	M8, N8	–40 to +125
—	—	—	LM2936Z-5.0	0.05	Note 1	5	0.20	40	0.009	–15	–1.20	Z3	–40 to +125

*Typical dropout voltage specified under full load operation. Note 1: 1995 Power ICs Databook.

Adjustable Positive Voltage Regulators

Mfr.'s Type				Output Current (A)	Databook Reference	Output Voltage (V)	Input Voltage* (V)	No. of Leads	Temperature Range (°C)
Metal Can	PDIP	TO-220	TO-92						
—	—	LM338T	—	3.0	Note 1	1.2 to 32	Diff. ≤ 40	T3	0 to +125
—	—	LM350T	—	3.0	Note 1	1.2 to 32	Diff. ≤ 35	T3	0 to +125
—	—	LM350AT	—	1.5	Note 1	1.2 to 32	Diff. ≤ 35	T3	–40 to +125
—	—	LM317T	—	1.5	Note 1	1.2 to 37	Diff. ≤ 40	T3	0 to +125
—	—	—	—	1.5	Note 1	1.2 to 37	Diff. ≤ 40	T3	–40 to +125
—	—	LM317HVT	—	0.5	Note 1	1.2 to 57	Diff. ≤ 60	T3	0 to +125
LM117H	—	—	—	0.5	Note 1	1.2 to 57	Diff. ≤ 40	H3	–55 to +150
LM317H	—	—	—	0.5	Note 1	1.2 to 37	Diff. ≤ 40	H3	0 to +125
LM317AH	—	—	—	0.5	Note 1	1.2 to 37	Diff. ≤ 40	H3	–40 to +125
LM317HVH	—	—	—	0.5	Note 1	1.2 to 57	Diff. ≤ 60	H3	0 to +125
—	LM317LM**	—	LM317LZ	0.1	Note 1	1.2 to 37	Diff. ≤ 40	M8, Z3	–40 to +125

*In cases where the regulator is "floating" the maximum input-to-output voltage differential is listed. **SOIC Package. Note 1: 1995 Power ICs Databook.

Adjustable Negative Voltage Regulators

Mfr.'s Type				Output Current (A)	Databook Reference	Output Voltage (V)	Input Voltage* (V)	No. of Leads	Temperature Range (°C)
Metal Can	PDIP	TO-220	TO-92						
LM337KSTEEL***	—	LM337T	—	1.5	Note 1	–1.2 to –37	Diff. ≤ 40	K2, T3	0 to +125
LM337H	—	—	—	0.5	Note 1	–1.2 to –37	Diff. ≤ 40	H3	0 to +125
—	LM337LM	—	LM337LZ	0.1	Note 1	–1.2 to –37	Diff. ≤ 40	M8, Z3	–25 to +125

*In cases where the regulator is "floating" the maximum input-to-output voltage differential is listed. ***TO-3 Steel Package. Note 1: 1995 Power ICs Databook.

Building Block Adjustable Positive and Negative Voltage Regulators

Mfr.'s Type		Output Current (A)	Databook Reference	Output Voltage (V)	Input Voltage* (V)	No. of Leads	Temperature Range (°C)
Metal Can	PDIP						
LM723H	—	150 mA	Note 1	2 to 37	9.5 to 40	H10	–55 to +150
—	LM723CN	150 mA	Note 1	2 to 37	9.5 to 40	N14	0 to +150
LM305H	—	45 mA	Note 1	4.5 to 40	8.5 to 50	H8	0 to +85
—	LM376N	45 mA	Note 1	5 to 37	9 to 40	N8	0 to +100

*In cases where the regulator is "floating" the maximum input-to-output voltage differential is listed. Note 1: 1995 Power ICs Databook

Fixed Positive Voltage Regulators

Mfr.'s Type				Output Current (A)	Databook Reference	Output Voltage (V)	Max. Input Voltage** (V)	No. of Leads	Temperature Range (°C)
Metal Can	SOIC	TO-220	TO-92						
—	—	LM7808CT	—	1.0	Note 1	8.0	35	T3	0 to +150
—	—	LM7818CT	—	1.0	Note 1	18.0	35	T3	0 to +150
LM340K-5.0*	—	LM340T-5.0	—	1.0	Note 1	5.0	35	K2, T3	0 to +150
—	—	LM340T-12	—	1.0	Note 1	12.0	35	T3	0 to +150
—	—	LM340T-15	—	1.0	Note 1	15.0	35	T3	0 to +150
—	—	LM341T-12	—	0.5	Note 1	12.0	35	T3	–40 to +125
—	—	LM341T-15	—	0.5	Note 1	15.0	35	T3	–40 to +125
—	—	LM341T-5.0	—	0.5	Note 1	5.0	35	T3	–40 to +125
—	LM78L05ACM	—	LM78L05ACZ	0.1	Note 1	5.0	35	M8, Z3	0 to +125
—	—	—	LM78L09ACZ	0.1	Note 1	9.0	35	Z3	0 to +125
—	LM78L12ACM	—	LM78L12ACZ	0.1	Note 1	12.0	35	M8, Z3	0 to +125
—	LM78L15ACM	—	LM78L15ACZ	0.1	Note 1	15.0	35	M8, Z3	0 to +125
LM140LAH-5.0	—	—	—	0.1	Note 1	5.0	35	H3	–55 to +150
LM340LAH-12	—	—	—	0.1	Note 1	12.0	35	H3	0 to +150
LM340LAH-5.0	—	—	LM340LAZ-5.0	0.1	Note 1	5.0	35	H3, Z3	0 to +150

*TO-3 Package. **Minimum Input Voltage for Fixed Negative Voltage Regulators. Note 1: 1995 Power ICs Databook.

Fixed Negative Voltage Regulators

Mfr.'s Type				Output Current (A)	Databook Reference	Output Voltage (V)	Max. Input Voltage** (V)	No. of Leads	Temperature Range (°C)
Metal Can	SOIC	TO-220	TO-92						
—	—	LM7905CT	—	1.5	Note 1	–5.0	–35	T3	0 to +125
—	—	LM7912CT	—	1.5	Note 1	–12.0	–35	T3	0 to +125
—	—	LM7915CT	—	1.5	Note 1	–15.0	–35	T3	0 to +125
LM320K-15*	—	LM320T-15	—	1.5	Note 1	–15.0	–25	K2, T3	0 to +125
—	—	LM320T-12	—	1.5	Note 1	–12.0	–35	T3	0 to +125
—	—	LM320T-5.0	—	1.5	Note 1	–5.0	–35	T3	0 to +125
—	—	LM79M05CT	—	0.5	Note 1	–5.0	–30	T3	0 to +125
—	—	LM79M12CT	—	0.5	Note 1	–12.0	–35	T3	0 to +125
—	—	LM79M15CT	—	0.5	Note 1	–15.0	–35	T3	0 to +125
LM120H-5.0	—	—	—	0.5	Note 1	–5.0	–25	H3	–55 to +150
LM320H-5.0	—	—	—	0.5	Note 1	–5.0	–25	H3	0 to +125
—	LM79L05ACM	—	LM79L05ACZ	0.1	Note 1	–5.0	–35	M8, Z3	0 to +125
—	—	—	LM79L12ACZ	0.1	Note 1	–12.0	–35	Z3	0 to +125
—	LM79L15ACM	—	—	0.1	Note 1	–15.0	–35	M8	0 to +125
—	—	—	LM320LZ-12	0.1	Note 1	–12.0	–35	Z3	0 to +125
—	—	—	LM320LZ-5.0	0.1	Note 1	–5.0	–35	Z3	0 to +125

*TO-3 Package. **Minimum Input Voltage for Fixed Negative Voltage Regulators. Note 1: 1995 Power ICs Databook.

Shunt Voltage Regulators

Mfr.'s Type		Output Current (A)	Databook Reference	Output Voltage (V)	Max. Input Voltage (V)	No. of Leads	Temperature Range (°C)
SOIC	PDIP						
LM431ACM	LM431ACZ	0.15	Note 1	2.5 to 36	37	M8, Z3	0 to +150
—	LM431AIZ	0.15	Note 1	2.5 to 36	37	Z3	–40 to +150

High Current Switches

Mfr.'s Type*	Description	Databook Reference	Drivers/ Package	Continuous Current (A)	Peak Current (A)	Input Voltage Range (V)	No. of Leads	Temperature Range (°C)
TO-220								
LM1921T	1 A Industrial Switch	Note 1	1	1	2.0	4.5 to 26	T5	–40 to +125
LM1951T	Solid State 1 A Switch	Note 1	1	1	2.5	4.5 to 26	T5	–40 to +125

*All devices incorporate Automotive transient protection. Note 1: 1995 Power ICs Databook.

Precision Motion Control Circuits

Mfr.'s Type PDIP	Features	Databook Reference	Speed (MHz)	No. of Leads	Temperature Range (°C)
LM628N-6	32-Bit Position, Velocity and Acceleration Registers; Position and Velocity Modes; 16-Bit PID Filter with Programmable Coefficients; 8- or12-Bit DAC Output Data; Quadrature Incremental Encoder Interface; 8-Bit Asynchronous Host Interface	Note 1	6	N28	–40 to +85
LM628N-8	32-Bit Position, Velocity and Acceleration Registers; Position and Velocity Modes; 16-Bit PID Filter with Programmable Coefficients; 8- or12-Bit DAC Output Data; Quadrature Incremental Encoder Interface; 8-Bit Asynchronous Host Interface	Note 1	8	N28	–40 to +85
LM629N-6	32-Bit Position, Velocity and Acceleration Registers; Position and Velocity Modes; 16-Bit PID Filter with Programmable Coefficients; 8-Bit PWM Sign/Magnitude Output Data; Quadrature Incremental Encoder Interface; 8-Bit Asynchronous Host Interface	Note 1	6	M24, N28	–40 to +85
LM629N-8	32-Bit Position, Velocity and Acceleration Registers; Position and Velocity Modes; 16-Bit PID Filter with Programmable Coefficients; 8-Bit PWM Sign/Magnitude Output Data; Quadrature Incremental Encoder Interface; 8-Bit Asynchronous Host Interface	Note 1	8	M24, N28	–40 to +85

Note 1: 1995 Power ICs Databook.

Data Transmission Interface Line Drivers, Receivers and Transceivers

TIA/EIA-232 (RS-232)

Mfr.'s Type			Description	No. of Tx	No. of Rx	No. of Leads	Temperature Range (°C)
CERDIP	SOIC	PDIP					
—	DS1488M	DS1488N	Quad Line Driver	4	0	14	0 to +70
—	DS14C88M	DS14C88N	Quad CMOS Line Driver	4	0	14	0 to +70
—	DS14C88TM	DS14C88TN	Quad CMOS Line Driver	4	0	14	–40 to +85
—	—	DS75150N	Dual Line Driver	2	0	8	0 to +70
—	DS1489AM	DS1489AN	Quad Line Receiver	0	4	14	0 to +70
—	—	DS1489N	Quad Line Receiver	0	4	14	0 to +70
—	—	DS14C89AN	Quad CMOS Line Receiver	0	4	14	0 to +70
—	DS14C89ATM	—	Quad CMOS Line Receiver	0	4	14	–40 to +85
—	—	DS75154N	Quad Line Receiver	0	4	16	0 to +70
—	DS14C232CM	DS14C232CN	Dual Driver/Receiver	2	2	16	0 to +70

TIA/EIA-423 (RS-423)

—	—	DS9636ACN	Dual Programmable Slew Rate Driver	2	0	8	0 to +70
—	DS3691M	DS3691N	Quad Tri-State Line Driver	4	0	16	0 to +70

TIA/EIA-422 Drivers (RS-422) and TIA/EIA-422/423 Receivers (RS-422/423)

DS26F31CJ	—	—	Quad High Speed Differential Line Driver	4	0	16	0 to +70
DS26LS31CJ	DS26LS31CM	DS26LS31CN	Quad High Speed Differential Line Driver	4	0	16	0 to +70
—	DS3487M	DS3487N	Quad Tri-State Line Driver	4	0	16	0 to +70
DS9638CJ	—	DS9638CN	Dual High Speed Differential Line Driver	2	0	8	0 to +70
—	DS26C32ATM	—	Quad CMOS Differential Line Receiver	0	4	16	–40 to +85
DS26F32CJ	—	—	Quad Differential Line Receiver	0	4	16	0 to +70
—	DS26LS32ACM	DS26LS32ACN	Quad Differential Line Receiver	0	4	16	0 to +70
—	—	DS26LS32CN	Quad Differential Line Receiver	0	4	16	0 to +70
DS26LS32MJ	—	—	Quad Differential Line Receiver	0	4	16	–55 to +125
—	—	DS26LS33ACN	Quad Differential Line Receiver	0	4	16	0 to +70
—	—	DS26LS33CN	Quad Differential Line Receiver	0	4	16	0 to +70
—	DS3486M	DS3486N	Quad Differential Line Receiver	0	4	16	0 to +70
—	—	DS88C20N	Dual CMOS Compatible Differential Line Receiver	0	2	14	0 to +70
—	DS9637ACM	DS9637ACN	Dual Differential Line Receiver	0	2	8	0 to +70
—	DS8921AM	DS8921AN	Differential Line Driver and Receiver Pair	1	1	8	0 to +70
DS8921ATJ	DS8921ATM	DS8921ATN	Differential Line Driver and Receiver Pair	1	1	8	–40 to +85
—	DS8921M	DS8921N	Differential Line Driver and Receiver Pair	1	1	8	0 to +70
—	DS8922AM	DS8922AN	Dual Tri-State Differential Line Driver and Receiver Pair	2	2	16	0 to +70
—	DS8922M	DS8922N	Dual Tri-State Differential Line Driver and Receiver Pair	2	2	16	0 to +70
—	DS8923AM	DS8923AN	Dual Tri-State Differential Line Driver and Receiver Pair	2	2	16	0 to +70
—	DS8923M	DS8923N	Dual Tri-State Differential Line Driver and Receiver Pair	2	2	16	0 to +70

TIA/EIA-485 (RS-485)

—	—	DS96172CN	Quad Differential Line Driver	4	0	16	0 to +70
DS96F172CJ	—	—	Quad High Speed Differential Line Driver	4	0	16	0 to +70
—	—	DS96174CN	Quad Differential Line Driver	4	0	16	0 to +70
DS96F174CJ	—	—	Quad High Speed Differential Line Driver	4	0	16	0 to +70
DS96F173CJ	—	—	Quad High Speed Differential Line Receiver	0	4	16	0 to +70
—	—	DS96175CN	Quad Differential Line Receiver	0	4	16	0 to +70
DS96F175CJ	—	—	Quad High Speed Differential Line Receiver	0	4	16	–55 to +125
—	DS3695AM	—	Multipoint Transceiver	1	1	8	0 to +70
—	DS3695ATM	—	Multipoint Transceiver	1	1	8	–40 to +85
—	—	DS3695N	Multipoint Transceiver	1	1	8	0 to +70
—	—	DS3695TN	Multipoint Transceiver	1	1	8	–40 to +85
DS36F95J	—	—	Differential Bus Transceiver	1	1	8	0 to +70
—	—	DS3696N	Multipoint Transceiver	1	1	8	0 to +70
—	—	DS3696TN	Multipoint Transceiver	1	1	8	–40 to +85
—	—	DS3697N	Multipoint Repeater	1	1	8	0 to +70
—	DS75176BM	DS75176BN	Multipoint Transceiver	1	1	8	0 to +70
—	DS75176BTM	DS75176BTN	Multipoint Transceiver	1	1	8	–40 to +85
DS96176CJ	—	DS96176CN	Differential Bus Transceiver	1	1	8	0 to +70
—	—	DS96177CN	Differential Bus Repeater	1	1	8	0 to +70

General Purpose

—	—	DS75113N	Dual Tri-State Differential Line Driver	2	0	16	0 to +70
—	—	DS8830N	Dual Differential Line Driver	2	0	14	0 to +70
DS1692J	—	—	Tri-State Differential Line Driver	2	0	16	–55 to +1250
—	—	DS3692N	Tri-State Differential Line Driver	2	0	16	0 to +70
—	—	DS75108N	Dual Line Receiver	0	2	14	0 to +70
—	DS3650M	—	Quad Differential Line Receiver	0	4	16	0 to +70

Clocks, Transceiver Logic and Logic Circuits

National Semiconductor®

Real Time Clocks

Mfr.'s Type		Description	No. of Leads	Temperature Range (°C)
PLCC	PDIP			
DP8570AV	DP8570AN	Timer Clock Peripheral	28	0 to +70
—	DP8571AN	Timer Clock Peripheral	24	0 to +70
DP8572AV	—	Real Time Clock	24	0 to +70
DP8573AV	DP8573AN	Real Time Clock	24	0 to +70

Futurebus+ and Backplane Transceiver Logic (BTL)

Mfr.'s Type			Description	No. of Leads	Temperature Range (°C)
SOIC	PLCC	PDIP			
—	—	DP8304BN	8-Bit Bidirectional Bus Transceiver	20	0 to +70
—	—	DS3662N	Quad High Speed Trapezoidal Bus	16	0 to +70
—	—	DS3862N	Octal Trapezoidal Transceiver	20	0 to +70
—	—	DS3890N	BTL Octal Trapezoidal Driver	20	0 to +70
—	DS3893AV	—	BTL Turbo Transceiver	20	0 to +70
DS3896M	—	DS3896N	BTL Octal Trapezoidal Transceiver	20	0 to +70
—	—	DS8640N	Quad 2-Input Receiver without Hysteresis	14	0 to +70
—	—	DS8641N	Quad 2-Input Receiver without Hysteresis	16	0 to +70
—	—	DS8834N	Quad Tri-State Transceiver FA	16	0 to +70
DS8837M	—	DS8837N	Hex Unified Bus Receiver	16	0 to +70
—	—	DS75160AN	IEEE-488 GPIB Transceiver	20	0 to +70
—	—	—	—	—	—

Logic

74AC and 74ACT Logic

Mfr.'s Type				Description	No. of Leads
74AC		74ACT			
PDIP	SOIC	PDIP	SOIC		
74AC00PC	74AC00SC	74ACT00PC	74ACT00SC	Quad 2-Input NAND Gate	14
74AC02PC	74AC02SC	74ACT02PC	74ACT02SC	Quad 2—Input NOR Gate	14
74AC04PC	74AC04SC	74ACT04PC	—	Hex Inverter	14
74AC08PC	74AC08SC	74ACT08PC	74ACT08SC	Quad 2-Input AND Gate	14
74AC109PC	74AC109SC	—	74ACT109SC	Dual JK Flip-Flop	16
74AC10PC	74AC10SC	—	74ACT10SC	Triple 3-Input NAND Gate	14
74AC11PC	74AC11SC	—	—	Triple 3-Input AND Gate	14
74AC125PC	74AC125SC	74ACT125PC	74ACT125SC	Quad Buffer w/3-State	14
74AC138PC	74AC138SC	74ACT138PC	74ACT138SC	1 Of 8 Decoder	16
74AC139PC	74AC139SC	74ACT139PC	74ACT139SC	Dual 1 Of 4 Decoder	16
74AC14PC	74AC14SC	—	—	Hex Schmitt Trigger	14
—	74AC151SC	74ACT151PC	—	8-Input Multiplexer	16
—	74AC153SC	—	—	Dual 4-Input Multiplexer	16
74AC157PC	74AC157SC	—	74ACT157SC	Quad 2-Input Multiplexer	16
—	—	74ACT158PC	74ACT158SC	Quad 2-Input Multiplexer	16
74AC161PC	74AC161SC	—	74ACT161SC	4-Bit Binary Counter Asynchronous	16
74AC163PC	74AC163SC	74ACT163PC	—	4-Bit Binary Counter Synchronous	16
74AC169PC	74AC169SC	—	—	4-Bit Binary Counter	16
74AC174PC	74AC174SC	74ACT174PC	74ACT174SC	Hex D Flip-Flop	16
—	74AC175SC	—	74ACT175SC	Quad D Flip-Flop	16
74AC191PC	74AC191SC	—	—	4-Bit Up/Down Counter	16
74AC240PC	74AC240SC	74ACT240PC	74ACT240SC	Octal Buffer/Driver	20
74AC244PC	74AC244SC	74ACT244PC	74ACT244SC	Octal Buffer/Driver	20
74AC245PC	74AC245SC	74ACT245PC	74ACT245SC	Octal Transceiver	20
—	—	74ACT251PC	74ACT251SC	8-Bit Multiplexer	16
—	—	74ACT253PC	74ACT253SC	Dual 4-Input Multiplexer	16
74AC257PC	74AC257SC	74ACT257PC	74ACT257SC	Quad 2-Input Multiplexer	16
—	—	74ACT258PC	74ACT258SC	Quad 2-Input Multiplexer	16
—	—	74ACT2708PC	—	64x9 FIFO Memory	28
74AC273PC	74AC273SC	—	—	Octal D Flip-Flop	20
74AC299PC	74AC299SC	74ACT299PC	74ACT299SC	Octal Shift/Storage	20
—	—	74ACT32PC	74ACT32SC	Quad 2-Input OR Gate	14
74AC373PC	74AC373SC	74ACT373PC	74ACT373SC	Octal D Latch	20
74AC374PC	74AC374SC	74ACT374PC	74ACT374SC	Octal D Flip-Flop	20
74AC377PC	—	—	—	Octal D Flip-Flop	20
—	—	—	74ACT399SC	Quad 2-Port Register	16
—	—	74ACT520PC	74ACT520SC	Comparator w/Resistor	20
74AC521PC	74AC521SC	74ACT521PC	74ACT521SC	8-Bit Comparator	20
—	—	74ACT534PC	—	Octal D Flip-Flop	20
—	74AC540SC	—	—	Octal Buffer/Line Driver	20
74AC541PC	74AC541SC	—	—	Octal Buffer/Line Driver	20
—	—	74ACT573PC	—	Octal D Latch	20
74AC574PC	74AC574SC	74ACT574PC	74ACT574SC	Octal D Flip-Flop	20
74AC646SPC	74AC646SC	—	—	Octal Transceiver/Register	24
—	—	74ACT715PC	74ACT715SC	Video Sync Generator	20
74AC74PC	74AC74SC	74ACT74PC	—	Dual D Flip-Flop	14
—	—	74ACT818SPC	—	Diagnostic/Pipeline Register	24
74AC821SPC	74AC821SC	74ACT821SPC	—	10-Bit D Flip-Flop	24
—	—	74ACT823SPC	74ACT823SC	9-Bit D Flip-Flop	24
—	—	74ACT825SPC	74ACT825SC	8-Bit D Flip-Flop	24
—	—	74ACT841SPC	74ACT841SC	10-Bit Transparent Latch	24
—	—	74ACT843SPC	74ACT843SC	9-Bit Transparent Latch	24
74AC86PC	74AC86SC	—	—	Quad 2-Input Exclusive OR	14
—	—	—	74ACT899QC*	9-Bit Bidirectional Latch	28

*PLCC Package.

DM74ALS and DM74LS Logic

Mfr.'s Type				Description	No. of Leads
74ALS		74LS			
SOIC	PDIP	SOIC	PDIP		
DM74ALS00AM	DM74ALS00AN	DM74LS00M	DM74LS00N	Quad 2-Input NAND Gate	14
—	DM74ALS02N	—	DM74LS02N	Quad 2-Input NOR Gate	14
DM74ALS04BM	DM74ALS04BN	DM74LS04M	DM74LS04N	Hex Inverter	14
—	DM74ALS05AN	—	DM74LS05N	Hex Inverter Open Collector	14
DM74ALS08M	DM74ALS08N	DM74LS08M	DM74LS08N	Quad 2-Input AND Gate	14
—	DM74ALS1000AN	—	—	Quad 2-Input Inverting Buffer	14
—	DM74ALS109AN	—	—	Dual JK Flip-Flop	16
DM74ALS10AM	DM74ALS10AN	—	DM74LS10N	Triple 3-Input NAND Gate	14
—	DM74ALS11AN	—	—	Triple 3-Input AND Gate	14
—	—	DM74LS123M	DM74LS123N	Dual One Shot	16
DM74ALS125M	DM74ALS125N	DM74LS125AM	DM74LS125AN	Quad Tri-State Buffer	14
DM74ALS133M	—	—	—	13-Input NAND Gate	16
DM74ALS138M	DM74ALS138N	—	DM74LS138N	Expandable 3/8 Decoder	16
—	—	—	DM74LS139N	Expandable Dual 2/4 Decoder	16
DM74ALS14M	DM74ALS14N	—	DM74LS14N	Hex Schmitt Trigger	14
—	—	—	DM74LS154N	4/16 Demultiplexer	24
—	—	—	DM74LS156N	Dual 2/4 Demultiplexer O.C.	16
—	—	—	DM74LS157N	Quad 2/1 Multiplexer	16
—	DM74ALS161BN	DM74LS161AM	DM74LS161AN	Presettable Synchronous Binary Counter	16
—	DM74ALS163BN	—	DM74LS163AN	Presettable Synchronous Binary Counter	16
—	—	—	DM74LS164N	8-Bit Shift Register	14
—	—	—	DM74LS165N	8-Bit Shift Register	16
—	DM74ALS174N	DM74LS174M	DM74LS174N	Hex D Flip-Flop	16
—	—	—	DM74LS175N	Quad D Flip-Flop	16
—	—	—	DM74LS193N	Sync Up/Down Binary Counter	16
—	DM74ALS20AN	—	—	Dual 4-Input NAND Gate	14
—	—	—	DM74LS221N	Dual One Shot(Schmitt Trigger)	16
DM74ALS240AWM	DM74ALS240AN	DM74LS240WM	DM74LS240N	Tri-State Octal Line Driver	20
—	DM74ALS241AN	—	—	Octal Inv Bus/Line Driver	20
DM74ALS244AWM	DM74ALS244AN	DM74LS244WM	DM74LS244N	Tri-State Octal Line Driver	20
DM74ALS245AWM	DM74ALS245AN	DM74LS245WM	DM74LS245N	Tri-State Octal Transcender	20
—	DM74ALS253N	—	—	Tri-State Dual 4/1 Multiplexer	16
DM74ALS257M	DM74ALS257N	—	DM74LS257BN	Tri-State Quad 2/1 Multiplexer	16
—	DM74ALS258N	—	—	Tri-State Quad 2/1 Multiplexer	16
—	—	—	DM74LS259N	8-Bit Addressable Latch	16
—	DM74ALS273N	DM74LS273WM	DM74LS273N	8-Bit D-Type Flip-Flop	20
—	DM74ALS27N	—	—	Triple 3-Input NOR Gate	14
—	DM74ALS30AN	—	—	8-Input NAND Gate	14
DM74ALS32M	DM74ALS32N	—	DM74LS32N	Quad 2-Input OR Gate	14
—	DM74ALS373N	DM74LS373WM	DM74LS373N	Tri-State Octal D Flip-Flop	20
DM74ALS374WM	DM74ALS374N	DM74LS374WM	DM74LS374N	Tri-State Octal D Flip-Flop	20
	—	—	DM74LS377N	8-Bit D-Type Flip-Flop	20
—	DM74ALS38AN	—	DM74LS38N	Quad 2-Input NAND Buffer O.C.	14
—	—	DM74LS393M	DM74LS393N	Dual 4-Bit Binary Counter	14
—	—	—	DM74LS503N	8-Bit Successive Approximation Register	16
DM74ALS520WM	DM74ALS520N	—	—	Octal Comparator	20
DM74ALS521WM	—	—	—	Octal Comparator	20
DM74ALS5245WM	DM74ALS5245N	—	—	Octal Bus Trans w/Schmidt Trigger	20
—	DM74ALS533N	—	—	Inverting Octal D Latch	20
—	—	—	DM74LS534N	Octal D-Type Flip-Flop	20
DM74ALS541WM	DM74ALS541N	—	—	Octal Buffer/Line Driver	20
—	—	—	DM74LS573N	Octal D-Type Flip-Flop	20
DM74ALS574AWM	DM74ALS574AN	—	DM74LS574N	Octal D-Type Flip-Flop	20
—	DM74ALS576AN	—	—	Inverting Octal D Flip-Flop	20
DM74ALS640AWM	DM74ALS640AN	—	—	Octal Bus Transceiver	20
DM74ALS645AWM	DM74ALS645AN	—	—	Tri-State Octal Transceiver	20
DM74ALS646WM	DM74ALS646NT	—	—	Octal Bus Transceiver	24
DM74ALS648WM	DM74ALS648NT	—	—	Octal Bus Transceiver	24
DM74ALS652WM	—	—	—	Octal Bus Transceiver	24
DM74ALS74AM	DM74ALS74AN	DM74LS74AM	DM74LS74AN	Dual D Flip-Flop	14
—	DM74ALS808AN	—	—	Hex 2-Input AND Line Driver	20
—	—	—	DM74LS85N	4-Bit Magnitude Comparator	20
—	DM74ALS86N	—	DM74LS86N	Quad 2-Input Exclusive OR Gate	14

Logic (continued)

DM74AS Logic

Mfr.'s Type		Description	No. of Leads
SOIC	PDIP		
DM74AS00M	DM74AS00N	Quad 2-Input NAND Gate	14
DM74AS02M	DM74AS02N	Quad 2-Input NOR Gate	14
DM74AS04M	DM74AS04N	Hex Inverter	14
DM74AS08M	DM74AS08N	Quad 2-Input AND Gate	14
DM74AS1000AM	DM74AS1000AN	Quad 2-Input NAND Driver	14
DM74AS1004AM	DM74AS1004AN	Hex Inverting Driver	14
—	DM74AS1032AN	Quad 2-Input OR Driver	14
DM74AS1034AM	—	Hex Non-Inverting Driver	14
DM74AS10M	DM74AS10N	Triple 3-Input NAND Gate	14
DM74AS157M	DM74AS157N	Quad 2/1 Data Sel/Multiplexer	16
—	DM74AS20N	Dual 4-Input NAND Gate	14
—	DM74AS21N	Dual 4-Input AND Gate	14
DM74AS240WM	DM74AS240N	Octal Inv Bus/Line Driver	20
DM74AS244WM	DM74AS244N	Octal Bus/Line Driver	20
DM74AS245WM	DM74AS245N	Tri-State Octal Transceiver	20

Mfr.'s Type		Description	No. of Leads
SOIC	PDIP		
—	DM74AS257N	Quad Tri-State 2/1 Multiplexer	16
DM74AS258M	DM74AS258N	Quad Tri-State 2/1 Multiplexer	16
—	DM74AS27N	Triple 3-Input NOR Gate	14
DM74AS286M	DM74AS286N	9-Bit Parity Generator	14
—	DM74AS30N	8-Input NAND Gate	14
DM74AS32M	DM74AS32N	Quad 2-Input OR Gate	14
DM74AS373WM	DM74AS373N	Tri-State Octal Latch	20
—	DM74AS374N	Tri-State Octal D Flip-Flop	20
—	DM74AS573N	Octal D-Type Latch	20
—	DM74AS574N	Octal D-Type Flip-Flop	20
—	DM74AS640N	Tri-State Octal Transceiver	20
DM74AS646WM	DM74AS646NT	Octal Bus Transceiver	24
—	DM74AS648NT	Octal Bus Transceiver	24
DM74AS804BWM	DM74AS804BN	Hex 2-Input NAND Line Driver	20
—	DM74AS874NT	Octal D-Type Flip-Flop	24

MM74C Logic

—	MM74C00N	Quad Two-Input NAND Gate	14
—	MM74C02N	Quad Two-Input NOR Gate	14
—	MM74C08N	Quad 2-Input AND Gate	14
—	MM74C10N	Triple 3-Input NAND Gate	14
—	MM74C154N	4 Line To 16 Line Decoder	24
—	MM74C157N	Quad 2-Input Multiplexer	16
—	MM74C164N	8-Bit Serial In/Parallel Out Shift Register	14
—	MM74C221N	Dual Monostable Multivibrator	16
—	MM74C240N	Tri-State Octal Buffers	20
—	MM74C244N	Tri-State Octal Buffers	20
—	MM74C32N	Quad 2-Input OR Gate	14
—	MM74C373N	Octal Flow-Through Latch 3-State	20
—	MM74C374N	Octal D Flip-Flop 3-State	20

—	MM74C42N	BCD To Decimal Decoder	16
MM74C74M	MM74C74N	Dual D Flip-Flop	14
—	MM74C85N	4-Bit Comparator	16
—	MM74C902N	Hex Inverting Buffer	14
—	MM74C905N	12-Bit CMOS Successive Approximation Register	24
MM74C906M	MM74C906N	Open Drain Hex Buffer-Active Pull	14
—	MM74C911N	Display Controller	28
—	MM74C912N	Display Controller	28
—	MM74C914N	Hex Schmitt Trigger Inverter	14
—	MM74C922N	16 Key Keyboard Encoder	18
—	MM74C923N	20 Key Keyboard Encoder	20
—	MM74C925N	4-Digit Counter w/Multiplexer D Segment Driver	16
—	MM74C926N	4-Digit Counter w/Multiplexer D Segment Driver	18

74F Logic

74F00SC	74F00PC	Quad 2-Input NAND	14
—	74F02PC	Quad 2-Input NOR	14
74F04SC	74F04PC	Hex Inverter	14
74F08SC	74F08PC	Quad 2-Input AND	14
—	74F109PC	Dual JK Flip-Flop	16
—	74F10PC	Triple 3-Input NAND	14
—	74F112PC	Dual JK Flip-Flop	16
—	74F113PC	Dual JK Flip-Flop	16
74F11SC	74F11PC	Triple 3-Input AND	14
74F125SC	74F125PC	Quad Buffer	14
74F138SC	74F138PC	1 of 8 Decoder/Demux	16
74F139SC	74F139PC	Dual 1/4 Decoder/Demux	16
—	74F148PC	8-Bit Priority Encoder	16
—	74F153PC	Dual 4-Input Mux	16
—	74F157APC	Quad 2-Input Mux	16
—	74F158APC	Quad 2-Input Mux	16
—	74F161APC	4-Bit Binary Counter, Asynchronous	16
74F163ASC	74F163APC	4-Bit Binary Counter	16
74F169SC	74F169PC	Up/Down Binary Counter	16
—	74F174PC	Hex D Flip-Flop	16
74F175SC	74F175PC	Quad D Flip-Flop with Clear	16
—	74F181SPC	ALU	24
74F189SC	74F189PC	64-Bit RAM, 3-State	16
74F191SC	74F191PC	Up/Done Binary Counter	16
—	74F193PC	Up/Down Binary Counter	16
—	74F20PC	Dual 4-Input NAND	14
—	74F219PC	64-Bit RAM, 3-State	16
74F2244SC	74F2244PC	Octal Buffer with 25 Ohm Series Resistors	2
74F240SC	74F240PC	Octal Inverting Bus Driver	20
—	74F241PC	Octal Bus/Line Driver	20
74F244SC	74F244PC	Octal Bus/Line Driver	20
74F245SC	74F245PC	Octal Bus Transceiver	20
—	74F257APC	Quad 2-Input Mux	16
74F269SC	74F258APC	Quad 2-Input Mux	16
—	74F269SPC	8-Bit Bidirectional Counter	24
—	74F273PC	Octal D Flip-Flop	20
—	74F280PC	9-Bit Parity Generator	20
—	74F283PC	4-Bit Binary Full Adder	14
74F299SC	74F299PC	Shift/Storage Register	20

74F32SC	74F32PC	Quad 2-Input OR Gate	14
—	74F365PC	Hex Buffer/Driver	16
74F373SC	74F373PC	Octal D Latch	20
74F374SC	74F374PC	Octal D Flip-Flop	20
—	74F382PC	ALU	20
74F399SC	74F399PC	Quad 2-Port Register	16
—	74F401PC	CRC Generator/Checker (9401 Type)	14
74F521SC	74F521PC	8-Bit Identity Comparator	20
74F524SC	74F524PC	8-Bit Registered Comparator	20
—	74F534PC	Inverting Octal D Register	20
—	74F538PC	1 of 8 Decoder, 3-State	20
74F541SC	74F541PC	Octal Buffer/Line Driver	20
74F543SC	74F543PC	Octal Bidirectional Latch	24
74F544SC	74F543SPC	Octal Bidirectional Latch	24
—	74F544SPC	Octal Bidirectional Latch	24
—	74F545PC	Octal Bus Transceiver	20
—	74F569PC	4-Bit Binary Counter, 3-State	20
74F573SC	74F573PC	Octal D-Type Latch	20
74F574SC	—	Octal D Flip-Flop	20
—	74F579PC	8-Bit Bidirectional Binary Counter	20
—	74F620PC	Invert Octal Transceiver	20
—	74F623PC	Octal Invert Transceiver	20
74F632VC*	—	32-Bit Error Detection/Correction Circuit	52
—	74F640PC	Invert Octal Transceiver	20
74F646BSC	74F646BSPC	Octal Bus Transceiver	24
74F646SC	74F646SPC	Octal Bus Transceiver	24
—	74F64PC	AND/OR-Invert Gate	14
74F652SC	74F652SPC	Octal Bus Transceiver /Register	24
74F657SC	74F657SPC	Octal Transceiver w/Parity	24
—	74F675ASPC	16-Bit Serial In/Parallel Out Shift Register	24
74F74SC	—	Dual D-Type Flip	14
74F779SC	74F779PC	8-Bit Bidirectional Binary Counter	16
74F821SC	74F794PC	Read Back Register	20
—	74F821SPC	10-Bit D Flip-Flop	20
74F825SC	74F825SPC	8-Bit Dual Flip-Flop	24
74F827SC	—	10-Bit Buffer/Line Driver	24
—	74F841SPC	10-Bit Transparent Latch	24
74F86SC	74F86PC	Quad Excl OR Gate	14
74F899QC*	—	Transceiver with Parity Generator/Checker	28

*PLCC Package.

CD4000 CMOS Logic

CD4001BCM	CD4001BCN	Buffered Quad 2-Input NOR Gate	14
—	CD4001CN	Quad 2-Input NOR Gate	14
CD40106BCM	CD40106BCN	Hex Schmitt Trigger	14
CD4011BCM	—	Buffered Quad 2-Input NAND Gate	14
—	CD4013BCN	Dual D Flip/Flop	14
—	CD4014BCN	8-Bit Static Shift Register	16
—	CD4015BCN	Dual 4-Bit Static Register	16
CD4016BCM	CD4016BCN	Quad Bilateral Switch	14
—	CD40174BCN	Hex D Flip-Flop	16
—	CD4017BCN	Decade Counter/Divider	16
—	CD40193BCN	Binary Up/Down Counter	16
—	CD4020BCN	14-Stage Ripple-Carry Binary Counter	16
CD4021BCM	CD4021BCN	8-Bit Static Shift Register	16
—	CD4023BCN	Buffered Triple 3 Input NAND Gate	14
CD4024BCM	CD4024BCN	7-Bit Binary Counter	14
—	CD4027BCN	Dual J-K Flip/Flop	16
CD4040BCM	CD4040BCN	12-Bit Binary Ripple Counter	16
—	CD4044BCN	Quad Tri-State NAND R/S Latch	16
CD4046BCM	CD4046BCN	Phase Locked Loop	16

CD4047BCM	CD4047BCN	Monostable Multivibrator	14
CD4049UBCM	CD4049UBCN	Hex Inverting Buffer	16
—	CD4050BCN	Hex Buffer	16
CD4051BCM	CD4051BCN	Single 8-Channel Multiplexer	16
—	CD4052BCN	Differential 4-Channel Multiplexer	16
CD4053BCM	CD4053BCN	Triple 2-Channel Multiplexer	16
CD4060BCM	CD4060BCN	14-Bit Counter Osc	16
CD4066BCM	CD4066BCN	Quad Bilateral Switch	14
—	CD4071BCN	Buffered Quad 2-Input OR Gate	14
—	CD4081BCN	Buffered Quad 2-Input AND Gate	14
CD4093BCM	CD4093BCN	Quad 2-Input NAND Schmitt Trigger	14
—	CD4099BCN	8-Bit Addressable Latch	16
—	CD4503BCN	Tri-State Hex Buffer	16
—	CD4514BCN	4-Bit Latch 4 to 16 Line Decoder	24
—	CD4515BCN	4-Bit Latch 4 to 16 Line Decoder	24
—	CD4528BCN	Dual Monostable Multivibrator	16
—	CD4538BCN	Dual Monostable Multivibrator	16
—	CD4541BCN	Programmable Timer	14
—	CD4724BCN	8-Bit Addressable Latch	16

Quick Cross

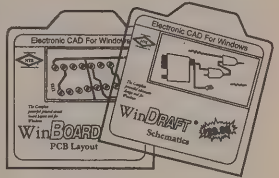
► **NTE's Computer Based Cross Reference Disk for Semiconductors and Relays**

NTE Electronics, Inc. has taken its entire Semiconductor and Relay Cross References and put them on IBM PC compatible diskettes. These disks, once loaded into your PC, will only take up a little more than 2 Megabytes of disk space. You will have instant access to over 250,000 Semiconductor Cross References and 22,000 Relay Cross References. Minimum system requirements are an IBM PC compatible computer with 640K RAM, 5 MB hard disk.

935-0003. QC-001. 5¼" (1.2 M)	**EACH 7.00**
935-0008. QC-002. 3½" (7.20 K)	**EACH 12.00**
935-0006. QC-004. 3½" (7.20 K)	**EACH 8.00**
935-0009. QC-005. 3½" (1.44 M) for Windows	**EACH 10.00**

WinBoard and WinDraft for Windows

— NEW —



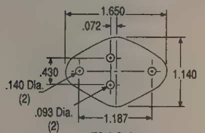
WinBoard has everything you need for high-speed circuits, analog designs and dense SMT boards. Add in point-and-click editing, powerful copper pour, routing and a library of over 700 module footprints-plus a graphical editor for customer jobs — and you can see why WinBoard is so hot.

WinDraft is the ideal front-end complement to WinBoard. In just minutes, WinDraft can turn your PC into an electronic drafting table. You can do it all — from wiring and drawing to printing and finishing. And WinDraft makes your life even easier with a full graphical library editor, Bill of Materials (BOM), a clean-up tool and on-line help for troubleshooting.

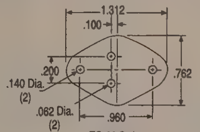
The WD350 and WB350 include an 85-page getting started and tutorial manual for the programs.

935-0060. WD01*. WinDraft 200 pin version	**EACH 29.95**
935-0065. WB01*. WinBoard 200 pin version	**EACH 29.95**
935-0061. WD350. WinDraft 350 pin version	**EACH 99.95**
935-0066. WB350. WinBoard 350 pin version	**EACH 99.95**

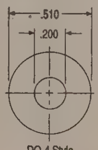
*Maximum of 200 pins. Currently not available for Macintosh.



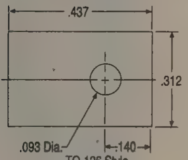
TO-3 Style
TP0001



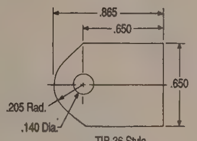
TO-66 Style
TP0002



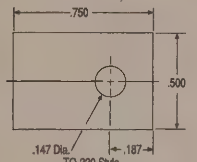
DO-4 Style
TP0003



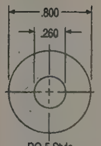
TO-126 Style
TP0004



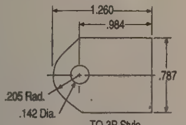
TIP-36 Style
TP0005



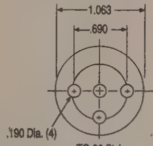
TO-220 Style
TP0006



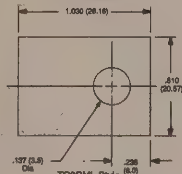
DO-5 Style
TP0007



TO-3P Style
TP0008



TO-36 Style
TP0009



TO3PML Style
TP0010

Thermo-Pads

NTE's THERMO-PADS do away with the old fashioned and messy mica wafer and conductive grease method of mounting power semiconductors. These thermally conductive insulators offer low heat transfer resistance while still providing high electrical isolation between the parts of the assembly. The elastomeric material combines the electrical isolation of rigid insulators with the ability to conform to rough surfaces and reduce contact resistance in much the same manner as thermal greases. Proper selection and use of these thermo-pads results in a securely-mounted power semiconductor and minimum resistance to the the heat transfer between it and the heat sink.

Typical Properties
Color: .009 Inch Thickness — Gray; Test Method — Visual. **Breaking Strength, Lbs./Inch:** .009 Inch Thickness — 100; Test Method — ASTM D 1458. **Elongation, Percent:** .009 Inch Thickness — 4; Test Method — ASTM D 412. **Volume Resistance Ohm Metre Minimum Normal:** .009 Inch Thickness — 1.0 × 10^{13} , Test Method — ASTM D 257. **Volume Resistance Ohm Metre Minimum Moist:** .009 Inch Thickness — 1.5 × 10^{10}, Test Method — ASTM D 257. **Breakdown Voltage, Minimum Normal:** .009 Inch Thickness — 5000; Test Method — ASTM D 149. **Moist:** .009 Inch Thickness — 2500; Test Method — ASTM D 149. **Dielectric Constant 1000 Cups (HZ):** .009 Inch Thickness — 5.5; Test Method — ASTM D 150. **Continuous Use Temp. °C:** .009 Inch Thickness –60 to +180. **Thermal Conductance W/m-k:** .009 Inch Thickness — 0.7. **Thermal Vacuum Weight Loss Percent (TML) Maximum As Manufactured:** .009 Inch Thickness — .40; Test Method — NASA. **Thermal Vacuum Weight Loss Percent (TML) Maximum Post Cure 24 Hrs @ 400°F:** .009 Inch Thickness — .25; Test method — SP-R-0022A. **Volatile Condensable Material, Percent, Maximum (CVCM) As Manufactured:** .009 Inch Thickness — .11; Test Method — NASA. **Volatile Condensable Material, Percent, Maximum (CVCM) Post Cure 24 Hrs.@ 400°F:** .009 Inch Thickness — .07; Test Method — SP-R-0022A. **Hardness, Shore A:** .009 Inch Thickness — 85; Test Method — ASTM D 2240. **Specific Gravity:** .009 Inch Thickness — 2.0-2.1. **Thickness (Expressed In Inches):** .009 Inch Thickness — .009 (+.002, –.001). **Thermal Resistance (TO-3 Transistor) °C/Watt:** .009 Inch Thickness — .50.

935-6510. TP0001	**PER PKG./5 1.46**
935-6512. TP0002	**PER PKG./5 1.22**
935-6514. TP0003	**PER PKG./5 .88**
935-6516. TP0004	**PER PKG./5 .74**
935-6518. TP0005	**PER PKG./5 1.10**
935-6520. TP0006	**PER PKG./5 1.07**
935-6522. TP0007	**PER PKG./5 1.10**
935-6524. TP0008	**PER PKG./5 1.47**
935-6526. TP0009	**PER PKG./5 1.47**
935-6527. TP0010	**PER PKG./5 1.99**

Insulator Kits

Each Kit Includes Mica insulator and nylon bushings.

Stock No.	Mfr.'s Type	Description	EACH
935-9413	NTE413	Insulator Kit for TO-3 Style Package	**1.78***
935-9414	NTE414	Insulator Kit for TO-36 Style Package. Includes Lock Washer, Solder Lug, Nut and Plastic Insulating Tube	**1.78***
935-9415	NTE415	Insulator Kit for TO-66 Style Package.	**1.72***
935-9422	NTE422	Insulator Kit for TO-220 (Plastic TO-66) Style Package	**1.74***
935-9438	NTE438	Insulator Kit for DO-4 and TO-64 Stud Package. Includes Flat Washer, Solder Lug and Nut	**.64**
935-9439	NTE439	Insulator Kit for DO-5 and TO-48 Stud Package. Includes Flat Washer, Lock Washer, Solder Lug and Nut	**.68**

*2 Per Package.

Bi-Polar Transistors

Stock No.	Mfr.'s Type	Polarity and Material	Description and Application	Case Style	Maximum Collector Current Amps	Maximum Breakdown Voltage			Typical Forward Current Gain	Maximum Collector Power Dissipation	Typical Freq. in MHz
						Collector to Base	Collector to Emitter	Emitter to Base			
					I_C	BV_{CBO}	BV_{CEO}	BV_{EBO}	h_{FE}	P_D Watts	f_T
935-6006	36	NPN-Si	AF Power Amp, High Current Switching (Compl to NTE37)	TO3P	12.00	160	140	6.0	100	100.000	15.0
935-6008	37	PNP-Si	AF Power Amp, High Current Switching (Compl to NTE36)	TO3P	12.00	160	140	6.0	100	100.000	15.0
935-6500	39	PNP-Si	Line Operated Series Pass and Switching Reg. (Compl to NTE157)	TO126	0.50	300	300	3.0	92	20.000	—
935-6010	46	NPN-Si	Darlington, Gen Purpose Amp, Preamp, Driver	TO92	0.50	100	100	12.0	10,000 Min.	0.625	200.0
935-6012	51	NPN-Si	High Voltage/Speed Switching Switchmode Applications, tf = 0.4µS Typ	TO220	4.00	700	400	9.0	30	75.000	4.0 Min.
935-6014	53	NPN-Si	High Voltage/Speed Switching Switchmode Applications, tf = 0.7µS Typ	TO3	15.00	850	400	9.0	25	175.000	6.0 Min.
935-6016	54	NPN-Si	High Freq. Driver for Audio Amplifiers (Compl to NTE55)	TO220	8.00	150	150	5.0	100	50.000	30.0 Min.
935-6018	55	PNP-Si	High Freq. Driver for Audio Amplifiers (Compl to NTE54)	TO220	8.00	150	150	5.0	120	50.000	30.0 Min.
935-0085	85	NPN-Si	General Purpose Amp, Hi-Fi Drivers	TO92	0.40	70	70 (CES)	4.0	120 Min.	0.625	200.0 Min.
935-6024	89	NPN-Si	Color TV Horizontal Output with Internal Damper Diode tf = 1.0µS Max	TO3	7.00	1500	600	6.0	8	50.000	—
935-6026	90	NPN-Si	General Purpose High Gain Amp (Compl to NTE91)	Giant TO92	0.05	120	120	5.0	400 Min.	0.750	350.0
935-6028	91	NPN-Si	General purpose High Gain Amp (Compl to NTE90)	Giant TO92	0.05	120	120	5.0	400 Min.	0.750	150.0
935-6032	94	NPN-Si	High Voltage Inverter, Converter, Regulator and Switching Circuits	TO3	5.00	300	300	5.0	40	100.000	2.5 Min.
935-0098	98	NPN-Si	HV Darlington Power Amp, Fast Sw	TO3	20.00	700	500	8.0	40 Min.	175.000	—
935-6034	100	PNP-Ge	Oscillator, Mixer for AM Radio, Medium Speed Switch (Compl to NTE101)	TO5	0.30	25	20 (CER)	12.0	40 at 455 KHz	0.150	5.0
935-6036	101	NPN-Ge	Oscillator, Mixer for AM Radio, Medium Speed Switch (Compl to NTE100)	TO5	0.30	25	20 (CER)	20.0	40 at 455 KHz	0.150	5.0
935-0715	102	PNP-Ge	Driver, Power Output, Switch (Compl to NTE103)	TO5	0.30	30	16 (CER)	25.0	100	0.150	—
935-0720	102A	PNP-Ge	Medium Power Amplifier (Compl to NTE103A)	TO1	1.00	32	32 (CES)	10.0	120	0.650	—
935-6502	103	NPN-Ge	Power Output Driver, Switch (Compl to NTE102)	TO5	0.30	30	16 (CER)	25.0	115	0.150	—
935-6038	103A	NPN-Ge	Medium Power Amplifier (Compl to NTE102A)	TO1	1.00	32	32 (CES)	10.0	110	0.650	—

For quantity pricing or parts not listed, contact the Allied facility nearest you at 1-800-433-5700. *Tc = 25°C.

Bi-Polar Transistors — Continued

Stock No.	Mfr.'s Type	Polarity and Material	Description and Application	Case Style	Maximum Collector Current Amps	Maximum Breakdown Voltage			Typical Forward Current Gain	Maximum Collector Power Dissipation	Typical Freq. in MHz
						Collector to Base	Collector to Emitter	Emitter to Base			
					I_C	BV_{CBO}	BV_{CEO}	BV_{EBO}	h_{FE}	P_D Watts	f_T
935-0755	107	NPN-Si	UHF Oscillator for Tuner, High Frequency	T092	0.05	30	12	3.0	75	0.200	1000.0
935-0760	108	NPN-Si	RF-IF Amp and Osc	T0106, T092	0.05	30	15	2.0	20 Min.	0.625	800.0
935-0840	123A	NPN-Si	Amp, Audio to VHF Freq., Switch	T018	0.80	75	40	6.0	200	0.400	300.0 Min.
935-0841	123AP	NPN-Si	Amp, Audio to VHF Freq., Driver (Compl to NTE159)	T092	0.60	75	40	6.0	200	0.625	300.0 Min.
935-0845	124	NPN-Si	High Voltage Power Output Line Operated Equipment	T066	0.15	300	300	5.0	100	20.000	10.0
935-0855	126	PNP-Ge	RF-IF Amp, TV, Radio, High Speed Switch	T018	0.20	25	18 (CES)	1.0	60	0.200	250.0
935-6040	127	PNP-Ge	Amp, Power Output, Horizontal and Vertical Deflection	T03	10.00	320	320 (CES)	2.0	15	56.000	1.0
935-0865	128	NPN-Si	Audio Output, Video, Driver (Compl to NTE129)	T039	1.00	120	80	7.0	90 Min.	1.000	100.0 Min.
935-0870	129	PNP-Si	Audio Output, Video, Driver (Compl to NTE128)	T039	1.00	90	80	7.0	90 Min.	1.000	150.0 Min.
935-0875	130	NPN-Si	Audio Power Amp, Medium Speed Switch (Compl to NTE219)	T03	15.00	100	60	7.0	45	115.000	3.0
935-0995	152	NPN-Si	Audio Power Amp, Medium Speed Switch (Compl to NTE153)	T0220	7.00	60	60	5.0	60	50.000	10.0
935-1000	153	PNP-Si	Audio Power Amp (Compl to NTE152)	T0220	7.00	60	60	5.0	60	50.000	10.0
935-6042	154	NPN-Si	High Voltage Video Output Ccb = 2.5 pf @ 2.0 V	T039	0.20	300	300	7.0	100	1.000	80.0
935-1020	157	NPN-Si	Audio Power Amp, High Voltage Converter (Compl to NTE39)	T0126	0.50	325	300	6.0	90	20.000	10.0 Min.
935-1025	158	PNP-Ge	Audio Power Amp	T01	1.00	32	32	10.0	90	1.400	1.5
935-1030	159	PNP-Si	Low Noise Audio Amp, Switch NF = 3dB @ 1 KHz (Compl to NTE123AP)	T092	1.00	80	80	5.0	180	0.625	200.0
935-1035	160	PNP-Ge	RF-IF Amp, FM Mixer/Osc	T072	0.01	30	20 (CES)	0.3	50	0.100	550.0
935-1040	161	NPN-Si	VHF-UHF Amp, Mixer/Osc	T072	0.05	45	45 (CES)	3.0	60	0.200	800.0
935-1045	162	NPN-Si	TV Vertical Deflection	T03	10.00 Peak	500	300	5.0	20 Min.	100.000	—
935-1060	165	NPN-Si	Color TV Horizontal Output	T03	6.00	1500	1400 (CES)	5.0	8 Min.	50.000	3.0
935-1105	171	NPN-Si	Audio-Video Amp, Reg	T0202	0.10	300	300	5.0	30 Min.	6.250	75.0
935-6046	172A	NPN-Si	Darlington Pre-Amp, Medium-Speed Switch	T098/T092	0.30	40	40	12.0	7,000 Min.	0.400	60.0 Min.
935-1110	175	NPN-Si	Linear and Audio Power Amp	T066	3.00	500	300 (CER)	6.0	60	40.000	15.0
935-0179	179	PNP-Ge	Audio Power Amp High Current Switch	T03	25.00	90	90 (CEX)	2.0	65 Min.	106.000	0.5 Min.
935-6048	180	PNP-Si	High Power Audio Amp (Compl to NTE181)	T03	30.00	100	100 (CER)	4.0	25 Min.	200.000	2.0 Min.
935-0181	181	NPN-Si	High Power Audio Amp (Compl to NTE180)	T03	30.00	100	100 (CER)	4.0	25 Min.	200.000	2.0 Min.
935-1155	184	NPN-Si	Audio Power Amplifier and Switching (Compl to NTE185)	T0126	4.00	80	80	5.0	25 Min.	40.000	2.0 Min.
935-6052	185	PNP-Si	Audio Power Amplifier and Switching (Compl to NTE184)	T0126	4.00	80	80	5.0	25 Min.	40.000	2.0 Min.
935-1165	186	NPN-Si	General Purpose Output and Driver Stages of Audio Amps (Compl to NTE187)	T0202	3.00	70	60	5.0	100 Min.	12.500	50.0
935-6054	186A	NPN-Si	Medium Power Audio Amplifier	T0202M	3.00	40	50	5.0	120	10.000	150.0
935-6056	187	PNP-Si	General Purpose Output and Driver Stages of Audio Amplifiers (Compl to NTE186)	T0202	3.00	70	60	5.0	100 Min.	12.500	50.0
935-6060	188	NPN-Si	High Voltage Amplifier and Driver (Compl to NTE189)	T0202N	2.00	80	80	4.0	60 Min.	10.000	150.0
935-6504	189	PNP-Si	High Voltage Amp and Driver (Compl to NTE188)	T0202N	2.00	80	80	4.0	60 Min.	10.000	100.0
935-1205	192	NPN-Si	Audio Power Output (Compl to NTE193)	T092HS	1.00	70	70 (CES)	5.0	150	1*, .7	120.0 Min.
935-6068	193	PNP-Si	Audio Power Output (Compl to NTE192)	T092HS	1.00	70	70 (CES)	5.0	150	1*, .7	120.0 Min.
935-6070	194	NPN-Si	Gen Purpose HV Amp, Hi-Speed Sw	T092	0.60	180	160	6.0	100	.310	100.0 Min.
935-1235	196	NPN-Si	Audio Power Output and Medium Power Switching (Compl NTE197)	T0220	7.00	90	80 (CER)	5.0	20 Min.	50*, 1.8	4.0
935-6072	197	PNP-Si	Audio Power Output and Medium Power Switching (Compl NTE196)	T0220	7.00	90	80 (CER)	5.0	20 Min.	50*, 1.8	4.0
935-1249	198	NPN-Si	High Voltage Audio Output	T0220	1.00	500	500 (CES)	5.0	80	40*, 2	10.0 Min.
935-1250	199	NPN-Si	Lo-Noise, Hi-Gain Pre-Amp (Compl to NTE234)	T098/T092	0.10	70	50	5.0	400 Min.	.360	90.0 Min.
935-6076	211	PNP-Si	General Purpose Output and Driver (Compl to NTE210)	T0202	1.00	90	75	5.0	120 Min.	6.25*, 1.33	150.0 Min.
935-6078	219	PNP-Si	General Purpose Amplifier and Switch (Compl to NTE130)	T03	15.00	100	70 (CER)	7.0	20 Min.	115.000	2.5 Min.
935-6082	234	PNP-Si	Lo-Noise, Hi-Gain AF Pre-Amp (Compl to NTE199)	T092	0.05	60	50	5.0	400 Min.	0.200	80.0 Min.
935-6084	235	NPN-Si	Final RF Power Output (Po 5 W, 50 MHz)	T0220	3.00 Pulse	65	65 (CER)	4.0	80	12.000	300.0
935-6086	236	NPN-Si	Final RF Power Output, CB (Po 13 W, 50 MHz)	T0220	8.00 Pulse	70	70 (CER)	4.0	20 Min.	25.000	150.0
935-6088	238	NPN-Si	Color TV Horizontal Output	T03	8.00	1500	1500 (CEX)	5.0	8	100.000	—
935-6096	249	NPN-Si	Darlington Power Amp (Compl to NTE250)	T03	16.00	100	100	5.0	4,000	150.000	—
935-6506	250	PNP-Si	Darlington Power Amp (Compl to NTE249)	T03	16.00	100	100	5.0	4,000	150.000	—
935-6100	253	NPN-Si	Darlington Power Amp (Compl to NTE254)	T0126	4.00	80	80	5.0	2,500	40.000	—
935-6102	254	PNP-Si	Darlington Power Amp (Compl to NTE253)	T0126	4.00	80	80	5.0	2,500	40.000	—
935-6104	261	NPN-Si	Darlington Power Amp (Compl to NTE262)	T0220	8.00	100	100	5.0	1,000 Min.	65.000	—
935-6106	262	PNP-Si	Darlington Power Amp (Compl to NTE261)	T0220	8.00	100	100	5.0	1,000 Min.	65.000	—
935-6108	263	NPN-Si	Darlington Power Amp (Compl to NTE264)	T0220	10.00	100	100	5.0	1,000 Min.	65.000	—
935-9377	264	PNP-Si	Darlington Power Amp (Compl to NTE263)	T0220	10.00	100	100	5.0	1,000 Min.	65.000	—
935-6110	265	NPN-Si	Darlington Power Amp Switch	T0202	0.50	50	50	13.0	10,000 Min.	6.250	—
935-6112	280	NPN-Si	Audio Amp Output (Compl to NTE281)	T03	12.00	150	150	5.0	70	100.000	15.0
935-6116	283	NPN-Si	High Voltage, high Current Switch and Horizontal Output	T03	10.00	800	325	8.0	10 Min.	100.000	6.0
935-6118	284	NPN-Si	Audio Amplifier Output (Compl to NTE285)	T03	16.00	180	180	5.0	70	150.000	6.0
935-6120	285	PNP-Si	Audio Amplifier Output (Compl o NTE284)	T03	16.00	180	180	5.0	70	150.000	6.0
935-6122	287	NPN-Si	High Voltage, Low Saturation, Low Cap, General Purpose Amp (Compl to NTE288)	T092	0.50	300	300	8.0	40 Min.	0.625	50.0 Min.
935-6124	288	PNP-Si	High Voltage, Low Saturation, General Purpose Amp (Compl to NTE287)	T092	0.50	300	300	5.0	40 Min.	0.625	50.0 Min.
935-6126	289	NPN-Si	Audio Power Amp and Switch (Compl to NTE290)	U83/T092	0.80	35	30	5.0	120 Min.	0.600	100.0
935-0289	289A	NPN-Si	Audio Power Amp (Compl to NTE290A)	T092	0.50	100	80	5.0	100 Min.	0.600	120.0
935-6128	290	PNP-Si	Audio Power Amp and Switch (Compl to NTE289)	U83/T092	0.80	35	30	5.0	120 Min.	0.600	140.0
935-6130	290A	PNP-Si	Audio Power Amp (Compl to NTE289A)	T092	0.50	100	80	5.0	100 Min.	0.600	120.0
935-6132	291	NPN-Si	General Purpose Medium Power Amp and Switch (Compl to NTE292)	T0220	4.00	130	120	5.0	70	40.000	4.0 Min.
935-6134	292	PNP-Si	General Purpose Medium Power Amp and Switch (Compl to NTE291)	T0220	4.00	130	120	5.0	70	40.000	5.0 Min.
935-6136	293	NPN-Si	Audio Amp and Driver (Compl to NTE294)	Giant, T092	1.00	60	50	5.0	120	1 w/Heat Sink .75	200.0
935-6138	294	PNP-Si	Audio Amp and Driver (Compl to NTE293)	Giant, T092	1.00	60	50	5.0	120 Min.	1 w/Heat Sink .75	200.0
935-6144	311	NPN-Si	Freq-Multiplier, Amp, Driver Osc, VHF-UHF Pre-Driver	T039	0.40	55	30	3.5	25 Min.	5.000	800.0 Min.
935-6146	331	NPN-Si	Audio Power Amp, Switch (Compl to NTE332)	T0220	15.00	100	100	5.0	40 Min.	90.000	3.0 Min.
935-6148	332	PNP-Si	Audio Power Amp, Switch (Compl to NTE331)	T0220	15.00	100	100	5.0	40 Min.	90.000	3.0 Min.
935-6150	373	NPN-Si	Audio Amp,Driver (Compl to NTE374)	T0126	1.50	180	160	5.0	190	20.000	140.0
935-6152	374	PNP-Si	Audio Amp, Driver (Compl to NTE373)	T0126	1.50	180	160	5.0	190	20.000	140.0
935-6145	375	NPN-Si	Vertical Deflection (Compl to NTE398)	T0220	3.00	200	150	6.0	150	25.000	8.0
935-6158	377	NPN-Si	Power Amp Driver, Output, Switch (Compl to NTE378)	T0220	10.00	80	80	5.0	60 Min.	50.000	50.0
935-6160	378	PNP-Si	Power Amp Driver, Output, Switch (Compl to NTE377)	T0220	10.00	80	80	5.0	60 Min.	50.000	50.0
935-6162	379	NPN-Si	Power Amp, High Voltage, Switch tr = 0.45 µS Typ	T0220	12.00	700	400	9.0	12	100.000	4.0 Min.
935-6168	382	NPN-Si	Audio Frequency Driver (Compl to NTE383)	R245	1.00	120	100	5.0	200	0.900	140.0
935-6170	383	PNP-Si	Audio Frequency Driver (Compl to NTE382)	R245	1.00	120	100	5.0	200	0.900	140.0
935-6172	384	NPN-Si	High Voltage Power Amp.Switch tr = 0.3 µS Typ	T066	7.00	375	350	9.0	28	45.000	1.0 Min.
935-6174	385	NPN-Si	Audio Power Amp, Switch tr = 0.085 µS Typ	T03	10.00	550	350	6.0	17	150.000	—
935-6176	386	NPN-Si	Audio Power Amp, Switch tr = 0.3 µS Typ	T03	20.00	800	500	6.0	20	175.000	—
935-6180	389	NPN-Si	Horizontal Output	T03	6.00	1500	1500 (CES)	5.0	5 Min.	100.000	4.0 Min.
935-6186	396	NPN-Si	Power Amp and High Speed Switch (Compl to NTE397)	T039	1.00	450	350	7.0	40 Min.	10*, 1	15 Min.
935-6508	397	PNP-Si	Power Amp and High Speed Switch (Compl to NTE396)	T039	1.00	350	300	6.0	30 Min.	10*, 1	15.0 Min.
935-6188	398	PNP-Si	Vertical Deflection, Audio Amp (Compl to NTE375)	T0220	2.00	200	150	5.0	100	25.000	5.0
935-6190	399	NPN-Si	High Voltage Amp, Video	Giant, T092	0.10	300	300	6.0	100 Min.	0.900	50.0 Min.
935-6192	2302	NPN-Si	High Voltage Horizontal Output w/Internal Damper Diode tf = 0.4 µS	T03P	5.00	1500	800	7.0	8 Min.	120*	3.0
935-6194	2308	NPN-Si	High Voltage/Current Switch tf = 1.0 µS	T03P	12.00	500	400	7.0	15 Min.	100*	20.0

For quantity pricing or parts not listed, contact the Allied facility nearest you at 1-800-433-5700. *Tc = 25°C.

Silicon Unijunction Transistor (UJT)

Stock No.	Mfr.'s Type	Case Style	Maximum RMS Emitter Current	Intrinsic Stand Off Ratio	Interbase Resistance	Maximum Interbase Voltage	Maximum RMS Power Dissipation	Emitter Reverse Current	Valley Point Current
			i_E mA	Min.-Max.	R_{BBO} (kΩ) Min.-Max.	V_{BB} Volts	P_D mW	I_{EO} µAmps	I_V mA
935-6196	6401	T018	50	0.56-0.75	4.7-9.1	35	300	0.050 typ. 12 max.	4 min.
935-6200	6409	T018	50	0.68-0.82	4.7-9.1	35	300	0.010 typ. 0.2 max.	8 min.
935-6202	6410	T092	50	0.70-0.85	4.0-9.1	35	300	0.005 typ.	4 min.

Zener Diodes

Stock No.	Mfr.'s Type	DWG	Rated Voltage ±5%	Watt
935-6298	135A	D041	5.1	1
935-6300	136A	D041	5.6	1
935-6302	137A	D041	6.2	1
935-6304	138A	D041	7.5	1
935-6306	139A	D041	9.1	1
935-0940	140A	D041	10.0	1
935-6308	142A	D041	12.0	1
935-6310	143A	D041	13.0	1
935-6312	145A	D041	15.0	1
935-6314	146A	D041	27.0	1
935-6316	147A	D041	33.0	1
935-6318	5001A	D035	2.5	½
935-6320	5010A	D035	5.1	½
935-5013	5013A	D035	6.2	½
935-6324	5069A	D041	4.7	1
935-6328	5071A	D041	6.8	1
935-6330	5072A	D041	8.2	1
935-6332	5077A	D041	18.0	1
935-6334	5079A	D041	20.0	1
935-6336	5080A	D041	22.0	1
935-6338	5084A	D041	30.0	1
935-6340	5098A	D041	130.0	1
935-6342	5127A	—	12.0	5
935-6344	5130A	—	15.0	5
935-6346	5134A	—	19.0	5
935-3115	5155A	—	91.0	5
—	—	—	—	—

General Purpose Diodes and Rectifiers

Stock No.	Mfr.'s Type	Material	Description and Application	Case Style	Maximum Peak Reverse Voltage	Maximum Average Forward Current Amps	Max. Peak Surge Forward Current Amps	Maximum Forward Voltage Drop	Reverse Recovery Time
					P_{RV}	I_F	I_{FSM}	V_F	L_T
935-0765	109	Germ	General Purpose, Fast Switch	D07	100	0.200	0.5	1.0	—
935-6248	112	Si	TV UHF Mixer	D07	5	0.025	—	0.5 @ 15 mA	—
935-6250	177	Si	Fast, Sw, Det, etc.	D035	200	0.160	250.0 mA	1.0 V @ 100 mA	50 nS
935-2519	519	Si	Fast Sw Diode	D035	75	0.200	—	1.0 V @ 100 mA	4 nS
935-6428	525	Si	High Voltage, Fast Recovery Sw	D041	2000	1.000	150.0	2.0 V @ 2A	3 µS (Fwd. Rec.)
935-0795	116	Si	General Purpose Rectifier	D041	600	1.000	30.0	1.1 V @ 1 A typ	—
935-6252	117	Si	General Purpose Metal Case Rectifier	D026	600	1.000	—	1.2 V @ .5A	—
935-0850	125	Si	General Purpose Rectifier	D041	1000	2.500	30.0	0.8 V @ 1A typ	—
935-1015	156	Si	General Purpose Rectifier	D015	1000	3.000	—	1.1 V @ 3A	—
935-6254	156A	Si	General Purpose Rectifier	D027A	1000	3.500	125.0	1.1 @ 3.5 A	—
935-6256	166	Si	Bridge Rectifier	C207	100	2.000	60.0	1.0 V @ 1A	—
935-6258	167	Si	Bridge Rectifier	C207	200	2.000	60.0	1.0 V @ 1A	—
935-6260	168	Si	Bridge Rectifier	C207	400	2.000	60.0	1.0 V @ 1A	—
935-2055	506	Si	Sw, Fast Recovery, Bst Damper, Blanking	D041	1400	2.000	3.5 A	1.0 V @ 1A	50 nS forward
935-6262	552	Si	General Purpose Rectifier, Fast Rec, Fast Sw	D041	600	1.000	30.0	1.1 V @ 1A	200 nS
935-6264	558	Si	General Purpose Rectifier, Fast Rec, Fast Sw, HV	D041	1500	1.000	—	1.2	250 nS
935-6266	580	Si	Fast Recovery, General Purpose Rectifier	—	600	3.000	100.0	1.1 V @ 3A	250 nS
935-6268	5304	Si	Bridge Rectifier	C207	400	1.500	50.0	1.0 V @ 1A	—
935-6270	5305	Si	Bridge Rectifier	C207	600	1.500	50.0	1.0 V @ 1A	—
935-6272	5313	Si	Bridge Rectifier	—	200	8.000	200.0	1.1 V @ 4 A	—
935-6274	5314	Si	Bridge Rectifier	—	400	8.000	200.0	1.1 V @ 4A	—
935-6276	5315	Si	Bridge Rectifier	—	600	8.000	200.0	1.1 V @ 4A	—
935-6278	5322	Si	Bridge Rectifier	—	200	25.000	300.0	1.2 V @ 12.5 A	—
935-6280	5324	Si	Bridge Rectifier	—	400	25.000	300.0	1.2 V @ 12.5 A	—
935-6282	5326	Si	Bridge Rectifier	—	600	25.000	300.0	1.2 V @ 12.5 A	—
935-6284	5332	Si	Bridge Rectifier	—	600	1.000	25.0	1.2 V @ 1A	—
935-6286	5800	—	Industrial Rectifier	D027	50	3.000	200.0	1.2 V Max	—
935-6288	5801	—	Industrial Rectifier	D027	100	3.000	200.0	1.2 V Max	—
935-4065	5802	—	Industrial Rectifier	D027	200	3.000	200.0	1.2 V Max	—
935-4075	5804	—	Industrial Rectifier	D027	400	3.000	200.0	1.2 V Max	—
935-4085	5806	—	Industrial Rectifier	D027	600	3.000	200.0	1.2 V Max	—
935-6290	5809	—	Industrial Rectifier	D027	1000	3.000	200.0	1.2 V Max	—
935-6292	5812	—	Industrial Rectifier	Axial LD	100	6.000	400.0	0.9 V Max	—
935-5814	5814	—	Industrial Rectifier	Axial LD	400	6.000	400.0	0.9 V Max	—
935-6294	5817	—	Industrial Rectifier	Axial LD	1000	6.000	400.0	0.9 V Max	—
935-6296	5994	—	Industrial Rectifier	D05	600	40.000	500.0	1.2 V Max	—

ICs

Stock No.	Mfr.'s Type	Pkg.	Description
935-6366	NTE778A	8 Pin Dip	IC-Dual Op Amp
935-6368	NTE834	14 Pin Dip	IC-Quad Comparator
935-6374	NTE923	10 Ld Metal Can	IC-Precision Voltage Regulator
935-6376	NE923D	14 Pin Dip	IC-Precision Voltage Regulator
935-6378	NTE928M	8 Pin Dip	IC-Dual Low Power Dual OP-Amp
935-9372	NTE931	TO-3	IC-Linear, Voltage Regulator
935-6380	NTE941	8 Ld Metal Can	IC-Frequency Compensated OP-Amp
935-6382	NTE941D	14 Pin Dip	IC-Frequency Compensated OP-Amp
935-6384	NTE941M	8 Pin Dip	IC-Frequency Compensated OP-Amp
935-6386	NTE943M	8 Pin Dip	IC-Dual Comparator
935-6388	NTE955M	8 Pin Dip	IC-Timer/Oscillator
935-6390	NTE956	TO-220	IC-Pos VR, 1.2 to 37 V, 1.5 Amp
935-3020	NTE960	TO-220	IC-Pos VR, 5 V, 1 Amp
935-6392	NTE964	TO-220	IC-Pos VR, 8 V, 1 A
935-3050	NTE966	TO-220	IC-Pos VR, 12 V, 1 Amp
935-3055	NTE967	TO-220	IC-Neg VR, –12 V, 1 A
935-6394	NTE968	TO-220	IC-Pos VR, 15 V, 1 A
935-3080	NTE972	TO-220	IC-Pos VR, 24 V, 1 A
935-6396	NTE977	TO-92	IC-Pos VR, 5 V, 100 mA
935-9966	NTE978	14 Pin Dip	IC-Dual Timing
935-6398	NTE987	14 Pin Dip	IC-Quad OP-Amp
935-6400	NTE992	14 Pin Dip	IC-4 Independent Amps
935-6406	NTE1471	16 and 2 Pin Dip	IC-TV Horizontal Oscillator
935-6408	NTE2013	16 Pin Dip	IC-7 Chan. CMOS Input Array
935-6410	NTE4001B	14 Pin Dip	IC-CMOS, Nor Gate
935-6412	NTE4011B	14 Pin Dip	IC-CMOS, Nand Gate
935-6414	NTE4013B	14 Pin Dip	IC-CMOS Dual D Flip-Flop
935-6416	NTE4016B	14 Pin Dip	IC-CMOS Quad Bilateral Switch
935-6418	NTE4049	16 Pin Dip	IC-CMOS Hex Buffer
935-6420	NTE4066B	14 Pin Dip	IC-CMOS Quad Bilateral Switch
935-6422	NTE4069	14 Pin Dip	IC-CMOS Hex Inverter
935-6424	NTE4081B	14 Pin Dip	IC-CMOS, And Gate
935-6426	NTE4093B	14 Pin Dip	IC-CMOS, Nand Gate
935-7145	NTE7400	14 Pin Dip	IC-TTL, Nand Gate
935-7147	NTE7402	14 Pin Dip	IC-TTL, Nor Gate
935-7148	NTE7403	14 Pin Dip	IC-TTL Quad 2-Input Pos-Nand, OPN Collector
935-7149	NTE7404	14 Pin Dip	IC-TTL Hex Inverter
935-7151	NTE7406	14 Pin Dip	IC-TTL Hex Inverter
935-7152	NTE7407	14 Pin Dip	IC-TTL Hex Buffer Driver
935-7156	NTE7408	14 Pin Dip	IC-TTL, And Gate
935-7155	NTE7410	14 Pin Dip	IC-TTL Triple 3 Input Pos-Nand
935-7194	NTE7432	14 Pin Dip	IC-TTL Quad 2 Input Pos-OR
935-7195	NTE7437	14 Pin Dip	IC-TTL Quad 2 Input Pos Nand
935-7199	NTE7442	16 Pin Dip	IC-TTL BCD to Decimal Decoder
935-7210	NTE7472	14 Pin Dip	IC-TTL J-K Master Slave Flip-Flop
935-7212	NTE7473	14 Pin Dip	IC-TTL Dual J-K Flip-Flop
935-7211	NTE7474	14 Pin Dip	IC-TTL Dual D Flip-Flop
935-7213	NTE7475	16 Pin Dip	IC-TTL 4 Bit Bistable Latch
935-7214	NTE7476	16 Pin Dip	IC-TTL Dual J-K Flip-Flop
935-7218	NTE7486	14 Pin Dip	IC-TTL Quad 2 Input Ex-OR
935-7221	NTE7490	14 Pin Dip	IC-TTL Decade Counter
935-7158	NTE74121	14 Pin Dip	IC-TTL Monostable Multivibrator
935-7239	NTE74192	16 Pin Dip	IC-TTL BCD Counter
—	—	—	—

For quantity pricing or parts not listed, contact the Allied facility nearest you at 1-800-433-5700.

Microcontrollers

ROMless 8051-Based 8-Bit Microcontrollers

Mfr.'s Type		Operating Frequency (MHz)	Memory			Counters Timers	I/O Port	Serial Interfaces	External Interrupt	Program Security	Temperature Range	No. of Leads
PLCC	PDIP		ROM (Bytes)	EPROM (Bytes)	RAM (Bytes)							
—	P80CL410HFN	0 to 16	—	—	128	2	4	I2C	10	No	–40 to +85	40
P80C32EBAA	P80C32EBPN	3.5 to 16	—	—	256	3	4	UART	2	Yes	0 to +70	44/40

8051-Based 8-Bit Microcontrollers

Mfr.'s Type				Operating Frequency (MHz)	Memory			Counters Timers	I/O Port	Serial Interfaces	External Interrupt	Program Security	Temperature Range	No. of Leads
PLCC	Hermetic CDIP (Window)	CerQuad (Window)	PDIP		ROM (Bytes)	EPROM (Bytes)	RAM (Bytes)							
P87C52EBAA*	P87C52EBFFA	P87C52EBLKA	P87C52EBPN*	3.5 to 16	—	8 K	256	3	4	UART	2	Yes	0 to +70	40/40/44/44
P87C52EFAA*	P87C52EFFFA	P87C52EFLKA	P87C52EFPN*	3.5 to 16	—	8 K	256	3	4	UART	2	Yes	–40 to +85	40/40/44/44
P87C528EBAA*	P87C528EBFFA	P87C528EBLKA	P87C528EBPN*	3.5 to 16	—	32 K	512	3 + WD	4	UART, I2C-bit	2	Yes	0 to +70	40/40/44/44
P87C550EBAA*	P87C550EBFFA	P87C550EBLKA	P87C550EBPN*	3.5 to 16	—	4 K	128	2 + WD	4	UART	2	Yes	0 to +70	40/40/44/44
P87C750EBAA*	P87C750EBFFA	—	P87C750EBPN*	3.5 to 16	—	1 K	64	1 (16-Bit)	$2^{3}/_{8}$	—	2	Yes	0 to +70	24/24/28

*One Time Programmable.

Logic

74ABT Logic Devices

Mfr.'s Type		Description	No. of Leads
SOIC	PDIP		
74ABT125D	—	Quad Buffer, 3-State	14
74ABT244D	74ABT244N	Octal Buffer/Line Driver, 3-State	20
74ABT245D	74ABT245N	Octal Transceiver, 3-State	20
74ABT541D	74ABT541N	Octal Buffer/Line Driver, 3-State	20
—	74ABT573N	D-Type Transparent Latch	20
74ABT574D	74ABT574N	Octal D Flip-Flop, 3-State	20
74ABT657D	—	Octal Transceiver with Parity Generator/Checker	24
74ABT821D	—	10-Bit D-Type Flip-Flop, 3-State	24
74ABNT841D	—	10-Bit Bus Interface Latch, 3-State	24

74F Fast TTL Logic Devices

74F04D	74F04N	Hex Inverter	14
74F06D	—	Hex Inverter Buffer/Driver, Open-Collector	14
74F07D	74F07N	Hex Inverter Buffer/Driver, Open-Collector	14
—	74F08N	Quad 2-Input AND Gate	14
74F1244D	74F1244N	Octal Bus/Line Driver	20
74F125D	—	Quad 3-State Bus Buffer	14
74F14D	—	Hex Schmitt Trigger	14
—	74F153N	Dual 4-Input Multiplexer	16
—	74F164N	8-Bit Serial In/Parallel Out Shift Register	14
74F166D	74F166N	8-Bit Shift Register	16
74F191D	74F191N	Binary Up/Down Counter	16
74F244D	74F244N	Octal Buffer, 3-State	20
74F245D	74F245N	Octal Bus Transceiver	20
74F269D	74F269N	8-Bit Bidirectional Binary Counter	24
74F273D	74F273N	Octal D-Type Flip-Flop	20
74F283D	—	4-Bit Adder	16
74F299D	—	Octal Shift/Storage Register, 3-State	20
74F3037D	74F3037N	Quad 2-Input NAND Transceiver/Line Driver	16
74F32D	74F32N	Quad 2-Input OR Gate	14
74F367D	—	Hex Buffer, 4-Bit and 2-Bit, 3-State	16
74F373D	74F373N	Octal 3-State Latch	20
74F374D	74F374N	Octal D Flip-Flop, 3-State	20
74F377D	74F377N	Octal D Flip-Flop with Enable	20
74F38D	74F38N	Quad 2-Input NAND Buffer, Open-Collector	14
—	74F393N	Dual Binary Ripple Counter	14
—	74F521N	8-Bit Ident Comparator	20
74F540D	74F540N	Octal 3-State Driver/Buffer	20
74F541D	74F541N	Octal 3-State Driver/Buffer	20
74F543D	74F543N	Octal Transceiver, Bidirectional Latch	24
74F573D	74F573N	Octal D-Type Latch	20
74F574D	74F574N	Octal D Flip-Flop	20
74F579D	74F579N	8-Bit Counter Common I/O, 3-State	20
74F595D	74F595N	8-Bit Shift Register with Latch	16
74F646D	74F646N	Octal Bus Transceiver and Register	24
74F652AD	74F652AN	Octal Bus Transceiver and Register, Non-Inverting, 3-State	24
74F657D	74F657N	Octal Buffer with Parity Generator/Checker	24
74F74D	74F74N	Dual D-Type Edge Triggered Flip-Flop	14
74F760D	—	Octal Bus/Line Driver, Inverting	20
74F779D	74F779N	8-Bit Counter	16
74F786D	74F786N	4-Input Asynchronous Bus Arbiter	16
74F821D	74F821N	10-Bit Register, Non-Inverting, 3-State	24
74F823D	74F823N	9-Bit Register, Non-Inverting, 3-State	24
74F827D	74F827N	10-Bit Buffer/Driver, Non-Inverting, 3-State	24
74F841D	74F841N	10-Bit Latch, Non-Inverting, 3-State	24
74F85D	74F85N	4-Bit Magnitude Comparator	16

74HCT High Speed TTL Compatible CMOS and 74HC CMOS Logic Devices

Mfr.'s Type				Description	No. of Leads
74HCT Logic		74HC Logic			
SOIC	PDIP	SOIC	PDIP		
74HCT00D	74HCT00N	74HC00D	74HC00N	Quad 2-Input NAND Gate	14
74HCT02D	74HCT02N	74HC02D	74HC02N	Quad 2-Input NOR Gate	14
74HCT04D	74HCT04N	74HC04D	74HC04N	Hex Inverter	14
74HCT08D	74HCT08N	74HC08D	74HC08N	Quad 2-Input AND Gate	14
—	74HCT10N	—	—	Triple 3-Input NAND Gate	14
—	74HCT11N	—	—	Triple 3-Input AND Gate	14
74HCT123D	74HCT123N	74HC123D	74 HC123N	Dual Retriggerable Monostable Multivibrator	16
74HCT125D	74HCT125N	74HC125D	—	Quad 3-State Bus Buffer	14
74HCT126D	74HCT126N	—	—	Quad 3-State Bus Buffer	14
—	74HCT132N	74HC132D	74HC132N	Quad 2-Input NAND Schmitt Trigger	14
74HCT138D	74HCT138N	74HC138D	74HC138N	1-of-8 Decoder/Demultiplexer	16
—	74HCT139N	74HC139D	—	Dual 1-of-4 Decoder/Demultiplexer	16
74HCT14D	74HCT14N	74HC14D	74HC14N	Hex Schmitt Trigger	14
—	74HCT151N	—	—	8-Input Multiplexer	16
—	74HCT153N	—	—	Dual 4-Input Multiplexer	16
—	74HCT154N	—	74HC154N	1-of-6 Decoder/Demultiplexer	24
74HCT157D	74HCT157N	74HC157D	—	Quad 2-Input Multiplexer	16
—	74HCT161N	—	—	4-Bit Binary Counter	16
—	74HCT163N	—	—	Synchronous 4-Bit Binary Counter	16
74HCT164D	74HCT164N	—	—	8-Bit Serial In/Parallel Out Shift Register	14
74HCT165D	74HCT165N	—	—	Parallel Load 8-Bit Shift Register	16
—	74HCT166N	—	—	8-Bit Parallel In/Serial Out Shift Register	16
74HCT174D	74HCT174N	—	—	Hex D Type Flip-Flop with Clear	16
74HCT175D	74HCT175N	—	—	Quad D Type Flip-Flop, Edge Triggered	16
—	—	74HC191D	74HC191N	Synchronous Binary Up/Down Counter	16
—	74HCT20N	—	—	Dual 4-Input NAND Gate	14
—	—	74HC221D	—	Dual Monostable Multivibrator	16
—	74HCT238N	—	74HC238N	1-to-8 Decoder/Demultiplexer	16
—	74HCT240N	—	—	Octal 3-State Buffer, Inverting	20
74HCT244D	74HCT244N	74HC244D	74HC244N	Octal 3-State Driver	20
74HCT245D	74HCT245N	74HC245D	74HC245N	Octal Transceiver, 3-State	20
—	74HCT251N	—	—	8-Input Multiplexer, 3-State	16
—	74HCT257N	—	—	Quad 2-Input Multiplexer	16
74HCT259D	74HCT259N	74HC259D	74HC259N	8-Bit Addressable Latch	16
—	74HCT27N	—	—	Triple 3-Input NOR Gate	14
74HCT273D	74HCT273N	74HC273D	74HC273N	Quad D-Type Flip-Flop	20
74HCT32D	74HCT32N	74HC32D	74HC32N	Quad 2-Input OR Gate	14
—	74HCT365N	74HC365D	—	Hex Buffer with Common Enable, 3-State	16
—	74HCT367N	—	—	Hex Buffer, 4-Bit and 2-Bit, 3-State	16
74HCT373D	74HCT373N	74HC373D	74HC373N	Octal 3-State Latch	20
74HCT374D	74HCT374N	74HC374D	74HC374N	Octal D Flip-Flop, 3-State	20
—	74HCT377N	74HC377D	74HC377N	Octal D Flip-Flop with Enable	20
74HCT393D	74HCT393N	74HC393D	74HC393N	Dual Binary Ripple Counter	14
—	74HCT40103N	—	74HC40103N	8-Bit Binary Down Counter	16
—	74HCT40105N	—	74HC40105N	4-Bit × 16-Word FIFO Register	16
74HCT4020D	—	74HC4020D	—	14-Stage Binary Counter	16
—	74HCT4040N	74HC4040D	74HC4040N	12-Stage Binary Counter	16
—	74HCT4046AN	74HC4046AD	74HC4046AN	Phase Locked Loop with VCO	16
—	74HCT4051N	74HC4051D	74HC4051N	8-Channel Multiplexer/Demultiplexer	16
—	—	74HC4052D	74HC4052N	Dual 4-Channel Analog Multiplexer/Demultiplexer	16
74HCT4053D	74HCT4053N	74HC4053D	74HC4053N	Triple 2-Channel Multiplexer/Demultiplexer	16
—	—	74HC4060D	—	14-Stage RC Binary Counter	16
—	74HCT4066N	74HC4066D	—	Quad Bilateral Switch	14
—	—	—	74HC423N	Dual Retriggerable Monostable Multivibrator	16
—	74HCT4538N	74HC4538D	74HC4538N	Dual Monostable Multivibrator	16
—	74HCT540N	—	—	Octal Inverting Buffer, 3-State	20
74HCT541D	74HCT541N	74HC541D	74HC541N	Octal Buffer, 3-State	20
74HCT573D	74HCT573N	74HC573D	74HC573N	Octal 3-State Transparent Latch	20
74HCT574D	74HCT574N	74HC574D	74HC574N	Octal D-Type Flip-Flop, Positive Edge Triggered, 3-State	20
74HCT595D	—	74HC595D	—	8-Bit Shift Register with Output Latch	16
—	74HCT597N	—	74HC597N	8-Bit Shift Register with Input Latch	16
—	74HCT640N	—	74HC640N	Octal 3-State Transceiver, Inverting	20
74HCT646D	—	—	—	Octal Transceiver/Register, 3-State	24
74HCT688D	74HCT688N	—	—	8-Bit Magnitude Comparator	20
—	—	74HC7046AD	—	Phase Locked Loop with Lock	16
74HCT74D	74HCT74N	74HC74D	74HC74N	Dual D-Type Edge Triggered Flip-Flop	14
—	74HCT86N	74HC86D	74HC86N	Quad 2-Input Exclusive OR Gate	14

Programmable Logic, Amplifiers, Comparators and Compandors

Programmable Logic Devices

Programmable Array Logic (Fixed OR Array)

Mfr.'s Type		Architecture Inputs × Terms × Outputs	Total Inputs (Dedicated)	Product Terms Per OR Gate	Internal State Registers (Dedicated)	Outputs C, I/O, R, R I/O	Max t_{PD} (ns)	f_{MAX} (MHz)	Max. ICC	No. of Leads
PLCC	PDIP									
PLUS16L8-7A	PLUS16L8-7N	16 × 64 × 8	16 (10)	7	0	2 C, 6 I/O	7.5	—	180.0 mA	20
PLC18V8Z35A	PLC18V8Z35N	18 × 74 × 8	18 (8)	8	8 (0)	8 Varied	35.0	21	1.5 mA/MHz	20
PLC18V8ZIA	—	18 × 74 × 8	18 (8)	8	8 (0)	8 Varied	40.0	21	1.5 mA/MHz	20

Programmable Logic Array

—	PLS100N	16 × 48 × 8	16 (16)	Up to 48	0	8 C	50.0	—	170.0 mA	28
PLS153AA	PLS153AN	18 × 42 × 10	18 (8)	Up to 32	0	10 I/O	30.0	—	155.0 mA	20
—	PLS153N	18 × 42 × 10	18 (8)	Up to 32	0	10 I/O	40.0	—	155.0 mA	20
PLS173A	PLS173N	22 × 42 × 10	22 (12)	Up to 32	0	10 I/O	30.0	—	170.0 mA	24

Programmable Logic Sequencer

—	PLS105N	22 × 48 × 8	22 (16)	Up to 48	6 (6)	8 R	—	14	180.0 mA	28
—	PLS159AN	16 × 45 × 12	16 (4)	Up to 32	8 (0)	4 I/O, 8 R I/O	35.0	18	190.0 mA	20
—	PLS167AN	22 × 48 × 6	22 (14)	Up to 48	8 (6)	6 R	—	20	180.0 mA	24
—	PLS168AN	22 × 48 × 8	22 (12)	Up to 48	10 (6)	8 R	—	20	180.0 mA	24

Operational Amplifiers

Mfr.'s Type		Description	VCC (V)	DC Voltage Gain (dB)	Input Offset Voltage Typical (mV)	Input Offset Current Typical (nA)	Common-mode Rejection Ratio (dB)	Unity Gain Bandwidth (MHz)	Slew Rate (V/µs)	No of Leads
SOIC	PDIP									
NE5534AD	NE5534AN	Single Low Noise	±22	100000	0.5	20.0	100	10.0	13.00	8
NE5534D	NE5534N	Single Low Noise	±22	100000	0.5	20.0	100	10.0	13.00	8
SA5534AD	SA5534AN	Single Low Noise	±22	100000	0.5	20.0	100	10.0	13.00	8
NE5230D	NE5230N	Single Low Voltage	1.8 to 15 or ±9	—	0.4	3.0	95	—	0.25	8
SA5230D	—	Single Low Voltage	1.8 to 15 or ±9	—	0.4	3.0	95	—	0.25	8
—	UA747CN	Dual General Purpose	±18	—	2.0	20.0	90	—	0.50	14
MC1458D	MC1458N	Dual General Purpose	±18	—	2.0	20.0	90	—	0.80	8
NE4558D	NE4558N	Dual General Purpose	±18	—	2.0	30.0	70	3.0	1.00	8
NE5532D	NE5532N	Dual Internally Compensated Low Noise	±22	50000	0.5	10.0	100	10.0	9.00	16/8
—	NE5532AN	Dual Internally Compensated Low Noise	±22	50000	0.5	10.0	100	10.0	9.00	16
—	NE5533AN	Dual Low Noise	±22	100000	0.5	20.0	100	10.0	13.00	14
—	NE532N	Dual Low Power	+32 or ±16	100	±2.0	±5.0	70	1.0	0.30	8
LM258D	LM258N	Dual Low Power	+32 or ±16	100	±2.0	±3.0	85	1.0	0.30	8
LM358D	LM358N	Dual Low Power	+32 or ±16	100	±2.0	±5.0	70	1.0	0.30	8
NE5517D	NE5517N	Dual Operational Transconductance Amp	+36 or ±18	—	0.4	0.1 µA	110	—	50.00	16
—	NE5514N	Quad High Performance	±16	—	1.0	6.0	100	3.0	1.00	14
LM324D	LM324N	Quad Low Power	+32 or ±16	100	±2.0	±5.0	70	1.0	0.30	14
LM324AD	LM324AN	Quad Low Power	+32 or ±16	100	±2.0	±5.0	85	1.0	0.30	14

Comparators

Mfr.'s Type		Complexity	Max. Input Offset Voltage (mV)	Max. Input Current		Supply Voltage (V)	Response Time (ns)	Voltage Range (V)	Voltage Gain (V/mV)	TTL Fanout	No. of Leads
SOIC	PDIP			Bias (µA)	Offset (µA)						
LM311D	LM311N	Single	7.5	0.25	0.05	±15 or +5	200	−14.5/+13	200	5	8
—	NE527N	Single	10.0	4.00	1.00	±10	16	±5	—	5	14
NE529D	NE529N	Single	10.0	50.00	15.00	±10	12	±5	—	5	14
LM319D	LM319N	Dual	10.0	1.20	0.30	±15 or +5	80	±13	40	2	14
—	LM293N	Dual	4.0	0.40	0.15	±1 to ±18 or +2 to +36	1300	0 to Vs-2	200	2	8
—	LM393AN	Dual	4.0	0.40	0.15	±1 to ±18 or +2 to +36	1300	0 to Vs-2	200	2	8
LM393D	LM393N	Dual	9.0	0.40	0.15	±1 to ±18 or +2 to +36	1300	0 to Vs-2	200	2	8
LM2903D	LM2903N	Dual	15.0	0.50	0.20	5	1300	0 to Vs-2	100	2	8
NE521D	NE521N	Dual	15.0	40.00	12.00	−5 or +5	8	±3	—	12	14
—	LM339AN	Quad	4.0	0.40	0.15	±1 to ±18 or +2 to +36	1300	0 to Vs-2	200	2	14
LM339D	LM339N	Quad	9.0	0.40	0.15	±1 to ±18 or +2 to +36	1300	0 to Vs-2	200	2	14

RF Amplifiers

Mfr.'s Type		V_{CC} (V)	I_{CC} (mA)	Bandwidth 3 dB (MHz)	Noise Figure (dB)	1 dB Compression Output (dBm)	3rd Order Intercept Output (dBm)	Input Impedance (Ω)	Output Impedance (Ω)	Gain per Amplifier (dB)	No. of Leads
SOIC	PDIP										
—	NE5205AN	5.0 to 8	24	550	6.0 @ 50 Ohms	+4	+17	50.0	50	19	8
NE5209D	NE5209N	4.5 to 7	43	850	9.3	−3	+13	1.2 K	60	25*	16

Single In/Differential Out.

Compandors

Mfr.'s Type		V_{CC} (V)	I_{CC} (mA)	ALC	Reference Voltage	Unity Gain	Power Down	Key Features	No. of Leads
SOIC	PDIP								
NE570D	NE570N	6 to 24	3.2	Both Channels	Fixed 1.8 V	775 mVrms	No	Excellent Unity Gain Tracking Error	16
NE571D	NE571N	6 to 18	3.2	Both Channels	Fixed 1.8 V	775 mVrms	No	Excellent Unity Gain Tracking Error	16
NE572D	NE572N	6 to 22	6.0	Both Channels	Fixed 2.5 V	100 mVrms	No	Independent Attack and Release Time	16
NE575D	NE575N	3 to 7	3.0 to 5.5	Right Channel	$V_{CC}/2$	100 mVrms	No	2 Uncommitted On-Chip Op Amps	20
NE578D	—	2 to 7	1.0 to 2	Right Channel	$V_{CC}/2$	10 mV to 1 Vrms	Yes (170 µA)	Programmable Unity Gain, Mute Function	16

FM IF Systems

High Performance Low Power FM IF System

Mfr.'s Type		VCC (V)	ICC (mA)	Max. Input Frequency (MHz)	Max. IF Frequency (MHz)	f_{RF} = 45 MHz			RSSI Range (dB)	Fast RSSI	Output Op. Amps	No. of Leads
SOIC	PDIP					Sensitivity Input	Power Gain	Input 301				
NE604AD	NE604AN	4.5 to 8	3.3 @ 6 V	25	25	0.22 µV	—	—	90	—	—	16
SA604AD	SA604AN	4.5 to 8	3.3 @ 6 V	25	25	0.22 µV	—	—	90	—	—	16
NE614AD	NE614AN	4.5 to 8	3.3 @ 6 V	25	25	0.22 µV	—	—	80	—	—	16
—	NE624N	4.5 to 8	3.3 @ 6 V	25	25	0.22 µV	—	—	90	—	—	16

Integrated Mixer Systems

Integrated Mixer Systems (Mixer + Oscillator), f_R = 45 MHz

Mfr.'s Type		VCC (V)	ICC (mA)	Bandwidth		Noise Figure		1 dB Compression (Output)		3rd Order Intercept (Output)		Input Impedance		Output Impedance (Ω)	Power Gain		No. of Leads
SOIC	PDIP			LNA (MHz)	Mixer (GHz)	LNA (dB)	Mixer (dB)	LNA (dBm)	Mixer (dBm)	LNA (dBm)	Mixer (dBm)	LNA (Ω)	Mixer (Ω)		LNA (dB)	Mixer (dB)	
NE602AD	NE602AN	4.5 to 8	2.4	—	500	—	5	—	–10	—	–13	—	1.5 K	1.5 K	—	17	8
SA602AD	SA602AN	4.5 to 8	2.4	—	500	—	5	—	–10	—	–13	—	1.5 K	1.5 K	—	17	8
—	NE612AN	4.5 to 8	2.4	—	500	—	5	—	–10	—	–13	—	1.5 K	1.5 K	—	17	8

Timers

Mfr.'s Type		Description	V_{CC} Max. (V)	Output Voltage (Low) (V)	Output Voltage (High) (V)	I_{OUT} Max. (mA)	Output Rise Time (ns)	Output Fall Time (ns)	Oscillator Frequency Min. (kHz)	No. of Leads
SOIC	PDIP									
—	ICM7555CN	General Purpose CMOS	18	0.1	15.7	100	45	20	500	8
NE555D	NE555N	General Purpose	16	0.1	12.5	—	100	100	500	8
SA555D	SA555N	General Purpose	16	0.1	12.5	—	100	100	500	8
NE556D	NE556N	Dual General Purpose	16	0.1	12.5	—	100	100	500	14
NE558D	NE558N	Quad General Purpose	16	—	—	—	100	100	—	16

High Frequency Phase Locked Loops and Function Generators

Mfr.'s Type		Description	Max. Supply Voltage (V)	V_{CO} Frequency Typ. (MHz)	Signal To Noise Ratio (dB)	Supply Current (mA)	No. of Leads
SOIC	PDIP						
NE564D	NE564N	Phase Locked Loop, TTL Inputs/Outputs	Pin1: 14, Pin 10: 6	60	40	45	16
—	NE566N	Function Generator	±12	1	—	7	8
NE567D	NE567N	Tone Decoder/Phase Locked Loop	10	—	—	—	8
NE568AD	NE568AN	150MHz Phase Locked Loop	6	—	—	54	20

Line Drivers/Receivers and Modems

Mfr.'s Type		Description	No. of Drivers	No. of Receivers	No. of Leads
SOIC	PDIP				
MC145406D	MC145406N	EIA-232-D/V.28 Driver/Receiver	3	3	16
NE5170A*	—	Octal Line Driver	8	—	28
—	NE5080N	High Seed FSK Modem Transmitter	—	—	16
—	NE5081N	High Seed FSK Modem Transmitter	—	—	20

*PLCC package.

Relay/Peripheral Drivers

Mfr.'s Type		Description	No. of Drivers	Supply Voltage (V)	Input Voltage (V)	Output Voltage (V)	Output Current/Output (mA)	No. of Leads
SOIC	PDIP							
NE5090D	NE5090N	Addressable Relay Driver	8	–0.5 to +7	–0.5 to +15	0 to +30	200	16
—	NE590N	Addressable Peripheral Driver	8	–0.5 to +7	–0.5 to +15	0 to +7	300	16
—	NE591N	Addressable Peripheral Driver	8	–0.5 to +7	–0.5 to +15	0 to V_{CC}	300	18

Analog to Digital Converters

Mfr.'s Type		Description	Max. Supply Voltage (V)	Max. Reference Voltage (V)	Max. V_{IN} (Analog) Voltage (V)	Max. V_{IN} (Digital) Voltage (V)	Resolution (Bits)	Relative Accuracy (LSB)	Min. Clock Frequency (MHz)	Conversion Time (µs)	No. of Leads
SOIC	PDIP										
TDA8703TD	TDA8703N	8-Bit High Speed ADC	7	—	7	7	8	±2	40	—	24
TDA8708ATD	TDA8708AN	Video Analog Input Interface	7	—	7	7	8	±1	30	—	28
TDA8709ATD	TDA8709AN	Video Analog Input Interface	7	—	7	7	8	±2	30	—	28

Digital to Analog Converters

Mfr.'s Type		Description	Max. Supply Voltage (V)	Resolution (Bits)	Relative Accuracy (% FS)	Settling Time (ns)	No. of Leads
SOIC	PDIP						
—	DAC-08CN	8-Bit High Speed Multiplying DAC	±15	8	±0.39	70.0	16
—	NE5018N	8-Bit Microprocessor Compatible DAC	±18	8	±0.19	1.8 µs/2.3 µs*	24/22
—	TDA1541AN	Stereo High Performance 16-Bit DAC	–5, +5, +15	16	—	0.5 µs	28
TDA8702TD	TDA8702N	8-Bit Video DAC	7	8	±1 LSB	6.5	16

*Bits Low to High/Bits High to Low.

Silicon Single Junction Diodes DO-35 Package

Mfr.'s Type	V_{RRM} (Volts) Min.	I_{RRM} (na) Max.	V_{FM} (Volts) Max.	@ 1_F (ma)	t_{rr} (ns) Max.
1N4148	100	25	1.0	10	4.0
1N914B	100	25	1.0	100	4.0

Power Transistors TO-220 Package

Mfr.'s Type	Type	I_C Max. A	V_{CEO} Max. V	h_{FE} Min./Max.	@ I_C A	V_{CE} Max.	@ I_C A	f_T Min. MHz	P_D (Max.) Tc=25° W
TIP29	NPN	3.0	40	15/75	1.0	0.7	1.0	3.0	30
TIP29A	NPN	3.0	60	15/75	1.0	0.7	1.0	3.0	30
TIP29B	NPN	3.0	80	15/75	1.0	0.7	1.0	3.0	30
TIP29C	NPN	3.0	100	15/75	1.0	0.7	1.0	3.0	30
TIP30	PNP	3.0	40	15/75	1.0	0.7	1.0	3.0	30
TIP30A	PNP	3.0	60	15/75	1.0	0.7	1.0	3.0	30
TIP30B	PNP	3.0	80	15/75	1.0	0.7	1.0	3.0	30
TIP30C	PNP	3.0	100	15/75	1.0	0.7	1.0	3.0	30
TIP31	NPN	5.0	40	10/50	3.0	1.2	3.0	3.0	40
TIP31A	NPN	5.0	60	10/50	3.0	1.2	3.0	3.0	40
TIP31B	NPN	5.0	80	10/50	3.0	1.2	3.0	3.0	40
TIP31C	NPN	5.0	100	10/50	3.0	1.2	3.0	3.0	40
TIP32	PNP	5.0	40	10/50	3.0	1.2	3.0	3.0	40
TIP32A	PNP	5.0	60	10/50	3.0	1.2	3.0	3.0	40
TIP32B	PNP	5.0	80	10/50	3.0	1.2	3.0	3.0	40
TIP32C	PNP	5.0	100	10/50	3.0	1.2	3.0	3.0	40
TIP41	NPN	6.0	40	15/75	3.0	1.5	6.0	3.0	65
TIP41A	NPN	6.0	60	15/75	3.0	1.5	6.0	3.0	65
TIP41B	NPN	6.0	80	15/75	3.0	1.5	6.0	3.0	65
TIP41C	NPN	6.0	100	15/75	3.0	1.5	6.0	3.0	65
TIP42	PNP	6.0	40	15/75	3.0	1.5	6.0	3.0	65
TIP42A	PNP	6.0	60	15/75	3.0	1.5	6.0	3.0	65
TIP42B	PNP	6.0	80	15/75	3.0	1.5	6.0	3.0	65
TIP42C	PNP	6.0	100	15/75	3.0	1.5	6.0	3.0	65
TIP110	NPN	2.0	60	1K/-	1.0	2.5	2.0	—	50
TIP111	NPN	2.0	80	1K/-	1.0	2.5	2.0	—	50
TIP112	NPN	2.0	100	1K/-	1.0	2.5	2.0	—	50
TIP116	PNP	2.0	80	1K/-	1.0	2.5	2.0	—	50
TIP117	PNP	2.0	100	1K/-	1.0	2.5	2.0	—	50
TIP120	NPN	5.0	60	1K/-	3.0	2.0	3.0	—	65
TIP121	NPN	5.0	80	1K/-	3.0	2.0	3.0	—	65
TIP122	NPN	5.0	100	1K/-	3.0	2.0	3.0	—	65
TIP125	PNP	5.0	60	1K/-	3.0	2.0	3.0	—	65
TIP126	PNP	5.0	80	1K/-	3.0	2.0	3.0	—	65
TIP127	PNP	5.0	100	1K/-	3.0	2.0	3.0	—	65

Small Signal, General Purpose Surface Mount Transistors SOT-23 Package (3000 Piece Tape and Reel)

Mfr.'s Type	Polarity	$V_{CEO(sus)}$ V Min.	I_C mA Max.	h_{FE} @ I_C			f_T @ I_C		NF dB Max.	Package Type	$P_{D(Amb)}$ mW @ 25°C
				Min.	Max.	mA	MHz Min.	mA			
MMBT3906T/R	PNP	40	200	100	300	10	250	10	5.0	TO-236	350
MMBT4401T/R	NPN	40	600	100	300	150	250	20	—	TO-236	350
MMBT4403T/R	PNP	40	600	100	300	150	200	10	6.0	TO-236	350

Unijunction Transistors

Plastic TO-92 Package

Mfr.'s Type	η		I_P A Max.	I_{EB} A Max.	I_V mA Min.
	Min.	Max.			
2N4870	0.56	0.75	5.00	1.00	2.00
2N4871	0.70	0.85	5.00	1.00	4.00
MU4892	0.51	0.69	2.00	0.01	2.00
MU4893	0.55	0.82	2.00	0.01	2.00

Metal TO-18 Package

Mfr.'s Type	η		I_P A Max.	I_{EB} A Max.	I_V mA Min.
	Min.	Max.			
2N2646	0.56	0.75	5.00	12.00	4.00
2N2647	0.68	0.82	2.00	0.20	8.00
2N4853	0.70	0.85	0.40	0.05	6.00
—	—	—	—	—	—

Voltage Regulators

Positive

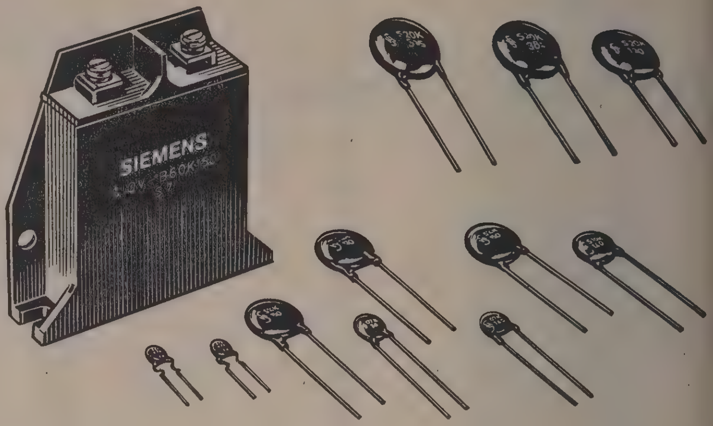
Mfr.'s Type	Output Voltage V	Output Current A	Package Type
LM7805CT	5.0	1.0	TO-220
LM7808CT	8.0	1.0	TO-220
LM7812CT	12.0	1.0	TO-220
LM7815CT	15.0	1.0	TO-220
LM78L05ACZ	5.0	0.1	TO-92
LM78L06ACZ	6.0	0.1	TO-92
LM78L08ACZ	8.0	0.1	TO-92
LM78L09ACZ	9.0	0.1	TO-92
LM78L12ACZ	12.0	0.1	TO-92
LM78L15ACZ	15.0	0.1	TO-92
LM78L24ACZ	24.0	0.1	TO-92
LM78M05CT	5.0	0.5	TO-220
LM78M08CT	8.0	0.5	TO-220
LM78M12CT	12.0	0.5	TO-220
LM78M15CT	15.0	0.5	TO-220
LM317T	Adj. 1.2 to 37.0	1.5	TO-220

Negative

Mfr.'s Type	Output Voltage V	Output Current A	Package Type
LM7905CT	–5	1.0	TO-220
LM7908CT	–8	1.0	TO-220
LM7912CT	–12	1.0	TO-220
LM7915CT	–15	1.0	TO-220
LM79L05ACZ	–5	0.1	TO-92
LM79L06ACZ	–6	0.1	TO-92
LM79L08ACZ	–8	0.1	TO-92
LM79L09ACZ	–9	0.1	TO-92
LM79L12ACZ	–12	0.1	TO-92
LM79L15ACZ	–15	0.1	TO-92
LM79M05CT	–5	0.5	TO-220
LM79M15CT	–15	0.5	TO-220
—	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—

SIOV™ Metal Oxide Varistors

The SIOV will fit applications requiring protection at operating voltage levels as low as 11 volts and as high as 1100 volts with energies rated up to 15000 Joules, depending on the device selected.



Typical Protection Applications

- Protection of Semiconductors (Diodes, Transistors, Thyristors, ICs, Etc.)
- Appliances Connected to 110 V or 220 VAC
- Industrial Equipment Vulnerable to Transients on the AC Power Line (Computers, Traffic Controls, Motor Controllers, Etc.)
- Protection of Equipment Connected to Telephone or Signal Lines, Such as Security Systems, Railroad Equipment, Fire Alarm Systems, Etc.
- Arc Suppression Across Relay and Switch Contacts
- Protection of Instrument Input Terminals from Accidentally Connected High Voltages
- Power Control Equipment for Power Distribution Lines
- GFI (Ground Fault Interrupters)

Features

- Nanosec. Switching Response Time, <15 nsec., with Minimal Lead Length
- High Transient Current Capability (Up to 100,000 Amps)
- No Extinguishing or Follow-On Current Limitations
- Small Size for Compact Designs
- Wide Operating Temperature Range: –40 to +85°C
- Compatible with Automatic Insertion; Tape and Reel Configuration Available on S05, S07, S10 and S14 Series
- Excellent Clamping Characteristics
- Low Standby Power Consumption

Benefits

- Eliminates Dangerous Voltage Transients
- Lowers Overall System Costs by Reducing Downtime and Maintenance Costs
- Improves Component and System Reliability
- Reduces Lightning Effects
- Reduces EMP/RFI Interference
- Promotes Personal Safety

Mfr.'s Type	Rated Voltage		Varistor Voltage (±10%) Volts	Rated Single Pulse Transient Energy Joules	Rated Transient Average Power Dissipation Watts	Minimum Clamping Voltage Volts
	AC Volts (RMS)	DC Volts				
S05K11	11	14	18	0.3	0.01	36 @ 1.0 A
S07K11	11	14	18	0.8	0.02	36 @ 2.5 A
S10K11	11	14	18	1.7	0.05	36 @ 5.0 A
S14K11	11	14	18	3.2	0.10	36 @ 10.0 A
S20K11	11	14	18	10.0	0.20	36 @ 20.0 A
S05K14	14	18	22	0.4	0.01	43 @ 1.0 A
S07K14	14	18	22	0.9	0.02	43 @ 2.5 A
S10K14	14	18	22	2.0	0.05	43 @ 5.0 A
S14K14	14	18	22	4.0	0.10	43 @ 10.0 A
S20K14	14	18	22	12.0	0.20	43 @ 20.0 A
S05K17	17	22	27	0.5	0.01	53 @ 1.0 A
S07K17	17	22	27	1.1	0.02	53 @ 2.5 A
S14K17	17	22	27	5.0	0.10	53 @ 10.0 A
S20K17	17	22	27	14.0	0.20	53 @ 20.0 A
S07K20	20	26	33	1.3	0.02	65 @ 2.5 A
S10K20	20	26	33	3.1	0.05	65 @ 5.0 A
S14K20	20	26	33	6.0	0.10	65 @ 10 .0A
S20K20	20	26	33	18.0	0.20	65 @ 20.0 A
S05K25	25	31	39	0.7	0.01	77 @ 1.0 A
S07K25	25	31	39	1.6	0.02	77 @ 2.5 A
S10K25	25	31	39	3.7	0.05	77 @ 5.0 A
S14K25	25	31	39	7.0	0.10	77 @ 10.0 A
S20K25	25	31	39	22.0	0.20	77 @ 20.0 A
S07K30	30	38	47	2.0	0.02	93 @ 2.5 A
S10K30	30	38	47	4.4	0.05	93 @ 5.0 A
S14K30	30	38	47	9.0	0.10	93 @ 10.0 A
S05K35	35	45	56	1.1	0.01	110 @ 1.0 A
S07K35	35	45	56	2.5	0.02	110 @ 2.5 A
S10K35	35	45	56	5.4	0.05	110 @ 5.0 A
S14K35	35	45	56	10.0	0.10	110 @ 10.0 A
S05K40	40	56	68	1.3	0.01	135 @ 1.0 A
S07K40	40	56	68	3.0	0.02	135 @ 2.5 A
S10K40	40	56	68	6.4	0.05	135 @ 5.0 A
S14K40	40	56	68	13.0	0.60	135 @ 10.0 A
S05K50	50	65	82	1.8	0.10	135 @ 5.0 A
S07K50	50	65	82	4.2	0.25	135 @ 10.0 A
S10K50	50	65	82	8.4	0.40	135 @ 25.0 A
S14K50	50	65	82	15.0	0.60	135 @ 50.0 A
S05K60	60	85	100	2.2	0.10	165 @ 5.0 A
S10K60	60	85	100	10.0	0.40	165 @ 25.0 A
S14K60	60	85	100	17.0	0.60	165 @ 50.0 A
S05K75	75	100	120	2.5	0.10	200 @ 5.0 A
S07K75	75	100	120	5.9	0.25	200 @ 10.0 A
S10K75	75	100	120	12.0	0.40	200 @ 25.0 A
S20K75	75	100	120	40.0	1.00	200 @ 100.0 A
S05K95	95	125	150	3.4	0.10	250 @ 5.0 A
S10K95	95	125	150	15.0	0.40	250 @ 25.0 A
S14K95	95	125	150	25.0	0.60	250 @ 50.0 A
S07K130	130	170	205	9.5	0.25	340 @ 10.0 A
S10K130	130	170	205	19.0	0.40	340 @ 25.0 A
S14K130	130	170	205	34.0	0.60	340 @ 50.0 A
S20K130	130	170	205	68.0	1.00	340 @ 100.0 A
B32K130	130	170	205	210.0	1.20	340 @ 100.0 A
B40K130	130	170	205	310.0	1.40	340 @ 300.0 A
B60K130	130	170	205	490.0	1.60	340 @ 500.0 A
B80K130	130	170	205	660.0	2.00	340 @ 800.0 A
S07K140	140	180	220	10.0	0.25	360 @ 10.0 A
S14K140	140	180	220	36.0	0.60	360 @ 50.0 A
S07K150	150	200	240	11.0	0.25	395 @ 10.0 A
S10K150	150	200	240	24.0	0.40	395 @ 25.0 A
S14K150	150	200	240	40.0	0.60	395 @ 50.0 A
S20K150	150	200	240	79.0	1.00	395 @ 100.0 A
B32K150	150	200	240	240.0	1.20	395 @ 200.0 A
B40K150	150	200	240	360.0	1.40	395 @ 300.0 A
B60K150	150	200	240	570.0	1.60	395 @ 500.0 A
B80K150	150	200	250	800.0	2.00	395 @ 800.0 A
S07K175	175	225	270	13.0	0.25	455 @ 10.0 A
S14K175	175	225	270	46.0	0.60	455 @ 50.0 A
S07K230	230	300	360	17.0	0.25	595 @ 10.0 A
S14K230	230	300	360	60.0	0.60	595 @ 50.0 A
S07K250	250	320	390	19.0	0.25	650 @ 10.0 A
S10K250	250	320	390	38.0	0.40	650 @ 25.0 A
S14K250	250	320	390	65.0	0.60	650 @ 50.0 A
S20K250	250	320	390	130.0	1.00	650 @ 100.0 A
B32K250	250	320	390	340.0	1.20	650 @ 200.0 A
B40K250	250	320	390	490.0	1.40	650 @ 300.0 A
B60K250	250	320	390	800.0	1.60	650 @ 500.0 A
B80K250	250	320	390	1300.0	2.00	650 @ 800.0 A
S07K275	275	350	430	21.0	0.25	710 @ 10.0 A
S10K275	275	350	430	43.0	0.40	710 @ 25.0 A
S14K275	275	350	430	71.0	0.60	710 @ 50.0 A
S20K275	275	350	430	140.0	1.00	710 @ 100.0 A
B32K275	275	350	430	360.0	1.20	710 @ 200.0 A
B40K275	275	350	430	550.0	1.40	710 @ 300.0 A
B60K275	275	350	430	860.0	1.60	710 @ 500.0 A
S07K300	300	385	470	23.0	0.25	775 @ 10.0 A
S14K300	300	385	470	76.0	0.60	775 @ 50.0 A
S20K300	300	385	470	160.0	1.00	775 @ 100.0 A
S14K385	385	505	620	80.0	0.60	1025 @ 50.0 A
S20K385	385	505	620	140.0	1.00	1025 @ 100.0 A
B32K385	385	505	620	550.0	1.20	1025 @ 200.0 A
S14K420	420	560	680	90.0	0.60	1120 @ 50.0 A
S20K420	420	560	680	160.0	1.00	1120 @ 100.0 A
B32K460	460	615	750	520.0	1.20	1240 @ 200.0 A
B40K460	460	615	750	780.0	1.40	1240 @ 300.0 A
B60K460	460	615	750	1200.0	1.60	1240 @ 500.0 A
S14K510	510	670	820	110.0	0.60	1355 @ 50.0 A
S20K510	510	670	820	190.0	1.00	1355 @ 100.0 A
S14K550	550	745	910	120.0	0.60	1500 @ 50.0 A
S20K550	550	745	910	210.0	1.00	1500 @ 100.0 A
B32K550	550	745	910	620.0	1.20	1500 @ 200.0 A
S14K625	625	825	1000	130.0	0.60	1650 @ 50.0 A
S20K625	625	825	1000	230.0	1.00	1650 @ 100.0 A
S14K680	680	895	1100	140.0	0.60	1815 @ 50.0 A
S20K680	680	895	1100	250.0	1.00	1815 @ 100.0 A
B40K750	750	1060	1200	1200.0	1.40	2000 @ 300.0 A
S14K1000	1000	1465	1800	230.0	0.60	2970 @ 50.0 A
S20K1000	1000	1465	1800	410.0	1.00	2970 @ 100.0 A

The B80 series is available with operating voltage levels through 1100 VAC (RMS).

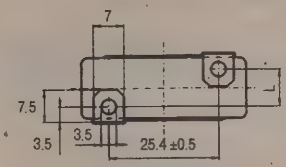
Metal Oxide Varistors (SIOV™) LS40K130QP-To-K750QP Series

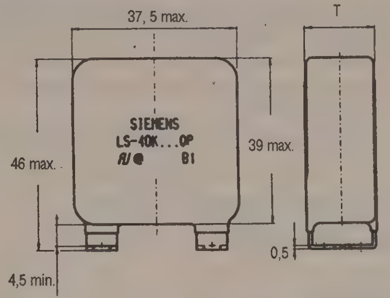
Electrical Specifications

Mfr.'s Type	Maximum Ratings (85°C)					Characteristic (25°C)			Typical Capacitance 1 KHz
	Continuous			Transient		Varistor* Voltage 1 mA DC	Maximum Clamping Voltage		
	AC Voltage (RMS)	DC Voltage	Average Power Dissipation	Energy 2 ms	Peak Current 8/20 µs				
	Volts	Volts	Watts	Joules	Amps Ka	Volts	Volts	Amps	Picofarads
LS40K130QP	130	170	1.4	310	40	205	340	300	5600
LS40K150QP	150	200	1.4	360	40	240	396	300	4800
LS40K230QP	230	300	1.4	460	40	360	595	300	3200
LS40K250QP	250	320	1.4	490	40	390	650	300	2900
LS40K275QP	275	350	1.4	550	40	430	710	300	2700
LS40K320QP	320	420	1.4	640	40	510	840	300	2300
LS40K385QP	385	505	1.4	800	40	620	1025	300	1900
LS40K420QP	420	560	1.4	910	40	680	1120	300	1800
LS40K460QP	460	615	1.4	780	40	750	1240	300	1600
LS40K550QP	550	745	1.4	960	40	910	1500	300	1400
LS40K680QP	680	895	1.4	1100	40	1100	1815	300	1100
LS40K750QP	750	1060	1.4	1200	40	1200	2000	300	1000

***Tolerance:** K=±10%.

Dimensions in mm





File E 77005

LR 63185-1

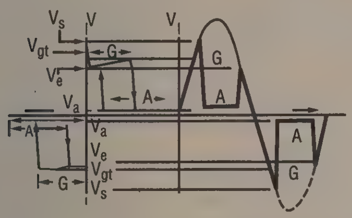
Mfr.'s Type	Tmax. (mm)	L ±1.0 (mm)
LS40K130QP	8.1	3.5
LS40K150QP	8.3	3.2
LS40K230QP	9.0	2.0
LS40K250QP	9.2	1.8
LS40K275QP	9.4	1.6
LS40K320QP	9.9	1.1

Mfr.'s Type	Tmax. (mm)	L ±1.0 (mm)
LS40K385QP	10.6	0.4
LS40K420QP	10.9	0.0
LS40K460QP	11.4	0.4
LS40K550QP	12.3	1.2
LS40K680QP	13.5	2.4
LS40K750QP	14.1	3.0

SVP — Surge Voltage Protectors

- **High Surge Current Capacity at 20KA Maximum**
- **High Insulation Resistance at ≥1010 Ohm**
- **Low Capacitance — Down to 1pF**
- **High Breakdown Speed**
- **Low Cost**
- **Small Size**
- **Designed to Meet Industry Specifications**
- **Proven Performance: Millions in Service**

The SVP is bipolar and has a symmetrical V-1 characteristic as shown below.



Voltage-current characteristic and voltage variation across the protector.

Vs	striking voltage	Ve	extinguishing voltage
Vgt	glow voltage	G	glow range
Va	arc voltage	A	arc range

Surge Voltage Protectors. SVPs are gas discharge tubes, hermetically sealed, composed of 2 or 3 electrodes properly spaced by insulators and filled with a rare gas. SVPs mainly serve to provide a conductive path for unwanted, excessive transients, which prevents the transient energy and associated voltages from damaging sensitive equipment and components, and from harming personnel. Designed for rapid switching at a specific voltage level (breakdown voltage) from a non-conductive state to a conductive state (arc mode) when subjected to an excessive voltage transient. The SVP momentarily carries very high currents during conduction. After discharge of the transient, the circuit allows the SVP to restore itself. In the restored conduction, the high impedance of the SVP causes very little loss. Normal AC or DC operating circuit voltages may cause the SVP to remain in a conducting mode after the transient has passed, unless the following precautions are taken: for AC Applications — the AC follow current must not be exceeded; For DC Applications — if the normal operating voltage across the tube is greater than the glow voltage, and the current into the SVP while in arc mode, (10-20 V across the SVP) does not exceed 0.2A, a 0.68 µfd. capacitor placed in parallel with the tube will cause it to extinguish. If the DC is greater than the given values, current must be momentarily interrupted. **Electrical Characteristics Common To All Types:** Transition Time — 0.1 µs typ. **R_{INS}:** ≥ 10,000 megohm. **Capacitance:** 1 pF typ. at 1 MHz. **Operating and Storage Temperature Range:** –55°C to +130°C.

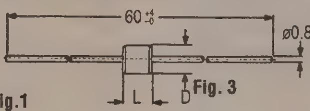


Fig.1

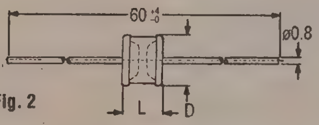


Fig. 2

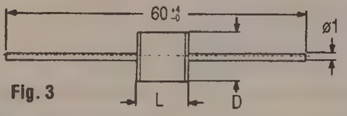


Fig. 3

Button Type SVPs. Compact medium-duty 2-electrode tubes provide protection for most circuit applications. Features high breakdown speed by means of a patented process. Economical; easily mounted onto PC boards.

Special Button Type SVPs. Special L71 types for AC applications undergo AC burn-in to guarantee good extinguishing characteristics at high follow currents — excellent for CATV amplifiers and other applications where AC Voltage is present.

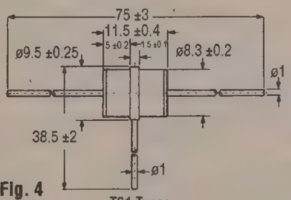


Fig. 4

T61 Types

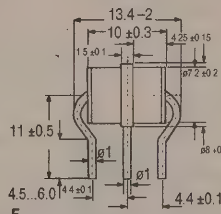


Fig. 5

T23 Types

Three-Electrode Type SVPs. Developed and refined through experience gained from actual use in telecommunications equipment. These units are designed to meet or exceed parameters specified in REA Specification PE-80.

2 Electrode, Miniature Button Types

Mfr.'s Type	DC Breakdown Voltage (V)	Nominal OD × L (mm)	Single Impulse Discharge Current (KA) 8/20 µs	AC Discharge Current (A)[1]	Impulse Breakdown Voltage Volts at			AC Follow Current (A Peak)	DC Holdover Voltage (V)[6]	Impulse Life (No. of Pulses) 500 A 10/1000 µs	Special Notes	Fig.
					100 V/µs	1 KV/µs	10 KV/µs					
M51-C90	90 ±20%	5.0 × 5.0	2.5	10	<550	<600	<900	—	60	>50	General Purpose	1
M51-A230X	230 ±20%	5.0 × 5.0	2.5	10	<550	<650	<900	—	100	>50	General Purpose	1
M51-A350X	350 ±20%	5.0 × 5.0	2.5	10	<650	<750	<1000	—	120	>50	General Purpose	1

2 Electrode, Standard Button Types

B1-C75	75 +30%/–20%	9.0 × 7.0	5.0	20	<550	<600	<1000	20	>60	>200	General Purpose	2
B1-C90/20	90 ±20%	9.0 × 7.0	5.0	20	<550	<600	<1000	20	>60	>200	General Purpose	2
N81-C90X	90 ±20%	8.0 × 6.0	10.0	>65	<350	<550	<700	—	60	>200	General Purpose	3
A81-C90X	90 ±20%	8.0 × 6.0	20.0	>65	<350	<550	<700	—	60	>400	General Purpose, High Current	3
B1-C145	145 ±20%	9.0 × 6.0	5.0	20	<550	<600	<1000	>100[2]	60	>200	60 VAC Application (CATV)	2
B1-A230	230 ±15%	9.0 × 6.0	5.0	20	<600	<650	<1000	25	>80	>200	General Purpose (Communication)	2
N81-A230X	230 ±20%	8.0 × 6.0	10.0	>65	<450	<600	<800	—	100	>200	General Purpose	3
A81-A230X	230 ±20%	8.0 × 6.0	20.0	>65	<450	<600	<800	—	100	>400	General Purpose, High Current	3
L71-A270X*	270 +25%/–15%	8.0 × 8.0	10.0	>65	<400	<500	<700	>35	—	>200	120 VAC Application (S20K150[5])	3
B1-A350	350 ±15%	9.0 × 6.0	5.0	20	<650	<700	<1000	25	>150	>200	General Purpose (Communication)	2
N81-A350X	350 ±20%	8.0 × 6.0	10.0	>65	<650	<800	<1000	—	120	>200	General Purpose	3
A81-A350X	350 ±20%	8.0 × 6.0	20.0	>65	<650	<800	<1000	—	120	>400	General Purpose, High Current	3
L71-A470X*	470 +25%/–15	8.0 × 8.0	10.0	>65	<600	<700	<800	>35	—	>200	220 VAC Application (S20K250[5])	3
B2-B600	600 +20%/–10	9.0 × 6.5	5.0	20	<1000	<1100	<2000	25	100	>200	General Purpose	2
L71-A800X*	800 +25%/–15	8.0 × 8.0	10.0	>65	<1000	<1100	<1300	>35	—	>200	440 VAC Application (S20K460[5])	3

*Special button type SVP for AC applications.

3 Electrode Types

T23-A230X	230 ±20%[3]	8.0 × 10.0	10.0[3]	>20	<350	<450	<600	—	150	>50[4]	Medium Duty, Communication Use	5
T23-A350	350 ±20%[3]	8.0 × 10.0	10.0[3]	>20	<550	<650	<800	—	150	>100[4]	Medium Duty, Communication Use	5
T61-C350	300-500[3]	9.5 × 11.5	10.0[3]	>65	<550	<650	<800	—	150	>400	Heavy Duty, Communication Use	4

[1] 11 cycles, 60 Hz, 1 Time. [2] 60 VRMS. [3] Line to ground, single side. [4] Changing polarity after each surge. [5] Suggested Siemens limiting Varistor (SIOV). [6] In accordance with IEEE C62.31.

If you don't see it, call! We carry Simple Technology's complete line of 1500 memory upgrade products for portables, workstations, servers, printers, desktop systems, PDAs, and more. Please call for current pricing and availability.

Every Simple Technology product is tested for 100% compatibility and is backed with a lifetime warranty.

Simple Technology memory upgrades are recognized and approved by leading computer manufacturers.

INDIVIDUALLY TESTED 100% COMPATIBLE

LIFETIME WARRANTY

WORLDWIDE WEB
http://www.simpletech.com

TECH SUPPORT
1-800-367-7330 x4

FAX ON-DEMAND
1-800-429-5626 x500

Computer Memory Modules, Kits and Cards

AST Computer

Ascentia P30, P50
SST-P30/8. 8 MB Memory Module
SST-P30/16. 16 MB Memory Module

Ascentia J50
SST-J10/8. 8 MB Memory Kit
SST-J10/16. 16 MB Memory Kit
SST-J10/32. 32 MB Memory Kit

Ascentia 950N
SST950/8. 8 MB Memory Card
SST950/16. 16 MB Memory Card

Ascentia 900N, 910N
SST1392/8. 8 MB Memory Module
SST1392/16. 16 MB Memory Module

COMPAQ

Proliant 5000, 5000R
STC9282/64. 64 MB Memory Kit ECC
STC9282/128. 128 MB Memory Kit ECC
STC9282/256. 256 MB Memory Kit ECC
STC9282/512. 512 MB Memory Kit ECC

Armada 1120
STC-A1100/8. 8 MB Memory Module
STC-A1100/16. 16 MB Memory Module

Contura 400 Series
STC400CX/4. 4 MB Memory Module
STC400CX/8. 8 MB Memory Module
STC400CX/16. 16 MB Memory Module
STC400CX/20. 20 MB Memory Module

LTE Elite 5000 Series
STC-LTE5000/8. 8 MB Memory Kit
STC-LTE5000/16. 16 MB Memory Kit
STC-LTE5000/32. 32 MB Memory Kit
STC-LTE5000/64. 64 MB Memory Kit

Presario 962, 9536, 9546, 9548, 972, 982, 978, 974, 992
STC-P75/8. 8 MB Memory Kit
STC-P75/16. 16 MB Memory Kit
STC-P75/32. 32 MB Memory Kit
STC-P75/64. 64 MB Memory Kit

COMPAQ (continued)

ProSignia 500, 586
STC-XL/8. 8 MB Memory Kit
STC-XL/16. 16 MB Memory Kit
STC-XL/32. 32 MB Memory Kit
STC-XL/64. 64 MB Memory Kit

Digital

Alpha Station 200 Series, 400, Alpha Server 400
STV-MSP01/16. 16 MB Memory Kit
STV-MSP01/32. 32 MB Memory Kit
STV-MSP01/64. 64 MB Memory Kit
STV-MSP01/128.128 MB Memory Kit

Alpha Station 600
STV-MSP01C/32. 32 MB Memory Kit
STV-MSP01C/64. 64 MB Memory Kit
STV-MSP01C/128. 128 MB Memory Kit
STV-MSP01C/256. 256 MB Memory Kit

HiNote CT450, CT475
STV-HN/8. 8 MB Memory Module
STV-HN/16. 16 MB Memory Module

HiNote Ultra II
STV-HNU/8. 8 MB Memory Module
STV-HNU/16. 16 MB Memory Module

Hewlett Packard

LaserJet 4V, 4P, 4MPlus, 4MP, 4MV, 5P, 5MP, 5Si
STH-4P/4. 4 MB Memory Module
STH-4P/8. 8 MB Memory Module

LaserJet 4Si, 4M
STH-4SI/4. 4 MB Memory Module
STH-4SI/8. 8 MB Memory Module

IBM

ThinkPad 365E, 365 ED
STM-TP365/8. 8 MB Memory Module
STM-TP365/16. 16 MB Memory Module
STM-TP365/32. 32 MB Memory Module

ThinkPad 701 C, CS
STM-TP701/8. 8 MB Memory Module
STM-TP701/16. 16 MB Memory Module

ThinkPad 750, 750 C Series, P
STM-CLSX/4. 4 MB Memory Card, Parity
STM-CLSX/8. 8 MB Memory Card, Parity
STM-TP750/16. 16 MB Memory Card, Parity
STM-TP750/32. 32 MB Memory Card, Parity

IBM (continued)

ThinkPad 755 Series
STM-CLSX/4. 4 MB Memory Card, Parity
STM-CLSX/8. 8 MB Memory Card, Parity
STM-TP750/16. 16 MB Memory Card, Parity
STM-TP750/32. 32 MB Memory Card, Parity

ThinkPad 760 C Series
STM-TP760/8T. 8 MB Memory Module, EDO
STM-TP760/16T. 16 MB Memory Module, EDO

ThinkPad 760 E Series
STM7340/8. 8 MB Memory Module, EDO
STM7340/16. 16 MB Memory Module, EDO

NEC

Versa 6000, 6030 Series
STN-V6000/8. 8 MB Memory Module
STN-V6000/16. 16 MB Memory Module
STN-V6000/32. 32 MB Memory Module

Versa 2000 Series
STN-VERSA/8S. 8 MB Memory Module
STN-VERSA/16S. 16 MB Memory Module

Versa 4000 Series, E, V, M, P
STN-VERSA/4E. 4 MB Memory Card
STN-VERSA/8E. 8 MB Memory Card
STN-VERSA/12. 12 MB Memory Card
STN-VERSA/16. 16 MB Memory Card
STN-VERSA/20. 20 MB Memory Card
STN-VERSA/32. 32 MB Memory Card

Texas Instruments

Extensa 450 Series, 550 Series, 560 Series, 570 Series
STI-EXTENSA/8. 8 MB Memory Module
STI-EXTENSA/16. 16 MB Memory Module

Extensa 510, 515
STI-EXT510/8. 8 MB Memory Kit, EDO

TravelMate 5000 Series
STI5000/8. 8 MB Memory Module
STI5000/16. 16 MB Memory Module

SIMM Memory Modules

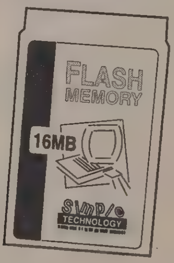
Standard Memory 72-Pin, Non-Parity, 70ns

STI321000-70T. 4 MB (1 × 32) Tin Lead
STI322000-70T. 8 MB (2 × 32) Tin Lead
STI324000-70T. 6 MB (4 × 32)Tin Lead
STI324100-70T. 32 MB (8 × 32) Tin Lead

Standard Memory 72-Pin, Parity, 70ns

STI361000-70T. 4 MB (1 × 32) Tin Lead
STI362000-70T. 8 MB (2 × 32) Tin Lead
STI364000-70T. 16 MB (4 × 32)Tin Lead
STI364100-70T. 32 MB (8 × 32) Tin Lead

Digital "Film" for Your Digital Camera



Linear Flash PC Cards

1 MB, 2 MB, 6 MB, 10 MB, 12 MB, 14 MB available, call for current pricing and availability. **Compatible with These Digital Cameras:** Chinon 3000, DayCam 10-C in 4 MB-20 MB capacities.
STI-FL/4A. 4 MB Memory.
STI-FL/8A. 8 MB Memory.
STI-FL/16A. 16 MB Memory.

ATA Flash PC Cards

4 MB, 12 MB, 40 MB available, call for current pricing and availability. **Compatible with These Digital Cameras:** Kodak DC-50, Nikon E2, Nikon E2S, Fujix 505, Fujix 515, Fujix 440 in 4MB-20MB capacities.
STI-ATAFL/8. 8 MB ATA Memory.
STI-ATAFL/16. 16 MB ATA Memory.
STI-ATAFL/20. 20 MB ATA Memory.

CompactFlash™

STI-ATACF/4. 4 MB Memory
STI-ATACF/8. 8 MB Memory
STI-ATACF/AD. Adapter to Type II

Simple Technology Removable Hard Drives

Each Simple Technology removable hard drive is pre-formatted with Ontrack Disk Manager (software included). Guaranteed for one full year. 13 msec. average seek, 128 KB buffer. **Data Transfer Rate:** 810 MB, 11.1 MB/sec.; 1.3 GB, 16.6 MB/sec.; 2.1 GB, 16.6 MB/sec.

Mfr.'s Type			Computer Model
Hard Drive Capacity			
810 MB	1.3 GB	2.1 GB	
STM-TP750HD/810	STM-TP750HD/1300	STM-TP750HD/2100	IBM ThinkPad 355, 360, 750, 755
STT4700HD/810	STT4700HD/1300	—	Toshiba T4700, T4800, T4850
—	—	STT700HD/2100	Toshiba T700, T710, T720
STN-VHD/810	STN-VHD/1300	—	NCR Safari 3181 4/50, 3182 4/75
STN-VHD/810	STN-VHD/1300	—	AT&T Globalyst 250
STN-VHD/810	STN-VHD/1300	—	NEC UltraLite Versa 4/20, 4/25, 4/33
STN-VHD/810	STN-VHD/1300	STN-VHD2100	NEC Versa E, V, M, P
—	—	STC-LTE5KHD/2.1	Compaq LTE 5000, 5100, 5300

For Literature or Technical Assistance on Texas Instruments Semiconductors, Call the Texas Instruments Semiconductor Product Information Center at 214/644-5580 or Visit TI's Web Site at http://www.ti.com.

Logic

SN7400: TTL Logic

Mfr.'s Type		Description	No. of Leads
SOIC	PDIP		
SN7400D	SN7400N	Quad 2-Input NAND Gate	14
—	SN7402N	Quad 2-Input Positive-NOR Gate	14
—	SN7404N	Hex Inverter	14
SN7405D	SN7405N	Hex Inverter with Open Collector Outputs	14
SN7406D	SN7406N	Hex Inverter with Open Collector Outputs	14
SN7407D	SN7407N	Hex Inverter with Open Collector Outputs	14
—	SN7410N	Triple 3-Input Positive-NAND Gate	14
—	SN74121N	One Shot Multivibrator	14
—	SN74123N	Dual Monostable Multivibrator	16
—	SN74128N	50 Ohm Line Driver	14
—	SN74132N	Quad 2-Input Positive-NAND Schmitt Trigger	14
—	SN74145N	BCD-to-Decimal Decoder/Driver	16
SN7414D	SN7414N	Hex Schmitt-Trigger Inverter	14
—	SN74150N	Data Selector/Multiplexer	24
—	SN74154N	4-to-16 Line Decoder/Demultiplexer	24
—	SN74156N	Dual 1 - 4 Decoder with Open Collector Outputs	16
—	SN74157N	Quad 1-of-2 Data Selector/Multiplexer	16
—	SN74159N	4 - 16 Line Decoder/Demultiplexer	24
—	SN74164N	8-Bit Parallel-Out Serial Shift Register	14
SN7416D	SN7416N	Hex Inverter/Driver	14
—	SN74175N	Quad D-Type Flip-Flop	16
SN7417D	SN7417N	Hex Buffer/Driver with Open Collector Outputs	14
—	SN74279N	Quad Set/Rest Latch	16
—	SN7430N	8-Input Positive-NAND Gate	14
—	SN7432N	Quad 2-Input Positive-OR Gate	14
—	SN7437N	Quad 2-Input Positive-NAND Buffer	14
SN7438D	SN7438N	Quad 2-Input NAND Buffer with Open Collector Outputs	14
—	SN7445N	BCD-to-Decimal Decoder/Driver	14
—	SN7447AN	BCD-to-7 Segment Decoder/Driver	16
—	SN7474N	Dual D-Type Flip-Flop	14
—	SN7486N	Quad 2-Input Exclusive-OR Gate	14
—	SN7490AN	Decade Divide-by-12 Counter	14
—	SN7425N	Dual 4-Input NOR Gate	14

74ACT11: Advanced CMOS TTL Logic

74ACT11008D	74ACT11008N	Quad 2-Input Positive-AND Gate	16
74ACT11240DW	74ACT11240NT	Octal Buffer/Line Driver with 3-State Outputs	24
74ACT11244DW	74ACT11244NT	Octal Buffer/Line Driver with 3-State Outputs	24
74ACT11245DW	74ACT11245NT	Octal Bus Transceiver with 3-State Outputs	24
74ACT11373DW	74ACT11373NT	Octal D-Type Transparent Latch with 3-State Outputs	24
—	74ACT11374NT	Octal D-Type Flip-Flop with 3-State Outputs	24
74ACT11544DW	—	Octal Registered Transceiver with 3-State Outputs	28
74ACT11593DW	74ACT11593NT	8-Bit Binary Counter with 3-State I/O Register	24
74ACT11657DW	—	Octal Xceiver with Parity Generator/Counter	28
74ACT11898DW	—	10-Bit Parallel-Out Shift Register	20
74ACT16241DL	—	16-Bit Buffer/Line Driver with 3-State Outputs	48
74ACT16244DL	—	16-Bit Buffer/Line Driver with 3-State Outputs	48
74ACT16245DL	—	16-Bit Bus Transceiver with 3-State Outputs	48
74ACT16373DL	—	16-Bit D-Type Transparent Latch with 3-State Outputs	48
74ACT16374DL	—	16-Bit D-Type Flip-Flop with 3-State Outputs	48
74ACT16470DL	—	16-Bit Registered Transceiver with 3-State Outputs	56
74ACT16474DL	—	18-Bit Flip-Flop	56
74ACT16540DL	—	16-Bit Buffer/Line Driver with 3-State Outputs	48
74ACT16541DL	—	16-Bit Buffer/Line Driver with 3-State Outputs	48
74ACT16543DL	—	16-Bit Registered Transceiver with 3-State Outputs	56
74ACT16620DL	—	16-Bit Transceiver with 3-State Outputs	48
74ACT16646DL	—	16-Bit Bus Xceiver AND Register with 3-State Outputs	56
74ACT16648DL	—	16-Bit Bus Xceiver AND Register with 3-State Outputs	56
74ACT16652DL	—	16-Bit Bus Xceiver AND Register with 3-State Outputs	56
74ACT16861DL	—	20-Bit Transceiver with 3-State Outputs	56
74ACT16864DL	—	18-Bit Transceiver with 3-State Outputs	56

SN74ALS: Advanced Low Power Schottky TTL Logic

SN74ALS00AD	SN74ALS00AN	Quad 2-Input Positive-NAND Gate	14
SN74ALS02AD	—	Quad 2-Input Positive-NOR Gate	14
SN74ALS04BD	SN74ALS04BN	Hex Inverter	14
SN74ALS05AD	SN74ALS05AN	Hex Inverter with Open-Collector Outputs	14
SN74ALS08D	SN74ALS08N	Quad 2-Input Positive-AND Gate	14
SN74ALS1005D	SN74ALS1005N	Hex Inverting Buffer with Open-Collector Outputs	14
—	SN74ALS1034N	Hex Driver	14
SN74ALS1035D	SN74ALS1035N	Hex Noninverting Buffer with Open-Collector Outputs	14
SN74ALS109AD	SN74ALS109AN	Dual J-K-Bar Flip-Flop	16
SN74ALS10AD	SN74ALS10AN	Triple 3-Input Positive-NAND Gate	14
—	SN74ALS11AN	Triple 3-Input Positive-AND Gate	14
SN74ALS139D	SN74ALS139N	Dual 2-To-4 Decoder/Demultiplexer	16
SN74ALS151D	SN74ALS151N	8-To-1 Data Selector/Multiplexer	16
SN74ALS153D	SN74ALS153N	Dual 4-To-1 Data Selector/Multiplex	16
SN74ALS157AD	SN74ALS157AN	Quad 1-Of-2 Data Selector/Multiplex	16
SN74ALS161BD	SN74ALS161BN	4-Bit Synchronous Binary Counter	16
SN74ALS163BD	SN74ALS163BN	4-Bit Synchronous Binary Counter	16
SN74ALS1645ADW	SN74ALS1645AN	Octal Bus Transceiver with 3-State Outputs	20
—	SN74ALS165N	8-Bit Parallel-Load Shift Register	16
SN74ALS174D	SN74ALS174N	Hex D-Type Flip-Flop	16
SN74ALS175D	SN74ALS175N	Quad D-Type Flip-Flop	16
SN74ALS240ADW	SN74ALS240AN	Octal Buffer/Line Driver with 3-State Outputs	20
SN74ALS241BDW	SN74ALS241BN	Octal Buffer/Line Driver with 3-State Outputs	20
SN74ALS245A-1DW	SN74ALS245A-1N	Octal Bus Transceiver with 3-State Outputs	20
SN74ALS245ADW	SN74ALS245AN	Octal Bus Transceiver with 3-State Outputs	20
SN74ALS251D	SN74ALS251N	1-Of-8 Data Selector/Mux with 3-State Outputs	16
SN74ALS253D	SN74ALS253N	Dual 4-To-1 Data Selector/Mux with 3-State Outputs	16
SN74ALS259D	SN74ALS259N	8-Bit Addressable Latch	16
SN74ALS273DW	SN74ALS273N	Octal D-Type Flip-Flop	20
SN74ALS29821DW	SN74ALS29821NT	10-Bit D-Type Flip-Flop with 3-State Outputs	24
SN74ALS29827DW	SN74ALS29827NT	10-Bit Buffer/Driver with 3-State Outputs	24
SN74ALS29863DW	SN74ALS29863NT	9-Bit Transceiver with 3-State Outputs	24

SN74ALS: Advanced Low Power Schottky TTL Logic (continued)

Mfr.'s Type		Description	No. of Leads
SOIC	PDIP		
SN74ALS299DW	SN74ALS299N	8-Bit Universal Shift/Storage Register	20
SN74ALS32D	SN74ALS32N	Quad 2-Input Positive-OR Gate	14
SN74ALS373ADW	SN74ALS373AN	Octal D-Type Transparent Latch with 3-State Outputs	20
SN74ALS374ADW	SN74ALS374AN	Octal D-Type Flip-Flop with 3-State Outputs	20
SN74ALS520DW	SN74ALS520N	8-Bit Identity Comparator	20
SN74ALS521DW	SN74ALS521N	8-Bit Identity Comparator	20
SN74ALS540DW	SN74ALS540N	Octal Buffer/Line Driver with 3-State Outputs	20
SN74ALS541DW	SN74ALS541N	Octal Buffer/Line Driver with 3-State Outputs	20
SN74ALS569ADW	SN74ALS569AN	4-Bit Synchronous Up/Down Binary Counter	20
—	SN74ALS573CN	Octal D-Type Transparent Latch with 3-State Outputs	20
SN74ALS574BDW	SN74ALS574BN	Octal D-Type Flip-Flop with 3-State Outputs	20
SN74ALS576BDW	SN74ALS576BN	Octal D-Type Flip-Flop with 3-State Outputs	20
SN74ALS623ADW	SN74ALS623AN	Octal Transceiver with 3-State Outputs	20
SN74ALS640B-1DW	SN74ALS640B-1N	Octal Bus Transceiver with 3-State Outputs	20
SN74ALS640BDW	SN74ALS640BN	Octal Bus Transceiver with 3-State Outputs	20
SN74ALS641A-1DW	SN74ALS641A-1N	Octal Bus Transceiver with Open-Collector Outputs	20
SN74ALS645A-1DW	SN74ALS645A-1N	Octal Bus Transceiver with 3-State Outputs	20
SN74ALS645ADW	SN74ALS645AN	Octal Bus Transceiver with 3-State Outputs	20
SN74ALS651DW	SN74ALS651NT	Octal Bus Xceiver AND Register with 3-State Outputs	24
SN74ALS652-1DW	SN74ALS652-1NT	Octal Bus Xceiver AND Register with 3-State Outputs	24
SN74ALS652DW	SN74ALS652NT	Octal Bus Xceiver AND Register with 3-State Outputs	24
SN74ALS666DW	SN74ALS666NT	Octal D-Type Transparent Read-Back	24
SN74ALS688DW	SN74ALS688N	8-Bit Identity Comparator	20
SN74ALS74AD	SN74ALS74AN	Dual D-Type Flip-Flop	14
SN74ALS841DW	SN74ALS841NT	10-Bit D-Type Latch with 3-State Outputs	24
SN74ALS867ADW	SN74ALS867ANT	8-Bit Synchronous Up/Down Binary Counter	24
SN74ALS869DW	SN74ALS869NT	8-Bit Synchronous Up/Down Binary Counter	24
SN74ALS86D	SN74ALS86N	Quad 2-Input Exclusive-OR Gate	14
SN74ALS874BDW	SN74ALS874BNT	Dual 4-Bit D-Type Flip-Flop with 3-State Outputs	24
SN74ALS990DW	SN74ALS990N	8-Bit D-Type Transparent Read-Back	20
SN74ALS992DW	SN74ALS992NT	9-Bit D-Type Read-Back Latch with 3-State Outputs	24
SN74ALS996DW	SN74ALS996NT	8-Bit D-Type Read-Back Latch with 3-State Outputs	24

SN74AS: Advanced Schottky TTL Logic

SN74AS00D	SN74AS00N	Quad 2-Input Positive-NAND Gate	14
SN74AS04D	SN74AS04N	Hex Inverter	14
SN74AS08D	SN74AS08N	Quad 2-Input Positive-AND Gate	14
SN74AS1000AD	SN74AS1000AN	Quad 2-Input Positive-NAND Buffer/Driver	14
SN74AS1004AD	SN74AS1004AN	Hex Inverting Driver	14
SN74AS1032AD	SN74AS1032AN	Quad 2-Input Positive-OR Buffer/Driver	14
SN74AS1034AD	SN74AS1034AN	Hex Driver	14
SN74AS11D	SN74AS11N	Triple 3-Input Positive-AND Gate	14
SN74AS138D	SN74AS138N	3-To-8 Decoder/Demultiplexer	16
SN74AS157D	SN74AS157N	Quad 1-Of-2 Data Selector/Multiplexer	16
SN74AS158D	SN74AS158N	Quad 1-Of-2 Data Selector/Multiplexer	16
SN74AS161D	SN74AS161N	4-Bit Synchronous Binary Counter	16
SN74AS163D	SN74AS163N	4-Bit Synchronous Binary Counter	16
SN74AS174D	SN74AS174N	Hex D-Type Flip-Flop	16
—	SN74AS1804N	Hex 2-Input NAND Driver	20
SN74AS240DW	SN74AS240N	Octal Buffer/Line Driver with 3-State Outputs	20
SN74AS245DW	SN74AS245N	Octal Bus Transceiver with 3-State Outputs	20
SN74AS258D	SN74AS258N	Quad 2-To-1 Data Selector/Mux with 3-State Outputs	16
SN74AS27D	SN74AS27N	Triple 3-Input Positive-NOR Gate	14
SN74AS280D	SN74AS280N	9-Bit Parity Generator/Checker	14
SN74AS286D	SN74AS286N	9-Bit Parity Generator/Checker	14
SN74AS32D	SN74AS32N	Quad 2-Input Positive-OR Gate	14
SN74AS373DW	SN74AS373N	Octal D-Type Transparent Latch with 3-State Outputs	20
SN74AS374DW	SN74AS374N	Octal D-Type Flip-Flop with 3-State Outputs	20
SN74AS573ADW	SN74AS573AN	Octal D-Type Transparent Latch with 3-State Outputs	20
SN74AS574DW	SN74AS574N	Octal D-Type Flip-Flop with 3-State Outputs	20
SN74AS640DW	SN74AS640N	Octal Bus Transceiver with 3-State Outputs	20
SN74AS646DW	SN74AS646NT	Octal Bus Xceiver AND Register with 3-State Outputs	24
SN74AS648DW	SN74AS648NT	Octal Bus Xceiver AND Register with 3-State Outputs	24
SN74AS651DW	SN74AS651NT	Octal Bus Xceiver AND Register with 3-State Outputs	24
SN74AS652DW	SN74AS652NT	Octal Bus Xceiver AND Register with 3-State Outputs	24
SN74AS760DW	SN74AS760N	Octal Buffer/Line Driver with Open-Collector Outputs	20
SN74AS804BDW	SN74AS804BN	Hex 2-Input NAND Driver	20
SN74AS805BDW	SN74AS805BN	Hex 2-Input NOR Driver	20
SN74AS808BDW	SN74AS808BN	Hex 2-Input Positive-AND Driver	20
SN74AS821ADW	SN74AS821ANT	10-Bit Bus Interface Flip-Flop with 3-State Outputs	24
—	SN74AS867NT	8-Bit Synchronous Up/Down Binary Counter	24
SN74AS869DW	SN74AS869NT	8-Bit Synchronous Up/Down Binary Counter	24
SN74AS873ADW	SN74AS873ANT	Dual 4-Bit D-Type Latch with 3-State Outputs	24
SN74AS874DW	SN74AS874NT	Dual 4-Bit D-Type Flip-Flop with 3-State Outputs	24
SN74AS885DW	SN74AS885NT	8-Bit Magnitude Comparator	24

SN74BCT: BiCMOS Bus Interface Logic

SN74BCT2240DW	SN74BCT2240N	Octal Buffer with 3-State Outputs (Series Resistors)	20
SN74BCT2244DW	SN74BCT2244N	Octal Buffer with 3-State Outputs (Series Resistors)	20
SN74BCT2245DW	SN74BCT2245N	Octal Bus Xver with 3-State Outputs (Series Resistors)	20
SN74BCT244DW	SN74BCT244N	Octal Buffer/Line Driver with 3-State Outputs	20
SN74BCT245DW	SN74BCT245N	Octal Bus Transceiver with 3-State Outputs	20
SN74BCT25245DW	SN74BCT25245NT	25-Ohm Octal Bus Transceiver with 3-State Outputs	24
SN74BCT2827CDW	SN74BCT2827CNT	10-Bit Buffer with 3-State Outputs (Series Resistors)	24
SN74BCT2828BDW	SN74BCT2828BNT	10-Bit Buffer with 3-State Outputs (Series Resistors)	24
SN74BCT2953DW	SN74BCT2953NT	Octal Reg Transceiver with Clock Enable	24
SN74BCT373DW	SN74BCT373N	Octal D-Type Transparent Latch with 3-State Outputs	20
SN74BCT543DW	SN74BCT543NT	Octal Registered Transceiver with 3-State Outputs	24
SN74BCT646DW	SN74BCT646NT	Octal Bus Xceiver AND Register with 3-State Outputs	24
SN74BCT8245ADW	SN74BCT8245ANT	Scope Octal Bus Transceiver	24

SN74F: F-TTL Logic

SN74F00D	SN74F00N	Quad 2-Input Positive-NAND Gate	14
SN74F02D	SN74F02N	Quad 2-Input Positive-NOR Gate	14

Logic (continued)

SN74F: F-TTL Logic (continued)

Mfr.'s Type		Description	No. of Leads
SOIC	PDIP		
SN74F04D	SN74F04N	Hex Inverter	14
SN74F08D	SN74F08N	Quad 2-Input Positive-AND Gate	14
SN74F1056D	—	8-Bit Schottky Barrier Diode	16
SN74F11D	SN74F11N	Triple 3-Input Positive-AND Gate	14
SN74F125D	SN74F125N	Quad Bus Buffer Gates with 3-State Outputs	14
SN74F126D	SN74F126N	Quad Bus Buffer Gates with 3-State Outputs	14
SN74F138D	SN74F138N	3-To-8 Decoder/Demultiplexer	16
SN74F157AD	SN74F157AN	Quad 1-Of-2 Data Selector/Multiplex	16
SN74F161AD	SN74F161AN	4-Bit Synchronous Binary Counter	16
SN74F163AD	SN74F163AN	4-Bit Synchronous Binary Counter	16
SN74F240DW	SN74F240N	Octal Buffer/Line Driver with 3-State Outputs	20
SN74F243D	SN74F243N	Quad Bus Transceiver with 3-State Outputs	14
SN74F244DW	SN74F244N	Octal Buffer/Line Driver with 3-State Outputs	20
SN74F245DW	SN74F245N	Octal Bus Transceiver with 3-State Outputs	20
SN74F257D	SN74F257N	Quad 2-To-1 Data Selector/Mux with 3-State Outputs	16
SN74F260D	SN74F260N	Dual 5-Input Positive-NOR Gate	14
SN74F27D	SN74F27N	Triple 3-Input Positive-NOR Gate	14
SN74F280BD	SN74F280BN	9-Bit Parity Generator/Checker	14
SN74F30D	SN74F30N	8-Input Positive-NAND Gate	14
SN74F32D	SN74F32N	Quad 2-Input Positive-OR Gate	14
SN74F373DW	SN74F373N	Octal D-Type Transparent Latch with 3-State Outputs	20
SN74F374DW	SN74F374N	Octal D-Type Flip-Flop with 3-State Outputs	20
SN74F38D	SN74F38N	Quad 2-Input P-NAND Buffer with Open Collector Outputs	14
SN74F521DW	SN74F521N	8-Bit Identity Comparator	20
SN74F541DW	SN74F541N	Octal Buffer/Line Driver with 3-State Outputs	20
SN74F543DW	SN74F543NT	Octal Registered Transceiver with 3-State Outputs	24
SN74F573DW	SN74F573N	Octal D-Type Transparent Latch with 3-State Outputs	20
SN74F574DW	SN74F574N	Octal D-Type Flip-Flop with 3-State Outputs	20
SN74F74D	SN74F74N	Dual D-Type Flip-Flop	14

SN74HC: High Speed CMOS Logic

SN74HC00D	SN74HC00N	Quad 2-Input Positive-NAND Gate	14
SN74HC02D	SN74HC02N	Quad 2-Input Positive-NOR Gate	14
SN74HC04D	SN74HC04N	Hex Inverter	14
SN74HC05D	SN74HC05N	Hex Inverter with Open-Collector Outputs	14
SN74HC08D	SN74HC08N	Quad 2-Input Positive-AND Gate	14
SN74HC10D	SN74HC10N	Triple 3-Input Positive-NAND Gate	14
SN74HC125D	SN74HC125N	Quad Bus Buffer Gates with 3-State Outputs	14
SN74HC126D	SN74HC126N	Quad Bus Buffer Gates with 3-State Outputs	14
SN74HC132D	SN74HC132N	Quad 2-Input P-NAND Schmitt-Trigger	14
SN74HC138D	SN74HC138N	3-To-8 Decoder/Demultiplexer	16
SN74HC139D	SN74HC139N	Dual 2-To-4 Decoder/Demultiplexer	16
SN74HC14D	SN74HC14N	Hex Schmitt-Trigger Inverter	14
SN74HC151D	SN74HC151N	8-To-1 Data Selector/Multiplexer	16
SN74HC157D	SN74HC157N	Quad 1-Of-2 Data Selector/Multiplex	16
SN74HC161D	SN74HC161N	4-Bit Synchronous Binary Counter	16
SN74HC163D	SN74HC163N	4-Bit Synchronous Binary Counter	16
SN74HC164D	SN74HC164N	8-Bit Parallel-Out Serial Shift Register	14
SN74HC165D	SN74HC165N	8-Bit Parallel-Load Shift Register	16
SN74HC166D	SN74HC166N	8-Bit Parallel-Load Shift Register	16
SN74HC174D	SN74HC174N	Hex D-Type Flip-Flop	16
SN74HC175D	SN74HC175N	Quad D-Type Flip-Flop	16
SN74HC240DW	SN74HC240N	Octal Buffer/Line Driver with 3-State Outputs	20
SN74HC244DW	SN74HC244N	Octal Buffer/Line Driver with 3-State Outputs	20
SN74HC245DW	SN74HC245N	Octal Bus Transceiver with 3-State Outputs	20
SN74HC251D	SN74HC251N	1-Of-8 Data Selector/Mux with 3-State Outputs	16
SN74HC257D	SN74HC257N	Quad 2-To-1 Data Selector/Mux with 3-State Outputs	16
SN74HC273DW	SN74HC273N	Octal D-Type Flip-Flop	20
—	SN74HC32N	Quad 2-Input Positive-OR Gate	14
SN74HC367D	SN74HC367N	Hex Driver with 3-State Outputs	16
SN74HC373DW	SN74HC373N	Octal D-Type Transparent Latch with 3-State Outputs	20
SN74HC374DW	SN74HC374N	Octal D-Type Flip-Flop with 3-State Outputs	20
SN74HC377DW	SN74HC377N	Octal D-Type Flip-Flop with Clock Enable	20
SN74HC393D	SN74HC393N	Dual 4-Bit Binary Counter	14
SN74HC4040D	SN74HC4040N	12-Bit Asynchronous Binary Counter	16
SN74HC540DW	SN74HC540N	Octal Buffer/Line Driver with 3-State Outputs	20
SN74HC541DW	SN74HC541N	Octal Buffer/Line Driver with 3-State Outputs	20
SN74HC573ADW	SN74HC573AN	Octal D-Type Transparent Latch with 3-State Outputs	20
SN74HC574DW	SN74HC574N	Octal D-Type Flip-Flop with 3-State Outputs	20
SN74HC590ADW	SN74HC590AN	8-Bit Binary Counter with 3-State Outputs	16
SN74HC594DW	SN74HC594N	8-Bit Shift Register with Output Register	16
SN74HC595DW	SN74HC595N	8-Bit Shift Register with 3-State Outputs	16
SN74HC7001D	SN74HC7001N	Quad P-AND Gate with Schmitt-Trigger	14
SN74HC74D	SN74HC74N	Dual D-Type Flip-Flop	14
SN74HC86D	SN74HC86N	Quad 2-Input Exclusive-OR Gate	14

SN74HCT: High Speed CMOS-TTL Logic

SN74HCT00D	SN74HCT00N	Quad 2-Input Positive-NAND Gate	14
SN74HCT04D	SN74HCT04N	Hex Inverter	14
SN74HCT08D	SN74HCT08N	Quad 2-Input Positive-AND Gate	14
SN74HCT138D	SN74HCT138N	3-To-8 Decoder/Demultiplexer	16
SN74HCT240DW	SN74HCT240N	Octal Buffer/Line Driver with 3-State Outputs	20
SN74HCT244DW	SN74HCT244N	Octal Buffer/Line Driver with 3-State Outputs	20
SN74HCT245DW	SN74HCT245N	Octal Bus Transceiver with 3-State Outputs	20
SN74HCT273DW	SN74HCT273N	Octal D-Type Flip-Flop	20
SN74HCT32D	SN74HCT32N	Quad 2-Input Positive-OR Gate	14
SN74HCT373DW	SN74HCT373N	Octal D-Type Transparent Latch with 3-State Outputs	20
SN74HCT374DW	SN74HCT374N	Octal D-Type Flip-Flop with 3-State Outputs	20
SN74HCT541DW	SN74HCT541N	Octal Buffer/Line Driver with 3-State Outputs	20
SN74HCT573DW	SN74HCT573N	Octal D-Type Transparent Latch with 3-State Outputs	20
SN74HCT574DW	SN74HCT574N	Octal D-Type Flip-Flop with 3-State Outputs	20
SN74HCT646DW	SN74HCT646NT	Octal Bus Xceiver AND Register with 3-State Outputs	24
—	SN74HCT652NT	Octal Bus Xceiver AND Register with 3-State Outputs	24
SN74HCT74D	SN74HCT74N	Dual D-Type Flip-Flop	14

SN74LS: Low Power Schottky TTL Logic

SN74LS00D	SN74LS00N	Quad 2-Input Positive-NAND Gate	14
SN74LS02D	SN74LS02N	Quad 2-Input Positive-NOR Gate	14
SN74LS04D	SN74LS04N	Hex Inverter	14

SN74LS: Low Power Schottky TTL Logic (continued)

Mfr.'s Type		Description	No. of Leads
SOIC	PDIP		
SN74LS05D	SN74LS05N	Hex Inverter with Open-Collector Outputs	14
SN74LS06D	SN74LS06N	Hex Inverter with Open-Collector Outputs	14
SN74LS07D	SN74LS07N	Hex Buffer with Open-Collector Outputs	14
SN74LS08D	SN74LS08N	Quad 2-Input Positive-AND Gate	14
SN74LS10D	SN74LS10N	Triple 3-Input Positive-NAND Gate	14
SN74LS123D	SN74LS123N	Dual Monostable Multivibrator	16
SN74LS125AD	SN74LS125AN	Quad Bus Buffer Gates with 3-State Outputs	14
SN74LS126AD	SN74LS126AN	Quad Bus Buffer Gates with 3-State Outputs	14
SN74LS132D	SN74LS132N	Quad 2-Input P-NAND Schmitt-Trigger	14
SN74LS137D	SN74LS137N	3-To-8 Decoder/Demux with Address Latch	16
SN74LS138D	SN74LS138N	3-To-8 Decoder/Demultiplexer	16
SN74LS139AD	SN74LS139AN	Dual 2-To-4 Decoder/Demultiplexer	16
SN74LS145D	SN74LS145N	BCD-to-Decimal Decoder/Driver	16
SN74LS148D	SN74LS148N	8-To-3 Line Priority Encoder	16
SN74LS14D	SN74LS14N	Hex Schmitt-Trigger Inverter	14
SN74LS151D	SN74LS151N	8-To-1 Data Selector/Multiplexer	16
SN74LS153D	SN74LS153N	Dual 4-To-1 Data Selector/Multiplexer	16
SN74LS156D	SN74LS156N	Dual 2-To-4 Line Decode/Demux with Open Collector Outputs	16
SN74LS157D	SN74LS157N	Quad 1-Of-2 Data Selector/Multiplexer	16
SN74LS161AD	SN74LS161AN	4-Bit Synchronous Binary Counter	16
SN74LS163AD	SN74LS163AN	4-Bit Synchronous Binary Counter	16
SN74LS164D	SN74LS164N	8-Bit Parallel-Out Serial Shift Register	14
SN74LS165AD	SN74LS165AN	8-Bit Parallel-Load Shift Register	16
SN74LS166AD	SN74LS166AN	8-Bit Parallel-Load Shift Register	16
SN74LS174D	SN74LS174N	Hex D-Type Flip-Flop	16
SN74LS175D	SN74LS175N	Quad D-Type Flip-Flop	16
SN74LS193D	SN74LS193N	4-Bit Synchronous Up/Down Binary Counter	16
SN74LS19AD	SN74LS19AN	Hex Schmitt-Trigger Inverter	14
SN74LS221D	SN74LS221N	Dual Monostable Multivibrator	16
SN74LS240DW	SN74LS240N	Octal Buffer/Line Driver with 3-State Outputs	20
SN74LS241DW	SN74LS241N	Octal Buffer/Line Driver with 3-State Outputs	20
SN74LS244DW	SN74LS244N	Octal Buffer/Line Driver with 3-State Outputs	20
SN74LS245DW	SN74LS245N	Octal Bus Transceiver with 3-State Outputs	20
SN74LS251D	SN74LS251N	1-Of-8 Data Selector/Mux with 3-State Outputs	16
SN74LS253D	SN74LS253N	Dual 4-To-1 Data Selector/Mux with 3-State Outputs	16
SN74LS257BD	SN74LS257BN	Quad 2-To-1 Data Selector/Mux with 3-State Outputs	16
SN74LS259BD	SN74LS259BN	8-Bit Addressable Latch	16
SN74LS273DW	SN74LS273N	Octal D-Type Flip-Flop	20
SN74LS280D	SN74LS280N	9-Bit Parity Generator/Checker	14
SN74LS283D	SN74LS283N	4-Bit Binary Full Adder	16
—	SN74LS292N	30-Bit Programmable Counter	16
SN74LS299DW	SN74LS299N	8-Bit Universal Shift/Storage Register	20
SN74LS30D	SN74LS30N	8-Input Positive-NAND Gate	14
SN74LS32D	SN74LS32N	Quad 2-Input Positive-OR Gate	14
SN74LS365AD	SN74LS365AN	Hex Driver with 3-State Outputs	16
SN74LS367AD	SN74LS367AN	Hex Driver with 3-State Outputs	16
SN74LS368AD	SN74LS368AN	Hex Driver with 3-State Outputs	16
SN74LS373DW	SN74LS373N	Octal D-Type Transparent Latch with 3-State Outputs	20
SN74LS374DW	SN74LS374N	Octal D-Type Flip-Flop with 3-State Outputs	20
SN74LS377DW	SN74LS377N	Octal D-Type Flip-Flop with Clock Enable	20
SN74LS378D	SN74LS378N	Hex D-Type Flip-Flop with Clock Enable	16
SN74LS38D	SN74LS38N	Quad 2-Input P-NAND Buffer with Open Collector	14
SN74LS393D	SN74LS393N	Dual 4-Bit Binary Counter	14
SN74LS540DW	SN74LS540N	Octal Buffer/Line Driver with 3-State Outputs	20
SN74LS541DW	SN74LS541N	Octal Buffer/Line Driver with 3-State Outputs	20
SN74LS590D	SN74LS590N	8-Bit Binary Counter with 3-State Outputs	16
SN74LS592D	SN74LS592N	Binary Counter with Input Registers	16
SN74LS593DW	SN74LS593N	8-Bit Binary Counter with 3-State I/O Registers	20
SN74LS595D	SN74LS595N	8-Bit Shift Register with 3-State Outputs	16
SN74LS597D	SN74LS597N	Shift Register with Input Latch	16
—	SN74LS624N	Voltage-Controlled Oscillator	14
SN74LS628D	SN74LS628N	Voltage-Controlled Oscillator	14
SN74LS640-1DW	SN74LS640-1N	Octal Bus Transceiver with 3-State Outputs	20
SN74LS640DW	SN74LS640N	Octal Bus Transceiver with 3-State Outputs	20
SN74LS645-1DW	SN74LS645-1N	Octal Bus Transceiver with 3-State Outputs	20
SN74LS646DW	SN74LS646NT	Octal Bus Xceiver AND Register with 3-State Outputs	24
SN74LS652DW	SN74LS652NT	Octal Bus Xceiver AND Register with 3-State Outputs	24
SN74LS670D	SN74LS670N	4-By-4 Register File	16
SN74LS682DW	SN74LS682N	8-Bit Magnitude Comparator	20
SN74LS684DW	SN74LS684N	8-Bit Magnitude Comparator	20
SN74LS688DW	SN74LS688N	8-Bit Identity Comparator	20
SN74LS74AD	SN74LS74AN	Dual D-Type Flip-Flop	14
SN74LS85D	SN74LS85N	4-Bit Magnitude Comparator	16
SN74LS86AD	SN74LS86AN	Quad 2-Input Exclusive-OR Gate	14

SN74S: Schottky TTL Logic

SN74S00D	SN74S00N	Quad 2-Input Positive-NAND Gate	14
—	SN74S02N	Quad 2-Input Positive-NOR Gate	14
SN74S04D	SN74S04N	Hex Inverter	14
SN74S05D	SN74S05N	Hex Inverter with Open-Collector Outputs	14
SN74S1050D	SN74S1050N	12-Bit Schottky Barrier Diode	16
SN74S1051D	SN74S1051N	12-Bit Schottky Barrier Diode	16
SN74S1053DW	SN74S1053N	16-Bit Schottky Barrier Diode	20
SN74S1056D	SN74S1056SC*	8-Bit Schottky Barrier Diode	16
SN74S112AD	SN74S112AN	Dual J-K Negative-Edge Flip-Flop	16
SN74S124D	SN74S124N	Dual Voltage-Controlled Oscillators	16
SN74S138AD	SN74S138AN	3-To-8 Decoder/Demultiplexer	16
SN74S163D	SN74S163N	4-Bit Synchronous Binary Counter	16
SN74S175D	SN74S175N	Quad D-Type Flip-Flop	16
—	SN74S225N	16x5 Asynchronous FIFO, 10 MHz	20
SN74S240DW	SN74S240N	Octal Buffer/Line Driver with 3-State Outputs	20
SN74S241DW	SN74S241N	Octal Buffer/Line Driver with 3-State Outputs	20
SN74S244DW	SN74S244N	Octal Buffer/Line Driver with 3-State Outputs	20
SN74S280D	SN74S280N	9-Bit Parity Generator/Checker	14
SN74S32D	SN74S32N	Quad 2-Input Positive-OR Gate	14
SN74S373DW	SN74S373N	Octal D-Type Transparent Latch with 3-State Outputs	20
SN74S374DW	SN74S374N	Octal D-Type Flip-Flop with 3-State Outputs	20
SN74S38D	SN74S38N	Quad 2-Input Positive-NAND Buffer with Open Collector Outputs	14
SN74S74D	SN74S74N	Dual D-Type Flip-Flop	14
SN74S85D	SN74S85N	4-Bit Magnitude Comparator	16

*Single in line package.

Bipolar Programmable Logic and PROMs

Bipolar Programmable Logic Devices

Mfr.'s Type		Propagation Delay (ns)	@ Icc (mA)	Max. Clock Frequency (MHz)	No. of I Inputs	No. of 3-State O Outputs	No. of Registered Q Outputs	No. of I/O Ports	No. of Leads
PLCC	PDIP								
TIBPAL16L8-10CFN	TIBPAL16L8-10CN	10.0	180.0	62.5	10.0	2	0	6	20
TIBPAL16L8-15CFN	TIBPAL16L8-15CN	15.0	180.0	50.0	10.0	2	0	6	20
TIBPAL16L8-25CFN	TIBPAL16L8-25CN	25.0	100.0	30.0	10.0	2	0	6	20
TIBPAL16L8-5CFN	TIBPAL16L8-5CN	5.0	180.0	125.0	10.0	2	0	6	20
TIBPAL16L8-7CFN	TIBPAL16L8-7CN	7.5	210.0	100.0	10.0	2	0	6	20
TIBPAL16R4-10CFN	TIBPAL16R4-10CN	10.0	180.0	62.5	8.0	0	4 (3-State Buffers)	4	20
TIBPAL16R4-15CFN	TIBPAL16R4-15CN	15.0	180.0	50.0	8.0	0	4 (3-State Buffers)	4	20
TIBPAL16R4-25CFN	TIBPAL16R4-25CN	24.0	100.0	30.0	8.0	0	4 (3-State Buffers)	4	20
TIBPAL16R4-5CFN	TIBPAL16R4-5CN	5.0	180.0	125.0	8.0	0	4 (3-State Buffers)	4	20
TIBPAL16R4-7CFN	TIBPAL16R4-7CN	7.5	210.0	100.0	8.0	0	4 (3-State Buffers)	4	20
TIBPAL16R6-10CFN	TIBPAL16R6-10CN	10.0	180.0	62.5	8.0	0	6 (3-State Buffers)	2	20
TIBPAL16R6-15CFN	TIBPAL16R6-15CN	15.0	180.0	50.0	8.0	0	6 (3-State Buffers)	2	20
TIBPAL16R6-25CFN	TIBPAL16R6-25CN	25.0	100.0	30.0	8.0	0	6 (3-State Buffers)	2	20
TIBPAL16R6-5CFN	TIBPAL16R6-5CN	5.0	180.0	125.0	8.0	0	6 (3-State Buffers)	2	20
TIBPAL16R6-7CFN	TIBPAL16R6-7CN	7.5	210.0	100.0	8.0	0	6 (3-State Buffers)	2	20
TIBPAL16R8-10CFN	TIBPAL16R8-10CN	10.0	180.0	62.5	8.0	0	8 (3-State Buffers)	0	20
TIBPAL16R8-15CFN	TIBPAL16R8-15CN	15.0	180.0	50.0	8.0	0	8 (3-State Buffers)	0	20
TIBPAL16R8-25CFN	TIBPAL16R8-25CN	25.0	100.0	30.0	8.0	0	8 (3-State Buffers)	0	20
TIBPAL16R8-5CFN	TIBPAL16R8-5CN	5.0	210.0	125.0	8.0	0	8 (3-State Buffers)	0	20
TIBPAL16R8-7CFN	TIBPAL16R8-7CN	7.5	210.0	100.0	8.0	0	8 (3-State Buffers)	0	20
TIBPAL20L8-10CFN	TIBPAL20L8-10CNT	10.0	210.0	71.4	14.0	2	0	6	28
TIBPAL20L8-15CFN	TIBPAL20L8-15CNT	15.0	180.0	45.0	14.0	2	0	6	28
TIBPAL20L8-25CFN	TIBPAL20L8-25CNT	25.0	105.0	33.0	14.0	2	0	6	28
TIBPAL20L8-5CFN	TIBPAL20L8-5CNT	5.0	210.0	125.0	14.0	2	0	6	28
TIBPAL20L8-7CFN	TIBPAL20L8-7CNT	7.5	210.0	100.0	14.0	2	0	6	28
TIBPAL20R4-10CFN	TIBPAL20R4-10CNT	10.0	210.0	71.4	12.0	0	4 (3-State Buffers)	4	28
TIBPAL20R4-15CFN	TIBPAL20R4-15CNT	15.0	180.0	45.0	12.0	0	4 (3-State Buffers)	4	28
TIBPAL20R4-25CFN	TIBPAL20R4-25CNT	25.0	105.0	33.0	12.0	0	4 (3-State Buffers)	4	28
TIBPAL20R4-5CFN	TIBPAL20R4-5CNT	5.0	180.0	125.0	12.0	0	4 (3-State Buffers)	4	28
TIBPAL20R4-7CFN	TIBPAL20R4-7CNT	7.5	210.0	100.0	12.0	0	4 (3-State Buffers)	4	28
TIBPAL20R6-10CFN	TIBPAL20R6-10CNT	10.0	210.0	71.4	12.0	0	6 (3-State Buffers)	2	28
TIBPAL20R6-15CFN	TIBPAL20R6-15CNT	15.0	180.0	45.0	12.0	0	6 (3-State Buffers)	2	28
—	TIBPAL20R6-25CNT	25.0	105.0	33.0	12.0	0	6 (3-State Buffers)	2	24
TIBPAL20R6-5CFN	TIBPAL20R6-5CNT	5.0	180.0	125.0	12.0	0	6 (3-State Buffers)	2	28
TIBPAL20R6-7CFN	TIBPAL20R6-7CNT	7.5	210.0	100.0	12.0	0	6 (3-State Buffers)	2	28
—	TIBPAL20R8-10CNT	10.0	210.0	71.4	12.0	0	8 (3-State Buffers)	0	24
TIBPAL20R8-15CFN	TIBPAL20R8-15CNT	15.0	180.0	45.0	12.0	0	8 (3-State Buffers)	0	28
—	TIBPAL20R8-25CNT	25.0	105.0	33.0	12.0	0	8 (3-State Buffers)	0	24
TIBPAL20R8-5CFN	TIBPAL20R8-5CNT	5.0	210.0	125.0	12.0	0	8 (3-State Buffers)	0	28
TIBPAL20R8-7CFN	TIBPAL20R8-7CNT	7.5	210.0	100.0	12.0	0	8 (3-State Buffers)	0	28
TIBPAL22V10-10CFN	TIBPAL22V10-10CNT	10.0	210.0	71.0	11.0	0	10 (3-State Buffers)	10	28
TIBPAL22V10-15BCFN	TIBPAL22V10-15BCNT	15.0	180.0	60.0	11.0	0	10 (3-State Buffers)	10	28
TIBPAL22V10ACFN	TIBPAL22V10ACNT	25.0	180.0	28.5	11.0	0	10 (3-State Buffers)	10	28
—	TIBPAL22VP10-20CNT	20.0	210.0	37.0	11.0	0	10 (3-State Buffers)	10	24

Programmable Read Only Memory

TMS27C: CMOS EPROMs

Mfr.'s Type	Density	Organization (Words × Bits)	Maximum Access Time (ns)	Power Supply/ Percent Tolerance (+V/±%)	Maximum Power Dissipation		Temperature Package (°C)	Package Type
					Active (mW)	Standby (mW)		
TMS27C256-10JL	256 K	32 K × 8	100	5/10	165	1.40	0 to 70	28 Lead CERDIP
TMS27C256-120JL	256 K	32 K × 8	120	5/5	165	1.40	0 to 70	28 Lead CERDIP
TMS27C256-12JL	256 K	32 K × 8	120	5/10	165	1.40	0 to 70	28 Lead CERDIP
TMS27C256-150JL	256 K	32 K × 8	150	5/5	165	1.40	0 to 70	28 Lead CERDIP
TMS27C256-15JL	256 K	32 K × 8	150	5/10	165	1.40	0 to 70	28 Lead CERDIP
TMS27C256-17JL	256 K	32 K × 8	170	5/10	165	1.40	0 to 70	28 Lead CERDIP
TMS27C256-1JL	256 K	32 K × 8	170	5/5	165	1.40	0 to 70	28 Lead CERDIP
TMS27C256-20JL	256 K	32 K × 8	200	5/10	165	1.40	0 to 70	28 Lead CERDIP
TMS27C256-2JE	256 K	32 K × 8	200	5/5	165	1.40	–40 to +85	28 Lead CERDIP
TMS27C256-2JL	256 K	32 K × 8	200	5/5	165	1.40	0 to 70	28 Lead CERDIP
TMS27C256-25JL	256 K	32 K × 8	250	5/10	165	1.40	0 to 70	28 Lead CERDIP
TMS27C256JL	256 K	32 K × 8	250	5/5	165	1.40	0 to 70	28 Lead CERDIP
TMS27C512-10JL	512 K	64 K × 8	100	5/10	165	1.40	0 to 70	28 Lead CERDIP
TMS27C512-120JL	512 K	64 K × 8	120	5/5	165	1.40	0 to 70	28 Lead CERDIP
TMS27C512-12JE	512 K	64 K × 8	120	5/10	165	1.40	–40 to +85	28 Lead CERDIP
TMS27C512-12JL	512 K	64 K × 8	120	5/10	165	1.40	0 to 70	28 Lead CERDIP
TMS27C512-150JE	512 K	64 K × 8	150	5/5	165	1.40	–40 to +85	28 Lead CERDIP
TMS27C512-150JL	512 K	64 K × 8	150	5/5	165	1.40	0 to 70	28 Lead CERDIP
TMS27C512-15JL	512 K	64 K × 8	150	5/10	165	1.40	0 to 70	28 Lead CERDIP
TMS27C512-1JL	512 K	64 K × 8	170	5/5	165	1.40	0 to 70	28 Lead CERDIP
TMS27C512-20JL	512 K	64 K × 8	200	5/10	165	1.40	0 to 70	28 Lead CERDIP
TMS27C512-2JL	512 K	64 K × 8	200	5/5	165	1.40	0 to 70	28 Lead CERDIP
TMS27C512-25JL	512 K	64 K × 8	250	5/10	165	1.40	0 to 70	28 Lead CERDIP
TMS27C512JL	512 K	64 K × 8	250	5/5	165	1.40	0 to 70	28 Lead CERDIP
TMS27C010A-10JL	1024 K	128 K × 8	100	5/10	165	0.55	0 to 70	32 Lead CERDIP
TMS27C010A-12JL	1024 K	128 K × 8	120	5/10	165	0.55	0 to 70	32 Lead CERDIP
TMS27C010A-15JL	1024 K	128 K × 8	150	5/10	165	0.55	0 to 70	32 Lead CERDIP
TMS27C010A-20JL	1024 K	128 K × 8	200	5/10	165	0.55	0 to 70	32 Lead CERDIP
TMS27C210A-12JL	1024 K	64 K × 16	120	5/10	165	0.55	0 to 70	40 Lead CERDIP
TMS27C210A-15JL	1024 K	64 K × 16	150	5/10	165	0.55	0 to 70	40 Lead CERDIP
TMS27C020-12JL	2048 K	256 K × 8	120	5/10	165	0.55	0 to 70	32 Lead CERDIP
TMS27C020-15JL	2048 K	256 K × 8	150	5/10	165	0.55	0 to 70	32 Lead CERDIP
TMS27C040-10JL	2048 K	512 K × 8	100	5/10	275	0.55	0 to 70	32 Lead CERDIP
TMS27C040-12JL	4096 K	512 K × 8	120	5/10	275	0.55	0 to 70	32 Lead CERDIP
TMS27C040-15JL	4096 K	512 K × 8	150	5/10	275	0.55	0 to 70	32 Lead CERDIP

TMS27PC: CMOS One-Time-Programmable PROMs

TMS27PC256-12FML	256 K	32 K × 8	120	5/10	165	1.40	0 to 70	32 Lead PLCC
TMS27PC256-20FML	256 K	32 K × 8	200	5/10	165	1.40	0 to 70	32 Lead PLCC
TMS27PC256-2NL	256 K	32 K × 8	200	5/5	165	1.40	0 to 70	28 Lead PDIP
TMS27PC512-12FML	512 K	64 K × 8	120	5/10	165	1.40	0 to 70	32 Lead PLCC
TMS27PC512-15NL	512 K	64 K × 8	150	5/10	165	1.40	0 to 70	28 Lead PDIP
TMS27PC512-20FML	512 K	64 K × 8	200	5/5	165	1.40	0 to 70	32 Lead PLCC
TMS27PC512-20NL	512 K	64 K × 8	200	5/10	165	1.40	0 to 70	28 Lead PDIP

Programmable Read Only Memory (continued)

TMS27PC: CMOS One-Time-Programmable PROMs (continued)

Mfr.'s Type	Density	Organization (Words × Bits)	Maximum Access Time (ns)	Power Supply/ Percent Tolerance (+V/±%)	Maximum Power Dissipation		Temperature Package (°C)	Package Type
					Active (mW)	Standby (mW)		
TMS27PC512-2NL	512 K	64 K × 8	200	5/5	165	1.40	0 to 70	28 Lead PDIP
TMS27PC010A-12FML	1024 K	128 K × 8	120	5/10	165	0.55	0 to 70	32 Lead PLCC
TMS27PC020-15FML	2048 K	256 K × 8	150	5/10	165	0.55	0 to 70	32 Lead PLCC

Digital Signal Processors

TMS320C1X: First Generation 16-Bit Digital Signal Processors, Fixed Point

Mfr.'s Type	Operating Frequency (MHz)	Memory			Peripherals			Temperature Range (°C)	No. of Leads
		On Chip		Off Chip (K Bytes)	Parallel	Serial	On-Chip Timer		
PDIP		RAM (Bytes)	ROM (Bytes)						
TMS320C10NL	20	144	1.5	4	8 × 16	—	—	0 to +70	40

TMS320C2X: Second Generation 16-Bit Digital Signal Processors, Fixed Point

Mfr.'s Type		Operating Frequency (MHz)	Memory			Peripherals			Temperature Range (°C)	No. of Leads
			On Chip		Off Chip (K Bytes)	Parallel	Serial	On-Chip Timer		
PLCC	CPGA		RAM (Bytes)	ROM (Bytes)						
TMS320C25FNL	TMS320C25GBL	40	544	4 K	128	16 × 16	1	1	0 to +70	68
TMS320C25FNL50	—	50	544	4 K	128	16 × 16	1	1	0 to +70	68

TMS320C3X: Third Generation 16-Bit Digital Signal Processors, Floating Point Matrix

Mfr.'s Type		Operating Frequency (MHz)	On Chip Memory		Memory Space	Cache	Memory I/F	I/O			Temperature Range °C	No. of Leads
CPGA	PQFP		RAM	ROM				Timer	Com.	DMA		
TMS320C30GEL	—	33	2 K × 32	4 K × 32	16 M × 32	64 × 32	2	2	2 Serial	1	0 to +70	181
—	TMS320C31PQA	33	2 K × 32	Boot	16 M × 32	64 × 32	1	2	1 Serial	1	0 to +85	132
—	TMS320C31PQL	33	2 K × 32	Boot	16 M × 32	64 × 32	1	2	1 Serial	1	0 to +70	132
—	TMS320C31PQL50	50	2 K × 32	Boot	16 M × 32	64 × 32	1	2	1 Serial	1	0 to +70	132

TMS320C4X: Fourth Generation 16-Bit Digital Signal Processors, Floating Point Matrix

Mfr.'s Type	Operating Frequency (MHz)	On Chip Memory		Memory Space	Cache	Memory I/F	I/O			Temperature Range (°C)	No. of Leads
PGA		RAM	ROM				Timer	Com.	DMA		
TMS320C40GFL40	40	2 K × 32	Boot	4 G × 32	128 × 32	2	2	6 Parallel	6	0 to +70	325

TMS320C5X: Fifth Generation 16-Bit Digital Signal Processors, Fixed Point

Mfr.'s Type	Operating Frequency (MHz)	Memory			Peripherals			Temperature Range (°C)	No. of Leads
		On Chip		Off Chip (K Bytes)	Parallel	Serial	On-Chip Timer		
PQFP		RAM (Bytes)	ROM (Bytes)						
TMS320C50PQ	40	20 K	2 K	192	64 K × 16	2	1	0 to +85	132
TMS320C50PQ57	57	20 K	2 K	192	64 K × 16	2	1	0 to +85	132
TMS320C51PQ57	57	2 K	8 K	192	64 K × 16	2	1	0 to +85	132/100

Telecommunication Circuits

Mfr.'s Type	Description	Function	Technology	Supply Voltage (V)	Product Features	No. of Leads
PDIP						
TCM29C16AN	PCM Interface	COMBO	CMOS	±5	Synchronous, µLaw, Variable Data Rate Fixed Data Rate, 2.048 MHz	16
TCM29C16N	PCM Interface	COMBO	CMOS	±5	Synchronous, µLaw, Variable Data Rate Fixed Data Rate, 2.048 MHz	16

Analog To Digital Converters

Mfr.'s Type		Conversion Function	Address and Data I/O Format	Signal Inputs		Resolution (Bits)	Unadjusted Error (±LSB Max.)	Power Dissipation (mW)	Conversion Speed (µs)	No. of Leads
PLCC	PDIP			Analog Dedicated	Analog Digital					
—	TLC0820ACN	Modified Flash	Parallel	1 Differential	0	8.0	1.0	35	1	20
TLC1540CFN	TLC1540CN	Successive Approximation	Serial	11	0	10.0	0.5	6	31	20
—	TLC549CP	Successive Approximation	Serial	1	0	8.0	0.5	6	25	8
—	TLC7135CN	Dual Slope Integrating	Muxed BCD, 4.5 Digits	1 Differential	0	4.5 Digits	0.5	—	35	28

Digital To Analog Converters

Mfr.'s Type	Transfer Characteristics	Dynamic Range (Bits)	Resolution (Bits)	Sampling Rate (MHz)	On-Board Filters	Package Type
TLC7528CFN	Linear	8	8	5, Dual D/A	No	20 Lead PLCC

Mfr.'s Type	Transfer Characteristics	Dynamic Range (Bits)	Resolution (Bits)	Sampling Rate (MHz)	On-Board Filters	Package Type
TLC7528CN	Linear	8	8	5, Dual D/A	No	20 Lead PDIP

Analog Interface For Digital Signal Processors

Mfr.'s Type		Function	Transfer Characteristics	Dynamic Range (Bits)	Resolution (Bits)	Sampling Rate	On-Board Filters	No. of Leads
PLCC	PDIP							
TLC32040CFN	TLC32040CN	High Performance Combo	Linear	14	14	16 kHz Programmable	Yes Programmable	28
TLC32044CFN	TLC32044CN	Voiceband AIC	Linear	14	14	16 kHZ	Yes	28
—	TLC32046CN	Voiceband AIC	Linear	14	14	25 kHz	Yes	28

Interface Circuits

General Purpose Drivers

Mfr.'s Type		Maximum Switching Voltage (V)	Maximum Off-State Voltage (V)	Output Current (mA)	Drivers Per Package	Output Clamp Diodes	Input Capability	Function	Delay Time Typ. (ns)	No. of Leads
SOIC	PDIP									
SN75372D	SN75372P	24	24	500	2	Yes	TTL	MOS Driver	35	8
SN75374D	SN75374N	24	24	500	4	Yes	TTL	MOS Driver	35	16
—	SN75451BP	20	30	300	2	No	TTL	AND	18	8
SN75452BD	SN75452BP	20	30	300	2	No	TTL	NAND	25	8
—	SN75453BP	20	30	300	2	No	TTL	OR	18	8
SN75454BD	SN75454BP	20	30	300	2	No	TTL	NOR	26	8
—	SN75462P	30	35	300	2	No	TTL	NAND	38	8
SN75463D	SN75463P	30	35	300	2	No	TTL	OR	28	8
—	SN75437ANE	35	70	500	4	Yes	TTL, CMOS	Inverting with Enable	1050	16
SN75471D	SN75471P	55	70	300	2	No	TTL	AND	28	8
SN75472P	—	55	70	300	2	No	TTL	NAND	38	8
SN75477D	SN75477P	55	70	300	2	Yes	TTL, CMOS	NAND	200	8

Line Drivers

Mfr.'s Type		Application	Output	Drivers Per Pkg.	No. of Leads
SOIC	PDIP				
—	MC1488N	EIA Standard RS-232-C	Single-Ended	4	14
SN65C188D	SN65C188N	EIA Standard RS-232-C	Single-Ended	4	14
SN75150D	SN75150P	EIA Standard RS-232-C	Single-Ended	2	8
SN75188D	SN75188N	EIA Standard RS-232-C	Single-Ended	4	14
SN75C188D	SN75C188N	EIA Standard RS-232-C	Single-Ended	4	14
AM26C31CD	AM26C31CN	EIA Standard RS-422-A	Differential	4	16
AM26LS31CD	AM26LS31CN	EIA Standard RS-422-A	Differential	4	16
MC3487D	MC3487N	EIA Standard RS-422-A	Differential	4	16
SN75158D	SN75158P	EIA Standard RS-422-A	Differential	2	8
SN75159D	SN75159N	EIA Standard RS-422-A	Differential	2	14
—	SN75172N	EIA Standard RS-422-A	Differential	4	16
SN75174DW	SN75174N	EIA Standard RS-422-A	Differential	4	16
SN75ALS192D	SN75ALS192N	EIA Standard RS-422-A	Differential	4	16
—	SN75ALS194N	EIA Standard RS-422-A	Differential	4	16
—	UA9638CP	EIA Standard RS-422-A	Differential	2	8
UA9636ACD	UA9636ACP	EIA Standard RS-423-A	Single-Ended	2	8
—	SN75110AN	General Purpose	Differential	2	14
SN75112D	SN75112N	General Purpose	Differential	2	14
SN75113D	SN75113N	General Purpose	Differential	2	16
SN75114D	SN75114N	General Purpose	Differential	2	16
—	SN75126N	IBM 360/370	Single-Ended	4	16

Line Receivers

SN75ALS197D	—	CCIT V.11 & X.27	Differential	4	16
LT1030CD	LT1030CN	EIA Standard RS-232-C	Single-Ended	4	14
—	MC1489AN	EIA Standard RS-232-C	Single-Ended	4	14
—	MC1489N	EIA Standard RS-232-C	Single-Ended	4	14
SN75154D	SN75154N	EIA Standard RS-232-C	Single-Ended	4	16
SN75189AD	SN75189AN	EIA Standard RS-232-C	Single-Ended	4	14
SN75189D	SN75189N	EIA Standard RS-232-C	Single-Ended	4	14
SN75C189AD	SN75C189AN	EIA Standard RS-232-C	Single-Ended	4	14
SN75C189D	SN75C189N	EIA Standard RS-232-C	Single-Ended	4	14
AM26LS32ACD	AM26LS32ACN	EIA Standard RS-422-A or RS-423-S	Differential or Single-Ended	4	16
MC3486D	MC3486N	EIA Standard RS-422-A or RS-423-S	Differential or Single-Ended	4	16
—	SN75157P	EIA Standard RS-422-A or RS-423-S	Differential or Single-Ended	2	8
SN75173D	SN75173N	EIA Standard RS-422-A or RS-423-S	Differential or Single-Ended	4	16
SN75175D	SN75175N	EIA Standard RS-422-A or RS-423-S	Differential or Single-Ended	4	16
—	SN75ALS193N	EIA Standard RS-422-A or RS-423-S	Differential or Single-Ended	4	16
—	SN75ALS195N	EIA Standard RS-422-A or RS-423-S	Differential or Single-Ended	4	16
UA9637ACD	UA9637ACP	EIA Standard RS-422-A or RS-423-S	Differential or Single-Ended	2	8
—	UA9639CP	EIA Standard RS-422-A or RS-423-S	Differential or Single-Ended	2	8

Line Receivers (continued)

Mfr.'s Type		Application	Output	Drivers Per Pkg.	No. of Leads
SOIC	PDIP				
AM26LS33ACD	AM26LS33ACN	General Purpose	Differential	4	16
SN75107AD	SN75107AN	General Purpose	Differential	2	14
SN75107BD	SN75107BN	General Purpose	Differential	2	14
SN75108D	SN75108BN	General Purpose	Differential	2	14
—	SN75115N	General Purpose	Differential	2	16
—	SN75207BN	General Purpose	Differential	2	14
—	SN75128N	IBM 360/370	Single-Ended	8	20
SN75129DW	SN75129N	IBM 360/370	Single-Ended	8	20

Line Transceivers

SN75160BDW	SN75160BN	EIA Standard 488 GPIB	Single-Ended	8	20
—	SN75161BN	EIA Standard 488 GPIB	Single-Ended	8	20
—	SN75162BN	EIA Standard 488 GPIB	Single-Ended	8	22
SN75ALS160DW	SN75ALS160N	EIA Standard 488 GPIB	Single-Ended	8	20
MAX232DW	—	EIA Standard RS-232-C	Single-Ended	2/2	16
MAX232D	MAX232N	EIA Standard RS-232-C	Single-Ended	2/2	16
SN75155D	SN75155P	EIA Standard RS-232-C	Single-Ended	1	8
SN75C185DW	SN75C185N	EIA Standard RS-232-C	Single-Ended	3/5	20
SN65176BD	SN65176BP	EIA Standard RS-422-C & RS-485	Differential	1	8
—	SN65ALS176P	EIA Standard RS-422-C & RS-485	Differential	1	8
SN65ALS180D	—	EIA Standard RS-422-C & RS-485	Differential	1/1	14
SN75176AD	SN75176AP	EIA Standard RS-422-C & RS-485	Differential	1	8
SN75176BD	SN75176BP	EIA Standard RS-422-C & RS-485	Differential	1	8
—	SN75178BP	EIA Standard RS-422-C & RS-485	Differential	1	8
SN75179BD	SN75179BP	EIA Standard RS-422-C & RS-485	Differential	1	8
SN75ALS170DW	SN75ALS170J*	EIA Standard RS-422-C & RS-485	Differential	3	14
SN75ALS171DW	SN75ALS171J*	EIA Standard RS-422-C & RS-485	Differential	3	14
SN75ALS176AD	SN75ALS176AP	EIA Standard RS-422-C & RS-485	Differential	1	8
SN75ALS176BD	SN75ALS176BP	EIA Standard RS-422-C & RS-485	Differential	1	8
SN75ALS176D	SN75ALS176P	EIA Standard RS-422-C & RS-485	Differential	1	8
SN75ALS180D	SN75ALS180N	EIA Standard RS-422-C & RS-485	Differential	1/1	14
TL3695D	TL3695P	EIA Standard RS-422-C & RS-485	Differential	1	8
—	AM26S10CN	General Purpose	Single-Ended	4	16
—	SN75116N	General Purpose	Differential	1	16
—	SN75117P	General Purpose	Differential	1	8
—	SN75118N	General Purpose	Differential	1	16
—	SN75119P	General Purpose	Differential	1	8
—	SN75138N	General Purpose	Single-Ended	4	16
SN75ALS056DW	SN75ALS056N	IEEE Std. 896.1-1987	Single-Ended	8	20

*Ceramic DIP.

11

Vacuum Fluorescent Display Drivers

Anode Grid Drivers; Segment or Dot Matrix Formats

Mfr.'s Type	Drivers Per Package	Architecture	Outputs	Current Source Output (mA)	Input Capability	Power Supply	Features	No. of Leads
PDIP								
SN75512CN	12	Serial In/Parallel Out	60 V Totem-Pole	25 mA	TTL	V_{CC1} (Logic) = 5 V-15 V, V_{CC2} (Display) = 0 V-60 V	On-board Latches	20
TL4810BN	10	Serial In/Parallel Out	60 V Totem-Pole	40 mA	CMOS	V_{CC1} (Logic) = 5 V-15 V, V_{CC2} (Display) = 0 V-60 V	Improved Direct Replacement for TL4810A and UCN4810A	18
TL5812N	20	Drives Up To 20 Lines	70 V Voltage Swing	—	CMOS	V_{CC1} (Logic) = 5 V-15 V, V_{CC2} (Display) = 0 V-60 V	—	28

Asynchronous Communication Elements (UARTs)

Mfr.'s Type		Function	Features	Temperature Range (°C)	No. of Leads
PLCC	PDIP				
TL16C450FN	TL16C450N	Single ACE without FIFO	Programmable Baud Generation	0 to +70	44
TL16C451FN	—	Single ACE with Parallel Port and without FIFO	Programmable Interface Characteristics	0 to +70	68
TL16C452FN	—	Dual ACE with Parallel Port and without FIFO	Programmable Interface Characteristics	0 to +70	68
TL16C550AFN	TL16C550AN	Single ACE with FIFO	Functional Upgrade of the 16C450	0 to +70	44
TL16C550BFN	TL16C550BN	Single ACE with FIFO	Functional Upgrade of the 16C450	0 to +70	40
TL16C552FN	—	Dual ACE with Centronic Port	—	0 to +70	68

Interface Circuits (continued)

Transistor Arrays, General Purpose Drivers

Mfr.'s Type		Function	Input Capability	Switching Voltage Max. (V)	Off-State Current Max. (V)	Output Current (mA)	Drivers Per Package	Output Clamp Diodes	Delay Time Typ. (ns)	No. of Leads
SOIC	PDIP									
SN75468D	SN75468N	Inverting	TTL, CMOS	60	100	350	7	Yes	250	16
ULN2002AD	ULN2002AN	Inverting	TTL, CMOS	50	50	350	7	Yes	250	16
ULN2003AD	ULN2003AN	Inverting	15 V MOS	50	50	350	7	Yes	250	16
ULN2004AD	ULN2004AN	Inverting	TTL	50	50	350	7	Yes	250	16

Motor Drivers

Mfr.'s Type	Function	Input Capability	Switching Voltage Max. (V)	Off-State Current Max. (V)	Output Current (mA)	Drivers Per Package	Output Clamp Diodes	No. of Leads
L293DNE	Half-H Driver	TTL	36	36	600	4	Yes	16
L293NE	Half-H Driver	TTL	36	36	1000	4	No	16
SN754410NE	Half-H Driver	TTL, CMOS	36	36	1000	4	Yes	16

Comparators

Mfr.'s Type		Type	Features	Power Supply		V_{IO} Max. (mV)	I_{IB} Max. (µA)	I_{OL} Min. (mA)	Response Time Typ. (ns)	Temperature Range (°C)	No. of Leads
SOIC	PDIP			V_{CC+} (V)	V_{CC-} (V)						
LM211D	LM211P	Single	Strobe	4 - 30	0	3.0	0.1	8	115	–25 to +85	8
LM306D	LM306P	Single	Strobe	12	–6	5.0	40	100	28	0 to +70	8
LM311D	LM311P	Single	Strobe	4 - 30	0	7.5	0.25	8	115	0 to +70	8
LP211D	LP211P	Single	Low Power, Strobe	4 - 30	0	7.5	0.1	1.6	1200	–25 to +85	8
LP311D	LP311P	Single	Low Power, Strobe	4 - 30	0	7.5	0.1	1.6	1200	0 to +70	8
TL712CD	TL712CP	Single	Output Enable	5	0	±1.0	—	Max. 16	25	0 to +70	8
LM2903D	LM2903P	Dual	Low Power, Bipolar	4 - 30	0	7.0	0.25	6	300	–40 to +125	8
LM293D	LM293P	Dual	Low Power, Bipolar	4 - 30	0	5.0	0.25	6	300	–25 to +85	8
LM393AD	LM393AP	Dual	Precision Input	4 - 30	0	2.0	0.25	6	300	0 to +70	8
LM393D	LM393P	Dual	Low Power, Bipolar	4 - 30	0	5.0	0.25	6	300	0 to +70	8
TLC352CD	TLC352CP	Dual	Ultra Low Supply, LinCMOS	1.4 - 18	0	10.0	5 pA Typ.	6	200	0 to +70	8
TLC3702CD	TLC3702CP	Dual	Push-Pull Output, CMOS	3 - 18	0	5.0	5 pA Typ.	4	1300	0 to +70	8
TLC372CD	TLC372CP	Dual	High Speed, LinCMOS	3 - 16	0	5.0	5 pA Typ.	6	200	0 to +70	8
TLC393CD	TLC393CP	Dual	Open Drain Output, CMOS	3 - 18	0	5.0	5 pA Typ.	6	1100	0 to +70	8
—	LM239N	Quad	Low Power, Bipolar	4 - 30	0	5.0	–.25	6	300	–25 to +85	14
LM2901D	LM2901N	Quad	Low Power, Bipolar	4 - 30	0	7.0	–0.25	6	300	–40 to +125	14
LM3302D	LM3302N	Quad	Ultra Low Power, Bipolar	4 - 26	0	20.0	0.5	6	300	–40 to +125	14
LM339AD	LM339AN	Quad	Precision Input	4 - 30	0	2.0	–0.25	6	300	0 to +70	14
LM339D	LM339N	Quad	Low Power, Bipolar	4 - 30	0	5.0	–0.25	6	300	0 to +70	14
LP239D	LP239N	Quad	Ultra Low Power, Bipolar	4 - 30	0	±5.0	–0.025	20	8000	–25 to +85	14
LP2901D	LP2901N	Quad	Ultra Low Power, Bipolar	4 - 30	0	±5.0	–0.025	20	8000	–40 to +125	14
—	TLC374CN	Quad	High Speed, CMOS	3 - 18	0	10.0	5 pA Typ.	6	200	0 to +70	14

Operational Amplifiers

Internally Compensated, Single

Mfr.'s Type		Features	Supply Voltage		V_{IO} Max. (mV)	I_{IB} Max. (nA)	A_{VD} Min. (V/mV)	B_1 Typ. (MHz)	Slew Rate Typ. (V/µs)	Temperature Range (°C)	No. of Leads
SOIC	PDIP		Min. (V)	Max. (V)							
LM318D	LM318P	High Performance	±5.0	±20	10.00	250	25	15.00	70.00	0 to +70	8
NE5534AD	NE5534AP	Low Noise, High Performance	±3.0	±22	4.00	1500	25	10.00	13.00	0 to +70	8
NE5534D	—	Low Noise, High Performance	±3.0	±22	4.00	1500	25	10.00	13.00	0 to +70	8
—	OP07CP	Ultra Low Offset Voltage	±3.0	±22	0.15	7	120	0.60	0.30	0 to +70	8
OP07DD	OP07DP	Ultra Low Offset Voltage	±3.0	±22	0.15	12	120	0.60	0.30	0 to +70	8
TL031CD	TL031CP	BIFET, Low Power, Precision	±3.5	±18	1.50	0.2	5	1.10	2.90	0 to +70	8
TL051CD	TL051CP	BIFET, Precision	±3.5	±18	1.50	0.2	50	3.10	20.00	0 to +70	8
TL061ACD	TL061ACP	BIFET, Low Power	±3.5	±18	6.00	0.2	4	1.00	3.50	0 to +70	8
TL061BCD	TL061BCP	BIFET, Low Power	±3.5	±18	3.00	0.2	4	1.00	3.50	0 to +70	8
TL061CD	TL061CP	BIFET, Low Power	±3.5	±18	15.00	0.2	3	1.00	3.50	0 to +70	8
TL071CD	TL071CP	BIFET, Low Power	±3.5	±18	10.00	0.2	25	3.00	13.0	0 to +70	8
—	TL081ACP	BIFET, General Purpose	±3.5	±18	6.00	0.2	50	3.00	13.0	0 to +70	8
—	TL081BCP	BIFET, General Purpose	±3.5	±18	3.00	0.2	50	3.00	13.0	0 to +70	8
TL081CD	TL081CP	BIFET, General Purpose	±3.5	±18	15.00	0.04	25	3.00	13.0	0 to +70	8
TLC271CD	TLC271CP	LinCMOS, Programmable, Low Bias	1.4	18	10.00	0.001 Typ.	30	0.10	0.04	0 to +70	8
TLC2201ACD	TLC2201ACP	LinCMOS, Precision, Low Noise	4.6	16	0.20	0.001 Typ.	400	1.90	2.70	0 to +70	8
TLC2201CD	TLC2201CP	LinCMOS, Precision, Low Noise	4.6	16	0.50	0.001 Typ.	400	1.90	2.70	0 to +70	8
—	UA741CP	General Purpose	±2.0	±18	6.00	500	20	1.00	0.50	0 to +70	8

Internally Compensated, Dual

LF353D	LF353P	BIFET, General Purpose	±3.5	±18	10.00	0.2	25	3.00	13.00	0 to +70	8
LF412CD	LF412CP	BIFET, Low Offset	±3.5	±18	3.00	0.2	25	3.00	13.00	0 to +70	8
LM258D	LM258P	High Gain, Low Power, Bipolar, Single or Dual Supply	3, ±1.5	30, ±15	5.00	–150	50	0.60	0.20	–40 to +125	8
LM2904D	—	High Gain, Low Power, Bipolar, Single or Dual Supply	3, ±1.5	26, ±13	7.00	–250	100 Typ.	0.60	0.20	–40 to +125	8
LM358AD	LM358AP	High Gain, Low Power Bipolar, Single or Dual Supply	3, ±1.5	30, ±15	3.00	–100	25	0.60	0.20	0 to +70	8
LM358D	LM358P	High Gain, Low Power Bipolar, Single or Dual Supply	3, ±1.5	30, ±15	7.00	–250	25	0.60	0.20	0 to +70	8
—	LT1013CP	Precision, Single or Dual Supply	4, ±2	44, ±22	0.30	30	1200, 500	0.80	0.40	0 to +70	8
LT1013DD	LT1013DP	Precision, Single or Dual Supply	4, ±2	44, ±22	0.80	30	1200, 500	0.80	0.40	0 to +70	8

Operational Amplifiers (continued)

Internally Compensated, Dual (continued)

Mfr.'s Type		Features	Supply Voltage		V_{IO} Max. (mV)	I_{IB} Max. (nA)	A_{VD} Min. (V/mV)	B_1 Typ. (MHz)	Slew Rate Typ. (V/µs)	Temperature Range (°C)	No. of Leads
SOIC	PDIP		Min. (V)	Max. (V)							
MC1458D	MC1458P	General Purpose	±1.5	±18	6.00	500	20	1.00	0.50	0 to +70	8
—	NE5532AP	Low Noise	±3	±20	4.00	800	25	10.00	9.00	0 to +70	8
—	NE5532P	Low Noise	±3	±20	4.00	800	25	10.00	9.00	0 to +70	8
RC4558D	RC4558P	High Performance	±4	18	6.00	500	20	3.00	1.70	0 to +70	8
RV4558D	—	High Performance	±4	±18	6.00	–500	20	3.00	1.70	–40 to +125	8
TL032ACD	TL032ACP	BIFET, Low Power, Precision	±3.5	±18	0.80	0.2	5	1.10	2.90	0 to +70	8
TL032CD	TL032CP	BIFET, Low Power, Precision	±3.5	±18	1.50	0.2	5	1.10	2.90	0 to +70	8
TL052ACD	TL052ACP	BIFET, Precision	±3.5	±18	1.50	0.2	50	3.00	16.00	0 to +70	8
TL052CD	—	BIFET, Precision	±3.5	±18	4.00	0.2	50	3.00	16.00	0 to +70	8
—	TL062ACP	BIFET, Low Power	±3.5	±18	6.00	0.2	4	1.00	3.50	0 to +70	8
TL062BCD	—	BIFET, Low Power	±3.5	±18	3.00	0.2	4	1.00	3.50	0 to +70	8
TL062CD	TL062CP	BIFET, Low Power	±3.5	±18	15.00	0.4	3	1.00	3.50	0 to +70	8
TL072ACD	TL072ACP	BIFET, Low Noise	±3.5	±18	6.00	0.2	50	3.00	13.00	0 to +70	8
TL072BCD	TL072BCP	BIFET, Low Noise	±3.5	±18	3.00	0.2	50	3.00	13.00	0 to +70	8
TL072CD	TL072CP	BIFET, Low Noise	±3.5	±18	10.00	0.2	25	3.00	13.00	0 to +70	8
TL082ACD	TL082ACP	BIFET, General Purpose	±3.5	±18	6.00	0.2	50	3.00	13.00	0 to +70	8
TL082BCD	TL082BCP	BIFET, General Purpose	±3.5	±18	3.00	0.2	50	3.00	13.00	0 to +70	8
TL082CD	TL082CP	BIFET, General Purpose	±3.5	±18	15.00	0.4	25	3.00	13.00	0 to +70	8
TLC1078CD	TLC1078CP	LinCMOS, µPower, Precision	1.4	18	0.60	0.007 Typ.	500	0.11	0.05	0 to +70	8
TLC2272ACD	TLC2272ACP	LinCMOS, Rail to Rail	4.4	16	0.95	0.0001 Typ.	35 Typ.	2.25	3.60	0 to +70	8
TLC2272CD	TLC2272CP	LinCMOS, Rail to Rail	4.4	16	2.50	0.0001 Typ.	35 Typ.	2.25	3.60	0 to +70	8
—	TLC252ACP	LinCMOS, High Bias	1.4	18	5.00	0.005 Typ.	10	2.20	5.30	0 to +70	8
TLC252BCD	TLC252BCP	LinCMOS, High Bias	1.4	18	2.00	0.005 Typ.	10	2.20	5.30	0 to +70	8
TLC252CD	TLC252CP	LinCMOS, High Bias	1.4	18	10.00	0.005 Typ.	10	2.20	5.30	0 to +70	8
TLC272CD	TLC272CP	LinCMOS, High Bias	3	18	10.00	0.005 Typ.	10	2.20	5.30	0 to +70	8
TLC277CD	TLC277CP	LinCMOS, High Bias	3	18	0.50	0.005 Typ.	10	2.20	5.30	0 to +70	8
—	TLC27L2ACP	LinCMOS, Low Bias	3	18	5.00	0.005 Typ.	50	0.10	0.05	0 to +70	8
TLC27L2CD	TLC27L2CP	LinCMOS, Low Bias	3	18	10.00	0.005 Typ.	50	0.10	0.05	0 to +70	8
TLC27L7CD	—	LinCMOS, Low Bias	3	18	0.50	0.005 Typ.	50	0.10	0.05	0 to +70	8
—	TLC27M2ACP	LinCMOS, Medium Bias	3	18	5.00	0.005 Typ.	25	0.60	0.60	0 to +70	8
TLC27M2CD	TLC27M2CP	LinCMOS, Medium Bias	3	18	10.00	0.005 Typ.	25	0.60	0.60	0 to +70	8
TLC27M7CD	TLC27M7CP	LinCMOS, Medium Bias	3	18	0.50	0.005 Typ.	25	0.60	0.60	0 to +70	8
TLC2202ACD	TLC2202ACP	LinCMOS, Low Noise, Precision	4.6	16	0.50	0.005 Typ.	400	1.90	1.80	0 to +70	14
TLC2202BCD	TLC2202BCP	LinCMOS, Low Noise, Precision	4.6	16	0.50	0.005 Typ.	400	1.90	1.80	0 to +70	14
—	TLC2202CP	LinCMOS, Low Noise, Precision	4.6	16	1.00	0.005 Typ.	400	1.90	1.80	0 to +70	14

Internally Compensated, Quad

LF347D	LF347N	BIFET, General Purpose	±3.5	±18	10.00	0.2	25	3.00	13.00	0 to +70	14
LM224D	LM224N	General Purpose, Bipolar	3	30	5.00	–150	50	0.60	0.30	0 to +70	14
LM2902D	LM2902N	General Purpose, Extended Temp. Range LM324	3	26	7.00	–250	100 Typ.	0.60	0.30	-40 to +105	14
—	LM324AN	General Purpose	3	30	3.00	–100	25	0.60	0.30	0 to +70	14
LM324D	LM324N	General Purpose	3	30	7.00	–250	25	0.60	0.30	0 to +70	14
LM348D	LM348N	General Purpose	±4	±18	6.00	200	25	1.00	0.50	0 to +70	14
LM3900D	LM3900N	Norton Amp., Bipolar, Single or Dual Supply	4, ±2	32, ±16	—	200	1.2	2.50	0.50	0 to +70	14
—	MC3403N	Low Power, Bipolar, Single or Dual Supply	3, ±1.5	36, ±18	10.00	–500	20	1.00	0.60	0 to +70	14
—	RC4136N	Quad UA741, High Performance	±4	±18	6.00	500	20	3.00	1.70	0 to +70	14
—	TL034ACN	BIFET, Low Power, Precision	±3.5	±18	1.50	0.2	5	1.10	2.90	0 to +70	14
TL034CD	TL034CN	BIFET, Low Power, Precision	±3.5	±18	4.00	0.2	5	1.10	2.90	0 to +70	14
TL054ACD	TL054ACN	BIFET, Precision	±3.5	±18	1.50	0.2	50	2.70	16.00	0 to +70	14
—	TL054CN	BIFET, Precision	±3.5	±18	4.00	0.2	50	2.70	16.00	0 to +70	14
TL064ACD	TL064ACN	BIFET, Low Power	±3.5	±18	6.00	0.2	4	1.00	3.50	0 to +70	14
TL064BCD	TL064BCN	BIFET, Low Power	±3.5	±18	3.00	0.2	4	1.00	3.50	0 to +70	14
TL064CD	TL064CN	BIFET, Low Power	±3.5	±18	15.00	0.4	3	1.00	3.50	0 to +70	14
TL074ACD	TL074ACN	BIFET, Low Noise	±3.5	±18	6.00	0.2	50	3.00	13.00	0 to +70	14
TL074BCD	TL074BCN	BIFET, Low Noise	±3.5	±18	3.00	0.2	50	3.00	13.00	0 to +70	14
TL074CD	TL074CN	BIFET, Low Noise	±3.5	±18	10.00	0.2	50	3.00	13.00	0 to +70	14
—	TL084ACN	BIFET, General Purpose	±3.5	±18	6.00	0.2	50	3.00	13.00	0 to +70	14
—	TL084BCN	BIFET, General Purpose	±3.5	±18	3.00	0.2	50	3.00	13.00	0 to +70	14
TL084CD	TL084CN	BIFET, General Purpose	±3.5	±18	15.00	0.4	25	3.00	13.00	0 to +70	14
TLC254ACD	TLC254ACN	LinCMOS, High Bias	1.4	18	5.00	0.005 Typ.	10	2.20	5.30	0 to +70	14
—	TLC254BCN	LinCMOS, High Bias	1.4	18	2.00	0.005 Typ.	10	2.20	5.30	0 to +70	14
TLC254CD	TLC254CN	LinCMOS, High Bias	1.4	18	10.00	0.005 Typ.	10	2.20	5.30	0 to +70	14
TLC274ACD	TLC274ACN	LinCMOS, High Bias	3	18	5.00	0.005 Typ.	10	2.20	5.30	0 to +70	14
TLC274BCD	—	LinCMOS, High Bias	3	18	2.00	0.005 Typ.	10	2.20	5.30	0 to +70	14
TLC274CD	TLC274CN	LinCMOS, High Bias	3	18	10.00	0.005 Typ.	10	2.20	5.30	0 to +70	14
—	TLC279CN	LinCMOS, High Bias	3	18	0.90	0.005 Typ.	10	2.20	5.30	0 to +70	14
TLC27L4ACD	TLC27L4ACN	LinCMOS, Low Bias	3	18	5.00	0.005 Typ.	50	0.10	0.05	0 to +70	14
TLC27L4CD	TLC27L4CN	LinCMOS, Low Bias	3	18	10.00	0.005 Typ.	50	0.10	0.05	0 to +70	14
TLC27L9CD	—	LinCMOS, Low Bias	3	18	0.90	0.005 Typ.	50	0.10	0.05	0 to +70	14
TLC27M4ACD	—	LinCMOS, Medium	3	18	5.00	0.005 Typ.	25	0.60	0.60	0 to +70	14
TLC27M4CD	TLC27M4CN	LinCMOS, Medium	3	18	2.00	0.005 Typ.	25	0.60	0.60	0 to +70	14
TLC27M9CD	—	LinCMOS, Medium	3	18	0.90	0.005 Typ.	25	0.70	0.60	0 to +70	14
TLC1079CD	TLC1079CN	LinCMOS, µPower, Precision	1.4	18	1.15	0.007 Typ.	500	0.11	0.05	0 to +70	14

Precision Timers

Mfr.'s Type		Description	Output Current (mA)	Timing		Temperature Range (°C)	No. of Leads
SOIC	PDIP			From	To		
NE555D	NE555P	Single Timer, Bipolar	±200	10 µs	Hours	0 to +70	8
NE556D	NE556N	Dual Timer, Bipolar	±200	10 µs	Hours	0 to +70	14
SA555D	SA555P	Single Timer, Bipolar	±200	10 µs	Hours	–40 to +85	8
—	SE555P	Single Timer, Bipolar	±200	10 µs	Hours	–55 to +125	8
TLC555CD	TLC555CP	LinCMOS, Single High Speed Timer	100	1 µs	Hours	0 to +70	8
TLC556CD	TLC556CN	LinCMOS, Dual High Speed Timer	100	1 µs	Hours	0 to +70	14

Switching Power Supply Controllers (PWMs)

Mfr.'s Type		Control Topology	Single Ended	Fixed Push Pull	Single Switch Outputs	Totem-Pole Outputs	Output Current Per Switch (mA)	Maximum Frequency (kHz)	Voltage Reference Tolerance (%)	Pulse By Pulse Current Limiting	Output Steering Control	Prog. Outputs	Dead-Time Control	Under Voltage Lockout	Soft Start	On-Board Amplifiers	Current Sense Amplifiers	Temperature Range (°C)	No. of Leads
SOIC	PDIP																		
—	SG2524N	Voltage Mode PWM	•	X	•	•	250	300	5	•	•	•	•	•	•	1	1	0 to +70	16
SG3524D	SG3524N	Voltage Mode PWM	•	X	•	•	250	300	5	•	•	•	•	•	•	1	1	0 to +70	16
TL494CD	TL494CN	Voltage Mode PWM	X	•	X	•	250	300	5	•	•	X	X	•	•	2	•	0 to +70	16
—	TL594CN	Voltage Mode PWM	•	•	X	•	250	300	1	•	•	X	X	X	•	2	•	0 to +70	16
—	UC2844P	Current Mode PWM	X	•	•	X	±1000	500	1	X	•	•	•	X	•	1	X	0 to +70	8
UC2845D	—	Current Mode PWM	X	•	•	X	±1000	500	1	X	•	•	•	X	•	1	X	0 to +70	14
UC3845D	UC3845P	Current Mode PWM	X	•	•	X	±1000	500	1	X	•	•	•	X	•	1	X	0 to +70	14
—	LT1072CP	Current Mode PWM	X	•	X	•	1250	40	2	X	•	•	•	•	•	1	X	0 to +70	8
TL497ACD	TL497ACN	Fixed On-Time Voltage Mode	X	•	X	•	700	50	5	•	•	•	•	•	•	1	•	0 to +70	14
—	TL499ACP	Fixed On-Time Voltage Mode	X	•	X	•	1200	40	5	•	•	•	•	•	•	1	•	0 to +70	8

X=Applicable Data. •=Nonapplicable Data

Power Supply Supervisors

Mfr.'s Type			Function	Sense Input Supply S1 (V)	S2 (V)	Sense Input Threshold Typ. (V)	Threshold Tolerance (%)	Output	Temperature Range (°C)	No. of Leads
SOIC	PDIP	TO-92								
TL7702ACD	TL7702ACP	—	Under Voltage Monitor	Programmable	—	2.53	1.00	Open Collector	0 to +70	8
—	TL7702BCP	—	Under Voltage Monitor	Programmable	—	7.53	1.00	Open Collector	0 to +70	8
TL7705ACD	TL7705ACP	—	Under Voltage Monitor	5	—	4.50	1.00	Open Collector	0 to +70	8
TL7705BCD	TL7705BCP	—	Under Voltage Monitor	5	—	4.55	1.00	Open Collector	0 to +70	8
—	TL7757CPK*	TL7757CLP	Under Voltage Monitor	5	—	4.55	2.60	Open Collector	0 to +70	3
TL7759CD	TL7759CP	—	Under Voltage Monitor	5	—	4.55	2.60	Open Collector	0 to +70	8
TL7770-5CDW	—	—	Dual Under/Over Voltage	5	Programmable	5.00	4.55	1	0 to +70	16

*TO-252 Package.

Switched Capacitor Voltage Converters

Mfr.'s Type		Control Topology	Output Switch	Supply Voltage Range (V)	Quiescent Current (No Load)	Maximum Continuous I/O	Maximum Frequency (kHz)	Typical Conversion Efficiency (%)	Temperature Range (°C)	No. of Leads
SOIC	PDIP									
LT1054CDW	LT1054CP	Voltage Mode	Single	3.5 - 15	150 µA	300 mA	35	90	0 to +70	8

Voltage Regulators and Voltage References

Shunt Voltage Regulators/References

Mfr.'s Type			Regular Voltage Range (V)	Minimum Shunt Current To Maintain Regulation (µA)	Maximum Shunt Current (mA)	Tolerance (%)	Temperature Coefficient (typ.)	Temperature Range (°C)	No. of Leads
SOIC	PDIP	TO-92							
LM385BD-1-2	—	LM385BLP-1-2	1.2	10	20	1.0	20 PPM/°C	0 to +70	8
LM385D-1-2	—	LM385LP-1-2	1.2	10	20	2.0	20 PPM/°C	0 to +70	8
—	—	LT1009CLP	2.5	400	10	0.2	15 PPM/°C	0 to +70	3
—	—	TL430CLP	2.5 to 30	500	150	4.0	120 PPM/°C	0 to +70	3
TL431ACD	TL431ACP	TL431ACLP	2.5 to 36	400	150	1.0	25 PPM/°C	0 to +70	8
TL431CD	TL431CP	TL431CLP	2.5 to 36	400	150	2.0	25 PPM/°C	0 to +70	8

Adjustable Series-Pass Voltage Regulators

Mfr.'s Type			Output Voltage	Output Current (mA)	Output Voltage Range (V)	Tolerance (%)	Maximum (VI-VO) Difference	Temperature Range (°C)	No. of Leads
SOIC	PDIP	TO-92							
—	—	TL317CLP	Positive	100	1.2 to 32	5	35 V	0 to +70	3
UA723CD	UA723CN	—	Positive or Negative	150	2 to 37	5	38 V	0 to +70	14
—	—	TL783CKC*	Positive	750	1.25 to 125	5	125 V	0 to +70	3

*TO-220 Package.

Positive Fixed Output Series Pass Voltage Regulators

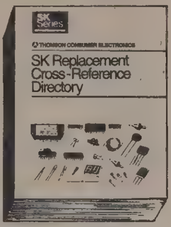
Mfr.'s Type		Output Voltage (V)	Output Current Rating (mA)	Output Voltage Tolerance (±%)	Minimal Differential Voltage (V)	Temperature Range (°C)	No. of Leads
SOIC	TO-226						
TL750L05CD	TL750L05CLP	5	150	5	0.6	0 to +70	8/3
UA78L05ACD	UA78L05ACLP	5	100	5	2.0	0 to +70	8/3
UA78L05CD	UA78L05CLP	5	100	10	2.0	0 to +70	8/3
UA78L06ACD	UA78L06ACLP	6	100	5	2.0	0 to +70	8/3
UA78L08ACD	UA78L08ACLP	8	100	5	2.0	0 to +70	8/3
UA78L10ACD	UA78L10ACLP	10	100	5	2.0	0 to +70	8/3
UA78L12ACD	UA78L12ACLP	12	100	5	2.0	0 to +70	8/3
UA78L12CD	UA78L12CLP	12	100	10	2.0	0 to +70	8/3
UA78L15ACD	UA78L15ACLP	15	100	5	2.0	0 to +70	8/3
UA78L15CD	UA78L15CLP	15	100	10	2.0	0 to +70	8/3

Negative Fixed Output Series Pass Voltage Regulators

MC79L05ACD	MC79L05ACLP	–5	100	5	1.7	0 to +70	8/3
MC79L05CD	—	–5	100	10	1.7	0 to +70	8/3
MC79L12ACD	MC79L12ACLP	–12	100	5	1.7	0 to +70	8/3
MC79L15ACD	MC79L15ACLP	–15	100	5	1.7	0 to +70	8/3

Thomson Consumer Electronics SK Replacement Technical Manual and Cross Reference

- ► Bipolar Transistors
- ► Field Effect Transistors
- ► Zener Diodes
- ► Diodes and Rectifiers
- ► Industrial Rectifiers
- ► SCRs and Triacs
- ► Metal Oxide Varistors
- ► Optoelectronics
- ► Linear Integrated Circuits
- ► Digital Integrated Circuits


SK Series
THOMSON CONSUMER ELECTRONICS
SK Replacement Cross-Reference Directory

SK Replacement Solid State Devices are"Top of the Line" quality units, purchased to OEM standards, from original manufacturers. This guide contains 3600 SK devices which replace over 235,000 parts. Each transistor, TRIAC, SCR, Thyristor, Integrated Circuit can be used to replace a broad variety of devices used in electronic equipment. Electrical characteristics are equal to or better than original specified components. The easy to use cross reference section enables you to locate the exact replacement needed for over 235,000 solid state devices.

902-0010. SKG202G..**EACH 4.95**

Thomson Consumer Electronics SK Cross

This comprehensive PC-based cross reference software contains information on over 235,000 semiconductor devices which can be accessed easily and quickly. Advantages included the ability to scroll through the entire cross reference, descriptions next to the part number, technical notes below descriptions, transistor complements, matched pairs and matched complementary pairs listed in the description. The minimum system requirements are an IBM PC compatible computer with 640K RAM, 3½" floppy drive, and 14 Megabytes of hard disk space.

Stock No.	Mfr.'s Type	Disk Type	No. of Disks	PER SET
902-0021	SKG202DK1	3½"	2	**5.00**

Linear Integrated Circuits

Stock No.	Mfr.'s Type	Description	Package
902-6000	SK3022	TV Sound	10-Ld TO-5
902-4241	SK3072	TV Sound IF	14-Ld Quad-Formed DIP
902-6008	SK3129	FM IF Amp	10-Ld TO-5
902-6009	SK3134	TV Chroma Demod	9-Ld Plug-In Pkg TO-5
902-6013	SK3149	TV Chroma Amp/Demod	16-Ld DIP
902-6014	SK3158	TV Chroma Signal Proc	16-Ld Quad-Formed DIP
902-6015	SK3159	FM MPX Stereo Decoder	14-Ld DIP
902-4255	SK3164	TV Voltage Regulator	10-Ld TO-5
902-6022	SK3207	TV Luminance Processor	16-Ld DIP
902-6024	SK3214	TV Luminance Processor	16-Ld DIP
902-6026	SK3223	FM & TV Sound IF AMP	7-Ld SIP
902-6029	SK3226	TV Chroma Demod	16-Ld DIP
902-6030	SK3227	TV Chroma Signal Processor	16-Ld DIP
902-6035	SK3234	FM & TV Sound IF	8-Ld DIP
902-6038	SK3238	Quad Stereo Decoder	14-Ld DIP
902-6039	SK3249	AF Preamp	7-Ld SIP
902-4278	SK3255	TV Horiz Processor	8-Ld Mini DIP
902-6042	SK3281	AF Preamp	7-Ld SIP
902-6043	SK3282	5 W AF AMP	10-Ld SIP
902-6044	SK3283	RF/IF Amp	7-Ld SIP
902-6045	SK3284	TV Video IF	14-Ld DIP
902-6046	SK3286	TV Chroma Signal Processor	16-Ld DIP
902-6048	SK3288	AM/FM IF Amp	14-Ld DIP
902-6049	SK3294	TV Vertical Processor	14-Ld DIP
902-6053	SK3364	AF Preamp	8-Ld SIP
902-6054	SK3365	TV AFC System	14-Ld DIP
902-6056	SK3367	FM IF Sound Amp	8-Ld DIP
902-6058	SK3370	0.7 W AF Amp	12-Ld DIP w/tabs
902-6063	SK3445	PLL Synthesizer/Amp/Mix for CB	9-Ld SIP
902-6065	SK3447	0.25 W AF AMP	8-Ld SIP
902-6066	SK3451	1 W FM Sound Syst. TV/Mobile	12-Ld DIP
902-6067	SK3456	Audio Amp	14-Ld DIP
902-6071	SK3461	FM IF AMP	7-Ld SIP
902-9058	SK3462	Voltage Regulator 5V	TO-92
902-4293	SK3465	Dual Op Amp	8-Ld Mini DIP
902-6072	SK3468	Audio Preamp	10-Ld SIP w/htsk flange
902-6076	SK3472	RF/IF Amp to 150 MHz	7-Ld SIP
902-6077	SK3474	Audio Amp	10-Ld SIP w/htsk flange
902-6078	SK3476	Audio Preamp	7-Ld SIP
902-6079	SK3477	Audio Preamp	7-Ld SIP
902-6081	SK3481	TV Chroma Demod	8-Ld DIP
902-6082	SK3483	AM/FM IF Amp	16-Ld DIP
902-6085	SK3487	FM/CB/TV Sound IF Amp	7-Ld SIP
902-6088	SK3493	Preamp for 8-Track Stereo	7-Ld SIP
902-4302	SK3514	Single OP AMP	8-Ld TO-5
902-6095	SK3540	Single Op Amp	12-Ld TO-5
902-6098	SK3544	Dual Independent Differential Amp	14-Ld DIP
902-6099	SK3545	Six Independent Diodes	12-Ld TO-5
902-6101	SK3548	Dual VHF Differential Amps	12-Ld TO-5
902-6102	SK3550	7-Transistor Array	16-Ld DIP
902-4309	SK3552	Single Op Amp	8-Ld Mini DIP
902-4310	SK3555	Dual Op Amp	8-Ld TO-5
902-4313	SK3564	Timer/Oscillator	8-Ld Mini DIP
902-4314	SK3565	Single OP Amp	8-Ld TO-5
902-6103	SK3567A	Voltage Comparator	8-Ld TO-5
902-6104	SK3568	BiMos Op Amp	8-Ld TO-5
902-4315	SK3569	Quad Voltage Comparator	14-Ld DIP
902-4322	SK3594	Quad Op Amp	14-Ld DIP
902-4323	SK3596	Single Op Amp	8-Ld DIP
902-6106	SK3617	Power Switch Amp	8-Ld TO-5
902-4335	SK3641	Single Op Amp	8-Ld DIP
902-4337	SK3643	Quad Op Amp	14-Ld DIP
902-6110	SK3668	Voltage Comparator	8-Ld DIP
902-4349	SK3688	4 Independent Op Amps	14-Ld DIP
902-4350	SK3689	Dual Timing Circuit	14-Ld DIP
902-4351	SK3692	Dual Op Amp	8-Ld DIP
902-8478	SK3693	Timer	8-Ld TO-5
902-8480	SK3694	High-Current NPN Transistor Array	16-Ld DIP
902-6113	SK3695	High-Current NPN Transistor Array	16-Ld DIP
902-6114	SK3696	BiMOS Op Amp	8-Ld DIP
902-6115	SK3697	High-Voltage Transistor Array	14-Ld DIP
902-6118	SK3702	Low-Noise Equalizer/Amp	14-Ld DIP
902-6121	SK3705	TV Chroma Processor	28-Ld DIP
902-6122	SK3706	FM Stereo MPX Demod	16-Ld DIP
902-6124	SK3711	TV Low Level Video Detector	14-Ld DIP
902-6126	SK3730	4.2 W Audio Amp	14-Ld DIP w/tabs
902-6127	SK3731	FM Stereo MPX Decoder	14-Ld DIP
902-6129	SK3737	Tape Recorder Preamp	8-Ld DIP
902-6130	SK3738	Auto/FM Stereo Equalizer Amp	16-Ld DIP
902-6132	SK3742	TV Video IF Detector	8-Ld SIP
902-6133	SK3743	Color TV Subcarrier Processor	16-Ld DIP
902-6135	SK3745	Dual Preamp	8-Ld SIP
902-6136	SK3762	FM IF Amp Limiter	8-Ld DIP
902-6137	SK3763	FM MPX Stereo Demod	14-Ld DIP
902-6139	SK3828	Head Coil/Meter Driver	7-Ld SIP
902-6140	SK3829	FM IF System/IF Amp	16-Ld DIP
902-4359	SK3832	TV Sound IF/Audio Out Subsystems	16-Ld
902-6145	SK3876	12-V Preamplifier	7-Ld SIP
902-6147	SK3878	TV Vertical Deflection	10-Ld SIP w/flange
902-6148	SK3879	2.4-W Audio Amplifier	14-Ld DIP w/end tab
902-6150	SK3885	TV VIR Signal Processor	24-Ld DIP
902-6154	SK3892	Balanced Modulator/Demodulator	14-Ld DIP
902-6155	SK3914	Power Op AMP/Cassette Recorders	9-Ld SIP
902-6156	SK3916	Dual Channel Audio Power Amp	20-Ld DIP
902-6163	SK3969	5-W Audio Amplifier	12-Ld Quad-Formed DIP
—	—	—	—

Transistors

Stock No.	Mfr.'s Type	Material	Description	Package
902-4223	SK3003A	PNP Ge	AF Small Signal	TO-18
902-9102	SK3004	PNP Ge	AF Low Power	TO-1
902-4224	SK3006	PNP Ge	RF Low Power	TO-72
902-6183	SK3007A	PNP Ge	AF Output	TO-1
902-9104	SK3009	PNP Ge	AF High Pwr	TO-3
902-4225	SK3012	PNP Ge	AF High Power	TO-36
902-4226	SK3018	NPN Si	RF IF Stages	TO-72
902-4228	SK3021	NPN Si	AF Power	TO-66
902-4229	SK3026	NPN Si	AF High Power	TO-66
902-8928	SK3027	NPN Si	AF High Pwr	TO-3
902-6186	SK3029	NPN Si	Matched Pair of SK3027	TO-204MA
902-4233	SK3036	NPN Si	AF High Pwr	TO-3
902-6188	SK3037	NPN Si	Matched Pair of SK3036	TO-3
902-4234	SK3039	NPN Si	RF TV UHF/VHF	TO-72
902-4236	SK3044	NPN Si	High-Voltage	TO-39
902-6191	SK3052	PNP Ge	AF Medium Power	TO-66
902-8930	SK3054	NPN Si	AF Deflection	TO-220
902-6193	SK3079	NPN Si	Deflection	TO-3
902-6194	SK3085	PNP Si	Deflection	TO-66
902-4246	SK3103A	NPN Si	TV Power Out/Video Amp	TO-39
902-8932	SK3114A	PNP Si	AF PO	TO-92
902-8934	SK3115	NPN Si	Deflection	TO-3
902-6197	SK3117	NPN Si	RF/TV Video IF	TO-72
902-4250	SK3118	PNP Si	AM/FM RF, TV IF	TO-92
902-6198	SK3122	NPN Si	AF/RF Medium Power	TO-92
902-6199	SK3123	PNP Ge	AF Medium Power	TO-8
902-9175	SK3124A	NPN Si	AF PO	TO-92
902-6200	SK3133	NPN Si	Deflection	TO-3
902-6201	SK3176	NPN Si	VHF Output	HF-44
902-6202	SK3177	NPN Si	VHF Output	HF-44
902-8458	SK3179B	PNP Si	AF Medium Power	TO-202
902-8938	SK3180	NPN Si	Darlington High Power	TO-220AB
902-4260	SK3181A	PNP Si	Darlington High Power	TO-220AB
902-4261	SK3182	NPN Si	Darlington High Power	TO-3
902-4262	SK3188A	NPN Si	High Power	TO-220AB
902-4263	SK3189A	PNP Si	High Power	TO-220AB
902-8940	SK3190	NPN Si	AF High Power	TO-126
902-4264	SK3191	PNP Si	AF High Power	TO-126
902-4265	SK3192	NPN Si	AF High Power	—
902-6204	SK3194	NPN Si	Deflection	TO-66
902-4267	SK3195	NPN Si	VHF RF Output	TO-39
902-6205	SK3198	PNP Ge	Medium Power	Mod. TO-66
902-4270	SK3200	PNP Si	Medium Power	TO-202N
902-4271	SK3201	NPN Si	AF TV Video/Chroma Amp	TO-202
902-6206	SK3218	NPN Si	RF CATV/MATV Amp	TO-39
902-8944	SK3245	NPN Si	AF Preamp	TO-92
902-6208	SK3246A	NPN Si	AM/FM/CB RF	TO-92
902-6209	SK3247	PNP Si	AF Preamp	TO-92
902-6210	SK3248	NPN Si	CB AF Output	TO-220 w/flange
902-4276	SK3250	NPN Si	RF CB Predriver/Driver	TO-920
902-4277	SK3253	NPN Si	RF CB Driver/Output	TO-126
902-9991	SK3260	NPN Si	AF High Power	TO-3
902-4279	SK3261	NPN Si	AF High Voltage	TO-66
902-4280	SK3265	NPN Si	AF Driver/Output	TO-39
902-5614	SK3275	NPN Si	FM AF Driver/Output	TO-92
902-6214	SK3298	NPN Si	CB RF Driver	TO-202
902-6215	SK3299	NPN Si	CB RF Out	TO-5 w/flange
902-6216	SK3356	NPN Si	AM/FM/CB RF	TO-92

Transistors (continued)

Stock No.	Mfr.'s Type	Material	Description	Package
902-6217	SK3357	NPN Si	RF/AF/CB	—
902-4288	SK3434	PNP Si	AF High Voltage	TO-92
902-4289	SK3438	NPN Si	Deflection/High Power	TO-3
902-4290	SK3439A	NPN Si	Deflection/High Power	TO-3
902-8948	SK3440	NPN Si	AF Medium Power	TO-220 AB
902-8952	SK3444	NPN Si	RF/AF Osc/Amp TV Video Amp	—
902-4291	SK3449	NPN Si	AF Driver	TO-92
902-4292	SK3450	PNP Si	AF Driver	TO-92
902-6219	SK3452	NPN Si	AM/FM RF, TV VHF/RF/IF	TO-92
902-8954	SK3466	PNP Si	AF Med Pwr Preamp/Dr	TO-92
902-6221	SK3467	NPN Si	Switching TV Horizontal Output	TO-3
902-6222	SK3479	NPN Si	AF Med Pwr Preamp/Driver	TO-92
902-4301	SK3512	NPN Si	AF Med. Power High Voltage	TO-39
902-6223	SK3513	PNP Si	AF Med. Power High Voltage	TO-39
902-6224	SK3528	PNP Si	High-Voltage AF Power Out	TO-39
902-6225	SK3529	NPN Si	High-Voltage Switching	TO-39
902-6226	SK3538	NPN Si	AF/Switching	TO-66
902-4312	SK3559	NPN Si	AF High Voltage	TO-3
902-6230	SK3621	NPN Si	AF Power	TO-3
902-6232	SK3626	NPN Si	AF Output/Switching	TO-66
902-4336	SK3642	PNP Ge	Switching/AF	TO-3
902-8956	SK3710	NPN Si	Deflection	TO-3
902-6233	SK3716A	NPN Si	Wide Band, Low-Noise VHF/UHF Amplifier	TO-72
902-4354	SK3717	PNP Ge	AF Power Output	TO-3
902-6234	SK3718	PNP Ge	Matched Pair of SK3717	TO-3
902-4355	SK3719	PNP Ge	AF Power Output	TO-3
902-6235	SK3720	PNP Ge	Matched Pair of SK3719	TO-3
902-4356	SK3721	PNP Ge	RF/IF Amp	TO-5
902-6236	SK3722	PNP Ge	AM AF Preamp	TO-5
902-4358	SK3747	NPN Si	AF High Power	TO-126
902-6237	SK3764	PNP Ge	Deflection/AF High-Voltage	TO-3
902-4360	SK3835	NPN Ge	AF Driver/Preamp	TO-1
902-4361	SK3836	NPN Si	AF PO	TO-3
902-6239	SK3840	PNP Ge	Matched Pair of SK3198	TO-3
902-4362	SK3841	PNP Si	AF Power Amp	TO-92
902-6240	SK3842	NPN Si	CB RF Amp	TO-92M
902-4363	SK3845	PNP Ge	AF Power Amp	TO-39
902-4365	SK3849	NPN Si	AF Power Amp	TO-92
902-8958	SK3854	NPN Si	RF/AF Osc/Amp, TV Video Amp	TO-92
902-4367	SK3858	NPN Si	Darlington High Power	TO-3
902-6243	SK3862	NPN Ge	AF Low Power	TO-39
902-6244	SK3865A	NPN Si	TV Vert and Horiz Driver; AF Driver Stage	TO-202
902-4371	SK3866A	NPN Si	AF Predriver/AMP	TO-92M
902-4372	SK3867A	PNP Si	AF Predriver/Amp	TO-92M
902-6245	SK3895	NPN Si	Power Amp/Fast Switching	TO-3
902-8962	SK3896	NPN Si	Power Amplifier Circuit	TO-220AB
902-4375	SK3897	PNP Si	Darlington Power Amp	TO-220AB
902-6246	SK3899	NPN Si	Low-Noise Preamp/High-Gain	TO-92
902-4377	SK3912	PNP Si	Med Pwr TV/CB/VCR	Plastic Case
902-4378	SK3929	NPN Si	Med Pwr Driver/Output	TO-220AB
902-4380	SK3931	NPN Si	AF/RF High Voltage	TO-92
902-4381	SK3932	PNP Si	AF/RF High-Voltage	TO-92
902-4385	SK3945	NPN Si	Pwr Amp/Switch	TO-3
902-4387	SK3947	NPN Si	High-Power AF	TO-3
902-4389	SK3949	PNP Si	Darlington 100 V, 12A	TO-3
902-6248	SK3958	NPN Si	Power Amp/High-Speed Switch	TO-218
902-5616	SK9041	NPN Si	AF Driver	TO-126
902-8964	SK9085	NPN Si	High Voltage/Speed Switch	TO-200
902-8966	SK9118	NPN SI	Vertical Deflection /Amp	TO-220
902-8968	SK9119	NPN SI	Horizontal Deflection /Amp	TO-3
902-5622	SK9422	NPN Si	Damper Diode	TO-3P
—	—	—	—	—

Rectifiers

Bridge Rectifiers

Stock No.	Mfr.'s Type	Description	Peak Voltage (V)	Forward Current (A)
902-9018	SK3105	Bridge Rectifier	200	1.5
902-9020	SK3107	Bridge Rectifier	1000	1.5
902-9028	SK3647	Bridge Rectifier	200	2.0
902-4338	SK3648	Bridge Rectifier	400	2.0
902-9032	SK3650	Bridge Rectifier	200	35.0
902-4340	SK3651	Bridge Rectifier	600	35.0
902-4346	SK3676	Bridge Rectifier	600	1.5
902-8472	SK3677	Bridge Rectifier	800	1.5
902-4347	SK3678	Bridge Rectifier	600	2.0
902-8474	SK3679	Bridge Rectifier	100	25.0
902-9034	SK3680	Bridge Rectifier	200	25.0
902-4348	SK3681	Bridge Rectifier	400	25.0
902-9036	SK3682	Bridge Rectifier	600	25.0
902-9042	SK3985	Bridge Rectifier	100	8.0
902-9044	SK3988	Bridge Rectifier	600	8.0

Fast Recovery Rectifiers

Stock No.	Mfr.'s Type	Description	Peak Voltage (V)	Forward Current (A)	Package
902-4235	SK3043B	Si Fast Recovery	1000	1.0	DO-15
902-4283	SK3318A	Si Fast-Recovery	600	1.5	DO-41
902-6166	SK3586A	Si Fast-Recovery	200	12.0	DO-4
902-6167	SK3587A	Si Fast-Recovery	600	12.0	DO-4
902-6168	SK3588A	Si Fast-Recovery	200	70.0	DO-5
902-6169	SK3589A	Si Fast-Recovery	600	70.0	DO-5
902-9046	SK3998	Si Fast-Recovery	1500	1.0	DO-15
902-9048	SK9000	Si Fast-Recovery	600	1.0	DO-15
902-9054	SK9091	Si Fast-Recovery	200	0.2	DO-35

Standard Recovery Rectifiers

Stock No.	Mfr.'s Type	Description	Peak Voltage (V)	Forward Current (A)	Package
902-9010	SK3017B	Si Axial-Lead Rectifier	600	1.0	Glass
902-4230	SK3031A	Si Axial-Lead Rectifier	400	1.0	Glass
902-6170	SK3033A	Si Axial-Lead Rectifier	1000	1.0	Glass
902-9012	SK3051	Si Axial-Lead Rectifier	1000	3.0	DO-27
902-9014	SK3081	Si Axial-Lead Rectifier	1000	1.0	DO-41
902-6172	SK3311	Si Axial-Lead Rectifier	200	1.0	DO-41
902-5612	SK3312	Si Axial-Lead Rectifier	400	1.0	DO-41
902-9024	SK3313	Si Axial-Lead Rectifier	600	1.0	DO-41
902-4295	SK3500	Si Stud Rectifier	600	12.0	DO-4
902-4296	SK3501	Si Stud Rectifier	600	40.0	DO-5
902-4303	SK3517	Si Stud Rectifier	600	12.0	Rev Polarity DO-4
902-4304	SK3518	Si Stud Rectifier	600	40.0	Rev Polarity DO-5
902-6173	SK3584	Si Stud Rectifier	600	6.0	DO-4
902-6174	SK3585	Si Stud Rectifier	600	15.0	DO-4
902-6176	SK3600	Si Stud Rectifier	200	6.0	DO-4
902-6177	SK3601	Si Stud Rectifier	50	6.0	DO-4
902-6180	SK3605	Si Stud Rectifier	400	15.0	DO-5
902-6181	SK3606	Si Stud Rectifier	200	15.0	DO-5
902-6182	SK3607	Si Stud Rectifier	50	15.0	DO-5
902-4325	SK3608	Si Stud Rectifier	400	40.0	DO-5
902-4326	SK3609	Si Stud Rectifier	200	40.0	DO-5
902-4327	SK3610	Si Stud Rectifier	50	40.0	DO-5
902-9026	SK3639	Si Axial-Lead Rectifier	200	6-22	—
902-4334	SK3640	Si Axial-Lead Rectifier	600	6-22	—
902-6183	SK3698	Si Stud Rectifier	200	40.0	Rev Polarity DO-5
902-9038	SK3848	Si Axial-Lead Rectifier	600	3.0	DO-27
902-9050	SK9007	Si Axial-Lead Rectifier	400	3.0	DO-27
902-9052	SK9010	Si Axial-Lead Rectifier	1000	3.0	DO-27

Thyristors

Silicon Controlled Rectifiers

Stock No.	Mfr.'s Type	Peak Voltage (V)	Forward Current (A)	Package
902-8972	SK3503	600	7.0	TO-5
902-6250	SK3504	600	20.0	TO-48
902-4298	SK3505	600	35.0	TO-48
902-6252	SK3571	600	4.0	TO-220
902-4317	SK3574	200	16.0	TO-220
902-4318	SK3575	400	16.0	TO-220
902-6253	SK3576	600	16.0	TO-220
902-4319	SK3577	200	7.0	TO 5
902-4320	SK3582	400	35.0	TO-48
902-4331	SK3634	200	8.0	TO-127
902-6260	SK3655	200	35.0	Isolated Stud
902-6261	SK3656	400	35.0	Isolated Stud
902-6262	SK3657	600	35.0	Isolated Stud
902-8986	SK3683	200	5.0	TO-66
902-6263	SK3684	400	5.0	TO-66
902-6264	SK3940	50	8.0	TO-64
902-8482	SK3942	200	8.0	TO-64
902-6265	SK3953	60	4.0	TO-126
902-6266	SK3955	400	4.0	TO-126
902-6267	SK6629	600	25.0	TO-48
902-6268	SK6631	800	25.0	TO-48
902-6269	SK6632	1000	25.0	TO-48
902-6270	SK6648	800	35.0	TO-48
902-6273	SK6652	200	25.0	TO-220
902-4446	SK6654	400	25.0	TO-220
902-4447	SK6656	600	25.0	TO-220

Sensitive Gate SCRs

Stock No.	Mfr.'s Type	Peak Voltage (V)	Forward Current (A)	Package
902-8978	SK3597	200	4.0	TO-202
902-8980	SK3598	400	4.0	TO-202
902-8982	SK3638	100	0.8	TO-92
902-6274	SK6641	50	35.0	TO-48
902-6275	SK6642	100	35.0	TO-48

TRIACs

Stock No.	Mfr.'s Type	Peak Voltage (V)	Forward Current (A)	Package
902-8974	SK3506	400	2.5	TO-5
902-4300	SK3508	400	15.0	TO-48
902-6276	SK3509	400	40.0	TO-48
902-6277	SK3519	600	2.5	TO-5
902-6278	SK3520	600	15.0	TO-48
902-6279	SK3521	600	30.0	TO-48
902-8464	SK3522	600	40.0	TO-48
902-8976	SK3533	400	16.0	TO-220
902-6280	SK3583	200	2.5	TO-5
902-6281	SK3631	100	10.0	TO-127
902-6284	SK3633	400	10.0	TO-127
902-6285	SK3652	200	40.0	TO-48
902-4341	SK3658	200	15.0	TO-220
902-5608	SK3659	400	15.0	TO-220
902-4342	SK3660	600	15.0	TO-220
902-4343	SK3662	400	40.0	Isolated Stud
902-4344	SK3663	600	40.0	Isolated Stud
902-6288	SK3665	200	4.0	TO-126
902-8984	SK3666	400	4.0	TO-126
902-6289	SK3937	100	16.0	TO-220
902-6290	SK6630	50	10.0	TO-127
902-6291	SK6683	20	30.0	TO-48
902-9292	SK6685	400	30.0	TO-48
902-9004	SK6708	400	8.0	TO-220
902-4448	SK6709	600	8.0	TO-220
—	—	—	—	—

Voltage Regulators

Stock No.	Mfr.'s Type	Peak Voltage (V)	Forward Current (A)	Package
902-9058	SK3462	+5	0.10	TO-92
902-9060	SK3591	+5	1.00	TO-220
902-9062	SK3592	+12	1.00	TO-220
902-9064	SK3593	+15	1.00	TO-220
902-9066	SK3630	+8	1.00	TO-220
902-9068	SK3670	+24	1.00	TO-220
902-9070	SK3671	–5	1.50	TO-48
902-9072	SK3673	–12	1.50	TO-202
902-9080	SK9169	+12	0.10	TO-92
902-9082	SK9170	+15	0.10	TO-92
902-9084	SK9215	+1.2 to +37	1.50	TO-92
902-9086	SK9216	–1.2 to –37	1.50	TO-220
902-9088	SK9219	–5	0.10	TO-92
902-9090	SK9221	–12	0.10	TO-92
902-9100	SK9344	–1.2 to +32	5.00	TO-3

Evaluation Boards, Drivers, Interface, Motion Circuits and Power Factor Correction

Unitrode's Evaluation Boards — Available Now*

UC3573EVAL. Buck Regulator Evaluation Board
UC3909EVAL. Switchmode Lead-Acid Battery Charge Controller Evaluation Board
UCC3889EVAL. Off-Line Power Supply Controller Evaluation Board
UCC3912EVAL. Programmable Electronic Circuit Breaker Evaluation Board

*Limited availability, subject to prior sale.

Drivers

Power driver ICs provide an ideal interface between low power control circuitry and high power motor drive or power supply output devices. A wide variety of power MOSFET driver ICs combine high speed with high output current drive capability which greatly simplifies power stage design. Transformer isolated solutions are also provided for both power MOSFET and IGBT drive applications.

Mfr.'s Type	Description	Power Driver	FET Driver	Isolated Driver Pairs	Input Configuration	Output Rise Time (nS)	Maximum Voltage (V)	Peak Output Current (A)
UC2950T	Half Bridge Bipolar Switch	Single	—	—	Sink/Source TTL	—	35	4.0
UC3705N	High Speed Power Driver	Single	—	—	Complementary	60	40	1.5
UC3707N	Dual Channel Power Driver	Dual	—	—	Complementary	50	40	1.5
UC3708N	Dual Non-Inverting Power Driver	Dual Noninverting	—	—	Inverting	75	35	3.0
UC3709N	Dual High Speed FET Driver	—	Single	—	Non-Inverting	40	40	1.5
UC3710N	High Current FET Driver	—	Single	—	Complementary	40	20	6.0
UC3711N	Dual Ultra High Speed FET Driver	—	Dual	—	Non-Inverting	20	40	1.5
UC3724N	Isolated Drive Transmitter	—	Single	FET Drv	Non-Inverting	30	40	2.0
UC3726N	Isolated Drive Transmitter	Single	—	IGBT Drv	Non-Inverting	75	40	4.0
UC3727N	Isolated High Side IGBT Driver	Single	—	IGBT Drv	Non-Inverting	75	40	4.0

Interface

Interface chips include octal E1A line driver and receivers, and SCSI (small computer system interface) 18-line and 9-line terminators. Octal line drivers and receivers are used to interface terminal servers, printers, network routers, and video terminals over long distances. Terminators are used to at the end of long cables in SCSI application to prevent line reflections, which would result in false signals and interference.

Communications Interface Drivers and Receivers

Mfr.'s Type	Description	Number of Drivers	Number of Receivers	Supply Voltage (V)	EIA232 V.28	EIA423 V.10	EIA422 V.11	V.35	AppleTalk
UC5170CN	Octal Line Driver	8	—	±10	Yes	Yes	No	No	No

SCSI Active Terminators

Mfr.'s Type	Description	Signal Line Channels	Channel Capacitance (pf)	Termination Impedance (Ω)	Disconnect High or Low	Input Voltage Range (V)	Supports Active Negation	SCSI Hot Plug Current (nA)
UC5601N	18 Line SCSI Active Terminator	18	10	110	High	4.0 to 5.25	No	<10
UC5602N	18 Line SCSI Active Terminator	18	11	110	High	4.0 to 5.25	No	<10
UC5603N	9 Line SCSI Active Terminator	9	6	110	High	4.0 to 5.25	Yes	<10

Intelligent Motion Circuits

Motor control ICs include a wide variety of voice coil drivers, stepper motor drivers, and both brush and brushless DC motor controllers. On board power drivers provide a complete motor drive design solution for low power applications. High power solutions combine sophisticated control and fault protection features with easy interface to external power amplifiers.

PWM Motor Controllers and Drivers

Mfr.'s Type	Description	Hall Logic	Microstepping	Number of Outputs	Output Current Per Output (A)	Current Sense Amplifier
L293N	Push-Pull 4 Channel Driver	—	—	2	1.0	—
L293DN	Push-Pull 4 Channel Driver	—	—	2	0.6	—
UC3517N	Stepper Motor Drive Circuit	—	—	2	0.5	—
UC3625N	Brushless DC Motor Controller	Yes	—	2	—	Differential
UC3637N	Switchmode Controller for DC Motor Driver	—	—	2	0.1	Differential
UC3638N	Switchmode Controller for DC Motor Driver	—	—	2	0.5	Differential
UC3717AN	Stepper Motor Drive Circuit	—	—	2	1.0	Single Ended
UC3717N	Stepper Motor Drive Circuit	—	—	2	1.0	Single Ended
UC3770AN	High Performance Stepper Motor Drive Circuit	—	Yes	2	1.0	Single Ended
UC3770BN	High Performance Stepper Motor Drive Circuit	—	Yes	2	2.0	Single Ended

Phase Locked Frequency Controllers

Mfr.'s Type	Description	Phase Locked Loop Control	Internal Oscillator	Phase Drive Logic	Divide Logic	Maximum Frequency (MHz)	Sense Amplifier
UC3633N	Phase Locked Frequency Controller	Yes	Yes	—	2/4/8	10	Yes
UC3635N	Phase Locked Frequency Controller	Yes	Yes	—	2/4	10	Yes

Power Factor Correction

Power Factor Correction (PFC) circuits are preregulators used in off-line power supplies that make the input current have the same wave shape and phase as the input voltage. All of these devices except for the UC3852N employ average current mode control and RMS input voltage feed-forward for optimal dynamic response while achieving power factors better than 0.99. Power factor correction is needed to meet IEC-1000 which regulates input line current harmonics.

Mfr.'s Type	Description	Differentiating Features	Maximum Practical Operating Frequency	Output Drive (A)	Start-Up Current (mA)	Under-Voltage Lockout (V)
UC3852N	8-pin PFC Controller	Critical conduction control	Variable	0.5	1.00	16.3/11.5
UC3853N	8-pin PFC Controller	Minimal external components	125 KHz with ext. sync.	1.0	1.50	11.5/9.5
UC3854AN	Enhanced PFC Controller	Improved UC3854N	200 KHz	1.0	1.50	16.0/10.0
UC3854BN	Enhanced PFC Controller	Improved UC3854N	200 KHz	1.0	1.50	10.5/10.0
UC3854N	PFC Controller	RMS input voltage feed-forward	200 KHz	1.0	1.50	16.0/10.0
UC3855AN	Zero Voltage Switched PFC Controller	Zero Voltage Switching	500 KHz	1.5	0.15	16.0/10.0
UC3855BN	Zero Voltage Switched PFC Controller	Zero Voltage Switching	500 KHz	1.5	0.15	10.5/10.0

Power Management Circuits

Battery Management

Mfr.'s Type	Description	Applications
UC3906N UC3909N	Lead Acid Battery Charger Switchmode Lead Acid Charger	4 Step Linear Charger High Power, External Temperature Sensor
UCC3941D UCC3911DP	Single Cell Alkaline Boost Regulator Lithium-Ion Protector	High Efficiency Boost Converter Integrated Power FET

Electronic Circuit Breaker

Mfr.'s Type	Description	Voltage Range	Current Range	Integrated Power FET	Active Current ILIM Limit	Programmable Threshold	Programmable Time Delay
UCC3913N	Negative Voltage Circuit Breaker	Floating Negative	Unlimited	No	Yes	Yes	Yes
UCC3915N	Programmable Electronic Circuit Breaker	7 V-15 V	0 A-3 A	Yes	Yes	Yes	Yes
UCC3916N	SCSI Circuit Breaker	4 V-6 V	0 A-1.5 A	Yes	Yes	No	Yes

Lighting Controllers

Mfr.'s Type	Description	Application	Topology	Peak Output Current	Output Frequency	Outputs	Startup Current	Maximum Duty Cycle
UC3871N	Resonant Fluorescent Lamp Driver	Zero Voltage Switched Driver with LCD Bias Supply	Push-Pull	0.1 A	200 KHz	2 Single and 2 Push-Pull, Totem Pole	—	100%/95%
UC3872N	Resonant Lamp Ballast Controller	Zero Voltage Switched Lamp Ballast Controller	Push-Pull	0.1 A	200 KHz	Single and 2 Push-Pull, Totem Pole	—	100%

Linear Regulators

Mfr.'s Type	Description	Output Voltage (V)	Dropout Voltage (V)	Quiescent Current	Maximum Input Voltage (V)	Special Features	Line Regulation (mV)	Load Regulation (mV)
UC381DP-3	Low Dropout Linear Regulator	3.30	0.50 V at 1 A	400.0 µA	9	Short Circuit Protection and Shutdown Mode	3	5
UC381DP-5	Low Dropout Linear Regulator	5.00	0.50 V at 1 A	400.0 µA	9	Short Circuit Protection and Shutdown Mode	3	5
UC381DP-ADJ	Low Dropout Linear Regulator	Adjustable	0.50 V at 1 A	400.0 µA	9	Short Circuit Protection and Shutdown Mode	3	5
UC382T-1	Fast Response, Low Dropout Bus Regulator	1.50	0.45 V at 3 A	6.7 mA	13	Fast Transient Response	60 dB (VIN) 100 dB (VB)	1
UC382T-2	Fast Response, Low Dropout Bus Regulator	2.10	0.45 V at 3 A	6.7 mA	13	Fast Transient Response	60 dB (VIN) 100 dB (VB)	1
UC382T-3	Fast Response, Low Dropout Bus Regulator	2.50	0.45 V at 3 A	6.7 mA	13	Fast Transient Response	60 dB (VIN) 100 dB (VB)	1
UC382T-ADJ	Fast Response, Low Dropout Bus Regulator	Adjustable or 1.20 V	0.45 V at 3 A	6.7 mA	13	Fast Transient Response	60 dB (VIN) 100 dB (VB)	1
UC560DP	SCSI Source Sink Regulator	2.85	1.00 V at 750 mA	100.0 µA	6	Meets SCSI, SCSI-2, SCSI-3 and Fast-20 Requirements	10	100
UCC383T-ADJ	Low Dropout Linear Regulator	Adjustable	0.45 at 3 A	400.0 µA	9	Short Circuit Current 3% Duty Cycle Limited	1	2

Power Supply Support

Mfr.'s Type	Description	Application
UC3730N UC3902D UC3902N UC3908D	Thermal Monitor 8-Pin Load Share Controller 8-Pin Load Share Controller Programmable Voltage Clamp	This device combines a temperature transducer, precision ref. and temp. comparator Used to interconnect two or more power supplies connected in parallel to share a common load Used to interconnect two or more power supplies connected in parallel to share a common load Connects across the output of a power supply to protect the load from overvoltage transients
UC3908T UC3910D UC3910N	Programmable Voltage Clamp 4-Bit DAC and Voltage Monitor 4-Bit DAC and Voltage Monitor	Connects across the output of a power supply to protect the load from overvoltage transients DAC and voltage monitor used in conjunction with UC3886 for Intel Pentium® Pro applications DAC and voltage monitor used in conjunction with UC3886 for Intel Pentium® Pro applications

PWM Controllers

PWM Controllers consist of a reference voltage, ramp generator, latched PWM comparator, error amplifier, clock and output driver. The pulse width of the converter's power switch is modulated (adjusted) with changes in input voltage or output current. Used in conjunction with an external inductor in buck, boost of flyback topologies, these converters provide a regulated output voltage at high efficiency.

Mfr.'s Type	Description	Application	Topology	Peak Output Current	Output Frequency	Outputs	Startup Current	Maximum Duty Cycle
UC3548N	Voltage Mode PWM Controller	Primary Side Control of Isolated Power Supplies	Forward, Flyback	2.00 A	1.0 MHz	Single, Totem Pole	500.0 µA	76%
UC3578N	Floating Buck Controller	PWM Controller Drives External NMOS FET	Buck	1.60 A/1.2 A	100.0 KHz	Single, Totem Pole	500.0 µA	90%
UC3823AN	High Speed PWM Controller	DC-DC	Buck, Boost	2.00 A	1.0 MHz	Single, Totem Pole	0.1 mA	Programmable
UC3823BN	High Speed PWM Controller	Off-Line	Buck, Boost	2.00 A	1.0 MHz	Single, Totem Pole	0.1 mA	Programmable
UC3823N	High Speed PWM Controller	DC-DC	Buck, Boost	1.50 A	1.0 MHz	Single, Totem Pole	1.1 mA	100%
UC3824N	High Speed PWM Controller	Synchronous Rectifier Forward Converter	Forward, Flyback	1.50 A	1.0 MHz	Dual Complementary, Totem Pole	1.1 mA	100%
UC3825AN	High Speed PWM Controller	DC-DC	Push-Pull Full Bridge, Half Bridge	2.00 A	1.0 MHz	Dual Alternating, Totem Pole	0.1 mA	Programmable
UC3825DW	High Speed PWM Controller	DC-DC	Push-Pull Full Bridge, Half Bridge	1.50 A	1.0 MHz	Dual Alternating, Totem Pole	1.1 mA	50%/50%
UC3825N	High Speed PWM Controller	DC-DC	Push-Pull Full Bridge, Half Bridge	1.50 A	1.0 MHz	Dual Alternating, Totem Pole	1.1 mA	50%/50%
UC3825Q	High Speed PWM Controller	DC-DC	Push-Pull Full Bridge, Half Bridge	1.50 A	1.0 MHz	Dual Alternating, Totem Pole	1.1 mA	50%/50%
UC3827N	Current Fed Push Pull Controller	Multiple Output, HV Output Converters	Buck, Push-Pull	1.50 A Flying Output, 1 A Push-Pull Output	—	1 Buck, 2 Push-Pull	—	—

Power Management Circuits (continued)

PWM Controllers (continued)

Mfr.'s Type	Description	Application	Topology	Peak Output Current	Output Frequency	Outputs	Startup Current	Maximum Duty Cycle
UC3841N	Programmable, Off-Line, PWM Controller	Off-Line, DC-DC	Forward, Flyback, Buck, Boost	1.00 A	500.0 KHz	Single, Totem Pole	1.0 mA	100%
UC3842AN	Current Mode PWM Controller	Off-Line	Forward, Flyback, Buck, Boost	1.00 A	500.0 KHz	Single, Totem Pole	0.5 mA	100%
UC3842D	Current Mode PWM Controller	Off-Line	Forward, Flyback, Buck, Boost	1.00 A	500.0 KHz	Single, Totem Pole	1.0 mA	100%
UC3842N	Current Mode PWM Controller	Off-Line	Forward, Flyback, Buck, Boost	1.00 A	500.0 KHz	Single, Totem Pole	1.0 mA	100%
UC3843AD	Current Mode PWM Controller	DC-DC	Forward, Flyback, Buck, Boost	1.00 A	500.0 KHz	Single, Totem Pole	0.5 mA	100%
UC3843AN	Current Mode PWM Controller	DC-DC	Forward, Flyback, Buck, Boost	1.00 A	500.0 KHz	Single, Totem Pole	0.5 mA	100%
UC3843D	Current Mode PWM Controller	DC-DC	Forward, Flyback, Buck, Boost	1.00 A	500.0 KHz	Single, Totem Pole	1.0 mA	100%
UC3843N	Current Mode PWM Controller	DC-DC	Forward, Flyback, Buck, Boost	1.00 A	500.0 KHz	Single, Totem Pole	1.0 mA	100%
UC3844AN	Current Mode PWM Controller	Off-Line	Forward, Flyback, Buck, Boost	1.00 A	500.0 KHz	Single, Totem Pole	0.5 mA	50%
UC3844N	Current Mode PWM Controller	Off-Line	Forward, Flyback, Buck, Boost	1.00 A	500.0 KHz	Single, Totem Pole	1.0 mA	50%
UC3845AN	Current Mode PWM Controller	DC-DC	Forward, Flyback, Buck, Boost	1.00 A	500.0 KHz	Single, Totem Pole	0.5 mA	50%
UC3845N	Current Mode PWM Controller	DC-DC	Forward, Flyback, Buck, Boost	1.00 A	500.0 KHz	Single, Totem Pole	1.0 mA	50%
UC3846N	Current Mode PWM Controller	Off-Line, DC-DC	Push-Pull Full Bridge, Half Bridge	0.50 A	500.0 KHz	Dual Alternating, Totem Pole	—	50%/50%
UC3847N	Current Mode PWM Controller	Off-Line, DC-DC	Push-Pull Full Bridge, Half Bridge	0.50 A	500.0 KHz	Dual Alternating, Totem Pole	—	50%/50%
UC3848N	Average Current Mode PWM Controller	Average Current Mode, Off-Line, DC-DC	Forward, Flyback	2.00 A	1.0 MHz	Single, Totem Pole	500.0 µA	Programmable
UC3856N	Improved Current Mode PWM Controller	Isolated Output, Push-Pull	Push-Pull Full Bridge, Half Bridge	1.50 A	1.0 MHz	Dual Alternating, Totem Pole	—	50%/50%
UC3874N-1	Average Current Mode Buck Controller	High Performance, High Efficiency Stepdown	N-Channel Synchronous Buck	1.50 A	300 KHz	High Side and Low Side	—	100%
UC3874N-2	Average Current Mode Buck Controller	High Performance, High Efficiency Stepdown	N-Channel Synchronous Buck	1.50 A	300 KHz	High Side and Low Side	—	100%
UC3875N	Phase Shift Resonant Controller	Zero Voltage Transition, Phase Shifted Bridge	Full Bridge	2.00 A	1.0 MHz	Quad, Phase Shifted, Totem Pole	150.0 µA	100%
UC3878N	Phase Shift Resonant Controller	Zero Voltage Transition, Phase Shifted Bridge	Full Bridge	2.00 A	1.0 MHz	Quad, Phase Shifted, Totem Pole	150.0 µA	100%
UC3886N	Average Current Mode Controller	Controller for Intel Pentium® Pro Microprocessor	Buck	1.50 A	300.0 KHz	Single, Totem Pole	—	100%
UCC3570N	Low Power PWM	Wide Range, Off-Line	Forward, Flyback, Buck, Boost	0.50 A	500.0 KHz	Single, Totem Pole	85.0 µA	100%
UCC3580N	Single Ended Active Clamp Reset PWM	Primary Side Controller with Main and Auxiliary Outputs	Forward, Flyback	1.00 A/0.50 A, 0.30 A/0.30 A	1.0 MHz	Dual	100.0 µA	>50%
UCC3581N	Micropower Voltage Mode PWM	Very High Efficiency DC-DC Converters	Forward, Flyback	1.00 A	100.0 KHz	Dual	85.0 µA	>50%
UCC3582N	8-Pin Voltage Mode Buck Controller	Portable/Low Power Stepdown	Synchronous Buck	0.50 A	500.0 KHz	High Side and Low Side	85.0 µA	100%
UCC3583N	Synchronizable Secondary Side Post Regulator	Regulates Auxiliary Outputs at Secondary Side of Switching Regulator	Buck	1.50 A/0.50 A	500.0 KHz	Single, Totem Pole	85.0 µA	100%
UCC3800N	Low-Power BiCMOS Current Mode PWM Controller	DC-DC and Battery	Buck, Boost	1.00 A	1.0 MHz	Single, Totem Pole	100.0 µA	100%
UCC3801N	Low-Power BiCMOS Current Mode PWM Controller	DC-DC and Battery	Buck, Boost	1.00 A	1.0 MHz	Single, Totem Pole	100.0 µA	50%
UCC3802N	Low-Power BiCMOS Current Mode PWM Controller	Off Line	Forward, Flyback	1.00 A	1.0 MHz	Single, Totem Pole	100.0 µA	100%
UCC3806N	Dual Output, Current Mode PWM Controller	Isolated Output, Push-pull	Push-pull, Full Bridge, Half Bridge	0.50 A	1.0 MHz	Dual Alternating, Totem Pole	100.0 µA	50%/50%
UCC3810N	Low-Power BiCMOS Dual Current Mode PWM Controller	Dual PWM, Off Line, DC-DC	Forward, Flyback, Buck, Boost	1.00 A	1.0 MHz	Dual, Totem Pole	150.0 µA	50%
UCC3813N-0	Low Cost BiCMOS Current Mode Controller	DC-DC and Battery	Buck, Boost	1.00 A	1.0 MHz	Single, Totem Pole	100.0 µA	100%
UCC3813N-1	Low Cost BiCMOS Current Mode Controller	DC-DC and Battery	Buck, Boost	1.00 A	1.0 MHz	Single, Totem Pole	100.0 µA	50%
UCC3813N-2	Low Cost BiCMOS Current Mode Controller	Off-line	Forward, Flyback	1.00 A	1.0 MHz	Single, Totem Pole	100.0 µA	100%
UCC3888N	Off-Line Power Supply Controller	5 V Off-Line Bias Supply	Flyback	0.15 A	250.0 KHz	Single, Totem Pole	150.0 µA	55%
UCC3889N	Off Line Power Supply Controller	Off Line, Bias Supply	Flyback	0.15 A	250.0 KHz	Single, Totem Pole	150.0 µA	55%
UCC3890N	Off-Line Battery Charger Circuit	Off-Line Constant Voltage or Constant Current PWM	Flyback	0.15 A	250.0 KHz	Single, Totem Pole	150.0 µA	55%

®Pentium Pro is a registered trademark of Intel Corporation.

Supply Monitors

Mfr.'s Type	Description	Power Supply Monitor	Voltage Range (V)	Window Adjust	Current Limit	Programmable Threshold	Programmable Time Delay
UC3544N	Power Supply Supervisory Circuit	Single	5.00 to 35	No	Yes	Yes	Yes
UC3903N	Quad Supply and Line Monitor	Quad	8.00 to 40	Yes	No	Yes	No
UC3904N	Quad Supply and Line Monitor	Quad	4.75 to 18	Yes	No	Yes	Yes

Switching Regulators

Switching regulators consist of reference supply, error amplifier, oscillator, comparator, and a switching element. In conjunctions with an external inductor, diode, and capacitor, the switching regulator offers output power capability with minimum loss.

Mfr.'s Type	Description	Application	Topology	Peak Output Current	Output Frequency	Outputs	Maximum Duty Cycle
UC2577T-ADJ	Simple Adjustable Volt Step-Up Voltage Regulator	Current Mode, Step-Up Switching Regulator	Boost, Forward, Flyback	3 A	52 KHz	Single, Open Collector	95%

XC3000A and XC3100A Series FPGAs

Product Selection Matrix

Features

	XC3020A/L	XC3030A/L	XC3042A/L	XC3064A/L	XC3090A/L	XC3120A	XC3130A	XC3142A	XC3164A	XC3190A	XC3195A
Output Drive (mA)	4	4	4	4	4	8	8	8	8	8	8
JTAG (IEEE 1149.1)	N	N	N	N	N	N	N	N	N	N	N
Dedicated Arithmetic	N	N	N	N	N	N	N	N	N	N	N
Quiescent Current (mA)	0.5/0.02	0.5/0.02	0.5/0.02	0.5/0.02	0.5/0.02	8	8	8	8	8	8

Performance

	XC3020A/L	XC3030A/L	XC3042A/L	XC3064A/L	XC3090A/L	XC3120A	XC3130A	XC3142A	XC3164A	XC3190A	XC3195A
Fastest Speed Grade	-6/-8	-6/-8	-6/-8	-6/-8	-6/-8	-09	-09	-09	-09	-09	-09
Shift Register (MHz)	124/69	124/69	124/69	124/69	124/69	312	312	312	312	312	312
Small State Machine (MHz)	42/23	42/23	42/23	42/23	42/23	112	112	112	112	112	112
Large State Machine (MHz)	21/14	21/14	21/14	21/14	21/14	55	55	55	55	55	55
4-Bit Multiply-Accumulator (MHz)	20/12	20/12	20/12	20/12	20/12	51	51	51	51	51	51
16-Bit Accumulator (MHz)	25/15	25/15	25/15	25/15	25/15	58	58	58	58	58	58
Address Map Decoder (MHz)	52/27	52/27	52/27	52/27	52/27	127	127	127	127	127	127
Data Path (MHz)	147/86	147/86	147/86	147/86	147/86	335	335	335	335	335	335
Counter Timer (MHz)	37/23	37/23	37/23	37/23	37/23	81	81	81	81	81	81
16-Bit Non Loadable Counter (MHz)	135/81	135/81	135/81	135/81	135/81	370	370	370	370	370	370
16-Bit Loadable Binary Up Counter (MHz)	39/25	39/25	39/25	39/25	39/25	91	91	91	91	91	91
16-Bit Loadable Prescaled Counter (MHz)	100/59	100/59	100/59	100/59	100/59	228	228	228	228	228	228
Pad to Setup (ns)	14/12	14/12	14/12	14/12	14/12	2.5	2.5	2.5	2.5	2.5	2.5
Clock to Pad (ns)	7/18	7/18	7/18	7/18	7/18	4	4	4	4	4	4
Combinatorial Pad to Pad (ns)	14/25	14/25	14/25	14/25	14/25	6	6	6	6	6	6

XC3000A Field Programmable Gate Arrays

Mfr.'s Type		Speed Grade Tpid (ns)	No. of Leads	Max. Logic Gates	Typical Gate Range	CLBs	Array	User I/Os Max.	Flip-Flops	Horizontal Longlines	Configuration Data Bits
PLCC	Plastic PGA										
XC3020A-6PC68C	—	7.0	68	1,500	1,000-1,500	64	8 × 8	64	256	16	14,779
XC3020A-6PC84C	—	7.0	84	1,500	1,000-1,500	64	8 × 8	64	256	16	14,779
XC3020A-7PC68C	—	7.5	68	1,500	1,000-1,500	64	8 × 8	64	256	16	14,779
XC3020A-7PC84C	—	7.5	84	1,500	1,000-1,500	64	8 × 8	64	256	16	14,779
XC3030A-6PC44C	—	7.0	44	2,000	1,500-2,000	100	10 × 10	80	360	20	22,176
XC3030A-6PC68C	—	7.0	68	2,000	1,500-2,000	100	10 × 10	80	360	20	22,176
XC3030A-6PC84C	—	7.0	84	2,000	1,500-2,000	100	10 × 10	80	360	20	22,176
XC3030A-7PC44C	—	7.5	44	2,000	1,500-2,000	100	10 × 10	80	360	20	22,176
XC3030A-7PC68C	—	7.5	68	2,000	1,500-2,000	100	10 × 10	80	360	20	22,176
XC3030A-7PC84C	—	7.5	84	2,000	1,500-2,000	100	10 × 10	80	360	20	22,176
XC3042A-6PC84C	—	7.0	84	3,000	2,000-3,000	144	12 × 12	96	480	24	30,784
XC3042A-7PC84C	—	7.5	84	3,000	2,000-3,000	144	12 × 12	96	480	24	30,784
XC3064A-6PC84C	XC3064A-6PP132C	7.0	84/132	5,000	4,000-5,000	224	16 × 14	120	688	32	46,064
XC3064A-7PC84C	XC3064A-7PP132C	7.5	84/132	5,000	4,000-5,000	224	16 × 14	120	688	32	46,064
XC3090A-6PC84C	XC3090A-6PP175C	7.0	84/175	6,000	5,000-6,000	320	16 × 20	144	928	40	64,160
XC3090A-7PC84C	XC3090A-7PP175C	7.5	84/175	6,000	5,000-6,000	320	16 × 20	144	928	40	64,160

XC3100A Field Programmable Gate Arrays

XC3120A-09PC68C	—	3.9	68	1,500	1,000-1,500	64	8 × 8	64	256	16	14,779
XC3120A-09PC84C	—	3.9	84	1,500	1,000-1,500	64	8 × 8	64	256	16	14,779
XC3120A-1PC68C	—	4.3	68	1,500	1,000-1,500	64	8 × 8	64	256	16	14,779
XC3120A-1PC84C	—	4.3	84	1,500	1,000-1,500	64	8 × 8	64	256	16	14,779
XC3120A-2PC68C	—	4.7	68	1,500	1,000-1,500	64	8 × 8	64	256	16	14,779
XC3120A-2PC84C	—	4.7	84	1,500	1,000-1,500	64	8 × 8	64	256	16	14,779
XC3120A-3PC68C	—	5.6	68	1,500	1,000-1,500	64	8 × 8	64	256	16	14,779
XC3120A-3PC84C	—	5.6	84	1,500	1,000-1,500	64	8 × 8	64	256	16	14,779
XC3120A-4PC68C	—	6.5	68	1,500	1,000-1,500	64	8 × 8	64	256	16	14,779
XC3120A-4PC84C	—	6.5	84	1,500	1,000-1,500	64	8 × 8	64	256	16	14,779
XC3120A-5PC68C	—	6.8	68	1,500	1,000-1,500	64	8 × 8	64	256	16	14,779
XC3120A-5PC84C	—	6.8	84	1,500	1,000-1,500	64	8 × 8	64	256	16	14,779
XC3130A-09PC68C	—	3.9	68	2,000	1,500-2,000	100	10 × 10	80	360	20	22,176
XC3130A-09PC84C	—	3.9	84	2,000	1,500-2,000	100	10 × 10	80	360	20	22,176
XC3130A-1PC68C	—	4.3	68	2,000	1,500-2,000	100	10 × 10	80	360	20	22,176
XC3130A-1PC84C	—	4.3	84	2,000	1,500-2,000	100	10 × 10	80	360	20	22,176
XC3130A-2PC68C	—	4.7	68	2,000	1,500-2,000	100	10 × 10	80	360	20	22,176
XC3130A-2PC84C	—	4.7	84	2,000	1,500-2,000	100	10 × 10	80	360	20	22,176
XC3130A-3PC68C	—	5.6	68	2,000	1,500-2,000	100	10 × 10	80	360	20	22,176
XC3130A-3PC84C	—	5.6	84	2,000	1,500-2,000	100	10 × 10	80	360	20	22,176
XC3130A-4PC68C	—	6.5	68	2,000	1,500-2,000	100	10 × 10	80	360	20	22,176
XC3130A-4PC84C	—	6.5	84	2,000	1,500-2,000	100	10 × 10	80	360	20	22,176
XC3130A-5PC68C	—	6.8	68	2,000	1,500-2,000	100	10 × 10	80	360	20	22,176
XC3130A-5PC84C	—	6.8	84	2,000	1,500-2,000	100	10 × 10	80	360	20	22,176
XC3142A-09PC84C	—	3.9	84	3,000	2,000-3,000	144	12 × 12	96	480	24	30,784
XC3142A-1PC84C	—	4.3	84	3,000	2,000-3,000	144	12 × 12	96	480	24	30,784
XC3142A-2PC84C	—	4.7	84	3,000	2,000-3,000	144	12 × 12	96	480	24	30,784
XC3142A-3PC84C	—	5.6	84	3,000	2,000-3,000	144	12 × 12	96	480	24	30,784
XC3142A-4PC84C	—	6.5	84	3,000	2,000-3,000	144	12 × 12	96	480	24	30,784
XC3142A-5PC84C	—	6.8	84	3,000	2,000-3,000	144	12 × 12	96	480	24	30,784
XC3164A-09PC84C	—	3.9	84	4,500	3,500-4,500	224	16 × 14	120	688	32	46,064
XC3164A-1PC84C	—	4.3	84	4,500	3,500-4,500	224	16 × 14	120	688	32	46,064
XC3164A-2PC84C	—	4.7	84	4,500	3,500-4,500	224	16 × 14	120	688	32	46,064
XC3164A-3PC84C	—	5.6	84	4,500	3,500-4,500	224	16 × 14	120	688	32	46,064
XC3164A-4PC84C	—	6.5	84	4,500	3,500-4,500	224	16 × 14	120	688	32	46,064
XC3164A-5PC84C	—	6.8	84	4,500	3,500-4,500	224	16 × 14	120	688	32	46,064
XC3190A-09PC84C	XC3190A-09PP175C	3.9	84/175	6,000	5,000-6,000	320	16 × 20	144	928	40	64,160
XC3190A-1PC84C	XC3190A-1PP175C	4.3	84/175	6,000	5,000-6,000	320	16 × 20	144	928	40	64,160
XC3190A-2PC84C	XC3190A-2PP175C	4.7	84/175	6,000	5,000-6,000	320	16 × 20	144	928	40	64,160
XC3190A-3PC84C	XC3190A-3PP175C	5.6	84/175	6,000	5,000-6,000	320	16 × 20	144	928	40	64,160
XC3190A-4PC84C	XC3190A-4PP175C	6.5	84/175	6,000	5,000-6,000	320	16 × 20	144	928	40	64,160
XC3190A-5PC84C	XC3190A-5PP175C	6.8	84/175	6,000	5,000-6,000	320	16 × 20	144	928	40	64,160
XC3195A-09PC84C	XC3195A-09PP175C	3.9	84/175	7,500	6,500-7,500	484	22 × 22	176	1320	44	94,944
XC3195A-1PC84C	XC3195A-1PP175C	4.3	84/175	7,500	6,500-7,500	484	22 × 22	176	1320	44	94,944
XC3195A-2PC84C	XC3195A-2PP175C	4.7	84/175	7,500	6,500-7,500	484	22 × 22	176	1320	44	94,944
XC3195A-3PC84C	XC3195A-3PP175C	5.6	84/175	7,500	6,500-7,500	484	22 × 22	176	1320	44	94,944
XC3195A-4PC84C	XC3195A-4PP175C	6.5	84/175	7,500	6,500-7,500	484	22 × 22	176	1320	44	94,944
XC3195A-5PC84C	XC3195A-5PP175C	6.8	84/175	7,500	6,500-7,500	484	22 × 22	176	1320	44	94,944

XC4000 Series FPGAs

► **High Density, High Performance Select-RAM™ Memory**

Features and Performance

	XC4003E*	XC4005E*	XC4006E*	XC4008E*	XC4010E*	XC4013E*	XC4020E*	XC4025E*	XC4028E	XC4036E
Output Drive (mA)	12	12	12	12	12	12	12	12	12	12
JTAG (IEEE 1149.1)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Dedicated Arithmetic	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Quiescent Current (mA)	10	10	10	10	10	10	10	10	10	10
Fastest Speed Grade	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2
Shift Register (MHz)	190	190	190	190	190	190	190	190	190	190
Small State Machine (MHz)	69	69	69	69	69	69	69	69	69	69
Large State Machine (MHz)	43	43	43	43	43	43	43	43	43	43
4-Bit Multiply-Accumulator (MHz)	39	39	39	39	39	39	39	39	39	39
16-Bit Accumulator (MHz)	65	65	65	65	65	65	65	65	65	65
Address Map Decoder (MHz)	71	71	71	71	71	71	71	71	71	71
Data Path (MHz)	156	156	156	156	156	156	156	156	156	156
Counter Timer (MHz)	117	117	117	117	117	117	117	117	117	117
16-Bit Non Loadable Counter (MHz)	180	180	180	180	180	180	180	180	180	180
16-Bit Loadable Binary Up Counter (MHz)	87	87	87	87	87	87	87	87	87	87
16-Bit Loadable Prescaled Counter (MHz)	115	115	115	115	115	115	115	115	115	115
Pad to Setup (ns)	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Clock to Pad (ns)	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
Combinatorial Pad to Pad (ns)	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5

*Usable gates assume 20% of total logic blocks used as RAM.

XC4000 Field Programmable Gate Arrays

Mfr.'s Type			Speed Grade Tpid (ns)	No. of Leads	Max. Logic Gates (No RAM)	Max. RAM Bits (No Logic)	Typical Gate Range (Logic and RAM)	CLB Matrix	Total Logic Blocks	No. of Flip-Flops	Max. Decode Inputs Per Side	Max. User I/O
PLCC	QFP	PGA										
XC4003E-2PC84C	—	XC4003E-2PG120C	2.0	84/120	3,000	3,200	2,000-5,000	10 × 10	100	360	30	80
XC4003E-3PC84C	—	XC4003E-3PG120C	2.5	84/120	3,000	3,200	2,000-5,000	10 × 10	100	360	30	80
XC4003E-4PC84C	—	XC4003E-4PG120C	3.0	84/120	3,000	3,200	2,000-5,000	10 × 10	100	360	30	80
XC4005E-2PC84C	—	XC4005E-2PG156C	2.0	84/156	5,000	6,272	3,000-9,000	14 × 14	196	616	42	112
XC4005E-3PC84C	—	XC4005E-3PG156C	2.5	84/156	5,000	6,272	3,000-9,000	14 × 14	196	616	42	112
XC4005E-4PC84C	—	XC4005E-4PG156C	3.0	84/156	5,000	6,272	3,000-9,000	14 × 14	196	616	42	112
XC4006E-2PC84C	—	XC4006E-2PG156C	2.0	84/156	6,000	8,192	4,000-12,000	16 × 16	256	768	48	128
XC4006E-3PC84C	—	XC4006E-3PG156C	2.5	84/156	6,000	8,192	4,000-12,000	16 × 16	256	768	48	128
XC4006E-4PC84C	—	XC4006E-4PG156C	3.0	84/156	6,000	8,192	4,000-12,000	16 × 16	256	768	48	128
XC4008E-2PC84C	—	XC4008E-2PG191C	2.0	84/191	8,000	10,368	6,000-15,000	18 × 18	324	936	54	144
XC4008E-3PC84C	—	XC4008E-3PG191C	2.5	84/191	8,000	10,368	6,000-15,000	18 × 18	324	936	54	144
XC4008E-4PC84C	—	XC4008E-4PG191C	3.0	84/191	8,000	10,368	6,000-15,000	18 × 18	324	936	54	144
—	—	XC4010E-2BG225C*	2.0	225	10,000	12,800	7,000-20,000	20 × 20	400	1120	60	160
—	—	XC4010E-3BG225C*	2.5	225	10,000	12,800	7,000-20,000	20 × 20	400	1120	60	160
—	—	XC4010E-4BG225C*	3.0	225	10,000	12,800	7,000-20,000	20 × 20	400	1120	60	160
XC4010E-2PC84C	—	XC4010E-2PG191C	2.0	84/191	10,000	12,800	7,000-20,000	20 × 20	400	1120	60	160
XC4010E-3PC84C	—	XC4010E-3PG191C	2.5	84/191	10,000	12,800	7,000-20,000	20 × 20	400	1120	60	160
XC4010E-4PC84C	—	XC4010E-4PG191C	3.0	84/191	10,000	12,800	7,000-20,000	20 × 20	400	1120	60	160
—	XC4013E-2HQ208C	XC4013E-2BG225C*	2.0	208/225	13,000	18,432	10,000-30,000	24 × 24	576	1536	75	192
—	XC4013E-3HQ208C	XC4013E-3BG225C*	2.5	208/225	13,000	18,432	10,000-30,000	24 × 24	576	1536	75	192
—	XC4013E-4HQ208C	XC4013E-4BG225C*	3.0	208/225	13,000	18,432	10,000-30,000	24 × 24	576	1536	75	192
—	XC4013E-2HQ240C	XC4013E-2PG223C	2.0	240/223	13,000	18,432	10,000-30,000	24 × 24	576	1536	75	192
—	XC4013E-3HQ240C	XC4013E-3PG223C	2.5	240/223	13,000	18,432	10,000-30,000	24 × 24	576	1536	75	192
—	XC4013E-4HQ240C	XC4013E-4PG223C	3.0	240/223	13,000	18,432	10,000-30,000	24 × 24	576	1536	75	192
—	XC4020E-2HQ208C	XC4020E-2PG223C	2.0	208/223	20,000	25,088	13,000-40,000	28 × 28	784	2016	84	224
—	XC4020E-3HQ208C	XC4020E-3PG223C	2.5	208/223	20,000	25,088	13,000-40,000	28 × 28	784	2016	84	224
—	XC4020E-4HQ208C	XC4020E-4PG223C	3.0	208/223	20,000	25,088	13,000-40,000	28 × 28	784	2016	84	224
—	XC4020E-2HQ240C	—	2.0	240	20,000	25,088	13,000-40,000	28 × 28	784	2016	84	224
—	XC4020E-3HQ240C	—	2.5	240	20,000	25,088	13,000-40,000	28 × 28	784	2016	84	224
—	XC4020E-4HQ240C	—	3.0	240	20,000	25,088	13,000-40,000	28 × 28	784	2016	84	224
—	XC4025E-2HQ240C	XC4025E-2PG223C	2.0	240/223	25,000	32,768	15,000-45,000	32 × 32	1024	2560	96	256
—	XC4025E-3HQ240C	XC4025E-3PG223C	2.5	240/223	25,000	32,768	15,000-45,000	32 × 32	1024	2560	96	256
—	XC4025E-4HQ240C	XC4025E-4PG223C	3.0	240/223	25,000	32,768	15,000-45,000	32 × 32	1024	2560	96	256
—	XC4025E-2HQ304C	—	2.0	304	25,000	32,768	15,000-45,000	32 × 32	1024	2560	96	256
—	XC4025E-3HQ304C	—	2.5	304	25,000	32,768	15,000-45,000	32 × 32	1024	2560	96	256
—	XC4025E-4HQ304C	—	3.0	304	25,000	32,768	15,000-45,000	32 × 32	1024	2560	96	256
—	XC4028EX-3HQ208C	XC4028EX-3BG352C*	2.5	208/352	28,000	32,768	18,000-50,000	32 × 32	1024	2560	96	256
—	XC4028EX-4HQ208C	XC4028EX-4BG352C*	3.0	208/352	28,000	32,768	18,000-50,000	32 × 32	1024	2560	96	256
—	XC4028EX-3HQ240C	XC4028EX-3PG299C	2.5	240/299	28,000	32,768	18,000-50,000	32 × 32	1024	2560	96	256
—	XC4028EX-4HQ240C	XC4028EX-4PG299C	3.0	240/299	28,000	32,768	18,000-50,000	32 × 32	1024	2560	96	256
—	XC4028EX-3HQ304C	—	2.5	304	28,000	32,768	18,000-50,000	32 × 32	1024	2560	96	256
—	XC4028EX-4HQ304C	—	3.0	304	28,000	32,768	18,000-50,000	32 × 32	1024	2560	96	256
—	—	XC4036EX-3BG432C*	2.5	432	36,000	41,472	22,000-65,000	36 × 36	1296	3168	108	288
—	—	XC4036EX-4BG432C*	3.0	432	36,000	41,472	22,000-65,000	36 × 36	1296	3168	108	288
—	XC4036EX-3HQ304C	XC4036EX-3PG411C	2.5	304/411	36,000	41,472	22,000-65,000	36 × 36	1296	3168	108	288
—	XC4036EX-4HQ304C	XC4036EX-4PG411C	3.0	304/411	36,000	41,472	22,000-65,000	36 × 36	1296	3168	108	288

*Ball Grid Array Package Style.

XC5200 Series FPGAs

► **High Density, Low Cost**

Features and Performance

	XC5202	XC5204	XC5206	XC5210	XC5215
Output Drive (mA)	8	8	8	8	8
JTAG (IEEE 1149.1)	Y	Y	Y	Y	Y
Dedicated Arithmetic	Y	Y	Y	Y	Y
Quiescent Current (mA)	15	15	15	15	15
Fastest Speed Grade	-4	-4	-4	-4	-4
Shift Register (MHz)	83	83	83	83	83
Small State Machine (MHz)	50	50	50	50	50
Large State Machine (MHz)	35	35	35	35	35
4-Bit Multiply-Accumulator (MHz)	24	24	24	24	24
16-Bit Accumulator (MHz)	60	60	60	60	60
Address Map Decoder (MHz)	69	69	69	69	69
Data Path (MHz)	83	83	83	83	83
Counter Timer (MHz)	59	59	59	59	59
16-Bit Loadable Binary Up Counter (MHz)	58	58	58	58	58
16-Bit Loadable Prescaled Counter (MHz)	83	83	83	83	83
Pad to Setup (ns)	6.6	6.6	6.6	6.6	6.6
Clock to Pad (ns)	14.2	14.2	14.2	14.2	14.2
Combinatorial Pad to Pad (ns)	15	15	15	15	15

XC5200 Series FPGAs (Continued)

XC5200 Field Programmable Gate Arrays

Mfr.'s Type PLCC	Mfr.'s Type QFP	Mfr.'s Type BGA	Speed Grade Tpid (ns)	No. of Leads	Max. Logic Gates	Typical Gate Range	VersaBlock Array	No. of CLBs	No. of Flip-Flops	No. of I/Os	TBIFs Per Horizontal Longline
XC5202-5PC84C	—	—	10.2	84	3,000	2,000-3,000	8 × 8	64	256	84	10
XC5202-6PC84C	—	—	11.4	84	3,000	2,000-3,000	8 × 8	64	256	84	10
XC5204-5PC84C	—	—	10.2	84	6,000	4,000-6,000	10 × 12	120	480	124	14
XC5204-6PC84C	—	—	11.4	84	6,000	4,000-6,000	10 × 12	120	480	124	14
XC5206-5PC84C	—	—	10.2	84	10,000	6,000-10,000	14 × 14	196	784	148	16
XC5206-6PC84C	—	—	11.4	84	10,000	6,000-10,000	14 × 14	196	784	148	16
XC5210-4PC84C	—	XC5210-4BG225C	10.2	84/225	16,000	10,000-16,000	18 × 18	324	1296	196	20
XC5210-5PC84C	—	XC5210-5BG225C	10.2	84/225	16,000	10,000-16,000	18 × 18	324	1296	196	20
XC5210-6PC84C	—	XC5210-6BG225C	11.4	84/225	16,000	10,000-16,000	18 × 18	324	1296	196	20
—	XC5215-5HQ208C	—	10.2	208	23,000	15,000-23,000	22 × 22	484	1936	244	24
—	XC5215-6HQ208C	—	11.4	208	23,000	15,000-23,000	22 × 22	484	1936	244	24
—	XC5215-5HQ240C	XC5215-5BG225C	10.2	240/225	23,000	15,000-23,000	22 × 22	484	1936	244	24
—	XC5215-6HQ240C	XC5215-6BG225C	11.4	240/225	23,000	15,000-23,000	22 × 22	484	1936	244	24
—	XC5215-5HQ304C	—	10.2	304	23,000	15,000-23,000	22 × 22	484	1936	244	24
—	XC5215-6HQ304C	—	11.4	304	23,000	15,000-23,000	22 × 22	484	1936	244	24

XC7300 Series CPLDs

- ► 100% Routable, 100% Utilization, 5 ns TPD

Features and Performance

	XC7336	XC7354	XC7372	XC73108
Output Drive (mA)	24	24	24	24
JTAG (IEEE 1149.1)	N	N	N	N
Dedicated Arithmetic	Y	Y	Y	Y
Quiescent Current (mA)	126	140	187	227
Fastest Speed Grade	-5	-7	-7	-7
Shift Register (MHz)	125	95	95	95
Small State Machine (MHz)	108	95	95	95
Large State Machine (MHz)	102	95	95	95
4-Bit Multiply-Accumulator (MHz)	46	52	52	52
16-Bit Accumulator (MHz)	40	63	63	63
Address Map Decoder (MHz)	108	95	95	95
Data Path (MHz)	125	95	95	95
Counter Timer (MHz)	94	47	47	47
16-Bit Non Loadable Counter (MHz)	125	95	95	95
16-Bit Loadable Binary Up Counter (MHz)	125	95	95	95
16-Bit Loadable Prescaled Counter (MHz)	125	95	95	95
Pad to Setup (ns)	3.5	4	4	4
Clock to Pad (ns)	4.5	7	7	7
Combinatorial Pad to Pad (ns)	5	7	7	7

XC7300 CMOS CPLD Family

Mfr.'s Type PLCC	Mfr.'s Type BGA	Mfr.'s Type PGA	Speed Grade Tpid (ns)	No. of Leads	Typical 22 V 10 Equivalent	No. of Macrocells	No. of Function Blocks	No. of Flip-Flops	No. of Fast Inputs	No. of Signal Pins
XC73108-7PC84C	XC73108-7BG225C	XC73108-7PG144C	18.0	84/225/144	12	108	12	198	12	120
XC73108-10PC84C	XC73108-10BG225C	XC73108-10PG144C	25.0	84/225/144	12	108	12	198	12	120
XC73108-12PC84C	XC73108-12BG225C	XC73108-12PG144C	30.0	84/225/144	12	108	12	198	12	120
XC73108-15PC84C	XC73108-15BG225C	XC73108-15PG144C	36.0	84/225/144	12	108	12	198	12	120
XC73108-20PC84C	XC73108-20BG225C	XC73108-20PG144C	45.0	84/225/144	12	108	12	198	12	120
XC7336-5PC44C	—	—	5.0	44	3-4	36	4	36	12	38
XC7336-7PC44C	—	—	7.5	44	3-4	36	4	36	12	38
XC7336-10PC44C	—	—	10.0	44	3-4	36	4	36	12	38
XC7336-12PC44C	—	—	12.0	44	3-4	36	4	36	12	38
XC7336-15PC44C	—	—	15.0	44	3-4	36	4	36	12	38
XC7336Q-10PC44C	—	—	10.0	44	3-4	36	4	36	12	38
XC7336Q-12PC44C	—	—	12.0	44	3-4	36	4	36	12	38
XC7336Q-15PC44C	—	—	15.0	44	3-4	36	4	36	12	38
XC7354-7PC44C	—	—	16.5	44	6	54	6	108	12	58
XC7354-7PC68C	—	—	16.5	68	6	54	6	108	12	58
XC7354-10PC44C	—	—	22.0	44	6	54	6	108	12	58
XC7354-10PC68C	—	—	22.0	68	6	54	6	108	12	58
XC7354-12PC44C	—	—	27.0	44	6	54	6	108	12	58
XC7354-12PC68C	—	—	27.0	68	6	54	6	108	12	58
XC7354-15PC44C	—	—	32.0	44	6	54	6	108	12	58
XC7354-15PC68C	—	—	32.0	68	6	54	6	108	12	58
XC7372-7PC68C	—	—	18.5	68	8	78	8	126	12	84
XC7372-7PC84C	—	—	18.5	84	8	78	8	126	12	84
XC7372-10PC68C	—	—	23.0	68	8	78	8	126	12	84
XC7372-10PC84C	—	—	23.0	84	8	78	8	126	12	84
XC7372-12PC68C	—	—	28.0	68	8	78	8	126	12	84
XC7372-12PC84C	—	—	28.0	84	8	78	8	126	12	84
XC7372-15PC68C	—	—	33.0	68	8	78	8	126	12	84
XC7372-15PC84C	—	—	33.0	84	8	78	8	126	12	84

XC1700D/L Serial Configuration PROMs

Mfr.'s Type	Configuration Bits	Package Type*
XC1718DVO8C	18144	8 Lead Small Outline Thin
XC1718LVO8C	18144	8 Lead Small Outline Thin
XC1736DVO8C	36288	8 Lead Small Outline Thin
XC1765DVO8C	65536	8 Lead Small Outline Thin
XC1765LVO8C	65536	8 Lead Small Outline Thin
XC17128DPC20C	131072	20 Lead PLCC
XC17128DPD8C	131072	8 Lead Plastic DIP
XC17128DVO8C	131072	8 Lead Small Outline Thin

Mfr.'s Type	Configuration Bits	Package Type*
XC17128LPD8C	131072	8 Lead Plastic DIP
XC17128LVO8C	131072	8 Lead Small Outline Thin
XC17256DPC20C	262144	20 Lead PLCC
XC17256DPD8C	262144	8 Lead Plastic DIP
XC17256DVO8C	262144	8 Lead Small Outline Thin
XC17256LPD8C	262144	8 Lead Plastic DIP
XC17256LVO8C	262144	8 Lead Small Outline Thin
—	—	—

*Additional package types are available.

1997 IC MASTER

- ► **Digital**
- ► **DSP**
- ► **Microprocessor**
- ► **Interface**
- ► **MPU Development Systems**
- ► **Linear**
- ► **PLDs**
- ► **ASICs**
- ► **Memory**
- ► **Chip Sets and Multifunction Devices**
- ► **Plus Two Free IC Updates**

The 1997 IC MASTER is organized for easier access with ICs listed by manufacturer and by function category. Functional and numerical search guide to over 120,000 commercially available ICs, including over 13,000 new ICs. Includes hundreds of new and updated manufacturer supplied data pages. Alternate Source Directory is an industry wide listing of 120,000 current and discontinued pin-for-pin equivalents. Includes complete Manufacturers and Distributors Directory.

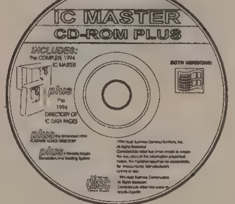
Pinout and Package Data for Over 75,000 Devices
The new pinout and package data for over 75,000 devices is available on the World Wide Web at http://icmaster.com or by calling the IC MASTER Pinout and Package Fax-Back Service. Pinout and package data for additional devices will be added throughout the year.

New and Expanded Data

- ► **Over 13,000 New Device Listings Including 2,000 New Listings in Memory, 1,100 New Listings in Digital, and 1,000 New Listings in Linear**
- ► **Alternate Source Directory Expanded with Complete List of Over 9,000 NTE Parts**
- ► **Application Note Directory Includes More Than 4,400 Notes, with Hundreds of New Application Notes**

504-1097. 1997 IC MASTER (3 Volume Set)..**EACH 190.00**

1997 IC MASTER CD-ROM for Windows



Your direct link to the IC industry, with the latest product information on 120,000 integrated circuits, including more than 13,000 new device listings...on a single compact disk!

Includes pinout and package data for over 75,000 devices with Internet and Fax-Back Service access to pinout and package data updates. Now users also have ability to download and search database updates from the Internet. The new and expanded IC MASTER CD-ROM is the entire IC MASTER on a single compact disk. It includes the world famous Alternate Source Directory with NTE parts, hundreds of manufacturer supplied data pages, the complete IC MASTER Manufacturers and Distributors Directory, and the entire IC MASTER Directory of IC Manufacturers' Data Pages.

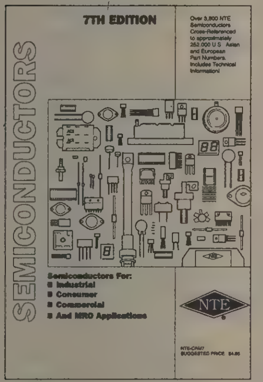
The CD-ROM permits device selection by flexible category search and key word search. It features a redesigned and simplified interface to speed searches. Also available in multi-user and network versions.

504-1597. 1997 IC MASTER CD-ROM for Windows..**EACH 235.00**

1997 IC MASTER Alternate Source Directory on Floppy Disk

Put the famous Alternate Source Directory section of the IC MASTER on your IBM or compatible PC. This industry wide listing of 120,000 current and discontinued pin-for-pin equivalents includes the complete list of 9,000 NTE parts. Customize the ASD to fit your needs, add parts, delete parts, add prices, approval notes, and more. Fast, easy and very user friendly. Includes complete vendor contact information. Does not include specifications or data sheets.

504-1397. 1997 IMASD 3.5" HD..**EACH 179.50**



NTE Selection Guide

► **Over 253,000 Devices Replaced with NTE Numbers**

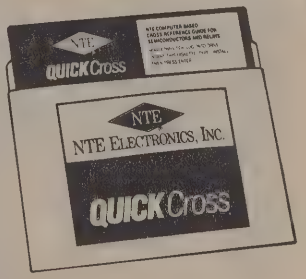
The NTE catalog has become the industry's guide when you need semi-conductors for maintenance and repair work. Now available is the 6th edition containing over 250,000 cross references to American, European and Japanese, industrial and commercial devices. The catalog includes short form specifications and cross reference in a new easier to read format for the over 3500 devices in NTE's line. Each NTE transistor, triac, silicon controlled rectifier (SCR), integrated circuit, thyristor or microprocessor can be used to replace a broad variety of devices used in electronic equipment. Electrical characteristics are equal to or better than originally specified components.

The easy to use cross reference section enables you to locate the exact replacement needed for over 253,000 solid state devices.

935-0020. NTE-CRM7..**EACH 4.95**

Quick Cross

► **NTE's Computer Based Cross Reference Disk For Semiconductors and Relays**



NTE Electronics, Inc. has taken its entire Semiconductor and Relay Cross References and put them on IBM PC compatible diskettes. These disks, once loaded into your PC, will only take up a little more than 2 Megabytes of disk space. You will have instant access to over 250,000 Semiconductor Cross References and 40,000 Relay Cross References. Minimum system requirements are an IBM PC compatible computer with 640K RAM, 5 MB hard disk.

935-0003. QC-001. 5¼" (1.2M)..**EACH 7.00**
935-0008. QC-002. 3½" (7.20K)..**EACH 12.00**
935-0006. QC-004. 3½" (1.44M)..**EACH 8.00**
935-0009. QC-005. 3½" (1.44M) for Windows..**EACH 10.00**

Thomson Consumer Electronics SK Replacement Technical Manual and Cross Reference

- ► **Bipolar Transistors**
- ► **Field Effect Transistors**
- ► **Zener Diodes**
- ► **Diodes and Rectifiers**
- ► **Bridge Rectifiers**
- ► **Industrial Rectifiers**
- ► **Silicon Controlled Rectifiers**
- ► **TRIACs**
- ► **Metal Oxide Varistors**
- ► **Optoelectronics**
- ► **Linear Integrated Circuits**
- ► **Digital Integrated Circuits**

SK Replacement Solid State Devices are "Top of the Line" quality units, purchased to OEM standards, from original manufacturers. This guide contains 3,600 SK devices which replace over 235,000 parts. Each transistor, TRIAC, SCR, Thyristor, Integrated Circuit can be used to replace a broad variety of devices used in electronic equipment. Electrical characteristics are equal to or better than original specified components.

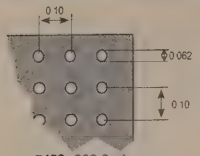
902-0010. SKG202G..**EACH 4.95**

Thomson Consumer Electronics SK CROSS

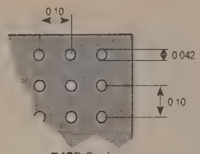
This comprehensive PC-based cross reference software contains information on over 235,000 semiconductor devices which can be accessed easily and quickly. Advantages included the ability to scroll through the entire cross reference, descriptions next to the part number, technical notes below descriptions, transistor complements, matched pairs and matched complementary pairs listed in the description. The minimum system requirements are an IBM PC compatible computer with 640 K RAM, 5¼" or 3½" floppy drive, and 14 Megabytes of hard disk space.

902-0022. SKG202DK1. Two 3½" (1.2 M) Disks..**PER SET 5.00**
902-0032. SKG202DK2. Eight 5¼" (360 K) Disks..**PER SET 7.50**

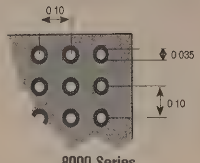
Prototyping General Purpose Boards



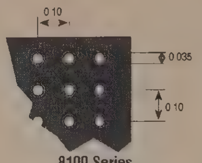
7100- 062 Series
Non-Plated Holes



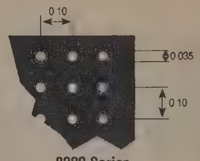
7100 Series
Non-Plated Holes



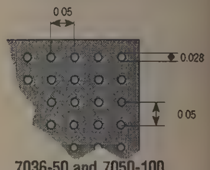
8000 Series
Plated Through Holes
No Plane



8100 Series
Plated Through Holes
One Plane



8200 Series
Plated Through Holes
Two Planes

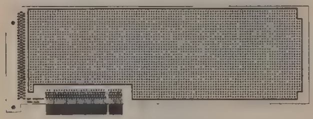


7036-50 and 7050-100
50 Mil. Grid

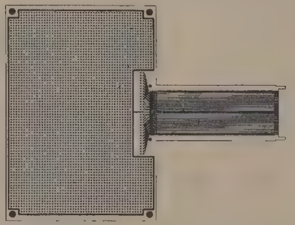
Twin Industries general purpose prototype boards provide a versatile solution for many research and development projects. **Available In Four Different Types:** perf board with non-plated holes, the 7100 series; perf board with plated through holes, the 8000 series; perf board with plated through holes with a plane on one side, the 8100 series; perf board with plated through holes and planes on both sides, the 8200 series. Boards are available in a number of sizes. Material is FR-4 fiber glass with UL Flammability Class 94V-0. They are .062" thick with .035" plated through holes and .042" non plated on a 0.1" × 0.1" grid spacing.

Stock No.	Mfr.'s Type	Description	Width	Length	EACH
237-0100	4010-4565	Interleave plane design. .042 Plated through holes on a 0.1" grid.	4.50	6.50	**45.00**
237-0101	7036-50	2.8" × 3.4" of plated holes on a .05" grid. 2/18 gold fingers on .156 centers.	3.50	4.00	**28.00**
237-0102	7044-54	Prototype board with 2/22 .156 I/O connector. Capacity: up to 54 16-pin sockets.	6.20	4.50	**28.00**
237-0103	7050-100	Plated holes on a .05" grid and 4.0" × 8.0" of plated holes on a .10" grid.	8.00	8.00	**58.00**
237-0104	7072-54	2/36 connector on .100 centers. Space provided for 54 ICs with up to 16 pins per socket.	6.20	4.50	**28.00**
237-0105	7100-062-4565	Protoboard featuring a 0.1" × 0.1" grid of non-plated .062" through holes.	4.50	6.50	**7.50**
237-0106	7100-062-4585	Protoboard featuring a 0.1" × 0.1" grid of non-plated .062" through holes.	4.50	8.50	**11.25**
237-0107	7100-1010	Protoboard featuring a 0.1" × 0.1" grid of non-plated through holes.	10.00	10.00	**22.50**
237-0108	7100-1020	Protoboard featuring a 0.1" × 0.1" grid of non-plated through holes.	10.00	20.00	**45.00**
237-0109	7100-144	Prototyping board with 2/50 connector on .100 centers. Space provided for 144 ICs with up to 16 pins per socket.	9.25	8.00	**45.00**
237-0110	7100-410	Protoboard featuring a 0.1" × 0.1" grid of non-plated through holes.	4.00	10.00	**9.00**
237-0111	7100-44EXT	Extender I/O connector 2/22 on .156 center.	4.50	6.50	**45.00**
237-0112	7100-45	Protoboard featuring a 0.1" × 0.1" grid of non-plated through holes.	4.00	5.00	**4.50**
237-0113	7100-4517	Protoboard featuring a 0.1" × 0.1" grid of non-plated through holes.	4.50	17.00	**22.50**
237-0114	7100-4565	Protoboard featuring a 0.1" × 0.1" grid of non-plated through holes.	4.50	6.50	**7.50**
237-0115	7100-8517	Protoboard featuring a 0.1" × 0.1" grid of non-plated through holes.	8.50	17.00	**45.00**
237-0116	8000-1010	Protoboard featuring a 0.1" × 0.1" grid of plated through holes, no plane.	10.00	10.00	**59.00**
237-0117	8000-1020	Protoboard featuring a 0.1" × 0.1" grid of plated through holes, no planes.	10.00	20.00	**118.00**
237-0118	8000-410	Protoboard featuring a 0.1" × 0.1" grid of plated through holes, no plane.	4.00	10.00	**23.60**
237-0119	8000-45	Protoboard featuring a 0.1" × 0.1" grid of plated through holes, no plane.	4.00	5.00	**11.80**
237-0120	8000-4565	Protoboard featuring a 0.1" × 0.1" grid of plated through holes, no plane.	4.50	6.50	**19.67**
237-0122	8100-1010	Protoboard featuring a 0.1" × 0.1" grid of plated through holes, one plane.	10.00	10.00	**59.00**
237-0123	8100-1020	Protoboard featuring a 0.1" × 0.1" grid of plated through holes, one plane.	10.00	20.00	**118.00**
237-0124	8100-1020-DB	Protoboard featuring a 0.1" × 0.1" grid of plated through holes. The board is separated into two planes, perfect for prototypes with two VCC levels.	10.00	10.00	**59.00**
237-0125	8100-410	Protoboard featuring a 0.1" × 0.1" grid of plated through holes, one plane.	4.00	10.00	**23.60**
237-0126	8100-45	Protoboard featuring a 0.1" × 0.1" grid of plated through holes, one plane.	4.00	5.00	**11.80**
237-0127	8100-4565	Protoboard featuring a 0.1" × 0.1" grid of plated through holes, one plane.	4.50	6.50	**19.67**
237-0128	8100-546	Protoboard with space provided for 546 ICs with up to 16 pins per socket.	12.00	22.00	**220.00**
237-0129	8196-EXT	96 pin extender.	5.00	3.90	**58.00**
237-0130	8200-1010	Protoboard featuring a 0.1" × 0.1" grid of plated through holes, two planes.	10.00	10,00	**59.00**
237-0131	8200-1020	Protoboard featuring a 0.1" × 0.1" grid of plated through holes, two planes.	10.00	20.00	**118.00**
237-0132	8200-410	Protoboard featuring a 0.1" × 0.1" grid of plated through holes, two planes.	4.00	10.00	**23.60**
237-0133	8200-45	Protoboard featuring a 0.1" × 0.1" grid of plated through holes, two planes.	4.00	5.00	**11.80**
237-0134	8200-4565	Protoboard featuring a 0.1" × 0.1" grid of plated through holes, two planes.	4.50	6.50	**19.67**
237-0135	812-C2	Double Sided One Ounce Copper Clad.	8.00	12.00	**12.96**
237-0136	612C2	Double Sided One Ounce Copper Clad.	6.00	12.00	**9.72**
237-0137	810C2	Double Sided One Ounce Copper Clad.	8.00	10.00	**10.80**
237-0138	55C2	Double Sided One Ounce Copper Clad.	5.00	5.00	**3.38**
237-0139	4517C2	Double Sided One Ounce Copper Clad.	4.50	17.00	**10.33**

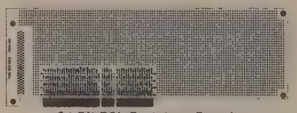
Prototyping BUS Specific Boards



32 Bit PCI Prototype Board
7586-5100



PCMCIA Prototype Board
3300-EX100



64 Bit PCI Prototype Board
7564-100

ISA Prototype Board

Stock No.	Mfr.'s Type	Description	Width	Length	BUS	EACH
237-0121	8044-30	Protoboard with 2/22 connector on .156 centers. Space provided for 30 ICs with up to 16 pins per socket.	4.50	6.50	—	**28.00**
237-0147	7098-52	Space provided for 26 ICs with up to 20 pins per socket, 26 ICs with up to 16 pins per socket and an uncommitted prototyping area of 5.7" × 3.9".	13.10	4.50	ISA	**68.00**
237-0148	7098-104	Space provided for 52 ICs with up to 20 pins per socket and 52 ICs with up to 16 pins per socket. Plane on solder side.	13.10	4.50	ISA	**68.00**
237-0149	7098-100	Uncommitted prototyping area of 13.0" × 4.4" on a 0.1" grid of plated through holes. Plane on solder side.	13.10	4.50	ISA	**68.00**
237-0153	PC104	Uncommitted prototyping area of 3.6" × 3.3"	3.80	3.50	PC104	**68.00**
237-0154	7586-5100	Uncommitted prototyping area of 11.2" × 3.7"	12.20	3.90	PCI 32 BIT	**68.00**
237-0155	7564-100	Uncommitted prototyping area of 11.2" × 3.7"	12.20	3.90	PCI 64 BIT	**78.00**
237-0156	3300-EX100	VCC monitor and VCC bus on outer holes. Marked signals for easy probing.	8.25	10.80	PCMCIA	**135.00**
237-0162	8192-114	Uncommitted area of 8.7" × 2.4" on a 0.1" grid and space provided for 19 ICs with up to 20 pins per socket and 95 ICs with up to 16 pins per socket.	9.20	8.66	VME	**64.00**
237-0163	8288-217	Uncommitted area of 14.437" × 2.8" on a 0.1" grid and space provided for 124 ICs with up to 20 pins per socket and 93 ICs with up to 16 pins per socket.	14.44	11.02	VME	**95.00**
237-0164	8096-48	Uncommitted area of 3.7" × 2.4" on a 0.1" grid and space provided for 8 ICs with up to 20 pins per socket and 40 ICs with up to 16 pins per socket.	3.90	8.66	VME	**32.00**

Active Extender Cards — *NEW* —

Type PCI-EXT+64 PCI Bus Extender Card. The PCI-EXT+64 is a high-speed PCI Bus Extender Card with switchable bus isolation switches, supporting both 32 and 64-bit PCI cards. This allows for "Hot Insertion" of the boards that are being tested without having to power down or reboot the host system. Special power monitoring and current limiting features insure a highly robust debug environment. Slot power on/off switch eliminates rebooting. Auto overload and voltage protection.
237-0190. PCI-EXT+64 .... **EACH 495.00**

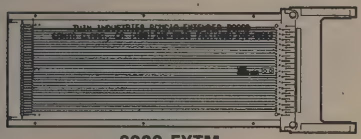
Type 3300-4EXACR PC Card PCMCIA. Four layer card with extensive use of grounding to minimize noise and maximize signal integrity. Sixteen DIP switches enable breaking signals to isolate problems. Each of the three power sources are fused, monitored with LEDs and have a connection point for a current meter. Two pushbutton switches provide interrupt card detect 1 and 2 which simulates the removal and reinsertion of the PC Card.
237-0205. 3300-4EXACR .... **EACH 229.00**

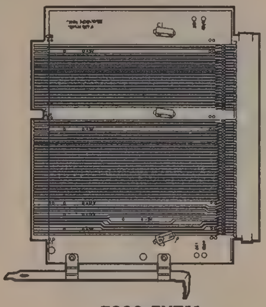
Type PC/AT 150 ISA Bus Active Extender. Swap board-under-test without the need to reboot your entire system. External voltage (+5 V, –5 V, +12 V and –12 V) from an external power supply is allowed in additional, instead of the PC bus voltages, for Voltage Margin Testing of the Board-Under-Test. No software is required to operate, but program control can be used for automatic operation. Automatic shut down takes place when +5 V to the Board-Under-Test drops below 4.5 volts. Easily accessible test points are provided for all bus signals for connections to scope or a logic analyzer. These signals are available and labeled on both sides of the boards.
237-0206. PC/AT 150 .... **EACH 320.00**

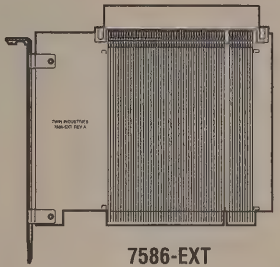
Type VME100 Active 6U VME Bus Extender. Swap board-under-test without the need to reboot your entire system. External power supply is allowed for Voltage Margin Testing of the Board-Under-Test. No software is required to operate. On-Board +5 V current limiting and short circuit protection. On-Board fuses to protect the system motherboard +12 V and –12 V traces in case of shorts from the Board-Under-Test. Test points are provided for all bus signals for connections to scope or a logic analyzer.
237-0207. VME100 .... **EACH 535.00**

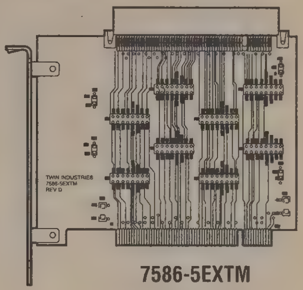
Type PMC2PCI-64 PCI Mezzanine Extender. Swap board-under-test without the need to reboot y our system. Designed to work with either 32 or 64-bit PCI bus for supporting 32 or 64 bit mezzanine cards. Allows testing of PCI Mezzanine cards in the PCI local bus, while allowing access to both sides of the Mezzanine board for easy troubleshooting. Test points are provided for all PCI bus signals for connectors to a scope or a logic analyzer. On-Board Power-On Reset simulates the bus reset to the board under test every time the extender is turned on. On-Board current to voltage converters allow current measurement for the +5 V, +12 V and +3.3 V by using only a simple voltmeter at provided terminals.
237-0208. PMC2PCI-64 .... **EACH 425.00**

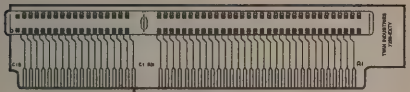
Extender Cards

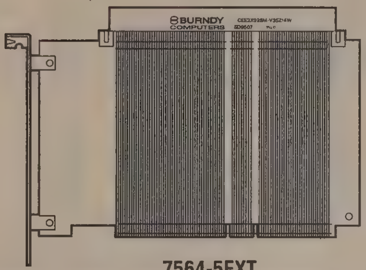

3300-EXTM


7098-EXTM

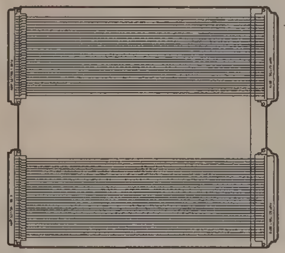

7586-EXT


7586-5EXTM


7298-EXT



7564-5EXT


8192-EXT

Stock No.	Mfr.'s Type	Width	Length	Layers	BUS	EACH
237-0179	3300-EXTM	2.13	6.35	4	PCMCIA	**118.00**
237-0172	7098-EXT	6.70	5.00	2	ISA	**58.00**
237-0171	7098-EXTM	6.70	5.00	4	ISA	**145.00**
237-0170	7298-EXT	1.00	6.10	2	ISA	**50.00**
237-0178	7564-5EXT	4.20	6.90	2	PCI	**95.00**
237-0176	7564-5EXTM	4.20	6.90	4	PCI	**158.00**

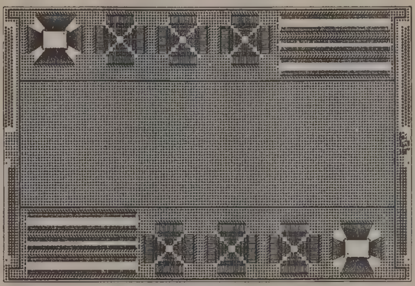
Stock No.	Mfr.'s Type	Width	Length	Layers	BUS	EACH
237-0175	7586-EXT	5.10	3.90	2	PCI	**78.00**
237-0177	7586-5EXTM	5.10	3.90	4	PCI	**158.00**
237-0216	7586-RAEXTM	5.10	1.25	4	PCI	**140.00**
237-0215	7586-MINI-M	5.10	2.00	4	PCI	**140.00**
237-0184	8192-EXT	9.20	9.63	2	VME	**95.00**
237-0183	VME-280-EXTM	9.20	11.00	4	VME	**280.00**

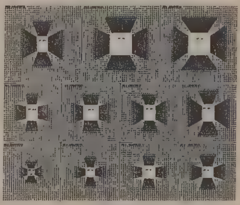
Surface Mount Adapters

Twin Industries family of Surface Mount Adapters will allow you to use today's sophisticated ASIC technology and other popular SMT devices in wire wrap prototypes. Featuring plated through holes and one plane.

Stock No.	Mfr.'s Type	Description	Width	Length	EACH
237-0185	8100-SMT1	SMT adapters supporting: 20, 28, 44, 68 or 84 Pin PLCC Packages (6); Narrow and wide SOIC packages; 80 and 100 pin controller packages.	10.00	15.00	**90.00**
237-0186	8100-SMT2	SMT Adapters for Quad Flat Pack (QFP) Packages 144, 128, 100-3, 100-2, 80-3, 74, 64-4, 64-1, 52, 48, 44-2	12.00	10.00	**68.00**
237-0187	8100-SMT3	SMT Adapters-PLCC packages 20, 28, 44, 64 and 84 pin packages and socket families.	6.00	6.00	**45.00**
237-0188	8100-SMT4	SMT Adapters for SOIC medium, wide, metric and plastic. miniflat packages	6.00	4.00	**28.00**
237-0189	8100-SMT5	SMT Adapters for Quad Flat Pack (QFP) Package 208.	4.00	4.00	**28.00**

237-0127. 8100-SM-44. 44 Pin PLCC Socket Mounts .... **EACH 30.00**
237-0128. 8100-SM-52. 52 Pin PLCC Socket Mounts .... **EACH 32.00**
237-0129. 8100-SM-68. 68 Pin PLCC Socket Mounts .... **EACH 34.00**


SMT1


SMT2

SMT3

SMT4

VME Backplanes

237-0200. VME-05-BPNL. VME 5 slot J1/J2 monolithic backplane 10.374" × 3.8" .... **EACH 296.00**
237-0201. VME-07-BPNL. VME 7 slot J1/J2 monolithic backplane 10.374" × 5.4" .... **EACH 348.00**
237-0202. VME-12-BPNL. VME 12 slot J1/J2 monolithic backplane 10.374" × 9.4" .... **EACH 497.00**
237-0203. VME-21-BPNL. VME 21 slot J1/J2 monolithic backplane 10.374" × 16.6" .... **EACH 875.00**

Development Products

— NEW —

Electronic Network Designers

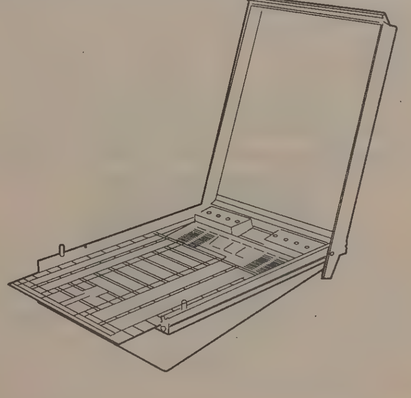
The ultimate prototyping tool. Now you can build a working circuit board directly from your breadboarded prototype in one simple step, error free. The patented Electronic Network Designer is a tool for the rapid prototyping of electronic circuits. It is comprised of a base matrix of nickel silver connector clips in arrays of six, over which a PCB is aligned. The designer prototypes the circuit through the board, using the clips to make the connections until the circuit is tested and ready for soldering. The circuit is soldered before being removed from the unit, and the painstaking process of transposing to a hard wired system is eliminated.

Type 8100-01NAA. Board Size. Length: 6.875". **Width:** 8.00". **Thickness:** 0.031". **Electronic Network Designer Size. Length:** 7.75". **Width:** 11.00". **Thickness:** 1.25".
237-0209. 8100-01NAA .... **EACH 139.99**

Type 8100-22NDC. Board Size. Length: 4.06". **Width:** 6.84". **Thickness:** 0.031". **Electronic Network Designer Size. Length:** 5.00". **Width:** 9.00". **Thickness:** 1.25".
237-0210. 8100-22NDC .... **EACH 99.99**

Circuit Boards

Stock No.	Mfr.'s Type	Description	Width (In.)	Length (In.)	Thickness (In.)	Electronic Network Designer	EACH
237-0211	8100-01AYF	Double sided, gold plated through holes	8.00	6.875	0.031	8100-01NAA	**35.00**
237-0212	8100-01AYG	Double sided, gold plated through holes with PC Cardedge	8.00	6.875	0.031	8100-01NAA	**40.00**
237-0213	8100-02BYE	Single sided, solder plated, 3400 insertion points	8.00	6.875	0.031	8100-01NAA	**19.50**
237-0214	8100-22BYH	Single sided, solder plated, 2154 insertion points	6.84	4.060	0.031	8100-22NDC	**14.95**



Vectorbord® — Punchboards

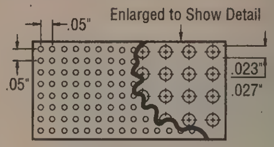
Precision drilled or prepunched, Vectorbord® Prototyping Boards are convenient economical design tools and cost efficient alternatives to custom designs. Available in several hole patterns, many are copper clad. Sockets and pins, terminals, tools, and accessories are available separately to facilitate construction of your prototype boards, see Accessories page.

Stock No.	Mfr.'s Type	Pattern	Width	Length	Thickness	Hole	Material	EACH 1-9	EACH 10-Up
977-1214	126M76-032	M	4.0	6.5	0.037	0.025	FR4 Epoxy Glass	41.38	39.31
977-1216	336M76-032	M	4.0	17.0	0.037	0.025	FR4 Epoxy Glass	54.31	51.59
977-8300	64P44XXXP	P	4.5	6.5	0.062	0.042	FR2 Phenolic	5.17	4.91
977-1212	64P44	P	4.5	6.5	0.062	0.042	CEM-1 Epoxy Glass Composite	5.17	4.94
977-1000	64P44WE	P	4.5	6.5	0.062	0.042	FR4 Epoxy Glass	5.17	4.91
977-1001	84P44WE	P	4.5	8.5	0.062	0.042	FR4 Epoxy Glass	5.88	5.59
977-1002	85H85WE	H	8.5	8.5	0.062	0.062	FR4 Epoxy Glass	12.33	11.71
977-1255	169P44	P	4.5	17.0	0.062	0.042	CEM-1 Epoxy Glass Composite	9.38	8.86
977-1261	169P44XXXP	P	4.5	17.0	0.062	0.042	FR2 Phenolic	7.31	6.95
977-1003	169P44WE	P	4.5	17.0	0.062	0.042	FR4 Epoxy Glass	9.79	9.30
977-1265	169P59-047	P	6.0	17.0	0.047	0.042	FR4 Epoxy Glass	13.96	13.26
977-1263	169P59-032	P	6.0	17.0	0.031	0.042	FR4 Epoxy Glass	13.96	13.26
977-1269	169P59XXXP	P	6.0	17.0	0.062	0.042	FR2 Phenolic	11.08	10.53
977-1266	169P79	P	8.0	17.0	0.062	0.042	CEM-1 Epoxy Glass Composite	15.34	14.58
977-1267	169P84	P	8.5	17.0	0.062	0.042	CEM-1 Epoxy Glass Composite	16.40	15.58
977-1270	169P84WE	P	8.5	17.0	0.062	0.042	FR4 Epoxy Glass	18.65	17.71
977-1004	169P99	P	10.0	17.0	0.062	0.042	CEM-1 Epoxy Glass Composite	22.07	20.96
977-8306	85G24WE	G	4.8	17.0	0.062	0.062	CEM-1 Epoxy Glass Composite	11.25	10.68
977-8164	85G42WE	G	8.5	17.0	0.062	0.062	CEM-1 Epoxy Glass Composite	16.06	15.26
977-8160	85H48WE	H	4.8	8.5	0.062	0.062	FR4 Epoxy Glass	8.62	8.19
977-1271	170H48WE	H	4.8	17.0	0.062	0.062	FR4 Epoxy Glass	11.25	10.68
977-8162	170H85WE	H	8.5	17.0	0.062	0.062	FR4 Epoxy Glass	19.82	18.83

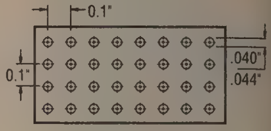
Copper Clad

Stock No.	Mfr.'s Type	Pattern	Width	Length	Thickness	Hole	Material	EACH 1-9	EACH 10-Up
977-1218	336M76-032C1*	M	4.0	17.0	0.037	0.025	FR4 Epoxy Glass	42.41	40.29
977-8304	169P44C1*	P	4.5	17.0	0.062	0.042	CEM-1 Epoxy Glass Composite	11.33	10.77
977-8132	169P44WEC1*	P	4.5	17.0	0.062	0.042	FR4 Epoxy Glass	13.96	13.26
977-1268	169P84C1*	P	8.5	17.0	0.062	0.042	CEM-1 Epoxy Glass Composite	22.67	21.53
977-8134	169P84WEC1*	P	8.5	17.0	0.062	0.042	FR4 Epoxy Glass	24.06	22.86

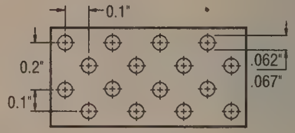
*Copper clad, one side.



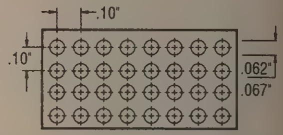
Pattern M



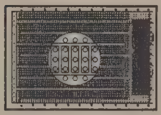
Pattern P



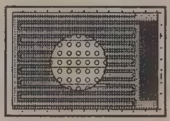
Pattern G



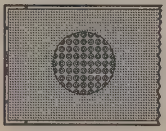
Pattern H



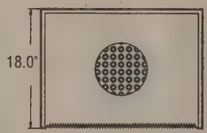
8001
3-Hole Solder Pad



8002
Interleaved Buses



8006
Pad-Per-Hole



106P180-4
Ground Plane 2 Sides and PTH

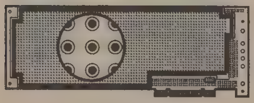
Circbord® — Printed Circuit Prototyping Boards

Circbord® prototyping boards with printed circuitry cover a wide range of design requirements—without the expense of edge connectors. All boards have provisions for I/O connectors. Several circuit patterns are available. All bus and pad surfaces are solder coated for user convenience. Holes are 0.042" diameter, hole patterns are based on 0.1" grids. Sockets and pins, terminals, tools, and accessories are available separately, see Accessories page.

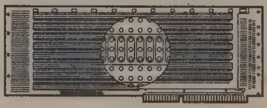
Stock No.	Mfr.'s Type	Length	Width	Thickness	Hole	16-Pin DIPs	Material	Circuit Pattern	EACH 1-9	EACH 10-Up
977-1951	8001	4.5	6.50	0.062	0.042	20	A	3-Hole Solder Pad	20.78	19.74
977-3090	8007	4.5	6.50	0.062	0.042	60	A	Pad-Per-Hole/Ground Plane	22.14	21.03
977-5099	8004	4.5	6.50	0.062	0.042	50	A	Ground Plane 1 side	21.80	20.71
977-5098	8003	4.5	6.50	0.062	0.042	60	A	Pad-Per-Hole 1 side	19.77	18.78
977-1952	8002	4.5	6.50	0.062	0.042	36	A	Interleaved Buses 1 side	23.03	21.88
977-8308	3677-6	4.5	8.08	0.062	0.042	21	A	3-Hole Solder Pad	15.33	14.57
977-8310	45P80-1	4.5	8.08	0.062	0.042	103	A	Pad-Per-Hole	24.15	22.94
977-3085	8006	5.0	13.25	0.062	0.042	154	A	Pad-Per-Hole, PTH	38.20	36.29
977-1006	8010	4.0	12.86	0.062	0.042	124	B	Pad-Per-Hole 2 sides, PTH	67.07	63.72
977-8312	8012	9.2	11.00	0.062	0.042	283	B	Pad-Per-Hole, PTH	57.30	54.43
977-1249	106P70-4	7.0	10.60	0.062	0.042	175	B	Pad-Per-Hole/Ground Plane	56.90	54.05
977-1245	106P106-1	10.6	10.60	0.062	0.042	275	A	Pad-Per-Hole	59.56	56.58
977-1247	106P180-4	10.6	18.00	0.062	0.042	275	B	Ground Plane 2 Sides, Pad-Per-Hole, PTH	129.31	122.84

Material: A = CEM-1 Epoxy Glass Composite; B = FR4 Epoxy Glass; PTH = Plated-thru-hole.

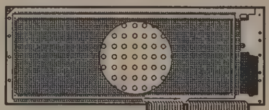
PC Bus Plugbords™



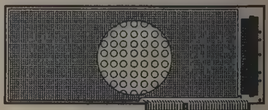
4624-3 PCI



4617 AT/ISA



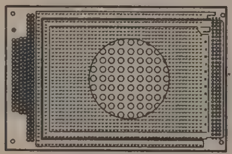
4617-1 AT/ISA



4617-4 AT/ISA

Stock No.	Mfr.'s Type	Width	Height	Hole Dia.	DIP Capacity	Material	Bus	Circuit Pattern	Solder Connector	Wire-Wrap Connector	Extender	Card Cage	EACH 1-9	EACH 10-Up
977-1007	4624-3	12.28	4.20	0.042	79	FR4 Epoxy Glass	PCI, +5 or 3.3 V	PTH, Peripheral Buses	—	—	3690-34	CGA4600	135.34	125.57
977-3070	4613-3	4.10	13.23	0.042	91	Epoxy Glass, 2 oz. Copper	IBM PC, XT	Pad-Per-Hole, PTH	—	—	3690-22	—	63.60	60.42
977-3060	4617	4.50	13.25	0.042	39	Epoxy Glass	IBM AT	3-Hole Solder Pad, PTH	—	—	3690-26	CCA4600	63.60	60.42
977-3065	4617-1	4.50	13.25	0.042	108	Epoxy Glass, 2 oz. Copper	IBM AT	Peripheral Buses	—	—	3690-26	CCA4600	49.42	46.95
977-3077	4617-4	4.50	13.25	0.055	130	Epoxy Glass, 2 oz. Copper	IBM AT	Voltage/Ground	—	—	3690-26	CCA4600	63.60	60.42
977-4077	4617-5	4.50	13.25	0.055	140	Epoxy Glass, 2 oz. Copper	IBM AT	Vectorbord plus	—	—	3690-26	CCA4600	72.79	69.15

PTH – Plated-Through-Hole.

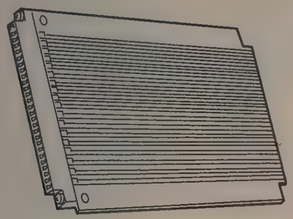


E160-3U-1
3 U × 160 mm

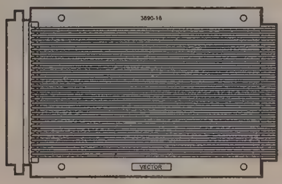
VME Prototyping Boards (DIN 41612)

Stock No.	Mfr.'s Type	Width	Height	Hole Dia.	16-Pin DIP Capacity	96-Pin DIN Connector	Card Cage	Terminals	Socket	Pattern	EACH 1-9	EACH 10-Up
977-3000	E160-3U-1	6.30	3.94	0.042	35	RE96MWR	CCK160-3U	T125, T126	R32	Pad-Per-Hole, PTH	32.08	30.48
977-3015	E160-6U-1	6.30	9.19	0.042	100	RE96MWR	CCK160-6U	T125, T126	R32	Pad-Per-Hole, PTH	51.43	48.86
977-3025	E160-6U-3	6.30	9.19	0.055	105	RE96MWR	CCK160-6U	—	R52	Voltage/Ground Plane	51.44	48.86
977-3030	E220-6U-1	8.66	9.19	0.042	140	RE96MWR	CCK220-6U	T125, T126	R32	Pad-Per-Hole, PTH	62.40	59.28
977-3040	E220-6U-3	8.66	9.19	0.055	168	RE96MWR	CCK220-6U	—	R52	Voltage/Ground Plane	62.40	59.28

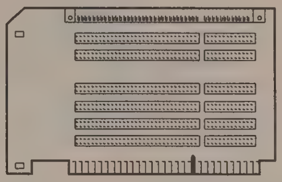
Vectorbord® Extender Cards



3690/3690-6 General Purpose



3690-16 STD

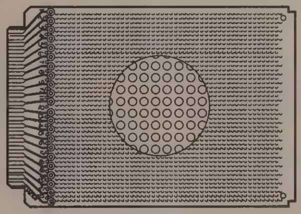


3690-34 PCI

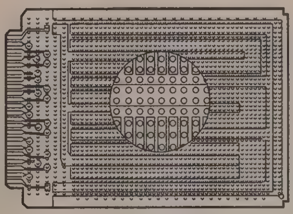
- ► Easy In-System, Functional Testing of Circuits
- ► Connectors Installed
- ► Test Points on Each Line
- ► Nickel/Gold Plated Edge Contacts and Gold Plated Socket Contacts

Stock No.	Mfr.'s Type	Contacts	Spacing	Length	Height	Material	Bus	EACH	
								1-9	10-Up
977-1411	3690	44	0.100	6.500	4.500	—	—	31.50	29.93
977-8174	3690-6	44	0.156	11.000	4.500	—	—	41.06	39.01
977-8124	3690-16	58	0.125	6.500	4.300	—	—	41.17	39.11
977-6018	3690-22	62	0.100	5.700	3.180	Epoxy Glass	IBM PC, XT	41.76	39.68
977-3080	3690-26	18/36 31/62	0.100 0.100	5.600	6.700	Epoxy Glass	IBM AT	61.23	58.16
977-4100	3690-26-1	18/36 31/62	0.100 0.100	5.600	6.700	Multilayer	IBM AT	174.70	165.96
977-1059	3690-34-5V	120	0.050	6.875	4.200	—	PCI Local	225.00	215.16
977-1060	3690-34-3V	120	0.050	6.875	4.200	—	PCI Local	225.00	215.16

Vectorbord® Prototyping Boards



3662



3677-2

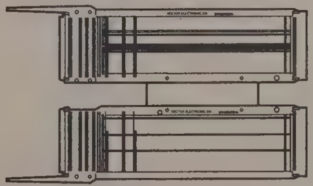
General Purpose Plugbords™

Stock No.	Mfr.'s Type	Width	Height	Spacing	Contacts	Thickness	Hole Dia.	16-Pin DIP Capacity	Material	Solder Connector	Wire-Wrap Connector	Extender	Pattern	EACH	
														1-9	10-Up
977-1421	3662-5	4.5	4.5	0.156	44	0.062	0.042	40	Epoxy Glass Composite	R644	R644-3	3690	Contacts Only	14.65	13.91
977-1455	4112-5	4.5	4.5	0.156	44	0.062	0.042	8	Epoxy Glass Composite	R644	R644-3	3690	3-Hole Solder Pad	26.67	25.33
977-8316	4112	9.6	4.5	0.156	44	0.062	0.042	40	Epoxy Glass Composite	R644	R644-3	3690-6	3-Hole Solder Pad	34.38	32.66
977-1397	3662-2	9.6	4.5	0.156	44	0.062	0.042	90	Epoxy Glass Composite	R644	R644-3	3690-6	Contacts Only	20.06	19.06
977-1402	3677	9.6	4.5	0.156	44	0.062	0.042	21	Epoxy Glass	R644	R644-3	3690-6	3-Hole Solder Pad	24.06	22.86
977-1399	3662	6.5	4.5	0.156	44	0.062	0.042	50	Epoxy Glass Composite	R644	R644-3	3690	Contacts Only	18.65	17.71
977-5100	3662-9	6.5	4.5	0.156	44	0.062	0.042	45	FR4 Epoxy Glass	R644	R644-3	3690	Pad-Per-Hole	38.20	36.29
977-1403	3677-2	6.5	4.5	0.156	44	0.062	0.042	12	Epoxy Glass Composite	R644	R644-3	3690	3-Hole Solder Pad	21.34	20.28
977-8314	4112-4	6.5	4.5	0.156	44	0.062	0.042	25	Epoxy Glass	R644	R644-3	3690	3-Hole Solder Pad	28.77	27.33
977-1407	3682-2	6.5	4.5	0.156	44	0.062	0.042	24	Epoxy Glass Composite	R644	R644-3	3690	Interleaved Buses, Zig-Zag	24.06	22.86
977-1415	3719-1	6.5	4.5	0.100	72	0.062	0.042	50	Epoxy Glass Composite	R636-2	R636-1	3690-4	Contacts Only	18.07	17.16

Bus Specific Plugbords™

Stock No.	Mfr.'s Type	Width	Height	Hole Dia.	DIP Capacity	Material	Bus	Circuit Pattern	Solder Connector	Wire-Wrap Connector	Extender	Card Cage	EACH	
													1-9	10-Up
977-1911	4610-1	6.5	4.5	0.042	59	Epoxy Glass Composite	STD	Contacts Only	R656-1	R656	3690-16	Series 13	24.84	23.60

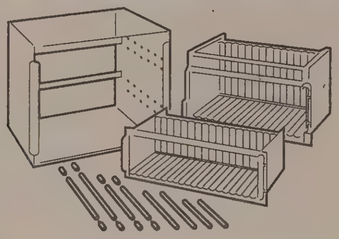
Vectorbord® Metric Extender Card



Model VMEE-M J1 and J2 Extender (assembly) is for 160 mm and 220 mm depths. Three-layer construction, controlled impedance design, and patented signal trace shielding minimize crosstalk. Jumpers are provided for interrupting all signal lines. Mounting pads for additional DIN connector or for test point mounting of logic analyzer also included.

Stock No.	Mfr.'s Type	Contacts	Spacing	Height	Length (In.)	Bus	EACH	
							1-9	10-Up
977-4135	VMEE-M	192	DIN	6 U (9.19")	12.20	VME	300.00	285.00

DIN Based Vector-Pak® Subrack Kit and Card Guide



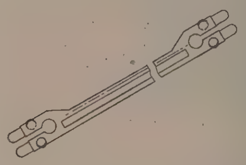
- Based on DIN 41914
- All Side Panels Deeper Than 160 mm Include Mounting Holes for Positioning Front Extrusions at 60 mm Increments
- Brushed Aluminum Finish
- Subrack Assemblies and Kits Can Be Configured to Custom Specifications — Call Factory for Information
- DIN Connectors, Dress Panels, Cage Handles and Decorative Enclosures Available Separately (Please Consult Factory)

Subrack Kit

Stock No.	Mfr.'s Type*	Description W × H × D	Card Size H × W	Max. Slots	EACH	
					1-9	10-Up
977-8216	CCK160-3U	19 × 5.21 × 9.27	3 U × 160 mm	21	90.22	85.71

*Order card guides separately. For assembled versions, substitute (A) for the (K) in part number above.

Card Guide For Subrack



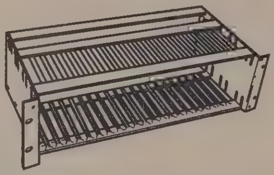
Stock No.	Mfr.'s Type	Description (mm)	Card Thickness**	Snap-In Type	Application	EACH	
						1-9	10-Up
977-8400	CG1-160/12	160	0.062	Glass filled noryl	CCK160	14.22	13.51

**Guides for 0.090 thick cards available with anodized center piece — contact factory.

EIA Based Vector-Pak® Subracks

- Guide Positions at .25" Increments
- Adjustable Slots
- Construction: .080" Thick Aluminum, Clear Anodized Finish
- Sidewall Slots Provide Adjustability to 1"
- For 4.5" × 6.5" Cards
- Rear Struts for Mounting Connectors

CCA13S/90 — Assembled Subrack



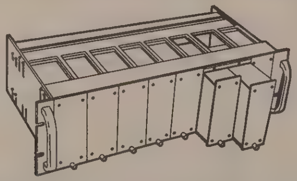
- With 21 Pair of Snap-In Guides
- Kit or Assembled Versions Available
- Designed in Accordance with EIA Std. RS-310

RETMA (EIA) Card Subracks

Stock No.	Mfr.'s Type	Dimensions W × H × D (In.)	Card Size H × W (In.)	Guide Sets	EACH	
					1-9	10-Up
977-0131	CCA13S/90	19 × 5.25 × 9.00	4.5 × 5.5-7.0	21	120.44	114.42
977-8246	CCK13S/90*	19 × 5.25 × 9.00	4.5 × 5.5-7.0	21	98.18	93.27
977-1035	CCM13S/90	19 × 5.25 × 9.00	4.5 × 5.5-7.0	16	156.98	149.13
977-1036	CCK13S-H/90*	10.25 × 5.25 × 9.00	4.5 × 5.5-7.0	11	78.75	74.81
977-6003	CCK13S-HT/90*	8.12 × 5.25 × 8.12	4.5 × 5.5-7.0	10	73.77	70.08
977-8242	CCA14S/90	19 × 5.25 × 12.00	4.5 × 8.6-10.1	21	125.48	119.20
977-1039	CCK15F/90	19 × 7.00 × 12.00	6.25 × 8.6-10.1	0	109.71	104.22

*Kit, all others are assembled. CCK = Kit; CCA = Assembled. "S" version subracks include 12 pairs of card guides.

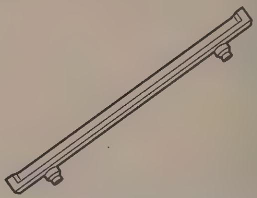
CMA13-20/90 — Module Subrack with Eight 2" Wide EFP Modules



Stock No.	Mfr.'s Type	Dimensions W × H × D (In.)	Module Size H × W (In.)	Modules	EACH	
					1-9	10-Up
977-1045	CMA13-20/90**	19 × 5.25 × 9.00	4.5 × 7.0	8	147.41	140.04

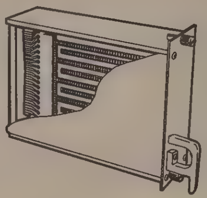
**Zinc riveted card guides.

RETMA (EIA) Card Guides



Stock No.	Mfr.'s Type	Type	Length (In.)	Centers (In.)	Card Length (In.)	Application	EACH	
							1-9	10-Up
977-1051	CG2-65P	Plastic, screw	5.42	4.50	6.50	Subrack series 12, 13, 14, 17, 18 and 100 and Vector P series sidewalls	12.33	11.71
977-8248	CG2-65S	Nylon, snap-in	5.42	4.50	6.60		10.16	9.65
977-1053	CG2-80P	Plastic, screw	6.64	6.00	8.00	Subrack series 14, 15 17, 18 and 100 and Vector P series sidewall ending in 119 or 156	24.09	22.88
977-1055	CG2-95P	Plastic, screw	8.14	7.50	9.50		18.72	17.78

EFP Modules



- Extended Front Panels Provide Thumb Screw Mounting and Flush Fit from Module to Module and with Strut Line
- Supplied In Kit Form

Stock No.	Mfr.'s Type	Use with Subrack	EACH	
			1-9	10-Up
977-1065	EFP164A66	CMA13	27.54	25.42
977-0340	EFP204A66	CMA13	23.93	22.74

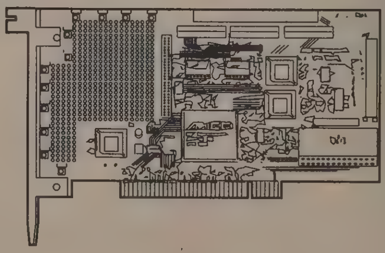
PCI Developer's Kit (P/N 4624-10)

PCI Developer's Kit for Fast Development of Adapter Card to PCI Bus; Become Familiar with the PCI Bus Through Hands-On Use

- Allows Engineers an Initial Design Advantage
- Allows Programmers Master Bus Compliance Early in the Product Cycle
- Provides Prototype Space and Additional Boards and Accessories for Circuit Layout
- Provides Bus Mastering Functions Compliant with PCI Spec 2.1
- Includes Software Tools for Diagnostic and Device Programming
- Includes Chip and Kit Documentation, Including Schematics and Circuit Layout Drawings
- Makes Bus Interface Easy and Cost Effective

Kit contains four PC boards including; PCI board with the AMCC matchmaker chip, with memory and provisions for flash memory on board for actual software use; one ISA board for communicating with another computer (or the same computer); and two additional breadboards for additional development which plug on to the Matchmaker board; Software for bus interface diagnostics and design configuration, and documentation books and quick reference guide.

977-1057. 1-9 .... EACH 495.00
10-Up .... EACH 484.50



PCI, PCMCIA Prototype Boards, Wire Wrap Connectors and Terminals

PCI Prototyping Boards

4624-8

4624-3

PCI Prototype Board 4624-8 for Circuit Development

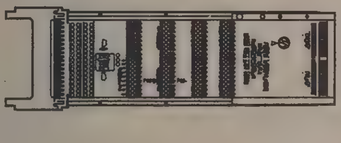
- ► Allows Expanded Space for Circuit Layout on a Full Size PCI Card
- ► Allows Use in Power PC Macintosh and PC Formats
- ► Contains AMCC Matchmaker Chip, Assembled and Tested
- ► Includes Software and Documentation

977-1058. 4624-8. 1-9 .... EACH 296.00
10-Up .... EACH 280.90

PCI Prototype Board 4624-3 for Universal Development

- ► Multi-Layer Board Contains Pad Per Hole Patterns with Power and Ground Accessible Throughout the Board
- ► For Use in 5 V or 3.3 V Applications
- ► For Use with Vector Prototype Accessories
- ► Includes Software and Documentation

977-1007. 4624-3. 1-9 .... EACH 135.34
10-Up .... EACH 128.57



PCMCIA Test Extender 3690-35

- ► For Type I and Type II
- ► 64-Pin Connector Numbering
- ► Multi-Layer Construction
- ► Assembled and Tested
- ► Contains Test Points for Each Signal Line

977-1061. 3690-35. 1-9 .... EACH 135.00
10-Up .... EACH 128.25

Push-In Terminals

T42 — for 0.042" Diameter Holes

- ► Wiring Terminals for Mounting Leads or Wires Horizontally or Vertically (Through Board Hole)
- ► Connectors Require No Staking for Most Applications
- ► Horizontal Slot Holds Up to Seven Wires, Depending Upon Thickness of Wire

977-0970. T42-1/C. 1-9 .... PER PK./100 5.07
10-Up .... PER PK./100 4.82
977-0971. T42-1/M. 1-9 .... PER PK./1000 28.15
10-Up .... PER PK./1000 26.75

T28 — for 0.062" Diameter Holes

- ► Vertical Slot Holes 0.025" Diameter Leads or .22 Gauge Wires
- ► 0.018" Diameter Tab Holes Can Be Used to Hold Additional Wires
- ► Material: Phos. Bronze, Tin Plating

977-8362. T28/C. 1-9 .... PER PK./100 6.25
10-Up .... PER PK./100 5.93
977-0951. T28/M. 1-9 .... PER PK./1000 34.76
10-Up .... PER PK./1000 33.02

Package quantities of 100 or 1000. Consult factory for applicable tools.

Press-In Terminals

T46 — for 0.042" Diameter Holes

- ► Single and Double-Tailed (Accessible from Both Sides) Wire-Wrap Terminals
- ► 0.025" Square Posts
- ► Provides Secure Contact without Soldering or Staking
- ► Rectangular Base with Stepped Shank Presses Into Plain or Plated-Thru Holes and Is Retained without Etching or Soldering

977-0980. T46-5-9/C. 1-9 .... PER PK./100 7.97
10-Up .... PER PK./100 7.57
977-1079. T46-5- 9/M. 1-9 .... PER PK./1000 65.37
10-Up .... PER PK./1000 62.10

Package quantities of 100 or 1000. Use P158 insertion tool, sold separately.

Terminals

T44, T68 — for 0.042" Diameter Holes

- ► Wire Wrap Tail with Two-Pronged Receptacle for Wires or Leads
- ► 0.025 Square Posts
- ► Rectangular Terminal with Stepped Shank Presses Securely Into Plated or Unplated Holes, Requires No Staking or Soldering
- ► Bifurcated End Holds Soldered Leads Securely
- ► For 3 Level Wire Wraps

977-0972. T44/C. 1-9 .... PER PK./100 5.21
10-Up .... PER PK./100 4.95
977-0973. T44/M. 1-9 .... PER PK./1000 34.32
10-Up .... PER PK./1000 32.61
977-0984. T68/C. 1-9 .... PER PK./100 6.12
10-Up .... PER PK./100 5.81
977-9994. T68/M. 1-9 .... PER PK./1000 31.03
10-Up .... PER PK./1000 29.48

T49 Klipwrap Terminal — for 0.042" Diameter Holes

- ► Wire Wrap Tail (0.025" Square) with 3-Pronged Clip for Up to 22 Gauge Wires
- ► Up to 3 Wires May Be Pressfit, Crimped or Soldered Into Clip
- ► Tail For 3 Level Wire Wraps

977-5060. T49/C. 1-9 .... PER PK./100 8.45
10-Up .... PER PK./100 8.03
977-5036. T49/M. 1-9 .... PER PK./1000 66.98
10-Up .... PER PK./1000 63.63

Package quantities of 100 or 1000. Use P158 or A13, A13-1, P156 insertion tools, sold separately.

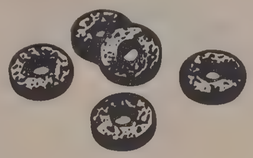
K32 (J Pin Terminal) — for 0.042" Diameter Holes

- ► Wire Wrap Pin (0.025" Square) Fits and Connects Two Adjacent Holes (0.042" D) on a .1" Grid
- ► Short Log Can Be Bent to Secure Pin
- ► Shorting Pin Allows Wire Wrap Connection to Wiring Side Pads or Circuits

977-0595. K32/C. 1-9 .... PER PK./100 8.79
10-Up .... PER PK./100 8.35
977-1078. K32/M. 1-9 .... PER PK./1000 56.30
10-Up .... PER PK./1000 53.49

Package quantities of 100 or 1000. Use P158 insertion tool, sold separately.

Solder Washers For 042" and .055" Holes



Multi-functional solder washer kits, with three sizes of washers. Different sizes provided to fit over sockets and tails of most Vector socket pins and wiring terminals. Ideal tools for committing pins to voltage and ground planes.

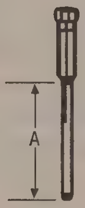
T124/M

Stock No.	Quantity	I.D. (In.)	O.D. (In.)	Application	EACH	
					1-9	10-Up
977-8110	500 500 100	0.078 0.058 0.040	0.110 0.103 0.106	Vcc Side GNC Side Connector	102.16	97.05

T124-040/500

Stock No.	Quantity	I.D. (In.)	O.D. (In.)	Application	1-9	10-Up
977-1019	500	0.040	0.106	Connector	84.91	80.67

Socket Pins



R32 — for 0.042" Diameter Holes

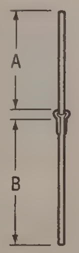
- ► Low Profile Wire Wrap Socket Pins
- ► Pressfit Mounting
- ► 4-Finger Contacts, Tapered Sockets for Easy Insertion

Stock No.	Mfr.'s Type	Qty.	Dim. A	Male Pin Depth	EACH	
					1-9	10-Up
977-5064	R32C	100	0.500	.13	22.63	21.50
977-5040	R32M	1000	0.500	.13	174.16	165.45

R52 — for 0.055" Diameter Holes

Stock No.	Mfr.'s Type	Qty.	Dim. A	Male Pin Depth	1-9	10-Up
977-8098	R52C	100	0.700	.17 3-Level, 4-Finger Contacts	18.45	17.53

Inbord Pins



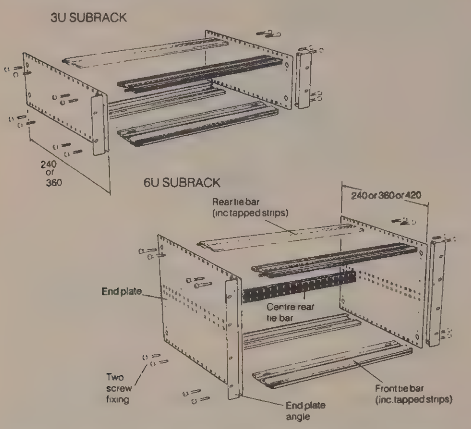
- ► Press-In Pins Provide Excellent Solder Points (Tin or Gold PL)
- ► Phos. Bronze Material

Stock No.	Mfr.'s Type	Qty.	Hole Size	Dim. A	Dim. B	EACH	
						1-9	10-Up
977-1086	K30C/M	1000	0.042	0.225	0.305	31.05	29.50
977-1087	K31C/M	1000	0.042	0.160	0.195	33.11	31.46
977-1088	K36C/M	1000	0.025	0.283	0.400	31.03	29.48

VERO
VERO ELECTRONICS

VME Backplanes, Card Cages, Extender Cards, Prototyping Boards and Assemblies

KM6-II Card Cages

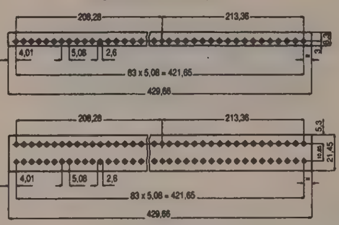


Conforming fully to IEC 297-3 these card cages are manufactured utilizing fully conductive components. This is a versatile design which uses large cross section extrusions for superior mechanical strength. Tapped strips, all fixings and assembly instructions are supplied with the kit in addition to the structural members. Backplane spacer strips and card guides must be ordered separately.

Stock No.	Mfr.'s Type	Size	EACH
961-0100	950-202581E	3U × 84HP × 180 mm	66.50
961-0101	950-202585H	3U × 84HP × 240 mm	69.50
961-0102	950-202582C	6U × 84HP × 180 mm	94.50
961-0103	950-202586F	6U × 84HP × 240 mm	102.00
961-0104	950-202594G	3U × 84HP × 360 mm	76.00
961-0105	950-202595E	6U × 84HP × 360 mm	121.00
961-0106	950-202597A	6U × 84HP × 420 mm	152.00
961-0107	950-202596C	9U × 84HP × 360 mm	177.00
961-0108	950-202598K	9U × 84HP × 420 mm	203.00

Backplane Spacer Strips

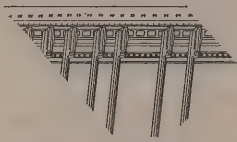
INSULATING SPACERS



In order to maintain the correct dimension between the backplane and the front panel these spacer strips must be used. Two types are available; Insulating (for VME type applications) and Conductive (for Multibus type applications).

Stock No.	Mfr.'s Type	Size	EACH
961-0111	950-10014H	Insulating single level, 84 HP	1.70
961-0112	950-10015E	Insulating two level, 84 HP	2.50

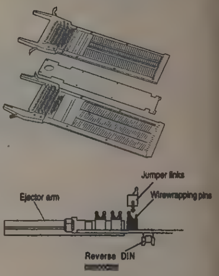
Card Guides



These positive retention guides are molded with two anti-vibration clips per guide which restrict any free play lateral movement of the daughter board. A "bolt down" hole is provided which permits the guide to be secured to the front tie bars. Additional tapped strips must be purchased to use this feature.

Stock No.	Mfr.'s Type	Size (mm)	EACH
961-0109	950-232662J	160 × 1.6, packet of 10 pcs	4.30
961-0110	950-232663G	220 × 1.6, packet of 10 pcs	5.85

Extender Cards



VME extender cards are of a multilayer construction with a full ground plane and in addition 'guard tracks' are provided between each signal line. Jumper links are provided for signal interrogation and a logic analyzer or termination module may be fitted. A conversion kit can join the J1 and J2 together. Double sided extender cards provide line to line extension of 96 way DIN 41612 connectors. Two versions are available, 3U and a monolithic 6U. Multilayer extender card with excellent cross talk performance, 3 layer construction with full central ground plane and 'guard tracks' between each signal line. Line jumper pins and logic analyzer or termination module are provided.

VME Extender Cards

Stock No.	Mfr.'s Type	Description	EACH
961-0128	243-26487G	VME J1	263.00
961-0129	243-26499H	VME J2	263.00
961-0130	188-27542E	Conversion Kit	16.20

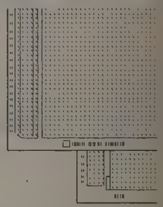
Double Sided Extender Cards

Stock No.	Mfr.'s Type	Size	Connectors Fitted			EACH
			Plug	Socket	Type	
961-0131	09-2459K	3U	1 pc	1 pc	96/96	150.00
961-0132	09-2460E	6U	2 pcs	2 pcs	96/96	288.00

Multilayer Extender Card

961-0133. 38-39084J. 96/96 Multilayer extender card (3U) ......**EACH 389.00**

Square Pad Boards



- ► Maximum Packing Density
- ► Hard Wire or Wire Wrap
- ► Cad Cage Compatible to DIN41494
- ► DIN41642 Connector Pattern
- ► Grid References on Both Sides of the Board
- ► 2.54 mm × 2.54 mm Hole Grid
- ► 1.02 mm Hole Diameter

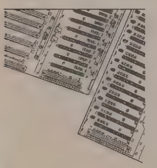
Square Pad Boards

Stock No.	Mfr.'s Type	Size (mm)	No. of Pads (width)	No. of Pads (length)	Base Material	EACH
961-0134	03-0026J	100.0 × 160	34	54	Epoxy glass	19.00
961-0135	03-0111L	233.4 × 160	85	52	Epoxy glass	35.60

Square Pad Boards with Colander Ground Plane

961-0139	03-2989L	100.0 × 160	34	54	Epoxy glass	22.30

VMExcel Monolithic Backplanes



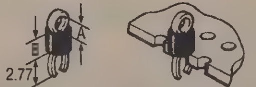
VMExcel is a six layer (+5 V - Signal - 0 V - +5 V - Signal - 0 V) stripline, controlled impedance (57 Ω) backplane. Excellent cross talk performance is achieved using 'guard track' technology and an anti-cross talk termination component layout. Decoupling capacitor positions are provided between each slot to permit fine tuning of system parameters.

VMEMonolithic J1/J2 Backplanes with on Board Termination, Standard DIN Connectors and Mate'n'Lok Power Connections

Stock No.	Mfr.'s Type	Slot Size	EACH
961-0119	243-431305B	5 slot*	343.00
961-0120	243-431110F	10 slot	547.00
961-0121	243-431121A	21 slot	939.00

*Faston power connections

Terminal Assemblies — NEW —



This assembly is designed to act as a terminal on PC boards for attachment of scope probe, etc. The spring design allows the terminal to be inserted into a plated through hole board without damaging the hole plating. The terminal will remain in place when the board is reversed for soldering. The sintered glass bead has a recommended maximum working temperature of 475°C. All solder pins are manufactured from brass to BS 2873 CZ 124 and have a tin finish over a copper flash. **Color:** Black.

Stock No.	Mfr.'s Type	Hole Dia. (mm)	Dimensions (mm)		PER PK./100
			A	B	
961-0145	20-002137D	1.02	1.1-1.3	3.1-3.3	13.90
961-0146	20-002136J	1.32	2.0-2.2	2.9-3.1	13.90

VME Microracks

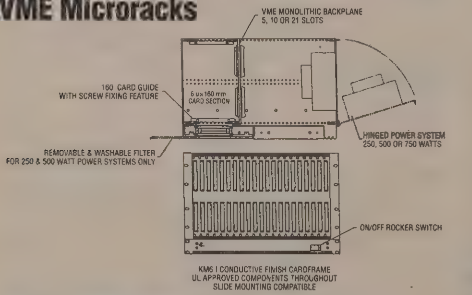

VME MONOLITHIC BACKPLANE
5, 10 OR 21 SLOTS
160 CARD GUIDE
WITH SCREW FIXING FEATURE
6 u × 160 mm
CARD SECTION
HINGED POWER SYSTEM
250, 500 OR 750 WATTS
REMOVABLE & WASHABLE FILTER
FOR 250 & 500 WATT POWER SYSTEMS ONLY
ON/OFF ROCKER SWITCH
KM6 I CONDUCTIVE FINISH CARDFRAME
UL APPROVED COMPONENTS THROUGHOUT
SLIDE MOUNTING COMPATIBLE

Fig. A — Vertical Mount

A vertical mount microrack comprises of the following: **Rack:** Mountable card cage with cover over the board area. **Card Cage:** To suit 160 mm deep VME boards. **Fan Tray:** Fitted below card cage (three fans). **Monolithic Backplane:** (Combined Monolithic J1/J2 — our VMExcel product). **Power Supply:** fitted into a standard, hinged, rear module which has i/o connector cutouts. The product is fully wired and ready to be powered up.

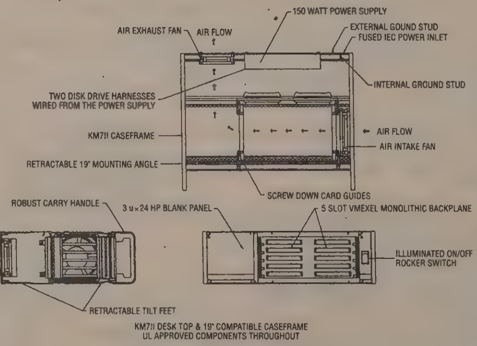
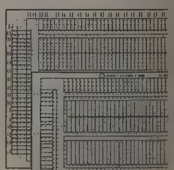


Fig. B — Horizontal Mount

Stock No.	Mfr.'s Type	Fig.	Description	EACH
961-0113	224-600523L	A	5 slot VME Microrack with 250 W PSU	1679.00
961-0114	224-600524J	A	10 slot VME Microrack with 250 W PSU	1937.00
961-0115	224-600530C	A	10 slot VME Microrack with 500 W PSU	2328.00
961-0116	224-600527C	A	21 slot VME Microrack with 500 W PSU	2843.00
961-0117	224-600529K	A	21 slot VME Microrack with 750 W PSU	3183.00
961-0118	224-606926C	B	5 slot VME Microrack with 150 W PSU	1600.00

Microboards



- ► Medium Packing Density
- ► DIN41612 Connector Pattern
- ► Vcc Power Rails
- ► Grid to Assist Component Layout
- ► 2.54 mm × 2.54 mm Hole Grid
- ► 1.02 mm Hole Diameter

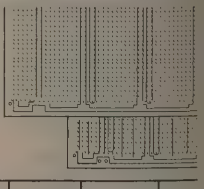
DoubleSided with 0 V Ground Plane Screen

Stock No.	Mfr.'s Type	Size	0.3" Pitch IC DIP Row/pads	0.6" Pitch IC DIP Rows/pads	Base Material	EACH
961-0140	10-2845B	100.0 × 160	4/46	4/46	Epoxy glass	23.70
961-0141	10-2846H	233.4 × 160	11/46	7/46	Epoxy glass	53.50

Single Sided without Component Side Ground Plane

961-0142	10-27563H	100.0 × 160	4/46	4/46	Epoxy glass	19.70
961-0143	10-27564D	233.4 × 160	11/69	7/60	Epoxy glass	50.50

DIP Board

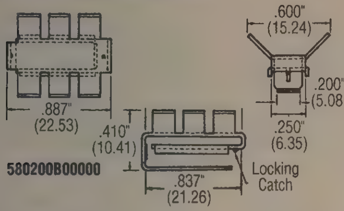


- ► Designed for Hard Wiring of Ics
- ► Vcc and Ov Rails Duplicated on Both Sides
- ► 2.54 mm × 2.54 mm Hole Grid
- ► 1.02 mm Hole Diameter

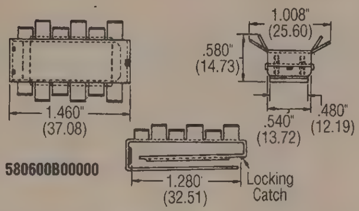
Stock No.	Mfr.'s Type	Size (mm)	0.3" Pitch IC DIP Row/pads	0.6" Pitch IC DIP Rows/pads	Base Material	EACH
961-0137	10-1041J	100.0 × 160	4/32	3/32	SRBP	14.80
961-0144	10-3183G	233.4 × 160	7/47	6/47	Epoxy glass	48.50

All material is aluminum alloy with a black, anodized finish unless otherwise noted.

Slide-On for DIPs



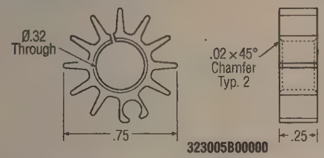
580200B00000



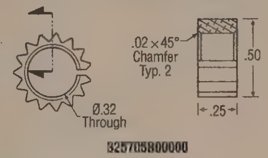
580600B00000

Stock No.	Mfr.'s Type	For DIP Pins	EACH			
			1-24	25-99	100-499	500-Up
619-6047	580200B00000	14 or 16	.35	.31	.26	.22
619-0300	580600B00000	28	.85	.77	.65	.54

Press-On for TO-5



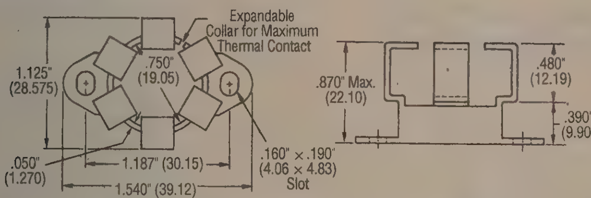
323005B00000



325705B00000

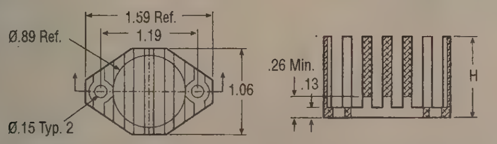
Stock No.	Mfr.'s Type	EACH			
		1-24	25-99	100-499	500-Up
619-0040	323005B00000	.98	.83	.70	.59
619-0050	325705B00000	1.02	.91	.77	.64

Expandable Collar for TO-3



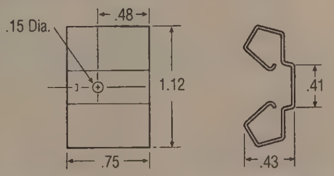
Stock No.	Mfr.'s Type	Case Style	EACH			
			1-24	25-99	100-499	500-Up
619-6042	579103B00000	TO-3	.81	.72	.61	.50

Cap for TO-3



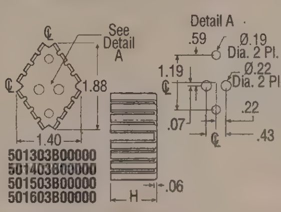
Stock No.	Mfr.'s Type	Dim. (In.)	EACH			
		H	1-24	25-99	100-499	500-Up
619-0305	542703X00000	1.00	3.09	2.77	2.38	2.20
619-0311	542603X00000	0.75	3.63	3.30	3.02	2.79
619-0312	542303X00000	0.50	2.90	2.64	2.42	2.23

Snap-Down for TO-220

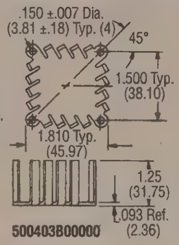


Stock No.	Mfr.'s Type	EACH			
		1-24	25-99	100-499	500-Up
619-0310	575102B00000	.36	.32	.27	.23

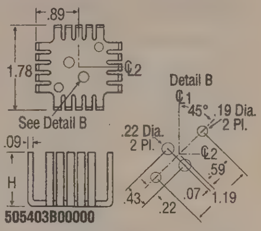
For TO-3



501303B00000
501403B00000
501503B00000
501603B00000



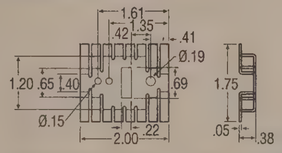
500403B00000



505403B00000

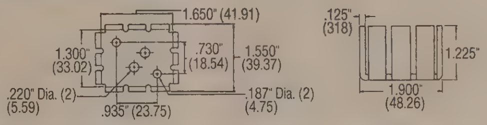
Stock No.	Mfr.'s Type	Dim. (In.)	EACH			
		H	1-24	25-99	100-499	500-Up
619-0110	501303B00000	0.50	.74	.66	.56	.48
619-0111	501403B00000	0.75	.78	.70	.59	.51
619-0112	501503B00000	1.00	1.09	.96	.82	.70
619-0113	501603B00000	1.25	1.24	1.10	.93	.79
619-0121	500403B00000	1.25	1.30	1.13	.97	.82
619-0140	505403B00000	1.25	1.63	1.36	1.16	.98

Economy, Low Profile for TO-3



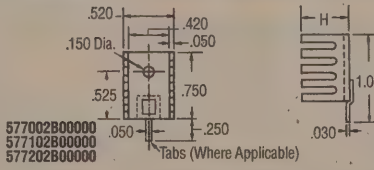
Stock No.	Mfr.'s Type	EACH			
		1-24	25-99	100-499	500-Up
619-0150	506007B00000	.47	.41	.37	.30

Heavy-Duty Space Saver for TO-3

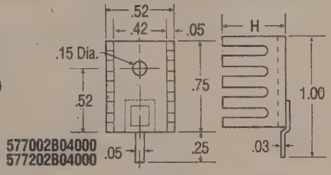


Stock No.	Mfr.'s Type	EACH			
		1-24	25-99	100-499	500-Up
619-6078	520103B00000	2.33	1.95	1.66	1.41

Compact, Limited Space for TO-220



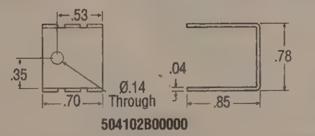
577002B00000
577102B00000
577202B00000



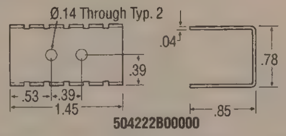
577002B04000
577202B04000

Stock No.	Mfr.'s Type	Tabs	Dim. (In.)	EACH			
			H	1-24	25-99	100-499	500-Up
619-6014	577002B00000	No	0.250	.34	.30	.25	.23
619-6016	577102B00000	No	0.375	.22	.19	.16	.13
619-6018	577202B00000	No	0.500	.23	.19	.16	.14
619-6020	577002B04000	Yes	0.250	.34	.30	.26	.22
619-6024	577202B04000	Yes	0.500	.31	.28	.23	.20

Narrow, Low Profile for TO-220



504102B00000



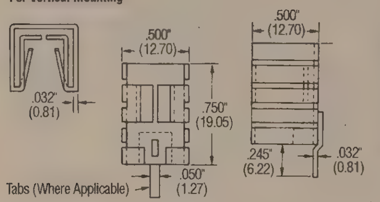
504222B00000

Stock No.	Mfr.'s Type	EACH			
		1-24	25-99	100-499	500-Up
619-0315	504102B00000	.30	.26	.21	.20
619-0320	504222B00000	.39	.33	.29	.25

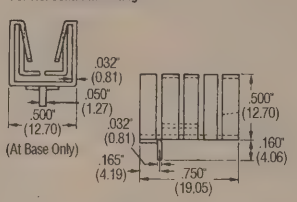
All material is aluminum alloy with a black, anodized finish unless otherwise noted.

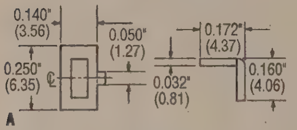
Slimmest, Plug-In for TO-220

For Vertical Mounting

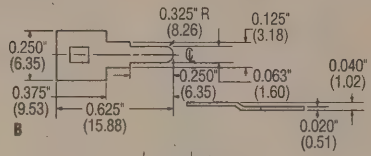


For Horizontal Mounting

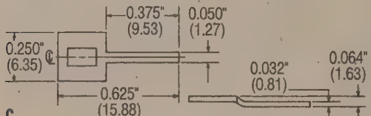




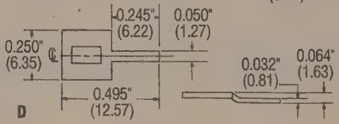
A



B



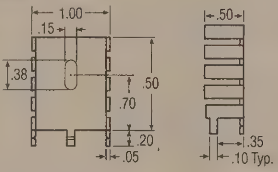
C



D

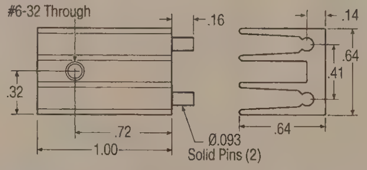
Stock No.	Mfr.'s Type	Tabs	EACH 1-24	25-99	100-499	500-Up
619-0360	576802B00000	None	**.34**	**.30**	**.26**	**.22**
619-0361	576802B03100	Fig. A	**.51**	**.46**	**.43**	**.39**
619-0362	576802B03700	Fig. B	**.54**	**.49**	**.45**	**.42**
619-0363	576802B03900	Fig. C	**.45**	**.41**	**.38**	**.35**
619-0364	576802B04000	Fig. D	**.49**	**.44**	**.41**	**.38**

Vertical Mount for TO-220



Stock No.	Mfr.'s Type	EACH 1-24	25-99	100-499	500-Up
619-0160	563002B00000	**.35**	**.30**	**.27**	**.22**
619-0161	563002D00000	**.92**	**.73**	**.67**	**.57**

Heavy Duty, Extruded for TO-218 and TO-220



Stock No.	Mfr.'s Type	EACH 1-24	25-99	100-499	500-Up
619-6072	581002B02500	**1.32**	**1.12**	**.96**	**.80**

Cool Cat

— NEW —

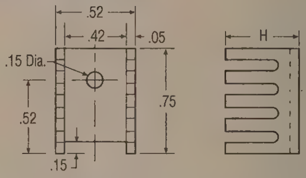
Aavid interactive thermal management design catalog on disk. Once loaded onto your computers you will have the ultimate tool in thermal management design. The program is "Windows" based and allows you to enter the thermal requirements needed which are then translated into the Aavid part numbers that meet those criteria. The tutorial that accompanies the 2-disk program will assist you in utilizing "Cool Cat" to the fullest. As you enter the "Cool Cat" software you will be presented with seven product families. Each family is designed to help you select a thermal solution(s) for your specific application. Depending on the family you have entered, there may be several options for which you will have to choose from to help with your heat sink selection. To proceed, input such information as the type of device to be cooled, the total volume available for your thermal solution and/or the manufacturer of the device to be cooled, to narrow down your selection. As you narrow down your search to a specific solution, use the "Finish", "Interface Material", and other menus to configure the product. The correct Aavid part number will always be displayed below the schematic.

Family Name	Typical Device to be Cooled
Digital Products	BGA, MQUAD, PLCC, PGA, QFP
PC Board Products	Jedic Style Devices
Extrusion	TEC, Mid-Ranged Semiconductor
Bonded Fin	Motor Drives, Traction Drives

Family Name	Typical Device to be Cooled
Liquid Cooling	IGBT, RF Transistors
Interface Materials	Heat Sink Accessories
Attachment Methods	Heat Sink Accessories
—	—

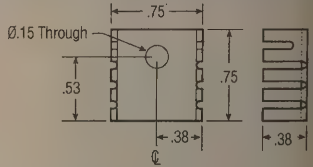
619-0050. Cool Cat. Set of 2 3¼" disks..**PER SET 19.95**

Trim, Low-Profile for TO-202



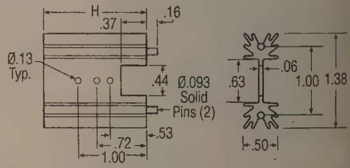
Stock No.	Mfr.'s Type	Dim. (In.) H	EACH 1-24	25-99	100-499	500-Up
619-6036	577304B00000	0.375	**.27**	**.23**	**.20**	**.16**
619-6038	577404B00000	0.500	**.31**	**.25**	**.23**	**.18**

Economy, Low Profile for TO-126 and TO-127



Stock No.	Mfr.'s Type	EACH 1-24	25-99	100-499	500-Up
619-0230	507302B00000	**.23**	**.20**	**.17**	**.14**

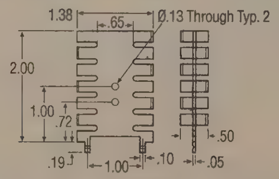
Extrusion with Solderable Pins for TO-218 and TO-220



Stock No.	Mfr.'s Type	Dim. (In.) H	EACH 1-24	25-99	100-499	500-Up
619-0370	531002C02500*	1.000	**1.10**	**.97**	**.82**	**.71**
619-0375	531102C02500*	1.500	**1.16**	**1.02**	**.87**	**.73**

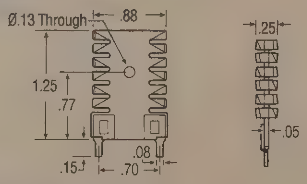
*Gold Chromate Finish.

Soldered or Twisted Tabs for Vertical Mounting for TO-220



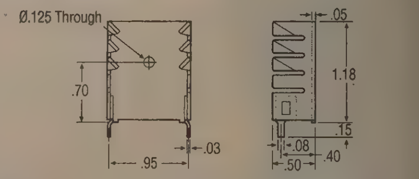
Stock No.	Mfr.'s Type	EACH 1-24	25-99	100-499	500-Up
619-0130	563202B00000	**.88**	**.77**	**.67**	**.56**

Small, Wave-Solderable for TO-220



Stock No.	Mfr.'s Type	EACH 1-24	25-99	100-499	500-Up
619-6062	592502B03400	**.59**	**.53**	**.46**	**.38**

Wave-Solderable, Twisted Fin for TO-220



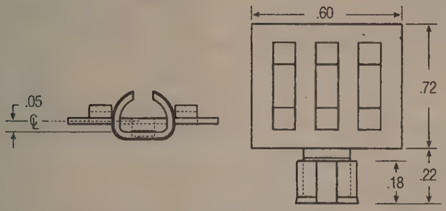
Stock No.	Mfr.'s Type	EACH 1-24	25-99	100-499	500-Up
619-6064	593002B03400	**.71**	**.63**	**.53**	**.46**

Heat Sinks, Conductive Adhesive and Compounds, and IN-SIL-8™ Pads

AAVID THERMAL TECHNOLOGIES INC

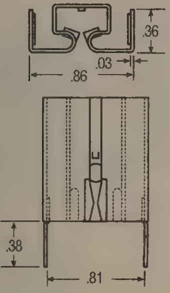
All material is aluminum alloy with a black, anodized finish unless otherwise noted.

Slip-On for TO-92

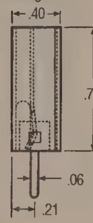


Stock No.	Mfr.'s Type	EACH			
		1-24	25-99	100-499	500-Up
619-0770	575200B00000	.26	.23	.19	.16

Plug-In for TO-220



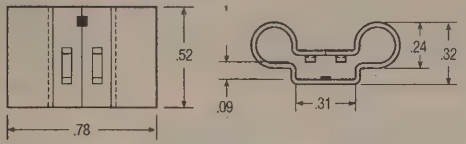
Straight Tabs



Stock No.	Mfr.'s Type	EACH			
		1-24	25-99	100-499	500-Up
619-5001 619-6032	574502B00000* 574502B03300**	.25 .48	.22 .42	.19 .36	.16 .30

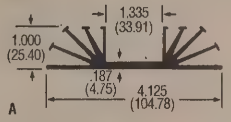
*No tabs (not shown). **Vertical mount, 0.375" tinned tabs for soldering directly to PC board.

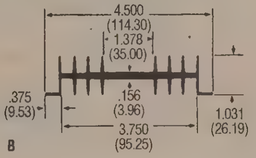
Vertical Mount for TO-126

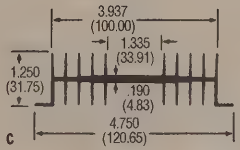


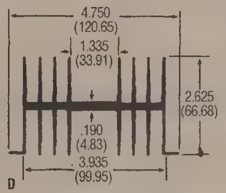
Stock No.	Mfr.'s Type	EACH			
		1-24	25-99	100-499	500-Up
619-9990	577500B00000	.26	.23	.20	.17

4 Foot Length Extrusion (Cut, Deburred and Washed) Not Anodized









Stock No.	Mfr.'s Type	Fig.	Weight Lbs.	EACH		
				1-4	5-9	10-Up
619-0503	600802F00000	A	4.80	49.27	40.33	34.10
619-0504	600852F00000	B	5.20	39.89	32.63	27.61
619-0505	600502F00000	C	5.60	60.02	49.11	41.55
619-0506	600552F00000	D	10.00	96.11	78.63	66.54

Ther-O-Bond Adhesive

Ther-O-Bond is a 2-part thermally conductive epoxy adhesive system that also has good electrical insulating qualities. It bonds readily to metal, ceramics, glass, plastics and many other materials. An easy-to-spread thixotropic paste, it offers high heat transfer, low shrinkage, and a coefficient of thermal expansion comparable to that of copper and aluminum. It cures overnight at room temperature, or in 2 hours at 65°C. Pot life is about 60 minutes.

Typical Properties — Series 1500. Color: Black. **Thermal Conductivity, Btu/Ft.²/Hr./°F/In.:** 9.0. **Tensile Strength, psi at 25°C:** 9800. **Dielectric Strength, Volt/Mil.:** 600.

Stock No.	Mfr.'s Type	Package	Size	EACH		
				1-4	5-9	10-Up
619-0005	159900F00000	Can (resin), bottle (hardener)	1 qt.	86.86	78.37	72.39
619-0006	161000F00000	2-part plastic kit	10 gm.	7.22	6.56	6.02
619-0007	164000F00000	2-part plastic kit	40 gm.	11.29	9.91	9.08

Ther-O-Link 1000 Thermally-Conductive Compound

Ther-O-Link Series 1000 compound was developed to reduce the high thermal resistance of the air gap otherwise present between mating surfaces of a heat sink and semiconductor. It provides an excellent thermal path by displacing the air gap between the two mating surfaces. Ther-O-Link provides a low thermal resistance of only 0.05°C/W when using a 0.001." film on a one-inch square area. Ther-O-Link will not become hard, and retains its viscous consistency even after continuous operation up to 200°C. It has the consistency of a viscous hand lotion and will wet-out the surfaces and displace more air than heavier compounds. Ther-O-Link is easily brushed on to the mating surfaces of semiconductor devices. When applying, spread or brush the compound evenly over the entire mating surface. For maximum performance, proper torque should be used when mounting stud-mounted devices. The compound can easily be removed with a damp cloth using any commercially-available clean-up solvent.

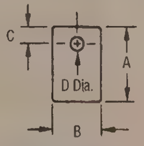
Typical Properties — Series 1000. Specific Gravity: 2.1-2.1. **Viscosity:** Paste. **Thermal Conductivity, Btu/Ft.²/Hr./°F/In.:** 5.2. **Thermal Resistivity, °C In./Watt:** 52. **Volume Resistivity, Ohm-Cm:** 1015. **Dielectric Strength, Volts/Mil.:** 250. **Weight Loss, % After 24 Hours at 200°C:** 0.6.

Stock No.	Mfr.'s Type	Package	Size	EACH		
				1-9	10-19	20-Up
619-0001	100200F00000	Tube	2 oz.	7.27	5.95	5.03
619-0002	100500F00000	Tube	5 oz.	13.54	11.08	9.38
619-0003	100800F00000	Can	8 oz.	18.60	15.22	12.88
619-0004	101600F00000	Can	1 lb.	23.09	18.89	15.99

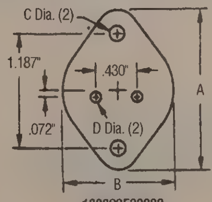
IN-SIL-8™ Pads, Silicone-Based Insulators with Thermally Conductive Fillers

— NEW —

- Thermally Conductive Composite of Silicone Rubber and Fiberglass Provides Better Thermal Conduction Than Mica and Grease
- Customer Applied or Factory Applied
- Quick Application Is Over 4 Times Faster Than Mica or Grease
- Doesn't Attract Dust or Foreign Particles
- Won't Contaminate Solder Baths
- Can Withstand Environmental Changes without Changing Its Properties
- Rigors of Assembly: Doesn't Crack Under Pressure; Resists Puncture and Tearing
- Aging and Continuous Use: Won't Dry Up or Deteriorate; Maintains Low Thermal Resistance; Flame Retardant
- Dielectric Constant 100 Hz (ASTM D 1450): 5.5



188858F00000
188958F00000
188854F00000
188954F00000



188823F00000
188923F00000

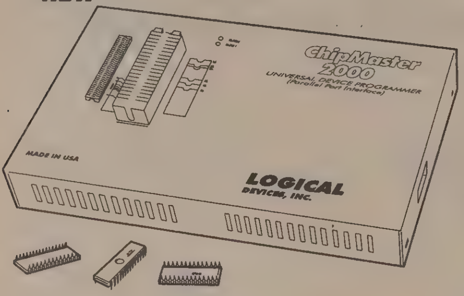
Stock No.	Mfr.'s Type	Thickness	Thermal Resistance	Package Type	Color	Voltage Min., Dry (ASTM D 149)	Continuous Use °C	Mounting Pressure Lbs./In.² (Recommended)	Dimensions				EACH		
									A	B	C	D	1-49	50-99	100-Up
619-1000	188858F00000	.007" (±.001)	1.25	TO-220	Grey	4000	−60 to +180	300 to 600	0.750	0.500	0.187	0.125	.24	.22	.20
619-1001	188958F00000	.009" (−.001, +.002)	1.50	TO-220	Grey	5000	−60 to +180	300 to 600	0.750	0.500	0.187	0.125	.11	.10	.09
619-1002	188854F00000	.007" (±.001)	1.25	TO-220	Grey	4000	−60 to +180	300 to 600	0.750	0.500	0.187	0.147	.08	.07	.06
619-1003	188954F00000	.009" (−.001, +.002)	1.50	TO-220	Grey	5000	−60 to +180	300 to 600	0.750	0.500	0.187	0.147	.18	.17	.15
619-1004	188823F00000	.007" (±.001)	0.33	TO-3	Grey	4000	−60 to +180	300 to 600	1.593	1.100	0.156	0.062	.43	.39	.36
619-1005	188923F00000	.009" (−.001, +.002)	0.50	TO-3	Grey	5000	−60 to +180	300 to 600	1.593	1.100	0.156	0.062	.25	.23	.21

Shooter Stand Alone Low Cost EPROM Programmer

- ► Stand Alone or PC Based Through Serial RS-232 Port
- ► Supports EPROMs and EEPROMs
- ► Load, Program, Verify From Front Panel
- ► Upload/Download Motorola, Intel Binary, Hex Files
- ► Edit Files in PC or In Shooter RAM
- ► Works with Dumb Terminal or Any PC
- ► Compact Size Fits in Briefcase
- ► Free IBM PC Communications Software (Prolink)
- ► Ideal for Engineers, Technicians and Field Personnel
- ► Built-In DIP Socket, Optional PLCC Adapters
- ► One Year Warranty
- ► Satisfaction Guaranteed

Stock No.	Mfr.'s Type	Capacity Device Size	Device Technology	Memory Internal RAM	EACH
864-0100	PROPP4-512	512 K	E/EEPROM	512 K	495.00

— NEW —



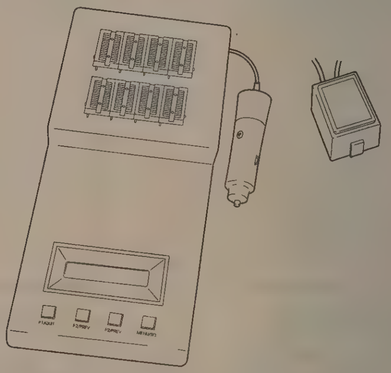
ChipMaster 2000™

- ► Contains a 48-Pin ZIF Socket Module, Universal (100-260 VAC) Switching Power Supply, 6-Foot Printer Cable, Installation Diskette and Operation Manual
- ► Allows You to Not Only Program ICs but Also Test TTL and CMOS Logic ICs, As Well As Check Dynamic and Stati Memory
- ► Interfaces with PC Compatible 386 and Higher Computers Including Laptops
- ► Free Lifetime Software Updates and Technical Support Are Available Via Logical's BBS
- ► Made and Supported in the USA
- ► Two Year Warranty on Parts and Labor

ChipMaster 2000 is a software expandable, universal device programming work station that supports a wide variety o programmable devices and tests digital ICs. The hardware and software architecture of ChipMaster 2000 is easil expandable to support your future design needs and device library requirements. This state-of-the art universa programmer offers you the most advanced programming features with a user friendly interface.

864-0450. PROCM2-000. Chipmaster 2000 with Parallel Port Interface..**EACH 995.00**

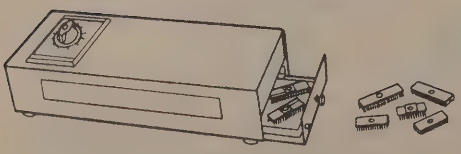
XPRO-1 Stand Alone Intelligent EPROM/FPGA Gang Programmer



- ► Copy, Program, Verify, Test Chips, EPROMs, PROMs, Micros Stand Alone or PC Based
- ► Easy To Use LCD and Keypad Lets Your Program-In Most Frequent Used Devices
- ► Built In High Speed Serial Port, Lets You Integrate with PC in DOS or Windows 3.1
- ► 1, 4, 8 Meg Internal RAM Buffer Options, Allows Data Storage Within Unit
- ► Single Socket or Gang of 8 Adapter in DIP or PLCC Direct Docking Heads
- ► High Speed Gang Algorithms for Fast Production Throughput
- ► Cluster Multiple Units for Expanded for Production Setup (64 EPROMs At A Time)
- ► Powerful Development Facility, Download in Motorola, Intel, Binary, Hex File Formats
- ► Programs EPROM, EEPROMs, Serial PROMs, Micros, FPGAs, EPLDs
- ► Lifetime Free Software Update Via BBS, 100% Made-In-USA
- ► Battery Backed Up, Protects Against Accidental Data Loss Due to Power Glitches
- ► 12-Bit DAC Controlled, Highly Accurate, Requires No Calibration
- ► External Power Source, UL, CSA, VDE Approved, ISO 9000 Traceability
- ► Optional TSOP, PCMCIA, PQFP, BGA, PGA, SOIC, LCC Socket Adapters

Stock No.	Mfr.'s Type	Description	Capacity	Memory	EACH
864-2000	PROXP1-101*	XPRO-1 Base Unit	1 Meg	1 Meg	**795.00**
864-2010	PROXP1-104*	XPRO-1 Base Unit	4 Meg	4 Meg	**995.00**
864-2020	PROXP1-108*	XPRO-1 Base Unit	8 Meg	8 Meg	**1295.00**
864-2030	MODXP1-SD32	32 Pin DIP Socket	—	—	**110.00**
864-2035	MODXP1-GP28	32 Pin PLCC Socket, 8 Gang for Devices with a 28 Pin Footprint	—	—	**661.11**
864-2040	MODXP1-GD32	32 Pin DIP Socket, 8 Gang	—	—	**661.11**
864-2045	MODXP1-GP32	32 Pin PLCC Socket, 8 Gang	—	—	**661.11**
864-2050	MODXP1-GD40	40 Pin DIP Socket, 4 Gang	—	—	**550.00**
864-2055	MODXP1-GD44	44 Pin PLCC Socket, 4 Gang	—	—	**661.11**
864-2060	MODXP1-UM1	28/32/40 Pin Universal EPROM and 87XX DIP and PLCC Adapter	—	—	**550.00**

*Each base unit requires at least one programming head (MODXP1-XXXX). Call for Xilinx, Altera, AMD, Lattice, PLD/FPGA adapter lists.



UV Erasers Ultra Fast EPROM — Erasing 1-200 Devices at a Time

- ► One Year Warranty
- ► Satisfaction Guaranteed

UV Eraser to Meet Every Need

The Logical Devices family of UV eraser are professionally designed for erasing UV EPROMs and microcontrollers at an optimum speed and safety. All products are designed to avoid any leakage of Ultraviolet rays which can be harmful to human eyes and skin. Each unit is equipped with a safety interlock switch which is activated only when the unit tray is sealed shut. The Ultraviolet Eraser units come in a variety of sizes and models and could even be custom made to a specific application.

Stock No.	Mfr.'s Type	Description	Capacity	Timer	Erase Time	Dimension Inches	EACH
864-1000	ERAPME-000	Palm Erase	1	No	30 Min.	2 × 4 × 2	**52.45**
864-1100	ERAT8N-000	QUV-T8/N	10	No	30 Min.	5.25 × 13 × 3.5	**74.26**
864-1200	ERAT8Z-000	QUV-TT8/Z	15	Yes	20 Min.	5.25 × 13 × 3.5	**149.95**
864-1300	ERALUV-000	Ultralite	50	Yes	20 Min.	12.5 × 12.5 × 4.7	**299.00**
864-1400	ERAMAX-000	Ultralite-Max	100	Yes	20 Min.	13.5 × 19 × 5	**495.00**

EPROM Erasers

SPECTROLINE®

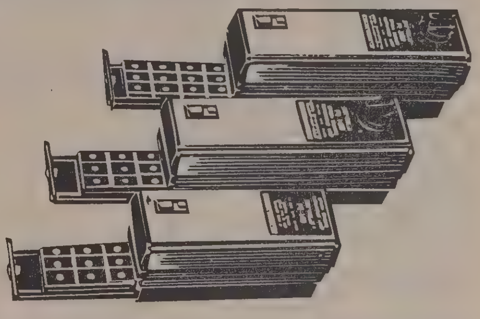
All Spectroline erasers are handsomely styled of rugged, anodized aluminum and stainless steel. They have a safety interlock to protect the user against accidental exposure to hazardous short wave (254 nm) UV radiation. Also, the devices are protected by conductive foam pads which prevent electrostatic charge build-up. **All models are UL listed. PE-Series are CSA approved.**

Mfr.'s Type	Auto Timer Shut-Off	Chip Erasing Capacity	Typical Intensity (μW/cm^2)
PE-140	No	9	8,000
PE-140T	Yes	9	8,000
PE-240T	Yes	12	9,600
PL-265T	Yes	30	9,600
PR-125T	Yes	25	17,000

Mfr.'s Type	Auto Timer Shut-Off	Chip Erasing Capacity	Typical Intensity (μW/cm^2)
PR-320T	Yes	42	17,000
PC-1100A	Yes	84	18,500
PC-2200A	Yes	168	18,500
PC-3300A	Yes	252	18,500
PC-4400A	Yes	336	18,500

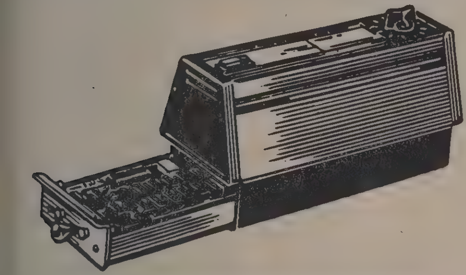
PE-Series Lamps

- **Small Capacity, Medium Intensity**
- **Efficient and Complete Erasing in as Little as 11 to 13 Minutes, Depending on the Model**
- **Type PE-240T Erases 12 Chips, Type PE-140 and PE-140T, 9 Chips**



PE-140, PE-140T, and PE-240T are desktop lamps specifically designed for personal and small-system users. They are the perfect choice for fast and complete EPROM erasure. The PE-140 and PE-140T use a single 4 watt UV tube, while the PE-240T uses two 4 watt UV tubes. Tube life is rated at 6,000 hours. Safety features include fully shielded UV tubes with UV-absorbing light indicators to signal when tubes are lit. The PE-140T and PE-240T feature the added convenience of a 60-minute timer for automatic unit shut-off.

Stock No.	Mfr.'s Type	Description	Inside Tray Dimensions	EACH
986-0140	PE-140	Lamp with One 4-watt Tube	2"W × $6\frac{5}{8}$"L × $\frac{5}{8}$"H	**155.00**
986-0141	PE-140T	Lamp with Timer and One 4-watt Tube	2"W × $6\frac{5}{8}$"L × $\frac{4}{8}$"H	**195.00**
986-0240	PE-240T	Lamp with Timer and Two 4-watt Tubes	2"W × $6\frac{5}{8}$"L × $\frac{5}{8}$"H	**225.00**
986-2537	BLE-2537S	Tube for PE-Series Lamps	–	**27.50**



PL-265T Lamp

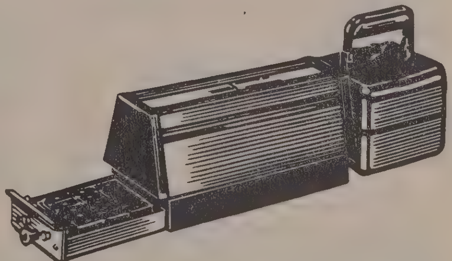
- **Medium Capacity, Medium Intensity**
- **Compact and Economical**
- **Erases up to 30 Chips**
- **Efficient and Complete Erasing in as Little as 11 Minutes**
- **Accepts PC Boards up to 4" × 9"**

PL-265T is ideal for data processing centers and other medium-volume EPROM users. This unit uses two 6-watt UV tubes. Tube life is rated at 6,000 hours. The PL-265T lamp erases up to 30 EPROM chips or will accept PC boards up to 4" x 9". A specular aluminum reflector assures maximum intensity. The loading drawer contains a removable tray insert which is adjustable to varying heights to ensure optimum exposure. Safety features include UV-absorbing light indicators to signal when tubes are lit. A 60-minute timer automatically shuts off unit at the end of each erasing cycle.

Stock No.	Mfr.'s Type	Description	Inside Tray Dimensions	EACH
986-0265	PL-265T	Lamp with Timer and Two 6-watt Tubes	$4\frac{1}{8}$"W × 9 $\frac{7}{8}$"L × $1\frac{3}{8}$"H	**325.00**
986-6254	BLE-6254S	Tube for PL-265T	–	**31.25**

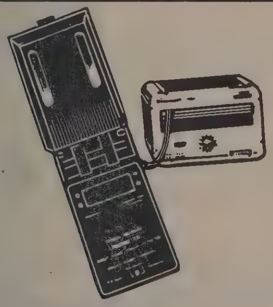
PR-Series Lamps

- **PR-125T Erases 25 Chips**
- **PR-320T Erases 42 Chips**
- **Medium Capacity, High Intensity**
- **Complete Erasing in as Little as 6 Minutes**



PR-125T and PR-320T are designed for medium to large-volume EPROM users. The PR-Series features high-intensity UV grid tubes that provide maximum irradiance uniformity, for extremely fast and efficient erasing. Grid tube life is rated at 5000 hours. They can completely erase EPROMs on PC boards up to 4" x 9". The PR-125T can hold up to 25 EPROMs while the PR-320T accommodates up to 42 individual EPROMs. A specular aluminum reflector assures maximum intensity. The loading drawer contains a removable insert which is adjustable to varying heights to ensure optimum exposure. Safety features include UV-absorbing light indicators to signal when tubes are lit. Other features include a 60-minute timer which automatically shuts off the unit and a carrying handle to ease portability.

Stock No.	Mfr.'s Type	Description	Inside Tray Dimensions	EACH
986-0125	PR-125T	Lamp with Timer and Grid	$4\frac{1}{8}$"W × $9\frac{7}{8}$"L × $1\frac{3}{8}$"H	**550.00**
986-0320	PR-320T	Lamp with Timer and Grid	$4\frac{1}{8}$"W × $9\frac{7}{8}$"L × $1\frac{3}{8}$"H	**760.00**
986Q2600	G260N0	Grid for PR-125T	2" × 6" Grid Area	**325.00**
986Q4800	G480N0	Grid for PR-320T	4" × 8" Grid Area	**518.75**



Digital Ultraviolet Radiometers

- **Measure UV Intensity with ±5% Accuracy**
- **Reliable Solid-State Circuitry**
- **Calibrated to NIST Standards**
- **Perfect for Calculations**
- **Durable Plastic Case**

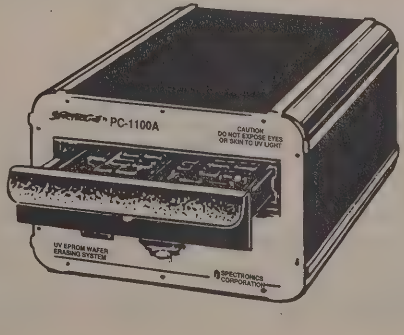
DM-254X and DS-254E precisely measure the UV output of EPROM erasers. They make erase time calculations easy and accurate, and are perfect for monitoring the useful life of your eraser's UV source. The DS-254E not only measures UV irradiance, but actually calculates proper erasing time. Both units feature $4\frac{1}{2}$ digit LED display, measuring range 0-19, 990μW/Cm^2 with accuracy of ±5%. Calibrated to NIST standards. Both come complete with four non-rechargeable, 1.5V alkaline batteries.

Stock No.	Mfr.'s Type	Description	EACH
986Q0245	DM-254X	Digital UV Radiometer	**630.00**
986Q0254	DS-254E	EPROM Meter/Calculator	**1102.50**

PC-Series Cabinets

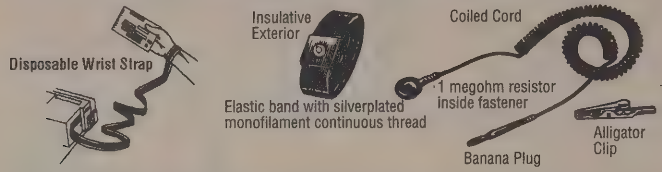
- **Large Capacity, Ultra-High Intensity**
- **Complete Erasing in Less than 5.5 Minutes**
- **Erase from 84 to 336 Chips Depending on Model**
- **Accepts PC Boards from 8" × 12" to 32" × 12"**

PC-1100A, PC-2200A, PC-3300A, and PC-4400A Erasing Cabinets are specifically designed for high-volume production requirements. In as little as 5.5 minutes, their high-intensity, UV grid lamps completely erase programmed memories. Quartz grids are mounted on a specular-aluminum reflector, providing uniform irradiance with a typical peak intensity of 18,500μW/cm^2. The 8" x 8" modular assemblies feature a special drop-in design making replacement quick and easy. As well as erasing individual EPROMs, these cabinets will accept various quantities of PC boards, wafers, and metric cards. The PC-3300 and PC-4400A will accommodate open-face stocking tubes. UV-absorbing light indicators signal when grids are lit. Chamber temperature is controlled by powerful internal cooling fans, maintaining maximum UV intensity and prolonging grid life, which is rated at 5000 hours. Also features adjustable tray to ensure optimum exposer.


SPECTROLINE PC-1100A
CAUTION DO NOT EXPOSE EYES OR SKIN TO UV LIGHT
UV EPROM WAFER ERASING SYSTEM
SPECTRONICS CORPORATION

Stock No.	Mfr.'s Type	Description	Inside Tray Dimensions	EACH
986Q1100	PC-1100A	Cabinet with Timer and Grid	$8\frac{3}{8}$"W × 12"L × $1\frac{3}{8}$"H	**2082.50**
986Q2200	PC-2200A	Cabinet with Timer and 2 Grids	$16\frac{3}{8}$"W × 12"L × $1\frac{3}{8}$"H	**2715.00**
986Q3300	PC-3300A	Cabinet with Timer and 3 Grids	$24\frac{3}{8}$"W × 12"L × $1\frac{3}{8}$"H	**4375.00**
986Q4400	PC-4400A	Cabinet with Timer and 4 Grids	$32\frac{3}{8}$"W × 12"L × $1\frac{3}{8}$"H	**4795.00**
986Q7500	G750N02	Grid Assembly	–	**1027.08**

Wrist Straps, Grounding Cords and Wrist Strap Tester


Disposable Wrist Strap
Insulative Exterior
Coiled Cord
Elastic band with silverplated monofilament continuous thread
1 megohm resistor inside fastener
Alligator Clip
Banana Plug

The wrist strap consists of a wrist band and a grounding cord. Grounding cord length is the extended length for the coiled cords. The molded cap on the grounding cord that snaps onto the wristband contains a 1 megohm resistor.

Wrist Straps with Grounding Cords

617-2211. 2211. Small Size band (4½"-6") with 5' coiled cord	EACH	21.25
617-2003. 2212. Medium Size band (5½"-7¼") with 5' coiled cord	EACH	21.25
617-2222. 2222. Medium Size band (5½"-7¼") with 10' coiled cord	EACH	25.58
617-2004. 2213. Large Size band (6½"+) with 5' coiled cord	EACH	21.25
617-2026. 2214. Adjustable band with 5' coiled cord	EACH	24.97
617-2027. 2224. Adjustable band with 10' coiled cord	EACH	31.06
617-2259. 2259. Lay-in Adjustable band with 5' coiled cord	EACH	11.77
617-2272. 2272. Highland™ Adjustable band with 5' coiled cord	EACH	7.93

Disposable Wrist Strap

617-0209. 2209. Disposable wrist strap	EACH	1.16

Wrist Straps Only

617-2201. 2201. Small Size band (4½"-6") only	EACH	8.42
617-2000. 2202. Medium Size band (5½"-7¼") only	EACH	8.42
617-2001. 2203. Large Size band (6½"+) only	EACH	8.42
617-2028. 2204. Adjustable band only	EACH	10.28
617-2271. 2271. Highland™ Adjustable band only	EACH	3.91

Grounding Cords Only

617-2002. 2210. Coiled grounding cord — 5'	EACH	17.05
617-2038. 2220. Coiled grounding cord — 10'	EACH	20.67
617-2273. 2270. Highland™ Coiled grounding cord — 5'	EACH	5.44

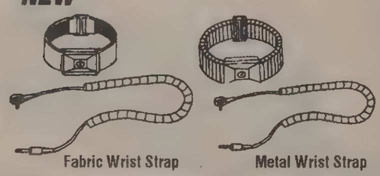
Periodic Wrist Strap Tester

The 3M Model 746/745 Wrist Strap Tester is a compact unit that can be used for daily testing in a production facility; periodic testing at telephone central offices and remote sites; and by field service personal. The "746 Tester" comes with a 110/120 AC adapter and the unit can be wall-mounted. a long-life lithium battery provides back-up power for portable applications or during power failures.

617-0747. 746C. Certified/Calibrated. AC Powered	EACH	413.30
617-0748. 746. AC Powered	EACH	300.70
617-0749. 745C. Certified/Calibrated. Battery Powered	EACH	341.70
617-0745. 745. Battery Powered	EACH	218.69

— NEW —

Dual Conductor Wrist Straps, Cords, and Wrist Strap Tester


Fabric Wrist Strap
Metal Wrist Strap

The dual conducting wrist strap permits monitoring resistance to ground of the operator. Used exclusively with the 722 Work Station Monitor and 721 wrist strap monitor.

Wrist Straps with Grounding Cords

617-9505. 2361GT. Small (4½"-6¼") pink wrist strap with gear teeth and 5' cord	EACH	34.84
617-9506. 2362GT. Medium (5½"-7¼") turquoise wrist strap with gear teeth and 5' cord	EACH	34.84
617-9507. 2363GT. Large (Over 6½") purple wrist strap with gear teeth and 5' cord	EACH	34.84
617-9508. 2381GT. Small metal wrist strap with gear teeth and 5' cord	EACH	50.04
617-9509. 2382GT. Medium metal wrist strap with gear teeth and 5' cord	EACH	50.04
617-9510. 2383GT. Large metal wrist strap with gear teeth and 5' cord	EACH	50.04

Wrist Straps Only

617-9511. 2364GT. Small fabric wrist strap with gear teeth	EACH	14.06
617-9512. 2365GT. Medium fabric wrist strap with gear teeth	EACH	14.06
617-9513. 2366GT. Large fabric wrist strap with gear teeth	EACH	14.06
617-9500. 2368GT. Adjustable fabric wrist strap with gear teeth	EACH	14.06
617-9514. 2384GT. Small metal wrist strap with gear teeth	EACH	36.63
617-9515. 2385GT. Medium metal wrist strap with gear teeth	EACH	36.63
617-9516. 2386GT. Large metal wrist strap with gear teeth	EACH	36.63

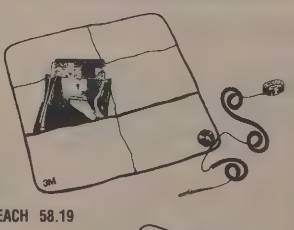
Grounding Cords Only

617-9517. 2360GT. 5' Coiled cord with gear teeth	EACH	26.93
617-9501. 2370GT. 10' Coiled cord with gear teeth	EACH	30.82
617-9518. 2371GT. 20' Coiled cord with gear teeth	EACH	38.02

Wrist Strap Monitor

617-0021. 721	EACH	72.03

Portable Field Service Grounding Kits



The 3M 8501 Portable Field Service Kit provides effective static protection in a compact package for the electronics field technician. The entire kit folds to a size that fits easily into most tool cases. Two pockets sewn into the work surface provide storage for the cords.

3M 8501 Portable Field Service Kit. Meets the requirements of MIL-W-87893, Type III.

617-2009. 8501	EACH	58.19

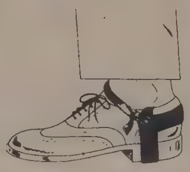
3M 8506 Economy Field Service Kit ***— NEW —***

617-9548. 8506	EACH	31.31

3M 8505 Small Lightweight Kit. Offers the same level of static control as the full-sized 3M 8505 Field Service Kit, yet is small enough to fit in a shirt pocket.

617-8502. 8505	EACH	60.82

Shoe Grounding Assembly



This long lasting assembly effectively grounds personnel when they are in contact with conductive flooring. One size fits most shoes and boots. A comfortable elastic handle strap and 24-inch long conductive ribbon for insertion into the shoe complete the ground path to the operator. To be effective, the shoe grounders must be worn on both feet. Models are available with a one megohm or a 240 K ohms resistor. Contains a one megohm resistor. **Note: The 2051 Grounding Assembly is not to be used in areas where the individual may come in contact with electrical circuitry exceeding 250 volts.**

617-2051. 2051	EACH	10.17

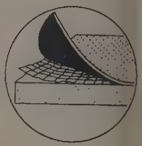
Wrist Strap/ Foot Wear Tester

— NEW —

Shoe electrode sold separately.

617-9519. 740. Tester	EACH	396.37
617-9520. 741. Shoe Electrode	EACH	102.41

Dissipative Three-Layer Floor and Table Mats



3M 8200 Series Mats are soft table and floor mats with a unique three-layer construction. The top layer is durable static-dissipative vinyl which has sufficiently low resistivity to discharge static-laden conductors, yet will prevent the shorting of pins on the backs of printed circuit boards laid on the mat.

8200 Series Floor Mat

Includes one 15 ft. (4,6M) 3040 Ground Cord and two 3050 Female Snap Fasteners (installed).

Stock No.	Mfr.'s Type	Description	EACH
617-8201	8201	4' × 6' Brown Floor Mat	198.59
617-8203	8203	4' × 6' Gray Floor Mat	198.59
617-8205	8205	4' × 6' Granite Floor Mat	198.59

8210 Series Table Mat

Includes two 3050 Female Snap Fasteners (installed) and one 3048 Wrist Strap Grounding System.

617-8211	8211	2' × 4' Brown Table Mat	86.84
617-8213	8213	2' × 4' Gray Table Mat	86.84
617-8214	8214	2' × 4' Blue Table Mat	86.84
617-8215	8215	2' × 4' Granite Table Mat	86.84

Work Station Grounding Kits

Each Work Station Grounding Kit contains:
- **Table Mat; 2 × 4 ft. (0,6 × 1,2m)**
- **Floor Mat; 4 × 6 ft. (1,2 × 1,8m)**
- **3040 Ground Cord; 15 ft. (4,6m)**
- **3048 Grounding System For Wrist Strap/Table Mat**
- **2214 Adjustable Wrist Strap**

8011 Series

A complete static control solution for the work environment that requires more rigid surfaces with higher conductivity. Both table and floor mats are made from black Velostat conductive plastic for optimum static protection.

617-2040. 8011 (Black)	EACH	215.78

8020 Series

The 8020 Work Station Grounding Kits provide the complete static protection offered by all 3M kits. Both the floor and table mats are made from our soft three-layer static-dissipative material.

617-8023. 8023 (Gray)	EACH	259.01
617-8024. 8024 (Blue)	EACH	259.01
617-8026. 8025 (Granite)	EACH	259.01

8030 Series

These kits contain two different types of static control mats. The table mat is made of the soft three-layered, static-dissipative 8200 material (optional color), while the floor mat is of the more rigid, conductive black Velostat material.

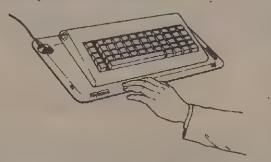
617-8029. 8030 (Gold)	EACH	247.91
617-8033. 8033 (Gray)	EACH	247.91
617-8036. 8035 (Granite)	EACH	247.91

Work Station Monitors

Work Station Monitors use DC current to make a resistance determination. They continuously pulse a signal which is returned to the monitor through a special wrist strap and cord that contain two separate sets of independent conductors. They measure operator resistance to ground, have a resistor by-pass warning, use a safe, low current signal pulse, provide dual ground paths, and have passive system actuation. Remote Input Jack Size: 3³⁄₁₆" × 1" × 1½".

617-0723. 722	EACH	193.80

Keyboard Static Control Pads



3M Static Control Pads drain away static charge instantly when touched. The unique layered construction not only creates a static-free environment, but also cushions your keyboard, prevents slippage and reduces noise.

617-2013. 9210. Keyboard Pad 23" × 9.5", Brown	EACH	28.26
617-9212. 9212. Keyboard Pad 23" × 9.5", Gray	EACH	28.26

Test Kit for Control Surfaces

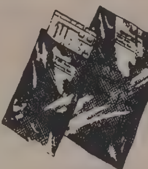
The 3M 701 Test Kit contains a lightweight, user-friendly megohmmeter plus all of the components needed to make testing mats and other surfaces simple and accurate. All of the items are packaged in a foam-lined carrying case.

The kit is compatible with EOS/ESD Standard S4.1-1990, "Worksurfaces-Resistive Characterization" and with MIL-W-87893A, "Workstation, Electrostatic Discharge (ESD) Control."

617-0702. Model 701. Test Kit. Certified/Calibrated	EACH	764.04
617-0701. Model 701. Test Kit	EACH	641.03

2100R/2110R Series Metal-Out — *NEW* — Transparent Static Shielded Bags

These shielding bags are used to encase PC boards, subassemblies, and components in total Faraday cage protection. Bags are testable and reusable.



2100R

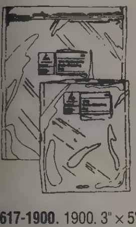
2110R

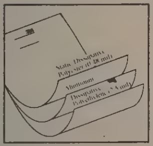
2100R Series Static Bags

617-2023. 2100R. 3" × 5"	PER PK./100	15.30
617-2024. 2100R. 5" × 8"	PER PK./100	32.97
617-2025. 2100R. 6" × 10"	PER PK./100	38.15
617-9521. 2100R. 8" × 10"	PER PK./100	41.92
617-2022. 2100R. 8" × 12"	PER PK./100	47.52
617-9522. 2100R. 10" × 12"	PER PK./100	59.07
617-9523. 2100R. 10" × 14"	PER PK./100	69.89
617-9524. 2100R. 11" × 15"	PER PK./100	82.92
617-9525. 2100R. 15" × 18"	PER PK./100	121.26

2110R Series Static Bags (Reclosable)

617-9526. 2110R. 3" × 5"	PER PK./100	20.09
617-9527. 2110R. 5" × 8"	PER PK./100	43.31
617-9528. 2110R. 6" × 10"	PER PK./100	50.08
617-9529. 2110R. 8" × 10"	PER PK./100	55.08
617-9530. 2110R. 8" × 12"	PER PK./100	62.44
617-9531. 2110R. 10" × 12"	PER PK./100	77.58
617-9532. 2110R. 10" × 14"	PER PK./100	88.88
617-9533. 2110R. 11" × 15"	PER PK./100	105.57





1900/1910 Transparent Static Shielding Bags

1900 Series Static Shielding Bags

- ► Metal-In Static-Shielding Bag
- ► Polyester Layer Thickness: 0.48 Mil

Use this more economical static-shielding bag for less demanding applications where reuse and high durability are not a prime consideration.

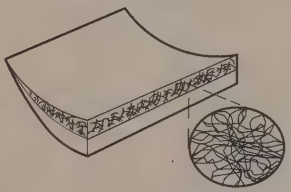
617-1900. 1900. 3" × 5"	PER PK./100	7.19
617-1901. 1900. 4" × 6"	PER PK./100	8.31
617-1902. 1900. 6" × 10"	PER PK./100	15.41
617-1903. 1900. 8" × 10"	PER PK./100	18.99
617-1904. 1900. 10" × 12"	PER PK./100	24.31
617-1905. 1900. 11" × 15"	PER PK./100	30.59
617-1906. 1900. 15" × 18"	PER PK./100	46.20

1910 Series Static Shielding Bags (Reclosable)

- ► 1900 Static-Shielding Bags with a Dual-Track Closure System
- ► Metal-In Static-Shielding Bags
- ► Polyester Layer Thickness: 0.48 Mil

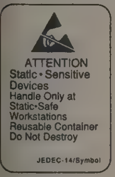
617-1910. 1910. 3" × 5"	PER PK./100	9.81
617-1911. 1910. 4" × 6"	PER PK./100	11.35
617-1912. 1910. 6" × 10"	PER PK./100	21.05
617-1913. 1910. 8" × 10"	PER PK./100	25.93
617-1914. 1910. 10" × 12"	PER PK./100	33.22
617-1915. 1910. 10" × 14"	PER PK./100	36.52
617-1916. 1910. 11" × 15"	PER PK./100	41.77

2750 Static-Shielding Bag — Transparent and Reusable



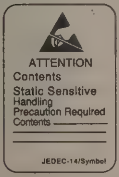
- ► Transparent — 70% Light Transmission
- ► Reusable Without Verification — Electrical Properties Guaranteed for the Life of the Bag
- ► 7 Mils Density Polyethylene
- ► Meets Shielding and Static-Dissipative Requirements of 81705C
- ► Volume-Loaded, Long Lasting Anti-Stat Effective Down to 10% RH
- ► <6% Conductive Stainless Steel Fibers (Non-Corroding)

617-7104. 2750. 3" × 5"	PER PK./100	23.54
617-7106. 2750. 4" × 6"	PER PK./100	33.82
617-7108. 2750. 6" × 8"	PER PK./100	57.45
617-7110. 2750. 8" × 8"	PER PK./100	70.22
617-7112. 2750. 8" × 10"	PER PK./100	81.99
617-7114. 2750. 10" × 12"	PER PK./100	99.56
617-7116. 2750. 10" × 14"	PER PK./100	115.48
617-7118. 2750. 12" × 14"	PER PK./100	136.50



ATTENTION
Static • Sensitive
Devices
Handle Only at
Static-Safe
Workstations
Reusable Container
Do Not Destroy
JEDEC-14/Symbol

7101



ATTENTION
Contents
Static Sensitive
Handling
Precaution Required
Contents
JEDEC-14/Symbol

7102

Anti-Static Labels

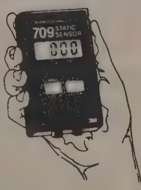
Model 7101. Reusable orange with black type JEDEC-14 symbol.

617-7101. 7101	PER ROLL/500	16.81

Model 7102. Destructible yellow with black type JEDEC-14 symbol.

617-7102. 7102	PER ROLL/500	16.81

Static Sensor

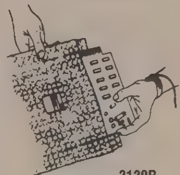


The 3M 709 Static Sensor is an accurate, hand-held, lightweight unit designed to measure static voltages on objects and surfaces. The 709 features a digital (LCD) display and two range settings: LOW to measure up to 1990 volts and HIGH to measure up to 19,900 volts. The sensor comes with one standard 9 volt transistor battery and has a battery test circuit, which displays the battery voltage level on the LCD readout when activated. For remote monitoring or permanent recording, the 709 provides two pin-type output jacks.

617-0710. Model 709C. Static Sensor. Certified/Calibrated	EACH	593.19
617-0709. Model 709. Static Sensor	EACH	470.18

2120R/2126 Metal-Out Cushioned Static Shielding Bags and Shielding Wrap — *NEW* —

The five layer construction combines static shielding with 3M's exclusive open-cell cushioning. Protects against direct discharge, triboelectric charge and static fields.



2120R

2126

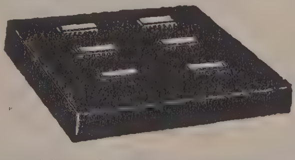
2120R Series Static Shielding Bags

Bags are testable and reusable.

617-9534. 2120R. 6" × 7"	PER PK./100	77.80
617-9535. 2120R. 8" × 7"	PER PK./100	95.83
617-9536. 2120R. 8" × 11"	PER PK./100	119.71
617-9537. 2120R. 10" × 7"	PER PK./100	109.35
617-9538. 2120R. 12" × 11"	PER PK./100	166.05
617-9539. 2120R. 14" × 11"	PER PK./100	186.37
617-9540. 2120R. 14" × 15"	PER PK./100	236.58
617-9541. 2120R. 16" × 11"	PER PK./100	212.06
617-9542. 2120R. 16" × 15"	PER PK./100	263.86
617-9543. 2120R. 18" × 11"	PER PK./100	226.45
617-9544. 2120R. 18" × 15"	PER PK./100	295.80
617-9545. 2120R. 18" × 23"	PER PK./100	443.74

2126 Series Static Shielding Wrap

617-9546. 2126. 24" × 250'	PER ROLL	309.16
617-9547. 2126. 48" × 250'	PER ROLL	604.35



Velostat® Electrically Conductive Foam

This crosslinked polyethylene foam provides both physical and electrostatic protection for sensitive microelectronic parts. Conductive qualities are compounded directly into the material using a carbon impregnation process.

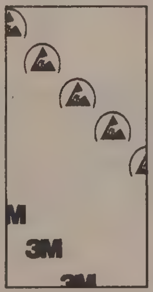
VELOSTAT Crosslinked Polyethylene Conductive Foam

617-2035. 2803. ¼" Thick, 24" × 36" Sheet	EACH	34.43
617-2010. 920210-R. ¼" Thick, Two 4" × 4" Sheets	PER PK./2	3.03
617-2036. 2803. ⅜" Thick, 24" × 36" Sheet	EACH	48.65
617-2011. 920211-R. ⅜" Thick, Two 4" × 4" Sheets	PER PK./2	3.52
617-2037. 2803. ½' Thick, 24" × 36" Sheet	EACH	68.94

VELOSTAT® Electrically Conductive Hinged Container

This rugged container protects your static sensitive PC boards or other devices from all external static fields or static charges on personnel and materials that exceed 20,000 volts. Made of carbon-loaded electrically conductive polyolefin plastic. Strong, light weight, non-corrosive, ideal for storage and shipping. Molded pin hinges are far more durable than traditional snap hinges. **Color:** black.

617-2029. Model 4021. 2⅞" × 1 3⁄16" × ½" Deep	EACH	.86
617-2012. Model 4022. 3⅞" × 1 15⁄16" × ½" Deep	EACH	1.14
617-2030. Model 4023. 2 9⁄16" × 3½" × 1¾" Deep	EACH	1.43
617-2031. Model 4024. 7" × 3½" × 1" Deep	EACH	2.84
617-2032. Model 4025. 7" × 5" × ½" Deep	EACH	6.86

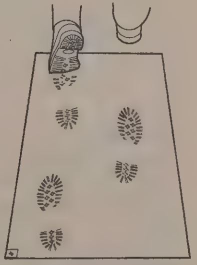


Scotch™ 40 Anti-Static Utility Tape

3M Scotch™ 40 Anti-Static Utility Tape represents a breakthrough in PSA tape technology. This new tape, which generates less than 50 volts on unwind and removal from stainless steel, helps prevent ESD damage to sensitive electronic components in manufacturing environments. Use this tape a third hand to hold work orders, notes or documentation in place, or to hold down obstructions. This tape can also be use as a sealing tape to secure static shielding bags, boxes contacting electronic components, DIP tubes or to hold IC rails.

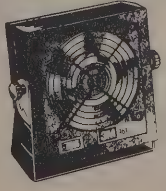
617-7150. 40. ½" × 72 Yds.	PER ROLL	10.22
617-7155. 40. ¾" × 72 Yds.	PER ROLL	15.33

Clean-Walk Mats



- ► Long Lasting 2 MIL Polyethylene Backing
- ► Mats Can Adhere to Any Clean, Dry Floor
- ► Unique Design Has No Beveled Edge or Frame to Trap Dirt
- ► Large Surface Has Room for Two Steps to Effectively Capture Contaminants
- ► 4 Mats Per Box, 30 Sheets Per Mat

617-5801. Model 5800. 18" × 36"	PER BOX/4	115.31



Ionized Air Blower

This compact electrical 961 Ionized Air Blower neutralizes static charge on nonconductive materials and helps prevent static from damaging sensitive electronic components. Designed to be very user-friendly, the ionizer's gentle air flow does not disturb papers or delicate components, and the fan is extremely quiet at low speed. 100/120 V, 50/60 Hz.

617-0961. Model 961. Ionized Air Blower	EACH	408.67

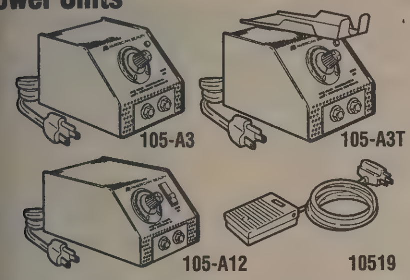
Solder Equipment, Chemicals and Cleaners

Manufacturer	Page
American Beauty	759, 760, 761
Antex Heli-Tube	762
Chemtronics	763, 764
Four Star Chemical	780
G.C. Electronics**	765, 781, 782
Kester Solder	766, 783
Master Appliance	767,768
O.K. Industries	769, 770, 771
Radio Shack	772
Soder Wick	763
Tech Spray	784, 785, 786
Wahl Clipper	773
Weller	774, 775, 776, 777, 778, 779

Product	Page
Adhesive Remover	784
Adhesives	781, 782
Alcohol	782, 785
Anti-Static Products	764, 780, 781, 786
Bar Solder	766
Bread Boards	772
Brushes	782, 786
Butane	765, 767, 768, 776
Butane Soldering Iron/Torches	765
Circuit Works Conductive Pen	763
Cleaners	763, 764, 780, 781, 782, 784, 785, 786
Coatings	781, 784
Cordless Soldering Irons	767, 773, 776
Crimp Tools	771
Cutting Tools and Strippers	772
Defluxers	763, 780, 781, 783, 785
Degreasers	763, 764, 781, 785
Desoldering Pumps	769, 775, 776,
Desoldering Tools/Stations	765, 769, 770, 772, 779
Dispensers	761, 771, 776
Drill	773
Drill Accessories	773
Dusters	763, 764, 780, 781, 785
Epoxy	763, 781, 782
ESD Soldering Stations	762, 774, 777, 778, 779
Extraction/Insertion Tool	769
Filer/Sander	773
Fluid Dispensing	771
Flux Pens	766
Flux Removers	763, 764, 780, 781, 783, 785
Flux/No Clean	783
Fluxes	783
Fume Absorbers	769
Fume Extractor	765, 779
Handles	775
Heat Blowers	768
Heat Guns	765, 768, 775
Heat Sink Compounds	782, 784
Heat Tools	767, 775
Heaters	767, 768
Instant Chillers/Freezers	763, 780, 781, 785
Lead Bender	771
Light Tool	773
Lubricants	763, 780, 781, 782
Magnifying Lamp	765
Masks	784
Overcoat Pen	763
PC Boards	772
Polishing Bar	776
Power Units	759
Quick Bond Kit	763
Rework Nozzles	770
Rework Systems	770, 779
RMA Fluxes	783
Round House	760
Self Contained Vacuum	773
Self Igniting Cordless Soldering Irons	767,776
Silicone Sprays	780
Solder	760, 766
Soldering Gun Kits	777
Soldering Guns	776, 777
Solder Pots	759, 761
Solder Sponges	762, 776
Solder Stand	760, 762, 772, 775, 776
Solder Stations	759, 762, 765, 769, 770, 771, 773, 774, 778, 779
Solder Tips	762, 765, 771, 773, 774, 775, 776, 777, 778
Solder Wick	763, 765, 784
Soldering Aids	765
Soldering Irons	760, 761, 762, 765, 767, 771, 772, 773, 774, 776, 777, 778
Solvent Dispensers	776
Solvents/Cleaners	780, 781
Spiral Wrap	762
Swabs	764, 786
Temperature Control Stations	759, 762, 765, 774, 778, 779
Thermal Tweezers	779
Thinners	783
Tip Cleaner	760
Track Repair Kit	772
Tweezers	759, 770
Ultrasonic Cleaners	760
Ultratorch	767
Water Soluble Fluxes	783
Wick Gun	761
Wire Wrap	762

**See Sections 6 and 15 for additional products.

Power Units



NOTE: All American Beauty power units are standard 120 VAC, 60 Hz, with 3-wire cord and NEMA plug. Also available on special order for 220/240 VAC, 60 Hz. All power ratings based on 50% duty cycle.

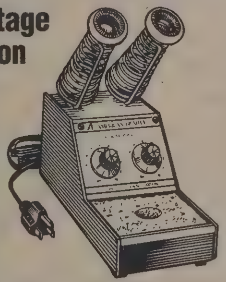
Variable Power Control Unit
Infinitely variable, stepless dialing. Ideal where precise settings and repeatability are essential. Dial reads zero to 100, gives exact guide for duplicating heat output at a later date. **Wattage Range:** 0 to 100 W. Pilot light. Fuse. Ventilated steel case, 3¾" × 3⅞" × 5¼" (9.53 × 9.84 × 13.34 cm) with black and white crackle finish. **Shipping Weight:** 7½ lbs. (3.40 kg).
709-2303. Model 105-A3-120 .... **EACH 226.00**

Variable Power Control Unit with Automatic Switching
Same as 105-A3-120, except for cradle-type ON-OFF switch for wirestripping applications. Power turns ON when handpiece if lifted from cradle, OFF when handpiece is returned to cradle. Eliminates need for footswitch. Extends element life. Saves power. **Shipping Weight:** 7½ lbs. (3.40 kg).
709-6060. Model 105-A3T-120 .... **EACH 280.00**

Medium Power, Infinitely Variable Unit
A power range of 0 to 250 watts (0.8 to 2.8 volts) makes this unit a desirable power source for a wide variety of handpieces. Combines rugged construction with economy and convenience. Stepless dialing from 0% to 100% of power range for precision and repeatability. Has ON/OFF switch, pilot light and fuse. Ventilated steel case with black and white crackle finish. **Size:** 7⅛" × 4½" × 3¹¹/₁₆" (18.10 × 11.43 × 9.37 cm). **Shipping Weight:** 7¾ lbs. (3.52 kg).
709-6050. Model 105-A12-120 .... **EACH 320.00**

Footswitches
For foot control of all power units up to an including 1000 W. Eliminates sparking on contact and removal of electrodes from work. Provides more accurate timing of soldering operations. Recommended in most applications. A rugged industrial switch with six-foot (1.83 m), three-wire cord and NEMA plug. **Shipping Weight:** 1 lb. (.45 kg).
709-2310. Model 10519. **1-4** .... **EACH 44.00**
5-Up .... **EACH 36.00**

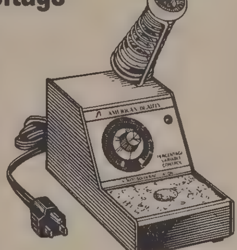
V-3500 Variable Voltage Dual Soldering Station



- **Output Voltage Infinitely Variable from 0% to 100% of Line Voltage**
- **Accepts Miniature and Pencil-Type Irons Up to 60 Watts**
- **3-Conductor Power Outlets for Two Irons (Irons Not Included, Order Separately)**

Gives the operator simultaneous, independent control of two soldering irons for special purposes such as: a) alternate use of two irons to compensate for large heat requirements; b) when different size irons are needed by the same operator; c) controlling iron output during idle situations.
709-3500. Model V3500 .... **EACH 198.00**

V-3600 Variable Voltage Soldering Station

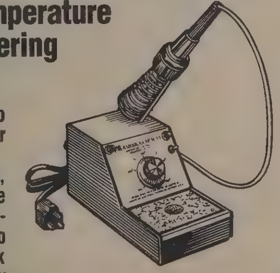


- **Output Voltage Infinitely Variable from 0% to 100% of Line Voltage**
- **3-Conductor Power Outlet for Iron (Iron Not Included, Order Separately)**
- **Spring-Type Iron Holder**

Powers and controls one soldering iron. Plug in almost any iron up to 60 watts to make a complete soldering station.
709-3600. Model V3600 .... **EACH 138.00**

Model V3800S. Sponge for V3600, V3500, 5000, 5100, 5200 Soldering Station.
709-3800. Model V3800S .... **PER PKG./6 8.30**

5000 Series Temperature Controlled Soldering Stations



- **Holds Temperature to Within ±5°F (9°C) or Less**
- **Zero Cross-Switching, Total Grounding of the Station's Iron and All-Metal Housing to Protect Sensitive Work**
- **Iron Completely Isolated when Idling in Station's Spring-Type Holder**
- **Iron Equipped with Paragon Quality Tip No. 646 (Chisel)**
- **Deep-Well, Self-Moistening Tip Cleaner**
- **Meets or Exceeds MIL SPECS, Including DOD-2000-1B**
- **120 AC, 60 Hz 3-Wire Cord, NEMA Plug**

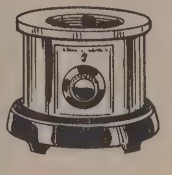
Three 50-watt all-electric stations. Each utilize a different mode of temperature selection to meet different needs. **Overall Size:** Length — 8⅞"; Width — 3¾"; Height — 8¼" (22.54 × 9.53 × 20.95 cm) including soldering iron holder.

Model 5000. Offers continuous temperature selection from 600° to 800°F.
709-5000. Model 5000 .... **EACH 250.00**

Model 5100. Specifications similar to Model 5000 except temperature selection limited to four most used settings — 600°, 650°, 700°, 750°F (316°, 343°, 371°, 399°C).
709-5100. Model 5100 .... **EACH 250.00**

Model 5200. Specifications similar to Model 5000 except that this model has no external temperature controls. Temperature set by supervisor by means of selector control inside of cabinet. Settings limited to 600°, 650°, 700°, 750°F (316°, 343°, 371°, 399°C). Replacement sponges and Paragon Quality® tips are available from your Allied Distributor.
709-5200. Model 5200 .... **EACH 250.00**

General-Purpose Solder Pots

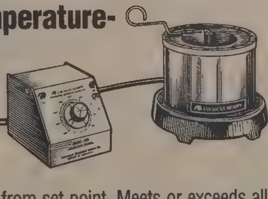


Cast iron crucible. **Depth:** 1½". **Heat Range:** adj. 325°-750°. **Model 300.** Center tapped, ¼-20. I.D. 2¼". **Size:** Height — 5⅛"; Base Dia. — 5¾"; Top O.D. — 4¾". Includes dross skimmer. **Model 600.** Center tapped, 5/16"-18 I.D. 3½". **Size:** Height — 5½"; Base Dia. — 7"; Top O.D. — 6". Cast iron base. Includes dross skimmer.

Stock No.	Mfr.'s Type	Capacity	Elements	Shipping Wt.	EACH
709-1300	300	1 lb.	(2) 160 W	6½ lbs.	264.00
709-1600	600	2½ lbs.	(2) 300 W	9 lbs.	300.00

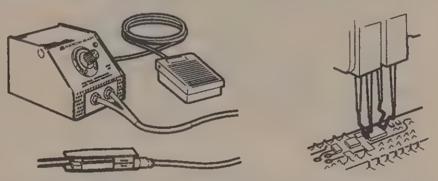
709-6035. Model 9301. Element for 300/301 .... **EACH 26.00**
709-9300. Model 9300. Element for 600 .... **EACH 28.00**

Solid State, Temperature-Controlled Solder Pots



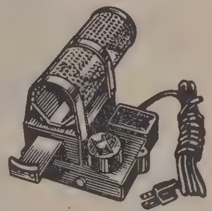
Model 675 features remote control module with solid-state, close tolerance temperature control ± 5°F from set point. Meets or exceeds all MIL spec. requirements including DOD-2001-B. 400-800°F range. 2¾ lb. capacity. Removable dross skimmer included. Permanently attached control module can be placed up to 18" from solder pot.
709Q0675. Model 675 .... **EACH 940.00**

Surface Mount Handwork System Kit



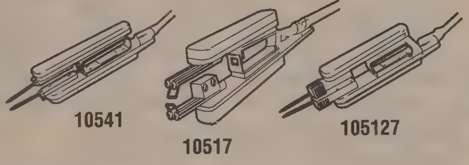
Designed for rework, salvage and manual fabrication of SMD circuits. One tool does it all — holds the SMD, solders and desolders. the handpiece is a micro-tweezer whose gripping points are also heating elements, specially shaped to work between closely spaced SMDs. To protect adjacent components, traces and substrates, no heat is applied until the tweezer is firmly positioned. Only then is current turned on via Footswitch to supply a controlled level of heat — just enough for soldering and desoldering of two size flat pack SMDs. The kit consists of the Power Unit (105A3-120V), a Footswitch (10519), Elements (105156, 105157, 105160), and a 105131 handpiece.
709Q6070. Model 105SMD-120. Kit .... **EACH 452.00**

Temperature Regulating Stands



Maintain soldering iron at preset safe idle temperature, during downtime. Fast return to full on. Extends element life, prevents cooking and detinning tips. Saves current. **Note:** For perforated guard (as shown) add "SG" to catalog number. 3-wire cord with NEMA plug, standard.
709-0475. Model 475. For 100-600 W Irons .... **EACH 138.00**
709-0476. Model 476. For 30-85 W Irons .... **EACH 142.00**
709-4750. Model 475SG .... **EACH 142.00**
709-4760. Model 476SG .... **EACH 150.00**

Tweezers

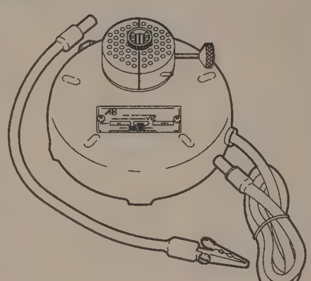


Regular Tweezer
For "squeeze and pull" stripping of thermoplastic insulation from wires up to 14 gauge. Now improved to meet increasing need for faster stripping of "tough" insulations such as Teflon and other PTFE-based materials. Now accepts special flat-blade heating elements designed to mount at 90° for a more powerful bite. Still accepts standard elements that mount at 45°. Strips lengths ⅛" to 1½" (3.18 to 38.10 mm). Use with 15 to 100 W power (50 W for continuous operation; 100 W with intermittent switching). **Length:** 4½" (11.43 cm). **Weight:** 4 oz. (.11 kg). **Cord:** 4' (1.22 m). **Shipping Weight:** 1 lb. (.45 kg).
709-2319. Model 10517. **1-3** .... **EACH 124.00**
4-Up .... **EACH 103.00**
709-2322. Element .... **PER PKG./2 4.00**

Regular Tweezer
For perfect contact and control on microminiature setups. Holds part for soldering. Stainless steel electrodes .078" (1.98 mm) dia., may be formed or bent. Space between electrodes 0" to ⅜" (0 to 9.53 mm). Use with 15 to 100 W power. **Length:** 5" (12.70 cm). **Weight:** 4 oz. (.11 kg). **Cord:** 4' (1.22 m). **Shipping Weight:** 1 lb. (.45 kg).
709-2313. Model 10541. **1-3** .... **EACH 90.00**
4-Up .... **EACH 75.00**

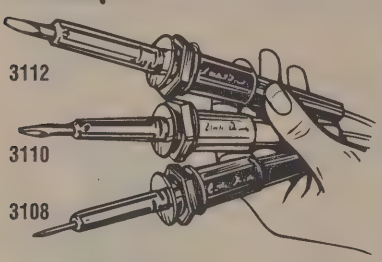
Medium Tweezer
Handles connections up to ½" (12.7 mm) dia. including heavy gauge wire, terminals, lugs, posts, etc. Replaceable stainless steel electrodes .125" (3.18 mm) dia. may be bent to fit job. Use with 15 to 250 W power. **Length:** 7" (17.78 cm). **Weight:** 9 oz. (.26 kg). **Cord:** 4' (1.22 m), ten gauge stranded wire. **Shipping Weight:** 2 lbs. (.91 kg).
709-6040. Model 105127. **1-3** .... **EACH 208.00**
4-Up .... **EACH 173.00**

Model 105V12 Roundhouse



- Industrial and Model/Hobby Applications
- Great for Holding Small Parts
- Versatile Holding Fixture for Your Resistance Soldering Needs
- Provides Return Path to American Beauty Resistance Power Units
- Functions as a Stand-Alone Workstation, Too
- No-Stick Aluminum Vise Resists Solder Build-Up
- Precision Vise Has Positionable Chromed Pins to Securely Hold Rectangular, Round and Even Odd-Shaped Parts
- Requires Only 5½" Benchtop Space
- Comes with 12" Extension Lead with Alligator Clip
- Vise Diameter: 2"
- Overall Height: 3.5"

709-6030. Model 105V12 .... **EACH 66.86**



Little Dandy® Miniature Irons

Here's an economy-line of miniature irons that will stand up to rugged treatment without "letdown" performance. Easy to use, fits comfortably in your hand, and gives you unbelievably long service. Use for custom jobs or production runs. No sweat for Little Dandy Irons!

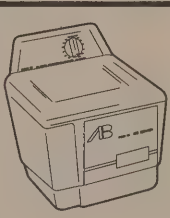
Little Dandy Irons

Stock No.	Mfr.'s Type	Wattage	Tip Size	EACH
709-3108	3108-20	20	1/8"	43.30
709-3110	3110-30	30	3/16"	44.14
709-3112	3112-50	50	1/4"	54.15

Tips for Above

Stock No.	Mfr.'s Type	Size	Description	EACH
709-3643	643	3/16"	Chisel	6.49
709-3617	617	3/16"	Tapered Chisel	6.49
709-3715	715	1/4"	Tapered Chisel	7.42

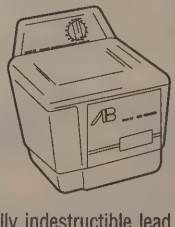
Bench-Top Ultrasonic Cleaners



Model S-5500 Ultrasonic Cleaner
Tank Size: 9 × 5 × 4" (22.86 × 12.7 × 10.16 cm) with a 3-quart capacity. **Overall Size:** 12 × 9 × 7½" (30.48 × 22.86 × 19.05 cm) high. 125 watts RF input. Stainless steel tank. Duralac coated steel housing. Solid-state circuitry on a G-10 board. Stainless steel tank cover included. **Weight:** 14 lbs. (6.35 kg).

709Q6090. Model S-5500 .... **EACH 738.02**
709Q6095. Model S-5510 Deluxe .... **EACH 929.03**

Model S-3300 Ultrasonic Cleaner



- Clean Components and Small Instruments
- 100% American Made
- Stainless Steel

The small size and simple operation of this ultrasonic cleaner makes cleaning practical at work bench or lab table. Completely self-contained and self-tuned with solid state circuitry for dependability and long life. Stainless steel tank with stainless steel tank cover. One pilot-lighted on/off switch. No radio-frequency interference. Virtually indestructible lead zirconate titanate transducer. **Capacity:** ½ gal. (1.8 liters). **Tank Size:** 5½" × 6" × 4" (14.0 × 15.2 × 10.2 cm). 50 W cleaning power. 75 W input. **Shipping Weight:** 7 lbs.

709Q6080. Model S-3300 .... **EACH 488.49**
709Q6085. Model S-3310 .... **EACH 686.55**

Soldering Irons for Industrial Use

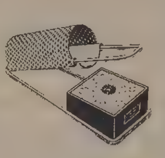
Rugged and dependable soldering irons, ideal for industrial applications. Special iron-plated tips, available for all models, greatly reduc pitting. Casing and body are of one-piece seamless steel. Rubberoid-coated "stay-cool handles. 6-ft. (1.8 m) cords. Choice of models from light to heavy-duty. UL listed.

Model 3138-LT. 100 Watts. Cooling baffle; stand. 12⅞" (32.7 cm) long. Fo 110-120 VAC/DC. **Weight:** 2¼ lbs. (1.02 kg).
709-0045. 1-3 .... **EACH 69.52** **4-Up** .... **EACH 64.1**

Model 3158-LT. 200 Watts. For medium-heavy work. With stand. 13⅝" (34.61 cm) long 110-120 VAC/DC. **Weight:** 3 lbs. (1.36 kg).
709-0048. 1-3 .... **EACH 81.23** **4-Up** .... **EACH 74.4**

Model 3178-LT. 300 Watts. For special production-line applications. With stand. Fo 110-120 VAC/DC. **Weight:** 4 lbs. (1.81 kg).
709-0051. 1-3 .... **EACH 108.49** **4-Up** .... **EACH 99.4**

Tips
709-0062. 45C. Chisel Tip .... **EACH 35.1**
709-0063. 45D. Diamond Tip .... **EACH 37.1**



Safety Soldering Iron Stand

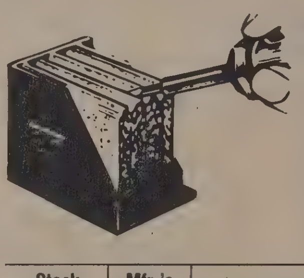
Provides a stable holder for irons up to ⅜" diameter. Perforated guar allows ventilation of element and protects operator from accidenta contact. Handle support adjusts to various iron designs. **Overall Size** 8" × 3" × 4" (203.2 × 76.2 × 101.6 mm). **Shipping Weight:** 1¼ lbs.

709-3575. Model 577 .... **EACH 36.6**

Miniature Tip Cleaner

Low profile case is self-contained water well. Simple wick keeps sponge wet for days. Wipings from solder tip drop into well, leaving sponge free of contaminants. Made of high impact, no-burn plastic and stainless steel. **Size:** 2¾" × 2⅝" × 1¼".

709-0481. Model 481 .... **EACH 15.76**
709-4810. Replacement Sponges .. **PER PKG./6 6.40**



One-Pass Tip Cleaner

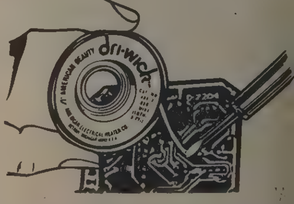
- Handiest Way to Clean Tips
- Eliminates Cleaning Problems

One pass between wet cellulose sponges cleans entire tip. Eliminates the former cleaning problems o tip-plate damage, linting, stray solder pellets. Water-well (¾" deep) keeps sponges wet and ready to use all day. The high impact styrene holder has a non-slip, rubberized base, bored for bench mounting. Ideal for workroom, classroom, and hobbyist.

Stock No.	Mfr.'s Type	Description	Size	Weight	EACH
709-4800	480	Complete tip cleaner	2½" × 2¾" × 3½"	¾ lb.	7.98
709-4801	480-S*	Replacement sponge	—	1 oz.	4.87

*Complete set of 4 sponges.

Dri-Wick® Fine De-Soldering Tool on a Spool



Tested, proved...and backed by American Beauty. Dri-Wick is used in U.S. space program, at flight centers and by subcontractors. Proved most efficient for de-soldering, re-work, salvage. Any place you can put solder, you can remove it in a second with Dri-wick. Lay Dri-wick on joint and apply tip of hot soldering iron. Capillary action draws out all solder, leaves joint clean, ready for salvage or rework. Specially woven copper, each strand coated with water-white resin. Packaged 5 ft. per spool, 25 spools per carton. (No. 484-6, 2½ ft. spools.) Six widths. Test quickly indicate best width to use. Table below gives general guidance.

Stock No.	Mfr.'s Type	Width	EACH
709-4841	484-1	.025" (.63 mm)	1.90
709-4842	484-2	.050" (1.27 mm)	1.90
709-4843	484-3	.075" (1.90 mm)	1.90
709-4844	484-4	.095" (2.41 mm)	2.15
709-4845	484-5	.130" (3.30 mm)	2.35
709-4846	484-6	.200" (5.08 mm)	2.35

— NEW —

Xuron Wick Gun by ATI

Convenient method of automatically dispensing Dri-Wick®. Easily positions wick and allows user to maintain proper pressure on the wick while insulating hands from burns. Automatically cuts used wick. Includes cassette filled with 15' of wick. Specify wick size when ordering.

Xuron Wick Gun
709-4820. 484-20 ......EACH 39.95

Replacement Cassettes

709-4821. 484-21. 1 Replacement Cassette Filled with 15' of Number 1 Wick......EACH 5.65
709-4822. 484-22. 1 Replacement Cassette Filled with 15' of Number 2 Wick......EACH 5.65
709-4823. 484-23. 1 Replacement Cassette Filled with 15' of Number 3 Wick......EACH 5.65
709-4824. 484-24. 1 Replacement Cassette Filled with 15' of Number 4 Wick......EACH 6.95

Dri-Wick® Disposable Dispenser

— NEW —

Economic, manual method of dispensing Dri-Wick®. Comes loaded with 8' of wick. Simply dispose of case when empty.

709-4830. 484-30 ......EACH 3.99

Replacement Parts for Soldering Irons

— NEW —

For Use with Solder Iron	Element			Handle			Terminal Assembly			Casing/Terminal Assembly			Setscrew		
	Stock No.	Mfr.'s Type	EACH	Stock No.	Mfr.'s Type	EACH	Stock No.	Mfr.'s Type	EACH	Stock No.	Mfr.'s Type	EACH	Stock No.	Mfr.'s Type	EACH
3108 120-20	**709-9014**	9014 120-20	**26.00**	**709-3901**	3901	**7.80**	—	—	—	—	—	—	—	—	—
3108 120-25	**709-9015**	9014 120-25	**26.00**	**709-3901**	3901	**7.80**	—	—	—	—	—	—	—	—	—
3108 120-30	**709-9016**	9014 120-30	**26.00**	**709-3901**	3901	**7.80**	—	—	—	—	—	—	—	—	—
3110 120-25	**709-9010**	9010 120-25	**26.00**	**709-3901**	3901	**7.80**	—	—	—	—	—	—	—	—	—
3110 120-30	**709-9011**	9010 120-30	**26.00**	**709-3901**	3901	**7.80**	—	—	—	—	—	—	—	—	—
3110 120-35	**709-9012**	9010 120-35	**26.00**	**709-3901**	3901	**7.80**	—	—	—	—	—	—	—	—	—
3112 120-40	**709-9017**	9012 120-40	**27.90**	**709-3901**	3901	**7.80**	—	—	—	—	—	—	—	—	—
3112 120-50	**709-9018**	9012 120-50	**27.90**	**709-3901**	3901	**7.80**	—	—	—	—	—	—	—	—	—
3112 120-60	**709-9019**	9012 120-60	**27.90**	**709-3901**	3901	**7.80**	—	—	—	—	—	—	—	—	—
3114 120-60	**709-9270**	9270 120-60	**27.90**	**709-3907**	3907	**7.80**	—	—	—	**907-3607**	3607	**22.00**	**709-3747**	3747	**4.50**
3114 120-75	**709-9269**	9270 120-75	**27.90**	**709-3907**	3907	**7.80**	—	—	—	**907-3607**	3607	**22.00**	**709-3747**	3747	**4.50**
3125 120-60	**709-9271**	9271 120-60	**27.90**	**709-3908**	3908	**8.50**	—	—	—	**907-3612**	3612	**24.00**	**709-3747**	3747	**4.50**
3125 120-75	**709-9272**	9271 120-75	**27.90**	**709-3908**	3908	**8.50**	—	—	—	**907-3612**	3612	**24.00**	**709-3747**	3747	**4.50**
3138 120-100	**709-9273**	9273 120-100	**30.70**	**709-3910**	3910	**7.00**	**709-7271**	7271	**11.10**	**907-3610**	3610	**29.60**	**709-3741**	3741	**4.00**
3138 120-130	**709-9274**	9273 120-130	**30.70**	**709-3910**	3910	**7.00**	**709-7271**	7271	**11.10**	**907-3610**	3610	**29.60**	**709-3741**	3741	**4.00**
3138 120-150	**709-9275**	9273 120-150	**30.70**	**709-3910**	3910	**7.00**	**709-7271**	7271	**11.10**	**907-3610**	3610	**29.60**	**709-3741**	3741	**4.00**
3138X 120-175	**709-9276**	9273X 120-175	**38.80**	**709-3910**	3910	**7.00**	**709-7271**	7271	**11.10**	**907-3610**	3610	**29.60**	**709-3741**	3741	**4.00**
3138XY 120-175	**709-9277**	9273XY 120-175	**38.80**	**709-3910**	3910	**7.00**	**709-7271**	7271	**11.10**	**907-3610**	3610	**29.60**	**709-3741**	3741	**4.00**
3158 120-200	**709-9285**	9275 120-200	**39.10**	**709-3910**	3910	**7.00**	**709-7271**	7271	**11.10**	**907-3613**	3613	**31.70**	**709-3740**	3742	**4.50**
3158X 120-250	**709-9286**	9275X 120-250	**44.40**	**709-3910**	3910	**7.00**	**709-7271**	7271	**11.10**	**907-3613**	3613	**31.70**	**709-3740**	3742	**4.50**
3178 120-300	**709-9287**	9277 120-300	**46.00**	**709-3910**	3910	**7.00**	**709-7271**	7271	**11.10**	**907-3615**	3615	**42.40**	**709-3743**	3743	**4.50**
3178X 120-300	**709-9278**	9277X 120-300	**51.20**	**709-3910**	3910	**7.00**	**709-7271**	7271	**11.10**	**907-3615**	3615	**42.40**	**709-3743**	3743	**4.50**
3178X 120-400	**709-9279**	9277X 120-400	**51.20**	**709-3910**	3910	**7.00**	**709-7271**	7271	**11.10**	**907-3615**	3615	**42.40**	**709-3743**	3743	**4.50**
3198 120-550	**709-9280**	9279 120-550	**62.10**	**709-3910**	3910	**7.00**	**709-7271**	7271	**11.10**	**907-3616**	3617	**45.70**	**709-3744**	3744	**4.50**

Replacement Parts for Solder Pots

— NEW —

For Use with Solder Pot	Dross Skimmer			Cordset			Thermostat			Thermostat Knob			Heating Element		
	Stock No.	Mfr.'s Type	EACH	Stock No.	Mfr.'s Type	EACH	Stock No.	Mfr.'s Type	EACH	Stock No.	Mfr.'s Type	EACH	Stock No.	Mfr.'s Type	EACH
300	**709-0302**	302	**18.60**	**709-8074**	874S3	**3.00**	**709-8055**	8055	**26.90**	**709-8057**	8057	**11.70**	**709-6035**	9301*	**23.70**
600	**709-0602**	602	**18.90**	**709-8074**	874S3	**3.00**	**709-8055**	8055	**26.90**	**709-8057**	8057	**11.70**	**709-9300**	9300*	**26.30**
675	**709-0602**	602	**18.90**	**709-8074**	874S3	**3.00**	—	—	—	—	—	—	**709-9302**	9302*	**78.90**

*Two elements required for each pot.

Replacement Parts for Soldering Stations

— NEW —

For Use with Soldering Station	Long, Tapered Tip with Built-In Element			Chisel Tip with Built-In Element			Sponges		
	Stock No.	Mfr.'s Type	EACH	Stock No.	Mfr.'s Type	EACH	Stock No.	Mfr.'s Type	PER PKG./6
T-7 Micro	**709-0610**	T-61	**42.00**	**709-0620**	T-62	**42.00**	**709-0700**	T-70S	**3.50**
V-3500 and V-3600*	—	—	—	—	—	—	**709-3800**	V-3800S	**7.90**
5000, 5100 and 5200**	—	—	—	—	—	—	**709-3800**	V-3800S	**7.90**

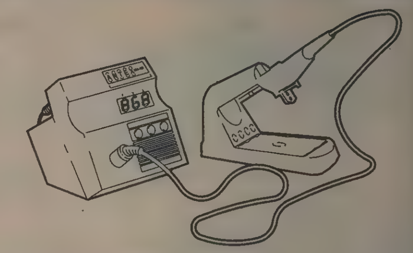
*For other parts or repairs for V-3500 and V-3600 stations, contact factory. **For service and recalibration of 5000 series stations, return to factory.

690-SD Soldering Station

— NEW —

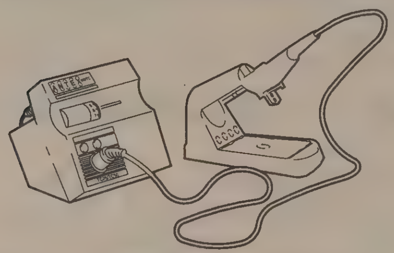
690-SD Digital Read-Out, Multi-Program Station

- **2 Memory Settings**
- **°C or °F Read-Out**
- **Dial-In Tip Selector for Accurate Offset**
- **Lockable, with PIN Security**
- **Basic Self Diagnostics**
- **Uses 180 Series Tips; 180-IS Tip Attached**
- **This Station Features the 690-SD Static Dissipative Soldering Unit, the SD-50 Static Dissipative Temperature Controlled Iron and the ST-6 Bench Stand**



The 690-SD is a Multi-program, digital read-out static dissipative, temperature controlled iron and soldering station. Built to meet the US Mil Std 2000A and EN 1 000 1 5-1, the temperature range is 60 to 450°C and repeatability to 2°C. Program selection and settings are made using three buttons. Each station is shipped with easy-to-use, multilingual instructions.

728-6900. 690-SD. Digital Temperature Control Station. Complete with SD50 50 Watt Soldering Iron and ST6 Stand .... **EACH 395.00**



660TC Soldering Station

— NEW —

660TC Standard Soldering Station

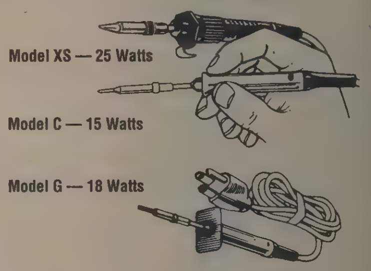
- **Bench or Wall Mounted**
- **Includes ST6 Bench Stand**
- **Fully Compatible with European EMC and CE Regulations**
- **25 Watt Power with TC25; Uses 140 Series Tips**
- **50 Watt Power with TC50; Uses 180 Series Tips**
- **This Station Features the 660TC Soldering Unit, Either the TC25 or TC5 Temperature Controlled Soldering Iron and the ST6 Bench Stand**

The 660TC, designed for Wall or Bench Mounting, has a temperature control range of 65 to 450°C selected by using the thumbwheel potentiometer. Indicator LED show "PowerOn" and "Power to Iron". The included TC50 is an ergonomically designed 50 watt cool handle soldering iron which will take any of the Antex 180 Series Tips. The 25 watt TC25 Iron can be used where finer soldering and lower wattage is required. It will take any of the Antex 140 Series Tips.

728-6600. 660TC. Temperature Control Station Complete with TC25 25 Watt, and ST6 Stand .... **EACH 253.8**
728-6605. 660TC. Temperature Control Station Complete with TC50 50 Watt, and ST6 Stand .... **EACH 253.8**

Soldering Irons

- **Safe for Delicate Components**
- **3-Wire Ground Plug**
- **Slide-On Replaceable Tips**
- **Heat to Full Operating Temperature in 45 Seconds**
- **Long-Lasting Elements**

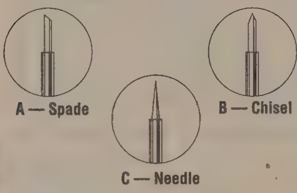


Antex Soldering Irons put the heat into the tip, not into the environment. This gives you faster heat up, quicker recovery times and a cooler handle. It takes only 45 seconds to be ready to solder, while most other irons require a full 2-5 minutes. Antex has also shortened the distance from your fingertips to the end of the tip to give greater control and soldering accuracy. The Antex product line is designed for all electronic and industrial assembly and field service soldering. Each iron features a heating element directly under the tip for optimum thermal efficiency.

728-0220. C/3U. 15 Watts 115 VAC, 665° to 700°F Tip Temperature .... **EACH 19.73**
728-0320. G/3U. 18 Watts 115 VAC, 700° to 750°F Tip Temperature .... **EACH 19.95**
728-0520. XS. 25 Watts 115 VAC, 750° to 800°F Tip Temperature .... **EACH 23.55**

Accessories

728-0200. Model C-E Element .... **EACH 11.00**
728-0300. Model G-E Element .... **EACH 11.00**
728-0500. Model XS-E Element .... **EACH 13.75**
728-0060. ST-6 Stand .... **EACH 12.18**
728-1000. Replacement Sponge .... **EACH .92**



Tips

Series 140 Tips for Models C, G and TC25 Soldering Irons

These tips are designed for .135" heating element shafts and are made from a special copper alloy giving them maximum strength at high temperatures and maximum heat conductivity for rapid heat up and recovery times. All tips easily slide-on over the heating element. There are no set screws to freeze or threads to bind. To change tips, simply remove your old tip and slide the new one on.

Iron-Plated Tips — Long Life

Spade			Chisel			Size (In.)	EACH
Stock No.	Mfr.'s Type	Fig.	Stock No.	Mfr.'s Type	Fig.		
728-1602	6-IS	A	**728-1600**	6-IC	B	3/64"	**2.85**
728-4605	46-IS	A	**728-4600**	46-IC	B	1/16"	**2.85**
728-0056	56-IS	A	**728-0057**	56-IC	B	5/64"	**2.85**
728-1202	2-IS	A	**728-1200**	2-IC	B	3/32"	**2.85**
728-8605	86-IS	A	**728-8600**	86-IC	B	1/8"	**2.85**
728-0053	3-IS	A	**728-0072**	3-IC	B	5/32"	**2.85**

Nickel-Plated Tips — Economy

728-1606	6-NS	A	**728-1604**	6-NC	B	3/64"	**1.90**
728-4615	46-NS	A	**728-4610**	46-NC	B	1/16"	**1.90**
728-5605	56-NS	A	**728-5600**	56-NC	B	5/64"	**1.90**
728-1208	2-NS	A	**728-1204**	2-NC	B	3/32"	**1.90**
728-8615	86-NS	A	**728-8610**	86-NC	B	1/8"	**1.90**
728-0054	3-NS	A	**728-0058**	3-NC	B	5/32"	**1.90**

Needle Tips — Fig. C

728-1800. 8-I Iron. Tapered to .012 .... **EACH 2.95**
728-1801. 8-X Unplated. Tapered to .012 .... **EACH 1.93**
728-0055. 8-G Gold. Tapered to .012 .... **EACH 5.79**

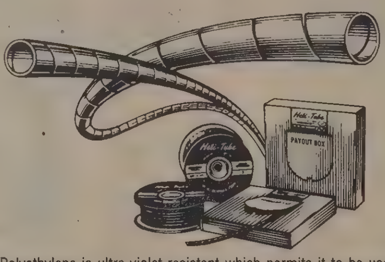
Series 180 Tips (For Models XS, TC50 and SD-50)

These tips are designed for .178" heating element shafts. Designed for soldering larger components, these tips have more copper and, therefore, greater thermal inertia.

Iron Tips

Spade			Chisel			Size (In.)	EACH
Stock No.	Mfr.'s Type	Fig.	Stock No.	Mfr.'s Type	Fig.		
728-0061	180-IS	A	**728-0063**	180-IC	B	3/32"	**4.00**
728-0060	186-IS	A	**728-0066**	186-IC	B	3/64"	**4.00**
728-0062	181-IS	A	**728-0068**	181-IC	B	1/8"	**4.00**
728-0064	183-IS	A	**728-0070**	183-IC	B	1/4"	**4.00**

Heli-Tube



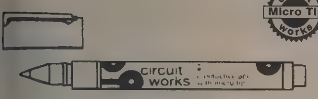
Spirally Cut Cable Wrap

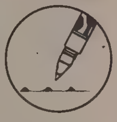
U.L. Recognized Heli-Tube® is a spirally cut expandable plastic cable harness. Bundles wires cables or hoses firmly but allows flexibility. Wrap on like tape, can be re-used, quickly and simpl Resists abrasion and insulates. Clamps bundles t standoff. Dampens vibration. Can have wir breakouts in any orientation. Wires can be routed o re-routed after Heli-Tube® is in place; either ne wires or replacement wires. Stocked by Allied i 100' spools of Clear Polyethylene, Blac Polyethylene, and Black Fire-Resistant Polyethylene The Clear Polyethylene is a low cost material idea for general applications. Not affected by ordinar solvents and extremely resistant to abrasion **Maximum Operating Temperature:** 101°C t 215°F. **Minimum Operating Temperature:** –76°C t –105°F. **MIL Spec. and Approvals:** Fed. Spec LP390, MIL 1631D, MIL P26692. The Blac Polyethylene is ultra-violet-resistant which permits it to be used in direct sunlight for long periods of time. Sam temperature range and MIL spec. as Clear Polyethylene. The Black Fire-Resistant Polyethylene is self-extinguishing **Maximum Operating Temperature:** 93°C to 200°F. **Minimum Operating Temperature:** –19°C to –1°F.

Stock No.	Mfr.'s Type	Material	O.D.	Wall Thickness	Pitch	Maximum Bundle Range	PER 100 FT.	
							1-9	10-49
728-9005	HT1/4C2	Clear Polyethylene	0.250	0.035	0.375	3/16-2"	**13.62**	**12.57**
728-9010	HT1/4C		0.250	0.045	0.375	3/16-2"	**13.75**	**12.70**
728-9015	HT1/2C		0.500	0.062	0.563	3/8-4"	**28.88**	**26.66**
728-9020	HT3/4C		0.750	0.065	0.750	3/4-5"	**43.53**	**40.19**
728-9025	HT1C		1.000	0.095	1.000	1-7"	**83.58**	**77.16**
728-9040	HT1/4UR	Black Polyethylene	0.250	0.045	0.375	3/16-2"	**15.77**	**14.55**
728-9045	HT1/2UR		0.500	0.062	0.500	3/8-4"	**30.58**	**28.23**
728-9050	HT3/4UR		0.750	0.065	0.750	3/4-5"	**47.77**	**44.09**
728-9055	HT1UR		1.000	0.095	1.000	1-7"	**92.33**	**85.24**
728-9030	HT1/4FR-B	Fire-Resistant Black	0.250	0.045	0.375	3/16-2"	**34.32**	**31.38**
728-9035	HT1/2FR-B		0.500	0.062	0.563	3/8-4"	**81.30**	**75.05**
728-9065	HT1/8N	Nylon Natural	0.125	0.015	0.187	1/16-1/2"	**10.19**	**9.40**
728-9070	HT1/4N		0.250	0.025	0.375	3/16-2"	**27.93**	**21.02**
728-9075	HT3/8N		0.375	0.035	0.438	5/16-3"	**43.37**	**40.04**
728-9080	HT1/2N		0.500	0.035	0.500	3/8-4"	**65.40**	**59.95**
729-9085	HT3/4N		0.750	0.032	0.750	1/2-5"	**136.27**	**125.78**
728-9090	HT1N		1.000	0.032	1.000	1-7"	**167.40**	**154.52**
728-9095	HT1/4N-B	Nylon Black Ultraviolet Resistant for Outdoor Use	0.250	0.025	0.375	3/16-2"	**24.49**	**22.45**
728-9105	HT3/8N-B		0.375	0.035	0.438	5/16-3"	**47.84**	**43.85**
728-9110	HT1/2N-B		0.500	0.035	0.500	3/8-4"	**70.00**	**64.17**
728-9115	HT3/4N-B		0.750	0.032	0.750	1/2-5"	**147.03**	**135.73**
728-9120	HT1N-B		1.000	0.032	1.000	1-7"	**183.82**	**169.68**

Products Not Cataloged Are Available — Call 1-800-433-5700 For Price And Deliver

Micro Tip 2200 Circuit Works Conductive Pen





- Fine Line Conductive Traces
- Improved Silver Conductor
- Precise Trace Application
- Makes Instant Conductive Silver Traces
- Dries in Minutes at Room Temperature
- Valved Pen Tip for Easy Application
- Can Be Soldered at Low Temperatures
- Use Where Conductive Traces Are Needed
- Lower the Cost of PCB Fabrication and Repair
- Speed Prototype and Design of PCBs
- Cut Rework Time and Materials

974-0005. 2200-MT..**EACH 16.40**

2400 Circuit Works Conductive Epoxy

- Solderless Electronic Connections
- Quick No or Low Heat Cure
- Strong Electronic Component Bonding
- Maximum Conductivity
- Two Part, Easy to Mix, 1 to 1 Ratio System
- Convenient Tubed Packaging
- Small, Cost Effective Quantities

974-0004. 2400 Conductive Epoxy..**EACH 17.49**

3300 Circuit Works Overcoat Pen

circuit works overcoat pen

- Insulates Against Shorting and Arcing
- Protects Against Abrasion, Moisture and Chemicals
- Helps Prevent Static Discharge Problems on Sensitive Circuits
- Matches Coloring and Durability of Solder Masks for Nearly Invisible Repairs
- Dries in Minutes at Room Temperature with Minimal Shrinkage
- Compatible with the 2200 Circuit Works Conductive Pen

974-0002. 3300. Clear Overcoat Pen..**EACH 15.56**
974-0003. 3300. Green Overcoat Pen..**EACH 15.56**

Rosin Flux Solder Removal Braid

When it comes to removing the Blob, the original Soder-Wick® Brand is still the best. Removing blobs, bridge, icicles or faulty components is quick and easy work for Soder-Wick® Brand Desoldering Braids. Years of nnovative research has expanded our line. Fine-Braid™ with pure white rosin flux.

ESD Packaging

Stock No.	Mfr.'s Type	Size Color	Width	Length	EACH 1-24	EACH 25-99	EACH 100-Up
898-8015	80-1-5	White	0.030	5'	2.54	2.14	1.47
898-8025	80-2-5	Yellow	0.060	5'	2.54	2.14	1.47
898-8035	80-3-5	Green	0.080	5'	2.64	2.22	2.04
898-8045	80-4-5	Blue	0.110	5'	2.93	2.41	2.26
898-8055	80-5-5	Brown	0.145	5'	3.30	2.77	2.55
898-8065	80-6-5	Red	0.210	5'	3.48	2.94	2.69
898-8020	80-2-10	Yellow	0.060	10'	4.30	3.79	3.50
898-8030	80-3-10	Green	0.080	10'	4.38	3.86	3.56
898-8040	80-4-10	Blue	0.110	10'	5.83	4.43	4.08

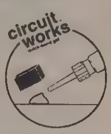
No-Clean Solder Removal Braid

898-6015	60-1-5	White	0.030	5'	2.83	2.37	2.19
898-6025	60-2-5	Yellow	0.060	5'	2.83	2.37	2.19
898-6035	60-3-5	Green	0.080	5'	2.80	2.34	2.16
898-6045	60-4-5	Blue	0.110	5'	3.21	2.76	2.56
898-6055	60-5-5	Brown	0.145	5'	3.49	3.01	2.77
898-6065	60-6-5	Red	0.210	5'	3.59	3.29	2.79
898-6011	60-1-10	White	0.030	10'	4.75	4.19	3.86
898-6021	60-2-10	Yellow	0.060	10'	4.75	4.19	3.86
898-6031	60-3-10	Green	0.080	10'	5.41	4.86	4.51

Rosin Fluxed

898-4000	50-1-5	White	0.030	5'	2.68	2.18	2.00
898-4005	50-2-5	Yellow	0.060	5'	2.68	2.18	2.00
898-4010	50-3-5	Green	0.080	5'	2.78	2.27	2.08
898-5045	50-4-5	Blue	0.110	5'	3.25	2.53	2.31
898-4020	50-5-5	Brown	0.145	5'	3.40	2.77	2.54
898-4025	50-6-5	Red	0.210	5'	3.71	3.03	2.77
898-5029	50-1-10	White	0.030	10'	4.40	3.95	3.62
898-5030	50-2-10	Yellow	0.060	10'	4.40	3.94	3.62
898-5031	50-3-10	Green	0.080	10'	4.54	3.81	3.50
898-5032	50-4-10	Blue	0.110	10'	5.10	4.68	4.31
898-5033	50-5-10	Brown	0.145	10'	5.73	5.15	4.71

4300 Circuit Works Quick-Bond Kit

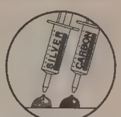


Circuit Works Quick-Bond Gel and Accelerator. Provide strong instant bonding of metals, rubbers, and plastics in design, prototype and repair applications. Not for use on polyethylene or polypropylene.

- Provides Strong, Instant Bonding to Rubbers, Metals and Plastics
- Gel Formula Is Easy to Apply and Stays in Place; Ideal for Filling Gaps, Wide Tolerances or Bonding Dissimilar Materials
- Triple Distilled Cyanoacrylate for Long Shelf-Life and Improved Adhesive Performance
- Quick-Bond Accelerator Insures Reliable Instant Bonding
- Accelerator Is Safe for Metals, Plastics and Rubbers; Contains No Ozone Depleting Materials
- Adhesive Features Excellent Resistance to Impact, Weathering and Thermal Cycling

974-0006. 4300. Quick Bond Kit..**EACH 8.04**

7100/7200 Circuit Works Conductive Grease



Circuit Works Conductive Greases provide electrical and thermal conductivity, proven lubrication properties, and protection from moisture, oxidation and other environmental hazards. 7100 Circuit Works Silver Conductive Grease. Contains pure silver for maximum electrical and thermal conductivity while maintaining superior lubrication properties. 7200 Circuit Works Carbon Conductive Grease. Relies on cost-effective carbon for good conductivity and lubrication properties. Both greases are inert, thermally stable over a wide temperature range, and exhibit excellent lubricating properties when used at low to moderate loads and speeds. Circuit Works greases use advanced silicone lubrication technology to protect components against moisture, corrosion, radiation and oxidation while remaining compatible with metal, rubber and plastic.

974-0011. 7100 Silver Grease..**EACH 11.95**
974-0012. 7200 Carbon Grease..**EACH 11.95**

Chemicals

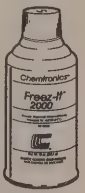
Freez-It® 2000 Antistat

Circuit refrigerant cools sensitive components with minimal risk of static discharge.

- Fast Cooling to –60°F (–51°C)
- Nonflammable
- Antistat Minimizes Static Voltage
- Leaves No Residue
- Nonabrasive, Safe for Most Surfaces
- Contains No Ozone Depleting Compounds
- CFC and HCFC Free

Designed for use on components sensitive to static discharge. Use to locate thermal intermittent components, test for trace continuity, and provide heat sink protection during soldering and desoldering.
898-0045. ES1051. 10 Oz. Aerosol..**EACH 10.88**

Freez-It® 2000



Circuit refrigerant for locating thermal intermittent components.

- Quickly Lowers Temperature to –60°F (–51°C)
- Nonflammable
- Ultra-Pure Formulation Leaves No Residue
- Nonabrasive, Safe for Most Surfaces
- Contains No Ozone Depleting Compounds
- CFC and HCFC Free

Use to locate thermal intermittent components and test PC boards for trace continuity from stress fractures or to cool the entire board. Provides heat sink protection for components during soldering and desoldering operations. Effectively hardens adhesives for easy removal.
898-0010. ES1050. 10 Oz. Aerosol..**EACH 10.50**

Ultrajet® 2000

High pressure duster cleans electronics without scratching delicate surfaces.

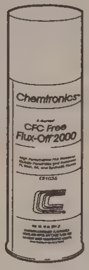
- 82 psig at 77°F
- Nonflammable
- Removes Dirt, Dust and Dry Contaminants
- Deep Cleans Hard to Reach Areas
- Nonabrasive, Safe for Most Materials
- Ultra-Pure, Leaves No Residue
- Contains No Ozone Depleting Compounds
- CFC and HCFC Free
- May Be Used On Energized Equipment

Cleans keyboards, circuit boards, surface mount devices, computers and other electronic components, assemblies, photographic and video equipment.
898-0020. ES1020. 10 Oz. Aerosol..**EACH 10.20**

— NEW —

CFC Free Flux-Off® 2000

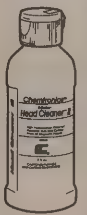
Fast drying aerosol quickly and completely removes R, RMA, RA and synthetic flux.



- Superior Wetting; Solvent Flushes Areas Under Components Clean
- Effective Spot Cleaner For Removing Flux, Oil, Ionic and Non-Ionic Soils
- Noncorrosive, Safe for Most Surfaces
- No Rinsing Required
- No Ozone Depleting Compounds
- CFC and HCFC Free
- Not For Use on Energized Equipment
- Available in 1, 5 and 55 Gallons

Perfect for fast repair and rework. Use on printed circuit boards, SMD pads, plugs, sockets, heat sinks, switches, relays, and chip carriers.
898-0035. ES1035. 10 Oz. Aerosol..**EACH 11.39**

Head Cleaner™ II



Safe and effective cleaner for removing dust, oils and metal oxides from magnetic heads and drives.

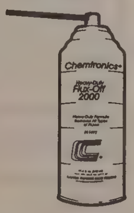
- Reduces Head Wear and Improves Performance
- Evaporates Quickly; Leaves No Residue
- Safe On Most Plastics and Elastomers
- No Ozone Depleting Compounds
- CFC and HCFC Free
- Not for Use On Energized Equipment

Specially formulated to safely clean optical and magnetic tape/disk heads, memory systems, and tape transport mechanisms.
898-0025. ES820L. 8 Fl. Oz. Liquid..**EACH 8.00**

Commercial Chemicals

— NEW —

Heavy-Duty Flux-Off® 2000 (For Commercial Use Only)



Fast drying, nonflammable extra strength solvent removes heavy and encrusted flux deposits.

- Removes R, RMA, RA, and Synthetic Flux
- Effectively Cleans Oil, Grease, and Other Contaminants From PC Boards
- Check Compatibility On Acrylics, ABS, Polycarbonates and Polystyrenes
- Contains No Class I CFC
- May Be Used On Energized Equipment

Removes flux and contaminants from printed circuit boards, connectors, telecommunications devices and other precision equipment.
898-0030. ES1692. 14.5 Oz. Aerosol..**EACH 13.43**

Electronics Cleaner/Degreaser 2000 (For Commercial Use Only)

Fastest drying nonflammable electronics cleaner and degreaser.

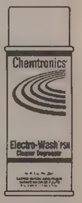
- Nonflammable
- Nonfoaming Ultrasonic Cleaner
- Noncorrosive, Safe for Metals
- Removes Oil, Grease, Dirt, Silicone, Flux, Adhesive and Other Contaminants
- Check Compatibility On Acrylics, ABS, Polycarbonates and Polystyrenes
- Contains No Class I CFCs
- May Be Used On Energized Equipment

Engineered for use on PC boards, motors and electronic devices.
898-0040. ES1601. 14.5 Oz. Aerosol..**EACH 13.09**

Commercial Only Cleaners and Degreasers

— NEW —

Electro-Wash® PSN Cleaner Degreaser



The general purpose, nonflammable cleaner and degreaser safe for use on plastics.

- Contains No CFCs; Contains HCFCs
- Nonflammable; May Be Used on Energized Equipment
- Safe for Use On Most Plastics
- Removes Dirt, Oils, Grease, Oxides and Other Contaminants
- Excellent Wetting and Penetrating Action — Flushes Tight Tolerance Areas Clean
- Evaporates Quickly — Leaves No Residue
- Removes Flux Residues

898-0095. ES1675. 12 Oz. Aerosol..**EACH 19.73**

Pow-R-Wash™ Contact Cleaner

The high performance, nonflammable cleaner safe for use on powered-up contacts and surrounding plastics.

- Contains No CFCs or VOCs; Contains HCFCs
- Nonflammable; May Be Used on Energized Equipment
- Safe for Use On Most Plastics
- Removes Oily Carbon Soils, Dirt, Greases and Other Soils from Contact Surfaces
- Low Surface Tension — Flushes Tight Tolerance Areas Clean
- Evaporates Quickly — Leaves No Residue
- Excellent Dielectric Properties

898-0110. ES1674. 12 Oz. Aerosol..**EACH 21.72**

Value Line

Duster
General purpose duster for electronics and office equipment.

- ► Nonflammable
- ► Moisture Free
- ► Leaves No Residue
- ► Removes Dirt, Dust, and Other Particles
- ► Will Not Scratch or Abrade Surfaces
- ► CFC and HCFC Free

898-0080. CV3012. 10 Oz. .... **EACH 6.55**

Cleaner/Degreaser
General purpose cleaner and degreaser.

- ► Removes Grease, Dirt, Oil, Carbon and Oxidation
- ► Safe for Use on Most Plastics and All Metals
- ► Fast Drying, Leaves No Residue
- ► Flushes Tight Tolerance Areas Clean
- ► Features All-Way Spray Valve
- ► No Ozone Depleting Compounds
- ► CFC and HCFC Free
- ► Not for Use on Energized Equipment

898-0085. CV2116. 10 Oz. .... **EACH 7.73**

No Flash Contact Cleaner (For Commercial Use Only)
Nonflammable, Non-Corrosive Contact Cleaner

- ► Removes Built-Up Grease, Dirt, Oil, Carbon and Oxidation
- ► Restores Electrical Continuity of Contacts and Switches
- ► Excellent Dielectric Properties
- ► Safe for Use on Metals
- ► Fast Drying, Reduces Down Time
- ► Flushes Tight Tolerances Areas Clean
- ► Features All-Way Spray Valve
- ► Check Compatibility with Plastics
- ► May Be Used on Energized Equipment

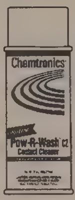
898-0090. CV1116. 12 Oz. .... **EACH 10.55**

No Ozone Depleting Chemistry

Electro-Wash® CZ Cleaner Degreaser
The first non-ozone depleting, nonflammable cleaner and degreaser safe for use on plastics.

- ► CFC/HCFC Free
- ► Nonflammable; May Be Used On Energized Equipment
- ► Safe for Use On Most Plastics
- ► Cleans Encrusted Dirt, Oils, Oxides, and Other Soils
- ► Removes Acrylic Conformal Coatings
- ► Excellent Wetting and Penetrating Action — Flushes Tight Tolerance Areas Clean
- ► Evaporates Quickly — Leaves No Residue
- ► Available in 1, 5, and 55 Gallons

898-0050. ES7100. 12 Oz. Aerosol .... **EACH 30.18**
898-0055. ES7108B. 5 Oz. BrushClean™ System .... **EACH 16.09**



Pow-R-Wash™ CZ Contact Cleaner
The first non-ozone depleting, nonflammable cleaner safe for use on powered-up contacts and surrounding plastics.

- ► CFC/HCFC Free
- ► Nonflammable; May Be Used On Energized Equipment
- ► Safe for Use on Most Plastics
- ► Rapidly Removes Oily Carbon Soils, Greases and Oxides
- ► Low Surface Tension — Flushes Tight Tolerance Areas Clean
- ► Evaporates Quickly — Leaves No Residue
- ► Available in 1, 5 and 55 Gallons

898-0060. ES7300. 12 Oz. Aerosol .... **EACH 31.18**
898-0065. ES7308. 5 Oz. Aerosol .... **EACH 15.00**

Flux-Off® CZ Flux Remover
The first non-ozone depleting, nonflammable flux remove safe for use on plastics.

- ► CFC/HCFC Free
- ► Nonflammable; May Be Used On Energized Equipment
- ► Safe for Use on Most Plastics
- ► Cleans Type R, RMA, RA and Most No-Clean, Syntheti and Water Soluble Fluxes
- ► Low Surface Tension — Flushes Tight Tolerance Area Clean
- ► Evaporates Quickly — Leaves No Residue
- ► Available in 1, 5, and 55 Gallons

898-0070. ES7200. 12 Oz. Aerosol .... **EACH 32.0**
898-0075. ES7208B. 5 Oz. BrushClean™ System .... **EACH 16.3**

Anti-Static

SD-7 Plast-N-Glas®
Non-streaking cleaner for transparent surfaces that protects against electrostatic build-up.

- ► Nonflammable
- ► Controls Static, Cleans and Polishes In One Application
- ► Foaming Spray Won't Run or Drip; Ideal for Optical Surfaces
- ► Prevents Attraction of Dust and Dirt
- ► Compatible with Plastics, Glass and Stainless Steel
- ► Prevents Electrostatic Point Sources
- ► Not for Use on Anti-Glare Coatings or Mesh Screens

898-0115. ES1668. 16 Oz. Aerosol .... **EACH 7.18**

SD-22 Mat and Benchtop Reconditioner
Cleans and reconditions ESD mats and benchtops while adding static dissipative protection.

- ► Nonflammable
- ► Nonabrasive
- ► Noncorrosive, Chloride and Amine-Free
- ► Safe on Surfaces Not Harmed by Water
- ► Will Not Dry Out ESD Mats
- ► Available in 1, 5, and 55 Gallons

898-0120. ES1664T. 16 Fl. Oz. Sprayer .... **EACH 10.91**

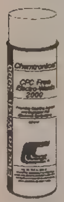
Hand Guard™
Hand lotion specially formulated for electronic technicians.

- ► Nongreasy Formula Contains Aloe Vera and Vitamin E
- ► Special Formulation Minimizes Potential for Static Damage
- ► Contains No Lanolin, Silicone or Mineral Oil that Could Inhibit Solderability of Printed Circuits and Components

Emollients penetrate deeply to relieve dry, chapped or chemically irritated skin. New easy to use pump dispenses the right amount of lotion every time.

898-0125. C805. 8 Fl. Oz. Liquid Pump .... **EACH 5.7**

Precision Cleaners

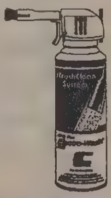


CFC Free Electro Wash® 2000 (For Commercial Use Only)
Fast drying one step cleaner and degreaser safe for most plastics.

- ► High Pressure Aerosol Cleans Soils, Oxidation and Contaminants
- ► Low Surface Tension; Solvent Flushes Area Under Components Clean
- ► Cleans and Degreases in One Step, No Rinsing Required
- ► No Ozone Depleting Compounds
- ► CFC and HCFC Free
- ► Not for Use on Energized Equipment
- ► Available in 1, 5, and 55 Gallons

898-0100. ES1210. 12.5 Oz Aerosol .... **EACH 14.27**

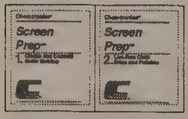
CFC Free Flux-Off® 2000 BrushClean™ System
Cleaning system quickly and completely removes R, RMA, RA, No-Clean and Synthetic Flux



- ► CFC and HCFC Free
- ► No Ozone Depleting Compounds
- ► Not for Use on Energized Equipment
- ► Fast Drying Solvent
- ► Noncorrosive, Safe for Most Surfaces
- ► No Rinsing Required
- ► Excellent Material Compatibility
- ► Superior Wetting; Solvent Flushes Areas Under Components Clean
- ► Effective Spot Cleaner for Removing Flux Oil, Ionic and Non-Ionic Soils

898-0105. ES835B. 5 Oz. BrushClean System .... **EACH 7.09**

Screen Prep™



A convenient to use wet and dry cleaning and static control system for use on monitor screens.

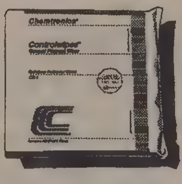
- ► Cleans and Provides a Static Dissipative Treatment
- ► Safely Removes Dust, Dirt and Oils
- ► Controls Static-Generated Dust

Wet pad is premoistened with a unique static control cleaner the removes vision inhibiting contaminants and controls dust. Dry pad wipes screen optically clear.

890-0150. CSP20. #1 3" × 4" Pad; #2 4" × 6" Wiper .... **PER PK./25 18.45**

Controlwipes™

Solvent resistant high absorbency wipe.



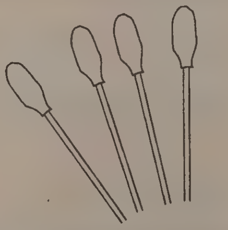
- ► Packaged in a Class 100 Cleanroom Environment
- ► Polyester Cellulose Blend
- ► Strong, Will Not Tear or Shred
- ► High Absorbency and Liquid Retention
- ► Will Not Abrade Surfaces
- ► Spunlaced Fabric Will Not Unravel or Lint
- ► Resistant to Most Solvents, Alcohols and Dilute Acids

Safe for critical applications requiring excellent contamination control on precision instrumentation and other applications.

898-0155. C910. 9" × 9" Wipers .... **PER PK./150 24.18**

Foamtips™

High absorbent precision cleaning swabs with a wide variety of head sizes and shapes.



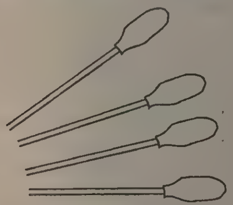
- ► Precision Cleaning Swabs with 100 PPI Polyurethane Foam Head
- ► Purest Medical Grade Foam

Foamtips™ swabs are available in a wide variety of head sizes and shapes. The Foamtips Pro has a blue scrubber side and a soft absorbent side.

898-0170. CF4050 .... **PER PK./50 12.73**

Flextips™

Flexible head is ideal for cleaning optics and small confined areas.



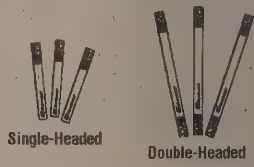
- ► Superior Durability
- ► 100 PPI Open Foam Head
- ► Nonabrasive

Provides gentle, nonabrasive brushing of sensitive surfaces.

898-0175. CX50. Flextips .... **PER PK./50 19.5**
898-0180. CXM50. Flextips Mini .... **PER PK./50 20.5**

Chamois Tips™

The ideal swab for cleaning audio and video heads and optical pick ups.

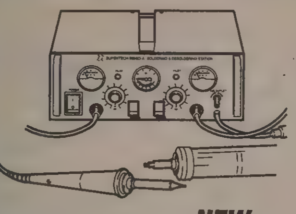


- ► Synthetic Chamois Cloth Head
- ► Flexible, Formable ABS Handle Bends to Clean Hard-to-Reach Areas
- ► Available in Single and Double Headed Styles
- ► Solvent Bonded, No Adhesive Leeching
- ► Material Is Free of Oils and Residues
- ► Use with Head Cleaner™ II to Clean Magnetic Heads and Drives

Chamois Tips clean the magnetic heads of VCRs and other sensitiv assemblies.

898-0160. CC50. Chamois Tips .... **PER PK./50 26.7**
898-0165. CCD50. Double Headed .... **PER PK./50 48.9**

Soldering/ Desoldering Station



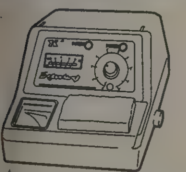
- ► Supertech 999SD-A's Superior Performance Is Unsurpassed in Providing You with the Very Best in State of the Art Temperature Controlled, Hand-Held Soldering/Desoldering Equipment
- ► The Self-Contained "High-Flo" Diaphragm Vacuum Pump Is Engineered to Provide Continuous, Maintenance-Free Operation, Delivering an "Amazingly Quiet" Vacuum Force of Over 60 cm/Hg (23 in/Hg)
- ► Vacuum Pump Actuation Occurs "On-Demand" Via a Finger Actuated, Thyristor Switching Circuit, Located for Ease of Operation on Desoldering Handle
- ► The Nichrome Element Wire Is Precision Wound at the End of the Stainless Steel Barrel to Ensure Maximum Temperature as Close to the Working Surface of the Tip as Possible — This Results in Both a Rapid Heat-Up and Instant Recovery
- ► XYTRONIC's "Hassle Free" Design Incorporates Electronic Circuitry That Enables the User to Fine Tune Tip Temperature from 150°C (300°F) Through 450°C (850°F) without Changing Tips
- ► The Revolutionary "Zero Voltage" Electronic Switching Design Protects Voltage and Current Sensitive Components (CMOS Devices etc.) Against Current and Transient Voltage Spikes Commonly Produced by Poorly Designed, Mechanically Switched Stations
- ► The Power Unit Is Isolated from the A.C. Line by a Transformer and Only 24 VAC Isolated Voltage Is Used to Drive All Heating Elements; the Desoldering Tip Is Grounded Through the Power Unit to Ensure Less than 0.4 Millivolt and 0.5 Ohm Resistance
- ► Engineered to Meet the Demanding Needs of Today's Electronics Industry, Technicians and Assembly Experts Alike; 999SD-A Not Only Increases Productivity but also Achieves New Standards of Quality in Partnership with XYTRONIC's Superior Operating Performance

— NEW —

796-2402. Type 999SD-A	**EACH**	**579.95**

Electronic Temperature Controlled Soldering Station

Ⓤⓛ



- ► Direct Temperature Readout
- ► Temperature Stability
- ► ESD Safe
- ► Heat-Up and Recovery
- ► Temperature Range
- ► Isolated
- ► Lock-Out Feature
- ► Optional Fume Extractor
- ► Interchangeable Tips

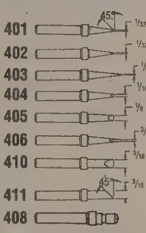
— NEW —

Supertemp temperature controlled soldering stations are constructed of high quality materials and workmanship. **Specifications. Mains Power:** VAC as requested. **Heater Output:** 24 VAC. **Heater Power:** 60 watts. **Soldering Iron:** SIA60. **Temperature Range:** 150°C-450°C (300°F-850°F). **Standard Tip:** 44-415404 (44-016824).

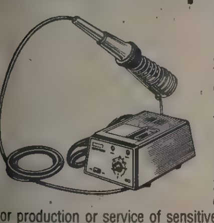
796-2424. Type XY9-60D	**EACH**	**216.42**

Interchangeable Tips for XYTRONIC Stations

796-2404. Type 401	**EACH**	**4.15**
796-2406. Type 402	**EACH**	**4.15**
796-2408. Type 403	**EACH**	**4.15**
796-2410. Type 404	**EACH**	**4.15**
796-2412. Type 405	**EACH**	**4.15**
796-2414. Type 406	**EACH**	**4.15**
796-2416. Type 410	**EACH**	**4.15**
796-2418. Type 411	**EACH**	**4.15**
796-2420. Type 408	**EACH**	**12.79**



Solid-State Temperature Controlled Solder Station



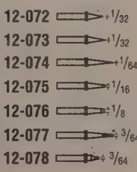
Auto-temp solder station for precise temperature control. Features electronically controlled low-voltage system and LED power indicator. User-set temperature with front panel control. Fast warm-up. CMOS-safe, fully grounded conical tip included — a wide variety of tips available. Provides accurate control over a range of 200° to 900°F with meter indication of exact temperature at all times. Designed or production or service of sensitive electronic circuits. **Specifications. Line Voltage:** 110-125 VAC. **Heater Power:** 48 W. **Heater Voltage:** 24 V. Comes with ip, cleaning sponge, and iron holder.

796-0155. Type 12-070	**EACH**	**119.40**

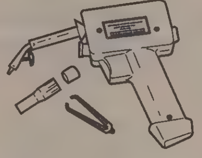
Replacement Tips

ron-clad copper tips — premium quality, long life or continuous heavy-duty soldering.

796-0160. Type 12-072. 1/32	**EACH**	**6.99**
796-0165. Type 12-073. 1/32	**EACH**	**6.99**
796-0170. Type 12-074. 1/64	**EACH**	**7.89**
796-0175. Type 12-075. 1/16	**EACH**	**6.99**
796-0180. Type 12-076. 1/8	**EACH**	**6.99**
796-0185. Type 12-077. 3/64	**EACH**	**6.99**
796-0190. Type 12-078. 3/64	**EACH**	**6.99**



Portable Hi-Speed Desoldering Tool (Corded)

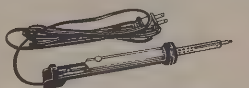


- ► USA Patented
- ► Totally Self-Contained
- ► Light and Compact
- ► Long Life, Extra Hard Heating Head
- ► Quick Release Stainless Solder Collector
- ► Ergonomically Designed
- ► Zero Static Tip
- ► Interchangeable Standard Tips
- ► Highest Quality Materials
- ► Long Life, Low Cost Filter
- ► Electronic Temperature Control
- ► Power On/Off Switch
- ► Economical Price

— NEW —

796-2422. Type 2008	**EACH**	**157.63**

Solder Popper



The Solder Popper combines the popular snap-vacuum solder removal tool with a soldering iron for fast, one-hand operation, and is an excellent tool for field repair or production work. Has a tightly sealed vacuum pump that snaps up all of the solder quickly. A removable reservoir stores solder and cleans out in seconds. The 30 watt iron melts solder rapidly and features a long-life tip that unscrews for easy replacement.

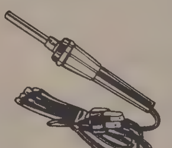
796-2157. Type 12-2157. Solder Popper	**EACH**	**47.61**
796-2160. Type 12-2160. Replacement Tip	**EACH**	**4.70**
796-2161. Type 12-2161. Replacement 'O' Ring Seal	**EACH**	**1.97**

Tempmaster Soldering Iron

The Tempmaster is an iron for practically all uses. The temperature may be user-set from very low (barely melting 60/40 solder) up to 840°F for brute-force work. Lower temperatures at about mid-range are ideal for most assembly and service work. Higher ranges may be used when heating large areas or solder removal braid. Temperature setting is readily adjusted by turning a control on the handle with a screwdriver. The Tempmaster has a grounded tip via 3-prong U-plug for ESD damage prevention. Replacement tips are available in a variety of shapes — see GC Nos. 12-072 through 12-078.

796-1248. Model 12-048	**EACH**	**48.75**

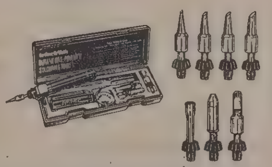
25 Watt Soldering Iron



A well made iron that is tough enough for daily use in production or at the service bench. Three-wire grounded tip prevents inducing ESD failures. A wide range of long-life tips is available (Nos. 12-072 through 12-078) for special applications.

796-1238. Model 12-038	**EACH**	**29.58**

P-1 Cordless, Refillable Butane Gas-Powered Soldering Tool



Designed and engineered for micro-precision soldering applications, the patented Portasol® soldering tool is cordless, refillable, and operates up to 90 continuous minutes on standard butane lighter fuel. The tool is ergonomically designed to minimize operator fatigue, at a weight of 2.5 oz. and length of less than 7", can be used for virtually any anti-static* soldering or desoldering applications. The tool eliminates all risk of leakage current to sensitive circuits and allows anti-static soldering. Product features include a fast, flint sparked ignition in the cap and an adjustable temperature control for providing the equivalent of 10-60 watts of power. This allows the tool to melt solder in less than 40 seconds. Refilling the tool is simple and takes only 20 seconds. The unit comes standard with a 2.4 mm (3/32") soldering tip. A complete range of optional soldering tips, 1.0 mm (1/32"), 2.4 mm (3/32"), 3.2 mm (1/8"), 4.8 mm (3/16"), and heat tool accessories make the unit ideal for a variety of applications. Heat tool accessories include a blow torch, hot blower and hot knife.

797-0230. P-1K-B Kit. Complete kit	**EACH**	**78.82**
797-0225. Portable Unit and P-1-B Unit with 2.4 mm tip	**EACH**	**40.89**
797-0235. Model T-1. 1.0 mm (1/32")	**EACH**	**11.89**
797-0240. Model T-2. 2.4 mm (3/32")	**EACH**	**11.89**
797-0245. Model T-3. 3.2 mm (1/8")	**EACH**	**11.89**
797-0250. Model T-4. 4.8 mm (3/16")	**EACH**	**11.89**
797-0255. Model T-7. Hot Knife	**EACH**	**11.89**
797-0260. Model T-6. Hot Blower	**EACH**	**11.89**
797-0265. Model T-5. Blow Torch	**EACH**	**11.89**

Butane Gas

A premium grade butane for use in the Portasol® soldering iron, Portasol professional and all other similar tools that require butane fuel. This is a quality butane that contains no contaminants and will not clog valves or deactivate catalytic conversion materials.

796-1213. Model 12-133. **1-5**	**EACH**	**4.80**
6-11	**EACH**	**3.71**

Tweezer 226

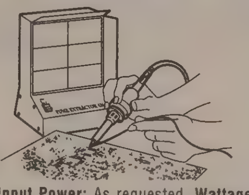
A Unique Concept for SMD Soldering/Desoldering Re-Work

— NEW —

- ► XYTRONIC Tweezer 226 Provides a Fast, Efficient Method to Solder/Desolder Surface Mount Devices
- ► Engineered with a Pair of Highly Insulated, Maximum Efficiency Ceramic Heating Elements that Insure Both Rapid Heat-Up and Instant Heat Recovery
- ► Heater Insulation Exceeds 100 Mohms
- ► Light, Compact and Portable
- ► High Performance, Inexpensive to Operate
- ► Custom Designed Tips are Available

796-2400. 226	**EACH**	**123.94**

Fume Extractor



- ► Built-In High Efficiency, Low Noise, Brushless Mini-Fan
- ► Easy to Replace Activated Carbon Filter Effectively Absorbs Noxious Flux and Lead Fumes
- ► Quickly Removes Smoke and Fumes

Input Power: As requested. **Wattage:** 20-22 W. **Max. Air Volume:** 95/115 CFM. **Outer Dimensions (W × H × D):** 162 × 200 × 120 mm (6.38 × 7.78 × 4.72"). **Weight Excluding AC Cord:** 1500 grams (3.3 lbs.). **Filter Size:** 130 mm². **Filter Weight:** 12 grams.

— NEW —

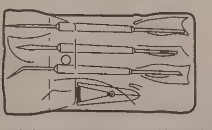
796-2426. Type 426	**EACH**	**115.00**

Heat Gun

UL Listed, 115 VAC. A dual range heat gun for use in heating shrink tube and drying coatings, adhesives, etc. Low temperature range setting produces a nominal 700°F (2,000 BTUs), high range 975°F (4,000 BTUs). Maximum setting draws 10 amps, low heat draws 5 amps. A light weight design that is easy to handle. Designed so that it may be put down to cool without a special holder.

796-1297. Model 12-997	**EACH**	**73.81**

Solder Aid Kit



Seven tools provide complete solder maintenance capabilities to technicians, hobbyists, and electronics designers. Spring-loaded "extra fingers" clamp onto hot wires, while sharp-angles scraping tool cleans away excess solder with ease and accuracy. Hard to reach wires are quickly tamed with versatile wire clip. Smooth out solder beads with handy brush and detail tiny circuitry with 30° angled soldering prong. Kit contains the right tools for every job.

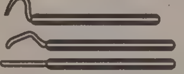
796-9800. Model 9065. **1-5**	**EACH**	**8.37**
6-11	**EACH**	**6.07**

Solder Wick — Pure Copper

Stock No.	Mfr.'s Type	Size	Color Coded	Nominal Size W × Thk.	EACH
796-0441	22-441†	2	Yellow	.060" × .016"	**13.54**
796-0442	22-442†	3	Green	.080" × .028"	**13.37**
796-0443	22-443†	4	Blue	.100" × .028"	**10.25**

*5' length. †25' length.

Precision Probes

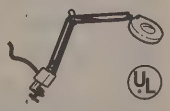


Stainless steel probes that have been popular for a long time are now even more valued as soldering/desoldering aids in SMD assemblies. Stainless is non-contaminating, static-free and will not solder. Needle point tips permit exact placement. Hex handles prevent rolling, allows better grip.

796-2260. Type 12-2260. 5½" Probe — Straight	**EACH**	**4.33**
796-2264. Type 12-2264. 5½" Probe — Hooked	**EACH**	**4.33**
796-2266. Type 12-2266. 5½" Probe — Curved	**EACH**	**4.33**
796-2270. Type 12-2270. Set of all 3 Probes	**EACH**	**12.04**

Long Reach Fluorescent Magnifying Work Lamp

Ⓤⓛ



An excellent lamp for PC repair or rework or other assemblies requiring magnification. A 22 watt circular fluorescent bulb supplies even, shadow-free light for a center-mounted magnifying (3-diopter) lens. Lamp arms reach up to 45". This lamp is UL Listed and well made for many years of use. 5' cord.

796-9801. Model 22-423. **1-5**	**EACH**	**149.79**
6-11	**EACH**	**110.00**

Ultrapure Tip Tinner

— NEW —

Formulated with lead free solder and special fluxing agents, Kester's Tip Tinner provides a safer alternative to re-tinning with standard lead bearing compounds. Kester's Ultrapure Tip Tinner will replenish the original coating while removing excess oxides, extending the life span of the tip, and reducing replacement costs.

Stock No.	Mfr.'s Type	Description	Unit	EACH
833-3000	83-4000-4010	Ultra Pure Tip Tinner Lead Free	0.7 Oz. Cans	4.30

Kester "44" Rosin Core Solder

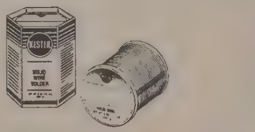
Fast-acting and instant wetting design allows for faster soldering. The non-corrosive, non-conductive flux is ideal where a strong, long-lasting bond is needed. Available in any size ranging from .005" to .250". Also available for Fed Spec QQ-S-571d. Two standard put-ups: 1 lb. and 5 lb. spools; 20 lb. spools available on special order.

Stock No.	Mfr.'s Type	Alloy	Unit Spool	Dia. (In.)	Gauge	PER LB.
833-5040	24-4060-0061	40/60	1 lb.	.062	16	9.24
833-9994	26-4060-0061	40/60	5 lb.	.062	16	45.84
833-5041	24-4060-0066	40/60	1 lb.	.093	16	9.92
833-5060	24-6040-0018	60/40	1 lb.	.025	25	14.88
833-5070	24-6040-0027	60/40	1 lb.	.031	21	12.87
833-5090	24-6040-0039	60/40	1 lb.	.040	19	13.67
833-5100	24-6040-0053	60/40	1 lb.	.050	18	11.86
833-5105	26-6040-0053	60/40	5 lb.	.050	18	66.81
833-5110	24-6040-0061	60/40	1 lb.	.062	16	10.20
833-5120	26-6040-0061	60/40	5 lb.	.062	16	57.83
833-5125	24-6040-0066	60/40	1 lb.	.093	13	10.83
833-5126	24-6337-0010	63/37	1 lb.	.020	25	16.18
833-5130	24-6337-0027	63/37	1 lb.	.031	21	11.86
833-5133	24-6337-0039	63/37	1 lb.	.040	19	11.53
833-5140	24-6337-0061	63/37	1 lb.	.062	16	11.62

285 Mildly Activated Rosin Core Solder

Conforms to Type RMA of Fed Spec QQ-SS-571 and is on the qualified products list. "285" has high-mobility and fast spreading action.

Stock No.	Mfr.'s Type	Alloy	Unit Spool	Dia. (In.)	Gauge	PER LB.
833-5127	24-6337-9700	63/37	1 lb.	.020	25	17.98
833-5129	24-6337-9713	63/37	1 lb.	.031	21	12.86



Kester Solid Wire Solder

Equal to Kester "44" in consistency and use. Standard put-ups are 1 lb. and 5 lb. spools; 20 lb. spools and 50 lb. reels also available

Stock No.	Mfr.'s Type	Alloy	Unit Spool	Dia. (In.)	Gauge	PER LB.
833-5150	14-4060-0125	40/60	1 lb.	.125	11	8.85
833-5160	14-5050-0125	50/50	1 lb.	.125	11	9.58
833-5190	14-6040-0125	60/40	1 lb.	.125	11	9.56

Lead Free Wire Solder

Stock No.	Mfr.'s Type	Alloy	Unit Spool	Dia. (In.)	Gauge	PER LB.
833-5191	14-7016-0125	98/2AG	1 lb.	.125	11	18.18
833-5192	14-7080-1001	95/5SB	1 lb.	.093	13	14.38
833-5194	14-0000-8053	Aquabond	1 lb.	.093	13	13.48

331 Water Soluble Core Solder

More effective than rosin fluxes in soldering difficult metals. Residue can be completely removed with simple water rinse.

Stock No.	Mfr.'s Type	Alloy	Unit Spool	Dia. (In.)	Gauge	PER LB.
833-1455	24-6337-6401	63/37	1 lb.	.020	25	17.98
833-1456	24-6337-6403	63/37	1 lb.	.031	21	12.86

Kester Acid Wire Solder

The Original Acid-Core Solder. Kester Acid-Core Solder meets all the requirements of "general soldering work". Provides the maximum efficiency — the least labor and material costs. Do not use on electrical work.

Stock No.	Mfr.'s Type	Alloy	Unit Spool	Dia. (In.)	Gauge	PER LB.
833-5195	24-4060-2437	40/60	1 lb.	.125	11	8.54

Precision Braid

— NEW —

Kester's Precision Braids combine oxide-free clean copper braided wire and fast acting fluxes formulated to be compatible with Kester's line of rosin, and no-clean wire, paste, and liquid flux products. These desoldering braids provide rapid hea transfer, resulting in accelerated solder removal during rework, or touchup.

Precision Braid Type 44 Rosin Based Flux

Stock No.	Mfr.'s Type	Unit Spool	EACH
833-3005	53-5005-4025	5' × .025	2.04
833-3010	53-5005-4050	5' × .050	2.04
833-3015	53-5005-4075	5' × .075	2.04
833-3020	53-5005-4100	5' × .100	2.30
833-3025	53-5025-4025	25' × .025	8.12
833-3030	53-5025-4050	25' × .050	8.12
833-3035	53-5025-4075	25' × .075	8.12
833-3040	53-5025-4100	25' × .100	9.88

Precision Braid Type 951 No Clean Flux

Stock No.	Mfr.'s Type	Unit Spool	EACH
833-3045	53-5005-1025	5' × .025	2.26
833-3050	53-5005-1050	5' × .050	2.26
833-3055	53-5005-1075	5' × .075	2.26
833-3060	53-5005-1100	5' × .100	2.26
833-3065	53-5025-5025	25' × .025	9.38
833-3070	53-5025-5050	25' × .050	9.38
833-3075	53-5025-5075	25' × .075	9.38
833-3080	53-5025-5100	25' × .100	10.84

Kester Bar Solder

Available in all the tin-lead alloys. Uniform distribution of tin lead alloys provides for more efficient and easy application.

Stock No.	Mfr.'s Type	Composition	Bar Weight	PER LB.
833-4995	04-3070-000	30% tin, 70% lead	1 Lb.	5.02
833-4997	04-4060-000	40% tin, 60% lead	1 Lb.	5.26
833-4998	04-5050-000	50% tin, 50% lead	1 Lb.	6.76
833-5000	04-6040-000	60% tin, 40% lead	1 Lb.	8.50
833-5010	04-6337-000	63% tin, 37% lead	1 Lb.	7.92

Electronic Silver Solder

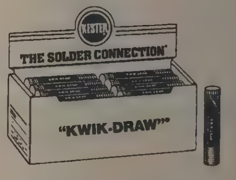
Stock No.	Mfr.'s Type	Composition	Dia.	AWG	Weight	EACH
833-1120	83-7145-0415	2% silver, 62% tin, 36% lead	.020"	24	1 oz.	1.82
833-1125	24-7150-0018	2% silver, 62% tin, 36% lead	.025"	22	1 lb.	17.82
833-1130	24-0062-0053	2% silver, 62% tin, 36% lead	.050"	18	1 lb.	16.24

Flux Pens

Kester Flux Pen is a unique tool for rework and touch-up soldering. It allows controlled application of flux, eliminating the mess from flux bottles. The chisel point allows for wor in very confined spaces. The flux pen is ideally suited for tab assembly no-clean and surface mount rework applicatio because it can deliver flux to a specific area.

Stock No.	Mfr.'s Type	Description	Volume (Oz.)	EACH
833-5196	83-1000-0186	Formula #186 RMA Flux	.33	4.35
833-5197	83-1000-0951	Formula #951 No Clean	.33	3.91
833-5198	83-1002-0450	Formula #450 Organic Acid Water Soluble Flux	.33	4.47

Pocket Pak and Kwik Draw



Handy, clear, plastic pocket size solder dispenser.

Stock No.	Mfr.'s Type	Description	Alloy	Dia. (In.)	Volume (oz.)	EACH
833-5030	83-4000-0000	Pocket Pak	60/40	.031	.5	1.15
833-5020	83-3000-0000	Kwik Draw	60/40	.050	1.3	1.94

245 No Clean Flux Core Solder

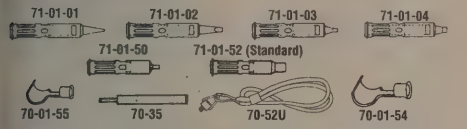
Leaves a low amount of residue which is both visually negligible and electrically safe. Does not require cleaning, i environmentally safe, and needs no CFC solvents.

Stock No.	Mfr.'s Type	Alloy	Unit Spool	Dia. (In.)	Gauge	PER LB.
833-1445	24-6337-8807	63/37	1 lb.	.020	25	17.08
833-1450	24-6337-8800	63/37	1 lb.	.031	21	11.58
833-1105	24-6337-8813	63/37	1 lb.	.040	19	13.50
833-1100	24-6040-8813	60/40	1 lb.	.040	19	13.50
833-1110	24-6040-8800	60/40	1 lb.	.031	21	13.50
833-1115	24-6040-8807	60/40	1 lb.	.020	25	18.60

Mini UT-50

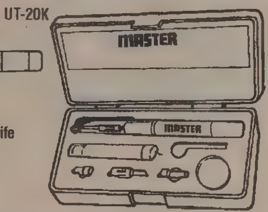
Smartly Styled Pen Sized Heat Tool
The heat tool fits in your shirt pocket for absolute portability. It's as small as a pen, but has the power of an 80 watt soldering iron. Comes standard with a protective cap, soldering tip and heat tip.
861-1520. UT-50 ....**EACH 84.00**

Optional Accessories



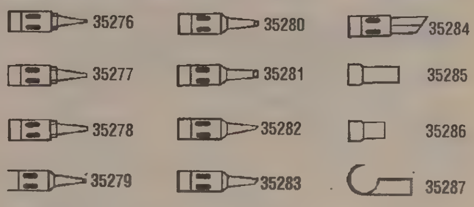
Stock No.	Mfr.'s Type	Description	EACH
861-7101	71-01-01	1 mm dia. tapered needle soldering tip	11.58
861-7102	71-01-02	2.4 mm dia. chisel soldering tip (standard)	11.58
861-7103	71-01-03	2 mm dia. spade soldering tip	11.58
861-7104	71-01-04	3 mm dia. spade soldering tip	11.58
861-7150	71-01-50	2.3/1.5 (O.D./I.D. mm)	13.80
861-7152	71-01-52	5.6/4.7 (O.D./I.D. mm) (standard)	13.80
861-1555	70-01-55	Heat shrink attachment	4.67
861-1554	70-01-54	Heat shrink attachment	4.67
861-0035	70-35	Ejector spanner wrench	3.07
861-0052	70-52U	Carrying strap	4.98
861-5177	51773	Butane fuel — 145 gm (5¹/₈ oz.)	4.16

UltraTorch Soldering Iron, Heat Tool, Torch, and Hot Knife — *NEW* —



- ► **Completely Portable**
- ► **Solder and Desolder**
- ► **Heat Shrink, Torch and Hot Knife**
- ► **Silver Solder**
- ► **Hot Knife Strips Insulation**
- ► **Perfect for Field Service**
- ► **Electric/Electronic Repair**
- ► **Hot Knife Strips Insulation**

The Master Ultratorch heat tool Model UT-20 is an economically priced, refillable butane gas powered soldering iron, flameless heat tool, butane torch and hot knife. It's lightweight and easy to handle. The tool is started with a flint lighter which is built into its cap. The unique interchangeable tips make the UT-20 a perfect tool for engineers, electricians, repairmen, hobbyists and do-it-yourselfers. It's now possible to solder, desolder, heat shrink, torch, strip insulation and do many other applications all with one portable tool. Also use Master Ultratane™ butane fuel to power your Ultratorch. With its special "non-clogging" formula, it's the only approved butane for use with Master Ultratorch heat tools.
861-5000. UT-20. Tool, solder tip and torch tip ....**EACH 33.00**
UT-20K. Complete boxed kit includes tool, plastic case with tool rest, solder tip, heat tip, torch tip, hot knife tip, coil of 60/40 solder and sponge.
861-5020. UT-20K ....**EACH 42.00**
861-5177. 51773. Master Ultratane Butane, non-clogging 145 gm..**EACH 3.90**
861-5277. 10448. Master Ultratane Butane, non-clogging, 26 gm ...**EACH 2.35**

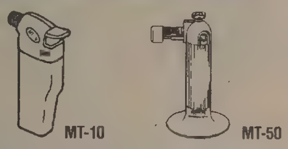


Accessories

Stock No.	Mfr.'s Type	Description	EACH
861-3550	35276	1 mm dia. needle tip	9.65
861-3551	35277	2 mm dia. needle tip	9.65
861-3552	35278	3 mm dia. needle tip	9.65
861-3553	35279	2 mm dia. chisel tip	9.65
861-3554	35280	3 mm dia. chisel tip	9.65
861-3555	35281	4 mm dia. chisel tip	9.65
861-3556	35282	2 mm dia. spade tip	9.65
861-3557	35283	3 mm dia. spade tip	9.65
861-3558	35284	Hot knife tip	9.65
861-3559	35285	Flameless heat tip	9.65
861-3560	35286	Torch tip	9.65
861-3561	35287	Shrink attachment	9.65

Master Microtorch MT-10 and MT-50

— *NEW* —



Perfect for hundreds of Microtorch applications. Aluminum welding, automotive repairs, light brazing, electrical and electronic repairs, lab use, melting plastics, shrinking tubing and connectors, silver soldering, soldering and desoldering, windshield repair, hundreds of other uses.

Master Microtorch Model MT-10

- ► **Compact Palm Size**
- ► **Self Igniting**
- ► **Adjustable Flame**
- ► **Powered by "Refillable" Fuel Cell**
- ► **20 Minute Run Time On Fuel Tank**

A butane powered microtorch. Generates a long sharp blue flame approximately 2500°F/1300°C. Perfect for many microtorch applications. It features a wind resistant flame and waterproof self-ignition system with deadmans switch. The flame can be adjusted by the regulator on the front of the fuel cell. A safety lock insures the switch is not turned on when not in use. The MT-10 runs 20 minutes on a full charge. Its compact size makes it perfect for tool kits and field service kits. Unit comes ready to use with fuel cell included. Refill fuel cell with Master Ultratane butane.
861-5500. MT-10 ....**EACH 18.00**
861-0009. RC-30. Optional refillable fuel cell ....**PER PKG./2 3.64**

Master Microtorch Model MT-50

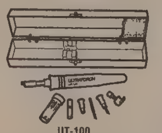
- ► **Hand Held or Tabletop Use**
- ► **Self Igniting**
- ► **Adjustable Flame**
- ► **Built-in Refillable Plastic Fuel Tank**

A butane powered microtorch. This Master microtorch generates a long sharp blue flame of approximately 2500°F/1000°C. Perfect for many microtorch applications. It features a built in self-ignition system with an easy to adjust flame. The flame is adjustable by turning the air control sleeve forward or backward producing a broad or pinpoint flame. The MT-50 has a 2 hour run time on a full charge and is perfect for applications which require continuous heat. Unit comes ready to use with a full tank of butane. Runs on Master Ultratane butane.
861-5501. MT-50 ....**EACH 36.27**

UT-100 and UT-100Si

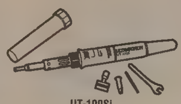
UT-100 — Compact, Yet High-Performance Heat Tool

The Standard Ultratorch comes complete with one ejector for soldering and heat tip applications; and one ejector for torch applications. Also included is a heat shrink attachment, a tool holder, a solder sponge, a spanner wrench, soldering tip, heat tip and a metal carrying case. Optional accessories available.
861-1500. UT-100 ....**EACH 109.00**

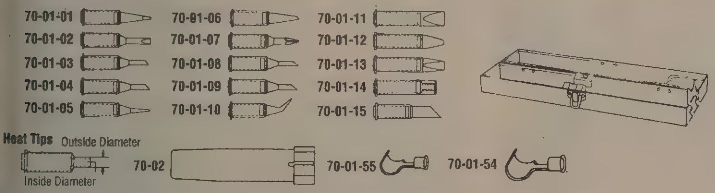

UT-100

UT-100Si — Self Igniting Model

UT-100Si comes complete with one ejector for soldering, a soldering and heat tip, a spanner wrench, open end wrench, shrink attachment and protective cap. All existing UT-100 soldering and heat tips will also fit your new self-igniting UT-100Si Ultratorch. **Note: The self-igniting Ultratorch operates only as a soldering iron and heat tool. NO TORCH MODE.**
861-1311. UT-100Si ....**EACH 109.09**


UT-100Si

Optional Accessories



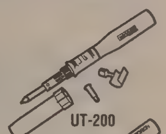
All available soldering and heat tips and attachments are interchangeable between UT-100 and UT-100Si.

Stock No.	Mfr.'s Type	Description	EACH
861-0101	70-01-01	1 mm dia. tapered needle soldering tip	11.58
861-0102	70-01-02	3.3 mm dia. chisel soldering tip (standard)	11.58
861-0103	70-01-03	2 mm dia. spade soldering tip	11.58
861-0104	70-01-04	3 mm dia. spade soldering tip	11.58
861-0105	70-01-05	0.5 mm dia. tapered needle soldering tip	11.58
861-0106	70-01-06	2 mm dia. micro spade soldering tip	11.58
861-0107	70-01-07	0.5 mm dia. square tapered pyramid soldering tip	11.58
861-0108	70-01-08	2 mm dia. 35° spade soldering tip	11.58
861-0109	70-01-09	3 mm dia. 35° spade soldering tip	11.58
861-0110	70-01-10	1 mm dia. offset tapered needle soldering tip	11.58
861-0111	70-01-11	8 mm dia. high powered chisel soldering tip	13.80
861-0112	70-01-12	3 mm dia. high powered round head needle soldering tip	13.80
861-0113	70-01-13	5 mm dia. high powered long tapered chisel and soldering tip	13.80
861-0114	70-01-14	8.4 tip adapter (4 mm dia. × .7 pitchman)	13.80
861-1181	70-01-15	7 mm dia. 45° spade soldering tip	13.80
861-7016	70-01-16	Hot knife tip	18.47
861-1550	70-01-50	2.5/1.59 (O.D./I.D. mm)	13.80
861-1551	70-01-51	4.25/3.3 (O.D./I.D. mm)	11.58
861-1552	70-01-52	(Standard) 5.7/4.9	11.58
861-1553	70-01-53	8.0/7.4	11.58
861-0002	70-02	Protective cap	6.05
861-0040	70-40U	Metal box for tool	16.14
861-5177	51773	Butane fuel — 145 gm (5¹/₈ oz.)	4.16
861-1555	70-01-55	Heat shrink attachment	4.67
861-1554	70-01-54	Heat shrink attachment	4.67

UT-200 and UT-200Si

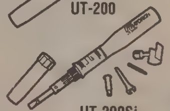
UT-200 — You Can Really Depend On This Power!

They're the "big brothers" of the Ultratorch family, with more power (BTUs) to do the job. The Jumbo UT-200 includes one ejector for soldering and heat tip and one ejector for torch applications. Also included is a soldering tip, heat tip, heat shrink attachment and protective cap.
861-1525. UT-200 ....**EACH 131.00**

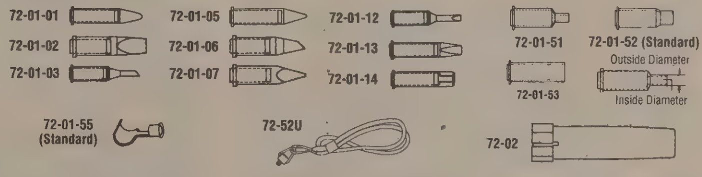

UT-200

UT-200Si — Self Igniting Model

The Jumbo UT-200Si comes complete with a soldering and heat tip, spanner wrench, open end wrench, heat shrink attachment, ejector for soldering and heat applications, and protective cap. All existing Jumbo tips will also fit your new self-igniting version. **Note: The self-igniting Ultratorch operates only as a soldering iron and heat tool. NO TORCH MODE.**
861-1312. UT-200Si ....**EACH 142.00**


UT-200Si

Optional Accessories



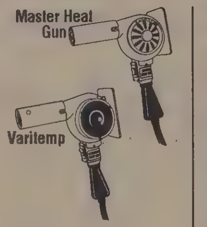
Stock No.	Mfr.'s Type	Description	EACH
861-7201	72-01-01	3 mm dia. tapered needle soldering tip	26.54
861-7202	72-01-02	10 mm dia. chisel soldering tip (standard with 200)	26.54
861-7203	72-01-03	4 mm dia. spade soldering tip	26.54
861-1186	72-01-05	1.5 mm dia. tapered needle soldering tip	26.54
861-7206	72-01-06	4 mm dia. micro spade soldering tip	26.54
861-7207	72-01-07	1.5 mm dia. tapered pyramid soldering tip (standard with 200)	26.54
861-7212	72-01-12	4 mm dia. chisel soldering tip	26.54
861-7213	72-01-13	12.5 mm dia. spade soldering tip	26.54
861-7214	72-01-14	Soldering tip adapter	26.54
861-7251	72-01-51	5.6/3.6 (O.D./I.D. mm)	26.54
861-7252	72-01-52	8.7/6.6 (Standard) (O.D./I.D. mm)	26.54
861-7253	72-01-53	11.5/9.7 (O.D./I.D. mm)	26.54
861-7255	72-01-55	Heat shrink attachment	6.80
861-7261	72-52U	Carrying strap	3.07
861-7256	72-02	Protective cap	11.25
861-5177	51773	Butane fuel — 145 gm (5¹/₈ oz.)	4.16

Master Ultratane™ Butane — *NEW* —

The only approved butane recommended to fuel all Master butane powered heat tools including all Ultratorch and Microtorch products. Butane is produced using purest refining method possible. Special non-clogging formula permits extended use. Contains no CFCs (chlorofluorocarbons). Will not harm the ozone layer. Each canister comes with a convenient single piece universal filling tip. Available in two sizes; 5¹/₈ oz. (145 gms.) and ¹⁵/₁₆ oz. (26.5 gms.) canisters.

861-5177. 51773. Master Ultratorch Butane. 5¹/₈ Oz. (145 gms.). Canister ....**EACH 4.16**
861-5277. 10448. Master Ultratane Butane. ¹⁵/₁₆ Oz. (26.5 gms.). Canister ....**EACH 2.45**

Master Heat Gun® and Varitemp®



Both Master Heat Gun and Varitemp heat guns provide the following features:

- **Double Protected Element Housing**
- **Reinforced, Mica-Insulated Ceramic Heating Elements**
- **Sturdy Die-Cast Aluminum Housing Is Rugged and Light Weight**
- **Adjustable Air Intake Controls Air Volume And Temperature Range**
- **Powerful High Speed Universal Motor**
- **Externally Accessible Brush Holders**
- **Three Position ("Off-On-Hot") Rocker Switch**
- **Non-Slip Rubber Backed Base Which Permits Full 90° Rotation**
- **Contoured, Well-Balanced Handle**
- **Oil Resistant Neoprene 3-Wire Cord Set**

Master Heat Guns®

The number one choice of industry. Has a rugged aluminum die-cast construction for heavy duty use. Four models provide temperatures up to 300°F, 500°F, 750°F and 1,000°F. "Wherever fast, portable flameless heat is the need."

Varitemp®

- **The Varitemp Provides A Safe Way To Heat Sensitive Materials Such As Thermoset Resins and Potting Compounds, When Exact Temperatures Are Needed**
- **The Dial-In Temperature Control Can Be "Locked-In" To The Required Temperature For Each Individual Job. This Feature Is Unique In That Once It Is Locked, It Cannot Be Accidentally Changed To An Incorrect Temperature**

The Variable temperature version of the Master Heat Gun. One model provides temperatures from ambient to 1000°F. It also has identical air flow characteristics to the Master Heat Gun. We recommend using the Varitemp in the laboratory where specific temperatures are required. It is also recommended for spot drying, defrosting and softening thermoplastic sheet, rod and tubing. All Master Heat Gun® attachments are interchangeable with the Varitemp® heat gun.

Master Heat Gun

Stock No.	Mfr.'s Type	Temp. °F	Temp. °C	Volts	Amps	Watts	EACH
861-1602	HG-201A	200-300	93-149	120	5.0	600	**99.45**
861-1603	HG-301A	300-500	149-260	120	12.0	1440	**99.45**
861-1604	HG-501A	500-750	260-399	120	14.0	1680	**99.45**
861-1605	HG-751B	750-1000	399-538	120	14.5	1740	**99.45**

Varitemp Heat Gun

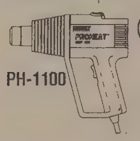
Stock No.	Mfr.'s Type	Temp. °F	Temp. °C	Volts	Amps	Watts	EACH
861-1506	VT-750C	Ambient-1000	538	120	14.5	1740 Max.	**142.45**

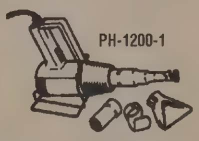
Replacement Heating Element Kits and Optional Accessories

Stock No.†	Mfr.'s Type	Description	Ship Wt. (Oz.)	EACH
861-1630	HAS-042K	Element kit for HG-201A	4	**18.76**
861-1631	HAS-041K	Element kit for HG-301A	4	**18.76**
861-1632	HAS-011K	Element kit for HG-501A	4	**18.76**
861-1633	HAS-043K	Element kit for HG-751B and VT-750C	4	**18.76**
861-1007	BAS-103K	Brush and Spring Kit (All Models) (Kit of 2)	.1	**2.70**
861-1660	A-160-HG	Shrink tubing attachment for tubing to 3/4" O.D.	—	**10.80**
861-1670	A-170-HG	Shrink tubing attachment for tubing from 3/4" to 2" O.D.	—	**13.02**
861-1706	51309*	Pinpoint heat attachment	—	**14.76**
861-2670	A-203-HG	Extra-wide (8") shrink tubing attachments for tubing up to 3/4" O.D.	—	**34.25**
861-5113	51013	Form fitted storage and carrying case	—	**48.14**
861-5124	51024*	Spreader attachment, spreads heat to 8"	—	**36.36**
861-3020	30202*	Solder-sleeve attachment	—	**23.98**
861-5142	51542	Glass protector attachment	—	**8.40**
861-5143	51543	Spreader attachment spreads heat to 2 1/4"	—	**8.40**
861-5144	51544	Reducer attachment reduces heat to 7/8"	—	**8.40**

*Not recommended for use with HG-751B and HG-752A models. †All accessories and replacement parts carried in Allied's inventory. Contact your local Allied sales office for assistance.

Proheat® Heat Gun and Proheat Varitemp® Heat Guns





Proheat® Heat Gun

This heat gun with temperature settings of 570° and 1050°F (299 and 565°C); and airflow of 15 CFM at 3650 FPM meets the requirements of most materials. The variety of attachments available makes the Proheat heat gun adaptable for a wide variety of uses including aircraft and marine applications.

The Proheat Features a DC permanent magnet motor that is compatible with all electrical frequencies. The compact, ergonomically-designed *Lexan® housing, enclosed ceramic heating element and wrap-around air intake assure you of a lightweight (1 lb. 10 oz.), easy-to-use source of flameless heat whether you're working with shrinkable packaging materials, spot-drying paint, bending plastics/laminates or activating adhesives.

*Registered Trademark of General Electric.

Proheat Varitemp® Heat Gun

This easy-to-use heat gun offers all the features of the Proheat heat gun, plus variable temperature control that allows the user to dial in any temperature from ambient to 1050°F (565°C). The airflow rating is 15 CFM at 3650 FPM. Its thermostatic control maintains the pre-selected temperature and prevents heat back-up or overheating when airflow is restricted. The Supervisor Temperature Lock-in feature allows pre-setting or temperature and sealing of access opening to assure compliance with pre-set temperature.

The Proheat Varitemp is suited to applications such as activating adhesives and potting compounds, curing and setting adhesives and epoxy resins. It is ideal for use in confined spaces or for applications where its lightweight construction can prevent operator fatigue.

Proheat® Heat Gun

Stock No.	Mfr.'s Type	Description	Temp. °F	Temp. °C	Volts	Amps	Watts	Hz	EACH
861-1003	PH-1100	Proheat Heat Gun	570 1050	299 565	120	6 12	750 1500	60 60	**74.82**

Proheat Varitemp® Heat Gun

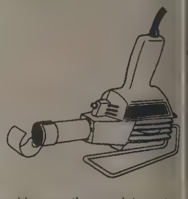
Stock No.	Mfr.'s Type	Description	Temp. °F	Temp. °C	Volts	Amps	Watts	Hz	EACH
861-1200	PH-1200	Proheat Varitemp Heat Gun	1050	565	120	12 Max.	1500 Max.	60	**135.27**
861-1201	PH-1200-1	Complete heat shrink system. Includes Proheat Varitemp Heat Gun, bench stand, reducer and specialty connector attachment	—	—	—	—	—	—	**158.82**

Optional Accessories

Stock No.†	Mfr.'s Type	Description	EACH
861-3504	35004	Heating element kit for PH-1100	**28.46**
861-3531	35031	Element kit, 120 V with thermocouple for PH-1200	**31.70**
861-3517	35017	Shrink attachment	**10.53**
861-3516	35016	Spreader attachment	**15.44**
861-3526	35026	Nozzle shield	**9.45**
861-3527	35027*	Specialty connector with reducer attachment	**30.78**
861-5216	35216	Bench stand	**8.87**
861-5079	50379*	Reducer attachment	**17.27**
861-5198	51598*	Specialty connector	**14.29**

*For use with PH-1200 only. †Available accessories are designed to be used with both the Proheat Heat Gun and the Proheat Varitemp Heat Gun.

The Master-Mite® Heat Gun



The Master-Mite is a lightweight complete bench-top heating system, equipped to perform jobs without the excess air flow. It comes standard with and adjustable stand, a standard 650°F (343°C) heating element and a heat shrink attachment. The air flow rating is 3.8 CFM 700 FPM.

Weighing only 28 ounces, the Master-Mite can be hand-held for jobs such as vinyl repair or drying film without causing operator fatigue. The adjustable stand allows the operator to work with both hands free. The quiet operation and low power draw (4.5 amps, maximum) of the brushless continuous-duty motor, assures you of a quiet work environment. **Size:** 8.875" L × 3.375" W × 7" H. **Nozzle Opening Dia.:** 1". **Heating Element:** 3.875" long. **Net Weight:** 1.75 lbs. **Shipping Weight:** 3 lbs. **Cord Length:** 7 ft.

Stock No.	Mfr.'s Type	Volts	Hz	Amps	EACH
861-1610	10008	120	60	4.5	**71.09**
861-2609	10009	220	50/60	2.0	**71.09**
861-2610	10010	240	50/60	1.9	**71.09**

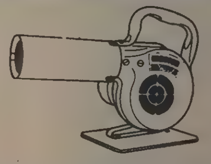
Replacement Heating Elements

Stock No.	Mfr.'s Type	Color	Temp. °F	Temp. °C	Volts	Watts	EACH
861-1615	20012	Blue	500	260	120	340	**20.36**
861-1613	20013	Silver	650	343	120	475	**20.36**
861-1620	20014	Black	800	427	120	525	**20.36**
861-2633	20033	Blue	500	260	220	400	**20.36**
861-2634	20034	Silver	650	343	220	450	**20.36**
861-2635	20035	Black	800	427	220	500	**20.36**
861-2636	20160	Blue	500	260	240	400	**20.36**
861-2161	20161	Silver	650	343	240	450	**20.36**
861-2162	20162	Black	800	427	240	500	**20.36**

Attachments and Accessories

Stock No.	Mfr.'s Type	Description	EACH
861-2230	20230	High temperature pinpoint attachment with element kit (standard with 10011)	**30.87**
861-3201	30201	Solder preform attachment	**22.67**
861-1709	40060	Deflector attachment-slide-on deflector encapsules shrink tubing with even heat distribution (standard)	**5.31**
861-1710	40061	Pinpoint attachment — 1/4" concentration of heat exactly where you want it	**11.58**
861-1711	50675	Adjustable stand (standard)	**7.24**
861-1774	51074	High temperature pinpoint attachment (standard with 10011) For use ONLY with heating element #20217	**13.51**

The Masterflow® Heat Blower



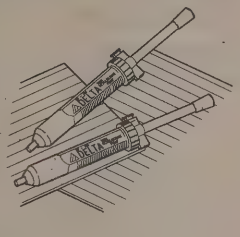
The Masterflow heat blower is the perfect answer wherever a continuous high volume of dry hot air is needed. It is ideal for installation on machinery and equipment for localized heating applications. The non-slip rubber-backed base permits a full 90° rotation of the blower for use in any position on workbench or assembly line. Three models offer temperatures of 300°, 500° and 750°F (150°, 260°, 400°C). The Masterflow features a quiet, oversize squirrel-cage blower which delivers up to 47 CFM 2,200 FPM through a 1.875" diameter nozzle and a brushless shaded-pole motor for continuous 24-hour operation. The hot/cold/off toggle switch permits blowing cool air which cools down the heating element after use and eliminates residual heat. **Overall Dimensions:** 12" L × 6" W × 9" H, 6" × 6" base (except AH-301 and AH-302, 9" L × 6" W × 9" H. **Nozzle Diameter:** 2.625" O.D., 1.875 air opening. **Net Weight:** 6 lbs. **Shipping Weight:** 8 lbs. **Cord Length:** 6 ft.

Stock No.	Mfr.'s Type	Temp. °F	Temp. °C	Volts	Amps	Watts	EACH
861-1607	AH-301	300	150	120	10.0	1200 (UL/CSA)	**163.82**
861-3607	AH-302	300	150	220-240	5.2	1200	**163.82**
861-1608	AH-501	500	260	120	14.0	1680 (UL)	**163.82**
861-3608	AH-502	500	260	220-240	7.3	1680	**163.82**
861-1609	AH-751	750	400	120	18.0	2160 (UL/CSA)	**163.82**
861-3609	AH-752	750	400	220-240	9.4	2160	**163.82**

Replacement Heating Elements

Stock No.	Mfr.'s Type	Description	Volts	Watts	EACH
861-0815	815	Replacement for AH-301	120	1200	**19.62**
861-0816	816	Replacement for AH-302	220/240	1200	**19.62**
861-3310	30310	Replacement for AH-501	120	1680	**24.90**
861-3311	30311	Replacement for AH-502	220/240	1680	**24.90**
861-1109	30312	Replacement for AH-751	120	2160	**26.98**
861-3313	30313	Replacement for AH-752	220/240	2160	**26.98**

Desoldering Pump

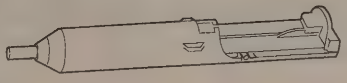


- ► Durable Corrosion Resistant Plastic Construction
- ► Precision Metal Plunger
- ► Corrosion Treated Springs
- ► Regulated Return (1 Millisecond ±30%)
- ► Insulated Vacuum Pulse
- ► Uniform Reset Pressure (11 in./lbs. ±20%)
- ► Cushioned Shock Reduction (Pulse Release to Minimize Board Damage)

A specially engineered desolder pump made to high specifications and providing precise repeatable operation. Fitted with a Teflon Tip.

827-0100. DP-100. High Vacuum Desoldering Pump......................EACH 20.70
827-0200. DP-200. High Vacuum Desoldering Pump, ESD Safe......EACH 29.06
827-0101. DPT-100. 1 Tip for DP-100/140..EACH 3.68
827-0201. DPT-200. 1 Tip for DP-200 ....EACH 4.95

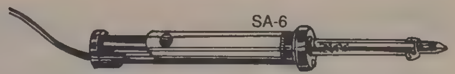
Desoldering Pump

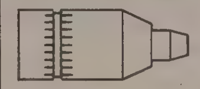


- ► Precision Regulated Return
- ► Replaceable Tip
- ► Compact, Anti-Corrosive Plastic Housing
- ► Precision Metal Plunger
- ► Sealed Vacuum Chamber
- ► Easy Cleaning

827-0140. DP-140. Standard Desoldering Pump.............................EACH 17.20
827-0101. DPT-100. 1 Tip for DP-100/140..EACH 3.68

Electric Desoldering Pump



REPLACEMENT TIP		NOZZLE HOLE DIAMETER
SAT-6-059		.059" (1.5mm)
SAT-6-070		.070" (1.77mm)

- ► Portable Hand Held Desoldering Iron
- ► Self Contained Suction Power and Heating Element
- ► Lightweight 4 oz. (113 gms)
- ► Compact Size 10¼" (26 cm)
- ► Simple One Hand Desoldering
- ► No Factory Air Required

827-6115. Model SA-6-115 ....EACH 53.16
827-6059. Model SAT-6-059. Tip only ....EACH 8.12
827-6070. Model SAT-6-070. Tip only ....EACH 8.12

SA-500 Series Soldering Stations

- ► High Power Soldering with No Trade-Offs
- ► 600°F to 800°F Operating Range for Multi-Application Use
- ► Precise RTD Temperature Control for Excellent Stability and Repeatability
- ► Powerful 70W Heating Element for Quick Recovery on Heavy Joints
- ► Six Extra-Fine, Fine and Heavy Duty Tips Listed Below, More Available as Special Order
- ► Directly Grounded Tip to Meet MIL-STD-2000 Resistance and Voltage Requirements
- ► Light-Weight, ESD-Safe Handle for Maximum Operator Comfort, Component Safety
- ► Low Profile, Small Foot-Print Housing Uses Minimum Bench Space
- ► Low Cost, High Reliability with 12 Month Station Warranty

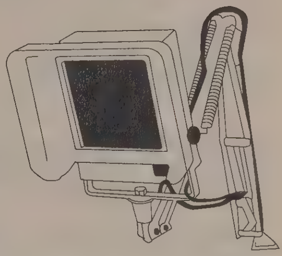
Hand soldering in the 1990s will require a highly flexible station; one with high power for boards with exceptional thermal demands, a wide range of tips for standard and micro components and consistent performance for cost-effective and reliable results. OK Industries SA-570 Series is a part of a new generation of soldering products with no trade-offs; designed for quick recovery, durability and low cost.

Stock No.	Mfr.'s Type	Description	EACH
827-0007	SA-571	115 V, 50/60 Hz Model	128.11
827-5711	SA-571X	Variable Temp., 70 W Station with Fume Extraction Adapter, 115 VAC	163.07
827-0571	SA-571E	ESD Safe Variable Temp., 70 W Soldering Station	141.74

Stock No.	Mfr.'s Type*	Description	Tip Dia.	EACH
827-0001	S9-108S	Chisel 45	2.0 mm	6.33
827-0002	S9-116S	Chisel 45	4.0 mm	6.33
827-0003	S9-203S	Conical	0.8 mm	7.99
827-0004	S9-208S	Conical	2.0 mm	6.33
827-0005	S9-305S	Double Flat	1.2 mm	6.33
827-0006	S9-112L	Chisel 45	3.0 mm	6.33

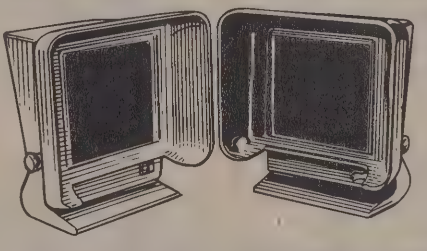
*Other sizes and styles available upon request.

SA-91 Series Articulated Arm-Mounted Fume Absorber



- ► Bench-Mounted Fume Absorber Preserves Valuable Bench Space
- ► Articulating Arm Allows Optimized Positioning
- ► Bench Mounting Clamp and Two Filters Come Complete with Unit
- ► ESD-Safe Version Available with Static-Dissipative Housing

827-0009. Model SA-91...EACH 211.97
827-0010. Model SA-91-E ....EACH 244.57

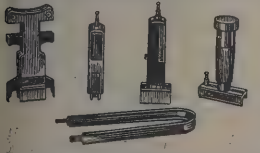


Benchtop Fume Absorbers

- ► Aerodynamic Hood Design Effectively Draws Irritating Soldering Fumes Away from the Work Area
- ► Carbon-Impregnated Filters Trap 80% of the Airborne Pollutants Most Commonly Associated with Headaches, Nausea, Eye Disease and Occupational Asthma
- ► Compact Size, Low Profile and Adjustable Stand Allow Convenient Placement Where the Most Protection from Noxious Fumes Is Needed
- ► ESD-Safe Version Available with Static-Dissipative Housing Protects Delicate Components As Well As Operators

827-9115. Model SA-9-115 ....EACH 115.00
827-9116. Model SA-9E-115 (ESD) ....EACH 142.00
827-9114. Model SAF-1. Replacement filter, set of 3 pieces ....PER SET 18.59
827-9112. Model SAK-90. Articulating arm assembly retro-fit kit..........................EACH 119.00

IC Insertion/Extraction Kits, Tools and Accessories



Insertion/Extraction Kit

WK-7, a kit of DIP IC extractors and inserters to accommodate all ICs from 8 to 40 pins. All tools that engage conductive surfaces are CMOS safe and include grounding lugs where appropriate. The kit consists of extractors EX-1 to 14-16 pin devices, and EX-2 for 24-40 pin chips, plus inserters MOS-1416, MOS 2428 and MOS-40 for 14-16, 24-28 and 36-40 pin ICs respectively.

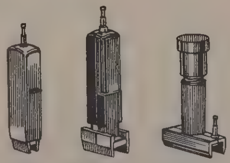
827-4007. Model WK-7 Kit ....EACH 75.96

DIP Extraction Tool

Narrow profile permits tool to work on densely spaced patterns while unique extraction mechanism, assures accuracy as well as excellent "feel". Additionally, the tool includes a unique pin straightener built into handle. Patented.

827-4015. Model EX-2 ....EACH 21.22

Insertion/Extraction Tools

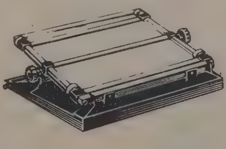


For highly sensitive MOS and CMOS ICs. Ground strap may be easily attached. Durable chrome ABS construction features precision parts for long life and easy on-hand operation. For use with DIP sockets.
827-1417. MOS-1416......EACH 19.27

For easy insertion of 24-28 pin ICs, same features as MOS-1416. For use with DIP sockets.
827-1420. MOS-2428......EACH 19.83

This insertion tool also aligns bent-out pins. A twist of the handle compresses the pins to proper .600 inch spacing and locks the IC into the tool. Then simply place the tool on the socket and depress the plunger for instant and accurate insertion. Features heavy chrome plating throughout for reliable static dissipation. Includes terminal lug for attachment to ground strap. For use with DIP sockets.
827-1418. MOS-40 ....EACH 21.18

Circuit Troubleshooting Kit



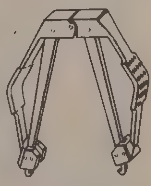
- ► Spring Loaded Guides to Accommodate Different Board Sizes
- ► Angled Board Position for Ease of Use
- ► Adjustable Foam-Lines Retaining Cover
- ► Removable Center Bar
- ► Replaceable Foam and Conductive Foam Available

These four printed circuit board holders are constructed of rugged steel components for durability as well as stability in use. The frame rotates a full 360° and steel backed foam cover opens (from either end) to expose component side of PC board for stuffing components, testing, or assembly work. Close and lock cover to hold components in place then flip over frame on pivot to allow for final work on PCB.

Stock No.	Mfr.'s Type	Maximum Board Size Without Center Bar	Outside Dimensions	EACH
827-7500	PCBH-60	10.6" × 8.6" (270 mm × 220 mm)	15½" × 11" (341 mm × 242 mm)	193.80
827-7505	PCBH-70	19.6" × 8.6" (500 mm × 220 mm)	25" × 11¾" (550 mm × 258.5 mm)	232.56
827-7515	PCBH-90	19.6" × 13.8" (500 mm × 350 mm)	25" × 17" (550 mm × 374 mm)	307.04

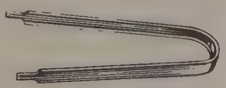
Extractor Tools

Universal PLCC Extractor Tools



- ► Extracts PLCCs from 20 Pins through 84 Pins from Any Socket without Damage to Chip
- ► Spring Loaded One-Hand Design Requires No Pulling, Just Squeeze Handles and Chip Is Lifted from the Socket
- ► ESD Safe Handles for Use on all Static Safe Components (EX-5)
- ► Machined Stainless Steel for Long Life (EX-5)
- ► EX-6 -ABS Handles and Stamped Steel

827-4011. Model EX-5. ESD safe ....EACH 21.46
827-4012. Model EX-6. Low cost..EACH 7.82

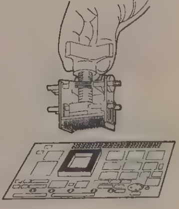


Extractor Tool

The EX-1 Extractor is ideally suited for hobbyist or lab engineer. Featuring one piece spring steel construction. It will extract all LSI, MSI and SSI devices from 8-to-24 pin.

827-4010. Model EX-1 ....EACH 3.25

PGA-X Insertion Extraction Tool

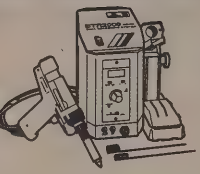


Pin Grid Array inserter and extractor easily adjusts to fit all sizes of PGA's from 12 × 12 to 26 × 26 pins. One hand operation lifts PGA's evenly without damage to devices, board or socket. Includes molded carrying case.

827-4013. Model PGA-X ....EACH 224.25

BTR-1201-V Desoldering System

— NEW —

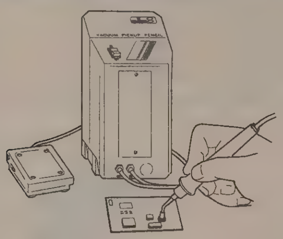


System Includes
- **BTR-1000 Desoldering System Base**
- **DG28110A Desolder Gun**
- **Temperature Control Module**
- **BTR-D-039 Nozzle**

The BTR-1000 modular desoldering system provides maximum application flexibility for soldering and desoldering of both conventional and SMT components. The BTR-1000 stands out as the highest power, closed-loop system available. A unique combination of RTD sensor feedback, 110 W power and high mass desoldering nozzle provide the most efficient and consistent desoldering system in the industry. By using one of the 3 optional handpieces the BTR-1200 can solder or desolder any through-hole or SMT component.

827Q0111. BTR-1201-V. Desoldering system with variable temperature module. **1-2**	**EACH 745.26**
3-Up	**EACH 692.03**
825-0003. BTR-D-039. Nozzle	**EACH 21.20**

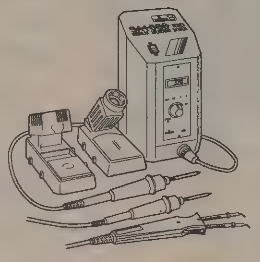
VP-161 Vacuum Pick-Up for SMD Handling and Placement



The 115-volt ac VP-161 vacuum pick-up pencil works with all component sizes. It features foot pedal or finger-activated vacuum and a self-contained vacuum pump. This ESD-safe system includes controller, handpiece nozzle kit, foot pedal and high-temperature silicone pads. An optional nozzle kit is available separately.

827-0161. Model VP-161. Vacuum Pencil System. **1-2**	**EACH 224.25**
3-Up	**EACH 215.00**
827-0160. Model NK-160. Nozzle Kit	**EACH 20.91**

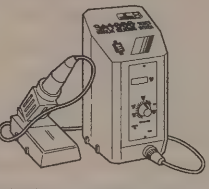
SMTweezer SMD Removal System



SMTweezer removes PLCC, SOIC and discretes. Precision tips contact leads simultaneously. Variable, tri-temp and fixed temperature controls with a 600-800°F range. System includes 115-volt input power base, variable temperature module, handpiece and holder. Accessories also available separately.

827Q1441. Model SA-1441-V. SMTweezer System. **1-2**	**EACH 455.00**
3-Up	**EACH 419.00**
827-0640. Model SAI-640. Micro Soldering Iron Handpiece	**EACH 74.75**
827-0690. Model SAI-690. Macro Soldering Iron Handpiece	**EACH 74.75**

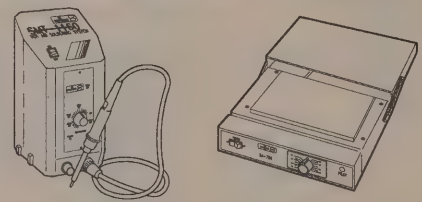
Modular Soldering Stations for Hand Soldering and Touch-Up



These user-configurable, digital, ESD-safe soldering stations are ideal for QFP removal plus SMT hand soldering and touch-up. Choose micro or macro soldering iron versions with variable temperature control. Each contains a 115-volt input power base and a soldering iron holder. These soldering stations feature digital, variable, tri-temp and fixed temperature controls. The temperature range is 600-800°F.

827-1401. Model SA-1401-V. Micro Soldering Iron System. **1-2**	**EACH 270.25**
3-Up	**EACH 248.00**
827-1901. Model SA-1901-V. Macro Soldering Iron System. **1-2**	**EACH 270.25**
3-Up	**EACH 248.00**

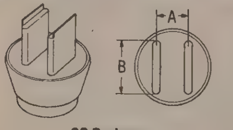
SMT-1161-V Hot Air Pencil and SA-751 Hot Plate



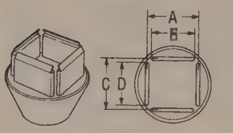
Use the hot air pencil for non-contact soldering of heat-sensitive SMT components. Features self-contained air pump, variable temperature and airflow control with 486-840°F range and 60-watt quick-response heater. Includes handpiece holder and three nozzles. The Hot Plate features variable closed-loop RTD temperature control with 150-500°F range.

827Q1161. SMT-1161-V. Variable-Temp. Hot Air Pencil. **1-2**	**EACH 910.00**
3-Up	**EACH 837.00**
827-1060. Model NK-1060A. Three-Piece Nozzle Kit	**EACH 44.85**
827Q0751. Model SA-751. SMT Preheat/Reflow Hot Plate. **1-2**	**EACH 660.00**
3-Up	**EACH 607.00**

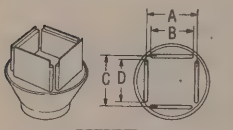
Nozzles for FCR-2000 Series



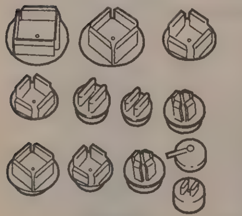
SO Packages



PLCC Comp.



BQFP/QFP



NK-EZ12

SO Packages

Stock No.	Mfr.'s Type	Suggested Package	Dimensions — In. (mm)				EACH	
			A	B	C	D	1-4	5-Up
827-5080	N-S8	SOIC 8	0.267 (6.78)	0.210 (5.33)	—	—	**109.25**	**101.78**
827-5016	N-S16	SOIC 14, 16	0.267 (6.78)	0.400 (10.16)	—	—	**109.25**	**101.78**
827-5017	N-SL16	SOL14, 16	0.416 (10.57)	0.425 (10.80)	—	—	**109.25**	**101.78**
827-5002	N-SL20	SOL 20, 20J	0.416 (10.57)	0.525 (13.34)	—	—	**109.25**	**101.78**
827-5024	N-SL24	SOL 24, 24J	0.416 (10.57)	0.625 (15.88)	—	—	**109.25**	**101.78**
827-5003	N-SL28	SOL 28	0.416 (10.57)	0.725 (18.42)	—	—	**109.25**	**101.78**
827-5032	N-SOJ32	SOJ 32	0.530 (13.50)	0.812 (20.60)	—	—	**109.25**	**101.78**
827-5040	N-SOJ40	SOJ 40	0.530 (13.50)	1.000 (25.40)	—	—	**109.25**	**101.78**

PLCC Comp.

For PLCC sockets replace N-P in Mfr.'s Type with N-PS.

827-5020	N-P20	PLCC-20	0.469 (11.91)	0.300 (7.62)	0.469 (11.91)	0.300 (7.62)	**109.25**	**101.78**
827-5004	N-P28	PLCC-28	0.569 (14.45)	0.400 (10.16)	0.569 (14.45)	0.400 (10.16)	**109.25**	**101.78**
827-5320	N-P32	PLCC-32	0.664 (16.87)	0.500 (12.70)	0.564 (14.33)	0.400 (10.16)	**109.25**	**101.78**
827-5005	N-P44	PLCC-44	0.769 (19.53)	0.600 (15.24)	0.769 (19.53)	0.600 (15.24)	**109.25**	**101.78**
827-5052	N-P52	PLCC-52	0.870 (22.10)	0.700 (17.78)	0.870 (22.10)	0.700 (17.78)	**109.25**	**101.78**
827-5006	N-P68	PLCC-68	1.071 (27.20)	0.900 (22.86)	1.071 (27.20)	0.900 (22.86)	**109.25**	**101.78**
827-5007	N-P84	PLCC-84	1.276 (32.41)	1.100 (27.94)	1.276 (32.41)	1.100 (27.94)	**109.25**	**101.78**

BQFP/QFP

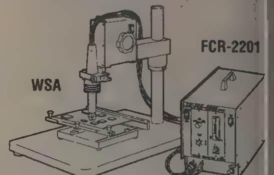
827-5012	N-Q10	QFP-44	0.526 (13.36)	0.400 (10.16)	0.526 (13.36)	0.400 (10.16)	**109.25**	**101.78**
827-5014	N-Q14	QFP-52, 80	0.682 (17.32)	0.550 (13.97)	0.682 (17.32)	0.550 (13.97)	**109.25**	**101.78**
827-5008	N-Q1420	QFP-64, 80, 100	0.920 (23.37)	0.790 (20.07)	0.712 (18.08)	0.550 (13.97)	**109.25**	**101.78**
827-5009	N-Q28	QFP-120, 128, 144, 160	1.230 (31.24)	1.100 (27.94)	1.230 (31.24)	1.100 (27.94)	**109.25**	**101.78**
827-5023	N-BQ23	BQFP-100	0.880 (22.35)	0.650 (16.51)	0.880 (22.35)	0.650 (16.51)	**109.25**	**101.78**
827-5010	N-BQ28	BQFP-132	1.086 (27.58)	0.850 (21.59)	1.086 (27.58)	0.850 (21.59)	**109.25**	**101.78**

Hot Air Nozzle Kit

Contains an assortment of nozzles for the most popular package sizes. Includes one each of the following nozzles — ND25A, NP20, NP28, NP44, NP52, NP68, NP84, NQ1420, NS8, NS16, NSL24 and NBQ23.

827Q5055. NK-EZ12. Mixed Nozzle Kit	**EACH 1250.00**

Focused Convection Rework with Vacuum



System Includes
- **Handpiece Holder**
- **Multiple Nozzle Holder**
- **N-D25 Nozzle**
- **Nozzle Removal Tool**
- **Vacuum Pad Removal Tool**
- **Instruction Manual**
- **Base Controller with Pump, Temperature, Time and Air Flow Controller**
- **Mode Selection/Heater Timer Module**
- **Handpiece with Vacuum, Cord and Connector (FCT-2228)**
- **Dual Footswitch for Vacuum and Heater Activation**
- **10 Piece High Temperature Silicone Rubber Vacuum Pads**
- **RTS-A Adjustable Handpiece Stand with Z Axis Control and Stainless Steel Base Plate (WSA Systems)**
- **RBH-A Adjustable Board Holder (WSA Systems)**

The all new FCR-2200 Series is a focused convection SMT rework system with vacuum pick-up. Utilizing a self-contained air source, the FCR-2200 regulates air flow and temperature to rework a wide range of components from discretes to PLCC and QFP. Its unique three-mode operation provides manual or semi-automatic control for component removal or replacement.

- **Manual Mode: Continuous Hot Air Flow or On-Demand Air Flow (Via Footswitch); On-Demand Vacuum (Via Footswitch)**
- **Auto Remove Mode: Sequenced and Timed — Hot Air > Hot Air with Vacuum > Hot Air Shut Off > Vacuum Release**
- **Auto Replace Mode: Sequenced and Timed — Vacuum > Hot Air > Hot Air Shut Off**

The FCR-2200 handpiece has a spring loaded vacuum tube which virtually eliminates mechanical stress when contacting the component. Additionally, the vacuum tube length is adjustable: the operator may extend it for better viewing during placement, retract it to allow the nozzle to "encapsulate" the component during reflow. The nozzles are designed to focus heated air on the component leads while impeding heat flow to adjacent areas. **Specifications. Input Voltage:** FCR-2201 — 115 VAC, 50/60 Hz; FCR-2202 — 230 VAC, 50/60 Hz. **Heater:** Resistive, 300 W, 28 VAC. **Heater Control:** Closed loop, thermocouple sensor feedback. **Air Source:** High efficiency diaphragm pump. **Air Flow:** Variable, 3 to 20 l/min. **Output Temperature Range:** 392° to 932°F (200° to 500°C). **Modes:** Manual/auto place/auto remove. **Heater Timer:** 0-180 seconds, utilized with auto place or auto remove modes.

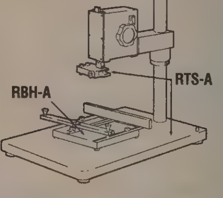
Model FCR-2201. Forced convection SMT rework system with vacuum and heater timer, 115 VAC.

827Q2200. Model FCR-2201. **1-2**	**EACH 1741.77**
3-Up	**EACH 1637.92**
827Q2202. WSA. Z-Axis Tool Stand and Board Holder	**EACH 1500.00**

Model WSB-1. Z-axis tool stand with pre-heater and open frame board holder.

827Q2203. WSB-1	**EACH 2000.00**

Board Holder and Tool Stand

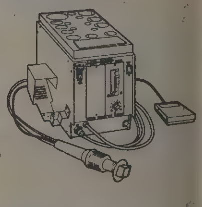


- **Adjustable to Board Widths of Up to 12"**
- **Spring Loaded Board Fixturing for Repeatable Board Sizes**
- **Heavy Duty Aluminum Construction**

Model RBH-A. Board holder.

827Q2103. 1-2	**EACH 747.50**
3-Up	**EACH 696.43**
827Q2104. Model RTS-A. Rework Tool Stand. **1-2**	**EACH 799.25**
3-Up	**EACH 744.64**
827Q2202. WSA. Z-Axis Tool Stand and Board Holder	**EACH 1500.00**

Focused Convection Rework



- **Removes and Replaces Discrete, SOIC, PLCC and QFP Components**
- **Closed-Loop, Variable Temperature Control**
- **Variable Air Flow Adjusts to Thermal Demands of the Board**
- **Self-Contained Air Source Provides Easy Set Up**
- **Fully Grounded and Static-Safe System**
- **Over 40 Nozzles Available**

System Includes
- **Air Flow Meter/Temp. Control Module**
- **Handpiece, Cord, Connector (FCT-2128)**
- **Footswitch for Hot Air Activation**
- **Power Base with Pump**
- **Handpiece Holder**
- **Multiple Nozzle Holder**
- **N-D25 Nozzle**
- **Nozzle Removal Tool**
- **Instruction Manual**

The FCR-2100 Series is a low-cost hot air rework system with closed loop temperature control and air flow control. Unlike the FCR-2200 Series it does not have vacuum or timer. **Specifications. Input Voltage:** FCR-2101 — 115 VAC, 50/60 Hz; FCR-2102 — 230 VAC, 50/60 Hz. **Heater:** Resistive, 300 W, 28 VAC. **Heater Control:** Closed loop, thermocouple sensor feedback. **Air Source:** High efficiency diaphragm pump. **Air Flow:** Variable, 3 to 20 l/min. **Temperature Range:** 392° to 932°F (200° to 500°C). **Modes:** Continuous hot air or on-demand hot air via footswitch.

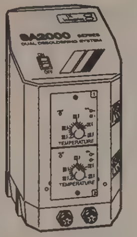
Model FCR-2101. Forced air convection SMT rework system, 115 VAC.

827Q2101. Model FCR-2101. **1-2**	**EACH 1255.49**
3-Up	**EACH 1165.82**

Dual Soldering System with Soldering Iron and SMTweezer® SA-2981-VV/SA-2841-VV

— NEW —

- ► Simultaneous Operation of Any Two Soldering Handpieces
- ► Static Dissipative Construction for ESD Safe Operation
- ► SAI-690 High Power Soldering Iron for QFP Removal, and Standard Soldering Applications or SAI-640 Micro Iron
- ► SAI-644 SMTweezer® for Removal of SMD Chips, SOIC, and PLCCs
- ► Dual Independent Temperature Settings
- ► Front Panel Calibrated from 446° to 850°F (230° to 455°C)

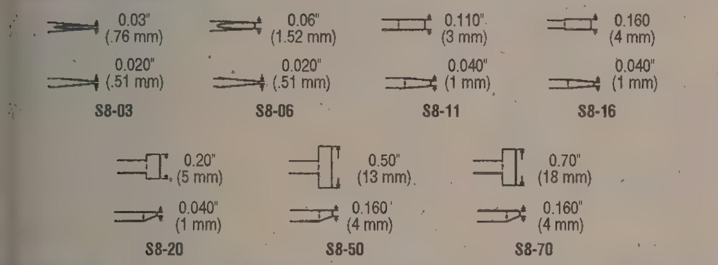


827Q2981. SA-2981-VV. Dual Soldering System with SAI-690 and SAI-644 ....**EACH 656.70**
827Q2841. SA-2841-VV. Dual Soldering System with SAI-640 and SAI-644 ....**EACH 656.70**

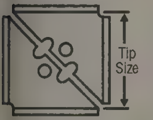
Tips for SAI-644

— NEW —

S8 Series SMTweezer™ Tips



827-6050. S8-03 ....**PER SET/2 53.25**
827-6055. S8-06 ....**PER SET/2 53.25**
827-6060. S8-11 ....**PER SET/2 59.10**
827-6065. S8-16 ....**PER SET/2 59.10**
827-6071. S8-20 ....**PER SET/2 59.10**
827-6075. S8-50 ....**PER SET/2 70.94**
827-6080. S8-70 ....**PER SET/2 70.94**



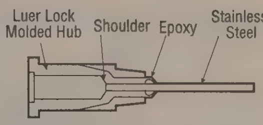
S8-PLCC Tips

827-6020. S8-P20. PLCC-20 Tip. 0.390" Tip Size ....**PER SET/2 70.99**
827-6025. S8-P28. PLCC-28 Tip. 0.490" Tip Size ....**PER SET/2 70.99**
827-6030. S8-P44. PLCC-44 Tip. 0.690" Tip Size ....**PER SET/2 76.91**
827-6035. S8-P52. PLCC-52 Tip. 0.790" Tip Size ....**PER SET/2 76.91**
827-6040. S8-P68. PLCC-68 Tip. 0.990" Tip Size ....**PER SET/2 76.91**
827-6045. S8-P84. PLCC-84 Tip. 1.190" Tip Size ....**PER SET/2 94.66**

OK Industries SE Series Dispensing Tips

— NEW —

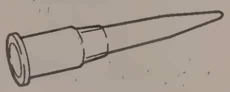
These stainless steel blunt tips are the finest general purpose dispensing tips available. Stainless steel tubing is precision cut to precise lengths and ground to be burr free. Cut tubing is epoxy bonded into polyethylene hubs molded on colors that correspond to gauge size. All OK Industries tips secure to OK Industries syringe barrels, correspond to the luer lock specification, and are produced in a silicone free environment.



Stock No.	Mfr.'s Type	Hub Color	Gauge	I.D.		Length		PER PK./50
				In.	mm	In.	mm	
827-6220	SE18-1/2-50	Green	18	0.033	0.84	½	12.70	**6.40**
827-6230	SE18-1-50	Green	18	0.033	0.84	1	25.40	**6.40**
827-6240	SE19-1/2-50	Black	19	0.027	0.69	½	12.70	**6.40**
827-6250	SE20-1/2-50	Pink	20	0.024	0.61	½	12.70	**6.40**
827-6260	SE20-1-50	Pink	20	0.024	0.61	1	25.40	**6.40**
827-6270	SE21-1/2-50	Purple	21	0.020	0.50	½	12.70	**6.40**
827-6280	SE22-1/2-50	Blue	22	0.016	0.40	½	12.70	**6.40**
827-6290	SE23-1/2-50	Orange	23	0.013	0.33	½	12.70	**6.40**
827-6300	SE25-1/2-50	Red	25	0.010	0.25	½	12.70	**6.40**
827-6310	SE26-1/2-50	Beige	26	0.010	0.25	½	12.70	**6.40**
827-6320	SE27-1/4-50	Clear	27	0.008	0.20	¼	6.35	**7.40**
827-6330	SE27-1/2-50	Clear	27	0.008	0.20	½	12.70	**7.40**
827-6340	SE30-1/4-50	Lavender	30	0.006	0.15	¼	6.35	**7.40**
827-6350	SE30-1/2-50	Lavender	30	0.006	0.15	½	12.70	**7.40**

— NEW —

OK Industries TT Series Dispensing Tips



- ► Ideal for Solder Paste Dispensing

These tips are molded in high density polyethylene to include a luer lock hub and taper tip. Color coding indicates tip orifice inside diameter that corresponds to gauge size. Easily cut by user when shorter tip is required.

Stock No.	Mfr.'s Type	Hub Color	Gauge	I.D.		Length		PER PK./50
				In.	mm	In.	mm	
827-6360	TT14-50	Tan	14	0.063	1.60	1¼	31.75	**6.40**
827-6370	TT16-50	Grey	16	0.047	1.19	1¼	31.75	**6.40**
827-6380	TT18-50	Green	18	0.033	0.84	1¼	31.75	**6.40**
827-6390	TT20-50	Pink	20	0.024	0.61	1¼	31.75	**6.40**
827-6400	TT22-50	Blue	22	0.016	0.40	1¼	31.75	**6.40**

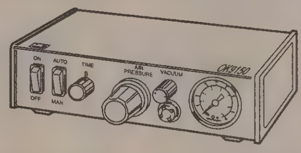
OK9150 Series Dispenser

— NEW —

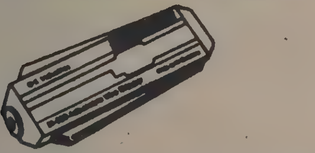
- ► 10-Year Warranty

The OK9150 is a precision fluid dispensing system with vacuum control of all viscosities of fluids using air powered disposable syringes. Solid state digital integrated circuitry timer, lighted function switches, adjustable vacuum feature for controlling drip, micro action foot switch. **Input Voltage:** 115 V AC, 60 Hz (OK19151). **Operating Pressure:** 1 to 100 psi (0.1-7 bar). **Timer:** Programmable from .01 to 30 sec. ±.5%. **Cycle Actuation:** Manual or timer mode. **Minimum Deposit Size:** .01 ml.

827-6200. OK9151. Precision Dispensing System. 115 V AC, 60 Hz ....**EACH 495.00**
827-6210. OKD-KT. Dispensing Starter Kit ....**EACH 105.00**



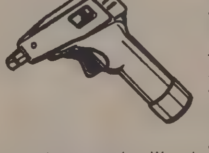
Adjustable Precision Wire Strippers



Feature adjustment dial for six settings. Calibrated wire stop adjustable for desired insulation strip length. Operator squeezes tool and pulls in one motion, allowing 4 hardened steel blades to cleanly cut wire insulation. Pocket-size and lightweight, less than 1 oz. Calibrated strip length is 2". ABS housing.

Stock No.	Mfr.'s Type	Strips	EACH
825-0500	ST-500	20-30 AWG Wire	**50.60**
825-0550	ST-550	18-28 AWG Wire	**50.60**

Battery Powered Wire Wrapping Tools



The BW-928 battery-powered unit accepts standard bits and sleeves for 24-30 AWG wire. Feature positive indexing, LEXAN® housing, 8-ounce weight. Reversible for unwrapping by turning batteries over. Available with or without backforce to prevent overwrapping. Wrapping speed 3000 RPM. Uses 2 standard "C" rechargeable NiCad batteries, ordered separately. BW-520 industrial duty battery powered tool accommodates 22-30 AWG wire. Wrapping speed 3000 RPM. Rechargeable NiCad batteries included.

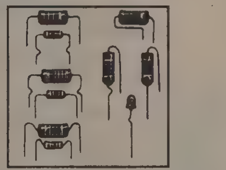
Stock No.	Mfr.'s Type	Housing	EACH
825-1012	BW-928	Wrapping/Unwrapping	**165.00**
825-1011	BW-928-BF	Industrial Reversible	**171.50**
825-7020	BW-520-BF	Battery Wrap — Back Force	**259.62**
825-7030	BW-520-BF-U	Battery Unwrap Tool — Back Force	**319.70**

Chuck Type Manual Wire-Wrapping Tool

The SPEED-WRAP tool is designed to produce wire-wrapped connections by merely squeezing the trigger. This model makes full use of bits and sleeves made for use in electric or air driven wire-wrapping tools, both regular and modified. It will accommodate wire from AWG 22 through AWG 32. For production line and field service use in the electronic, telecommunications and appliance industries.

Stock No.	Mfr.'s Type	Housing	EACH
825-2001	G100/R3278	Aluminum	**121.99**
825-2002	G200/R3278	Lexan®	**87.00**

Lead Bender Crimper

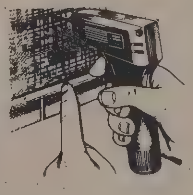


LB-100. Unique lead bender and crimper handles all common axial components and can be used on many radial and "TO" packages as well. The lead bending section enables simple right-angle layover of leads on any centers from 0.375 to 1.500" (9.5-38.1 mm) while an additional feature enables "vertical" bends. For applications requiring "stand-off" or "snap-in" lead forms, just use the built-in crimper. This device is easily adjusted for both lead diameter and crimp size and requires no additional tooling or die changes. Simply set the adjusting screw, insert the lead, and crimp. May be hand-held or mounted in a vise.

827-1100. Model LB-100 ....**EACH 31.49**

Portable Wire Wrapping Tool (Model BW-2630)

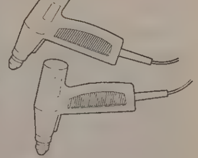
Quick on the draw, on performance and durability. The pistol grip design Model BW-2630 is a revolutionary, rugged ABS construction wire-wrapping tool that operates on 2 standard "C" Nicad batteries (not included) and accepts either of two specially designed bits. Bit Model BT-30 is for wrapping 30 AWG wire onto .025" square pins; BT-2628 wraps 26-28 AWG wire. Also includes both positive indexing and anti-overwrapping mechanisms — features usually found on models of this type costing much more.



827-2631. Model BW-2630. Wrapping Tool ....**EACH 74.31**
827-3630. Model BT-30. Bit ....**EACH 21.62**
827-3628. Model BT-2628. Bit ....**EACH 21.62**

Electric Wire Wrapping Tools

The OK-20 and OK-21 Series Wire Wrapping tools offer high speed, light weight and improved ergonomics. The tools are ideal for both prototyping and production wire wrapping applications. OK-20 Series incorporates a longer 2-finger trigger to reduce repetitive motion injuries. **Input Voltage:** 115 V AC/DC.



Stock No.	Mfr.'s Type	Trigger	Backforce	Unwrap	EACH
825-7060	OK-20	2 Finger	—	—	**215.00**
825-7065	OK-20-BF	2 Finger	Yes	—	**203.57**
825-7050	OK-21	Single	—	—	**194.10**
825-7010	OK-21-BF	Single	Yes	—	**201.25**
825-7002	OK-21-U	Single	—	Yes	**212.75**
825-7004	OK-21-BF-U	Single	Yes	Yes	**207.00**

Track Repair Kits

► **Archer® Printed Circuit Kit has Everything You Need**

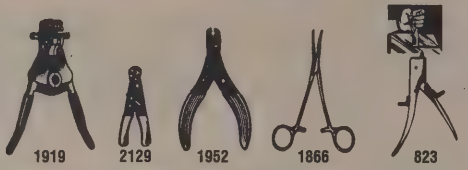
This kit contains everything you need to design and make printed circuit boards. Two printed circuit boards, resist ink pen, 6-oz. bottle of etchant, 2-oz. bottle of resist ink solvent, $\frac{1}{8}$" drill bit, $7\frac{1}{8}$" × $5\frac{1}{8}$" × 2" plastic box. **Shipping Weight:** 2 lbs.
910-6726. Model 276-1576....................**EACH 13.99**

Printed Circuit Etchant Solution

- **Takes Copper Off Perfboard**
- **Safe, Easy And Fast To Use**
- **16 Fluid Ounces**

A PC 'must' for hobbyists, builders, experimenters! A special ferric chloride solution removes copper completely without damage to board material. **Shipping Weight:** $1\frac{1}{2}$ lbs.
910-6715. Model 276-1535....................**EACH 3.49**

Cutting Tools and Strippers



Model 64-1919 Automatic Wire Stripper. Strips wire from #8 to #22 gauge in seconds. Removes insulation cleanly without nicking or breaking wire for smooth, professional quality work. Lightweight, yet extremely durable. 7".
910-1919. Model 64-1919....................**EACH 12.99**

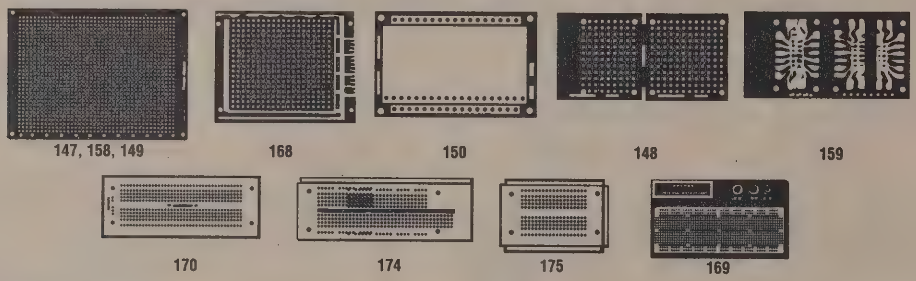
Model 64-2129 Wire Stripper/Cutter. Spring-loaded tool strips #12 to #24 wires. Handy tool has easy-grip handle. **Shipping Weight:** $\frac{1}{2}$ lb.
910-5931. Model 64-2129....................**EACH 2.99**

Dial Type 64-1952 Stripper/Cutter. Versatile spring-loaded stripper and cutter adjusts to any gauge wire from #12 to #24. Flush cutting action. Plastic cushioned grips.
910-5803. Model 64-1952....................**EACH 4.59**

Model 64-1866. Perfect for temporary heat sink and picking up parts. Three-position lock, curved serrated tip. Box joint construction. Stainless steel.
910-2144. Model 64-1866....................**EACH 4.99**

Model 64-823. Easy-to-use hand-held sheet metal cutter. Cuts up to 18-gauge steel, $\frac{1}{16}$" copper, aluminum and plastic.
910-2142. Model 64-823....................**EACH 10.99**

Breadboards and PC Boards



Predrilled PC Boards

Grid Boards
.100" × .100" centers for DIP ICs, sockets and headers. Solder-ringed holes. Indexed columns and rows to help you identify component pin outs.
910-2203. Model 276-147. $4\frac{1}{2}$" × $6\frac{5}{8}$". 2200 holes....................**EACH 3.99**
910-2204. Model 276-158. $2\frac{3}{4}$" × $3\frac{3}{4}$". 750 holes....................**EACH 2.39**
910-2205. Model 276-149. $1\frac{27}{32}$" × $2\frac{27}{32}$". 356 holes....................**EACH 1.19**

Universal PC Board
Accepts ICs up to 40 pins. Total of 750 indexed, solder-ringed holes. Two busses, one grounding strip. Mounting holes at corners. $2\frac{13}{16}$" × $3\frac{3}{4}$".
910-2194. Type 276-168....................**EACH 2.49**

Multi-Purpose Bus Board
Two bus strips at the center. PC pattern traced on component side speeds building. 417 solder points. $1\frac{7}{8}$" × $2\frac{7}{8}$".
910-2188. Type 276-150....................**EACH 1.19**

Dual Mini General-Purpose Board
213 holes. $1\frac{3}{4}$" × $3\frac{5}{8}$". Can be snapped in half.
910-2187. Model 276-148....................**EACH 1.49**

Dual IC Board
Accepts two 6 to 20-pin DIPs. Four connecting points for each IC pin. $1\frac{3}{4}$" × $3\frac{3}{8}$".
910-2191. Model 276-159....................**EACH 1.69**

Experimenter's Solderless Boards

The fast efficient way to design your own solid-state circuits. The modular breadboards are reusable and accept a wide variety of components. When you have your circuit working properly, it's easy to transfer it to the matching PC board for a soldered, permanent version.

Experimenter's PC Board
Layout matches modular breadboard. 550 pre-drilled connection points. $2\frac{1}{16}$" × $5\frac{7}{16}$" × $\frac{1}{16}$".
910-2197. Model 276-170....................**EACH 2.99**

Modular IC Breadboard Socket
Snaps together horizontally or vertically for more complex designs. Silver-nickel contacts accepts 30 to 22 gauge solid wire. Features two bus strips and 550 indexed connection points. $2\frac{1}{8}$" × 6".
910-6707. Model 276-174....................**EACH 12.49**

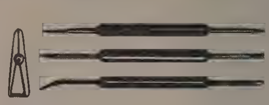
Modular IC Breadboard Socket
Smaller version of 276-174 with 270 indexed connection points. $2\frac{1}{8}$" × $3\frac{5}{8}$" × $\frac{1}{16}$".
910-6708. Model 276-175....................**EACH 7.99**

Universal Breadboard
Our Finest! The $2\frac{1}{4}$" × $6\frac{1}{2}$" breadboard is mounted on a 7" × 4" 'stay put' steel base with rubber feet. Accepts DIPs, discrete components and up to 22 gauge wire. Total of 640 plug-in tie points. 3 binding posts for power hookup, etc.
910-2196. Model 276-169....................**EACH 21.99**

Soldering Equipment

Soldering Aids

Solder Ease Kit — 2227

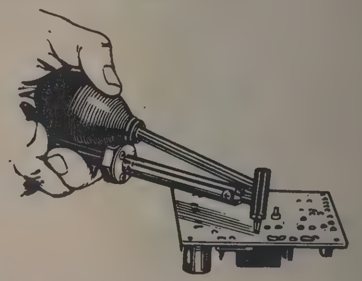


Model 64-2098 Vacuum Desoldering Tool
Aluminum. Sturdy aluminum housing with nonstick tip and side-mounted trigger button. Disassembles easily for cleaning. $7\frac{3}{4}$" long.
910-2154. Model 64-2098........**EACH 6.99**

Model 64-2227 "Solder Ease" Kit
Special kit containing four tools for improved soldering. Aluminum heat sink protects transistors and diodes when soldering, gives a firm grip. Fine-point probe aids soldering on printed circuits. Stainless steel hardened probe, steel brush and scraper helps keep circuit clean as you solder. Also with heat sink. **Shipping Weight:** $\frac{1}{2}$ lb.
910-5937. Model 64-2227....................**EACH 4.19**

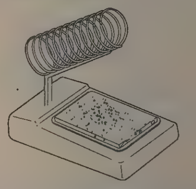
Model 64-2086 Vacu-Bulb
Takes up solder safely, easily with vacuum action. No spattering. Teflon tip.
910-2155. Model 64-2086....................**EACH 2.79**

"One-Hand" Electric Desoldering Iron



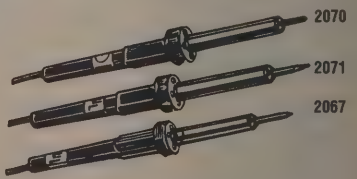
Model 64-2060. Makes repairs quickly and cleanly. The easy way to remove or replace old electronic parts from circuit boards. With handle, bulb, desoldering unit and tip, 5-foot cord. Rated 45 watts. U.L. listed.
910-2145. Model 64-2060....................**EACH 8.99**
910-2146. Model 64-2061. Replacement Tip....................**EACH 1.29**

Soldering Iron Holder and Cleaner



Model 64-2078. All-in-one solder station helps keep your workbench free from solder splatters and burn marks. Coil holder protects you and your work while the convenient sponge pad cleans soldering tip.
910-2078. Model 64-2078....................**EACH 6.49**

Soldering Irons

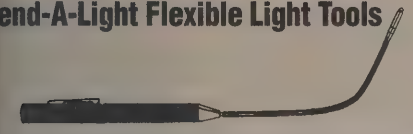


Model 64-2070B 25-Watt Pencil Iron
Insulated. $\frac{5}{32}$" screw in tip. 600-640°F. With stand.
910-6420. Model 64-2070B....................**EACH 6.99**
910-2148. Model 64-2073. Replacement Tip....................**EACH 1.29**

Model 64-2071 40-Watt Pencil Iron
Insulated. $\frac{1}{4}$" screw in tip. 600-640°F. With stand.
910-2149. Model 64-2071....................**EACH 7.99**
910-2150. Model 64-2072. Replacement Tip....................**EACH 1.29**

Model 64-2067 30-Watt Pencil Iron
Lightweight 7" long.
910-2151. Model 64-2067....................**EACH 5.99**
910-2152. Model 64-2065. Replacement Tip....................**EACH 1.19**

Bend-A-Light Flexible Light Tools



Operates on two replaceable AA Batteries (included). Small diameter shaft reaches in tight places. High intensity lamp provides brilliant beam. Durable ABS plastic construction. Goes where other lights won't. Bends and stays in any position.

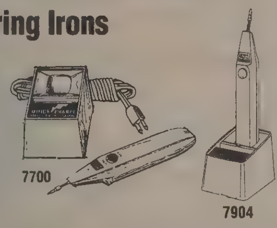
991-6511. Model 6511. 11" Bend-A-Light	EACH 17.61
991-6516. Model 6516. 16" Bend-A-Light	EACH 25.25
991-6518. Model 6518. Replacement Bulb	EACH 7.69
991-6517. Model 6517. Magnetic Retriever	EACH 4.37

Brighteyes Pro Headlights

Adjustable sockets let you aim the light beams higher, lower or to either side. Automatically lights when you put them on. Switches off when you fold the bows in. Fits over glasses. Wear them comfortably with most glasses.

991-6525. Model 6525. Bright Eyes	EACH 15.36
991-6526. Model 6526. Replacement Bulb	EACH 1.20
991-6527. Model 6527. Carrying Case	EACH 5.62

Cordless Soldering Irons



Cordless convenience, lightweight and 25 W performance. Tip temperature reaches 900°F in 5 sec. Up to 125 soldered connections per battery charge.* Nickel cadmium batteries feature long service life. Isolated-tip design eliminates electrical leakage and the need for grounding when soldering in delicate solid-state equipment. Designed for good "feel" and balance — only 8" long. **Weight:** 8 oz. Built-in light. Safety lock switch prevents accidental heating. Standard batteries recharge from charging stand or from 12 V automotive battery. Full line of accessories and several complete kits provide variety of selections. Batteries included.

"Quick Charge" Iso-Tip

Recharges in 3 to 4½ hours from complete discharge. Nickel cadmium battery can withstand high-rate charging without damage (cannot overcharge).

Model 7700. Iso-Tip soldering iron with recharging stand and no. 7545, 7546 tips.

991-7700. 7700	EACH 54.09

Model 7733. Replacement battery for gray, black or orange iron.

991-7733. 7733	EACH 12.16

Iso-Tip "60"

Allows 20% continuous soldering when kept in charger between uses. Recharges fully in one hour and automatically switches to energy-saving charge rate when battery is full (cannot overcharge). LED shows when battery is charged.*

Model 7800. Iso-Tip soldering iron with recharging stand, and no. 7577, 7545 tips.

991-7800. 7800	EACH 67.08

*Replacement batteries available by special order.

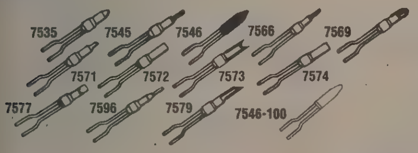
Power Pro Soldering Iron

High Capacity cordless iron with high efficiency soldering tips. The Power Pro includes a recharging stand and hi-efficiency tip #7545-100 fine tip and #7577-100 chisel tip. Complete recharge in four hours.* LED in recharge stand to indicate charging status. Isolated tip design to eliminate electrical leaks and damage. Tip performance up to 900°F.

991-7904. 7904. Power Pro Soldering Iron	EACH 67.08
991-7578. 7578-100. High Efficiency Tip. 3/32" Diameter	EACH 5.01
991-4500. 7545-100. High Efficiency Tip. 1/16" Diameter	EACH 5.01

*Batteries available by special order.

Soldering Tips For Iso-Tip Cordless



Stock No.	Mfr.'s Type	Description	EACH	
			1-9	10–Up
991-7535	7535	Regular Tip No. 5 — 5/32"	4.49	3.98
991-7545	7545	Fine Tip No. 2 — 1/16"	4.49	3.98
991-7546	7546	Heavy Duty Tip No. 6 — 13/16"	4.49	3.98
991-7566	7566	Micro Soldering Tip — 1/64"	4.49	3.98
991-7569	7569	"V" Tip No. 5 — 5/32"	4.49	3.98
991-7571	7571	Beveled Tip No. 2 — 1/16"	4.49	3.98
991-7572	7572	Blunt Tip No. 5 — 5/32"	4.49	3.98
991-7573	7573	Tinning Tip No. 5 — 5/32"	4.49	3.98
991-7574	7574	Concave Cen. Tip No. 5 — 5/32"	4.49	3.98
991-7577	7577	Chisel Tip No. 5 — 5/32"	4.49	3.98
991-7579	7579	Beveled Tip No. 3 — 3/32"	4.49	3.98
991-7596	7596	Knife Tip — 1/32"	4.49	3.98
991-4600	7546-100	Hi-E Heavy Duty Tip (High Wattage) 3/16" (4.8 mm)	4.94	4.49

WAHL Filer/Sander

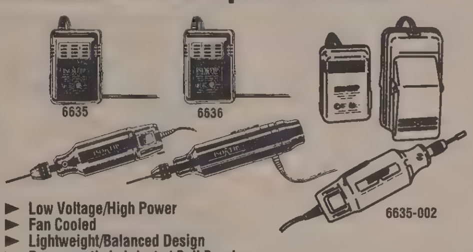
- Industrial Quality
- Up to 45 Minutes of Continuous Operation Per Full Battery Charge
- Complete Recharge in 4 Hours; Partial Charge in Less
- Red LED Indicates Power to Stand; Green LED Indicates Unit Is Charging
- Reciprocal, 6,000 Strokes-Per-Minute Action With Approximate .100" Stroke Length
- Lightweight and Balanced for Comfortable Operation
- Sanding and Filing Tips Quickly and Firmly Snap On and Off
- Complete Range of Sanding and Filing Accessories Available
- Ideal for Reaching Into Tight Spots and for Quick, Easy Precision Finishing, Deburring, and Sanding

991-6750. Model 6750. Filer/Sander. Cordless	EACH 68.89
991-6780. Model 6780. Corded With 19 Accessories	EACH 68.89

Accessories

991-6733. Model 6733. Replacement Battery	EACH 6.92
991-6760. Model 6760. Flat Needle File	EACH 4.47
991-6761. Model 6761. Round Needle File	EACH 4.47
991-6762. Model 6762. Triangle Needle File	EACH 4.47
991-6763. Model 6763. Half Round Needle File	EACH 4.47
991-6764. Model 6764. Sander Pad Asst. 100, 220, 400 Grit	PER PK. 4.47
991-6765. Model 6765. Sander Sheets 400 Grit	PER PK./12 4.47
991-6766. Model 6766. Sander Sheets 220 Grit	PER PK./12 4.47
991-6767. Model 6767. Sander Sheets 100 Grit	PER PK./12 4.47
991-6768. Model 6768. Sander Sheets 4 each 100, 220, 400 Grit	PER PK. 4.47

ISO-TIP® Multi-Purpose Minidrills



- Low Voltage/High Power
- Fan Cooled
- Lightweight/Balanced Design
- Permanently Lubricated Ball Bearing
- Long 6-Foot Cord
- 20 Accessories Included — Type 6678 Union Nut with Four Collets, Drill Bit, Mandrel, Sanding Discs, Polishing Wheel, Cutting Wheels, Grinding Stones

Model 6635 Constant Speed Minidrill

Operates at 21,000 RPM with on/off switch conveniently located at the top of the drill.

991-6635. Model 6635	EACH 50.91

Model 6636 Variable Speed Minidrill

Features variable speed operation from 10,000 to 21,000 RPM. Control knob at the top of the drill rotates to vary speed from "off" to maximum power.

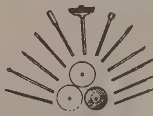
991-6636. Model 6636	EACH 67.92

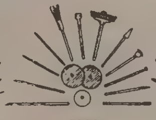
Model 6635-002 Multi-Purpose Minidrill Kit

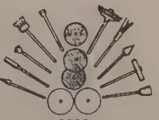
Lightweight, high speed minidrill features variable speed foot control (10,000 - 21,000 RPM). Collett chuck with four collets and universal chuck. Chucks accept all accessories up to .140" shank. Durable carrying case included.

991-6634. Model 6635-002	EACH 97.95

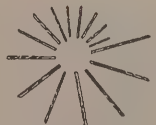
Drill Accessories


6637


6638


6639

6641


6642

Accessory assortments for 6600 series drills. **Type 6637 Contains:** drills, bits, cutters, saws, cutting and grinding wheels, brushes, arbor. **6638:** drill bits, brushes, grinders, cutters, cutting wheels, saws, arbor. **6639:** polishers; cutters, grinders. **6641:** brushes, cutters. **6642:** 1 each bit sizes 76, 73, 67, 65, 61, 56, 54, 52, 50, 47, 43, 41, 38, 35, 32.

991-6637. Type 6637. 15 Pc. Assorted Modeling Set	EACH 29.66
991-6638. Type 6638. 15 Pc. Assorted All Purpose Set	EACH 25.31
991-6639. Type 6639. 15 Pc. Polishing, Cutting, Grinding Set	EACH 24.14
991-6641. Type 6641. 15 Pc. Grinding, Cutting, Brushing Set	EACH 21.42
991-6642. Type 6642. 15 Pc. Steel Drill Set	EACH 18.35
991-6673. Type 6673. Circular Saw Hardened Steel	EACH 4.68

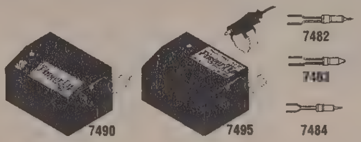
WAHL® SOLMAX 7485 *— NEW —*

Temperature Controlled Soldering Station with Fume Extractor

- Increase Productivity and Improve the Work Environment by Removing Noxious Fumes
- Reduce the Chances of Headaches, Nausea and Eye Irritations That Are Often Associated with the Exposure to Solder Fumes
- Electronic Temperature Controlled, Continuously Adjustable
- Fast Heat Up and Instant Heat Recovery
- Built In High Efficiency, Low Noise, Brushless Mini Fan

991-7485. 7485. Solmax Fume Extractor/Solder Station	EACH 183.95
991-9796. 97906. Replacement Filters	EACH 11.95
991-9791. 97901. 1/32 Tip	EACH 5.49
991-9792. 97902. 1/32 Tip	EACH 5.49
991-9793. 97903. 1/64 Tip	EACH 5.49
991-9794. 97904. 1/16 Tip	EACH 5.49
991-9795. 97905. 1/8 Tip	EACH 5.49

Finger Tip Soldering Iron *— NEW —*

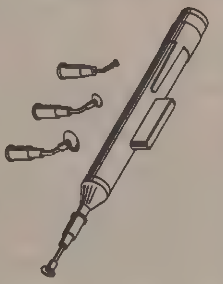


- Fits on the Tip of Your Finger, Allowing You to Hold More With Less Effort
- New Iron Nickel Chrome Plated Tips for Increased Solder Tip Life
- The Constant Temperature Model Has a 900°F Tip Temperature
- The Variable Temperature Model Has a 425°-900° Tip Temperature Range
- ESD Safe (Isolated Tip — Grounded Case)
- U.L. Approved

991-7490. 7490. Fingertip Soldering Iron	EACH 129.95
991-7495. 7495. Variable Temp. Fingertip Soldering Iron	EACH 139.95
991-7482. 7482. 1/2 Mil. Tip .010-0.15	EACH 7.95
991-7483. 7483 1/16 Fine Tip	EACH 7.95
991-7484. 7484. 1/64 Micro Tip	EACH 7.95

— NEW —

WAHL® Pen-Vac

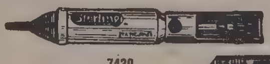


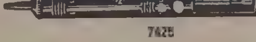
- Self-Contained Vacuum
- No Hoses or Batteries Required
- Lifts Over 500 Grams
- Weighs Less Than 21 Grams
- Brushed Aluminum Body
- ESD Safe
- Quick Change Luer-lock Vacuum Tips
- Includes 6 Vacuum Cups and Probes
- Made in the USA

Now any items with a flat surface can easily be picked up with the Pen-Vac tool. This self-contained tool eliminates problems associated with handling parts using fingers or tweezers. Ideal for handling and manipulating various objects during assembly or placement operations. The ergonomically designed Pen-Vac tool is a low cost alternative to other vacuum handling systems.

991-7433. 7433. PenVac Handling Tool with 6 Attachments	EACH 69.11
991-7434. 7434. Penvac Jr. Handling Tool with 4 Attachments	EACH 58.23
991-7436. 7436. Straight with 1/8 Cup	EACH 2.20
991-7437. 7436-100. Angled with 1/8 Cup	EACH 2.20
991-7438. 7436-200. Straight with 1/4 Cup	EACH 2.20
991-7439. 7436-300 Angled with 1/4 Cup	EACH 2.20
991-7440. 7436-400. Straight with 3/8 Cup	EACH 2.20
991-7441. 7436-500. Angled with 3/8 Cup	EACH 2.20

Anti-Static and Static-Free Desoldering Tools and Tips


7420


7425

Static-Free Desoldering Tool

Model 7420. 8.25" precision-built desoldering tool and replacement tip. Barrel made of nylon glass; tip made of conductive carbon fiber. **Outer Diameter:** 1.03". **Tip O.D.:** .113".

991-7420. Model 7420. Desoldering Tool	EACH 12.05
991-7421. Model 7421. Replacement Tip	EACH 5.26

Anti-Static Desoldering Tool

Model 7425. 8.62" precision-built desoldering tool and replacement tip. Barrel made of conductive polypropylene; tip made of conductive carbon fiber. **Outer Diameter:** .79". **Tip I.D.:** .113".

991-7425. 7425. Desoldering Tool	EACH 12.05
991-7426. 7426. Replacement Tip	EACH 5.26

Weller® WP Series Professional Soldering Irons

- Quick Change Knurled Collar Makes Changing Heaters Simple
- Small, Lightweight Handle Now With Cushioned Grip
- Iron-Plated Tips For Long Life and Greater Soldering Efficiency
- Ideal For A Wide Variety Of Electronic and Electrical Work
- Three Wattages Available: 25, 30 and 35 W

Weller introduces a new line of professional soldering irons with interchangeable heating elements. Just a twist of the knurled collar and the element can be unplugged and changed for the required wattage. Now a single handle plus three different elements effectively gives you a trio of irons to handle different jobs. For additional safety, all irons come with a three-wire cord. Heaters are available in 25, 30 and 35 watts plus 8 interchangeable, iron plated tips that make the WP Series suitable for a wide variety of electrical and electronic work.

Add the comfort of the new cushion grip handle, and you'll see why the Weller WP Series Soldering Irons are taking a turn for the better.

Stock No.	Mfr.'s Type	Description	EACH
984-2500	WP25	Professional 25 watt soldering iron with ST3 Tip	40.08
984-2505	WP30	Professional 30 watt soldering iron with ST3 Tip	43.28
984-0435	WP35	Professional 35 watt soldering iron with ST3 Tip	50.44

Replacement Tips

Stock No.	Mfr.'s Type	Tip Size In. (mm)	Description	EACH
984-0001	ST1	1/16 (1.6)	Screwdriver	6.20
984-0008	ST2	3/32 (2.4)	Screwdriver	6.20
984-0009	ST3	1/8 (3)	Screwdriver	6.20
984-0026	ST4	3/16 (4.8)	Screwdriver	6.20
984-2260	ST5	1/32 (0.8)	Single Flat	6.20
984-0019	ST6	1/32 (0.8)	Screwdriver	6.20
984-0020	ST7	1/32 (0.8)	Conical	6.20
984-0021	ST8	1/16 (1.6)	Narrow screwdriver	6.20

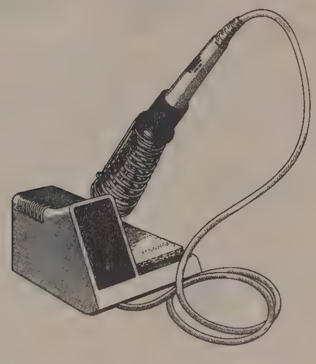
IMPORTANT: Use only Weller® tips. Use of non-Weller components may void product warranty if the non-Weller component causes damage to the unit.

Replacement Heaters*

984-0024	HE30	—	For 30 watt iron	22.94
984-0027	HE35	—	For 35 watt iron	25.22

*Heater replacements include heater and knurled collar.

WCC100
Electronic Soldering Station



- Electronically Controlled Station, With Compact Design, Is Ideal For The Novice Soldering Buff
- The 40 Watt Soldering Pencil Is Fitted With An ETA Tip and Can Be Used With The Full Range Of Weller ET Series Tips
- Temperature Is Adjustable From 350°F to 850°F and Is Stable Within 10°F At Idle
- Zero Voltage Circuit Ensures That No High Voltage Spikes Or Magnetic Fields Are Present At Tip To Damage Sensitive Components
- 3-Wire Grounded Power Cord, UL Recognized
- Lighted On/Off Switch; Impact Resistant Housing and Iron Handle
- UL Listed

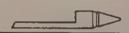
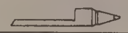
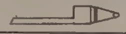
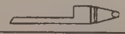
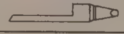
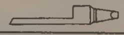
984-9100. WCC100. Complete station with 40 W iron, 120 V, 60 W, 60 Hz	EACH	143.24
984-2266. WCC101. Soldering iron with ETA tip, 24 V, 40 W	EACH	61.76

Replacement Parts

984-2265. WCC102. Heater assembly for WCC101 iron	EACH	18.42
984-2267. WCC103. Sensor assembly for WCC101 iron	EACH	10.90
984-2268. WCC104. Sponge	EACH	1.26
984-2269. WCC105. Spring and funnel assembly	EACH	6.18

Thermal Thrust, High Capacity Tips

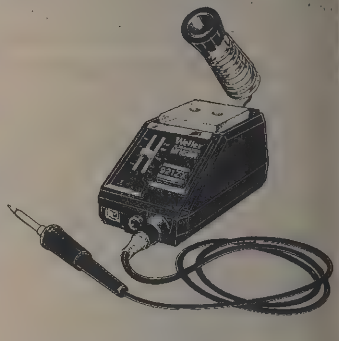
Thermal Thrust, High Capacity Tips for use with the 921ZX Temperature Controlled Soldering Station. Ideal for high mass and heavy ground plane applications.

Stock No.	Mfr.'s Type	Tip	Description	Tip Size In. (mm)	Reach In. (mm)	EACH
972-9056	9056**		Conical	0.02 (0.50)	0.50 (12.70)	9.74
972-9057	9057**		Screwdriver	0.03 (0.76)	0.50 (12.70)	9.74
972-9058	9058**		Screwdriver	0.05 (1.27)	0.50 (12.70)	9.74
972-9059	9059**		Screwdriver	0.07 (1.77)	0.50 (12.70)	9.74
972-9060	9060**		Screwdriver	0.10 (2.54)	0.50 (12.70)	9.74
972-9061	9061**		Screwdriver	0.13 (3.30)	0.50 (12.70)	9.74

**Note - must use 9919 Tip Retainer Assembly.

921ZX Soldering Station

Introducing Our Most Affordable Temperature-Controlled Station Ever



- Electronically Controlled-Zero Cross Circuitry
- Spike Free — ESD Safe
- Ceramic Heater Rated For Exceptionally Long Life
- Variable Control — Fully Adjustable 550°-850°
- Over 19 Tips Available Including SMT Tips
- External Fuse and Calibration Access
- Cool, Lightweight Handpiece

Now you can get the quality, dependability, and reputation of a Weller soldering station at a price that's very competitive. The ceramic heating element is exceptionally reliable and long lasting. Should it ever need replacing, the new element just plugs in. There are no tools required. The 24 V handle is not only safe, it is cool and comfortable. The 921ZX is electronically controlled and fully adjustable. It is ESD safe/MIL compliant. The 921ZX carries a full one year warranty, and you have the Weller/Ungar technical service department available to help you with any questions or problems.

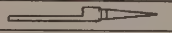
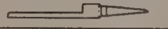
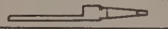
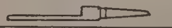
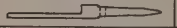
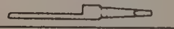
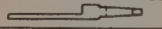
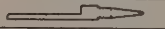
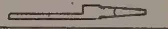
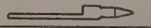
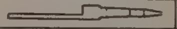
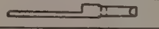
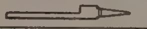
Stock No.	Mfr.'s Type	Tip Included	Voltage	Handle Wattage	Hz	Footprint	Pencil Weight	EACH
972-9215	921ZX1	9018	120 V	60*	60	7" × 3 3/16"	2.9 oz./82.21 g	171.64

*Handle wattage is rated at full load. Idle wattage is approximately 20 watts.

Accessories and Replacement Parts

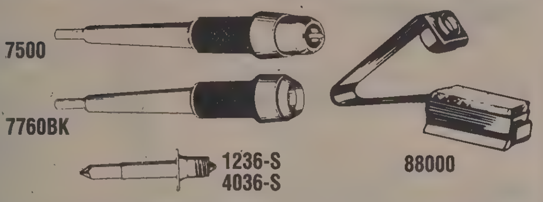
Stock No.	Mfr.'s Type	Description	EACH
984-9904	9904	Replacement sponge	4.44
972-2115	2115	Temperature lockout kit	6.92
972-9908	9908	Replacement heating element	19.78
972-9037	9037	Tip retainer assembly for standard tips	19.78
972-9919	9919	Tip retainer assembly for thermal thrust tips	19.78

Standard Tips

Stock No.	Mfr.'s Type	Tip	Description	Tip Size In. (mm)	Reach In. (mm)	EACH
972-9010	9010†		Precision point	0.01 (0.25)	0.78 (19.81)	11:28
972-9011	9011†		Spade	0.03 (0.76)	0.71 (18.03)	9.74
972-9012	9012†		Screwdriver	0.05 (1.27)	0.62 (15.74)	9.74
972-9013	9013†		Spade	0.06 (1.52)	0.71 (18.03)	9.74
972-9014	9014†		Spade	0.02 (0.50)	0.85 (21.59)	9.74
972-9015	9015†		Screwdriver	0.07 (1.77)	0.70 (17.78)	9.74
972-9016	9016BK†		Screwdriver	0.09 (2.28)	0.55 (13.97)	9.06
972-9017	9017†		Screwdriver	0.03 (0.76)	0.60 (15.24)	9.74
972-9018	9018†		Screwdriver	0.05 (1.27)	0.60 (15.24)	9.74
972-9019	9019†		Short spade	0.03 (0.76)	0.45 (11.43)	9.74
972-9050	9050†		Conical	0.02 (0.50)	0.85 (21.59)	9.74
972-9051	9051†		Screwdriver	0.13 (3.30)	0.50 (12.70)	9.74
972-9052	9052†		Short spade	0.02 (0.50)	0.45 (11.43)	9.74
972-9054	9054	—	Tip Adapter 1/8"	—	—	5.82

†Note: Must use 9037 Tip Retainer Assembly.

Handles



Model 7500 Grounded 3-Wire Handle. The handle, when assembled with the S or HP Series heaters, is completely grounded from tip to plug and eliminates electrostatic tip potential. A unique, spring-loaded ground plate reflects heat away from the operator's hand. For use only with S or HP heaters.
972-8750. Model 7500 .... **EACH 35.12**

Model 7760BK Cool Grip Handle. Convection-cooled, molded grip for "clean room" use. Octagonal handle prevents rolling. Stainless steel heat reflector. Accepts all Standard Line heaters and integral heaters/tips, including the S and HP series. Red.
972-8776. Model 7760BK .... **EACH 15.74**

Type 100 Tip Adapter may be used with heater 537-S, 1237-S and 4037-S. See below.

Model 8800 Soldering Iron Holder. Holds most irons with 5/16" to 7/16" dia. heater cases. Tip sponge, tray. Non-skid. Not for Princess or ceramic type heaters.
972-8800. Model 8800 .... **EACH 37.08**

Pyramid Tips. Type 1236-S. Long life iron, silver plated; 3.50" L, .365" D, .015" point. **Type 4036-S.** Tellurium copper, iron clad, silver plated; 3.60" L, .365" D, .031" point.
972-8132. Type 1236-S. 900°F, 33 W .... **EACH 27.18**
972-8133. Type 4036-S. 1100°F, 45 W .... **EACH 33.58**

Interchangeable Heaters

535S

537S, 1237S, 4037S

1233S

4039S

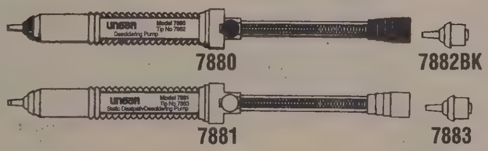
1/8" Heaters for Thread-in Tips. Type 535S. 3.25"L, .365"D. **Type 1235S.** 3.50"L, .365"D. **Type 4035S.** 3.50"L, .365"D.
972-0535. Type 535S. 700°F, 23 W .... **EACH 23.32**
972-1235. Type 1235S. 800°F, 33 W .... **EACH 23.32**
972-4035. Type 4035S. 900°F, 45 W .... **EACH 26.24**

1/4" Heater for Thread-on Tips. Type 537S. 3.15"L, .365"D. **Type 1237S.** 3.40"L, .365"D. **Type 4037S.** 3.50"L, .365"D.
972-5929. Type 537S. 700°F, 23 W .... **EACH 20.78**
972-5930. Type 1237S. 700°F, 33 W .... **EACH 22.66**
972-5933. Type 4037S. 700°F, 45 W .... **EACH 26.44**

Large Taper Chisel. Tellurium copper tip. **Type 1233S.** 3.65"L, .365"D, .200" point. **Type 4033S.** Iron-clad silver plated tip; 3.92"L, .365"D, .200" point.
972-1233. Type 1233S. 900°F, 33 W .... **EACH 24.00**
972-4033. Type 4033S. 1000°F, 45 W .... **EACH 32.62**

Short Taper Chisel. Tellurium copper tip. **Type 4039S.** iron-clad silver plated, 3.60"L, .365"D.
972-4039. Type 4039S. 1000°F, 45 W .... **EACH 33.58**

Desoldering Pumps and Replacement Tips


UNGAR Model 7880 Tip No 7882 Desoldering Pump
7880
7882BK
UNGAR Model 7881 Tip No 7883 Static Dissipative Desoldering Pump
7881
7883

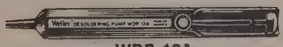
972-7880. Model 7880. Desoldering Pump .... **EACH 24.28**
972-7881. Model 7881. AS Desoldering Pump .... **EACH 33.24**
972-7882. Model 7882BK. Tip for 7880 .... **EACH 4.80**
972-7883. Model 7883. Tip for 7881 .... **EACH 8.64**

Desoldering Pumps

WDP-07

WDP-12

WDP-07A

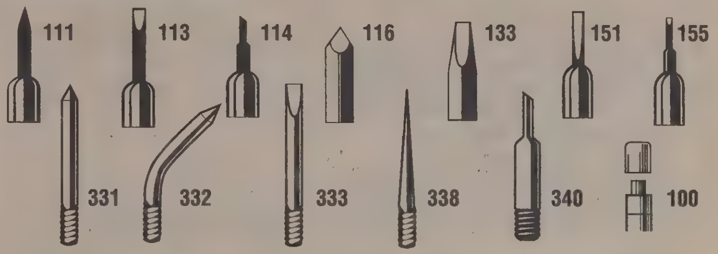

WDP-12A

Easy lightweight operation. Plunger seal spring creates strong suction. Screw-in tips ensure strong vacuum. Aluminum body withstands high temperatures.

Desoldering Pumps
984-9950. Model WDP-07. .07" Tip .... **EACH 23.22**
984-9951. Model WDP-07A. .07" Tip, Anti-Static .... **EACH 34.72**
984-9952. Model WDP-12. .12" Tip .... **EACH 23.22**
984-9953. Model WDP-12A. .12" Tip, Anti-Static .... **EACH 34.72**

Replacement Tips
984-9954. Model WDT-07. .07" Tip .... **EACH 5.36**
984-9955. Model WDT-07A. .07" Tip, Anti-Static .... **EACH 9.36**
984-9956. Model WDT-12. .12" Tip .... **EACH 5.36**
984-9957. Model WDT-12A. .12" Tip, Anti-Static .... **EACH 9.36**

Standard Line Tips



1/4" tips are thread-on; 1/8" and 3/16" are thread-in. Fit Standard Line heaters (above) or Princess heat capsules (below). Use type 100 Adapter for installation of 1/8" thread-in tiplet into thread-on heater. "PL" prefix tips are iron-clad tellurium copper, silver plated; others are unplated copper alloy.

Stock No.	Mfr.'s Type	Size	Description	Length × Dia.	EACH
972-8100	PL111	1/4"	Pencil	11/16 × 1/8"	**6.20**
972-8111	111	1/4"	Pencil	11/16 × 1/8"	**3.28**
972-8112	PL113	1/4"	Chisel	11/16 × 1/8"	**6.20**
972-8114	PL114	1/4"	Micro Spade	7/16 × .050"	**6.20**
972-8001	PL116	1/4"	Pyramid	1 × 5/16"	**7.14**
972-8115	PL133	1/4"	Taper Chisel	1 1/16 × 1/8"	**7.04**
972-8116	PL151	1/4"	Screwdriver	11/16 × 1/8"	**6.30**
972-8117	PL155	1/4"	Stepped Chisel	11/16 × 1/16"	**6.30**
972-8118	PL331	1/8"	Pencil	3/4 × 1/8"	**4.96**
972-8119	331UG	1/8"	Pencil	3/4 × 1/8"	**2.78**
972-8127	PL332	1/8"	Offset Pencil	5/8 × 1/8"	**4.96**
972-8120	PL333	1/8"	Chisel	3/4 × 1/8"	**4.96**
972-8121	333	1/8"	Chisel	3/4 × 1/8"	**2.78**
972-8002	PL338	1/8"	Taper Needle	1 1/8 × 1/8"	**4.96**
972-8122	PL340	1/8"	Micro Spade	9/16 × 1/16"	**4.96**

Thread-On Adapter. Adapts 1/8" thread-in tiplet to standard line 1/4" thread-on heater.
972-0100. Type 100 .... **EACH 3.26**

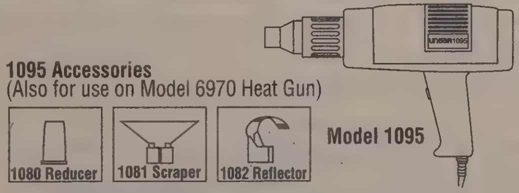
Anti-Seize. Lubricant for metals operating at high temperatures. Reduces tip thread seizure.
972-8802. Type 8001. 1/2 oz. tube .... **EACH 5.78**

Model 6966C Heat Gun

Ruggedly constructed, yet weighing only 13 oz., the 6966C is comfortable to the grip, easy to use, and the handle remains cool to the touch even after extended use. There is a convenient 3-way switch at the trigger position. A 3/8" air stream from the nozzle directs the heat to the exact area desired. Air flow temperature at the nozzle reaches approximately 750°F to 800°F in seconds. A 6 ft. 3-wire cord assures maximum operational flexibility. **Specifications. Temperature:** 750°-800°F. 120 volts AC, 3-wire grounded plug, 6 foot cord. Includes heat gun, 6 foot cord, suspension ring, and shrink tubing reflectors, reducing baffle, precision reflector.
972-6966. Model 6966C. Heat Gun .... **EACH 162.50**

6965A Heat Gun Stand. This optional accessory holds the gun within reach for immediate use and positions the gun for hands-off operation.
972-6965. Model 6965A. Heat Gun Stand .... **EACH 22.94**

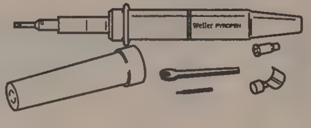
Model 1095 Heat Gun



The Ungar heat guns provide flameless heat for applying heat shrink tubing, curing epoxy, loosening adhesives, heating liquids, thawing frozen pipes, stripping paint and many other applications. Rugged design and high and low temperature settings make this heat gun ideal for use in the laboratory, production line, repair shop or home. 1000 watts (maximum), 120V-AC, 60 Hz, 3-wire grounded, 790°F-low, 1200°F-high. U.L. Listed.

972-1095. Model 1095. Heat Gun .... **EACH 62.96**
972-1080. Model 1080. Reducer for Concentrating Heat .... **EACH 7.24**
972-1081. Model 1081. Scraper for Paint Stripping .... **EACH 7.24**
972-1082. Model 1082. (Formerly 6955) Reflector for Heat Shrink .... **EACH 7.24**

WPA2 Self-Igniting Pyropen®



- ► Lightweight/Completely Portable
- ► Runs on LP Gas For Three Hours of Operation (Refill With Butane Lighter Gas)
- ► Press Self-Igniting Button and Iron Is Ready To Solder In 30 Seconds...No Need for Matches Or Sparklighter
- ► 14 Tip Combinations Available
- ► Temperature Control 482° F-932° F/250° C-500° C
- ► Inactive Hot Air Nozzles For Low Temperature Heat
- ► Wide Variety of User Applications In Work Shop For Repairs Or Hobbies

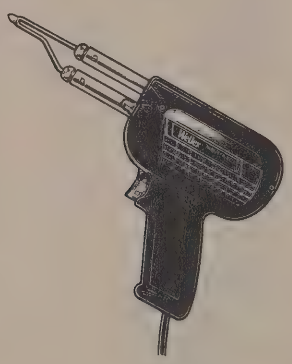
984-7600.	WPA2. Self-igniting cordless soldering iron	EACH	142.86
984-7605.	WPAPC. Pyropen plastic cap	EACH	8.10
984-7606.	WPAE. Pyropen ejector	EACH	11.88
984-7607.	WPAB. Pyropen burner	EACH	22.50
984-7608.	WPACN. Pyropen cap nut	EACH	15.16

Flux Dispensers

Standard and ESD 2 oz. squeeze-bottle flux dispensers. Stainless steel needles.

984-7615.	FD2. Dispenser with .020" × 1.0" Needle	EACH	3.00
984-7616.	FD21. Dispenser with .008" × 1.0" Needle	EACH	3.00
984-7617.	FD22. Dispenser with .050" × 1.0" Needle	EACH	3.00
984-7618.	FD3. Dispenser with .008", .020" and .050" × 1.0" Needle	EACH	3.40
984-7619.	FD2N. Needles; .020" × 1.0"	PER PKG./10	6.12
984-7620.	FD21N. Needles; .008" × 1.0"	PER PKG./10	6.12
984-7621.	FD22N. Needles; .050" × 1.0"	PER PKG./10	6.12
984-7622.	FD2D. ESD Dispenser with .020" × 1.0" Needle	EACH	3.82
984-7623.	FD21D. ESD Dispenser with .008" × 1.0" Needle	EACH	3.82
984-7624.	FD22D. ESD Dispenser with .050" × 1.0" Needle	EACH	3.82

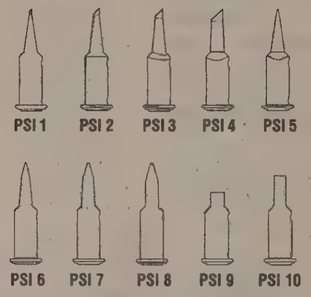
D650 Soldering Gun



- ► Reliable New Industrial-Quality Tool
- ► Highest Power Output of All Our Soldering Guns: 300 Watts in High Trigger Position and 200 Watts in Low Trigger Position
- ► Features Nickel-Plated Copper Secondary, Heat-Resistant Thermoplastic Housing
- ► Heavy-Duty Grounded Cord
- ► Wide Selection of Soldering, Cutting and Smoothing Tips Available

984-3725.	D650	EACH	77.26

Iron-Plated Tips



984-3735.	PSI 1	EACH	11.54
984-3736.	PSI 2	EACH	11.54
984-3737.	PSI 3	EACH	11.54
984-3738.	PSI 4	EACH	11.54
984-3739.	PSI 5	EACH	11.54
984-3740.	PSI 6	EACH	11.54
984-3741.	PSI 7	EACH	11.54
984-3742.	PSI 8	EACH	11.54
984-3743.	PSI 9	EACH	11.54
984-3744.	PSI 10	EACH	11.54

Weller® Portasol® PSI-100

- ► Rugged Stainless Steel Body
- ► Uses Standard Butane Fuel
- ► Runs For Up To Two Hours On A Single Butane Refill
- ► Ten Professional-Quality, Iron-Plated Tips Available
- ► Self-Igniting Portable Gas Soldering Heat Tool
- ► Solders, Heat Shrinks, Cuts Nylon Rope
- ► Temperature Adjustable Up To 1,076°F

984-4500.	PSI-100	EACH	78.92

TC205 Sponge

- ► One Standard Size Fits All Weller Soldering and Desoldering Tool Stands

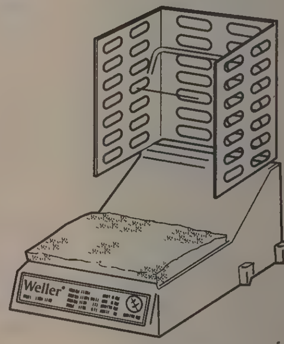
984-0205.	TC205. Sponge For Tool Stand	EACH	1.96

Scrub-It™ Solvent Dispensers

Distribute solvent through brush. Type SD74 has nylon bristles. SD74H has horsehair bristles for anti-static applications.

984-7611.	SD74	EACH	10.14
984-7612.	SD74H	EACH	10.14

DS2010



- ► Desoldering Tool Stand With Base, Sponge and Holder
- ► For All Weller Desoldering Irons

DS2010. Desoldering Iron Stand Assembly,

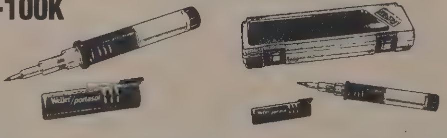
984-7630.	DS2010	EACH	56.68

Butane Cylinder WB1

- ► 70 ml Butane Cylinder
- ► Premium Butane Fuel

984-3730.	WB1	EACH	3.16

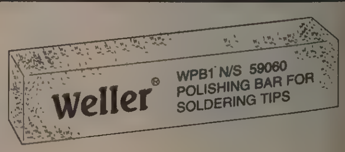
Portasol® PSI-100K



Kit Includes PSI-100 Soldering Tool, PSI 6 (2.4 mm) double flat tip, PSI 9 Hot Blower, PSI 8 (4.8 mm) double flat tip, PSI 10 Hot Knife, cleaning sponge, and rugged storage case. Fuel not included.

984-4505.	PSI-100K	EACH	104.56

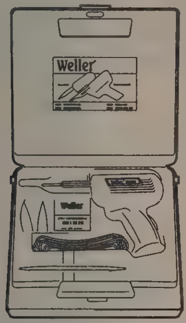
WPB1 Polishing Bar

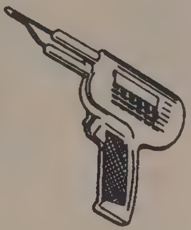


- ► Used For Cleaning Soldering Tips
- ► Removes Plastic Resins, Silicone Grease and Other Chemicals From The Tip
- ► Do Not Overdo This Cleaning As This Could Remove The Iron Plating and Ruin the Tip
- ► After Cleaning Tip, Always Retin It Immediately To Prevent Oxidation

984-7610.	WPB1. Polishing bar for soldering tips	EACH	8.50

Heavy Duty Soldering Gun Kit





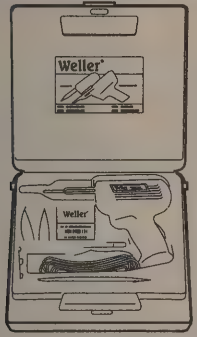
D550PK kit contains type D550 soldering gun with 2-position trigger selection of dual heats. Tin-plated copper tip heats up in 6 seconds. Twin lights to illuminate work. Kit comes with 1 sealing tip, flux brush, soldering aid tool, 40/60 rosin-core solder, plastic carrying case and booklet. 260/200 W, 120 V, 50/60 Hz. Order extra tips separately below.

984-0551. D550PK....................EACH 66.52
984-0550. D550. Soldering Gun Only. 260/200 W....................EACH 57.16
984-3725. D650. Soldering Gun Only. 300/200 W....................EACH 77.26

Replacement Tips and Parts

984-5904. 6130. Cutting Tip with Hex Nut....................EACH 4.80
984-9060. 6140. Smoothing Tip with Hex Nut....................EACH 4.80
984-5902. 7250. Standard Tip 2 Per Card....................PER PK./2 4.80
984-9061. 7250N. Standard Tip with Hex Nut....................EACH 4.80
984-7324. 7324. Switch for Dual Heat Model....................EACH 10.80
984-9062. 7417. Tip Nuts....................EACH .76
984-9063. D550-RH. Right and Left Housing....................EACH 12.08

Medium Duty Soldering Gun Kit



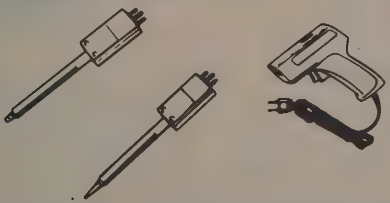
8200PK eight-piece soldering kit contains 8200 all-purpose gun, with trigger selection of high or low output. Gun heats up in 6 seconds. High-efficiency tip of tin-plated pure copper. Light illuminates work. Compact, balanced pistol grip design, 2-wire cord. Kit also includes 1 soldering tip, 1 sealing tip, 1 cutting tip, flux brush, soldering aid tool, coil of 40/60 rosin-core solder, sturdy plastic carrying case, and soldering hints booklet. 140/100 W, 120 V, 50/60 Hz. Order extra tips separately below. UL listed.

984-8205. 8200PK....................EACH 49.02
984-8200. 8200. Soldering Gun Only....................EACH 42.08

Replacement Tips and Parts

984-9065. 6110. Cutting Tip with Hex Nut....................EACH 4.80
984-9066. 6120. Smoothing Tip with Hex Nut....................EACH 4.80
984-5901. 7135. Standard Tip 2 Per Card....................PER PK./2 4.80
984-9983. 8125. Iron Plated Tip 2 Per Card....................PER PK./2 4.80
984-7325. 7325. Tip Nuts....................EACH 2.06
984-8210. 8200-RH. Right and Left Housing....................EACH 12.08

Tempmatic® Soldering Gun



Model GT. Combines temperature-controlled operation with the convenience of a pistol-shaped, trigger-operated gun with small-frame pencil iron. Quick heating, patented powerhead gives control of maximum temperature for damage-free soldering. Requires #7A long-life 700°F, 3/16" chisel point powerhead or #6B, 600°F, 1/8" conical powerhead. Powerhead ejection button. 110-120 V, 60 Hz AC.

984-3700. GT. Solder Gun Body....................EACH 29.90
984-0707. 7A. 700°F Powerhead....................EACH 47.84
984-0706. 6B. 600°F Powerhead....................EACH 47.84

W60P Series Irons

- **Line Voltage High Quality Portable Tool... Controlled Output and Temperature**
- **Weller "Closed Loop" Method of Controlling Max. Tip Temperature, Protecting Temperature Sensitive Components**
- **Iron Features Stainless Steel Modular Plug-In Heater Construction, Greater Soldering Efficiency**
- **Comes with CT5A7, 700°F 1/16" Dia. Screwdriver Tip**

Stock No.	Mfr.'s Type	Description	V	W	Hz	EACH
984-2515	W60P	Soldering iron with CT5A7 tip	120	60	50/60	**76.60**
984-0603	W60P-3	Same as W60P but with 3-wire cord	120	60	50/60	**83.20**

Replacement Parts

Stock No.	Mfr.'s Type	Description	EACH
984-9070	HEW100P	Heater assembly for W100P	**40.38**
984-1306	PH60	Soldering iron stand assembly	**23.68**
984-9071	SFA100	Spring and funnel assembly	**15.04**
984-0205	TC205	Sponge	**1.96**
984-5051	HEW60P	Heater assembly for W60P	**34.46**

Premium-Plated Replacement Tips

CT series tips are solid copper, plated with iron, nickel and chromium, precision ground and provide maximum heat transfer from heater to tip.

984-1001. CT5A6. 1/16" Screwdriver. 600°F....................EACH 7.86
984-1002. CT5A7. 1/16" Screwdriver. 700°F....................EACH 7.86
984-1003. CT5A8. 1/16" Screwdriver. 800°F....................EACH 7.86
984-1005. CT5B7. 3/32" Screwdriver. 700°F....................EACH 7.86
984-1008. CT5C7. 1/8" Screwdriver. 700°F....................EACH 7.86
984-1009. CT5C8. 1/8" Screwdriver. 800°F....................EACH 7.86
984-1011. CT5D7. 3/16" Screwdriver. 700°F....................EACH 7.86
984-1012. CT5D8. 3/16" Screwdriver. 800°F....................EACH 7.86

W100PG Series Irons

- **Line Voltage High Quality Portable Tool... Controlled Output and Temperature**
- **Weller "Closed Loop" Method of Controlling Max. Tip Temperature, Protecting Temperature Sensitive Components**
- **Iron Features Stainless Steel Modular Plug-In Heater Construction, Greater Soldering Efficiency**
- **Nominal Heat-Up Time With CT6E7 Tip: 110 Seconds**
- **Comes with CT6F7, 700°F 1/4" Dia. Screwdriver Tip**

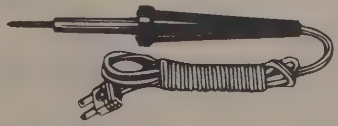
Stock No.	Mfr.'s Type	Description	V	W	Hz	EACH
984-2520	W100PG	Soldering iron with CT6F7 tip	120	100	50/60	**75.20**
984-9075	W100P-3	Same as W100PG but with 3-wire cord	120	100	50/60	**89.72**

Premium-Plated Replacement Tips

CT series tips are solid copper, plated with iron, nickel and chromium, precision ground and provide maximum heat transfer from heater to tip.

984-1015. CT6D7. 3/16" Screwdriver. 700°F....................EACH 11.24
984-9076. CT6C7. 1/8" Screwdriver. 700°F....................EACH 11.24
984-9077. CT6C6. 1/8" Screwdriver. 600°F....................EACH 11.24
984-9078. CT6D6. 3/16" Screwdriver. 600°F....................EACH 11.24
984-9079. CT6E6. 1/4" Screwdriver. 600°F....................EACH 11.24
984-9080. CT6E7. 1/4" Screwdriver. 700°F....................EACH 11.24
984-9081. CT6E8. 1/4" Screwdriver. 800°F....................EACH 11.24

"Marksman" Soldering Iron



Model SP-23 Featherweight 25-Watt Pencil Iron

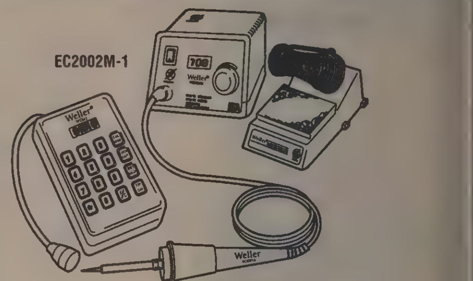
Features long-reach stainless steel barrel. Thin, nickel-plated removable tip. Excellent for detailed work. Develops 750°F For 115 VAC. **Shipping Weight:** 8 oz.

984-2423. SP-23....................EACH 15.04

Tips for SP23 (Card of Two)

984-2425. MT1....................PER PK./2 4.38
984-2427. MT3....................PER PK./2 4.38

Weller® EC Series Soldering Stations


EC2002M-1

EC2002M Series

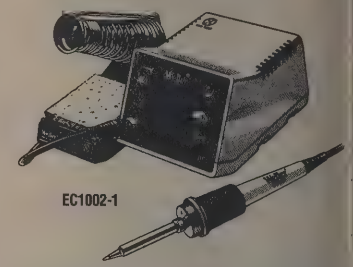
The EC2002M Series has a three digit LED read out displaying temperature settings and tip temperature with resolution of ±1°F. Tip temperature "set" mode included in the dial control. With the addition of the WCM1-Calibrator the station has the following features; user calibration, lockout, f/c read out, temperature set-back and automatic shut off. Continuously variable tip temperature from 350-850°F. Positive temperature coefficient sensor deep inside tip provides temperature feedback to maintain tip temperature at set point. Zero crossing control of heater current to eliminate RFI/EMI and accurate time proportioning to reduce tip temperature hysteresis are features of the control circuit and ensure against any high voltage spikes or magnetic fields on the soldering tip. A transformer isolates the EC power unit from the AC line. External fuse allows easy maintenance by user. 24 VAC isolated voltage drives the heating element. The irons are interchangeable on all EC units and do not require recalibration. Power unit provided with extra large sponge and iron holder. All EC stations meet the following Mil Specs DOD STD 2000-1A, DOD STD 1686, Mil-S-45743, W-S-6356 and W-S-570.

Stock No.	Mfr.'s Type	Description	EACH
984-0500	EC2002M-1	Complete station with EC1201A 42 W handpiece and ETA tip	412.18
984-0510	EC2002M-2	Complete station with EC1302A 20 W handpiece and EPH101	412.18
984-0502	EC2002M-3	Complete station with EC1503A 42 W high performance handpiece and EMA tip	431.26
984-0515	WCM1	Calibrator for Micro-Controller Stations	201.86

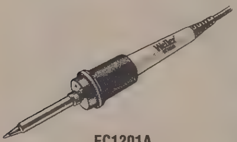
EC1002 Series

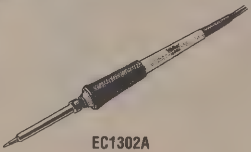
The EC1002 Series is a dial controlled electronic soldering station. The dial is calibrated in 10°F (6°C) steps and provides accurate temperature control at all times. The control of the station ensures maintenance of the temperature selected (±10°F). The unit is fully calibratable by the user and has an external fuse for ease of maintenance. The irons are interchangeable on all EC units and do not require recalibration. Power unit provided with extra large sponge and iron holder. All EC stations meet the following Mil Specs DOD STD 2000-1A, DOD STD 1686, Mil-S-45743, W-S-6356 and W-S-570.

Stock No.	Mfr.'s Type	Description	EACH
984-0100	EC1002-1	Complete station with EC1201A 42 W handpiece and ETA tip	301.08
984-3000	EC1002-2	Complete station with EC1302A 20 W handpiece and EPH101	301.08
984-6004	EC1002-3	Complete station with EC1503A 42 W high performance handpiece and EMA tip	320.14


EC1002-1

Weller® Irons and Tips For ESD Soldering


EC1201A

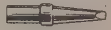

EC1302A

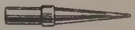
EC1503A

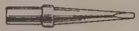
Irons

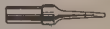
Stock No.	Mfr.'s Type	Description	EACH
984-1201	EC1201A	40 W Soldering Iron with ETA tip	116.96
984-5025	EC1302A	20 W Iron with EPH101 tip	116.96
984-1504	EC1503A	42 W Soldering Iron with EMA tip	136.02

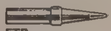
WELLER ET Series Soldering Tips


ETA to ETH


ETO, ETS


ETK, ETL, ETM


ETR

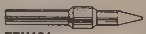

ETP

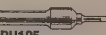
Tips

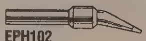
The following tips fit the EC1201A soldering iron:

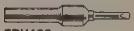
Stock No.	Mfr.'s Type	Description	Tip Size	EACH
984-0210	ETA	Screwdriver	.06"	6.62
984-0222	ETB	Screwdriver	.09"	6.62
984-0300	ETC	Screwdriver	.12"	6.62
984-0301	ETD	Screwdriver	.18"	6.62
984-0302	ETH	Screwdriver	.03"	6.62
984-0303	ETK	Long screwdriver	.04"	6.62
984-0304	ETL	Long screwdriver	.07"	6.62
984-0305	ETM	Long screwdriver	.12"	6.62
984-0306	ETO	Long conical	.03"	6.62
984-0232	ETP	Conical	.03"	6.62
984-0307	ETR	Narrow screwdriver	.06"	6.62
984-0308	ETS	Long conical	.01"	6.62

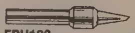
WELLER EPH Series Soldering Tips

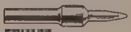

EPH101


EPH105

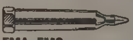

EPH102

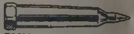

EPH106

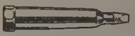

EPH103

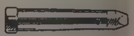

EPH109

WELLER EM Series Soldering Tips


EMA, EMC


EMH


EMB, EMD


EMF

Tips (continued)

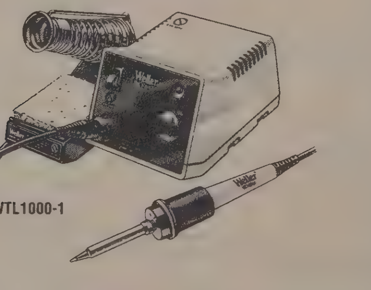
The following tips fit the EC1302A soldering iron:

Stock No.	Mfr.'s Type	Description	Tip Size	EACH
984-3201	EPH101	Micro point	.01"	6.92
984-3202	EPH102	Bent conical	.03"	6.92
984-2271	EPH103	Single flat	.03"	6.92
984-3205	EPH105	Single flat	.04"	6.92
984-3206	EPH106	Screwdriver	.06"	6.92
984-0109	EPH109	Conical	.03"	6.92

The following tips fit the EC1503A soldering iron:

Stock No.	Mfr.'s Type	Description	Tip Size	EACH
984-3272	EMA	Chisel	.06"	15.74
984-3273	EMB	Chisel	.09"	15.74
984-8810	EMD	Conical	.01"	15.74
984-5015	EMF	Chisel	.04"	15.74
984-3274	EMC	Bent conical	.01"	15.74
984-5016	EMH	Chisel	.03"	15.74

WTL1000 Soldering Stations

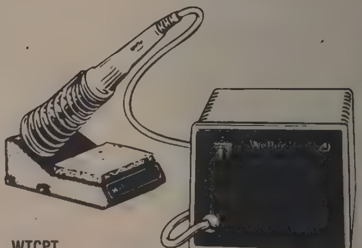

WTL1000-1

Tip temperature controlled by Thermolock® "keys" — provides operator lockout. Tip temperature automatically set to within ±10°F with insertion of different Thermolock® "key". Safety features powers iron down to 350°F if "key" is removed while unit is on. Electrostatic dissipative (ESD Safe), UL listed. For use with 40, 20, and 42 watt irons. Iron stand, with tip storage, positions left, right or remotely off main unit. **Spec. Compliance:** DOD-STD-2000, Mil-S-45743, W-S-6536, W-S-570 and DOD-STD-1686.

Stock No.	Mfr.'s Type	Description	EACH
984-9924	WTL1000-1	ESD station EC1201A, 40 W pencil, ETA tip, stand and keys	299.90
984-9960	WTL1000-2	ESD station EC1302A, 20 W pencil, EPH101 tip, stand and keys	299.90
984-9962	WTL1000-3	ESD station EC1503A, 42 W pencil, EMA tip, stand and keys	318.96

Controlled Output Station

- Automatic Output and Temperature Control
- Lightweight Iron
- UL Listed
- Impact-Resistant Case


WTCPT

Model WTCPT. This closed-loop, low-voltage circuit automatically controls output and temperature in three ranges: 600°F (315°C), 700°F (371°C), and 800°F (427°C). The operator selects temperatures by changing grounded, heat-sensing tip with the knurled thumbscrew. This unit's lightweight iron has locking designs for interchangeability and a nonburnable silicone rubber cord. The power unit is in an impact-resistant case and has a unitized on/off rocker switch with indicator light, nonheat-sinking iron holder, storage tray for extra tips, and tip cleaning sponge. **Cord:** 3-wire 4.5' (1.4 m) long. **Tip:** 1/16" (1.58 mm) screwdriver tip 700°F (371°C) PTA7 furnished. UL Listed. Features the TC201P iron and is safe for IC soldering.

984-2507..EACH 171.64

Replacement Tips for WTCPT Soldering Station

Stock No.	Mfr.'s Type	Description	Temp.	EACH
984-1506	PTA6	1/16" Screwdriver	600°F	7.00
984-2106	PTH6	1/32" Screwdriver	600°F	7.00
984-2306	PTL6	5/64" Long screwdriver	600°F	7.00
984-1507	PTA7	1/16" Screwdriver	700°F	7.00
984-1600	PTB7	3/32" Screwdriver	700°F	7.00
984-1907	PTC7	1/8" Screwdriver	700°F	7.00
984-2107	PTH7	1/32" Screwdriver	700°F	7.00
984-2307	PTL7	5/64" Long screwdriver	700°F	7.00
984-2350	PTM7	1/8" Long screwdriver	700°F	7.00
984-1500	PTAA7	1/16" Single flat	700°F	7.00
984-2000	PTDD7	3/16" Single flat	700°F	7.00
984-2370	PTP7	1/32" Conical	700°F	7.00
984-2030	PTF7	1/32" Conical flat	700°F	7.00
984-1508	PTA8	1/16" Screwdriver	800°F	7.00
984-1908	PTC8	1/8" Screwdriver	800°F	7.00
984-2308	PTL8	5/64" Long screwdriver	800°F	7.00
984-1505	PTAA8	1/16" Single flat	800°F	7.00
984-1995	PTDD8	3/16" Single flat	800°F	7.00

Weller Thermal Tweezer and Tips — *NEW* —

The new Weller WT50 Thermal Tweezers are designed for quick and easy removal of small two-sided SMT components. Tips ranging in size from 1 mm (.040") to 18.5 mm (.728") are available. These tweezers provide 50 watts of power (25 W per leg) and can be used with any Weller EC station as well as the new WRS1000 and WRS3000 rework stations.

984Q0615.	WT50. Thermal Tweezer with WT1 Tip	EACH	317.52
984-0618.	AK50. Stand for WT50	EACH	155.82
984-0620.	WT1. 1 mm (.040") Tip	EACH	26.40
984-0621.	WT2. 3 mm (.118") Tip	EACH	26.40
984-0622.	WT3. 6 mm (.236") Tip	EACH	26.40
984-0623.	WT4. 12.5 mm (.492") Tip	EACH	62.40
984-0624.	WT5. 18.5 mm (.728") Tip	EACH	62.40

Note: Power unit and stand sold separately.

Weller® Ungar 2024 Series

The 2024 service center is a shop air tool used for electronic repair and rework. Increased production is made possible by rapid heat up and vacuum response, with temperature variation from 500°F-850°F. Tiplet clogging is decreased with the built-in trigger time delay circuit. This feature insures complete flow of solder into the collector tube. The unit operates with either inline or pistol-grip style handles. Other features include the iron holder, which may be customized for the operator by allowing for adjustment of the angle. The 2024 is totally ESD safe.

984Q9700.	2024P. Desolder system with 5098AS desolder pistol	EACH	706.86
984Q9702.	2024IL. Desolder system with 5088AS inline desolder iron	EACH	706.86

Weller® Ungar 4024 Series

This self-contained, electronically controlled desoldering system has an internal vacuum pump, which provides flexibility for the user, but has been made quieter than older stations. Tiplet clogging is decreased with the built-in trigger time delay circuit. This feature insures complete flow of solder into the collector tube. Other features include the adjustable iron holder. The 4024 is totally ESD safe and operates with either inline or pistol-grip style handles.

984Q9703.	4024P. Desolder system with 5098AS desolder pistol	EACH	755.50
984Q9704.	4024IL. Desolder system with 5088AS inline desolder iron	EACH	755.50

Desoldering Irons — *NEW* —

High-Performance Inline Desoldering Iron

60-watt inline-style desoldering tool comes complete with 4006 tiplet. ESD safe with non-burning silicon rubber cord and vacuum line.

984-5088.	5088AS	EACH	251.30

Pistol Style Desoldering Iron

Smallest, lightest desoldering pistol is the toughest when it comes to solder removal. Operates with a lower temperature setting which reduces damage to temperature sensitive components. Delivers quick, clean solder removal from multilayered PCB or heavy ground planes.

984-5098.	5098AS	EACH	251.30

Weller® Ungar 4624 Series

The 4624 is a self-contained soldering and desoldering system for rework and repair. Increased production is made possible by rapid heat up and vacuum response, with temperature variation from 500°F-850°F. Tiplet clogging is decreased with the built-in trigger time delay circuit. This feature insures complete flow of solder into the collector tube. It operates with the 9931AS 24 VAC soldering irons (listed below) and either the inline or pistol-grip desoldering tools. Features include quiet pump operation and adjustable, non-slip iron holders for maximum operator flexibility. The 4624 is UL listed, CUL listed and ESD safe.

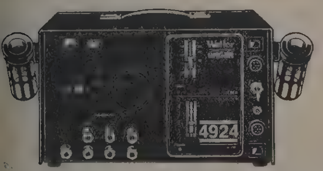
Type 4624P. Solder/Desolder system with 5098AS desolder pistol and 9931AS soldering iron.

984Q9705.	4624P	EACH	987.56

Type 46241L. Solder/Desolder system with 5088AS inline desolder iron and 9931AS soldering iron.

984Q9706.	46241L	EACH	987.56

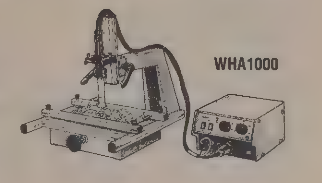
Weller® Ungar 4924 Series



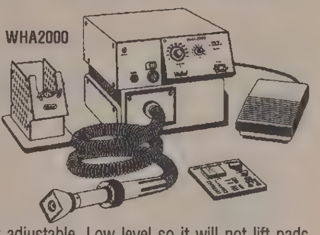
The new 4924 service center is designed to handle virtually all repair and rework applications. Totally ESD safe, it can be powered continuously or by means of a foot pedal, and has three voltage ranges for use with a broad range of tools. The 4924 has its own internal pump — eliminating the need for shop air — and is substantially quieter than older stations. Desoldering or heat shrinking is made possible by means of an air reversal switch, which changes from vacuum to hot air flow. Tiplet clogging is decreased with the built-in trigger time delay circuit. This feature insures complete flow of solder into the collector tube. Temperature can be controlled from 500°F-850°F. System includes pistol or inline desoldering iron, micro and macro soldering irons, machine center motor and extra stand.

984Q9708.	4924P. Service center with 5098AS desolder pistol	EACH	2032.74
984Q9710.	4924IL. Service center with 5088AS inline desolder iron	EACH	2032.74

Weller® WHA 2000 and WHA 1000 Hot Air SMD Rework Systems — *NEW* —



WHA1000



WHA2000

- **Nozzle Design Promotes Preheating of Component, Can Be Used With Other Manufacturer's Nozzles by Using Adapters**
- **Micrometer Adjustment Precisely Replaces Chips as Small as 25 Mil**
- **Unique Vacuum Pickup Eliminates Need For Additional Tools To Remove Chips; Precise Temperature Control Reduces Thermal Stress**
- **Available With Heated or Nonheated Rework Tables**
- **Also WHA 2000 Is Available as a Self Contained Unit**

Fully self contained unit has an air turbine and a separate vacuum pump. Comes standard with one foot pedal to control both air and vacuum. A second foot pedal and a wired remote are optional. Hand control operates both air and vacuum and can be used simultaneously with the foot pedals. 300°F-1000°F. 10-50 liters per minute air. 0.6 bar vacuum (7" Hg.) not adjustable. Low level so it will not lift pads, damage components, etc. 820 watts total. 730 watts handpiece. ESD Safe (has an ionizing circuit).

984Q0650.	WHA2000. Hot air repair/rework system with pump	EACH	2558.16
984Q9740.	WHA1000. Complete hot-air station, with tool and stand	EACH	1670.76
984Q9741.	WHA101. Rework-stand arm	EACH	1151.96
984Q9742.	WHA102. Rework table, non-heated, 13" × 24"	EACH	572.36
984Q9743.	WHA103. Rework table, heated, 120 V, 13" × 24"	EACH	862.16
984Q9745.	WHA104. Combo stand, non-heated table	EACH	1702.02
984Q9746.	WHA105. Combo stand, heated table, 120 V	EACH	2553.04
984-9747.	58736833. Nozzle; pin count: QFP — 120, 128, 144; PLCC — 84	EACH	172.50
984-9748.	58736814. Nozzle, pin count: QFP — 64, PLCC — 44	EACH	176.80
984-9749.	58736843. Nozzle, 5°, SOJC, DSO pin count: 16	EACH	172.50

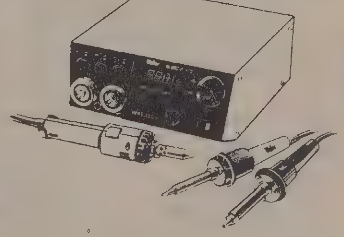
NOTE: Other nozzles are available.

Weller Fumex Extractor — *NEW* —

The WFE2P fume extractor is a bench-top filtration unit that reduces harmful soldering emissions by extracting 99.99 percent of the fumes before they can be released into the environment. Services one or two soldering stations.

984Q0630.	WFE2P	EACH	1331.60

Weller® WRS 3000

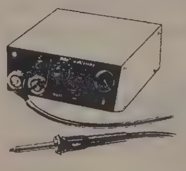


- **ESD Safe, UL Listed**
- **Operator Lock-Out**
- **Completely Self-Contained**
- **Digital Readout**
- **Dimensions: 9.6" (W) × 4.1" (H) × 10.6" (L)**
- **Power Input: 300 W**
- **Meets MIL-SPECS**
- **Maximum Air Flow For The Hot-Air Pencil Is 10/L Min.; For Desoldering Vacuum Is 20.7 Hg**
- **Temperature Range For Hot Air Is 300°F-980°F; For Solder/Desolder It's 300°F-850°F**

The Weller WRS 3000 is designed to handle all rework and repair of mixed technology boards. It has a built-in microprocessor that provides simultaneous controlled desoldering, soldering and hot air functions with complete accuracy and reliability. Temperature, hot air time and automatic temperature set-back can be programmed. An operator lock-out feature prevents any unauthorized changes. The WRS 3000 has its own internal pump — eliminating the need for shop air — and is compatible with both Weller and Ungar products and is totally ESD safe. *Blades sold separately.

984Q9715.	WRS3000. Power unit, 120 V, tools sold separately	EACH	1663.12
984-9716.	EC1201AP. 40-W macro soldering iron with ETA tip and stand	EACH	138.88
984-9717.	HAP1. 100-W hot-air pencil, stand, and two tiplets	EACH	275.32
984-9719.	DS58. 60-W in-line desoldering tool, 4006 tiplet	EACH	291.20
984Q9720.	WST20. Temperature-controlled thermal wire-stripper*	EACH	477.00
984-9721.	58725726. 12-, 16- and 24-AWG blade	EACH	60.48
984-9722.	58725729. 12-, 14- and 24-AWG blade	EACH	60.34
984-9723.	58725732. 14-, 18-, 22- and 26-AWG blade	PER SET/2	60.34
984-9724.	58725718. Flat cable stripper	EACH	64.58
984-9725.	58725723. Cutting knives	PER SET/2	25.12

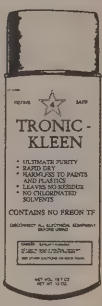
Weller® WRS 1000



The Weller WRS 1000 station is designed to handle a variety of rework and repair tasks. A selector switch allows the user to choose either the standard hot air tool supplied with the unit or another Weller/Ungar soldering or desoldering iron. The WRS 1000 has its own internal pump — eliminating the need for shop air — and comes complete with a hot air pencil. It is compatible with both Weller and Ungar products and is totally ESD safe. (ADP1 adapter must be used with Ungar tools.)

984Q9730.	WRS1000. Rework system, 120 V, hot-air pencil and stand	EACH	1104.92
984-9732.	ADP1. Tool adapter	EACH	50.80

Tronic Kleen™



- ► Ozone Safe Formula
- ► Leaves No Residue
- ► Ultimate Purity
- ► Safe on Paint, Plastics and Insulations
- ► Rapid Dry

Contact Cleaner is a special solvent recently developed for use in white rooms for cleaning of sophisticated spacecraft instruments, controls and computers. An extremely high-purity solvent cleaner for cleaning critical metallic and non-metallic surfaces. Removes grease or dirt from sensitive electronic, television or telephone contacts. Does not attack plastics or wire insulations.

596-1000. 4025. Aerosol. 19.7 Fl. oz. **1-11** .... EACH 5.04
12-23 .... EACH 4.11

Tronic Kleen™ of Lube

- ► Ozone Safe Formula
- ► Ultimate Purity
- ► Rapid Dry
- ► Safe on Paint, Plastics and Insulations
- ► Second Spraying Leaves a Lubricated Surface

Contact Cleaner and Lube is a special solvent recently developed for use in white rooms for cleaning of sophisticated spacecraft instruments, controls and computers. An extremely high-purity solvent cleaner for cleaning critical metallic and non-metallic surfaces. Removes grease or dirt from sensitive electronic, television or telephone contacts. Does not attack plastics or wire insulations. A light spray after cleaning will leave a lubricated surface.

596-1001. 4035. Aerosol. 19.7 Fl. oz. **1-11** .... EACH 5.04
12-23 .... EACH 4.11

SS-500

- ► Electronic, Electrical, Industrial
- ► Non-Flammable Safety Solvent
- ► Cleaner-Degreaser
- ► High Di-Electric Strength Low Toxicity

The high solvent power of SS-500 quickly dissolves oils, fats and resins without attacking many plastics, coatings, varnishes or maskings. These solvent properties are particularly important where such items as electronic components, electrical insulation and metals are being cleaned.

596-4635. 4650. Aerosol. 20 Fl. oz. **1-11** .... EACH 4.95
12-23 .... EACH 4.05

Flux-Gone

- ► Ozone Safe Formula
- ► Contains No Freon
- ► Leaves No Residue
- ► Quickly Removes Resin Flux, Organic Flux, Soldering Oils, Grease and Other Contaminants

Flux-Gone is a heavy duty solvent that removes solder fluxes, grease, oil, silicones, waxes and other soils leaving a clean residue-free surface. Thorough cleaning makes Flux-Gone the ideal cleaner for all electronic cleaning.

596-1003. 6250. Aerosol. 20 Fl. oz. **1-11** .... EACH 5.03
12-23 .... EACH 4.11

Pro Duster

- ► Ozone Safe Formula
- ► Contains No Freon
- ► Moisture Free
- ► Zero Residue
- ► Non-Abrasive

Effectively removes microscopic lint, dust, ferrous oxides and other particulates.

596-1002. 6315. Aerosol. 10 Fl. oz. **1-11** .... EACH 9.45
12-23 .... EACH 8.55

421 Silicone Spray

- ► Industrial Commercial Machine Shop Transportation
- ► Stops Sticking and Squeaking
- ► Retards Corrosion
- ► Unaffected by Temperature Ranging from –40°F to 400°F

421 Silicone stops squeaking, sticking, binding and retards corrosion. Makes cleaning easier and quicker. Saves valuable time, protects and preserves equipment. Use on any surface — metal, glass, rubber, plastic, painted finishes and fabrics. It is odorless, colorless, non-staining and heat stable — unaffected by temperature ranging from –40° to 400°F. It has unusually low surface-tension properties.

596-1005. 10015. Aerosol. 16 Fl. oz. **1-11** .... EACH 5.03
12-23 .... EACH 4.11

Freeze

- ► Ozone Safe Formula
- ► Contains No Freon
- ► Contains No Prop. 65 Chemicals
- ► Instant Chilling to –40°C
- ► Quickly Tracks Thermal Intermittents
- ► Quick Location Due to Heat Failure
- ► Indispensable Tool in Electronic Repair

596-1006. 6300. Aerosol. 12 oz. **1-11** .... EACH 9.26
12-23 .... EACH 8.55

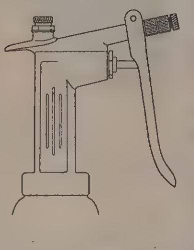
Dio-Tronic Electronic Component Cleaner

- ► Non-Polar Solvent HCFC Replacement for Freon TF
- ► No 1,1,1-Trichloroethane
- ► No TF Solvent
- ► No Citrus Oil
- ► No Petroleum Distillates
- ► 26,000 Volt Dielectric Strength
- ► Non-Flammable
- ► Dries Fast — Residue Free

A high purity, high di-electric, non-flammable spray specially formulated for removing oil, grease, condensation and other contaminants from sophisticated electronic parts. Quick drying formula will not harm Neoprene W, Buna N, Buna S, Silicone Rubber, Butyl, Natural Rubber, Thiokol FA, Hypalon 40, Viton A, Adiprene L, Nordel, Delrin, Zytel, Nylon, Teflon, PVC and Polyurethane. **Note:** Do not use on Styrene or Polystyrene. For other plastics, test on inconspicuous area first. Use on circuit boards, terminals, relays, switches, contacts, circuit breakers, tuners, control panels, motors and other electronic equipment.

596-4075. 4075. Aerosol. 12 oz. **1-11** .... EACH 7.99
12-23 .... EACH 7.25

SprēZ Equipment



Model eZ 100. Precision Trigger Sprayer.
596-1017. 1-11 .... EACH 28.50
12-23 .... EACH 24.25

Model eZ 100-25. Brass Extension Tube.
596-1018. 1-11 .... EACH 7.25
12-23 .... EACH 6.15

Model eZ 100-75. Spiral Insert.
596-1019. 1-11 .... EACH 1.13
12-23 .... EACH .91

SprēZ ANTI STATIC

- ► End Static Shocks
- ► Neutralize Static Electricity
- ► Minimize Danger of Fire or Explosion
- ► Reduce Product Loss
- ► Decrease Downtime
- ► Stop All Carpet Shocks
- ► Non-Staining
- ► Non-Corrosive
- ► Non-Oily
- ► Non-Greasy
- ► Will Not Discolor or Ring

ANTI STATIC is the answer to all of your static electricity problems — just spray on as needed. ANTI STATIC's modern chemical action reduces static charges generated by friction or atmospheric conditions. Continued use actually builds immunity against future static build up.

596-1009. eZ1815. 16 Fluid Ounces. **1-11** .... EACH 3.17
12-23 .... EACH 2.54

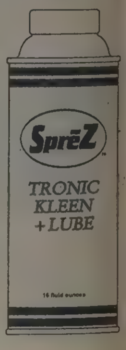
SprēZ TRONIC KLEEN™

- ► Ozone Safe Formula
- ► Leaves No Residue
- ► Ultimate Purity
- ► Safe On Paint, Plastics and Insulations
- ► Rapid Dry

TRONIC KLEEN is a special solvent recently developed for use in white rooms for cleaning of sophisticated spacecraft instruments, controls and computers. An extremely high-purity solvent cleaner for cleaning critical metallic and non-metallic surfaces. Removes grease or dirt from sensitive electronic, television or telephone contacts. Does not attack plastics or wire insulations. (Authorized by USDA for use in federally inspected meat and poultry plants.) TRONIC KLEEN consists of an ultimate purity solvent which contains no freon or other chlorinated solvent.

596-1007. eZ4025. 16 Fluid Ounces. **1-11** .... EACH 3.96
12-23 .... EACH 3.07

SprēZ TRONIC KLEEN™ + LUBE

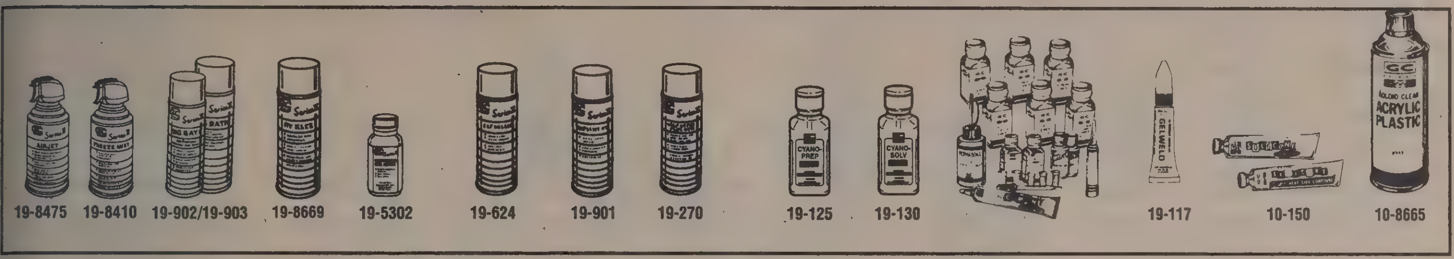


- ► Ozone Safe Formula
- ► Ultimate Purity
- ► Rapid Dry
- ► Safe On Paint, Plastics and Insulations
- ► Second Spraying Lubricates

TRONIC KLEEN + LUBE is a special solvent recently developed for use in white rooms for cleaning of sophisticated spacecraft instruments, controls and computers. An extremely high-purity solvent cleaner for cleaning critical metallic and non-metallic surfaces. Removes grease or dirt from sensitive electronic, television or telephone contacts. Does not attack plastics or wire insulations. A light spray after cleaning will leave a lubricated surface. TRONIC KLEEN + LUBE consists of an ultimate purity solvent plus silicone lubricant, which contains no freon or other chlorinated solvent.

596-1012. eZ4035. 16 Fluid Ounces. **1-11** .... EACH 3.96
12-23 .... EACH 3.07

Chemicals, Adhesives, Cleaners and Lubricants



All GC Aerosols, except as noted, contain no ecology-damaging fluorocarbons.

Anti Static Products

► **Anti Static Formulations Minimize the Risk of Electrostatic Damage to Sensitive Components**

Static Null
Neutralizes and prevents static electricity from reforming. May be used on circuit boards, printers, paper, carpeting, clothing etc. Non-greasy formula.
796-9899. 19-1004. 9.75 Avdp. Oz. Aerosol .... **EACH 4.61**

Optical Cleaner
Contains silicone-glycol polymers which provide a high luster and minimize or eliminate dust attracting static. Cleans dust, dirt and grime without leaving streaks or dulling residue.
796-9897. 19-1710. 16 Fl. Oz. Trigger Sprayer .... **EACH 3.86**

Static Free Big Bath
An excellent cleaner, degreaser for removing dirt, oil, grease and fluxes from electronic and electrical equipment. Effective on switches, motors, PC boards, etc. Displaces moisture. Check for compatibility on sensitive plastics.
796-9847. 19-903-SF. 22 Avdp. Oz. Aerosol .... **EACH 13.25**

Static Free Air Jet
For dusting and cleaning of components and equipment especially in hard to reach places. Nonflammable.
796-9827. 19-8475-SF. 12 Avdp. Oz. Aerosol .... **EACH 7.31**

Static Free Freeze Mist
A refrigerant spray used to locate thermal intermittents in electronic equipment and for thermal fitting. Nonflammable.
796-9824. 19-8410-SF. 12 Avdp. Oz. Aerosol .... **EACH 8.01**

High Strength Flux Remover
796-4280. 10-7517. 12 Avdp. Oz. Aerosol .... **EACH 7.55**
796-4285. 10-7521. 18 Avdp Oz. Aerosol .... **EACH 10.60**

Series II Aerosol Chemicals

Airjet
Airjet contains no CFCs, VOCs or HCFCs. Formulated for dusting and cleaning of components and equipment. Contains 100% of 1,1,1,2 — tetrafluoroethane. Used for blowing dust and residue out of hard to reach places without scratching.
796-1910. 19-8475. 12 Oz. (340 gms.). Aerosol .... **EACH 6.38**
796-5311. 19-8475-10. 10 Oz. (284 gms.). Aerosol .... **EACH 6.78**

Freeze Mist
Freeze Mist contains no CFCs, VOCs or HCFCs. A refrigerant spray, Freeze Mist is used to locate thermal intermittents in electronic components and thermal fitting metal parts. Cools to –60°F.
796-1911. 19-8410. 12 Oz. (340 gms.). Aerosol .... **EACH 7.28**
796-5313. 19-8410-10. 10 Oz. (284 gms.). Aerosol .... **EACH 6.54**

Big Bath (Cleaner/Degreaser)
Excellent cleaner and degreaser for removing dirt, oil, grease, and fluxes from electronic and electrical components including switches, meters, PC boards, etc. Contains an HCFC blend with no Class I CFCs. This high pressure spray dissolves and flushes away all contaminants. **Note:** All plastic surfaces should be checked for compatibility. **Environmental Data. CFC:** 0%. **HCFC:** 92%. **Cl. Solvent:** 0%. **ODP:** .10. **VOC:** 5%.
796-5314. 19-903-6. 6 Oz. (170 gms.). Aerosol .... **EACH 3.15**
796-1912. 19-902. 12 Oz. (340 gms.). Aerosol .... **EACH 6.57**
796-1913. 19-903. 22 Oz. (624 gms.). Aerosol .... **EACH 11.55**

Dry Kleen
Dry Kleen is formulated to clean all electrical controls, contacts, relays, and other components where oil and grease is not desired. It will not damage electrical parts when used properly. **Note:** All plastic surfaces should be check for compatibility. **Environmental Data. CFC:** 0%. **HCFC:** 50%. **Cl. Solvent:** 26%. **ODP:** .10. **VOC:** 47%.
796-1914. 19-8669. 16 Oz. (454 gms.). Aerosol .... **EACH 6.33**

VCR Magnetic Head Cleaner
Removes dust, dirt and oxide from heads on VCRs, cassette recorders, and computer drives. Evaporates quickly and leaves no residue. **Note:** Plastic safe.
796-1915. 19-5302. 2 Oz. (59 ml). Bottle .... **EACH 3.41**

Component Bath
Excellent general use cleaner/degreaser for removing dirt, oil, grease and fluxes for electronic and electrical contacts in switches, motors, PC boards, etc. This product is formulated to dissolve and flush away all contaminants. **Note:** All plastic surfaces should be checked for compatibility. **Environmental Data. CFC:** 0%. **HCFC:** 97%. **Cl. Solvent:** 0%. **ODP:** .10. **VOC:** 0%.
796-1918. 19-901. 16 Oz. (454 gms.). Aerosol .... **EACH 13.00**
796-1917. 19-624. 22 Oz. (624 gms.). Aerosol .... **EACH 10.46**

General Use Flux Solv
General Use Flux Solv evaporates quickly and is excellent for the removal of most ionic and rosin fluxes from electronic components, PC boards or other surfaces requiring a general flux remover. **Contains:** HCFC and alcohol. **Applications:** PC boards, electronic components, electrical components.
796-2430. 19-328-12. 12 Oz. Aerosol .... **EACH 7,50**
796-2432. 19-328-22. 22 Oz. Aerosol .... **EACH 11.00**

Extra Strength Flux Solv
Extra Strength Flux Solv is excellent for the removal of most ionic and non ionic fluxes from electronic components, PC boards or any other surface requiring an extra strength flux remover. **Note:** All plastic surfaces should be checked for compatibility. **Environmental Data. CFC:** 0%. **HCFC:** 85%. **Cl. Solvent:** 6%. **ODP:** .10. **VOC:** 12%.
796-1920. 19-270. 16 Oz. (454 gms.). Aerosol .... **EACH 8.95**

Glass and Plastic Cleaner
Wipes dirt, dust and grime from all glass and plastic surfaces without leaving streaks or dulling residue. Contains grease-cutting ammonia. Convenient aerosol packaging. Economical for home or industry.
796-9895. 10-9082. 14 Oz. (397 gms.). Aerosol .... **EACH 3.18**

Adhesives

Cyano-Prep/Accelerator
Surface activator and cleaner for all cyanoacrylate adhesives. Provide better, faster curing bonds on materials generally difficult to bond.
796-9833. 19-125. 1 Fl. Oz. (29 ml). Bottle .... **EACH 4.29**

Cyano-Solv
Solvent for cyanoacrylate adhesives including GR-R-RIP. Releases cyanoacrylate adhesive bonds. Used to clean clothes, tools, spills, etc.
796-9834. 19-130. 1 Fl. Oz. (29 ml). Bottle .... **EACH 3.09**

Cyano Accessory Kit
Kit contains Cyano-Prep for surface preparation before using adhesive, Cyano-Solv for releasing bonds or clean-up.
Model 19-135. 1 fl. oz (29 ml) each. Cyano-Prep bottle and Cyano-Solv bottle.
796-2434. 19-135 .... **EACH 5.98**

GC Epoxy Putty
A two part epoxy in a single tube. Amount needed is cut off and kneaded together. Two minute work life. **Applications Include:** Plumbing repairs, works under water. Electrical, use in place of tape. **Dielectric Strength:** 400 volts/mil. Sets hard in 20 minutes, may be drilled and tapped. **Maximum Useful Temperature:** 300°F.
796-9831. 19-348. 4 Oz. (113.4 gms.). Tube .... **EACH 7.50**

GC Potting Epoxy
Black opaque highly filled epoxy used for potting and encapsulating electronic circuits. Use to environmentally protect or conceal circuits. This product is excellent when used with GC Chassis Boxes. **Working Time (Pott Life):** 1 hour. **Mix Ratio:** 1 to 1. **Temperature Range:** –40° to 180°F. **Electrical Properties. Volume Resistivity:** 10^{12} at 300°F. **Dielectric Constant:** 4.2 (10^4 CPS at 77°F). **Dissipation Factor:** .014 (10^4 CPS at 77°F).
796-9828. 19-823. 9 Oz. Kit .... **EACH 10.83**

Conductive Epoxy
Electrically conductive two part for attaching electrical components. **Mix Ratio:** 1 to 3. **Pot Life:** 40 minutes. Cure 24 hours. **Volume Resistivity:** 5.0×10^{-3} ohm-cm max.
796-9850. 19-2092. 5 gms. Kit .... **EACH 17.90**

5-Minute Epoxy Cement
Clear, fast-curing two-part epoxy. Handle in 8-12 minutes.
796-4290. 10-114. 2 Fl. Oz. Tubes .... **EACH 5.40**

GR-R-RIP
World famous ethyl cyanoacrylate rapid bonding adhesive. Bond strength not affected by temperatures from –112°F to +212°F (–80°C to +100°C).
796-4216. 19-115. 0.075 Fl. Oz. (3 gms.). Bottle .... **EACH 4.49**

Gelweld — Gel Cyanoacrylate Adhesive
Ethyl cyanoacrylate super strength adhesive in a "gel" form — will not drip or run. Fills gaps well.
796-4218. 19-117. 0.101 Fl. Oz. (3 ml). Tube .... **EACH 3.87**

Electronic Grade Silicone Sealant/Adhesive
One part non-corrosive, neutral cure electronic grade silicone sealant. Will remain flexible from –60°C to +200°C (–70°F to +390°F). An excellent adhesive for many electrical and electronic applications where corrosion to metals is a problem. Good dielectric properties, high surface resistivity and resists electrical tracking. Meets the requirements of Mil-A-46146a-Type 1; meets the requirements of FDA status, FDA Regulation #177.260.
796-9845. 19-155. 3 Fl. Oz. (90 ml). Tube .... **EACH 5.50**

Silicone Rubber Adhesive Sealant
Excellent elastomer cures to a tough rubbery solid. Resists weathering, vibration and exposure to oil, moisture, ozone and temperatures from sub-zero to 450°F. Tack free 20 min./cures 24 hrs.
796-4305. 10-150. 3 Fl. Oz. Tube. Clear .... **EACH 6.99**

Epoxy Glue — 5 Hour Set
Provides an exceptionally hard and strong bond. Good dielectric properties. Gray-white in color with fillers added to increase the viscosity and make it thixotropic (non-running). May be used to fill gaps or to replace broken sections. Bonds may be over-filled and filed or sanded after curing.
796-2446. 10-347. 2 Fl. Oz. (59 ml). Tubes .... **PER PKG./2 12.98**

Coatings

Koloid-Clear Acrylic Plastic
Acrylic, ester resin base.
796-8665. 10-8665. 15 Oz. (422 gms.). Aerosol .... **EACH 6.31**

Q-Dope
Polystyrene, fast-drying. Leaves a clear protective coating.
796-4335. 10-3702. 2 Fl. Oz. Bottle .... **EACH 5.11**
796-4340. 10-3704. 4 Fl. Oz. Bottle .... **EACH 8.57**

Corona Dope
Quick-drying black lacquer of cellulosic resin. Excellent dielectric, arc and corona resisting properties and protects against moisture, atmospheric effects.
796-4345. 10-4702. 2 Fl. Oz. Bottle .... **EACH 6.34**

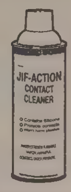
Red X Corona Dope
Thixotropic polyester base red enamel. Excellent adhesion. Is oil and waterproof. Insulation of high voltage components especially in high humidity areas.
796-2068. 10-5002. 2 Fl. Oz. Bottle .... **EACH 7.39**

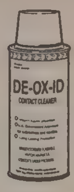
Red Glpt. Insulating Varnish
Alkyd based resistant to environmental extremes, including oils, water, acids and alkalis. Retains high dielectric strength even if wet.
796-3670. 10-9002. 2 Fl. Oz. Bottle .... **EACH 6.26**

Printed Circuit Soldering Chemicals
Silver Print. Draw or repair printed circuits. Made of pure silver. Air drying.
796-2035. 22-201. 1/2 Troy Oz. Bottle .... **EACH 52.99**

Nickel Print (Conductive Paint)
A quick drying lacquer-based coating, pigmented with powdered nickel. For repair and modification of printed circuits. Conductivity is 5 to 6 ohms per square.
796-2436. 22-207. 2 Fl. Oz. (59 ml). Bottle .... **EACH 7.34**

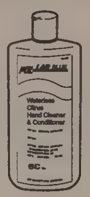
Print Kote Conformal Coating
The ultimate coating for PC boards provides a protective shield to resist environmental contaminants. Prevents arcing and shorting. Air dry 15 to 30 minutes. May be baked at 200°C for 30-60 minutes for extreme high temperature applications.
796-2438. 22-203. 2 Fl. Oz. (59 ml). Bottle .... **EACH 6.34**
796-2440. 22-245. 11 Oz. (311 gms.). Aerosol .... **EACH 10.70**

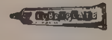

19-638, 19-640


19-1906

19-725

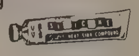
EL-612-2

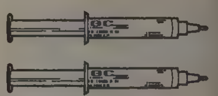

EL-612


10-2302

10-4807

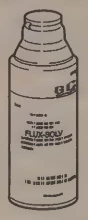
10-8109


10-8101

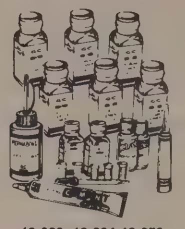

10-8135, 10-8130, 10-8132

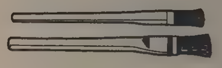
22-270

10-4202


10-228

10-1507


10-302, 10-304,10-352,
10-4302, 10-347, 10-4002


Acid Brushes

All GC Aerosols, except as noted, contain no ecology-damaging fluorocarbons.

Cleaning Compound — *NEW* —

Pull-Ar Blue Hand Cleaner
Pull-Ar Blue hand cleaner with pumice cuts the most difficult grime with ease. Aloe vera is added to help soften rough skin. Packaged in a convenient squeeze bottle.
796-2456. EL-612-2. 2 Fl. Oz. (59.1 ml). Squeeze Bottle ....**EACH 1.98**
796-2458. EL-612. 12 Fl. Oz. (354.8 ml). Squeeze Bottle ....**EACH 5.90**

Contact/Tuner Cleaners

Jiffy Bath
Consists of solvents, safe for use on most materials. It possesses a balanced ratio of cleaning solvents to lubricating and protecting ingredients. Contains silicone oils which will not oxidize and will remain active as protective coating and lubricating agent for years, even under adverse environmental conditions such as high humidity and contaminated atmosphere. One of the most universal and safe contact cleaners and may be used on all rotating and sliding contacts in any types of switches or controls.
796-1963. 19-638. 4 Oz. Aerosol..........**EACH 3.85**
796-9815. 19-640. 10 Oz. Aerosol..........**EACH 5.50**

DE-OX-ID
Light, oil based contact treatment compound with active ingredients to counteract oxidation. Lowers contact resistance, inhibits arcing, lubricates and protects against corrosion. For use on connectors, sockets, potentiometers, switch contacts, battery connections, telescoping antennas, relay and thermostat contacts. Should be applied sparingly (e.g. with a toothpick or a hypodermic needle injector) on dirty, dusty and heavily oxidized contacts. Precleaning with a solvent type cleaner is recommended. Best results are obtained with small amounts.
796-9839. 19-1906. 4 Oz. (113.4 gms.). Aerosol ....**EACH 6.50**

GC Bath Contact Cleaner/Degreaser for De-Energized Equipment
GC Bath is formulated as a heavy duty cleaner/degreaser. Exceptional performance can be expected where heavy buildups of grease, oil, dirt, grime, adhesive, and other unwanted substances are encountered. This strong action product can be sprayed on the surface to break down, wash away, and clean grease from equipment, floors, work areas, engines, metal parts, and any area needed to be cleaned. GC Bath has been found to be effective to remove adhesive and adhesive overspray from surfaces. Test for compatibility with sensitive plastics. GC Bath is formulated with no chlorinated solvents and thus has no ozone depleting chemicals. No CFCs. No HCFCs.
796-9848. 19-725. 10 Oz. Aerosol..........**EACH 5.72**

Lubricants

Lubriplate
Grease type super lubricant reduces friction loss, prevents rust and corrosion.
796-2040. 10-2302. 1¾ Oz. (50 gms.). Tube ....**EACH 5.04**

GC TFE Coat
GC TFE Coat is all purpose dry film coating that contains minutes Teflon particles in tough, durable, long lasting binder (paint). Resistant to friction, chemical corrosion, rust and weathering. **Temperature Range:** –100°F to 120°F.
796-9817. 19-800. 14.5 Oz. (411 gms.). Aerosol ....**EACH 6.25**

GC Dry TFE
GC Dry TFE is an all purpose dry film lubricant and release agent that contains minute Teflon particles to lubricate where a dry lubricant is needed. Excellent as a mold release and for potting compounds. **Temperature Range:** –300°F to +500°F.
796-9818. 19-810. 4 Oz. (113.4 gms.). Aerosol ....**EACH 3.85**

GC Compu-Lube Moly/PTFE Lubricant
Super low friction, low wear, low viscosity lubricant for the micro computer age. Effective from –60 to +500°F. **Applications:** Computers, CD and VCR units, printers and all high speed mechanisms.
796-9819. 19-832. 0.5 Fl. Oz. (14 ml). Squeeze Tube..........**EACH 3.92**

Special Chemicals

EMI-RFI Shield
An extremely conductive graphite coating. Adheres to glass, plastics for protecting circuitry from external interference or containing low level signals. 7.5 ohms/square at 1 mil.
796-4375. 10-4807. 12 Avdp. Oz. Aerosol ....**EACH 21.29**

Silicone Compound
Soft inert Silicone Grease for moisture proofing connections with excellent dielectric properties. Also lubricant for rubber and plastics.
796-8101. 10-8101. 1 Fl. Oz. Tube ....**EACH 9.99**

Silicone Heat Sink Compound
Zinc oxide filled silicone grease with heat transfer properties. Does not soften under elevated temperatures. Will not dry and harden.
796-8109. 10-8109. 1 Fl. Oz. Tube ....**EACH 9.99**
796-2470. 10-8108. 6.5 gms..........**EACH 2.38**
796-2472. 10-8107-10. 1.1 gms. ....**PER PK./10 7.00**
796-2474. 10-8107-100 1.1 gms. ....**PER PK./100 50.00**
796-2476. 10-8106-1. 1 Lb. Jar ....**EACH 31.64**

Type 44 Heat Sink Compound Non Silicone
Non-contaminating Synthetic-Ester based, capable of moving 46% more heat than other compounds. Passed Western Electric Std. KS-21343 and exceeds MIL performance Spec. MIL-C-47009.
796-4390. 10-8118. ½ Fl. Oz. Tube ....**EACH 11.59**
796-4395. 10-8120. 1 Fl. Oz. Tube ....**EACH 18.49**
796-4400. 10-8126. 1 Lb. Jar ....**EACH 62.00**

HTC (High Thermal Conductivity) Heat Sink Compound
Higher thermal conductivity formula has all the same benefits of conventional heat sink greases, plus is exceptionally stable in high humidity applications. Available in silicone and non-silicone versions.
Model 10-8135. Silicone based, 1 oz. avdp. (28.4 gms.), syringe.
796-2460. 10-8135..........**EACH 12.50**
Model 10-8130. Non-silicone based, 1 oz. avdp. (28.4 gms.), syringe.
796-2462. 10-8130..........**EACH 12.50**

Water Soluble Heat Sink Compound
Easy clean-up, non migrating. Eliminates use of solvents, is non-reactive, exhibits excellent dielectric properties.
796-2464. 10-8132. 1 Oz. Avdp. (28.4 gms.). Syringe ....**EACH 12.50**

Type 22-270 Solder Flux Remover and Cleaner
Convenient, fast and easy to use. Removes all types of organic flux. Use within one hour of soldering. Simply spray and wash from top to bottom. No CFCs. No HCFCs.
796-2037. 22-270. 16 Avdp. Oz. Aerosol ....**EACH 10.19**

Flux Solv™ (Contains No CFCs) Solder Flux Remover
A strong flux remover that will dissolve and remove all flux types. Far more practical than an aerosol for spot cleaning of rework or repaired boards. May be used with brushes, cotton tipped swabs or cloth. Contains no chlorofluorocarbons. Very safe for PC boards and components but can discolor or distort some plastics, particularly polystyrene.
796-2466. 10-220. 2 Fl. Oz. (59 ml). Flux Solv..........**EACH 3.18**
796-2468. 10-228. 16 Fl. Oz. (473 ml). Can ....**EACH 7.40**

Liquid Solder Flux
Completely non-corrosive liquid solder flux consisting of a solution of special rosin in alcohol. Contains no traces of acids or chlorides and is completely safe to use on even the most delicate electronic equipment.
796-4202. 10-4202. 2 Fl. Oz. (59 ml). Bottle..........**EACH 5.23**

Non-Aerosol Cleaner

Isopropyl Alcohol (Anhydrous). This extremely pure alcohol is frequently the recommended cleaner by manufacturers of tape heads, disc drives, etc. Does an excellent job of dissolving and removing oxides from recording heads, also an excellent degreaser. This pure alcohol contains no water, usually a problem with alcohols, and leaves no residue. Suggested for use with swabs, clean cloth, or by immersion.

796-1507. 10-1507. One Pint (16 Fl. Oz.). Can ....**EACH 6.40**

Cements

Service Cement
Quick drying and waterproof clear cement. Use on porous or semi-porous materials such as metals, plastics, etc.
796-4320. 10-302. Btl. 2 Fl. Oz. Bottle..........**EACH 5.70**
796-4325. 10-304. Btl. 4 Fl. Oz. Bottle..........**EACH 7.43**

Rubber to Metal Cement
Bonds synthetic rubber, metal, wood, and plastic. Dries quickly and produces a lasting bond.
796-4330. 10-352. 2 Fl. Oz. Bottle..........**EACH 4.73**

GC Bond Nitrile Cement
Produces a waterproof, resilient, and long-lasting flexible bond on metals and glass. Dries 15 to 30 minutes.
796-3640. 10-4302. 2 Fl. Oz. Bottle..........**EACH 6.63**

Epoxy Glue
Specified by N.A.S.A. for use in its space program. Super grip, slow set. A drop holds tons. Two 2 oz. (57 gms.) tubes of resin and hardener.
796-2098. 10-347. 2 Oz. (57 gms.). Tube ....**PER PKG./2 12.04**

Acrylic Cement
Specially formulated to mend acrylic materials such as lucite and plexiglass. Forms an inseparable, usually invisible joint.
796-2060. 10-4002. 2 Oz. (57 gms.). Bottle..........**EACH 5.11**

Acid Brushes

Brushes for cleaning with solvents, applying coatings and a host of other uses. These brushes are economical enough to use as throw-aways in many applications. Or may be used repeatedly with cleaners such as Freon TF, Chlorothene, Flux Solv, etc. Handles are of tin plated steel and bristles a medium-fine horse hair. Also fine for dusting keyboards, optics, etc. All 6" long, width below refers to width at base of bristles.

Stock No.	Mfr.'s Type	Width (Bristle)	Qty. Per Pkg.	Description	PER PKG.*
796-0251	10-251	3/8"	4	No. 1 Acid Brush	2.61
796-0252	10-252	7/16"	4	No. 2 Acid Brush	2.69
796-0253	10-253	1/2"	3	No. 3 Acid Brush	2.69
796-0255	10-255	3/4"	2	No. 5 Acid Brush	2.90
796-0259	10-249	—	—	Assortment, 7 pcs.	6.09

***Note:** Bulk pricing can be obtained if you have bulk requirements of 1000+.

Cleaning Swabs — *NEW* —

Double Headed Cleaning Swabs
Cotton tipped swabs for general cleaning with alcohol, Freon TF, 1,1,1 Trichloroethane, etc. **Length:** 6". Package of 50 swabs.
796-2450. 10-270..........**PER PKG./50 2.22**

Poly and Cotton Lint Free Swabs
A special absorbent polyurethane swab with a fine texture that is gentle enough for cleaning delicate surfaces. Particularly good for delicate tape heads and similar usage. Reusable if used with solvents such as TF solvent, alcohol, etc.
796-2452. 10-277..........**PER PKG./30 2.95**

Standard Fluxes, Thinners, and Cleaners

Chemicals

#5768 Bio-Clean Saponifier
Saponifiers turn rosin residue into a water soluble soap. #5768 is used as an alternative to ozone depleting chemicals used to remove rosin flux residues. A 4% to 10% solution is made with water and then followed by a water rinse. Available in quart and 1 gallon units.
833-6214. 63-0000-5768. 1 gallon .... **EACH 47.20**
833-6215. 62-0000-5768. 1 quart .... **EACH 20.60**

Residue Remover

Formula 5315 Residue Remover
Kester No. 5315 is a solvent blend designed for use as a cleaner for automated conveyor fingers in soldering machines. It is specifically developed for removal of built up residues from low solids "No-Clean" fluxes. Continuous use of 5315 prevents excessive flux residues from contaminating the conveyor and transferring to the circuit board assembly. The solvent cleaner is more effective than isopropyl alcohol and other commonly used solvents.
833-1135. 63-0000-5315. 1 gallon .... **EACH 33.74**
833-1136. 62-0000-5315. 1 quart .... **EACH 10.62**

RMA Fluxes

186 RMA Mildly Activated Rosin Flux
Kester's standard mil-approved rosin flux for electronics. It can be applied by dip, wave, foam, and other methods. Available in quart and 1 gallon units.
833-6300. 63-0000-0186. 1 gallon .... **EACH 42.80**
833-6200. 62-0000-0186. 1 quart .... **EACH 19.20**

Water Soluble Fluxes

1429 Water Soluble All Purpose Flux
Has been one of Kester's standard water washable materials for a long time. It is capable of soldering to most metals including some mild steels, but is not generally used for wave soldering. Available in quart and 1 gallon units.
833-6304. 63-0000-1429. 1 gallon .... **EACH 32.40**
833-6305. 62-0000-1429. 1 quart .... **EACH 13.00**

2224-25 Organic Acid Water Soluble Flux
Kester's strongest flux for wave soldering. It is recommended where component and board quality are difficult to control. Available in quart and 1 gallon units.
833-6306. 63-0025-2224. 1 gallon .... **EACH 30.96**
833-6307. 62-0025-2224. 1 quart .... **EACH 13.80**

2331-ZX Neutral pH Water Soluble Flux
Relatively mild and safe water soluble flux used for electronic assembly. The residues left after soldering are still conductive, however, and must be removed in most applications. Available in quart and 1 gallon units.
833-1225. 63-0097-2331. 1 gallon .... **EACH 36.36**
833-1220. 62-0097-2331. 1 quart .... **EACH 14.58**

HF-1189 VOC (Volatile Organic Compound) Free Water Soluble Flux
A water based, halide (chloride) free liquid flux that combines moderate activity with environmental friendliness. It contains no alcohols which are photochemically reactive and been linked to global warming. The residue left after soldering must be cleaned with water. Available in quart and 1 gallon units.
833-6308. 63-0086-1189. 1 gallon .... **EACH 80.40**
833-6309. 62-0086-1189. 1 quart .... **EACH 30.40**

120 Thinner
A mixture of alcohols used to replace lost solvent in 186 liquid flux. Solvent is commonly lost when liquid flux is applied by foaming or waving. Available in quart and one gallon units.
833-6201. 62-0000-0120. 1 quart .... **EACH 9.60**

Low Solids, No Clean Fluxes

951, 2% Low Solids No-Clean Flux
Kester's best selling Low solids flux. It combines good activity with no visible residue after wave soldering. The low solids content helps to eliminate defects when soldering bottom side surface mount components, but overall board and component solderability must be good for best results. #951 can be foamed, waved or sprayed and also comes in a flux pen. Available in quart and one gallon units.
833-6202. 63-0000-0951. 1 gallon .... **EACH 34.00**
833-6203. 62-0000-0951. 1 quart .... **EACH 14.00**

110 Thinner
Contains a mixture of alcohols used to replace solvents lost when using #951 liquid flux. Available in quart and one gallon units.
833-6205. 62-0000-0110. 1 quart .... **EACH 9.18**

#961, 3% Low Solids No-Clean Flux
A higher activity version of Kester #951 which has better solderability, but leaves behind a little more residue. It is recommended when component solderability or boards design require a flux which is slightly more active than #951. Available in quart and 1 gallon units.
833-6207. 62-0000-0961. 1 quart .... **EACH 14.40**

#111-B Thinner
Contains a mixture of alcohols which are used to replace solvents lost when using Kester #961 liquid flux. Available in quart and 1 gallon units.
833-6209. 62-0002-0111. 1 quart .... **EACH 9.18**

#970 VOC (Volatile Organic Compound) Free No-Clean Flux
The way that all liquid fluxes will eventually evolve. It combines environmental friendliness with cost effective no-clean technology. It is a water based, halide free liquid flux that can be applied by dip, spray, wave or foam. Although thinning is not normally required, ordinary deionized water can be used. Kester has applied for a patent to protect the technology. Available in quart and 1 gallon units.
833-6211. 62-0000-0970. 1 quart .... **EACH 22.80**

RA Fluxes

1515 RA 15% Solids Activated Rosin Flux
Developed for wave soldering of consumer or non-critical electronic assemblies. It can also be used for other general applications. Even though 1515 is a fully activated flux many customers do remove the residue after cleaning. Available in quart and 1 gallon units.
833-6303. 62-0000-1515. 1 quart .... **EACH 12.40**

Formula 4662 Thinner
A mixture of alcohols used to replace lost solvent in Kester formulas 1515, 2224-25, and 2331-ZX. Available in quart and 1 gallon units.
833-1231. 62-0000-4662. 1 quart .... **EACH 9.20**

1544 RA 50% Solids Activated Rosin Flux
The liquid version of Kester 44 resin. The high solids content gives it good heat stability for dipping and hand applications. Available in quart and 1 gallon units.
833-1201. 63-0000-1544. 1 gallon .... **EACH 42.57**
833-1200. 62-0000-1544. 1 quart .... **EACH 15.40**

104 Thinner for 1544
Available in quart and 1 gallon units.
833-1202. 63-0000-0104. 1 gallon .... **EACH 30.06**
833-1203. 62-0000-0104. 1 quart .... **EACH 13.40**

Rubber Rejuvenator Platen Cleaner

Rubber Rejuvenator/Platen Cleaner is a specially designed, hydrocarbon cleaner that cleans and revitalizes rubber rollers and platens. Use on rollers in office paper handling equipment such as copiers, FAX machines, postage machines, laser printers and others. Improves rubber grip and reduces misfeeds and jams. Also cleans typewriter and printer platens removing dirt and inks for cleaner printing.

907-7004. 1612-DSP	EACH 15.64
907-7005. 1612-2SQ	EACH 4.92

Label and Adhesive Remover

Label and Adhesive Remover is a specially designed, hydrocarbon cleaner that safely removes labels and adhesive gums from equipment and products. Effectively removes gummy residues, labels, stickers, ink marks, beverage spills and other contaminants commonly found on equipment housings without damaging plastics. Solvent has a pleasant odor.

907-7006. 1613-2SQ	EACH 4.92
907-7007. 1613-6S	EACH 7.55

Production Chemicals

TECH SPRAY
WONDERMASK P
TEMPORARY PEELABLE SOLDER MASK
TECH SPRAY
WONDERMASK W
TEMPORARY WATER SOLUBLE SOLDER MASK

Wondermask™ P 2211
Peelable temp. solder mask for any wave solder system. Non-contaminating. Excellent resistance to polar and non-polar solvent systems. Can be used as a spot mask, mask prior to conformal coating, or as a protective storage or shipping shield. Self-leveling; quick film formation. Non-ammoniated.
907-0165. 2211-8SQ. 8 oz. Air/Therm. Cure .... EACH 7.06

Wondermask W 2205
A temporary protective water soluble masking agent. Easily and completely removed in normal hot water washing cycle. Leaves no residue. Non Flammable – Non Corrosive – Non Contaminating – Non Dripping.
907-1697. 2205-8SQ. 8 oz. Air/Therm. Cure .... EACH 6.72

Wondermask® PL Latex 2218 ***— NEW —***
A temporary, peelable solder mask comprised of a thixotropic, natural acrylic latex designed to withstand fluxing, wave soldering, and cleaning operations. Wondermask® PL Latex is rapid drying and has excellent peel strength. Cured mask can be used in water or solvent systems and in masking for conformal coatings. Excellent heat stability allows for prolonged exposure to high temperatures, without product degradation. May be used in most common forms of mask applications such as robotic, pneumatic, hand applied, or template screening (not recommended for silk screening).
907-1698. 2218-8SQ. 8 oz. .... EACH 8.09

1978 Silicone Free Heat Sink Compound

Features exceptionally low bleed and evaporation characteristics. Will not harden, dry out, or melt; will not contaminate wave and solder baths. Meets or exceeds KS 21343 and MIL-C-47113. Use with both metal and plastic.

907-0190. 1978-DP. 2 oz. tube	EACH 8.42
907-0191. 1978-1. 1 lb. jar	EACH 27.63

1977 Transistor Silicone Grease
A heat conductive material used to coat the bases of power transistors as they are connected to heat sinks. The grease is heat conductive and will draw the heat away from the transistor allowing it to run cooler.
907-1977. 1977-DP. 1 oz. Squeeze Tube .... EACH 5.27

Envi-Ro-Tech Fine-L-Kote® Remover*

No Methylene Chloride. Effectively and safely removes most conformal coatings, including acrylic, epoxy, urethane, and some silicones. Can also be used to remove enamels, paints, varnishes and lacquers. This product quickly removes tar, adhesives, crayon, rubber, and carbon.
907-0195. 1618-P. 1 Pint in Metal .... EACH 15.22

*This product is not recommended for acrylic, polystyrene, or polycarbonate materials. Always test in an inconspicuous area before use.

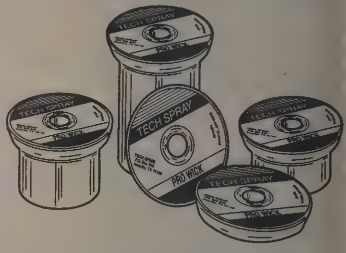
1-800-858-4043 TECH Line

No-Clean Wick Desoldering Braid

- ► Removes Up to Four Times More Solder
- ► Residue Halide Free and Non-Conductive
- ► Does Not Have to Be Cleaned Off the Board
- ► Designed to Improve Reworking Efficiency in Both Conventional and No-Clean Operations

Stock No.	Mfr.'s Type	Length	Width	EACH 1-24	EACH 25-100
907-8000	1814-5F	5'	0.030"	2.08	1.61
907-8001	1815-5F	5'	0.060"	2.08	1.61
907-8002	1816-5F	5'	0.085"	2.08	1.61
907-8003	1817-5F	5'	0.100"	2.16	1.67
907-8004	1818-5F	5'	0.145"	2.64	2.03
907-8005	1819-5F	5'	0.210"	2.82	2.02
907-8009	1822-5F	5'	0.850"	2.25	1.77
907-8006	1816-10F	10'	0.850"	3.66	2.89
907-8010	1822-10F	10'	0.850"	3.85	3.03
907-8006	1816-50F	50'	0.850"	17.10	13.46
907-8006	1816-100F	100'	0.850"	33.21	26.13

Pro Wick® Desoldering Braid

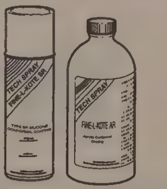


- ► Pure Copper Braid
- ► Fine Braid Construction Enhances Wicking Action
- ► Mildest Non-Activated White Rosin Flux Ensures Safe, Clean Operation
- ► Meets MIL-F-142560D Type R NASA NNB 5300.4 (3A-1), NPC 200-4, SP-5002

Stock No.	Mfr.'s Type	Length	Width	EACH 1-24	EACH 25-100
907-1820	1801-5F	5'	0.030"	1.77	1.38
907-1821	1801-10F	10'	0.030"	3.01	2.34
907-1822	1802-5F	5'	0.060"	1.77	1.38
907-1823	1802-10F	10'	0.060"	3.01	2.34
907-1824	1803-5F	5'	0.085"	1.81	1.41
907-1825	1803-10F	10'	0.085"	3.79	3.23
907-1826	1804-5F	5'	0.100"	1.94	1.52
907-1827	1804-10F	10'	0.100"	3.40	2.65
907-1836	1805-5F	5'	0.145"	2.25	1.75
907-1837	1805-10F	10'	0.145"	4.07	3.16
907-1838	1806-5F	5'	0.210"	2.40	1.87
907-1839	1806-25F	25'	0.210"	10.34	8.75
907-1829	1808-10F*	10'	0.030"	3.18	2.47
907-1831	1809-10F*	10'	0.060"	3.18	2.47
907-1833	1810-10F*	10'	0.085"	3.22	2.50
907-1834	1811-5F*	5'	0.100"	2.20	1.71
907-1835	1811-10F*	10'	0.100"	3.51	2.73
907-1840	1812-5F*	5'	0.145"	2.14	1.75
907-1841	1812-10F*	10'	0.145"	3.85	3.14
907-1842	1813-5F*	5'	0.210"	2.41	1.97

*Static dissipative bobbin. Other lengths available upon request.

Fine-L-Kote



Tough conformal coatings for PC boards, components, and electrical equipment. Protects against corrosive atmosphere, salt, water, dilute acids, and alkali solutions. Prevents formation of conducting films or moisture. Formulated with OPTI/SCAN, an ultraviolet material for conformity checks under a black light.

Stock No.	Mfr.'s Type	Type	Unit	EACH
907-0135	2102-12S	SR*	12 oz. Aerosol	14.96
907-0136	2102-P	SR	1 Pint	55.42
907-1710	2103-12S	AR	12 oz. Aerosol	12.41
907-2104	2104-P	UR	1 Pint	30.00
907-2114	2104-12S	UR	12 oz. Aerosol	13.52
907-2116	2106-12S	HT*	12 oz. Aerosol	13.18

*Silicone.

Tech Spray Product Identification Information

Solvent Line	Plastics Safe*	Flammable	Evaporation	Cleaning Ability	Commercial Use Only
Eco-Line	Yes	No	Moderate	Good	No
Envi-Ro-Tech	Test	No	Fast	Excellent	Yes
AK225	Yes	No	Fast	Excellent	Yes
HFE	Yes	No	Fast	Good	No
Vertrel	Yes	No	Fast	Good	No

*Always test plastics compatibility in an inconspicuous area before general use of a new solvent.

HFE Flux Remover — *NEW* —

- Ozone Safe
- Safe On Plastics
- General Purpose Defluxer

Excellent Cleaner for hand and batch bench-top cleaning applications. Solvent readily removes type R, RMA, RA and synthetic fluxes from printed circuit assemblies.

907-4007. 1686-8S. 8 Oz. Aerosol .... **EACH 20.51**
907-4008. 1686-P. 1 Pt. in Metal .... **EACH 62.87**

AK225 Cleaners (Commercial Use Only) — *NEW* —

Asahiklin AK225 1663 (Cleaner/Degreaser)

AK225 Neat is 100% HCFC-225. Completely non-flammable and safe on metals and plastics, the straight AK225 is an excellent solvent for metal degreasing. Vapor degreasing with AK225 offers superior cleaning on video heads, reflector glasses for laser printers, scanners and other equipment that requires optimal cleanliness.

907-1663. 1663-8S .... **EACH 18.45**
907-1669. 1663-18S .... **EACH 35.14**

Kleen ATMS 1664 (Heavy Duty Cleaner/Degreaser)

Kleen ATMS is an azeotropic blend of AK225, trans-dichloroethylene and methanol. An ideal 1,1,1-trichoroethane (methyl chloroform) replacement, it is designed to be a general cleaner/degreaser and defluxer. Having excellent solvency, Kleen ATMS is aggressive towards greases, oils and similar soils.

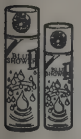
907-1664. 1664-8S .... **EACH 17.53**
907-1670. 1664-18S .... **EACH 29.39**

Flux Remover AMS 1665 (Defluxer)

Specifically designed for defluxing in vapor degreasing and cold-batch cleaning, AMS offers superior flux removal for type R, RMA, RA and synthetic fluxes. Non-flammable and safe on plastics and elastomers, AMS is the perfect choice for all defluxing applications.

907-1665. 1665-8S .... **EACH 17.53**
907-1671. 1665-18S .... **EACH 32.97**

Blue Shower® II 1667 (Universal Cleaner/Degreaser)



Developed for general cleaning and degreasing. Non-flammable and safe on plastics, Blue Shower® II is the standard for precision cleaning including hand oils, solder oils, greases, silicone, fluxes, and similar soils. Excellent for tape head cleaning and general degreasing.

907-1667. 1667-8S .... **EACH 16.65**
907-1672. 1667-18S .... **EACH 31.25**

Contact Cleaner II 1668 (Contact Cleaner)

Designed for either batch cleaning or hand operations, Contact Cleaner II removes oil, greases, silicones, dirt and grime from contacts and pads. Non-flammable and safe on plastics, Contact Cleaner II is the optimum solvent for contacts.

907-1668. 1668-8S .... **EACH 17.95**
907-1673. 1668-18S .... **EACH 33.29**

Duster Directional Attachment 1990 and 1991

Allows directional control of spray for dusters 1671-10RS, 1668-12ROFS while maintaining upright can position.

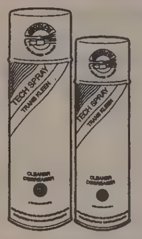
907-1990. 1990 .... **EACH 8.93**

Brush Attachment for Solvents with 3 Brushes

907-1991. 1991 .... **EACH 14.93**

1-800-858-4043 Techline

Trans Kleen — *NEW* —

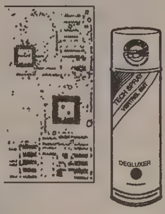


- Non-Corrosive
- Pure Solvent
- Heavy Duty Cleaner

Trans Kleen is used to penetrate and dissolve non-polar soils such as oil, grease, wax, tar, adhesive, and rosins. An excellent product for electronic and electrical equipment, machinery, and metal parts.

907-4003. 1684-8S. 8 Oz. Aerosol .... **EACH 12.25**
907-4004. 1684-18S. 18 Oz. Aerosol .... **EACH 21.78**

Vertrel® SMT — *NEW* —



- Ozone Safe
- Rapid Evaporation
- Safe On Plastic
- Non-Flammable

Vertrel®. SMT is a non-flammable, rapidly evaporating, safe on plastics, cleaner/degreaser and flux remover that is non-ozone depleting.

907-4001. 1689-8S. 8 Oz. Aerosol .... **EACH 20.57**
907-4002. 1689-P. 1 Pt. in Metal .... **EACH 62.87**

Eco Line

Cleaner/Degreaser

A blend of isopropanol and ethanol, this product is designed for cleaning electronic and electrical equipment, machinery and metal parts. Rapid evaporation and complete compatibility with plastics makes it the perfect choice for general cleaning.

907-1621. 1620-10S .... **EACH 7.04**
907-1622. 1620-P .... **EACH 7.76**

Flux Remover

A unique combination of hydrocarbon solvents and alcohols making it an excellent defluxer. Safe on plastics and rapid evaporation, it dissolves type R, RMA, RA, SA and most no-clean fluxes. Can also be used as an all-purpose cleaner for removal of light oils, silicones, waxes, greases and similar contaminants found in electronics manufacturing.

907-1623. 1621-10S .... **EACH 7.19**
907-1624. 1621-P .... **EACH 7.60**

Contact Cleaner

Contains a hexamine mixture which cleans electrical contacts and connections. Ideal for switches, relays, contact pads and other places of electrical connections. Safe on plastics, the solvent will not damage switch housings.

907-1627. 1622-10S .... **EACH 6.76**
907-1628. 1622-P .... **EACH 6.69**

Dust Remover

Unique hydrocarbon based dusting gas removes dust and other particles. The exceptionally pure, moisture free gas does not harm the earth's ozone layer and thus has zero ozone depletion. Removes microscopic contaminants, lint, dust metallic oxide deposits, and other soils without the use of solvents. For added control, use the Tech Spray Multi-Directional Spray Attachment (1990).

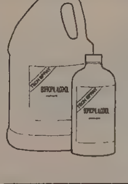
907-1631. 1623-8S .... **EACH 6.48**

Tape Head Cleaner

Formulated to remove harmful contaminants including dirt, nicotine, metallic oxides, tape residues and other interfering soils from magnetic and optical read/write heads. Cleans and restores head surfaces for better response and improved performance. Continued use produces better recording and clearer play back.

907-1632. 1624-10S .... **EACH 6.72**
907-1633. 1624-P .... **EACH 7.68**

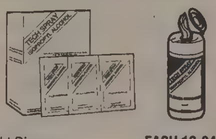
Isopropyl Alcohol



99% pure, anhydrous isopropanol for all purpose cleaning. Excellent for tape head cleaning, removal of fluxes, light oils, polar soils, and white mineral residue. Can be used as a thinner for most fluxes. 1610-GS is a plastic bladder in a box for easy pouring and economical shipping.

907-1645. 1610-P. 1 Pt. in Shatterproof Glass .... **EACH 6.58**
907-1650. 1610-G. 1 Gallon in Metal .... **EACH 31.92**
907-1654. 1610-GS. 1 Gallon Plastic in Box .... **EACH 15.21**
907-1655. 1610-5G. 5 Gallon in Plastic .... **EACH 47.92**

Isopropyl Alcohol Presaturated Pads



- Tape Head Cleaning
- Photocopying Equipment
- Connectors
- Medical Equipment
- Microwave and Telephone Circuitry
- Relays
- Data Processing Equipment

907-1738. 1610-DSP. 48 Wipes in Up-Right Dispenser .... **EACH 12.84**
907-1739. 1610-50PK. 50 Pre-Saturated Packets Per Carton **PK./50 15.00**

VTR/VCR Kit/Cleaner

VTR/VCR Kit/Cleaner

A complete maintenance kit to keep your VTR/VCR operating at the peak of efficiency. Contains six Techclean Swabs and one 6-dram bottle of VTR/VCR cleaner. An excellent cleaner for magnetic tape heads, video tape heads, video cassette recorder and computer tape heads. Safe on plastics, tape and rubber. Non-conductive, leaves no residue. Removes dirt — nicotine — film and oxides. Leaves no Newton Rings.

907-1684. 1690-DPK. Kit .... **EACH 5.07**
907-1683. 1690-DP. 2 Oz. Btl. Cleaner .... **EACH 4.81**
907-3683. 1690-12 S. 12 Oz. Aerosol Cleaner .... **EACH 8.28**
907-3684. 1690-DPKC. Chamois Swab .... **EACH 6.34**

Professional Tape Head Cleaner* — *NEW* —

- Moisture Free
- Mild Solvent
- Rapid Evaporation
- Non-Flammable

Head Cleaner removes dirt, metallic oxides, tape residues and other interfering soils from magnetic and optical read/write heads.

907-4005. 1673-DP. Carded, 2 Oz. Glass .... **EACH 7.15**
907-4006. 1673-P. 1 Pt. in Glass .... **EACH 50.64**

*For Commercial Use.

Envi-Ro-Tech™ Freezers and Dusters

Envi-Ro-Tech™ Anti-Static Freezer 1747

100% HFCs, no CFCs, no HCFCs. A rapidly evaporating HFC-134a product that contains an anti-static agent. Because HFCs do not harm the ozone, this product has a zero ozone depletion factor. This product is used as a trouble shooting aid in static sensitive areas for intermittently faulting capacitors, resistors, semiconductors, and other defective components. Also detects cold solder joints and oxidized junctions.

907-1747. 1747-10S. 10 Oz. Aerosol .... **EACH 7.35**

Envi-Ro-Tech™ Freezer 1672

100% HFCs, no CFCs, no HCFCs. An HFC-134a based, rapidly evaporating liquid that chills to minus 62°F. Because HFCs do not harm the ozone, this product has a zero ozone depletion factor. Used as a trouble shooting aid for intermittently faulting capacitors, resistors, semiconductors, and other defective components this tool speeds up the rework process. Also detects cold solder joints, cracks in printed circuit boards, and oxidized junctions.

907-0027. 1672-10S. 10 Oz. Aerosol .... **EACH 6.91**

Envi-Ro-Tech™ Duster 1671

100% HFCs, no CFCs, no HCFCs. Formulated with HFC-134a, this exceptionally pure, moisture free, inert gas removes particles without the use of harmful solvents. Because HFCs do not harm the ozone, this product has a zero ozone depletion factor. This product removes microscopic contaminates, lint, dust, metallic oxide deposits, and other soils.

907-1630. 1671-10S. 10 Oz. Aerosol .... **EACH 5.69**
907-1634. 1671-15S. 15 Oz. Aerosol .... **EACH 9.16**
907-1640. 1671-10RS. 10 Oz. Aeosol. Ref* .... **EACH 6.58**

*For use with 1990 attachment.

Envi-Ro-Tech™ For Commercial Use Only

Envi-Ro-Tech™ 1677*
General Purpose Cleaner-Degreaser

No CFCs and No 1,1,1-Trichloroethane. Contains HCFCs. Fast acting and highly effective cleaner containing a proprietary blend of HCFC. Safe for cleaning most electronic equipment. Used to remove oils, greases, dirt, silicone, fluxes and similar soils.

907-1676. 1677-12S. 12 Oz. Aerosol .... **EACH 8.22**
907-1677. 1677-22S. 22 Oz. Aerosol .... **EACH 11.64**

Envi-Ro-Tech™ 1675* Heavy Duty Cleaner-Degreaser

No CFCs and No 1,1,1-Trichloroethane. Contains HCFCs. Fast acting and highly effective cleaner containing a proprietary blend of HCFCs. Used to penetrate and dissolve non-polar soils such as oil, grease, wax, tar, adhesive, and rosin. Also an excellent cleaning product for electronic and electrical equipment, machinery, and metal parts.

907-1649. 1675-12S. 12 Oz. Aerosol .... **EACH 9.09**
907-1651. 1675-22S. 22 Oz. Aerosol .... **EACH 13.12**

Envi-Ro-Tech™ 1676* General Purpose Defluxer

No CFCs and No 1,1,1-Trichloroethane. Contains HCFCs. General duty defluxer for RA, RMA, and SA type fluxes. Can be used as an all purpose cleaner to remove light oils, silicones, waxes, greases, and similar contaminants often found in electronics manufacturing.

907-1600. 1676-12S. 12 Oz. Aerosol .... **EACH 8.42**
907-1605. 1676-22S. 22 Oz. Aerosol .... **EACH 12.30**

Envi-Ro-Tech™ 1678* Light Duty Defluxer

No CFCs and No 1,1,1-Trichloroethane. Contains HCFCs. Light duty defluxer for Type R and water soluble fluxes. Can be used as cleaner to remove light oils, polar soils, and white residue. Drying agent for water and removes water stains and mineral traces.

907-1615. 1678-12S. 12 Oz. Aerosol .... **EACH 8.22**
907-1620. 1678-22S. 22 Oz. Aerosol .... **EACH 12.91**

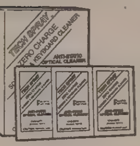
*This product is not recommended for acrylic, polystyrene, or polycarbonate materials. Always test in an inconspicuous area before use. Also available in bulk for bench top cleaning.

Anti-Static Products

1726 Zero Charge Anti-Stat

Zero Charge Anti-Stat is a Chloride-Free Industrial Grade topical Anti-Stat with no free amines. The extremely low surface tension provides excellent wetting to eliminate hot spots or voids. Safe on plastic. Will not attract dust or particulate contamination. Designed for use on any area or material where static buildup causes problems. **Meets or Exceeds:** MIL-B-81705B and NFPA 56A.

907-1686. 1726-QT*. 1 Qt. With Sprayer .... **EACH 11.82**
*Ready to use.



1743 Zero Charge Anti-Static Screen and Keyboard Cleaner

For optical clarity and distortion free reading. Removes grease, dust, salts, grime, inks, fingerprints, nicotine, syrups, soot, and carbon paper residue. Safe on ceramics, plastic, glass, metal, and elastomers. Use with Zero Charge Anti-Static Techclean Swabs to clean hard to reach areas.

907-1687. 1743-QT. 1 Qt. .... **EACH 12.15**
907-2687. 1743-50 PK. 50 Packet Box .... **EACH 14.11**
907-2688. 1743-65. 6 oz. Aerosol .... **EACH 3.96**

1742 ETC

An anti-static cleaner for computer enclosures, plastic, glass and metal. Effectively removes dirt, nicotine, grease, oil, inks, dust, fingerprints and grime. Non-Streaking, Non-Abrasive, Non-Flammable, Non-Scratching.

907-1653. 1742-Qt. 1 Qt. .... **EACH 11.47**

1733 Zero Charge Anti-Static Mat and Table Top Cleaner

Anti-static, non-abrasive cleaner for general use in all areas. Leaves no film, non-streaking, non-flammable and non-scratching. Contains no alkali or ammonia. Will not leave a soap scum or hard water buildup that can cause an insulation barrier on static-sensitive areas. Can be used in conjunction with Techclean Wipers (No. 2350) or standard paper towels.

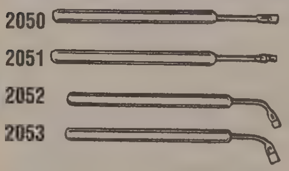
907-1733. 1733-Qt. 1 Qt. .... **EACH 9.27**
907-2733. 1733-G. 1 Gal. .... **EACH 22.24**
907-1735. 1733-PT .... **EACH 7.65**

1702 Zero Charge Anti-Static Hand Lotion

Specifically formulated to dissipate static charge from operators' hands and helps to eliminate electrostatic discharge on electric components and equipment. Formulated with Aloe Vera for a deep, penetrating, soothing action. Contains no silicone or lanolin. Non-greasy, non-sticky, odorless and fast absorbing.

907-2702. 1702-8FP. 8Fl.oz .... **EACH 4.14**

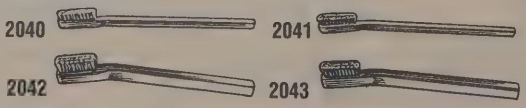
Inspection Station and Instrument Cleaning Brushes



- Easy-Grip 1/4" Delron Handles
- Small Diameter for Use Under Magnification (1/8" Neck)
- Straight and Angled Handles
- Solvent Resistant
- Brush Face 3/16" × 1/16". Overall Length 5$^1/_2$"

Stock No.	Mfr.'s Type	Bristle Material	Bristle Angle	Application	EACH 1-11	EACH 12-24
907-2050	2050-1	Nylon	Straight	Light cleaning	7.25	6.70
907-2051	2051-1	.003 St. steel	Straight	Precious metal, stubborn debris	8.25	7.58
907-2052	2052-1	.003 St. steel	75°Angle	Precious metal, stubborn debris	8.25	7.58
907-2053	2053-1	Nylon	75°Angle	Light cleaning	8.25	7.58

Cleanroom Brushes

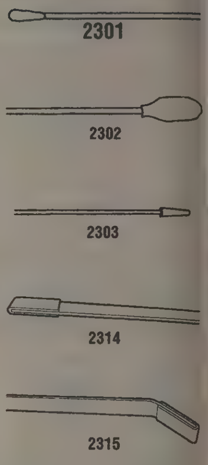


- Anodized Aluminum Handles
- ESD-Safe Stainless Steel or Natural Horsehair
- Rebristlable
- Bristle Length 7/16"
- Overall Length 6$^1/_2$"

Stock No.	Mfr.'s Type	Bristle Material	Brush Face	Application	EACH 1-11	EACH 12-24
907-2040	2040-1	Horse hair	1/8" × 1$^1/_4$"	Light and medium accumulations	7.75	7.16
907-2041	2041-1	.003 St. steel	1/8" × 1$^1/_4$"	Oxides and deposits for precious metals	8.64	7.98
907-2042	2042-1	Horse hair	3/8" × 1$^1/_4$"	Same as 2040 for larger areas	12.63	11.90
907-2043	2043-1	.003 St. steel	3/8" × 1$^1/_4$"	Same as 2041 for larger areas	13.48	13.00

1-800-858-4043 Techline

Tech Swabs



2301 Cotton/Wood Swab, Single-Tip

3/16" wide cotton wrapped tip, cushions 6" wood handle, static neutral swab, antistatic package. Packed in cleanroom.
907-2300. 2301-100 .... **PK./100 2.51**
907-2301. 2301-1000 .... **PK./1000 22.08**

2302 Absorb-Tip Foam Swab

7/16" foam tip, 6" ESD-safe polypropylene handle, 100% lint-free, non-contaminating solvent resistant polyurethane foam tip. Antistatic package. Packed in cleanroom.
907-1685. 2302-50 .... **PK./50 9.82**
907-2302. 2302-1000 .... **PK./1000 117.44**

2303 Narrow-Tip Foam Swab

1/4" foam tip, 6" ESD safe polypropylene handle. 100% lint-free, non-contaminating, solvent resistant polyurethane foam tip. Antistatic package. Packed in cleanroom.
907-2303. 2303-50 .... **PK./50 9.35**
907-2704. 2303-1000 .... **PK./1000 124.90**

2314/15 Chamois-Tip Head Cleaner Swabs

Low-lint synthetic chamois tip, ESD-safe polypropylene handle.
907-2314. 2314-50-Straight Head **PK./50 18.62**
907-2715. 2314-1000-Straight Head **PK./1000 295.20**
907-2316. 2315-50-Angled Head **PK./50 19.04**
907-2317. 2315-1000-Angled Head **PK./1000 311.20**

Tech Clean Wipes

2350 Techclean Wiper

Highly durable, high absorbing, hydroentangled cellulose/polyester wipe with extra low particulate and chemical extractables. Antistatic package. Packed in cleanroom.

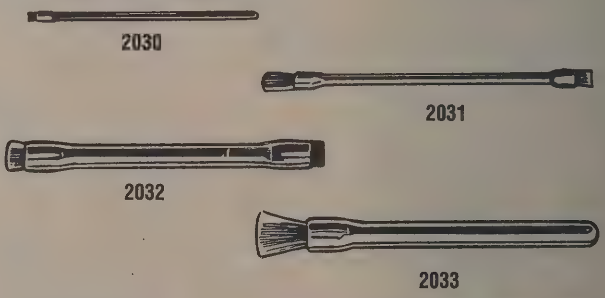
907-2350. 2350-100. 9" × 9" **PK./100 14.35**

Tech Clean Blue Wipe

— NEW —

907-2351. 2359-300 .... **PK./300 36.52**

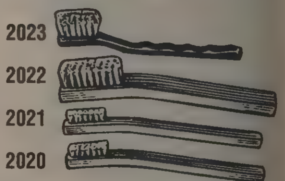
Technical Cleaning Brushes



- Heavy Duty Metal Handles
- No Contaminating Adhesives
- Non-Static Generating Natural Bristles
- Can Be Used With or Without Fluids
- Bristles Material-Horse Hair, Except 2030-Goat Hair

Stock No.	Mfr.'s Type	Bristle Length/Cut	Overall Length	Handle Dia.	Application	EACH 1-11	EACH 12-24
907-2030	2030	1/8" Bristle	3$^9/_{16}$"	1/8"	Fine detail cleaning or fluid application	5.08	4.60
907-2031	2031	1/4" Chisel Trim	5$^3/_{16}$"	3/16"	Side "A" light cleaning Side "B" med. accumulations	5.25	4.72
907-2032	2032	1/4" Chisel Trim	5$^3/_{16}$"	3/16"	General circuit board detailing solder balls or heavy flux	5.25	4.69
907-2033	2033	1/2" Bristle Width	5$^1/_8$"	3/8"	Duster/Cleaner	4.14	3.57

General Cleaning Brushes



- Easy-Grip Polypropylene or Static-Neutral Wood Handles
- Non-Static-Generating Bristles of Metal or Natural Horse, Goat or Hog's Hair
- Bristle Tips Cut to Maximize Cleaning and Minimize Bristle Wear for Long Brush Life

Stock No.	Mfr.'s Type	Bristle Material	Handle Material	Brush Face	Application	EACH 1-11	EACH 12-24
907-2020	2020	Horse hair	Wood	5/16" × 1$^3/_8$"	General flux removal, light cleaning	2.11	1.85
907-2021	2021	Hog's hair	Wood	5/16" × 1$^3/_8$"	Stubborn, dried or gummy residues	3.19	2.64
907-2022	2022	Hog's hair	Wood	1" × 2$^1/_4$"	Same as 2021 for larger areas	5.85	5.54
907-2023	2023	Horse hair	Polypropylene	5/16" × 1$^1/_4$"	Dusting from any surface, fine crevices	3.19	2.58

Switches

Page

Alectron

Pushbutton Switches....788
Rotary Switches....788
Thumbwheel Switches....788
Toggle Switches....788

Altech Corp.

Disconnect Switches....789

AMP

DIP Shunts....790
DIP Switches....790
PCB Switches....790
Rotary Switches....790

Augat/Alcoswitch

DIP Switches....793
Pushbutton Switches....791, 792
Rotary Switches....793
Slide Switches....792
Snap-Actions Switches....791
Tactile Switches....791
Toggle Switches....793

Bourns

DIP Switches....794
Rotary Switches....794
Slide DIP Switches....794
Tact Switches....794

C&K Components, Inc.

Accessories....804, 805
DIP Switches....798, 799
Hardware....803
Key Switches....799, 800, 805, 806
Lever Handle Switches....795, 798
Power Switches....797
Proximity Sensors....806
Pushbutton Switches....796, 797, 800, 801, 805, 806
Rocker Switches....795, 798, 800, 801
Rotary Switches....797, 799, 800
Slide Switches....795, 797, 801
Snap-Action Switches....804
Thumbwheel Switches....803
Toggle Switches....798, 800, 801, 802, 806

Carlingswitch

Pushbutton Switches....807
Rocker Switches....808
Snap-In Switches....808
Toggle Switches....807, 808

Cherry Switch

Accessories....809
Basic Switches....809, 810
Hardware....809, 810
Keyboard Switches....810
Lever Switches....809
Thumbwheel Switches....809

Eaton Corp./Cutler-Hammer

Accessories....813
Basic Switches....813
Hardware....811, 812
Pushbutton Switches....812, 813, 814
Lever Switches....812, 813
Rocker Switches....812, 814
Toggle Switches....811, 812, 813

Electroswitch

Rotary Switches....815, 816

Grayhill

Hardware....818
Keyboard Modules....817
Pushbutton Switches....818
Rotary Switches....817
Sealed Keypads....817
Tactile Switches....817

Page

Hermetic Switch

Accessories....819
Proximity Sensors....820
Reed Switches....819

IDEC

Mushroom Switches....822
Pilot Lights....821, 822
Pushbutton Switches....821
Selector Switches....822

Interswitch

Hardware....823
Rotary DIP Switches....823
Thumbwheel Switches....823

Linemaster

Foot Switches and Switch Guards....824

Multi-Flex Seals

Switch and Panel Seals....814

NKK Switches

Accessories....829, 830
Hardware....829
Keylock Switches....828
Keypad Switches....829
Lever Switches....825
Paddle Switches....826
Pushbutton Switches....825, 826, 827, 828, 829, 830, 831
Rocker Switches....826, 828
Rotary Switches....827, 831
Slide Switches....828
Toggle Switches....825, 828, 829, 831

Oak Grigsby

Rotary Switches....832

Ohmite

Knobs....833
Tap Switches....833

Omron

Keyswitches....835
Safety-Door Switches....834
Snap-Action Switches....834, 835

Selecta Switch

Accessories....837
Basic Switches....836
Enclosed Switches....836, 837
Limit Switches....837
Precision Switches....836
Pushbutton Switches....837

Tapeswitch

Accessories....838
Flex Switches....838
Switching Mats....838
Ribbon Switches....838

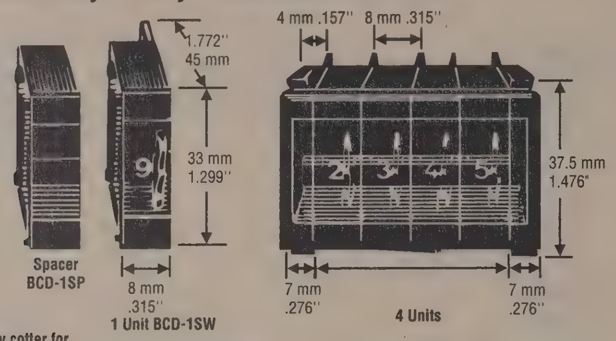
Transico

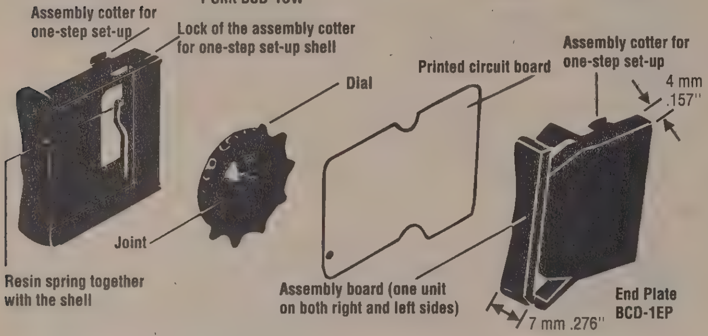
Hardware Kits....839
Printed Circuit Board Switches....839
Pushwheel Switches....839
Stripswitches....839
Thumbwheel Switches....839

Tschudin & Heid

Accessories....841
Emergency Stop Switches....840
Key Switches....840
Mushroom Switches....841
Pushbutton Switches....840, 841
Rotary Switches....840

Snap Assembly Binary Thumbwheel Switches





► **Similar to Interswitch and Intermarket Series Thumbwheel Products**

All parts of the thumbwheel switches are assembled by a lock one step only without use of screw. The resin springs are made for the joint cotter on basis of human mechanics providing soft and comfort push for assembly. Complete assembly can be achieved on lock only by pushing the spring of the shell into the cotter hole from the front. Useful as a controller of sheets for copiers, temperature and numerical quality or as a timer. End plate is fitted on both ends of the switch set. The resin spring, together with the shell easily locks the parts on the cotter hole.

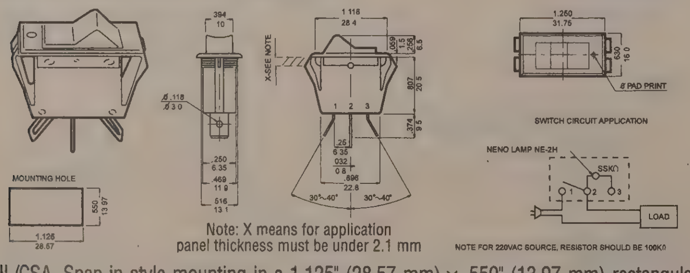
High reliability and longterm stability — quick, easy installation no additional screws required for mounting — ideal for preset counters, temperature controller, timer and automatic central equipments use where presetting is required.

Specifications. Operating Temperature: –40°C - +85°C. **Switching Load (Resistance):** AC50V/DC28V, 10μA-0.15A. **Continuous Load:** 1A max. **Contact Resistance:** 100 milliohms (initial), 200 milliohms max. (after life test). **Insulation Resistance (terminal to case):** 1000 megohms min. **Insulation Resistance (terminal to terminal):** 100 megohms min. **Electrical Life:** Over more than 20 × 10^4 time switching between any two adjacent positions.

Materials. Body and Wheel: Acetal resin. **Printed Circuit Boards:** Hard gold plated copper on epoxy fiberglass. **Contacts:** Gold plated Be-Cu alloy.

Stock No.	Mfr.'s Type	EACH		
		1-99	100-999	1000-Up
242-1001	BCD-1SW	4.27	3.87	3.56
242-1002	BCD-1EP	1.50	1.30	1.24
242-1003	BCD-1SP	1.36	1.23	1.13

Illuminated Rocker Switches — *NEW* —

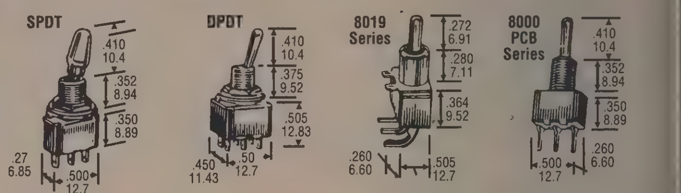


Note: X means for application panel thickness must be under 2.1 mm

UL/CSA. Snap-in style mounting in a 1.125" (28.57 mm) × .550" (13.97 mm) rectangular hole. Panel thickness under 2.1 mm. **Specifications. Rating:** 15 amp at 125 VAC, 10 amp at 250 VAC. **Contact Res.:** 20 m ohms initial (max.). SPST, 3 term., off-on action.

Stock No.	Mfr.'s Type	EACH		
		1-99	100-999	1000-Up
250-2160	B160-R2L (BR2BM) Red	1.60	1.00	.92
250-5160	B160-R2L (BG2BM) Green	1.60	1.00	.92
250-3160	B160-R2L (BO2BM) Orange	1.60	1.00	.92

Subminiature Toggle Switches



For manual control, solid-state devices and miniature circuits. Single pole types are 1/4" thin, double poles less than 1/2" square. Single hold mounting. 1/4" threaded bushing. **Nominal Rating:** 5 amps. 125 VAC or 24VDC. **Initial Contact Resistance:** 5 milliohms. **Insulation Resistance:** 10,000 megohms. **Life under load:** 50,000 make/break cycles. Bat handles have 30° throw. Silver contact. Solder terminals. **PCB Series.** Subminiature for direct insertion in PC boards. Terminals are silver plated.

SPDT-3 Terminals

Stock No.	Mfr.'s Type	Action	EACH			
			1-49	50-99	100-999	1000-Up
250-0140	8014	On-Off-On	2.33	2.00	1.84	1.72
250-0130	8013	On-None-On	2.29	1.97	1.79	1.65
250-0131	8013A	On-None-On*	2.79	2.32	1.81	1.52
250-0141	8014A	On*-Off-On*	2.58	2.20	2.01	1.87
250-0142	8014B	On-Off-On*	2.46	2.12	1.95	1.90

DPDT-6 Terminals

Stock No.	Mfr.'s Type	Action	1-49	50-99	100-999	1000-Up
250-0120	8012	On-Off-On	2.33	1.97	1.85	1.72
250-0110	8011	On-None-On	2.71	2.12	2.00	1.71
250-0111	8011A	On-None-On*	2.34	1.88	1.73	1.60
250-0121	8012A	On*-Off-On*	2.79	2.18	1.80	1.50
250-0122	8012B	On-Off-On*	2.35	1.74	1.51	1.40

3PDT-9 Terminals

Stock No.	Mfr.'s Type	Action	1-49	50-99	100-999	1000-Up
250-3113	8311	On-None-On	3.69	3.38	3.12	2.90

PC Mounting — SPDT-3 Terminals

Stock No.	Mfr.'s Type	Action	1-49	50-99	100-999	1000-Up
250-0133	8013 PCB	On-None-On	2.22	1.85	1.60	1.41
250-0143	8014A PCB	On*-Off-On*	2.60	2.38	2.20	2.04
250-0190	8019 PCB†	On-None-On	2.84	2.45	2.25	2.10

PC Mounting — DPDT-6 Terminals

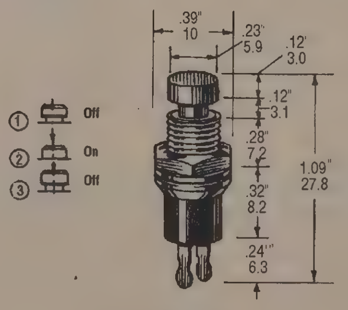
Stock No.	Mfr.'s Type	Action	1-49	50-99	100-999	1000-Up
250-0123	8012 PCB	On-Off-On	2.53	2.17	2.00	1.87
250-0113	8011 PCB	On-None-On	2.55	2.33	2.15	2.00

*Indicates Momentary Position. †Indicates Right Angle.

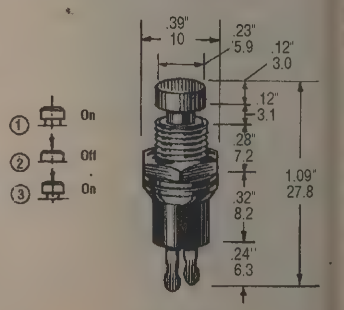
Color Coded Caps for 8000 Series Switches

Stock No.	Mfr.'s Type	Cap Color	PER PKG./100			
			1-49	50-99	100-999	1000-Up
250-0001	8000-01	White	2.03	1.75	1.52	1.43
250-0002	8000-02	Black	2.03	1.75	1.52	1.43
250-0003	8000-03	Red	2.03	1.75	1.52	1.43
250-0006	8000-06	Green	2.03	1.75	1.52	1.43
250-0007	8000-07	Blue	2.03	1.75	1.52	1.43

Bushing-Mounted Momentary Pushbutton Switches



R13-24A



R13-24B

Butt contacts for simplified operation. Solder-lug standard terminal. SPST operation. Requires 1/4" diameter mounting hole. Mounting hardware included. Rated 0.5 amp at 120 VAC.

Stock No.	Mfr.'s Type	Action	Button Color	EACH			
				1-99	100-499	500-999	1000-2499
250-3241	R13-24A	N.O.	Red	1.24	1.09	.99	.91
250-3242	R13-24B	N.C.	Black	1.24	1.09	.99	.91

13

Ensto ORIGIN Rotary and Toggle Disconnect Switches

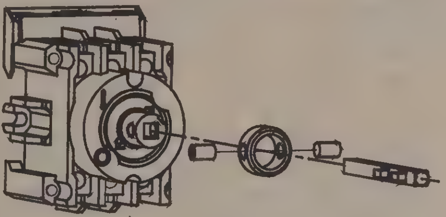
- World-Class, Industrial Grade Listed Device, UL508, CSA14, IEC947, CE
- Rugged, Reliable, Versatile, Economical
- Mount on Back Panel or DIN Rail
- Extended, Through-Door Rotary Actuation Kits Available
- Front Panel/Door Mount Kits for Rotary Switch Available
- Tested and Rated to Make and Break High Overload Currents, Typically Associated with AC Motor Starting and Stalling (Locked Rotor)
- General Use AC and DC, Motor Circuits AC Single and Polyphase
- Non-Fused Switch, Intended for Use with Separately Provided Branch-Circuit Fuses

Applications Guide and ORIGIN Catalog

Scannable drawing, installation options and instructions, sizing guidelines for National Electrical Code® applications, Canadian Electrical Code® applications, NFPA® 79 equipment applications, IEC switch disconnector terminology, detailed ratings and testing requirements for UL, CSA and IEC, copies of Declaration of Conformity and ENSTO ISO9001 Certification for CE Technical Construction File, and more.

767-2100. 45.000. Altech ORIGIN Applications Guide No. 2500.OP............................**EACH 5.00**

Rotary Actuation Switch

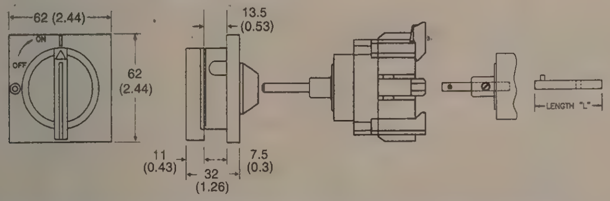


The Ensto ORIGIN rotary switch is used world wide for industrial through-door disconnect applications. From a back-panel or DIN rail mount rotary switch, extend actuation up to 12 inches with extension shaft, which on one end fits into the switch actuator and on the other end fits into the door-mounted and sealed actuation handle. Extension shaft collar fixes the extension shaft to the rotary switch. Extension shaft and handle are keyed so only in the closed position will the shaft slip out of the handle when the door starts to open. Extended shaft handles have lock-out provisions built-in (accept up to 3 padlocks). They are available with black handle and bezel for standard disconnect applications, or with red handle and yellow bezel for combination function of main disconnect and emergency stop (where emergency stop "pushbutton" is not considered necessary). Bezels are marked with molded and painted international standard "1/0" or molded "1/0" with printed USA standard "ON/OFF."

Stock No.	Mfr.'s Type	Catalog No.	Description	EACH
767-2101	KSR3.40/U	45.003	Rotary switch, 3 pole, 40A	**20.10**
767-2102	KSR3.80/U	45.005	Rotary switch, 3 pole, 80A	**36.30**
767-2103	KSR4.40/U	45.007	Rotary switch, 4 pole, 40A	**34.65**
767-2104	KK48.13/U	45.349	Extended handle, Red/Yel, "ON/OFF"	**7.30**
767-2105	KK48.02/U	45.352	Extended handle, Black, "ON/OFF"	**7.30**
767-2106	KK48/U	45.350	Extended handle, Red/Yel, "1/0"	**7.30**
767-2107	KK48.01/U	45.351	Extended handle, Black, "1/0"	**7.30**
767-2108	KK20/U	45.299	Shaft retention collar	**1.30**

Order rotary switch, extended actuation handle, shaft collar, and extension shaft separately. Direct actuation handles available.

Rotary Switch Actuation Extension Shafts

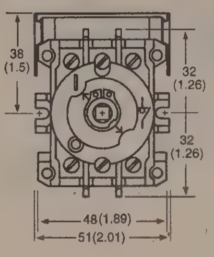


Needed with extended actuation handle. Minimum shaft-length calculation as follows.

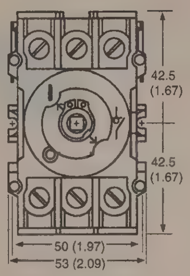
1. To the inside depth of the enclosure (face of mounting panel to inside face of front panel or door) add the front-panel/door thickness.
2. Subtract 1.5 mm if 7.5 mm DIN rail is used. Subtract 9 mm if 15 mm DIN rail is used. Subtract nothing if switch is direct back-panel mounted.
3. Subtract 30 mm for 40 A switches and 34 mm for 80 A switch. If minimum shaft-length is not a whole multiple of 10, use the shorter standard shaft length. When mounting the shaft in the switch, tighten the collar screws and position the shaft so that the exposed length is 20 mm less than the calculated minimum length.

Stock No.	Mfr.'s Type	Catalog No.	Length mm (in.)	EACH
767-2109	KK22.040/U	45.300	40 (1.58)	**1.50**
767-2110	KK22.050/U	45.301	50 (1.97)	**1.65**
767-2111	KK22.060/U	45.302	60 (2.36)	**1.80**
767-2112	KK22.070/U	45.303	70 (2.75)	**1.95**
767-2113	KK22.080/U	45.304	80 (3.15)	**2.10**
767-2114	KK22.090/U	45.305	90 (3.54)	**2.25**
767-2115	KK22.100/U	45.306	100 (3.94)	**2.40**
767-2116	KK22.110/U	45.307	110 (4.33)	**2.55**
767-2117	KK22.120/U	45.308	120 (4.72)	**2.70**
767-2118	KK22.130/U	45.309	130 (5.12)	**2.85**
767-2119	KK22.140/U	45.310	140 (5.51)	**3.00**
767-2120	KK22.150/U	45.311	150 (5.91)	**3.15**
767-2121	KK22.160/U	45.312	160 (6.30)	**3.30**
767-2122	KK22.170/U	45.313	170 (6.69)	**3.45**
767-2123	KK22.180/U	45.314	180 (7.09)	**4.30**
767-2124	KK22.305/U	45.327	305 (12.01)	**5.30**

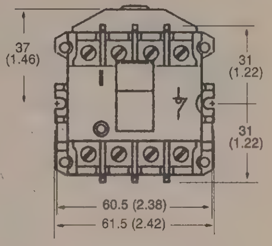
Rotary Switch Sets



KSR3.40/U



KSR3.80/U



KST4.40/U

Through-door extended actuation includes rotary switch, 200 mm extension shaft (you cut to length needed), shaft retaining collar, handle kit in black or with red handle and yellow bezel marked ON/OFF.

Stock No.	Mfr.'s Type	Catalog No.	Description	EACH
767-2125	340AR3A	45.402	3 pole, 40 A rotary switch, KSR3.40/U, black handle	**33.00**
767-2126	340AR3B	45.403	3 pole, 40 A rotary switch, KSR3.40/U, red/yel. handle	**33.00**
767-2127	380AR1A	45.412	3 pole, 80 A rotary switch, KSR3.80/U, black handle	**49.20**
767-2128	380AR1B	45.413	3 pole, 80 A rotary switch, KSR3.80/U, red/yel. handle	**49.20**

Toggle Actuated Switch

The Ensto ORIGIN toggle switch provides economical, industrial quality switching of AC and DC general use loads and ac motor-circuit loads. Back panel mount or DIN rail mount. Suitable for use through DIN cut-out (DIN cut-out covers available).Switch is complete with actuator.

767-2129	KST3.40/U	45.113	3 pole, 40 A	**20.10**
767-2130	KST3.80/U	45.115	3 pole, 80 A	**39.30**
767-2131	KST4.40/U	45.117	4 pole, 40 A	**33.00**

UL File 164205, NLRV, OY Ensto Control Ab.

Switch numbers for UL File are KK16, KK17, KK18, KK19, KK36 and KK37 respectively for type numbers KST3.40/U, KST3.80/U, KSR3.40/U, KSR3.80/U, KST4.40/U and KSR4.40/U.

Standard Short-Circuit Withstand

10 kArms symmetrical, when 40 A switches protected by max. 80 A RK5 or lower let-through fuses, and when 80 A switches protected by max. 150 A RK5 or lower let-through fuses.

Wiring Terminals

Copper conductors only, 60°/75°C, field and factory wiring rated. All 40 A switches rated with 14 AWG solid and stranded through 8 AWG stranded wire (accept at least next size larger). Tightening torque 35 lb./in. Stripping length 3/8 in. All 80 A switches rated with 14 AWG solid and stranded through 3 AWG stranded (accept at least next size larger). Tightening torque 50 lb./in. Stripping length 1/2 inch.

General Use Ratings

AC to 600Y/347 VAC at rated current (either 40 A or 80 A) polyphase and two-pole-break single phase, all switches. DC to 110 VDC at rated current (either 40 A or 80 A) two-pole break, three pole switches only (four pole switches not DC rated).

AC Motor-Circuit Ratings

Reference table for horsepower ratings, B, C and D motors. Specific applications to be per National Electrical Code® (herein Code), other appropriate authoritative documents (e.g. NFPA-79 and/or Canadian Electrical Code®) and local requirements, as necessary.

KSR3.40/U and KST3.40/U Motor Loading

Polyphase and two-pole-break single phase to 600Y/347 VAC, load to maximum 32.2 A with single or multiple motor total full-load-amperes from Code tables. Covers × 115% for disconnect. Locked-rotor-current from Code tables not to exceed 194 A.

KSR3.80/U and KST3.80/U Motor Loading

Polyphase to 600Y/347 VAC and two-pole-break single phase to 480Y/277 VAC, load to maximum 68 A with single or multiple motor total full-load-amperes from Code® tables. Covers × 115% for disconnect. Locked-rotor-current from Code tables not to exceed 408 A.

KSR4.40/U and KST4.40/U Motor Loading

Polyphase to 600Y/347 VAC, load to maximum 32 A, two-pole-break single phase to 600Y/347 VAC, load to maximum 28 A, single or multiple motor total full-load-amperes from Code tables not to exceed 192 A polyphase or 168 A single phase.

Motor-Circuit Horsepower

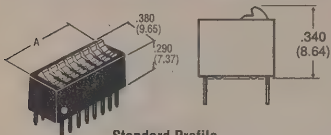
1-Phase, 2-Pole Break

Nom. System Voltage Motor Voltage	110-120 VAC 115 VAC	200 VAC 200 VAC	208 VAC 208 VAC	220-240 VAC 230 VAC	440-480 VAC 460 VAC	550-600 VAC 575VAC
KSR3.40/U, KST3.40U	2 hp	5 hp	5 hp	5 hp	10 hp	15 hp
KSR3.80/U, KST3.80/U	5 hp	10 hp	10 hp	15 hp	30 hp	—
KSR4.40/U, KST4.40/U	2 hp	—	—	5 hp	10 hp	15 hp

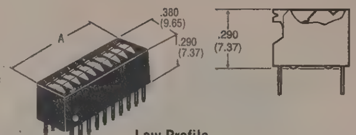
3-Phase

KSR3.40/U, KST3.40/U	5 hp	10 hp	10 hp	10 hp	20 hp	30 hp
KSR3.80/U, KST3.80/U	10 hp	20 hp	20 hp	25 hp	50 hp	60 hp
KSR4.40/U, KST4.40/U	—	—	—	10 hp	20 hp	30 hp

7100 Series DIP Switches

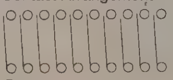


Standard Profile



Low Profile

Contact Arrangement



Pin 1
(Switches shown in open position)

Single pole, single throw. **Lead Spacing:** .100 × .300. **Lead Length:** .140 below mounting surface.

Standard Profile (Unsealed)*

Stock No.	Mfr.'s Type	No. of Switches	EACH 1-99	EACH 100-499	EACH 500-999
512-7018	2-435640-9	2	1.16	.97	.89
512-7019	3-435640-0	3	1.22	1.02	.94
512-7020	435640-2	4	1.24	1.04	.96
512-7021	435640-3	5	1.26	1.05	.97
512-7022	435640-4	6	1.31	1.09	1.00
512-7023	435640-1	7	1.33	1.11	1.02
512-7024	435640-5	8	1.35	1.12	1.04
512-7025	435640-6	9	1.37	1.14	1.05
512-7026	435640-7	10	1.39	1.16	1.07
512-7043	3-435640-2	12	2.04	1.70	1.57

Standard Profile (Sealed)

Stock No.	Mfr.'s Type	No. of Switches	EACH 1-99	EACH 100-499	EACH 500-999
512-7027	3-435640-3†	2	1.62	1.42	1.29
512-7046	3-435640-4†	3	1.68	1.46	1.39
512-7028	3-435640-5	4	1.31	1.09	1.00
512-7029	3-435640-6	5	1.33	1.11	1.02
512-7030	3-435640-7	6	1.37	1.14	1.05
512-7031	3-435640-8	7	1.39	1.16	1.07
512-7032	3-435640-9	8	1.41	1.17	1.08
512-7047	4-435640-0	9	1.43	1.19	1.10
512-7033	4-435640-1	10	1.45	1.21	1.12
512-7048	4-435640-3	12	2.15	1.79	1.65

Low Profile (Unsealed)*

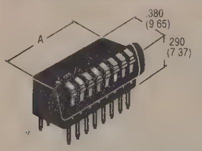
Stock No.	Mfr.'s Type	No. of Switches	EACH 1-99	EACH 100-499	EACH 500-999
512-7034	435668-3	4	1.37	1.14	1.05
512-7062	435668-4	5	1.39	1.16	1.07
512-7063	435668-5	6	1.43	1.19	1.10
512-7035	435668-7	8	1.49	1.24	1.15

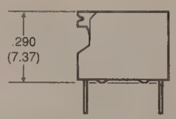
Low Profile (Sealed)

Stock No.	Mfr.'s Type	No. of Switches	EACH 1-99	EACH 100-499	EACH 500-999
512-7067	2-435668-6	2	1.35	1.12	1.04
512-7068	3-435668-3	3	1.82	1.51	1.40
512-7036	3-435668-4	4	1.43	1.19	1.10
512-7037	3-435668-5	5	1.45	1.21	1.12
512-7069	2-435668-7	7	1.51	1.26	1.16
512-7039	2-435668-8	8	1.57	1.31	1.21
512-7040	2-435668-9	9	1.60	1.33	1.22
512-7041	3-435668-0	10	1.62	1.34	1.24
512-7042	3-435668-2	12	2.35	1.95	1.80

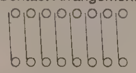
*All switches are bottom sealed. †UV sealed.

7000 Series DIP Switches





Contact Arrangement



Pin 1
(Switches shown in open position)

Single pole, single throw, side actuated, low profile. **Lead Spacing:** .100 × .300. **Lead Length:** .140 below mounting surface.

Unsealed*

Stock No.	Mfr.'s Type	No. of Switches	EACH 1-99	EACH 100-499	EACH 500-999
512-7000	1-435802-0	2	1.71	1.43	1.32
512-7001	435802-2	3	1.75	1.46	1.35
512-7002	435802-3	4	1.80	1.50	1.38
512-7004	435802-5	6	1.86	1.55	1.43
512-7006	435802-1	8	1.92	1.60	1.48
512-7007	435802-7	9	1.96	1.63	1.51

Sealed

Stock No.	Mfr.'s Type	No. of Switches	EACH 1-99	EACH 100-499	EACH 500-999
512-7010	1-435802-4	3	2.41	2.01	1.85
512-7011	1-435802-5	4	1.90	1.59	1.46
512-7012	1-435802-6	5	1.94	1.61	1.49
512-7013	1-435802-7	6	1.96	1.63	1.51
512-7086	435802-9	8	2.02	1.68	1.55
512-7015	1-435802-9	9	2.06	1.78	1.58
512-7017	2-435802-2	12	3.15	2.62	2.42

*All are bottom sealed.

Preprogrammed PCB Switches

Screwdriver Slot Style

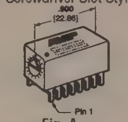


Fig. A

Extended Shaft Style

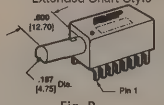
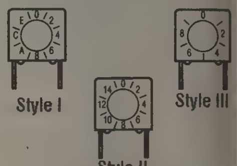


Fig. B

Stamping Legend



Lever Style

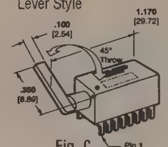


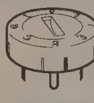
Fig. C

Voltage Rating: 120 Vms Max. **Current Rating:** 1 Amp max. **Life Expectancy:** 500 revolutions. **Screwdriver Slot Style:** Bottom sealed.

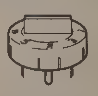
Stock No.	Mfr.'s Type	Fig.	Switch Type	No. of Pos.	Stamping Legend	EACH 1-24	EACH 25-99
512-7050	53137-5	A	Hexadecimal with Complement	16	I	6.27	5.82
512-7076	53137-6	A	Hexadecimal with Complement	16	II	6.27	5.82
512-7051	54792-1†	A	Hexadecimal with Complement	16	III	6.53	6.07
512-7053	53919-2	A	BCD with Complement	10	III	6.27	5.82
512-7077	54359-1	B	Hexadecimal with Complement	16	—	7.49	6.96
512-7078	54308-1	B	BCD with Complement	10	—	6.23	5.79
512-7079	53921-1	C	Input/Output	2	—	6.72	6.24

†With removable tape seal.

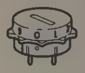
6000 Series Rotary Switches



Screwdriver/
Coin-Actuated Switch



Bar-Type
Knob Switch



Thumbwheel
Switch

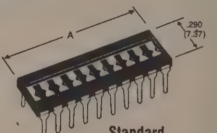
- **Compact Design — Small Diameter, Low Profile Switches Are Ideal for PC Board Mounting**
- **Positive Switching — Contacts Have Positive Detent Action**
- **Optimum Reliability — Fully Enclosed Design Protects Contacts Against Contamination**

Electrical. Current/Voltage Rating: Switching — 115 VAC or 28 VDC at 125 milliamperes max.; Nonswitching — 115 VAC or 28 VDC at 250 milliamperes max. **Durability:** 1000 cycles. **Dielectric Breakdown Voltage:** 500 VDC. **Mechanical and Environmental. Operating Torque:** 2-12 inch-ounces initial and after durability. **Operating Temperature:** –18°C to +88°C. **Storage Temperature:** –45°C to +88°C.

Stock No.	Mfr.'s Type	No. of Pos.	Description	Style	Dia. (In.)	EACH 1-9	EACH 10-24
512-7100	435174-1	8	Screwdriver/Coin Actuated	BCO	.750	13.36	12.40
512-7102	1-435174-1	8	Bar-Type Knob	BCO	.750	8.11	7.51
512-7104	1-435174-3*	8	Bar-Type Knob	BCO	.750	8.91	8.27
512-7106	435005-1	10	Screwdriver/Coin Actuated	BCD	.750	8.11	7.51
512-7108	435123-1	10	Bar-Type Knob	BCD	.750	8.11	7.51
512-7110	435128-1	10	Thumbwheel	BCD	.950	9.54	8.81
512-7112	1-435097-1	10	Screwdriver/Coin Actuated	Single Pole	.750	9.38	8.69
512-7114	2-435097-1	10	Bar-Type Knob	Single Pole	.750	9.38	8.69
512-7116	435097-1	10	Thumbwheel	Single Pole	.950	15.95	14.81
512-7118	435167-1	16	Screwdriver/Coin Actuated	Hexadecimal	.920	19.37	17.98
512-7120	1-435167-1	16	Bar-Type Knob	Hexadecimal	.920	8.61	7.92
512-7122	2-435167-1	16	Thumbwheel	Hexadecimal	1.100	12.81	11.89
512-7124	3-435167-1‡	16	Thumbwheel	Hexadecimal	1.100	23.06	21.41
512-7126	1-435304-1	16	Bar-Type Knob	Single Pole	.920	16.42	15.25

*With dots. ‡With number and letters.

7600 Series DIP Shunts



Standard

Standard Shunt

Standard Pressure. Lead Spacing: .100 × .300. **Lead Length:** .140 below mounting surface. **Color:** Black.

Stock No.	Mfr.'s Type	No. of Pos.	Overall Length Dim. A (In.)	EACH 1-99	EACH 100-499	EACH 500-999
512-7055	435704-4	4	.4	.45	.40	.32
512-7056	435704-6	6	.6	.50	.45	.40
512-7057	435704-7	7	.7	.53	.48	.38
512-7058	435704-8	8	.8	.56	.51	.40
512-7059	1-435704-0	10	1.0	.62	.55	.44
512-7060	1-435704-2	12	1.2	.67	.60	.48

DIP Shunt Programming Tool

512-7065. 435862-1 .... EACH 34.68

TSP Series — Tiny Sealed Pushbutton Switch

- **Rating: 0.4VA Max. at 20 VAC/DC**
- **High Temperature Plastics — Liquid Crystal Polymer (LCP)**
- **Specifically Designed for Thru-Hole and Surface Mount Applications — Tin/Lead Plated Terminals**
- **Washable Process Sealed Construction — Internal Actuator O-Ring**

Material Specifications: Contacts: Copper alloy with gold over nickel plating. **Case Material:** Thermoplastic (LCP). **Actuator Material:** Thermoplastic (Nylon). **Terminals:** Tin/Lead plated. **Typical Performance Characteristics: Contact Rating:** 0.4VA max. at 20VDC or peak AC. **Life Expectancy:** 80000 cycles. **Operating Temperature:** -30°C to +85°C.

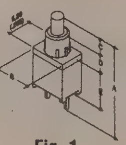


Fig. 1

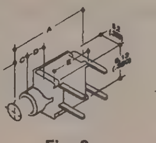


Fig. 2

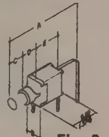


Fig. 3

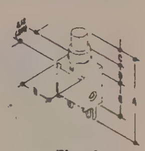


Fig. 4

Stock No.	Mfr.'s Type	Description	Fig.	Dimensions — mm (In.)						EACH		
				Lead Spacing	A	B	C	D	E	1-249	250-999	1000-2499
758-0192	TSPD11CGPC0	SPST: Sealed PC — N.O. Momentary — Black Actuator	1	.200	.855	—	.200	.170	.360	**3.87**	**3.51**	**3.22**
758-0194	TSPD11CGRA0	SPST: Sealed Right Angle — N.O. Momentary — Black Actuator	2	.200	.753	—	.200	.156	.374	**4.44**	**4.03**	**3.70**
758-0196	TSPD11CGVRA0	SPST: Sealed Angle Vert. Right— N.O. Momentary — Black Actuator	3	.200	.940	—	.200	.156	.374	**3.64**	**3.31**	**3.03**
758-0200	TSPD11CGPCV0	SPST: Sealed PC w/ Support Bracket — N.O. Momentary — Black Actuator	4	.200	.860	—	.200	.156	.374	**4.54**	**4.12**	**3.78**

Note: Suffix for actuator color — 0 = Black, 2 = Red, 6 = Blue.

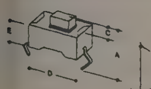


Fig. 1

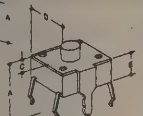


Fig. 2

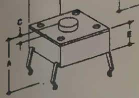


Fig. 3

FSM Series — Tactile Pushbutton Switch

Material Specifications: Contacts: FSM: Silverplate. FSM1-8: Beryllium copper. **Case:** Thermoplastic. **Terminals:** Silverplate. **Typical Performance Characteristics: Contact Rating:** 50mA at 12VDC. **Life Expectancy:** FSM: 20000 cycles, FSM1-8: 300000 cycles. **Operating Temperature:** -40°C to +80°C. **Actuation Force:** 150 Grams average.

Stock No.	Mfr.'s Type	Description	Fig.	Dimensions — In.						EACH		
				Lead Spacing	A	B	C	D	E	1-99	100-499	500-999
758-0206	FSM	SPST: Off/(On) When Depressed	1	.256	.282	.138	.060	.236	.138	**.78**	**.71**	**.65**
758-0211	FSM2J	SPST: Off/(On) When Depressed	3	.256 × .177	.295	N/A	.028	.244	.142	**.39**	**.35**	**.32**
758-0215	FSM4J	SPDT: Off/(On) When Depressed	3	.256 × .177	.323	N/A	.055	.244	.169	**.39**	**.35**	**.32**
758-0217	FSM5J	SPDT: Off/(On) When Depressed with ground terminal	2	.256 × .177	.539	N/A	.134	.244	.276	**.39**	**.35**	**.32**
758-0221	FSM7J	SPDT: Off/(On) When Depressed with ground terminal	2	.256 × .177	.736	N/A	.232	.244	.374	**.39**	**.35**	**.32**
758-0223	FSM8J	SPDT: Off/(On) When Depressed	3	.256 × .177	.733	N/A	.233	.244	.374	**.39**	**.35**	**.32**

MPS3/MSPS Series — Snap Action Pushbutton Switch

Material Specifications: Contacts: MPS: Silver. MPS5: Silver. **Case Material:** MPS: Thermoset. MPS5: Black phenolic resin. **Actuator Material:** MPS: Brass. MPS5: Brass. **Terminals:** Silver Plate. **Typical Performance Characteristics: Contact Rating:** MPS: 3 Amps at 115VAC or 28VDC. MSP5: 5 Amps at 125VAC or 28VDC. **Life Expectancy:** MPS: 50000 Actuations. **Operating Temperature:** MPS: -15°C to +70°C. MSP5: -15°C to +75°C.

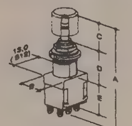


Fig. 1

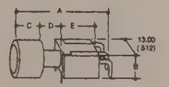


Fig. 2

Stock No.	Mfr.'s Type	Description	Fig.	Dimensions — In.						EACH		
				Lead Spacing	A	B	C	D	E	1-99	100-499	500-999
758-0166	MPS103F*	SPDT: Wire Lug — Momentary	1	.180	1.286	.315	.420	.315	.394	**6.54**	**5.45**	**5.03**
758-0168	MPS203R	DPDT: Wire Lug — Momentary	1	.180	1.286	.512	.420	.315	.394	**9.04**	**8.22**	**6.95**
758-0170	MPS103FPC*	SPDT: PCB Mount — Momentary	1	.180	1.670	.310	.420	.315	.430	**6.85**	**6.23**	**5.27**
758-0180	MPS103DRA*	SPDT: Push-On/Push-Off — Right Angle	2	N/A	1.122	.315	.315	.236	.384	**10.32**	**8.60**	**7.94**
758-0184	C220	Black Cap with 0.39" Diameter used on MPA, MPE, MPS	—	—	—	—	—	—	—	**.53**	**.49**	**.41**
758-0186	C222	Red Cap with 0.39" Diameter used on MPA, MPE, MPS	—	—	—	—	—	—	—	**.53**	**.49**	**.41**
758-0188	C230	Black Cap with 0.59" Diameter used on MPA, MPE, MPS	—	—	—	—	—	—	—	**.70**	**.64**	**.54**
758-0190	C232	Red Cap with 0.59" Diameter used on MPA, MPE, MPS	—	—	—	—	—	—	—	**.70**	**.64**	**.54**

*Caps not supplied, order separately.

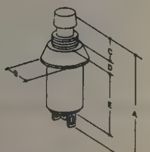


Fig. 1

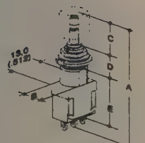


Fig. 2

Pushbutton Switch MPA/MPE/MPG Series

Molded-in heat terminals eliminate switch mechanism contamination. Gold flash contacts and terminals inhibit oxidation and extend shelf life. Diallyl phthalate cases permit these switches to withstand wide temperature ranges. Each switch has one-piece bushing to reduce the possibility of tear-off damage when mounting. All hardware is supplied unmounted. **Contact Rating:** 6 amps at 125VAC; 3 amps at 250VAC; 4 amps at 28VDC. Solid silver contacts. **Operating Force:** 2.5 to 4.4 lbs. **Plunger Travel:** 125" avg. **Insulation Resistance:** 1000 ohms. **Dielectric Strength:** 1500V rms at sea level. **Life Expectancy:** 50K operations. Terminal seal included at no extra charge. Order cap separately.

Stock No.	Mfr.'s Type	Description	Fig.	Dimensions — In.						EACH		
				Lead Spacing	A	B	C	D	E	1-99	100-499	500-999
758-9899	MPA106D*	SPDT: Wire Lug Push-On/Push-Off	2	.170	1.600	.315	.472	.280	.680	**8.38**	**7.62**	**6.45**
758-0122	MPA106F*	SPDT: Wire Lug Momentary	2	.170	1.600	.315	.472	.280	.680	**8.38**	**7.62**	**6.45**
758-0124	MPA206R*	DPDT: Wire Lug Momentary	2	.170 × .190	1.602	.512	.472	.280	.680	**10.81**	**9.82**	**8.31**
758-0126	MPA206N*	DPDT: Wire Lug Push-On/Push-Off	2	.170 × .190	1.602	.512	.472	.280	.680	**10.81**	**9.82**	**8.31**
758-0130	MPE106D*	SPDT: Wire Lug Push-On/Push-Off Splashproof	2	.170	1.618	.320	.472	.280	.690	**10.24**	**9.31**	**7.87**
758-0132	MPE106F*	Splashproof DPDT: Wire Lug Momentary	2	.170	1.618	.320	.472	.280	.690	**10.24**	**9.31**	**7.87**
758-0134	MPE206R*	Splashproof DPDT: Wire Lug Momentary	2	.170	1.610	.512	.472	.280	.690	**12.56**	**11.42**	**9.66**
758-0136	MPE206N*	DPDT: Wire Lug Push-On/Push-Off Splashproof	2	.170 × .190	1.610	.512	.472	.280	.690	**12.56**	**11.42**	**9.66**
758-0138	MPG106D**	Mustang Pushbutton SPDT: Wire Lug Push-On/Push-Off	2	.170	1.405	.315	.315	.473	.460	**10.96**	**9.97**	**8.43**
758-0140	MPG106F**	Mustang Pushbutton SPDT: Wire Lug Momentary	2	.170	1.405	.315	.315	.473	.460	**10.96**	**9.97**	**8.43**
758-0142	MPG206R**	DPDT: Wire Lug Momentary 15/32" Bushing	2	.170	1.405	.512	.315	.473	.460	**13.28**	**12.07**	**10.21**
758-0144	MPA103C	SPST: Wire Lug Normally Open - Black Cap	1	N/A	1.122	.354	.236	.236	.500	**3.99**	**3.63**	**3.07**
758-0146	MPA103D	SPDT: Push-On/Push-Off (Tactile) - Black Cap	1	N/A	1.122	.354	.236	.236	.500	**7.06**	**6.42**	**5.43**
758-0148	MPA103F	SPDT Momentary (Tactile) - Black Cap	1	N/A	1.122	.354	.236	.236	.500	**7.06**	**6.42**	**5.43**

*Caps not supplied. Refer to Switch 7 for standard caps. **Black cap supplied. Refer to full line catalog, model number C90.

MP/MSP Series Pushbutton Switch

Material Specifications: Contacts: MSPF/MSP3/MSPS: Silver plate. MSPM: Gold. **Case Material:** MPSF: Thermoset. MSPM: Steel. MSP3/MSPS: Thermoplastic. **Actuator Material:** MSPM: Nylon. MSPF/MSP3/MSPS: Thermoplastic. **Terminals:** Silver plate. **Typical Performance Characteristics.Contact Rating:** MSPF: 0.5 Amps at 125VAC. MSPM: 1.0 VA optimum (100 mA max. 50 VDC max.). MSP3: 3 Amps at 125 VAC. MSPS: 0.5 Amps at 125 VAC. **Life Expectancy:** MSPF: 10000 cycles min. MSPM: 5000000 cycles at 0.1VA. MSP3/MSPS: 10000 Cycles. **Operating Temperature:** MSPF: -20°C to 80°C. MSPM: -10°C to 80°C. MSP3/MSPS: -20°C to 80°C.

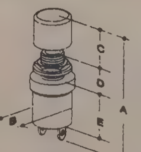


Fig. 1

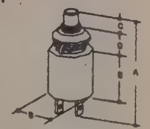


Fig. 2

Stock No.	Mfr.'s Type	Description	Fig.	Dimensions — In.						EACH		
				Lead Spacing	A	B	C	D	E	1-99	100-499	500-999
758-0150	MSPF101C	SPST: Normally Open — Red Plunger	2	.140	.980	N/A	.256	.374	.176	**4.90**	**4.45**	**3.77**
758-0152	MSPF101BC0	2 Circuit: Normally Open-Normally Closed — Black Plunger	2	.177	.980	N/A	.256	.374	.176	**5.93**	**5.39**	**4.56**
758-0154	MSPM101C1*	SPST: Normally Open, Pin Terminals — Red Cap	1	.284	1.640	.510	.480	.320	.560	**17.21**	**15.64**	**13.23**
758-0156	MSPM101CS1	SPST: Normally Open, Lug Terminals — Red Cap	1	.280	1.240	.510	.160	.320	.560	**15.98**	**14.53**	**12.29**
758-0158	MSP103B	SPST: Normally Closed — Black Plunger	2	.242	1.039	.410	.098	.235	.520	**3.60**	**3.27**	**2.77**
758-0160	MSP103C	SPST: Normally Open — Red Plunger	2	.242	1.039	.410	.098	.235	.520	**3.60**	**3.27**	**2.77**
758-0162	MSPS103C2	SPST: Normally Open — Red Plunger	1	.189	1.050	.310	.201	.252	.380	**1.71**	**1.56**	**1.32**
758-0164	MSPS103C0	SPST: Normally Open — Black Plunger	1	.189	1.050	.310	.201	.252	.380	**1.71**	**1.56**	**1.32**

*Caps model number C22 supplied.

MSS Series Slide Switch

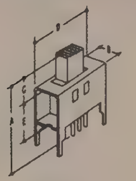


Fig. 1

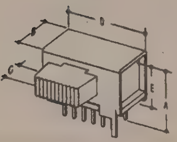


Fig. 2

Designed for PC applications. These slide switches save installation time and eliminate wiring errors. Available in vertical or right angle mount with mounting tabs on the perimeter of the frames for added stability. All switches in this series feature a positive wiping action to assure low contact resistance and make-before-break action. **Contact Rating:** Silver, 300 mA at 125 VAC. **Contact Resistance:** 30 milliohms max. **Insulation Resistance:** 1000 megohms min. **Dielectric Strength:** 500 V rms at sea level.

Stock No.	Mfr.'s Type	Description	Fig.	Dimensions — In.						EACH		
				Lead Spacing	A	B	C	D	E	1-99	100-249	250-499
758-0224	MSS1200	SDPT: Silver	1	.079	.740	.228	.197	.551	.327	**1.18**	**1.07**	**.90**
758-0226	MSS1200RG	SPDT: Right Angle Lever — Gold	2	.079	.559	.220	.157	.700	.413	**1.54**	**1.40**	**1.19**
758-0228	MSS1300R	SP3P: Right Angle Lever — Silver	2	.079	.570	.276	.335	.984	.346	**1.31**	**1.19**	**1.00**
758-0230	MSS2200	DPDT: Silver	1	.079	.630	.220	.090	.551	.394	**1.12**	**1.02**	**.86**
758-0232	MSS2200G	DPDT: Gold	1	.079	.630	.220	.090	.551	.394	**1.72**	**1.56**	**1.32**
758-0234	MSS2250	DPDT: Silver — Large Actuator	1	.079	.968	.227	.433	.551	.329	**1.28**	**1.16**	**.98**
758-0236	MSS2250R	DPDT: Right Angle Large Actuator — Silver	2	.079	.531	.236	.374	.639	.413	**1.19**	**1.08**	**.91**
758-0238	MSS4200	4PDT: Silver	1	.079	.827	.370	.315	.591	.394	**1.13**	**1.19**	**1.00**
758-0240	MSS4200G	4PDT: Gold	1	.079	.827	.370	.315	.591	.394	**4.06**	**3.69**	**3.13**
758-0242	MSS4200R	4PDT: Right Angle Lever — Silver	2	.079	.512	.370	.276	.567	.394	**1.60**	**1.45**	**1.23**
758-0244	MSS4200RG	4PDT: Right Angle Lever — Gold	2	.079	.512	.370	.276	.567	.394	**4.41**	**4.01**	**3.39**

SLS Series Slide Switch

Performance Specifications: Contact Rating: SLS 250 mA at 125 VAC, 150 mA at 12 VDC. SLSA 500 mA at 125 VAC, 200 mA at 12 VDC. **Life Expectancy:** 6,000 Cycles. **Operating Temperature:** SLSA -20°C to +85°C. SLS -10°C to +60°C. **Material Specifications: Contacts:** Silver plate. **Case Material:** Steel. **Actuator Material:** Polycarbonate. **Terminals:** Silver plate. **Terminal Board:** Phenolic.

Stock No.	Mfr.'s Type	Description	Fig.	Dimensions — In.						EACH		
				Lead Spacing	A	B	C	D	E	1-99	100-499	500-999
758-0246	SLS121PC	SPDT: PC Mount — 2 Positions	1	.126	.560	.220	.197	.433	.197	**1.02**	**.93**	**.78**
758-0248	SLS121RA	SPDT: PC Mount — Right Angle	2	.126	.393	.220	.197	.433	.201	**1.16**	**1.05**	**.89**
758-0250	SLS220PC	SP2P: PC Mount — Wiping Contacts	1	.126 × .196	.579	.402	.197	.535	.276	**1.67**	**1.52**	**1.29**
758-0252	SLS230PC	DP3P: PC Mount — Wiping Contacts	1	.126 × .196	.579	.402	.197	.661	.280	**1.89**	**1.72**	**1.45**
758-0254	SLS131PC	SP3P: PC Mount	1	.126	.563	.230	.197	.395	.236	**1.39**	**1.26**	**1.07**
758-0258	SLSA1201	SPDT: Turret Terminal	1	.120	.488	.230	.130	.410	.230	**1.34**	**1.22**	**1.03**
758-0260	SLSA2201	DPDT: Turret Terminal	1	.120 × .130	.594	.319	.189	.465	.276	**1.46**	**1.33**	**1.12**

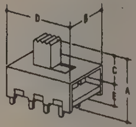


Fig. 1

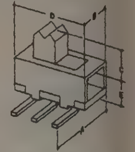


Fig. 2

PC Mount Slide Switch — TSS Tiny Series

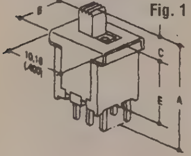


Fig. 1

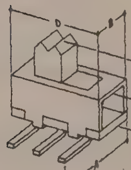


Fig. 2

These compact pushbutton switches are used in a variety of applications such as: instrumentation, telecom systems, computers, etc. Contacts and terminals are fully gold plated for dependability in frequent switching and gold solderability. Right angle models are ideal for PC board edge mounting. Contacts and terminals are fully gold plated for dependability in frequent switching and gold solderability. Right angle models are ideal for PC board edge mounting. **Contact Rating:** 0.4 VA max. at 20 VDC or peak AC. **Contact Resistance:** 20 milliohms max. **Insulation Resistance:** 1000 megohms min. at 500 VDC. **Dielectric Strength:** 1000 V rms at sea level. Thermoset plastic case material. Gold over nickel barrier plating. **Plunger Travel:** Approximately .030".

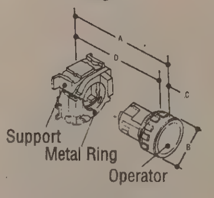
Stock No.	Mfr.'s Type	Description	Fig.	Dimensions — In.						EACH		
				Lead Spacing	A	B	C	D	E	1-49	50-99	100-249
758-0262	TSS11DGPC	SPDT: On-None-On	1	.100	.620	.206	.110	.400	.380	**2.77**	**2.52**	**2.13**
758-0264	TSS21NGPC	DPDT: On-None-On	1	.200	.620	.360	.110	.400	.380	**5.27**	**4.79**	**4.05**
758-0266	TSS11DGRA	SPDT: Right Angle -On-None-On	2	.100	.520	.206	.110	—	.380	**2.92**	**2.66**	**2.25**
758-0268	TSS11DG1RA	SPDT: Right Angle -On-None-On, Flush Actuator	2	.098	.410	.205	—	—	.410	**2.92**	**2.66**	**2.25**
758-0270	TSS21NGRA	DPDT: Right Angle -On-None-On	2	.100	.620	.360	.110	—	.380	**6.38**	**5.80**	**4.90**
758-0274	TSS41NGPC	4PDT: On-None-On	1	.100	.559	.360	.110	—	.319	**9.74**	**8.86**	**7.49**

Reliant '22 Series Oil Tight Industrial Controls

- ► **Fits 7/8" (22 mm) Diameter Holes**
- ► **Protection Level: 1 P 65**
- ► **Buttons Are Full Size**
- ► **Meets NEMA 1, 12, 13**
- ► **Finish: Matte Black Bezel**
- ► **Simple "No-Tool" Mounting**
- ► **Fully Insulated — Thermoplastic or Heavy-Duty Metal Bushings**
- ► **Contacts: Double-Break Silver Snap-Block, 6 A @ 600 VAC**
- ► **Stackable**

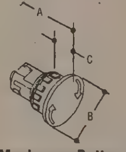
These controls utilize a snap-on contact block system with pushbuttons for a variety of switching configurations — momentary and maintained, lighted and unlighted, round and square keylocks and selectors. Suited for direct and pilot duty. Maximum contact rating of 6 A at 600 VAC. Contemporary front panel design. Order contact blocks separately.

Fig. 1



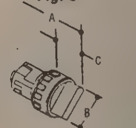
Flush Button

Fig. 2



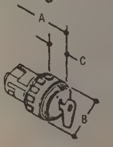
Mushroom Button

Fig. 3



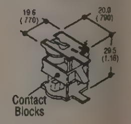
Selector

Fig. 4



Keylock

Fig. 5



Stock No.	Mfr.'s Type	Description	Fig.	Dimensions — In.				EACH		
				A	B	C	D	1-9	10-99	100-499
758-0500	RM0100	Flush Round Button — Momentary — Metal Threaded Bushing — Black Button	1	1.496	1.160	.450	1.043	**17.18**	**15.62**	**13.22**
758-9705	RM0102	Flush Round Button — Momentary — Metal Threaded Bushing — Red Button	1	1.496	1.160	.450	1.043	**17.18**	**15.62**	**13.22**
758-0501	RM0105	Flush Round Button — Momentary — Metal Threaded Bushing — Green Button	1	1.496	1.160	.450	1.043	**17.18**	**15.62**	**13.22**
758-9800	RT0100	Flush Round Button — Momentary — Thermoplastic Threaded Bushing — Black Button	1	1.496	1.160	.450	1.043	**8.31**	**7.55**	**6.39**
758-0602	RT0102	Flush Round Button — Momentary — Thermoplastic Threaded Bushing — Red Button	1	1.496	1.160	.450	1.043	**8.31**	**7.55**	**6.39**
758-0505	RT0105	Flush Round Button — Momentary — Thermoplastic Threaded Bushing — Green Button	1	1.496	1.160	.450	1.043	**8.31**	**7.55**	**6.39**
758-0504	RM0502	Red Mushroom Button — Momentary — Metal Bayonet	2	2.185	1.570	1.140	1.043	**25.17**	**22.88**	**19.36**
758-0506	RT0502	Red Mushroom Button — Momentary — Thermoplastic Threaded Bushing	2	2.185	1.570	1.140	1.043	**15.10**	**13.73**	**11.62**
758-0508	RM0532	Red Mushroom Button — Push-Pull — Metal Threaded Bushing	2	2.185	1.570	1.140	1.043	**38.08**	**34.62**	**29.29**
758-0510	RM0452	Red Mushroom Button — Maintained — Metal Bushing	2	2.185	1.570	1.140	1.043	**27.25**	**24.77**	**20.96**
758-0512	RM3040	Black Selector Operator — 2 Pos. 60° Throw — Metal Threaded Bushing	3	2.087	1.160	1.040	1.043	**23.30**	**21.18**	**17.92**
758-0514	RM0652	Red Mushroom Button — Push to Lock/Twist Release — Metal Threaded Bushing	2	2.185	1.570	1.140	1.043	**28.36**	**25.79**	**21.82**
758-0516	RM201	Key Lock Operator — Maintained — 2 Pos. 60° Throw — Metal Threaded Bushing	4	1.929	1.160	.886	1.043	**39.64**	**36.03**	**30.49**
758-0518	F40	Normally Closed Contact Block with Quick Connects — Red Plunger	5	—	—	—	—	**7.82**	**7.11**	**6.01**
758-0520	F50	Normally Open Contact Block with Quick Connects — Green Plunger	5	—	—	—	—	**7.82**	**7.11**	**6.01**
758-0522	V40	Normally Closed Contact Block — Screw Terminal — Red Plunger	5	—	—	—	—	**7.82**	**7.11**	**6.01**
758-0524	V50	Normally Open Contact Block — Screw Terminal — Green Plunger	5	—	—	—	—	**7.82**	**7.11**	**6.01**

MT Green Series

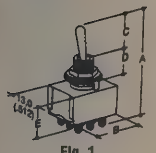


Fig. 1

These switches are best known for their ease of mounting and actuation as well as for long term reliability. Variety and quality are designed in, not added on. The miniature "Green Series" features the following: molded-in terminals, anti-push-in toggle, hi-torque bushing, gold flash terminals, UL Listed (File No. E46765). **Contact Rating:** 6 amps at 125 VAC, 3 amps at 250 VAC, 4 amps at 28 VDC. **Contact Resistance:** Below 10 milliohms. **Insulation Resistance:** 1000 megohms min. Solid silver contacts. Green diallyl phthalate case. () denotes momentary.

Stock No.	Mfr.'s Type	Description	Fig.	Dimensions — In.						EACH		
				Lead Spacing	A	B	C	D	E	1-99	100-499	500-Up
758-5560	MTA106D	SPDT: Wire Lug — On-None-On	1	.170	1.279	.320	.413	—	.354	**5.43**	**4.94**	**4.18**
758-0062	MTA106E	SPDT: Wire Lug — On-Off-On	1	.170	1.279	.320	.413	.315	.354	**6.63**	**6.02**	**5.10**
758-0064	MTA106G	SPDT: Wire Lug — (On)-Off-(On)	1	.170	1.279	.320	.413	.315	.354	**7.08**	**6.43**	**5.44**
758-0066	MTA106DPC	SPDT: PCB Mount — On-None-On	1	.170	1.373	.315	.413	.315	.354	**4.76**	**4.33**	**3.66**
758-0068	MTA206N	DPDT: Wire Lug — On-None-On	1	.100 x .100	1.279	.512	.413	.315	.354	**7.44**	**6.76**	**5.72**
758-0070	MTA206P	SPDT: Wire Lug — On-Off-On	1	.100 x .100	1.279	.512	.413	.315	.354	**8.75**	**7.96**	**6.73**
758-0072	MTA206NPC	DPDT: PCB Mount — On-None-On	1	.100 x .100	1.373	.512	.413	.315	.354	**7.65**	**6.95**	**5.88**
758-0076	MTE206N	DPDT: Wire Lug, Splash Proof — On-None-On	1	.100 x .100	1.120	.512	.410	.300	.410	**8.86**	**8.05**	**6.81**
758-0078	MTF206N	DPDT Wire Lug, Flatted Toggle — On-None-On	1	.100 x .100	1.350	.512	.490	.320	.390	**9.19**	**8.35**	**7.07**
758-0080	MTL106D	SPDT: Wire Lug, Locking Toggle — On-None-On	1	.170	1.500	.320	.669	.320	.430	**10.03**	**9.12**	**7.72**
758-0082	MTL206N	DPDT: Wire Lug, Locking Toggle — On-None-On	1	.100 x .100	1.500	.512	.669	.320	.430	**11.42**	**10.39**	**8.79**
758-0085	MTM106DPC	SPDT: PCB Mount, Short Toggle — On-None-On	1	.170	0.980	.320	.270	.320	.390	**5.55**	**5.05**	**4.27**
758-0088	MTG206N	DPDT: Wire Lug, Large Toggle — On-None-On	1	.100 x .100	1.272	.510	.450	.469	.354	**9.87**	**8.97**	**7.59**

Tiny Sealed Toggle Switch

Stock No.	Mfr.'s Type	Description	Fig.	Dimensions — In.					EACH		
				Lead Spacing	A	B	C	D	1-99	100-499	500-Up
758-0090	TST11DGPC1D	SPDT: Sealed Vertical — On-None-On P.C.	1	.100	.861	.206	.170	.360	**8.90**	**8.09**	**6.84**
758-0092	TST11DGRA1D	SPDT: Sealed Right Angle — On-None-On P.C.	2	.100	.759	.206	.156	.374	**5.56**	**5.06**	**4.28**
758-0094	TST11DGVRA1D	SPDT: Sealed Vert. Right Angle — On-None-On P.C.	3	.100	.946	.206	.156	.374	**5.15**	**4.68**	**3.96**

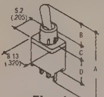


Fig. 1

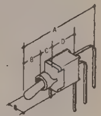


Fig. 3

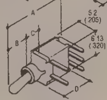


Fig. 2

DR Series Rotary DIP Switch

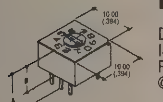


Fig. 1

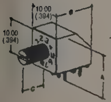


Fig. 2

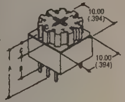


Fig. 3

DR Series Features highest contact reliability with a pin-point high contact pressure mechanism providing longer life expectancy by penetrating oxides and sulfurized film allowing more than 10000 rotations. Insert molded terminals and internal "O" ring allow wave soldering and immersion cleaning. **32 styles to choose from:** screwdriver, knob and shaft types are available in both upright and right angle versions. Plus your choice of 4 standard output codes. **Specifications. Contact Rating:** 0.4 VA @ 20 VDC (max.). **Initial Contact Resistance:** 50 milliohms max. @ 2 VDC. **Insulation Resistance:** 1000 milliohms min. @ 100 VDC. **Dielectric Strength:** 300 VAC 1 minute. **Operating Temperature Range:** -10°C to +85°C. **Life Expectancy:** 10000 rotations. Surface mount types available on special order.

Stock No.	Mfr.'s Type	Positions	Description	Fig.	Dimensions — In.				EACH		
					Lead Spacing	A	B	C	1-249	250-999	1000-2499
758-0278	DRD10	10	"D" Flush Actuator: BCD	1	.100 × .300	.382	.236	—	**5.78**	**5.25**	**4.44**
758-0280	DRD16	16	"D" Flush Actuator: Hexadecimal	1	.100 × .300	.382	.236	—	**6.51**	**5.92**	**5.01**
758-0282	DRD10RA	10	"D" Flush Actuator Right Angle: BCD	2*	.100 × .200	.540	.472	.012	**6.97**	**6.33**	**5.36**
758-0292	DRM10RA	10	"M" Mini Shaft Actuator Right Angle: BCD	2	.100 × .200	.540	.472	.287	**8.45**	**7.68**	**6.50**
758-0294	DRM16RA	16	"M" Mini Shaft Actuator Right Angle: Hexadecimal	2	.100 × .200	.540	.472	.287	**9.22**	**8.39**	**7.10**
758-0296	DRW10	10	"W" Mini Wheel Actuator: BCD	3	.100 × .300	.512	.236	.130	**6.73**	**6.12**	**5.18**
758-0300	DRW10RA	10	"W" Mini Wheel Actuator Right Angle: BCD	2*	.100 × .200	.540	.472	.130	**8.14**	**7.40**	**6.26**

*Actuator style varies from drawing.

AD Series Auto Insertable DIP Switch

Unique ceramic substrate allows soldering temperature of 245°C ±5% for up to 30 seconds. Auto-insertable using standard insertion equipment. Gas tight contacts (280000 PSI). Allows wave soldering and aqueous or solvent cleaning without the use of tape seals. **Base:** PBT encapsulated ceramic. **Cover and Actuation:** PBT 94V-O. Gold flash beryllium copper moving contacts. Solder coated brass fixed contact and terminal. **Operating Force:** Less than 800 grams. **Contact Rating:** 4VA at 20VDC max. **Operating Temperature:** -30°C to +86°C. **Dielectric Strength:** 500VAC rms at sea level. **Life Expectancy:** 5000 operations.

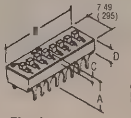


Fig. 1

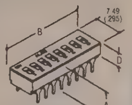


Fig. 2

Stock No.	Mfr.'s Type	Positions	Description	Fig.	Dimensions — In.					EACH		
					Lead Spacing	A	B	C	D	1-99	100-499	500-999
758-0302	ADE02	2	Extended Actuator — PC Term.	1	.100	.334	.278	.039	.167	**1.41**	**1.28**	**1.09**
758-0304	ADE04	4	Extended Actuator — PC Term.	1	.100	.334	.478	.039	.167	**1.59**	**1.45**	**1.23**
758-0308	ADE08	8	Extended Actuator — PC Term.	1	.100	.334	.878	.039	.167	**2.09**	**1.90**	**1.61**
758-0310	ADE10	10	Extended Actuator — PC Term.	1	.100	.334	1.078	.039	.167	**2.75**	**2.50**	**2.12**
758-0312	ADF02	2	Flush Actuator — PC Term.	2	.100	.295	.278	—	.167	**1.41**	**1.28**	**1.09**
758-0314	ADF04	4	Flush Actuator — PC Term.	2	.100	.295	.478	—	.167	**1.59**	**1.45**	**1.23**
758-0316	ADF06	6	Flush Actuator — PC Term.	2	.100	.295	.678	—	.167	**1.85**	**1.68**	**1.42**
758-0318	ADF08	8	Flush Actuator — PC Term.	2	.100	.295	.878	—	.167	**2.09**	**1.90**	**1.61**
758-0320	ADF08S	8	Flush Actuator — S Term. Surface Mount	3	.100	.175	.878	—	.167	**2.97**	**2.70**	**2.28**
758-0324	ADP02	2	Piano Actuator — PC Term.	4	.100	.394	.278	.083	.266	**1.68**	**1.53**	**1.29**
758-0326	ADP04	4	Piano Actuator — PC Term.	4	.100	.394	.478	.083	.266	**1.93**	**1.76**	**1.49**

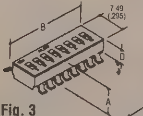


Fig. 3

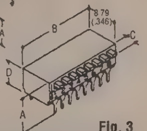
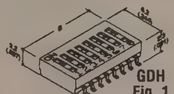
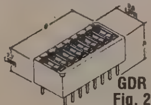


Fig. 3

GD Series DIP Switch


GDH
Fig. 1


GDR
Fig. 2

- **High Temperature Plastics Provide Process Compatibility with Reflow Soldering up to 260°C**
- **Tape Seal Corner Notch, No Cumbersome Tape to Interfere with Component Placement Equipment**
- **Gold-to-Gold Contact System Provides High Reliability**
- **Thru Board or SMD Terminals. SMD Configuration Facilities Cost Savings Through the Use of Smaller PC Boards and Enhanced Board Density**
- **Variety of Actuator Styles to Satisfy Every Application**

The GD Series Dip Switch family from Augat/Alcoswitch offers you slide, piano, rocker and button actuator styles in thru board and surface mount terminal configurations. High temperature polymers provide compatibility with reflow soldering temperature as high as 260°C. Standard tape seal with unique corner notch to facilitate removal Bifurcated gold contacts provide the reliability your programming requirements demand.

GDH Half Pitch Dip Switch

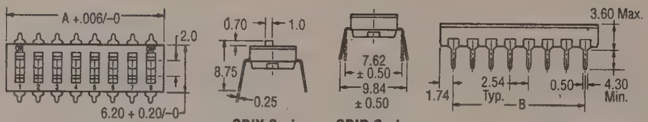
Stock No.	Mfr.'s Type	Poles	Description	Fig.	Dimensions — In.			EACH		
					Lead Spacing	A	B	1-99	100-499	500-999
758-0332	GDH02S	2	Half Pitch .050" (1.27mm) SMD Term. Spacing	1	.050	.091	.144	**2.47**	**2.25**	**1.90**
758-0334	GDH04S	4	Half Pitch .050" (1.27mm) SMD Term. Spacing	1	.050	.091	.244	**3.41**	**3.10**	**2.62**
758-0336	GDH08S	8	Half Pitch .050" (1.27mm) SMD Term. Spacing	1	.050	.091	.444	**4.64**	**4.22**	**3.57**
758-0338	GDH10S	10	Half Pitch .050" (1.27mm) SMD Term. Spacing	1	.050	.091	.544	**5.32**	**4.84**	**4.10**

GDR Recessed Rocker Actuator

758-0360	GDR02	2	Recessed Rocker Actuator	2	.100	.421	.238	**1.77**	**1.61**	**1.36**
758-0362	GDR04	4	Recessed Rocker Actuator	2	.100	.421	.438	**2.03**	**1.85**	**1.56**
758-0364	GDR06	6	Recessed Rocker Actuator	2	.100	.421	.638	**2.35**	**2.14**	**1.81**
758-0366	GDR08	8	Recessed Rocker Actuator	2	.100	.421	.838	**3.11**	**2.83**	**2.39**
758-0368	GDR10	10	Recessed Rocker Actuator	2	.100	.421	1.038	**3.04**	**2.76**	**2.34**

Note: Tube packaging standard. Tape and reel packaging optional for GDS and GDH versions. All versions are available in SMD termination. Add suffix "S" to the Mfr's. Type.

SDI Series DIP Switch



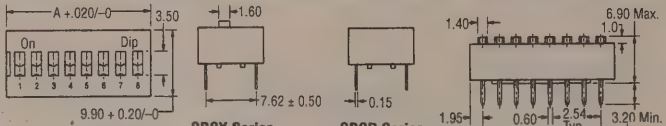
SDIX Series SDIR Series

— NEW —

These single pole single throw switches are black high temperature thermoplastic with white actuators. Contact material is copper alloy with gold plating over nickel plating, and the terminals are brass with gold plating. Double contacts offer high reliability and low contact resistance. The contact area is self cleaning. Splay terminals allow for automatic insertion by IC insertion machines. Straight terminals for manual insertion. Insert molding of terminals and ultrasonic welding improve flux proofness and enable flux washing in whole by top tape sealing. 2000 operations minimum per switch. Switching rating is 25 mA @ 24 VDC.

Stock No.	Mfr.'s Type	Actuator	Positions	Terminals	Dimensions		EACH				
					A	B	1-9	10-24	25-49	50-99	100-249
754-0560	SDIX-4-XH	Raised	4	Straight	11.10	7.62	**1.04**	**.96**	**.90**	**.84**	**.76**
754-0562	SDIX-8-XH	Raised	8	Straight	21.26	17.78	**1.04**	**.96**	**.90**	**.84**	**.76**
754-0564	SDIR-2-XS	Recessed	2	Splayed	6.02	2.54	**.58**	**.54**	**.50**	**.47**	**.43**
754-0566	SDIR-4-XS	Recessed	4	Splayed	11.10	7.62	**.72**	**.67**	**.62**	**.58**	**.53**
754-0568	SDIR-8-XS	Recessed	8	Splayed	21.26	17.78	**1.06**	**.98**	**.91**	**.85**	**.78**
754-0570	SDIR-4-TS	Recessed	4	Splayed	11.10	7.62	**.76**	**.70**	**.66**	**.61**	**.56**
754-0572	SDIR-6-TS	Recessed	6	Splayed	16.18	12.70	**.94**	**.87**	**.81**	**.76**	**.69**
754-0574	SDIR-8-TS	Recessed	8	Splayed	21.26	17.78	**1.10**	**1.02**	**.95**	**.89**	**.81**

SDS Series
Slide DIP Switch



SDSX Series SDSR Series

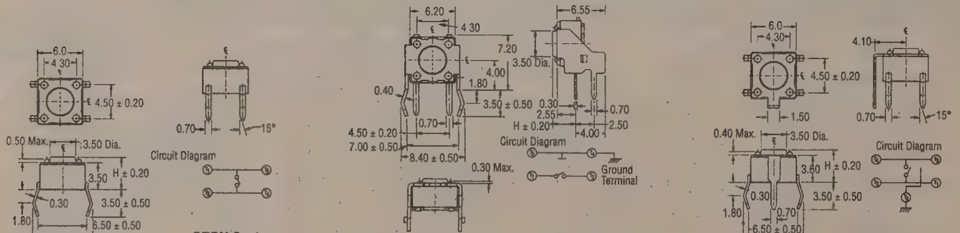
— NEW —

These normally open single pole single throw switches have a black base and red cover made of glass fiber reinforced plastic with white actuators. The top is sealed with polyester film and epoxy is used for potting. Contact material is phosphor bronze with gold plating over nickel. The contacts use self-cleaning. High reliability offers 2000 operations per switch minimum and low contact resistance. Switch rating is 25 mA @ 24 VDC.

Stock No.	Mfr.'s Type	Actuator	Positions	Seal	Dimensions		EACH				
					A	B	1-9	10-24	25-49	50-99	100-249
754-0620	SDSX-02RX-X	Raised	2	Standard	6.44	2.54	**.76**	**.70**	**.66**	**.61**	**.56**
754-0622	SDSX-03RX-X	Raised	3	Standard	8.98	5.08	**.80**	**.74**	**.69**	**.65**	**.59**
754-0624	SDSX-04RX-X	Raised	4	Standard	11.52	7.62	**.88**	**.81**	**.76**	**.71**	**.65**
754-0626	SDSX-05RX-X	Raised	5	Standard	14.06	10.16	**.94**	**.87**	**.81**	**.76**	**.69**
754-0628	SDSX-06RX-X	Raised	6	Standard	16.60	12.70	**1.02**	**.94**	**.88**	**.82**	**.75**
754-0630	SDSX-07RX-X	Raised	7	Standard	19.14	15.24	**1.10**	**1.02**	**.95**	**.89**	**.81**
754-0632	SDSX-08RX-X	Raided	8	Standard	21.68	17.78	**1.12**	**1.04**	**.97**	**.90**	**.82**
754-0634	SDSX-09RX-X	Raised	9	Standard	24.22	20.32	**1.28**	**1.19**	**1.10**	**1.03**	**.94**
754-0636	SDSX-10RX-X	Raised	10	Standard	26.76	22.86	**1.28**	**1.19**	**1.10**	**1.03**	**.94**
754-0638	SDSX-12RX-X	Raised	12	Standard	31.84	27.94	**1.50**	**1.39**	**1.29**	**1.21**	**1.10**
754-0640	SDSR-02RX-T	Recessed	2	Top Tape Sealed	6.44	2.54	**.76**	**.70**	**.66**	**.61**	**.56**
754-0642	SDSR-03RX-T	Recessed	3	Top Tape Sealed	8.98	5.08	**.80**	**.74**	**.69**	**.65**	**.59**
754-0644	SDSR-04RX-T	Recessed	4	Top Tape Sealed	11.52	7.62	**.88**	**.81**	**.76**	**.71**	**.65**
754-0646	SDSR-05RX-T	Recessed	5	Top Tape Sealed	14.06	10.16	**.94**	**.87**	**.81**	**.76**	**.69**
754-0648	SDSR-06RX-T	Recessed	6	Top Tape Sealed	16.60	12.70	**1.02**	**.94**	**.88**	**.82**	**.75**
754-0650	SDSR-07RX-T	Recessed	7	Top Tape Sealed	19.14	15.24	**1.10**	**1.02**	**.95**	**.89**	**.81**
754-0652	SDSR-08RX-T	Recessed	8	Top Tape Sealed	21.68	17.78	**1.12**	**1.04**	**.97**	**.90**	**.82**
754-0654	SDSR-09RX-T	Recessed	9	Top Tape Sealed	24.22	20.32	**1.28**	**1.19**	**1.10**	**1.03**	**.94**
754-0656	SDSR-10RX-T	Recessed	10	Top Tape Sealed	26.76	22.86	**1.34**	**1.24**	**1.16**	**1.08**	**.99**
754-0658	SDSR-12RX-T	Recessed	12	Top Tape Sealed	31.84	27.94	**1.56**	**1.44**	**1.34**	**1.26**	**1.15**

SDT Series Tact Switch

— NEW —

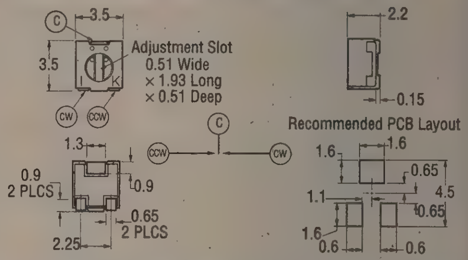


STDX Series STDA Series SDTG Series

The SDT series provides a sharp click feel with a positive tactile feedback switch in an ultra-miniature and light weight structure suitable for high density mounting. They offer economy with high reliability giving 100,000 operations minimum. Insert molding in the contact with special treatment prevents flux buildup during soldering and permits autodipping. Actuator and base are glass reinforced black plastic. Cover is tin-plated steel. Silver cladding covers the phosphor bronze contacts and the brass terminals. Switch rating is 50 mA @ 12 VDC.

Stock No.	Mfr.'s Type	Height (H) mm	Head	Series	EACH				
					1-9	10-24	25-49	50-99	100-249
754-0664	SDTX-610-K	4.3	Round	Standard	**.12**	**.11**	**.10**	**.09**	**.09**
754-0666	SDTX-620-K	5.0	Round	Standard	**.12**	**.11**	**.10**	**.09**	**.09**
754-0668	SDTX-610-N	4.3	Round	Standard	**.12**	**.11**	**.10**	**.09**	**.09**
754-0670	SDTX-620-N	5.0	Round	Standard	**.12**	**.11**	**.10**	**.09**	**.09**
754-0672	SDTX-630-N	7.0	Round	Standard	**.12**	**.11**	**.10**	**.09**	**.09**
754-0674	SDTX-610-R	4.3	Round	Standard	**.12**	**.11**	**.10**	**.09**	**.09**
754-0676	SDTA-610-K	4.3	Round	Right Angle	**.15**	**.14**	**.13**	**.12**	**.11**
754-0678	SDTA-620-K	5.0	Round	Right Angle	**.15**	**.14**	**.13**	**.12**	**.11**
754-0680	SDTA-630-K	7.0	Round	Right Angle	**.15**	**.14**	**.13**	**.12**	**.11**
754-0682	SDTA-644-K	7.3	Square	Right Angle	**.15**	**.14**	**.13**	**.12**	**.11**
754-0684	SDTA-650-K	9.5	Square	Right Angle	**.15**	**.14**	**.13**	**.12**	**.11**
754-0686	SDTA-610-N	4.3	Round	Right Angle	**.15**	**.14**	**.13**	**.12**	**.11**
754-0688	SDTA-620-N	5.0	Round	Right Angle	**.15**	**.14**	**.13**	**.12**	**.11**
754-0690	SDTA-630-N	7.0	Round	Right Angle	**.15**	**.14**	**.13**	**.12**	**.11**
754-0692	SDTA-650-N	9.5	Square	Right Angle	**.15**	**.14**	**.13**	**.12**	**.11**
754-0694	SDTG-610-N	4.3	Round	Ground Term	**.13**	**.12**	**.11**	**.10**	**.10**
754-0696	SDTG-620-N	5.0	Round	Ground Term	**.13**	**.12**	**.11**	**.10**	**.10**

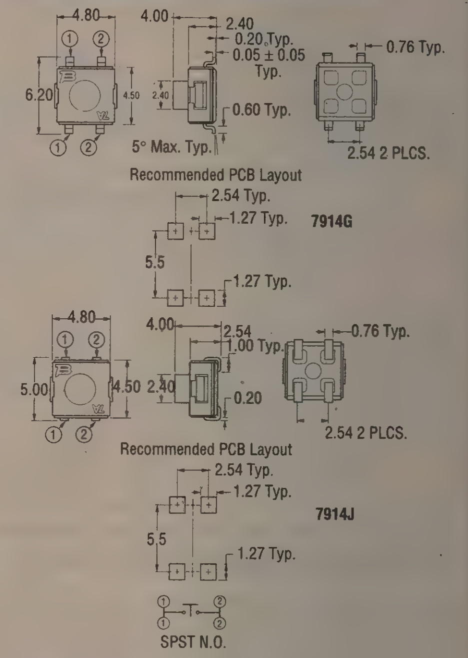
3 mm Square SPDT Rotary Switch



This low level signal switch is compatible with all surface mount soldering processes. Withstands 260° soldering heat. **Rotational Life:** Type 7813J-1-051E — 50; Type 7813J-1-023E — 2000 cycles. **Max. Current Contact Rating:** 100 mA. **Max. Voltage:** 24 V. Non-shorting contact timing. Switch is single pole double throw type. **Operating Temperature Range:** –55°C to +125°C.

754-0260. 7813J-1-051E........................**PER PK./100 160.00**
754-0261. 7813J-1-023E........................**PER PK./100 200.00**

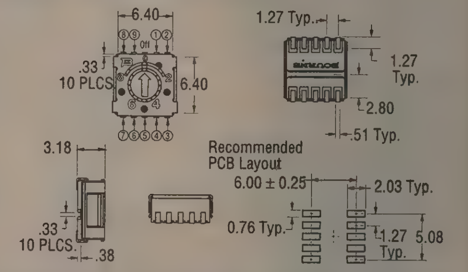
4 mm Square and Sealed Switch



Compatible with all surface mount soldering processes and all popular vacuum pick-and-place equipment. Meets EIA/EIAJ/IPC/VRCI SMD standard outline dimensions. Top or side actuated. **Current Contact Rating:** 100 mZ max. **Max. Voltage:** 24 V. Switch is normally open type. **Operating Temperature Range:** –55°C to +125°C.

754-0250. 7914G-1-000E........................**PER PK./100 79.00**
754-0252. 7914J-1-000E........................**PER PK./100 79.00**

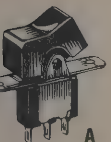
6 mm Square Sealed 10-Position Rotary Selector Switch

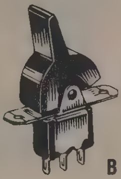


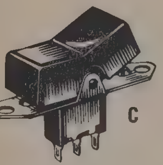
Miniature industrial rotary selector switch. Vertical adjust. Rugged surface mount design. Switch is SP9T, break-before-make timing. "0" position is off with no contact made. Withstands 260° soldering heat for five seconds. **Max. Current Contact Rating:** 100 mA. **Max. Voltage:** 24 V. **Operating Temperature Range:** –55°C to +125°C.

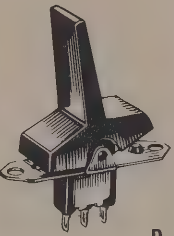
754-0265. 7643J-1-010. **1-9**........................**EACH 1.80**
10-24........................**EACH 1.67**
25-49........................**EACH 1.57**
50-99........................**EACH 1.50**
100-249........................**EACH 1.44**

Panel-Mounted Rocker and Lever Handle Switches


A


B


C


D

Contact Rating: 5 Amps at 120 VAC or 28 VDC; 2 Amps at 250 VAC. **Operating Temp.:** –30° to 85°C. **Rocker and Lever Handles:** Black nylon. **Bushings:** Brass, nickel plated. **End Contact:** Coin silver, silver plated. **Center Contact and Terminals:** Brass, silver plated. **Mounting Bracket:** Stainless steel. **Case:** Red diallyl phthalate. **Included hardware:** Nuts, screws, lockwashers, and standoffs.

Small Rocker (Fig. A) Mounting Hole Center .937"

Stock No.	Mfr.'s Type	Desc.	Switch Function	EACH			
				1-24	25-99	100-499	500-999
676-0005	7101J1ZQE2	SPDT	On-None-On	5.77	5.25	4.44	4.12
676-0010	7103J1ZQE2	SPDT	On-Off-On	6.41	5.82	4.93	5.58
676-0015	7105J1ZQE2	SPDT	Mom-Off-Mom	6.69	6.08	5.15	4.78
676-0020	7108J1ZQE2	SPDT	On-None-Mom	6.69	6.08	5.15	4.78
676-0025	7201J1ZQE2	DPDT	On-None-On	7.96	7.23	6.12	5.68
676-0030	7203J1ZQE2	DPDT	On-Off-On	9.00	8.18	6.92	5.43
676-0035	7205J1ZQE2	DPDT	Mom-Off-Mom	9.00	8.18	6.92	5.43
676-0040	7208J1ZQE2	DPDT	On-None-Mom	8.60	7.70	6.51	6.05

Small Lever Handle (Fig. B) Mounting Hole Centers .937"

676-0045	7101J2ZQE2	SPDT	On-None-On	6.43	5.84	4.94	4.59
676-0050	7103J2ZQE2	SPDT	On-Off-On	7.06	6.42	5.43	5.04
676-0055	7105J2ZQE2	SPDT	Mom-Off-Mom	7.34	6.68	5.65	5.25
676-0060	7108J2ZQE2	SPDT	On-None-Mom	6.57	5.97	5.05	4.69
676-0065	7201J2ZQE2	DPDT	On-None-On	8.61	7.83	6.62	6.15
676-0070	7203J2ZQE2	DPDT	On-Off-On	9.65	8.77	7.42	6.89

Large Rocker (Fig. C) Mounting Hole Centers 1.375"

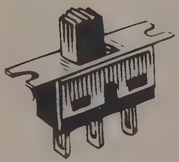
676-0075	7101J3ZQE2	SPDT	On-None-On	6.43	5.84	4.94	4.59
676-0080	7103J3ZQE2	SPDT	On-Off-On	7.06	6.42	5.43	5.04
676-0085	7105J3ZQE2	SPDT	Mom-Off-Mom	7.34	6.68	5.65	5.25
676-0091	7108J3ZQE2	SPDT	On-None-Mom	7.34	6.68	5.65	5.25
676-0095	7201J3ZQE2	DPDT	On-None-On	8.61	7.86	6.62	6.15
676-0100	7203J3ZQE2	DPDT	On-Off-On	9.65	8.77	7.42	6.89
676-0105	7205J3ZQE2	DPDT	Mom-Off-Mom	9.65	8.77	7.42	6.89
676-0110	7208J3ZQE2	DPDT	On-None-Mom	9.87	8.98	7.60	7.05

Large Lever Handle (Fig. D) Mounting Hole Centers 1.375"

676-0115	7101J4ZQE2	SPDT	On-None-On	7.22	6.57	5.56	5.16
676-0120	7103J4ZQE2	SPDT	On-Off-On	7.85	7.14	6.04	5.61
676-0125	7105J4ZQE2	SPDT	Mom-Off-Mom	8.14	7.40	6.26	5.81
676-0130	7201J4ZQE2	DPDT	On-None-On	9.40	8.55	7.23	6.72
676-0135	7203J4ZQE2	DPDT	On-Off-On	10.44	9.50	8.03	7.46
676-0140	7205J4ZQE2	DPDT	Mom-Off-Mom	10.44	9.50	8.03	7.46
676-0145	7208J4ZQE2	DPDT	On-None-Mom	10.67	9.70	8.21	7.62

Panel-Mounted Slide Switches

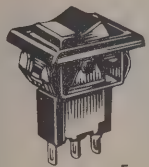
Contact Rating: 6 Amps at 120 VAC or 28 VDC; 3 Amps at 250 VAC. **Operating Temp.:** –30° to 65°C. **Actuator:** Black nylon. **Housing:** Stainless steel. **End contacts:** Coin silver, silver plated. **Center Contact and Terminals:** Brass, silver plated. All models UL/CSA listed.

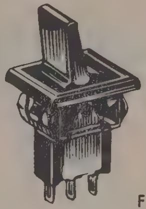


Solder Terminals

Stock No.	Mfr.'s Type	Desc.	Switch Function	EACH			
				1-24	25-99	100-499	500-999
676-0250	1101M1S3ZQE2	SPDT	On-None-On	3.57	3.25	2.75	2.55
676-0255	1103M1S3ZQE2	SPDT	On-Off-On	4.20	3.82	3.23	3.00
676-0261	1108M1S3ZQE2	SPDT	Mom-None-On	4.04	3.67	3.11	2.89
676-0265	1201M1S3ZQE2	DPDT	On-None-On	6.73	6.12	5.18	4.81
676-0270	1203M1S3ZQE2	DPDT	On-Off-On	7.65	6.95	5.88	5.46

Snap-In Rocker and Lever Handle Switches


E


F

Contact Rating: 5 Amps at 120 VAC or 28 VDC; 2 Amps at 250 VAC. **Operating Temp.:** –30° to 85°C. **Rocker and Lever Handles:** Black nylon. **Bushings:** Brass, nickel plated. **End Contact:** Coin silver, silver plated. **Center Contact and Terminals:** Brass, silver plated. **Mounting Bracket:** Stainless steel. **Case:** Red diallyl phthalate.

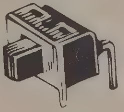
Small Rocker With Bezel (Fig. E) Panel Cutout .500 × .600"

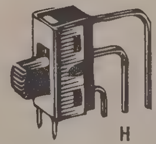
Stock No.	Mfr.'s Type	Desc.	Switch Function	EACH			
				1-24	25-99	100-499	500-999
676-0150	7101J51ZQE22	SPDT	On-None-On	6.43	5.84	4.94	4.59
676-0155	7103J51ZQE22	SPDT	On-Off-On	7.06	6.42	5.43	5.04
676-0160	7105J51ZQE22	SPDT	Mom-Off-Mom	7.34	6.68	5.65	5.25
676-0165	7107J51ZQE22	SPDT	On-Off-Mom	7.34	6.68	5.65	5.25
676-0170	7108J51ZQE22	SPDT	On-None-Mom	7.34	6.68	5.65	5.25
676-0175	7201J51ZQE22	DPDT	On-None-On	8.61	7.83	6.62	6.15
676-0180	7203J51ZQE22	DPDT	On-Off-On	9.65	8.77	7.42	6.89
676-0185	7205J51ZQE22	DPDT	Mom-Off-Mom	9.65	8.77	7.42	6.89
676-0190	7207J51ZQE22	DPDT	On-Off-Mom	9.87	8.98	7.60	7.05
676-0195	7208J51ZQE22	DPDT	On-None-Mom	9.87	8.98	7.60	7.05

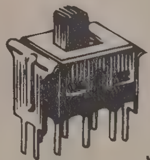
Small Lever Handle With Bezel (Fig. F) Panel Cutout .500 × 600"

676-0200	7101J61ZQE22	SPDT	On-None-On	6.43	5.84	4.94	4.59
676-0205	7103J61ZQE22	SPDT	On-Off-On	7.06	6.42	5.43	5.03
676-0210	7105J61ZQE22	SPDT	Mom-Off-Mom	7.34	6.68	5.65	5.25
676-9600	7107J61ZQE22	SPDT	On-Off-Mom	7.34	6.68	5.65	5.25
676-0220	7108J61ZQE22	SPDT	On-None-Mom	7.34	6.68	5.65	5.25
676-0225	7201J61ZQE22	DPDT	On-None-On	8.61	7.83	6.62	6.15
676-0230	7203J61ZQE22	DPDT	On-Off-On	9.65	8.77	7.42	6.89
676-0235	7205J61ZQE22	DPDT	Mom-Off-Mom	9.65	8.77	7.42	6.89
676-0240	7207J61ZQE22	DPDT	On-Off-Mom	9.87	8.98	7.60	7.05
676-0245	7208J61ZQE22	DPDT	On-None-Mom	9.87	8.98	7.60	7.05

PC-Mounted Slide Switches


G


H


J

Contact Rating: 0.4 Va max. at 20 VAC or VDC max. **Operating Temp.:** –30° to 65°C. **Actuator:** Black nylon. **Housing:** Stainless steel. **Contacts and terminals:** Brass with gold plate over nickel plate. **Switch Support:** Brass or steel, electrotin plated.

PC Terminals/Right Angle Mounting (Fig. G)

Stock No.	Mfr.'s Type	Desc.	Switch Function	EACH			
				1-24	25-99	100-499	500-999
676-0275	1101M2S3ABE2	SPDT	On-None-On	4.04	3.67	3.11	2.89
676-0280	1103M2S3ABE2	SPDT	On-Off-On	4.67	4.25	3.59	3.34
676-0290	1201M2S3ABE2	DPDT	On-None-On	7.67	6.97	5.90	5.48
676-0295	1203M2S3ABE2	DPDT	On-Off-On	8.59	7.81	7.16	6.13

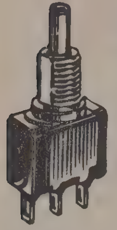
PC Terminals with Right Angle Mounting (Fig. H)

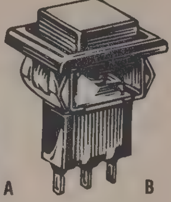
676-0300	1101M2S3AV2BE2	SPDT	On-None-On	4.04	3.67	3.11	2.89
676-0305	1103M2S3AV2BE2	SPDT	On-Off-On	4.67	4.27	3.59	3.34
676-0315	1201M2S3AV2BE2	DPDT	On-None-On	7.67	6.97	5.90	5.48
676-0320	1203M2S3AV2BE2	DPDT	On-Off-On	8.59	7.81	6.61	6.13

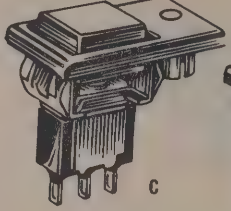
PC Terminals/Support Bracket (Fig. J)

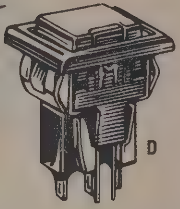
676-0325	1101M2S3V3BE2	SPDT	On-None-On	4.04	3.67	3.11	2.89
676-0330	1103M2S3V3BE2	SPDT	On-Off-On	4.67	4.25	3.59	3.34
676-0340	1201M2S3V3BE2	DPDT	On-None-On	7.67	6.97	5.90	5.48
676-0345	1203M2S3V3BE2	DPDT	On-Off-On	8.59	7.81	6.61	6.13

Panel-Mounted Switches









Bushings: Brass, nickel plated. **Plungers:** Glass filled Nylon. **Cap and Bezel:** Black Nylon. **Case:** Red diallyl phthalate. **Operating Temp:** –30°C to 65°C. **Included Hardware:** 2 nuts, locking ring, and lockwasher, where applicable.

8 x 25 Models. Contact Rating: 0.4 VA max. at 20 VAC or DC max. **Contacts and Terminals:** Brass, with gold plate over nickel plate.

8 x 21 Models. Contact Rating: 1 Amp at 120 VAC or 28 VDC, or 0.4 VA max. at 20 VAC or DC max. **Common Contact and Terminal:** Brass, with gold plate over nickel plate. **Normally Open and Normally Closed Contacts:** Coin silver, with gold plate over nickel plate. **8 x 6 x Models. Contact Rating:** 6 Amps at 120 VAC or 28 VDC; 3 Amps at 250 VAC (816X-UL). **Center Contact and Terminals:** Brass, silver plated. **End Contacts:** Silver, silver plated.

A "2" at the end of each part number indicates a black actuator; a "22" indicates a black actuator and black bezel; and a "223" indicates a black actuator, black bezel, and a red LED.

Snap-Action Momentary with Solder Terminals (Fig. A)
Bushing 1/4-40 UNS-2A, Term spacing .185"

Stock No.	Mfr.'s Type	Desc.	Switch Function Open-Closed	EACH			
				1-24	25-99	100-499	500-999
676-0400	8121SHZGE	SPDT	On-Mom	7.79	7.08	5.99	5.57
676-0405	8125SHZBE	SPDT	On-Mom	5.34	4.86	4.11	3.82
676-0410	8221SHZGE	DPDT	On-Mom	11.71	10.65	9.01	8.36
676-0415	8225SHZBE	DPDT	On-Mom	7.41	6.73	5.70	5.29
676-0420	8321SHZGE	3PDT	On-Mom	16.79	14.99	12.68	11.77
676-0425	8325SHZBE	3PDT	On-Mom	13.18	11.98	10.14	9.41
676-0430	8421SHZGE	4PDT	On-Mom	20.81	18.92	16.01	14.86
676-0435	8425SHZBE	4PDT	On-Mom	16.41	14.67	12.41	11.53

Alternate Action and Momentary with Solder Terminals (Fig. A)
Bushing 1/4-40 UNS-2A

676-0440	8161SHZQE2	SPDT	On-On	5.88	5.34	4.52	4.20
676-0445	8168SHZQE2	SPDT	On-Mom	5.88	5.34	4.52	4.20
676-0450	8261SHZQE2	DPDT	On-On	10.51	9.55	8.08	7.50

Snap Action Momentary with Cap and Bezel (Fig. B)
Panel Cut Out .500 × .600"

676-0455	8121J81ZGE22	SPDT	On-Mom	8.61	7.83	6.62	6.15
676-0460	8125J81ZBE22	SPDT	On-Mom	6.16	5.60	4.74	4.40
676-0465	8221J81ZGE22	DPDT	On-Mom	12.53	11.39	9.64	8.95
676-0470	8225J81ZBE22	DPDT	On-Mom	8.22	7.47	6.32	5.87

Alternate Action Momentary with Cap and Bezel (Fig. B)
Panel Cut Out .500 × .600"

676-0475	8161J81ZQE22	SPDT	On-On	7.00	6.35	5.38	5.00
676-0480	8168J81ZQE22	SPDT	On-Mom	7.00	6.36	5.38	5.00
676-0485	8261J81ZQE22	DPDT	On-On	11.63	10.57	8.94	8.31

Snap Action Momentary with Cap and Bezel for LED (Fig. C)

676-0490	8121J82ZGE22	SPDT	On-Mom	8.73	7.94	6.72	6.24
676-0495	8125J82ZBE22	SPDT	On-Mom	6.28	5.71	4.83	4.49
676-0500	8221J82ZGE22	DPDT	On-Mom	12.83	11.67	9.87	9.17
676-0505	8225J82ZBE22	DPDT	On-Mom	8.34	7.59	6.42	5.96

Alternate Action and Momentary with Cap and Bezel for LED (Fig. C)

676-0510	8161J82ZQE22	SPDT	On-On	7.00	6.36	5.38	5.00
676-0515	8168J82ZQE22	SPDT	On-Mom	7.00	6.36	5.38	5.00
676-0520	8261J82ZQE22	DPDT	On-On	11.63	10.57	8.94	8.31

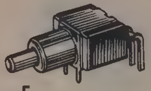
Snap Action Momentary with Cap, Bezel and Rect. LED (Fig. D)

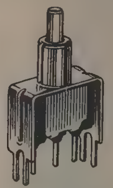
676-0525	8121J85ZGE223	SPDT	On-Mom	11.06	10.05	8.51	7.90

Alternate Action and Momentary with Cap, Bezel, and Rect. LED (Fig. D)
Panel Cut Out .600 × .500"

676-0530	8161J86ZQE223	SPDT	On-On	9.26	8.42	7.12	6.62
676-0535	8168J86ZQE223	SPDT	On-Mom	9.26	8.42	7.12	6.62

PC-Mounted Switches





Bushings: Brass, nickel plated. **Plungers:** Glass filled Nylon. **Cap:** Black Nylon. **Case:** Red diallyl phthalate. **Operating Temp.:** –30°C to 65°C.

8 x 25 Models. Contact Rating: 0.4 VA max. at 20 VAC or DC max. **Contacts and Terminals:** Brass, with gold plate over nickel plate.

8 x 21 Models. Contact Rating: 1 Amp at 120 VAC or 28 VDC, or 0.4 VA max, at 20 VAC or DC max. **Common Contact and Terminal:** Brass, with gold plate over nickel plate. **Normally Open and Normally Closed Contacts:** Coin silver, with gold plate over nickel plate.

8 x 6 x models. Contact Rating: 0.4 VA max. at 20 VAC or DC max. **Contacts and Terminals:** Brass with gold plate over nickel plate.

Snap-Action Momentary/Right Angle Mounting (Fig. E)

Stock No.	Mfr.'s Type	Desc.	Switch Function Open-Closed	EACH			
				1-24	25-99	100-499	500-999
676-0540	8125SD9ABE	SPDT	On-Mom	5.83	5.30	4.49	4.17
676-0545	8225SD9ABE	DPDT	On-Mom	8.27	7.52	6.36	5.90

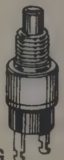
Alternate Action and Momentary/Right Angle Mounting (Fig. E)

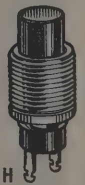
676-0550	8161SH9ABE2	SPDT	On-On	6.39	5.80	4.91	4.56
676-0555	8168SH9ABE2	SPDT	On-Mom	6.39	5.80	4.91	4.56
676-0560	8261SH9ABE2	DPDT	On-On	11.40	10.37	8.77	8.15

Snap-Action and Momentary With Support Bracket (Fig. F)

676-0565	8121SD9V3GE	SPDT	On-Mom	8.24	7.49	6.34	5.89
676-0570	8125SD9V3BE	SPDT	On-Mom	5.79	5.27	4.46	4.14

Subminiature Pushbutton Switches





Bushing: Brass, nickel plated. **Plunger:** Black phenolic or glass filled polyester. **Case:** Black diallyl phthalate. **Operating Temp.:** –30°C to 65°C. **Included Hardware:** Nut and lockwasher. **Contacts:** coin silver, silver plated. **Terminals:** Brass, silver plated.

853 x Models. Contact Rating: 1 Amp at 120 VAC or 28 VDC (UL).

855 x Models. Contact Rating: 3 Amps at 120 VAC or 28 VDC (UL).

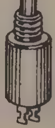
1/4"–40 Threaded Bushing With Solder Terminals (Fig. G)

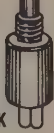
Stock No.	Mfr.'s Type	Desc.	Switch Function Open-Closed	EACH			
				1-24	25-99	100-499	500-999
676-0580	8531MZQE2	SPST	Off-Mom	4.63	4.21	3.56	3.31
676-0585	8532MZQE2	SPST	Off-Mom	4.63	4.21	3.56	3.31
676-0590	8533MZQE2	SPST	On-Mom	5.16	4.69	3.97	3.69
676-0595	8534MZQE2	SPST	On-Mom	5.16	4.69	3.97	3.69
676-0600	8551MZQE2	SPST	Off-Mom	4.63	4.21	3.56	3.31
676-0605	8552MZQE2	SPST	Off-Mom	4.63	4.21	3.56	3.31

15/32" –32 Threaded Bushing With Solder Terminals (Fig. H)

676-0610	8531TZQE2	SPST	Off-Mom	5.24	4.77	4.03	3.74
676-0615	8532TZQE2	SPST	Off-Mom	5.24	4.77	4.03	3.74
676-0620	8533TZQE2	SPST	On-Mom	5.77	5.25	4.44	4.12
676-0625	8534TZQE2	SPST	On-Mom	5.77	5.25	4.44	4.12
676-0630	8551TZQE2	SPST	Off-Mom	5.24	4.77	4.03	3.74
676-0635	8552TZQE2	SPST	Off-Mom	5.24	4.77	4.03	3.74

Microminiature Pushbutton Switches





Bushing: Brass, nickel plated, 8-40 UNS 2A, HT .175. **Plunger:** Black Nylon or glass filled. **Case:** Diallyl phthalate. **Operating Temp.:** –30°C to 65°C. **Included Hardware:** Nut. **Contacts:** Coin silver, silver plated.

8631, 8632 Models. Contact Rating: 500 mA at 120 VAC or 28 VDC; 250 mA at 250 VAC (UL). **Terminals:** Brass, silver plated.

8633 Models. Contact Rating: 250 mA at 120 VAC or 28 VDC; 125 mA at 250 VAC. **Terminals:** Coin silver.

Solder Terminals (Fig. J)

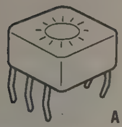
Stock No.	Mfr.'s Type	Desc.	Switch Function Open-Closed	EACH			
				1-24	25-99	100-499	500-999
676-0641	8631ZQ2	SPST	Off-Mom	5.06	4.60	3.89	3.61
676-0645	8632ZQ2	SPST	Off-Mom	5.06	4.60	3.89	3.61
676-0650	8633ZQE2*	SPST	On-Mom	5.26	4.78	4.05	3.76

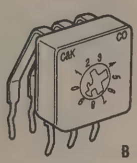
PC Terminals (Fig. K)

676-0655	8631CQ	SPST	Off-Mom	5.16	4.69	3.97	3.69
676-0661	8632CQD2	SPST	Off-Mom	5.16	4.69	3.97	3.69

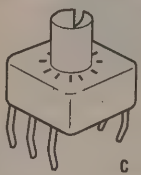
*This switch comes standard with epoxy seal.

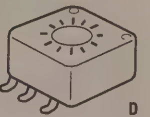
CD Series Sealed Dip Coated Rotary Switches — *NEW* —


A



B


C


D

Withstands machine soldering and cleaning. 10 position with BCD output and 16 position with hexadecimal output, real or complement codes. Flush version with cross-slotted rotor, or available with extended shaft actuator. PC or right angle terminals. Surface mount, gull wing terminals available on upright version, vapor phase or IR reflowable to 260°C. **Contact Rating:** 0.4 VA at 20 VDC. **Electrical Life:** 20,000 position changes. **Initial Contact Resistance:** 50 milliohms max. **Insulation Resistance:** 100 megohms min. **Operating Temperature:** –25°C to +85°C. **Contacts:** Gold over nickel. **Terminals:** 90/10 tin-lead. 8 mm square case made with UL 94V0 materials.

10 Position with Flush Actuator — Fig. A and B

Stock No.	Mfr.'s Type	Code	Termination	EACH		
				1-99	100-499	500-999
676-5004 •	CD10RM0AK	BCD	Right Angle	**4.71**	**4.28**	**3.62**
676-5005	CD10RM0CK	BCD	PC	**4.20**	**3.82**	**3.23**
676-5006	CD10CM0AK	BCD Complement	Right Angle	**4.71**	**4.28**	**3.62**
676-5007	CD10CM0CK	BCD Complement	PC	**4.20**	**3.82**	**3.23**

10 Position with Extended Actuator — Fig. C

Stock No.	Mfr.'s Type	Code	Termination	1-99	100-499	500-999
676-5008	CD10RL1AK	BCD	Right Angle	**5.32**	**4.84**	**4.10**
676-5009	CD10RL1CK	BCD	PC	**4.81**	**4.38**	**3.70**
676-5010	CD10CL1AK	BCD Complement	Right Angle	**5.32**	**4.84**	**4.10**
676-5011	CD10CL1CK	BCD Complement	PC	**4.81**	**4.38**	**3.70**

16 Position with Flush Actuator

Stock No.	Mfr.'s Type	Code	Termination	1-99	100-499	500-999
676-5012	CD16RM0AK	Hexadecimal	Right Angle	**4.71**	**4.28**	**3.62**
676-5013	CD16RM0CK	Hexadecimal	PC	**4.20**	**3.82**	**3.23**
676-5014	CD16CM0AK	Hex-Complement	Right Angle	**4.71**	**4.28**	**3.62**
676-5015	CD16CM0CK	Hex-Complement	PC	**4.20**	**3.82**	**3.23**

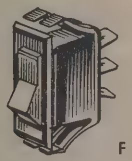
16 Position with Shaft Actuator

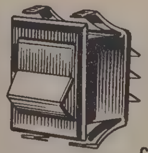
Stock No.	Mfr.'s Type	Code	Termination	1-99	100-499	500-999
676-5016	CD16RL1AK	Hexadecimal	Right Angle	**5.32**	**4.84**	**4.10**
676-5017	CD16RL1CK	Hexadecimal	PC	**4.81**	**4.38**	**3.70**
676-5018	CD16CL1AK	Hex-Complement	Right Angle	**5.32**	**4.84**	**4.10**
676-5019	CD16CL1CK	Hex-Complement	PC	**4.81**	**4.38**	**3.70**

Surface Mount with Flush Actuator — Fig. D

Stock No.	Mfr.'s Type	Code	Termination	1-99	100-499	500-999
676-5020	CD10RM0SK	BCD	Gull Wing	**4.61**	**4.19**	**3.55**
676-5021	CD10CM0SK	BCD Complement	Gull Wing	**4.61**	**4.19**	**3.55**
676-5022	CD16RM0SK	Hexadecimal	Gull Wing	**4.61**	**4.19**	**3.55**
676-5023	CD16CM0SK	Hex-Complement	Gull Wing	**4.61**	**4.19**	**3.55**

C Series Power Rocker Switches

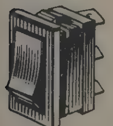

F

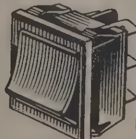

G

Housing and Actuator: Nylon, black. **Movable Contact:** Copper, silver plated. **Contacts and Terminals:** Copper, silver plated (15 amp models, copper). **Electrical Life:** 10,000 make-and-break cycles at full load. **Dielectric Strength:** 2,500 V rms min. at sea level. All models UL, CSA.

Stock No.	Mfr.'s Type*	Fig.	Description	EACH		
				1-99	100-499	500-999
677-0730	C122J12S205PQF†	F	SPST	**2.98**	**2.71**	**2.29**
677-0735	C221J12S205QA	G	DPDT	**2.88**	**2.61**	**2.21**
677-0740	C222J12S205QA	G	DPST	**2.75**	**2.50**	**2.12**
677-0745	C222J12S205PQF†	G	DPST	**3.73**	**3.39**	**2.88**

*Rating at 125, 250 VAC. †VDE, SEV, SEMKO.


J


K

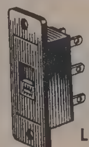
D Series
Miniature Power Rocker Switches

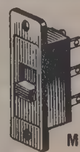
Housing and Actuator: Nylon, black. **Contacts and Terminals:** Copper, silver plated. **Movable Contacts:** Coin silver, silver plated. **Electrical Life:** 10,000 make-and-break cycles at full load. **Dielectric Strength:** 1000 V rms min. at sea level.

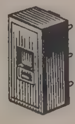
Stock No.	Mfr.'s Type	Fig.	Description	EACH		
				1-99	100-499	500-999
677-0775	D501J12S215QA*	J	SPDT	**2.06**	**1.87**	**1.58**
677-0780	D501J12S215QF†	J	SPDT	**2.77**	**2.52**	**2.13**
677-0851	D601J12S215QA*	K	DPDT	**3.39**	**3.08**	**2.60**
677-0790	D601J12S215QF†	K	DPDT	**4.10**	**3.73**	**3.15**

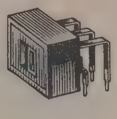
*10.5 Amps — UL/CSA. †10 (6), 5 (3) Amps — UL/CSA/VDE.

Power and Voltage-Select Slide Switches


L


M

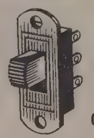

N

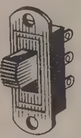

P

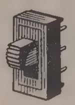
UL/CSA Rating: 10.1 amps at 125 VAC; 4 amps at 28 VDC; 5 amps at 250 VAC. **VDE Rating:** 2 (0.5)/250 VAC T85. **Housing and Top Plate:** Nylon, black. **Actuator:** Glass filled polyester. **Contacts and Terminals:** Copper, silver plated. **Insulation Resistance:** 10^9 ohms min. **Electrical Life:** 10,000 make-and-break cycles at full load.

Stock No.	Mfr.'s Type	Fig.	Description	Actuator Marking	EACH		
					1-99	100-499	500-999
677-0755	V80212SS05Q	L	DPDT	230/115	**3.14**	**2.86**	**2.42**
677-0760	V80201SS05Q	M	DPDT	—	**3.14**	**2.86**	**2.42**
677-0765	V80212MS02Q	N	DPDT	230/115	**3.14**	**2.86**	**2.42**
677-0770	V80212MA08Q	P	DPDT	230/115	**3.65**	**3.32**	**2.81**

S Series Slide Switches


Q

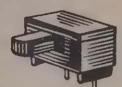

R

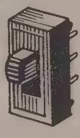

S

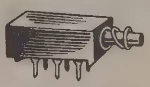
Contact Rating: 6 amps at 125 VAC; 6 amps at 250 VAC; 1 amp at 125 VDC (UL/CSA). **Housing, Top Plate, and Actuator:** Nylon, black. **Contacts and Terminals:** Copper, silver plated. **Insulation Resistance:** 10^9 ohms min. **Electrical Life:** 10,000 make-and-break cycles at full load.

Stock No.	Mfr.'s Type	Fig.	Description	EACH		
				1-99	100-499	500-999
677-0795	S102031SS03Q	Q	SPDT	**1.63**	**1.48**	**1.26**
677-0800	S202031SS03Q	R	DPDT	**2.00**	**1.82**	**1.54**
677-0805	S202031MS02Q	S	DPDT	**2.00**	**1.82**	**1.54**

L Series Miniature Slide Switches


T

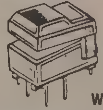

U

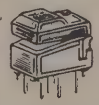

V

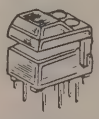
Contact Rating: 4 amps at 125 VAC; 2 amps at 250 VAC; 0.5 amp at 125 VDC (UL/CSA). **Housing, Top Plate, and Actuator:** Nylon, black. **Contacts and Terminals:** Copper, silver plated. **Insulation Resistance:** 10^9 ohms min. **Electrical Life:** 10,000 make-and-break cycles at full load.

Stock No.	Mfr.'s Type	Fig.	Description	EACH		
				1-99	100-499	500-999
677-0810	L102021ML04Q	T	SPDT	**1.26**	**1.15**	**.97**
677-0815	L202011MS02Q	U	DPDT	**2.14**	**1.95**	**1.65**
677-0820	L212132MV02Q	V	DPDT-Mom.	**3.20**	**2.91**	**2.46**

MP Series Mechanical Pushbutton Switches


W

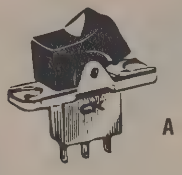

X

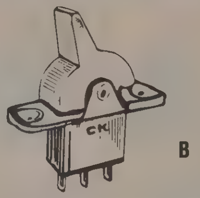

Y

Contact Rating: 0.4 VA max. at 20 VAC or DC max. **Switching Function:** SPDT momentary. **Case:** Glass filled nylon. **Cap:** Polycarbonate-ABS blend. **Contacts and Terminals:** Brass, with gold plate over nickel plate. **Operating Temperature:** –30°C to 65°C. **Operating Force:** 150 grams typ. **Electrical Life:** 1,000,000 actuations min. at full load.

Stock No.	Mfr.'s Type	Fig.	Cap Width	Cap Color	LED Color(s)	EACH		
						1-99	100-499	500-999
677-0825	MP01R01CBE	W	0.486	White	—	**3.51**	**3.19**	**2.70**
677-0830	MP01R02CBE	W	0.486	Black	—	**3.51**	**3.19**	**2.70**
677-0835	MP01R113CBE	X	0.486	White	Red	**4.18**	**3.80**	**3.22**
677-0840	MP01R123CBE	X	0.486	Black	Red	**4.02**	**3.65**	**3.09**
677-0845	MP01R2133CBE	Y	0.486	White	Red, Red	**4.86**	**4.41**	**3.73**
677-0850	MP01R2233CBE	Y	0.486	Black	Red, Red	**4.69**	**4.27**	**3.61**
677-0855	MP01R2236CBE	Y	0.486	Black	Red, Green	**4.79**	**4.36**	**3.69**
677-0860	MP01S01CBE	W	0.679	White	—	**3.55**	**3.23**	**2.73**
677-0865	MP01S02CBE	W	0.679	Black	—	**3.34**	**3.04**	**2.57**
677-0870	MP01S113CBE	X	0.679	White	Red	**4.22**	**3.84**	**3.25**
677-0875	MP01S123CBE	X	0.679	Black	Red	**4.06**	**3.69**	**3.12**
677-0880	MP01S2133CBE	Y	0.679	White	Red, Red	**4.90**	**4.45**	**3.77**
677-0885	MP01S2233CBE	Y	0.679	Black	Red, Red	**4.73**	**4.30**	**3.64**
677-0890	MP01S2236CBE	Y	0.679	Black	Red, Green	**4.83**	**4.40**	**3.72**

Panel-Mtd. Sealed Rocker and Lever Handle Switches





Contact Rating: 7.5 Amps at 125 VAC; 3 Amps at 250 VAC (UL/CSA). **Operating Temp.:** –30°C to 85°C. **Case and Bushing:** Glass filled Nylon. **Actuator:** Nylon, black with internal O-ring seal. **End Contacts:** Coin silver, silver plated. **Center Contact and Terminals:** Brass, silver plated. **Terminal Seal:** Epoxy. **Included Hardware:** Nuts, screws, lockwashers, and standoffs.

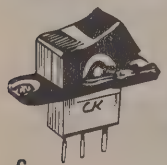
Rocker (Fig.A)

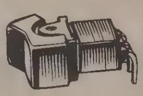
Stock No.	Mfr.'s Type	Desc.	Switch Function	EACH			
				1-24	25-99	100-499	500-999
676-1000	E101J1ZQE2	SPDT	On-None-On	5.96	5.42	4.58	4.25
676-1005	E103J1ZQE2	SPDT	On-Off-On	7.02	6.38	5.40	5.01
676-1010	E105J1ZQE2	SPDT	Mom-Off-Mom	7.02	6.38	5.40	5.01
676-1015	E201J1ZQE2	DPDT	On-None-On	8.77	7.97	6.75	6.27
676-1020	E203J1ZQE2	DPDT	On-Off-On	9.85	8.96	7.58	7.04
676-1025	E205J1ZQE2	DPDT	Mom-Off-Mom	9.85	8.96	7.58	7.04
676-1030	E211J1ZQE2	DPDT	On-On-On	11.00	9.16	8.46	7.85

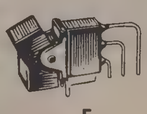
Lever Handle (Fig. B)

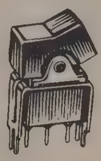
676-1035	E101J2ZQE2	SPDT	On-None-On	6.61	6.01	5.08	4.72
676-1040	E103J2ZQE2	SPDT	On-Off-On	7.67	6.97	5.90	5.48
676-1045	E105J2ZQE2	SPDT	Mom-Off-Mom	7.67	6.97	5.90	5.48
676-1050	E201J2ZQE2	DPDT	On-None-On	8.69	7.90	6.68	6.21
676-1055	E203J2ZQE2	DPDT	On-Off-On	10.51	9.55	8.08	7.50
676-1060	E205J2ZQE2	DPDT	Mom-Off-Mom.	10.51	9.55	8.08	7.50
676-1065	E211J2ZQE2	DPDT	On-On-On	11.65	10.59	8.96	8.32

PC-Mtd. Sealed Rocker Switches









Contact Rating: 0.4 VA max. at 20 VAC or DC max. **Operating Temp.:** -30°C to 85°C. **Case and Bushing:** Glass filled Nylon. **Actuator:** Nylon, black with internal O-ring seal. **Contacts and terminals:** Brass, with gold plate over nickel plate.

PC Terminals (Fig.C)

Stock No.	Mfr.'s Type	Desc.	Switch Function	EACH			
				1-24	25-99	100-499	500-999
676-1070	E101J1CBE2	SPDT	On-None-On	6.06	5.51	4.66	4.33
676-1075	E103J1CBE2	SPDT	On-Off-On	7.12	6.47	5.48	5.09
676-1080	E105J1CBE2	SPDT	Mom-Off-Mom	7.12	6.47	5.48	5.09
676-1085	E201J1CBE2	DPDT	On-None-On	8.94	8.12	6.87	6.38
676-1090	E203J1CBE2	DPDT	On-Off-On	10.02	9.11	7.70	7.15
676-1100	E205J1CBE2	DPDT	Mom-Off-Mom	9.18	8.35	7.06	6.56
676-1105	E211J1CBE2	DPDT	On-On-On	11.16	10.14	8.58	7.97

PC Terminals/Right Angle Mounting (Fig. D)

676-1110	E101J1ABE2	SPDT	On-None-On	6.45	5.86	4.96	4.60
676-1115	E103J1ABE2	SPDT	On-Off-On	7.51	6.82	5.77	5.36
676-1120	E105J1ABE2	SPDT	Mom-Off-Mom	7.51	6.82	5.77	5.36
676-1125	E201J1ABE2	DPDT	On-None-On	9.67	8.79	7.44	6.91
676-1130	E203J1ABE2	DPDT	On-Off-On	10.75	9.77	8.27	7.68
676-1135	E205J1ABE2	DPDT	Mom-Off-Mom	9.92	9.01	7.63	7.08
676-1140	E211J1ABE2	DPDT	On-On-On	10.94	9.94	8.41	7.81

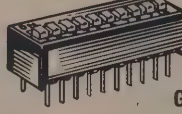
PC Terminals/Right Angle Mounting (Fig. E)

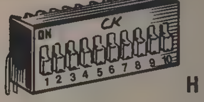
676-1145	E101J1AV2BE2	SPDT	On-None-On	6.67	6.06	5.13	4.76
676-1150	E103J1AV2BE2	SPDT	On-Off-On	7.73	7.03	5.95	5.52
676-1155	E105J1AV2BE2	SPDT	Mom-Off-Mom	7.73	7.03	5.95	5.52
676-1160	E201J1AV2BE2	DPDT	On-None-On	10.10	9.18	7.77	7.21
676-1165	E203J1AV2BE2	DPDT	On-Off-On	9.92	9.01	7.63	7.08
676-1170	E205J1AV2BE2	DPDT	Mom-Off-Mom	9.92	9.01	7.63	7.08
676-1175	E211J1AV2BE2	DPDT	On-On-On	10.94	9.94	8.41	7.81

PC Terminals/Support Bracket (Fig. F)

676-1180	E101J1V3BE2	SPDT	On-None-On	7.18	6.53	5.52	5.13
676-1185	E103J1V3BE2	SPDT	On-Off-On	8.24	7.49	6.34	5.89
676-1190	E105J1V3BE2	SPDT	Mom-Off-Mom	8.24	7.49	6.34	5.89
676-1195	E201J1V3BE2	DPDT	On-None-On	10.30	9.37	7.92	7.36
676-1200	E203J1V3BE2	DPDT	On-Off-On	11.38	10.35	8.76	8.13
676-1205	E205J1V3BE2	DPDT	Mom-Off-Mom	11.38	10.35	8.76	8.13

Washable DIP Switches





Contact Rating: Carry—100 mA max. at 50 VDC, switch-100 mA max. at 5 VDC or 25 mA max. at 25 VDC. **Operating Temp.:** –40°C to 85°C. **Case and Cover:** Glass filled polyester, red. **Actuator:** Glass filled Nylon, white. **Contacts:** WE #1 over palladium silver over nickel UL94VØ. **Terminals:** Tin lead.

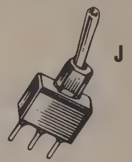
Vertical Mounted DIP Switches (Fig. G)

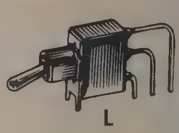
Stock No.	Mfr.'s Type	Number of Positions	EACH			
			1-24	25-99	100-499	500-999
676-1210	BD01	1	1.49	1.35	1.15	1.06
676-1215	BD02	2	1.51	1.37	1.16	1.08
676-1220	BD03	3	1.53	1.39	1.18	1.09
676-1225	BD04	4	1.67	1.52	1.29	1.19
676-1230	BD05	5	1.71	1.56	1.32	1.22
676-1235	BD06	6	1.77	1.61	1.37	1.27
676-1240	BD07	7	1.84	1.67	1.53	1.31
676-1245	BD08	8	1.90	1.72	1.46	1.36
676-1250	BD09	9	1.96	1.78	1.51	1.40
676-1255	BD10	10	2.06	1.87	1.58	1.47
676-1260	BD12	12	2.20	2.00	1.69	1.57

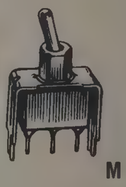
Right Angle Mounted DIP Switches (Fig. H)

676-1265	BD04AV	4	2.59	2.36	1.99	1.85
676-1270	BD08AV	8	2.84	2.58	2.18	2.03

PC-Mtd. Sealed Toggle Switches







Contact Rating: 0.4 VA max. at 20 VÁC or. **Operating Temp.:** –30°C to 85°C. **Case and Bushing:** Glass filled Nylon. **Toggle:** Brass, chrome plated with internal O-ring seal. **Contacts and Terminals:** Brass, with gold plate over nickel plate.

PC Terminals (Fig. J). Spacing: .185". **Actuator length:** .500".

Stock No.	Mfr.'s Type	Desc.	Switch Function	EACH			
				1-24	25-99	100-499	500-999
676-1275	E101SD1CBE	SPDT	On-None-On	5.26	4.78	4.05	3.76
676-1280	E103SD1CBE	SPDT	On-Off-On	6.32	5.75	4.86	4.52
676-1285	E105SD1CBE	SPDT	Mom-Off-Mom	6.32	5.75	4.86	4.52
676-1290	E107SD1CBE	SPDT	On-Off-Mom	6.32	5.75	4.86	4.52
676-1295	E108SD1CBE	SPDT	On-None-Mom	6.32	5.75	4.86	4.52
676-1300	E201SD1CBE	DPDT	On-None-On	8.14	7.40	6.26	5.81
676-1305	E203SD1CBE	DPDT	On-Off-On	9.22	8.38	7.09	6.59
676-1310	E205SD1CBE	DPDT	Mom-Off-Mom	9.22	8.38	7.09	6.59
676-1315	E207SD1CBE	DPDT	On-Off-Mom	9.22	8.38	7.09	6.59
676-1320	E208SD1CBE	DPDT	On-None-Mom	9.22	8.38	7.09	6.59
676-1325	E211SD1CBE	DPDT	On-On-On	10.36	9.42	7.97	7.40
676-1330	E215SD1CBE	DPDT	Mom-On-Mom	11.28	10.26	8.68	8.06

PC Terminals/Right Angle Mounting (Fig. K). Actuator length: .300".

676-1335	E101MD1ABE	SPDT	On-None-On	5.65	5.14	4.35	4.04
676-1340	E103MD1ABE	SPDT	On-Off-On	6.71	6.10	5.16	4.79
676-1345	E105MD1ABE	SPDT	Mom-Off-Mom	6.71	6.10	5.16	4.79
676-1350	E201MD1ABE	DPDT	On-None-On	8.87	8.07	6.83	6.34
676-1355	E203MD1ABE	DPDT	On-Off-On	9.96	9.05	7.66	7.11
676-1360	E205MD1ABE	DPDT	Mom-Off-Mom	9.96	9.05	7.66	7.11
676-1365	E211MD1ABE	DPDT	On-On-On	11.10	10.09	8.54	7.93

PC Terminals/Right Angle Mounting (Fig. L). Actuator length: .300".

676-1370	E101MD1AV2BE	SPDT	On-None-On	5.88	5.34	4.52	4.20
676-1375	E103MD1AV2BE	SPDT	On-Off-On	6.94	6.31	5.34	4.95
676-1380	E105MD1AV2BE	SPDT	Mom-Off-Mom	6.94	6.31	5.34	4.95
676-1385	E201MD1AV2BE	DPDT	On-None-On	9.30	8.46	7.16	6.64
676-1390	E203MD1AV2BE	DPDT	On-Off-On	10.38	9.44	7.99	7.42
676-1395	E205MD1AV2BE	DPDT	Mom-Off-Mom	10.38	9.44	7.99	7.42
676-1400	E211MD1AV2BE	DPDT	On-On-On	11.53	10.48	8.87	8.23

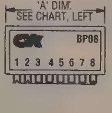
PC Terminals/Support Bracket (Fig.M). Actuator length: .300".

676-1405	E101MD1V3BE	SPDT	On-None-On	6.06	5.51	4.66	4.33
676-1410	E103MD1V3BE	SPDT	On-Off-On	7.12	6.47	5.48	5.09
676-1415	E105MD1V3BE	SPDT	Mom-Off-Mom	7.12	6.47	5.48	5.09
676-1420	E201MD1V3BE	DPDT	On-None-On	9.10	8.27	7.00	6.05
676-1425	E203MD1V3BE	DPDT	On-Off-On	10.18	9.25	7.83	7.27
676-1430	E205MD1V3BE	DPDT	Mom-Off-Mom	10.18	9.25	7.83	7.27

DIP, Rotary and Switchlock Switches

C&K COMPONENTS, INC.

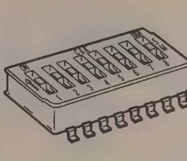
BP Series Side Actuated DIP Switches



High temperature materials (UL 94V-0)— withstands soldering temperatures. SPST switch function–1,2,3,4, 5,6,7,8,10, and 12 position models. Reverse throw models available. Side actuators with positive detent. Reliable wiping contact mechanism-self cleaning. Gold and tin plated contacts available. All terminals tin plated for solderability. Epoxy terminal seal standard. Tape seal available. Splash resistant.

Stock No.	Mfr.'s Type	No. Poles	"A"	EACH 1-24	25-99	100-499
676-8005	BP01KE	1	.217 (5.50)	**1.00**	**.91**	**.77**
676-8010	BP02KE	2	.315 (8.00)	**1.22**	**1.11**	**.94**
676-8015	BP03KE	3	.413 (10.50)	**1.33**	**1.21**	**1.02**
676-8020	BP04KE	4	.512 (13.00)	**1.39**	**1.26**	**1.07**
676-8025	BP05KE	5	.610 (15.50)	**1.47**	**1.34**	**1.13**
676-8030	BP06KE	6	.709 (18.00)	**1.63**	**1.48**	**1.26**
676-8035	BP07KE	7	.807 (20.50)	**1.67**	**1.52**	**1.29**
676-8045	BP10KE	10	1.102 (28.00)	**1.96**	**1.78**	**1.51**
676-8050	BP12KE	12	1.299 (33.00)	**2.20**	**2.00**	**1.70**

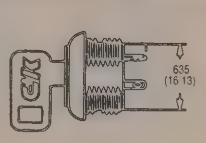
TD Series Sealed .050" Pitch Surface Mount DIP Switches



Surface mountable, low profile SPST DIP switch with spacing of 0.050" between terminals. Body height of 0.098". Gull wing terminals are tin-lead plated. Taped sealed switch is vacuum pick and place compatible, and will withstand machine soldering and cleaning. Can withstand vapor phase and IR soldering up to 260°C. **Contact Rating:** 0.4 VA @ 20 VDC. **Contacts:** Gold plated. **Life Expectancy:** 1,000 cycles min. **Initial Contact Resistance:** 50 milliohms max.

Stock No.	Mfr.'s Type	Code	Terminations	EACH 1-24	25-99	100-499
676-5001	TD04H0SK1	4	0.250"	**3.55**	**3.23**	**2.73**
676-5002	TD06H0SK1	6	0.350"	**4.18**	**3.80**	**3.22**
676-5003	TD08H0SK1	8	0.450"	**4.67**	**4.25**	**3.59**

P Series Low Profile Key Switches

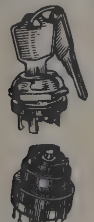


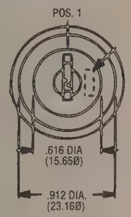
High reliability switch—single pole and two pole models. Ratings from low level to 4 amps @ 125 V AC. One piece switch and lock housing-four standard colors-custom colors available. Smallest behind-the-panel clearance-approximately .600 inches. Supervisory key capability.

Stock No.	Mfr.'s Type	No. Poles	Num. of Positions	EACH 1-99	100-499	500-999
677-1650	P101133WM03NQ2*	SP	1	**4.02**	**3.65**	**3.09**
677-1655	P1011U3WM03NQ2*	SP	1,2	**3.90**	**3.54**	**3.00**
677-1660	P201133WM03NQ2*	DP	1	**4.14**	**3.76**	**3.19**
677-1665	P2011U3WM03NQ2*	DP	1,2	**4.14**	**3.76**	**3.19**
677-1670	P101133WM03DQ2†	SP	1	**4.10**	**3.73**	**3.15**
677-1675	P1011U3WM03DQ2†	SP	1,2	**4.10**	**3.73**	**3.15**
677-1680	P201133WM03DQ2†	DP	1	**4.35**	**3.95**	**3.34**
677-1685	P2011U3WM03DQ2†	DP	1,2	**4.35**	**3.95**	**3.34**

*With mounting nut. † With mounting clip.

A Series Switchlocks

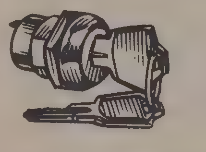


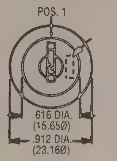


Contact Rating: Switch—2.5 Amps at 125 VAC or 28 VDC; 150 MA at 250 VAC or DC, carry—5 amps continuous. **Electrical Life:** 15,000 make-and-break cycles at full load. **Insulation Resistance:** 10^9 ohms min. **Dielectric Strength:** 1,000 V rms min. at sea level. **Lock:** Zinc alloy, stainless facing, four tumbler mechanism. **Switch Housing and Top Plate:** Glass filled Nylon. **Movable Contact:** Coin silver, silver plated. **Stationary Contacts and Terminals:** Brass, silver plated. **Included Hardware:** Hex nut. Two nickel keys supplied. All models UL, CSA.

Stock No.	Mfr.'s Type	No. Poles	Ref. No.	Key Pull Position	EACH 1-99	100-499	500-999
677-1500	A114132N2NZNQ	SP	5	1	**12.61**	**11.46**	**9.70**
677-1505	A1141U2N2NZNQ	SP	5	1,2	**12.61**	**11.46**	**9.70**
677-1510	A115132N2NZNQ	SP	1	1	**12.61**	**11.46**	**9.70**
677-1515	A1151U2N2NZNQ	SP	1	1,3	**12.61**	**11.46**	**9.70**
677-1520	A214132N2NZNQ	DP	5	1	**14.12**	**12.83**	**10.86**
677-1525	A2141U2N2NZNQ	DP	5	1,2	**14.12**	**12.83**	**10.86**
677-1530	A215132N2NZNQ	DP	1	1	**14.36**	**13.06**	**11.05**
677-1535	A2151U2N2NZNQ	DP	1	1,3	**14.36**	**13.06**	**11.05**
677-1540	A314132N2NZNQ	3P	5	1	**16.38**	**14.89**	**12.60**
677-1545	A3141U2N2NZNQ	3P	5	1,2	**16.38**	**12.60**	**11.70**
677-1550	A315132N2NZNQ	3P	1	1	**16.62**	**12.78**	**11.87**
677-1555	A3151U2N2NZNQ	3P	1	1,3	**16.38**	**12.60**	**11.70**
677-1560	A420192N2NZNQ	4P	6	1	**19.65**	**17.86**	**15.11**

Y Series Switchlocks





Contact Rating: 4 amps at 125 VAC or 28 VDC; 2 amps at 250 VAC (UL/CSA). **Electrical Life:** 10,000 make-and-break cycles at full load. **Insulation Resistance:** 10^9 ohms min. **Dielectric Strength:** 1,000 V rms min. at sea level. **Lock:** Zinc alloy, stainless steel facing, four tumbler mechanism. **Switch Housing and Top Plate:** Glass filled nylon. **Contacts and Terminals:** Copper, silver plated. **Included Hardware:** Nut. Two nickel keys supplied.

Four Tumbler With Positive Detent

Stock No.	Mfr.'s Type	No. Poles	Ref. No.	Key Pull Position	EACH 1-99	100-499	500-999
677-1700	Y100AA2C203NQ	SP	2	1,2,3	**10.28**	**9.35**	**7.91**
677-1705	Y100AB2C203NQ	SP	3	1,2,3,4	**11.55**	**10.50**	**8.88**
677-1710	Y101132C203NQ	SP	5	1	**9.67**	**8.79**	**7.44**
677-1720	Y1011U2C203NQ	SP	5	1,2	**9.67**	**8.06**	**6.91**
677-1725	Y200AA2C203NQ	DP	2	1,2,3	**11.91**	**10.83**	**9.16**
677-1735	Y201132C203NQ	DP	5	1	**11.30**	**10.27**	**8.69**
677-1745	Y2011U2C203NQ	DP	5	1,2	**11.30**	**10.27**	**8.69**

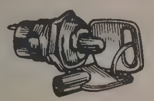
Four Tumbler Anti-static With Positive Detent

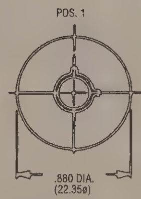
Stock No.	Mfr.'s Type	No. Poles	Ref. No.	Key Pull Position	EACH 1-99	100-499	500-999
677-1750	Y101132R203NQ	SP	5	1	**10.49**	**9.53**	**8.07**
677-1760	Y1011U2R203NQ	SP	5	1,2	**10.49**	**9.53**	**8.07**
677-1765	Y201132R203NQ	DP	5	1	**12.12**	**11.02**	**9.32**
677-1775	Y2011U2R203NQ	DP	5	1,2	**12.12**	**11.02**	**9.32**

Four Tumbler Momentary

Stock No.	Mfr.'s Type	No. Poles	Ref. No.	Key Pull Position	EACH 1-99	100-499	500-999
677-1800	Y108122A203NQ	SP	4	1	**12.32**	**11.20**	**9.48**
677-1810	Y208122A203NQ	DP	4	1	**12.93**	**11.76**	**9.95**

Y Series Tubular Switchlocks





Contact Rating: 4 amps at 125 VAC or 28 VDC; 2 amps at 250 VAC. **Electrical Life:** 10,000 make-and-break cycles at full load. **Insulation Resistance:** 9 milliohms min. **Dielectric Strength:** 1,000 V rms min. at sea level. Stainless steel facing on the 6 tumbler tubular locks. Switch housing and top plate glass filled polyester. Silver-plated copper terminals and contacts. Hardware and two keys included. UL/CSA.

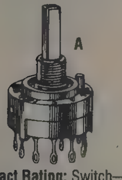
Six Tumbler Tubular with Solder Lug

Stock No.	Mfr.'s Type	No. Poles	Ref. No.	Key Pull Position	EACH 1-99	100-499	500-999
677-1820	Y101132V203NQ	SP	5	1	**12.91**	**9.93**	**9.22**
677-1825	Y1011U2V203NQ	SP	5	1,2	**12.91**	**9.93**	**9.22**
677-1830	Y201132V203NQ	DP	5	1	**14.30**	**11.00**	**10.21**
677-1835	Y2011U2V203NQ	DP	5	1,2	**14.30**	**11.00**	**10.21**

Six Tumbler Tubular Anti-Static with Solder Lug

Stock No.	Mfr.'s Type	No. Poles	Ref. No.	Key Pull Position	EACH 1-99	100-499	500-999
677-1840	Y101132W203NQ	SP	5	1	**13.48**	**10.37**	**9.63**
677-1845	Y1011U2W203NQ	SP	5	1,2	**13.48**	**10.37**	**9.63**
677-1850	Y201132W203NQ	DP	5	1	**15.12**	**11.63**	**10.80**

A Series Rotary Switches



Contact Rating: Switch—2.5 Amps at 125 VAC; 350 mA at 250 VDC (UL/CSA), carry—5 amps continuous. **Electrical Life:** 15,000 make-and-break cycles at full load. **Insulation Resistance:** 10^9 Ohms min. **Dielectric Strength:** 1,000 V rms min. at sea level. **Housing, Top Plate, and Bushing:** Glass filled nylon. **Movable Contact:** Coin silver, silver plated. **Stationary Contacts and Terminals:** Brass, silver plated. **Included Hardware:** Nut, lockwasher, and stop ring.

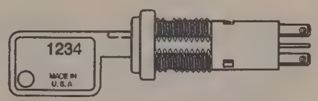
Solder Terminals (Fig. A)

Stock No.	Mfr.'s Type	No. Poles	Number of Positions	EACH 1-99	100-499	500-999
677-1600	A11215RNZQ	SP	12	**4.06**	**3.12**	**2.90**
677-1605	A20615RNZQ	DP	6	**4.28**	**3.89**	**3.30**
677-1610	A30415RNZQ	3P	4	**4.41**	**4.01**	**3.39**
677-1615	A40315RNZQ	4P	3	**4.88**	**4.43**	**3.75**

PC Terminals (Fig. B)

Stock No.	Mfr.'s Type	No. Poles	Number of Positions	EACH 1-99	100-499	500-999
677-1620	A11215RNCQ	SP	12	**4.06**	**3.69**	**3.12**
677-1625	A20615RNCQ	DP	6	**4.28**	**3.89**	**3.30**
677-1630	A30415RNCQ	3P	4	**4.41**	**4.01**	**3.39**
677-1635	A40315RNCQ	4P	3	**4.88**	**3.75**	**3.48**

YM Series Miniature Switchlock

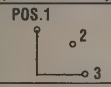
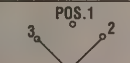
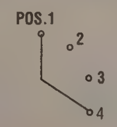
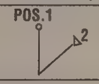
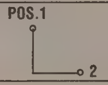
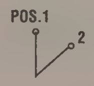


12mm miniature size. Stainless steel facing standard. Quick connect and wire lead terminal styles. **Rating**: 4 amps at 125 VAC; 2 amps at 250 V AC. T65, class 1, (VDE); (UL/CSA).

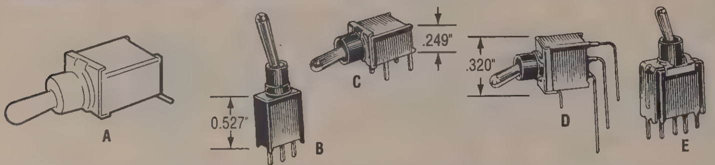
Lock Configuration:
Pos. 1-OFF
Pos. 2–ON
90° Indexing
Keypull
Pos. 1 & 2

Stock No.	Mfr.'s Type	No. Poles	Terminal Style	EACH 1-99	100-499	500-999
677-1640	YM061U2C205NQ	SP	.110 quick conn.	**10.28**	**7.91**	**7.34**
677-1645	YM061U2C2WCNQ	SP	Wire lead	**11.30**	**8.69**	**8.07**

Reference Chart

Ref No.	Lock Config. (Viewed from key end.)	Indexing
1		45° indexing
2		45° indexing
3		45° indexing
4		45° indexing mom.
5		90° indexing
6		30° indexing

Sealed Tiny Toggle Switches, ET Series



Mechanical and Electrical Life: 60,000 make-and-break cycles at full load on ET01 model. All other models, 30,000 cycles. **Contact Resistance:** Below 20 milliohms typ. initial @ 2-4 V DC, 100 mA. **Insulation Resistance:** 10^9 ohms min. **Static Resistance (M3 Actuator Only):** 9000 V DC min. **Dielectric Strength:** 1000 V RMS min. @ sea level. **Operating Temperature:** –30°C to +85°C. **Solderability:** Per MIL-STD-202F method 208D, or EIA RS-186E method 9; 1 hour steam aging. **Case and Bushing:** UL 94V-0. **Actuator:** M3 antistatic actuator — Nylon 4/6, black standard, UL 94 V-0; M Actuator — Brass, chrome. plated. Internal o-ring seal standard with all actuators. **Switch Support:** Brass, tin plated. **Contacts:** Gold plate over nickel plate. **Terminal Seal:** Epoxy, 0.1" terminal thru hole spacing.

Antistatic — with Plastic M3 Actuator Surface Mount — Fig. A

Stock No.	Mfr.'s Type	Switch Function			EACH		
		Pos. 1	Pos. 2	Pos. 3	1-99	100-499	500-999
676-7310	ET01M3D1SAKE	On	None	On	7.14	6.49	5.49
676-7311	ET03M3D1SAKE	On	Off	On	7.89	7.18	6.07
676-7313	ET07M3D1SAKE	On	Off	Mom.	7.89	7.18	6.07

With Chrome Plated Brass M Actuator Surface Mount — Fig. A

676-7315	ET01MD1SAKE	On	None	On	6.83	6.21	5.26
676-7316	ET03MD1SAKE	On	Off	On	7.59	6.90	5.84
676-7318	ET07MD1SAKE	On	Off	Mom.	7.59	6.90	5.84

All are SPDT Mom. = Momentary.

PC Terminals — Fig. B. Actuator Length: .400".

Stock No.	Mfr.'s Type	Description	Switch Action	EACH			
				1-24	25-99	100-499	500-999
676-1800	ET01SD1CBE	SPDT	On-None-On	5.79	5.27	4.46	4.14
676-1805	ET03SD1CBE	SPDT	On-Off-On	6.55	5.95	5.04	4.68
676-1810	ET08SD1CBE	SPDT	On-None-Mom.	6.55	5.95	5.04	4.68

PC Terminals/Right Angle Mounting — Fig. C. Actuator Length: .240".

676-1815	ET01MD1ABE	SPDT	On-None-On	6.18	5.62	4.75	4.42
676-1820	ET03MD1ABE	SPDT	On-Off-On	6.94	6.31	5.34	4.95
676-1825	ET08MD1ABE	SPDT	On-None-Mom.	6.94	6.31	5.34	4.95

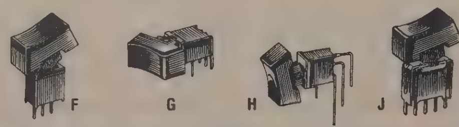
PC Terminals/Right Angle Mounting — Fig. D

676-1830	ET01MD1AVBE	SPDT	On-None-On	6.55	5.95	5.04	4.68
676-1835	ET03MD1AVBE	SPDT	On-Off-On	7.30	6.64	5.62	5.22
676-1840	ET08MD1AVBE	SPDT	On-None-Mom.	7.30	6.64	5.62	5.22

PC Terminals with Support Bracket — Fig. E

676-1845	ET01MD1V3BE	SPDT	On-None-On	6.18	5.62	4.75	4.42
676-1850	ET03MD1V3BE	SPDT	On-Off-On	6.94	6.31	5.34	4.95
676-1855	ET08MD1V3BE	SPDT	On-None-Mom.	6.94	6.31	5.34	4.95

Sealed Tiny Rocker Switches



Contact Rating: 0.4 VA max. at 20 VAC or DC max. **Operating Temp.:** –30°C to 85°C. **Rocker:** Nylon, black with internal O-ring seal standard. **Case and Bushing:** Glass filled Nylon. **Contacts and Terminals:** Brass, with gold plate over nickel plate. **Terminal Seal:** Epoxy, 0.1" terminal spacing.

PC Terminals — Fig. F

Stock No.	Mfr.'s Type	Description	Switch Action	EACH			
				1-24	25-99	100-499	500-999
676-1860	ET01J1CBE2	SPDT	On-None-On	6.51	5.92	5.01	4.65
676-1865	ET03J1CBE2	SPDT	On-Off-On	6.67	6.07	5.13	4.77
676-1870	ET08J1CBE2	SPDT	On-None-Mom.	7.26	6.60	5.59	5.19

PC Terminals/Right Angle Mounting — Fig. G

676-1875	ET01J6ABE2	SPDT	On-None-On	6.90	6.27	5.30	4.93
676-1880	ET03J6ABE2	SPDT	On-Off-On	7.65	6.95	5.88	5.46
676-1885	ET08J6ABE2	SPDT	On-None-Mom.	7.04	6.40	5.41	5.03

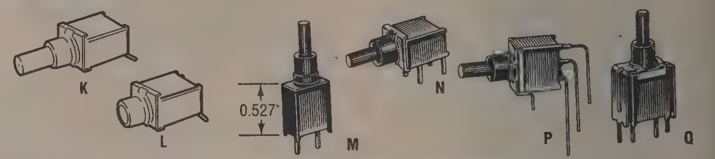
PC Terminals/Right Angle Mounting — Fig. H

676-1890	ET01J1AVBE2	SPDT	On-None-On	7.26	6.60	5.59	5.19
676-1895	ET03J1AVBE2	SPDT	On-Off-On	8.02	7.29	6.17	5.73
676-1900	ET08J1AVBE2	SPDT	On-None-Mom.	8.02	7.29	6.17	5.73

PC Terminals with Support Bracket — Fig. J

676-1905	ET01J1V3BE2	SPDT	On-None-On	6.90	6.27	5.30	4.93
676-1910	ET03J1V3BE2	SPDT	On-Off-On	7.04	6.40	5.41	5.03
676-1915	ET08J1V3BE2	SPDT	On-None-Mom.	7.04	6.40	5.41	5.03

Sealed Tiny Surface Mount Pushbutton Switches, EP Series



Contact Rating: 0.4 VA max. @ 20 V AC or DC max. **Mechanical and Electrical Life:** 60,000 make-and-break cycles at full load. **Contact Resistance:** Below 20 milliohms typ. initial @ 2-4 V DC, 100 mA. **Insulation Resistance:** 10^9 ohms min. **Dielectric Strength:** 1000 V RMS min. @ sea level. **Operating Temperature:** –30°C at 85°C. **Solderability:** Per MIL-STD-202F method 208D, or EIA RS-186E method 9; 1 hour steam aging. **Case and Bushing:** UL 94 V-0. **Actuator:** UL 94 V-0, with standard internal o-ring seal. **Switch Support:** Brass, tin plated. **Contacts:** Gold plate over nickel plate. **Terminals:** Tin-lead alloy. **Terminal Seal:** Epoxy, 0.1" terminal spacing on thru-hole.

SP Models with Extended Actuator Surface Mount — Fig. K

Stock No.	Mfr.'s Type	Switch Function		EACH		
		Pos. 1	Pos. 2	1-99	100-499	500-999
676-7320	EP11SD1SAKE*	Off	Mom.	5.49	4.99	4.22
676-7321	EP12SD1SAKE†	On	Mom.	6.43	5.84	4.94

SP Models With Flush Actuator Surface Mount — Fig. L

676-7322	EP11FPD1SAKE*	Off	Mom.	5.49	4.99	4.22
676-7323	EP12FPD1SAKE†	On	Mom.	6.43	5.84	4.94

*SPST. †SPDT + Mom. = Momentary.

PC Terminals — Fig. M

Stock No.	Mfr.'s Type	Description	Switch Function Open-Closed	EACH			
				1-24	25-99	100-499	500-999
676-1920	EP11SD1CBE	SPST	Off-Mom.	4.49	4.08	3.45	3.21
676-1925	EP12SD1CBE	SPDT	On-Mom.	5.43	4.93	4.17	3.88

PC Terminals/Right Angle Mounting — Fig. N

676-1930	EP11SD1ABE	SPST	Off-Mom.	4.83	4.40	3.72	3.45
676-1935	EP12SD1ABE	SPDT	On-Mom.	5.77	5.25	4.44	4.12

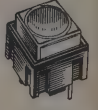
PC Terminals/Right Angle Mounting — Fig. P

676-1940	EP11SD1AVBE	SPST	Off-Mom.	5.00	4.54	3.84	3.57
676-1945	EP12SD1AVBE	SPDT	On-Mom.	5.94	5.40	4.57	4.24

PC Terminals/Support Bracket — Fig. Q

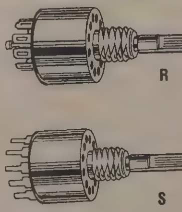
676-1950	EP11SD1V3BE	SPST	Off-Mom.	4.83	4.40	3.72	3.45
676-1955	EP12SD1V3BE	SPDT	On-Mom.	5.77	5.25	4.44	4.12

Pushbutton Key Switches



Contact Rating: 25 mA max. at VAC or DC max. **Operating Temperature:** –30°C to 65°C. **Case and Bushing:** Glass filled Nylon. **Actuator:** Black ABS or polycarbonate-ABS blend, matte finish. **Movable Contact:** Beryllium copper, silver plated. **Stationary Contacts and Terminals:** Brass, silver plated, 12 mm square.

Stock No.	Mfr.'s Type	Description	Switch Action	EACH			
				1-24	25-99	100-499	500-999
676-1960	KS11R21CQ	SPST	Off-Mom.	1.29	1.17	.99	.92
676-1965	KS11R22CQ	SPST	Off-Mom.	1.29	1.17	.99	.92
676-1970	KS12R21CQ	SPDT	On-Mom.	1.35	1.22	1.04	.96
676-1975	KS12R22CQ	SPDT	On-Mom.	1.35	1.22	1.04	.96



Half-Inch Rotary Switches

Contact Rating: Switch — 250 mA max. at 125 VAC or 28 VDC; Carry — 6 amps continuous, non-shorting contacts. **Electrical Life:** 10,000 make-and-break cycles at 150 mA, 125 VAC or 28 VDC. **Insulation Resistance:** 10^{10} ohms min. **Dielectric Strength:** 600 V rms min. at sea level. **Housing and Bushing:** Zinc alloy, bright zinc plated with clear chromate finish. **Bushing:** 1/4-28UNF-2A, .250" length. **Actuator:** Zinc alloy, nickel plated. **Base:** Diallyl phthalate, with insert molded terminals. **Contacts and Terminals:** Brass, silver plated. **Indexing:** MA00, MB00, models — 36°; MC00, MD00 models — 30°. All models have full 360° rotation with no stops. Stop pins are supplied for user-selectable stops. **Included Hardware:** Nut and lockwasher.

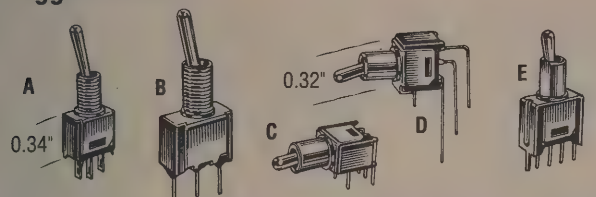
Solder Terminals — Fig. R

Stock No.	Mfr.'s Type	Description	No. of Positions	EACH			
				1-24	25-99	100-499	500-999
676-1980	MA00L1NZQ	SP	10	9.89	8.99	7.61	7.07
676-1985	MC00L1NZQ	SP	12	10.14	9.22	7.80	7.24
676-1990	MB00L1NZQ	DP	5	11.00	10.00	8.46	7.85
676-1995	MD00L1NZQ	DP	6	11.30	10.27	8.69	8.07

PC Terminals — Fig. S

676-2000	MA00L1NCQ	SP	10	10.20	9.27	7.85	7.29
676-2006	MC00L1NCQ	SP	12	10.44	9.50	8.03	7.46
676-2010	MB00L1NCQ	DP	5	11.30	10.27	8.69	8.08
676-2015	MD00L1NCQ	DP	6	11.61	10.55	8.93	8.29

Tiny Toggle Switches



Toggles: Brass, chrome plated. **Bushings:** Brass, nickel plated 10-48UNS-2A. **Included Hardware:** Nut, locking ring, and lockwasher.

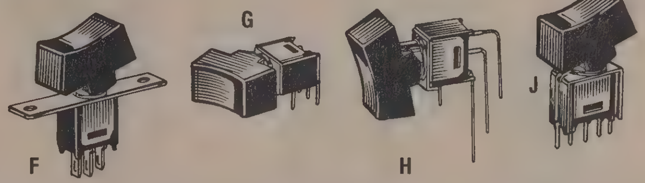
Switches Not Right Angle Mounted or With Support Bracket. Contact Rating: 3 Amps at 120 VAC or 28 VDC (UL) for all models with On-None-On switch function, all others 2 Amps at 120 VAC or 28 VDC. **End Contacts:** Coin silver, silver plated. **Center Contact and Terminals:** Brass, silver plated.

Switches with Right Angle Mounting or Support Bracket: Contact Rating: 0.4 VA max. at 20 VAC or DC max. **Contacts and Terminals:** Brass, with gold plate over nickel plate, 0.1" terminal spacing.

Solder Terminals (Fig. A)

Stock No.	Mfr.'s Type	Desc.	Switch Function	EACH 1-24	25-99	100-499	500-999
676-2400	T101SHZQE	SPDT	On-None-On	5.51	5.01	4.24	3.93
676-2405	T103SHZQE	SPDT	On-Off-On	6.59	5.99	5.07	4.71
676-2410	T108SHZQE	SPDT	On-None-Mom	7.16	6.51	5.51	5.11
676-2415	T201SHZQE	DPDT	On-None-On	8.63	7.84	6.64	6.16
676-2420	T203SHZQE	DPDT	On-Off-On	9.73	8.85	7.49	6.95
676-2425	T208SHZQE	DPDT	On-None-Mom	10.08	9.16	7.75	7.20
676-2430	T211SHZQE	DPDT	On-On-On	10.91	9.92	8.40	7.80
PC Terminals (Fig.B)							
676-2435	T101SHCQE	SPDT	On-None-On	5.39	4.90	4.14	3.85
676-2440	T103SHCQE	SPDT	On-Off-On	6.47	5.88	4.97	4.62
676-2445	T201SHCQE	DPDT	On-None-On	8.34	7.59	6.42	5.96
676-2450	T203SHCQE	DPDT	On-Off-On	9.45	8.59	7.27	6.75
PC Terminals/Right Angle Mounting (Fig. C)							
676-2455	T101MH9ABE	SPDT	On-None-On	5.79	5.27	4.46	4.14
676-2460	T103MH9ABE	SPDT	On-Off-On	6.87	6.25	5.29	4.91
676-2465	T201MH9ABE	DPDT	On-None-On	9.08	8.25	6.98	6.48
PC Terminals/Right Angle Mounting (Fig. D)							
676-2470	T101MH9AVBE	SPDT	On-None-On	6.02	5.47	4.63	4.30
676-2475	T103MH9AVBE	SPDT	On-Off-On	7.10	6.45	5.46	5.07
676-2480	T108MH9AVBE	SPDT	On-None-Mom	7.67	6.97	5.90	5.48
676-2485	T201MH9AVBE	DPDT	On-None-On	9.40	8.55	7.23	6.72
676-2490	T203MH9AVBE	DPDT	On-Off-On	10.51	9.55	8.08	7.50
676-2500	T208MH9AVBE	DPDT	On-None-Mom	10.85	9.87	8.35	7.75
676-2505	T211MH9AVBE	DPDT	On-On-On	11.69	10.63	8.99	8.35
PC Terminal With Support Bracket (Fig. E)							
676-2510	T101MH9V3BE	SPDT	On-None-On	5.75	5.23	4.43	4.11
676-2515	T103MH9V3BE	SPDT	On-Off-On	6.83	6.21	5.26	4.88
676-2520	T201MH9V3BE	DPDT	On-None-On	9.18	8.35	7.06	6.56

Tiny Rocker Switches



Actuator: Nylon, black. **Bushings:** Brass, nickel plated. **Included Hardware:** Nuts, screws, lockwashers, and standoffs.

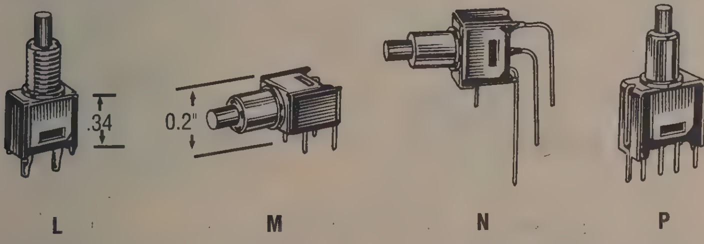
Switches with Solder Terminals. Contact Rating: 3 Amps at 120 VAC or 28 VDC (UL) for all models with On-None-On switch function, all others 2 Amps at 120 VAC or 28 VDC. **End Contacts:** Coil silver, silver plated. **Center Contact and Terminals:** brass, silver plated, 0.1" terminal spacing.

Switches with PC terminals.Contact Rating: 0.4 VA max. at 20 VAC or DC max. **Contacts and terminals:** Brass, with gold plate over nickel plate.

Solder Terminals (Fig. F)

Stock No.	Mfr.'s Type	Desc.	Switch Function	EACH 1-24	25-99	100-499	500-999
676-2525	T101J1ZQE2	SPDT	On-None-On	6.20	5.64	4.77	4.43
676-2530	T103J1ZQE2	SPDT	On-Off-On	7.28	6.62	5.60	5.20
676-2535	T108J1ZQE2	SPDT	On-None-Mom	7.85	7.14	6.04	5.61
676-2540	T201J1ZQE2	DPDT	On-None-On	9.32	8.48	7.17	6.66
676-2545	T203J1ZQE2	DPDT	On-Off-On	10.63	9.66	8.18	7.59
676-2550	T208J1ZQE2	DPDT	On-None-Mom	10.81	9.83	8.32	7.72
PC Terminals/Right Angle Mounting (Fig. G)							
676-2555	T101J6ABE2	SPDT	On-None-On	6.49	5.90	4.99	4.63
676-2560	T103J6ABE2	SPDT	On-Off-On	7.57	6.88	5.82	5.41
676-2565	T108J6ABE2	SPDT	On-None-Mom	8.14	7.40	6.26	5.81
676-2570	T201J1ABE2	DPDT	On-None-On	9.57	8.70	7.36	6.83
676-2575	T203J1ABE2	DPDT	On-Off-On	10.87	9.88	8.36	7.77
676-2580	T208J1ABE2	DPDT	On-None-Mom	11.22	10.20	8.63	8.01
PC Terminals/Right Angle Mounting (Fig. H)							
676-2585	T101J1AVBE2	SPDT	On-None-On	6.43	5.84	4.94	4.59
676-2590	T103J1AVBE2	SPDT	On-Off-On	8.08	7.35	6.22	5.77
676-2595	T108J1AVBE2	SPDT	On-None-Mom	8.36	7.60	6.43	5.97
676-2600	T201J1AVBE2	DPDT	On-None-On	10.10	9.18	7.77	7.21
676-2605	T203J1AVBE2	DPDT	On-Off-On	10.87	9.89	8.36	7.77
676-2610	T208J1AVBE2	DPDT	On-None-Mom	11.22	10.20	8.63	8.01
PC Terminals With Support Bracket (Fig. J)							
676-2615	T101J1V3BE2	SPDT	On-None-On	6.45	5.86	4.96	4.60
676-2620	T103J1V3BE2	SPDT	On-Off-On	7.53	6.84	5.79	5.38
676-2625	T108J1V3BE2	SPDT	On-None-Mom	8.10	7.36	6.23	5.78
676-2630	T201J1V3BE2	DPDT	On-None-On	9.57	8.70	7.36	6.83
676-2635	T203J1V3BE2	DPDT	On-Off-On	10.87	9.89	8.36	7.77
676-2640	T208J1V3BE2	DPDT	On-None-Mom	11.22	10.20	8.63	8.01

Tiny Pushbutton Switches



Plunger: Thermoplastic polyester. **Bushings:** Brass, nickel plated. **Included Hardware:** Nut, locking ring, and lockwasher.

Switches with Solder Terminals. Contact Rating: 1 Amp at 120 VAC or 28 VDC (UL listed). **Contacts:** Coin silver, silver plated. **Terminals:** Brass, silver plated, .01" terminal spacing.

Switches with PC Terminals. Contact Rating: 0.4 VA max. at 20 VAC or DC max. **Contacts and Terminals:** Brass, with gold plate over nickel plate.

Solder Terminal (Fig. L)

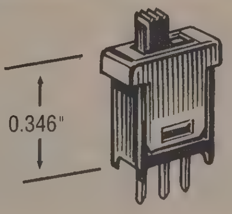
Stock No.	Mfr.'s Type	Desc.	Switch Function	EACH 1-24	25-99	100-499	500-999
676-2645	TP11SHZQE	SPST	Off-Mom	5.41	4.91	4.16	3.86
676-2650	TP12SHZQE	SPDT	On-Mom	6.94	6.31	5.34	4.95
676-2655	TP21SHZQE	DPST	Off-Mom	10.63	9.66	8.18	7.59
PC Terminals/Right Angle Mounting (Fig. M)							
676-2660	TP11SH9ABE	SPST	Off-Mom	5.92	5.38	4.55	4.23
676-2665	TP12SH9ABE	SPDT	On-Mom	7.45	6.77	5.73	5.32
676-2670	TP21SH9ABE	DPST	Off-Mom	11.36	10.33	8.74	8.20
PC Terminals/Right Angle Mounting (Fig. N)							
676-2675	TP12SH9AVBE	SPDT	On-Mom	7.45	6.77	5.73	5.48
676-2680	TP21SH9AVBE	DPST	Off-Mom	10.89	9.90	8.38	7.78
PC Terminals with Support Bracket (Fig. P)							
676-2685	TP12SH9V3BE	SPDT	On-Mom	7.41	6.73	5.70	5.29
676-2690	TP21SH9V3BE	DPST	Off-Mom	10.63	9.66	8.18	7.59

Tiny Slide Switches

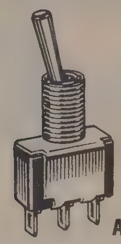
Contact Rating: 0.4 VA max. at 20 VAC or DC max. **Operating Temp.:** –30°C to 85°C. **Actuator:** Nylon, black. **Center Contacts and Terminals:** Gold plate over nickel plate, 0.1" terminal spacing.

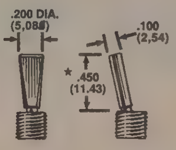
PC Terminals

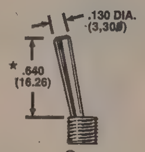
Stock No.	Mfr.'s Type	Desc.	Switch Function	EACH 1-24	25-99	100-499	500-999
676-2695	TS01CBE	SPDT	On-None-On	4.10	3.73	3.15	2.93
676-2697	TS03CBE	SPDT	On-Off-On	4.59	4.17	3.53	3.28

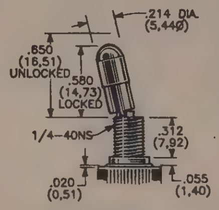


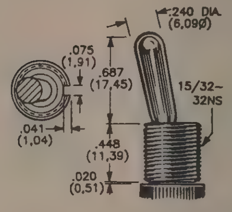
Panel-Mounted Toggle Switches

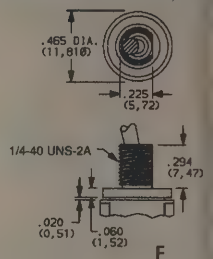












Contact Rating: 5 Amps at 120 VAC or 28 VDC. 2 Amps at 250 VAC. **Operating Temp.:** –30°C to 85°C. **Toggles:** Brass, chrome plate. **Bushings:** Brass, nickel plated. **End Contact:** Coin silver, silver plated. **Center Contact and Terminals:** Brass, silver plated. **Case:** Red diallyl phthalate. **Included Hardware:** 2 nuts, locking ring, and lockwasher.

Round Toggle (Fig. A)

Stock No.	Mfr.'s Type	Desc.	Switch Function	EACH			
				1-24	25-99	100-499	500-999
676-3000	7101SYZQE	SPDT	On-None-On	4.98	4.53	3.83	3.56
676-3005	7103SYZQE	SPDT	On-Off-On	5.61	5.10	4.32	4.01
676-3010	7105SYZQE	SPDT	Mom-Off-Mom	5.90	5.36	4.54	4.21
676-3015	7107SYZQE	SPDT	On-Off-Mom	5.90	5.36	4.54	4.21
676-3020	7108SYZQE	SPDT	On-None-Mom	5.90	5.36	4.54	4.21
676-3025	7201SYZQE	DPDT	On-None-On	7.16	6.51	5.51	5.11
676-3030	7203SYZQE	DPDT	On-Off-On	8.20	7.46	6.31	5.86
676-3035	7205SYZQE	DPDT	Mom-Off-Mom	8.20	7.46	6.31	5.86
676-3040	7207SYZQE	DPDT	On-Off-Mom	8.43	7.66	6.48	6.02
676-3045	7208SYZQE	DPDT	On-None-Mom	8.43	7.66	6.48	6.02
676-3050	7211SYZQE	DPDT	On-On-On	8.87	8.07	6.83	6.34
676-3055	7213SYZQE	DPDT	On-On-Mom	9.57	8.70	7.36	6.83
676-3060	7215SYZQE	DPDT	Mom-On-Mom	9.57	8.70	7.36	6.83
676-3065	7301SYZQE	3PDT	On-None-On	12.46	11.33	9.59	8.90
676-3070	7303SYZQE	3PDT	On-Off-On	13.22	12.02	10.17	9.44
676-3075	7305SYZQE	3PDT	Mom-Off-Mom	16.32	14.84	12.55	11.66
676-3080	7401SYZQE	4PDT	On-None-On	17.28	15.71	13.29	12.34
676-3085	7403SYZQE	4PDT	On-Off-On	18.32	16.65	14.09	13.09
676-3090	7405SYZQE	4PDT	Mom-Off-Mom	19.97	18.16	15.36	14.27
676-3095	7408SYZQE	4PDT	On-None-Mom	19.97	18.16	15.36	14.27
676-3100	7411SYZQE	4PDT	On-On-On	21.13	19.21	16.26	15.10
676-3105	7413SYZQE	4PDT	On-On-Mom	21.13	19.21	16.26	15.10
676-3110	7415SYZQE	4PDT	Mom-On-Mom	21.13	19.21	16.26	15.10

Flatted Toggle (Fig. B)

676-3115	7101P3YZQE	SPDT	On-None-On	6.30	5.73	4.85	4.50
676-3120	7103P3YZQE	SPDT	On-Off-On	6.94	6.31	5.34	4.95
676-3125	7105P3YZQE	SPDT	Mom-Off-Mom	7.22	6.57	5.56	5.16
676-3130	7107P3YZQE	SPDT	On-Off-Mom	7.22	6.57	5.56	5.16
676-3135	7108P3YZQE	SPDT	On-None-Mom	7.22	6.57	5.56	5.16
676-3140	7201P3YZQE	DPDT	On-None-On	8.49	7.71	6.53	6.06
676-3145	7203P3YZQE	DPDT	On-Off-On	9.53	8.66	7.33	6.80
676-3150	7205P3YZQE	DPDT	Mom-Off-Mom	9.53	8.66	7.33	6.80
676-3155	7207P3YZQE	DPDT	On-Off-Mom	9.75	8.86	7.50	6.97
676-3160	7208P3YZQE	DPDT	On-None-Mom	9.75	8.86	7.50	6.97

Long Round Toggle (Fig. C)

Stock No.	Mfr.'s Type	Desc.	Switch Function	EACH			
				1-24	25-99	100-499	500-999
676-3165	7101L1YZQE	SPDT	On-None-On	4.98	4.53	3.83	3.56
676-3170	7103L1YZQE	SPDT	On-Off-On	5.61	5.10	4.32	4.01
676-3175	7201L1YZQE	DPDT	On-None-On	7.16	6.51	5.51	5.11
676-3180	7203L1YZQE	DPDT	On-Off-On	8.20	7.46	6.31	5.86
676-3185	7301L1YZQE	3PDT	On-None-On	12.46	11.33	9.59	8.90
676-3190	7401L1YZQE	4PDT	On-None-On	17.28	15.71	13.29	12.34

Locking Toggle (Fig. D)

676-3196	7101K2ZQE	SPDT	On-None-On	7.41	6.73	5.70	5.29
676-3201	7103K2ZQE	SPDT	On-Off-On	8.16	7.42	6.28	5.83
676-9802	7105K2ZQE	SPDT	Mom-Off-Mom	8.45	7.68	6.50	6.03
676-3211	7107K2ZQE	SPDT	On-Off-Mom	8.45	7.68	6.50	6.03
676-3216	7108K2ZQE	SPDT	On-None-Mom	8.45	7.68	6.50	6.03
676-3221	7201K2ZQE	DPDT	On-None-On	9.71	8.83	7.47	6.94
676-7105	7203K2ZQE	DPDT	On-Off-On	10.34	9.40	7.96	7.39
676-3230	7301K2ZQE	3PDT	On-None-On	15.01	13.65	11.55	10.72
676-3236	7303K2ZQE	3PDT	On-Off-On	15.77	14.34	12.13	11.26

Large Round Toggle (Fig. E)

676-3240	7101TZQE	SPDT	On-None-On	6.96	6.32	5.35	4.97
676-3245	7103TZQE	SPDT	On-Off-On	7.59	6.90	5.84	5.42
676-3250	7105TZQE	SPDT	Mom-Off-Mom	7.87	7.16	6.06	5.62
676-3255	7108TZQE	SPDT	On-None-Mom	7.87	7.16	6.06	5.62
676-3260	7201TZQE	DPDT	On-None-On	9.14	8.31	7.03	6.53
676-3265	7203TZQE	DPDT	On-Off-On	10.18	9.25	7.83	7.27
676-3270	7301TZQE	3PDT	On-None-On	14.44	13.13	11.11	10.32
676-3275	7303TZQE	3PDT	On-Off-On	15.20	13.82	11.69	10.86
676-3280	7401TZQE	4PDT	On-None-On	19.32	17.56	14.86	13.80
676-3285	7403TZQE	4PDT	On-Off-On	20.36	18.51	15.66	14.54

Splash Proof Toggle (Fig. F)

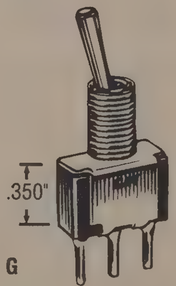
676-3290	7101SCWZQE	SPDT	On-None-On	6.04	5.49	4.64	4.31
676-3295	7103SCWZQE	SPDT	On-Off-On	6.67	6.06	5.13	4.76
676-3300	7105SCWZQE	SPDT	Mom-Off-Mom	6.96	6.32	5.35	4.97
676-3305	7108SCWZQE	SPDT	On-None-Mom	6.96	6.32	5.35	4.97
676-3310	7201SCWZQE	DPDT	On-None-On	8.22	7.47	6.32	5.87
676-3315	7203SCWZQE	DPDT	On-Off-On	9.26	8.42	7.12	6.62
676-3320	7301SCWZQE	3PDT	On-None-On	13.53	12.30	10.40	9.66
676-3325	7401SCWZQE	4PDT	On-None-On	18.34	16.67	14.11	13.10

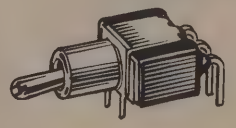
PC-Mounted Toggle Switches

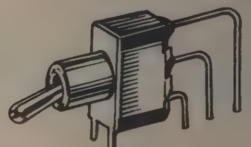
Operating Temp.: –30°C to 85°C. **Toggle:** Brass, chrome plated. **Bushing:** Brass, nickel plated. **Case:** Red diallyl phthalate. 0.185" terminal spacing.

Models Not Right Angle Mounted. Contact Rating: 5 Amps at 120 VAC or 28 VDC; 2 Amps at 250 VAC. **End Contact:** Coin silver, silver plated. **Center Contact and Terminals:** Brass, silver plated.

Right Angle Mounted Models. Contact Rating: 0.4 VA max. at 20 VAC or VDC max. **Contacts and Terminals:** Brass, with gold plate over nickel plate.







PC Terminals (Fig. G)

Stock No.	Mfr.'s Type	Desc.	Switch Function	EACH			
				1-24	25-99	100-499	500-999
676-3400	7101SYCQE	SPDT	On-None-On	5.08	4.62	3.91	3.63
676-3405	7103SYCQE	SPDT	On-Off-On	5.71	5.19	4.39	4.08
676-3410	7105SYCQE	SPDT	Mom-Off-Mom	6.00	5.45	4.61	4.28
676-3415	7107SYCQE	SPDT	On-Off-Mom	6.00	5.45	4.61	4.28
676-3420	7108SYCQE	SPDT	On-None-Mom	6.00	5.45	4.61	4.28
676-3425	7201SYCQE	DPDT	On-None-On	7.32	6.66	5.63	5.23
676-3430	7203SYCQE	DPDT	On-Off-On	8.36	7.60	6.43	5.97
676-3435	7205SYCQE	DPDT	Mom-Off-Mom	8.36	7.60	6.43	5.97
676-3440	7207SYCQE	DPDT	On-Off-Mom	8.59	7.81	6.61	6.13
676-3445	7208SYCQE	DPDT	On-None-Mom	8.59	7.81	6.61	6.13

PC Terminals Right Angle Mtg. (Fig. H)

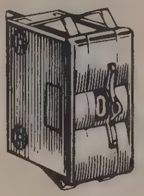
Stock No.	Mfr.'s Type	Desc.	Switch Function	EACH			
				1-24	25-99	100-499	500-999
676-3450	7101MD9ABE	SPDT	On-None-On	5.47	4.97	4.21	3.91
676-3455	7103MD9ABE	SPDT	On-Off-On	6.10	5.55	4.69	4.36
676-3460	7105MD9ABE	SPDT	Mom-Off-Mom	6.39	5.80	4.91	4.56
676-3465	7107MD9ABE	SPDT	On-Off-Mom	6.39	5.80	4.91	4.56
676-3470	7108MD9ABE	SPDT	On-None-Mom	6.39	5.80	4.91	4.56
676-3475	7201MD9ABE	DPDT	On-None-On	8.06	7.33	6.20	5.76
676-3480	7203MD9ABE	DPDT	On-Off-On	9.10	8.27	7.00	6.50

PC Terminals Right Angle Mtg. (Fig. J)

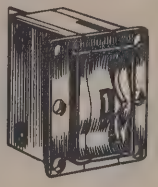
676-3485	7101MD9AV2BE	SPDT	On-None-On	5.69	5.17	4.38	4.07
676-3490	7103MD9AV2BE	SPDT	On-Off-On	6.32	5.75	4.86	4.52
676-3495	7107MD9AV2BE	SPDT	On-Off-Mom	6.61	6.01	5.08	4.72
676-3500	7201MD9AV2BE	DPDT	On-None-On	8.41	7.64	6.47	6.00
676-3505	7205MD9AV2BE	DPDT	Mom-Off-Mom	9.53	8.66	7.33	6.80
676-3510	7207MD9AV2BE	DPDT	On-Off-Mom	9.75	8.86	7.50	6.97
676-3515	7208MD9AV2BE	DPDT	On-None-Mom	9.75	8.86	7.50	6.97

Switches

Multisection switches can be made by ordering number of sections desired and accessories such as end plates and blank sections. **Description. Thumbwheel:** matte black with unsealed switch contacts. **Operating Voltage:** 50 mV to 28 VDC or 120 VAC. **Operating temperature:** –10°C to 65°C. **Body and Wheel:** ABS plastic. **Rotor contacts:** precious metal on copper alloy. **Stator contacts:** hard gold over nickel over 2 oz. copper on epoxy fiberglass. **Contact rating:** 1 Amp continuous carry, 100 mA max. switched current. **Insulation resistance:** 10^9 ohms min. **Dielectric strength:** 500 V RMS min. at sea level between common terminal and any output.



Front Mounting



Rear Mounting

C & K Model No. (Individual Sections)

Front Mount	Rear Mount	Front Mount with Diode Provision	Rear Mount with Diode Provision	Description
301109000	301119000	301109100	301119100	Decimal; 1 pole 10 pos.
301309M00	301319M00	—	—	Decimal; 2 pole 10 pos. (Special board: request terminal location, mechanical and electrical details.)
—	—	301409100	301419100	Resistor decade; 1-2-2-2-2 code
301609400	301619400	—	—	Decimal; 1 pole 11 pos.
302109000	302119000	302109100	302119100	BCD 1-2-4-8; 10 pos.
302209000	302219000	302209100	302219100	Octal 1-2-4; 8 pos. (Stopped between 0-7 incl.)
302309000	302319000	302309100	302319100	Complement of BCD 1-2-4-8; 10 pos.
302409000	302419000	302409100	302419100	Complement of Octal 1-2-4; 8 pos. (Stopped between 0-7 incl.)
302809700	302819700	—	—	Complement of 9's Complement; 10 pos.
303509000	303519000	303509100	303519100	BCD 1-2-4-8 with separate common to Not True Bits; 10 pos.
304109000	304119000	304109100	304119100	BCD 1-2-4-8 with Complement, one common; 10 pos.
304209000	304219000	304209100	304219100	Octal 1-2-4 with Complement, one common; 8 pos. (Stopped between 0-7 incl.)
306109000	306119000	306109100	306119100	SPDT repeating; 10 pos. Plus (+) and Minus (–) alternating.
307109000	307119000	307109100	307119100	Binary Coded Hexadecimal; 16 pos.

Stock No.	Mfr.'s Type	EACH 1-49	50-99	100-499	500-999
676-2100	301109000	**7.75**	**7.05**	**5.96**	**5.54**
676-2105	301119000	**9.38**	**8.53**	**7.22**	**6.70**
676-2110	301109100	**9.38**	**8.53**	**7.22**	**6.70**
676-2115	301119100	**9.26**	**8.42**	**7.12**	**6.62**
676-2120	301309M00	**12.00**	**10.90**	**9.23**	**8.57**
676-2125	301319M00	**12.00**	**10.90**	**9.23**	**8.57**
676-2130	301409100	**9.38**	**8.53**	**7.22**	**6.70**
676-2135	301419100	**9.26**	**8.42**	**7.12**	**6.62**
676-2140	301609400	**7.18**	**6.53**	**5.52**	**5.13**
676-2145	301619400	**7.18**	**6.53**	**5.52**	**5.13**
676-2150	302109000	**7.75**	**7.05**	**5.96**	**5.54**
676-2155	302119000	**7.75**	**7.05**	**5.96**	**5.54**
676-2160	302109100	**9.38**	**8.53**	**7.22**	**6.70**
676-2165	302119100	**9.38**	**8.53**	**7.22**	**6.70**
676-2170	302209000	**8.57**	**7.79**	**6.59**	**6.12**
676-2175	302219000	**8.57**	**7.79**	**6.59**	**6.12**
676-2180	302209100	**10.20**	**9.27**	**7.85**	**7.29**
676-2185	302219100	**10.20**	**9.27**	**7.85**	**7.29**
676-2190	302309000	**7.75**	**7.05**	**5.96**	**5.54**
676-2195	302319000	**7.75**	**7.05**	**5.96**	**5.54**
676-2200	302409000	**8.57**	**7.79**	**6.59**	**6.12**
676-2205	302419000	**8.57**	**7.79**	**6.59**	**6.12**
676-2210	302809700	**7.75**	**7.05**	**5.96**	**5.54**
676-2215	302819700	**7.75**	**7.05**	**5.96**	**5.54**
676-2220	303509000	**15.52**	**14.11**	**11.94**	**11.09**
676-2225	303519000	**14.38**	**13.07**	**11.06**	**10.27**
676-2230	303509100	**16.46**	**14.97**	**12.66**	**11.76**
676-2235	303519100	**16.46**	**14.97**	**12.66**	**11.76**
676-2240	304109000	**12.00**	**10.90**	**9.23**	**8.57**
676-2245	304119000	**12.00**	**10.90**	**9.23**	**8.57**
676-2250	304109100	**13.18**	**11.98**	**10.14**	**9.41**
676-2255	304119100	**13.63**	**12.39**	**10.48**	**9.73**
676-2260	304209000	**12.00**	**10.90**	**9.23**	**8.57**
676-2265	304219000	**12.00**	**10.90**	**9.23**	**8.57**
676-2270	304209100	**13.63**	**12.39**	**10.48**	**9.73**
676-2275	304219100	**13.18**	**11.98**	**10.14**	**9.41**
676-2280	306109000	**7.75**	**7.05**	**5.96**	**5.54**
676-2285	306119000	**7.75**	**7.05**	**5.96**	**5.54**
676-2290	306109100	**9.38**	**8.53**	**7.22**	**6.70**
676-2295	306119100	**9.38**	**8.53**	**7.22**	**6.70**
676-2300	307109000	**15.52**	**14.11**	**11.94**	**11.09**
676-2305	307119000	**15.52**	**14.11**	**11.94**	**11.09**
676-2310	307109100	**17.16**	**15.60**	**13.20**	**12.25**
676-2315	307119100	**17.16**	**15.60**	**13.20**	**12.25**

Hardware for Field Assembly

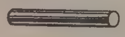
Screws for Field Assembly

Stock No.	Mfr.'s Type	Number of Sections Front Mtg.	Number of Sections Rear Mtg.	EACH
676-2320	412701000	3-4	3	**1.84**
676-2325	412702000	5-7	4-6	**1.84**
676-2330	412703000	8-10	7-9	**1.84**
676-2335	412704000	11-13	10-12	**.45**
676-2340	412705000	14-16	13-15	**.45**
676-2345	402900000	Stop Pins	Stop Pins	**.18**

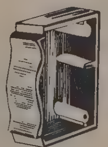
Accessories

Stock No.	Mfr.'s Type	Description	EACH
676-2350	400802000	Rear mtg. blank section (plain)	**1.43**
676-2355	400402000	Rear mtg. end plate	**.37**
676-2360	413502000	Front mtg. blank section (plain)	**1.53**
676-2365	413402000	Front mtg. end plate	**1.53**
676-2370	406100652	Nut driver	**8.22**
676-2375	403500000	Nut (2 Required Per Assembly)	**.18**
676-2381	605A00000	Connector	**6.47**

4127-XX



4029

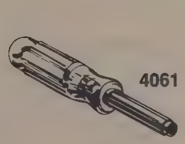


4008

4004

4135

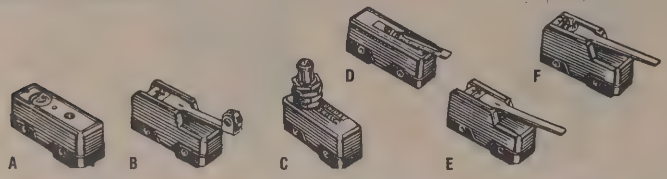
4134



4061

4035

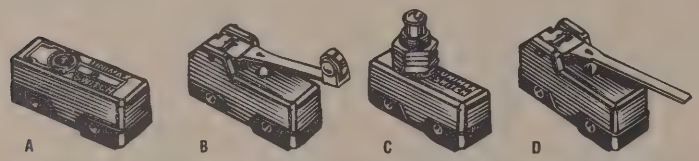
Basic Precision



Basic precision switch, is used in applications requiring minimum pretravel and overtravel, with moderate operating force. 20 Amps at 125, 250, 480 VAC; 1/2 Amp 125 VDC, 1/4 Amp 250 VDC; UL and CSA. Last digit in Mfr.'s Type indicates termination: -1 solder terminals; -5 screw terminals.

Stock No.	Mfr.'s Type	Figure	Actuator Type	O.F. Oz.	P.T. In.	O.T. In.	EACH 1-99	100-499	500-999
677-0005	HBS2KCB4SP011C	A	Pin Plunger	9-13	.020	.005	10.61	9.64	8.16
677-0010	HBS2KCB4SP055C	A	Pin Plunger	9-13	.020	.005	10.71	9.74	8.24
677-0015	HBS2KGB4SA011C	B	Hinged Roller Lever	1-3.5	.094-.312	.156	12.24	11.13	9.42
677-0020	HBS2KGB4SA055C	B	Hinged Roller Lever	1-3.5	.094-.312	.156	12.34	11.22	9.49
677-0021	HBS2KCB4SF011C	B	Reverse Act. Lever	10	.08	.09	13.46	12.24	10.36
677-0022	HBS2KCB4SF055C	B	Reverse Act. Lever	10	.08	.09	13.46	12.24	10.36
677-0025	HBS2KCB4SJ055C	C	Large Plunger	9-13	.020	.220	13.67	12.43	10.51
677-0030	HBS2KCB4SL011C	D	Leaf Spring	5	.156	.062	11.73	10.66	9.02
677-0035	HBS2KCB4SL055C	D	Leaf Spring	5	.156	.062	11.83	10.76	9.10
677-0040	HBS2KGB4ST011C	E	Long Hinged Lever	1-2.5	.38	.19	11.93	10.85	9.18
677-0045	HBS2KGB4ST055C	E	Long Hinged Lever	1-2.5	.38	.19	12.04	10.94	9.26
677-0050	HBS2KCB4STX11C	F	Adj. Hinged Lever	2	.19	.09	13.06	11.87	10.04
677-0055	HBS2KCB4STX55C	F	Adj. Hinged Lever	2	.19	.09	13.16	11.96	10.10

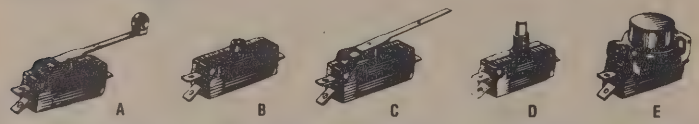
Heavy Duty



Precision switch, used for control of heavy duty electric circuits, including motor loads up to 2 HP at 250 VAC, 1 HP. 125 VAC. 20 Amps at 125, 250, 480 VAC; 10 Amps 125 VAC, lamp load, inrush current 75 Amps at 480 VAC. UL and CSA. Last digit in Mfr.'s Type indicates termination: -1 solder terminals -5 screw terminals.

Stock No.	Mfr.'s Type	Figure	Actuator Type	O.F. Oz.	P.T. In.	O.T. In.	EACH 1-99	100-499	500-999
677-0023	HL2KJC3D055C	A	Stub Plunger	22	.050	.093	19.85	18.04	15.27
677-0065	HL2KJC3P055C	A	Pin Plunger	14-22	.050	.010	16.99	15.45	13.07
677-3000	HL2KJC3A055C	B	Hinged Roller Lever	2.5	.470	.062	18.63	14.33	13.30
677-0075	HL2KJC3J055C	C	Large Plunger	14-22	.050	.219	19.95	18.14	15.35
677-0085	HL2KJC3T055C	D	Long Hinged Plunger	2.5	.590	.078	18.32	16.65	14.09

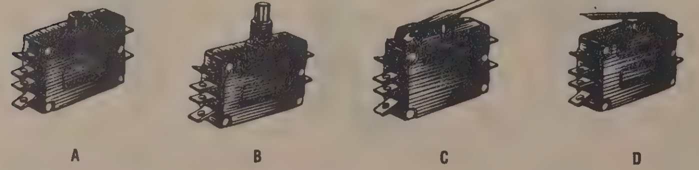
General Purpose



General Purpose Switch is designed for applications that require fully enclosed high-performance low cost, snap-acting switches with quick connect terminals. It is used where moderate pretravel and overtravel are required. 15 Amp, 125, 250 VAC, 3/4 HP. 125 VAC; 1 1/2 HP. 250 VAC; UL and CSA.

Stock No.	Mfr.'s Type	Figure	Actuator Type	O.F. Oz.	P.T. In.	O.T. In.	EACH 1-99	100-499	500-999
677-2005	ASKHC2A04AC	A	Hinged Roller Lever	4	.312	.312	5.06	3.89	3.61
677-2010	ASKHC2P04AC	B	Plastic Button	12	.281	.050	3.63	2.79	2.59
677-2015	ASKHC2T04AC	C	Hinged Lever	4	.312	.312	4.04	3.11	2.89
677-2020	ASKHC2J04AC	D	Threaded Bushing	20	.050	.187	4.55	4.14	3.50
677-2025	ASKHC2BB4AC	E	Large Red Button	20	.050	.050	5.98	5.43	4.60
677-2030	ASKHC2B14AC	E	Large Black Button	20	.050	.050	5.98	5.43	4.60

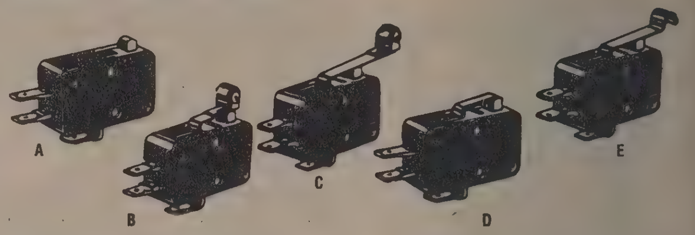
General Purpose Double Pole Double Throw



Same electrical rating as A Series, but double pole double throw.

Stock No.	Mfr.'s Type	Figure	Actuator Type	O.F. Oz.	P.T. In.	O.T. In.	EACH 1-99	100-499	500-999
677-2035	ADPDC2P04AC	A	Plastic Button	30	.050	.050	8.47	7.70	6.51
677-2040	ADPDC2J04AC	B	Threaded Bushing	30	.050	.187	9.38	8.53	7.22
677-2045	ADPDC2T04AC	C	Hinged Lever	6	.312	.187	8.87	8.07	6.83
677-2050	ADPDC2L04AC	D	Integral Leaf	18	.281	.062	8.87	8.07	6.83

Miniature Snap Switches

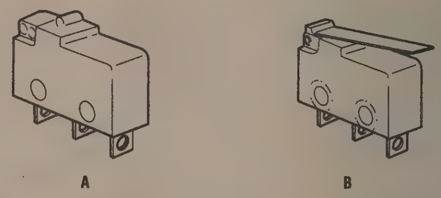


The TM Series miniature switches are for control of heavy duty electrical circuits up to 10A, 250 VAC. Available with .187 quick-connect terminals.

Stock No.	Mfr.'s Type	Figure	Actuator Type	O.F. Grams	P.T.	O.T.	EACH 1-99	100-499	500-999
677-2215	TMCGD6SP0040C	A	Basic Pin Type	75	.056	.040	2.86	2.60	2.20
677-2220	TMCGD6SA1040C	B	Short Roller Lever	90	.070	.040	3.81	3.47	2.93
677-2225	TMCGD6SA1540C	C	Std. Roller Lever	45	.160	.065	3.86	3.51	2.97
677-2230	TMCGD6ST1040C	D	Short Lever	90	.080	.040	3.26	2.97	2.51
677-2235	TMCGD6ST1440C	E	Simulated Roller	50	.140	.062	3.37	3.06	2.59

LC Series Subminiature Precision Snap Switches

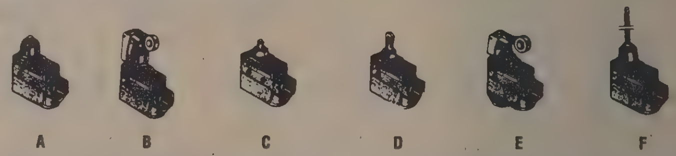
— NEW —



The LC Series of SPDT snap-acting switches afford small size, long life and high electrical capacity. Rated from low level to 1 amp at 125 VAC, 30 VDC, the switches provide a snap-acting mechanism that is positive and reliable, with a rolling and wiping contact action that assures good electrical life.

Stock No.	Mfr.'s Type	Figure	Actuator Type	O.F. Oz.	P.T.	O.T.	EACH 1-99	100-499	500-999
677-2405	LCGGX1P00EC	A	Basic Pin Type	5.0	.030	.010	4.86	4.41	3.73
677-2410	LCGGX1T10EC	B	Lever Type	5.0	.140	.029	5.16	4.69	3.97

Metal Enclosed Switches

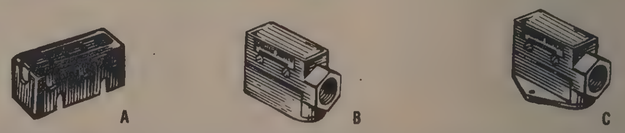


Snap-acting switches enclosed in metal housings that protect the basic switch against mechanical damage and offer methods of sealing to protect against moisture, dust, oil and corrosive atmospheres. Meets NEMA specifications 1, 2, 5, 12.

Stock No.	Mfr.'s Type	Figure	Actuator Type	O.F. Oz.	P.T. IN.	O.T. IN.	EACH 1-99	100-499	500-999
677-0105	KSB0TS	A	Sealed Plunger	9-24	.080	.220	31.48	28.62	24.21
677-0110	KSBPTS	B	Roller Lever	10-20	.190	.220	44.23	40.21	34.02
677-0115	KSJ0TS	C	Plain Plunger	9-13	.020	.220	28.93	26.30	22.25
677-0120	KSR0TS	D	Roller Plunger	9-13	.020	.140	34.03	30.93	26.17
677-0125	KSJPTS	E	Roller Lever	10-18	.190	.160	42.19	38.35	32.45
677-0130	KSB5TS	F	Semi-Rigid Rod	*	*	*	34.03	30.93	26.17

*Operates under direct pressure on rod end or by 15° max. lateral movement.

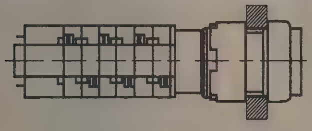
Terminal and Switch Enclosures



Terminal and switch enclosures, used to install HB and HL type switches with electric conduit, electrical tubing, or armored cable. The switch is inserted through the open top of the enclosure where it is secured by two screws that are supplied with the unit. The lower section is removable for easy access to terminals. TC-1, a molded phenolic cover for terminals only, has knock-outs for convenient positioning of wire.

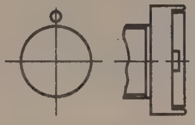
Stock No.	Mfr.'s Type	Figure	Actuator Type	EACH 1-99	100-499	500-999
677-0090	TC-1	A	Terminal cover only	.98	.89	.75
677-0095	TC-2	B	Enclosure Through Bolt Mount	14.10	12.81	10.84
677-0100	TC-3	C	Enclosure Flange Mount	16.26	14.78	12.51

Series 75 Lighted Pushbutton Switches



Round

Square



Rectangular

The RAFI Series 75 panel-mounted switches include momentary and alternate action lighted pushbuttons and keylocks. Each is designed to mount in a 16.2 mm diameter panel cutout. Units are rated at 4 A at 120/240 VAC, and are available in one, two, three, and four pole models. Standard soldering terminals are silver (gold contacts available on request). The series 75 are recognized by UL, CSA, and VDE. Operating life at 250 VAC/2 A exceeds 200,000 operations. Cataloged units feature a black collar.

18 mm Round Bezel and Lens

Stock No.	Mfr.'s Type	Switch Action	No. of Poles	EACH		
				1-24	25-249	250-499
677-4035	1.15108.451	Momentary	1	**13.57**	**12.33**	**10.44**
677-4036	1.15108.452	Momentary	2	**19.99**	**18.17**	**15.38**
677-4038	1.15108.551	Latching	1	**16.21**	**14.74**	**12.48**
677-4039	1.15108.552	Latching	2	**22.65**	**20.58**	**17.41**

18 mm Square Bezel and Lens

Stock No.	Mfr.'s Type	Switch Action	No. of Poles	1-24	25-249	250-499
677-4041	1.15108.251	Momentary	1	**13.34**	**12.13**	**10.26**
677-4042	1.15108.252	Momentary	2	**19.99**	**18.17**	**15.38**
677-4073	1.15108.351	Latching	1	**21.91**	**19.91**	**16.85**
677-4044	1.15108.352	Latching	2	**22.65**	**20.58**	**17.41**

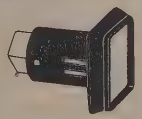
18 mm × 24 mm Rectangular Bezel and Lens

Stock No.	Mfr.'s Type	Switch Action	No. of Poles	1-24	25-249	250-499
677-4046	1.15108.051	Momentary	1	**13.56**	**12.33**	**10.43**
677-4047	1.15108.052	Momentary	2	**19.99**	**18.17**	**15.39**
677-4049	1.15108.151	Latching	1	**21.91**	**19.91**	**16.86**
677-4050	1.15108.152	Latching	2	**22.64**	**20.58**	**17.42**

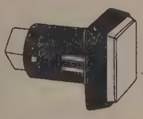
Note: Each of the above switches must be ordered with an appropriate colored lens cap, light diffuser, and incandescent lamp. Please see "accessories" below.

Series 25 Snap-In Mount, Lighted Pushbuttons

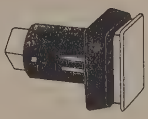
Flush



Recessed



Protruding



Stop

The RAFI Series 25 momentary action, lighted pushbuttons are designed to mount in the popular 16.2 mm diameter panel cutout...without the need for any installation tools. Simply insert into the drilled panel cutout, press the pushbutton once, and the snap-in locking mechanism secures the assembly to the front panel. Each unit features SPST gold-plated contacts designed for a maximum load of 100 mA at 24 V. The Series 25 pushbuttons feature black bezels and a 25 mm square operator button designed to meet industrial-grade "water-tight" sealing requirements (IP65). Electrical connections are made via a 4-pole flat cable insulation displacement connector (IDC) — thus eliminating the need for soldering or stripping insulation.

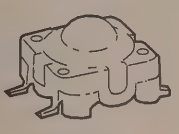
Stock No.	Mfr.'s Type	Color Button	Type Pushbutton	EACH		
				1-24	25-249	250-499
677-4012	1.15150.006/1002	Clear	Flush	**12.82**	**11.65**	**9.85**
677-4013	1.15150.006/1306	Red	Flush	**12.82**	**11.65**	**9.85**
677-4015	1.15150.006/1505	Green	Flush	**12.82**	**11.65**	**9.85**
677-4017	1.15150.106/1002	Clear	Protruding	**17.33**	**15.75**	**13.32**
677-4018	1.15150.106/1306	Red	Protruding	**17.33**	**15.75**	**13.32**
677-4020	1.15150.106/1505	Green	Protruding	**17.33**	**15.75**	**13.32**
677-4022	1.15150.206/1002	Clear	Recessed	**17.65**	**16.04**	**13.58**
677-4023	1.15150.206/1306	Red	Recessed	**17.65**	**16.04**	**13.58**
677-4025	1.15150.206/1505	Green	Recessed	**17.65**	**16.04**	**13.58**
677-4027	1.15154.006	Red (Unlighted)	Stop Pushbutton	**17.28**	**15.71**	**13.29**

Note: Each of the above lighted pushbutton switches must be ordered with the appropriate lamp (see available voltages below) and cable connector.

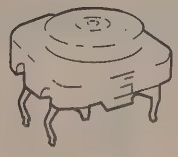
Stock No.	Mfr.'s Type	Operating Voltage (Incandescent Lamp)	EACH		
			1-24	25-249	250-499
677-4028	1.90142.001	6 V/0.7 W	**4.69**	**4.26**	**3.60**
677-4076	1.90180.474	12 V/0.7 W	**3.61**	**3.28**	**2.78**
677-4078	1.90180.475	28 V/0.8 W	**3.71**	**3.38**	**2.86**
677-4031	5.92025.368	Flat Cable IDC Connector	**2.16**	**1.97**	**1.67**

RACON Series

— NEW —



1.14100



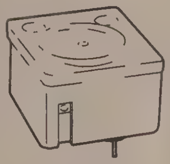
1.14001

High quality, long life momentary SPST PCB mounted keyswitches are solder-proof and washer-proof. **Operating Life:** 1,000,000 cycles minimum. Keyswitches are rated at 42 VAC/DC and 100 mA. **Actuator Height:** 5 mm. Other actuator heights are also available.

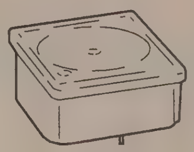
Stock No.	Mfr.'s Type	Description	EACH		
			1-24	25-249	250-499
677-4080	1.14100.001	Outward Terminals, 8 mm Square	**3.53**	**3.21**	2.71
677-4082	1.14100.002	Inward Terminals, 8 mm Square	**3.53**	**3.21**	2.71
677-4084	1.14100.003	SMD Terminals, 8 mm Square	**3.53**	**3.02**	2.56
677-4086	1.14001.001	Outward Terminals, 12 mm Square	**3.53**	**3.21**	2.71
677-4088	1.14001.002	Inward Terminals, 12 mm Square	**3.53**	**3.21**	2.71
677-4090	1.14001.003	SMD Terminals, 12 mm Square	**3.55**	**3.23**	2.73

RF Series

— NEW —



3.14100



3.14001

High quality, long life momentary SPST PCB mounted keyswitches available in 15 mm square and 19 mm square. **Operating Life:** 1,000,000 cycles minimum. Switches are non-illuminated. **Operating Temperature:** –25°C to 70°C. Gold contacts are rated to 42 V and 100 mA AC/DC, maximum power 2 W. Silver contacts are rated to 50 V and 250 mA AC/DC, maximum power 15 W. **Actuator Height:** 9.7 mm. Other actuator heights and spot-or full-illumination is also available.

Stock No.	Mfr.'s Type	Description	EACH		
			1-24	25-249	250-499
677-4092	3.14100.001	Gold Contacts, 15 mm Square	**2.73**	**2.15**	**1.82**
677-4094	3.14100.006	Silver Contacts, 15 mm Square	**2.06**	**1.87**	**1.58**
677-4096	3.14001.001	Gold Contacts, 19 mm Square	**2.04**	**1.85**	**1.57**
677-4098	3.14001.006	Silver Contacts, 19 mm Square	1.77	1.61	1.37

Series 75 Accessories

Stock No.	Mfr.'s Type	Description	EACH		
			1-24	25-249	250-499
677-4052	5.49257.011/1002	18 mm Round Lens Cap, Clear	**.53**	**.48**	**.41**
677-4053	5.49257.011/1303	18 mm Round Lens Cap, Red	**.53**	**.48**	**.41**
677-4055	5.49257.011/1502	18 mm Round Lens Cap, Green	**.53**	**.48**	**.41**
677-4057	5.49275.036/1002	18 mm Square Lens Cap, Clear	**.45**	**.41**	**.35**
677-4058	5.49275.036/1303	18 mm Square Lens Cap, Red	**.45**	**.41**	**.35**
677-4060	5.49275.036/1502	18 mm Square Lens Cap, Green	**.45**	**.41**	**.35**
677-4062	5.49275.032/1002	18 mm × 24 mm Rectangular Lens Cap, Clear	**.45**	**.41**	**.35**
677-4063	5.49275.032/1303	18 mm × 24 mm Rectangular Lens Cap, Red	**.45**	**.41**	**.35**
677-4065	5.49275.032/1502	18 mm × 24 mm Rectangular Lens Cap, Green	**.45**	**.41**	**.35**
677-4067	5.72050.000/0202	18 mm Round Legend Insert/Diffuser	**.33**	**.30**	**.25**
677-4068	5.73013.000/0202	18 mm Square Legend Insert/Diffuser	**.37**	**.33**	**.28**
677-4069	5.73012.000/0202	18 mm × 24 mm Rectangular Legend Insert/Diffuser	**.37**	**.33**	**.28**
677-4070	1.90100.021	6 V/0.3 W T4.5 Incandescent Lamp	**3.06**	**2.78**	**2.35**
677-4071	1.90100.022	12 V/0.48 W T4.5 Incandescent Lamp	**3.26**	**2.97**	**2.51**
677-4072	1.90100.023	24 V/0.48 W T4.5 Incandescent Lamp	**3.51**	**3.19**	**2.70**

Ordering Details: A Series 75 lighted pushbutton assembly consists of the basic switch, colored lens cap, legend insert/diffuser and lamp. For example, to order a 24 mm square red latching lighted pushbutton with two poles and 12 V lamp one would order Mfr.'s Type 1.15108.352, 5.49275.036/1303, 5.73013.000/0202, and 1.90100.022. Color blue also available on special order.

Optional Accessories for Series 25 Snap-In Mount Pushbuttons

Stock No.	Mfr.'s Type	Description	EACH		
			1-24	25-249	250-499
677-4032	5.37700.124	4-Conductor Flat Cable, 1 Meter Length	**2.23**	**2.02**	**1.71**
677-4033	1.90900.001	Lamp Extractor Tool	**5.73**	**5.22**	**4.41**
677-4034	5.05800.042	Tool for De-Mounting Pushbuttons from Front of Panel	**5.69**	**5.18**	**4.38**

PTS Series — NEW —
Sub-Miniature Tactile Switches

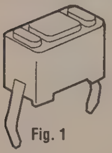


Fig. 1

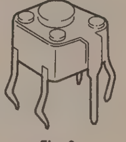


Fig. 2

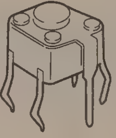


Fig. 3

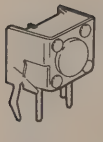


Fig. 4

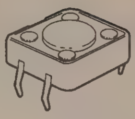


Fig. 5

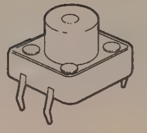


Fig. 6

Tactile feel, PC mountable pushbutton switches. SPST normally open momentary. **Rating:** 50 mA @ 12 V DC. **Mechanical and Electrical Life:** 25,000 operations for PTS635S and PTS453S/T models; 100,000 operations for PTS645S/T and PTS645V models; 200,000 operations for PTS125S models. **Contact Resistance:** 100 MΩ max. initial. **Operating Temperature:** –10°C to 60°C.

6 × 3.5 mm Models — Fig. 1

Stock No.	Mfr.'s Type	Operating Force	Switch Height	EACH		
				1-99	100-499	500-Up
677-5050	PTS635SL43*	130	0.169	.15	.14	.13
677-5051	PTS635SL50*	130	0.197	.15	.14	.13
677-5052	PTS635SH43†	200	0.169	.15	.14	.13
677-5053	PTS635SH50†	200	0.197	.15	.14	.13

Actuator Color: *Black; †Gray.

4.5 × 4.5 mm Models — Fig. 2

Stock No.	Mfr.'s Type	Operating Force	Switch Height	ESD Pin	EACH		
					1-99	100-499	500-Up
677-5054	PTS453SL38*	130	0.150	No	.22	.20	.18
677-5055	PTS453TL38*	130	0.150	Yes	.22	.20	.18

6 × 6 mm Models — Fig. 3

Stock No.	Mfr.'s Type	Operating Force	Switch Height	ESD Pin	1-99	100-499	500-Up
677-5056	PTS645SL43*	130	0.169	No	.12	.11	.10
677-5057	PTS645SL50*	130	0.197	No	.12	.11	.10
677-5058	PTS645SL70*	130	0.275	No	.12	.11	.10
677-5059	PTS645SL95*	130	0.374	No	.12	.11	.10
677-5060	PTS645SH43†	200	0.169	No	.12	.11	.10
677-5061	PTS645SH50†	200	0.197	No	.12	.11	.10
677-5062	PTS645SH70†	200	0.275	No	.12	.11	.10
677-5063	PTS645SH95†	200	0.374	No	.12	.11	.10
677-5064	PTS645TL43*	130	0.169	Yes	.12	.11	.10
677-5065	PTS645TL50*	130	0.197	Yes	.12	.11	.10
677-5066	PTS645TL70*	130	0.275	Yes	.12	.11	.10
677-5067	PTS645TL95*	130	0.374	Yes	.12	.11	.10
677-5068	PTS645TH43†	200	0.169	Yes	.12	.11	.10
677-5069	PTS645TH50†	200	0.197	Yes	.12	.11	.10
677-5070	PTS645TH70†	200	0.275	Yes	.12	.11	.10
677-5071	PTS645TH95†	200	0.374	Yes	.12	.11	.10

Actuator Color: *Black; †Gray.

6 × 6 mm Models — Fig. 4

Stock No.	Mfr.'s Type	Operating Force	Switch Height	EACH		
				1-99	100-499	500-Up
677-5072	PTS645VL31*	130	0.124	.15	.14	.13
677-5073	PTS645VL39*	130	0.151	.15	.14	.13
677-5074	PTS645VL58*	130	0.230	.15	.14	.13
677-5075	PTS545VL83*	130	0.329	.15	.14	.13
677-5076	PTS645VL15*	130	0.624	.15	.14	.13
677-5077	PTS645VH31‡	200	0.124	.15	.14	.13
677-5078	PTS645VH39†	200	0.151	.15	.14	.13
677-5079	PTS645VH58†	200	0.230	.15	.14	.13
677-5080	PTS645VH83†	200	0.329	.15	.14	.13
677-5081	PTS645VH15†	200	0.624	.15	.14	.13

6 × 6 mm Models — Fig. 5

677-5082	PTS125SM43†	160	0.169	.15	.14	.13

6 × 6 mm Models — Fig. 6

677-5083	PTS125SM85†	160	0.335	.15	.14	.13

Actuator Color: *Black; †Gray.

MPS Series — NEW —
Magnetic Proximity Sensors

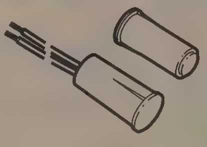


Fig. 1

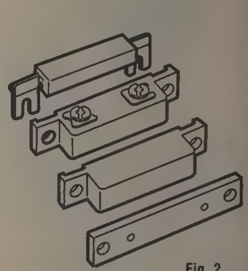


Fig. 2

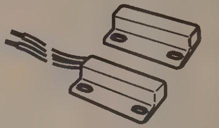


Fig. 3

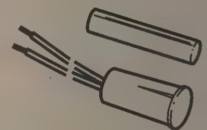
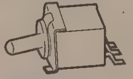


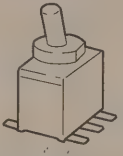
Fig. 4

SPST normally open reed switch, contacts are hermetically sealed within a glass capsule. Reed switch opens when separately encased magnet is removed from proximity. Contacts are held closed when magnet is within actuation range. Wide gap contacts speeds installation, making magnet and switch alignment easier. **Contact Rating:** 0.3 amps @ 100 VAC; 100 VA max. @ 100 VDC; max. carry current 1.0 amp. **Max. Operating Time:** 1 msec, including bounce. **Life Expectancy:** 10 million operations. **Housing:** UL 94V-0, impact resistant ABS plastic (white), with patented o-ring protecting the reed switch. Potted 12 inch wire leads, 22 AWG.

Stock No.	Mfr.'s Type	Fig.	Make Gap	EACH		
				1-99	100-499	500-Up
677-5084	MPS9WGW	1	1¼"	4.92	4.54	4.22
677-5085	MPS20WGW	2	1¼"	6.87	6.34	5.89
677-5086	MPS45WGW	3	1"	5.92	5.46	5.07
677-5087	MPS95WGW	4	1¼"	7.24	6.58	5.57

Sealed Ultra-Miniature Surface Mount Toggle Switches, GT Series


SP with SA Terminals


SP with SC Terminals

Process compatible — withstands IR and vapor phase reflow soldering and cleaning. New two pole model — same size as single pole switch. **Contact Rating:** 0.4 VA max. @ 20 V AC or DC max. **Mechanical and Electrical Life:** 40,000 make-and-break cycles at full load. **Contact Resistance:** Below 50 milliohms typ. initial @ 2-4 V DC, 100 mA. **Insulation Resistance:** 10^9 ohms min. **Dielectric Strength:** 500 V RMS min. **Operating Temperature:** –30°C at 85°C. **Solderability:** Per MIL-STD-202F method 208D, or EIA RS-186E method 9. **Housing and Base:** UL 94V-0. **Actuator:** UL 94 V-0 with standard internal o-ring seal. **Switch Support:** Brass, tin plated. **Movable Contact:** Gold plate over nickel plate. **Stationary Contacts:** Copper alloy, with gold plate over nickel plate. **Terminals:** Tin-lead alloy. **Terminal Seal:** Epoxy. All terminals insert molded.

SP Models With Right Angle SMD Terminals

Stock No.	Mfr.'s Type	Switch Function			EACH		
		Pos. 1	Pos. 2	Pos. 3	1-99	100-499	500-999
676-7270	GT11MSAKE*	On	None	On	5.96	4.96	4.25
676-7271	GT13MSAKE*	On	Off	On	6.83	5.70	4.88
676-7272	GT12MSAKE**	Off	None	On	6.34	5.29	4.53

SP Models with Upright SMD Terminals

676-7273	GT11MSCKE*	On	None	On	5.59	4.66	3.99
676-7274	GT13MSCKE*	On	Off	On	6.47	5.39	4.62
676-7275	GT12MSCKE**	Off	None	On	6.04	5.03	4.31

DP Models with Upright SMD Terminals

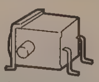
676-7276	GT21MSCKE†	On	None	On	7.45	6.21	5.32
676-7277	GT23MSCKE†	On	Off	On	7.92	6.60	5.65
676-7278	GT22MSCKE‡	Off	None	On	7.69	6.41	5.49

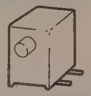
SP Models with Bracket and SMD Terminals

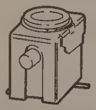
676-7279	GT11MSVKE*	On	None	On	6.20	5.17	4.43
676-7280	GT13MSVKE*	On	Off	On	7.00	5.83	5.00
676-7281	GT12MSVKE**	Off	None	On	6.39	5.32	4.56

*SPDT. **SPST. †DPDT. ‡DPST.

Sealed Ultra-Miniature Surface Mount Pushbutton Switches, GP Series


SP with SA Terminals


SP with SC Terminals


SP with SV1 Terminals

Process compatible — withstands IR and vapor phase reflow soldering and cleaning processes. **Contact Rating:** 0.4 VA max. @ 20 V AC or DC max. **Mechanical and Electrical Life:** 40,000 make-and-break cycles at full load. **Contact Resistance:** Below 50 milliohms typ. initial @ 2-4 V DC, 100 mA. **Insulation Resistance:** 10^9 ohms min. **Dielectric Strength:** 500 V RMS min. **Operating Temperature:** –30°C at 85°C. **Solderability:** Per MIL-STD-202F method 208D, or EIA RS-186E method 9. **Housing and Base:** UL 94 V-0. **Actuator:** UL 94 V-0 with standard internal o-ring seal. **Switch Support:** Brass, tin plated. **Movable Contact:** Gold plate over nickel plate. **Stationary Contacts:** Gold plate over nickel plate. **Terminals:** Copper alloy, with tin-lead alloy. **Terminal Seal:** Epoxy. All terminals insert molded.

SP Models with SA Terminals

Stock No.	Mfr.'s Type	Switch Func.		EACH		
		Pos. 1	Pos. 2	1-99	100-499	500-999
676-7290	GP11MSAKE*	Off	Mom.	5.67	4.73	4.05
676-7291	GP12MSAKE*	On	Mom.	6.12	5.10	4.37

SP Models with SA1 Terminals

676-7292	GP11MSA1KE†	Off	Mom.	6.75	5.63	4.82
676-7293	GP12MSA1KE†	On	Mom.	7.16	5.97	5.11

SP Model with SC Terminals

676-7294	GP12MSCKE	On	Mom.	5.51	4.59	3.93

SP Model with SC1 Terminals

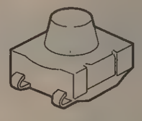
676-7295	GP12MSC1KE	On	Mom.	6.39	5.32	4.56

SP Models with SV1 Terminals

676-7296	GP11MSV1KE*	Off	Mom.	7.08	5.90	5.06
676-7297	GP12MSV1KE†	On	Mom.	7.51	6.26	5.36

*SPST. †SPDT. Mom. = Momentary.

Sealed Miniature Surface Mount Key Switches, KT Series



Contact Rating: 1.0 VA max. @ 50 V AC or DC max. **Mechanical and Electrical Life:** 100,000 make-and-break cycles at full load. **Contact Resistance:** Below 50 milliohms typ. initial @ 2-4 V DC, 100 mA. **Insulation Resistance:** 10^9 ohms min. **Dielectric Strength:** 250 V RMS min. **Operating Temperature:** –40°C at 90°C. **Solderability:** Per MIL-STD-202F method 208D, or EIA RS-186E method 9; 1 hour steam aging. **Base:** UL 94 V-0. **Actuator:** B0, B1, B2 actuators. Silicone rubber. P2. **Switch Support:** Stainless steel, tin plated. **Movable Contact:** Stainless steel, silver plated. **Stationary Contacts:** Copper alloy, silver plated. **Terminals:** Tin-lead alloy. All terminals insert molded. 6 mm square, sealed construction.

J Terminals

Stock No.	Mfr.'s Type	Actuator Height	Switch Func.		EACH		
			Pos. 1	Pos. 2	1-99	100-499	500-999
676-7330	KT11B0JM	Flush	Off	Mom.	1.82	1.51	1.30
676-7331	KT11B1JM	.025 (0.64)	Off	Mom.	1.94	1.61	1.38
676-7332	KT11B2JM	.088 (2.24)	Off	Mom.	2.02	1.68	1.44
676-7333	KT11P2JM	.093 (2.36)	Off	Mom.	2.10	1.75	1.50
676-7334	KT11P3JM	.044 (1.12)	Off	Mom.	2.10	1.75	1.50
676-7335	KT11P4JM	.156 (3.96)	Off	Mom.	2.10	1.75	1.50

S Terminals

676-7336	KT11B0SM	Flush	Off	Mom.	1.82	1.51	1.30
676-7337	KT11B1SM	.025 (0.64)	Off	Mom.	1.94	1.61	1.38
676-7338	KT11B2SM	.088 (2.24)	Off	Mom.	2.02	1.68	1.44
676-7339	KT11P2SM	.093 (2.36)	Off	Mom.	2.10	1.75	1.50
676-7340	KT11P3SM	.044 (1.12)	Off	Mom.	2.10	1.75	1.50
676-7341	KT11P4SM	.156 (3.96)	Off	Mom.	2.10	1.75	1.50

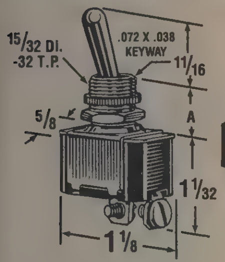
SA Right Angle Terminals

676-7342	KT11B0SAM	Flush	Off	Mom.	1.84	1.53	1.31
676-7343	KT11B1SAM	.025 (0.64)	Off	Mom.	1.94	1.61	1.38
676-7344	KT11B2SAM	.088 (2.24)	Off	Mom.	2.04	1.70	1.46

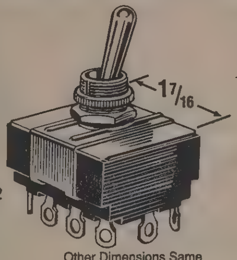
SPST Mom. = Momentary.

Heavy Duty AC Rated Toggle Switches

General Purpose switches rated at 15 AMP, 125 VAC and 28 VDC and 10 AMPs at 250 VAC. UL listed and CSA certified in single, double, three and four pole configurations. All are rated 3/4 H.P.–15/32" bushing–11/16" Toggle.

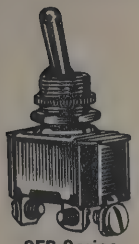


2FA Series

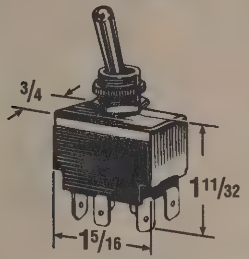


Other Dimensions Same As Three Pole Switch . . .

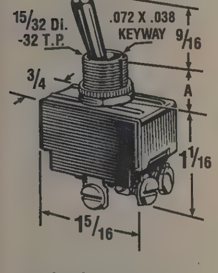
IK Series



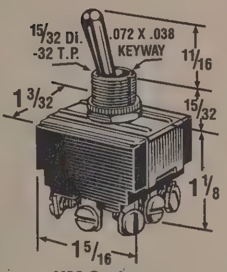
2FB Series
6FB Series



2GM Series



2GK Series



HM Series

Stock No.	Mfr.'s Type	Switch Action	Terminals	EACH 1-24	25-49	50-99	100-249
683-0048	2FA53-73	S.P.S.T. ON-NONE-OFF	Solder	3.18	2.36	1.90	1.47
683-0049	2FA53-73-TABS	S.P.S.T. ON-NONE-OFF	Spade	3.18	2.36	1.90	1.47
683-0050	2FA54-73	S.P.S.T. ON-NONE-OFF	Screw	3.66	2.73	2.20	1.69
683-0051	2FB53-73	S.P.D.T. ON-NONE-ON	Solder	4.32	3.21	2.59	2.00
683-0052	2FB53-73-TABS	S.P.D.T. ON-NONE-ON	Spade	4.25	3.17	2.55	1.96
683-0053	2FB54-73	S.P.D.T. ON-NONE-ON	Screw	4.62	3.88	2.93	2.43
683-0054	2FC53-73	S.P.D.T. ON-OFF-ON	Solder	3.16	2.50	2.30	2.12
683-0055	2FC53-73-TABS	S.P.D.T. ON-OFF-ON	Spade	3.16	2.50	2.30	2.12
683-0056	2FC54-73	S.P.D.T. ON-OFF-ON	Screw	4.03	3.17	2.56	1.96
683-0057	6FC54-73*	S.P.D.T. ON-OFF-ON	Screw	5.18	4.22	3.42	3.12
683-0058	2GK50-73	D.P.S.T. ON-NONE-OFF	Solder	4.08	3.70	3.40	3.13
683-0059	2GK51-73	D.P.S.T. ON-NONE-OFF	Spade	4.08	3.70	3.40	3.13
683-0060	2GK54-73	D.P.S.T. ON-NONE-OFF	Screw	4.84	4.40	4.03	3.72
683-0061	2GL50-73	D.P.D.T. ON-NONE-ON	Solder	4.88	4.43	4.06	3.75
683-0062	2GL51-73	D.P.D.T. ON-NONE-ON	Spade	4.88	4.43	4.06	3.75
683-0063	2GL54-73	D.P.D.T. ON-NONE-ON	Screw	6.00	5.00	4.61	4.28
683-0064	2GM50-73	D.P.D.T. ON-OFF-ON	Solder	4.88	4.43	4.06	3.75
683-0065	2GM51-73	D.P.D.T. ON-OFF-ON	Spade	4.88	4.43	4.06	3.75
683-0066	2GM54-73	D.P.D.T. ON-OFF-ON	Screw	6.00	5.00	4.61	4.28
683-0067	HK250-73	3.P.S.T. ON-NONE-OFF	Solder	7.50	6.81	6.25	5.76
683-0068	HK251-73	3.P.S.T. ON-NONE-OFF	Spade	7.50	6.81	6.25	5.76
683-0069	HK254-73	3.P.S.T. ON-NONE-OFF	Screw	8.88	8.07	7.40	6.83
683-0070	HL250-73	3.P.D.T. ON-NONE-ON	Solder	9.22	8.38	7.68	7.09
683-0071	HL251-73	3.P.D.T. ON-NONE-ON	Spade	9.22	8.38	7.68	7.09
683-0072	HL254-73	3.P.D.T. ON-NONE-ON	Screw	11.04	10.03	9.20	8.49
683-0073	HM250-73	3.P.D.T. ON-OFF-ON	Solder	9.22	8.38	7.68	7.09
683-0074	HM251-73	3.P.D.T. ON-OFF-ON	Spade	9.22	8.38	7.68	7.09
683-0075	HM254-73	3.P.D.T. ON-OFF-ON	Screw	11.04	10.03	9.20	8.49
683-0076	IK250-73	4.P.S.T. ON-NONE-OFF	Solder	10.28	9.23	8.56	7.90
683-0077	IK251-73	4.P.S.T. ON-NONE-OFF	Spade	10.28	9.23	8.56	7.90
683-0078	IK254-73	4.P.S.T. ON-NONE-OFF	Screw	15.10	13.72	12.58	11.61
683-0079	IL250-73	4.P.D.T. ON-NONE-ON	Solder	12.56	11.41	10.46	9.66
683-0080	IL251-73	4.P.D.T. ON-NONE-ON	Spade	12.56	11.41	10.46	9.66
683-0081	IL254-73	4.P.D.T. ON-NONE-ON	Screw	15.10	13.72	12.58	11.61
683-0082	IM250-73	4.P.D.T. ON-OFF-ON	Solder	12.56	11.41	10.46	9.66
683-0083	IM251-73	4.P.D.T. ON-OFF-ON	Spade	12.56	11.41	10.46	9.66
683-0084	IM254-73	4.P.D.T. ON-OFF-ON	Screw	15.10	13.72	12.58	11.61

*Momentary On Action

Nylon Insulated Toggle Switches

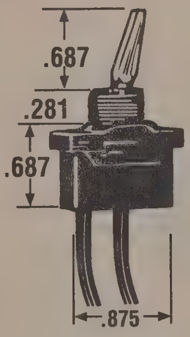
Series D switches have self-cleaning wiping action contacts suitable for both power and low-level switching nylon flat or bat lever actuators and bushing/frame super structure for double insulated requirements. UL listed, CSA certified. Series rated at 10 AMP 125 VAC, 5 AMP 250 VAC, 1/2 H.P. 125-250 VAC, 10 AMP 28 VDC.

Paddle Toggle Actuator

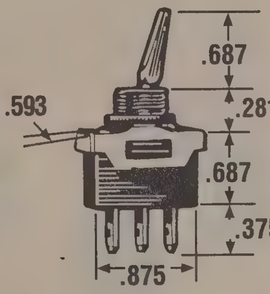
Stock No.	Mfr.'s Type	Switch Action	Terminals	EACH 1-24	25-49	50-99	100-249
683-0085	DA100-PB-B	S.P.S.T. ON-NONE-OFF	Solder/Spade	1.40	1.27	1.16	1.07
683-0086	DA105-PB-B	S.P.S.T. ON-NONE-OFF	Wire	2.08	1.89	1.73	1.60
683-0087	DB100-PB-B	S.P.D.T. ON-NONE-ON	Solder/Spade	1.57	1.43	1.31	1.21
683-0088	DC100-PB-B	S.P.D.T. ON-OFF-ON	Solder/Spade	1.57	1.43	1.31	1.21

Bat Toggle Actuator

683-0089	DA100-BB-B	S.P.S.T. ON-NONE-OFF	Solder/Spade	1.59	1.45	1.33	1.22
683-0090	DA105-BB-B	S.P.S.T. ON-NONE-OFF	Wire	2.06	1.87	1.72	1.58
683-0091	DB100-BB-B	S.P.D.T. ON-NONE-ON	Solder/Spade	1.57	1.43	1.31	1.21
683-0092	DC100-BB-B	S.P.D.T. ON-OFF-ON	Solder/Spade	1.77	1.61	1.48	1.37



DA105-PB-B

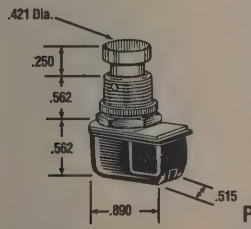


DA100-PB-B

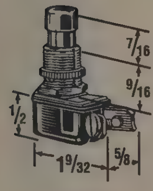
General Purpose Pushbutton Switches

Slow make/slow break momentary AC only.

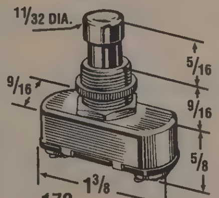
6 AMP 125 VAC—3 Amp 250 VAC. UL listed and CSA certified.



P27 Series



110-SP



172

Stock No.	Mfr.'s Type*	Switch Action	Terminals	Cap	EACH 1-24	25-49	50-99	100-249
683-0093	P26A-1D-RND*	S.P.M.O.	Solder	Metal	2.82	2.56	2.35	2.17
683-0094	P26L-1D-RND*	S.P.N.C.	Solder	Metal	2.82	2.56	2.35	2.17
683-0095	P27A-BL	S.P.N.O.	Solder	Black	2.75	2.50	2.29	2.12
683-0097	P27L-BL	S.P.N.C.	Solder	Black	3.10	2.82	2.58	2.39

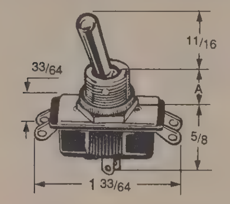
*Not shown

15 AMP 125 VAC—10 AMP 250 VAC

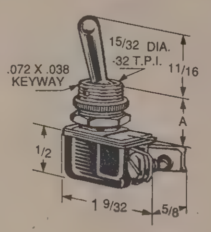
683-0099	170	S.P.N.C.	Screw	Metal	4.73	4.30	3.94	3.64
683-0100	172	S.P.N.O.	Screw	Metal	4.73	4.30	3.94	3.64

Quick Make/Quick Break Maintained AC/DC. 6 AMP 125 VAC—3 AMP 250 VAC. UL listed and CSA certified.

683-0101	110-SP	S.P.S.T.	Screw	Metal	5.55	5.04	4.62	4.27
683-0102	111-16P	S.P.S.T.	Wire	Metal	4.49	4.08	3.74	3.45



2BB, 2BK, 2BL Series



110, 111 Series

General Purpose AC-DC Toggle Switches

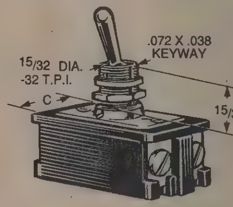
Quick Make and Break AC-DC Rated 6 Amps 125 VAC, 3 Amps 250 VAC
CSA certified 15/32" bushing 11/16" toggle.

Stock No.	Mfr.'s Type	Switch Action	Terminals	EACH 1-24	25-49	50-99	100-249
683-0103	110-73	S.P.S.T ON-NONE-OFF	Solder	2.61	2.37	2.18	2.01
683-0104	110-S-73	S.P.S.T ON-NONE-OFF	Screw	4.04	3.67	3.37	3.11
683-0105	111-16-73	S.P.S.T ON-NONE-OFF	Wire	4.04	3.67	3.37	3.11
683-0106	2BB62-73	S.P.D.T ON-NONE-ON	Solder	3.41	3.10	2.84	2.62
683-0107	2BK62-73	D.P.S.T ON-NONE-OFF	Solder	4.92	4.47	4.10	3.78
683-0108	2BK65-73	D.P.S.T ON-NONE-OFF	Wire	5.81	5.29	4.85	4.47
683-0109	2BL62-73	D.P.D.T ON-NONE-ON	Solder	5.98	5.43	4.98	4.60

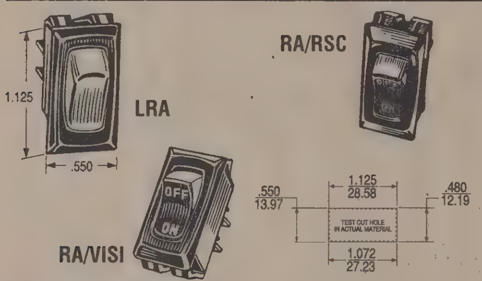
Heavy Duty AC-DC Toggle Switches

16 Amps, 125 VAC 8 Amps 250 VAC 1 HP 125-250 VAC

Stock No.	Mfr.'s Type	Switch Action	Terminals	EACH 1-24	25-49	50-99	100-249
683-0110	DK284-73	D.P.S.T.	Screw	4.16	3.78	3.47	3.20
20 AMPS 125 VAC — 10 AMPS 250 VAC — 1-1/2 H.P. 125-250 VAC							
683-0111	EK204-73	D.P.S.T.	Screw	8.75	7.96	7.29	6.73



D Series



Dimensions same for all models

Curvette Snap-In Switches

Slow-make and break action. .250 quick connect terminals. 16 amps 125 VAC — 10 amps 250 VAC, 10(4) amps — 250 W. CSA and VDE certified. Rated life 50 M cycles at rated load. Also features our unique visi-rocker—two-color molded curved rocker for low cost "ON" indication.

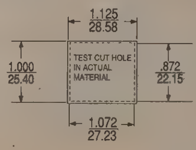
Stock No.	Mfr.'s Type	Switch Action	Rocker Color	EACH 1-24	25-49	50-99	100-249
683-0112	RA911-RB-B-O-N	S.P.S.T ON-NONE-OFF	Black	1.02	.93	.85	.78
683-0113	RA911-VB-B-O-V	S.P.S.T ON-NONE-OFF	Visi-Rocker*	1.16	1.06	.97	.90
683-0114	RA911-VB-B-1-V	S.P.D.T ON-NONE-OFF	Visi-Rocker* with on-off imprint	1.18	1.08	.99	.91
683-0115	RB911-RB-B-O-N	S.P.D.T ON-NONE-ON	Black	1.49	1.35	1.24	1.15
683-0116	RC911-RB-B-O-N	S.P.D.T ON-OFF-ON	Black	1.41	1.28	1.17	1.08
683-0117	LRA911-RS-B/125	S.P.S.T ON-NONE-OFF Lighted	Red	1.98	1.80	1.65	1.52

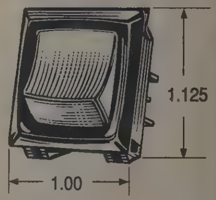
*Curvette Visi-Rocker has a second color molded-in for attractive low cost "ON" indication.

SC High Inrush Curvette Snap-In Switches

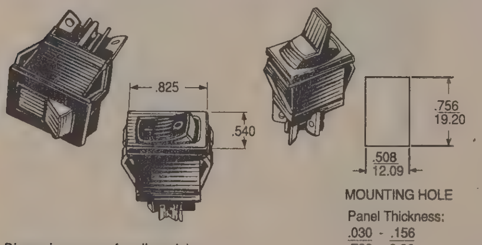
Designed to handle current surges over 100 amps. CSA certified for 20 amps 125 VAC — 15 amps 250 VAC.

Stock No.	Mfr.'s Type	Switch Action	Rocker Color	EACH 1-24	25-49	50-99	100-249
683-0118	RSCA711-RB-B-O-N	S.P.S.T ON-NONE-OFF	Black	1.63	1.48	1.36	1.26
683-0119	RGSCC711-RB-B-O-N	S.P.S.T ON-NONE-OFF	Black	2.00	1.82	1.67	1.54
683-0120	LRGSCK221-RS-B-O/125N	D.P.S.T ON-NONE-OFF Lighted	Red	3.33	3.02	2.77	2.56





RGS/LRGS



Dimensions same for all models

Miniature Curvette Snap-In Switches

These double insulated miniature switches offer self-cleaning wiping action. Contact system rated at 4 amps 250 VAC — 8 amps 125 VAC, 6(4) amps 250 VAC. CSA and VDE certified. Also features our unique Visi-Rocker two molded curved rocker for low cost "ON" indication.

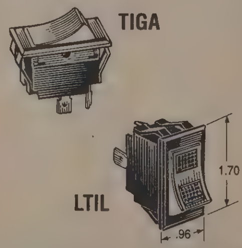
Stock No.	Mfr.'s Type	Switch Action	Terminals	Rocker Color	EACH 1-24	25-49	50-99	100-249
683-0121	62111421-0-0-N	S.P.D.T ON-NONE-ON	Solder	Black	1.08	.98	.90	.83
683-0122	62112421-0-0-N	D.P.D.T ON-NONE-ON	Solder	Black	1.33	1.21	1.11	1.02
683-0123	62116316-0-0-N	S.P.S.T ON-NONE-OFF	Solder	Black	1.16	1.06	.97	.89
683-0124	62115929-0-0-V*	D.P.S.T ON-NONE-OFF	.187 Tabs	Visi-Rocker	3.26	2.97	2.51	2.33
683-0125	62116919-0-9-V*	S.P.S.T ON-NONE-OFF	.187 Tabs	Visi-Rocker with 0-1 Mtg.	1.24	1.13	1.04	.96

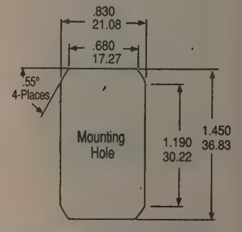
*Curvette Visi-Rocker has a second color molded-in for attractive low cost "ON" indication.

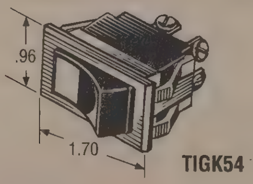
Heavy Duty Rocker Switches

These full-size rocker switches are designed for AC and low voltage DC applications. They include a slow make, slow break contact mechanism, nylon snap-in brackets and are available to resolve most insulation requirements. They are rated at 15 amps 125 VAC, 28 VDC, 10 amps 250 VAC 3/4 H.P. CSA certified.

Stock No.	Mfr.'s Type	Switch Action	Terminals	Rocker Color	EACH 1-24	25-49	50-99	100-249
683-0126	TIGA50-6S-BL-NBL	S.P.S.T ON-NONE-OFF	Solder	Black	5.94	5.40	4.57	4.24
683-0127	TIGK50-6S-BL-NBL	D.P.S.T ON-NONE-OFF	Solder	Black	3.67	3.34	3.06	2.82
683-0128	LTILA50-6S-BL-RC-NBL	S.P.S.T ON-NONE-OFF	Solder	Black with Red Light	3.43	3.12	2.86	2.64







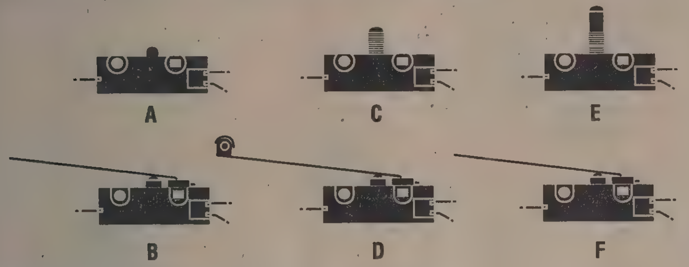
TIGK54

Drip Dry Rocker Switches

We have modified the tippette switches above to provide front panel dust and moisture protection with built in seal feature.

Stock No.	Mfr.'s Type	Switch Action	Terminals	Rocker Color	EACH 1-24	25-49	50-99	100-249
683-0129	TIGA54-6S-BL-WBL	S.P.S.T ON-NONE-OFF	Screw	Black	7.32	6.66	6.10	5.63
683-0130	TIGK54-6S-BL-WBL	D.P.S.T ON-NONE-OFF	Screw	Black	4.55	4.14	3.79	3.50

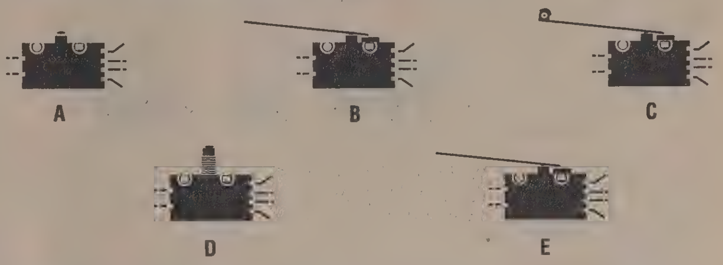
General Purpose Single Pole — E Series



Ratings: E13 — 15 amps 125/250 VAC. $\frac{3}{4}$ H.P., 125 VAC-1$\frac{1}{2}$ H.P., 250 VAC; E14 — 25 amps 125/250 VAC. 1 H.P., 125 VAC-2 H.P., 250 VAC.

Stock No.	Mfr.'s Type	Fig.	Operating Force (max. gms.)	Actuator Length/Description Dimension in Inches	EACH
					1-99
908-1435	E13-00E	A	425	Button	**3.02**
908-1440	E13-00H	B	100	1.500 Actuator std. ratio	**4.06**
908-1445	E13-00J	C	425	Plastic button ferrule mount	**2.37**
908-1450	E13-00K	D	100	1.391 Roller std. ratio	**4.96**
908-1455	E13-00M	E	425	Metal button ferrule mount	**4.24**
908-1460	E13-50H	F	65	1.750 Actuator high ratio	**4.06**

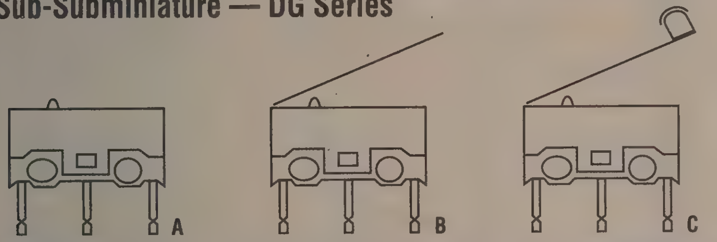
General Purpose Double Pole — E Series



Ratings: E19 — 15 amps 125/250 VAC. $\frac{3}{4}$ H.P., 125 VAC-1$\frac{1}{2}$ H.P., 250 VAC; E20 — 25 amps 125/250 VAC. 1 H.P., 125 VAC-2 H.P., 250 VAC.

Stock No.	Mfr.'s Type	Fig.	Operating Force (max. gms.)	Actuator Length/Description Dimension in Inches	EACH
					1-99
908-1465	E19-00A	A	850	Button	**6.18**
908-1470	E19-00H	B	205	1.500 Actuator std. ratio	**7.32**
908-1475	E19-00M	D	850	Metal button ferrule mount	**7.45**
908-1480	E19-50H	E	130	1.750 Actuator high ratio	**7.32**
908-1485	E20-00A	A	1280	Button	**9.28**
908-1490	E20-00K	C	425	.652 Roller std. ratio	**11.24**

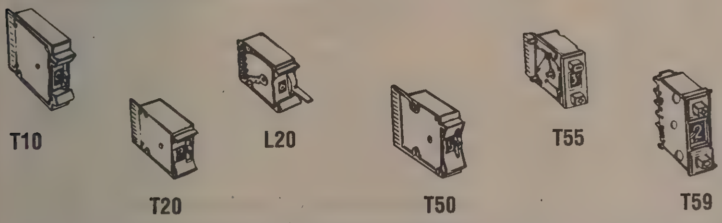
Sub-Subminiature — DG Series



Compact size: .504" long × .255" high × .228" wide. Gold or silver contacts. **Insertion Molded Terminals:** Printed circuit mountable. Wave solderable. Automatic assembly insures consistent quality. DG1 rated 3 amps at 125 VAC; 2 amps at 30 VDC. DG2 rated 50 mA at 30 VDC.

Stock No.	Mfr.'s Type	Fig.	Operating Force (max. gms.)	Current	Actuator	Actuator Length	EACH
							1-99
908-1495	DG1C-B1AA	A	140	2A	Button	—	**3.98**
908-1500	DG1C-B1LA	B	45	2A	Lever	.169	**4.10**
908-1505	DG1C-B1RA	C	45	2A	Roller	.075	**4.28**
908-1510	DG2C-B1AA	A	140	50mA	Button	—	**4.28**
908-1520	DG2C-B1RA	C	45	50mA	Roller	.075	**4.57**

Levers and Thumbwheels

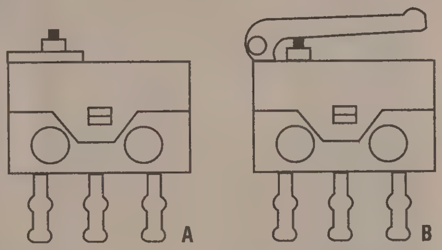


L series leverwheel switches and T series thumbwheel switches are rated 28 V @ 0.125 amp, 3 amps carrying current, except T50 units rated 50 V @ 0.125 amp, 3 amps carrying current. **Contact Resistance:** 0.1 ohm max. **Insulation Resistance:** 1000 Mohms. **Dielectric Strength:** 50, 55, 56, 57, 59, 65, 75 series — 500 VAC; 10, 11, 20 series — 1000 VAC. Mounting hardware is required to hold the switch modules together. Switches are available in gloss black finish (suffix "A") or matte black finish (suffix "M"). Switches available in backmount — L10, L20, T10, T20, T50, T57 and front mount L11, T11, T55, T56, T65, T25 and T59.

Stock No.	Mfr.'s Type	Output Code	Positions	Readout	EACH
					1-99
908-1550	T10-52A	BCD W/Ext board for diodes	10	0-9	**17.38**
908-1565	T20-02A	BCD	10	0-9	**11.65**
908-1570	T20-02M	BCD	10	0-9	**12.14**
908-1575	T20-04A	BCD and Comp 1 Common	10	0-9	**15.99**
908-1580	T20-52A	BCD W/Ext board for diodes	10	0-9	**14.59**
908-1585	L20-02A	BCD	10	0-9	**14.59**
908-1590	L20-52A	BCD W/Ext board for diodes	10	0-9	**16.79**
908-1595	L20-02M	BCD	10	0-9	**15.34**
908-1610	T55-02M	BCD	10	0-9	**11.75**
908-1615	T56-02M	BCD	10	0-9	**12.97**
908-1620	T59-02M	BCD	10	0-9	**5.79**

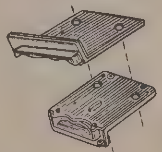
Ultra-Subminiature — DH Series

Ultra miniature for dramatic space savings. Just .322" wide ×.244" high × .106" deep. **Lightweight:** 0.3 grams. Designed for low energy applications. Choice of button or lever actuator. **Insertion Molded Terminals:** Printed circuit mountable. Wave solderable. Automatic assembly insures consistent quality.



Stock No.	Mfr.'s Type	Fig.	Operating Force (max. gms.)	Current	Actuator	Actuator Length	EACH
							1-99
908-1525	DH1C-B1AA	A	90	500mA	Button	—	**5.47**
908-1530	DH1C-B1PA	B	50	500mA	Lever	—	**5.59**
908-1535	DH2C-B1AA	A	90	50mA	Button	—	**5.77**
908-1540	DH2C-B1PA	B	50	50mA	Lever	—	**5.59**

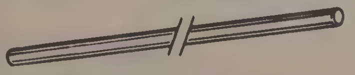
End Caps



Order 1 left and 1 right end cap per assembly

Stock No.	Mfr.'s Type	Fits Model	Description	EACH
				1-99
908-1625	009-0498	T10/L10	Left Gloss	**.41**
908-1630	009-0499	T10/L10	Right Gloss	**.41**
908-1665	009-1034	T20/L20	L/R Gloss	**.41**
908-1670	009-1153	T20/L20	L/R Matte	**.41**
908-1680	609-0801	T55	Left Matte	**.41**

Stock No.	Mfr.'s Type	Fits Model	Description	EACH
				1-99
908-1685	609-0799	T55	Right Matte	**.41**
908-1690	609-0754	T56	Left Matte	**.41**
908-1695	609-0756	T56	Right Matte	**.41**
908-1700	609-1346	T59	Left Matte	**.41**
908-1705	609-1347	T59	Right Matte	**.41**



Rods

Order Two Rods Per Assembly

Stock No.	Mfr.'s Type	Fits Model	Description	EACH
				1-99
908-1710	12-0147	T/L 10	1 Module	**.25**
908-1715	12-0148	T/L 10	2 Module	**.25**
908-1720	12-0149	T/L 10	3 Module	**.25**
908-1725	12-0150	T/L 10	4 Module	**.25**

Stock No.	Mfr.'s Type	Fits Model	Description	EACH
				1-99
908-1730	12-0340	T20/L20	1 Module	**.16**
908-1735	12-0341	T20/L20	2 Module	**.16**
908-1740	12-0342	T20/L20	3 Module	**.16**
908-1745	12-0343	T20/L20	4 Module	**.16**

Fasteners

Order Four Fasteners Per Assembly

Stop Pins

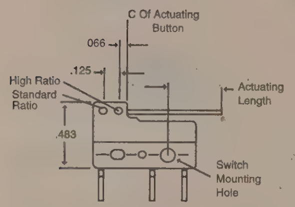
908-1770. 12-0744. For Series L20/T20. **1-99** ....EACH **.04**

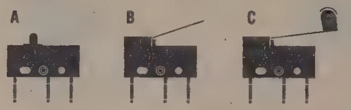
908-1775. 12-0093. For Series T10/L10. **1-99** ....EACH **.05**

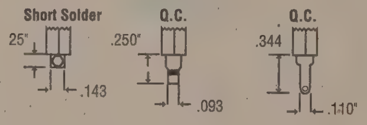
908-1780. 607-0011. For Series T20. **1-99** ....EACH **.07**

Subminiature

E Series







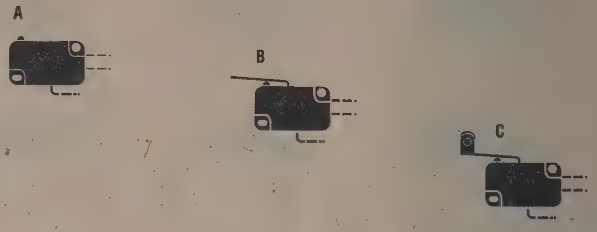
► **UL Recognized and CSA Certified**

Ratings: E61 — 5 amps 125/250 VAC; E62 — 10.1 amps 125/250 VAC ¼ H.P; 125 VAC; E63 — 0.1 amps 125 VAC. Gold Crosspoint Contacts. **Actuators.** Many special forms and lengths of actuators are available. Standard type integral hinged lever and roller actuators are available in choice of 2 pivot positions. Actuator lengths are dimensioned from centerline of switch mounting hole as shown. **Terminals.** Subminiature series available in three standard terminal types.

Stock No.	Mfr.'s Type	"DA" Series Equivalent	Fig.	Terminal	Circuitry	Operating Force (Max. gms.)	Actuator Length/ Description Dimension in Inches	EACH
								1-99
908-1265	E61-00A	—	A	.093 QC	SPDT	90	Button	**4.16**
908-1270	E61-00H	—	B	.093 QC	SPDT	27	.271 Actuator std. ratio	**4.90**
908-1275	E61-00K	—	C	.093 QC	SPDT	30	.201 Roller std. ratio	**3.96**
908-1280	E61-10A	—	A	SS	SPDT	90	Button	**4.16**
908-1285	E61-10H	—	B	SS	SPDT	27	.271 Actuator std. ratio	**4.90**
908-1290	E61-10K	—	C	SS	SPDT	30	.201 Roller std. ratio	**5.55**
908-1295	E61-50H	—	B	.093 QC	SPDT	9	.396 Actuator high ratio	**4.90**
908-1305	E61-60H	—	B	SS	SPDT	9	.396 Actuator high ratio	**4.90**
908-1310	E62-00A	—	A	.093 QC	SPDT	212	Button	**4.16**
908-1315	E62-00H	—	B	.093 QC	SPDT	56	.271 Actuator std. ratio	**4.90**
908-1320	E62-00K	—	C	.093 QC	SPDT	65	.201 Roller std. ratio	**5.55**
908-1325	E62-10A	—	A	SS	SPDT	212	Button	**4.16**
908-1330	E62-10H	—	B	SS	SPDT	56	.271 Actuator std. ratio	**4.90**
908-1335	E62-10K	—	C	SS	SPDT	65	.201 Roller std. ratio	**5.55**
908-1345	E62-60H	—	B	SS	SPDT	20	.396 Actuator high ratio	**4.90**
908-1355	E63-00H	DA3C-F1LB	B	.093 QC	SPDT	27	.271 Actuator std. ratio	**7.85**
908-1360	E63-00K	DA3C-F1RB	C	.093 QC	SPDT	30	.201 Roller std. ratio	**8.51**
908-1365	E63-10K	DA3C-D1RB	C	SS	SPDT	30	.201 Roller std. ratio	**8.51**
908-1370	E63-30A	DA3C-B1AA	A	.110 QC	SPDT	90	Button	**7.16**

Miniature Light and Standard Force

D4 Series/E Series



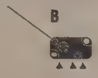
D4 Series — International; E Series — General purpose. **Ratings:** E21, D41 — 0.1 amps 125 VAC Gold Crosspoint Contacts; E22, D42 — 3 amps 125/250 VAC; E23, D43 — 5 amps, 1/4 H.P., 125/250 VAC; E33, D44 — 10 amps, 1/2 H.P., 125/250 VAC; E34, D45 — 15 amps, 1/2 H.P., 125/250 VAC. All listed are SPDT type.

Mfr.'s Type	"DA" Series Equivalent	Fig.	Terminal	Operating Force (Max. gms.)	Actuator Length/ Description Dimension in Inches	E Series		D4 Series	
						Stock No.	EACH 1-99	Stock No.	EACH 1-99
E21-50H	—	B	QC	35	1.400 Actuator std. ratio	**908-1025**	**4.24**	—	—
E21-50K	—	C	QC	35	1.340 Roller std. ratio	**908-1030**	**4.61**	—	—
E22-00AX	D42L-R1AA	A	QC	15	Button	**908-1055**	**3.61**	**908-1060**	**3.20**
E22-00K	—	C	QC	75	.810 Roller std. ratio	**908-1065**	**4.65**	—	—
E22-50HX	—	B	QC	8	1.400 Actuator std. ratio	**908-1075**	**4.10**	—	—
E22-50K	—	C	QC	35	1.340 Roller std. ratio	**908-1080**	**4.12**	—	—
E22-55HX	—	B	QC	4	2.757 Actuator std. ratio	**908-1085**	**4.10**	—	—
E22-85HX	D42L-R1XL	B	QC	2	2.932 Actuator high ratio	**908-1090**	**6.22**	**908-1095**	**3.61**
E23-00A	D43C-R1AA	A	QC	170	Button	**908-1100**	**3.57**	**908-1105**	**2.69**
E23-00K	—	C	QC	170	.810 Roller std. ratio	**908-1110**	**4.08**	—	—
E23-50K	—	C	QC	86	1.340 Roller std. ratio	**908-1120**	**4.08**	—	—
E23-85HX	D43L-R1ML	B	QC	6	2.932 Actuator high ratio	**908-1125**	**4.06**	**908-1790**	**3.57**
E33-00AX	D44L-R1AA	A	QC	75	Button	**908-1135**	**3.57**	**908-1140**	**3.16**
E33-00K	D44C-R1RA	C	QC	285	.810 Roller std. ratio	**908-1145**	**4.08**	**908-1150**	**3.59**
E33-20K	—	C	Solder	285	.810 Roller std. ratio	**908-1155**	**4.08**	—	—
E33-50H	—	B	QC	144	1.400 Actuator std. ratio	**908-1160**	**3.49**	—	—
E33-50K	—	C	QC	144	1.340 Roller std. ratio	**908-1165**	**4.08**	—	—
E33-55HX	—	B	QC	17	2.757 Actuator std. ratio	**908-1170**	**4.06**	—	—
E33-85HX	D44L-R1ML	B	QC	10	2.932 Actuator high ratio	**908-1180**	**4.06**	**908-1185**	**3.57**
E34-00A	D45C-R1AA	A	QC	400	Button	**908-1190**	**3.04**	**908-1195**	**2.69**
E34-00K	—	C	QC	400	.810 Roller std. ratio	**908-1200**	**4.08**	—	—
E34-50H	—	B	QC	200	1.400 Actuator std. ratio	**908-1205**	**5.79**	—	—

Low Torque

E Series

E51-00B, E51-00R



E51-00E, E51-00T

► **UL Recognized and CSA Certified; VDE Approved**

Actuators. Wireform actuators are supplied unassembled for each switch. Wireforms may be readily assembled to switch rotor as shown. **Ratings: E51** — 6 amps 250 VAC.

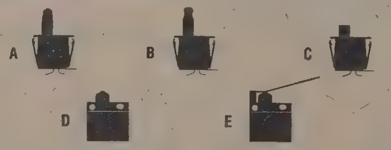
E51-50B

E51-60B

E51-60E

Stock No.	Mfr.'s Type	Fig.	Rotation	Circuitry	Terminal Description Dimension in Inches	EACH
						1-99
908-1220	E51-00B	A	Clockwise	SPDT	Std. parallel QC (.205" × .032")	**9.42**
908-1225	E51-00E	B	Counter Clockwise	SPDT	Std. parallel QC (.205" × .032")	**9.42**
908-1230	E51-00R	A	Clockwise	SPDT	Std. parallel QC (.187" × .020")	**9.42**
908-1235	E51-00T	B	Counter Clockwise	SPDT	Std. parallel QC (.187" × .020")	**9.42**
908-1240	E51-50B	C	Clockwise	SPDT	Vertical twist QC (.205" × .032")	**9.42**
908-1255	E51-60B	D	Clockwise	SPDT	Vertical straight QC (.205" × .032")	**9.42**
908-1260	E51-60E	E	Counter Clockwise	SPDT	Vertical straight QC (.205" × .032")	**9.42**

Panel Mount Pushbutton Single Pole and Weatherproof



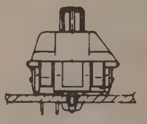
Ratings: E68 — 0.1 amps 125 VAC, Gold Crosspoint Contacts; E69 — 10 amps 125/250 VAC; E72 — 10.1 amps, 1/4 H.P — 125/250 VAC, 1/3 H.P — 125/250 VAC; E79 — 10 amps 125/250 VAC, 1/3 H.P., 125/250 VAC.

Stock No.	Mfr.'s Type	Fig.	Terminal	Circuitry	Operating Force (Max. gms.)	Description	EACH
							1-99
908-1375	E68-00A	A	.187 QC	SPDT	425	Basic momentary action	**6.65**
908-1380	E68-30A	B	.187 QC	SPDT	425/285	Momentary "Cheat interlock"	**7.85**
908-1385	E69-00A	A	.187 QC	SPDT	425	Basic momentary action	**3.92**
908-1390	E69-30A	B	.187 QC	SPDT	425/285	Momentary "Cheat interlock"	**5.24**
908-1395	E69-40A	C	.187 QC	SPDT	425	Short button momentary	**3.92**
908-1400	E79-00A	A	.187 QC	DPDT	680	Basic momentary action	**6.59**
908-1405	E79-30A	B	.187 QC	DPDT	757/567	Momentary "Cheat interlock"	**8.65**
908-1410	E72-40A*	D	10" 16 Gage	SPDT	300	Button	**12.14**
908-1415	E72-40H*	E	10" 16 Gage	SPDT	67	.858 Actuator	**12.97**

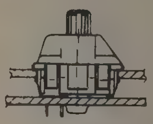
*Weatherproof.

Keyboard Switches Low Profile DIN-Compatible

Series MX



PCB Mount

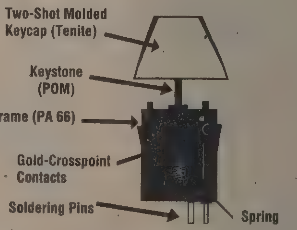


Face Plate Mount

Electrical Specifications. Contact Rating: 10 ma max. **Voltage:** 12 V max. **AC/DC Current:** 10 ma max. **Initial Contact Resist:** 200 mΩ (typical 25 mΩ). **Life:** 5 V/1 ma; (50 million operation).

908-1420. MX1A-11NN. Std. force, linear, face place mount. **1-99....EACH 1.20**
908-1425. MX1A-11NW. Std. force, linear, PCB mount. **1-99............EACH 1.20**

Gold "Crosspoint" Contact

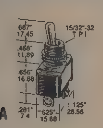


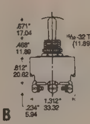
Electrical Specifications. Contact Rating: 125 max/28 V. **Voltage:** 28 V AC/DC. **Current:** 125 ma. **Initial Contact Resist.:** 200 mΩ max. **Life:** Momentary >20 million. Alt-Action > than 5 million.

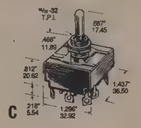
Mechanical Specifications. Pretravel: (2.4 ±.8 mm). **Total Travel:** (4 mm). **Operating Force:** 2.5 oz. typical (70 grams). **Feel:** Linear — positive stop. **Mounting:** Cover plate only.

908-1430. M73-0120. T-stem 0 degree momentary (SPST). **1-99.....EACH 3.24**

Bat Lever Switches


A


B


C

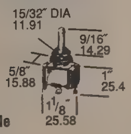
General Purpose AC Only Bat Lever Switches

Designed to provide high interrupting capacity in a small phenolic base. Contacts are silver plated. 3/4 HP, 15/32" slotted sleeve length. UL Recognized.

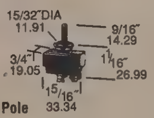
Stock No.	Mfr.'s Type	Circuit	Action	Term. Type	Fig.	Amps 125 VAC	Amps 250 V	EACH 1-24	EACH 25-49	EACH 50-99
717-0520	7802K31	SPST	On-None-Off	Screw	A	20	10	**3.07**	**2.66**	**2.18**
717-0521	7802K11	SPST	On-None-Off	Solder Lug	A	20	10	**2.74**	**2.34**	**1.95**
717-0600	7802K21	SPST	On-None-Off	.250 Quick Conn.	A	20	10	**2.64**	**2.26**	**1.88**
717-0528	7802K32	SPDT	On-Off-On	Screw	A	20	10	**3.83**	**3.29**	**2.70**
717-0530	7802K33	SPDT	On-None-On	Screw	A	20	10	**3.57**	**3.08**	**2.54**
717-0601	7802K37	SPDT	On*-Off-On*	Screw	A	20	10	**5.92**	**5.46**	**4.55**
717-0602	7803K31	DPST	On-None-Off	Screw	B	20	10	**4.68**	**4.03**	**3.33**
717-0539	7803K11	DPST	On-None-Off	Solder Lug	B	20	10	**4.13**	**3.55**	**2.92**
717-0540	7803K32	DPDT	On-Off-On	Screw	B	20	10	**5.56**	**5.13**	**4.28**
717-0542	7803K12	DPDT	On-Off-On	Solder Lug	B	20	10	**4.68**	**4.03**	**3.33**
717-0544	7803K33	DPDT	On-None-On	Screw	B	20	10	**5.57**	**5.13**	**4.31**
717-0546	7803K13	DPDT	On-None-On	Solder Lug	B	20	10	**4.68**	**4.03**	**3.33**
717-0603	7803K37	DPDT	On*-Off-On*	Screw	B	20	10	**8.86**	**8.18**	**6.81**
717-0605	7804K32	3PDT	On-Off-On	Screw	C	20	10	**11.33**	**10.45**	**8.72**
717-0608	7805K33	4PDT	On-None-On	Screw	C	20	10	**14.74**	**13.61**	**11.35**

*Momentary.

AC Rated Toggle Switches



Single Pole



Double Pole

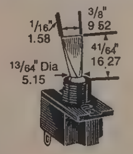
Single Pole

Stock No.	Mfr.'s Type	Circuit	Amps @ 125 V	Amps @ 250 V	HP @ 250 VAC	Terminals	EACH 1-24	EACH 25-49
757-4885	7580K4	On-Off	6	3	—	Screw	**2.34**	**2.02**
757-4888	7580K7	On-Off	6	3	—	Solder	**2.22**	**1.93**
757-4887	7580K6	On-Off	6	3	—	Solder	**2.13**	**1.85**
757-4001	7500K14	On-Off	15	10	3/4	Screw	**2.51**	**2.16**
757-4021	7501K13	On-Off	15	10	3/4	Solder	**2.24**	**1.92**
757-4022	7501K15	On-Off	15	10	3/4	.250 Spade	**2.33**	**2.00**
757-4201	7504K4	On-On	15	10	3/4	Screw	**3.09**	**2.67**
757-4070	7502K13	On-Off-On	15	10	3/4	Screw	**3.20**	**2.77**
757-4270	7509K5*	On-Off-On	—	10	1/2	Screw	**4.25**	**3.84**

Double Pole

Stock No.	Mfr.'s Type	Circuit	Amps @ 125 V	Amps @ 250 V	HP @ 250 VAC	Terminals	EACH 1-24	EACH 25-49
757-4940	7590K4	On-Off	6	3	—	Screw	**3.63**	**3.13**
757-4942	7590K6	On-Off	6	3	—	Solder	**3.24**	**2.80**
757-4500	7560K5	On-Off	15	10	3/4	Screw	**4.07**	**3.50**
757-4560	7561K4	On-Off	15	10	3/4	Solder	**3.42**	**2.96**
757-5006	7592K6	On-On	6	3	—	Solder	**3.53**	**3.05**
757-4760	7564K6	On-On	15	10	3/4	Screw	**6.94**	**5.53**
757-4805	7565K5	On-On	15	10	3/4	Solder	**4.23**	**3.64**
757-4807	7565K7	On-On	15	10	3/4	.250 Spade	**4.23**	**3.64**
757-4970	7591K4	On-Off-On	6	3	—	Screw	**4.43**	**3.82**
757-4590	7562K4	On-Off-On	15	10	3/4	Screw	**4.94**	**4.47**
757-4720	7563K4	On-Off-On	15	10	3/4	Solder	**4.23**	**3.64**

AC-DC Designer Line Toggle Switches



The lever and bushing on these switches are constructed of durable, high-strength thermo plastic. Lever color is black. Double insulated, quick-make, quick-break contact mechanism. Nylon bushing 15/32" dia. 11/32" long. Solder lug terminals. UL/CSA listed.

On-On Circuit

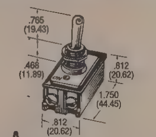
Stock No.	Mfr.'s Type	Amps 125 V	Amps 250 V	EACH 1-24	EACH 25-49
757-6520	8282K127C†	3 A	1 A	**3.83**	**3.28**
757-6940	8373K127C‡	6 A	3 A	**5.34**	**4.91**

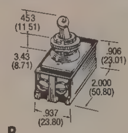
On-Off Circuit

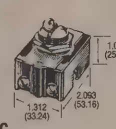
Stock No.	Mfr.'s Type	Amps 125 V	Amps 250 V	EACH 1-24	EACH 25-49
757-7070	8381K127C†	6 A	3 A	**3.18**	**2.73**
757-6880	8370K127C‡	6 A	3 A	**4.88**	**4.42**

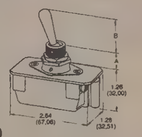
†Single pole. ‡Double pole.

Medium and Heavy Duty Toggle Switches (AC/DC)


A


B


C

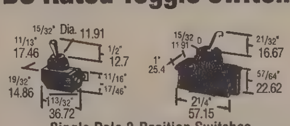

D

These switches have contacts with a quick-make/quick-break wiping action. The three-position switches offer a unique positive center stop feature, which assures that the lever cannot be thrown from one side through the center "Off" position without stopping. This design feature is a major factor in the widespread acceptance of these switches for motor reversing and speed control applications. Copper and bronze contacts are standard, as well as brass screw terminals.

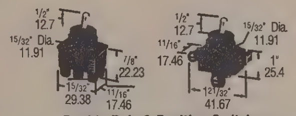
Stock No.	Mfr.'s Type	Circuit	Fig.	Amps 125 V	Amps 250 V	EACH 1-24	EACH 25-49	EACH 50-99
757-3751*	7321K3	SPST	A	12 A	6 A (1 HP)	**4.54**	**4.19**	**3.50**
717-0710*	7320K3	DPST	A	16 A	8 A (1 HP)	**4.42**	**3.97**	**3.29**
717-0720*	7360K8	DPST	B	20 A	10 A (1.5 HP)	**5.71**	**5.26**	**4.39**
717-0725**	7402K5	DPST	C	20 A	20 A (2 HP)	**11.91**	**10.99**	**9.16**
717-0730*	7402K4	DPST	D	20 A	20 A (2 HP)	**10.18**	**9.40**	**7.84**
717-0745†	7814K2	DPDT	C	14 A	7 A (3/4 HP)	**87.31**	**52.38**	**43.63**

Action: *Off-On (Bat); **Off-On (Ball); †On-Off-On.

AC-DC Rated Toggle Switches



Single Pole 2-Position Switches



Double Pole 2-Position Switches

Quick-make, quick-break contact with wiping action. Arc-resistant. 15/32" diameter bushing; mounting hardware included. UL and CSA listed. All have 11/32" bushing length, except (†) have 15/32". **Weight:** 2 oz.

Single Pole 2-Position Switches

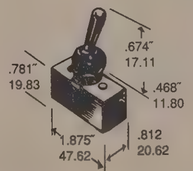
Stock No.	Mfr.'s Type	Circuit	Amps @ 125 V	Amps @ 250 V	HP @ 250 V AC	HP @ 250 V DC	Terminals	EACH 1-24	EACH 25-49
757-6302	8280K115	On-Off	—	3	—	—	Solder	**2.50**	**2.16**
757-6555	8295K107	On-Off	—	3	—	—	Screw	**3.52**	**3.02**
757-7040	8381K107	On-Off	6	3	—	—	Solder	**2.87**	**2.47**
757-7097	8396K108†	On-Off	6	3	—	—	Screw	**3.04**	**2.61**
757-7096	8396K107	On-Off	6	3	—	—	Screw	**3.17**	**2.72**
757-3751	7321K3†	On-Off	16	8	*	*	Screw	**4.54**	**4.19**
757-3770	7361K5†	On-Off	20	10	1	1 1/2	Screw	**6.09**	**5.62**

Double Pole 2-Position Switches

Stock No.	Mfr.'s Type	Circuit	Amps @ 125 V AC-DC	Amps @ 250 V DC	HP @ 250 V AC	HP @ 250 V DC	Terminals	EACH 1-24	EACH 25-49
757-6840	8370K107†	On-Off	6	3	—	—	Solder	**4.49**	**4.05**
757-6895	8372K107†	On-Off	6	3	—	—	Screw	**5.46**	**5.02**
757-3720	7320K2	On-Off	16	8	*	*	Screw	**4.55**	**4.10**
757-3760	7360K7	On-Off	20	10	1 1/2	1 1/2	Screw	**5.88**	**5.41**
757-6910	8373K107†	On-On	6	3	—	—	Solder	**5.12**	**4.75**

*Rated 1 HP @ 125 VAC and DC.

VDE Approved Toggle Switch



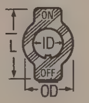
One hole mounting with quick-make, quick-break contact. Wiping contact action. Mounting hardware consisting of hexagon locknut and knurled facenut comes unassembled. **Threaded Bushing:** 0.0468" 32. **Keyway:** 0.068 × 0.039" (1.7 × 0.9 mm). **Ratings:** Amps (AC and DC) — 125 V, 16 A; 250 V, 8 A VDE; Hp at 125 V — AC, 1 hp; DC, 1 hp. DPST, On-Off circuit.

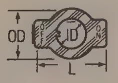
Stock No.	Mfr.'s Type	Terminal	EACH 1-24	EACH 25-49	EACH 50-99	EACH 100-249
757-3725	7320K55	Screw	**4.62**	**4.16**	**3.20**	**2.97**

Switch Hardware

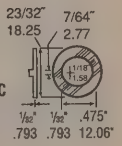
- **For 15/32" Diameter Bushing Switches**
- **Locking Ring; Keyway Switch Plates**

For 15/32" diameter bushing toggle switches. Types 30-5632-4 and 30-5632-13 are keyway switch plates. **Material:** .032" steel. Burnished nickel. Type 29-761 is a locking ring of zinc plated steel. **Average Shipping Weight:** 8 oz.

A


B


L=1"
OD=5/8"
ID=.470

C


Single Pole

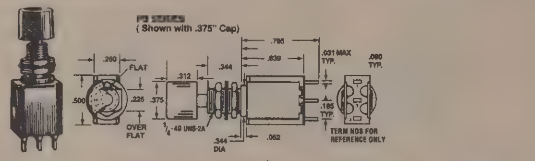
Stock No.	Mfr.'s Type	Fig.	EACH 1-24	EACH 25-49
757-2813	30-5632-4	A	**.14**	**.12**
757-2816	30-5632-13	B	**.14**	**.12**

Locking Ring With Washer — Fig. C

757-2229. Type 29-761. **1-4** ....**PER PKG./100 10.00**

PB Series Pushbutton Switches

Maintained and Momentary



Panel mount. PB series with 3 cap sizes and colors, sold separately. See table below. **Specifications. Contact Rating:** 6 A at 125 VAC; 3 A at 250 VAC; 6 A at 28 VDC, resistive (UL listed). 100,000 make-and-break cycles for maintained models; 60,000 for momentary, resistive load only. Coin silver contacts. Solder lugs. Other terminals styles available upon request.

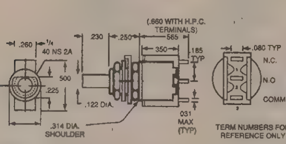
Stock No.	Mfr.'s Type	Circuit (Momentary)	EACH		
			1-24	25-99	100-249
757-0780	PB-12300ZQ	SPDT On/On	4.39	3.99	3.37
757-0781	PB-12600ZQ	SPDT On/(On)	4.63	4.21	3.56

Caps For Above

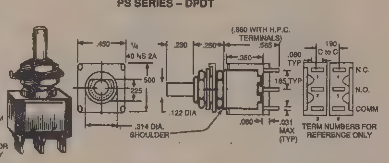
757-0784. W-KN-14. Black. .375 diameter	EACH .25
757-0785. W-KN-14A. White. .375 diameter	EACH .37
757-0786. W-KN-14B. Red. .375 diameter.	EACH .31
757-0789. W-KN-12B. Red. .200 diameter	EACH .25
757-0900. W-KN-31. Black. .310 diameter	EACH .29
757-0901. W-KN-31A. White. .310 diameter	EACH .39
757-0902. W-KN-31B. Red. .310 diameter	EACH .29

Momentary Snap Action

PS SERIES – SPDT



PS SERIES – DPDT



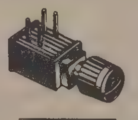
Specifications. Contact Rating: 5 A resistive (1 pole), 1 A resistive (2 pole) at 125 VAC or 28 VDC (UL listed) or 0.4 Volt-amp (VA) maximum at 28 V max. (AC or DC). 60,000 cycles minimum at full load resistive. **Center and End Contact:** 1 and 5 A, brass, silver inlay and gold flash for solderability. .4 VA–brass, 50 millionth gold plated over nickel. Epoxy seal is standard. Caps sold separately.

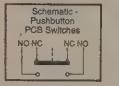
Stock No.	Mfr.'s Type	Terminal/ Rating	Circuit	EACH		
				1-24	25-99	100-249
757-0790	PS1-100Q	S.L. 5 A	SPDT	5.12	4.66	3.94
757-0793	PS2-100B	PC .4 VA	SPDT	4.18	3.80	3.22
757-0794	PS1-200Q	S.L. 1 A	DPDT	7.18	6.53	5.52
757-0795	PS2-200Q	PC 1A	DPDT	7.65	6.95	5.88
757-0796	PS1-200B	S.L. .4 VA	DPDT	5.16	4.69	3.97

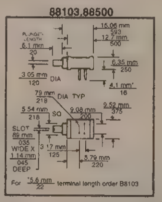
Caps For Above

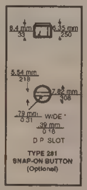
757-0800. W-KN-16B. Red. .200 diameter	EACH .31
757-0804. W-KN-18. Black. .450 sq. diameter	EACH .37
757-0805. W-KN-18A. White. .450 sq. diameter	EACH .37
757-0806. W-KN-18B. Red. .450 sq. diameter	EACH .37

PCB Subminiature Pushbutton Switch







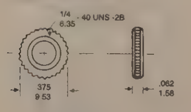


"Crossed Wire" contact system eliminates bounce. High contact pressure gives low contact resistance. Drain holes permit complete flux washdown. Solid silver contacts with gold over nickel plate. Momentary or Latch-Down (depress plunger and rotate 30° clockwise) operation. **Current Ratings:** 1 A at 6 VDC and 12 VDC; 0.5 A at 28 VAC and 125 VAC. 2 circuit poles and throw. Right Angle PC mounting. **Note:** Optional snap-on buttons should be ordered separately.

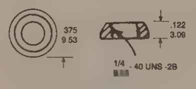
Stock No.	Mfr.'s Type	Terminal Length (In.)	EACH		
			1-24	25-49	50-99
757-0100	B8500	.160 (4.1mm)	2.96	2.69	2.28

Stock No.	Mfr.'s Type	Description	EACH		
			1-24	25-49	50-99
757-0281	P281R	Red Snap-On Button	.25	.21	.19
757-0282	P281B	Black Snap-On Button	.25	.21	.19

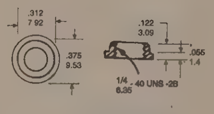
Dress Nuts



W-NU-31A



W-NU-17A

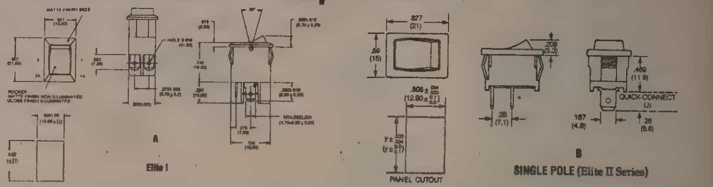


W-NU-18A

For Toggle Switches with 1/4-40-2 A Bushings.

757-9912. W-NU-31A. Knurled	EACH .29
757-9917. W-NU-17A. Knurled	EACH .14
757-9918. W-NU-18A. Beveled with Flats.	EACH .33

Elite Series Miniature Snap-In Rockers

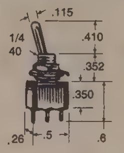


The Elite I Mini Rocker Switch Series is ideal for use in electronic instrumentation, data processing, communications, appliances, medical equipment, and any application within specifications. Lighted and non-lighted available. **Current Ratings:** 8 A at 125 VAC, 6 A at 250 VAC. **Contact Resistance:** 10 milliohms max. **Contact Material:** Silver inlay over copper. **Termination:** .187 quick-connect.

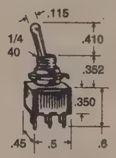
Stock No.	Mfr.'s Type	Switch Action	Description	Poles	Fig.	EACH		
						1-24	25-49	50-99
757-5500	E120M11J	On-None-Off	Non-lighted	2PST	A	1.26	1.13	.96
757-5505	E110MR11J	On-None-Off	Lighted w/red button, 125 V neon	1PST	A	2.11	1.91	1.61
757-5510	E120MR11J	On-None-Off	Lighted w/red button, 125 V neon	2PDP	A	2.33	2.11	1.77
757-5515	E20M11J*	On-None-Off	Non-lighted	1PST	B	.94	.85	.71

*10 A at 125 V ac.

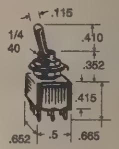
Miniature Toggle Switches, Panel Mount



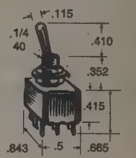
SPDT



DPDT



3PDT



4PDT

Panel Mount

One hole mounting, 1/4" threaded bushing, bat lever. **Contact Rating:** 6 A at 225 VAC/28 VDC; 3 A at 250 VAC. UL Listed. Coin silver contacts, solder lug terminals. Includes mounting hardware.

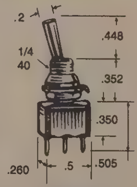
Stock No.	Mfr.'s Type	Circuit (Momentary)	Contact	EACH		
				1-24	25-99	100-Up
757-3351	A121S1YZQ	On-Off-On	SPDT	4.27	3.67	3.11
757-3353	A123S1YZQ	On-None-On	SPDT	3.71	3.21	2.71
757-9356	A126S1YZQ	On-None-(On)	SPDT	4.27	3.67	3.11
757-9357	A127S1YZQ	(On)-Off-(On)	SPDT	4.27	3.67	3.11
757-3361	A131S1YZQ	On-Off-(On)	SPDT	4.27	3.67	3.11
757-9381	A221S1YZQ	On-Off-On	DPDT	5.83	5.30	4.49
757-9883	A223S1YZQ	On-None-On	DPDT	4.92	4.41	3.74
757-9386	A226S1YZQ	On-None-(On)	DPDT	5.83	5.30	4.49
757-9387	A227S1YZQ	(On)-Off-(On)	DPDT	5.84	5.31	4.49
757-9392	A232S1YZQ	On-On-On	DPDT	6.24	5.68	4.80
757-3422	A321S1YZQ	On-Off-On	3PDT	9.69	8.81	7.45
757-3423	A323S1YZQ	On-None-On	3PDT	11.94	10.83	9.16
757-3451	A421S1YZQ	On-Off-On	4PDT	12.57	11.43	9.67
757-3453	A423S1YZQ	On-None-On	4PDT	11.91	10.83	9.16

PC Mount

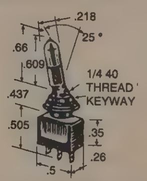
Same as panel mount except they are furnished with straight terminals. Terminals are gold flash over silver. Epoxy seal standard. Rating 5 A at 28 V AC/DC. Includes mounting hardware.

757-9501	A121S1YCQ	On-Off-On	SPDT	4.24	3.75	3.17
757-9503	A123S1YCQ	On-None-On	SPDT	3.47	3.00	2.54
757-9505	A221S1YCQ	On-Off-On	DPDT	6.91	5.89	5.51
757-9507	A223S1YCQ	On-None-On	DPDT	5.16	4.67	3.96

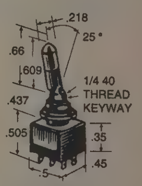
Miniature Flat Handle and Lever-Lock Switches



SPDT



1 Pole



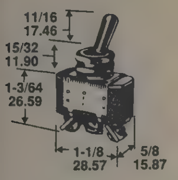
2 Pole

Flat Handle: Flat lever — brass, satin chrome finish. Rated 6 A at 125 VAC, 28 VDC; 3 A at 250 VAC. UL listed. Solder lug terminals. **Lever Lock:** Prevents accidental actuation — lever must be lifted and moved to other position. All switches include mounting hardware.

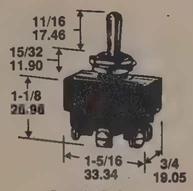
Stock No.	Mfr.'s Type	Circuit (Momentary)	Contact	EACH		
				1-24	25-99	100-Up
757-3321	A121P32Y5ZQ	On-Off-On	SPDT	5.27	4.78	4.12
757-3323	A123P32Y5ZQ	On-None-On	SPDT	4.77	4.32	3.66
757-9203*	A123K12KZQ	On-None-On	SPDT	6.24	5.67	4.80
757-3414	A221P32Y5ZQ	On-Off-On	DPDT	7.06	6.12	5.43
757-3416	A223P32Y5ZQ	On-None-On	DPDT	6.20	5.64	4.77
757-3213*	A223K12KZQ	On-None-On	DPDT	9.10	8.27	7.00

*Lever Lock.

MIL-S-83731 Lever-Seal Switches



Single Pole



Double Pole

Lever Seal Toggle. Tinned screw terminals, except †. Solder lug. All are Single Throw except ‡ which indicates Double Throw. **Weight:** 2 oz.

Single Pole

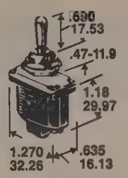
Stock No.	Mfr.'s Type	Gov't. MS No.	Circuit	EACH		
				1-24	25-49	50-99
757-3822	8261K22†	25098-22	On-None-Off	28.60	26.00	22.00
757-8701	8801K22	35058-22	On-None-Off	8.08	7.34	6.21
757-8680	8800K16‡	35058-21	On-Off-On	8.94	8.12	6.87
757-8750	8810K15‡	35058-23	On-None-On	9.06	8.23	6.97
757-8770	8812K14‡	35058-27	On*-Off-On*	9.55	8.68	7.39

Double Pole

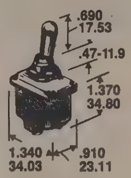
Stock No.	Mfr.'s Type	Gov't. MS No.	Circuit	1-24	25-49	50-99
757-8845	8820K16‡	35059-21	On-Off-On	12.48	11.35	9.60
757-8855	8822K20	35059-22	On-None-Off	10.89	9.90	8.38
757-8869	8824K14‡	35059-23	On-None-On	12.12	11.02	9.32
757-8904	8834K5‡	35059-27	On*-Off-On*	15.69	14.26	12.07

*Momentary. †Not tinned screw. ‡Double throw.

MIL-S-3950 Environmentally-Sealed Toggle Switch



Single Pole



Double Pole

Improved teeter totter mechanism provides positive "feel" and reliable return action. Silver contacts. Anodized aluminum bushing and cover; molded melamine/phenolic base. Sealed according to MIL-S-3950 standards. **Weight:** 2 oz. Flush screw terminals.

Single Pole

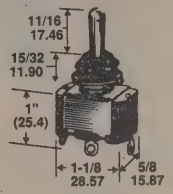
Stock No.	Mfr.'s Type	Gov't. MS No.	Circuit	EACH		
				1-24	25-49	50-99
826-8199	8500K9	24523-22	On-None-Off	17.46	15.88	13.43
826-8200	8500K1	24523-21	On-Off-On	17.46	15.88	13.43
826-8201	8500K2	24523-27	On*-Off-On*	17.46	15.88	13.43
826-8203	8500K4	24523-23	On-None-On	17.46	15.88	13.43

Double Pole

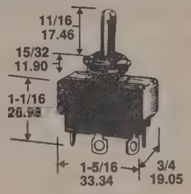
Stock No.	Mfr.'s Type	Gov't. MS No.	Circuit	1-24	25-49	50-99
826-8449	8501K9	24524-22	On-None-Off	23.40	21.27	18.00
826-8442	8501K2	24524-27	On*-Off-On*	23.40	21.27	18.00
826-8441	8501K1	24524-21	On-Off-On	23.40	21.27	18.00

*Momentary.

Jan-S-23 Heavy-Duty Toggle Switches



Single Pole



Double Pole

15 A @ 125 VAC, 20 A @ 30 VDC. Solder lug terminals. All are Single Throw except ‡ which indicates Double Throw. **Weight:** 2 oz.

Single Pole

Stock No.	Mfr.'s Type	JAN No. ST-	Circuit	EACH		
				1-24	25-49	50-99
757-3421	7300K38	42A	On-None-Off	5.63	5.12	4.33
757-3424	7302K38	42D	On-None-On	7.41	6.73	5.70
757-3425	7301K38‡	42E	On-Off-On	7.41	6.73	5.70
757-9427	7306K38‡	42G	On*-Off-On*	8.43	7.66	6.98
757-9428	7305K38‡	42H	On-Off-On*	8.43	7.66	6.98

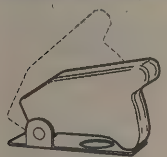
Double Pole

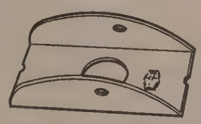
Stock No.	Mfr.'s Type	JAN No. ST-	Circuit	1-24	25-49	50-99
757-3521	7310K38	52K	On-None-Off	8.91	7.42	6.28
757-3522	7312K38‡	52N	On-None-On	10.18	8.44	7.14
757-3523	7311K38‡	52P	On-Off-On	14.58	11.97	9.03
757-3525	7317K38‡	52R	On-None-On*	10.55	9.59	8.11
757-7910	7316K38‡	52S	On*-Off-On*	11.08	10.07	8.52
757-9527	7315K38‡	52T	On-Off-On*	11.61	10.55	9.59

*Momentary. ‡Double throw.

Toggle Switchguards

— NEW —

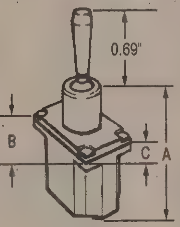




Stock No.	Mfr.'s Type	Description	EACH		
			1-24	25-49	50-99
826-8182	8492K1	Insertion of pin through guard prevents accidental operation and transfer of full throw single throw switches. Permits operation from first position to center on three-position switches.	5.02	4.56	3.86
826-8187	8497K1	For full throw single throw switches. Returns lever to off position.	12.91	11.74	9.93
826-1010	8494K2	For three-position switches. Returns lever to center position from either extreme. Guard housing remains fixed in open and closed position.	35.92	32.66	27.63
826-8498	8498K6	For two-or three-position switches. Closing guard does not affect toggle position.	56.98	51.80	43.83

Economy Sealed Toggle Switches

— NEW —



Switches are environmentally-sealed to "spraytight" requirements of MIL-STD-108E. One hole mounted (15/32"-32-thread). Electrical life at 50,000 cycles (rated load) and mechanical life at 100,000 cycles. Screw terminals. UL/CSA listed. **Temperature Range:** –5ºF to +150ºF.

1 Pole

Stock No.	Mfr.'s Type	Circuit	Switch Action	Dim. (In.)			EACH	
				A	B	C	1-9	10-24
826-1000	8530K1	SPDT	On-Off-On	1.30	1.25	0.6	14.06	12.78
826-1001	8530K2	SPDT	On*-Off-On*	1.30	1.25	0.6	14.06	12.78
826-1002	8530K4	SPDT	On-None-On	1.30	1.25	0.6	14.06	12.78
826-1003	8530K9	SPST	On-None-Off	1.30	1.25	0.6	14.06	12.78
826-1004	8530K11	SPST	Off-None-On*	1.30	1.25	0.6	14.06	12.78

2 Pole

Stock No.	Mfr.'s Type	Circuit	Switch Action	A	B	C	1-9	10-24
826-1005	8531K1	DPDT	On-Off-On	1.34	1.32	0.9	19.77	17.97
826-1006	8531K2	DPDT	On*-Off-On*	1.34	1.32	0.9	19.77	17.97
826-1007	8531K4	DPDT	On-None-On	1.34	1.32	0.9	19.77	17.97
826-1008	8531K9	DPST	On-None-Off	1.34	1.32	0.9	19.77	17.97
826-1009	8531K11	DPST	Off-None-On*	1.34	1.32	0.9	19.77	17.97

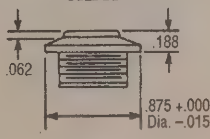
*Momentary Contact.

Snap Action Pushbutton Switches

— NEW —

W100

C100



Adapter

Uniform panel appearance for 120 VAC, 10 amps max. 28 VDC, 5 amps max. or 3 amps lamp load.

Sealed

Stock No.	Mfr.'s Type	Circuit	Button Color	EACH		
				1-24	25-49	50-99
826-1011	W1016	SPNO	Black	17.83	16.21	13.72
826-1012	W1016R	SPNO	Red	18.61	16.51	13.97
826-1013	W1026	SPNC	Black	17.83	16.21	13.72
826-1014	W1036	1PDT, 2 Cir	Black	20.40	18.55	15.69

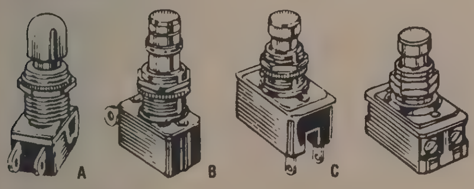
Non-Sealed

Stock No.	Mfr.'s Type	Circuit	Button Color	1-24	25-49	50-99
826-1015	C1006	SPNO	Black	13.16	11.96	10.12
826-1016	C1006R	SPNO	Red	13.30	12.09	10.23
826-1017	C31006	SPNC	Black	15.03	13.67	11.57
826-1018	C2006	1PDT, 2 Cir	Black	17.95	16.32	13.81

Adapter

Type P adapter for the sealed and non-sealed snap action pushbutton switches.
826-1024. P143. 1-24 .... **EACH 2.86**
25-49 .... **EACH 2.60** 50-99 .... **EACH 2.20**

Switches



Cutler Hammer

Cutler Hammer has been a leading manufacturer of standard and custom-designed UL recognized power switches for more than fifty years. Many of our products have international approvals, reflecting our commitment to the world market. Cutler Hammer switches are specified wherever highest quality standards are a requirement. We are proud that our switches, which range from heavy duty 60-ampere power toggles to miniature pushbuttons, are represented in every major electronic and electrical industry.

The switches listed in this catalog are typical of the products currently being used by original equipment manufacturers. Special switches not shown in this catalog are available upon request. Please contact the factory for details. Cutler Hammer welcomes inquiries to meet your specific requirements.

General Purpose Momentary AC Switches

Push switches with slow-make/slow-break butt type contacts. 7836K11A/7835K11A Series rated at 3 A, 120 VAC; 1 A, 250 VAC; 1/10 HP, 120 VAC. Solder lug terminations. Bushing .562" (14.27 mm) long. 7836K11A/7835K11A Series UL recognized, CSA Listed.

Stock No.	Mfr.'s Type	Fig.	Circuit	Action	EACH		
					1-24	25-49	50-99
717-0421	7836K11A†	A	SPST	Off-Mom-On	6.01	5.56	4.95
717-0420	7835K11A†	A	SPST	On-Mom-Off	6.01	5.56	4.95
717-3033	7836K11C‡	B	SPST	Off-Mom-On	7.22	6.57	5.56
717-0426	7836K11D*	B	SPST	Off-Mom-On	7.67	7.08	6.57
717-3004	7835K11C‡	B	SPST	On-Mom-Off	7.37	6.62	6.07
717-3005	7835K11D*	B	SPST	On-Mom-Off	7.37	6.62	6.07

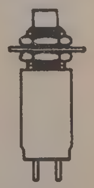
General Purpose Momentary AC/DC Switches

Features quick-make/quick-break contacts with wiping action. **Bushing Length:** 7226K2 — .437" (11.10 mm). **Ratings:** Type 8980K201 — 12 A, 125 V; 6 A, 250 V; Type 7226K2 (CSA certified) — 16 A, 125 V; 8 A, 250 V; 3/4 HP, 125-250 V. Solder lug termination except for 8980K201 types which have screw terminations.

Stock No.	Mfr.'s Type	Fig.	Circuit	Action	1-24	25-49	50-99
717-3009	8980K201†	C	SPST	Off-Mom-On	20.26	18.42	16.88
717-0450	7226K2†	D	DPST	Off-Mom-On	8.02	7.29	6.68

Button Style: †Standard; ‡Black Snap-on; *Red Snap-on.

Subminiature Pushbutton Switches



- MIL-S-8805 Approved
- Space Saving Design
- Snap-Action Momentary

— NEW —

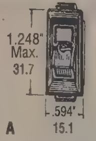
Sealed

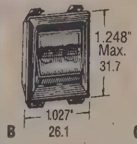
Stock No.	Mfr.'s Type	Circuit	Button Color	EACH		
				1-24	25-49	50-99
826-1019	BW9001B	SPNO	Red	31.68	28.80	24.37
826-1020	BW9001R	SPNO	Black	31.68	28.80	24.37
826-1021	BW9002B	SPNC	Black	34.68	31.53	26.68

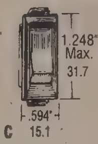
Non-Sealed

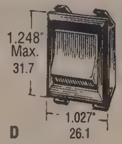
Stock No.	Mfr.'s Type	Circuit	Button Color	1-24	25-49	50-99
826-1022	B9001B	SPNO	Red	30.11	27.37	23.16
826-9001	B9001R	SPNO	Black	30.11	27.37	23.16
826-1023	B9002B	SPNC	Black	32.60	29.64	25.08

Miniature Snap-In AC Rocker Switches









These switches come in lighted and non-lighted versions in a variety of standard or custom colors. They are UL, CSA and VDE approved. Ideal applications include appliances, electronic instrumentation, data processing, communications, medical and office equipment and many others in both domestic and foreign markets. Options available are legend stamping, solder lugs, independent lamp circuits, special and matched colors, high inrush capabilities. Aesthetically pleasing yet ruggedly functional with traditional Cutler Hammer quality, these switches are ideal for up-front applications where both appearance and reliability are required. The smoothly rounded bezel and gently contoured rocker have a soft matte finish that blends in with the most sophisticated product designs. When a switch has to be more than just a switch, Cutler Hammer's rocker switch offers that designer touch that will enhance any product line.

Lighted Type (All Rated: 15 A, 125 V; 10 A, 250 V)

Stock No.	Mfr.'s Type*	Fig.	Circuit	Action	Lens Color†	EACH		
						1-24	25-49	50-99
717-0835	1500R11E	A	SPST	On-None-Off	R	2.42	2.14	1.72
717-0840	1500A11E	A	SPST	On-None-Off	A	2.82	2.56	2.35
717-0846	1500G11E	A	SPST	On-None-Off	G	2.82	2.56	2.35
717-2501	2500R11E	B	DPST	On-None-Off	R	2.41	2.19	2.01
717-0855	2500A11E	B	DPST	On-None-Off	A	3.53	3.21	2.94
717-0861	2500G11E	B	DPST	On-None-Off	G	2.98	2.63	2.42

*Other lamp voltages are available. †**Color Code:** R=Red; A=Amber; G=Green.

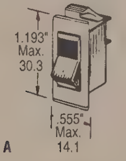
Non-Lighted Type (All Rated: 15 A, 125 V; 10 A, 250 V)

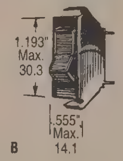
Stock No.	Mfr.'s Type	Fig.	Circuit	Action	EACH		
					1-24	25-49	50-99
717-0780	1500-11E	C	SPST	On-None-Off	.99	.90	.71
717-0785	1501-11E	C	SPST	Mom. On-None-Off	1.79	1.56	1.24
717-0790	1502-11E	C	SPST	On-None-On	1.75	1.58	1.45
717-0800	1504-11E	C	SPDT	On-Off-On	1.60	1.38	1.11
717-0805	2500-11E	D	DPST	On-None-Off	1.69	1.45	1.17
717-0810	2501-11E	D	DPST	Mom. On-None-Off	2.26	2.04	1.73
717-0815	2502-11E	D	DPDT	On-None-On	2.65	2.39	2.02

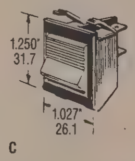
Rocker Switches With On-Off Legends (All Rated: 15 A, 125 V; 10 A, 250 V)

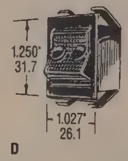
717-0825	1500-11E671	C	SPST	On-None-Off	1.67	1.52	1.40
717-0830	2500-11E735	D	DPST	On-None-Off	2.29	2.08	1.91

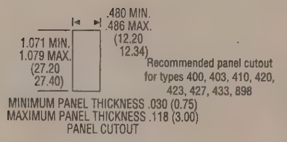
Miniature Rocker Switches





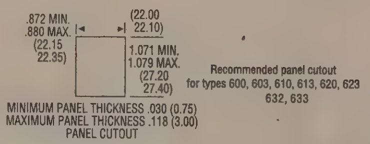






Recommended panel cutout for types 400, 403, 410, 420, 423, 427, 433, 898

MINIMUM PANEL THICKNESS .030 (0.75)
MAXIMUM PANEL THICKNESS .118 (3.00)
PANEL CUTOUT



Recommended panel cutout for types 600, 603, 610, 613, 620, 623 632, 633

MINIMUM PANEL THICKNESS .030 (0.75)
MAXIMUM PANEL THICKNESS .118 (3.00)
PANEL CUTOUT

Slow-make, slow-break action. Combination quick connector/solder lug terminals. Silver inlay over copper contact material. 5000 hours minimum lamp life. **Rated Life:** 50,000 cycles minimum at rated load. All rated 22 A (resistive load) at 125 VAC/16 (4) A 250 VAC. **Color Code:** A = Amber; R = Red; G = Green; B = Black.

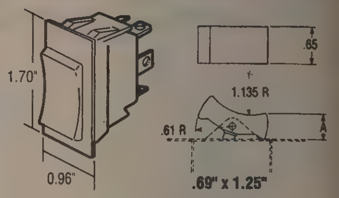
High Inrush "H" Series Switches

Stock No.	Mfr.'s Type	Fig.	Poles	Description	EACH		
					1-24	25-49	50-99
717-1085	1600H11E	A	1PST	Standard Gloss Finish	1.43	1.23	.98
717-1095	1600HR11E	B	1PST	Red Lens 125 V Neon Lamp	2.75	2.50	2.29
717-1501	2600H11E	C	2PST	Standard Gloss Finish	2.08	1.79	1.43
717-1105	2600HM11E	C	2PST	Standard Gloss Finish	2.08	1.79	1.43
717-1110	2600HR11E	D	2PST	Red Lens 125 V Neon Lamp	3.34	2.88	2.43

Stock No.	Mfr.'s Type	Fig.	Color	Model with Lever Up Center Down	Poles	EACH		
						1-24	25-49	50-99
717-2600	2600R-11E	D	R	On-None-Off	2PST	3.11	2.69	2.26
717-1065	2600-11E	C	B	On-None-Off	2PST	1.81	1.57	1.25
717-1076	2604-11E	C	B	On-Off-On	2PDT	2.42	2.09	1.75

Lighted or non-lighted versions available in standard black gloss or optional matte finish. Hap to 100 A Peak for 10 milliseconds @ 250 VAC, Electrical life rated at 10,000 cycles minimum. **Operating Temperature:** 0°C to + 85°C.
*Momentary.

Snap-In Mount Rockette Switches

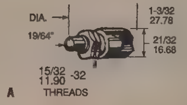


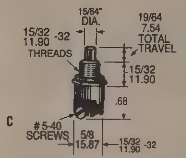
The rocker switches offer a remarkable silicone rubber seal that protects contacts and mechanisms better than conventional seal and boot combinations. The switches resist contaminants such as sand, dust and moisture with both base to frame seal and an actuator seal. Available in one and two-pole. Rated 15 A, 125 VAC; 10 A, 250 VAC. Spade terminals (brass).

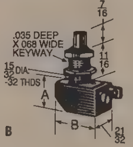
Stock No.	Mfr.'s Type*	Description	Circuit	EACH		
				1-24	25-49	50-99
757-5520	8055K23Z7V	SPST W/Concave Rocker	On-None-Off	4.38	3.96	3.45
757-5525	8055K43Z7V	DPST W/Concave Rocker	On-None-Off	5.54	5.10	4.49

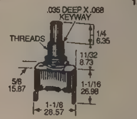
*Other terminations available.

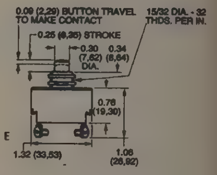
AC or AC/DC Rated Switches











Mfr.'s Type	Dimensions (In.)	
	A	B
8411K11	15/32	3/8
8411K12	15/32	3/8
8411K13	1/4	1/4
8411K7	15/32	13/32
8411K8	15/32	13/32
7208K104	.69	1.09

Multi-Purpose AC/DC Pushbutton Switches

These have slow-make, slow-break contacts. Hardware unassembled.

Single Pole — Momentary — Normally Open

Stock No.	Mfr.'s Type	Fig.	Rating @		Button Color	Terminals	EACH		
			125 V	250 V			1-24	25-49	50-99
757-2305	8411K11	A	3/4 A	1/4 A	Black	Spade	1.67	1.48	1.36
757-2309	8411K12	A	3/4 A	1/4 A	Black	Screw	2.01	1.78	1.60
757-2311	8411K13	A	3/4 A	1/4 A	Red	Spade	1.77	1.56	1.43

Single Pole — Momentary — Normally Closed

757-2337	8411K7	A	3/4 A	1/4 A	Black	Screw	2.14	1.95	1.78
757-2340	8411K8	A	3/4 A	1/4 A	Black	S. Lug	1.85	1.63	1.50

AC/DC Pushbutton Switches

AC-DC switches are quick-make, quick-break. Mounting hardware supplied unassembled.

Push-On/Push-Off Switches (SPST)

757-2908	7208K104	B	6 A	3 A DC	Nickel	Screw	5.90	5.36	4.54

AC Pushbutton Switches

AC rated pushbutton switches feature slow-make, slow-break momentary contact mechanism. Bright nickel plated button. 15/32" (11.9 mm) dia. bushing. Mounting hardware supplied unassembled.

Single Pole — Normally Open

Stock No.	Mfr.'s Type	Fig.	Rating @			Terminals	EACH		
			125 V	250 V	125/250 V		1-24	25-49	50-99
757-2364	8440K2	C	3 A	—	—	S. Lug	4.96	4.51	4.13
757-2363	8440K3	C	3 A	—	—	Screw	5.45	4.95	4.54
757-2369	8442K4	D	6 A	3 A	—	Screw	3.20	2.91	2.67
757-2373	8444K4	D	15 A	10 A	1/3 HP	Screw	3.45	3.13	2.87

Double Pole — Normally Open

757-2383	8448K2	E	15 A	10 A	—	Screw	5.96	5.42	4.96

Switch and Panel Seals

Military types perform three functions; provide vibration resistance for mounting nut; seal mounting hole; seal switch lever to 15 psi. Made of gray silicon rubber. Commercial type 80151 is black neoprene, comes in two parts, boot and nut which together form a switch seal. All others come molded as a complete switch seal. **Shipping Weight:** 1 oz.

Multi-Flex

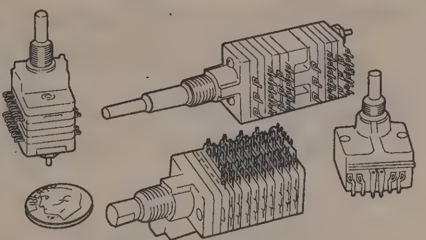
50151

40151

30122

Stock No.	Mfr.'s Type	Threads	MIL-B-5423	EACH		
				1-24	25-49	50-Up
760-0001	50151	15/32-32	1 A1	1.73	1.48	1.36
760-0008	5168	15/32-32	2 A3	2.77	2.47	2.26
760-0051	40151	15/32-32 5/16	7 B21	2.32	1.99	1.82
760-0022	30122	3/8-32	9 C2	2.14	1.84	1.68
760-0152	80151	15/32-32	Comm.	1.47	1.14	.89

Series C1



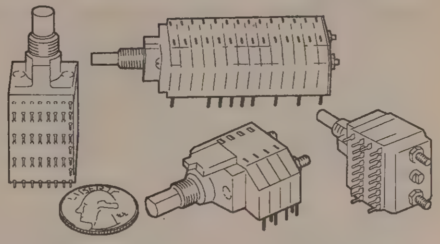
Standards
- Diallyl Phthalate Material
- 30° Index (2-12 Pos.)
- .250" Shaft Length
- Solder Lug Terminals
- Adjustable Stops

Options
- Right Angle and Rear PC Terminal
- Dual Concentric Designs
- Watertight Seals
- Keylocks

Series C1 is the ideal rotary switch to specify when space is at a premium and dependable switching is a priority. The subminiature, rectangular design is a fully enclosed, environment-proof package that helps keep dirt and moisture out of the contact area, while keeping the lubricant sealed in for long life and high reliability. Its modular design allows for a wide variety of switching configurations to suit your needs. **Electrical Ratings (Resistive):** Silver plated brass contacts — .10 A at 125 VAC, .25 A at 28 VDC. **Contact Resistance (Ohms — Initial):** Silver plated brass — .005 or less. **Current Carrying Capacity:** 6 A. **Maximum Temperature Rise:** 30°C. **Voltage Breakdown (Sea Level):** 600 VAC. **Rotational Torque (Variable):** 5 to 30 in. oz. **Stop Strength:** Acetal housing material — 5 in. lbs. **Minimum Mechanical Life:** 25,000 cycles. **Available Index Angles:** 30°, 60°, 90°.

Shorting		Non-Shorting		Poles	Pos.	EACH		
Stock No.	Mfr.'s Type	Stock No.	Mfr.'s Type			1-49	50-99	100-Up
747-6505	C1D0112S-A	**747-6535**	C1D0112N-A	01	02-12	**10.32**	**6.88**	**6.02**
747-6510	C1D0206S-A	**747-6540**	C1D0206N-A	02	02-06	**10.50**	**7.00**	**6.13**
747-6515	C1D0304S-A	**747-6545**	C1D0304N-A	03	02-04	**10.68**	**7.12**	**6.23**
747-6520	C1D0212S-A	**747-6550**	C1D0212N-A	02	02-12	**12.05**	**8.04**	**7.04**
747-6525	C1D0406S-A	**747-6555**	C1D0406N-A	04	02-06	**15.54**	**10.36**	**9.07**
747-6530	C1D0604S-A	**747-6560**	C1D0604N-A	06	02-04	**12.78**	**8.52**	**7.46**

Series C3

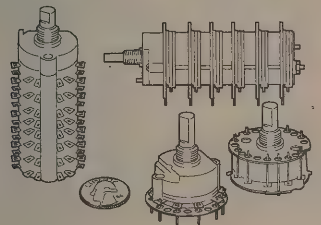


Standards
- Polyester Material
- 30° Index (2-12 Pos.)
- .250" Shaft Length
- Right Angle PC Mount
- Adjustable Stops

Options
- 8 Pin Model
- Watertight Seals
- Keylocks

An ideal solution to high density, printed circuit mount switching requirements is the Series C2 switch. Either the 12-pin or the 8-pin version can do the job well. These switches feature fully enclosed, environment-proof bodies with in-line PC terminals, a proven 25,000+ cycle detent mechanism, and the ability to provide complicated switching patterns in a minimum of space. The Series 400 is the preferred device by those in the data transfer, instrumentation, and stereo markets. **Electrical Ratings (Resistive):** Silver plated brass contacts — .10 A at 125 VAC, .25 A at 28 VDC. **Contact Resistance (Ohms — Initial):** Silver plated brass — .030 max. **Current Carrying Capacity:** 6 A. **Maximum Temperature Rise:** 30°C. **Voltage Breakdown (Sea Level):** 750 VAC. **Rotational Torque (Variable):** 5 to 30 in. oz. **Stop Strength:** Die cast housing material — 8 in. lbs. **Minimum Mechanical Life:** 25,000 cycles. **Available Index Angles:** 30°, 60°, 90°.

Shorting		Non-Shorting		Poles	Pos.	EACH		
Stock No.	Mfr.'s Type	Stock No.	Mfr.'s Type			1-49	50-99	100-Up
747-6565	C3P0112S-A	**747-6595**	C3P0112N-A	01	02-12	**10.14**	**6.76**	**5.92**
747-6570	C3P0206S-A	**747-6600**	C3P0206N-A	02	02-06	**10.32**	**6.88**	**6.02**
747-6575	C3P0304S-A	**747-6605**	C3P0304N-A	03	02-04	**10.50**	**7.00**	**6.13**
747-6580	C3P0212S-A	**747-6610**	C3P0212N-A	02	02-12	**12.54**	**8.36**	**7.32**
747-6585	C3P0406S-A	**747-6615**	C3P0406N-A	04	02-06	**12.90**	**8.60**	**7.53**
747-6590	C3P0604S-A	**747-6620**	C3P0604N-A	06	02-04	**13.32**	**8.88**	**7.77**



Series C4

Standards
- Diallyl Phthalate Material
- 30° Index (2-16 Pos.)
- .375" Shaft Length
- Solder Lug Terminals
- Adjustable Stops

Options
- Right Angle, Rear Mount Ventrical Mount, and Front Mount PC Terminal
- Keylocks
- Spring Return
- UL Listing
- BCD Output

The most versatile of all the enclosed rotary switches, the Series C4 provides a fully enclosed, modular, environment-proof package that helps keep dirt and moisture out of the contact area, while locking in lifetime lubricants. The modular design allows for a wide range of switching configurations, while the rugged, wear-compensating detent and thermoset modules provide a powerful construction to satisfy the most demanding industrial, computer or other commercial application. **Electrical Ratings (Resistive):** Silver plated brass contacts — .3 A at 125 VAC; .5 A at 28 VDC. **Contact Resistance (Ohms — Initial):** Silver plated brass (standard material) — .003 or less; Silver alloy — .002 or less. **Current Carrying Capacity:** 15 A. **Maximum Temperature Rise:** 30°C. **Voltage Breakdown (Sea Level):** 1000 VAC. **Rotational Torque (Variable):** 12 to 96 in. oz. **Stop Strength:** Acetal housing material (standard material) — 10 in. lbs.; Die cast housing material — 25 in. lbs. **Minimum Mechanical Life:** 25,000 cycles. **Available Index Angles:** 22.5°, 30°, 36°, 45°, 60°, 90°, 180°.

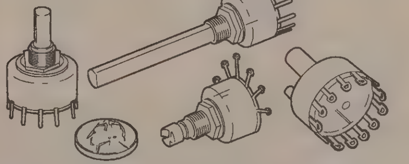
Shorting		Non-Shorting		Poles	Pos.	EACH		
Stock No.	Mfr.'s Type	Stock No.	Mfr.'s Type			1-49	50-99	100-Up
747-6625	C4D0112S-A	**747-6685**	C4D0112N-A	01	02-12	**9.12**	**6.08**	**5.32**
747-6630	C4D0206S-A	**747-6690**	C4D0206N-A	02	02-06	**9.30**	**6.20**	**5.43**
747-6635	C4D0304S-A	**747-6695**	C4D0304N-A	03	02-04	**9.48**	**6.32**	**5.53**
747-6640	C4D0212S-A	**747-6700**	C4D0212N-A	02	02-12	**11.76**	**7.84**	**6.86**
747-6645	C4D0406S-A	**747-6705**	C4D0406N-A	04	02-06	**12.12**	**8.08**	**7.07**
747-6650	C4D0604S-A	**747-6710**	C4D0604N-A	06	02-04	**12.42**	**9.92**	**8.68**

Shorting		Non-Shorting		Poles	Pos.	EACH		
Stock No.	Mfr.'s Type	Stock No.	Mfr.'s Type			1-49	50-99	100-Up
747-6655	C4D0312S-A	**747-6715**	C4D0312N-A	03	02-12	**14.40**	**9.60**	**8.40**
747-6660	C4D0606S-A	**747-6720**	C4D0606N-A	06	02-06	**14.88**	**9.92**	**8.68**
747-6665	C4D0904S-A	**747-6725**	C4D0904N-A	09	02-04	**15.42**	**10.28**	**9.00**
747-6670	C4D0412S-A	**747-6730**	C4D0412N-A	04	02-12	**17.04**	**11.36**	**9.94**
747-6675	C4D0806S-A	**747-6735**	C4D0806N-A	08	02-06	**17.70**	**11.80**	**10.33**
747-6680	C4D1204S-A	**747-6740**	C4D1204N-A	12	02-04	**18.36**	**12.24**	**10.71**

Series C6

Standards
- Polyester Material
- 30° Index (2-12 Pos.)
- .312" Shaft Length
- Solder Lug Terminals
- Adjustable Stops

Options
- Rear PC Terminals
- Flag Terminals
- Watertight Seals

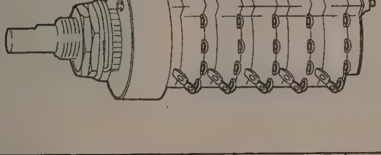


The Series C6 is an economical, one deck, washable switch with a minimum mechanical life of 25,000 cycles. This unique design features a 360° housing-to-deck snap fit, insert molded terminals, and O-ring sealing options (both internal shaft and external panel). It is ideal for applications where process or environmental moisture or contamination concerns must be solved. **Electrical Ratings (Resistive):** Silver plated brass contacts — 1.0 A at 125 VAC. **Contact Resistance (Ohms — Initial):** Silver plated brass less than .020 ohms. **Current Carrying Capacity:** 5 A. **Maximum Temperature Rise:** 30°C. **Voltage Breakdown (Sea Level):** 1000 VAC. **Rotational Torque (Variable):** 15 in. oz. nominal. **Stop Strength:** Adjustable stop housing — 5 in. lbs. minimum; Fixed stop housing — 12 in. lbs. nominal. **Minimum Mechanical Life:** 25,000 cycles. **Available Index Angles:** 30°.

Shorting		Non-Shorting		Poles	Pos.	EACH		
Stock No.	Mfr.'s Type	Stock No.	Mfr.'s Type			1-49	50-99	100-Up
—	—	**747-6745**	C6P0206N-A	02	02-06	**5.70**	**3.80**	**3.33**
—	—	**747-6750**	C6P0304N-A	03	02-04	**7.02**	**4.68**	**4.10**

Shorting		Non-Shorting		Poles	Pos.	EACH		
Stock No.	Mfr.'s Type	Stock No.	Mfr.'s Type			1-49	50-99	100-Up
—	—	**747-6755**	C6P0403N-A	04	02-03	**7.32**	**4.88**	**4.27**
—	—	**747-6760**	C6P0112N-A	01	02-12	**5.40**	**3.60**	**3.15**

Series M5



Standards
- Diallyl Phthalate Material
- 30° Index (2-12 Pos.)
- .437" Shaft Length
- Solder Lug Terminals
- Adjustable Stops
- UL Listed

Options
- Keylocks
- Spring Return
- Waterproof Mount

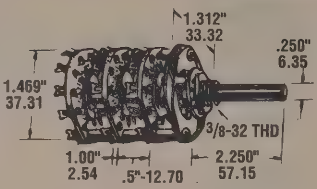
Series M6 switches utilize a technologically advanced, versatile design that enables standard modular units to be combined in a myriad of complex switching applications. They are meticulously hand assembled and tested for the ultimate reliability/quality necessary for exacting applications. All modules are rigidly stacked together into a rugged, vibration-proof unit designed to meet MIL-S-3786, Style SR04 requirements for materials, life, shock, vibration, salt spray, explosion, thermal shock, high altitude, sand, dust, fungus, moisture resistance, etc. **Electrical Specifications. Interrupting Ratings:** 2.5 amps resistive at 120 VAC (UL1054), 2.0 amps resistive at 30 VDC (UL 1054). **Continuous Rating:** 12 amps for 20°C max. temperature rise. **Contact Resistance:** .005 ohms (maximum). **Insulation Resistance:** 10^5 megohms (min.) **Dielectric:** 1500 VRMS initial, minimum (1000 VRMS — UL1054). **Thermal EMF:** Less than .5 microvolts per degree. **Mechanical Specifications. Size:** 1.0" diameter, enclosed construction. **Decks:** 1-20. **Poles:** 1-48. **Positions:** 2-12. **Indexing:** 30°, 36°, 45°, 60°, 90°. **Mounting:** Single hole 3/8"-32 NEF-2A bushing with non-turn washer. **Panel:** 1/4" maximum thickness. **Rotational Torque:** 10-60 oz.-in. **Stop Strength:** 15 in. lbs. (min.). **Temperature Range:** –65°C to 125°C. **Life:** 50,000 cycles (min.) per MIL-S-3786. **Shock:** High-impact per MIL-S-3786. **Vibration:** 10-2000 Hz per MIL-S-3786. **Altitude:** High-altitude to 70,000 ft.

Shorting		Non-Shorting		Poles	Pos.	EACH		
Stock No.	Mfr.'s Type	Stock No.	Mfr.'s Type			1-49	50-99	100-Up
747-6765	M5D0112S-A	**747-6795**	M5D0112N-A	01	02-12	**48.72**	**32.48**	**28.42**
747-6770	M5D0206S-A	**747-6800**	M5D0206N-A	02	02-06	**51.06**	**34.04**	**29.79**
747-6775	M5D0304S-A	**747-6805**	M5D0304N-A	03	02-04	**70.95**	**65.49**	**60.81**

Shorting		Non-Shorting		Poles	Pos.	EACH		
Stock No.	Mfr.'s Type	Stock No.	Mfr.'s Type			1-49	50-99	100-Up
747-6780	M5D0212S-A	**747-6810**	M5D0212N-A	02	02-12	**66.72**	**44.48**	**38.92**
747-6785	M5D0406S-A	**747-6815**	M5D0406N-A	04	02-06	**78.63**	**44.64**	**39.06**
747-6790	M5D0604S-A	**747-6820**	M5D0604N-A	06	02-04	**104.65**	**96.60**	**89.70**

Series D4C

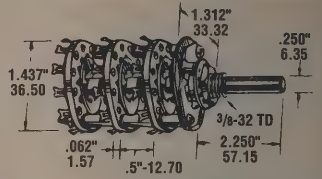
Feature maximum voltage flash-over points, high-Q, low-loss ceramic bodies; minimum intercircuit capacity; insulated front-back clips. Positive 30° indexing; adjustable stop or continuous rotation. All rated 1.5A @ 28VDC, 500mA @ 115VAC. Hardware incl. **Wt.:** 3 oz./section.



Non-Shorting		Shorting		Total Poles	No. of Pos.	No. of Sec.	EACH		
Stock No.	Mfr.'s Type	Stock No.	Mfr.'s Type				1-49	50-99	100-Up
747-7001	D4C0112N	747-7000	D4C0112S	1	2-12	1	22.49	17.00	12.94
747-7003	D4C0206N	747-7002	D4C0206S	2	2-6	1	22.82	14.91	13.13
747-2006	D4C0212N	747-7004	D4C0212S	2	2-12	2	34.42	22.50	19.81
747-7155	D4C0312N	–	–	3	2-12	3	46.86	30.63	26.97
–	–	747-7010	D4C0406S	4	2-6	2	35.40	23.14	20.38
747-7013	D4C0412N	–	–	4	2-12	4	59.59	38.95	34.30
747-7021	D4C0605N	–	–	6	2-5	2	37.31	24.39	21.48
747-7023	D4C0606N	–	–	6	2-6	3	48.75	31.87	28.06
747-7025	D4C0612N	–	–	6	2-12	6	83.70	54.71	48.18

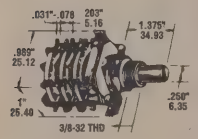
Series D4G

30° indexing; adjustable stop. 1.5A @ 28VDC; 500mA @ 115VAC. Index assemblies and hardware identical to PA-2000 Series. Phenolic insulated. Hardware incl. **Shpg. wt.:** 3 oz.



Non-Shorting		Total Poles	No. of Pos.	No. of Sec.	EACH		
Stock No.	Mfr.'s Type				1-49	50-99	100-Up
747-0842	D4G0111N	1	2-11	1	15.05	9.84	8.66
747-7065	D4G0205N	2	2-5	1	15.07	9.85	8.67
747-0844	D4G0211N	2	2-11	2	20.19	13.20	11.62
747-7080	D4G0303N	3	2-3	1	15.05	9.84	8.66
747-7085	D4G0311N	3	2-11	3	25.32	16.55	14.57
747-0846	D4G0405N	4	2-5	2	20.25	13.24	11.66
747-0848	D4G0411N	4	2-11	4	30.34	19.83	17.46
747-0850	D4G0511N	5	2-11	5	35.92	23.48	20.67
747-0852	D4G0603N	6	2-3	2	20.38	13.32	11.73
747-0854	D4G0605N	6	2-5	3	25.56	16.71	14.21

Series D2D



Positive 30° indexing, adjustable stops. Dual ball side thrust indexing. Sections .203" thick, spaced .031". **Rated:** 0.55A @ 28VDC; make and break, 170mA @ 115VAC. **Capacity:** 7 amps.

Non-Shorting		Total Poles	No. of Poles	No. of Sec.	EACH		
Stock No.	Mfr.'s Type				1-49	50-99	100-Up
747-0701	D2D0112N	1	2-12	1	20.58	13.45	11.85
747-0703	D2D0206N	2	2-6	1	21.57	14.10	12.41
747-0707	D2D0305N	3	2-5	1	23.78	15.54	13.69
747-0711	D2D0406N	4	2-6	2	30.20	19.74	17.38
747-0721	D2D0605N	6	2-5	2	34.15	22.32	19.66

Series D4C

Excellent quality ceramic sections for use in assembly of special switches for commercial and industrial applications. Designed for use with index assemblies PA-300 and PA-302 below. **Shpg. wt.:** 2 oz.

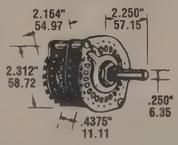
Shorting		Non-Shorting		Total Poles	No. of Pos.	EACH		
Stock No.	Mfr.'s Type	Stock No.	Mfr.'s Type			1-49	50-99	100-Up
747-0800	D4C-0	747-0801	D4C-1	1	2-12	16.56	11.04	9.66
–	–	747-0803	D4C-3	2	2-6	17.10	11.40	9.98
–	–	747-0805	D4C-5	3	2-5	18.90	12.60	11.13

Series D4

Hardware for assembling miniature switches. Each contains a 30° PA index assembly, adjustable stop plate, assorted spacers, tie bolts, nuts, fiber spacer washers, lock washers, instructions, 3 oz.

Stock No.	Mfr.'s Type	Shaft Length	Sections	EACH		
				1-49	50-99	100-Up
747-7045	D4-300	2"	1-3	13.32	8.88	7.77
747-0802	D4-302	6"	7-9	45.90	30.60	26.78

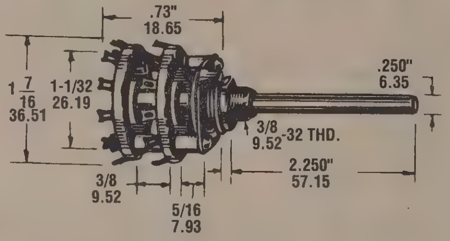
Series D8G and D9G



17- and 23-position switches using hill-and-dale index mechanism. **Breakdown:** 1000VAC rms. Sections are 2⁵⁄₁₆" high, ¹⁄₁₆" thick, **PA-3000 Series:** 2.25 @ 28VDC, 1.0A @ 115VAC; 20° indexing; 2¹¹⁄₆₄" wide. **PA-4000:** 1.5A @ 28VDC, 0.230A @ 115VAC; 15° indexing; 1³¹⁄₃₂" wide. **Wt.:** 4 oz.

Non-Shorting		Total Poles	No. of Poles	No. of Sec.	EACH		
Stock No.	Mfr.'s Type				1-49	50-99	100-Up
747-8001	D8G0117N	1	2-17	1	24.21	15.83	13.94
747-8003	D8G0217N	2	2-17	2	35.94	27.17	23.49
747-7230	D8G0417N	4	2-17	4	54.96	35.93	31.64
747-0806	D9G0123N	1	2-23	1	22.49	14.70	12.94
747-0808	D9G0223N	2	2-23	2	33.64	21.99	19.36
747-0810	D9G0423N	4	2-23	4	53.07	34.69	30.55

Series D3C



Miniature ceramic rotary switches, 1.312" diameter. Positive 30° indexing. **Adjust stop:** 1.0A @ 115VAC 2.6A @ 28VDC. Lockwasher, nut included. **Weight.:** 4 oz.

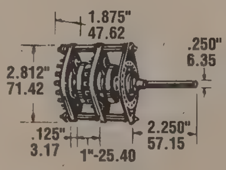
Shorting

Stock No.	Mfr.'s Type	Total Poles	No. of Poles	No. of Sec.	EACH		
					1-49	50-99	100-Up
747-0812	D3C0205S	2	2-5	1	35.90	23.46	20.66
747-0814	D3C0111S	1	2-11	1	35.90	23.46	20.66
747-0816	D3C0211S	2	2-11	2	59.96	39.20	34.52
747-0818	D3C0303S	3	2-3	1	36.94	24.15	21.26
747-0820	D3C0405S	4	2-5	2	61.03	39.89	35.13

Non-Shorting

747-0822	D3C0111N	1	2-11	1	35.90	23.46	20.66
747-0824	D3C0205N	2	2-5	1	35.90	23.46	20.66
747-0826	D3C0211N	2	2-11	2	59.96	39.20	34.52
747-0828	D3C0303N	3	2-3	1	36.94	24.15	21.26
747-0830	D3C0405N	4	2-5	2	61.03	39.89	35.13

Series E4C

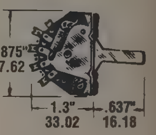


Silicone-treated ceramic switches for transmitters, industrial and commercial controls, and test gear. Rated 9A at 115VAC (resistive). **Breakdown:** 3000V rms. 20° positive indexing; adjustable stop. All metal parts except clips, contacts and index spring are cadmium plated. Coin silver contacts. Non-shorting. **Bushing:** ³⁄₈" x 32 thread, ³⁄₈" long. **Flatted shaft:** ¹⁄₄" x 2¹⁄₄" from mounting surface. ¹⁄₈" thick ceramic sections. 1" between sections. **Wafer size:** 2 x 2¹³⁄₁₆". **Av. wt.:** 4 oz.

Stock No.	Mfr.'s Type	Total Poles	No. of Poles	No. of Sec.	EACH		
					1-49	50-99	100-Up
747-0832	E4C0117N	1	2-17	1	88.13	57.61	50.73
747-0834	E4C0208N	2	2-8	1	98.01	64.07	56.42
747-0836	E4C0217N	2	2-17	2	151.04	98.73	86.94
747-0838	E4C0305N	3	2-5	1	100.02	65.38	57.57
747-0840	E4C0605N	6	2-5	2	173.00	113.08	99.58

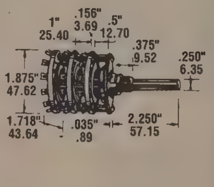
Series E2

Nylon rotor silver-plated brass clips, contacts, 30° indexing. **Breakdown:** 1000VAC rms. Contacts rated 1.5A @ 28VDC; 230mA @ 115VAC rms. Two 6-32 tapped holes on 1⁵⁄₈" ctrs. Phenolic insul. *positive; ‡ pos., spring return. 3 positions.



Non-Shorting		Total Poles	EACH		
Stock No.	Mfr.'s Type		1-49	50-99	100-Up
747-9800*	E2G0203N	2*	13.06	8.54	7.52
747-0858	E2G0203N-1	2 ‡	13.35	8.72	7.68

Series D7C

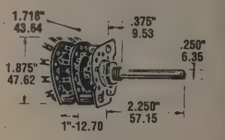


Silicone-treated for band charge and tap-switch use. **Breakdown:** 1500V rms. All rated 2.25A @ 28VDC; 1.0A @ 115VAC, make and break, resistive. **Front plate:** 1²³⁄₃₂ x 1⁷⁄₈" dia. ¹⁄₂" from plate and between sections for 1- and 2- sections switches. 1" spacing for others. **Bushing:** ³⁄₈" dia. x ³⁄₈" long. **Shaft:** ¹⁄₄" dia. x 2¹⁄₄" long. Positive 30° indexing; 2 adj. stops. Mtg. nut, lockwasher, 3 oz. per section.

Non-Shorting		Total Poles	No. of Poles	No. of Sec.	EACH		
Stock No.	Mfr.'s Type				1-49	50-99	100-Up
747-0860	D7C011N	1	2-11	1	22.71	14.85	13.07
747-0862	D7C0211N	2	2-11	2	37.29	24.37	21.46
747-7205	D7C0405N	4	2-5	2	36.72	24.00	21.13
747-0864	D7C0605N	6	2-5	3	50.66	33.11	29.16

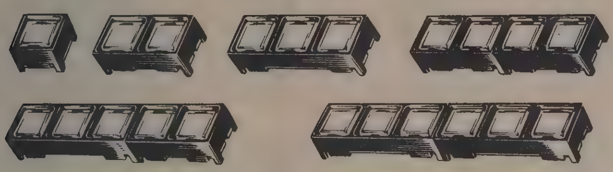
Series D7G

Ideal for band changes and general tap switch use where miniaturization not necessary. Index assemblies and hardware, same as Series 2500. Positive 30° indexing. Rated 2.25A @ 28VDC, 1.0A @ 115VAC, make and break resistive. Nut washer incl. **Wt.:** 3 oz./sect.



Non-Shorting		Total Poles	No. of Poles	No. of Sec.	EACH		
Stock No.	Mfr.'s Type				1-49	50-99	100-Up
747-7115	D7G0111N	1	2-11	1	15.50	13.61	11.88

87 Series Keyswitches — Provide Low Profile, Custom In-Line or Keypad Arrangements



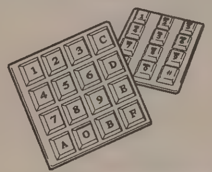
- Stackable Horizontally and Vertically
- Maintains 1/2" Button Centers
- Audible and Tactile Feedback
- Logic Compatible, 10 mA 24 VDC
- 3,000,000 Operations Per Button
- Single Pole/Common Bus Circuitry
- Post Mounted; PC Termination
- Snap-off Cap for Insertable Legend
- Legend Insert Sheet Available

Stock No.	Mfr.'s Type	Configuration	Circuitry*	Dimensions .350" Typ. High	EACH	
					1-99	100-499
948-7372	87CC3-201	1 Button	SPST	.490 Typ. Sq.	**2.90**	**2.63**
948-7373	87DC3-201	2 Button	SP/CB	.490 × 0.990	**4.16**	**3.78**
948-7374	87EC3-201	3 Button	SP/CB	.490 × 1.490	**5.37**	**4.88**
948-7375	87FC3-201	4 Button	SP/CB	.490 × 1.990	**7.16**	**6.51**
948-7378	87AC2046	Legends	—	—	**5.16**	**4.69**

*SP/CB = Single Pole/Common Bus.

Series 84LS 12 and 16 Button Environmentally Sealed Keypads

Series 84LS 12 and 16 button keypads have matrix circuitry output and are completely sealed by a silicon rubber boot. Legends are epoxy printed on the top surface of the boot. 3 × 4 legend is numeric telephone and 4 × 4 is hexadecimal notation as shown in the figure. 3 × 4 is 2.35" × 3.1"; 4 × 4 is 3.1" × 3.1". Termination accommodates standard connector. Integral studs mount to panel. Rated for 3,000,000 operations per button; 10 mA at 24 VDC.

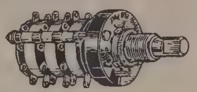


948-9820. 84LS-AB2-112. 3 × 4 Keypad, Matrix. **1-99**	**EACH 46.39**
100-499	**EACH 42.17**
948-9822. 84LS-BB2-014. 4 × 4 Keypad, Matrix. **1-99**	**EACH 49.63**
100-499	**EACH 45.12**

How To Select

42D, 44D, 71D and 56D Series are adjustable stop rotary switches. As listed, they are available with one or two poles per deck. Stop pins or washers can be removed from the front of the switch and replaced to set the number of positions per pole from two to the maximum number noted. Selections of the switch series depends upon the switching current requirements and the size restrictions of the application. The Series 56D is a single deck design with the lowest switching current rating, 200 mA, but requiring the least amount of space. The Series 42D and 44D switch up to 1 ampere of current, but are the largest in diameter at one inch. The Series 71D is GRAYHILL's most popular multi-deck switch providing a mid range 250 mA switching in an approximate one-half inch diameter. These switches are form, fit and function equivalent to their fixed stop counterparts, which can also be ordered from Allied Electronics.

42D and 44D Series 1 Amp Adjustable Stop Rotary

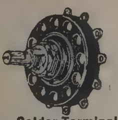


Fully enclosed switches interchange with fixed stop models. **Electrical Ratings:** Make/break 1 amp, carry 10 amps at 115 VAC, resistive. **Insulation Resistance:** 50,000 megohms initial, 10,000 megohms minimum. Non-shorting contacts. 3/8-32NEF bushing. **Behind-Panel Depth:** 1-deck — 1.025"; 2-deck — 1.371"; 3-deck — 1.717"; 4-deck — 2.063". **42D Series.** 10-position switch. 36° indexing. 1" diameter. **44D Series.** 12-position switch. 30° indexing. 1.162" diameter.

Stock No.	Mfr.'s Type	Poles	Decks	EACH	
				1-24	25-99
948-7224	42D36-01-1-AJN	1	1	**37.15**	**33.77**
948-7225	42D36-01-2-AJN	2	1	**37.15**	**33.77**
948-7226	42D36-02-1-AJN	1	2	**46.41**	**42.19**
948-7227	42D36-02-2-AJN	2	2	**49.49**	**44.99**
948-7228	44D30-01-1-AJN	1	1	**36.56**	**33.23**
948-7229	44D30-01-2-AJN	2	1	**38.11**	**34.64**
948-7230	44D30-02-1-AJN	1	2	**48.57**	**44.16**
948-7231	44D30-02-2-AJN	2	2	**51.63**	**46.94**
948-7232	44D30-03-1-AJN	1	3	**60.59**	**55.08**
948-7233	44D30-03-2-AJN	2	3	**65.11**	**59.22**
948-7234	44D30-04-1-AJN	1	4	**72.54**	**65.95**

19 Series
15-Amp Power Tap Rotary Switches

Faston Terminal



Solder Terminal

UL Recognized. Single pole, single deck units have 2 to 11 positions plus common, with 30° indexing. Available in solder lug terminal with 0.125" wire hole or Faston terminal with 0.080" wire hole. 15 amps, 120 VAC, non-inductive load. **Contact Resistance:** 10 milliohms at 2 VDC and 100 mA; contacts are non-shorting. **Insulation Resistance:** 100,000 megohms. **Voltage Breakdown:** 2500 VAC.

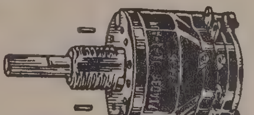
Stock No.	Mfr.'s Type	Poles	Positions	EACH	
				1-24	25-99
948-7277	19001-5UL	5	Solder	**25.60**	**23.27**
948-7278	19001-6UL	6	Solder	**26.79**	**24.35**
948-7280	19001-8UL	8	Solder	**29.17**	**26.52**
948-7281	19001-10UL	10	Solder	**31.54**	**28.67**
948-7282	19001-11UL	11	Solder	**32.70**	**29.73**
948-7284	19101-4UL	4	Faston	**24.42**	**22.20**
948-7285	19101-5UL	5	Faston	**25.60**	**23.27**
948-7287	19101-7UL	7	Faston	**27.97**	**25.43**

Series 95 Surface Mount Tactile Switches

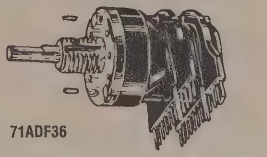
Excellent tactile feedback in these miniature switches offered in perpendicular and flush or offset right angle mounts. 95B04 part numbers are .14" × .275". Mounting terminals add .0825" length to each side for right angle types, .0205" for perpendicular mount types. 95B12 part numbers are .450" × .450". Switches are rated for 10,000 operations at 100 mA resistive, 5 VDC. All types offered are in tape and reel packaging only, with 2000 switches per reel. 95B12 part numbers are 750 per reel.

Stock No.	Mfr.'s Type	Circuitry	Mounting Style	EACH	
				1-24	25-99
948-9904	95B04GW	N.O.	Perpendicular — Gull Wing	**2.35**	**2.13**
948-9906	95B04FA	N.O.	Right Angle Offset Mount	**2.57**	**2.34**
948-9910	95B04RA	N.O.	Right Angle Flush Mount	**2.57**	**2.34**
948-9915	95B12GW	N.O.	Perpendicular — Gull Wing	**3.49**	**3.14**

71 Series 1/4 Amp, 1/2" Diameter Adjustable Stop Rotary Switches



71AD36



71ADF36

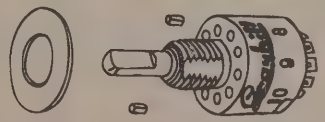
71 Series. Multi-deck, single shaft switches are adjustable stop. **Insulation Resistance:** 10,000 megohms minimum. **Voltage Breakdown:** 500 VAC minimum. Meet moisture, shock, salt spray, explosion and stop strength requirements of MIL-S-3786. 71BD are standard style with solder lug terminals and 0.250" diameter shaft. 71ADF are PC mount with 0.125" diameter shaft; 71BDF are PC Mount with 0.250" diameter shaft. All are either 30° or 36° angle of throw. **Behind-Panel Depth:** 1-deck —3/4"; 2-deck — 1".

Stock No.	Mfr.'s Type	Decks	Positions	EACH	
				1-24	25-99
948-7243	71BD36-01-1-AJN	1	10	**16.10**	**14.63**
948-7247	71BD30-01-1-AJN	1	12	**16.10**	**14.63**
948-7248	71BD30-01-2-AJN	2	6	**16.73**	**15.21**
948-7249	71BD30-02-1-AJN	1	12	**20.85**	**18.95**

Printed Circuit Terminals

948-7253	71ADF30-01-1-AJN	1	12	**17.58**	**15.99**
948-7257	71BDF36-02-1-AJN	1	10	**24.13**	**21.94**

56 Series 1/2" Diameter Single Rotary Switches



Economically priced, high quality, single deck rotary switches from GRAYHILL require a minimum of space. Rated to make and break 200 mA of current at 115 VAC or 30 VDC, resistive load for 10,000 cycles of operation. **Maximum Contact Resistance:** 100 milliohms, minimum of 10,000 megohms, insulation resistance. **Voltage Breakdown:** 600 VAC. The Series 56 switches that are listed below are adjustable stop to allow you to set and reset the number of positions per pole to suit the application's need. These switches have non-shorting contacts, please contact Allied Electronics for shorting contact types.

Solder Lug Terminals — Part Nos. Containing 'S' Have Shaft/Panel Seal

Stock No.	Mfr.'s Type	Poles	Positions	EACH	
				1-24	25-99
948-7166	56D36-01-1-AJN	1	10	**10.85**	**9.87**
948-7167	56D36-01-2-AJN	2	5	**12.08**	**10.78**
948-7173	56SD36-01-1-AJN	1	10	**11.77**	**10.70**
948-8004	56D30-01-1-AJN	1	12	**11.20**	**10.18**
948-7165	56D30-01-2-AJN	2	6	**12.42**	**11.29**

Printed Circuit Terminals — Part Nos. Containing 'S' Have Shaft/Panel Seal

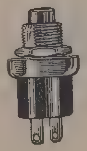
948-7181	56DP36-01-1-AJN	1	10	**11.20**	**10.18**
948-7182	56DP36-01-2-AJN	2	5	**12.42**	**11.29**
948-8012	56DP30-01-1-AJN	1	12	**11.55**	**10.50**

Pushbutton Switches and Hardware

A

B

C

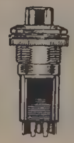

D

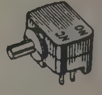
E

F

G

H


J


K

Butt Contact Switches (A, B, C, K)

- Miniature and Economical SPST Switches
- Positive Feel (30-17), Overtravel (30-15), and SPDT PC Mount (M) Versions

Wiping Contact Types (D, E, F, G, I, J)

- Self-Cleaning, Reliable At Low Voltage
- SPDT and DPDT Circuitry
- Capped (46-102), and Decorative (I, J) Styles

Snap Action Contact Types (H)

- Rapid Make and Break For High Current

Accessories (for D, H)

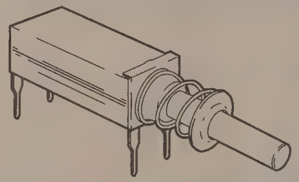
- Decorative Bezel (7C) Replaces Mounting Nut
- Guard (10C) Prevents Accidental Actuation

Type 7C1040-1. Overall Diameter: 0.77".
948-0001..........EACH **.73**

Type 10C1015-1. Overall Diameter: 0.89".
948-0002..........EACH **1.05**

Stock No.	Mfr.'s Type	Fig.	Amps 115 VAC Res.	Circuitry	Button	Dimensions			EACH		
						Mtg. Hole	Behind Panel	O.A. Ht.	1-99	100-499	500-999
948-7190	39-1	A	1/2	SPST-NO	Red	11/64	.315	.615	**3.79**	**3.45**	**2.92**
948-7191	39-2	A	1/4	SPST-NC	Blk	11/64	.490	.780	**5.85**	**5.32**	**4.50**
948-7192	39-3	A	1/2	SPST-NO	Blk	11/64	.315	.615	**3.79**	**3.45**	**2.92**
948-7193	30-1	B	1	SPST-NO	Red	17/64	.592	.992	**2.49**	**2.26**	**1.91**
948-7194	30-2	B	1	SPST-NC	Blk	17/64	.605	1.005	**2.79**	**2.54**	**2.15**
948-7195	30-3	B	1	SPST-NO	Blk	17/64	.592	.992	**2.49**	**2.26**	**1.91**
948-7196	30-15	B	1	SPST-NO	Red	17/64	.667	1.077	**3.10**	**2.82**	**2.39**
948-7197	30-17/Red	C	1	SPST-NO	Red	31/64	.958	1.350	**6.14**	**5.58**	**4.72**
948-7198	10-9	D	1	SPST-NO	Blk	31/64	.965	1.500	**4.73**	**4.02**	**3.41**
948-7199	4001	D	1	SPST-NO	Red	31/64	.965	1.500	**4.43**	**4.02**	**3.41**
948-7200	4002	D	1	SPST-NC	Blk	31/64	.965	1.500	**4.43**	**4.02**	**3.41**
948-7201	23-1	E	1/4	SPST-NO	Red	21/64	.633	1.059	**4.88**	**4.43**	**3.75**
948-7202	46-101/Red	F	1/4	SPDT-BBM	Red	17/64	.890	1.327	**4.73**	**4.30**	**3.64**
948-7203	46-101/Blk	F	1/4	SPDT-BBM	Blk	17/64	.890	1.327	**4.73**	**4.30**	**3.64**
948-7204	46-102/Red	F	1/4	SPDT-BBM	Red	17/64	.890	1.327	**4.75**	**4.32**	**3.66**
948-7205	46-102/Blk	F	1/4	SPDT-BBM	Blk	17/64	.890	1.327	**4.75**	**4.32**	**3.66**
948-7207	46-200/Red	G	1/4	DPDT-BBM	Red	17/64	.921	1.560	**9.12**	**8.29**	**7.01**
948-7208	46-200/Blk	G	1/4	DPDT-BBM	Blk	17/64	.921	1.560	**9.12**	**8.29**	**7.01**
948-7210	2201	H	10	SPSR-NO	Red	31/64	1.176	1.903	**13.36**	**12.15**	**10.28**
948-7211	2202	H	10	SPST-NC	Blk	31/64	1.176	1.903	**14.26**	**12.96**	**10.97**
948-7213	46-05-05-502-0707	J	1/4	SPDT-BBM	Blk	.51 sq.	1.179	1.527	**13.89**	**12.63**	**10.69**
948-7214	46-05-05-502-0303	J	1/4	SPDT-BBM	Red	.51 sq.	1.179	1.527	**13.89**	**12.63**	**10.69**
948-7215	46-05-07-502-0707	J	1/4	SPDT-BBM	Blk	.51 sq.	1.428	1.776	**20.58**	**18.71**	**15.83**
948-7217	46-05-08-502-0707	J	1/4	DPDT-BBM	Blk	.51 sq.	1.188	1.536	**18.48**	**16.80**	**14.22**
948-7218	46-05-08-502-0303	J	1/4	DPDT-BBM	Red	.51 sq.	1.188	1.536	**18.48**	**16.80**	**14.22**
948-7219	30-05-01-502-0707	J	1	SPST-NO	Blk	.51 sq.	.932	1.280	**17.07**	**15.52**	**13.13**
948-7221	30-05-04-502-0303	J	1	SPST-NO	Red	.51 sq.	1.132	1.480	**21.71**	**19.73**	**16.70**
948-7222	39-251/Red	K	1/4	SPDT-BBM	Red	PC	—	.328	**2.24**	**2.04**	**1.73**

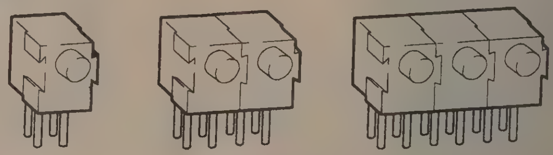
Series 38 Miniature Alternate Action Pushbutton Switches



Alternate Action Pushbutton Switch can be used as ON/OFF switch with silver plated contacts. Mounted on PC board, dimensions are 1.25" D × .35" H × .32" W. Rated for 25,000 operations. Silver-Plated contacts rated 1.0 A at 28 VDC. Gold-plated contacts rated .2 A at 30 VDC. O-ring sealed switches are process compatible.

Stock No.	Mfr.'s Type	Contact	Sealed	EACH	
				1-99	100-499
948-9801	38AT-2-H-1-N	Gold	No	**4.71**	**4.28**
948-9802	38AT-2-H-1-S	Gold	O-ring seal	**5.32**	**4.84**
948-9804	38AT-2-H-2-N	Silver	No	**4.71**	**4.28**
948-9806	38AT-2-H-2-S	Silver	O-ring seal	**5.32**	**4.84**

Miniature, Edge Mount, Stackable, Pushbutton Switches, and LEDs



- Stackable, Provides Custom Switch Arrangements
- .200" Button Centers When Stacked
- SPST-N.O., SPST-N.C. Circuitry In The Same Package
- Process Compatible, Internally Sealed Plunger
- Status/Reset Or Press To Test Functions With Companion LED
- Rated At 1/4 Amp At 115 VAC Resistive For 500,000 Operations

948-7500. Type 32-1. SPST-N.O., SPST-N.C. **1-99**..........**EACH 2.22**
948-9814. Type 32LED-Red. Red LED and holder, Red body. **1-99**..........**EACH .90**
948-9816. Type 32LED-GRN. Green LED and holder, Red body. **1-99**..........**EACH .90**
948-9818. Type 32LED-YEL. Yellow LED and holder, Red body. **1-99**..........**EACH .90**

Hardware

29 Series Binding Posts

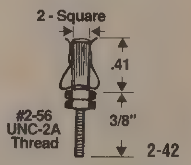
29-1

29-100

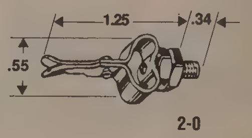
- Straight Skirt Binding Posts Rated Up To 15 A For 3/16" Panels (29-1)
- 20 A Push-Post™ Has Spring Pressure To Assure Positive Contact; In Standard
- (29-100), Capless (29-110), and Insulated (29-104) Versions

Stock No.	Mfr.'s Type	Cap Color	Mounting Hole Dia. (In.)	EACH		
				1-99	100-499	500-999
948-7390	29-1B	Black	3/8	**4.88**	**4.43**	**3.75**
948-7392	29-100B	Black	11/64	**3.26**	**2.97**	**2.51**
948-7393	29-100R	Red	11/64	**3.26**	**2.97**	**2.51**
948-7394	29-110	No Cap	11/64	**3.10**	**2.82**	**2.39**
948-7395	29-104B	Black	25/64	**4.47**	**4.06**	**3.44**
948-7396	29-104R	Red	25/64	**4.47**	**4.06**	**3.44**

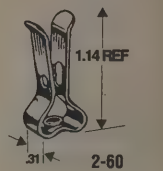
2 Series Test Clips



2-42



2-0



2-60

- Standard Size Test Clips With (2-0) and Without (2-60) Stud
- Threaded Miniature Test Clip (2-20) Mounts On Thick Panels Up To .25"
- Ultra Miniature Clips Save Space and Handle Single Or Double Leads

Stock No.	Mfr.'s Type	Mounting	Height (In.)	EACH		
				1-99	100-499	500-999
948-7397	2-0	Std. Thread Stud	1.59	**1.88**	**1.71**	**1.44**
948-7398	2-60	Studless	1.14	**1.92**	**1.74**	**1.48**
948-7399	2-20	Mini Thread Stud	1.16	**2.12**	**1.93**	**1.63**
948-7400	2-41	Ultra. Single	.79	**2.12**	**1.93**	**1.63**
948-7401	2-42	Ultra. Double	.79	**2.28**	**2.08**	**1.76**

Hermetic Switch, Inc.

Reed Switches

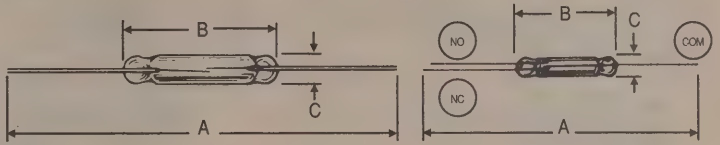
Highest quality reed switches feature contacts hermetically sealed in a protective atmosphere. Protected contacts mean reliable operation in wet, oily, dirty — even explosive —environments.

Glass capsule size ranges from a compact 2-inch glass length down to under 1/4-inch long! Ideal for use in proximity switches, flow meters, counting devices, limit switches, reed relays and precision instrumentation.

Actuate Time: 3 millisecond or less on 2-inch capsules; 1 millisecond or less on capsules under 1-inch in length.

Typical life expectancy 50 million operations. **Contacts:** Form A (SPST-N.O.) or Form C (SPDT), may be actuated by permanent magnet or coil. Magnets and coils sold below.

Average Shipping Weight: 1 ounce each.



Microminiature Reed Switches

Stock No.	Mfr.'s Type*	Form†	Dimensions (In.)			Max. DC Contact Ratings Watts	Max. Amps	Max. DC Volts	Min. VDC Breakdown	Stock Ampere Turn Pull-In	Actuating Magnet	Test Coil	EACH	
			A	B	C								1-24	25-49
808-0001	HSR-003DT	A	1.050	.210	.055	0.25	0.01	30	150	5-15	M-01	C-01	**2.96**	**2.69**
808-0002	HSR-067RT	A	1.240	.460	.070	4.00	0.20	30	250	15-25	M-01	C-01	**1.61**	**1.47**
808-0003	HSR-042RT	A	1.850	.370	.090	4.00	0.20	100	200	25-35	M-02	C-01	**2.53**	**2.30**
808-0004	HSR-069RT	A	1.240	.540	.101	4.00	0.20	30	250	20-40	M-02	C-01	**1.33**	**1.21**

Miniature Reed Switches

Stock No.	Mfr.'s Type*	Form†	Dimensions (In.)			Max. DC Contact Ratings Watts	Max. Amps	Max. DC Volts	Min. VDC Breakdown	Stock Ampere Turn Pull-In	Actuating Magnet	Test Coil	EACH	
			A	B	C								1-24	25-49
808-0005	HSR-520RT	C	2.000	.600	.125	3.0	0.25	100	200	15-40	M-02	C-02	**4.10**	**3.73**
808-0006	HSR-102RT	A	2.190	.800	.122	10.0	0.50	200	350	20-40	M-02	C-02	**1.18**	**1.08**
808-0007	HSR-101RT	A	2.090	.800	.091	10.0	0.50	200	300	20-40	M-02	C-02	**1.24**	**1.13**
808-0008	HSR-1015RT	A	2.190	.800	.101	10.0	0.50	200	350	20-40	M-02	C-02	**1.22**	**1.11**
808-0009	HSR-510RT	C	2.000	.590	.105	3.0	0.25	100	200	20-40	M-02	C-02	**3.53**	**3.21**
808-0010	HSR-740RT	A	2.190	.800	.101	10.0	0.50	300	1200	25-35	M-02	C-02	**5.51**	**5.01**

Standard Reed Switches

Stock No.	Mfr.'s Type*	Form†	Dimensions (In.)			Max. DC Contact Ratings Watts	Max. Amps	Max. DC Volts	Min. VDC Breakdown	Stock Ampere Turn Pull-In	Actuating Magnet	Test Coil	EACH	
			A	B	C								1-24	25-49
808-0011	HSR-190RT	A	3.230	2.100	.210	15.0	1.00	250	500	60-80	M-04	C-04	**2.24**	**2.04**
808-0012	HSR-630RT	C	3.390	1.300	.210	25.0	1.00	200	250	40-70	M-04	C-04	**3.86**	**3.51**
808-0013	HSR-194WT	A	3.230	2.100	.210	50.0	2.00	350	500	65-75	M-04	C-04	**3.41**	**3.10**

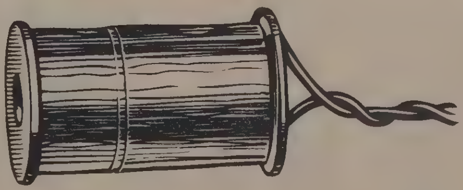
High Voltage and High Power Reed Switches

Stock No.	Mfr.'s Type*	Form†	Dimensions (In.)			Max. DC Contact Ratings Watts	Max. Amps	Max. DC Volts	Min. VDC Breakdown	Stock Ampere Turn Pull-In	Actuating Magnet	Test Coil	EACH	
			A	B	C								1-24	25-49
808-0014	HSR-830RT	C	3.390	1.300	.210	25.0	1.00	250	1000	65-85	M-03	C-04	**4.36**	**4.41**
808-0015	HSR-834WT	C	3.390	1.300	.210	100.0	3.00	500	1000	65-80	M-03	C-04	**6.71**	**6.10**
808-0016	HSR-V10K	A	3.230	2.100	.210	50.0	3.00	7500	10000	100-140	M-04	C-03	**9.08**	**8.25**
808-0017	HSR-780RT	A	3.200	2.000	.215	25.0	1.50	1500	3000	60-80	M-04	C-04	**3.77**	**3.43**
808-0018	HSR-790WT	A	3.230	2.000	.215	50.0	2.50	1000	2500	60-80	M-04	C-04	**5.04**	**4.58**
808-0019	HSR-156WT	A	3.200	1.700	.190	100.0	3.00	50	300	60-90	M-04	C-03	**3.51**	**3.19**

Notes: †Form A — SPST; Form C: SPDT. *R — Rhodium contacts; D — Durel contacts; W — Tungsten contacts; T — Tin-plated external leads (last 2 letters in Type No.).

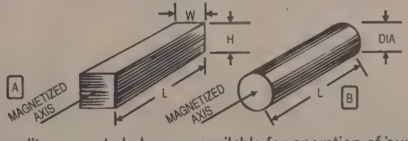
Reed Switch Test Coils

The coils described below are used for testing magnetic characteristics of reed switches. Pull-In, Drop-Out, Operate Time, Bounce Time, and Release Time are typical parameters measured using one of these coils. Coil specifications reference EIA/NARM RS 421-A for dry reed switches. MIL Spec MIL-S-55433.



Stock No.	Mfr.'s Type	NARM RS-421 Coil #	MIL-S-55433 Coil #	Number of Turns	Approx. Coil Ohms	Bobbin Dimensions Length × I.D. × O.D.	Recommended		EACH	
							Maximum Current	Maximum Voltage	1-24	25-49
808-0021	C-01	I	B	5,000	830	.435 × .110 × .325	0.02	24 VDC	**9.49**	**8.62**
808-0022	C-02	II	A	10,000	3700	.775 × .125 × .350	0.02	40 VDC	**14.20**	**12.91**
808-0023	C-03	III	C	10,000	1400	1.100 × .250 × .700	0.02	40 VDC	**10.32**	**9.38**
808-0024	C-04	IV	D	10,000	600	2.050 × .225 × .575	0.02	24 VDC	**14.20**	**12.91**

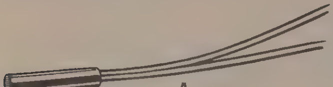
Actuating Magnets

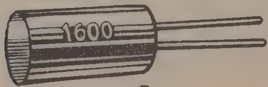


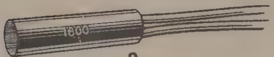
The quality magnets below are available for operation of our dry reed switches. They feature temperature stable Alnico V material magnetized lengthwise for strong consistent operation. The variety of sizes enables you to match your proximity or motion application to our switch and magnet with ease and satisfaction.

Stock No.	Mfr.'s Type	Fig.	Size Inches	EACH	
				1-24	25-49
808-0025	M-01	A	1/16 × 1/16 × 1/2	**1.80**	**1.63**
808-0026	M-02	A	1/8 × 1/8 × 3/4	**2.28**	**2.08**
808-0027	M-03	A	3/16 × 3/16 × 1	**2.59**	**2.36**
808-0028	M-04	A	1/4 × 1/4 ×1	**2.84**	**2.58**
808-0029	M-05	B	1/4 Dia. × 1.4	**3.30**	**3.00**

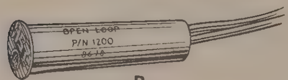
Proximity Sensors


A

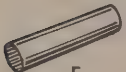

B

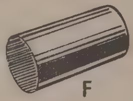


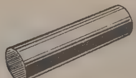
C

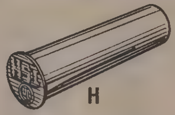


D

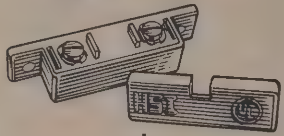

E


F

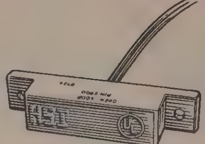

G



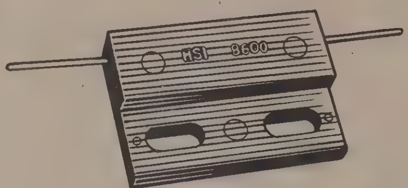
H



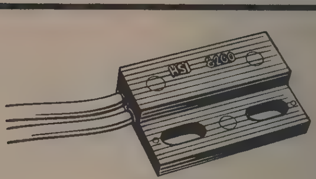
J



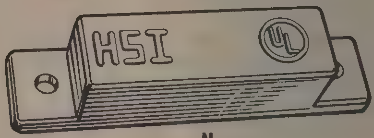
K



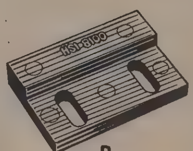
L



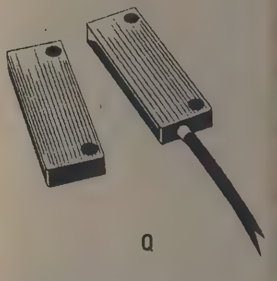
M



N



P


Q

Hermetic Switch, Inc. manufactures a variety of two part magnetic proximity sensors (sensor and actuator). All sensors feature hermetically sealed reed switch contacts that can survive harsh environments. Specially selected epoxy potting materials and rugged plastic cases withstand the impacts and forces of the real world. Many models are listed with Underwriters Laboratories, verifying that they have passed rigorous testing. The sensors listed in this catalog are designed for use in alarm systems, automotive, consumer products, industrial controls, safety interlock, and many other applications. Leaded units have color coded leads for easy identification.

Power Proximity Sensors

Stock No.	Mfr.'s Type	Form[6]	Switching Capabilities					Dimensional Data Inches				Fig.	Notes	EACH	
			Max Watts	Max VAC	Max VDC	Max Amps	Brkdn VDC Min.	Length	Diameter Width	Wire Length	Oper. Dist.			1-24	25-49
808-9100	9100	A	25	120	120	1.0	200	3.00	1.000	12	.750[1]	Q	SPST-NO	5.55	5.04
808-9105	9200	B	25	120	120	1.0	200	3.00	1.000	12	.750[1]	Q	SPST-NC	6.34	5.77
808-9110	9300	C	25	120	120	1.0	200	3.00	1.000	12	.750[1]	Q	SPDT	7.12	6.47
808-9115	9125	A	100	120	120	3.0	300	3.00	1.000	12	.750[1]	Q	SPST-NO	6.90	6.27
808-9120	9225	B	100	120	120	3.0	150	3.00	1.000	12	.750[1]	Q	SPST-NC	7.67	6.97
808-9125	9325	C	100	120	240	3.0	150	3.00	1.000	12	.750[1]	Q	SPDT	8.24	7.49
808-9130	9150	A	200	240	240	3.0	300	3.00	1.000	12	.500[1]	Q	SPST-NO	8.69	7.90
808-9135	9250	B	200	240	240	3.0	300	3.00	1.000	12	.500[1]	Q	SPST-NC	9.45	8.59
808-9140	9350	C	200	240	240	3.0	300	3.00	1.000	12	.500[1]	Q	SPDT	10.18	9.25
808-9145	9000	Actuator for 9000 Series						3.00	1.000	—	—	—	Matched Actuator	4.43	4.02

Cylindrical Proximity Sensors

808-1025*	808-1030†	1100	A	3.00	30	30	.25	200	1.510	.365	6	.750"	D	UL Listed	2.65	2.41
808-1035*	808-1040†	1200	B	3.00	30	30	.25	200	1.510	.365	6	.750"	D	UL Listed	4.12	3.75
808-1045*	808-1050†	1300	C	3.00	30	30	.25	200	1.510	.365	6	.750"	D	UL Listed	4.30	3.91
808-2000‡	–	1500	A	0.25	30	30	.01	150	0.480	.095	3	.125"	A	Worlds Smallest	8:00	7.27
808-2001‡	–	1600	A	3.00	100	100	.25	200	0.500	.250	1	.125"	B	PC Board Design	4.00	3.63
808-2002‡	–	1700	A	7.00	100	100	.25	250	1.000	.250	6	.200"	C	Fits 1/4" hole	3.55	3.23
808-2003‡	–	1800	B	3.00	100	100	.25	200	1.000	.250	6	.200"	C	Fits 1/4" hole	6.47	5.88
808-2004‡	–	1900	C	3.00	100	100	.25	200	1.000	.250	6	.200"	C	Fits 1/4" hole	6.87	6.25
808-2006*	808-2007†	1000	Actuator for 1100, 1200, 1300						1.510	.365	—	—	H	UL Listed	2.47	2.24
808-2008*	–	1005	Actuator for part 1500						0.440	.100	—	—	E	Alnico Magnet	1.57	1.43
808-2009*	–	1006	Actuator for part 1600						0.500	.250	—	—	F	Custom Actuator	2.28	2.08
808-2010*	–	1007	Actuator for 1700, 1800, 1900						1.000	.250	—	—	G	Matched Actuator	2.98	2.71

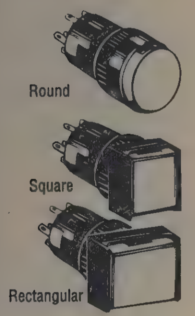
Screw Mounted Proximity Sensors

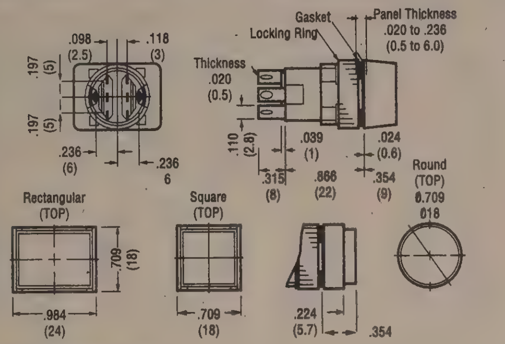
Stock No.		Mfr.'s Type	Form[6]	Switching Capabilities					Dimensional Data Inches					Fig.	Notes	EACH	
				Max Watts	Max VAC	Max VDC	Max Amps	Brkdn VDC Min.	Length	Width	Thick	Wire Length	Oper. Dist.			1-24	25-49
808-1055*	808-1060†	5100	A	3.0	30	30	0.25	200	2.562	.750[1]	.575	–	1.0"	J	UL Listed	2.71	2.47
808-1065*	808-1070†	5200	B	3.0	30	30	0.25	200	2.562	.750[1]	.575	–	1.0"	J	UL Listed	4.37	3.97
808-1075*	808-1080†	5300	C	3.0	30	30	0.25	200	2.562	.750[1]	.575	–	1.0"	J	UL Listed	4.73	4.30
808-1085*	808-1090†	6100	A	3.0	30	30	0.25	200	2.562	.550	.575	6.000	1.0"	K	UL Listed	2.65	2.41
808-1095*	808-1100†	6200	B	3.0	30	30	0.25	200	2.562	.550	.575	6.000	1.0"	K	UL Listed	4.37	3.97
808-1105*	808-1110†	6300	C	3.0	30	30	0.25	200	2.562	.550	.575	6.000	1.0"	K	UL Listed	4.69	4.27
808-1000‡	—	8200[2]	A	10.0	200	200	0.50	250	1.125	.750	.250	6.000	0.5	M	UL Listed	3.08	2.80
808-1005‡	—	8300[2]	C	3.0	100	100	0.25	300	1.125	.750	.250	6.000	0.5	M	UL Listed	5.59	5.08
808-1010‡	—	8400[2]	B	3.0	100	100	0.25	200	1.125	.750	.250	0.450	0.5	L	Low Profile	3.84	3.49
808-1015‡	—	8500[1]	A	360.0	240[2]	–	1.50	400	1.125	.750	.250	6.000	0.5	M	High Power	10.93	9.94
808-1016‡	—	8510	B	360.0	240[2]	–	1.50	400	1.125	.750	.250	6.000	0.5	M	High Power	15.32	13.93
808-1155‡	—	8600[2]	A	10.0	200	200	0.50	350	1.125	.750	.250	0.450	0.5	L	Low Profile	2.67	2.43
808-2011*	808-2012†	5000	Actuator for 5100, 5200, 5300						2.562	.550	.575	–	–	N	UL Listed	3.20	2.91
808-2013*	808-2014†	6000	Actuator for 6100, 6200, 6300						2.562	.550	.575	–	–	N	UL Listed	3.20	2.91
808-1020‡	—	8100[3]	Actuator for 8000 Series						1.125	.750	.250	–	–	P	Custom Actuator	2.65	2.41

*Brown. †White. ‡Black. Notes: **1.** Parts #8500 and #8510 are for AC loads only. Sensor will latch on with DC loads and will remain on until voltage is removed. **2.** 8000 series sensors — .125 wide × .281 long horizontal slot to .656 centers. **3.** 8100 actuator: .125 wide × .350 long vertical slot on .625 centers. **6.** A = SPST N.O.; B = SPST N.C.; C=SPDT.

Miniature Pushbutton Switches and Pilot Lights

A Series 16 mm Miniature Pushbutton Switches





Rating: 3 A 250 V AC/DC. **Contact Configuration:** SPDT, DPDT. **Contact Resistance:** 50 mΩ max. **Insulation Resistance:** 100 MΩ min. (500 VDC megger). **Dielectric Strength:** Switch unit — 2000 VAC, 1 min. between live/dead part and terminal of different poles; 1000 VAC, 1 min. between terminal of same pole; 1500 VAC between contact and lamp terminals. Illumination unit — 2000 VAC, 1 min. between live part/ground. **Operating Temperature:** –25°C to +55°C (no freezing); incandescent type –25°C to +40°C. **Maximum Voltage:** 250 V AC/DC. **Operating Voltage:** 24 V, 120 V, 240 V. **Contact Material:** Gold-clad silver . **Terminals:** Solder tab. **LED Lamp Ratings. Operating Voltage:** 12 VDC ±10%; 24 VDC ±10%. **Rated Voltage:** 12 VDC; 24 VDC. **Rated Current:** 20 mA; 10 mA. UL Approved, CSA Certified.

A Series Accessories and Tools

Stock No.	Mfr.'s Type	Description	EACH 1-9	EACH 10-99	EACH 100-499
814-1001	MT-001	Locking Ring Wrench	5.00	4.75	4.49
814-1002	MT-101	Lens Removal Tool	1.19	1.13	1.08
814-1003	OR-77	Lamp Holder	1.78	1.71	1.60
814-1005	AL-K6	Switch Guard*	2.39	2.27	2.14
814-1006	AL-KH6	Switch Guard†	2.39	2.27	2.14

*Round/Square. †Rectangular. Note: Locking ring wrench can be used on AP Series pilot lights.

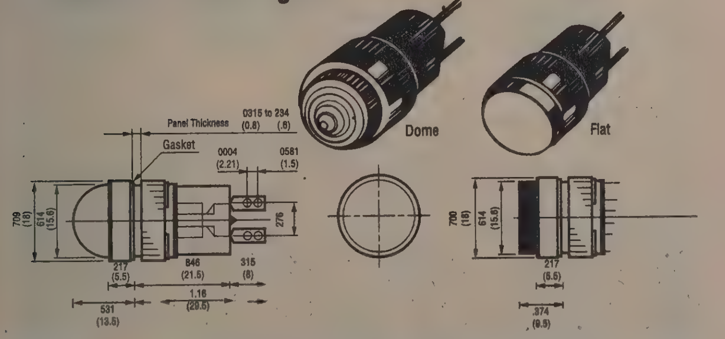
LED Illuminated Oiltight Enclosure (IP65) Momentary Action

Stock No.	Mfr.'s Type	Lens Shape	Color	Contacts	VDC	EACH 1-9	EACH 10-99	EACH 100-499
814-1007	AL6M-M13P-R	Round	Red	SPDT	12	10.17	9.68	9.17
814-1008	AL6M-M13P-G	Round	Grn	SPDT	12	10.17	9.68	9.17
814-1009	AL6M-M13P-A	Round	Ambr	SPDT	12	10.17	9.68	9.17
814-1010	AL6M-M13P-Y	Round	Yel	SPDT	12	10.17	9.68	9.17
814-1011	AL6M-M13P-W	Round	Wht	SPDT	12	10.17	9.68	9.17
814-1012	AL6M-M23P-R	Round	Red	DPDT	12	12.02	11.43	10.82
814-1013	AL6M-M23P-G	Round	Grn	DPDT	12	12.02	11.43	10.82
814-1014	AL6M-M23P-A	Round	Ambr	DPDT	12	12.02	11.43	10.82
814-1015	AL6M-M23P-Y	Round	Yel	DPDT	12	12.02	11.43	10.82
814-1016	AL6M-M23P-W	Round	Wht	DPDT	12	12.02	11.43	10.82
814-1017	AL6M-M14P-R	Round	Red	SPDT	24	10.17	9.68	9.17
814-1018	AL6M-M14P-G	Round	Grn	SPDT	24	10.17	9.68	9.17
814-1019	AL6M-M14P-A	Round	Ambr	SPDT	24	10.17	9.68	9.17
814-1020	AL6M-M14P-Y	Round	Yel	SPDT	24	10.17	9.68	9.17
814-1021	AL6M-M14P-W	Round	Wht	SPDT	24	10.17	9.68	9.17
814-1022	AL6M-M24P-R	Round	Red	DPDT	24	12.02	11.43	10.82
814-1023	AL6M-M24P-G	Round	Grn	DPDT	24	12.02	11.43	10.82
814-1024	AL6M-M24P-A	Round	Ambr	DPDT	24	12.02	11.43	10.82
814-1025	AL6M-M24P-Y	Round	Yel	DPDT	24	12.02	11.43	10.82
814-1026	AL6M-M24P-W	Round	Wht	DPDT	24	12.02	11.43	10.82
814-1027	AL6Q-M13P-R	Square	Red	SPDT	12	9.70	9.21	8.73
814-1028	AL6Q-M13P-G	Square	Grn	SPDT	12	10.17	9.68	9.17
814-1029	AL6Q-M13P-A	Square	Ambr	SPDT	12	10.17	9.68	9.17
814-1030	AL6Q-M13P-Y	Square	Yel	SPDT	12	10.17	9.68	9.17
814-1031	AL6Q-M13P-W	Square	Wht	SPDT	12	10.17	9.68	9.17
814-1032	AL6Q-M23P-R	Square	Red	DPDT	12	12.02	11.43	10.82
814-1033	AL6Q-M23P-G	Square	Grn	DPDT	12	12.02	11.43	10.82
814-1034	AL6Q-M23P-A	Square	Ambr	DPDT	12	12.02	11.43	10.82
814-1035	AL6Q-M23P-Y	Square	Yel	DPDT	12	12.02	11.43	10.82
814-1036	AL6Q-M23P-W	Square	Wht	DPDT	12	12.02	11.43	10.82
814-1037	AL6Q-M14P-R	Square	Red	SPDT	24	10.17	9.68	9.17
814-1038	AL6Q-M14P-G	Square	Grn	SPDT	24	10.17	9.68	9.17
814-1039	AL6Q-M14P-A	Square	Ambr	SPDT	24	10.17	9.68	9.17
814-1040	AL6Q-M14P-Y	Square	Yel	SPDT	24	10.17	9.68	9.17
814-1041	AL6Q-M14P-W	Square	Wht	SPDT	24	10.17	9.68	9.17
814-1042	AL6Q-M24P-R	Square	Red	DPDT	24	12.02	11.43	10.82
814-1043	AL6Q-M24P-G	Square	Grn	DPDT	24	12.02	11.43	10.82
814-1044	AL6Q-M24P-A	Square	Ambr	DPDT	24	12.02	11.43	10.82
814-1045	AL6Q-M24P-Y	Square	Yel	DPDT	24	12.02	11.43	10.82
814-1046	AL6Q-M24P-W	Square	Wht	SPDT	24	12.02	11.43	10.82
814-1047	AL6H-M13P-R	Rect.	Red	SPDT	12	9.89	9.41	8.92
814-1048	AL6H-M13P-G	Rect.	Grn	SPDT	12	9.89	9.41	8.92
814-1049	AL6H-M13P-A	Rect.	Ambr	SPDT	12	10.17	9.68	9.17
814-1050	AL6H-M13P-Y	Rect.	Yel	SPDT	12	10.17	9.68	9.17
814-1051	AL6H-M13P-W	Rect.	Wht	SPDT	12	10.17	9.68	9.17
814-1052	AL6H-M23P-R	Rect.	Red	DPDT	12	12.02	11.43	10.82
814-1053	AL6H-M23P-G	Rect.	Grn	DPDT	12	12.02	11.43	10.82
814-1054	AL6H-M23P-A	Rect.	Ambr	DPDT	12	12.02	11.43	10.82
814-1055	AL6H-M23P-Y	Rect.	Yel	DPDT	12	12.02	11.43	10.82
814-1056	AL6H-M23P-W	Rect.	Wht	DPDT	12	12.02	11.43	10.82
814-1057	AL6H-M14P-R	Rect.	Red	SPDT	24	10.17	9.68	9.17
814-1058	AL6H-M14P-G	Rect.	Grn	SPDT	24	10.17	9.68	9.17
814-1059	AL6H-M14P-A	Rect.	Ambr	SPDT	24	10.17	9.68	9.17
814-1060	AL6H-M14P-Y	Rect.	Yel	SPDT	24	10.17	9.68	9.17
814-1061	AL6H-M14P-W	Rect.	Wht	SPDT	24	10.17	9.68	9.17
814-1062	AL6H-M24P-R	Rect.	Red	DPDT	24	12.02	11.43	10.82
814-1063	AL6H-M24P-G	Rect.	Grn	DPDT	24	12.02	11.43	10.82
814-1064	AL6H-M24P-A	Rect.	Ambr	DPDT	24	12.02	11.43	10.82
814-1065	AL6H-M24P-Y	Rect.	Yel	DPDT	24	12.02	11.43	10.82
814-1066	AL6H-M24P-W	Rect.	Wht	DPDT	24	12.02	11.43	10.82

Non-Illuminated Oiltight Enclosure (IP65) Momentary Action

Stock No.	Mfr.'s Type	Lens Shape	Color	Contacts	EACH 1-9	EACH 10-99	EACH 100-499
814-1067	AB6M-M1P-B	Round	Black	SPDT	8.34	7.81	7.49
814-1068	AB6M-M1P-R	Round	Red	SPDT	8.34	7.81	7.49
814-1069	AB6M-M1P-G	Round	Green	SPDT	8.34	7.81	7.49
814-1070	AB6M-M1P-W	Round.	White	SPDT	8.34	7.81	7.49
814-1071	AB6M-M1P-S	Round	Blue	SPDT	8.34	7.81	7.49
814-1072	AB6M-M1P-Y	Round	Yellow	SPDT	8.34	7.81	7.49
814-1073	AB6M-M2P-B	Round	Black	DPDT	10.30	9.78	9.28
814-1074	AB6M-M2P-R	Round	Red	DPDT	10.30	9.78	9.28
814-1075	AB6M-M2P-G	Round	Green	DPDT	10.30	9.78	9.28
814-1076	AB6M-M2P-W	Round	White	DPDT	10.30	9.78	9.28
814-1077	AB6M-M2P-S	Round	Blue	DPDT	10.30	9.78	9.28
814-1078	AB6M-M2P-Y	Round	Yellow	DPDT	10.30	9.78	9.28
814-1079	AB6Q-M1P-B	Square	Black	SPDT	8.34	7.92	7.49
814-1080	AB6Q-M1P-R	Square	Red	SPDT	8.34	7.92	7.49
814-1081	AB6Q-M1P-G	Square	Green	SPDT	8.34	7.92	7.49
814-1082	AB6Q-M1P-W	Square	White	SPDT	8.34	7.92	7.49
814-1083	AB6Q-M1P-S	Square	Blue	SPDT	8.34	7.92	7.49
814-1084	AB6Q-M1P-Y	Square	Yellow	SPDT	8.34	7.92	7.49
814-1085	AB6Q-M2P-B	Square	Black	DPDT	10.30	9.78	9.28
814-1086	AB6Q-M2P-R	Square	Red	DPDT	10.30	9.78	9.28
814-1087	AB6Q-M2P-G	Square	Green	DPDT	10.30	9.78	9.28
814-1088	AB6Q-M2P-W	Square	White	DPDT	10.30	9.78	9.28
814-1089	AB6Q-M2P-S	Square	Blue	DPDT	10.30	9.78	9.28
814-1090	AB6Q-M2P-Y	Square	Yellow	DPDT	10.30	9.78	9.28
814-1091	AB6H-M1P-B	Rect.	Black	SPDT	8.34	7.92	7.49
814-1092	AB6H-M1P-R	Rect.	Red	SPDT	8.34	7.92	7.49
814-1093	AB6H-M1P-G	Rect.	Green	SPDT	8.34	7.92	7.49
814-1094	AB6H-M1P-W	Rect.	White	SPDT	8.34	7.92	7.49
814-1095	AB6H-M1P-S	Rect.	Blue	SPDT	8.34	7.92	7.49
814-1096	AB6H-M1P-Y	Rect.	Yellow	SPDT	8.34	7.92	7.49
814-1097	AB6H-M2P-B	Rect.	Black	DPDT	10.30	9.78	9.28
814-1098	AB6H-M2P-R	Rect.	Red	DPDT	10.30	9.78	9.28
814-1099	AB6H-M2P-G	Rect.	Green	DPDT	10.30	9.78	9.28
814-1100	AB6H-M2P-W	Rect.	White	DPDT	10.30	9.78	9.28
814-1101	AB6H-M2P-S	Rect.	Blue	DPDT	10.30	9.78	9.28
814-1102	AB6H-M2P-Y	Rect.	Yellow	DPDT	10.30	9.78	9.28

AP Series LED Pilot Lights



Input: Full Voltage. **Operational Voltages:** 12, 24 VDC. **Current Ratings:** 11 mA @ 12 VDC; 11 mA @ 24 VDC. **Insulation Resistance:** 100 MΩ minimum (500 VDC megger). **Reverse Withstand Voltage:** 200 V. **Degree of Protection:** IP65. **Terminal Style:** Solder Type.

Full Voltage/Solder Terminal Type

Stock No.	Mfr.'s Type	Lens Shape	Color	VDC	EACH 1-9	EACH 10-99	EACH 100-499
814-1103	AP6M211-R	Dome	Red	12	7.14	6.44	5.71
814-1104	AP6M211-G	Dome	Grn	12	7.14	6.44	5.71
814-1105	AP6M211-A	Dome	Ambr	12	7.14	6.44	5.71
814-1106	AP6M211-Y	Dome	Yel	12	7.14	6.44	5.71
814-1107	AP6M211-W	Dome	Wht	12	7.14	6.44	5.71
814-1108	AP6M222-R	Dome	Red	24	7.14	6.44	5.71
814-1109	AP6M222-G	Dome	Grn	24	7.14	6.44	5.71
814-1110	AP6M222-A	Dome	Ambr	24	7.14	6.44	5.71
814-1111	AP6M222-Y	Dome	Yel	24	7.14	6.44	5.71
814-1112	AP6M222-W	Dome	Wht	24	7.14	6.44	5.71
814-1113	AP6M111-R	Flat	Red	12	7.14	6.44	5.71
814-1114	AP6M111-G	Flat	Grn	12	7.14	6.44	5.71
814-1115	AP6M111-A	Flat	Ambr	12	7.14	6.44	5.71
814-1116	AP6M111-Y	Flat	Yel	12	7.14	6.44	5.71
814-1117	AP6M111-W	Flat	Wht	12	7.14	6.44	5.71
814-1118	AP6M122-R	Flat	Red	24	7.14	6.44	5.71
814-1119	AP6M122-G	Flat	Grn	24	7.14	6.44	5.71
814-1120	AP6M122-A	Flat	Ambr	24	7.14	6.44	5.71
814-1121	AP6M122-Y	Flat	Yel	24	7.14	6.44	5.71
814-1122	AP6M122-W	Flat	Wht	24	7.14	6.44	5.71

Oiltight Control Units

UL Listed and CSA Approved

The majority of IDEC assembled control units are UL Listed and CSA Certified. Contact IDEC for details.

General Specifications

Dielectric Strength:	2,500 V AC, 1 minute, Between live and dead parts (Full voltage units: 1,000 V Ac, 1 minute)
Mechanical Life (Minimum (Operations):	Pushbuttons and Illuminated Pushbuttons. Momentary: 5,000,000 oper. Others: 500,000 Selector Switches Non-Illuminated and Illuminated: 500,000
Electrical Life (Minimum Operations):	500,000 (Except pilot lights) Operating Frequency: 30 oper./mln. Duty Rate 40%

FILE NO.
E70646

FILE NO.
LR48366

Degrees of Protection

Units	NEMA	IEC Pub 529
Pushbuttons	Type	IP65
Pilot Lights	Type	IP65
Illuminated Pushbuttons	Type	IP65
Selector Switches	1, 2, 3, 3R, 4, 4 x , 5, 12, 13	IP65

LED Lamp Ratings

Rated Voltage	24 VDC	120 VAC
Rated Current	13mA	8 mA
Lamp Base	T3-$^{1}/_{4}$ Miniature Bayonet Base	
Color Code	(*) Red, Green, Amber	

Contact Ratings

Rated Operational Current	AC (Inductive Load) 120 V/6 A, 240 V/3 A, 480 V/1.5 A, 600 V/1.2 A	DC (Resistive Load) 120 V/2 A, 240 V/1.1 A, 480 V/0.4 A
Rated Thermal Current	10A	
Rated Insulation Voltage	600 VAC/DC	

Note: UL rating-Heavy pilot duty 600 V maximum.

Transformer Ratings

Primary/ Secondary	Application Rating Incandescent Lamp
120 V/6 V	6 to 7 V/1 W

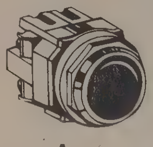
Note: UL rating: primary voltage 120 V to 480 VAC. Secondary Voltage Rating: 6.3 V/1 W.

Pushbuttons, Switches, and Pilot Lights

Flush Mount Momentary Action Pushbuttons — Fig.s A and B

$1^{13}/_{64}$" (30 mm) Full Size — Fig. A

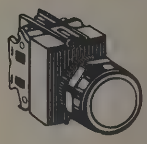
Stock No.	Mfr.'s Type	Color	Contacts	EACH		
				1-24	25-49	50-99
814-0001	ABD110N-R	Red	1NO	**20.00**	**15.27**	**12.93**
814-0004	ABD101N-R	Red	1NC	**20.00**	**15.27**	**12.93**
814-0007	ABD111N-R	Red	1NO-1NC	**27,14**	**20.74**	**17.54**



A

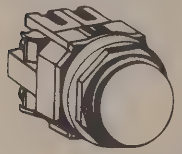
$^{7}/_{8}$" (22 mm) Miniature Size — Fig. B

Stock No.	Mfr.'s Type	Color	Contacts	EACH		
				1-24	25-49	50-99
814-0010	ABW110-R	Red	1NO	**13.69**	**10.45**	**8.84**
814-0013	ABW101-R	Red	1NC	**13.69**	**10.45**	**8.84**
814-0016	ABW111-R	Red	1NO-1NC	**20.12**	**15.38**	**13.00**



B

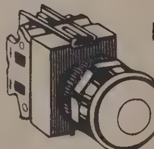
Mushroom Type: Emergency Stop — Momentary Pushbuttons (Fig.s C and D)



C

$1^{13}/_{64}$" (30 mm) Full Size — Fig. C

Stock No.	Mfr.'s Type	Color	Contacts	EACH		
				1-24	25-49	50-99
814-0019	ABD310N-R	Red	1NO	**34.29**	**26.19**	**22.15**
814-0020	ABD301N-R	Red	1NC	**34.29**	**26.19**	**22.15**
814-0021	ABD311N-R	Red	1NO-1NC	**41.43**	**31.64**	**26.77**



D

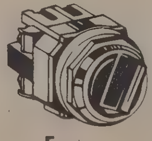
$^{7}/_{8}$" (22 mm) Miniature Size — Fig. D

Stock No.	Mfr.'s Type	Color	Contacts	EACH		
				1-24	25-49	50-99
814-0022	ABW410-R	Red	1NO	**20.12**	**15.38**	**13.00**
814-0023	ABW401-R	Red	1NC	**20.12**	**15.38**	**13.00**
814-0024	ABW411-R	Red	1NO-1NC	**26.55**	**19.50**	**16.50**

Maintained Selector Switches — Black with White Insert (Fig.s E and F)

$1^{13}/_{64}$" (30 mm) Full Size — Fig. E

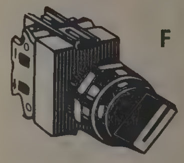
Stock No.	Mfr.'s Type	Number of Positions	Contacts	EACH		
				1-24	25-49	50-99
814-0025	ASD210N	2	1NO	**24.76**	**18.92**	**16.01**
814-0026	ASD201N-116	2	1NC	**24.76**	**18.92**	**16.01**
814-0027	ASD211N	2	1NO-1NC	**31.90**	**24.38**	**20.62**
814-0028	ASD320N	3	2NO	**31.90**	**24.38**	**20.62**
814-0029	ASD302N	3	2NC	**31.90**	**24.38**	**20.62**



E

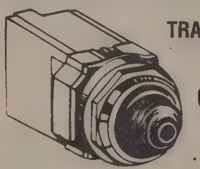
$^{7}/_{8}$" (22 mm) Miniature Size — Fig. F

Stock No.	Mfr.'s Type	Number of Positions	Contacts	EACH		
				1-24	25-49	50-99
814-0030	ASW210	2	1NO	**17.97**	**13.73**	**11.61**
814-0031	ASW201-116	2	1NC	**17.97**	**13.73**	**11.61**
814-0032	ASW211	2	1NO-1NC	**24.41**	**18.64**	**15.77**
814-0033	ASW320	3	2NO	**24.41**	**18.64**	**15.77**
814-0034	ASW302	3	2NC	**24.41**	**18.64**	**15.77**



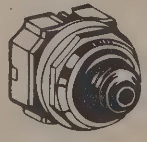
F

Round Domed Lens Pilot Lights (Fig.s G, H, J, and K)



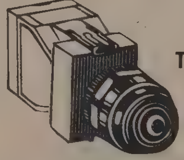
TRANSFORMER TYPE

G



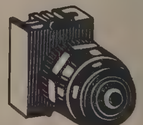
DIRECT TYPE

H



TRANSFORMER TYPE

J



DIRECT TYPE

K

$1^{13}/_{64}$" (30 mm) Full Size — Fig.s G and H

Stock No.	Mfr.'s Type	VAC	Style	Color	EACH		
					1-9	10-99	100-249
814-0035	APD1126N-R	120	Trans.	Red	**50.95**	**38.92**	**32.94**
814-0036	APD1126N-G	120	Trans.	Green	**50.95**	**38.92**	**32.94**
814-0037	APD1126N-A	120	Trans	Amber	**50.95**	**38.92**	**32.94**
814-0038	APD199DN-R-120	120	Direct	Red	**41.43**	**31.64**	**26.77**
814-0039	APD199DN-G-120	120	Direct	Green	**41.43**	**31.64**	**26.77**
814-0040	APD199DN-A-120	120	Direct	Amber	**41.43**	**31.64**	**26.77**
814-0041	APD199DN-R-24	24	Direct	Red	**41.43**	**31.64**	**26.77**
814-0042	APD199DN-G-24	24	Direct	Green	**41.43**	**31.64**	**26.77**
814-0043	APD199DN-A-24	24	Direct	Amber	**41.43**	**31.64**	**26.77**

$^{7}/_{8}$" (22 mm) Miniature Size — Fig.s J and K

Stock No.	Mfr.'s Type	VAC	Style	Color	EACH		
					1-9	10-99	100-249
814-0102	APW2126-D-R	120	Trans.	Red	**44.53**	**34.00**	**28.78**
814-0100	APW2126-D-G	120	Trans.	Green	**44.53**	**34.00**	**28.78**
814-0103	APW2126-D-A	120	Trans	Amber	**44.53**	**34.00**	**28.78**
814-0047	APW299D-R-120	120	Direct	Red	**24.29**	**18.54**	**15.69**
814-0048	APW299D-G-120	120	Direct	Green	**24.29**	**18.54**	**15.69**
814-0049	APW299D-A-120	120	Direct	Amber	**24.29**	**18.54**	**15.69**
814-0050	APW299-R-24	24	Direct	Red	**23.10**	**17.64**	**14.93**
814-0051	APW299-G-24	24	Direct	Green	**23.10**	**17.64**	**14.93**
814-0052	APW299-A-24	24	Direct	Amber	**23.10**	**17.64**	**14.93**

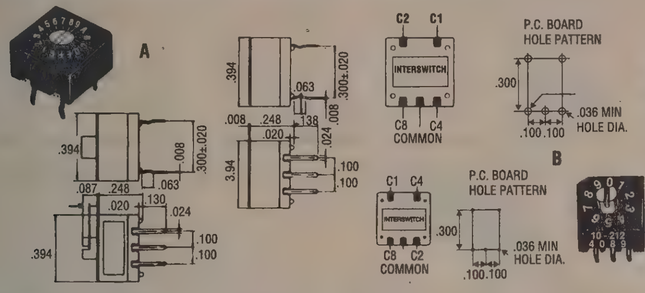
Thumbwheel and Rotary DIP Switches

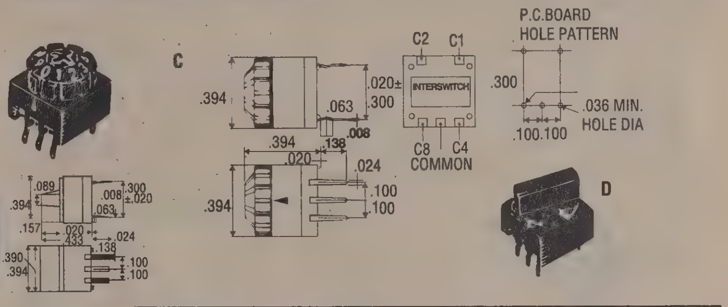
Rotary DIP Code Switches

- **Kinked terminals to hold switches in PC board to prevent lift off in wave soldering. Switches are still socket pluggable.**
- **Knob and wheel type switches may be hand adjusted.**
- **The wheel type RDS switch is designed so that it may be mounted on the end or side of a PCB and adjusted from the side without pulling the board out of the cage.**
- **Detent action is positive and firm assuring reliable settings.**
- **These switches may be interchanged with EECO and others.**
- **Optional red or green, screen indicator or knob color available.**
- **New right angle socket for mounting standard rotary switches provides possible 4-point contact.**

The new RDS rotary DIP switches embody many new improved features and at a reduced cost! This new model features molded-in contacts, ultrasonic welded body to base and an "O" ring around the rotor shaft. These features insure an absolute seal to fluxes, flux gasses and cleaners. (Acceptable solvents are isopropyl alcohol, ethyl alcohol, toluene, benzine, tricylene, clorocene, freon; acetone and methanol solvents are not acceptable.)

Current rating and voltage: Non switching 125 mA at 30 VDC; Switching 125 mA at 30 VDC. **Contact resistance:** 100 milliohms maximum. **Insulation resistance:** 1000 megohms at 250 VDC for 1 minute minimum. **Durability:** 20,000 actuations. **Positions:** 10 and 16. **Temperature rating:** –25°C (–13°F) to 85°C (185°F). **Body:** Glass-filled polyamide. (UL94V-0). **Contacts:** Copper alloy, selective gold plating over nickel. **Rotor control:** Polyacetal. **Rotor switch element:** Glass epoxy, gold over nickel plated circuits.





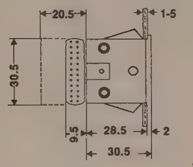
Stock No.	Mfr.'s Type	No. of Pos.	Fig.	Description	EACH 1-99	EACH 100-249	EACH 250-499
657-1000	RDS10-112	10	A	BCD Real Code	**4.49**	**3.55**	**3.25**
657-1005	RDS10-122	10	A	BCD Complement	**4.04**	**3.35**	**3.08**
657-1010	RDS10-312	10	C	BCD Real Code	**5.73**	**4.86**	**4.51**
657-1015	RDS10-322	10	C	BCD Complement	**5.23**	**4.43**	**4.21**
657-1020	RDS16-112	16	A	Hexadecimal Real	**5.30**	**4.28**	**3.97**
657-1025	RDS16-122	16	A	Hexadecimal Complement	**5.30**	**4.28**	**3.97**

Stock No.	Mfr.'s Type	No. of Pos.	Fig.	Description	EACH 1-99	EACH 100-249	EACH 250-499
657-1030	RDS16-312	16	C	Hexadecimal Real	**6.67**	**5.64**	**5.24**
657-1035	RDS16-322	16	C	Hexadecimal Complement	**7.61**	**6.44**	**5.98**
657-1040	RDS10-132	10	A	EECO-BCD Real Code	**3.98**	**3.21**	**2.97**
657-1050	RDS10-232	10	B	EECO-BCD Real Code	**3.74**	**2.95**	**2.71**
657-1055	RDS10-432	10	D	EECO-Hexadecimal Real	**5.70**	**4.59**	**4.25**
657-1641	RDS16-412	16	A	Hexadecimal Real	**5.30**	**4.28**	**3.97**

Thumbwheel Switches

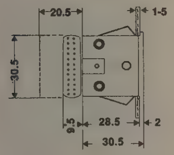
Type "H"

These switches are relatively small in size and are used extensively in instrumentation and test equipment. They are mounted through the panel from the front and snapped into place and held firm by a pair of springs attached to each end plate. **Contact rating:** 100 milliamps. **Max. Current:** 1 amp. **Working voltage:** 50V AC or DC. **Dielectric strength:** 500V. **Insulation resist. at 20°C:** 10^5 megohms. **Temperature range:** –55°C to +85°C. **Character height:** 4mm.



Stock No.	Mfr.'s Type	No. of Pos.	Description	EACH 1-49	EACH 50-99	EACH 100-Up
657-2000	HBW	–	End Plates (Pair)	**8.97**	**8.20**	**7.04**
657-2005	HBY	–	Spacer	**4.44**	**3.79**	**3.22**
657-2010	HB010/LS	10	Single Pole Decimal	**39.27**	**34.02**	**31.59**
657-2015	HB010/S	10	Single Pole Decimal	**35.48**	**30.02**	**27.87**
657-2020	HB731/LS	10	BCD Positive	**39.27**	**34.02**	**31.59**
657-2025	HB731/S	10	BCD Positive	**35.48**	**30.02**	**27.87**

Type "M"

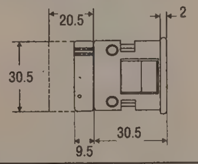


The type "M" thumbwheel switch is of relatively small size and is designed for use in computers, machine tool controls, data handling equipment and test equipment. This series is designed for front panel insertions into a panel cutout and requires no separate mounting hardware. **Contact rating:** 100 milliamps. **Max. Current:** 1 amp. **Working voltage:** 50V AC or DC. **Dielectric strength:** 500V. **Insulation resistance at 20°C:** 10^5 megohms. **Temperature range:** –25°C to +70°C. **Height:**

Stock No.	Mfr.'s Type	No. of Pos.	Description	EACH 1-49	EACH 50-99	EACH 100-Up
657-2060	MBW	–	End Plates (Pair)	**6.55**	**5.99**	**5.52**
657-2065	MBY	–	Spacer	**3.15**	**2.82**	**2.58**
657-2070	MB010/LS	10	Single Pole Decimal	**36.02**	**31.29**	**29.06**
657-2075	MB010/S	10	Single Pole Decimal	**32.27**	**27.29**	**25.35**
657-2080	MB731/LS	10	BCD Positive	**26.90**	**24.95**	**23.29**
657-2085	MB731/S	10	BCD Positive	**38.67**	**32.71**	**30.38**
657-2090	M2	–	Nut	**.70**	**.56**	**.47**
657-2095	M2X150T	–	Rod; Requires 2 Nuts	**3.05**	**2.60**	**2.25**

Type "U"

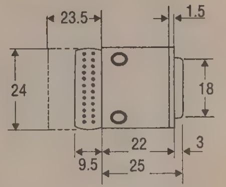
This series is front panel mounted for insertion into a rectangular panel cutout. They are designed for use in computers, machine tool controls, data handling equipment and test equipment. **Contact rating:** 100 milliamps. **Max. Current:** 1 amp. **Working voltage:** 50V AC or DC. **Dielectric strength:** 500V. **Insulation resistance at 20°C:** 10^3 megohms. **Temperature range:** –25°C to +70°C. **Character Height:** 5mm.



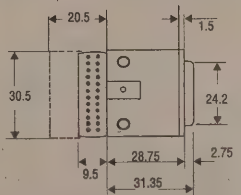
Stock No.	Mfr.'s Type	No. of Pos.	Description	EACH 1-49	EACH 50-99	EACH 100-Up
657-2130	UBW	–	End Plates (Pair)	**5.86**	**4.73**	**3.95**
657-2135	UBY	–	Spacer	**3.82**	**3.08**	**2.96**
657-2140	UB010/LS	10	Single Pole Decimal	**22.09**	**17.08**	**23.70**
657-2145	UB010/S	10	Single Pole Decimal	**18.27**	**15.46**	**1998**
657-2150	UB731/LS	10	BCD Positive	**22.79**	**20.08**	**25.49**
657-2155	UB731/S	10	BCD Positive	**19.00**	**16.08**	**21.77**

Type "L"

This series is designed for rear panel insertion into a rectangular panel cutout. They are designed for use in computers, machine tool controls, data handling equipment and test equipment. Their small size gives you the most switch with the least panel space. **Working voltage:** 50V AC or DC. **Contact rating:** 75 milliamps. **Max. current:** 1 amp. **Insulation resistance at 20°C:** 10^3 megohms. **Operating temperature:** –25°C to +70°C. **Character height:** 4mm.



Stock No.	Mfr.'s Type	No. of Pos.	Description	EACH 1-49	EACH 50-99	EACH 100-Up
657-2030	LBW	–	End Plates (Pair)	**4.81**	**4.31**	**3.95**
657-2035	LBY	–	Spacer	**3.75**	**3.18**	**2.96**
657-2040	LB010/LS	10	Single Pole Decimal	**29.25**	**25.52**	**23.70**
657-2045	LB010/S	10	Single Pole Decimal	**25.45**	**21.52**	**19.98**
657-2050	LB731/LS	10	BCD Positive	**31.45**	**27.44**	**25.49**
657-2055	LB731/S	10	BCD Positive	**27.72**	**23.44**	**21.77**



Type "P"

This series of switch is designed for rear panel insertion into a rectangular panel cutout. The type "P" thumbwheel switch is used in computers, machine tool controls, data handling equipment and test equipment. **Contact rating:** 100 milliamps. **Max. Current:** 50V AC or DC. **Dielectric strength:** 500V. **Insulation resistance at 20°C:** 10^5 megohms. **Temperature range:** –55°C to +85°C. **Height:** 4mm.

Stock No.	Mfr.'s Type	No. of Pos.	Description	EACH 1-49	EACH 50-99	EACH 100-Up
657-2100	PBW	–	End Plates (Pair)	**3.62**	**3.31**	**3.06**
657-2105	PBY/2.7	–	Spacer	**3.62**	**3.31**	**3.06**
657-2110	PB010/LS	10	Single Pole Decimal	**60.32**	**52.22**	**48.47**
657-2115	PB010/S	10	Single Pole Decimal	**57.00**	**48.22**	**44.77**
657-2120	PB731/LS	10	BCD Positive	**39.30**	**34.02**	**31.58**
657-2125	PB731/S	10	BCD Positive	**35.49**	**30.02**	**27.87**

Connectors for Types H, L, M, P & U

Stock No.	Mfr.'s Type	Description	EACH 1-49	EACH 50-99	EACH 100-Up
657-2200	CU300-644*	Solder Lugs w/out Mounting Ears	**10.67**	**9.78**	**9.02**
657-2205	CU300-645*	Wire Wrap w/out Mounting Ears	**3.06**	**2.80**	**2.72**
657-2210	CU400-217	Solder Lugs w/out Mounting Ears	**9.72**	**8.92**	**8.23**
657-2215	CU400-218	Wire Wrap w/out Mounting Ears	**9.72**	**8.92**	**8.23**
657-2220	CU400-354	PC Pins w/out Mounting Ears	**12.63**	**11.59**	**10.69**

*For Type "L" only.

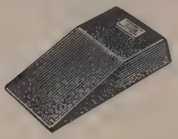
13

632 Clipper Series

The rugged, long life "Clipper" models have a patented molded nylon actuating cam that ensures long trouble-free performance. All models rated 20 Amps 1 Hp at 125-250VAC. **Models 632-D** and **632-S** consists of a cast-iron housing with skidproof base pads, black finish and strain relief connector. **Model 632-S Twin** consists of two SPDT switches, on a heavy steel base. **Dimensions:** 632-D and 632-S, $4\frac{1}{2} \times 3\frac{1}{2} \times 1\frac{1}{2}$". 632-S Twin, $8\frac{3}{8} \times 4\frac{1}{2} \times 1\frac{1}{2}$". **Weight:** 632-D and 632-S – $2\frac{1}{4}$ lbs.; 632-S Twin – 5 lbs.

Stock No.	Mfr.'s Type	Circuit	EACH	
			1-9	10-Up
842-6691	632-D	SPDT Maintained	57.08	52.69
842-6690	632-S	SPDT Momentary	37.68	34.78
842-6692	632-S Twin	SPDT Momentary	106.08	97.92

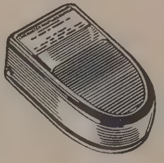
Junior Foot Switches



The low, smooth style plus its ease of operation make these models an ideal switch for both office or shop use. **Model 121-S** rated 20 Amps, 1 Hp at 125-250VAC. **Model 124-S** rated 15 Amp $\frac{1}{2}$ Hp at 125-250VAC. Both feature aluminum cast housings with a black finish and a skidproof base. Supplied with strain relief clamps and bushings for a wide variety of cord sizes. **Dimensions:** $5\frac{1}{2} \times 3\frac{1}{4} \times 1\frac{1}{4}$". **Weight:** 1 lb.

Stock No.	Mfr.'s Type	Circuit	EACH	
			1-9	10-Up
842-6605	121-S	SPDT Momentary	34.52	31.86
842-6610	124-S	DPDT Momentary	62.17	57.38

Nautilus Foot Switches



Rugged aluminum casting for a long life. Piston type actuator sealed with "O" rings. Electrical Contacts sealed in a "Well." Dust tight, watertight, oiltight, and rust resistant. Grey enamel finish. **Model WP-541-D** rated 12 Amp at 125VAC, 6 Amp at 250VAC. **Model WP-541-S** rated 20 Amp at 125-250VAC. **Dimensions:** $8 \times 4 \times 2\frac{1}{2}$". **Weight:** $2\frac{1}{2}$ lbs.

Stock No.	Mfr.'s Type	Circuit	EACH	
			1-9	10-Up
842-6616	WP-541-DC	SPDT Maintained	239.48	221.06
842-6621	WP-541-SC	SPDT Momentary	239.48	221.06

491 Series Compact Foot Switches

Strong steel housing with black finish and a skidproof base. Small compact and lightweight. This model was built for a long life. All type rated 10 Amps at 125VAC. **Dimensions:** $2\frac{7}{8} \times 2\frac{1}{2} \times 1\frac{1}{8}$" **Weight:** 7 oz.

Stock No.	Mfr.'s Type	Circuit	EACH	
			1-9	10-Up
842-6680	491-S	SPDT Momentary	17.63	16.27
842-6682*	491-SC3	SPDT Momentary	36.75	33.92
842-6684**	491-SC36	SPST Momentary	31.93	29.47

*Wired N.O. and supplied with an 8' 16/3 cord with a 3 prong series plug. Green lead grounded.

**Wired N.O. and supplied with a 6' 16/3 cord without plug. Green lead grounded.

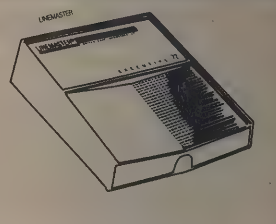
Lektro-Lok Foot Switches

The Lektro-Lok operates on the teeter-totter principle. Pressure on one side opens or closes circuits, release and switch returns to normal off position. Mechanical interlock prevents operation of both circuits at the same time. Second position operates independent of first. Both sides can be wired N.O. or N.C. All connections made internally with only one cord coming out. Rugged stamped metal housing has a black finish and a skidproof base. Both type rated 10 Amps at 125VAC. **Dimensions:** $5 \times 2\frac{1}{2} \times 1\frac{1}{4}$". **Weight:** 10 oz.

Stock No.	Mfr.'s Type	Circuit	EACH	
			1-9	10-Up
842-6634	L-2-S	SPDT Momentary*	42.67	39.38

*Both sides.

Executive Foot Switches

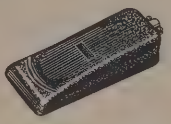


Uses same operating principle as "Lektro-Lok" series with internal wiring and one cord coming out. Also incorporates mechanical interlock to prevent accidental operation of both circuits at the same time. Both types rated 10 Amps at 125-250VAC. Modern style die cast cover is medium grey with skidproof back. **Dimensions:** $4\frac{5}{8} \times 4 \times 1\frac{1}{8}$". **Weight:** $1\frac{1}{4}$ lbs.

Stock No.	Mfr.'s Type	Circuit	EACH	
			1-9	10-Up
842-6640	72	SPDT Momentary*	41.08	37.92

*Both sides.

Duplex Foot Switches

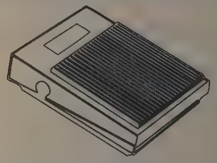


This neat cast aluminum housing is pivoted in the center for easy heel-toe operation. Uses same mechanical interlock system as the Executive and Lektro-Lok switches. Comes with an adjustable strain relief connector for most cord sizes. Smooth black finish with a skidproof base. Rated 15 Amps $\frac{1}{2}$ Hp at 125-250VAC. **Dimensions:** $8\frac{1}{2} \times 3\frac{1}{2} \times 2$". **Weight:** $1\frac{3}{4}$ lbs.

Stock No.	Mfr.'s Type	Circuit	EACH	
			1-9	10-Up
842-6670	476-S	SPDT Momentary*	66.86	61.72

*Both sides.

Treadlite II Foot Switches



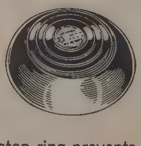
Operating efficiency and handsome appearance go hand-in-hand with this compact, versatile foot-switch. Each model has a nonskid pad on the actuating treadle and a skidproof base. Formed steel casings with a black finish. 10 and 15 amps. ½ HP at 125 VAC. **Dimensions:** $3\frac{1}{2} \times 2\frac{5}{8} \times 1$". **Weight:** 7 oz.

Stock No.	Mfr.'s Type	Circuit	EACH	
			1-9	10-Up
842-6091	T-91-S	SPDT Momentary*	14.49	13.45
842-6661*	T-91-SC3	SPST Momentary*	21.95	20.26
842-9998**	T-91-3C36	SPST Momentary*	22.66	20.92

*Supplied with 6' 18.3 SJT cable with 3 prong series plug, green lead grounded.

**Supplied with 6' 18.3 SJT cable without plug.

Gem Foot Switches



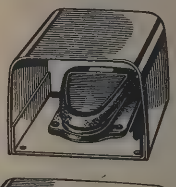
These switches feature a round, black actuating cap in a chrome plated heavy die-cast housing with a full non-skid base pad. Moderate pressure from any direction operates the switch. Internal over travel stop ring prevents damage to switch when excessive force is applied. The **GEM-3** is suppled with a 6' 18/3 cord and 3 prong plug, green lead grounded. The **GEM-36** is supplied with a 6' 18/3 cord without plug. Both type rated 10 amps, 1/2 Hp at 125 VAC. **Dimensions:** $3\frac{13}{16} \times 1\frac{7}{32}$". **Weight:** 1 lb., without cord set.

Stock No.	Mfr.'s Type	Circuit	EACH	
			1-9	10-Up
842-6036*	GEM-36	SPST Momentary*	35.98	33.21

*Wired N.O.

Full-Foot Switch Guards

- ► **Pre-Drilled**
- ► **Alert Orange Color**
- ► **Complete With Hardware and Instructions**



Type 522-B14. Full single guard. Accepts most "executive" and "compact" foot switch models. **Dimensions:** $6 \times 6 \times 4\frac{1}{2}$". **Weight:** 4 lbs.

842-6652. 1-9 ....EACH 29.25

10-Up ....EACH 27.00

Type 522-B12. Full Twin Guard. Accepts twin clipper style only. **Dimensions:** $11 \times 6 \times 4\frac{1}{2}$". **Weight:** 7 lbs.

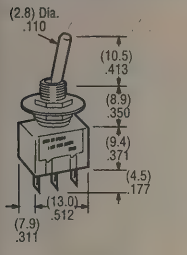
842-6653. 1-9 ....EACH 49.21

10-Up ....EACH 45.43

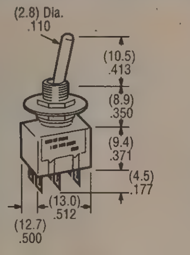
Subminiature Toggle Switches

M Series Features: 356,000 different configurations; most popular shown here. Epoxy sealed terminals, high torque bushings, anti-jamming levers, stainless steel housing. Bright chrome levers. 1/4"-40 threaded .350" long bushing with keyway. Solder lug terminals with holes .043" × .079". **Electrical Capacity:** 6 A @ 125 VAC or 30 VDC. **Dielectric Strength:** 1,500 VAC min. **Electrical Life:** 25,000 operations min. **Standard Hardware:** 2 hex nuts, 1 locking ring, 1 lockwasher.

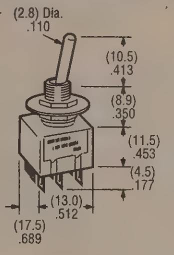
Bat Lever with Threaded Bushing and Solder Lugs



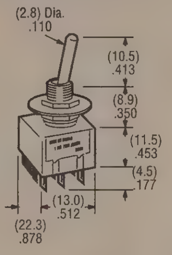
M2012SS1W01



M2022SS1W01



M2032SS1W01

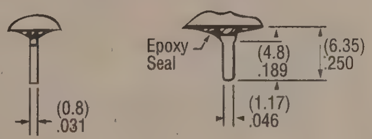


M2042SS1W01

Lever of brass with bright chrome finish. Standard bushing and terminal characteristics noted in introduction.

Stock No.	Mfr.'s Type	Pole Throw	Circuit () = momentary	EACH		
				1-24	25-99	100-499
870-9118	M2011SS1W01	SPST	on-none-off	2.97	2.74	2.54
870-8600	M2012SS1W01	SPDT	on-none-on	3.13	2.89	2.69
870-8601	M2013SS1W01	SPDT	on-off-on	3.63	3.35	3.11
870-8602	M2015SS1W01	SPDT	on-none-(on)	4.05	3.74	3.47
870-8603	M2018SS1W01	SPDT	(on)-off-(on)	4.13	3.82	3.54
870-8604	M2019SS1W01	SPDT	on-off-(on)	4.13	3.82	3.54
870-8610	M2024SS1W01	SP3T	on-on-on	6.67	6.15	5.71
870-8611	M2026SS1W01	SP3T	(on)-on-(on)	7.00	6.46	6.00
870-8612	M2027SS1W01	SP3T	on-on-(on)	7.00	6.46	6.00
870-8605	M2022SS1W01	DPDT	on-none-on	4.80	4.43	4.11
870-8606	M2023SS1W01	DPDT	on-off-on	5.50	5.08	4.71
870-8607	M2025SS1W01	DPDT	on-none-(on)	6.25	5.77	5.36
870-8608	M2028SS1W01	DPDT	(on)-off-(on)	6.50	6.00	5.57
870-8609	M2029SS1W01	DPDT	on-off-(on)	6.50	6.00	5.57
870-8617	M2044SS1W01	DP3T	on-on-on	15.42	14.23	13.21
870-8618	M2046SS1W01	DP3T	on-on-(on)	15.42	14.23	13.21
870-8619	M2047SS1W01	DP3T	on-on-(on)	15.42	14.23	13.21
870-8613	M2032SS1W01	3PDT	on-none-on	7.92	7.31	6.79
870-8614	M2033SS1W01	3PDT	on-off-on	9.80	9.05	8.40
870-8615	M2042SS1W01	4PDT	on-none-on	10.88	10.05	9.33
870-8616	M2043SS1W01	4PDT	on-off-on	12.83	11.85	11.00

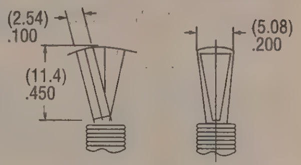
Bat Lever with Threaded Bushing and Straight PC Terminals



Silver plated PC terminals are spaced .185" center-to-center and .189" from pole to pole. Recommended PC board hole diameter is .073".

Stock No.	Mfr.'s Type	Pole Throw	Circuit () = momentary	EACH		
				1-24	25-99	100-499
870-9105	M2012SS1W03	SPDT	on-none-on	3.32	3.06	2.84
870-9106	M2013SS1W03	SPDT	on-off-on	3.82	3.52	3.27
870-9107	M2015SS1W03	SPDT	on-none-(on)	4.23	3.91	3.63
870-9108	M2018SS1W03	SPDT	(on)-off-(on)	4.32	3.98	3.70
870-9109	M2019SS1W03	SPDT	on-off-(on)	4.32	3.98	3.70
870-9110	M2024SS1W03	SP3T	on-on-on	7.03	6.49	6.03
870-9111	M2022SS1W03	DPDT	on-none-on	5.17	4.77	4.43
870-9112	M2023SS1W03	DPDT	on-off-on	5.87	5.42	5.03
870-9116	M2032SS1W03	3PDT	on-none-on	8.47	7.82	7.26
870-9117	M2042SS1W03	4PDT	on-none-on	11.62	10.72	9.96

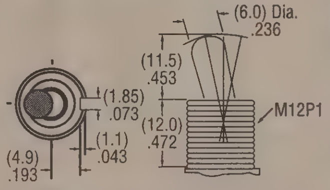
Flatted Lever, Threaded Bushing and Solder Lug Terminals



Lever of brass with bright chrome finish. Antirotation feature assures correctly aligned lever at all times. Standard bushing and terminal characteristics noted in introduction.

Stock No.	Mfr.'s Type	Pole Throw	Circuit () = momentary	EACH		
				1-24	25-99	100-499
870-8646	M2012ES1W01	SPDT	on-none-on	3.97	3.66	3.40
870-8647	M2013ES1W01	SPDT	on-off-on	4.47	4.12	3.83
870-8648	M2015ES1W01	SPDT	on-none-(on)	4.88	4.51	4.19
870-8649	M2018ES1W01	SPDT	(on)-off-(on)	4.97	4.58	4.26
870-8650	M2019ES1W01	SPDT	on-off-(on)	4.97	4.58	4.26
870-8651	M2024ES1W01	SP3T	on-on-on	7.50	6.92	6.43
870-8652	M2022ES1W01	DPDT	on-none-on	5.63	5.20	4.83
870-8653	M2023ES1W01	DPDT	on-off-on	6.33	5.85	5.43
870-8654	M2025ES1W01	DPDT	on-none-(on)	7.08	6.54	6.07
870-8655	M2028ES1W01	DPDT	(on)-off-(on)	7.33	6.77	6.29

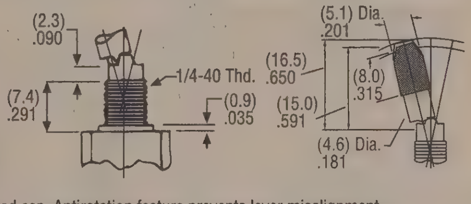
Large Lever and Bushing with Solder Lug Terminals



12 mm diameter threaded bushing with keyway. Bat shaped lever of brass with bright chrome finish. **Maximum Panel Thickness:** .216".

Stock No.	Mfr.'s Type	Pole Throw	Circuit () = momentary	EACH		
				1-24	25-99	100-499
870-9703	M2011BB1W01	SPST	on-none-off	4.80	4.43	4.11
870-8656	M2012BB1W01	SPDT	on-none-on	4.97	4.58	4.26
870-8657	M2013BB1W01	SPDT	on-off-on	5.47	5.05	4.69
870-8658	M2015BB1W01	SPDT	on-none-(on)	5.88	5.43	5.04
870-8659	M2018BB1W01	SPDT	(on)-off-(on)	5.97	5.51	5.11
870-8666	M2024BB1W01	SP3T	on-on-on	8.50	7.85	7.29
870-8661	M2022BB1W01	DPDT	on-none-on	6.63	6.12	5.69
870-8669	M2032BB1W01	3PDT	on-none-on	9.75	9.00	8.36
870-8671	M2035BB1W01	3PDT	on-none-(on)	13.72	12.66	11.76
870-8672	M2038BB1W01	3PDT	(on)-off-(on)	13.72	12.66	11.76
870-8673	M2042BB1W01	4PDT	on-none-on	12.72	11.74	10.90
870-8674	M2043BB1W01	4PDT	on-off-on	14.67	13.54	12.57
870-8675	M2045BB1W01	4PDT	on-none-(on)	16.05	14.82	13.76

Locking Lever, Threaded Bushing and Solder Lug Terminals

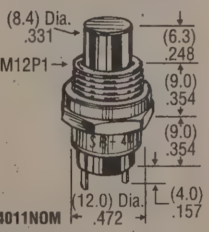


The lever locks in all maintained positions to prevent accidental actuation. Lever material is chrome plated brass with nickel plated cap. Antirotation feature prevents lever misalignment.

Stock No.	Mfr.'s Type	Pole Throw	Circuit () = momentary	EACH		
				1-24	25-99	100-499
870-8676	M2012LL1W01	SPDT	on-none-on	5.28	4.88	4.53
870-8677	M2013LL1W01	SPDT	on-off-on	5.78	5.34	4.96
870-8678	M2015LL1W01	SPDT	on-none-(on)	6.20	5.72	5.31
870-8679	M2018LL1W01	SPDT	(on)-off-(on)	6.28	5.80	5.39
870-8680	M2019LL1W01	SPDT	on-off-(on)	6.28	5.80	5.39
870-8681	M2022LL1W01	DPDT	on-none-on	6.95	6.42	5.96
870-8682	M2023LL1W01	DPDT	on-off-on	7.65	7.06	6.56
870-8684	M2032LL1W01	3PDT	on-none-on	10.07	9.29	8.63
870-8686	M2042LL1W01	4PDT	on-none-on	13.03	12.03	11.17

SB Series Pushbuttons

Rugged subminiature pushbutton switch. NO = Normally Open and NC = Normally Closed. Black plunger. **Resistive Load:** 3 A @ 125 VAC. **Dielectric Strength:** 1,000 VAC minimum. **Electrical Life:** 10,000 operations minimum. **Travel:** .088". **Operating Force:** 500 grams.



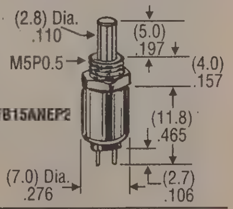
SB4011NOM

Switches and Optional Slip-On Caps

Stock No.	Mfr.'s Type	Pole Throw	Circuit () = momentary	Description	EACH		
					1-24	25-49	50-99
870-0790	SB4011NOM	SPST	off-(on)	Blk Plunger	3.42	3.15	2.93
870-0791	SB4011NCM	SPST	on-(off)	Blk Plunger	3.42	3.15	2.93
870-8780	AT422A	Cap	.394" Dia.	Black	.33	.31	.29
870-8781	AT422B	Cap	.394" Dia.	White	.33	.31	.29
870-8782	AT422C	Cap	.394" Dia.	Red	.33	.31	.29

FB Series Pushbuttons

Super-subminiature, momentary with epoxy sealed solder lug/PC terminals. White plunger. **Resistive Load:** 500 mA @ 125 VAC. **Dielectric Strength:** 1,000 VAC min. **Electrical Life:** 50,000 operations min. **Total Travel:** .065". **Operating Force:** 220 grams average. **Colors Available:** Black = 1 = A; White = 2 = B; Red = 3 = C.



FB15ANEP2

Switches and Optional Slip-On Caps

Stock No.	Mfr.'s Type	Pole Throw	Circuit () = momentary	Description	EACH		
					1-24	25-49	50-99
870-0905	FB15ANEP2	SPST	off-(on)	Wht Plunger	3.05	2.82	2.61
870-1201	AT475A	Cap	.201" dia.	Black	.23	.20	.19
870-1202	AT475B	Cap	.201" dia.	White	.23	.20	.19
870-1200	AT475C	Cap	.201" dia.	Red	.23	.20	.19
870-0901	AT496A	Cap	.295" dia.	Black	.31	.28	.26
870-0902	AT496B	Cap	.295" dia.	White	.31	.28	.26
870-0900	AT496C	Cap	.295" dia.	Red	.31	.28	.26

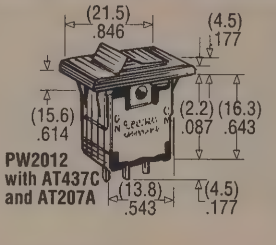
Snap-In Paddle and Rocker Switches

PW Series Features: Snap-in mount, .846" behind panel, UL recognition, CSA certification, and staked-in terminals. **Electrical Capacity:** 5 A resistive load @ 125 V AC. **Dielectric Strength:** 1,000 V AC minimum. **Electrical Life:** 10,000 operations minimum. **Angle of Throw:** 26°. **Ambient Temperature:** –10°C through +70°C. **Terminals Holes:** .043" × .079". **Panel Thickness:** .039" through .126" without bezel and .039" through .098" with bezel.

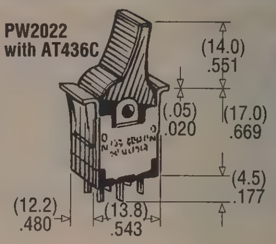
Basic Switch with Solder Lug Terminals

Order caps and bezel separately.

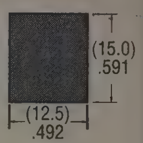
Stock No.	Mfr.'s Type	Pole Throw	Circuit ( ) = momentary	EACH 1-24	25-99	100-499
870-8700	PW2012	SPDT	on-none-on	4.00	3.69	3.43
870-8701	PW2013	SPDT	on-off-on	4.47	4.12	3.83
870-8702	PW2015	SPDT	on-none-(on)	4.67	4.31	4.00
870-8703	PW2018	SPDT	(on)-off-(on)	4.92	4.54	4.21
870-8704	PW2019	SPDT	on-off-(on)	4.92	4.54	4.21
870-8705	PW2022	DPDT	on-none-on	5.00	4.62	4.29
870-8706	PW2023	DPDT	on-off-on	5.75	5.31	4.93
870-8707	PW2025	DPDT	on-none-(on)	6.08	5.62	5.21
870-8708	PW2028	DPDT	(on)-off-(on)	6.50	6.00	5.57
870-8709	PW2029	DPDT	on-off-(on)	6.50	6.00	5.57



PW2012 with AT437C and AT207A



PW2022 with AT436C

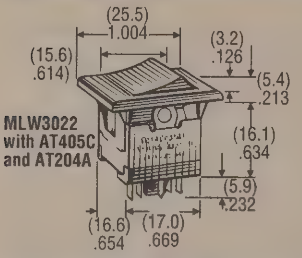


Cutout

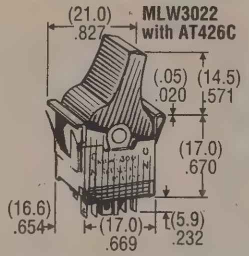
Caps and Bezel

Stock No.	Mfr.'s Type	Description	EACH 1-24	25-99	100-499
870-8710	AT436A	Black paddle cap	.50	.46	.43
870-8711	AT436B	White paddle cap	.50	.46	.43
870-8712	AT436C	Red paddle cap	.50	.46	.43
870-8713	AT436H	Gray paddle cap	.50	.46	.43
870-8714	AT437A	Black rocker cap	.50	.46	.43
870-8715	AT437B	White rocker cap	.50	.46	.43
870-8716	AT437C	Red rocker cap	.50	.46	.43
870-8721	AT207A	Black bezel	.58	.54	.50
870-8722	AT207B	White bezel	.58	.54	.50
870-8723	AT207C	Red bezel	.58	.54	.50

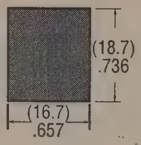
Lighted Snap-In Paddle and Rocker Switches



MLW3022 with AT405C and AT204A



MLW3022 with AT426C



Cutout

MLW Series Features: .902" behind panel, front panel relampable, isolated lamp circuit, UL recognition, and epoxy sealed terminals. **Electrical Capacity:** 5 A resistive load @ 125 V AC. **Dielectric Strength:** 1,500 V AC minimum. **Electrical Life:** 10,000 operations minimum. **Operating Force:** 1014 grams for rockers and 460 grams for paddles. **Angle of Throw:** 26°. **Ambient Temperature:** –10°C through +50°C.

Basic Switch with Solder Lug Terminals

Order caps and bezel separately. Matching indicator available. **Terminal Holes:** .043" × .079". **Panel Thickness:** .039" through .157" without bezel and .039" through .118" with bezel.

Stock No.	Mfr.'s Type	Pole Throw	Circuit ( ) = momentary	EACH 1-24	25-99	100-499
870-0801	MLW3012	SPDT	on-none-on	7.52	6.94	6.44
870-0802	MLW3013	SPDT	on-off-on	7.88	7.28	6.76
870-0803	MLW3015	SPDT	on-none-(on)	8.35	7.71	7.16
870-0804	MLW3018	SPDT	(on)-off-(on)	8.75	8.08	7.50
870-0805	MLW3019	SPDT	on-off-(on)	8.75	8.08	7.50
870-0806	MLW3022	DPDT	on-none-on	8.35	7.71	7.16
870-0807	MLW3023	DPDT	on-off-on	8.80	8.12	7.54
870-0808	MLW3025	DPDT	on-none-(on)	8.98	8.29	7.70
870-0809	MLW3028	DPDT	(on)-off-(on)	9.35	8.63	8.01
870-0810	MLW3029	DPDT	on-off-(on)	9.35	8.63	8.01

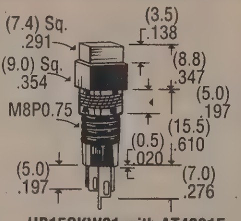
Caps, Bezel and Lamps

Stock No.	Mfr.'s Type	Description	EACH 1-24	25-49	50-99
870-0811	AT405B	White rocker cap	.92	.85	.79
870-0812	AT405C	Red rocker cap	.92	.85	.79
870-0816	AT405E	Yellow rocker cap	.92	.85	.79
870-0813	AT405F	Green rocker cap	.92	.85	.79
870-0815	AT405G	Blue rocker cap	.92	.85	.79
870-0817	AT426B	White paddle cap	.92	.85	.79
870-0818	AT426C	Red paddle cap	.92	.85	.79
870-0822	AT426E	Yellow paddle cap	.92	.85	.79
870-0819	AT426F	Green paddle cap	.92	.85	.79
870-8724	AT204A	Black bezel	.65	.60	.56
870-0839	AT204B	White bezel	.65	.60	.56
870-0842	AT204H	Gray bezel	.65	.60	.56
870-0843	AT602-6V	6 V incandescent lamp	1.57	1.45	1.34
870-0844	AT602-12V	12 V incandescent lamp	1.57	1.45	1.34
870-0847	AT602-28V	28 V incandescent lamp	1.57	1.45	1.34
870-8725	AT602N	110 V neon lamp	2.75	2.54	2.36

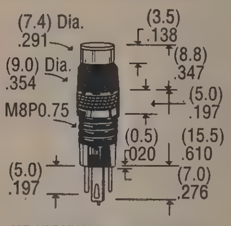
AT602 Lamp Specifications — Determined at Basic Temperature of 25°C

Voltage Current Endurance	6 V 80 mA 2000 hrs.	12 V 50 mA 2000 hrs.	28 V 22 mA 2000 hrs.	110 V Neon 1.5 mA 2000 hrs.	Recommended Resistor for Neon: 33 KΩ for 110 V and 100 KΩ for 220 V AC

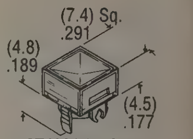
HB Series Lighted Pushbutton Switches



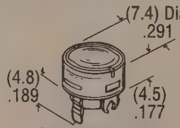
HB15SKW01 with AT4031F



HB15CKW01 with AT4032C

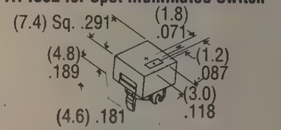


AT4031 for Switch

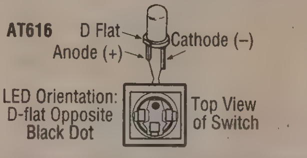


AT4032 for Switch

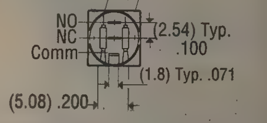
AT4052 for Spot Illuminated Switch



AT616



Terminals L (+) L (–)



Super-subminiature with LED full or spot illumination. Front panel relamp. Front panel threaded mount. Dual, sliding silver contacts. Momentary and alternate with latchdown. **Resistive Load:** 0.1 A max. @ 30 V AC/DC. **Electrical Life:** 50,000 operations minimum. **Travel:** .118". **Operating Force:** 350 g.

Switches and Snap-on Caps

Match switch and cap shapes; order lamps separately.

Stock No.	Mfr.'s Type	Pole Throw	Circuit ( ) = mom.	Description	EACH 1-24	25-49	50-99	100-249
870-0866	HB15SKW01	SPDT	on-(on)	Square Shroud	5.35	4.94	4.79	4.59
870-0867	HB16SKW01	SPDT	on-on	Square Shroud	5.80	5.35	5.19	4.97
870-0872	AT4031C	Cap	Square	Red	.95	.88	.85	.81
870-0873	AT4031E	Cap	Square	Yellow	.95	.88	.85	.81
870-0874	AT4031F	Cap	Square	Green	.95	.88	.85	.81
870-2005	AT4052A	Cap	Square	Black, Spot Illum'd.	1.30	1.20	1.16	1.11
870-0868	HB15CKW01	SPDT	on-(on)	Round Shroud	5.35	4.94	4.79	4.59
870-0869	HB16CKW01	SPDT	on-on	Round Shroud	5.80	5.35	5.19	4.97
870-0875	AT4032C	Cap	Round	Red	.95	.88	.85	.81
870-0876	AT4032E	Cap	Round	Yellow	.95	.88	.85	.81
870-0877	AT4032F	Cap	Round	Green	.95	.88	.85	.81

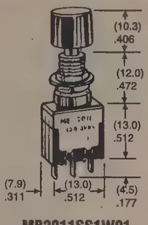
LED

Reverse Peak Voltage: 5 V for red, yellow, and green. **Current Reduction Rate Above 25°C:** 0.40 mA/°C for red and green, 26 mA/°C for yellow.

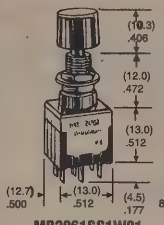
Stock No.	Mfr.'s Type	LED Color	Fwd. Peak Current	Cont's. Fwd. Current	Fwd. Voltage	EACH 1-24	25-49	50-99	100-249
870-8894	AT616C	Red	30 mA	24 mA	2.04 V	1.40	1.29	1.25	1.20
870-8895	AT616E	Yellow	20 mA	16 mA	1.88 V	1.40	1.29	1.25	1.20
870-8896	AT616F	Green	30 mA	24 mA	2.02 V	1.40	1.29	1.25	1.20
870-8789	AT111	Lamping Tool of stainless steel, .197" long				.40	.37	.36	.34

MB2000

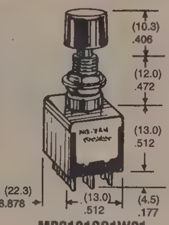
Features: High torque bushings, epoxy sealed terminals, UL recognized and CSA certified. **Electrical Capacity:** 6 A resistive load @ 125 VAC or 30 VDC. **Dielectric Strength:** 1,500 VAC minimum. **Electrical Life:** 25,000 operations minimum. **Travel:** .071" on-(on) and .153" on-on. **Hardware:** 2 nuts and 1 lockwasher.



MB2011SS1W01 with AT407A



MB2061SS1W01 with AT407A



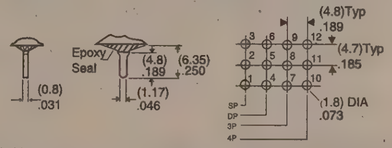
MB2181SS1W01 with AT407A

1/4"-40 Threaded Bushing and Solder Lug Terminals

Stock No.	Mfr.'s Type	Pole Throw	Circuit ( ) = mom.	EACH		
				1-24	25-99	100-499
870-8750	MB2011SS1W01	SPDT	on-(on)	4.47	4.12	3.83
870-8751	MB2065SS1W01	SPDT	on-on	4.63	4.28	3.97
870-8752	MB2061SS1W01	DPDT	on-(on)	6.13	5.66	5.26
870-8753	MB2085SS1W01	DPDT	on-on	6.50	6.00	5.57
870-8754	MB2181SS1W01	4PDT	on-(on)	10.75	9.92	9.21
870-8755	MB2185SS1W01	4PDT	on-on	11.17	10.31	9.57

1/4"-40 Threaded Bushing and Straight PC Terminals

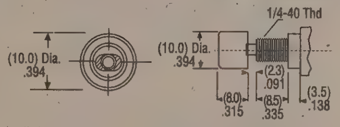
Silver contacts and terminals rated 6 A. Order optional screw-on cap separately.



Stock No.	Mfr.'s Type	Pole Throw	Circuit ( ) = mom.	1-24	25-99	100-499
870-8738	MB2011SS1W03	SPDT	on-(on)	4.65	4.29	3.99
870-8739	MB2065SS1W03	SPDT	on-on	4.82	4.45	4.13
870-8740	MB2061SS1W03	DPDT	on-(on)	6.50	6.00	5.57
870-8741	MB2085SS1W03	DPDT	on-on	6.87	6.34	5.89
870-8742	MB2181SS1W03	4PDT	on-(on)	11.48	10.60	9.84
870-8743	MB2185SS1W03	4PDT	on-on	11.90	10.98	10.20

1/4"-40 Splashproof Bushing and Solder Lug Terminals

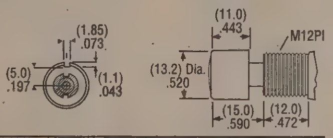
Silver contacts rated 6 A. Sealed with exterior and interior o-rings. Order optional screw-on cap separately.



Stock No.	Mfr.'s Type	Pole Throw	Circuit ( ) = mom.	1-24	25-99	100-499
870-8744	MB2011SD3W01†	SPDT	on-(on)	5.63	5.20	4.83
870-8745	MB2065SD3W01	SPDT	on-on	5.80	5.35	4.97
870-8746	MB2061SD3W01	DPDT	on-(on)	7.30	6.74	6.26
870-8747	MB2085SD3W01	DPDT	on-on	7.67	7.08	6.57

Large Bushing and Solder Lug Terminals

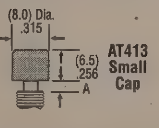
12 mm diameter threaded bushing. Supplied with a .520" screw-on black cap. Silver contacts rated 6 A @ 125 VAC.



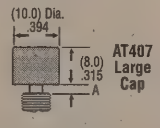
Stock No.	Mfr.'s Type	Pole Throw	Circuit ( ) = mom.	1-24	25-99	100-499
870-8762	MB2011SB1W01	SPDT	on-(on)	6.30	5.82	5.40
870-8763	MB2065SB1W01	SPDT	on-on	6.47	5.97	5.54
870-8764	MB2061SB1W01	DPDT	on-(on)	7.97	7.35	6.83
870-8765	MB2085SB1W01	DPDT	on-on	8.33	7.69	7.14
870-8786	MB2181SB1W01	4PDT	on-(on)	12.58	11.62	10.79
870-8766	MB2185SB1W01	4PDT	on-on	13.00	12.00	11.14

Optional Screw-On Caps

"X" for Color Codes: Black = 1 = A, white = 2 = B, red = 0 =C.
Note: "A" = .091" for momentary and .157" for alternate action.
870-300X. AT413A, B, or C. .315" Dia. **1-24** ....**EACH .38**
25-99..........**EACH .35** **100-499** ....**EACH .33**
870-400X. AT407A, B, or C. .394" Dia. **1-24** ....**EACH .43**
25-99..........**EACH .40** **100-499** ....**EACH .37**



AT413 Small Cap

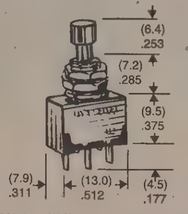


AT407 Large Cap

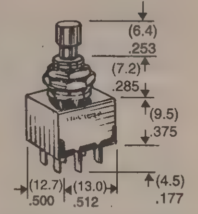
MB2400

► **Snap-Acting** ► **Light Touch**

Epoxy sealed terminals. **Electrical Capacity:** 3 A resistive load @ 125 VAC (silver — code W); 0.4 VA maximum @ 28 V maximum AC/DC (gold — code G). **Dielectric Strength:** 1,500 VAC minimum. **Electrical Life:** 25,000 operations minimum (silver — W) and 100,000 operations minimum (gold — G). **Travel:** .039'. **Operating Force:** 250 grams (single pole) and 400 grams (double pole). **Ambient Temperature:** –15°C through +70°C. **Hardware:** 2 nuts and 1 lockwasher.



MB2411E1W01 with AT475A



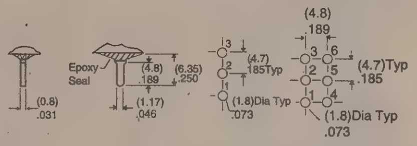
MB2461E1W01 with AT475C

1/4"-40 Threaded Bushing and Solder Lug Terminals

Stock No.	Mfr.'s Type	Pole Throw	Circuit ( ) = mom.	EACH		
				1-24	25-99	100-499
870-8768	MB2411E1W01	SPDT	on-(on)	4.32	3.98	3.70
870-8769	MB2461E1W01	DPDT	on-(on)	5.93	5.48	5.09
870-8770	MB2411E1G01	SPDT	on-(on)	4.67	4.31	4.00
870-8771	MB2461E1G01	DPDT	on-(on)	6.63	6.12	5.69

1/4"-40 Threaded Bushing and Straight PC Terminals

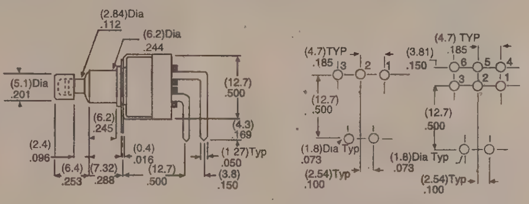
Silver contacts and terminals rated 3 A. Order optional snap-on cap separately.



Stock No.	Mfr.'s Type	Pole Throw	Circuit ( ) = mom.	1-24	25-99	100-499
870-8772	MB2411E1W03	SPDT	on-(on)	4.57	4.22	3.91
870-8773	MB2461E1W03	DPDT	on-(on)	6.43	5.94	5.51

Smooth Bushing and Right Angle PC

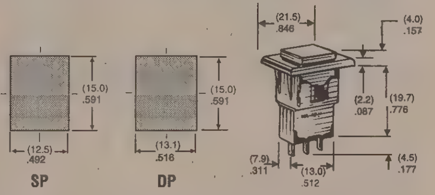
Gold contacts rated 0.4 VA. .244" dia. smooth bushing. Order optional snap-on cap separately.



Stock No.	Mfr.'s Type	Pole Throw	Circuit ( ) = mom.	1-24	25-99	100-499
870-8778	MB2411A2G30	SPDT	on-(on)	5.33	4.92	4.57
870-8900	MB2461A2G30	DPDT	on-(on)	7.97	7.35	6.83

Snap-In Mount and Solder Lug Terminals

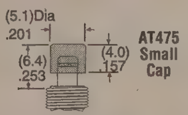
Silver contacts rated 3 A. Listed below with red cap (coded C) and black bezel (coded A). **Other Colors Available:** A = black, B = white, C = red, E = yellow, F = green, G = blue, and H = gray. **Panel Thickness:** .039"-.126".



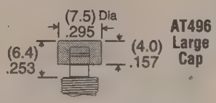
Stock No.	Mfr.'s Type	Pole Throw	Circuit ( ) = mom.	1-24	25-99	100-499
870-9924	MB2411JW01-C-1A	SPDT	on-(on)	6.05	5.58	5.19
870-9925	MB2461JW01-C-1A	DPDT	on-(on)	7.67	7.08	6.57

Optional Snap-On Caps

"X" for Color Codes: Black = 1 = A, white = 2 = B, red = 0 =C.



AT475 Small Cap



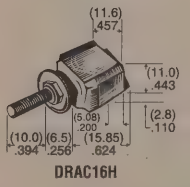
AT496 Large Cap

870-120X. AT475A, B, or C. .201" Dia. **1-24** ....**EACH .22**
25-99..........**EACH .20** **100-499**..........**EACH .19**
870-090X. AT496A, B, or C. .295" Dia. **1-24** ....**EACH .30**
25-99..........**EACH .28** **100-499**..........**EACH .25**

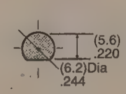
DR Series Binary-Coded DIP Rotaries

Process sealed. **Switching Rating:** 100 mA @ 5 VDC. **Nonswitching Rating:** 100 mA @ 50 VDC. **Electrical Life:** 20,000 detent operations minimum. **Operating Torque:** 120 g-260 g.

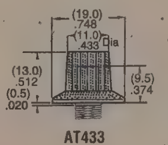
Stock No.	Mfr.'s Type	Actuator	Coding and Terminals (Added Info on Table at Left)	EACH		
				1-24	25-99	100-499
870-9130	DRAC16P	Knob	Complement/Hexa/Straight PC	5.50	5.08	4.71
870-9131	DRAC16H	Knob	Complement/Hexa/Right Angle	5.92	5.46	5.07
870-9132	DRAR16P	Knob	Real/Hexa/Straight PC	5.50	5.08	4.71
870-9133	DRAR16H	Knob	Real/Hexa/Right Angle	5.92	5.46	5.07
870-9140	AT433	Knob (Cap)	For DRA Models only	.67	.62	.57
870-6008	DRFR10P	Screwdriver	Real/Decimal/Straight PC	3.33	3.08	2.86
870-6009	DRFR16P	Screwdriver	Real/Hexadecimal/Straight PC	3.33	3.08	2.86
870-6010	DRFR10H	Screwdriver	Real/Decimal/Right Angle	3.75	3.46	3.21
870-6011	DRFR16H	Screwdriver	Real/Hexadecimal/Right Angle	3.75	3.46	3.21
870-6012	DRKR10P	Shaft	Real/Decimal/Straight PC	3.50	3.23	3.00
870-6013	DRKR16P	Shaft	Real/Hexadecimal/Straight PC	3.50	3.23	3.00
870-6014	DRKR10H	Shaft	Real/Decimal/Right Angle	3.92	3.62	3.36
870-6015	DRKR16H	Shaft	Real/Hexadecimal/Right Angle	3.92	3.62	3.36
870-6018	DRFC10P	Screwdriver	Complement/Deci/Straight PC	3.33	3.08	2.86
870-6019	DRFC16P	Screwdriver	Complement/Hexa/Straight PC	3.33	3.08	2.86
870-6020	DRFC10H	Screwdriver	Complement/Deci/Right Angle	3.75	3.46	3.21
870-6021	DRFC16H	Screwdriver	Complement/Hexa/Right Angle	3.75	3.46	3.21
870-6025	DRKC16H	Shaft	Complement/Hexa/Right Angle	3.92	3.62	3.36



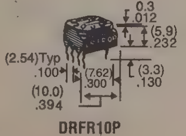
DRAC16H



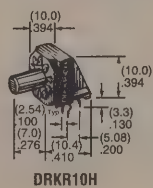
.091" Max. Panel Thickness



AT433



DRFR10P



DRKR10H

TRUTH TABLES

Actuator Positions ● = ON; Terminal Number (Output)

	Terminal Number (Output)	18 Hexadecimal Positions															
		10 Decimal Positions															
		0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
R Real Coded Model Numbers DRFR, DRKR & DRAR	1		●		●		●		●		●		●		●		●
	2			●	●			●	●			●	●			●	●
	4					●	●	●	●					●	●	●	●
	8									●	●	●	●	●	●	●	●
C Complement Coded Model Numbers DRFC, DRKC, & DRAC	1	●		●		●		●		●		●		●		●	
	2	●	●			●	●			●	●			●	●		
	4	●	●	●	●					●	●	●	●				
	8	●	●	●	●	●	●	●	●								

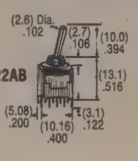
Toggles, Rockers, Pushbuttons and Slides

Terminals molded in and epoxy sealed. Washable. Patented Sliding Twin Crossbar (STC) contacts. **Electrical Capacity:** 0.4 VA maximum @ 28 V AC/DC maximum. **Contact Resistance:** 50 milliohms maximum. **Insulation Resistance:** 500 megohms minimum @ 500 V DC. **Dielectric Strength:** 500 V AC minimum. **Electrical Life:** 50,000 operations minimum.

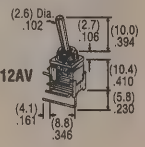
Toggle Switch

- ► **Antistatic Bushing**
- ► **Bright Nickel Finish Toggle**

B22AB



B12AV



Straight PC Terminals with Bracket

Stock No.	Mfr.'s Type	Pole Throw	Circuit ( ) = momentary	EACH 1-24	EACH 25-99	EACH 100-499
870-8400	B12AB	SPDT	on-none-on	3.33	3.08	2.86
870-8401	B13AB	SPDT	on-off-on	3.47	3.20	2.97
870-9708	B22AB	DPDT	on-none-on	4.50	4.15	3.86
870-8406	B23AB	DPDT	on-off-on	4.75	4.38	4.07

Right Angle PC Terminals

870-8410	B12AH	SPDT	on-none-on	3.50	3.23	3.00
870-8415	B22AH	DPDT	on-none-on	4.67	4.31	4.00
870-8416	B23AH	DPDT	on-off-on	4.92	4.54	4.21
870-8417	B25AH	DPDT	on-none-(on)	5.08	4.69	4.36
870-8418	B28AH	DPDT	(on)-off-(on)	5.72	5.28	4.90
870-8419	B29AH	DPDT	on-off-(on)	5.72	5.28	4.90

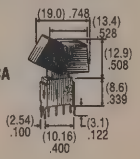
Vertical PC Terminals

870-8420	B12AV	SPDT	on-none-on	3.50	3.23	3.00
870-8425	B22AV	DPDT	on-none-on	4.67	4.31	4.00

Rocker Switch

- ► **.260" Wide Black Rocker**
- ► **Antirotation Feature**

A12KB-CA



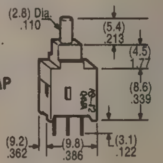
Straight PC Terminals with Bracket

870-9850	A12KB-CA	SPDT	on-none-on	4.33	4.00	3.71
870-9855	A13KB-CA	SPDT	on-off-on	4.47	4.12	3.83
870-9865	A22KB-CA	DPDT	on-none-on	5.50	5.08	4.71
870-9870	A23KB-CA	DPDT	on-off-on	5.75	5.31	4.93

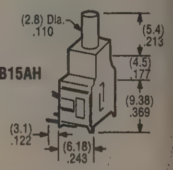
Pushbutton Switch

- ► **Total Travel: .043"**
- ► **Operating Force: 260 Grams**

AB25AP



AB15AH



Straight PC Terminals

Stock No.	Mfr.'s Type	Pole Throw	Circuit ( ) = momentary	EACH 1-24	EACH 25-99	EACH 100-499
870-9926	AB11AP	SPST	off-(on)	3.17	2.92	2.71
870-9927	AB15AP	SPDT	on-(on)	3.30	3.05	2.83
870-9119	AB25AP	DPDT	on-(on)	4.25	3.92	3.64

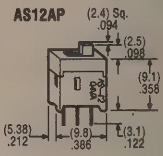
Right Angle PC Terminals

870-8434	AB15AH	SPDT	on-(on)	3.88	3.58	3.33
870-9120	AB25AH	DPDT	on-(on)	5.08	4.69	4.36

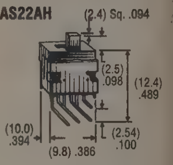
Slide Switch

- ► **Total Travel: .098"**
- ► **Operating Force: 260 Grams**

AS12AP



AS22AH



Straight PC Terminals

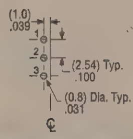
870-9704	AS12AP	SPDT	on-none-on	2.92	2.69	2.50
870-9705	AS13AP	SPDT	on-off-on	3.05	2.82	2.61
870-9706	AS22AP	DPDT	on-none-on	3.83	3.54	3.29
870-9707	AS23AP	DPDT	on-off-on	4.08	3.77	3.50

Right Angle PC Terminals

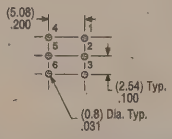
870-9308	AS12AH	SPDT	on-none-on	3.50	3.23	3.00
870-9309	AS13AH	SPDT	on-off-on	3.63	3.35	3.11
870-9310	AS22AH	DPDT	on-none-on	4.67	4.31	4.00
870-9311	AS23AH	DPDT	on-off-on	4.92	4.54	4.21

Footprints for Toggles, Rockers, Pushbuttons and Slides

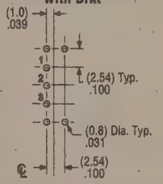
Single Pole Straight



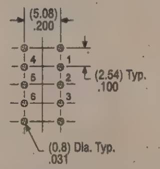
Double Pole Straight



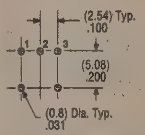
Single Pole Straight with Brkt



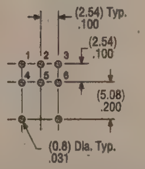
Double Pole Straight with Brkt



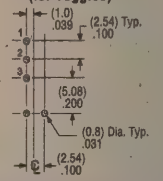
Single Pole Right Angle



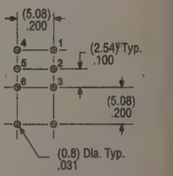
Double Pole Right Angle



Single Pole Vertical (for Toggles)

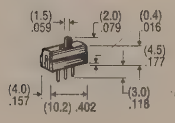


Double Pole Vertical (for Toggles)

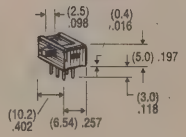


SS Series Slides

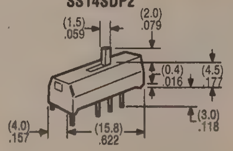
SS12SDP2



SS22SDH2



SS14SDP2



Micro-subminiature, logic level, shorting contacts. **Electrical Capacity:** 0.1 A @ 30 V DC. **Contact Resistance:** 20 milliohms max. **Electrical Life:** 10,000 operations min. **Total Travel:** .079".

Top Actuated

Stock No.	Mfr.'s Type	Pole Throw	Circuit	EACH 1-24	EACH 25-99	EACH 100-499
870-6003	SS12SDP2	SPDT	on-none-on	1.08	1.00	.93
870-9928	SS14SDP2	SP3T	on-on-on	1.42	1.31	1.21
870-6007	SS22SDP2	DPDT	on-none-on	1.38	1.28	1.19

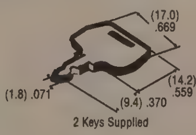
Side Actuated

870-6002	SS12SDH2	SPDT	on-none-on	1.08	1.00	.93
870-9929	SS14SDH2	SP3T	on-on-on	1.42	1.31	1.21
870-6006	SS22SDH2	DPDT	on-none-on	1.38	1.28	1.19

Miniature Keylock Switch

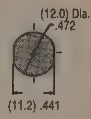
Single pole with 12 mm dia. bushing, silver contacts, UL recognition, CSA certification, short behind panel dimension, and epoxy sealed solder lug terminals. Terminals have .043" × .079" holes. Face and bezel have brushed chrome finish. 2 keys of chromate over zinc alloy provided with each switch. **Electrical Capacity:** 3 A @ 125 V AC. **Dielectric Strength:** 1,500 V AC minimum between contacts and case. **Mechanical Life:** 30,000 cycles minimum. **Electrical Life:** 10,000 cycles minimum. **Operating Torque:** 270 grams. **Ambient Temperature:** −10°C through +70°C. **Angle of Throw:** 90° for on-none-on models and 45° for on-off-on models. **Panel Thickness:** .315". **Standard Hardware:** 1 hex nut and 1 locking ring.

Stock No.	Mfr.'s Type	Circuit Pos. 1	Circuit Pos. 2	Circuit Pos. 3	Key Removable Position	EACH 1-24	EACH 25-49	EACH 50-99
870-9122	SK12AAW01	on	none	on	1 and 3	10.47	9.66	8.97
870-9123	SK12BAW01	on	none	on	1	10.47	9.66	8.97
870-9124	SK13DAW01	on	off	on	1, 2, 3	11.00	10.15	9.43
870-9125	SK13EAW01	on	off	on	2	11.00	10.15	9.43

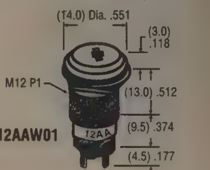


2 Keys Supplied

Panel Cutout

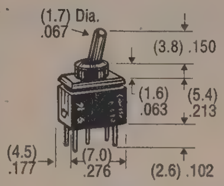


SK12AAW01

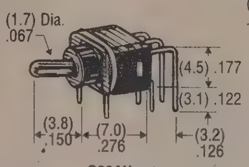


G Series Toggles and Pushbuttons

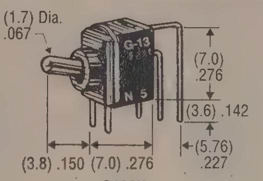
Micro-subminiature, PCB mountable, antistatic, washable, patented Sliding Twin Crossbar (STC) contact mechanism, plus molded-in, epoxy sealed terminals with .100" × .100" spacing. **Electrical Capacity:** 0.4 VA maximum @ 28 V AC/DC maximum. **Electrical Life:** 100,000 operations minimum for on-none-on and on-off-on toggles; 50,000 operations minimum for other toggle circuits as well as for pushbutton circuits.



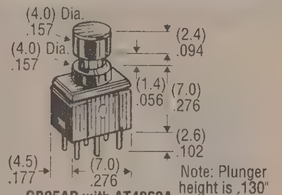
G19AP



G22AH



G13AV



Note: Plunger height is ,130"

GB25AP with AT4063A

Toggles

Straight PC Terminals

Stock No.	Mfr.'s Type	Pole Throw	Circuit ( ) = momentary	EACH 1-24	25-99	100-499
870-6028	G12AP	SPDT	on-none-on	3.17	2.92	2.71
870-6029	G13AP	SPDT	on-off-on	3.38	3.12	2.90
870-6030	G15AP	SPDT	on-none-(on)	3.50	3.23	3.00
870-6043	G22AP	DPDT	on-none-on	4.50	4.15	3.86
870-6044	G23AP	DPDT	on-off-on	4.83	4.46	4.14
870-6045	G25AP	DPDT	on-none-(on)	4.97	4.58	4.26

Right Angle PC Terminals

Stock No.	Mfr.'s Type	Pole Throw	Circuit ( ) = momentary	EACH 1-24	25-99	100-499
870-6033	G12AH	SPDT	on-none-on	3.75	3.46	3.21
870-6034	G13AH	SPDT	on-off-on	3.97	3.66	3.40
870-6048	G22AH	DPDT	on-none-on	5.42	5.00	4.64
870-6049	G23AH	DPDT	on-off-on	5.75	5.31	4.93

Vertical PC Terminals

Stock No.	Mfr.'s Type	Pole Throw	Circuit ( ) = momentary	EACH 1-24	25-99	100-499
870-6038	G12AV	SPDT	on-none-on	3.75	3.46	3.21
870-6039	G13AV	SPDT	on-off-on	3.97	3.66	3.40
870-6053	G22AV	DPDT	on-none-on	5.42	5.00	4.64
870-6054	G23AV	DPDT	on-off-on	5.75	5.31	4.93

Pushbuttons

Straight PC Terminals

Stock No.	Mfr.'s Type	Pole Throw	Circuit ( ) = momentary	EACH 1-24	25-99	100-499
870-9319	GB15AP	SPDT	on-(on)	3.92	3.62	3.36
870-9320	GB25AP	DPDT	on-(on)	4.50	4.15	3.86

Right Angle PC Terminals

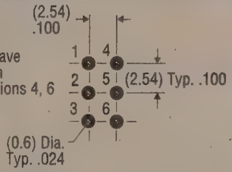
Stock No.	Mfr.'s Type	Pole Throw	Circuit ( ) = momentary	EACH 1-24	25-99	100-499
870-9321	GB15AH	SPDT	on-(on)	4.50	4.15	3.86
870-9322	GB25AH	DPDT	on-(on)	5.42	5.00	4.64

Optional Slip-On Cap

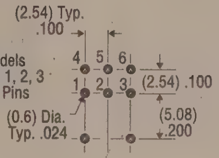
Stock No.	Mfr.'s Type	Colors	EACH 1-24	25-99	100-499
870-9325	AT4063A	Black	.27	.25	.23
870-9326	AT4063B	White	.27	.25	.23
870-9327	AT4063C	Red	.27	.25	.23

Footprints for G Series Toggles and Pushbuttons

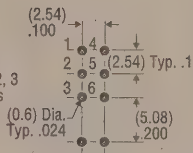
Straight
Single Pole Models have Terminals 1, 2, 3 with Support Pins at Positions 4, 6



Right Angle
Single Pole Models have Terminals 1, 2, 3 with 2 Support Pins



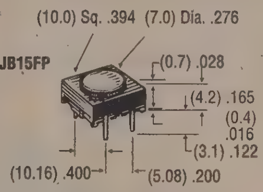
Vertical
Single Pole Models have Terminals 1, 2, 3 with 2 Support Pins

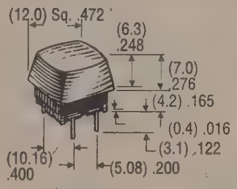


Keypad Switches

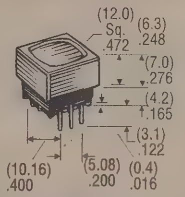
JB Series. Sealed dome contact mechanism and low profile. SPST contacts with strapped terminals allow X-Y coding on 1-sided PCB. Off-Momentary on circuit. **Resistive Load:** 50 mA @ 24 V DC. **Electrical Life:** 5,000,000 operations minimum. **Total Travel:** .010". **Operating Force:** 180 grams. **Contact Bounce:** 0.1 millisecond max.

JB15FP

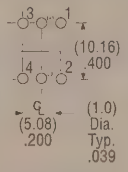




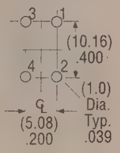
JB15KP-1C



JB15LP-3CC*



PCB Footprint for Illuminated



PCB Footprint for Nonilluminated

Stock No.	Mfr.'s Type	Description	EACH 1-24	25-99	100-499
870-6058	JB15FP	Flat Blue Button, Nonilluminated	1.05	.97	.90
870-6061	JB15KP-1A	Black Sculptured, Nonilluminated	1.47	1.35	1.26
870-6062	JB15KP-1B	White Sculptured, Nonilluminated	1.47	1.35	1.26
870-6063	JB15KP-1C	Red Sculptured, Nonilluminated	1.47	1.35	1.26
870-6067	JB15KP-1H	Gray Sculptured, Nonilluminated	1.47	1.35	1.26
870-6071	JB15KP-2A	Black Square, Nonilluminated	1.72	1.58	1.47
870-6080	JB15LP-3CC	Red Square, Illuminated	3.55	3.28	3.04
870-6082	JB15LP-3FF	Green Square, Illuminated	3.55	3.28	3.04

***Note:** Square caps (coded 2 and 3) are the same shape and dimensions.

LED Specifications	Red	Green
Forward Peak Current	30 mA	20 mA
Continuous Forward Current	20 mA	15 mA
Forward Voltage	2.0 V	1.95 V
Reverse Peak Voltage	5 V	5 V
Current Reduction Rate Above 25°C	0.40 mA/°C	0.27 mA/°C

Keypad Switches

JF Series. Extremely low profile and completely sealed dome contact. SPST contacts with strapped terminals allow X-Y coding on 1-sided PCB. Off-Momentary on circuit. **Resistive Load:** 50 mA @ 24 V DC. **Electrical Life:** 500,000 operations min. **Total Travel:** .031" with sculptured actuator, 0.16" with flush actuator. **Operating Force:** 200 grams with sculptured actuator; 350 grams with flush actuator. **Contact Bounce:** 0.1 millisecond max.

Nonilluminated Models with Square Black Housing

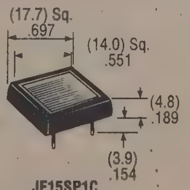
Stock No.	Mfr.'s Type	Description	EACH 1-24	25-99	100-499
870-9331	JF15SP1C	Square Red Actuator	2.13	1.97	1.83
870-9333	JF15SP1F	Square Green Actuator	2.13	1.97	1.83
870-9335	JF15SP1H	Square Gray Actuator	2.13	1.97	1.83

Nonilluminated Models with Round Black Housing

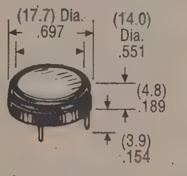
Stock No.	Mfr.'s Type	Description	EACH 1-24	25-99	100-499
870-9351	JF15CP2C	Round Red Actuator	2.13	1.97	1.83
870-9353	JF15CP2F	Round Green Actuator	2.13	1.97	1.83
870-9355	JF15CP2H	Round Gray Actuator	2.13	1.97	1.83

Spot Illuminated Models with Rectangular Black Housing

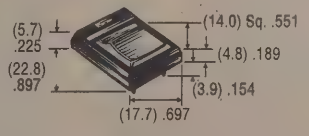
Stock No.	Mfr.'s Type	Description	EACH 1-24	25-99	100-499
870-9401	JF15RP1C-C	Square Red Actuator and Red LED	3.72	3.43	3.19
870-9405	JF15RP1D-E	Square Orange Actuator and Yellow LED	3.72	3.43	3.19
870-9409	JF15RP1F-F	Square Green Actuator and Green LED	3.72	3.43	3.19
870-9434	JF15RP3D-C	Sculptured Orange Actuator and Red LED	3.97	3.66	3.40
870-9438	JF15RP3F-E	Sculptured Green Actuator and Yellow LED	3.97	3.66	3.40
870-9442	JF15RP3G-F	Sculptured Blue Actuator and Green LED	3.97	3.66	3.40



JF15SP1C

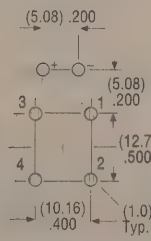


JF15CP2C



JF15RP3G-F

Spot Illuminated has 4 Terminals and 2 Lamp Terminals

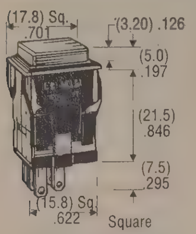


PCB Footprint for Nonilluminated or Spot Illuminated

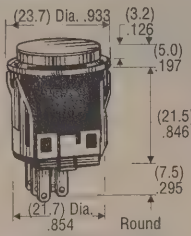
Note: All actuators (1, 2 and 3) are available in all five colors (C, D, F, G and H).

LED Specifications	Red	Yellow	Green
Forward Peak Current	40 mA	40 mA	40 mA
Continuous Forward Current	30 mA	30 mA	30 mA
Forward Voltage	1.7 V	2.2 V	2.2 V
Reverse Peak Voltage	4 V	4 V	4 V
Current Reduction Rate Above 25°C	0.67 mA/°C	0.67 mA/°C	0.67 mA/°C

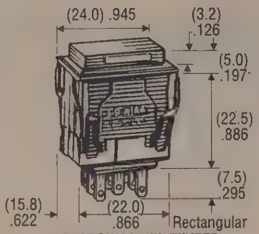
Basic Switches and Indicators



LB15SKW01 with AT478



LB16CKW01 with AT4014



LB26RGW01 with AT4028

LB Series. Standard size, snap-in mounting. Bright, full surface illumination. Front panel relamping and cap changing. **Panel Thicknesses Range:** .039"-.157". Latchdown for indication of circuit status. Snap-action contact mechanism. Combination solder lug and .110" quick connect, epoxy sealed terminals. **Resistive Load:** 3 A max. @ 125/250 V AC for silver contacts. **Dielectric Strength:** 1,500 V AC minimum. **Electrical Life:** 100,000 operations min. **Total Travel:** .118" for momentary and .094" for alternate action. **Operating Force:** 450 grams. **Ambient Temperature:** –15°C through +50°C. Panel sealed model available and meets IP 65 of IEC 529 specifications.

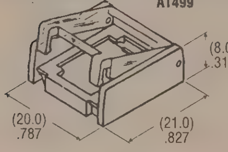
Basic Switches and Indicators

Order caps and lamps separately.

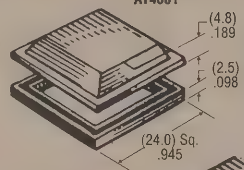
Stock No.	Mfr.'s Type	Pole Throw	Circuit ( ) = mom.	Bezel and Body Shape	EACH			
					1-24	25-49	50-99	100-249
870-8790	LB15SKW01	SPDT	on-(on)	Square	8.00	7.38	7.16	6.86
870-8791	LB16SKW01	SPDT	on-on	Square	9.20	8.49	8.24	7.89
870-8792	LB25SKW01	DPDT	on-(on)	Square	10.30	9.51	9.22	8.83
870-8793	LB26SKW01	DPDT	on-on	Square	11.45	10.57	10.25	9.81
870-8794	LB15CKW01	SPDT	on-(on)	Round	8.00	7.38	7.16	6.86
870-8795	LB16CKW01	SPDT	on-on	Round	9.20	8.49	8.24	7.89
870-8796	LB25CKW01	DPDT	on-(on)	Round	10.30	9.51	9.22	8.83
870-8797	LB26CKW01	DPDT	on-on	Round	11.45	10.57	10.25	9.81
870-8798	LB15RKW01	SPDT	on-(on)	Rectangle	8.00	7.38	7.16	6.86
870-8799	LB16RKW01	SPDT	on-on	Rectangle	9.20	8.49	8.24	7.89
870-8800	LB25RKW01	DPDT	on-(on)	Rectangle	10.30	9.51	9.22	8.83
870-8801	LB26RKW01	DPDT	on-on	Rectangle	11.45	10.57	10.25	9.81
870-8802	LB01KW01	Indicator	—	Square	4.70	4.34	4.21	4.03
870-8803	LB02KW01	Indicator	—	Round	4.70	4.34	4.21	4.03
870-8804	LB03KW01	Indicator	—	Rectangle	4.70	4.34	4.21	4.03

Optional Accessories

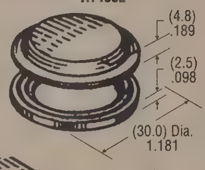
AT499

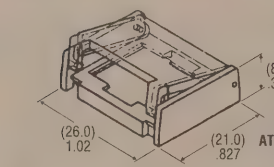


AT4001

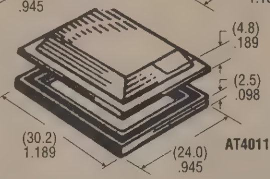


AT4002





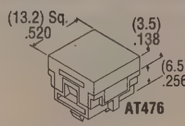
AT4057

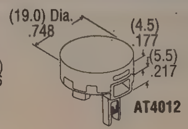


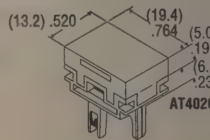
AT4011

Stock No.	Mfr.'s Type	Description	EACH			
			1-24	24-49	50-99	100-249
870-8811	AT499	Square Protective Guard	1.80	1.66	1.61	1.54
870-8812	AT4057	Rectangular Protective Guard	1.80	1.66	1.61	1.54
870-8813	AT4001	Square Splash Cover	1.60	1.48	1.43	1.37
870-8814	AT4002	Round Splash Cover	1.60	1.48	1.43	1.37
870-8815	AT4011	Rectangular Splash Cover	1.60	1.48	1.43	1.37

Incandescent Lamp and Matching Caps







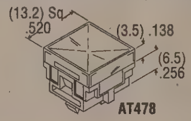
Incandescent Lamp

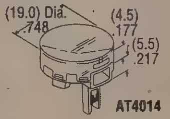
Stock No.	Mfr.'s Type	Electrical Specifications			EACH			
		Voltage	Current	Endurance	1-24	25-49	50-99	100-249
870-8805	AT607-5V	5 V	115 mA	7000 hrs.	1.60	1.48	1.43	1.37
870-8806	AT607-12V	12 V	60 mA	7000 hrs.	1.60	1.48	1.43	1.37
870-8807	AT607-28V	28 V	24 mA	7000 hrs.	2.00	1.85	1.79	1.71

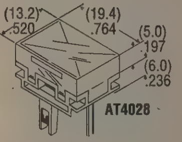
Caps for Incandescent Lamp

Stock No.	Mfr.'s Type	Actuator Shape	Cap Color	EACH			
				1-24	25-49	50-99	100-249
870-8816	AT476B	Square	White	1.40	1.29	1.25	1.20
870-8817	AT476C	Square	Red	1.40	1.29	1.25	1.20
870-8818	AT476E	Square	Yellow	1.40	1.29	1.25	1.20
870-8819	AT476F	Square	Green	1.40	1.29	1.25	1.20
870-8820	AT476G	Square	Blue	1.40	1.29	1.25	1.20
870-8821	AT4012B	Round	White	1.40	1.29	1.25	1.20
870-8822	AT4012C	Round	Red	1.40	1.29	1.25	1.20
870-8823	AT4012E	Round	Yellow	1.40	1.29	1.25	1.20
870-8824	AT4012F	Round	Green	1.40	1.29	1.25	1.20
870-8825	AT4012G	Round	Blue	1.40	1.29	1.26	1.20
870-8826	AT4026B	Rectangular	White	1.40	1.29	1.25	1.20
870-8827	AT4026C	Rectangular	Red	1.40	1.29	1.25	1.20
870-8828	AT4026E	Rectangular	Yellow	1.40	1.29	1.25	1.20
870-8829	AT4026F	Rectangular	Green	1.40	1.29	1.25	1.20
870-8830	AT4026G	Rectangular	Blue	1.40	1.29	1.25	1.20

LED and Matching Caps







LED Specifications

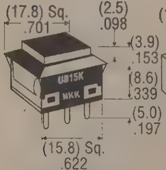
Reverse Peak Voltage: 4 V for red, yellow and green. **Current Reduction Rate Above 25°C:** 0.67 mA/°C for red, yellow and green.

Stock No.	Mfr.'s Type	LED Color	Electrical Specifications			EACH			
			Fwd. Peak Current	Continuous Fwd. Current	Fwd. Voltage	1-24	25-49	50-99	100-249
870-8808	AT614C	Red	50 mA	40 mA	1.75 V	1.80	1.66	1.61	1.54
870-8809	AT614E	Yellow	50 mA	40 mA	2.35 V	1.80	1.66	1.61	1.54
870-8810	AT614F	Green	50 mA	40 mA	2.35 V	1.80	1.66	1.61	1.54

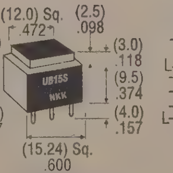
Caps for LED

Stock No.	Mfr.'s Type	Actuator Shape	Cap Color	EACH			
				1-24	25-49	50-99	100-249
870-8837	AT478C	Square	Red	1.40	1.29	1.25	1.20
870-8838	AT478E	Square	Yellow	1.40	1.29	1.25	1.20
870-8839	AT478F	Square	Green	1.40	1.29	1.25	1.20
870-8840	AT4014C	Round	Red	1.40	1.29	1.25	1.20
870-8841	AT4014E	Round	Yellow	1.40	1.29	1.25	1.20
870-8842	AT4014F	Round	Green	1.40	1.29	1.25	1.20
870-8843	AT4028C	Rectangular	Red	1.40	1.29	1.25	1.20
870-8844	AT4028E	Rectangular	Yellow	1.40	1.29	1.25	1.20
870-8845	AT4028F	Rectangular	Green	1.40	1.29	1.25	1.20

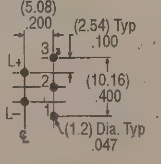
Low Profile Models



UB15KKW01C-CC



UB15SKG03C-CC



PCB Footprint

UB Series. Snap-action contact mechanism. Latchdown for indication of circuit status. Snap-in Mount (W01) with solder lug terminals and silver contacts. PCB Mount (G03) with straight PC terminals and gold contacts. **Resistive Load:** 5 A max. @ 125/250 V AC for silver contacts; 0.4 VA max. @ 28 V AC/DC max. (gold). **Dielectric Strength:** 1,500 V AC min. between contacts and case. **Electrical Life:** 10,000 operations min. (silver) and 200,000 min. (gold). **Total Travel:** .091". **Operating Force:** 160 grams. **Ambient Temp:** –20°C through +50°C. CSA certified.

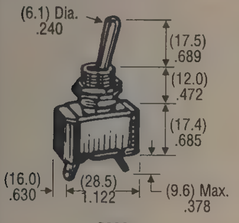
Complete Assembled Switch

Stock No.	Mfr.'s Type	Pole Throw	Circuit ( ) = mom.	Mounting Type	LED/Cap Color	EACH			
						1-24	25-49	50-99	100-249
870-9141	UB15KKW01C-CC	SPDT	on-(on)	Snap-in	Red	7.55	6.97	6.76	6.47
870-9142	UB15KKW01E-EE	SPDT	on-(on)	Snap-in	Yellow	7.55	6.97	6.76	6.47
870-9143	UB15KKW01F-FF	SPDT	on-(on)	Snap-in	Green	7.55	6.97	6.76	6.47
870-9144	UB15SKG03C-CC	SPDT	on-(on)	PCB	Red	7.35	6.78	6.58	6.30
870-9145	UB15SKG03E-EE	SPDT	on-(on)	PCB	Yellow	7.35	6.78	6.58	6.30
870-9146	UB15SKG03F-FF	SPDT	on-(on)	PCB	Green	7.35	6.78	6.58	6.30
870-9147	UB16KKW01C-CC	SPDT	on-on	Snap-in	Red	8.25	7.62	7.39	7.07
870-9148	UB16KKW01E-EE	SPDT	on-on	Snap-in	Yellow	8.25	7.62	7.39	7.07
870-9149	UB16KKW01F-FF	SPDT	on-on	Snap-in	Green	8.25	7.62	7.39	7.07
870-9150	UB16SKG03C-CC	SPDT	on-on	PCB	Red	8.05	7.43	7.21	6.90
870-9151	UB16SKG03E-EE	SPDT	on-on	PCB	Yellow	8.05	7.43	7.21	6.90
870-9152	UB16SKG03F-FF	SPDT	on-on	PCB	Green	8.05	7.43	7.21	6.90

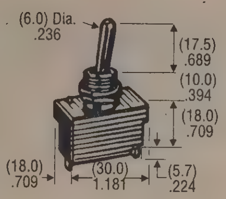
LED Electrical Specifications

LED Color	Forward Peak Current	Continuous Forward Current	Reverse Peak Voltage	Current Reduction Rate above 25°	Forward Peak Voltage
All	50 mA	40 mA	4 V	0.67 mA/°C	Red: 1.75; Yellow: 2.35; Green: 2.35

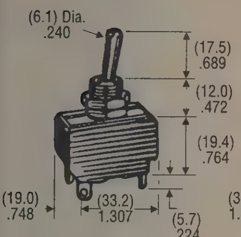
Standard Size Toggle Switches



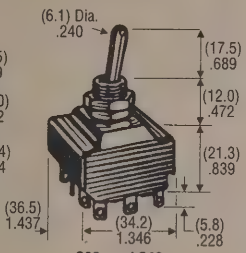
S300s



S1-S7



S330s



S30s and S40s

S Series. Variations: 1-4 pole; 15 A-25 A electrical capacities; solder lug, screw and .250" quick connect terminals; 12 mm bushings. Many devices UL recognized and CSA certified. Terminal hardware provided with screw terminals. Bright chrome finish on bat lever. Mounting hardware provided.

Solder Lug Terminals

Stock No.	Mfr.'s Type	Pole Throw	Circuit ( ) = momentary	Resistive Load		Inductive	EACH		
				125 VAC	250 VAC	125 VAC	1-24	25-49	50-99
870-9203	S1A	SPST	on-none-off	15 A	6 A	8 A	2.80	2.58	2.40
870-9206	S2A	SPDT	on-none-on	15 A	6 A	8 A	3.22	2.97	2.76
870-9209	S3A	SPDT	on-off-on	15 A	6 A	8 A	3.30	2.05	2.83
870-9950	S305	SPDT	on-none-(on)	15 A	6 A	8 A	4.08	3.77	3.50
870-9228	S308	SPDT	(on)-off-(on)	15 A	6 A	8 A	4.22	3.89	3.61
870-9229	S331	DPST	on-none-off	25 A	25 A	10 A	5.42	5.00	4.64
870-9155	S21A	DPST	on-none-off	15 A	15 A	8 A	4.03	3.72	3.46
870-9231	S332	DPDT	on-none-on	25 A	15 A	10 A	5.60	5.17	4.80
870-9233	S333	DPDT	on-off-on	25 A	15 A	10 A	6.37	5.88	5.46
870-9951	S335	DPDT	on-none-(on)	15 A	6 A	8 A	6.42	5.92	5.50
870-9952	S338	DPDT	(on)-off-(on)	15 A	6 A	8 A	7.02	6.48	6.01
870-9218	S32	3PDT	on-none-on	25 A	9 A	10 A	7.98	7.37	6.84
870-9219	S33	3PDT	on-off-on	25 A	9 A	10 A	8.62	7.95	7.39
870-9156	S35	3PDT	on-none-(on)	15 A	6 A	8 A	8.62	7.95	7.39
870-9220	S42	4PDT	on-none-on	25 A	9 A	10 A	9.22	8.51	7.90
870-9221	S43	4PDT	on-off-on	25 A	9 A	10 A	9.95	9.18	8.53

Screw Terminals

Stock No.	Mfr.'s Type	Pole Throw	Circuit ( ) = momentary	Resistive Load 125 VAC	Resistive Load 250 VAC	Inductive 125 VAC	EACH 1-24	EACH 25-49	EACH 50-99
870-9223	S301T	SPST	on-none-off	15 A	6 A	10 A	3.95	3.65	3.39
870-9225	S302T	SPDT	on-none-on	15 A	6 A	10 A	4.08	3.77	3.50
870-9227	S303T	SPDT	on-off-on	15 A	6 A	10 A	4.32	3.98	3.70
870-9230	S331T	DPST	on-none-off	15 A	15 A	10 A	6.05	5.58	5.19
870-9232	S332T	DPDT	on-none-on	15 A	15 A	10 A	6.37	5.88	5.46
870-9234	S333T	DPDT	on-off-on	15 A	15 A	10 A	7.38	6.82	6.33

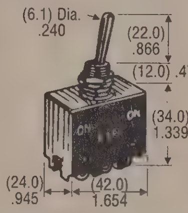
Quick Connect Terminals

Stock No.	Mfr.'s Type	Pole Throw	Circuit ( ) = momentary	Resistive Load 125 VAC	Resistive Load 250 VAC	Inductive 125 VAC	EACH 1-24	EACH 25-49	EACH 50-99
870-9205	S1F	SPST	on-none-off	15 A	6 A	8 A	3.07	2.83	2.63
870-9208	S2F	SPDT	on-none-on	15 A	6 A	8 A	3.62	3.34	3.10
870-9211	S3F	SPDT	on-off-on	15 A	6 A	8 A	3.77	3.48	3.23
870-9215	S6F	DPDT	on-none-on	20 A	10 A	8 A	5.63	5.20	4.83
870-9157	S7F	DPDT	on-off-on	20 A	10 A	8 A	5.68	5.25	4.87

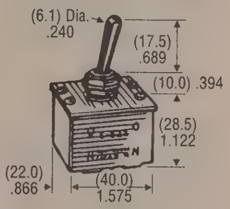
High Capacity Toggle Switches

Variations: 2 pole; 30-50 A range of electrical capacities; 12 mm bushings. Screw terminals. Terminal hardware provided. Bright chrome bat lever. S821 UL recognized; S532, S533, S821 CSA certified. **S732 Body:** 1.496"W × 2.362"L × 1.535"H.

Stock No.	Mfr.'s Type	Pole Throw	Circuit	Resistive Load		Inductive	EACH		
				125 VAC	250 VAC	125 VAC	1-24	25-49	50-99
870-9240	S821	DPST	on-none-off	30 A	30 A	—	20.30	18.74	17.40
870-9237	S532	DPDT	on-none-on	30 A	15 A	15 A	21.45	19.80	18.39
870-9239	S732	DPDT	on-none-on	50 A	30 A	25 A	50.33	46.46	43.14
870-9238	S533	DPDT	on-off-on	30 A	15 A	15 A	21.87	20.18	18.74

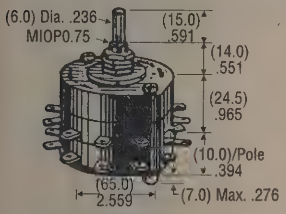


S821

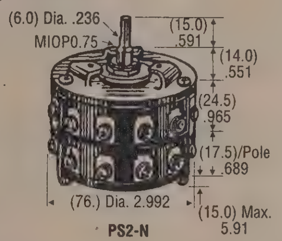


S532

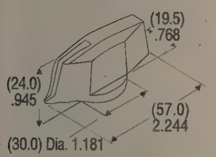
Standard Size and High Capacity Rotaries



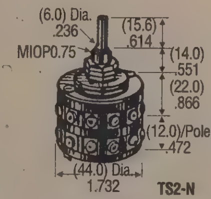
HS16-2N



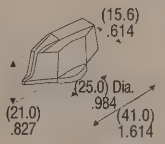
PS2-N



AT431



TS2-N

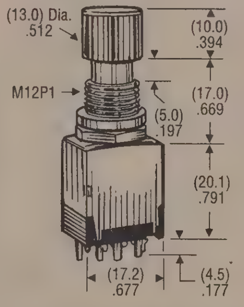


AT432

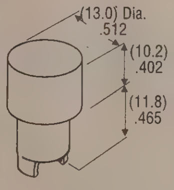
Available from 6 amp to 30 amp. Available in 1-12 positions and 1-6 pole with nonshorting circuits. Shorting circuits are also available. **Adjustable Settings:** 2, 3, 4, etc. through 11. .250" quick connect/solder lug terminals on HS. Hardware provided with screw terminals on TS and PS models.

Stock No.	Mfr.'s Type	Terminals	Resistive Load		EACH		
			125 VAC	250 VAC	1-24	25-49	50-99
870-9251	HS16-1N	1 COMM 11 LOAD	12 A	6 A	21.08	19.46	18.07
870-9253	HS16-2N	2 COMM 22 LOAD	12 A	6 A	25.40	23.45	21.77
870-9255	HS16-3N	3 COMM 33 LOAD	12 A	6 A	34.65	31.98	29.70
870-9257	HS16-4N	4 COMM 44 LOAD	12 A	6 A	60.23	55.60	51.63
870-9259	HS16-5N	5 COMM 55 LOAD	12 A	6 A	72.88	67.28	62.47
870-9261	HS16-6N	6 COMM 66 LOAD	12 A	6 A	106.10	97.94	90.94
870-9265	PS1-N	1 COMM 11 LOAD	30 A	30 A	35.20	32.49	30.17
870-9266	PS2-N	2 COMM 22 LOAD	30 A	30 A	53.27	49.17	45.66
870-9267	PS3-N	3 COMM 33 LOAD	30 A	30 A	73.62	67.95	63.10
870-9268	PS4-N	4 COMM 44 LOAD	30 A	30 A	98.08	90.54	84.07
870-9269	TS1-N	1 COMM 11 LOAD	6 A	6 A	29.57	27.29	25.34
870-9270	TS2-N	2 COMM 22 LOAD	6 A	6 A	40.25	37.15	34.50
870-9271	TS3-N	3 COMM 33 LOAD	6 A	6 A	51.15	47.22	43.84
870-9272	TS4-N	4 COMM 44 LOAD	6 A	6 A	82.42	76.08	70.64
870-9159	AT431	Large Rotary Knob	Glossy Black		3.12	2.88	2.67
870-9160	AT432	Small Rotary Knob	Glossy Black		3.12	2.88	2.67

Standard Size Lighted Pushbuttons

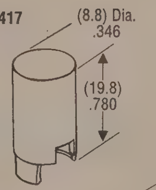


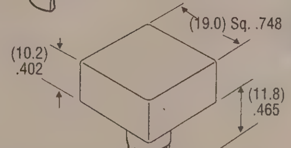
DLB2141W01 with AT418



AT418

AT417





AT419

Full face illumination. Rear panel threaded mounting. Momentary and alternate action. **Resistive Load:** 5 A max. @ 125 V AC. **Electrical Life:** 10,000 operations min. **Total Travel:** .196". **Operating Force:** 1,300 g (mom.) and 1,200 g (alt.).

Switches

Stock No.	Mfr.'s Type	Pole Throw	Circuit ( ) = mom.	Description	EACH		
					1-24	25-49	50-99
870-8200	DLB2141W01	DPDT	on-(on)	Switch only	9.35	8.63	8.01
870-8201	DLB2145W01	DPDT	on-on	Switch only	10.00	9.23	8.57

Snap-On Caps

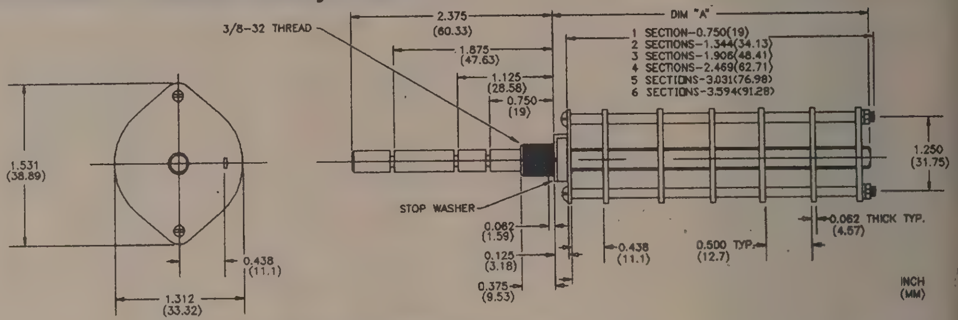
Stock No.	Mfr.'s Type	Pole Throw	Circuit ( ) = mom.	Description	EACH 1-24	EACH 25-49	EACH 50-99
870-0851	AT417B	Cap	.346" Dia.	White	1.02	.94	.87
870-0852	AT417C	Cap	.346" Dia.	Red	1.02	.94	.87
870-8785	AT418E	Cap	.512" Dia.	Yellow	1.20	1.11	1.03
870-8237	AT418F	Cap	.512" Dia.	Green	1.20	1.11	1.03
870-4501	AT418G	Cap	.512" Dia.	Blue	1.20	1.11	1.03
870-8229	AT419B	Cap	.748" Sqr.	White	1.20	1.11	1.03
870-8226	AT419C	Cap	.748" Sqr.	Red	1.20	1.11	1.03

Incandescent Lamp

Stock No.	Mfr.'s Type	Voltage	Current	Endurance	EACH		
					1-24	25-49	50-99
870-8300	AT604-14V	14 V	80 mA	750 hours	1.47	1.35	1.26
870-8305	AT604-28V	28 V	40 mA	1000 hours	1.47	1.35	1.26

K Series Phenolic Insulated and JC Series Ceramic Insulated Rotary Switches

1¹⁷⁄₃₂" diameter rotary switches, double-wiping, self-cleaning silver-plated brass contacts with either phenolic or ceramic insulation. Unique protective coating guards against tarnish and corrosion, extends shelf-life. Provides up to six sections and 12 poles.



Rotary Switching Wafers — K Series

Shorting		Non-Shorting		Index Angle	No. of Poles	No. of Positions	EACH	
Stock No.	Mfr.'s Type	Stock No.	Mfr.'s Type				1-9	10-49
809-1075	399242-K	809-1080	399243-K	30	1	2-11	4.30	3.55
809-1085	399244-K	809-1090	399245-K	30	2	2-5	4.30	3.50
—	—	809-1095	399247-K	30	3	2-3	5.88	4.90

Rotary Switching Wafers — JC Series

809-4065	399152-JC	809-0015	399153-JC	30	2	2-6	8.53	7.46
—	—	809-2005	399447-JC	30	5	2-3	9.62	8.41

Shaft and Index Assemblies — K Series

Stock No.	Mfr.'s Type	For Switches	Rear Shaft Length	EACH	
				1-9	10-49
809-4000	399043-K	1-4 Sections	2¹⁵⁄₃₂"	11.42	9.52

Shaft and Index Assemblies — JC Series

809-4070	399043-JC	1-4 Sections	2¹⁵⁄₃₂"	11.42	9.52

Assembled Rotary Switches — K Series

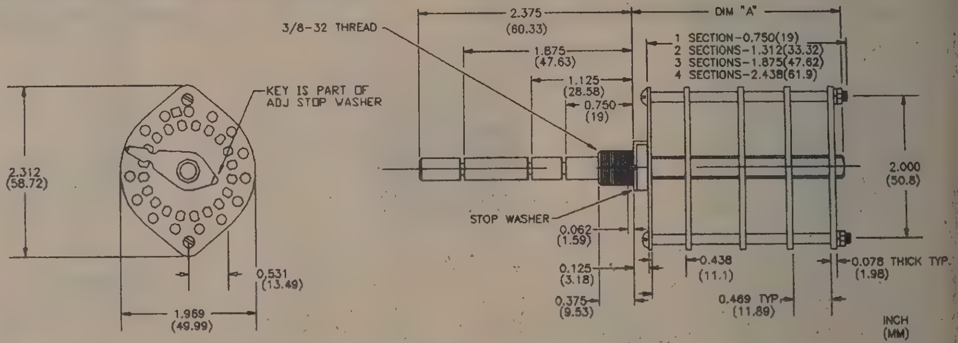
Shorting		Non-Shorting		Index Angle	No. of Sections	No. of Poles	No. of Positions	EACH	
Stock No.	Mfr.'s Type	Stock No.	Mfr.'s Type					1-9	10-49
809-4010	399418-K	809-0035	399419-K	30	1	1	2-12	13.46	11.22
809-1055	399420-K	809-0040	399421-K	30	2	1	2-12	17.61	14.67
809-1060	399422-K	809-4015	399423-K	30	3	1	2-12	25.36	21.13
809-4020	399424-K	809-4025	399425-K	30	4	4	2-12	29.05	24.21
809-4030	399426-K	809-4035	399427-K	30	1	2	2-6	13.83	11.53
809-4040	399428-K	809-4045	399429-K	30	2	4	2-6	18.20	15.23
—	—	809-0055	399431-K	30	3	6	2-6	27.50	22.92
—	—	809-4050	399433-K	30	1	4	2	14.75	12.29
—	—	809-4060	399737-K	30	6	6	2-11	54.67	45.56
809-2025	399739-K	—	—	30	4	8	2-5	35.09	29.24
—	—	809-2030	399745-K	30	6	12	2-5	64.67	53.89
809-2035	399749-K	—	—	30	2	2	2-6	19.44	16.20

Assembled Rotary Switches — JC Series

809-0050	399468-JC	809-0060	399469-JC	30	1	1	2-12	18.81	15.67
809-0070	399470-JC	809-0075	399471-JC	30	2	1	2-12	27.11	22.59
—	—	809-0080	399473-JC	30	3	2	2-12	37.76	31.47
809-1030	399474-JC	809-4080	399475-JC	30	4	4	2-12	49.19	40.99
809-1020	399476-JC	809-0065	399477-JC	30	1	2	2-6	19.20	16.00
809-1025	399478-JC	809-4085	399479-JC	30	2	2	2-6	28.74	23.95
809-2015	399480-JC	809-0090	399481-JC	30	2	3	2-6	41.31	34.43
—	—	809-4090	399705-JC	30	1	3	2-5	20.04	16.75
—	—	809-4095	399711-JC	30	2	5	2-3	32.15	26.79

L Series Phenolic Insulated and MF Series Phenolic Insulated Rotary Switches

2⁵⁄₁₆" diameter rotary switches, double-wiping, self-cleaning silver-plated brass contacts with ceramic insulation. Unique protective coating guards against tarnish and corrosion, extends shelf-life. **L Series:** Provides up to four sections and 18 poles. **MF Series:** Provides up to four sections and 24 poles.



Assembled Rotary Switches — L Series

Shorting		Non-Shorting		Index Angle	No. of Sections	No. of Poles	No. of Positions	EACH	
Stock No.	Mfr.'s Type	Stock No.	Mfr.'s Type					1-9	10-49
809-4180	399621-L	809-4185	399622-L	30	1	1	2-18	22.79	18.99
809-4190	399623-L	809-0105	399624-L	30	2	1	2-18	29.64	24.70
—	—	809-4195	399648-L	30	3	1	2-18	73.99	31.65
809-1000	399649-L	809-0110	399616-L	30	4	1	2-18	45.31	37.76

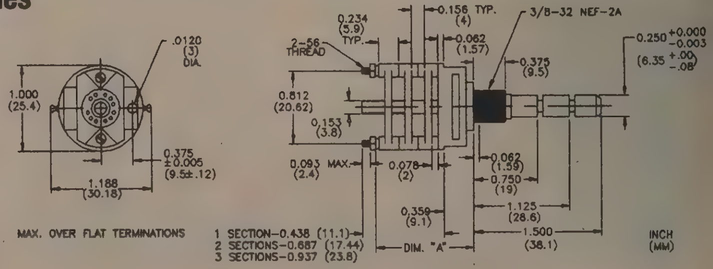
Assembled Rotary Switches — MF Series

Shorting		Non-Shorting		Index Angle	No. of Sections	No. of Poles	No. of Positions	EACH	
Stock No.	Mfr.'s Type	Stock No.	Mfr.'s Type					1-9	10-49
809-4200	399684-MF	809-0115	399685-MF	30	1	1	2-24	19.67	16.39
809-4205	399686-MF	809-0120	399687-MF	30	2	1	2-24	27.58	22.99
—	—	809-4210	399689-MF	30	3	1	2-24	35.90	29.92
809-4215	399690-MF	809-4220	399691-MF	30	4	1	2-24	43.15	35.96

AM Series "Acorn" Diallyl Phthalate Insulated Rotary Switches

Assembled Rotary Switches

Shorting		Non-Shorting		Index Angle	No. of Sections	No. of Poles	No. of Positions	EACH	
Stock No.	Mfr.'s Type	Stock No.	Mfr.'s Type					1-9	10-49
809-4235	399279-AM	809-4240	399280-AM	30	1	1	2-12	17.61	14.67
809-4245	399281-AM	809-4250	399282-AM	30	1	2	2-6	18.42	15.35
809-4255	399283-AM	809-4260	399284-AM	30	2	1	2-12	23.42	19.52
809-4265	399260-AM	809-0020	399261-AM	30	1	3	2-5	21.02	17.51
809-4270	399285-AM	809-4275	399286-AM	30	3	1	2-12	32.17	26.81
809-4225	399287-AM	809-0025	399288-AM	30	2	2	2-6	24.89	20.74
—	—	809-4230	399292-AM	30	3	2	2-6	33.86	28.22
—	—	809-1065	399263-AM	30	1	5	2-3	20.36	16.97
—	—	809-0030	399265-AM	30	2	3	2-5	21.11	17.60

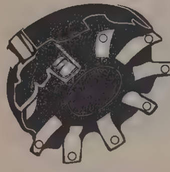


Power Tap Switches and Knobs

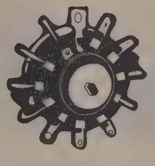
OHMITE®

Switches

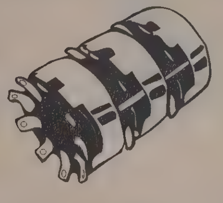
- ► Slow-Break, Quick-Make
- ► Non-Shorting Type
- ► Single and Tandem Models



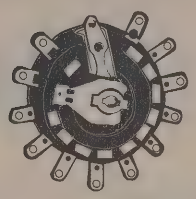
212, 312, 412, 608



Model 711



Typical Tandem Model



T505, T507

Ohmite power tap switches (high power rotary switches) are constructed to provide dependable, convenient operation. All switches have ceramic arc-proof bodies (except 711), metal alloy contacts, and are of an all-soldered and all-riveted construction which assures mechanical and operational integrity. The 711 Tap Switch has a reinforced non-metal body and solid metal alloy contacts; a very small unit with high current handling capability. These Tap Switches have a wide range of applications such as as arcwelders, battery chargers, motor controls, X-ray equipment, etc. Additional number of taps, configurations, assemblies, and arrangements are available as special order items. Call for pricing and delivery info.

Ceramic High-Current Rotary Switches
Models 111, 212, 312, 412, 608.
Non-shorting, single pole, rotary, multi-position unit with single, dual and triple tandem units. Bodies are high grade, arc proof ceramic bodies. Large, solid, silver alloy contacts. Positive cam and roller mechanism provides slow-break, quick-make action. Shaft is insulated by strong ceramic hubs. Enclosed mechanism. Contacts and mechanism are entirely enclosed and protected.

Model 711 Miniature Switch
Single pole, non-shorting selector switch with stationary and movable solid silver alloy contacts. Common contact is rounded for assured seating. Self-cleaning with built in wiping action. Slow-break, quick-make action achieved with cam and cam follower. Breaks 7 amps at 125 VAC (for 20 VDC); carries 15 amps at 125 VAC/DC. Molded melamine phenolic body $1\frac{1}{8}$" dia. × $\frac{13}{16}$" depth behind panel; $\frac{1}{4}$" flatted shaft. Mounts by $\frac{3}{8}$-32 bushings and hex nut. Model number suffix indicates taps (711-3 = 3 taps). Use 5103 knob.

Light Current Rotary Switches
Models T505 and T507.
Rated at 7 amps max, but only 3 amps at 120 VAC should be interrupted. Current ratings are less for inductive circuits, high voltages and all direct current circuits above 20 volts. Porcelain base and porcelain ring carrying the fixed contacts are vitreous coated. Metal tap contacts. Brush is silver graphite for very low resistance. Body dia. is $2\frac{5}{16}$". Behind panel depth is $1\frac{3}{8}$". **Weight:** .28 lb. Knob 5150 is recommended.

Mfr.'s Type	AC Rating	Dia. (In)	Shaft Dia.	Depth Behind Panel (Tandem)			Single Unit
				Single	Double	Triple	Wt. (Lbs.)
111	15 A 125 V	$1\frac{3}{4}$	$\frac{1}{4}$	$1\frac{1}{8}$	$2\frac{3}{4}$	—	.16
212	20 A 150 V	$2\frac{1}{4}$	$\frac{1}{4}$	$1\frac{3}{4}$	—	—	.40
312	30 A 300 V*	$3\frac{15}{16}$	$\frac{1}{4}$	$2\frac{1}{4}$	—	—	.75
412	50 A 300 V*	$4\frac{3}{16}$	$\frac{1}{4}$	$2\frac{7}{16}$	—	$7\frac{5}{8}$	1.40
608	100 A 300 V	6	$\frac{3}{8}$	$3\frac{5}{16}$	$6\frac{13}{16}$	$10\frac{5}{16}$	5.00

* 150 V between taps

Model 111

Stock No.	Mfr.'s Type	Number of Taps	Tandem Sections	Rotation Degrees	EACH 1-9	EACH 10-24	EACH 25-49
291-0820	111-3	3	1	60	**17.32**	15.98	14.84
291-0825	111-4	4	1	90	**17.48**	16.14	14.99
291-0830	111-5	5	1	120	**18.28**	16.88	15.67
291-0835	111-6	6	1	150	**19.08**	17.62	16.36
291-0840	111-7	7	1	180	**20.00**	18.46	17.14
291-0845	111-8	8	1	210	**20.72**	19.12	17.76
291-0850	111-10	10	1	270	**22.40**	20.68	19.20
291-0855	111-11	11	1	300	**23.33**	21.54	20.00
291-0860	111-3-T2	3	2	60	**42.48**	39.22	36.41
291-0865	111-4-T2	4	2	90	**44.52**	41.09	38.16

Model 212

Stock No.	Mfr.'s Type	Number of Taps	Tandem Sections	Rotation Degrees	EACH 1-9	EACH 10-24	EACH 25-49
291-0870	212-6	6	1	150	**39.00**	36.00	33.43
291-0875	212-12	12	1	330	**44.98**	41.52	38.56

Model 312

Stock No.	Mfr.'s Type	Number of Taps	Tandem Sections	Rotation Degrees	EACH 1-9	EACH 10-24	EACH 25-49
291-0880	312-3	3	1	60	**46.40**	42.83	39.77
291-0885	312-6	6	1	150	**50.70**	46.80	43.46
291-0890	312-7	7	1	180	**52.28**	48.26	44.81
291-0895	312-8	8	1	210	**53.88**	49.74	46.19
291-0900	312-9	9	1	240	**55.15**	50.91	47.27
291-0905	312-10	10	1	270	**56.57**	52.22	48.49
291-0910	312-11	11	1	300	**58.02**	53.55	49.73
291-0915	312-12	12	1	330	**59.52**	54.94	51.01

Model 412

Stock No.	Mfr.'s Type	Number of Taps	Tandem Sections	Rotation Degrees	EACH 1-9	EACH 10-24	EACH 25-49
291-0920	412-3	3	1	60	**47.53**	43.88	40.74
291-0925	412-5	5	1	120	**53.23**	49.14	45.63
291-0930	412-6	6	1	150	**56.73**	52.37	48.63
291-0935	412-7	7	1	180	**58.88**	54.35	50.47
291-0940	412-8	8	1	210	**62.47**	57.66	53.54
291-0945	412-9	9	1	240	**64.62**	59.65	55.39
291-0950	412-10	10	1	270	**68.12**	62.88	58.39
291-0955	412-12	12	1	330	**73.67**	68.00	63.14
291-0960	412-6-T3	6	3	150	**192.95**	178.11	165.39
291-0965	412-7-T3	7	3	180	**200.20**	184.80	171.60

Model 608

Stock No.	Mfr.'s Type	Number of Taps	Tandem Sections	Rotation Degrees	EACH 1-9	EACH 10-24	EACH 25-49
291-0970	608-6	6	1	150	**170.45**	157.34	146.10
291-0975	608-8	8	1	210	**185.22**	170.97	158.76
291-0977	608-8-T2	8	2	210	**395.25**	364.85	338.79
291-0980	608-6-T3	6	3	150	**552.68**	510.17	473.73
291-0983	608-8-T3	8	3	210	**612.13**	565.05	524.69

Model 711

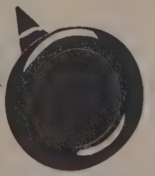
Stock No.	Mfr.'s Type	Number of Taps	Tandem Sections	Rotation Degrees	EACH 1-9	EACH 10-24	EACH 25-49
291-0985	711-3	3	1	60	**19.78**	18.26	16.96
291-0990	711-4	4	1	90	**21.40**	19.75	18.34
291-0995	711-5	5	1	120	**23.10**	21.32	19.80
291-1000	711-6	6	1	150	**24.75**	22.85	21.21
291-1005	711-8	8	1	210	**27.80**	25.66	23.83

Open Type

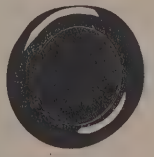
Stock No.	Mfr.'s Type	Number of Taps	Tandem Sections	Rotation Degrees	EACH 1-9	EACH 10-24	EACH 25-49
291-4545	T505	5	1	120	**35.80**	33.05	30.69
291-4550	T507	7	1	180	**38.57**	35.60	33.06

Knobs

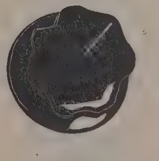
Finger-Grip With Pointer



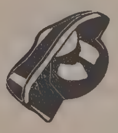
Handwheel With Pointer



Handwheel Without Pointer



Finger-Grip



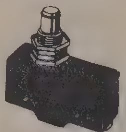
Bar Knob, $1\frac{1}{2}$" Long

Stock No.	Mfr.'s Type	Description	Knob Dia.	Hole Dia.	Set Screw	EACH 1-9	EACH 10-24	EACH 25-49	EACH 50-99
296-1215	5103	Bar knob $1\frac{1}{4}$" long	—	$\frac{1}{4}$"	Slot	**3.36**	2.67	2.51	2.40
296-1217	5104	Handwheel with pointer	$3\frac{1}{4}$"	$\frac{3}{8}$"	Slot	**15.80**	12.54	11.79	11.29
296-1218	5104A	Handwheel with pointer	$3\frac{1}{4}$"	$\frac{3}{8}$"	Hex	**16.60**	13.17	12.39	11.86
296-1220	5105	Handwheel without pointer	$3\frac{1}{4}$"	$\frac{3}{8}$"	Slot	**13.92**	11.05	10.39	9.94
296-1225	5109	Finger-grip with pointer	$1\frac{5}{8}$"	$\frac{1}{4}$"	Slot	**16.20**	12.86	12.09	11.57

Stock No.	Mfr.'s Type	Description	Knob Dia.	Hole Dia.	Set Screw	EACH 1-9	EACH 10-24	EACH 25-49	EACH 50-99
296-1227	5111	Finger-grip with pointer	$2\frac{3}{8}$"	$\frac{1}{4}$"	Slot	**17.06**	13.54	12.73	12.19
296-1230	5111A	Finger-grip with pointer	$2\frac{3}{8}$"	$\frac{1}{4}$"	Hex	**17.78**	14.11	13.27	12.70
296-1232	5116	Bar knob $1\frac{1}{2}$" long	—	$\frac{1}{4}$"	Slot	**6.12**	4.86	4.57	4.37
296-1235	5150	Finger-grip	$1\frac{1}{2}$"	$\frac{1}{4}$"	Slot	**4.86**	3.86	3.63	3.47
296-1240	5151	Finger-grip	$\frac{3}{4}$"	$\frac{1}{8}$"	Slot	**3.54**	2.81	2.64	2.53

A-Series High-Capacity Snap Action Switches

A-20GD-B7-K


A-20GQ-B7-K

A-20GQ22-B7-K

A-20GV-B7-K

A-20GV2-B7-K

A-20GV22-B7-K

Large capacity 20-amp; excellent vibration resistance; quick-break contacts. Steady Break Current (non-inductive, resistive); 20 A @ 125/250 VAC, 10 A @ 500 VAC, 5 A @ 600 VAC, 0.4 A @ 125 VDC, 0.2 @ 250 VDC. Screw terminals. **Body Size:** 49.2 x 17.5 x 24.2 mm (1.94 x 0.69 x 0.95 inch).

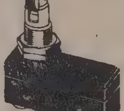
Stock No.	Mfr.'s Type	Actuator Type	Operating Force (max.)	Release Force (min.)	Pretravel (max.)	Overtravel (min.)	Movement Differential	Operating Position	Actuator Length	EACH		
										1-24	25-99	100-499
829-3018	A-20GD-B7-K	Short spring plunger	22.0 oz.	10.1 oz.	0.051 in.	0.118 in.	0.008 in.	1.032 in.	—	**9.34**	**8.88**	**7.98**
829-1704	A-20GQ-B7-K	Panel mount plunger	22.0 oz.	10.1 oz.	0.051 in.	0.221 in.	0.008 in.	0.858 in.	—	**12.81**	**12.17**	**10.89**
829-3022	A-20GQ22-B7-K	Panel mount roller plunger	22.2 oz.	9.9 oz.	0.051 in.	0.141 in.	0.014 in.	1.315 in.	—	**13.41**	**12.37**	**11.50**
829-1706	A-20GV-B7-K	Hinge lever	2.5 oz.	0.5 oz.	0.525 in.	0.157 in.	0.095 in.	0.748 in.	2.50 in.	**11.18**	**10.62**	**9.49**
829-1708	A-20GV2-B7-K	Roller hinge lever	3.5 oz.	0.5 oz.	0.472 in.	0.095 in.	0.087 in.	1.189 in.	1.91 in.	**14.08**	**13.37**	**11.97**
829-3024	A-20GV22-B7-K	Short roller hinge lever	6.3 oz.	1.7 oz.	0.256 in.	0.047 in.	0.047 in.	1.173 in.	1.03 in.	**7.35**	**6.98**	**6.54**

Z-Series General-Purpose Snap-Action Switches

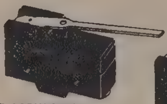
Z-15G-B7-K

Z-15GD-B7-K

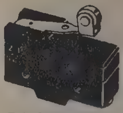
Z-15GQ-B7-K


Z-15GQ21-B7-K

Z-15GQ22-B7-K


Z-15GW-B7-K
Z-15GW55-B7-K

Z-15GW2-B7-K

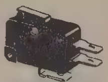

Z-15GW22-B7-K

High precision, 15 amp breaking capacity. Steady state break current (non-inductive; resistive) 15 amp @ 125/250 VAC, 10 A @ 500 VAC, 0.5 A @ 125 VDC, 0.25 A @ 250 VDC. **Body Size:** 49.2 x 17.5 x 24.2 mm (1.94 x 0.69 x 0.95 inch). Screw terminals.

Stock No.	Mfr.'s Type	Actuator Type	Operating Force (max.)	Release Force (min.)	Pretravel (max.)	Overtravel (min.)	Movement Differential	Operating Position	Actuator Length	EACH		
										1-24	25-99	100-499
829-3000	Z-15G-B7-K	Pin plunger	12.3 oz.	4.0 oz.	0.016 in.	0.005 in.	0.002 in.	0.626 in.	—	**5.28**	**5.01**	**4.69**
829-3002	Z-15GD-B7-K	Short spring plunger	12.3 oz.	4.0 oz.	0.016 in.	0.063 in.	0.002 in.	0.846 in.	—	**6.27**	**5.79**	**5.37**
829-3004	Z-15GQ-B7-K	Panel mount plunger	12.3 oz.	4.0 oz.	0.016 in.	0.217 in.	0.002 in.	0.858 in.	—	**7.78**	**7.38**	**6.93**
829-3008	Z-15GQ21-B7-K	Panel mount cross roller plunger	12.3 oz.	4.0 oz.	0.016 in.	0.141 in.	0.002 in.	1.315 in.	—	**12.03**	**11.43**	**9.55**
829-3010	Z-15GQ22-B7-K	Panel mount roller plunger	12.3 oz.	4.0 oz.	0.016 in.	0.141 in.	0.002 in.	1.315 in.	—	**13.35**	**12.68**	**12.13**
829-1570	Z-15GW-B7-K	Hinge lever	2.5 oz.	0.5 oz.	0.394 in.	0.221 in.	0.050 in.	0.748 in.	2.50 in.	**8.17**	**7.76**	**6.93**
829-1820	Z-15GW2-B7-K	Roller hinge lever	3.5 oz.	0.8 oz.	0.280 in.	0.157 in.	0.040 in.	1.189 in.	1.91 in.	**8.53**	**8.10**	**7.67**
829-1815	Z-15GW22-B7-K	Short roller hinge lever	5.6 oz.	1.5 oz.	0.106 in.	0.095 in.	0.020 in.	1.189 in.	1.05 in.	**10.58**	**10.04**	**9.51**
829-3012	Z-15GW55-B7-K	Hinge lever	3.5 oz.	0.5 oz.	0.394 in.	0.398 in.	0.050 in.	0.079 in.	2.50 in.	**9.70**	**9.22**	**7.18**

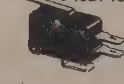
Miniature V-Series Snap Action Switches

V-10G-1C24-K
V-15G-1C25-K


V-10G1-1C24-K
V-15G1-1C25-K

V-10G2-1C24-K
V-15G2-1C25-K

V-10G3-1C24-K
V-15G3-1C25-K

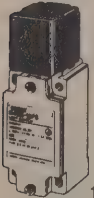
V-10G4-1C24-K
V-15G4-1C25-K


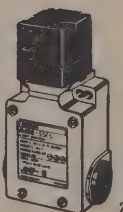
V-10G5-1C24-K
V-15G5-1C25-K

V-10G6-1C24-K
V-15G6-1C25-K

Long service life, high vibration and shock resistance, and easy installation. Solder/quick-connect (#187) terminals. Thermoset resin body allows wide operating temperature range of –25°C to 80°C (–13° to 176°F). **Body Size:** 19.7 x 9.4 x 6.4 mm (0.77 x 0.37 x 0.25). **Heavy duty load:** SPDT contacts (non-inductive, resistive) 15 A @ 250 VAC, 15 A @ 8 VDC, 10 A @ 30 VDC, 0.6 A @ 125 VDC; 36 A max. inrush current NC/NO. **Standard load:** SPDT contacts (non-inductive, resistive); 10 A @ 250 VAC, 10 A @ 8 VDC, 6 A @ 30 VDC, 0.6 @ 125 VDC; 24 A max. inrush current NC/NO.

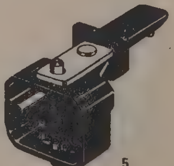
Stock No.	Mfr.'s Type	Actuator Type	Operating Force (max.)	Release Force (min.)	Pretravel (max.)	Overtravel (min.)	Movement Differential	Operating Position	Actuator Length	EACH		
										1-24	25-99	100-499
829-3056	V-10G-1C24-K	Pin plunger, standard load	3.5 oz.	0.7 oz.	0.047 in.	0.051 in.	0.012 in.	0.579 in.	—	**2.59**	**2.17**	**1.59**
829-3058	V-10G1-1C24-K	Short hinge lever, standard load	3.5 oz.	0.5 oz.	0.059 in.	0.039 in.	0.020 in.	0.598 in.	0.87 in.	**2.30**	**1.93**	**1.79**
829-3060	V-10G2-1C24-K	Hinge lever, standard load	2.1 oz.	0.2 oz.	0.130 in.	0.091 in.	0.032 in.	0.598 in.	1.40 in.	**2.40**	**2.20**	**2.03**
829-3062	V-10G3-1C24-K	Long hinge lever, standard load	1.2 oz.	—	0.299 in.	0.126 in.	0.079 in.	0.598 in.	2.34 in.	**2.62**	**2.33**	**2.13**
829-3064	V-10G4-1C24-K	Standard hinge lever, standard load	2.1 oz.	0.2 oz.	0.130 in.	0.091 in.	0.079 in.	0.736 in.	1.28 in.	**2.54**	**2.40**	**2.19**
829-3066	V-10G5-1C24-K	Hinge roller lever, standard load	4.7 oz.	0.5 oz.	0.059 in.	0.039 in.	0.020 in.	0.815 in.	0.79 in.	**4.12**	**3.46**	**2.66**
829-3070	V-15G-1C25-K	Pin plunger, standard load	7.1 oz.	2.0 oz.	0.047 in.	0.051 in.	0.012 in.	0.579 in.	—	**2.11**	**1.88**	**1.72**
829-3072	V-15G1-1C25-K	Short hinge lever, standard load	7.1 oz.	2.0 oz.	0.059 in.	0.039 in.	0.020 in.	0.598 in.	0.87 in.	**2.82**	**2.42**	**2.21**
829-3074	V-15G2-1C25-K	Hinge lever, standard load	4.4 oz.	0.6 oz.	0.091 in.	0.091 in.	0.032 in.	0.598 in.	1.40 in.	**2.49**	**2.14**	**1.95**
829-3076	V-15G3-1C25-K	Long hinge lever, standard load	2.5 oz.	0.2 oz.	0.354 in.	0.118 in.	0.079 in.	0.598 in.	2.34 in.	**2.81**	**2.41**	**2.20**
829-3078	V-15G4-1C25-K	Simulated hinge lever, standard load	4.4 oz.	0.6 oz.	0.130 in.	0.091 in.	0.032 in.	0.736 in.	1.28 in.	**2.63**	**2.25**	**2.06**
829-3080	V-15G5-1C25-K	Hinge roller lever, standard load	8.5 oz.	2.0 oz.	0.059 in.	0.039 in.	0.020 in.	0.815 in.	0.79 in.	**3.00**	**2.51**	**1.94**
829-3082	V-15G6-1C25-K	Long hinge roller lever, standard load	4.4 oz.	0.6 oz.	0.130 in.	0.091 in.	0.032 in.	0.815 in.	1.34 in.	**2.78**	**2.33**	**1.80**


1


2

3

4


5

D4BS Series

The D4BS Safety-door Switch uses a special operation key to assure a positive break in contacts, increasing safety and reducing liability. Mounting pitch and shape of the switch box conforms to CENELEC EN50041. **Enclosure Rating:** IP67(IEC529). **Approved Standards:** UL, CSA, BIA, SUVA and TUV.

Stock No.	Mfr.'s Type	Fig.	Description	Conduit Size	EACH
834-6552	D4BS-35FS	1	DPDB-1NC/NO	Standard 1/2-14PT	**51.33**
834-6553	D4BS-3AFS	1	DPDB-2NC	Standard 1/2-14PT	**51.33**
834-6554	D4BS-75FS	2	DPDB-1NC/NO	3 Conduit Switch 1/2-14NPT	**65.27**
834-6555	D4BS-7AFS	2	DPDB-2NC	3 Conduit Switch 1/2-14NPT	**69.80**
834-6556	D4BS-K1	3	Oper. Key — Horiz.	—	**6.15**
834-6557	D4BS-K2	4	Oper. Key — Vert.	—	**7.00**
834-6558	D4BS-K3	5	Oper. Key — Adj.	—	**26.16**

Snap Action and Mechanical Keyswitches

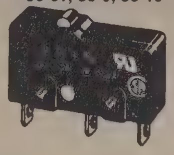
OMRON

SS Economical Subminiature Snap Action Switches

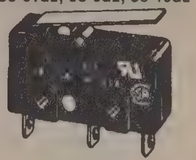
Three load switching capacities to choose from in a compact snap action switch. Long service life, high vibration and shock resistance, and easy installation. Solder terminals. **Body Size:** 19.7 × 9.4 × 6.4 mm (0.77 × 0.37 × 0.25). (9.5 mm). **Heavy Duty Load:** rivet contacts (non-inductive, resistive) 10.1 A @ 125 VAC/250 VAC, 10.1 A @ 8 VDC/14 VDC, 4 A @ 30 VDC; 20 A max. inrush current NC, 15 A max. inrush current NO. **Standard Load:** rivet contacts (non-inductive, resistive); 5 A @ 125 VAC/250 VAC, 5 A @ 8 VDC/14 VDC, 4 A 30 VDC; 20 A max. inrush current NC, 10 A max. inrush current NO. **Microvoltage/Current Load:** bifurcated crossbar contacts (non-inductive, resistive); 0.1 A @ 125 VAC/30 VDC; 1 A max. inrush current.

Stock No.	Mfr.'s Type	Actuator Type	Operating Force (Max.)	Release Force (Min.)	Pretravel (Max.) (In.)	Overtravel (Min.) (In.)	Movement Differential (In.)	Operating Position (In.)	Actuator Length (In.)	EACH		
										1-24	25-99	100-499
829-3042	SS-01	Pin plunger, micro load	5.3 oz.	0.9 oz.	0.020	0.020	0.004	0.331	—	**3.80**	**3.29**	**2.53**
829-3044	SS-01GL	Hinge lever, micro load	1.8 oz.	0.2 oz.	0.047	0.032	0.535	0.346	0.197	**2.60**	**2.18**	**1.68**
829-3046	SS-01GL13	Simulated hinge lever, micro load	1.8 oz.	0.2 oz.	0.047	0.047	0.610	0.421	0.248	**2.60**	**2.18**	**1.68**
829-3048	SS-01GL2	Hinge roller lever, micro load	1.8 oz.	0.2 oz.	0.047	0.047	0.760	0.571	0.197	**3.42**	**2.88**	**2.21**
829-2000	SS-5	Pin plunger, standard load	5.3 oz.	0.9 oz.	0.020	0.020	0.004	0.331	—	**2.39**	**2.01**	**1.68**
829-2002	SS-5GL	Hinge lever, standard load	1.8 oz.	0.2 oz.	0.022	0.022	0.032	0.346	0.197	**.91**	**.81**	**.73**
829-3050	SS-5GL13	Simulated hinge lever, standard load	1.8 oz.	0.2 oz.	0.022	0.022	0.032	0.421	0.248	**1.74**	**1.47**	**1.07**
829-2004	SS-5GL2	Hinge roller lever, standard load	1.8 oz.	0.2 oz.	0.022	0.022	0.032	0.571	0.197	**1.83**	**1.62**	**1.25**
829-3052	SS-10	Pin plunger, heavy duty load	5.3 oz.	0.9 oz.	0.024	0.024	0.005	0.217	—	**2.59**	**2.22**	**2.05**
829-3054	SS-10GL	Hinge lever, heavy duty load	1.8 oz.	0.2 oz.	0.039	0.039	0.020	0.268	0.197	**2.16**	**1.82**	**1.33**

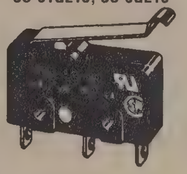
SS-01, SS-5, SS-10



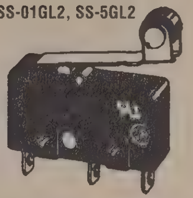
SS-01GL, SS-5GL, SS-10GL

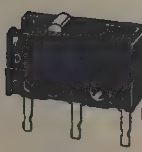


SS-01GL13, SS-5GL13



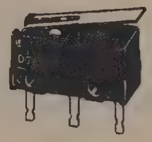
SS-01GL2, SS-5GL2





D2F-F

D2F-L

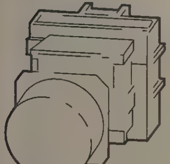


D2F Subminiature Snap Action Switch

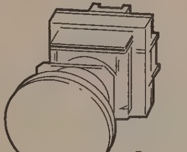
Permits direct soldering to PC board. Quick reverse-action mechanism with 2 leaf springs assures long life. Construction resistant to flux wicking. PCB termination. **Standard:** (non-inductive, resistive); 3 A @ 125 VAC, 2 A @ 30 VDC with 5.3 oz. operating force model; 1 A @ 125 VAC, 0.5 A @ 30 VDC with 3 oz. operating force. **Micro Load:** (non-inductive, resistive); 0.1 A @ 30 VDC. **Body Size:** 6 × 12.8 × 5.8 mm (0.24 × 0.50 × 0.23 inch).

Stock No.	Mfr.'s Type	Actuator Type	Operating Force (Max.)	Release Force (Min.)	Pretravel (Max.) (In.)	Overtravel (Min.) (In.)	Movement Differential (In.)	Operating Position (In.)	Actuator Length (In.)	EACH		
										1-24	25-99	100-499
829-3032	D2-F-F	Pin plunger, PCB terminal, standard load	3.0 oz.	0.2 oz.	0.020	0.010	0.005	0.217	—	**2.39**	**2.02**	**1.48**
829-4002	D2F-L	Hinge lever, PCB terminal, standard load	3.1 oz.	0.2 oz.	—	0.022	0.020	0.268	0.173	**1.52**	**1.30**	**1.07**
829-3036	D2F-01	Pin plunger, PCB terminal, micro load	5.3 oz.	0.7 oz.	0.020	0.010	0.005	0.217	—	**1.33**	**1.12**	**.82**
829-3038	D2F-01F	Pin plunger, PCB terminal, micro load	3.0 oz.	0.2 oz.	0.020	0.010	0.005	0.217	—	**1.33**	**1.12**	**.96**
829-3040	D2F-01L	Hinge lever, PCB terminal, micro load	3.1 oz.	0.2 oz.	—	0.022	0.020	0.268	0.173	**1.47**	**1.23**	**.90**

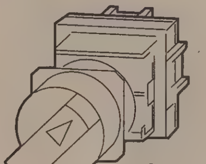
Knob and Keyswitches



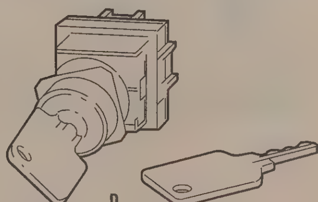
A



B



C



D

All versions are fully assembled. Contact blocks have screw terminals. Compact style requires only 16 mm dia. mounting holes. Comply with IP65 seal requirements (oil resistant). Snap flange design on contact block for ease of wiring and assembly. Accommodates panel thicknesses of 0.5 to 5 mm. **Contact Rating:** 5 A @ 120 VAC 3 A @ 250 VAC resistive 3 A @ 30 VDC resistive.

Illuminated Types

Stock No.	Mfr.'s Type	Fig.	CAP	Function	Color	Circuit	EACH		
							1-24	25-99	100-499
829-8500	A3GT-99C1-H1ND	A	Pushbutton	Momentary	Red	DP-DT	**23.10**	**21.25**	**20.94**
829-8502	A3GT-99C1-H1NG	A	Pushbutton	Momentary	Green	DP-DT	**23.10**	**21.25**	**20.94**
829-8504	A3GT-99C1-H1NW	A	Pushbutton	Momentary	White	DP-DT	**23.10**	**21.25**	**20.94**
829-8506	A3GT-99D1-H1ND	A	Pushbutton	Maintained	Red	DP-DT	**23.10**	**21.25**	**20.94**
829-8508	A3GT-99D1-H1NG	A	Pushbutton	Maintained	Green	DP-DT	**22.00**	**20.24**	**19.94**
829-8510	A3GT-99D1-H1NW	A	Pushbutton	Maintained	White	DP-DT	**22.00**	**20.24**	**19.94**
829-8512	M2GT-99A1-H1ND	A	—	Indicating light	Red	—	**15.75**	**14.55**	**14.28**
829-8514	M2GT-99A1-H1NG	A	—	Indicating light	Green	—	**15.00**	**13.86**	**13.60**
829-8516	M2GT-99A1-H1NW	A	—	Indicating light	White	—	**15.75**	**14.55**	**14.28**

Non-Illuminated Types

Stock No.	Mfr.'s Type	Fig.	CAP	Function	Color	Circuit	EACH		
							1-24	25-99	100-499
829-8518	A3GT-99C0-R	A	Pushbutton	Momentary	Red	DP-DT	**19.95**	**18.35**	**18.08**
829-8520	A3GT-99C0-Y	A	Pushbutton	Momentary	Yellow	DP-DT	**19.00**	**17.48**	**17.22**
829-8522	A3GT-99C0-G	A	Pushbutton	Momentary	Green	DP-DT	**19.95**	**18.35**	**18.08**
829-8524	A3GT-99C0-B	A	Pushbutton	Momentary	Black	DP-DT	**19.00**	**17.48**	**17.22**
829-8526	A3GT-99D0-R	A	Pushbutton	Maintained	Red	DP-DT	**19.51**	**17.95**	**17.68**
829-8528	A3GT-99D0-Y	A	Pushbutton	Maintained	Yellow	DP-DT	**19.51**	**17.95**	**17.68**
829-8530	A3GT-99D0-G	A	Pushbutton	Maintained	Green	DP-DT	**20.19**	**18.57**	**18.30**
829-8532	A3GT-99D0-B	A	Pushbutton	Maintained	Black	DP-DT	**20.49**	**18.85**	**18.57**
829-8534	A3GT-99C2-R	B	Mushroom cap	Momentary	Red	DP-DT	**17.32**	**15.94**	**15.62**
829-8536	A3GT-99D2-R	B	Mushroom cap	Maintained	Red	DP-DT	**18.11**	**16.66**	**16.18**
829-8538	A3GT-S9C11	C	2 pos. selector	Momentary	Black	DP-DT	**27.30**	**25.12**	**24.75**
829-8540	A3GT-S9C21	C	2 pos. selector	Maintained	Black	DP-DT	**28.35**	**26.08**	**25.70**
829-8542	A3GT-K9C11-C	D	Key	Maintained	Black	DP-DT	**44.10**	**40.57**	**39.97**
829-8544	A3GT-K9C21-C	D	Key	Momentary	Black	DP-DT	**44.10**	**40.57**	**39.97**

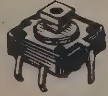
829-8546. A3B-3004. Locking Ring Wrench. **1-24**........**EACH 4.46**
25-99........**EACH 4.10** **100-499**........**EACH 3.77**

B3F-1000
B3F-1020
B3F-1100
B3F-1002

B3F-1050
B3F-1052

B3F-9100

B3F-4000
B3F-4100
B3F-4105
B3F-5000



B3F-5150
B3F-5151

B3F-3120

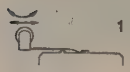
B3F-3150

Type B3F Mechanical Keyswitches

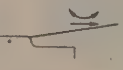
Flux tight mechanical keyswitch with snap action short keystroke with positive feedback. 50 mA @ 24 VDC resistive load switching capacity. 100 mOhm max. initial contact resistance. **Insulation Resistance:** 100 mOhm @ 250 VDC. Ideal for applications such as audio, office and communications equipment, measuring instruments, TV, VTRs and etc.

Stock No.	Mfr.'s Type	Switch Height × Pitch	Ground Terminal	Plunger	Operating Force	Size	EACH		
							1-24	25-99	100-499
829-5000	B3F-1000	.17" × .26"	No	Flat	3.5 oz.	.24" × .24"	**.35**	**.32**	**.27**
829-5005	B3F-1020	.20" × .26"	No	Flat	3.5 oz.	.24" × .24"	**.38**	**.35**	**.30**
829-5010	B3F-1050	.29" × .26"	No	Projected	3.5 oz.	.24" × .24"	**.41**	**.38**	**.21**
829-5015	B3F-1100	.17" × .26"	Yes	Flat	3.5 oz.	.24" × .24"	**.36**	**.33**	**.28**
829-5020	B3F-1002	.17" × .26"	No	Flat	5.3 oz.	.24" × .24"	**.53**	**.48**	**.42**
829-5025	B3F-1052	.29" × .26"	No	Projected	5.3 oz.	.24" × .24"	**.36**	**.33**	**.28**
829-5030	B3F-4000	.17" × .49"	No	Flat	4.6 oz.	.47" × .47"	**.50**	**.46**	**.41**
829-5035	B3F-4100	.17" × .49"	Yes	Flat	4.6 oz.	.47" × .47"	**.71**	**.64**	**.56**
829-5040	B3F-4005	.17" × .49"	No	Flat	9.2 oz.	.47" × .47"	**.46**	**.42**	**.38**
829-5045	B3F-4105	.17" × .49"	Yes	Flat	9.2 oz.	.47" × .47"	**.59**	**.54**	**.47**
829-5050	B3F-5000	.17" × .49"	No	Flat	4.6 oz.	.47" × .47"	**.63**	**.58**	**.53**
829-5055	B3F-5150	.29" × .47"	Yes	Projected	4.6 oz.	.47" × .47"	**.60**	**.55**	**.48**
829-5060	B3F-5151	.29" × .47"	Yes	Projected	4.6 oz.	.47" × .47"	**2.17**	**1.92**	**1.80**
829-5065	B3F-9100	.29" × .47"	No	Red LED	4.6 oz.	.47" × .47"	**2.50**	**2.15**	**1.98**
829-5070	B3F-3120	.15"	Yes	Flat	3.5 oz.	.24" × .24"	**.36**	**.32**	**.29**
829-5075	B3F-3150	.24"	Yes	Projected	3.5 oz.	.24" × .24"	**.50**	**.46**	**.41**

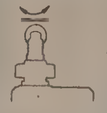
BZ and BA Series Standard Basic Switches


1

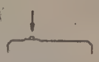
Roller Leaf; Low force large movement actuation


2

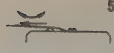
Lever; Very low force, slow cams and slides


3

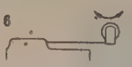
Panel-mount roller plunger; Actuation by cams


4

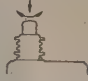
Pin plunger; in-line motion


5

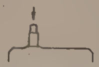
Leaf; Low-force, slow moving cams or slides


6

Roller lever; Very low force, fast moving cams


7

Panel-mount plunger; heavy duty in-line applications or slow cams. Cam rise should not exceed 30°

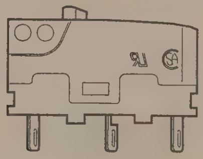

8

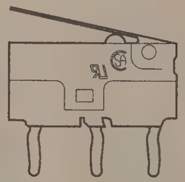
Overtravel plunger; in-line applications requiring additional overtravel

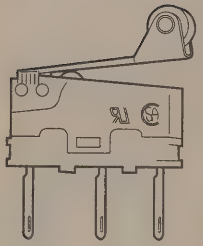
These standard basic switches are precision snap-action mechanisms enclosed in accurately molded plastic cases. Switches are UL recognized and CSA certified.

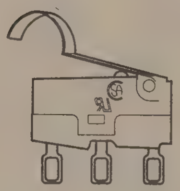
Stock No.	Mfr.'s Type	Fig.	Rating (Amps)	O.F.	EACH 1-24
727-0010	BZ-2RL2-A2	1	20	9	17.61
727-0018	BZ-2RW-A2	2	15	1-2.5	15.91
727-0020	BZ-2RW80-A2	2	15	2.5	15.22
727-0028	BZ-2RW863-A2	2	15	1	10.06
727-0038	BA-2RV-A2	2	20	2.5	16.83
727-0014	BZ-2RQ18-A2	3	15	9-13	44.23
727-0005	BZ-2R-A2	4	15	9-13	12.24
727-0030	BA-2R-A2	4	20	14-22	17.40
727-0032	BA-2R708-P7	4	20	14-22	39.70
727-0008	BZ-2RL-A2	5	15	5	14.69
727-0036	BA-2RL2-A2	5	15	5	25.11
727-0022	BZ-2RW82-A2	6	15	3.5	19.05
727-0024	BZ-2RW822-A2	6	15	6	19.05
727-0026	BZ-2RW826-A2	6	15	6	23.79
727-0040	BA-2RV22-A2	6	20	6	21.03
727-0012	BZ-2RQ1-A2	7	15	9-13	15.46
727-0006	BZ-2RD-A2	8	15	9-13	15.83
727-0034	BA-2RB-A2	8	20	14-22	16.22

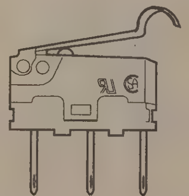
UM/UX Series Subminiature Basic Switches


1


2


3


4

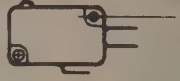

5

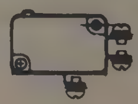
UM Series Snap Action Switches can fit a broad range of applications, and can handle loads from milliamps up to 5 A. UX Series Snap Action Switches are ideal for compact application. With dimensions of .197" H × .236" W × .504" L these switches can be used where space is a factor. 125-250 VAC, 30 VDC.

Stock No.	Mfr.'s Type	Fig.	Actuator Style	Poles/ Throws	Ratings (Amps)	Contacts	Termination	EACH 1-24
727-2000	UX10E30C01	2	Flat lever	SPDT	0.1	Gold	P.C.	2.31
727-2005	UX40E30C01	2	Flat lever	SPDT	3.0	Silver	P.C.	2.06
727-2010	UX40E10C01	2	Flat lever	SPDT	3.0	Silver	Solder	2.06
727-2015	UM10A10A01	1	Pin plunger	SPDT	0.1	Gold	Solder	3.37
727-2020	UX30C30A01	1*	Pin plunger	SPDT	1.0	Silver	P.C.	1.75
727-2025	UM40B10A01	1	Pin plunger	SPDT	3.0	Silver	Solder	2.22
727-2030	UX40E30A01	1*	Pin plunger	SPDT	3.0	Silver	P.C.	1.75
727-2035	UX40E10A01	1*	Pin plunger	SPDT	3.0	Silver	Solder	1.75
727-2040	UM50E10A01	1	Pin plunger	SPDT	5.0	Silver	Solder	2.22
727-2045	UM50E70A01	1	Pin plunger	SPDT	5.0	Silver	.110 Q.C.	2.22
727-2050	UM50E70F01	3	Roller lever	SPDT	5.0	Silver	.110 Q.C.	2.98
727-2055	UX40E30E01	4	Simulated roller lever	SPDT	3.0	Silver	P.C.	2.06
727-2060	UX40E10E01	4	Simulated roller lever	SPDT	3.0	Silver	Solder	2.16
727-2065	UM50E10E01	5	Simulated roller lever	SPDT	5.0	Silver	Solder	2.61
727-2070	UM50E70E01	5	Simulated roller lever	SPDT	5.0	Silver	.110 Q.C.	2.61
727-2075	UM10D10C01	2	Standard flat lever	SPDT	0.1	Gold	Solder	3.75
727-2080	UM50E10C01	2	Standard flat lever	SPDT	5.0	Silver	Solder	2.61
727-2085	UM50E70C01	2	Standard flat lever	SPDT	5.0	Silver	.110 Q.C.	2.61

*Dimensions: .26" H × .24" W × .50" L.

V3 Series Miniature Precision Switches

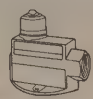

1

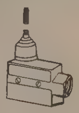

2

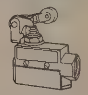
V3 Series miniature basic switches feature high electrical capacity and long life. Their size and shape meet design requirements in all types of applications. All are single-pole double throw. Switches are UL recognized and CSA certified. D8 suffix offers quick connect terminals .188 × .020 thick. D9 suffix has quick connect terminals .250 × .032. All others have screw terminals.

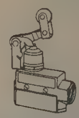
Stock No.	Mfr.'s Type	Fig.	Rating (Amps)	Lever Type	EACH 1-24
727-0046	V3-1-D8	1	15.1	Pin Plunger	3.59
727-0050	V3-101-D8	1	11.0	Pin Plunger	3.45
727-0052	V3-101-D9	1	11.0	Pin Plunger	3.12
727-0044	V3-1	2	10.0	Pin Plunger	6.30
727-0048	V3-101	2	11.0	Pin Plunger	5.83
727-0056	V3-2900-D8	1	25.0	Pin Plunger	4.51
727-0072	V3L-3	2	15.1	Roller	9.26
727-0074	V3L-3-D8	1	15.1	Roller	4.65
727-0062	V3L-111-D8	2	11.0	Roller	4.18
727-0066	V3L-139-D8	1	11.0	Roller	4.18
727-0058	V3L-101-D8	2	11.0	Sim Roller	3.98
727-0076	V3L-3014	2	15.1	Sim Roller	3.59
727-0060	V3L-104-D8	1	11.0	Straight	3.51
727-0064	V3L-131-D8	1	11.0	Straight	3.51
727-0070	V3L-2106-D8	1	10.0	Straight	3.51
727-0078	V3L-6-D8	1	15.0	Straight	3.98
727-9997	V3L-1101-D8	1	10.0	Pin Plunger	4.12

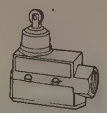
E6-V6 Compact Enclosed Switches


1


2


3


4

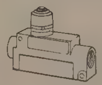

5

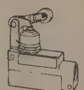
These enclosed switches contain a precision snap-action basic switch inside a rugged cast zinc housing. Lead washers are used to seal the mounting holes on side mount switches. Removal of the bottom enclosure exposes the terminals for easy wiring.

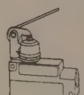
Stock No.	Mfr.'s Type*	Fig.	Rating†	Mtg.	Actuator Type	EACH 1-24
727-0088	BZE6-2RN	1	A	Side	Straight plunger	58.87
727-0090	BZE6-2RN18	2	A	Side	Coil spring	91.00
727-0092	BZE6-2RN2	3	A	Side	Roller lever	84.64
727-0094	BZE6-2RN28	4	A	Side	One-way roller	101.47
727-0096	BZE6-2RN7	1	A	Side	Straight plunger	61.53
727-0098	BZE6-2RN80	5	A	Side	Roller plunger	84.64
727-0100	BZE6-2RQ	1	A	Side	Straight plunger	48.72
727-0102	BZE6-2RQ2	3	A	Side	Roller lever	73.07
727-0104	BZE6-2RQ8	5	A	Side	Roller plunger	73.07
727-0106	BZE6-2RQ9	5	A	Side	Roller plunger	73.07
727-0110	BZV6-2RN	1	A	Flange	Straight plunger	61.14
727-0112	BZV6-2RN2	3	A	Flange	Roller lever	87.94
727-0114	BZV6-2RQ	1	A	Flange	Straight plunger	43.33
727-0116	BZV6-2RQ2	3	A	Flange	Roller lever	58.81
727-0108	DTE6-2RN	1	B	Side	Straight plunger	137.88

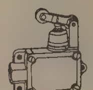
*RN Series — Without seal boot; RQ Series — With seal boot. †**Ratings @ 125 Volts:** A — 15 A, SPST; B — 1

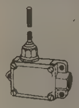
BZG1 and BAF1 Series Sealed Enclosed Switches

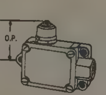

1


2


3


4


5



6

Switches have a neoprene seal gasket between the housing halves, elastomer boot actuators, sealed conduits connectors and die cast aluminum housing. Mounting holes are for #10 screws and are located outside the switch cavity. Each has a single conduit opening. Rating is a 15 amps for sealed enclosed switches and 20 amps for high capacity switches.

Sealed Enclosed

Stock No.	Mfr.'s Type	Fig.	EACH 1-24
727-0118	BZG1-2RN	1	82.19
727-0120	BZG1-2RN2	2	112.24
727-0122	BZG1-2RN62	3	118.54

High Capacity

Stock No.	Mfr.'s Type	Fig.	EACH 1-24
727-0124	BAF1-2RN-LH	6	112.06
727-0126	BAF1-2RN-RH	6	112.06
727-0132	BAF1-2RN2-LH	4	141.31
727-0134	BAF1-2RN2-RH	4	141.31
727-0130	BAF1-2RN18-RH	5	158.81
727-0128	BAF1-2RN18-LH	5	158.81

Additional products from this manufacturer.
Please contact Allied for price and delivery information.

(MANUFACTURED BY MICROSWITCH) SELECTA SWITCH®

LS/200LS Limit Switches

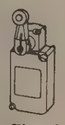


Fig. 1

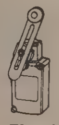


Fig. 2

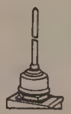


Fig. 3

These compact limit switches fit in many places too small for other fully adjustable limit switches. Rotary motion roller lever and rod actuators are adjustable through 360 degrees. Switches meet NEMA 1, 2, 3, 6 and 13. All are two circuit double-break.

Stock No.	Mfr.'s Type	Fig.	Description	EACH
727-0138	1LS1	1	Side Rotary Lever	162.79
727-0140	1LS1-L	1	As Above, 20 Pretravel	162.79
727-0144	201LS1	1	Side Rotary Lever*	175.64
727-0142	1LS3	2	ADJ Radius Lever	179.32
727-0152	8LS1	3	Wobble Actuator, Cable	163.40
727-0154	8LS1-L	3	As Above, UL Listed	134.80
727-0146	208LS1	3	Wobble Actuator*	153.61

*Requires terminal block 86-18PA1 for 86-200 series switches which must be ordered separately below.

Replacement Parts for Above

Stock No.	Mfr.'s Type	Description	EACH
			1-24
727-0136	18PA1	Terminal Block	36.11
727-0148	2MN1	Contact Block for 1LS1/201LS1	72.22
727-0162	9PA58	Operating Head for 8LS1-L	112.00
727-0161	9PA15	Operating Head for 1LS1-L	88.13
727-0150	6PA121	Actuator only for 1LS1-L	12.85

HDLS Heavy Duty Limit Switches

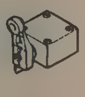
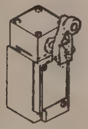


Fig. 1


Limit Switch with Standard Side Rotary Actuator

Many different actuator heads available. All are UL listed and CSA certified. Field adjustable operating modes for reduced inventory. Rated at 120 VDC, 0.25 inductive, 0.8 resistive; 240 VDC, 0.015 inductive, 0.4 resistive. Actuators must be ordered separately.

Stock No.	Mfr.'s Type	Fig.	Description	EACH
				1-24
727-0164	LSA1A	1	STD Side Actuator, Plug-In, 1/2 Conduit	142.60
727-0172	LSH1A	1	Low Diff/Low Torque Side Rotary, Plug-In, 1/2 Conduit	140.76

Lever Actuators for HDLS Switches

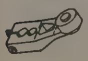


Fig. A

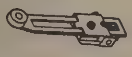


Fig. B

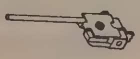


Fig. C

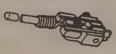
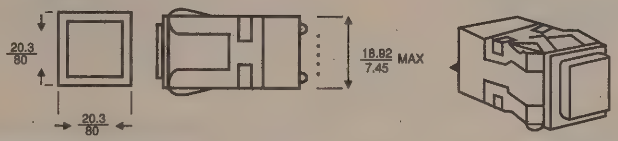


Fig. D

Stock No.	Mfr.'s Type	Fig.	Description	EACH
				1-24
727-0184	LSZ51A	A	Nylon Roller	12.85
727-0186	LSZ51B	A	Steel Roller	12.85
727-0188	LSZ52B	B	ADJ Radius Lever, Front, Steel	20.81
727-0190	LSZ52C	B	ADJ Radius Lever, Back, Nylon	20.81
727-0192	LSZ52D	B	ADJ Radius Lever, Front, Nylon	20.81
727-0196	LSZ54N	C	Rod Lever, Stainless	20.81
727-0198	LSZ68	D	Delrin Rod with Spring	29.38

AML21 Series Incandescent and Non-Lighted Electronic Control Pushbutton Switches



AML21 switches with black bezels are designed to meet CEE requirements. Type numbers 13th digit "A" have silver contacts rated 2A, 250VAC and 24VDC resistive; 3A, 125 VAC. 13th digit "B" have gold contacts rated 100mA, 125VAC/DC resistive. Terminals are solder or quick-connect. **Panel cutout:** 0.75" square. Lighted units use incandescent T-1¾ wedge base industry lamp nos. 73, 85, 86, which are ordered separately. Order **AML51** switch buttons separately on this page.

Square Display Non-Lighted

Stock No.	Mfr.'s Type	Circuit		EACH
		Poles	Action	1-24
727-0214	AML21BBA2AA	SPDT	Mom.	10.40
727-0218	AML21BBA2AC	DPDT	Mom.	13.08
727-0216	AML21BBA2AB	SPDT	Mom.	9.87

Square Display Lighted, Single Lamp Circuit

Stock No.	Mfr.'s Type	Poles	Action	EACH 1-24
727-0220	AML21CBA2AA	SPDT	Mom.	12.24
727-0222	AML21CBA2AB	SPDT	Alt.	11.87
727-0224	AML21CBA2AC	DPDT	Mom.	16.61
727-0226	AML21CBA2AD	DPDT	Alt.	15.53

Rectangular Display Lighted, Single Lamp Circuit

Stock No.	Mfr.'s Type	Poles	Action	EACH 1-24
727-0232	AML21FBA2AA	SPDT	Mom.	18.69
727-0236	AML21FBA2BA	SPDT	Mom.	14.91
727-0234	AML21FBA2AC	SPDT	Alt.	19.18

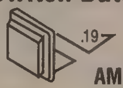
Rectangular Display Non-Lighted

Stock No.	Mfr.'s Type	Poles	Action	EACH 1-24
727-0228	AML21EBA2AA	SPDT	Mom.	13.77
727-0230	AML21EBA2AB	SPDT	Alt.	14.73

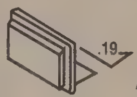
Rectangular Lighted, 2 Lamp Circuit

Stock No.	Mfr.'s Type	Poles	Action	EACH 1-24
727-0240	AML21GBA2AC	SPDT	Alt.	31.25
727-0242	AML21GBA2AD	DPDT	Alt.	24.64
727-0238	AML21GBA2AA	SPDT	Mom.	17.14

AML51 Switch Buttons



AML51-C



AML51-F

For **AML11** and **AML21** series incandescent and non-lighted pushbuttons. Color displayed whether lamp ON or OFF.

Square Pushbutton Style

Stock No.	Mfr.'s Type	Color	EACH
			1-24
727-0250	AML51-C10W	White	1.14
727-0252	AML51-C10Y	Yellow	1.08
727-0248	AML51-C10R	Red	1.43
727-0244	AML51-C10G	Green	1.39

Rectangular Pushbutton Style

Stock No.	Mfr.'s Type	Color	EACH 1-24
727-0260	AML51-F10W	White	1.39
727-0262	AML51-F10Y	Yellow	1.61
727-0258	AML51-F10R	Red	2.14
727-0254	AML51-F10G	Green	1.98

AML91 Incandescent Lamps

For **AML21 series** incandescent pushbutton switches listed above.

Stock No.	Mfr.'s Type	Lamp Voltage	EACH
			1-24
727-0268	AML91LA86	6.3	2.75
727-0264	AML91LA73	14.0	2.22
727-0266	AML91LA85	28.0	2.92

Miniature Pre-Wired Enclosed Switches

Factory pre-wired with SJTO industrial cable. Cable electrical connection and basic switch terminals are encapsulated in epoxy compound. Elastomer seal between plunger and switch housing. Plus mounting screw holes with continuous walls keep liquids from entering switch cavity. SPDT. **UL rating:** 5 amps. 1/10 HP, 125 or 250VAC. Zinc die-cast housing. Last digit in type number indicates cable length in inches. **Minimum overtravel is:** 0.118". **Differential travel:** 0.004. UL listed, CSA certified.

Stock No.	Mfr.'s Type	Fig.	Actuator Type	NEMA	O.F. Max.(lbs)	EACH
						1-24
727-0200	914CE 1-3	1	Plunger	1, 3	2.75	76.81
727-0202	914CE 1-6	1	Plunger	1, 3	2.75	83.91
727-0204	914CE 1-9	1	Plunger	1, 3	2.75	90.21
727-0206	914CE 18-3	2	Booted Plunger	1, 3, 4, 12, 13	5.00	92.41
727-0212	914CE 20-3	2	Spring Wire Wobbler	1, 3, 4, 12, 13	2 oz.	113.89

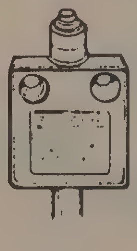


Fig. 1

UL Listed   SA Certified

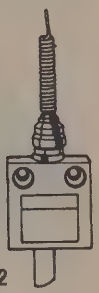
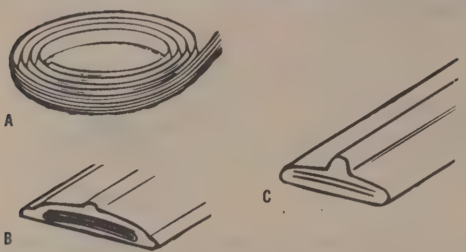


Fig. 2

Controflex Ribbon Switches



Type 131-A. 3/4" wide, 3/16" thick. Light grey, 40 oz., nominal finger pressure. Lead wires 18" long. 18/2 wire. Fasten with vinyl adhesive #105 or mount with Contamold Channel #106. Heat-sealed sleeve terminals. **(Fig.B)**

Type 121-BP. 9/16" wide, 5/32" thick. Light green, 8 oz., nominal finger pressure. Jacket-seal terminations. Lead wires 18" long. 22/2 wire. For indoor and outdoor use. Fasten with vinyl adhesive #105 or use Contamold Channel #104. **(Fig. C)**

Type 141-BPH. 9/16" wide, 9/32" thick. White, 8 oz., nominal finger pressure. Same as Type 121-BP except with 1/8" high bead for actuation. Fasten with #105 vinyl adhesive/sealant or mount with Contamold Channel #104. **(Fig. C)**

Do-It-Yourself Switch Material. Supplied in 50' lengths. Can be cut to any length desired. Terminated with the use of #103 terminals and sealed with vinyl adhesive #105 or use #104/106 mounting channels.

Type 102-A. Grey, 40 oz. 3/4" wide, 3/16" thick. Uses #106 mounting channel. **(Fig.'s A, B)**

Type 102-B. Yellow or black, 12 oz. 3/4" wide, 3/16" thick. Uses #106 mounting channel. **(Fig.'s A, B)**

Type 102-BP. Light green, 8 oz. 9/16" wide, 5/32" thick. Uses #104 mounting channel. **(Fig.'s A, C)**

Type 102-BHP. White, 8 oz. 9/16" wide, 5/32" thick. Uses #104 mounting channel. **(Fig.'s A, C)**

Stock No.	Mfr.'s Type	Length	Weight	EACH	
				1-24	25-99
966-1080	131-A	1'	3 oz.	18.18	16.52
966-1081	131-A	2'	6 oz.	24.66	22.42
966-1082	131-A	5'	15 oz.	44.21	40.19
966-1070	121-BP	1'	2 oz.	18.44	16.77
966-1072	121-BP	5'	10 oz.	60.14	54.67
966-1075	141-BPH	1'	4 oz.	18.56	16.88
966-1086	102-A	50'	3.75 lbs.	397.13	361.02
966-1087	102-B	50'	3.75 lbs.	444.68	404.25
966-1088	102-BP	50'	3 lbs.	489.66	445.15
966-1089	102-BPH	50'	3 lbs.	521.79	474.36

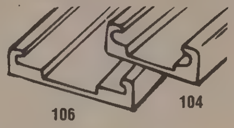
Controflex Switching Mats

Mat Switch

23"/584.2 L x 17"/431.8 W x 3/32"/2.38

Olive colored, pure vinyl heat-sealed mats with 22/2 lead wires, 6' long (48" for CVP-623). Activate with 5 lbs. nominal foot pressure. For use in entrance ways, stair treads and other areas for monitoring. Use exposed or concealed under carpeting. 3/22" thick.

Stock No.	Mfr.'s Type	Dimensions	Weight	EACH	
				1-24	25-99
966-1005	CVP-623	6 × 23"	1 lb	29.09	26.45
966-1010	CVP-1723	17 × 23"	1¾ lbs.	59.36	53.97



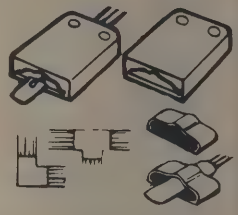
Contamold Mounting Channels

Fits Controflex ribbon switches. Switch slides in from one end. 104 Series is .688" wide, .270" high. 106 Series is .875" wide, .250" high. 106-S 6" pan head self-tapping screws for the Contamold channels are 5/8" long.

Stock No.	Mfr.'s Type	Length	EACH	
			1-24	25-99
966-0104	104	3'	9.18	8.35
966-1104	104	6'	16.71	15.19
966-0106	106	3'	9.57	8.70
966-1106	106	6'	17.46	15.87

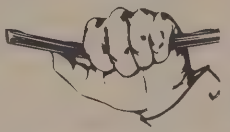
Molded Terminal Sets

Neat appearance. Quick connecting sealable terminations. Set includes one dead and one live end with tongue connectors and 18" lead wires. Seal with #105 adhesive/sealant. The "T" and "L" fittings connect types "A" and "B" switch material by means of self-contained tongue connectors.



Stock No.	Mfr.'s Type	Color	EACH	
			1-24	25-99
966-2000	103-A	Grey	10.20	9.27
966-2005	103-B	Yellow	10.20	9.27
966-2010	103-BP	Green	9.63	8.75
966-2015	103-BPH	White	9.63	8.75
966-2025	103-TB	Yellow	6.34	5.77
966-2030	103-LA	Grey	6.34	5.77

Flexswitch



180 Flex Switch

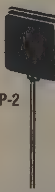
Sealed ribbon switch makes contact when flexed or squeezed. Quick and easy to install. Trouble-free sensing for virtually millions of cycles. Sensitivity is 7 oz. per foot at 2" 15° max. bending moment or 8 oz. finger squeeze. 9/16" wide, 8" long. Rated at 1 A res. 115 VAC, 2 A at 28 VDC.

966-1083. Model 180-S. **1-24**	**EACH 18.12**
25-99	**EACH 16.47**
100-Up	**EACH 13.93**

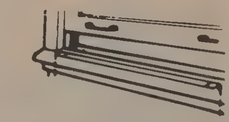
Touch Pads

Industrial sensing mats for hazardous area monitoring. Sealed, moisture resistant. Black.

Stock No.	Mfr.'s Type	EACH	
		1-24	25-99
966-6812	TP-2 (2" × 2")	34.15	31.05
966-6814	TP-4 (4" × 4")	39.70	36.09


TP-2

TP-4



151-BBW Window Sill Alarm Switch

9/16" wide, 3/32" thick. White, 8 oz. nominal finger pressure. Jacket seal terminations. 12" long lead wires at both ends, 22/2 wire. Fasten with vinyl adhesive #105. **Weight:** 2 oz. per 24".

Stock No.	Mfr.'s Type	Length	EACH	
			1-24	25-99
966-2055	151-BBW	36"	63.34	57.58
966-2060	151-BBW	48"	63.34	57.58

Other lengths available upon request.

111 Controflex Foot Switch

Rugged 100 W ribbon foot switch water resistant (momentary, normally open) sealed in weatherproof molded flat pad. 2 × 5", .375" thick. Tape or cement to floor. Includes 6' U.L. approved cord. **Weight:** 4 oz.

Foot Switch 111

966-1060. Model 111. **1-24**	**EACH 28.85**
25-99	**EACH 26.22**
100-Up	**EACH 22.19**

Controlmat Industrial Switching Mat

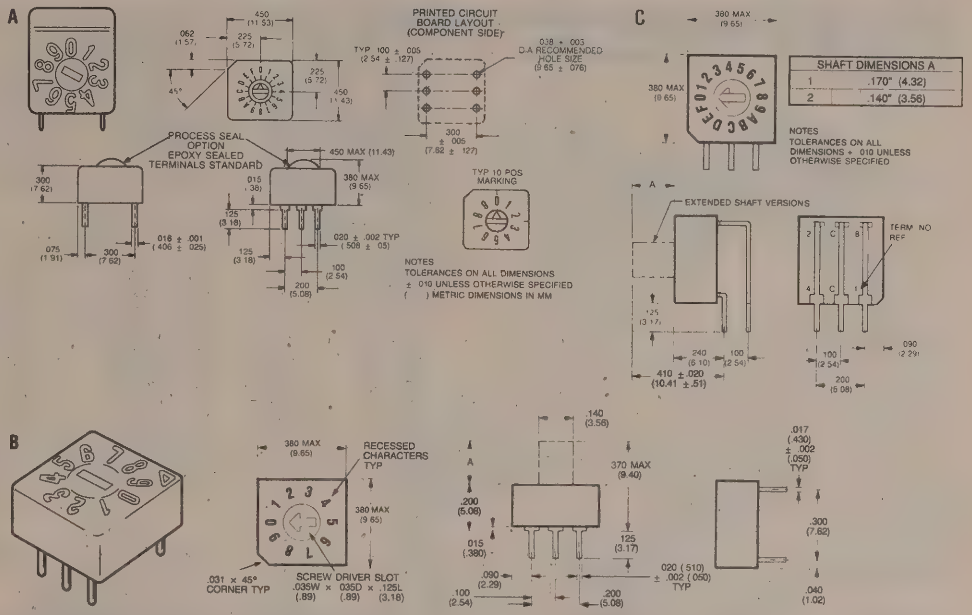
Designed for heavy moving loads, indoor or outdoor use. Top and bottom surfaces fully ribbed to prevent trapping moisture — no partial ribbing. Industrial grade surface is superior to soft cast or molded vinyl products. DRI-RUN cable is standard. Flexible mat is easy to install — ideal for door opening/closing, robotic installations, passenger sensing, machine tool protection. Nominal foot pressure anywhere on active area will be sensed. Write for installation notes. **Color:** Charcoal (or chrome yellow, special order only) available 16" long by 4' wide. Leads 6' long. No special handling. Lie flat on floor, and can be lifted for cleaning. **Weight:** 3.5 lbs. per ft.² (17 Kg/m²).

Stock No.	Mfr.'s Type	Dimensions	EACH	
			1-24	25-99
966-6800	CKP5510	24 × 36	274.26	249.33
966-6802	CKP5511	24 × 60	457.53	415.94
966-6804	CKP5512	24 × 72	550.07	500.06
966-6806	CKP5530	30 × 48	457.53	415.94
966-6808	CKP5540	36 × 48	550.07	500.06
966-6810	CKP5550	36 × 72	823.81	748.92

Need Larger Quantity Prices? Call 1-800-433-5700 For Prompt Handling

Micro Dips, StripSwitch, Thumbwheels/Pushwheels and Hardware Kits

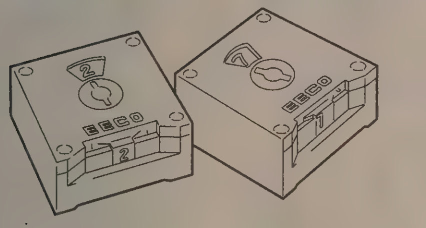
Printed Circuit Board Switches

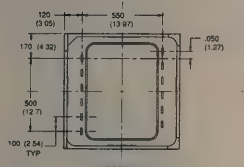

A
B
C
PRINTED CIRCUIT BOARD LAYOUT (COMPONENT SIDE)
PROCESS SEAL OPTION EPOXY SEALED TERMINALS STANDARD
TYP 10 POS MARKING
NOTES
TOLERANCES ON ALL DIMENSIONS ± .010 UNLESS OTHERWISE SPECIFIED
( ) METRIC DIMENSIONS IN MM
SHAFT DIMENSIONS A
1 .170" (4.32)
2 .140" (3.56)
NOTES TOLERANCES ON ALL DIMENSIONS ± .010 UNLESS OTHERWISE SPECIFIED
EXTENDED SHAFT VERSIONS
TERM NO REF
RECESSED CHARACTERS TYP
SCREW DRIVER SLOT .035W × .035D × .125L (.89) (.89) (3.18)
.031 × 45° CORNER TYP
370 MAX (9.40)
380 MAX (9.65)
450 MAX (11.43)

Micro Dips

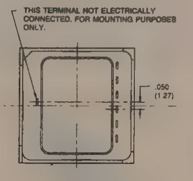
Stock No.	Mfr.'s Type	No. of Pos.	Fig.	Housing Color	EACH 1-99	EACH 100-499
594-0005	230056GB	10	A	Gray	4.41	4.01
594-0010	230057GB	16	A	Yellow	3.81	3.47
594-0015	350008GS	8	B	Brown	2.45	2.23
594-0020	351008GS	8	C	Brown	2.94	2.67
594-0025	350108GS	8	B	Brown	2.84	2.58
594-0030	350002GS	10	B	Red	2.35	2.13
594-0035	351002GS	10	C	Red	2.94	2.67
594-0040	350102GS	10	C	Red	2.84	2.58
594-0045	350012GS	10	B	Orange	2.79	2.54
594-0050	351012GS	10	C	Orange	2.94	2.67
594-0055	350112GS	10	B	Orange	2.84	2.58
594-0060	350035GS	16	B	Green	2.88	2.61
594-0065	351035GS	16	C	Green	4.43	4.02
594-0070	350135GS	16	B	Green	2.94	2.67
594-0075	350041GS	16	B	Blue	2.88	2.61
594-0080	351041GS	16	C	Blue	3.10	2.82
594-0085	350141GS	16	B	Blue	2.94	2.67

StripSwitch

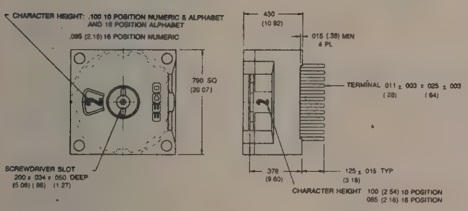




12 TERMINAL

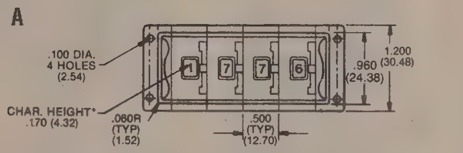

THIS TERMINAL NOT ELECTRICALLY CONNECTED. FOR MOUNTING PURPOSES ONLY.

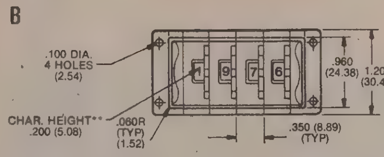
7 TERMINAL


CHARACTER HEIGHT: .100 10 POSITION NUMERIC & ALPHABET AND 16 POSITION ALPHABET
.085 (2.16) 16 POSITION NUMERIC
SCREWDRIVER SLOT
TERMINAL
CHARACTER HEIGHT .100 (2.54) 10 POSITION .085 (2.16) 16 POSITION
790 SQ (20.07)
EECO

Stock No.	Mfr.'s Type	No. of Pos.	Description	EACH 1-99	EACH 100-499
594-0090	276002M	10	BCD 1-2-4-8	5.98	5.43
594-0095	276057M	16	Hex 1-2-4-8	7.04	6.40

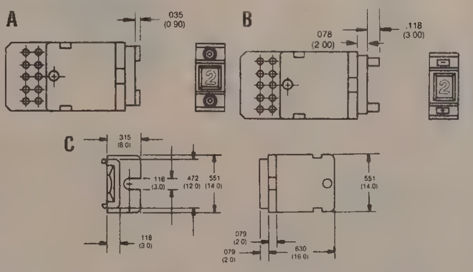
1776/1976 Series Thumbwheel





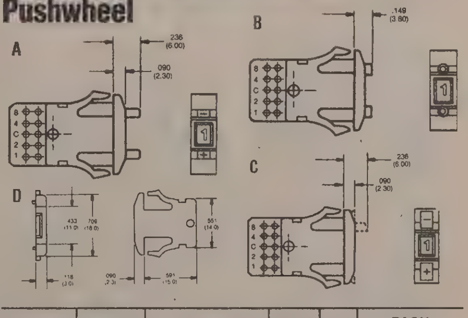
Stock No.	Mfr.'s Type	Description	No. of Pos.	Fig.	EACH 1-99	EACH 100-499
594-0100	177602GN	BCD 1-2-4-8 (Gloss)	10	A	15.34	13.95
594-0105	177602MN	BCD 1-2-4-8 (Matte)	10	A	15.08	13.71
594-0110	197602GN	BCD 1-2-4-8 (Gloss)	10	B	13.61	12.37
594-0115	197602MN	BCD 1-2-4-8 (Matte)	10	B	15.08	13.71

1000 Series Thumbwheel and Pushwheel



Stock No.	Mfr.'s Type	Description	No. of Pos.	Fig.	EACH 1-99	EACH 100-499
594-0120	100102J	Push-set (Rear)	10	A	6.94	6.31
594-0125	100202J	Pen-set (Rear)	10	B	6.94	6.31
594-0130	E10SJ	End piece (Pair)	—	C	1.29	1.17

1100 Series Thumbwheel and Pushwheel

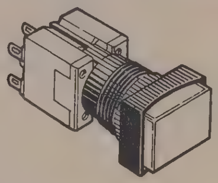


Stock No.	Mfr.'s Type	Description	No. of Pos.	Fig.	EACH 1-99	EACH 100-499
594-0135	110102J	Push-set (Front)	10	A	7.92	7.20
594-0140	110202J	Pen-set (Front)	10	B	6.12	5.56
594-0145	110302J	Lock-set (Front)	10	C	6.12	5.56
594-0150	E21SJ	End piece (Pair)	—	D	1.29	1.17

Hardware Kits — 1776/1976 Series Thumbwheels

Stock No.	Mfr.'s Type	Description	EACH
594-0155	77SG-1	1776 Kit, 1 Switch (Gloss)	5.71
594-0160	77SG-2	1776 Kit, 2 Switch (Gloss)	5.71
594-0165	77SG-3	1776 Kit, 3 Switch (Gloss)	5.71
594-0170	77SG-4	1776 Kit, 4 Switch (Gloss)	5.71
594-0175	77SG-5	1776 Kit, 5 Switch (Gloss)	5.71
594-0180	77SM-1	1776 Kit, 1 Switch (Matte)	6.94
594-0185	77SM-2	1776 Kit, 2 Switch (Matte)	6.94
594-0190	77SM-3	1776 Kit, 3 Switch (Matte)	6.94
594-0195	77SM-4	1776 Kit, 4 Switch (Matte)	6.94
594-0200	77SM-5	1776 Kit, 5 Switch (Matte)	6.94
594-0205	97SG-1	1976 Kit, 1 Switch (Gloss)	5.71
594-0210	97SG-2	1976 Kit, 2 Switch (Gloss)	5.71
594-0215	97SG-3	1976 Kit, 3 Switch (Gloss)	5.71
594-0220	97SG-4	1976 Kit, 4 Switch (Gloss)	5.71
594-0225	97SG-5	1976 Kit, 5 Switch (Gloss)	5.71
594-0230	97SM-1	1976 Kit, 1 Switch (Matte)	6.94
594-0235	97SM-2	1976 Kit, 2 Switch (Matte)	6.94
594-0240	97SM-3	1976 Kit, 3 Switch (Matte)	6.94
594-0245	97SM-4	1976 Kit, 4 Switch (Matte)	6.94
594-0250	97SM-5	1976 Kit, 5 Switch (Matte)	6.94
—	—	—	—

TH25 Series IP67 Pushbutton Switch — Oil-Tight, Dustproof, and Submersible



The IP67 version of the TH25 series switch is dust proof, oil tight and submersible in water up to 1.2 meters. The panel cutout is a round 16.2 mm hole. Basic loads range from milliamps ups to 5 amps (6 and 16 amps available upon request). Bezel styles are rectangular 18 × 24 mm (shown above), square 18 × 18 mm and round 18 mm. See "How to Order Your tschudin & heid Switch" on the next page.

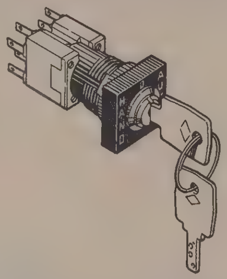
Contacts

Faston		Solder		Description	EACH		
Stock No.	Mfr.'s Type	Stock No.	Mfr.'s Type		1-24	25-49	50-99
804-4500	501015	**804-4502**	501115	Momentary	**6.77**	**6.16**	**5.21**
804-4504	511015	**804-4506**	511115	Maintained	**7.59**	**6.90**	**5.84**
804-4508	551015	**804-4510**	551115	Signal Lamp	**5.16**	**4.69**	**3.97**

Flat Lens

Opaque		Transparent		Color	EACH		
Stock No.	Mfr.'s Type	Stock No.	Mfr.'s Type		1-24	25-49	50-99
804-4512	560011	**804-4514**	561011	White	**1.47**	**1.34**	**1.13**
804-4516	560111	**804-4518**	561111	Yellow	**1.47**	**1.34**	**1.13**
804-4520	560211	**804-4522**	561211	Green	**1.47**	**1.34**	**1.13**
804-4524	560311	**804-4526**	561311	Blue	**1.47**	**1.34**	**1.13**
804-4528	560411	**804-4530**	561411	Red	**1.47**	**1.34**	**1.13**
804-4532	560511	—	—	Black	**1.47**	**1.34**	**1.13**
804-4534	560611	**804-4536**	561611	Orange	**1.47**	**1.34**	**1.13**

TH25 Series 3 Position Key-Switches



Tschudin & Heid offers you the greatest amount of flexibility in selecting a key switch. You can select the key removable position and the bezel style. Switches are rated 5 amps and up to 250 VAC with a lifetime of 50,000 operations. They fit a 16.2 mm panel cutout with a 22.5 mm cutout version available. It is also available in a two position version and an IP65 rated version. **Switch Positions:** Position 1 on left, position 0 center, and position on right. See "How to Order Your tschudin & heid Switch" on the next page.

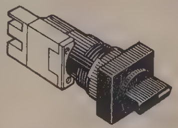
Stock No.	Mfr.'s Type	Cylinder Element	Key Removable Position	EACH		
				1-24	25-49	50-99
804-4538	548050	Maintain-Maintain-Maintain	All Positions	**35.72**	**32.47**	**27.48**
804-4540	548051	Maintain-Maintain-Maintain	Positions 0 and 2	**35.72**	**32.47**	**27.48**
804-4542	548052	Maintain-Maintain-Maintain	Position 2	**32.37**	**29.43**	**24.90**
804-4544	548053	Maintain-Maintain-Maintain	Position 0	**32.37**	**29.43**	**24.90**
804-4546	548054	Impulse in Position 1 and 2	Position 0	**32.37**	**29.43**	**24.90**
804-4548	548055	Impulse-Maintain-Maintain	Positions 0 and 2	**35.72**	**32.47**	**27.48**
804-4550	548056	Impulse-Maintain-Maintain	Position 2	**32.37**	**29.43**	**24.90**
804-4552	548057	Impulse-Maintain-Maintain	Position 0	**32.37**	**29.43**	**24.90**
804-4554	548059	Maintain-Maintain-Impulse	Position 1 and 0	**35.72**	**32.47**	**27.48**
804-4556	548060	Maintain-Maintain-Maintain	Position 1 and 2	**35.72**	**32.47**	**24.48**
804-4558	548061	Maintain-Maintain-Maintain	Position 1 and 0	**35.72**	**32.47**	**27.48**
804-4560	548062	Maintain-Maintain-Impulse	Position 1	**35.72**	**32.47**	**27.48**

Bezels

Stock No.	Mfr.'s Type	Size	EACH		
			1-24	25-49	50-99
804-4562	493060	18 × 24	**.94**	**.85**	**.72**
804-4564	493066	24 × 24	**.94**	**.85**	**.72**

Stock No.	Mfr.'s Type	Size	EACH		
			1-24	25-49	50-99
804-4566	493062	18 × 18	**.94**	**.85**	**.72**
804-4568	493064	18 round	**.94**	**.85**	**.72**

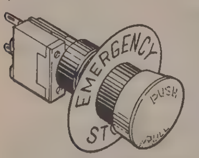
TH25 Series 3 Position Rotary Switches



Similar to the TH25 Series Key-Switches, the 3 position rotary offers you the widest selection of rotary elements and bezel styles. It is available in an illuminated version, a 2 position version and an IP65 version. See "How to Order Your tschudin & heid Switch" on the next page.

Stock No.	Mfr.'s Type	Rotary Element	EACH		
			1-24	25-49	50-99
804-4570	508040	Maintain-Maintain-Maintain	**15.46**	**14.06**	**11.89**
804-4572	508041	Impulse-Maintain-Impulse	**15.46**	**14.06**	**11.89**
804-4574	508042	Impulse-Maintain-Maintain	**15.46**	**14.06**	**11.89**
804-4576	508043	Maintain-Maintain-Impulse	**15.46**	**14.06**	**11.89**

TH25 Series Emergency Stop Switch



The TH25 Series Emergency Stop Switch offers the Push-Pull version with a forced unlatching contact block. Panel cutout is 16,2 mm. **Life Expectancy:** 10,000 operations. Meets SUVA certification. It is splash proof and oil tight in accordance with IP65 ratings. See "How to Order Your tschudin & heid Switch" on the next page.

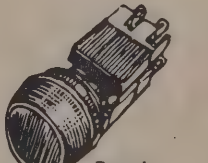
Stock No.	Mfr.'s Type	Description	EACH		
			1-24	25-49	50-99
804-4578	518039	Switch	**25.34**	**23.03**	**19.49**
804-4580	593590	Faston Contact Block	**11.81**	**10.74**	**9.09**
804-4582	593561	Solder Contact Block	**8.10**	**7.36**	**6.23**
804-4584	593068	Yellow 43 mm Disc	**2.37**	**2.15**	**1.82**

TH8 Emergency Stop Switch

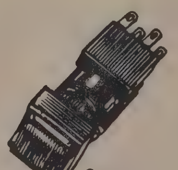
The New TH8 Series Emergency Stop Switch is a push/twist release monoblock switch which mounts in a 16.2 mm round panel cutout. It meets DIN VDE 0660 200/207, IEC 947-5-1 and CE specifications. It is a forced break contact emergency switch. **Switching Capacity:** 5 amp/250 VAC. It conforms to IP67 standards.

804-8800. 880004. Monoblock Switch. **1-24** .... **EACH 39.00**
25-49 .... **EACH 35.46** **50-99** .... **EACH 30.00**

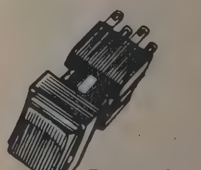
TH25 Series Pre-Wireable Lighted Pushbutton Switch



Round



Square



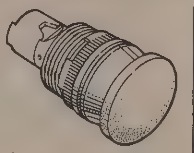
Rectangular

TH25 series is rated 5 amp, 250 VAC. The TH25 series patented contact block system allows the switch to be mounted to the panel while the wire harnessing is mounted to the contact block away from the switch panel. After harnessing, the contact block can be mounted to the switch. The switch is available in square, round and rectangle styles. The contact blocks are either solder or quick connect. See "How to Order Your tschudin & heid Switch" on the next page.

Stock No.	Mfr.'s Type	Bezel Type	EACH		
			1-24	25-49	50-99
804-1070	503008	Square straight*	**5.41**	**4.91**	**4.16**
804-1075	513008	Square straight†	**6.22**	**5.66**	**4.79**
804-1080	501008	Rectangular straight*	**5.41**	**4.91**	**4.16**
804-1085	511008	Rectangular straight†	**6.20**	**5.66**	**4.79**
804-1091	505018/464001	Round actuator with white lens*	**16.44**	**14.95**	**12.65**
804-1094	505018/464101	Round actuator with yellow lens*	**17.30**	**15.73**	**13.31**
804-1093	505018/464201	Round actuator with green lens*	**17.30**	**15.73**	**13.31**
804-1095	505018/464301	Round actuator with blue lens*	**17.30**	**15.73**	**13.31**
804-1092	505018/464401	Round actuator with red lens*	**17.30**	**15.73**	**13.31**
804-1098	505018/464501	Round actuator with black lens*	**17.30**	**15.73**	**13.31**
804-1097	505018/465001	Round actuator with clear lens*	**17.30**	**15.73**	**13.31**
804-0084	515018/464001	Round actuator with white lens†	**18.24**	**16.58**	**14.03**
804-0087	515018/464101	Round actuator with yellow lens†	**18.24**	**16.58**	**14.03**
804-0086	515018/464201	Round actuator with green lens†	**18.24**	**16.58**	**14.03**
804-0088	515018/464301	Round actuator with blue lens†	**18.24**	**16.58**	**14.03**
804-0085	515018/464401	Round actuator with red lens†	**18.24**	**16.58**	**14.03**
804-0089	515018/464601	Round actuator with black lens†	**18.24**	**16.58**	**14.03**
804-0090	515018/465001	Round actuator with clear lens†	**18.24**	**16.58**	**14.03**

*Momentary. †Maintained.

TH4 Series 30 mm IP65 Splashproof and Oil-Tight Mushroom Switches



The TH4 series mushroom cap switch fits a 22.5 mm panel cutout. Rated at 5 amps and 250 VAC, it is splashproof and oil tight to IP65 specifications. Mushroom cap switches are also available upon request in 16.2 panel cutout versions rated at IP40 specifications. See "How to Order Your tschudin & heid switch".

Momentary Switch

Stock No.	Mfr.'s Type	Type of Contacts	Cap Color*	EACH 1-24	EACH 25-49	EACH 50-99
804-0059	404119/464407	SPST	Red	**24.19**	**21.99**	**18.61**
804-2500	404119/464507	SPST	Black	**24.19**	**21.99**	**18.61**
804-0062	404219/464407	DPDT	Red	**32.11**	**29.19**	**24.70**
804-2501	404219/464507	DPDT	Black	**32.11**	**29.19**	**24.70**
804-2502	404319/464407	TPTT	Red	**40.05**	**36.40**	**30.80**
804-2503	404319/464507	TPTT	Black	**40.05**	**36.40**	**30.80**

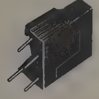
Maintained Switch

Stock No.	Mfr.'s Type	Type of Contacts	Cap Color*	EACH 1-24	EACH 25-49	EACH 50-99
804-0063	414119/464407	SPST	Red	**26.64**	**24.22**	**20.49**
804-2504	414119/464507	SPST	Black	**26.64**	**24.22**	**20.49**
804-2505	414219/464407	DPDT	Red	**34.58**	**31.43**	**26.60**
804-2506	414219/464507	DPDT	Black	**34.58**	**31.43**	**26.60**
804-2507	414319/464407	TPTT	Red	**42.51**	**38.65**	**32.70**
804-2508	414319/464507	TPTT	Black	**42.51**	**38.65**	**32.70**

*Caps also available in white, yellow, green and blue.

Contact Blocks

Solder Terminals **Faston Terminals** **Faston Terminals with Ins.**


A

B

C

D

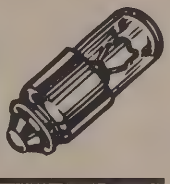
E

F

Slide-on contact blocks. Each actuator capable of mounting two contact blocks. Other options available upon request. See "How to Order Your tschudin & heid switch".

Stock No.	Mfr.'s Type	Fig.	Description	No. of Poles	EACH 1-24	EACH 25-49	EACH 50-99
804-1300	593561 000	A	1N.O./N.C. Solder	1	**8.10**	**7.36**	**6.23**
804-1225	593564 000	B	2N.O./N.C. Solder	2	**16.28**	**14.80**	**12.52**
804-1100	593566 000	C	1N.O./N.C. QC	1	**8.10**	**7.36**	**6.23**
804-1230	593567 000	D	2N.O./N.C. QC	2	**16.28**	**14.80**	**12.52**
804-9997	593560 000	E	1N.O./N.C. Inc. QC	1	**8.10**	**7.36**	**6.23**
804-1235	593563 000	F	2N.O./N.C. Inc. QC	2	**16.28**	**14.80**	**12.52**

Lamps



T-1¾ midget grooved incandescent lamps. Other voltages, neon or LEDs available upon request.

804-1152. 590000. 6.3 V Lamp. **1-24** .... EACH 2.20
25-49.......... EACH 2.00
804-1154. 590001. 14 V Lamp. **1-24** .... EACH 2.20
25-49.......... EACH 2.00
804-1156. 590002. 28 V Lamp. **1-24** .... EACH 2.20
25-49.......... EACH 2.00

How to Order Your tschudin & heid Switch

th4 and th5 Order **Actuator PLUS Lens PLUS Illumination** (*if desired*)

☒ ☒ ☒ ☒ ☒ ☒
Actuator - Black number indicates # of Poles - 1, 2, 3, 4
+
☒ ☒ ☒ ☒ ☒ ☒
Lens
+
Optional **Illumination** by Incandescent or LED

---

th4 **Mushroom Cap** Switches
Order **Actuator** and **Cap together** (*no exceptions*)

ACTUATOR NUMBER CAP NUMBER
☒ ☒ ☒ ☒ ☒ ☒ / ☒ ☒ ☒ ☒ ☒ ☒
Black number indicates # of Poles - 1, 2, 3, 4

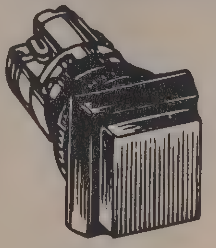
---

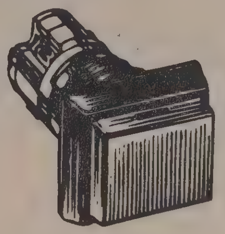
th25 Order **Actuator PLUS Contact Blocks PLUS Lens PLUS Illumination** (*if desired*)

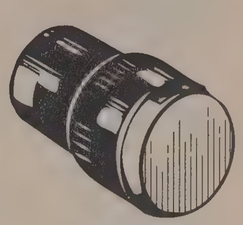
☒ ☒ ☒ ☒ ☒ ☒
Actuator
+
☒ ☒ ☒ ☒ ☒ ☒ ☒ ☒ ☒
Contact Blocks
+
☒ ☒ ☒ ☒ ☒ ☒
Lens
+
Optional **Illumination** by Incandescent or LED

TH5 Series Light Pushbutton Switches

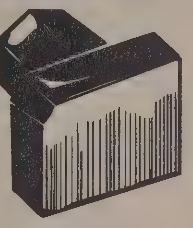
Tapered Bezel Pushbutton Switches

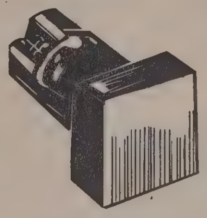

502/512 Series


500/510 Series

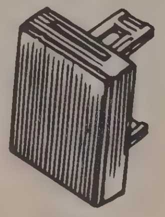

504/514 Series

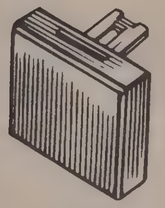
Covered Bezel Pushbutton Switches

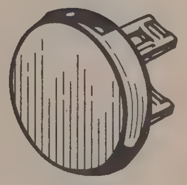

500/510 Series


502/512 Series

Lenses


Rectangular A


Square B


Round C

The TH5 series is rated up to 5 amps, 250 VAC. The compact size is perfect for applications where back panel depth is a problem. As with all T&H switches, the TH5 offers front panel access for bulb replacement. It also offers a bifunctional mechanism where the maintained version can be changed to momentary and back again to maintained. Switches can accommodate from 1 to 4 contact blocks stacked one on top of the other. See "How to Order Your tschudin & heid switch".

Tapered Bezel Pushbutton Switches

The TH5 tapered bezel comes in either square or rectangular shapes for a European front panel styling. See "How to Order Your tschudin & heid switch".

Stock No.	Mfr.'s Type	Description	EACH 1-24	EACH 25-49	EACH 50-99
804-1000	502100	Square Momentary Impulse Switch	**14.06**	**12.78**	**10.81**
804-1005	512100	Square Maintained Switch, 1 Pole	**15.93**	**14.48**	**12.26**
804-1010	512200	Square Maintained Switch, 2 Pole	**23.85**	**21.68**	**18.34**
804-1015	500100	Rectangular Momentary Impulse Switch	**14.06**	**12.78**	**10.81**
804-1099	510100	Rectangular Maintained Switch	**15.93**	**14.48**	**12.26**
804-1200	504108	Round Momentary, 1 Pole	**14.06**	**12.78**	**10.81**
804-1205	514108	Round Maintained, 1 Pole	**15.93**	**14.48**	**12.26**

Covered (Concealed) Bezel Pushbutton Switches

The TH5 covered bezel style provides the largest lens cap area available. This version is excellent for multiple switch panel designs. The extra large lens is the best style available for engraving or legending. See "How to Order Your tschudin & heid switch".

Stock No.	Mfr.'s Type	Description	EACH 1-24	EACH 25-49	EACH 50-99
804-1040	500102	Rectangular 1 Pole Momentary	**14.06**	**12.78**	**10.81**
804-1049	510102	Rectangular 1 Pole Maintained	**15.93**	**14.48**	**12.26**
804-1050	502102	Square 1 Pole Momentary	**14.06**	**12.78**	**10.81**
804-1055	512102	Square 1 Pole Maintained	**15.93**	**14.48**	**12.26**

Lenses

Note: Other colors are available. Specify color. Replace X in part number with color desired — 1=yellow, 2=green, 3=blue, 4=red, 5=black (except transparent), and 6=orange. See "How to Order Your tschudin & heid switch".

Stock No.	Mfr.'s Type	Fig.	Description	EACH 1-24	EACH 25-49	EACH 50-99
804-1031	460012	A	White Rectangular Lens	**1.29**	**1.17**	**.99**
804-1033	460212	A	Green Rectangular Lens	**1.29**	**1.17**	**.99**
804-1032	460412	A	Red Rectangular Lens	**1.29**	**1.17**	**.99**
804-1041	462013	B	White Square Lens	**1.29**	**1.17**	**.99**
804-1043	462213	B	Green Square Lens	**1.29**	**1.17**	**.99**
804-1042	462413	B	Red Square Lens	**1.29**	**1.17**	**.99**
804-1210	464021	C	White Round Lens	**1.29**	**1.17**	**.99**
804-1215	464221	C	Green Round Lens	**1.29**	**1.17**	**.99**
804-1220	464421	C	Red Round Lens	**1.29**	**1.17**	**.99**
804-200X	460X17	A	Rect. Translucent Lens Cap	**1.29**	**1.17**	**.99**
804-300X	461X17	A	Rect. Transparent Lens Cap	**1.29**	**1.17**	**.99**
804-400X	462X18	B	Square Translucent Lens Cap	**1.29**	**1.17**	**.99**
804-500X	463X18	B	Square Transparent Lens Cap	**1.29**	**1.17**	**.99**

Test Equipment

Page

American Reliance
- Clamp Meters 844
- DMM
  - Handheld 843
- EEPROM
  - Programmers 844
- Handheld Transmission 844
- Power Supplies 843

A W Sperry
- Digital Light Meter 845
- DMM 845
- Multimeters
  - Digital 845
- Snap-Around DMM 845
- Tachometer 845
- Thermometer 845

B+K Precision
- Analyzer 850, 851
- Capacitance Meters 848
- Clamp Meter 846
- Component
  - Tester 851
- Counters 848
- CRT Testers/Rejuvenators 848
- Generators
  - Audio 848
  - Digital 848
  - Function 848
  - NTSB/NTSC 848
  - Pattern 848
  - RF Signal 848
  - Sweep 848
- Multimeters
  - Bench 847
  - Handheld 846, 847, 851
- Oscilloscopes 850, 851
- Probes
  - High Voltage 851
- Universal Device Programmer 848

EMCO
- Generators 852
- Multitester 852
- Power Supplies 852
- Pressure Level Meter 852
- Resistance Decade Box 852

EPSCO
- Power Supplies 853

Fluke
- Accessories 860, 861, 862
- Buying Guide 855
- Clamp Meter 858
- Current Meters 858
- DMM
  - Analog/Digital 857, 858
  - Bench Type 860
- Fiber Optic 858
- Graphical Multimeter 863
- Handheld Multimeter 864
- LAN Meters 854
- Power Meters 863
- Probes 856
- Scopemeter 856
- Temperature Test Equipment 859
- VoltAlert 1AC 858

F.W. Bell
- Current Sensors 865

Page

- Clamp-On Current Meter 865
- ELF Meter 865
- Gaussmeter 865
- Multimeter 865

Global Specialties
- Breadboards 866, 867
- Capacitance Meters 867
- Counters 866
- Generators
  - Function 866
  - Pulse 866
- Kits
  - Wire Assortment 867
- Logic
  - Monitor 866
  - Probe 867
  - Test Kit 867
- Power Supplies 866
- Proto Boards 866, 867
  - Sockets 867

ITT Pomona
- Alligator Sets 869
- BNC Breakouts 871
- Cable Assemblies 871
- DMM Kits 869
- Flexible Test Lead Sets 869
- Insulated Alligator Clip Banana Jack 872
- Insulated Oscilloscope Probes 868
- JEDEC PQFP Test Clips 874
- Logic Scope Probes 868
- Maxigrabber Sets 869
- Metric QFP Test Clips 874
- MICRO-LC Oscilloscope 868
- Oscilloscope Probes 868
- Patch Cords 870
- Pop Jack DMM Kits 869
- Probe Sets 869
- RF Detector Probes 868
- Semi-Modular Oscilloscope Probes 868
- SMD Products 871
- Solder-On Test Adapters 874
- Test Adapters 872
- Test Clips 872
- Test Companion Test Kits Guide 873
- Test Lead Holders 871

Leader
- Generators
  - Audio Sine 875
  - RF Signal 875
  - Sweep/Function 875
- Oscilloscope Probes 875
- Oscilloscopes 875
- Power Supplies 875

Mueller
- "Pee-Wee" Copper Clips 876
- Alligator Clips 876, 877
- Banana and Pin Plugs 877
- Battery Clips 876
- BNC and Banana Interconnects 877
- BNC Breakouts 877
- Clip Kits 876
- Crimp Tool 876
- Insulated Test Accessories 878
- Insulators 876
- Kelvin Clips 876
- Square Pin Receptacles 877
- Test Clips 876, 877, 878
- Test Leads 878

Page

Newport Electronics
- DC Voltmeter 879
- Infrared Thermometers 879
- Thermocouple Probes, Connectors and Wire 879

Non-Linear Systems
- Circuit/Component Analyzer 990
- Frequency Counters 990
- Portable Dual Trace Miniscopes 990

Santronics
- AC Locator 880
- AC Sensor 880
- DC Detector 880

Simpson
- Accessories 881
- Insulation Testers 881
- Microwave Leakage Tester 881
- Sound Level Meters 881
- VOMs 881

Sperry, A W (See A W Sperry)

Tektronix
- Color Photometers 887
- Counter 884
- Differential Preamplifier 883
- DMM 887
- Function Generators 884
- Handheld Optical Meter 882
- Multimeter 887
- Oscilloscope Camera 889
- Oscilloscopes 883, 884, 886, 889
- Power Supplies 886
- Printer, Cart 886
- Probes 883, 885, 888
- Reflectometer 882
- Surface Mount Devices 885
- TekRanger 882
- Tektools Accessories 889
- Voltage Isolation System 885

Test Probes, Inc.
- Kits 890
- Multimeter Leads 890
- Oscilloscope Probes 890

Topward
- A/D Series Power Supplies 891
- Digital Function Generator/Frequency Counter 891

Vector-VID
- AC/RMS Digital Wattmeters 892
- Decade Resistance 892
- Monitors
  - Power Line 892
- Power Supplies 892
- R-C Circuit Box 892

Wavetek
- Capacitance Meter 894
- Clamp On Multimeter 894
- Counter 884
- Digital Multimeter 893
- DMM 894
- Function Generator 894
- LCR Meter 894
- Logic Probes 894

Panel Meters

Page

Allied Panel Meters
- AC/DC Current Meter 895
- AC/DC Volt Meter 895

Modutec
- 2% Accuracy Panel Meters
  - AC/DC Current Meters 896
  - AC/DC Volt Meters 896
- Backlit Digital Panel Meters 897
- Digital Panel Meters 897
- Elliptical Bar Graph 896
- Industrial Digital Panel Instruments 898
- LCD Digital Panel Meters 897
- Loop Powered Digital Panel Meters 898
- M Series Economy Moving Magnet Panel Meters
  - AC/DC Current Meters 896
  - AC/DC Volt Meters 896
- Microprocessor Based Digital Controller 898

Page

Newport Electronics
- Indicators/Controllers 899, 900
- Infinity C Series 900
- Infinity D Series Economical Meters 899
- Process Indicator 899
- True RMS Meter 900
- Splash-Proof Lens Cover 900

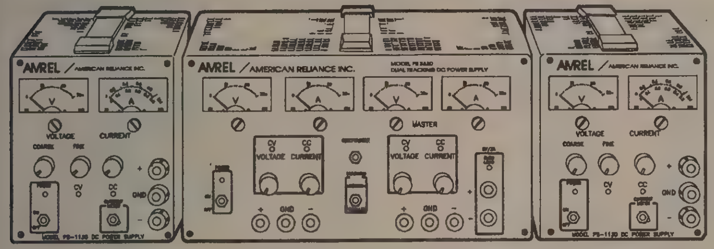
Non-Linear Systems
- Alert Meter 902
- Current Loop Panel Meter 903
- Digital Line Frequency Monitors 902
- Panel Meter Counters 902
- PM Series Miniature Panel Meters 901
- RM Series DIN/NEMA Style Panel Meters 901
- Signal Conditioners/Isolators 902
- Temperature Panel Meters 902
- X Series Digital Panel Meters 901

Page

Shurite
- Current
  - AC, DC 903
- Voltmeters
  - AC, DC 903

Simpson
- Analog
  - Current
    - AC, DC 906, 907
  - Voltmeters
    - AC, DC 906, 907
- Controllers 904, 906
- Counters 904
- Indicators 905
- Shunts 907
- Transformers 907

LPS-100 Series Programmable Power Supplies



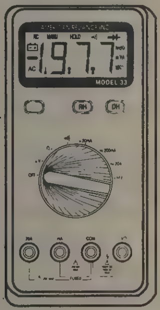
PS-100 series is the newest addition to AMREL's family of high quality power supplies. This series features the tightest line/load regulation in its class, a mere 0.01% +1 mV. The very low 0.3 mVrms in our LPS means your circuit is well protected from unwanted overshoot and noise. Furthermore, our LPS-100 series is the best in its class with a temperature coefficient of 200 ppm.

Specifications

Configuration: LPS-101, LPS-102, LPS-103, LPS-106 — Single Output; LPS-104, LPS-105 — Triple Output. **Output Power:** LPS-101 — 30 W; LPS-102 — 60 W; LPS-103 — 90 W; LPS-104 — 80 W; LPS-105 — 200 W; LPS-106 — 60 W. **Voltage. Output Voltage:** LPS-101, LPS-102, LPS-103, LPS-104, LPS-105 — 30 V; LPS-106 — 60 V. **Setting Resolution:** 2.5%. **Line/Load Regulation:** 0.01% +1 mV. **Noise (RMS):** 0.3 mV; Ripple (Peak) (B.W. — 10 Hz - 20 MHz): 5 mV. **Transient Response:** 50 µs/<100 mV. **Temperature Coefficient:** 200 ppm. **Current. Output Current:** LPS-101, LPS-104, LPS-106 — 1 A; LPS-102 — 2 A; LPS-103, LPS-105 — 3 A. **Setting Resolution:** 2.5%. **Line/Load Regulation:** 0.1% +2 mA. **Noise (RMS):** 2 mA. **Ripple (Peak):** 5 mA. **Temperature Coefficient:** 0.1%. **Fixed Output Voltage (Partial Adjustment):** LPS-101, LPS-102, LPS-103 — N/A; LPS-104, LPS-105, LPS-106 — 3 V - 6.5 V. **Fixed Output Current:** LPS-101, LPS-102, LPS-103 — N/A; LPS-104, LPS-105, LPS-106 — 3 A. **Transient Response:** LPS-101, LPS-102, LPS-103 — N/A; LPS-104, LPS-105, LPS-106 — 50 µs. **Display:** Analog. **Common Mode Voltage:** +240 Vdc. **Temperature Rating:** 0-40°C. **Relative Humidity:** 29%-90% max. **Dimensions (H × W × D):** LPS-101, LPS-102, LPS-103, LPS-106 — 6½" × 5⅛" × 13"; LPS-104, LPS-105 — 6½" × 10¼" × 13". **Weight:** LPS-101 — 7.5 lbs.; LPS-102, LPS-106 — 8.5 lbs.; LPS-103 — 9 lbs.; LPS-104 — 15 lbs.; LPS-105 — 19 lbs. **Cooling Fan:** Convention. **Warranty:** 3 Years.

952-1101. Model LPS-101	EACH 149.00
952-1103. Model LPS-103	EACH 199.00
952-1104. Model LPS-104	EACH 349.00
952-1105. Model LPS-105	EACH 499.00
952-1106. Model LPS-106	EACH 219.00

Model 33 3½ Digit Auto-Ranging DMM



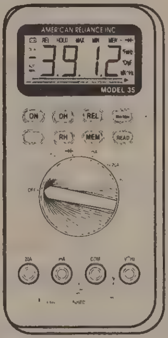
- Basic Accuracy 0.5%
- 20 A Fused
- Data Hold
- Auto Ranging
- High LCD Display

The model 33 has 3½ digit; 0.5% accuracy. The LCD display is 0.75" high and has data-hold function. The ranges are 200 mV to 1000 V DC, 2 V to 750 V AC, 20 mA to 20 A AC/DC, 200 to 20 M ohms resistance. It also has a diode and audible continuity check.

952-0033. Model 33. 3½	EACH 59.95

Model 35/37 4000 Count, Auto-Ranging DMM

- Basic Accuracy 0.3%
- 20 A Fused
- Auto Data Hold
- Auto Ranging
- High LCD Display
- Min./Max. Memories
- Relative Mode
- Frequency Counter
- Capacitance Measurement
- Memory and Read Function
- 2-Year Warranty
- True RMS Measurement (37 only)



The models 35 and 37 are 3¾ digit meters with 0.3% basic accuracy. They have a 0.67" high display with bargraph. The ranges are 4 nf to 40 µf capacitance measurement, 100 Hz to 600 KHz frequency measurement, 400 mV to 1000 V DC, 400 mV to 750 V AC, 40 mA to 20 A AC/DC and 400 to 40 M ohms resistance. They also have relative mode, data-hold, min./max. memory and read function and true RMS (model 37).

952-0035. Model 35	EACH 89.95
952-0037. Model 37	EACH 99.95

Model 120

This handy DMM offers maximum convenience of multiple functions in one package. 3½ digit with 0.5% basic accuracy. Used in radio and TV repair, quality control, HVAC repair and maintenance, electronic design, schools, and field service.

Specifications. DCV Range: 200 mV, 2 V, 20 V, 200 V, 1000 V. **ACV Range:** 200 mV, 2 V, 20 V, 200 V, 750 V. **Input Impedance:** 10 MΩ. **Resistance Range:** 200 Ω, 2 KΩ, 20 KΩ, 200 KΩ, 2 MΩ, 20 MΩ. **ACA and DCA Range:** 200 µA, 2 mA, 20 mA, 200 mA, 2 A, 10 A (10 A not fused). **Audible Continuity Check:** Buzzes if conductance is less than 30 Ω. **Diode Check:** Displays approximate forward voltage of diode. **Temperature:** Uses one 12 CF (optional — not supplied) or any converter giving 1 mV per °C output. **Display:** 3½ digit LCD 0.4" high with "LOBAT". **Power:** Single 9 V battery (800 hours typical). 1 pair test probes, 1 spare fuse, manual. **Dimensions:** 5.9" L × 3.2" W × 1.2" H. **Weight:** 7.1 ozs.

952-0120. Model 120. .5% Accuracy	EACH 49.95

Model 140/140K

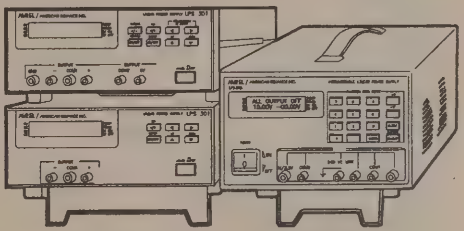
Covers all standard DMM functions. 3½ digit with 1% basic accuracy. Gold plated circuit board. Comprehensive assembly instructions provided for the kit version.

Specifications. DCV Range: 200 mV, 2 V, 20 V, 200 V, 1000 V, **ACV Range:** 200 V, 750 V. **Input Impedance:** 10 MΩ. **DCA Range:** 200 µA, 2 mA, 20 mA, 200 mA, 2 A, 10 A (10 A not fused). **Resistance Range:** 200 Ω, 2 KΩ, 20 KΩ, 200 KΩ, 2 MΩ, 20 MΩ. **Diode Check:** Display reads approximate forward voltage of diode. **Display:** 3½ digit LCD 0.4" high with "LOBAT". **Power:** Single 9 V battery (1000 hours typical). 1 pair test probes, 1 spare fuse, manual. **Dimensions:** 5.9" L × 3.2" W × 1.2" H. **Weight:** 7.1 ozs.

952-0140. Model 140	EACH 39.95
952-0141. Model 140K. (Kit Form)	EACH 49.95

Ultra-Low Cost Linear Programmable Power Supplies

User-Friendly with LCD Readouts at Analog Prices



- Microprocessor Controlled
- Digital Programming and Readback
- Keypad Data Entry
- Power-off Memory
- Voltage and Current Slew Function
- Low PARD/Noise and Ripple
- Superior Line and Load Regulation
- Output Enable/Disable
- Three Year Warranty

Each LPS includes many user-friendly features to simplify operations. Power-off memory retains both voltage and current settings and an output enable/disable function allows the user to safely disable the output without changing the voltage or current settings. Status annunciators on the LCD panel are updated continuously to inform the user of the power supply's status at all times. Today's testing demands the latest technology and the highest accuracy. The AMREL LPS series DC power supplies offer the ease of keypad data entry and four digit LCD readout accuracy. Far outclassing analog power supplies and other units in its class, AMREL DC power supplies have no equal for accuracy and ease. All this at analog prices.

Specifications	LPS-301	LPS-302	LPS-303
Configuration	Single Output • Dual Range		Single Output
Output Power	30 Watts	60 Watts	90 Watts
Output Voltage	0 to 15 V (HI) 0 to 30 V (LO)	0 to 15 V (HI) 0 to 30 V (LO)	0 to 30 V
Voltage Accuracy	± (0.2% of reading + 2 digits)		
Setting Resolution	10 mV		
Line Regulation	1 mV		
Load Regulation	2 mV		
Noise (RMS)	1 mV rms		
Ripple (Peak)	10 mVp-p		
Temperature Coefficient	100 ppm/°C typical		
Output Current	0 to 2 A (HI) 0 to 1 A (LO)	0 to 4 A (HI) 0 to 2 A (LO)	0 to 3A
Current Accuracy	±(0.5% of reading + 5 digits)		
Setting Resolution	1 mA		
Line Regulation	15 mA		
Load Regulation	5 mA		
Noise (RMS)	1 mA rms		
Ripple (Peak)	5 mAp-p		
Temperature Coefficient	200 ppm/°C typical		
Transient Response	100 µs typical		
Display	16 × 2 LCD with backlight		
Common Mode Voltage	±240 V		
Temperature Rating	0°C to 40°C (operating) –40°C to 70°C (storage)		
Relative Humidity	<80%		
Dimensions (W × H × L)	8.7" × 3.4" × 11.8"		
Weight	10 lbs.	12 lbs.	
Cooling	Convection	Forced Air	
RS-232C Interface	Optional		

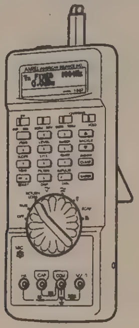
952-0301. Model LPS-301	EACH 249.00
952-0302. Model LPS-302	EACH 299.00
952-0303. Model LPS-303	EACH 369.00

Handheld Transmission Impairment Measuring Sets

— NEW —

The 186T or 188T are intended for evaluation, installation, or troubleshooting leased lines and dial-up circuits. Universal and compact, the instruments can test telecommunication circuits with an extended frequency range of 20 Hz to 50 KHz. Ideal for field service applications, these test sets will expedite your tests and measurements. They incorporate the latest technology and design standards the 186T and 188T meet or exceed IEEE743, BELL pub41009 and CCITT Standards, providing exceptional performance and reliability.

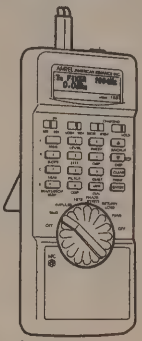
Model 186T



- **Sinewave Generator**
- **Frequency Counter**
- **TIMS**
- **DMM**
- **Telephone Headset**
- **Tx Range: 20 to 50 KHz**
- **Rx Range: 20 to 50 KHz**
- **4 Wire Test Mode**
- **2 Wire Test Mode**
- **Noise Measurement**
- **Noise with Tone Measurement**
- **Noise to Ground Measurement**
- **Signal to Noise Measurement**
- **Impulse Measurement**
- **Return Loss Measurement**
- **Dial Capability with DTMF, Dial Pulse, and MF**
- **RS-232C Capability**
- **Printing Capability**
- **Termination Available in 135 Ohm/600 Ohm/Bridge or 600 Ohm/900 Ohm/Bridge**

952-0186. Model 186T .... **EACH 1975.00**

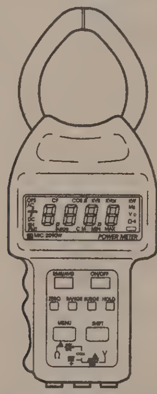
Model 188T



- **Sinewave Generator**
- **Frequency Counter**
- **TIMS**
- **Telephone Headset**
- **Tx Range: 20 to 50 KHz**
- **Rx Range: 20 to 50 KHz**
- **4 Wire Test Mode**
- **2 Wire Test Mode**
- **Noise Measurement**
- **Noise with Tone Measurement**
- **Noise to Ground Measurement**
- **Signal to Noise Measurement**
- **Impulse Noise/Phase Jitter/Amplitude Jitter/Gain Hits/Phase Hits/Dropout Measurement**
- **Peak to Average Ratio Measurement**
- **Return Loss Measurement**
- **Dial Capability with DTMF, Dial Pulse, and MF**
- **RS-232C Capability**
- **Printing Capability**
- **Termination Available in 135 Ohm/600 Ohm/Bridge or 600 Ohm/900 Ohm/Bridge**

952-0188. Model 188T .... **EACH 2975.00**

— NEW —



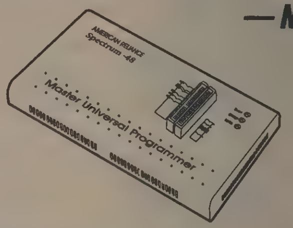
2090W Current Power Clamp Meter

- **Measure Power, Current, Voltage, Frequency and Resistance**
- **Read True Power (VacosØ), Apparent Power (VA), Reactive Power (VAsinØ), and Power Factor (cos Ø).**
- **Read the Value of AC, DC, and AC + DC in the Signal**
- **Selectable True RMS or Average Scale to RMS Measurement**
- **Surge Mode for Inrush Current Measurement**
- **Data Hold, Maximum, Minimum, and Crest Factor Reading**
- **Autorange and Manual Operation Selectable**
- **0.8" Digital Height Display, 3500 Counts with Annunciators**
- **Optional Computer Interface for Remote Operation**
- **Frequency Range: 10 Hz to 1 KHz; Accuracy — 0.5%; Resolution — 1 Hz**
- **Resistance Range: 0 to 3.5 KΩ; Accuracy — ±1%; Resolution — 1 Ω**
- **Audible Continuity Check**

952-2091. Model 2090W .... **EACH 795.00**

Fastest Universal Programmer

— NEW —



- **Parallel Printer-Port Interface**
- **On-Board Processor and Built-In Power Supply**
- **Fastest Programming Speed on the Market: Less Than 20 Seconds to Program a 1 Mbit EPROM and Less Than 100 Seconds to Program an 8 Mbit EPROM (with 486DX2-66 Processor)**
- **48-Pin Universal Pin Driver and Current Limit**
- **Checks for Incorrect Device Insertion (Backward, Incorrect Position) and Poor Pin Contact**
- **Optional ROM Emulator for Up to 4 Mbit Chips**
- **Automatic EPROM ID Search**
- **User-Selectable Verify Voltage with One or Two Passes**
- **Function Lets You Compare the Device with the Memory Buffer and List the Differences**
- **MS-Windows Like Pop-Up Menus with Mouse Support**
- **Free DOS and Windows Software**
- **Automatic File Format Conversion**
- **High-Speed Device Function Tests and User-Creatable Test Library**
- **"Mass Production Mode" Allows Users To Program Multiple Devices Without Touching the Keyboard**
- **User Changeable Programming Parameters**
- **Lifetime Free Software Updates**

AMREL introduces technological innovation with the release of the Spectrum-48. AMREL has designed the Spectrum-48 for laboratory as well as mass-production applications. The Spectrum-48 is a universal device programmer which works through the parallel port of your desktop PC or notebook computer. It features a 48-pin universal pin drive and an expandable TTL pin driver. The onboard processor and FPGA allows it to handle the most complicated DIP-type silicon PLDs, microprocessors and high density memory chips without adapters.

The Spectrum-48 can support over 1200 different devices! This would include the PAL, GAL, CPAL, EPLD, PEEL, MAX, MACH, PLSI, microprocessors, EPROM, series EPROM, PROM and Flash memory. The optional ROM emulator modules support devices up to 16-bits.

The Spectrum-48 MOSFET logic controls the programmer's pin switches. Each pin can supply Vcc, Vpp or ground. The pins can also be configured for TTL high/low levels and pull-high/pull-low, high-speed clock and tri-state. The Spectrum-48 is so advanced in pin design, it lets you program any DIP device up to 48 pins without an adapter. It also ensures support for the full range of silicon technologies on the market.

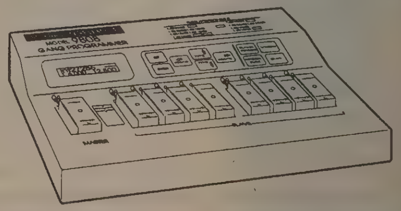
The Spectrum-48 has on-board intelligence. SRAM and FPGA which reduces system overhead to a minimum. The Spectrum-48 can program an 8 Mbit EPROM in less than 100 seconds! This feature alone surpasses all other competitors, which makes the Spectrum-48 much more productive with today's high-density, multi-megabit memory devices.

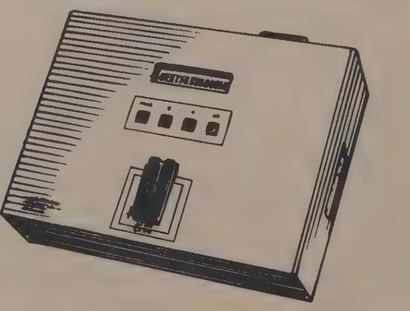
952-0048. Spectrum-48 .... **EACH 1495.00**

Model 9808/High-Speed Gang Programmer with User Replaceable ZIP Sockets

The 9808 is a stand-alone, high speed EPROM gang programmer designed for mass programming applications. The programmer is equipped with nine 32-pin ZIP (zero insertion force) sockets with the master device occupying the first socket. The 9808 programs up to eight 8M-bit EPROMs or 2M-bit flash EEPROMs from one master device with a single keystroke. In order to provide years of reliable service, all ZIP sockets on the 9808 programmer are removable. Worn-out or damaged ZIP sockets can be easily and economically replaced by the user which eliminates programmer down-time and improves productivity. **Specifications. Power Supply:** 90 to 260 VAC; 47 to 63 Hz auto-switching. **Power Consumption:** 60 W maximum. **Dimensions:** 31.6 cm × 26.6 cm × 7.1 cm (12.4" × 10.5" × 2.8"). **Net Weight:** 3.2 kgs (7 lbs.). **Operating Temperature:** 5° to 45°C. **Humidity:** 90% non-condensing.

952-9808 .... **EACH 1495.00**





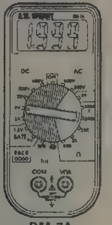
Model 9850UV Personal E/EEPROM Programmer

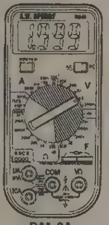
- **Simple Function Key Operations**
- **Programs 2716 to 27513 EPROMs and 2804 to 28286 EPROMs**
- **Built-in UV Eraser**
- **Stand-Alone or PC Remote Operation with Auto Detection**
- **Programming Algorithms: STANDARD, INTELLIGENT, INTERACTIVE AND QUICK PULSE**

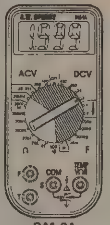
Specifications. EPROMs: 2716, 2716B, 2732, 2732A, 2732B, 2764, 2764A, 27128, 27128A, 27256, 27256D, 27512, 27513. **EEPROMs:** 2804A, 2816A, 2817A, 2864, 28256. **Programming Functions:** Read, Program, Auto, Verify, Blank Check. **Data Formats:** Intel Hex, Binary, Motorola S, Tektronix Hex. **Device Check:** Blank, Verify, Over Current, Checksum. **Programming Algorithms:** Standard, Intelligent, Interactive, Quick Pulse. **Serial Interface:** RS-232, DB-25F. **Data Rates:** 150-19200 baud. **Data Socket:** (1) 28 pin ZIF. **UV Erase (9850UV):** 6 devices. **Display:** 16 × 1 Dot Matrix LCD. **Protection:** Reverse Insertion. **Data RAM:** 64KB. **Power:** 110/220 VAC, 50/60 Hz.

952-9851. 9850UV .... **EACH 395.00**

Models DM-7A, DM-8A, DM-9A Ruggerdized Manual Range DMMs


DM-7A


DM-8A


DM-9A

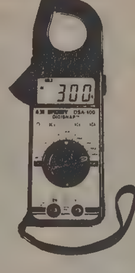
Ergonomically designed 3.5 digit DMMs. All feature safety style test leads and recessed inputs. 600 volt burn out protection on ohms/audible continuity and diode test ranges, overload protection on all ranges. 5.8" x 2.8" x 1.75", 12.9 oz. All include B-4 (9V) battery, C-71 Case (C-72 holster optional). DM-7A has F-24 fuse and spare, TL-58 test leads, #236 instructions. DM-8A includes F-25 fuse (1), F-22 fuse plus spare, #236 instructions. DM-9A includes TL-62 leads, F-2, plus spare, TP-900 temp probe, #237 instructions. Limited 5 year warranty.

DM-7A Digital Multimeter. Ranges. DC Voltage: 0-2/20/200/600 Vdc. **AC Voltage:** 0-200/600 Vac. **DC Current:** 0-2 Adc. **Resistance:** 0-200/2 K/20 K/200 K/2000 K ohm. **HFE Test:** NPN/PNP. **Battery Test:** 1.5/9 Vdc. **Diode Test:** 0-2 K ohm.
947-0050. Model DM-7A .... **EACH 42.95**

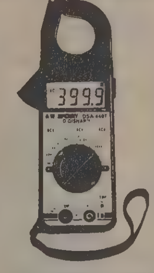
DM-8A Digital Multimeter. Ranges. DC Voltage: 0-200 mV/2/20/200/600 Vdc. **AC Voltage:** 0-200 mV/2/20/200/600 Vac. **DC Current:** 0-200 µA/2 m/20 m/200 mA/10 Adc. **AC Current:** 0-200 µA/2 m/20 m/200 mA/10 Aac. **Resistance:** 0-200/2 K/20 K/200 K/2000 K/20 M/20 M/2000 M ohm. **HFE Test:** NPN/PNP. **Capacitance:** 0-2 n/20 n/200 nF/2 µ/20 µF. Continuity Test, Diode Test.
947-0055. Model DM-8A .... **EACH 64.95**

DM-9A Digital Multimeter. Ranges. DC Voltage: 0-2/20/200/600 Vdc. **AC Voltage:** 0-200/600 Vac. **Resistance:** 0-200/2 K/20 K/200 K/2000 K/20 M/200 M/2000 M ohm. **30 Indicator:** RST. **Frequency:** 0-100 KHz. **Temperature:** –20°C to 400°C, –4°F to 752°F. **Capacitance:** 0-20 µ/200 µ/2000 µF/20 mF. Continuity Test, Diode Test.
947-0060. Model DM-9A .... **EACH 84.95**

DSA Series Digisnap Volt-OHM-Ammeters


DSA-400/DSA-400A

DSA-400T


DSA-440/DSA-450TRMS

Rugged high accuracy digital snap arounds feature instant continuity buzzer, data hold (all), peak hold (except DSA-400, DSA-400A), and electronic burn out protection to 500 volts on ohms, audible continuity, and diode test ranges. All use UL type 1244. Safety Test leads of reading @ 50-60 Hz. All meet I.E.C. 348 Class II). **Storage Environment:** –20° to +60°C, (0°-140°F) @ 0-80% humidity. **Dimensions:** 7.5" × 3.2" × 1.3". **Weight:** 9.4 oz. including battery. All come with instructions #225, TL-52 test leads, B-4 (9 volt) battery, Cc-62 case (except DSA-400A). DSA-440T includes TP-800K (K type) temperature probe. Optional Accessories include test leads TL-5, TL-5A1, TL-6, TL-6A1, TL-48, E-1 Energizer, and TA-1A temperature adapter. Limited Lifetime Warranty !

Models DSA-400 and DSA-400A. AC Amps: 20/200/300. **AC Volts:** 200/750. **DC Volts:** 2/200/1000. **Resistance:** 200/200 K. Diode test and audible continuity.
947-0400. Model DSA-400 .... **EACH 79.95**
947-0405. Model DSA-400A (without case) .... **EACH 74.95**

Model DSA-440T. AC Amps: 40/400. **AC Volts:** 400/750. **DC Volts:** 4/40/400. **Resistance:** 400. **Temperature:** –20 to 750°C (–4 to 1400°F). Diode test and audible continuity.
947-0445. Model DSA-440T .... **EACH 129.95**

Models DSA 440 and DSA-450TRMS. AC Amps: 40/400. **AC Volts:** 400/750. **DC Volts:** 4/40/400/1000. **Resistance:** 400. **Frequency:** 4 K/40 K/400/1 MHz. Diode test and audible continuity. True RMS reading.
947-0440. Model DSA-440 .... **EACH 99.95**
947-0450. Model DSA-450TRMS .... **EACH 134.95**

6000 Series Ruggedized Digital Multimeters

DM-6100

DM-6200

DM-6300

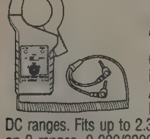
These exceptional 3½ Digit Heavy Duty Drop Proof Digital Multimeters have the capacity of reading up to 10 functions on 33 ranges. This new series of ruggedized digital multimeters have features such as drop proof to five feet, 6KV transient voltage protection, audible continuity, diode test, overload protection on all ranges, meets IEC-348 Class II and UL-1244 standards, employs a combination tilt stand/hanger and have a one year limited warranty. Many other features in this new family are: large LCD displays, data hold, low ohm range, capacitance, transistor HFE, and direct temperature measurement.

DM-6100 3½ Digit Heavy Duty Drop-Proof Digital Multimeter. Ranges: 200 mV/2/20/200/1000 Vdc, 200 mV/2/20/200/750 Vac, 20 µ/200 µA/2 m/20 m/200 mA/20 ADC, 20 µ/200 µA/2 m/ 20 m/200 mA/20 AAC, 20/200/2 K/20 K/200 K/2 M/20 M ohm, Continuity and Diode Test.
947-6100. Model DM-6100 .... **EACH 94.95**

DM-6200 3½ Digit Heavy Duty Drop-Proof Digital Multimeter with Temperature Ranges. Ranges: 200 mV/2/20/200/1000 Vdc, 200 mV/2/20/200/750 Vac, 200 µA/2 m/20 m/200 mA/20 ADC, 200 µA/2 m/20 m/200 mA/20 AAC, 200/2 K/20 K/200 K/2 M/20 M ohm. –20° to 200°F/750°C, –200° to 200°F/750°C. Continuity and Diode Test.
947-6200. Model DM-6200 .... **EACH 104.95**

DM-6300 3½ Digit Heavy Duty Drop-Proof Digital Multimeter with Capacitance Ranges. Ranges: 200 mV/2/20/200/1000 Vdc, 200 mV/2/20/200/750 Vac, 200 µA/2 m/20 m/200 mA/20 ADC, 200 µA/2 m/20 m/200 mA/20 AAC, 200/2 K/20 K/200 K/2 M/20 M ohm, 20 µ/200 µF. Continuity, Transistor HFE, Diode and Microwave Diode Test.
947-6300. Model DM-6300 .... **EACH 104.95**

Model CA-250 AC/DC AMP Adapter for DMMs



CA-250 works with all DMMs with 10 Mohm input impedance and 0-200 mV/2 volt or greater ranges AC/DC. Rugged ABS plastic, 40" leads with shielded banana plug. "Low Battery" indicator and zero adjust for DC ranges. Fits up to 2.31" conductors. Rated for continuous duty at 50-60 Hz on 2 ranges. 0-200/2000 Amps AC/DC on circuits to 750 volts AC. Gives true RMS readings when used with True RMS DMM. 7.75" × 2.5" × 1.5", 18 oz.

947-0685. Model CA-250 .... **EACH 104.95**

Model DM-2A Pocket Pro DMM

UL listed 3.5 digit pocket size DMM has auto/manual range selection, built in test leads, electronic burn out protection to 400 volts on ohm/audible continuity and diode test ranges. Ranges are 0-20-/20/200/400 VAC/DC. 0-200/2 K/20 K/200 K/2 M ohms resistance. Audible continuity. 4.2" × 2.0" × .4", 3.5 oz. Comes with (2) B-6 1.5 V batteries, C-70 case, operating instructions #219.

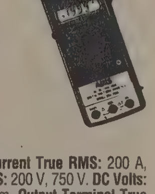
947-6205. Model DM-2A .... **EACH 32.95**

Model DM-6953A "Pen-Style" DMM

5 functions, 15 ranges, 3.5 digit autoranging DMM has interchangeable probe tip, data hold, audible continuity, overload protection on all ranges. Ohms and Diode ranges are protected to 250 volts electronically. **Ranges:** 0-200 mV (DC only) 2/20/200/500 Volts AC/DC. 0-200/2 K/20 K/200 K/2 M/20 M ohm resistance. 6.3" × 1.2" × .8", 2.3 oz. Comes with (2) B-6 "button" batteries, TL-49 test leads, AG-940 alligator slip-on alligator clip, 1 long, 1 short probe tip C-49 Case, instructions #167-2.

947-6593. Model DM-2A .... **EACH 62.95**

DSA-2009 True RMS/ DSA-2003 Avg. AC/DC Digital Snap Around



Reads true RMS AC Amps, volts AC on DC signals, and DC amps, volts. Electronic burn out protection to 500 volts. Accurate Amp/Volt measurements on non-sine wave power circuits such as SCR drivers. Triac circuits, variable speed/frequency drives, HID lighting, UPS systems, and other non-linear loads, as well as DC drives, cranes, DE powered vehicles, and battery power systems. Tear drop jaws allow easy access to tight places. Output jack for recording or oscilloscope viewing. **Specifications. Ranges. AC Current True RMS:** 200 A, 2000 A. **DC Current:** 200 A, 2000 A. **AC Volts True RMS:** 200 V, 750 V. **DC Volts:** 20 V, 200 V, 1000 V. **Resistance:** 200 ohm, 1500 ohm. **Output Terminal True RMS:** 200 AAC, 200 ADC, 2000 AAC, 2000 ADC. **Overload Protection:** Up to 500 V AC/DC on resistance range. Diode test range. **Data Hold Switch:** Freezes readings. **Display:** 3.5 digit LCD, Max reading 1999. **Max. Conductor Size:** 2.16 Dia. **Power:** One 9 V battery (NEDA Type 1604). 16 hours typical with carbon zinc cell. **Dimensions:** 9.7"H × 2.8"W × 1.4"D. **Weight:** 17.7 oz. **Supplied Accessories:** TL-48 test leads, B-4 battery, C-50 carrying case, form #171-1 operating instructions, millivolt output jack, and warranty card.

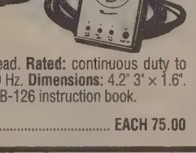
947-2009. Model DSA-2009. True RMS .... **EACH 514.95**
947-2003. Model DSA-2003. Avg. sensing .... **EACH 409.95**

DT-35A Dual Input Temp Differential Thermometer

Rugged Ergonomically designed dual input thermometer features instantaneous two zone capability using dual K type thermo couple probes. Reads in ½F or ½C, with temp differential (T-1/T-2). Offset adjust accommodates different style/length probes, data hold, max record, 200 hr. battery life. 5.8" × 2.8" × 1.75", 13 oz. Comes with two TP-800K K type probes, b-4 (9 V) battery, instructions. **Ranges:** –58 ½-2000 ½C. **Resolution:** 1½. **Optional:** Rubberized "Holster" C-72, TP-750K 8" rigid probe, TP-850K surface probe.

947-0035. Model DT-35A .... **EACH 94.95**
947-0045. Model C-72 .... **EACH 17.45**

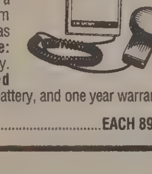
Phase Sequence and Open Phase Indicator



Indicates phase sequence and open phase on 3 phase power circuits up to 600 volts. Easy to use, no exposed metal parts, rugged ABS Housing, color coded 60" Test lead. **Rated:** continuous duty to 500 Volts, 5 minutes max. 500-600 VAC, 50-60 Hz. **Dimensions:** 4.2" 3" × 1.6". **Weight:** 12.5 oz. Comes with C-31 case and SPB-126 instruction book.

947-8031. PSI-8031 .... **EACH 75.00**

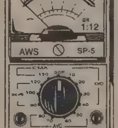
Digital Light Meter



The SLM-110 is a digital light meter which combines a 5% basic accuracy with the capability of reading up to 10,000 footcandles. This unit is compact, light weight and easy to operate. It has a separate light sensor to allow optimum measurements on its large LCD display. It also has a data hold switch to freeze readings. **Range:** 0-200/2,000/10,000 fc. **Power:** Single 9-V battery. **Battery Life:** 150 hours typical. **Supplied Accessories:** C-57 carry case, one 9 V transistor battery, and one year warranty.

947-0110. SLM-110 .... **EACH 89.95**

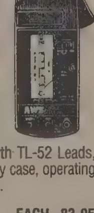
Pocket-Size Multimeter



Features 4 functions, 12 ranges, mirrored scale plate, diode protected meter movement and more. **Specifications. DC/AC Voltage. Ranges:** 0-10/50/250/500 VDC and VAC. **DC Current:** 0-0.5/50/250 mAdc. **Resistance:** 0-1 MΩ (mid-scale). **Decibels:** –20 to +56 db on VAC ranges. **Sensitivity:** 2KΩ/V AC/DC. **Accuracy:** ±4% FS (DCV, DCA); ±4% Arc length (Ω); + 5% FS (ACV). **Power Source:** One 1.5 V AA size battery AWS B-1. **Size:** 3.5 × 2.4 × 1.3"; 3.7 oz. SP-5A package includes TL-34 test leads, 1 B-1 battery, operating instructions, and 1-year warranty.

947-0005. Model SP-5A .... **EACH 10.95**

Snap 8 Series Rotary Scale Volt-Ohm-Ammeter



Specifications. Range. AC Voltage: 150/300/600 VAC. **AC Current:** SPR-300 PLUS — 0-6/20/60/200/600 AAC; SPR-311 PLUS — 0-1.5/5/15/50/150 AAC. **Resistance. Frequency:** SPR-300 PLUS — 50-400 Hz; SPR-311 PLUS — 60 Hz. **Jaws:** Takes up to 1.2" (30 mm) conductors. **Weight:** 13.8 ounces (with batteries). **Dimensions:** 8.7L × 3.3W × 1.6H inches. **Fuse Protection:** One fast acting, high interrupting capacity ½ A 250 V ¼ × 1¼" fuse, AWS Part #F-1. **Note:** The instrument is designed for ampere readings on circuits with maximum of 600 Volts A.C. **Packaging:** The SPR-300 PLUS and SPR-311 PLUS come with TL-52 Leads, 1 F-1 fuse installed/1-spare, B-1 battery AA Type 1.5 V, C-53 carry case, operating instructions and warranty card, all ready for use. Limited warranty.

947-2000. SPR-300 PLUS .... **EACH 83.95**
947-0311. SPR-311 PLUS .... **EACH 109.50**

TACH-1 Digital Photo/Contact Tachometer

The TACH-1 is a digital photo/contact tachometer. This multifunction instrument combines 0.05% basic accuracy with the capability of RPM and surface speed measurements. **Specifications.** Has both photo tachometer (RPM) and contact tachometer (RPM, M/Min., Ft/Min.). **Measuring Range:** 0.5 to 100,000 RPM, 0.05 to 2,000 M/Min., 0.2 to 6560 Ft/Min. **Memory Recall:** Automatically displays last value, max. value and min. value. **Display:** 5-digit LCD with insignificant zero suppression. **Housing:** ABS Plastic. **Range Selection:** Autoranging. **Power:** Four 'AA' batteries (Part #B-1). **Dimensions:** 8.5" x 2.6" x 1.5". Wt.: .66 lb. including batteries. Supplied Accessories: C-55 carrying case, four 'AA' batteries, T-1 reflective tape, 2 W-1 RPM adapters (cone), W-2 adapter (funnel), W-3 surface speed test wheel and form #189 operating instructions.

947-0010. Model TACH-1 .... **EACH 239.95**

Test Bench® Multimeters

Model 388A

Model 389

Model 390

Model 391

- 3 Year Warranty
- High Quality, Ruggedized, Multifunction

BK's Test Bench® models are packed with useful functions. Model 391 is a 4½ digit True RMS DMM with 0.05% DCV accuracy. Models 390 and 389 are 3¾ digit, auto/manual ranging DMMs with analog bargraph, capacitance measurement, temperature probe (390), and 0.1% DCV accuracy (390) or 0.25% DCV accuracy (389). Model 388A is a 3¾ digit, manual ranging DMM with 0.5% DCV accuracy. All models measure frequency and include probes and rubber protective boot.

731-0388. Model 388A	EACH 119.00
731-1389. Model 389	EACH 139.00
731-1390. Model 390	EACH 159.00
731-1391. Model 391	EACH 179.00

Tool Kit™ Multimeters

Model 2703B

Model 2704B

Model 2706

Model 2707

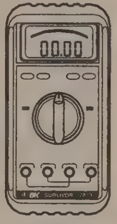
- Practical, Compact and Inexpensive
- 1 Year Warranty

BK Tool Kit™ multimeters fit in your budget. All Tool Kit™ DMMs have 0.5% DCV accuracy, 3½ digit displays, and drop resistant cases. Model 2703B has all basic functions including DCA and diode tests. Model 2704B is a DMM/parts tester. It tests capacitors, transistors and diodes. Model 2706 is the same as 2704B and includes temperature. Model 2707 includes frequency, capacitance, logic level, transistor and diode tests. All include test leads, manual, and thermocouple probe (2706 only).

731-2710. Model 2703B	EACH 39.00
731-2705. Model 2704B	EACH 59.00
731-2706. Model 2706	EACH 79.00
731-2707. Model 2707	EACH 89.00

The Survivor® Series

Model 2870 — Ruggedized 3¾ Digit True RMS DMM

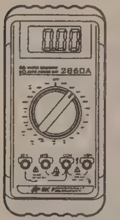


— NEW —

- Ruggedized Construction
- 5 Year Warranty
- 0.25% DCV Accuracy
- True RMS 750 VAC
- 20 A Range
- Heavy Duty 1500 VDC Rating
- Autoranging, Analog Bargraph
- Includes Test Leads, Rubber Holster

731-2870. Model 2870 .... EACH 149.00

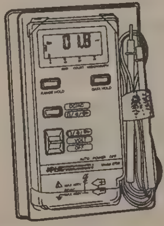
Model 2860A — 3½ Digit Ruggedized DMM



- Ruggedized Construction
- 5 Year Warranty
- Now Includes Rubber Boot
- 1500 V Overload
- Auto Power Off Saves Batteries
- 20 A Range
- Audible Continuity
- Large 0.8" LCD Display

731-2861. Model 2860A .... EACH 99.00

Model 2700 — 3½ Digit Pocket DMM with Bargraph



- Analog Bargraph
- 3200 Count Display
- Auto Power Off
- Low Battery Indicator
- Range Hold
- Data Hold

731-2700. Model 2700 .... EACH 33.00

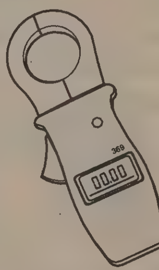
Model 114A — 20,000 Ohms/Volt Multimeter

- 20,000 Ohms/Volt DC
- 28 Ranges
- 3½" Mirrored Scale
- Tests Batteries Under Load
- Tests Transistors
- Includes Batteries and Test Leads

731-0115. Model 114A .... EACH 42.38

Model 369 — True RMS 1000 A AC/DC Clamp Meter

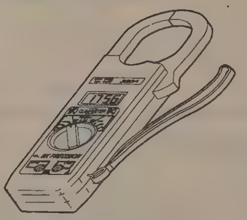
— NEW —



- Measures AC/DC V to 750 V, AC/DC A to 1000 A, Frequency to 10 KHz, Resistance to 4 KΩ
- True RMS
- 3¾ Digit, 4000 Count LCD Display
- Auto/Manual Ranging
- Bargraph
- Crest Mode Measures Peak Current
- Soft Mode Averages Over 3 Seconds
- Includes Test Leads, Holster

731-0369. Model 369 .... EACH 199.00

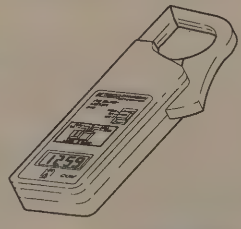
Model 350A — 1000 A AC Multifunction Clamp Meter



- Measures ACA to 1000 A, DCV to 1000 V, ACV to 750 V, Resistance to 2 KΩ
- Peak Hold, Data Hold
- Audible Continuity, Diode Check
- 2" Clamp Opening
- Includes Test Leads, Carrying Case

731-0350. Model 350A .... EACH 149.00

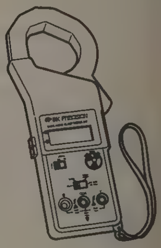
Model 340A — 300 A AC Multifunction Clamp Meter



- Measures ACV to 750 V, ACA to 300 A, and Ohms to 2 KΩ
- Data Hold
- 1⅛" Clamp Opening
- Includes Battery, Test Leads, Carrying Case

731-0340. Model 340A .... EACH 109.00

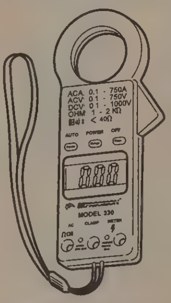
Model 367 — 2000 A AC/DC Multifunction Clamp Meter



- Measures AC/DC Current to 2000 A, DC Voltage to 200 V, AC Voltage to 750 V, Resistance to 2 KΩ
- Peak Hold, Data Hold
- 1¾" Clamp Opening
- Includes Test Leads, Manual, Carrying Case

731-0406. Model 367 .... EACH 169.00

Model 330 — 750 A AC Clamp Meter

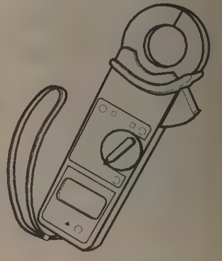


- Measures ACA to 750 A, DCV to 1000 V, ACV to 750 V and Resistance to 2 kΩ
- LEDs Show Which Test Jack to Use
- 1.6" Clamp Opening
- Includes Battery, Test Leads, Carrying Case

731-0410. Model 330 .... EACH 89.00

Model 320 — 600 A AC Clamp Meter

— NEW —



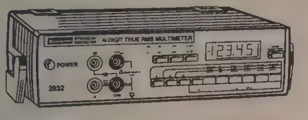
- Measures ACA to 600 A, ACV to 750 V, Ohms to 2 KΩ, and Frequency to 5 MHz
- Max. Hold, Data Hold
- 1⅜" Clamp Opening
- Includes Battery, Test Leads, Carrying Case

731-0320. Model 320 .... EACH 79.00

Handheld, Bench and Ruggedized DMMs, Parts Testers, and Accessories

"Over 30 Years of Servicing the Electronic Industry Together."

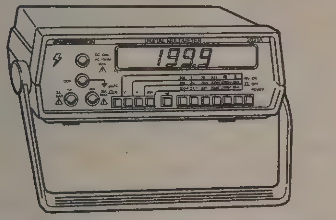
Model 2833 4½ Digit Multimeter



- Basic Accuracy: 0.05% VDC
- True RMS Reading
- Data Hold Feature
- Measures dBm from –48 dB to 62.21 dB
- Measures Volts to 1000 VDC and 1000 VAC
- Measures Frequency to 200 kHz
- Audible Continuity Check, Diode Test

731-2833. Model 2833 .... EACH 400.00

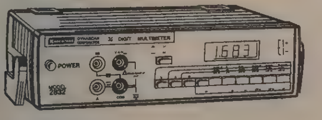
Model 2831A 3½ Digit Bench DMM



- Bright, 0.5" LED Display
- 0.1% Accuracy (DCV)
- Measures Current to 20 A
- Measures Voltage to 1200 VDC or 1000 VAC
- Audible Continuity Check
- Diode Test
- Overload Protection
- Measures AC Voltage to 40 kHz

731-2831. Model 2831A .... EACH 299.00

Model 2832 3½ Digit Multimeter



- AC or Battery Operation
- Measures Voltage, Resistance, Current and Capacitance
- 0.5% Basic DC Accuracy
- Includes Audible Continuity Check and Diode Test

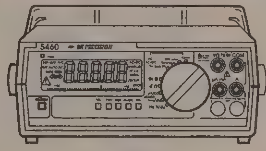
731-2832. Model 2832 .... EACH 209.00

Model 815 Hand-Held Parts Tester

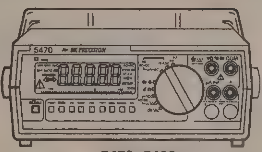
- Large 0.8" Digit, High Contrast LCD Readout
- Tilt Stand for Benchtop Use
- 25 User Ranges for Versatile Test Selection
- Tests Resistance from 0.1 Ohm through 20 M Ohm
- Tests Transistors, SCRs, Diodes and LEDs
- Tests Batteries Under Actual Loaded Conditions
- 5 Foot Drop-Proof, Heavy Duty Case

731-0815. Model 815 .... EACH 99.00

50,000 Count, True RMS Bench Digital Multimeter *— NEW —*



5460



5470, 5490

- True RMS, AC or AC + DC
- Capacitance to 50,000 µF
- 3-Year Warranty
- IE1010, Class 2 Safety Compliance

Model 5460 — 0.1% DCV Accuracy

- 0.1% Ohms
- 30 kHz AC Response
- Autoranging, Bargraph
- Frequency, Duty Cycle
- 100 to 253 VAC, 50/60 Hz

731-5460. Model 5460 .... EACH 425.00

Model 5470 — 0.05% Accuracy

- RS-232 Interface Standard
- 0.07% Ohms
- 100 kHz AC Response
- Autoranging, Bargraph with Zoom
- Frequency, Duty Cycle
- dB Across 1 Ω to 10 kΩ
- Power Across 1 Ω to 10 kΩ
- Min./ Max./Avg.
- 100 to 253 VAC, 50/60 Hz
- Temperature Mode
- No Pulse Width or Power Mode

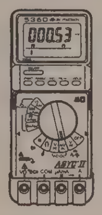
731-5470. Model 5470 .... EACH 525.00

Model 5490 — 0.025% Accuracy

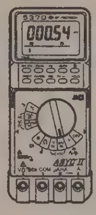
- RS-232 Interface Standard
- 0.07% Ohms
- 100 kHz AC Response
- Autoranging, Bargraph with Zoom
- Frequency, Duty Cycle, Pulse Width
- dB Across 1 Ω to 10 kΩ
- Power Across 1 Ω to 10 kΩ
- Min./ Max./Avg.
- 100 to 253 VAC, 50/60 Hz

731-5490. Model 5490 .... EACH 675.00

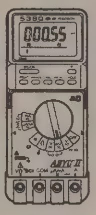
50,000 Count, True RMS Ruggedized DMM *— NEW —*



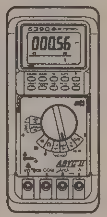
5360



5370



5380



5390

- True RMS, AC or AC + DC
- Capacitance to 50,000 µF
- Sealed Case, Splashproof
- 3-Year Warranty
- IEC1010, Class 2 Safety Compliance

Model 5360 — 0.1% DCV Accuracy

- 0.1% Ohms to 50 MΩ
- 30 kHz AC Response
- Autoranging, Bargraph
- Frequency to 500 kHz, Duty Cycle

731-5360. Model 5360 .... EACH 249.00

Model 5370 — 0.05% DCV Accuracy

- 0.07% Ohms to 50 MΩ
- 100 kHz AC Response
- Autoranging, Bargraph with Zoom
- Frequency to 500 kHz, Duty Cycle
- Temperature ±0.5°C to 800°C
- dB Across 1 Ω to 10 kΩ
- Disturbance Indicator
- Min./Max./Avg.

731-5370. Model 5370 .... EACH 289.00

Model 5380 — 0.025% DCV Accuracy

- 0.07% Ohms to .50 MΩ
- 100 kHz AC Response
- Autoranging, Bargraph
- Frequency to 500 kHz
- dB

731-5380. Model 5380 .... EACH 349.00

Model 5390 — 0.025% DCV Accuracy

- 0.07% Ohms to 50 MΩ
- 100 kHz AC Response
- Autoranging, Bargraph with Zoom
- Frequency to 500 kHz, Duty Cycle, Pulse Width
- dB Across 1 Ω to 10 kΩ
- Power Across 1 Ω to 10 kΩ
- Disturbance Indicator
- Min./Max./Avg.

731-5390. Model 5390 .... EACH 395.00

Mini-Pro® Multimeters *— NEW —*

Pro Quality, Mini Price

Model 2405 Compact Low Cost DMM

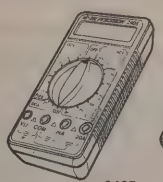
- Manual Ranging
- 3½ Digit LCD
- Transistor hFe Test
- All Basic Measurements DCV, ACV, DCma, DCA and Diode
- DCV Accuracy 0.5%

731-2405. Model 2405 .... EACH 27.00

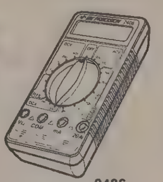
Model 2406 Compact Low Cost DMM

- Manual Ranging
- 3½ Digit LCD
- Continuity Buzzer
- Temperature Measurements
- DCV Accuracy 0.5%

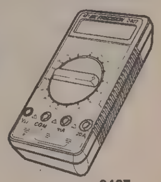
31-2406. Model 2406 .... EACH 49.00



2405



2406



2407

Model 2407 Compact Low Cost DMM

- Autoranging, Bargraph
- 3200 Count LCD
- Measures AC Current
- Continuity Buzzer
- DCV Accuracy 0.5%

731-2407. Model 2407 .... EACH 55.00

Test Equipment Accessories and Probes

Test Equipment Accessories and Probes

Stock No.	Mfr.'s Type	Description	For Use With B and K Model	EACH
731-0022	DP-21	20 MHz Logic Probe	—	35.70
731-0035	DP-31A	Pulser Probe	—	39.00
731-0071	DP-52	50 MHz Digital Logic Probe	—	45.00
731-0044	HV-44	Direct-Reading 40 K VDC Probe	—	99.00
731-0027	PR-28	Hi Voltage Probe	All DMMs	51.45
731-0028	PR-32	Demod Probe	All B and K Scopes with BNC	59.00
731-0037	PR-37AG	Grey Probe	All B and K Scopes with BNC	57.23
731-0039	PR-37AK	Red Probe	All B and K Scopes with BNC	54.50
731-0081	TP-29	Thermocouple Probe	390, 2706, TP-30	15.75
731-0046	PR-46	10:1/Deluxe Probe	All Scopes with BNC	75.50
731-0100	PR-100A	X100	All Scopes with BNC	66.00
731-0001	TL-1	Replacement DMM Test Leads	All "Test Bench" and "Tool Kit" Series	8.00
731-0005	TL-2	Deluxe DMM Test Leads	All "Test Bench" and "Tool Kit" Series	20.00
731-0006	TL-3	Accessory Tip Kit	TL-2	12.00
731-0007	PR-33A	X1-X10 Scope Probe	All Scopes through 60 MHz	43.00
731-0008	TP-30	Temperature Adapter	All DMMs	125.00
731-0009	CP-3	DC/AC Current Clamp Adapter	All DMMs	86.00
731-0010	TP-1	Immersion/General Purpose Temperature Probe	390, 2706, TP-30	33.00
731-0012	TP-2	Air/Gas Temperature Probe	390, 2706, TP-30	37.00
731-0013	TP-3	High Temperature Probe (900°F)	390, 2706, TP-30	12.00
731-0014	TP-4	Surface Temperature Probe	390, 2706, TP-30	45.00

Charges and Battery Paks for Test Instruments

Stock No.	Mfr.'s Type	Description	For Use With B and K Model	EACH
731-0020	BC-28	115 V Adapter/Charger	820, 830	24.15
731-2800	BP-28	Battery Pak	820, 830	51.98

Carrying Case and Covers For Test Equipment

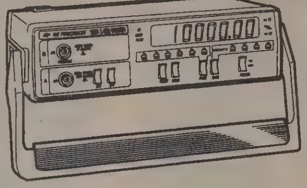
731-0021	LC-28	Carrying Case	820, 830	23.10
731-0002	LC-29A	Carrying Case	All DMMs and Models 810B, 815, 875A, 878	10.00
731-0030	LC-32	Carrying Case	PR-28, HV-44	22.05
731-0210	LC-210	Scope Carrying Case	All Scopes	92.00

Spectrum Analyzer Accessories

731-0210	LC210	Carrying Case	2615, 2620, 2625, 2630	92.00
731-0211	PR-261	Near Field "Sniffer" Probe Set	2615, 2620, 2625, 2630	999.00
731-0212	RM-26	19" Rackmount Adapter	2615, 2620, 2625, 2630	269.00
731-0213	TE-26	50 Ohm Feed Thru Termination	2615, 2620, 2625, 2630	45.00
731-0215	VH-26	Viewing Hood	2615, 2620. 2625, 2630	29.00
731-0216	ZTF-1	50 to 75 Ohm Adapter	2615, 2620, 2625, 2630	59.00

"Over 30 Years of Servicing the Electronic Industry Together."

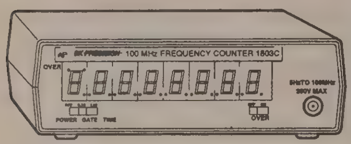
Model 1856A 2.4 GHz Multifunction Counter



- ► Frequency, Period, Period Average and Totalize Functions
- ► Selection Resolution
- ► Display Hold
- ► 0.5 PPM TCXO Time Base (23 +5°C)
- ► 8 Digit LED Display
- ► Low Pass Filter
- ► Remote Start-Stop
- ► Accepts Standard 10 MHz External Time Base

731-1856. Model 1856A	EACH 499.00
731-0018. Model AN18. Antenna	EACH 30.00

Model 1803C 100 Battery/AC Powered Multi-Function Counter



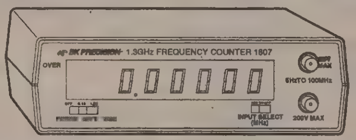
- ► Selectable 1.0 Sec./0.1 Sec. Gate Times
- ► Low Pass Filter
- ► 8 Digit LED Display
- ► Charger/AC Adapter Included
- ► 5 Hz to 100 MHz Range
- ► 2 PPM Timebase, 20° to 30°C

MADE IN U. S. A.

731-1810. Model 1803C	EACH 210.00
731-9998. Model PR37A. Probe	EACH 57.23

Model 1807 1.3 GHz Battery/AC Powered Counter

MADE IN U. S. A.

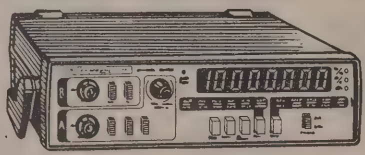


- ► 5 Hz to 1.3 GHz Range
- ► 0.5 PPM TCXO Time Base, 20° to 30°C
- ► Low Pass Filter
- ► 1 Sec. and 0.1 Sec. Gates
- ► 8 Digit LED Display

731-1807. Model 1807	EACH 299.00
731-9998. Model PR37A. Probe	EACH 57.23
731-0018. Model AN18. Antenna	EACH 30.00

Model 1823 175 MHz Universal Counter

MADE IN U. S. A.



- ► 5 Hz to 175 MHz Range
- ► 8 Digit LED Display
- ► Display Hold and Reset Feature
- ► 10 PPM Time Base

731-1823. Model 1823	EACH 399.00

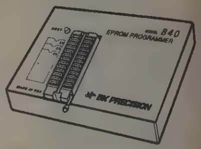
Device Programmers

— NEW —

Model 840

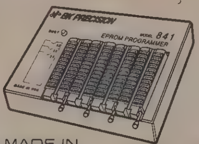
MADE IN U. S. A.

- ► Program EPROMs (NMOS and CMOS), Page Mode EPROMs, EEPROMs, and Flash EEPROMs
- ► Library Contains Over 500 Devices
- ► 32 Pin ZIF Socket
- ► Works With IBM PC/XT/AT 386/486 Host Computer
- ► Includes Software Diskette, 8 Bit ISA Bus Adapter Interface Card, 40 Pin Ribbon Cable, Programming Module, Instruction Manual



731-0840. Model 840	EACH 229.00

Model 841



MADE IN U. S. A.

- ► Program EPROMs, (NMOS and CMOS), Page Mode EPROMs, EEPROMs, and Flash EEPROMs
- ► Library Contains Over 500 Devices
- ► 32 Pin ZIF Socket
- ► 4 Sockets: Program 4 Devices at Once
- ► Works With IBM PC/XT/AT 386/486 Host Computer
- ► Includes Software Diskette, 8 Bit ISA Bus Adapter Interface Card, 40 Pin Ribbon Cable, Programming Module, Instruction Manual

731-0841. Model 841	EACH 299.00

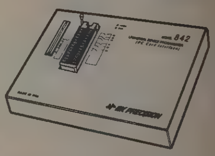
Universal Device Programmer/Tester

— NEW —

Model 842

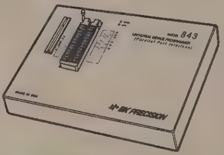
MADE IN U. S. A.

- ► Programs PALs, PROMs, EPROMs, EEPROMs, Flash EEPROMs, MICROs, Serial (E)PROMs, EPLDs, GALs, PEELs
- ► Tests TTL, CMOS, Logic ICs
- ► Library Contains Over 1800 ICs
- ► 48 Pin ZIF Socket
- ► Tests Chips Up to 256 MB
- ► Works With IBM PC/XT/AT 386/486 Host Computer
- ► Includes Software Diskette, 8 Bit ISA Bus Adapter Interface Card, 40 Pin Ribbon Cable, Programming Module, Instruction Manual



731-0842. Model 842	EACH 849.00

Model 843

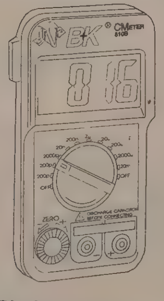


MADE IN U. S. A.

- ► Programs PALs, PROMs, EPROMs, EEPROMs, Flash EEPROMs, MICROs, Serial (E)PROMs, EPLDs, GALs, PEELs
- ► Tests TTL, CMOS, Logic ICs
- ► Library Contains Over 1800 ICs
- ► 48 Pin ZIF Socket
- ► Tests Chips Up to 256 MB
- ► Plugs Into Standard Parallel Port (LPT 1, LPT 2) of IBM PC/XT/AT 386/486 Host Computer
- ► Includes Software Diskette, Universal Power Transformer, Printer Cable (6 Ft.), Instruction Manual

731-0843. Model 843	EACH 995.00

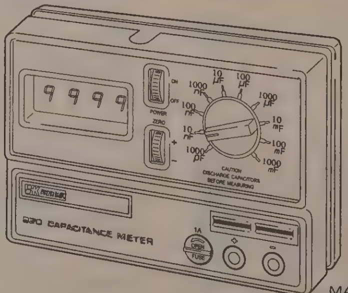
Model 810 B Capacitance Meter



- ► 3½ Digit LCD Display
- ► Measures Capacitance to 20 mF
- ► Nine Ranges from 200 pF to 20 mF
- ► 0.1 pF Resolution
- ► Low Battery and Overload Indicator

731-0811. Model 810B	EACH 99.00

Model 820 Manual Ranging Capacitance Meter

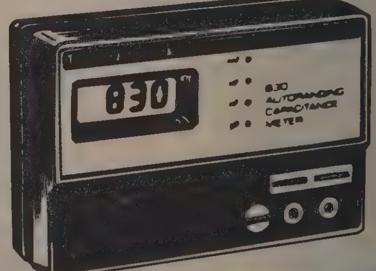


MADE IN U. S. A.

- ► 4 Digit LED Display
- ► Measures Capacitance to 999.9 mF
- ► 10 Ranges from 999.9 pF to 999.9 mF

731-0820. Model 820	EACH 279.00

Model 830 Auto Ranging Capacitance Meter



MADE IN U. S. A.

- ► 3½ Digit LED Display
- ► Measures Capacitance to 199.9 mF
- ► 10 Ranges from 199.9 pF to 199.9 mF

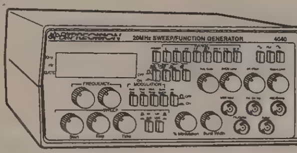
731-0830. Model 830	EACH 325.00

"Over 30 Years of Servicing the Electronic Industry Together."

Model 4040 — 20 MHz Sweep/Function Generator with Frequency Counter

BK REBORN IN THE USA

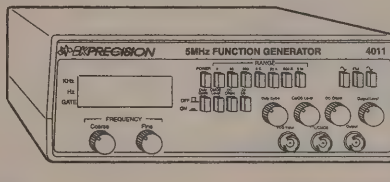
- 20 MHz Bandwidth
- Amplitude or Frequency Modulation
- Burst Operation
- External Frequency Counter to 30 MHz
- 5-Digit LED Display
- Linear and Log Sweep
- Sine, Square, Triangle Wave Outputs
- TTL and CMOS Outputs
- Variable Symmetry
- Variable DC Offset
- Two Year Warranty



731-4040. Model 4040 .... **EACH 499.00**

Model 4011 — 5 MHz Function Generator with Digital Display

BK REBORN IN THE USA

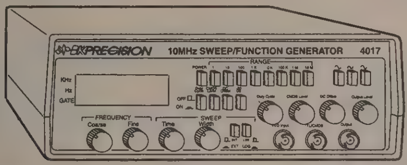


- 5 MHz Bandwidth
- 4-Digit Counter
- Sine, Square, Triangle Wave Outputs
- TTL and CMOS Outputs
- Variable Symmetry
- Variable DC Offset
- Two Year Warranty

731-4011. Model 4011 .... **EACH 289.00**

Model 4017 — 10 MHz Sweep/Function Generator

BK REBORN IN THE USA

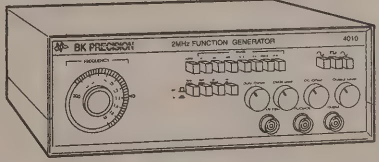


- 10 MHz Bandwidth
- 5-Digit LED Display
- Linear and Log Sweep
- Sine, Square, Triangle Wave Outputs
- TTL and CMOS Outputs
- Variable Symmetry
- Variable DC Offset
- Two Year Warranty

731-4017. Model 4017 .... **EACH 369.00**

Model 4010 — 2 MHz Bandwidth Function Generator

BK REBORN IN THE USA



- 2 MHz Bandwidth
- Sine, Square, Triangle Wave Outputs
- TTL and CMOS Outputs
- Variable Symmetry
- Variable DC Offset
- Two Year Warranty

731-4010. Model 4010 .... **EACH 229.00**

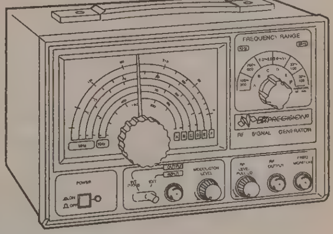
Model 3001 — Sine/Square Wave Audio Generator

- Sine and Square Wave Generator
- 20 Hz to 150 KHz in 46 Steps
- Low Distortion R-C Oscillator
- Variable Output Control
- Compact, Fully Portable, Light Weight
- Low Battery Indicator

731-3001. Model 3001 .... **EACH 79.00**

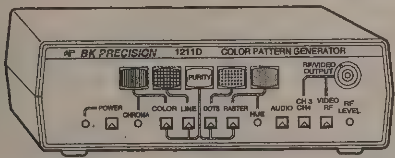
Model 2005A — 150 MHz RF Signal Generator

- 100 KHz to 150 MHz on Six Bands
- Output to 450 MHz on Harmonics
- AM Modulation, Internal or External, 0% to 100%
- Frequency Monitor Output for External Frequency Counter
- Step and Variable Attenuation to –40 dB



731-2005. Model 2005A .... **EACH 275.00**

Model 1211D — Hand Held Color Pattern Generator



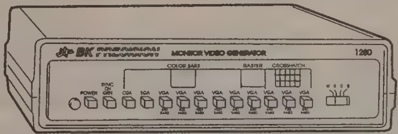
MADE IN U. S. A.

- Compact, Battery Operated
- 5 Patterns Including Full Field Raster
- Composite Video Output to 1 V p-p
- Progressive Scan
- CH 3 and CH 4 Crystal Controlled RF Outputs
- Chroma Can Be Switched Off

731-1213. Model 1211D .... **EACH 235.00**

Model 1280 — Computer Monitor Pattern Generator

— NEW —



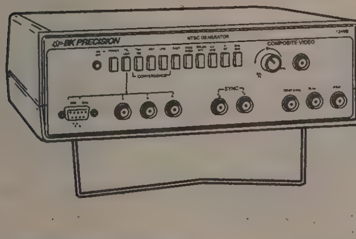
MADE IN U. S. A.

- Generates Seven Color Bar Patterns — CGA, EGA, VGA 640 × 480/60 Hz, SVGA 800 × 600/56 Hz, SVGA 1024 × 768/87 Hz, SVGA 1024 × 768/60 Hz Non-Interlaced, and Mac II 640 × 480/67 Hz
- Full Compliment of Jacks on Rear Panel — DB9, DB15, HD15, and 5 BNCs
- Includes AC Adapter, Instruction Manual

731-1280. Model 1280 .... **EACH 429.00**

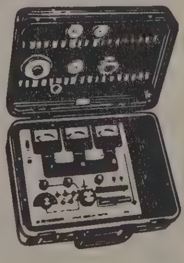
Model 1249B — NTSC Generator with RGB

MADE IN U. S. A.



- NTSC Color Bar Pattern, ±5° and ±5 IEEE Units
- CH 3, CH 4 and IF Outputs Crystal Controlled
- Calibrated 1 Vp-p or Variable Composite Video Output
- RGB Outputs on BNC or 9-Pin D Connector
- Composite Sync, Vertical Sync, and Horizontal Sync Outputs
- Chroma Can Be Switched Off

731-1250. Model 1249B .... **EACH 569.00**



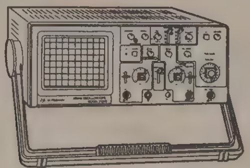
Model 480 and 490 — CRT Testers/Rejuvenators

MADE IN U. S. A.

- Test and Restore Color or Monochrome CRTs
- Test and Restore Most Computer Monitor CRTs
- Test and Restore Most Projection TV CRTs
- Test Emission, Tracking, Leakage, Shorts, Life
- Remove Shorts, Clean and Balance Guns, Rejuvenate Cathodes
- Continual Set-Up Chart Updates and New Adapter Development
- Extra Rugged Polyethylene Case

731-0480. Model 480 .... **EACH 739.00**
731-0490. Model 490 .... **EACH 1049.00**

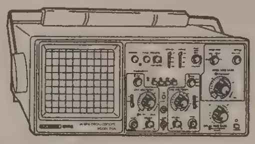
Model 2120B — 20 MHz Dual Trace Oscilloscope



- Dual or Single Trace Operation
- 1 mV/div Sensitivity
- AUTO/NORM Triggered Sweep Operation with AC, TVH, TVV and Line Coupling
- Calibrated 20 Step Timebase with X10 Magnifier
- Compact Low-Profile Design
- Two Year Warranty

731-2111. Model 2120B ....EACH 549.00

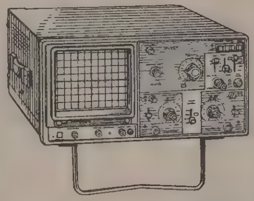
Model 2125 — 20 MHz Dual Trace Oscilloscope with Delayed Sweep



- Dual or Single Trace Operation
- 1 mV/div Sensitivity
- Built-In Component Tester for Capacitors, Inductors, Diodes, Transistors, Zener Diodes
- Delayed Sweep in 18 Ranges
- AUTO/NORM Triggered Sweep Operation with AC, TVH, TVV and Line Coupling
- Calibrated 20 Step Timebase with X10 Magnifier
- Compact Low-Profile Design
- Three Year Warranty

731-2125. Model 2125 ....EACH 646.00

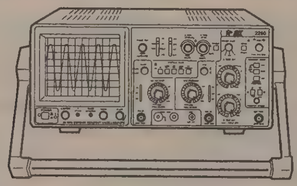
Model 1541C — 40 MHz Dual-Channel Oscilloscope



- 1 mV/div Sensitivity
- 19 Calibrated Sweeps
- Video Sync Separators
- X10 Sweep Mag. Single Sweep
- V Mode-Displays Two Signals Unrelated in Frequency
- Three Year Warranty

731-1445. Model 1541C ....EACH 799.00

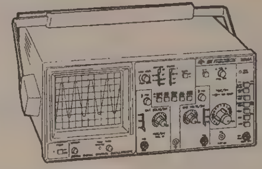
Model 2260 — 60 MHz Cursors and Readouts, Dual Time Base Oscilloscope



- Cursors and Readouts
- 1 mV/div Sensitivity
- Signal Delay Time
- Z Axis Input
- Single Sweep
- 23 Calibrated Ranges — Main Time Base
- 19 Calibrated Ranges — Delayed Time Base
- V Mode — Displays Two Signals Unrelated in Frequency
- Component Tester
- Three Year Warranty

731-2260. Model 2260 ....EACH 1399.00

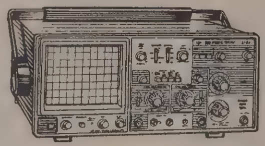
Model 2522A — 20 MHz Digital Storage/Analog Oscilloscope



- 20 MHz Analog Bandwidth
- 20 MS/s Sampling Rate Each Channel
- 2 K Memory Per Channel
- 400 MHz Equivalent Time Sampling
- Pre-Trigger Capture
- Three Year Warranty

731-2522. Model 2522A ....EACH 1099.00

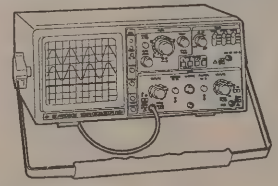
Model 2160A — 60 MHz Dual Trace Dual Time Base Oscilloscope



- 1 mV/div Sensitivity
- Sweep to 10 ns/div
- Component Tester
- Z Axis Input
- 23 Calibrated Ranges — Main Time Base
- 23 Calibrated Ranges — Delayed Time Base
- Three Year Warranty

731Q2160. Model 2160A ....EACH 1099.00

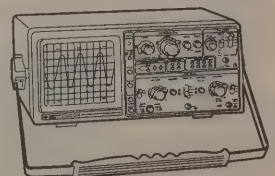
Model 2190A — 100 MHz Three Trace Dual Time Base Oscilloscope



- 1 mV/div Sensitivity
- Sweep to 5 ns/div
- Signal Delay Time
- Channel 1 Output
- 22 Calibrated Ranges — Main Time Base
- 19 Calibrated Ranges — Delayed Time Base
- Calibrated Delay Time Multiplier
- 15 kV Accelerating Voltage
- Three Year Warranty

731Q2195. Model 2190A ....EACH 1599.00

Model 2560 — 60 MHz Digital Storage Oscilloscope

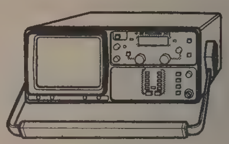


- Cursors and Readouts
- RS-232 Port
- 20 MS/s Real Time Sampling
- 1 GHz Equivalent Time Sampling (at 0.1 µs/div.)
- Prints Via RS-232 Port to Any HP-GL Plotter
- Three Year Warranty

731-2560. Model 2560 ....EACH 2395.00

Spectrum Analyzers — NEW —

Model 2615

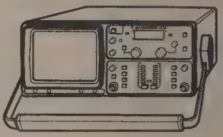


MADE IN U. S. A.

- 500 MHz Range
- 150 KHz to 500 MHz Frequency Range
- Dynamic Range 80 dB (113 dB with Attenuation)
- +20 dBm Maximum Input
- 12.5 KHz and 250 KHz Resolution Bandwidth
- 150 KHz/Hour Stability
- See Page 847 for Accessories

731-2615. Model 2615 ....EACH 1795.00

Model 2620

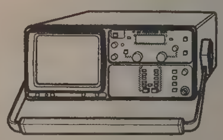


MADE IN U. S. A.

- 500 MHz Range
- 150 KHz to 500 MHz Frequency Range
- Dynamic Range 80 dB (113 dB with Attenuation)
- +20 dBm Maximum Input
- 12.5 KHz and 250 KHz Resolution Bandwidth
- 150 KHz/Hour Stability
- Built-In Tracking Generator
- –50 dBm to +1 dBm Output Level Range 50 Ω
- See Page 847 for Accessories

731-2620. Model 2620 ....EACH 2195.00

Model 2625

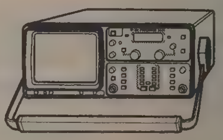


MADE IN U. S. A.

- 1.05 GHz Range
- 0.15 MHz to 1050 MHz Frequency Range
- Dynamic Range 80 dB (113 dB with Attenuation)
- 20 KHz and 400 KHz Resolution Bandwidth
- 150 KHz/Hour Stability
- AM and FM Demod Included
- See Page 847 for Accessories

731-2625. Model 2625 ....EACH 2595.00

Model 2630



MADE IN U. S. A.

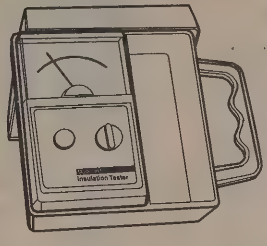
- 1.05 GHz Range
- 0.15 MHz to 1050 MHz Frequency Range
- Dynamic Range 80 dB (113 dB with Attenuation)
- 20 KHz and 400 KHz Resolution Bandwidth
- 150 KHz/Hour Stability
- AM and FM Demod Included
- Built-In Tracking Generator
- –50 dBm to +1 dBm Output Level Range 50 Ω
- See Page 847 for Accessories

731-2630. Model 2630 ....EACH 3395.00

"Over 30 Years of Servicing the Electronic Industry Together."

Model 307 Multi-Range Analog Insulation Tester

— NEW —

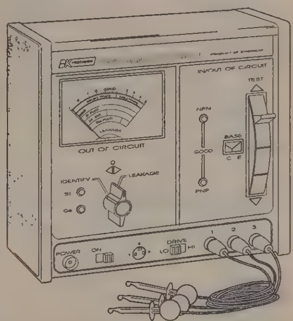


- ► Selectable 250 V, 500 V, or 1000 V Insulation Test
- ► Low Resistance Test
- ► Economical Analog Meter Version
- ► Measures to 200 MΩ
- ► Extra Rugged Integral Carrying Case
- ► Live Circuit Indicator Warns of Safety Hazard
- ► Push to Test

731-0307. Model 307 .... **EACH 189.00**

Model 520B Industrial Tester

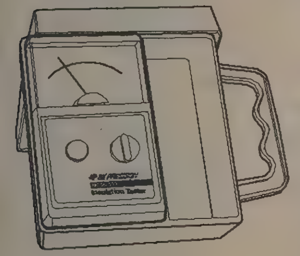
MADE IN U.S.A.



- ► HI/LO Drive
- ► Works In-Circuit
- ► Identifies All Three Transistor Leads
- ► Random Lead Connection
- ► Automatic NPN/PNP Determination
- ► Audibly and Visually Indicates Good Transistor
- ► Positive Si/Ge Identification
- ► Tests Diodes, SCRs, FETs and Darlingtons

731-0520. Model 520B .... **EACH 399.00**

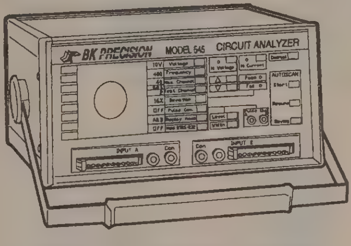
— NEW —



Model 308 Multi-Range Digital Insulation Tester

- ► Selectable 250 V, 500 V, or 1000 V Insulation Test
- ► Low Resistance Test
- ► $3^1/_2$ Digit LCD Display
- ► Measures to 2000 MΩ
- ► Extra Rugged Integral Carrying Case
- ► Live Circuit Indicator Warns of Safety Hazard
- ► Push to Test

731-0308. Model 308 .... **EACH 259.00**


BK PRECISION MODEL 545 CIRCUIT ANALYZER

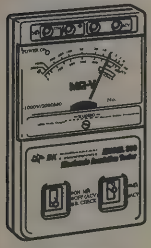
Model 545 PC Board Circuit Analyzer

MADE IN U.S.A.

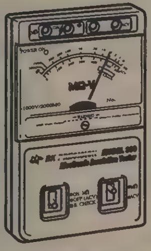
- ► Simple to Use
- ► Tests All Active and Passive Components
- ► Tests Digital and Analog ICs Up to 40 Pins
- ► Autoscan Mode Gives a Positive Pass/Fail Indication
- ► Built-In Switcher Automatically Tests IC Pins Sequentially
- ► Built-In Pulse Generator Tests SCRs
- ► Signature Storage on Computer Using Supplied Software

731-0545. Model 545 .... **EACH 2950.00**

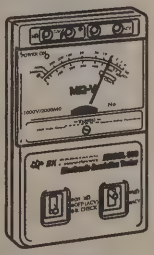
Insulation Testers



Model 300
1000 V, 2000 MΩ



Model 305
500 V, 1000 MΩ



Model 306
500 V, 100 MΩ

Model 300

- ► Tests Insulation Resistance
- ► Test Voltage: 1000 VDC
- ► Resistance Range 2000 MΩ Center Scale 50 MΩ
- ► Measures AC Voltage to 600 V
- ► Includes Batteries, Carrying Case, Test Leads, Manual

731-0400. Model 300 .... **EACH 129.00**

Model 305 **— NEW —**

- ► Tests Insulation Resistance
- ► Test Voltage: 500 VDC
- ► Resistance Range 1000 MΩ Center Scale 20 MΩ
- ► Measures AC Voltage to 600 V
- ► Includes Batteries, Carrying Case, Test Leads, Manual

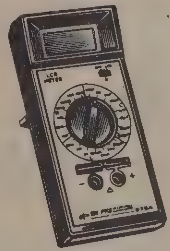
731-0305. Model 305 .... **EACH 129.00**

Model 306 **— NEW —**

- ► Tests Insulation Resistance
- ► Test Voltage: 500 VDC
- ► Resistance Range 100 MΩ Center Scale 2 MΩ
- ► Measures AC Voltage to 600 V
- ► Includes Batteries, Carrying Case, Test Leads, Manual

731-0306. Model 306 .... **EACH 129.00**

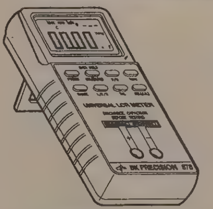
Model 875A LCR Meter



- ► Measures Capacitance, Resistance and Inductance
- ► Measures Dissipation Factor of Capacitors and 1/Q of Inductors
- ► $3^1/_2$ Digit LCD Display

731-0875. Model 875A .... **EACH 199.00**

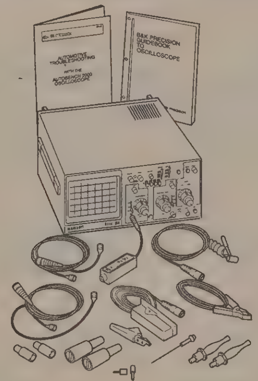
Model 878 Dual-Display Hand-Held LCR Bridge with Statistical Functions



- ► Measures Capacitance, Resistance and Inductance
- ► Accuracy Compares to More Costly Bench Bridges
- ► Measures Dissipation Factor of Capacitors and Q of Inductors
- ► Excellent for Sorting Parts in Engineering, QC, or Production
- ► Simultaneously Displays Measured Value and Q or Dissipation Factor
- ► Remembers Minimum and Maximum Values
- ► Keeps a Running Average of Tested Component Values
- ► Relative Mode Displays the Difference Between the Measured and Reference Component Values
- ► Tolerance Mode "Beeps" to Indicate Measured Components Outside a 1%, 5%, or 10% Tolerance Around a Reference Value
- ► Two Selectable Test Frequencies (120 Hz, 1 kHz)
- ► Auto or Manual Ranging

731-0878. Model 878 .... **EACH 275.00**

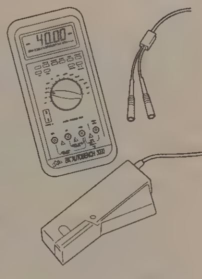
Model 2000 Automotive Oscilloscope



- ► 20 MHz, Dual Trace Scope
- ► Automotive Probe and Lead Set
- ► Comprehensive, Easy to Understand Training Manual with Typical Waveforms and Test Data

731-2000. Model 2000 .... **EACH 795.00**

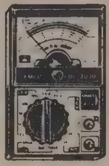
Model 3000 Automotive Digital Multimeter



- ► $3^3/_4$ Digit, 4000 Count Display
- ► Diode and Continuity Test
- ► Reads RPM
- ► Frequency and Capacitance
- ► Automatic Power Down
- ► Shielded for EMI
- ► Reads Pulse Duty Cycle and Dwell
- ► Full Autoranging on DC/AC Volts, Capacitance and Frequency
- ► Comprehensive, Easy to Understand Users Manual

731-3000. Model 3000 .... **EACH 270.00**
731-0002. LC-29A. Carry/Storage Case .... **EACH 10.00**
731-0009. CP-3. DC/AC Current Clamp, 400 A.. **EACH 86.00**

BL-10 K Multitester



- 18 Ranges
- 6 Function
- Battery Test
- Fully Protected

Specifications. 3-color mirrored scale 180 µA movement. **Ranges:** DC Voltage — 0 to 2.5, 10, 50, 500, 1000 V; AC Voltage — 0 to 10, 50, 250, 1000 V. **DC Current:** 0, 10 M, 250 mA. **Resistance:** 0-5 k, 5000 k, (R × 10/R × 1 K). **Battery Test:** 1.5 V (125 mA); 9 V (10 mA). 10,000 ohms/volt. Uses "AA" battery (UM-3). Supplied with test leads, manual, and battery.

776-1000. Model BL-10K..**EACH 16.86**

Model DMR-35A 3½ Digit Economy LCD Digital Multitester

- 3½ Digit 0.5" Height LCD Reading to 1999
- Auto-Polarity Display for Negative Input
- 27 Ranges
- High Overload Protection for all Ranges
- Power Consumption 20 mW Approx.
- 6 Functions

10 megohm input on DC volt. **Power Consumption:** 20 mW. Includes diode check. Supplied with batteries, test leads, and case. **Specifications. DC Volts:** 5 ranges, 200 mV to 1000 V, 0.8% +1 digit. **AC Volts:** 2 ranges, 200 V to 750 V, 1.2 +3 digits. **DC Current:** 5 ranges, 200 microamps to 10 amps, 0.8% +2 digits. **Resistance:** 6 ranges, 200 ohms to 20 Megohms, 1% +2 digits.

776-0351. Model DMR-35..**EACH 50.51**

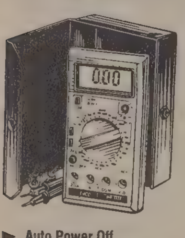
Model DMR-2012A

- 9 Functions, 35 Ranges
- Capacitor, Transistor, Diode Test
- Audible Continuity
- .5% Accuracy
- 20 Amp AC/DC Ranges
- Drop Proof Case

9 function, 35 range LCD multimeter with 20 amp AC/DC ranges. Housed in drop proof case. **Specifications. Ranges:** Volts — 200 mV, 2 V, 20 V, 200 V, 1000 V (750 V AC); Current (AC/DC) — 200 µA, 2 mA, 20 mA, 200 mA, 20 A; Resistance — 200, 2 K, 20 K, 200 K, 2 M, 20 M; Capacitance — 2000 pF, 20 nF, 200 nF, 2 µF, 20 µF. **Transistor Check:** NPN, PNP, hFE. **Protection:** Fuse and diode overload protected. **Size:** 6¼"H × 2⅞"W × 1¼"D. **Supplied With:** Battery, test leads and case.

776-2012. Model DMR-2012A..**EACH 63.51**

Model DMR-2322A

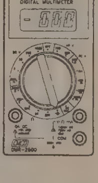


- 10 M Ohm/Volt Large Oversize Display
- 3½ Digit LCD Multimeter
- Fuse and Diode Overload Protected
- High Visibility Yellow Housing
- 11 Functions
- 45 Ranges
- Audible Continuity
- Test Capacitors, Transistors, Diodes
- 20 Amp AC/DC Ranges
- Shockproof Case
- 7½"H × 3½"W × 1½"D
- Auto Power Off
- Probes Slot Onto Case
- Display Boxed
- Complete with Battery, Test Leads and Case
- Logic Test, Transistor Test, Capacitor Test, Frequency Measurement

Specifications. DC Volt Range: 200 mV, 2 V, 20 V, 200 V, 1000 V. **AC Volt Range:** 200 mV, 2 V, 20 V, 200 V, 750 V. **DC Amps:** 200 mA, 2 mA, 20 mA, 200 mA, 20 A. **AC Amps:** 200 mA, 2 mA, 20 mA, 200 mA, 20 A. **Resistance:** 200, 2 K, 20 K, 200 K, 2 M, 20 M. **Capacitance:** 2000 pF, 20 nF, 200 nF, 2 µF, 20 µF. **Freq.:** 20 KHZ, 200 KHZ. Supplied with ruggedized case and test leads.

776-2322. Model DMR-2322A..**EACH 86.56**

DMR-2500 Multitester



- DC Volts: 200 mV, 2 V, 20 V, 200 V, 1000 V
- AC Volts: 200 V, 750 V
- DC Current: 200 µA, 2 mA, 20 mA, 200 mA, 2000 mA, 10 A
- Resistance: 200, 2 K, 20 K, 200 K, 2000 K

Specifications. 6 Functions. 19 Ranges. 10 Amp DC range. Diode test. Shockproof case. Low battery indication. Fuse and diode overload protected. High surge voltage protection. 5½"H × 2¾"W × 1"D. Complete with battery, instruction manual and probes. Display boxed.

776-2500. Model DMR-2500..**EACH 41.00**

RES-5A Resistance Decade Box

Display Boxed

- Universal Binding Posts
- Easy to Read Slide Switch Operation

Range: From 1 Ohm to 11,111,110 Ohms in 1 Ohm increments. **Accuracy:** ±1% Tolerance Minimum. **Power Capacity:** ½ Watt.

776-1175. RES-5A..**EACH 33.86**

SLM-120 Sound Pressure Level Meter

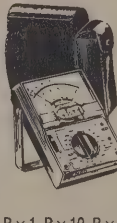
— NEW —

- Easy to Operate
- Accurate Readout
- High Reliability Circuitry for Durability
- Battery Check
- Calibration Adjustment for Accurate Readings
- Designed to JIS dBA Specification (ANSI)
- Range: 40-80 dB, 80-120 dB
- Microphone: Condenser Type Element
- Battery: Single 9 V
- Dimensions: 6¼" × 2½" × 1½"
- Includes Instruction Manual and Carrying Case

Ambient noise measurement — adapted to dBA readings, and suitable fore measurement of work environment, traffic noise conditions, PA trumpet horns, alarms, sirens, etc.

776-0120. SLM-120..**EACH 79.99**

F-72 Multitester

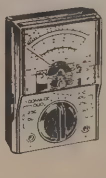


- Better Overload Protection
- Battery Tester
- With Carrying Case and Buzzer
- Includes Test Leads and Batteries
- Adjustable Handle
- Mirror-Back Scale
- 23 Ranges

Specifications. 20 k ohms/vdc. **DC V:** 0, 2.5, 10, 50, 250, 1000 V. **AC V:** 0, 10, 50, 250, 1000 V. **DC Current:** 0, 5, 50, 500 mA, 10 A on separate jack. **Resistance:** R × 1, R × 10, R × 1K (Center 50 ohm). **Decibel:** –8 dB to +62 dB on all AC V range. **Battery Test:** 1.5 V size AA; internal loading resistance and current 75 ohm/20 mA; 9 V Std.; internal loading resistance and current 450 ohm/20 mA. **Audio Power Level:** –8 dB to +22 dB on a 600 3° arc of scale length. **Batteries:** 1.5 V AA × 2 pcs. **Protection:** 1 A/250 V fuse and silicon double diode. MT-20-BC made of high impact plastic and phenolic PCB. 5¼"H × 3½"W × 1½"D. **Weight:** 1.2 lbs.

776-0020. Model F-72..**EACH 29.50**

MT-2 12-Range VOM

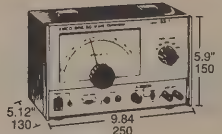


- 16 Ranges — 5 Function
- Mirror-Back Scale
- Meter Overload Protection
- Includes Test Leads and Battery
- Excellent for Security or Home Use
- Used in Engineering and Field Service

Specifications. DC Volts: 0-10, 50, 250, 500 V. **AC Volts:** 0-10, 50, 250, 500 V. **DC Current:** 250 mA. **Resistance:** 10 K Ohm, 1 Meg Ohm. **Decibels:** –20 to +56 dB. **Accuracy:** DC +3% (of full scale). **Sensitivity:** 2000 Ohm/Volt DC and AC. **Battery:** 1.5 V (UM-3/AA size). **Size (H × W × D):** 3⅝" × 2⅜" × 1⅛". **Weight.:** 3 oz.

776-0200. Model MT-2..**EACH 12.65**

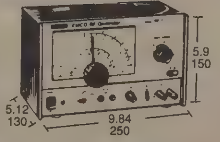
GEN-SS-1 Solid State Sine/Square Wave Generator



Provides sine and square wave outputs simultaneously while covering 20 Hz to 2 MHz in 5 bands. **Specifications. Square Wave:** 20 Hz-200 KHz. **Sine Wave:** 20 Hz to 2 MHz. **Output Voltage:** sine wave 0-7.5 volts rms into high impedance output, 0-6.5 volts into 600 ohms. **Square Wave:** 0-10 volts p-p into high impedance, positive direction with ground zero. **Calibration Accuracy:** 3% except for 5%, 20 Hz to 100 Hz and 1 MHz to 2 MHz. **Maximum Distortion Across Audio Range:** 0.25% rise time at 20 KHz, less than 0.1 microseconds. **Power Requirements:** 105-132 volts. 50/60 Hz, 10 VA.

776-0379. Model GEN-SS-1..**EACH 200.00**

RF-1 Generator

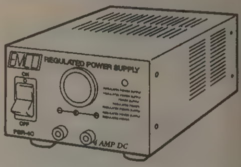


RF Signal Generator is invaluable for aligning TV sets, AM-FM radios and other communication equipment. The vernier control allows you to set RF frequencies accurately, ranging from 100 KHz to 150 MHz in 6 bands. **Specifications. Frequency Range:** A — 100 KHz to 300 KHz, B — 300 KHz to 1000 KHz; C — 1 MHz to 3.2 MHz; D — 3 MHz to 10 MHz; E — 10 MHz to 35 MHz; F — 32 MHz to 150 MHz; (Up to 450 MHz on third harmonic). **Frequency Accuracy:** ±3%. **RF Output:** 100 mV. **Modulation:** Internal — 1 KHz; External — 50 Hz to 20 KHZ, at less than 1 volt RMS. **Audio Output:** 1 KHz, Max. 1 V RMS. **Power Requirement:** 100 V or 220 AC; 50/60 Hz. **Weight:** 2.5kg. **Dim.:** 150H × 250W × 130D mm.

776-0330. Model RF-1..**EACH 190.74**

PSR-4C 12 Volt, 4 Amp Reg./Filtered Power Supply

— NEW —

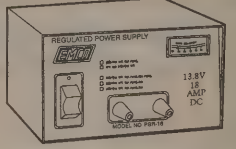


- With Cigarette Lighter Adapter Built-In Front Panel
- Input: 117 VAC, 60 Hz
- Output: 12 VDC, 4 Amp Constant, 5 Amp Surge
- Dimensions: 2⅝"H × 4¼"W × 7½"D
- Weight: 4 Lbs.

776-0040. PSR-4C......**EACH 33.23**

PSR-18 18 Amp Precision Regulated 12 VDC Power Supply

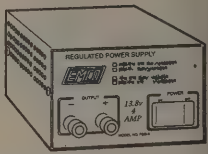
— NEW —



- Input: 117 VAC, 60 Hz
- Output: 12 VDC, 18 Amp Constant
- 20 Amp Surge
- Amp Meter
- 4¾"H × 7¾"W × 11⅜"D
- Weight: 15 Lbs.

776-0018. PSR-18........**EACH 119.21**

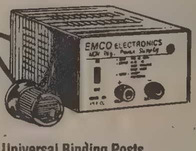
PSR-4 12 Volt DC Regulated Power Supply



- Regulated and Filtered
- Universal Binding Posts
- Input: 117 V AC 60 Hz
- Output: 13.8 V DC 4 Amp Constant, 6 Amp Surge
- Fuse and Auto Reset Circuit Breaker Overload Protected
- Heavy Duty Grounded 3 Prong AC Power Cord
- Dimensions: 2⅝"H × 4¼"W × 7½"D
- Weight: 4 Lbs.

776-0004. PSR-4..**EACH 33.83**

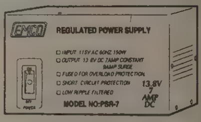
PS-4CL 12 Volt DC Power Supply



- Universal Binding Posts
- Fuse and Auto Reset Circuit Breaker Overload Protected
- Input: 117 V AC 60 Hz
- Output: 13.8 V DC 3 Amp Constant, 5 Amp Surge
- Filtered Output
- Cigarette Lighter Adapter Included
- 2¾"H × 4"W × 7½"D
- 3½ Lbs.

776-0003. PS-4CL..**EACH 25.21**

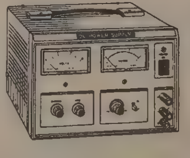
PSR-7 7 Amp and PSR-10 10 Amp Regulated DC Power Supplies



- Input: 117 V AC, 60 Hz
- Output: PSR-7 — 13.8 V DC 7 Amp Constant, 9 Amp Surge; PSR-10 — 13.8 VDC 10 Amp Constant, 12 Amp Surge
- Dim.: PSR-7 — 3¾"H × 6¼"W × 7⅝"D; PSR-10 — 4½"H × 6½"W × 7¾"D
- Regulated and Filtered
- Universal Binding Posts
- Fuse and Auto Reset Circuit Breaker Overload Protected
- Heavy Duty Grounded 3 Prong AC Power Cord
- Weight: PSR-7 — 6½ Lbs.; PSR-10 — 9¼ Lbs.
- Display Boxed

776-0015. PSR-7..**EACH 64.57**
776-0030. PSR-10..**EACH 84.96**

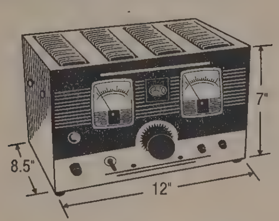
PSV-5 General Purpose Variable DC Power Supply



- Input: 117V/220V AC, 60 Hz
- Output: 0-30V DC, 0-5 Amp Regulated
- Dual Panel Meters, Volts and Amps
- Coarse and Fine Voltage Adjustment
- Hi-Lo Current Switch with Min.-Max. Control
- Dual Scale Amp Meter
- Low Ripple 0.5mV rms
- Single Output Heavy Duty Binding Posts for (+) (–) and Ground
- Overload and Short Circuit Protection
- Current Limiting 0-5 Amps
- Heavy Duty 3 Prong Power Cord
- 6¼"H × 8½"W × 10"D; 10 Lbs.

776-0050. PSV-5..**EACH 258.40**

General Purpose Unregulated Power Supplies



D612-T

- Input: 117 VAC, 60 Hz
- Two Continuously Variable DC Output Ranges: 0-16 VDC, 0-10 Amps; 0-8 VDC, 0-10 Amps
- Max. Ripple: .5%
- 5 Way Output Terminals
- Fused Protection
- Rack Mount Available
- 230 VAC Input Available
- Weight: 21 Lbs.

780-1000. D612-T ....EACH 269.50

EF

- Input: 117 VAC, 60 Hz
- Two Continuously Variable DC Output Ranges: 0-28 VDC, 0-5 Amps; 0-14 VDC, 0-5 Amps
- Max. Ripple: 1%
- 5 Way Output Terminals
- Fused Protection
- Rack Mount Available
- 230 VAC Input Available
- Weight: 21 Lbs.

780-2200. EF..EACH 353.50

EFB/EFBR

- Input: 117 VAC, 60 Hz
- Two Continuously Variable DC Output Ranges: 0-32 VDC, 0-4 Amps; 0-16 VDC, 0-8 Amps
- Max. Ripple: .1%
- 5 Way Output Terminals
- Fused Protection
- 230 VAC Input Available
- Weight: 26 Lbs.

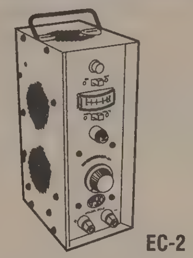
780-2300. EFB ....EACH 399.50
780Q6301. EFBR. Rack Mount Version.........EACH 463.50

Model H

- Input: 117 VAC, 60 Hz
- Eight Position Voltage Control Knob
- Two Variable Output Ranges: 0-12 VDC, 0-10 Amps; 0-6 VDC, 0-20 Amps
- Max. Ripple: 5%
- 5 Way Output Terminals
- Fused Overload Protection
- Rack Mount Available
- 230 VAC Input Available
- Weight: 30 Lbs.

780-6308. H ....EACH 299.50

Light Purpose Power Supplies



EC-2

EC-1

- Input: 117 VAC, 60 Hz
- Output: Three Position Voltage Control Knob
- 0-12 VDC, 0-5 Amps
- Max. Ripple: 5%
- 5 Way Output Terminals
- Fused Protection
- Rack Mount Available
- 230 VAC Input Available
- Weight: 11 Lbs.
- EC-1 Is in the Same Chassis as EC-2

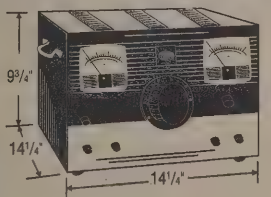
780-6309. EC-1..EACH 129.50

EC-2

- Input: 117 VAC, 60 Hz
- Output: Continuously Variable
- 0-16 VDC, 0-5 Amps
- Max. Ripple: 5%
- Fused Overload Protection
- 5 Way Output Terminals
- Rack Mount Available
- 230 VAC Input Available
- Digital Output Meter Available
- Weight: 11 Lbs.

780-2100. EC-2...EACH 199.50

Industrial Unregulated Power Supplies



NFB/NFBR

- Input: 117 VAC, 60 Hz
- Output: Continuously Variable, 0-32 VDC, 0-15 Amps
- Overload Protection: Primary Fuse, Instantaneous Trip Output Circuit Breaker
- Max. Ripple: .75%
- 5 Way Output Terminals
- 230 VAC Input Available
- Weight: 113 Lbs.

780Q5000. NFB...EACH 805.50
780Q6304. NFBR. Rack Mount Version ....EACH 930.84

GFL/GFLR

- Input: 117 VAC, 60 Hz
- Output: Continuously Variable, 0-125 VDC, 0-5 Amps
- Max. Ripple: .5%
- 5 Way Output Terminals
- Overload Protection: Primary and Secondary Fuses
- 230 VAC Input Available
- Weight: 88 Lbs.

780Q6302. GFL..EACH 861.50
780Q6303. GFLR. Rack Mount Version.........EACH 936.50

PS-5/PS-5R

- Input: 117 VAC, 60 Hz
- Output: Continuously Variable, 0-55 VDC, 0-10 Amps
- Max. Ripple: .5%
- 5 Way Output Terminals
- Overload Protection: Primary and Secondary Fuses
- 230 VAC Input Available
- Weight: 72 Lbs.

780Q2500. PS-5 ....EACH 766.50
780Q6305. PS-5R. Rack Mount Version.......EACH 826.50

PS-30

- Input: 117 VAC, 60 Hz
- Output: 8 Position Tap Switch, 0-12 VDC, 0-30 Amps
- Max. Ripple: 1%
- Overload Protection
- Rack Mount Available
- 230 VAC Input Available
- Weight: 68 Lbs.

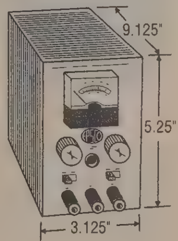
780-6200. PS-30..EACH 652.50

PS-50

- Input: 117 VAC, 60 Hz
- Output: 8 Position Tap Switch, 0-12 VDC, 0-50 Amps
- Max. Ripple: 1%
- Overload Protection
- Rack Mount Available
- 230 VAC Input Available
- Weight: 106 Lbs.

780-6311. PS-50..EACH 815.50

Regulated Power Supplies



PSR-12-25

- Load Regulated
- Output Controls Include Adjustments for Course and Fine
- Input: 117 VAC, 60 Hz
- Line Regulation: .01% ±2 mV
- Max: 100 µV
- Output: 0-25 VAC, 0-500 mA
- Fused Overload Protection
- 230 VAC Input Available
- Weight: 7 Lbs.

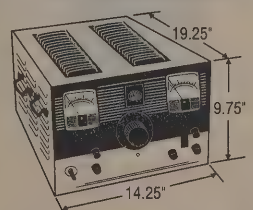
780-6300. PSR-12-25 ....EACH 282.50

PSR-12-50

- Load Regulated
- Output Controls Include Adjustments for Course and Fine
- Input: 117 VAC, 60 Hz
- Line Regulation: .01% ±2 mV
- Max: 100 µV
- Output: 0-50 VAC, 0-250 mA
- Fused Protection
- 230 VAC Input Available
- Weight: 7 Lbs.

780Q2400. PSR-12-50 ....EACH 282.50

Heavy Duty Power Supplies



PS-1000-32

- Input: 117 VAC, 60 Hz
- Output: Continuously Variable, 0-32 VDC, 0-30 Amps
- Max. Ripple: .75%
- 5 Way Output Terminals
- Overload Protection: Primary Fuse, Output Circuit Breaker
- Rack Mount Available
- 230 VAC Input Available
- Weight: 113 Lbs.

780Q2600. PS-1000-32.................................EACH 1147.50

PS-1000-55

- Input: 117 VAC, 60 Hz
- Output: Continuously Variable, 0-55 VDC, 0-20 Amps
- Max. Ripple: .5%
- 5 Way Output Terminals
- Overload Protection: Primary Fuse, Output Circuit Breaker
- Rack Mount Available
- 230 VAC Input Available
- Weight: 113 Lbs.

780Q6306. PS-1000-55................................EACH 1168.50

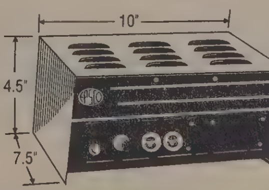
PS-1000-125

- Input: 117 VAC, 60 Hz
- Output: Continuously Variable, 0-125 VDC, 0-8 Amps
- Max. Ripple: 1%
- 5 Way Output Terminals
- Overload Protection: Primary Fuse, Output Circuit Breaker
- Rack Mount Available
- 230 VAC Input Available
- Weight: 113 Lbs.

780Q6307. PS-1000-125..............................EACH 1335.50

Inverter

TI-250B



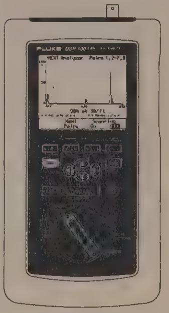
- 250 W Transistorized Inverter
- Input: 12 VDC
- Output: Nominal 117 VAC
- Circuit Protection: Auto Reset Circuit Breaker
- Weight: 13 Lbs.

780-6312. TI-250B...EACH 229.50

DSP-100 Cable Meter

— NEW —

The First Digital Cat 5 Tester with Unique Diagnostic Capabilities



Certify your category 5 UTP cabling installation with confidence. The Fluke DSP-100 is a rugged, handheld field tester that uses a revolutionary digital technology to give you a powerful combination of capabilities. Designed to meet the most stringent TIA Accuracy Level II specifications for all link types (Basic Link and Channel). This performance has been independently verified. Only Fluke's patented Time Domain Crosstalk (TDX™) Analyzer instantly pinpoints NEXT faults due to bad connectors, poor workmanship, or improper cable. The DSP-100 tests a 4-pair UTP cable from both ends in less than 17 seconds — faster and more completely than any other tester.

The Fluke DSP-100 uses a truly revolutionary test technique. To measure the critical parameter of Near-End Crosstalk (NEXT) between two pairs, the DSP-100 sends a pulse — a pulse that very closely resembles the signals transmitted on 100 Mbps local area networks — into one pair and captures the signal induced by this pulse on the other pairs. The captured signal is analyzed using the Digital Signal Processing algorithms to provide a very accurate picture of NEXT in both the frequency domain as well as the time domain. And since one pulse replaces hundreds of test frequencies, the DSP-100 is extremely fast without compromising accuracy!

Specifications. DC Loop Resistance: Verifies good ohmic connections. **Range:** 0 to 400 Ω. **Accuracy:** ±(0.5 Ω + 1% of reading). **Resolution:** 0.1 Ω. **Attenuation. Frequency Range:** 100 kHz to 105 MHz in 100 kHz steps size (range of test is determined by network and cable type). **Measurement Accuracy (Calculated Per TSB-67):** Better than ±1 dB over a range of 0 dB to 25 dB from 1 MHz to 100 MHz; Typically better than ±0.3 dB at 30 dB of attenuation from 1 MHz to 100 MHz. **Near End Crosstalk (NEXT). Frequency Range:** 100 kHz to 105 MHz in 100 kHz step size (range of test is determined by network and cable type). **Resolution:** 0.1 dB. **Range:** 0 to 30 dB. **Accuracy:** ±3 dB over the following ranges as defined by ISO Class D — 0 to 18 dB from 1 to 10 MHz, 0 to 15 dB from 10.1 to 20 MHz, 0 to 10 dB from 20.1 to 100 MHz. **Case:** High impact plastic with shock absorbing "Fluke Yellow" overmold. **Dimensions:** 9¼"L × 5" W × 3"D. **Weight:** 3 lbs., 1 oz. **Display:** Graphic LCD, 240 × 200 bit mapped, with back light. **Test Connections:** Shielded 8-pin modular connector (RJ45) and BNC. **Input Protection:** Protected against continuous telco voltages and 100 mA overcurrent. **Characteristic Impedance. Range:** Twisted pair cable — 70-180 Ω; Coax — 35-100 Ω. **Accuracy:** ±(5 Ω +5% Nom.-Measured.); ±(5 Ω +5% Nom.-Measured.). The accuracy of impedance measurements decreases as the difference between the expected value (nominal) and the measured value increases. **Length.** Link length and/or distance to a fault detected by Time Domain Reflectometry (TDR) pulse. The DSP-100 has a zero "dead zone". **Resolution:** Twisted pair cable — 0.1 m (1 ft.); Coax — 0.1 m (1 ft.). **Range:** Twisted pair cable — 0 to 100 m (328 ft.); Coax — 0 to 100 m (328 ft.). **Accuracy:** Twisted pair cable — ±(0.3 m (1 ft.) +2% of reading); Coax — ±(0.3 m (1 ft.) +2% of reading). **Range:** Twisted pair cable — 100 m to 760 m (2500 ft.); Coax — 100 to 1200 m (4000 ft.). **Accuracy:** Twisted pair cable — ±(0.3 m (1 ft.) +4% of reading); Coax — ±(0.3 m (1 ft.) +4% of reading). Accuracy specification excludes error in Nominal Velocity of Propagation (NVP). The DSP-100 offers the mode to "calibrate" the NVP of the cable under test.

730-0100. DSP-100. CableMeter	**EACH 3795.00**
730-0101. DSP-100/SR. CableMeter with Smart Remote	**EACH 4995.00**
730-0102. DSP-R. Standard Remote	**EACH 395.00**
730-0103. DSP-SR. Smart Remote	**EACH 2495.00**
730-0104. BP 7217. Spare Battery Pack	**EACH 90.00**
730-0106. BC 7210. External Battery Charger	**EACH 100.00**
730-0706. N6580. UTP Cable Kit	**EACH 125.00**
730-0107. N6581. STP Cable Kit	**EACH 95.00**

652 LAN CableMeter

The 652 is the most comprehensive LAN cable testing, verification and certification tool on the market today. Now, with a single instrument, installers can test Ethernet, Token Ring, and ARCnet cabling in every nook and cranny of a network. Nothing stops the 652 because it uses traditional AA batteries. So you never have to wait for recharging.

The 652 is the only CableMeter designed to meet all the challenges of an installer's full day of work.

It provides a complete suite of tests; from wire mapping to noise and traffic measurements; from Near-End Crosstalk (NEXT) to identifying split pairs. It also offers full cable verification, certification, and documentation features. Results are compared to IEEE-802 and EIA/TIA 568 Commercial Building Telecommunications Wiring Standards and may be printed out for future reference. There's even an O'SCOPE mode that lets you view TDR pulses and reflections on an oscilloscope such as a Fluke ScopeMeter, for detailed analysis of cables having multiple faults.

Specifications. Cable Types. Unshielded Twisted Pair (UTP) — 10BaseT Level 3, 4, 5; and IBM Type 3 Level 3, 4, 5; IBM Type 1; Coaxial — 10Base2, RG58, RG58 Foam, RG59, RG59 Foam, RG62, 10Base5. Also allows two custom cable types with selection of characteristic impedance, nominal velocity of propagation (NVP), and BNC or RJ-45 (Ethernet or Token-Ring wired) connectors. **Display.** 64 character, four line LCD with backlight. **Measurements.** Length, wire map, attenuation, near-end crosstalk (NEXT), characteristic and termination impedance, noise and Ethernet traffic. **Autotest.** Automatically sequences through a series of cable measurements, compares results to both the IEEE-802 specifications and EIA/TIA 568 specifications, displays a Pass/Fail message along with audible tone and summarizes key cable parameters. Up to 400 autotest measurements can be saved in non-volatile memory and printed via the serial printer port. **Wire Map.** Detects correct and faulty pair wiring in cables with RJ-45 connectors. Indicates the following faults: opens, shorts, reversed paris, and crossed pairs. **Length.** A built-in TDR is used to make the measurement. **Range:** 6 m to 600 m (20 ft. to 2000 ft.) for UTP Cable; 6 m to 1200 m (20 ft. to 4000 ft.) for Coaxial Cable. **Accuracy:** ±1% + 0.6 m (2 ft.). **Resolution:** 1 m or 1 ft. **Display Units:** Meters or feet.

730-0652. Model 652	**EACH 2395.00**

650 LAN CableMeter

Have you been looking for a better way to troubleshoot LAN cable? The grab Fluke's compact, new 650 CableMeter. This easy-to-use handheld tool takes you directly to the source of network cabling problems so you can pinpoint and repair problems fast. In seconds, you can perform a simple pass/fail test to verify cable performance, or identify a particular cable as the culprit. The high-performance 650 is indispensable for anyone responsible for cable installation or on-going maintenance of a network. It tests standard or custom unshielded twisted pair (UTP) and coaxial wiring in both Ethernet and 4 Mbps Token-Ring LANs. Fluke's 650 CableMeter is as easy to learn as it is to use. All functions are selected with a rotary knob on the clean, simple face. With a twist of the knob you can test for faults, with another twist you can do wire mapping. You can also monitor Ethernet traffic and noise over time to locate intermittent problems. Don't let the 650's size and uncomplicated design fool you. This is one powerful instrument. It provides very specific diagnostic information, together with detailed cable performance analysis and certification of standard or custom cable types. It also features a replaceable battery so recharging doesn't keep you waiting. Feature for feature, you won't find a better way to locate network cabling problems than with Fluke's new 650 CableMeter.

Specifications. Measurements. Length, wire map, attenuation, near-end crosstalk (NEXT), characteristic and termination impedance, noise and Ethernet traffic. **Autotest.** Automatically sequences through a series of cable measurements, compares results to industry cable standards, displays a Pass/Fail message along with audible tone and summarizes key cable parameters. Up to 50 autotest measurements can be saved in non-volatile memory and printed via the serial printer port. **UTP Measurements:** Wire map, length, background noise, near-end crosstalk, attenuation, characteristic impedance and impedance anomalies. **Coaxial Measurements:** Length; background noise, characteristic impedance, termination resistance and impedance anomalies. **Length.** A built-in TDR is used to make this measurement. **Range:** 20 ft. to 2000 ft. or 6 m to 600 m for UTP Cable; 20 ft. to 4000 ft. or 6 m to 1200 m for Coaxial Cable. **Accuracy:** ±1% + 0.6 m (2 ft.). **Resolution:** 1 m or 1 ft. **Display Units:** Meters or feet. **Wire Map.** Detects correct and faulty pair wiring in Ethernet or Token-Ring cables with RJ-45 connectors. Indicates the following faults: opens, shorts, reversed pairs, and crossed pairs. **Near-End Crosstalk (NEXT).** Measures crosstalk between cable pairs in unshielded twisted pair cables. Near-end crosstalk of less than 20 dB is used to warn user of a possible split pair. **Range:** 0 dB to 40 dB, 5 MHz to 10 MHz in 100 kHz steps. **Accuracy:** ±2 dB. **Attenuation.** Measures attenuation of unshielded twisted pair cables. **Range:** 0 dB to 40 dB, 5 MHz to 10 MHz in 100 kHz steps. **Accuracy:** ±2 dB.

730-0650. Model 650	**EACH 1795.00**

Fluke 620 CableMeter

- **One Person Verifies Each Connection As He Goes**
- **Versatility to Test All LAN Cable Types**
  - **UTP, STP, FTP¹, Coax**
  - **Test Two, Three, or Four Wire Pairs in Twisted Pair Cables**
- **Detect Wiring Problems: Open, Short, Crossed-, Reversed-, Split Pair**
- **Locate Wiring/Connection Errors (Distance to the Open or Short)**
- **Measure Cable Length**
- **Ease-of-Use: Single Rotary Knob to Select the Test**
- **Portable, Long Battery Life (50 Hours)**
- **Best Price-Performance Ratio**

Included with the 620 CableMeter
- **A Carrying Case**
- **One UTP Category 5 Patch Cable, RJ45-RJ45 Straight Through, 4 Ft. in Length (EIA/TIA 4 Pair Cat 5)**
- **One RJ45F-RJ45F In-Line Coupler (Barrel Connector)**
- **One Cable Identifier for the Verification of the Wire Map and the Cable Routing (Cable Identifier #1)**
- **A Quick Reference Card (Explains Display Symbols and Menu Selections)**
- **An Operator Manual**
- **A Warranty Card (Registration Card)**

Physical Characteristics. Dimensions: 7.25" × 3.875" × 1.8" (18.4 cm × 9.8 cm × 4.6 cm). **Weight:** 12.5 oz. (354 g). **Batteries:** 1.5 V alkaline size AA.

730-0620. Model 620	**EACH 795.00**
730-0625. N6201	**EACH 90.00**
730-0630. N6202	**EACH 120.00**

610 LAN CableMapper

- **The One-Button Answer to Wire Mapping**
- **610 CableMapper, Determines UTP Termination Faults Per LAN Cabling Standard EIA/TIA 568 for Ethernet and Token Ring LANs**
- **Measures Near-End Crosstalk (NEXT) for Split Pair Identification**
- **Lightweight, Handheld Design for Portability**
- **Fault Codes and Cable Identifier Number Indicated Directly on Front Panel**
- **Bright LEDs Signify Pass (Green) or Fail (Red) for Each Pair**
- **Handy Carrying Case Organizes 610, Cable Identifiers and Manual**
- **Protective Holster**

The Fluke 610 LAN CableMapper is a low cost solution to LAN cable testing. It will find the most common problems such as opens, shorts, reverses, crossed pairs, and split pairs. The Cable Identifiers have a unique ID number which is displayed on the 610. This enables the 610 to distinguish one cable run from another. The 610 comes with Cable Identifier number 1. Optional Cable Identifiers are numbered 2-8 allowing the user to easily test and identify multiple cables.

Specifications. Cable Length: 0 to 122 m (0 to 400 ft.). Identifies opens, shorts, reversed pairs or crossed pairs, and other miswires. Split pair detection. Pairs are checked at 10 MHz and reported if Crosstalk exceeds 21 db ±3 dB. **Input Connector:** RJ-45. **Input Protection:** Inputs withstand telco ringing and loop voltages. Display alarms on overvoltage faults.

730-0610. Model 610	**EACH 395.00**
730-6101. N6101 (Numbered 2-4)	**EACH 125.00**
730-6102. N6102 (Numbered 5-8)	**EACH 165.00**

Accessories Compatibility Guide

Temperature Accessories

Stock No.	Mfr.'s Type	Description	Handheld Digital Multimeters													Bench/Portable/System Digital Multimeters and Graphical™ Multimeters (GMMs 863, 865 and 867)			
			10/11/12/12B	21	23	25/27	29/79	70	73	75	76	77	83/85	87	8060A/ 8062A	45	863	865	867
730-0089	80T-IR	Infrared Temperature Probe	1	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼
730-8079	80TK	Thermocouple Module	1	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼
730-8015	80T-150U	Universal Temperature Probe	1	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼

Test Leads

730-0200	TL20	Test Lead Set	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼
730-9022	TL22	Flexible Test Leads	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼
730-9024	TL24	Flexible Test Leads — Straight	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼
730-9026	TL26	5-Way Multipoint Test Lead Set	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼
730-9028	TL28	2-Way Clip Test Lead Set	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼
730-9030	TL70A	Right-Angle Test Lead Set	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	●	●	●	●	●
730-0701	TL75	Hard Point Test Lead Set™	●	●	●	●	●	●	●	●	●	●	●	●	—	—	—	—	—
730-8131	Y8132	Test Lead Set	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼
730-8134	Y8134	Test Lead Kit	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼
730-8140	Y8140A	Test Lead Set	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼

Current/Power Accessories

730-8100	Y8100	AC/DC Current Probe	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼
730-8400	80i-400	AC Current Probe	—	▼	▼	▼	3	—	—	▼	3	▼	▼	▼	▼	▼	▼	▼	▼
730-8410	80i-410	AC/DC Current Probe	2	2	2	▼	▼	2	2	2	2	2	▼	2	4	5	5	5	5
730-8600	80i-600A	AC Current Probe	—	▼	▼	▼	3	—	—	▼	3	▼	▼	▼	▼	▼	▼	▼	▼
730-1010	80i-1010	AC/DC Current Probe	2	2	2	▼	▼	2	2	2	2	2	▼	2	4	5	5	5	5
730-0810	80J-10	Current Shunt	▼	—	—	—	—	▼	—	—	—	—	—	—	▼	—	—	—	—

Specialty Accessories

730-8115	A81	Battery Eliminator	—	—	—	—	—	—	—	—	—	—	—	—	▼	—	—	—	—
730-8016	80K-6	High Voltage Probe	6	7	7	▼	▼	7	7	7	▼	7	▼	▼	▼	8	8	8	8
730-8040	80K-40	High Voltage Probe	6	7	7	▼	▼	7	7	7	▼	7	▼	▼	▼	8	8	8	8
730-0085	85RF	High Frequency Probe	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼
739-0350	PV350	Pressure Vacuum Module	9	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼

Cases and Holsters

739-0103	C10	Holster	▼	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
739-0104	C12A	Soft Case	▼	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
730-0040	C17Y	DuraCase™	10	▼	▼	—	▼	▼	▼	▼	▼	▼	—	—	—	—	—	—	—
730-0020	C20	Hard Case	—	—	—	▼	—	—	—	—	—	—	▼	▼	—	—	—	—	—
730-2500	C25	Soft Case	—	11	11	▼	11	11	11	11	11	11	▼	▼	11	—	—	—	—
730-0041	C28Y	DuraCase™	—	—	—	▼	—	—	—	—	—	—	▼	▼	—	—	—	—	—
739-0042	C40	Soft Case	—	—	—	—	—	—	—	—	—	—	—	—	—	▼	—	—	—
730-0050	C50	Compact Soft Case	—	▼	▼	—	▼	▼	▼	▼	▼	▼	—	—	—	—	—	—	—
730-2000	C70G	Holster Grey	—	▼	▼	—	▼	▼	▼	▼	▼	▼	—	—	—	—	—	—	—
730-7000	C70Y	Holster Yellow	—	▼	●	—	●	▼	▼	▼	●	●	—	—	—	—	—	—	—
730-0081	C81G	Holster Grey	—	—	—	—	—	—	—	—	—	—	▼	▼	—	—	—	—	—
730-0082	C81Y	Holster Yellow	—	—	—	—	—	—	—	—	—	—	●	●	—	—	—	—	—
730-0090	C90	Soft Case	—	▼	▼	—	▼	▼	▼	▼	—	▼	—	—	▼	—	—	—	—
730-1000	C100	Ruggedized Hard Case	—	▼	▼	▼	▼	▼	▼	▼	—	▼	▼	▼	▼	—	—	—	—
730-0080	C800	Hard Storage Case	—	11	11	—	11	11	11	11	—	11	▼	▼	11	—	—	—	—
730-0789	C789	Soft Case	—	—	—	—	—	—	—	—	—	—	—	—	—	—	▼	▼	▼

▼=Compatible and recommended.
●=Compatible and recommended — included with DMM.
1=10 Series DMMs will show one degree resolution, Degree C or Degree F.
2=1 A resolution AC or DC with Series 10; 1 A resolution AC with 21, 23, 70, 73, 75, 77; 20 A minimum AC specified accuracy with 76 and 87.
3=1 A resolution above 40 A.
4=10 A minimum AC specified accuracy.
5=15 A minimum specified accuracy with 45; minimum specified accuracy is 30 A for the true-rms AC current measurements with 863, 865 and 867.
6=80K-6, 80K-40 notes — 1 V resolution DC only with Series 10.
7=1 V AC resolution with 21, 23, 70, 73, 75, and 77.
8=DC only.
9=PV350 notes — 1 psig/ in Hg resolution.
10=The C17Y DuraCase™ will hold a Series 10 meter in a C10 Holster.
11=Fit will be loose.

80i-110s AC/DC Current Probe

The 80i-110s accurately reproduces current waveforms as they occur. Connect the clamp to a Fluke ScopeMeter® Test Tool or other waveform recording device like a Fluke CombiScope™ or Power Harmonics Analyzer, to clearly see distorted waveforms that result from non-linear loads such as computers, adjustable speed motor drive, and electronic ballasts for fluorescent lighting.

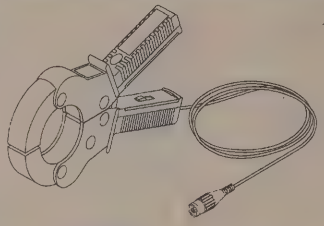
Electrical Specifications. Current Ranges: 0 to 10 A DC or AC Peak; 0 to 100 A DC or AC Peak. **Output Signals:** 10 A Range — 100 mV/A; 100 A Range — 10 mV/A. **Working Voltage (Clamp Jaws To Ground):** 600 V AC RMS On Installation Category II per IEC 1010-1 Circuits; 300 V AC RMS On Installation Category III per IEC 1010-1 Circuits. **Floating Voltage (Output Cable and Connector To Ground):** 600 V AC RMS On Installation Category II per IEC 1010 1 Circuits; 300 V AC RMS On Installation Category III per IEC 1010-1 Circuits.

Basic Accuracy (DC to 1 kHz)

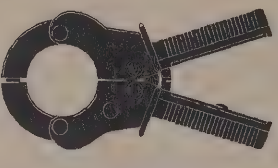
Input Current DC Or AC Peak	Error (After Zero Check)	
	100 mV/A	10 mV/A
50 mA to 10 A	<3% of reading +50 mA	—
50 mA to 40 A	—	<4% of reading +50 mA
40 to 80 A	—	<12% of reading +50 mA
80 to 100 A	—	<15% of reading

730-0110. Model 80i-110s .... **EACH 395.00**

80i-500s and 80i-1000s Clamp-On AC Current Probes



80i-500S



80i-1000S

Precision Designed to Increase AC Current Accuracy in Oscilloscopes and Power Meters

- **AC Current Ranges: 80i-500s — 1 to 500 A AC RMS; 80i-1000s — 100 mA to 1000 A RMS Continuous**
- **Best Accuracy 2% Of Reading**
- **Usable Frequency Range (With Current Derating): 80i-500s — 5 Hz to 10 kHz; 80i-1000s — 5 Hz to 100 kHz**
- **Built-In Low Pass Filter (Eliminates High Frequency Noise)**
- **Minimal Amplitude And Phase Distortion**
- **Built-In Safety Features: 600 V RMS Rating At Input Jaws Output Cable and BNC Connector**

Specifications

Function	80i-500s	80i-1000s
AC Current Ranges	1 A to 500 A AC RMS (to 700 A RMS for max. of 10 minutes)	0.1 A to 1000 A, continuous (2000 A instantaneous peak)
Accuracy	100 A to 500 A, ±2% of reading; 20 A to 100 A, ±5% of reading; 1 A to 20 A, ±(5% of reading +0.3 A)	0.5 A to 1000 A, 2% of reading; 0.1 A to 10 A; 3% of reading ±100 mA
Usable Frequency Range (With Current Derating)	5 Hz to 10 kHz	5 Hz to 100 kHz
Working Voltage	600 V AC RMS clamp jaws to ground	600 V AC RMS clamp jaws to ground
Common Mode Voltage	600 V AC RMS at output cable and connector to ground	600 V DC or AC RMS at output cable and connector to ground
Maximum Conductor Diameter	1.18" (30 mm) (2 × 500 MCM THHN)	2.13" (54 mm) (2 × 500 MCM THHN)
Output Cable	63" (1.6 m) BNC termination; Cable and BNC rated to 600 V AC RMS for enhanced safety	63" (1.6 m) BNC termination; Cable and BNC rated to 600 V AC RMS for enhanced safety

Accurate current measurements are critical to resolving power quality problems in commercial and industrial power distribution systems. Fluke now offers two clamp-on AC current probes that boost the performance of any oscilloscope or voltage input device capable of millivolt measurements. When connected to an oscilloscope or other waveform recording tool, the 80i-1000s and new 80i-500s eliminate distortion and accurately reproduce current waveforms as they occur. Clearly see distorted waveforms that result from non-linear loads. Other current clamps, not designed for oscilloscopes, may add their own distortion over and above the actual distortion present in your power distribution system.

730-0500. Model 80i-500s .... **EACH 170.00**
730-0078. Model 80i-1000s .... **EACH 395.00**

ScopeMeter® "B"

— NEW —

All Models

- **Number of Channels: 2**
- **Continuous Autoset**
- **Video Triggering, NTSC, PAL, SECAM and Hi Resolution Video (Line and Field Selectable**
- **Glitch Capture Down to 40 ns**
- **Volts/Division: 1 mV/div. to 100 V/div.**
- **Pre and Post Trigger: –20 to +640 div.**
- **Trigger Delay (Cycles, Events, Time and Zoom)**
- **Envelope Mode (Min./Max.)**
- **Gray Scale Waveform Display**
- **Measure Amps with Optional Current Clamps**
- **5 MHz DMM Measurement and Full Waveform**
- **Min. Max. TrendPlot™ with New Time and Date Stamp**
- **Autoranging**
- **Advanced Measurements: Temp., Current, RPM, % Duty, Pulse Width, dB, Hz, % Scale, Amps, Watts, and More**
- **True RMS Volts**
- **Diode Test (Up to 2.8 V)**
- **Continuity Beeper**
- **High-Contrast, Backlit Display**
- **Screen Image Transfers to a PC**
- **On Line Help (Information)**
- **4 Hour NiCad Battery and Charger**
- **Optically Isolated RS-232 Interface for Printer and PC**

Fluke 92B

- **Bandwidth: 60 MHz**
- **Maximum Repetitive Sample Rate: 2.5 GS/s**
- **Maximum Time Resolution: 400 ps**
- **Time Division: 10 ns/div. to 60 sec./div**
- **28 Automatic Setup Measurements**

Fluke 96B

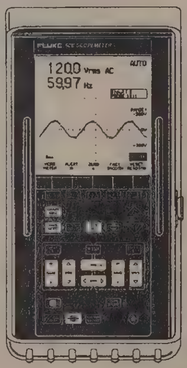
- **Bandwidth: 60 MHz**
- **Maximum Repetitive Sample Rate: 2.5 GS/s**
- **Maximum Time Resolution: 400 ps**
- **Time Division: 10 ns/div. to 60 sec./div**
- **5 Screen Memory**
- **10 Waveform Memory**
- **20 Set-Up Memory**
- **40 Automatic Setup Measurements**
- **Waveform and Screen Image Transfers to a PC and Remote Operation**

Fluke 99B

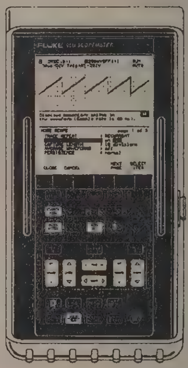
- **Bandwidth: 100 MHz**
- **Maximum Repetitive Sample Rate: 5 GS/s**
- **Maximum Time Resolution: 200 ps**
- **Time Division: 5 ns/div. to 60 sec./div**
- **10 Screen Memory**
- **20 Waveform Memory**
- **40 Set-Up Memory**
- **40 Automatic Setup Measurements**
- **Waveform and Screen Image Transfers to a PC and Remote Operation**

Fluke 105B

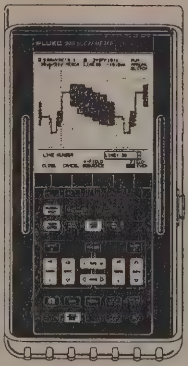
- **Bandwidth: 100 MHz**
- **Maximum Repetitive Sample Rate: 5 GS/s**
- **Maximum Time Resolution: 200 ps**
- **Time Division: 5 ns/div. to 60 sec./div**
- **10 Screen Memory**
- **20 Waveform Memory**
- **40 Set-Up Memory**
- **40 Automatic Setup Measurements**
- **Waveform and Screen Image Transfers to a PC and Remote Operation**
- **PC Software (DOS and Windows) and PM9080 Cable**
- **Hard Carrying Case**



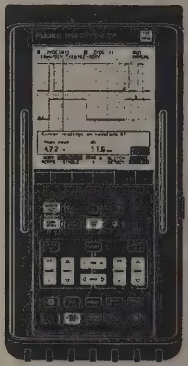
92B



96B



99B



105B

The ScopeMeter® B test tool is the best handheld scope for rugged on-the-go applications. You can count on its 100 MHz and 5 GS/s sampling rate that insures excellent signal fidelity on repetitive signals. The new B version offers a 10X brighter display with an unequaled 4 hour battery life. The ScopeMeter® B test tool adds full video triggering for NTSC, PAL, SECAM, PAP/M and Non Interlaced standards. With the built-in line and frame selector and trigger delay you can now see it all. ScopeRecord™ is a new feature providing 30 K deep memory for extended waveform recording, and a time of day (real time) clock to pinpoint events. Characterize complete events like long machine cycles or complex pulse train activity. TrendPlot™ meter logging now has a time of day and date stamp. This versatile electronic chart recorder now helps to better identify measurement peaks and valleys for up to 40 days.

The ScopeMeter test tool at its best. Simultaneously take meter and scope readings with a single probe. Measures AC, AC+DC (to 5 MHz) and DC voltages in eight ranges to 600 Vrms (1700 V peak to peak). Measure resistance to 30 MΩ in seven ranges. With optional accessories measure current and temperature; TrendPlot™ to record intermittents and changes.

With the Measure Menu, one button access lets you select a set-up from 40 commonly-used measurements. Simply select a measurement and the automatic set-up does the rest. Continuous Autoset assures a stable, usable measurement on virtually any signal. It permits signal probing of a sequence of test points without touching the controls.

730-6020. Model 92B .... **EACH 1495.00**
730-6021. Model 96B .... **EACH 1795.00**

When you take the ScopeMeter® B from the box there is nothing extra to buy to get going. The scope and meter probe accessories you need, the battery charger and battery are in there too. The Fluke-105B includes FlukeView software, an interface cable and a carrying case. Store and recall up to 40 set-ups for quick configuration. Store and recall 20 waveforms for quick, accurate signal comparison. Store and recall 10 screens for a quick snapshot of exactly how that signal looked. All 70 storage locations can be loaded to a PC with the PM9080 interface cable and FlukeView software.

The ScopeMeter test tools are famous for versatility and the B version is no exception. Amps, Watts, Power, Temperature, RPM, % Duty Cycle, Phase and Pulse Width are just a few of the scaled measurements available.

Add PC power to the ScopeMeter test tool with FlukeView™. FlukeView™ ScopeMeter software runs on a PC and communicates with the ScopeMeter via the optional RS-232 serial interface. Versions for DOS and Windows, supports all models (screen capture only for the model 92B). Print out complete screens directly or store graphical data for use in word processors or for spreadsheets. Create a library of waveforms for reference and comparison. Suited for making floating measurements on 600 Vrms industrial power lines. EN61010-1 CAT III compliant and UL listed for 600 V Cat. III measurement. **Size:** 65 × 140 × 275 mm (2.5 × 5.5 × 10.8 inches). **Weight:** 1.5 kg (3.3 lbs.). 3 year warranty.

730-6022. Model 99B .... **EACH 2195.00**
730-6023. Model 105B .... **EACH 2595.00**

80 Series Analog/Digital Multimeters

Model 83

Model 85

Model 87

High Performance Meters with 11 Functions and 40 Ranges for a Wide Variety of Electronic and Industrial Applications

- ► **MIN MAX AVERAGE Recording Mode with Min Max Alert™**
- ► **Frequency, Duty Cycle and Capacitance Measurements**
- ► **1000 V Input Protection; Input Alert™ Detects Wrong Input Jack Connections**
- ► **3³/₄ Digit, 4000 Count Display Updates 4 Times Per Second, Analog Display Updates 40 Times Per Second**
- ► **4¹/₂ Digit Mode, 1 ms Peak Hold, Back Lit Display and True RMS Measurements (87 Only)**
- ► **Touch Hold® and Relative Modes**
- ► **Splash Proof and Dust Proof Case; EMI Shielded**
- ► **Protective Holster with Flex-Stand™**
- ► **Safety-Designed Test Lead Set**

The Fluke 80 Series (83, 85, and 87) is a family of versatile analog/digital multimeters with an impressive range of capabilities, including frequency, duty cycle and capacitance measurement. Designed for electronic as well as industrial applications, the 80 Series features durable construction and several unique safety features.

MIN MAX AVERAGE Recording Mode With Min Max Alert™
Stores the highest, lowest, and average of all readings, allowing you to monitor a signal for seconds or days. Selectable response times allow you to specify the time required to sense changes. Min Max Alert gives an audible tone for readings above or below previous minimums or maximums.

Touch Hold® and Relative Modes
Touch Hold captures the measurement, beeps and locks it on the digital display until you're ready to view it. It automatically updates with each new measurement. The Relative Mode remembers a reading and shows the change (difference) between it and any readings that follow.

Frequency, Duty Cycle and Capacitance Measurements
Fluke 80 Series meters have a counter for frequency measurements from 0.5 Hz to 200 kHz, and duty cycle measurements from 0.1% to 99.9% of cycle. All three meters measure capacitance from 10 pF to 5 µF. Larger value capacitors may be measured using the analog display in the resistance mode.

Input Alert and Overload Protection
Input Alert™ provides an audible warning if the input jack connections are not correct for the measurement selected. This reduces the risk of damage to the equipment being tested and to the meter. Fluke 80 Series meters also provide 1,000 volt input protection in both ohms and diode test.

Fast 3³/₄-digit, 4000 Count Digital Display, High Resolution Analog Display
Digital display updates 4 times/second. For changing or unstable signals, the 87 features a high-resolution analog pointer; the 83 and 85 use an analog bargraph. The 83 and 85 also feature Zoom Mode for higher resolution analog readings. Analog displays update 40 times per second.

4¹/₂ Digit Mode, 1 ms Peak Hold, True RMS, Back-Lit Display (87 Only)
The Fluke 87 is a true-rms meter, and offers a 4¹/₂ digit, 19,999 count high resolution mode, plus 1 ms Peak Min Max hold. The back lit display assures readability in poorly lit settings. Light shuts off automatically after 68 seconds, prolonging battery life.

Specifications. Rugged, Sealed Construction. Splash proof and dust proof case and a specially designed protective holster protect the meter even under harsh operating conditions. All units are sealed and EMI shielded. **Standard Equipment.** Every meter comes packaged with a yellow protective holster complete with Flex-Stand™ safety-designed test leads, 9 V battery (installed), manual and operator guide. **Options/Accessories.** A dark grey holster with Flex-Stand™ is available. The full line of Fluke measurement accessories is compatible with the 80 Series. **Battery Life:** 500 hours typical (alkaline). **Three Year Warranty:** One year calibration interval. **Size:** 1.25"H × 3.41"W × 7.35"L (32 mmH × 87 mmW × 187 mmL). **Weight:** 12.5 oz. (0.36 kg).

Basic Accuracy (% of reading + number of digits)

	83	85	87
DV Voltage	0.3% + 1	0.1% + 1	0.1% + 1
AC Voltage	1.0% + 3	0.5% + 2	0.7% + 2
True RMS	No	No	Yes
Specified to	5 kHz	20 kHz	20 kHz
Ohms	0.4% + 1	0.2% + 1	0.2% + 1
DC Current	0.4% + 2	0.2% + 2	0.2% + 2
AC Current	1.2% + 2	0.6% + 2	1.0% + 2
Frequency	0.005% + 1	0.005% + 1	0.005% + 1
Capacitance	1.0% + 2	1.0% + 2	1.0% + 2

730-0830.	Model 83. Multimeter with holster	**EACH 265.00**
730-0850.	Model 85. Multimeter with holster	**EACH 305.00**
730-0870.	Model 87. Multimeter with holster	**EACH 335.00**
730-0081.	C81G. Optional grey holster	**EACH 16.80**
730-0082.	C81Y. Replacement yellow holster	**EACH 16.80**

4¹/₂ Digit Handheld DMMs

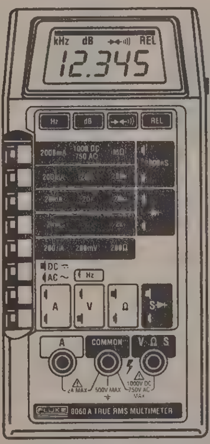
- ► **True-RMS AC Voltage and Current Measurement**
- ► **Audible/Visual Continuity Tests**
- ► **Relative Reference (Offset)**
- ► **Low-Power Ohms on all Resistance Ranges**
- ► **Constant-Current Diode Test Mode**
- ► **Measures Resistance to 300 M**
- ► **Model 8060A — Frequency and dB Measurements**
- ► **UL 1244 Listed**

Model 8060A. The 8060A 4¹/₂ digit handheld DMM offers more measurement capabilities than most bench or portable models. This microcomputer-based unit provides unique features never before available in a small low-cost DMM, features like: dB and Frequency. Accuracy measurement of the dB gain or loss of amplifiers, filters, or attenuators in a direct dB readout. Rel dB measurement when used with the relative function. Precision frequency measurement. **Relative Reference.** The microcomputer allows user to automatically subtract lead resistance when measuring ohms, and this displays only the difference between a stored reference value and a measured value — even if rate was changed between reading. Works in all functions and ranges. Ideal for use in dB and frequency measurements. **Automatic MΩ Range Selection.** Front panel offers one manually-selectable position above 200 KΩ. In that position, the appropriate range — 2 MΩ, 20 MΩ, or 300 MΩ — is automatically selected. **True-RMS AC.** Provides accurate true-RMS AC measurements on non-sinusoidal waveforms and sine waves. **Special Annunciators.** Annunciator symbols appear in the display to remind user which measurement function has been selected. These symbols indicate relative, continuity/diode, dB, and frequency functions as well as low battery and overload conditions. In addition to these features, the 8060A is designed with overload protection and a rugged case with safety-engineered components for excellent precision performance. **Basic DC Accuracy:** 0.04% rdg + 2 digit. **Dimensions:** 1.8 × 3.4 × 7.1" (45 × 86 × 180 mm). **Weight:** 0.90 lbs. (0.41 kg). Comes with Y8132 test leads, 9 V battery, spare fuse, and operator's manual. One year warranty with guaranteed calibration.

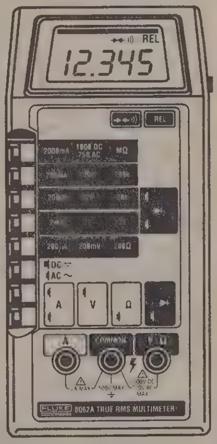
730-8060.	Model 8060A	**EACH 459.00**

Model 8062A. The 8062A 4¹/₂ digit handheld DMM offers more measurement capabilities than most bench or portable models. This microcomputer-based unit provides unique features never before available in a small low-cost DMM, features like: Relative Reference. The microcomputer allows user to automatically subtract lead resistance when measuring ohms and then displays only the difference between a stored reference value and a measured value — even if rate was changed between reading. Works in all functions and ranges. Ideal for use in dB and frequency measurements. **Automatic MΩ Range Selection.** Front panel offers one manually-selectable position above 200 k. In that position, the appropriate range — 2 MΩ, 20 MΩ, or 300 MΩ — is automatically selected. **True-RMS AC.** Provides accurate true-RMS AC measurements on non-sinusoidal waveforms and sine waves. **Special Annunciators.** Annunciator symbols appear in the display to remind user which measurement function has been selected. These symbols indicate relative and continuity/diode functions, as well as low battery and overload conditions. In addition to these features, the 8062A is designed with overload protection and a rugged case with safety-engineered components for excellent precision performance. **Basic DC Accuracy:** 0.05% rdg + 2 digits. **Dimensions:** 1.8 × 3.4 × 7.1" (45 × 86 × 180 mm). **Weight:** 0.90 lbs (0.41 kg). Comes with Y8132 test leads, 9V battery, spare fuse and operator's manual. 1-yr. warranty and guaranteed calibration.

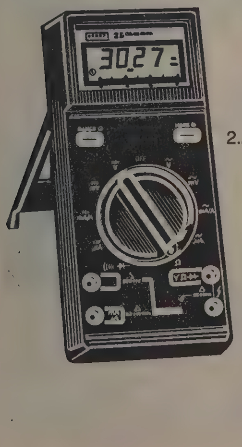
730-8062.	Model 8062A	**EACH 389.00**



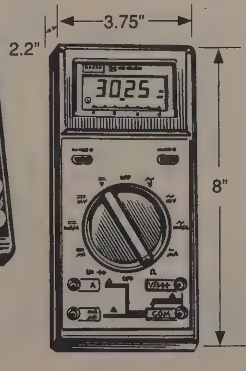
Model 8060A



Model 8062A



LISTED
UL
1244
MSHA
APPROVAL
2G-3665-0
PERMISSIBLE
MULTIMETER



25/27 Analog/Digital Multimeters

- ► **Survives 6 kV Transients on 660V Major AC Feeders**
- ► **High Performance**
- ► **Superior Shielding Against EMI**
- ► **Operates from–15° to +55°C, 95% Relative Humidity**
- ► **UL 1244 Listed**

The Fluke 25 and 27 3¹/₂ digit handheld multimeters combine precision digital and analog measurement capabilities with ruggedness and durability. O-ring sealed case withstands water, contaminants, and chemicals under the harshest conditions. A separate sealed battery/fuse door allows access without interrupting the primary case seal. **Other Features Include:** 3200-Count Digital Display: Better accuracy and resolution than a conventional 3¹/₂ digit DMM. The high contrast LCD with wide viewing angle updates twice every second. **31-Segment Analog Bar Graph:** Makes measurements such as peaking, nulling, zero adjustments, and capacitor checking. Updates ten times faster than digital readout. Touch Hold™. Allows automatic measurements while watching probes and circuit. Meter captures the measurement, beeps, and locks it in display until user is ready to view it. Will automatically update each new measurement. **Min-Max and Resistive Modes (Model 27 only):** Min-Max stores the highest and lowest digital readings to allow user to monitor a signal for a few seconds or days. Relative remembers a reading and displays the difference between it and any following readings. **Autoranging:** instantly selects the proper range. Optional manual ranging included. **Audible Continuity/Diode Test:** Quickly check wiring, diode, and transistor without looking at display. Low frequency (1500Hz) beeper. **Safety-Designed:** Overload protection, high-energy fuses, fused 10 A range, non-metallic case and bail. All voltage inputs meet the power line surge tests for major feeders as defined in IEEE-587-1980, Category B. Offered in a choice of dark charcoal grey or safety yellow. Operates on a standard 9 V battery which yields a life of over 1000 hours. Meets military stock, vibration, and water-resistance requirements. Each meter includes a pair of safety-designed TL70 right-angle test leads, 2 insulated alligator clips, spare fuse, 9 V battery, and operator's manual. **Optional Accessories.** Type C20 heavy-duty hard plastic case features a carrying handle, operating guide decal, and test lead storage. Type C25 padded soft case has 2 storage pockets and a water-resistant zipper. **Specifications. Basic Accuracy (% of reading + number of digits):** DCV — 0.1% + 1; ACV — 0.5% + 3; OHMs — 0.2% + 1; DC Current — 0.75% + 2%; AC Current — 1.5% + 2. **AC/DC Volt:** 100 µV to 1000 V. **AC Response:** 30 kHz. **AC/DC Current:** 0.1 µA. **Resistance:** 0.1 to 32 M; up to 10,000 M with conductance. **Dimensions:** 2 × 3.75 × 8" (56 × 95 × 203 mm). **Weight:** 1.6 lbs. (0.75 kg). Two-year warranty; one-year calibration.

730-0025.	Fluke 25. Multimeter (Charcoal Grey)	**EACH 235.00**
730-0024.	Fluke 25. Multimeter (Safety Yellow)	**EACH 235.00**
730-0027.	Fluke 27. Multimeter (Charcoal Grey)	**EACH 299.00**
730-0026.	Fluke 27. Multimeter (Safety Yellow)	**EACH 299.00**
730-0020.	C 20. Hard Case	**EACH 30.00**
730-2500.	C 25. Ruggedized Soft Case	**EACH 21.00**

Model 12B Multimeter

— NEW —

Listed

Economical, Easy-To-Use DMM; Ideal for Basic Electronic Testing.

- ► 4000 Count Digital Display
- ► V-Chek™
- ► Automatic Readings of Volts AC and DC
- ► Ohms
- ► Continuity Beeper
- ► Sleep Mode to Conserve Battery
- ► Min./Max. with Time Stamp
- ► Continuity Capture™
- ► 4 Ranges of Capacitance
- ► TL75 Test Leads Included with Meter
- ► Battery Life: Alkaline, 650 Hours Continuous, Sleep Mode
- ► Two Year Warranty

The same great functionality of Fluke's economical Model 12, now with an easy-to-use rotary dial for first level electronic and electrical troubleshooting. The compact design and rotary dial offers one-handed operation. **Specifications. DC Volts:** Range and resolution — 4.000 V, 40.00 V, 400.0 V, 600 V; Best accuracy — 0.9 +1. **AC Volts:** Range and resolution — 4.000 V, 40.00 V, 400.0 V, 600 V; Best accuracy — 1.9 +3. **Ohms:** Range and resolution — 400.0 Ω, 4.000 kΩ, 40.00 kΩ, 4.000 MΩ; Best accuracy — 0.9 +1. **Capacitance:** Range and resolution — 1.00 mF, 10.00 mF, 100.0, mF, 1000 mF, 10000 mF; Best accuracy — 1.9 +2.

739-0201. Model 12B .... **EACH 95.00**

7 Series Electrical Testers — NEW —

Economical, Easy-To-Use Testers; Ideal for Basic Electrical Testing.

Listed

- ► 4000 Count Digital Display
- ► Auto Selection
- ► Automatic Readings of Volts AC — 300 V in 7-300; 600 V in 7-600
- ► Automatic Readings of Volts DC — 300 V in 7-300; 600 V in 7-600
- ► 400 Ohm Range/Continuity Beeper
- ► TL75 Test Leads Included with Meter
- ► Battery Life: Alkaline, 650 Hours Continuous, Sleep Mode
- ► Two Year Warranty

7-600

7-300

The economical 7 series offers first-level electrical troubleshooting. The compact design and slide switch offer one-handed operation. **Specifications. DC Volts:** Range and resolution — 40.00 V, 400.0 V*, 600 V*; Best accuracy — ±(1.5% +1). **AC Volts:** Range and resolution — 40.00 V, 400.0 V*, 600 V*; Best accuracy — ±(2.9% +3). **Ohms:** Range and resolution — 400.0 Ω; Best accuracy — ±(1.5% +2).

*Maximum reading of 300 volts on 7-300.

739-0203. Model 7-600 .... **EACH 69.00**
739-0202. Model 7-300 .... **EACH 49.00**

Fiber Optic — NEW — Test Equipment

CLASS I LED PRODUCT

Test Fiber Optic Cable with Your Digital Multimeter.

FOM

FOS 850/1300

- ► The Small FOM Plugs into Your DMM and Makes Testing in Tight Spaces Easy
- ► A Variety of Light Sources (FOS 850, FOS 1300, and FOS 850/1300) and Patch Cords (ST to ST, ST to FC, ST to SC, ST to SMA) Let You Get Just What You Need for Testing Different Cable Types and Lengths
- ► Highly Accurate Readings Mean Less Work, Less Repeated Testing
- ► Input Connector: Fixed ST
- ► Battery Life: 16 Hours Minimum, 9 V Alkaline
- ► LED Low Battery Indicator
- ► Operating Temperature: 0°C to +40°C (32°F to +104°F)
- ► Storage Temperature: –20°C to +70°C (–4°F to +158°F)

Model FOM

Specifications. Output: 1 mV per 1 dB. **Application Range:** 800-1600 nm. **Acceptable Fiber Types:** 9/125 to 100/140 µm. **Operating Range:** +3 to –50 dBm. **Absolute Accuracy:** ±0.25 dB. **Relative Accuracy:** ±0.15 dB. **Repeatability:** ±0.04 dB. **Operating Temperature/RH:** 0°C to 40°C (32°F to 104°F) up to 75% RH.

Models FOS 850, FOS 1300, FOS 850/1300

Specifications. Wavelength: FOS 850 — 850 nm ±30 nm; FOS 1300 — 1300 nm –40/+50 nm; FOS 850/1300 — 850 nm/1300 nm ±30 nm/–40/+50 nm. **Output Power:** –20 dBm. **Connector:** ST. **Stability:** ±0.2 dB per 8 hours. **Battery Type:** 9 V alkaline NEDA 1604A or IEC 6LR61. **Battery Life:** 24 hours typical. **Operating Temperature/RH:** 0°C to 40°C (32°F to 104°F) up to 75% RH.

739-0204. Model FOM .... **EACH 295.00**
739-0209. Model FOS 850 .... **EACH 195.00**
739-0210. Model FOS 1300 .... **EACH 395.00**
739-0211. Model FOS 850/1300 .... **EACH 495.00**

VoltAlert™ 1AC — NEW —

Test Line Voltage with Easy-To-Use Detector.

- ► Fits in Shirt Pocket for Convenience
- ► All Outer Surfaces are Non-Conductive for Safety
- ► Detects Voltage without Metallic Contact
- ► Manufactured, Printed and Packaged in the US

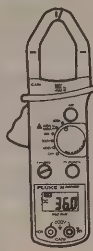
C22.2 #1010

Specifications. Operating Range: 90-600 volts AC*. **Batteries:** Two AAA alkaline. **Operating Temperature:** –10°C to 50°C. (14°F to 122°F). **Humidity:** 0°C to 30°C, 95% (32°F to 86°F); 30°C to 40°C, 75% (86°F to 104°F); 40°C to 50°C, 45% (104°F to 122°F). **Operating Altitude:** 3000 m (10,000 ft.). **Enclosure:** IEC 529, IP54. CAT III-600 V; ANSI/ISA-S82.01-94; IEC-1010-1, 1990; IEC-1010-2-031. UL listing and TÜV approval pending to UL 3111 and EN61010-1.

*U.S. and North America. Other models available.

739-0200. Model IAC .... **EACH 19.95**

Fluke 36 Clamp Meter — NEW —



The Model 36 is similar in form factor to the Models 30 and 32, however it is about 20% longer and has a DC current zero adjust knob and an AC/DC selector button. It also has a slightly larger jaw to accommodate larger DC conductors. The Model 36 is a simple-to-use, rugged, safe, true-rms sensing AC/DC clamp meter. It is manual ranging and capable of measuring true-rms AC to 600 A with a crest factor of 3, and true-rms AC to 600 V. It measures up to 1000 ADC and 600 VDC, and measures up to 200 ohms with a continuity beeper. The Model 36 is shipped with test leads, soft carrying case, 9 V battery and manual.

The major benefits the Model 36 provides to the customer is its ability to service both AC and DC power systems with one tool, true-rms sensing, ruggedness, reliability, and safety. The Model 36 conforms to the IEC 1010 standard and has UL, CSA, and TUV certification and CE approval. The Model 36 will survive a 2 meter drop.

Specifications. Maximum Voltage Between Any Terminal and Earth Ground: 600 Vrms. **Battery Type:** 9 V, NEDA 1604 or IEC 6F22. **Battery Life:** 60 hours, alkaline — has sleep mode to conserve battery. **Size:** 9.8" × 3.75" × 1.77" (H × W × L). **Safety/Approvals:** Submitted for approval to UL1244, CSA C22.2 #231, VDE 0411, and the EMC directive.

Measurement Specifications. 45 Hz-400 Hz bandwidth. **AC Current. Range:** 600 A and 200 A. **Accuracy:** At 600 A — 10-600 A, 2% Rdg + 3 dgts; At 200 A — .5-200 A, 2% Rdg + 3 dgts. **Crest Factor:** ≤3. **DC Current. Range:** 1000 A and 200 A. **Accuracy:** At 1000 A — 0-1000 A, 1.5% Rdg + 3 dgts; At 200 A — 0-200 A, 1.5% Rdg + 3 dgts. **Overload Protection:** AC — 600 A, 1800 A peak; DC — 1000 A; ≤3 crest factor. **AC Volts. Range:** 200 V and 600 V. **Accuracy:** At 200 V — 1-200 V, 1.5% + 3 dgts; At 600 V — 10-600 V, 1.5% + dgts. **Crest Factor:** At 200 V — ≤3; At 600 V — <3,933 V pk. **DC Volts. Range:** 200 V and 600 V. **Accuracy:** At 200 V — 1.0% + 3 dgts; At 600 V — 1.0% + 3 dgts. **Overload Protection:** AC — 1200 Vrms, sine; DC — 1200 V. **Ohms. Range:** 200 Ω. **Accuracy:** 1.2% + 3 dgts. **Continuity Beeper. Overload Protection:** 660 Vrms continuous. Features Maximum Hold for measuring motor inrush current or maximum load on a circuit. Has DC current zero control for nulling out jaw/sensor offset.

730-0036. Model 36 .... **EACH 219.00**

30 Series-Current Master™

Rugged, Easy-to-Use, True-RMS Current Master — "For the True Measure of Your Current Problems".

33

31

C30 Holster Included

Models 31 and 33

- ► True-RMS Current Measurement for Testing Non-Linear and Traditional Loads
- ► Frequency Measurement (Hz)
- ► Hand Guard — For Prevention of Accidental Contact with Conductors
- ► Display Hold
- ► Combination Digital/Analog Display
- ► Power-Up Self Test — Verifies Proper Functioning and Estimates Battery Life
- ► Beeper Provides Audible Feedback
- ► Clip On Holster
- ► Auto and Manual Ranging

33 Only

- ► Crest — Instantaneous Peak Current Readings
- ► Smooth™: 3 Second Running Average of RMS Current or Frequency
- ► Min/Max — Records Maximum, Minimum, and Average Frequency or RMS Current

Both the Fluke 31 and 33 offer a comprehensive set of features for troubleshooting current problems including manual and autorange, display hold, sleep mode (for battery conservation) and a power-up self test. A combination analog/digital display includes real-time current, even while reading frequency or in the hold mode. All of these functions are self-contained in these easy-to-use, handheld Current Masters. A protective holster then can be quickly attached to a work belt included with each unit.

730-0031. Model 31 .... **EACH 229.00**
730-0033. Model 33 .... **EACH 269.00**

Models 30 and 32 Clamp Meters

Model 30

Model 32

- ► True-RMS Measurement for Accurate Readings of Non-Linear Loads (Model 32)
- ► Average AC Responding Measurements (Model 30)
- ► Measures up to 400 A AC, 600 V AC, 200 Ω
- ► Meets UL, CSA and TÜV Certification Standards (Pending for Model 32) and Conforms to the IEC 1010 Safety Standard
- ► Rugged Enough to Take a Drop from a Six-Foot Ladder
- ► Display Hold Captures Readings in Difficult to Reach Areas for Later Viewing
- ► Easy-to-Read 31/2 Digit 2000 Count Digital Display
- ► Manual Ranging for Repetitive Measurements
- ► Continuity Beeper
- ► Protective Soft Carrying Case and Fluke Hard Point™ TL 75 Test Leads Included

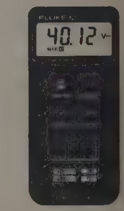
The Fluke Models 30 and 32 Clamp Meters are rugged, self contained, general purpose clamp meters that measure up to your tough standards at a basic price. Use the Models 30 and 32 to measure AC current, AC volts, ohms, and continuity for troubleshooting commercial and residential electrical and HVAC systems. You can view the results instantly on the easy-to-read digital display.

730-0030. Model 30 .... **EACH 109.00**
730-0032. Model 32 .... **EACH 159.00**

Series 10 Digital Multimeters

The Fluke 12

Packed with Features. Priced to Go, Fast.



- ► V Chek™
- ► Min Max Recording With Relative Time Stamp
- ► Continuity Capture™
- ► Capacitance: .001 to 9999 µF
- ► 4000 Count Digital Display
- ► 0.9% Basic DC Volts Accuracy
- ► 1.9% Basic AC Volts Accuracy
- ► 0.9% Basic Ohms Accuracy
- ► Fast Continuity Beeper
- ► Diode Test
- ► Sleep Mode
- ► Two-year Warranty

Model 12. The more skilled service technician who is called upon to service the difficult or intermittent problem will be drawn to the Model 12.

739-0012. Model 12 .... **EACH 95.00**

The Fluke 11

V Chek™ Saves You Time — Every Time You Use It.

- ► V Chek™
- ► Capacitance: .001 to 9999 µF
- ► 4000 Count Digital Display
- ► 0.9% Basic DC Volts Accuracy
- ► 1.9% Basic AC Volts Accuracy
- ► 0.9% Basic Ohms Accuracy
- ► Fast Continuity Beeper
- ► Diode Test
- ► Sleep Mode
- ► Two-year Warranty

Model 11. The Model 11 adds capacitance measuring capability with guaranteed specifications from .001 to 400 µfd, and up to 9999 µfd with a typical spec. Since capacitors are a notorious source of system failure, this middle unit will appeal to those who service down to the component level in the bench or in the field.

739-0011. Model 11 .... **EACH 79.95**

The Fluke 10

Fast On The Front Line. Easy On the Bottom Line.

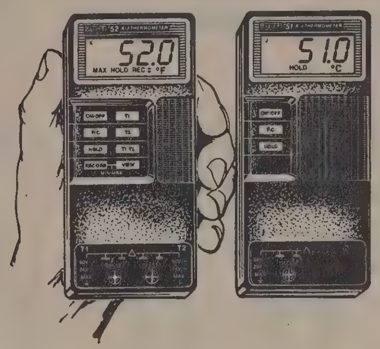
- ► 4000 Count Digital Display
- ► 1.5% Basic DC Volts Accuracy
- ► 2.9% Basic AC Volts Accuracy
- ► 1.5% Basic Ohms Accuracy
- ► Fast Continuity Beeper
- ► Diode Test
- ► Sleep Mode
- ► Two-Year Warranty

Model 10. The Model 10 is the simplest and lowest cost model. It has the core set of features to locate the vast majority of hard faults and do first-round checks. The Model 10 will appeal to the first time user, corporate equipment specifier and the price-sensitive buyer.

739-0010. Model 10 .... **EACH 69.95**

Accessories. Accessories planned for the Series 10 product consist of a holster with tilt-stand and padded soft case. A wide range of Fluke test leads and temperature measurement devices are compatible with the new family.

50 Series Thermometers



FLUKE 51 Single Point Thermometer

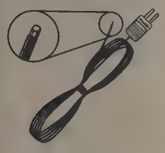
Offers high accuracy. 0.1°C resolution, high repeatability, and low thermal "lurch." Features include digital noise filter, automatic 2-second diagnostic self-test, Fahrenheit/Celsius conversion, and display freeze function. All functions are pushbutton activated. Operates on a standard 9 V battery (included) — 1200 hours of life. Accepts any K-Type or J-Type thermocouple with a standard mini-connector plug. **Accuracy:** K-Type — +(0.1% rdg. + 0.7°C or 1.3°F); J-Type — (0.1% rdg. + 0.8°C or 1.4°F). **Reading Rate:** 1 second. Comes with a Type 80PK-1 bead probe.

730-0051. Model 51 .... **EACH 149.00**

FLUKE 52 Dual Point Thermometer

Offers the same great performance and features as the Model 51 plus dual-point or differential measurements, scanning and Min./Max. storage capabilities, and selectable high or low resolution readouts. **Accuracy:** K-Type — + (0.1% T1-T2 rdg. + 1.0°C or 1.8°F); J-Type — + (0.1% T1-T2 rdg. + 1.2°C or 2.2°F). **Max. DCMV:** 1 V. **Reading Rate:** 2 thermocouples — 1.7 seconds. Comes with 2 Type 80PK-1 bead probes.

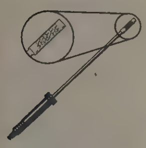
730-0052. Model 52 .... **EACH 199.00**



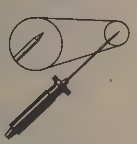
80PK-1

80PK-2A

80PK-3A

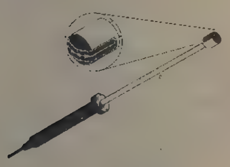


80PK-4A



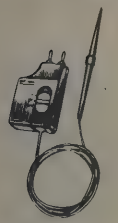
80PK-5A

80PK-6A



80PK-7

80PK-8



80T-150U

80TK

Temperature Probes

80PK-1 Bead Probe. For general purpose applications, Teflon tape insulation. Not to be used for liquid immersion. **Measurement Range:** –40° to +260°C (–40° to +500°F).

730-8001. Type 80PK-1 .... **EACH 12.00**

80PK-2A Immersion Probe. For use with liquids and gels. Inconel sheath protection from tip to handle. Can be used in most general temperature measurement applications. **Measurement Range:** 0° to 927°C (32° to 1700°F).

730-8002. Type 80PK-2A .... **EACH 46.00**

80PK-3A Surface Probe. For flat or slightly convex surfaces. Ideal for use with hot rollers and plates. **Measurement Range:** 20° to 260°C (68° to 500°F).

730-8003. Type 80PK-3A .... **EACH 85.00**

80PK-4A Air Probe. For air and gases. Measuring bead is protected by perforated stainless steel baffle. Not for immersion in liquid. **Restrictions:** The 304 stainless steel baffle cannot be exposed to halides or sulfides. **Measurement Range:** –196°C to 816°C (–320°F to 1500°F). **Maximum Temperature:** Cable — 105°C (220°F); Handle — 125°C (257°F).

730-8004. Type 80PK-4A .... **EACH 64.00**

80PK-5A Stainless Steel Piercing Probe. FDA Approved. Similar to 80PK-2A.

730-8005. Type 80PK-5A .... **EACH 58.00**

80PK-6A Exposed Probe. Exposed bead attached to 6-inch sheath, designed for general purpose, air, and gas measurements. **Restrictions:** The 304 stainless steel shaft cannot be exposed to halides or sulfides, or reducing to atmospheres or a vacuum. **Measurement Range:** –196°C to 816°C (–320°F to 1500°F). **Maximum Temperature:** Cable — 105°C (220°F); Handle — 125°C (257°F).

730-8006. Type 80PK-6A .... **EACH 65.00**

80PK-7 Industrial Surface Probe. Performs surface measurements in rugged environments over a wide temperature range. **Measurement Range:** –196°C to 600°C (–320°F to 1112°F). Made of 303 stainless steel, with a state-of-the-art ribbon sensor for extra durability. **Maximum Temperature:** Cable — 105°C (220°F); Handle — 125°C (275°F).

730-8017. Type 80PK-7 .... **EACH 189.00**

80PK-8 Pipe Clamp Temperature Probe. Produces fast and accurate temperature and super heat measurements of pipe surfaces from 1/4" (6.4mm) to 13/8" (34.9mm) diameter. **Measurement Range:** -29°C to 149°C (-20°F to 300°F). **Basic Accuracy:** ± 1.9°C (±3.4°F). **Maximum Temperature:** Cable — 105°C (220°F); Handle — 149°C (300°F).

730-8018. Type 80PK-8 .... **EACH 99.00**

80T-150U Universal Temperature Probe. Highly accurate P-N junction probe converts any DMM into a thermometer. For air, surface, and non-corrosive liquid measurement applications. **Isolation:** 350 VDC or peak AC. **Basic Accuracy:** +1°C (1.8°F), 0° to 100°C. **Range:** –50° to +150°C (–58° to +320°F).

730-8015. Type 80T-150U .... **EACH 120.00**

80TK Thermocouple Module. Use with a standard banana plug to convert any 10 M DMM into a thermometer. Uses K-type thermocouple with miniconnectors. Switch-selectable °C, °F, use with interchangeable probes described below (Type 80PK-1 Bead Probe included with this module). **Basic Accuracy:** +0.5% + 2°C (3.6°F)

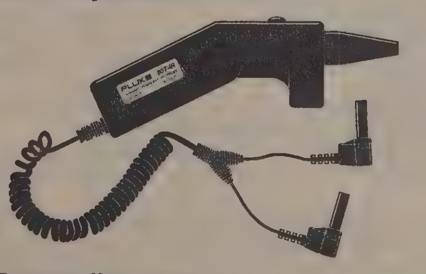
730-8079. Type 80TK .... **EACH 69.00**

Non-Contact Infrared Temperature Probe

Instantly measures temperature from –18°C to 260°C (0 to 500°F) without contact. Ideal for maintenance applications where object to be measured is hazardous to touch, is moving, easily contaminated, or difficult to reach. Highly repeatable readings. Senses and converts infrared energy emitted from an object into a signal readable on a DMM or Digital Thermometer display. Results displayed in °C or °F; 1 mV dc per °C or °F output. Automatic shut-off after 10 minutes of operation saves battery life. **Specifications. Temperature Range:** –18°C to 260°C (0°F to 500°F). **Accuracy:** ±3% of reading or ±3°C (±5°F), whichever is greater, 18°C to 28°C (64°F to 82°F) ambient operating temperature. **Temperature Coefficient:** 0.2% of reading or ±0.2°C (±0.3°F), whichever is greater, change in accuracy per degree change in ambient temperature above 28°C (82°F) or below 18°C (64°F). **Response Time:** 1 second. **Emissivity:** fixed at .95. **Output:** Type-K thermocouple mini-connector. **Operating Temperature:** 0°C to 65°C (32°F to 150°F). **Resolution:** 1°C or °F. **Optical Resolution:** 4:1 distance to target ratio. **Power:** 9 V battery. **Size (L × W × H):** 180 mm × 30 mm × 50 mm (7.1" × 1.2" × 2"). **Weight:** 180 g (6.4 oz.). **Warranty:** 1 year. **Compatibility:** Any Type-K thermometer or other temperature measuring device that accepts Type K mini-connector inputs.

730-8019. Type 80PK-IR .... **EACH 159.00**

80T-IR Infrared Temperature Probe

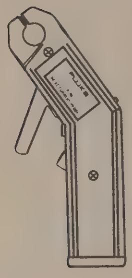


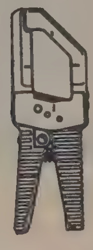
- **Fast Non-Contact Temperature Measurements**
- **Ideal When Object to Measure is Moving, Hard to Reach, Hazardous to Touch, Or Easily Contaminated**
- **0 to 500°F (–18 to 260°C) Measurement Range**
- **Internal Selection Switch for °F or °C**
- **1 mV dc per °F or °C Output, Compatible With the Most Popular DMMs**

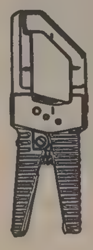
Specifications. Temperature Range: 0 to 500°F (–18 to 260°C). **Accuracy:** ±3% of reading or ±5%°F (±3°C), whichever is greater, at 64° to 82°F (18° to 28°C) ambient operating temperature. **Temperature Coefficient:** 0.2% of reading or ±0.3°F (±0.2°C), whichever is greater, change in accuracy per degree change in ambient temperature above 82°F (28°C) or below 64°F (18°C). **Response Time:** 1 second. **Repeatability:** 1% of reading. **Emissivity:** Fixed at 95%. **Analog Output:** 1 mV per degree F or C (switchable). **Operating Temperature:** 32°F to 150°F (0°C to 260°C). **Optical Resolution:** 4:1 distance to target ratio. **Size:** 1.5" (38 mm) W × 7" (178 mm) L. **Weight:** 10 oz. (286 g). **DMM Compatibility:** Any DMM with 10 MΩ input impedance, accepting .160" (4 mm) diameter safety-shrouded test leads.

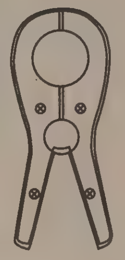
730-0089. 80T-IR .... **EACH 219.00**

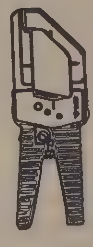
Current, Voltage Accessories


A

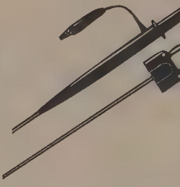

B

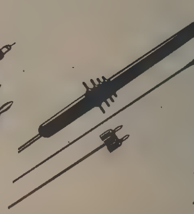

C

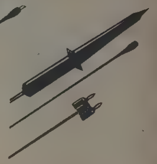

D


E

F


G


H


J

- **One Year Warranty On All Accessories**

A Y8100 Clamp-On AC/DC Current Probe
Battery-powered Hall-effect clamp-on probe with switch selectable 200 A or 20 A current range. Produces 2 V full range output. For conductors to 1.9 cm (0.75"). **Accuracy:** ±2% of range from DC to 200 Hz.
730-8100. Y8100.......................................EACH 319.00

B 80i-400 Clamp-On AC Current Probe
Measures AC current from 1 A to 400 A. 1000 to 1 division ratio. **Maximum Conductor Size:** One 30 mm (1.18") or two 25 mm (0.98"). **Accuracy:** ± (3% + 0.4 A) from 48 Hz to 440 Hz, ± (4% + 0.4 A) 440 Hz to 1000 Hz.
730-8400. 80i-400.......................................EACH 83.00

C 80i-410 AC/DC Clamp-On Current Probe
Battery-powered Hall-effect clamp-on probe measures AC or DC current from 5 A to 400 A. **Maximum Conductor Size:** One 30 mm (1.18") or two 25 mm (0.98"). Output is 1 mV per amp DC or AC. **Accuracy:** ±(5% +2.5 A), 5 A to 400 A, DC to 62 Hz. Useable to 400 Hz.
730-8410. 80i-410.......................................EACH 179.00

D 80i-600A Clamp-On AC Current Probe
Measures AC current from 1 A to 600 A. Division ratio is 1000 to 1. Clamps on conductors to 5 cm (2") in diameter. **Accuracy:** ±2%, 50 Hz to 1 kHz, ±3% (typical) 30 Hz to 10 kHz.
730-8600. 80i-600A.......................................EACH 119.00

E 80i-1010 AC/DC Clamp-On Current Probe
Battery-powered Hall-effect clamp-on probe measures AC current to 700 A, DC current to 1000 A. Thumbwheel ZERO control compensates for residual core magnetism, improving the accuracy of DC measurements down to 1 A. Output is 1 mV per amp DC or AC. **Accuracy:** ±(2%,+ 1 A), 1 A to 100 A, DC to 62 Hz. Useable to 440 Hz.
730-1010. 80i-1010.......................................EACH 297.00

F 80J-10 Current Shunt
Allows measurement of AC or DC current with precision DMM (such as an 8050A or 8060A). Will pass 10 A continuously, 20 A for one minute. **Accuracy:** ±0.25% from DC to 10 kHz.
730-0810. 80J-10.......................................EACH 65.00

G 85RF High Frequency Probe
Converts 10 MΩ DMM into high frequency AC voltmeter. AC to DC conversion ratio is 1:1 over a range of 0.25 to 30 V rms. The probes DC output is calibrated to the rms value of a sinewave input. **Frequency Range:** 100 kHz to 500 MHz. **Accuracy:** ±0.5 dB above 0.5 V.
730-0085. 85RF.......................................EACH 99.00

H 80K-40 High Voltage Probe
Measures up to 40 kV DC or 28 kV rms AC. Division ratio is 1000 to 1. Has 1000 MΩ input resistance. **DC Accuracy:** ±1% from 20 kV to 30 kV, changes linearly from 1% at 30 kV to 2% at 40 kV, and from 1% at 20 kV to 2% at 1 kV. **AC Accuracy:** ±2.5% at 60 Hz. **WARNING:** To avoid damage or electric shock, use under dry conditions within the following ratings: low energy applications such as CRT supplies, 40 kV DC or AC peak; other applications 40 kV DC or AC peak in circuits where transient overvoltages (micro second transients) are limited to 80 kV peak.
730-8040. 80K-40.......................................EACH 119.00

J 80K-6 High Voltage Probe
Division ratio is 1000 to 1. Extends measurement capabilities to 6000 V DC or peak AC. **Accuracy:** ±1.0% DC; ±1% to 500 Hz AC, ±2% 500 Hz to 1 kHz AC. **WARNING:** To avoid damage or electric shock, use under dry conditions within the following ratings: low energy applications such as CRT supplies, 6 kV DC or AC peak; other applications 6 kV DC or AC peak in circuits where transient overvoltages (micro second transients) are limited to 16 kV peak.
730-8016. 80K-6.......................................EACH 65.00

Model 45

- **True-RMS for Voltage and Current**
- **Touch Hold®, Relative, Min/Max**
- **Compare Function (Hi/Lo/Pass)**
- **dB Function (21 Ref. Impedances)**
- **Diode Test**
- **Multi-Function Dual Display**
- **RS-232 Interface for PC Instrument Applications (Uses DB-9)**
- **1µV and 0.1µA Resolution**
- **Bright Vacuum Fluorescent Primary and Secondary Displays**
- **IEEE-488.2 Option Available for Remote Use and Control of Unit**
- **Autoranging**
- **Frequency Counter to 1 MHz**
- **Audio Power**
- **Continuity**
- **Data Recorded in Lotus 123 Format**

Feature Rich 5-Digit 100,000 count DMM with unique multi-function dual display, allowing measurement of two signal parameters from a single test connection. The standard RS-232 interface allows measurement data to be filed, manipulated, printed or transmitted by modem. The print mode automatically formats measurement data for printing on an RS-232 printer. IEEE-488.2 option available factory installed or as kit for field installation. Does not require removal of RS-232. Calibration performed via either RS-232 or IEEE-488.2 without opening case. Provides digital read-out of decibels using front panel selection of any of twenty-one references from 2 ohms to 8000 ohms. For 2, 4, 8, and 16 ohms, the meter displays audio power in watts. Using front panel entry of upper and lower limits, unit shows both a Hi/Lo/Pass evaluation and measured value. Touch Hold® captures the measurement, beeps, and locks it on the display until you are ready to use it. It automatically updates with each new stable measurement. Relative mode remembers a reading and shows the change (difference) between it and any readings that follow. Min/Max records the highest and lowest values measured. Either can be displayed at any time. Extended three year warranty option available. **Specifications. Display Counts At Full Range:** 2.5 readings/second (slow) 99,999; 5 readings/second (medium) 30,000; 20 readings/second (fast) 3,000. **Resolution:** DC volts — 1 µV; AC volts — 1 µV; Ohms — 1 mOhms; DC Amps — 100 nA; Frequency — 10 MHz. **Basic Accuracy (Given as ±% of Reading + Number of Least Significant Digits):** DC volts — .02% + 2; AC volts — .2% +2; Ohms — .05% + 2; DC Amps — .05% + 10; Frequency — .05% + 1. One Year Warranty. **RS-232 Baud Rate:** 300, 600, 1200, 2400, 4800 and 9600; Odd, even or no parity; one stop bit, 8 data bits. **Size:** 3.67 in. × 8.50 × 11.27 in. **Weight:** 5.2 lb; with battery 7.0 lb. Includes operators manual, quick reference guide, line cord, test leads.

739-0045.	45. Mainframe Unit	EACH 679.00
739-0046.	45-01. With Battery (8 hours typical; 16 hours recharge)	EACH 809.00
739-0047.	45-05. With IEEE-488.2	EACH 839.00
739-0048.	45-15. With IEEE-488.2 and Battery (8 hrs. typical; 16 hrs. recharge)	EACH 969.00
739-0049.	45-01K. Battery Kit (8 hours typical; 16 hours recharge)	EACH 170.00
739-0050.	45-05K. IEEE-488.2 Kit	EACH 200.00
739-0042.	C40. Soft Case for Model 45	EACH 52.50
739-0044.	S45. QuickStart 45 Software	EACH 95.00
739-0040.	RS-40. 6' RS-232 Termination Cable (DB-9 to DB-25 Female)	EACH 31.50
739-0041.	RS-41. 6' RS-232 Modem Cable (DB-9 to DB-25 Male)	EACH 31.50
739-0043.	M00-200-634. Rack Mount Kit	EACH 122.00

► Full One Year Warranty on All Accessories.

Interchangeable Test Lead Accessories
The best meter in the world is no good if you can't make a proper test connection.

This group of interchangeable test lead accessories allows you to match a wide variety of clips and probes to make the most dependable test connections possible for your application.

TL24 and TL22 Interchangeable Test Leads

- 385 internal strands and superior strain relief provide flexibility to prevent kinks and bends in test leads.
- Silicone-insulated; won't crack from cold or melt from accidental contact with soldering iron.
- Safety-designed with double insulation for added protection.
- All metal on banana plugs is capped and shrouded to prevent accidental contact.
- Compatible with all meters accepting safety-shrouded, standard-sized banana plugs.

Test Probes and Clips

- Made from a combination of high quality steel and Polyamide plastic bodies for exceptional durability.
- Safety grip clips keep your hand a safe distance from test connection and are easy to use even when wearing gloves.

Compatibility Chart for Test Leads and Attachments

Accessory Type	TL20 Set	TL22 Leads	TL24 Leads	TL26 Set	TL28 Set	TL70A/TL75 Set	Y8131 Set	Y8132 Set	Y8133 Kit	Y8134 Kit	Y8140 Set
TP20	✱	●	●	–	–	–	●	●	●	●	–
TP80	●	●	●	–	–	–	●	●	●	●	–
AC20	✱	●	●	–	–	–	●	●	●	●	–
AC70A	●	–	–	–	–	●	–	–	–	–	●
AC75	●	●	●	–	–	–	●	●	✱	✱	–
AC80	●	●	●	–	–	–	●	●	●	●	–
AC83	●	●	●	–	–	–	●	●	●	●	–
AC85A	●	●	●	–	–	–	●	●	●	●	–
AC89	●	●	●	–	–	–	●	●	●	●	–

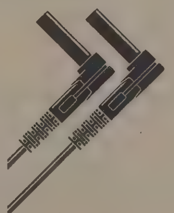
● Compatible and recommended
– Not compatible, not recommended or not applicable
✱ Included with test lead set or kit

Test Lead Kit

Y8134 Shrouded Test Lead Kit
Interchangeable tips: 2 alligator clips, 2 spade lugs, 1 retractable hook tip, and 2 standard pointed tips. Shrouded banana plugs, C75 carrying case. Y8132 Test Leads included.
730-8134 ....EACH 36.00

Test Leads

TL22 Flexible Test Leads
Silicone-insulated test leads have superior flexibility and cold/heat resistance from –80°C to + 150°C (–112°F to +302°F). Shrouded right-angle connectors on both ends. 63" (1.6m). 1000V†, 10A maximum. One red, one black. Listed to UL Safety Standards UL 1244.
730-9022...............EACH 17.00



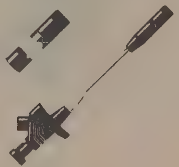
TL24 Flexible Test Leads — Straight
Same as TL22 except that one end has a shrouded, straight connector. One red and one black. Listed to UL Safety Standards UL 1244.
730-9024..............EACH 17.00

Clips

AC20 Industrial Test Clips
Safety-grip, spring-loaded alligator clips with a wide .750" (19 mm) jaw opening. 1000V†, 10A maximum. One red, one black. Recommended for use with TL22 Test Leads. Listed to UL Safety Standards UL 1244.
730-9020 ....EACH 22.00

AC80 Hook-Style Test Clips
Safety-grip, spring-loaded clips with hook grip. Hook size is .400" x .080" (10 mm x 2 mm). 1000V†, 3A maximum. One red, one black. Recommended for use with TL22 Test Leads. Listed to UL Safety Standards UL 1244.
730-9080...............EACH 17.00

AC83 Pin-Grabber Test Clips
Safety-grip, spring-loaded pin-grabber hooks for use with test points in close contact areas. Flexible shaft is 4" (100 mm), grabber extends 375" (9.5 mm). 1000V†, 1A maximum. One red, one black. Recommended for use with TL22 Test Leads. Listed to UL Safety Standards UL1244.
730-9083..............EACH 22.00



AC89 New Insulation Piercing Clip
Clamp-type test probe has spring-loaded stainless steel tip for piercing insulated wires. Pierces insulated wires from 30 AWG (.25 mm²) to 14 AWG (1.5 mm²). 250V, 5A. A single probe per package. Recommended for use with TL24 Test Leads. For use only with shrouded test leads having standard diameter banana plugs.
730-9089..............EACH 22.00

AC85A Large Jaw Alligator Clips
Fully insulated banana-jack alligator clips. All new construction with stronger teeth. Large .750" (19 mm) opening. 600V†, 10A maximum. One red, one black. Recommended for use with TL24 Test Leads. Listed to UL Safety Standards UL 1244.
730-9085..............EACH 11.00

AC70A Alligator Clips
Gold-plated beryllium copper spring contacts accept probe tips from .076" to .084" (1.93 mm to 2.13 mm). Standard jaw opening of .313" (8 mm). 1000V, 10A maximum. One red, one black.
730-0069 ....EACH 7.35

AC75 Banana Jack-Alligator Clips
Insulated alligator clips with banana jacks. Standard .313" (8 mm) jaw opening. Compatible with test leads Y8131 through Y8134 and TL24. 1000V, 10A maximum. Two red, two black.
730-0750 ....EACH 9.00

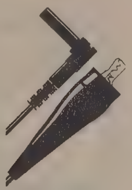
Test Probes

TP 20 Industrial Test Probes
Very sharp, extra-long .750" (19mm) stainless steel tip. For reaching deep test points or recessed components; will pierce insulation. 1000V†, 10A maximum. One red, one black. Recommended for use with TL24Test Leads. Listed to UL Safety Standards UL 1244.
730-9021................EACH 8.00

TP80 Electronic Test Probe
Designed for electronic probing of high density components or boards. IC insulator cap prevents shorting of adjacent IC legs. Probe has tapered .160" (4mm) steel tip. 1000V, 10A maximum. One red, one black. Recommended for use with TL 24 Test Leads.
730-9081..............EACH 13.00

Test Lead Sets

TL26 5-Way Multipoint Test Lead Set
Industry-standard for telecom and automotive applications. 5 ways to connect: 1) U-shaped nose for blade-shaped terminals; 2) Notched jaw for gripping screw heads, bare wire or terminals; 3) Serrated teeth for gripping threaded or wire-wrapped terminals; 4) Cluster of sharp needles for piercing small gauge (#22-#28 AWG) wires; 5) Large piercing needle for penetrating larger gauge wires. 60" (1.5m), silicone-insulated, useable from –80°C to +150°C (–112°F to +302°F). 250V, 10A maximum. One red, one black.
730-9026 ....EACH 35.00



TL28 2-Way Clip Test Lead Set
Solid, spring-loaded copper clips with a wide .50" (12.7mm) jaw opening and serrated teeth. Large piercing needle for penetrating larger gauge wires. 60" (1.5m), silicone-insulated, useable from –80°C to +150°C (–112°F to +302°F). 250V, 10A maximum. One red, one black.
730-9028 ....EACH 25.00

TL20 Industrial Test Lead Set
Suggested for Electrical/HVAC applications. Set consists of silicone-insulated TL22 Test Leads (one red and one black), stainless-steel TP20 Industrial Test Probes (one red, one black), and AC20 Industrial Alligator Clips (one red, one black). 1000V†, 10A maximum. Shrouded right-angle connectors. Listed to UL Safety Standards UL 1244.
730-0200...........EACH 42.00

TL75 Hard Point™ Test Lead Set
Comfort-grip probe with PVC-insulated leads. Super strong tips and new integral strain relief provide extended service life. Safety-shrouded, right-angled inputs. Not recommended for µV measurements. 48" (1.2 m). 1500 V, 10A. Replacement test leads for all Fluke DMMs except 8060A and 8062. Replaces TL70. Listed to UL Safety Standards UL 1244.
730-0701...EACH 9.00

Y8132 Detachable Probe Test Lead Set
Test leads have straight, shrouded banana plugs on both ends. Detachable probes with standard point tips. PVC-insulated, 48" (1.2m), 2000V, 10A maximum. One red, one black. Listed to UL Safety Standards UL 1244.
730-8132..............EACH 15.00

Y8140A Slim-Flex Test Lead Set
Slim, retractable, insulated needle-point test leads adjust to desired length by extending probe up to 2.5" (63.5mm). Needle points will pierce varnish and thin insulation. 48" (1.2m). Shrouded plugs, 1000V, 2A maximum. One red, one black. Factory Mutual Approved.
730-8140..............EACH 26.00

***Factory Mutual Approved †Heavy Industrial Rating, Overvoltage Category III (CAT III) per IEC 1010-1**

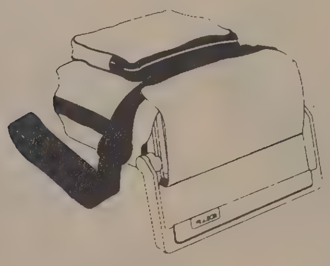
14

Carrying Cases

C12A Soft Case
Soft Sided, zippered, vinyl carrying case for all Series 10 meters. Inside pockets are designed to carry a meter, manual, and test leads. Clear pocket fits international business cards. Convenient hanging loop.
739-0105 .... **EACH 12.00**

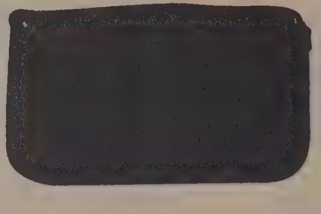
C25 Ruggedized Soft Case
For Fluke 25 or 27 or other Fluke handheld meters including Fluke 21, 23, 29, 50 or 70 Series meters in C70 Holster, or 80 Series meters in C81 Holster. Also for use with PV350 and PV500. Water resistant zipper, two inside pockets for test leads or small accessories.
730-2500 .... **EACH 21.00**

C90 Soft Case (not shown)
Similar to C25, but smaller and without accessory storage space or water resistant zipper. One internal pocket; will hold Fluke 21, 23, 29, 50 or 70 Series meters in a C70 holster. Not for Fluke 25, 27 or 80 Series.
730-0090 .... **EACH 16.00**



C40 Soft Case
For Fluke 45. Test lead storage in removable upper pouch, shoulder strap.
739-0042 .... **EACH 52.50**

C50 Compact Soft Case
Vinyl case with belt loop. For Fluke 21, 23, 29, 50 and 70 Series without holster. Holds meter, manual, and leads ready for testing. Use C25 when using meter with holster.
730-0050 .... **EACH 16.00**



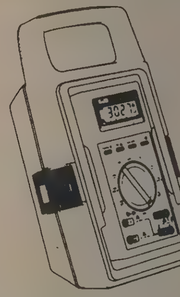
C75 Test Lead Case
Vinyl carrying case with two inside pockets. Designed to carry test leads, test probes or clips. Will not accommodate large probes or AC83 Test Clips. Size: 7.25" x 4.25" x 1.25" (190.5 mm x 108 mm x 31.8 mm).
730-0017 .... **EACH 6.00**

C10 Holster
Yellow, snap-on holster for all Series 10 meters absorbs shocks and protects the meter from rough handling. Built-in stand and hanger-loop allows for positioning meter. Molded hanger-loop can also be used as a stationary probe holder, allowing one hand to hold, operate, and contact test points simultaneously.
739-0103 .... **EACH 12.00**

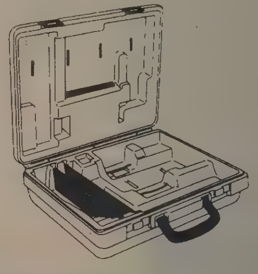
C30 Replacement Holster
For Fluke 31 and 33 clamp-meters. Protects meter display, and has a convenient belt clip for hands free carrying. Rugged velcro closure makes it easy to access meter even when wearing gloves.
739-0110 .... **EACH 15.75**

C70Y/G Series II Holster
For all 70 and 50 Series and 21, 23 and 29 meters. Choice of high-visibility yellow (C70Y) or grey (C70G). Easy-to-clean, vinyl, snap-on holster absorbs shocks and protects meter from rough handling. Unique Flex-Stand™ allows meter to hang, lean or stand for best viewing position. Belt hook and lead/probe storage on back. Replaces C70.
730-7000 .... **EACH 16.00**

C81Y/C81G Holster
For 80 Series DMMs. Yellow version (C81Y) is included with multimeter. Grey version (C81G) is optional. Easy-to-clean, vinyl, snap-on holster absorbs shocks and protects meter from rough handling. Lead and probe storage on back; includes unique Flex-Stand™ so meter can hang, lean or stand in best viewing position.
730-0081.C81G .... **EACH 16.00**
730-0082.C81Y .... **EACH 16.00**



C20 Hard Case
Heavy duty case for Fluke 25 and 27. Top cover snaps on back to serve as tilt stand. Carrying handle and storage compartment for test leads and small accessories are part of case.
730-0020 .... **EACH 30.00**

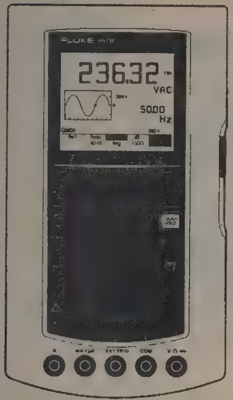


C100 Universal Carrying Case
For any Fluke handheld DMM or Fluke 50 Series thermometers and most Fluke DMM accessories. Tough polypropylene case provides protection against rough handling and bad weather.
730-1000 .... **EACH 31.50**

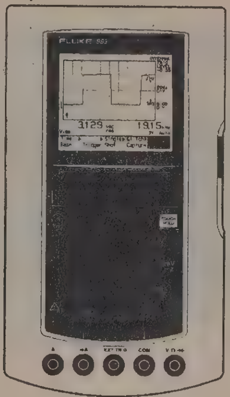
C800 Hard Storage Case (not shown)
Smaller than C100. Will hold 21, 23, 29, 70 Series and 80 Series in holsters. Double seal latches resist popping open if case is dropped. Includes compartments for holding accessories and manuals. Lid is detachable for easy storage.
730-0080 .... **EACH 28.00**

Fluke 23 and Fluke 87 Service Kits
Both of these fully-equipped service kits include all the tools you need to take on just about any job. And they'll save you 10% off the total cost of the separate tools. **Each Kit Includes:** Either the Fluke 23-2 or Fluke 87 digital multimeter. 80i-400 Clamp-on AC Current Probe, to measure current to 400 A. TL22 Flexible Test Leads (resistant to heat and cold). AC20 Industrial Test Clips (spring-loaded with extra wide jaw opening.) TP20 Industrial Test Probes (safety-designed, extra long to reach deep test points). Hard Shell DuraCase™ that holds meters in transit with right-angle test leads connected. Training and application booklets (87 Service Kit only) "Understanding Harmonics" video.
730-0060. Kit 23 .... **EACH 309.00**
730-0087. Kit 87 .... **EACH 469.00**
► **Full One Year Warranty On All Accessories.**

860 Series Graphical Multimeters



Model 867BE



Model 863E

Introducing the 860 Series of Graphical™ Multimeters, a whole new category of innovative handheld instruments. The GMM™ test tool family gives you state-of-the-art multimeter capabilities coupled with the graphical power of wave form display, trend plotting, in-circuit component testing and logic activity. You choose the best format for your application. Four meter display modes show you the measured information in different forms — to help you pinpoint more problems faster with a single handheld tool. You won't have to learn how to use your new GMM instrument — you'll already know. It has the familiar, intuitive feel of a Fluke DMM. Just glance at the simple rotary knob, and you instantly see which function is selected. If you want to see the latest major advance in handheld instruments, you need to look at Fluke's new Graphical Multimeter. **The 867B has a bright new display.**

730-0863. Model 863E	EACH	495.00
730-0868. Model 867BE	EACH	695.00
730-0869. SC860. Software and Optical Cable	EACH	245.00

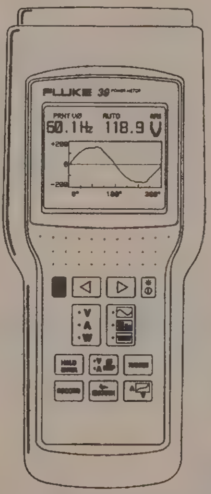
Selection Guide	867BE	863E
Basic DC Accuracy	.025%	.04%
30 mA Direct Current Accuracy	.05% ±15 counts	.1% ±15 counts
Current Range	6	4
Frequency Counter Range	>10 MHz	2 MHz
Meter AC Bandwidth	300 kHz	300 kHz
Waveform Display Bandwidth	1 MHz	1 MHz
Logic Activity	•	
Component Test	•	
High-Intensity LCD Backlight	•	
Internal Battery Charging	•	
Waveform Memory	•	
TL70A Test Leads	•	•
Alkaline Batteries		•
Battery Eliminator	•	
NiCd Batteries	•	

Basic Accuracy

Range	Measurement	867BE	863E
V dc	0 V to 1000 V	0.025%	0.04%
V ac (20 Hz to 300 kHz)	0 V to 1000 V		
	50 Hz to 30 kHz	0.5%	0.5%
Ohms	0 Ω to 30 MΩ	0.07%	0.07%
A dc	300 μA to 10 A	0.05% to 0.2%	
	30 mA to 10 A		0.1% to 0.2%
A ac	300 μA to 10 A	0.75%	
	30 mA to 10 A		0.75%
Hz	2 Hz to 2 MHz	0.05%	0.05%
Capacitance	10 nF to 10,000 μF	1.90%	1.90%
db/dBm	2, 4, 8, 16, 50, 75, 93, 110, 125, 135, 150, 300, 600, 900, 1000, 1200, ohm references		

730-0789. C789. Soft Case	EACH	80.00
730-0781. C781. Soft Case	EACH	39.00

Fluke 39 Power Meter *— NEW —*



The Fluke 39 is designed specifically to meet the day-to-day needs of electricians and facilities maintenance groups. It brings together the relevant features (such as rms voltage and current, and power factor) of much more expensive and training-intensive tools into a handheld power meter that's so easy to use, you'll be up to speed in minutes. No more complex set-ups. With the Fluke 39 in hand, you can quickly zero in on power system problems — minimizing downtime and maximizing your system's efficiency.

For fast, accurate testing of your power distribution system — at a price that won't test your budget — nothing beats the new Fluke 39 Power Meter. At the touch of a key, see volts, amps and watts displayed in your choice of waveforms, bar graphs and numeric values. Count on true-rms readings for accurate measurements on all types of loads. Get a real-time view of changing circuit conditions as your display automatically updates three times per second. If you're testing power on three-phase, three-conductor systems with balanced loads, you can even skip the manual calculations. The Fluke 39 does them for you, displaying three-phase results from a single-phase measurement that's easy to make. And if you need to troubleshoot harmonics on non-linear loads, no test tool makes it easier. the 39 Power Meter comes with Fluke's handheld portability and rugged on-the-job reliability. A full one-year guarantee, and a price that gives you the best value in power meters today. Every day.

Specifications. Frequency Range, Fundamental Individual: 6-65 Hz and dc. **Minimum Input Levels:** 5 Vrms or 1 Arms. **Volts Measurements (True rms). Input Range:** 5.0 V to 600 Vrms (ac+dc). **Basic Accuracy:** rms (ac+dc) — ±(0.5% + 2 digits); peak, dc — ±(2% + 3 digits); crest factor — >3.0 below 300 V, 1.56 at 600 V. **Amps Measurements (True rms) (1 mV/A) Isolated Input. Input Range:** 1.00 mV (A) to 1000 mVrms (A) (ac+dc); 1.0 mV (A) to ±2000 mV (A) peak. **Basic Accuracy:** rms (ac+dc) — ±(0.5% + 3 digits) + probe specs; peak, dc — ±(2% + 4 digits) + probe specs; crest factor — >3.0 below 600 mV, 2.0 at 1000 mV. **Watts Measurements (Volts-Amps) (1 mV/A) Isolated Input. Range:** 0 W (VA) to 600 kW (kVA) average; 0 W (VA) to 2000 kW (kVA) peak. **Accuracy (ac + dc):** active W (VA) — ±(1% + 4 digits) + probe specs single phase. **Harmonics Measurement Accuracy (Harmonic Level >5% Using Smooth √ 20). Volts:** Fundamental to 13th Harmonic — ±(2% + 2 digits); At 31st Harmonic — ±(8% + 2 digits). **Amps or Watts:** Fundamental to 13th Harmonic — ±(3% + 3 digits) + probe specs; At 31st Harmonic: ±(8% + 3 digits) + probe specs. **Phase:** Fundamental — (±2 degrees) + probe specs. **Frequency Measurement Accuracy. Fundamental:** 6.0 Hz-99.9 Hz — ±0.3 Hz. **Other Measurement Features. Input Bandwidth:** DC — 6 Hz to 2.1 kHz (–0.5 dB). **Crest Factor (CF) Range:** 1.00 to 5.00 (±4%). Power Factor (PF): 0.00 to 1.00 (±0.02%). **Displacement Power Factor (DPF):** 0.00 to 1.00 (±0.04 at 0.30). **Phase Measurement Range:** –179 to 180 degrees. **K-Factor (KF) Range:** 1.0 to 30.0 (±10%).

General Specifications. Size: 9.2 × 3.9 × 2.5" (234 × 100 × 64 mm). **Weight:** 2.0 lbs. (1 kg). **Battery:** Type — 4 alkaline "C" cells ANSI/NEDA-144A, IEC-LR14 (supplied); Operating Time — 48 hours, typical (continuous, without backlight). **Temperature:** Operating — 0 to 50°C (32 to 122°F). **Humidity (Non-Condensing):** Operating — 0-30°C - 90%; 30-40°C - 75%; 40-50°C - 45%. **Display:** LCD with LED backlight, adjustable contrast. **Safety. Overload Protection:** Maximum voltage isolation to earth — 600 V from any terminal. **Protection Levels:** IEC 1010-1, Pollution Degree 2, Installation Category III, Material Group II, 600 V. Tested to UL 1244.

730-0039. Model 39	EACH	995.00

Fluke 41B Power Harmonics Analyzer *— NEW —*

Graphical Solutions

Waveform display is ideal for tracking down harmonics problems; waveform distortion indicates the presence of harmonics. No set-up required; a single-cycle waveform appears automatically. Bar graph displays individual harmonics up to the 31st, indicating the percentage of the total signal contributed by each harmonic. The 41Bs new Zoom Mode feature lets you see even small amounts of harmonics. Numeric values display power and true-rms readings of voltage and current; frequency, minimum, maximum and average values; peak, Dc and total harmonic distortion; crest factor and power factor. Volts/Amp Check Screen displays a one-screen summary for all types of loads.

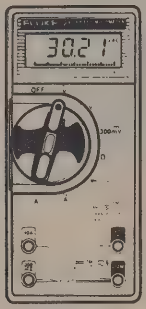
For engineers and power quality consultants who design and upgrade power distribution systems, the Fluke 41B Power Harmonics Analyzer offers advanced capabilities that let you download test data to your printer and PC for detailed system documentation and analysis. You've got the same fast, accurate test and measurement capabilities as the 39, which makes it easy to communicate with your system's field electricians and maintenance people. But it's what you can do with all this data that makes the Fluke 41B such a powerful analytical tool. Store up to eight complete measurement sets for future reference. Print reports, screen and tabular data directly from the Fluke 41B. And use the Fluke 41B's FlukeView® documenting software to view data and generate custom reports. From taking a measurement in the field to downloading the data for analysis and documentation, the Fluke 41B makes it easy to capture and work with power system data in meaningful ways.

Specifications. Frequency Range, Fundamental Individual: 6-65 Hz and dc. **Minimum Input Levels:** 5 Vrms or 1 Arms. **Volts Measurements (True rms). Input Range:** 5.0 V to 600 Vrms (ac+dc). **Basic Accuracy:** rms (ac+dc) — ±(0.5% + 2 digits); peak, dc — ±(2% + 3 digits); crest factor — >3.0 below 300 V, 1.56 at 600 V. Amps Measurements (True rms) (1 mV/A) Isolated Input. **Input Range:** 1.00 mV (A) to 1000 mVrms (A) (ac+dc); 1.0 mV (A) to ±2000 mV (A) peak. **Basic Accuracy:** rms (ac+dc) — ±(0.5% + 3 digits) + probe specs; peak, dc — ±(2% + 4 digits) + probe specs; crest factor — >3.0 below 600 mV, 2.0 at 1000 mV. **Watts Measurements (Volts-Amps) (1 mV/A) Isolated Input. Range:** 0 W (VA) to 600 kW (kVA) average; 0 W (VA) to 2000 kW (kVA) peak. **Accuracy (ac + dc):** active W (VA) — ±(1% + 4 digits) + probe specs single phase. **Harmonics Measurement Accuracy (Harmonic Level >5% Using Smooth √ 20). Volts:** Fundamental to 13th Harmonic — ±(2% + 2 digits); At 31st Harmonic — ±(8% + 2 digits). **Amps or Watts:** Fundamental to 13th Harmonic — ±(3% + 3 digits) + probe specs; At 31st Harmonic: ±(8% + 3 digits) + probe specs. **Phase:** Fundamental — (±2 degrees) + probe specs. **Frequency Measurement Accuracy. Fundamental:** 6.0 Hz-99.9 Hz — ±0.3 Hz. **Other Measurement Features. Input Bandwidth:** DC — 6 Hz to 2.1 kHz (–0.5 dB). **Crest Factor (CF) Range:** 1.00 to 5.00 (±4%). **Power Factor (PF):** 0.00 to 1.00 (±0.02%). **Displacement Power Factor (DPF):** 0.00 to 1.00 (±0.04 at 0.30). **Phase Measurement Range:** –179 to 180 degrees. **K-Factor (KF) Range:** 1.0 to 30.0 (±10%).

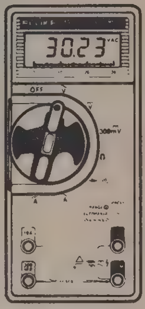
General Specifications. Size: 9.2 × 3.9 × 2.5" (234 × 100 × 64 mm). **Weight:** 2.0 lbs. (1 kg). **Battery:** Type — 4 alkaline "C" cells ANSI/NEDA-144A, IEC-LR14 (supplied); Operating Time — 48 hours, typical (continuous, without backlight). **Temperature:** Operating — 0 to 50°C (32 to 122°F). **Humidity (Non-Condensing):** Operating — 0-30°C - 90%; 30-40°C - 75%; 40-50°C - 45%. **Display:** LCD with LED backlight, adjustable contrast. **Safety. Overload Protection:** Maximum voltage isolation to earth — 600 V from any terminal. **Protection Levels:** IEC 1010-1, Pollution Degree 2, Installation Category III, Material Group II, 600 V. Tested to UL 1244.

730-0045. Model 41B	EACH	1700.00

Series II Analog/Digital Handheld Multimeters



Model 21



Model 23

Model 70

Model 73

Model 75

Model 77

All Models

- **Automatic Touch Hold®**
- **Diode Test**
- **Audible Continuity Beeper**
- **Autoranging with Manual Ranging**
- **TL75 Test Leads with Hard Ponts™**
- **Sleep Mode**
- **3 Year Warranty**
- **79/77/75/73/70 for Measurements to 4800 V-A**
- **29/23/21 for Higher Energy Measurements**

The Fluke 70 Series multimeters were first introduced in 1983 with three models, 73, 75 and 77. The Series was later expanded with the addition of the Industrial Models, 21 and 23. This Series has become a Classic. We have improved on the existing models and added three models, the 70, 29/79. **Autoranging.** With autoranging, you choose the function you want and the meter automatically selects the range with the greatest accuracy and resolution. Symbols on the liquid crystal display remind you what is being measured and the range of measurement.

Model 75 and Model 21

- **3200 Count Digital Display**
- **31 Segment Analog Bar Graph**
- **0.4% Basic DC Volts Accuracy**
- **2.0% Basic AC Volts Accuracy**
- **1.5% Basic DC Current Accuracy (32 mA to10A)**
- **0.5% Basic Resistance Accuracy**
- **2000 Hour Battery Life (Alkaline)**

Model 73

- **3200 Count Digital Display**
- **31 Segment Analog Bar Graph**
- **0.4% Basic DC Volts Accuracy**
- **2.0% Basic AC Volts Accuracy**
- **1.5% Basic DC Current Accuracy (10A Input Only))**
- **0.5% Basic Resistance Accuracy**
- **2000 Hour Battery Life (Alkaline)**

Model 70

- **3200 Count Digital Display**
- **31 Segment Analog Bar Graph**
- **0.5% Basic DC Volts Accuracy**
- **2.0% Basic AC Volts Accuracy**
- **0.5% Basic Resistance Accuracy**
- **2000 Hour Battery Life (Alkaline)**

Model 77 and Model 23

- **3200 Count Digital Display**
- **31 Segment Analog Bar Graph**
- **0.3% Basic DC Volts Accuracy**
- **2.0% Basic AC Volts Accuracy**
- **1.5% Basic DC Current Accuracy (32mA to 10A)**
- **0.5% Basic Resistance Accuracy**
- **2000 Hour Battery Life (Alkaline)**
- **Holster/Flex-Strand™**

Specifications. Specifications apply to all models unless otherwise stated. Accuracy is specified as ±([% of reading + [number of least significant digits]) at 18°C to 28°C (64°F to 82°F) with relative humidity to 90%, for a period of one year after calibration. **Display:** 3200 counts, updates 2.5/sec. **Analog:** 31 segments, update rate 25/sec. **Voltage. DC V - Range. 320 mV:** Model 70 — (0.5% + 1); Model 73/75/21 — ±(0.4% + 1); Model 77/23 — ±(0.3% + 1). **3.200V, 32.00V, 320.0V:** Model 70 — (0.5% + 1); Model 73/75/21 — ±(0.4% + 1); Model 77/23 — ±(0.3% + 1). **1000V:** Model 70 — ±(0.6% + 1); Model 73/75/21 — ±(0.4% + 1); Model 77/23 — ±(0.4% + 1). **AC V - Range. 45-500 Hz, 3.2V:** All Models — ±(2% + 2). **45-1 kHz, 32.00V, 320.0V, 750V:** All Models — ±(2% + 2). **AC Conversion:** AC-coupled, average responding, and calibrated to the rms value of a sine wave input. **Best Resolution:** 0.1 mV in 320 mV range. **Input Impedance:** 10 MΩ nominal, <50 pF. **DC V Normal Mode Rejection:** >60 dB @ 50 Hz or 60 Hz. **DC V Common Mode Rejection Ratio:** >120 dB @ dcm 50 Hz or 60 Hz. **AC V Common Mode Rejection Ratio:** >60 dB, dc to 60 Hz. **Overload Protection:** 1000V dc (500V dc, 500V ac {sine} on mV range), 750V ac rms (sine). **Current*. DC - Range. 32.00 mA, 320.0 mA:** Model 75/77/21/23 — ±(1.5% + 2). **10.00A**:** Model 73 — ±(1.5% + 2); Model 75/77/21/23 — ±(1.5 + 2). **AC - Range. 45 Hz to 1 kHz, 32.00 mA, 320.0 mA:** Model 75/77/21/23 — ±(2.5% + 2). **45Hz to 1 kHz, 10.00A**:** Model 73 — ±(2.5% + 2); Model 75/77/21/23 — ±(2.5% + 2).

*Current function not available on Fluke 70. **10A continuous, 20A for 30 seconds maximum.

730-0072.	Model 70 Series II	EACH 79.00
730-0073.	Model 73 Series II	EACH 109.00
730-0075.	Model 75 Series II	EACH 149.00
730-0021.	Model 21 Series II (Yellow)	EACH 149.00
730-0077.	Model 77 Series II with holster	EACH 179.00
730-0023.	Model 23 Series II with holster (Yellow)	EACH 179.00

Series II Handheld Multimeters

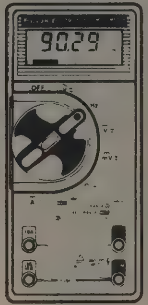
- **Frequency Counter**
- **Capacitance**
- **Low-ohms Range with Zero Calibration**
- **Smoothing™**
- **4000 Count Digital Display (9999 Count for Frequency, Capacitance)**
- **63 Segment Analog Bar Graph**
- **0.3% Basic DC Volts Accuracy**
- **1.0% Basic AC Volts Accuracy**
- **1.5% Basic DC Current Accuracy (4mA to 10A)**
- **0.4% Basic Resistance Accuracy**
- **Holster/Flex-Strand™**
- **700 hour Battery Life (Alkaline)**
- **Fluke 76 Is a True RMS Meter**

Specifications. Accuracy is specified as ±([%.of reading] + [number of least significant digits]) at 18°C to 28°C (64°F to 82°F) with relative humidity to 90%, for a period of one year calibration. **Display:** 400 counts, updates 4/sec {9999 counts for frequency, capacitance and Lo-ohms} **Analog:** 63 segments, update rate 40/sec. **DC V - Range. 40.00 mV:** ±(0.3% + 5). **400.0 mV, 4.000V, 40.00V, 400.0V:** ±(0.3% + 5). **1000V:** ±(0.3% + 1). **AC V - Range. 45 Hz to 1 kHz, 400.0 mV:** ±(1.9% + 4). **45 Hz to 1 kHz, 4.000V:** ±(1.9% + 2). **45 Hz to 1 kHz, 40.00V, 400.0V, 750.0V:** ±(1.0% + 2). **To 20 kHz, All ranges:** ±1.5 dB typical. **AC Conversion:** AC-coupled, average responding, and calibrated to the rms value of a sine wave input. **Best Resolution:** 0.01mV DC in 40mV range. **Input Impedance:** 10MΩ nominal, <100 pF. **DC V Normal Mode Rejection:** >60 dB @ 50 Hz or 60 Hz. **DC V Common Mode Rejection Ratio:** >120 dB @ DC, 50 Hz or 60 Hz. **AC V Common Mode Rejection Ratio:** >60 dB, DC to 60 Hz. **Overload Protection:** 1000V DC, 750V AC rms (sine). **Current. DC - Range. 4.0000 mA, 4.000A:** ±(0.5% + 5). **40.00 mA, 10.00A*:** ±(0.5% + 2) **AC - Range. 45 Hz to 1 kHz, 4.000 mA, 4.000A:** ±(1.5% + 4). **45 Hz to 1 kHz, 40.00 mA, 10.00A*:** ±(1.5% + 2). **AC Conversion:** Same as voltage. **Best Resolution:** 0.001 mA in 4 mA range. **Burden Voltage:** 11 mV/mA for mA input, 30 mV/A for A input. **Input Protection:** mA — 1A, 600V FAST fuse; A — 15A, 600V FAST fuse. **Ohms and Diode Test. Range. 400.0Ω:** ±(0.4% + 2). **4.000 kΩ, 40.00 kΩ, 400.0 kΩ, 4.000 MΩ:** ±(0.4% + 1). **40.00 MΩ:** ±(1% + 3). *10A continuous, 20A for 30 seconds maximum.

730-0079.	Model 79 Series II with Holster	EACH 199.00
730-0076.	Model 76 Series II with Holster	EACH 199.00
730-0029.	Model 29 Series II with Holster (Yellow)	EACH 199.00

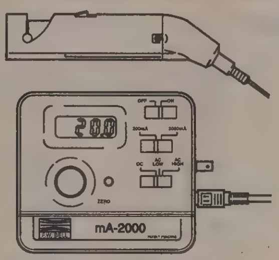
Model 79

Model 76



Model 29

Model mA-2000 Clamp-On mA Current Meter

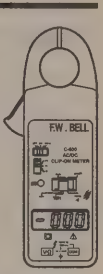


- ► **Measures DC and AC Currents with 0.1 mA Resolution**
- ► **Simple Clamp-On Operation**
- ► **Frequency Range DC to 100 KHz**
- ► **Built in 3½ Digit Display**
- ► **True RMS Measurement**
- ► **BNC Analog Output for Connection to Oscilloscope or Recorder**
- ► **Supplied with Optional AC Battery Eliminator and Hard Carrying Case**

Measures AC and DC currents on two ranges; 0-200 mA and 0-2000 mA. **Resolution:** 0.1 mA on low range and 1 mA on high range. **Basic Accuracy:** 1%. **Aperture:** 0.21 inches.

595-0001. Model mA-2000 .... **EACH 448.00**

Model C-600 Multimeter

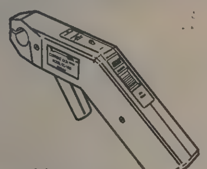


- ► **Measures DC and AC Currents Up to 600 A**
- ► **Measures Voltage Up to 1000 VDC and 750 VAC**
- ► **Measures Resistance Up to 2000 Ω**
- ► **Basic Accuracy: 1%**
- ► **Large Built In Display**
- ► **IEC 348 Safety Rating**
- ► **Audio Continuity Indicator**

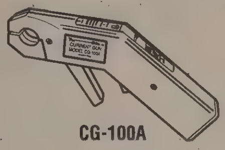
Versatile and easy to use. Simple clamp-on current measurements. Comes with voltage leads and carrying case. **Aperture:** 1.22 inches.

595-0005. Model C-600 .... **EACH 259.00**

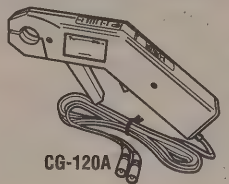
Models CG-100D/CG-100A/CG-120A Clamp-On Current Meter and Probes



CG-100D



CG-100A



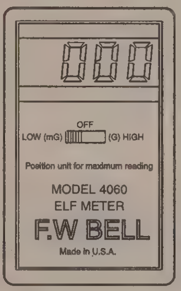
CG-120A

- ► **Measures AC and C Currents**
- ► **Frequency Range DC to 1 KHz**
- ► **Simple Clamp On Operation**
- ► **Analog Output for Connection to Digital Multimeter or Oscilloscope**
- ► **CG-100D Features Built In Display**

CG-100D. Features 200 A range with 0.1 A resolution, built in display and analog output. **Basic Accuracy:** 3% of reading. **Aperture:** 0.75 inches. **CG-100A.** Features 10 A and 100 A ranges with 1 V Full Scale analog output. **Basic Accuracy:** 2% Full Scale. **Overrange Capability:** 100%. **Aperture:** 0.75 inches. **CG-120A.** Features 50 A and 500 A ranges with 0.5 V Full Scale output. **Basic Accuracy:** 5% of reading. **Overrange Capability:** 300% on 50 A range. **Aperture:** 0.75 inches.

595-0002. Model CG-100D .... **EACH 335.00**
595-0003. Model CG-100A .... **EACH 255.00**
595-0004. Model CG-120A .... **EACH 165.00**

Model 4060 and 4080 ELF Meters



- ► **Compact**
- ► **Lightweight**
- ► **Large Built In Display**
- ► **Simple to Use**

Measures Extreme Low Frequency magnetic fields that are produced by electrical equipment and power transmission lines. Battery and instructions included. **Calibration Frequency:** 60 Hz. **LCD Display:** 3½ digits.

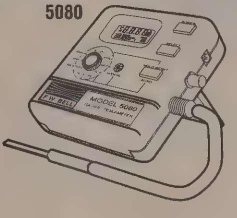
Model 4060. No. of Axes: Single. **Ranges:** 200 mG and 5 G. **Resolution (Low Range):** 1 mG. **Basic Accuracy:** 1%. **Frequency Response:** 40-600 Hz.

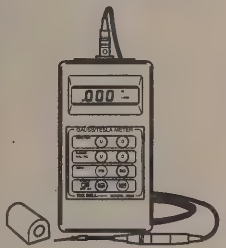
Model 4080. No. of Axes: Three. **Range:** 511 mG. **Resolution:** 0.1 mG. **Basic Accuracy:** 2%. **Frequency Response:** 60 Hz.

595-0008. Model 4060 .... **EACH 179.00**
595-0015. Model 4080 .... **EACH 199.50**

Model 4048 and 5080 Gaussmeters

5080





4048

Use for sorting and testing magnets, NDT Compliance Testing (ASTM Section E709), and instructional use. Both models Come complete with transverse probe, batteries, chamber for zeroing, carrying case and instructions.

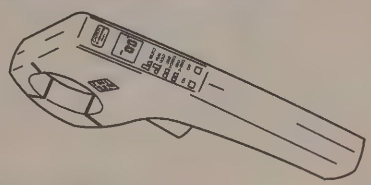
Model 4048. Ranges: 200 G, 2 kG, and 20 kG. **Basic Accuracy:** 2%. **Resolution (Low Range):** 0.1 G. **Frequency Range:** DC to 12 kHZ. **LCD Display:** 3½ digits. **Choice of Readings:** Gauss/Tesla.

Model 5080. Features analog and RS-232 output. **Ranges:** 300 G, 3 kG, and 30 kG. **Basic Accuracy:** 1%. **Resolution (Low Range):** 0.1 G. **Frequency Range:** DC to 20 kHZ. **LCD Display:** 3¾ digits. **Choice of Readings:** Gauss/Tesla, Ampere/Meters. **Analog Output:** ±3 V F.S. **Communication Port:** RS-232.

595-0006. Model 4048 .... **EACH 669.00**
595-0014. Model 5080 .... **EACH 995.00**

Model UM-7700D Current/Power Meter

— NEW —



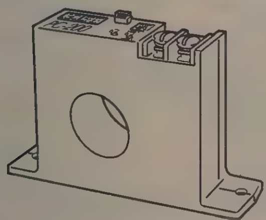
- ► **Measures DC and AC Current from 1 to 1000 A**
- ► **Measures AC Power from 1 to 660 kW**
- ► **Large 2⅞" × 2⅜" Oval Shaped Aperture**
- ► **Built in LCD Display**
- ► **Includes Battery, Instructions and Hard Carrying Case**

Measures DC and AC current up to 1000 A simply by clamping on the current conductor. Large oval shaped aperture for use on big power cables. Measures AC power up to 660 kW. User can easily calculate 3 phase power in 3 wire circuits by measuring two of the phases and summing the total. For 4 wire circuits, 3 phase power can be calculated by measuring all three phases and summing the total. Built in LCD display. Includes 9 volt battery, instructions, hard carrying case and voltage probes necessary for power measurements.

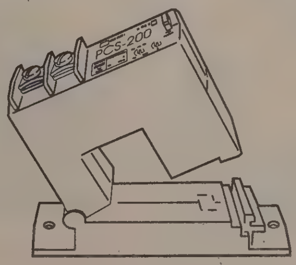
595-0013. Model UM-7700D .... **EACH 625.00**

Models PC-50/PC-200 and PCS-50/PCS-200 AC Current Sensors

— NEW —



PC-50/PC-200



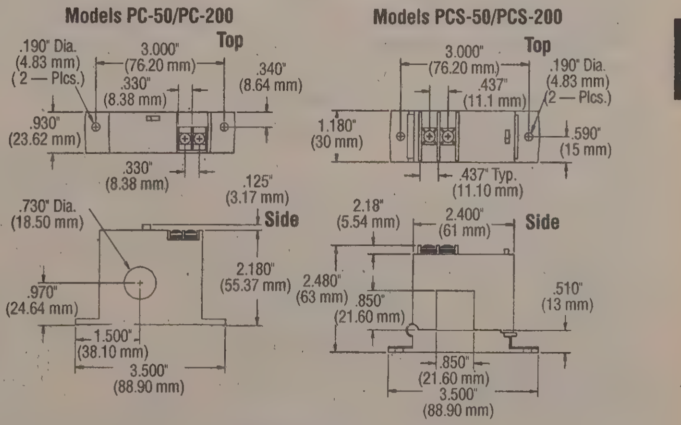
PCS-50/PCS-200

- ► **4-20 mA DC Output**
- ► **Range Selected on Sensor**
- ► **UL Listed**
- ► **Split Core Eases Installation**
- ► **Loop Powered — Only Requires Two Wires**

Loop powered sensors provide 4-20 mA DC output proportional to AC current. **Range Selected By Jumper:** PC-50/PCS-50 Ranges — 10 A, 20 A and 50 A; PC-200/PCS-200 Ranges — 100 A, 150 A and 200 A. The PCS-50 and PCS-200 clamp over existing wiring for easy installation. Simple two wire connection to computers or PLCs.

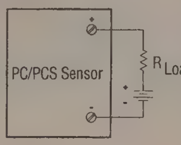
Stock No.	Mfr.'s Type	Current Range	Frequency Range	Full Scale Linearity	Output (DC)	Aperture Size (In.)	EACH
595-0009	PC-50	50 A	20-100 Hz	0.1%	4-20 mA	0.73	**95.00**
595-0010	PC-200	200 A	20-100 Hz	0.1%	4-20 mA	0.73	**95.00**
595-0011	PCS-50	50 A	20-100 Hz	0.3%	4-20 mA	0.85	**110.00**
595-0012	PCS-200	200 A	20-100 Hz	0.3%	4-20 mA	0.85	**110.00**

Mechanical Dimensions — All Dimensions are in inches (mm)



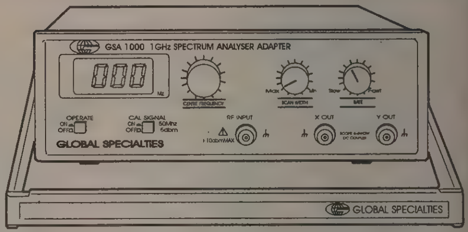
Connection Schematic

Connection to Sensor Is Made Via Two 6-32 Screw Terminals



Model GSA-1000 Spectrum Analyser Adapter

— NEW —



This adapter converts any conventional oscilloscope into a highly cost effective spectrum analyser. Bandwidth is unimportant and the only requirement is for an X-Y mode. Despite the low cost, the adapter offers excellent performance. The frequency range is 400 kHz to 1 GHz and the bandwidth (selectivity) is 250 kHz. The center frequency can be adjusted over the full frequency range with direct frequency readout on a large liquid crystal display. Both scan width and scan rate are fully adjustable. The amplitude range is –70 dBm with good accuracy over the whole amplitude and frequency range. A front panel CAL button allows a calibrated –30 dBm 50 MHz marker signal to be superimposed for precise amplitude and frequency checks.

Frequency. Frequency Range: 400 kHz to 1000 MHz. **Center Frequency Adjust:** 0 MHz to 1000 MHz. **Bandwidth:** 250 kHz (–6 dB typical). **Meter Accuracy:** 1% of reading + 1 MHz. **Calibration Marker:** 50 MHz fundamental, harmonics to 1 GHz. **Frequency Scan Width:** 1 MHz to 100 MHz/div. **Scan Speed:** 0.5 ms to 35 ms/div. **Amplitude. Input Impedance:** 50 Ω. **Amplitude Range:** –70 dBm to 0 dBm nominal. **Amplitude Scale:** Logarithmic, 10 dB/div. **Amplitude Linearity:** Typically ±2 dB. **Amplitude Flatness:** Typically ±1.5 dB, 4 MHz to 1000 MHz. **Max. Input Level:** +10 dBm. **Calibration Marker:** –30 dBm ±1 dB at 50 MHz. **Oscilloscope Requirements. Oscilloscope Mode:** X-Y mode, DC coupling; bandwidth not critical. **X-Input Sensitivity:** 0.5 V/div. **Y-Input Sensitivity:** 0.5 V/div. **Power Requirements. Input Voltage:** 220/240 or 110/120 volts at 50/60 Hz, internally adjustable. **Power Consumption:** 8 VA max. **General and Environmental. Electrical Safety:** Designed and manufactured to IEC1010-1. **Operating Range:** +5°C to +40°C, 20% to 80% RH. **Storage Range:** –10°C to +65°C. **Size:** 10.2 × 3.5 × 9.25" (W × H × D). **Weight:** 3.2 lbs.

761-1011. GSA-1000 .... **EACH 1050.00**

Model 5003 1.3 GHz Hand Held Frequency Counter

— NEW —

- **5 Hz to 1300 MHz Frequency Range**
- **Very High Sensitivity at all Frequencies**
- **Frequency and Period Measurement, 0.0001 MHz Resolution**
- **Reciprocal Counting Technique Gives Superior Accuracy**
- **Push-To-Measure Function with Auto Power-Down**
- **Large 8 Digit Display with Full Range of Annunciators**

The 5003 is a highly compact battery powered frequency counter which offers the convenience of a hand-held multimeter. Surprisingly, however, its performance exceeds that of many bench top counters of much higher cost. Despite its compact dimensions, the 5003 incorporates an 8 digit liquid crystal display of the size you'd expect to find on a bench top instrument. A full range of annunciators provide indication of measurement function, measurement time, overflow, trigger activity, low battery, and the measurement units. Operation is simplicity itself with all functions and ranges being selected using just five large buttons.

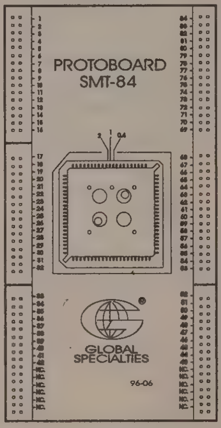
761-5003. Model 5003 .... **EACH 250.00**

Protoboard Surface Mount Breadboard Systems

— NEW —

- **Quick and Easy Prototyping with Surface-Mount Carriers**
- **Eliminate Time-Consuming Soldering**
- **Breadboard Strips Accept 20-26 AWG Leads**
- **Accepts JEDEC Type A Plastic Leading Chip Carrier (PLCC)**
- **Header Strips Allow Flexibility**
- **Limited Lifetime Warranty**

The Global Specialties® Surface mount Series of Protoboards® provide the only quick, non-destructive and solderless method of prototyping circuits with surface-mount chip carriers. The series, called SMT Protoboard®, accommodates the PLCC (plastic leaded chip carrier), by far the most widely used surface-mount package for integrated circuits. It allows instant access to surface-mount chips and eliminates the time-consuming and expensive building of permanent connections. Each SMT Protoboard®, in the standard configuration, comprises of a chip carrier socket and two solderless breadboarding ;strips mounted on a PC board. There is a numbered breadboard tie-point joined via the PC board to each contact point on the chip carrier socket. Each contact point corresponds to a particular lead on the PLCC. In the optional configuration, the SMT Protoboard® is supplied with header pins replacing the breadboard sockets. This allows the board to be mounted to a mother pc board, or to be mounted to an array of sockets that allows even more prototype area. By simply placing the PLCC in the socket, the designer can connect other components to pins on the integrated circuit through conventional solderless breadboarding methods. Design changes are quickly and easily performed by moving wires and components on the breadboarding strips, without damage to chip carriers and PC boards. More than one surface-mount chip can be included in a prototype circuit through the use of additional SMT Protoboards® connected through breadboarding.



SMT with Breadboards

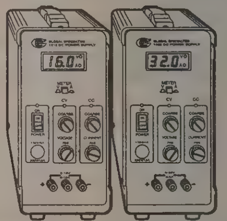
761-1001. SMT-20. 20 Pins	EACH	22.01
761-1002. SMT-28. 28 Pins	EACH	20.41
761-1003. SMT-44. 44 Pins	EACH	25.96
761-1004. SMT-68. 68 Pins	EACH	33.97
761-1005. SMT-84. 84 Pins	EACH	38.80

SMT with Header Strips

761-1006. SMT-20H. 20 Pins	EACH	19.49
761-1007. SMT-28H. 28 Pins	EACH	19.31
761-1008. SMT-44H. 44 Pins	EACH	22.58
761-1009. SMT-68H. 68 Pins	EACH	25.39
761-1010. SMT-84H. 84 Pins	EACH	29.81

1316/1332 Power Supplies

Laboratory Grade Single Output Supply — Has All the Features of the Competition Except Their High Price



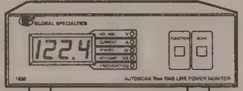
- **Available in 16 VDC at 10 A or 32 VDC at 5 A**
- **Short Circuit Protected**
- **Digital Readout Monitors Current and Voltage**
- **Coarse and Fine Adjustments**
- **Heavy Duty Transformer Isolated Design**
- **Constant Current/Voltage Mode LED Indicators**

761-1316. Model 1316. 0-16 VDC at 0-10 A .... **EACH 410.00**
761-1332. Model 1332. 0-32 VDC at 0-5 A .... **EACH 360.00**

Model 1520

— NEW —

Autoscan True RMS Line Power Monitor



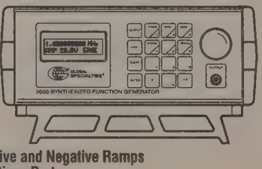
- **True RMS Measurements of Voltage, Current, Power, Volt-Amps and Frequency**
- **Unique Scan Mode Enables Continuous Monitoring of All Functions**
- **Separate Function Switch Allows Individual Monitoring of Each Parameter**
- **Reads Current Up to 20 Amps and Wattage Up to 2,000 Watts**

761-1520. Model 1520 .... **EACH 480.00**

2003 Synthesized Function Generator

— NEW —

With RS232 Communication Port Built In — Direct Digital Synthesis with 11 Digits of Accuracy



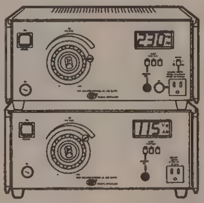
- **Program from the Keypad or Interface Directly to Your PC**
- **Fully Synthesized Generator**
- **Wide Frequency Range — DC to 1.6 MHz**
- **Trigger, Sweep, Burst, Hop, Gate Modes**
- **Internal Linear/Log Sweep**
- **External Trigger and Gate**
- **Sine, Square, Triangle, Positive and Negative Ramps**
- **Optional RS-485 Communications Port**

The Model 2003 is a menu driven direct digital synthesis (DDS) programmable function generator whose performance rivals units that cost several thousand dollars. Up to 16 preset waveforms configurations can be stored into memory and recalled automatically. The 32 character Backlit LCD display allows precise setting of the desired frequency to 10 digits of resolution. Applications for the 2003 include repetitive testing, automotive, telecommunications, transmission line, filter response, or wherever you need to select an exact frequency.

761-2004. Model 2003/232 .... **EACH 499.95**
761-2005. Model 2003/485 .... **EACH 599.95**

Model 1504 and 1505

Variable Line Supply Series



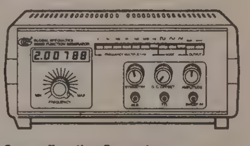
- **Model 1504 Single Range 0-150 VAC @ 4 A**
- **Model 1505 Dual Range 0-150 VAC @ 4 A, 0-260 VAC @ 2 A**
- **Triple Isolated Continuously Variable AC Output**
- **Variable from 0-150 VAC at 0-4 A**
- **3 Digit DPM for High Accuracy**
- **Power Line Leakage Current Measurement Facility**
- **Capacitive Coupling Less than 0.0005 pF**
- **Galvanic Leakage Less than 10 µA**
- **120 dB Attenuation for Common Mode Noise**

— NEW —

761-1504. Model 1504 .... **EACH 420.00**
761-1505. Model 1505 .... **EACH 595.00**

2002D Function Generator

2 MHz Sweepable Generator with Internal 6 Digit Frequency Counter

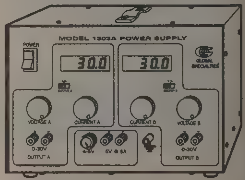


- **Multi-Purpose Sweep Function Generator**
- **Wide Frequency Range 0.2 Hz to 2 MHz**
- **Provides Sine, Triangle, Square Wave, and Ramp Outputs**
- **Continuously Variable 50 Ohm Output**
- **Symmetry Control Provides Duty-Cycle Adjustment**
- **Variable DC Offset**
- **Separate TTL Output**
- **Sweep Input Allows VCO Control of Frequency**
- **Model 2002 Available without Digital Display**

761-2010. Model 2002D .... **EACH 269.00**
761-2002. Model 2002 .... **EACH 219.95**

1302A Power Supply

Laboratory Grade Triple Output Supply — High Quality, Economically Priced

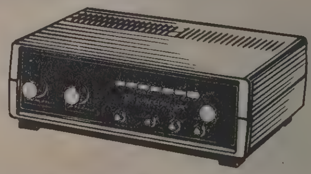


- **Triple Outputs, +5 VDC and Two 0-30 VDC Variable**
- **+5 VDC at 5 A, 0-30 VDC at 1 A**
- **+5 VDC Supply Variable from 4 to 6 VDC**
- **Two Digital Readouts — Monitors Current or Voltage**
- **Constant Current or Constant Voltage Mode**
- **Heavy Duty Transformer Isolated Design**
- **Series and Parallel Operation**

761-0132. Model 1302A .... **EACH 525.00**

4001 Digital Pulse Generator

5 MHz Ultra-Variable Generator



- **Independent Settings of Pulse Width and Pulse Spacing**
- **Outputs from 0.5 to 5 MHz**
- **Four Modes — Run, Triggered, Gated, Single Shot**
- **Symmetrical Square Wave Outputs**
- **Complement Output — Inverts Waveform**
- **Variable Output for CMOS Circuits**

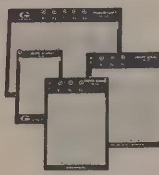
Triggerable dual output precision pulse source.

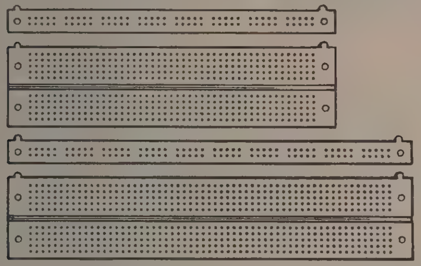
761-4001. Model 4001 .... **EACH 199.95**

Protoboard — All Breadboard Products are Proudly Made in the U.S.A. and Have an Unconditional Life-time Guarantee!

Stock No.	Mfr.'s Type	Sockets	Bus Strips	IC Capacity*	Terminals	Tie Points	Binding Posts	Length In. (mm)	Width In. (mm)	Height In. (mm)	Weight Ozs.	EACH
761-0010†	PB-10	UBS-100	—	8	180	900	3	7.0 (178)	4.0 (102)	1.4 (36)	6.5	**17.44**
761-0102‡	PB-102	2/QT47S	1/QT35B-3/QT47B	12	248	1240	1	7.4 (187)	4.5 (114)	1.4 (36)	10.0	**30.00**
761-0103‡	PB-103	3/QT59S	1/QT47B-4/QT59B	24	450	2250	4	9.0 (229)	6.0 (152)	1.4 (36)	21.0	**42.96**
761-0104‡	PB-104	4/QT59S	7QT59B	32	612	3060	4	9.8 (249)	8.0 (203)	1.4 (36)	29.0	**65.00**
761-0105‡	PB-105	6/QT59S	4QT47B-7QT59B	48	912	4560	5	9.2 (234)	11.4 (290)	1.4 (36)	29.0	**97.90**

*No Power; Shipped Assembled. †Plastic Backplate. ‡Aluminum Backplate.





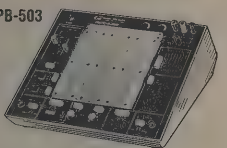
Quick Test Sockets and Bus Strips

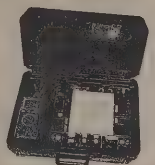
Universal solderless breadboarding system includes Quick-Test sockets and bus strips. Socket terminals are arranged with two rows of five pre-constructed tie points running crosswise. Bus strip terminals are arranged in two rows of five pre-connected tie points running lengthwise. Base is molded of high-temperature plastic. Contacts are pre-stressed, spring loaded, nickel silver alloy. **Wire Sizes:** .015" to .032". Units feature snap-lock mechanism for mating two or more units together.

Stock No.	Mfr.'s Type	Strip Length (Ins.)	Strip Width (Ins.)	Mount Dimen. (Ins.)	Tie Points	Term. Points	IC Qty. (14-pin)	EACH
761-0059	QT-59S	6.5	1.32	6.2	590	118	8	**7.26**
761-0060	QT-59B	6.5	0.36	6.2	100	20	—	**2.80**
761-0047	QT-47S	5.3	1.32	1.0	470	94	6	**5.00**
761-0048	QT-47B	5.3	0.36	5.0	80	16	—	**2.60**

PB-503 or PB-503C Protoboard Trainers Design Workstation

PB-503





PB-503-C

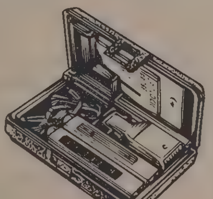
- ► **Also Available in Kit Form**

Global's professional Proto-Board® design station puts a workbench full of circuit design tools on your desktop. The PB-503 offers you .1 to 100 kHz function generator with sine, TTL square and triangle outputs. Triple voltage +5 V, and variable ±5-15 VDC power supplies. Large solderless breadboard areas. Ideal for all types of circuits both analog and digital. 6"H × 13"W × 11.5"D. **Weight:** 7 lbs.

The PB-503-C is a complete design work station, including instrumentation, breadboarding, and a rugged DC regulated triple power supply. The instrumentation features a 100 KHz function generator with sine, square, and triangle waveforms, plus a TTL output for generating clock pulses. Add to this two digital pulsers operated by debounced push-button switches, and eight logic state indicators which operate as individual logic probes. The Breadboarding area has a total of 2520 uncommitted tie points, enough space for circuits containing 24 ICs of 14 pins or equivalent. The Breadboarding sockets have an unlimited lifetime guarantee. The power supply offers three DC regulated supplies, one fixed at +5 VDC and two variable from 5 to 15 VDC. All three supplies are short-circuit protected, automatically current limiting the output to a safe level.

761-0503. PB-503..EACH 299.95
761-0504. PB-503-C..EACH 349.95
761-0505. PB-503K..EACH 225.00
761-0506. PB-503CK..EACH 274.95

Logic Analysis Test Kits



Three high performance troubleshooting instruments — complete portable test systems including accessories.

LTC-1/Standard Logic Analysis Test Kit

- ► **Includes LP-1 Logic Probe, DP-1 Digital Pulsar, LM-1 Logic Monitor**
- ► **Captures Pulses to 50 ns; Pulse Trains to 10 MHz**
- ► **Excellent for All but Highest Speed Circuitry**
- ► **Our Most Economical Test Kit**

761-1333. Model LTC-1..EACH 159.95

LTC-2/High Speed Logic Analysis Test Kit

- ► **Includes LP-3 Logic Probe, DP-1 Digital Pulsar, LM-1 Logic Monitor**
- ► **Captures Pulses to 15 ns; Pulse Trains to Over 35 MHz**
- ► **High Speed and High Performance**
- ► **For Demanding Troubleshooting**

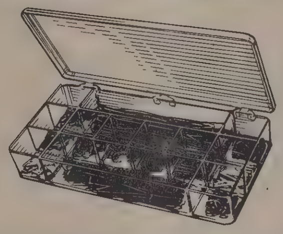
761-1300. Model LTC-2..EACH 199.95

LTC-5/Ultra Speed Logic Analysis Test Kit

- ► **Includes LP-5 Logic Probe, DP-1 Digital Pulsar, LM-1 Logic Monitor**
- ► **Captures Pulsers to 5 ns — Speeds to 100 MHz**
- ► **Ultra-High Speed Performance**
- ► **For the Most Advanced Troubleshooter**

761-1299. Model LTC-5..EACH 254.95

WK-1 Wire Jumper Assortment



WK-1 jumper kit contains 350 pre-cut, pre-stripped and pre-formed #22 gauge solid hook-up wire jumpers in color coded lengths. Thirteen different lengths are supplied to insure the right jumper for every design. Use WK-1 with all of Global's solderless breadboarding products for added simplicity and reduced design time.

761-0002. Model WK-1..EACH 14.95

Deluxe Logic Analysis Test Kits — *NEW* —

Smarter tools for demanding microprocessor circuits. The logical solution for your digital troubleshooting problems.

LTC-6/Deluxe Logic Analysis Test Kit

- ► **Includes LP-1 Logic Probe, DP-1 Digital Pulsar, LM-2A Logic Monitor, SQ-1 Tone-Ohmmeter**
- ► **Captures Pulses to 50 ns**
- ► **SQ-1 Locates Bad ICs without Unsoldering Parts**
- ► **Reduces Troubleshooting Time**

761-1334. Model LTC-6..EACH 299.95

LTC-7/Deluxe High Speed Test Kit

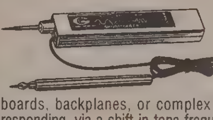
- ► **Includes LP-3 Logic Probe, DP-1 Digital Pulsar, LM-2A Logic Monitor, SQ-1 Tone-Ohmmeter**
- ► **Captures Pulses to 15 ns**
- ► **SQ-1 Locates Bad ICs without Unsoldering Parts**
- ► **For Higher Speed Troubleshooting**

761-1335. Model LTC-7..EACH 324.95

LTC-8/Deluxe Ultra Speed Test Kit

- ► **Includes LP-5 Logic Probe, DP-1 Digital Pulsar, LM-2A Logic Monitor, SQ-1 Tone-Ohmmeter**
- ► **Captures Pulses to 5 ns**
- ► **SQ-1 Locates Bad ICs without Unsoldering Parts**
- ► **Speeds to 100 MHz**
- ► **For the Professional Troubleshooter**

761-0008. Model LTC-8..EACH 379.95

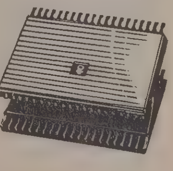


Shortsqueek SQ-1

Shortsqueek is a unique type of "audible" tone ohmmeter that simplifies finding shorts on PC boards, backplanes, or complex hard wire assemblies. It does this by responding, via a shift in tone frequency, to very small changes in resistance that conventional ohmmeters can't cope with. Most important, Shortsqueek significantly reduces the time it takes to locate those hard to find shorts.

761-0003. SQ-1..EACH 49.95

Protoclips

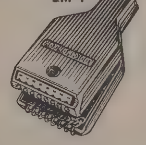


Dual spring clip design provides you with superior contact time after time. The PC-14, PC-16, PC-24, and PC-40 dual spring construction insures you a positive connection to all pin ICs. Its non-corroding nickel-silver contacts and clip notch test pins give you trouble free testing. Quality materials and a short-proof design for "no smoke" testing.

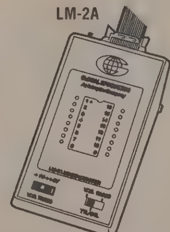
761-0014. Model PC-14..EACH 5.50
761-0016. Model PC-16..EACH 6.00
761-0024. Model PC-24..EACH 9.25
761-0040. Model PC-40..EACH 14.25

Logic Monitors

LM-1



LM-2A

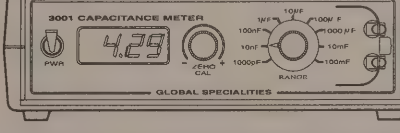


- ► **Fast, Easy to Use**
- ► **Monitors Up to 16 Pin DIP ICs**
- ► **Multi-Logic Family Compatibility**
- ► **Clip-On Directly (LM-1)**
- ► **Variable Threshold (LM2A)**

Read static and dynamic states of entire ICs. Trace signals through counters, shift registers, flip-flops and decoders.

761-1400. Model LM-1..EACH 59.95
761-0020. Model LM-2A..EACH 175.00

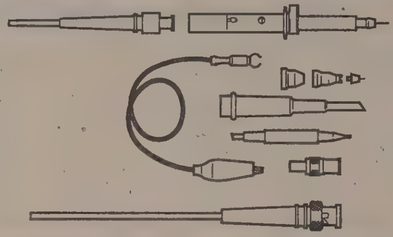
3001 Digital Capacitance Meter



Direct, highly accurate 3½-digit readout of capacitance from 1 pF to 199,900 μF. Unique dual threshold technique delivers 0.1% accuracy on seven of its nine ranges and eliminates errors due to dielectric absorption. Uses DC charging characteristics to determine true capacitance, even in wires, switches and other components. Zero Calibrate knob allows nulling of spurious capacitance up to 100 pF. **Timebase:** 2 MHz crystal oscillator. **Accuracy:** ±0.1% of reading on seven lower ranges (up to 1999 μF), ±0.5% on upper ranges; ±2pF. ±1 count, at 23°C (±5°). **Power Required:** 105-135 VAC, 57-63 Hz, 6 VA, max. **Size:** 3 × 10 × 7" (7.6 × 25.4 × 17.8 cm). **Weight:** 3.0 lbs (1.4 kg).

761-3001. Model 3001..EACH 299.95

Semi-Modular — *NEW* — Oscilloscope Probes



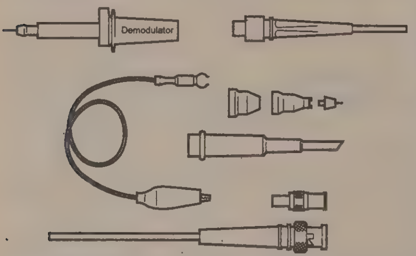
- Modular Parts for Replacements
- Pomona's Traditional Offering
- Cable Length: 1.2 Meter
- Good General Purpose Probes
- Accessories Included

ITT Pomona continues to offer its highly regarded line of semi-modular passive voltage oscilloscope probes. The design allows component replacement in 100, 200 and 300 MHz bandwidth probes.

Stock No.	Mfr.'s Type	Attn.	Bandwidth (MHz)	Input Impedance		Risetime (ns)	Approx. Voltage (V) Max.†	Compensation Range (pF)	EACH
				Resistance (MΩ)*	Capacitance (pF)				
885-5800	5800	X1	30	1	45.0	11.7	600	—	**45.00**
885-5803	5803	X10	200	10	15.0	1.8	600	10-60	**50.00**
885-6007	5809	X10	300	10	15.0	1.2	600	10-60	**87.00**
885-5812	5812‡	X10	300	10	15.0	1.2	600	10-60	**92.00**
885-5827	5827	X100	200	100	6.5	1.8	1200	15-50	**88.00**

*When connected to an oscilloscope with 1 MΩ input resistance. †Derated with frequency.‡Readout actuator.

RF Detector — *NEW* — (Demodulator) Probes



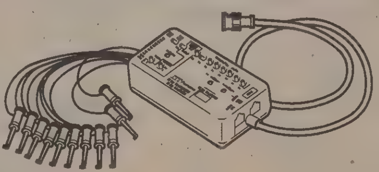
Semi-Modular Probe

- Cable Length: 1.2 Meter
- 1 VRMS = 1 VDC
- Accessories Included

Model 5815 is a miniature RF Detector Probe intended for use with a wide range of oscilloscopes. These probes are very useful for measuring RF signals up to 800 MHz. They provide an output of 1 VDC for an input of 1 VRMS sinewave. **Points to Obtain Optimum Performance:** Where possible, the probe should be connected to the test point using the BNC adapter supplied to minimize the VSWR; If the ground connection cannot be made using the BNC adapter, connect the ground lead as close as possible to the test point to minimize stray inductance. Where possible, take measurements from low impedance parts of the circuit to minimize loading effect of the probe.

Stock No.	Mfr.'s Type	Cable Length (M)	Diode Turnon Voltage (mV)	Bandwidth	Input Capacitance (pF)	Peak AC Input (V)	DC Isolation Incl. Peak AC (V)	EACH
885-5815	5815	1.2	200	100 KHz-800 MHz ±3 dB	5	50	200	**83.00**

Logic Scope Probe

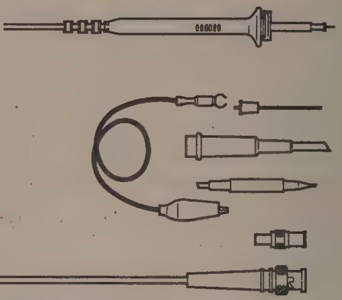


- 3 Mode Operation: Logic Analyzer, Trigger Probe, Multiplexer
- 20 MHz Bandwidth Covers Most Microcontroller Frequencies
- 8 nS Minimum Data Set-Up and Data Hold-Time
- 100 KΩ/5 pF Input Impedance
- 800 KHz Internal Clock Frequency
- Minimum/Maximum Input Levels 0.8-2.4 V (Low/High), –0.5-5.5 V (Low/High)
- 4.75-7 V With 190 mA Maximum Supply Current
- Includes 11 Test Leads With Micrograbber® Test Clip (Eight Gray Signal Leads, One Yellow Clock Lead, One Red Power Lead and A Black Ground Lead)

Turns your analog oscilloscope into a logic analyzer. Ideal as a cost effective solution to examine and analyze single-shot and repetitive digital phenomena. 8 channel reading capability lets you use one unit independently or daisy chain up to three units for 16 or 24 channels.

885-6004. Model 6004 .... **EACH 385.00**

MICRO-LC™ Oscilloscope Probes — *NEW* —



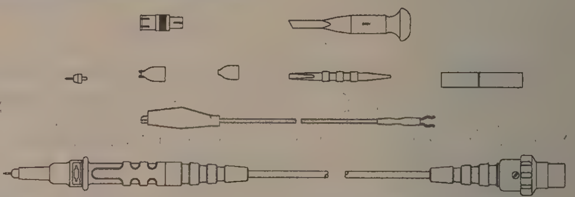
- High Bandwidth; Up to 450 MHz on Some Models
- Fast Risetime and Low Overshot
- Low Capacitance; As Low As 7 pF in a X10 Probe
- High Accuracy with Laser Trimmed Components
- Ergonomic Design; Made Possible with SMD Usage
- Wide Compensation Range: 10-30 pF
- Replaceable Gold Plated Test Tip
- Designed in Accordance with IEC 1010 International Safety Specifications
- Cable Length: 1.2 Meters
- Two Switchable Attenuation Versions
- Accessories Included

ITT Pomona is introducing a new line of monolithic passive voltage oscilloscope probes for your most demanding applications. These probes offer top performance — high bandwidth and low capacitance — in a small, narrow-line body. The small size and improved input impedance is achieved thanks to the use of special, low dielectric constant material and surface mount devices (SMDs). This rugged design, made to IEC 1010 safety standards, assures quality and durability. Three models offer readout actuator capability in popular bandwidths.

Stock No.	Mfr.'s Type	Attn.	Bandwidth (Mhz)	Input Impedance		Approx. Risetime (ns)	Max. Voltage (V)†	Compensation Range (pF)	EACH
				Resistance (MΩ)*	Capacitance (pF)				
885-6205	6101‡	X10	150	10	12.0	2.3	600	10-30	**47.00**
885-6206	6069	X10	250	10	12.0	1.4	600	10-30	**50.00**
885-6207	6102‡	X10	250	10	12.0	1.4	600	10-30	**54.00**
885-6208	6075	X10	450	10	7.0	0.8	600	8-15	**109.00**
885-6209	6103‡	X10	450	10	8.5	0.8	600	10-25	**120.00**
885-6210	6072	X1/X10	25/250	1/10	45.0/12.0	14.0/1.4	600	10-30	**54.00**

*When connected to an oscilloscope with 1 MΩ input resistance. †Derated with frequency. ‡Readout actuator.

Oscilloscope Probes, Fully Insulated for Portable Oscilloscopes



- Fits Fluke 90 Series Scopemeter®
- Low Profile
- Extra Durable
- Available In Switchable X1/X10 Model
- Fast Risetime
- Easy Calibration

Stock No.	Mfr.'s Type	Bandwidth (MHz)	Attn.	Input Capacitance (pF)	Cable Length (m)	Max. Voltage (V)	Input Impedance	Color	EACH
885-6033	6033	250	X10	15	1.5	600	20	1 Red, 1 Gray	**138.00**
885-6035	6035-2	250	X1/X10	15	1.5	600	20	Red	**105.00**
885-6036	6035-8	250	X1/X10	15	1.5	600	20	Gray	**105.00**

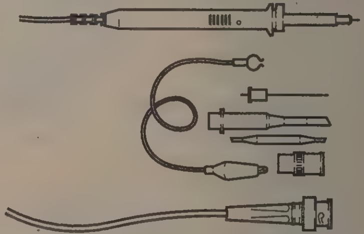
®Scopemeter is a registered trademark of Fluke Mfg.

Oscilloscope Probes

Micro-LC™ Oscilloscope Probes

- Fast Risetime and Low Overshot
- Low Capacitance
- High Accuracy with Laser Trimmed Components
- Ergonomic Design, Made Possible With DMS Usage
- Wide Compensation Range
- 1.2 Meter Cable
- Replaceable Gold Plated Test Tip
- Accessories Included

Top performance — high bandwidth and low capacitance — in a small, narrow-line body. Meets IEC 1010 safety standards.

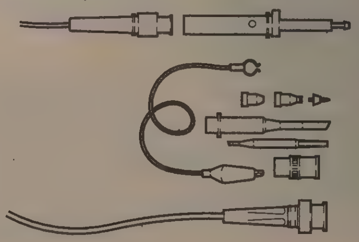


Stock No.	Mfr.'s Type	Attn.	Bandwidth (MHz)	Input Impedance		Approx. Risetime (ns)	Max. Voltage (V)†	Compensation Range (pF)	EACH
				Resistance (MΩ)*	Capacitance (pF)				
885-6151	6049	X10	150	10	12	2.3	600	10-30	**39.60**

Semi Modular Oscilloscope Probes

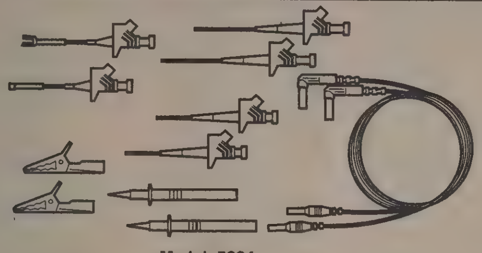
- Modular Parts For Replacement
- 1.2 Meter Cable
- Accessories Included

Design allows for component replacement.

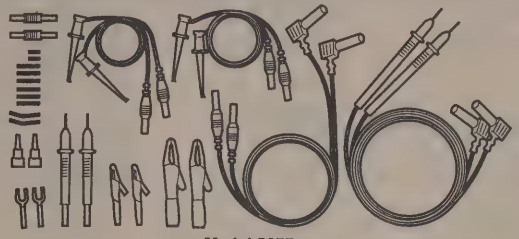


885-5792	5792	X1	20	1	45	17.5	600	—	**34.10**
885-5795	5795	X10	100	10	15	3.5	600	10-60	**38.50**
885-4550	4550A	X1/X10	15/100	1/10	55/16	23.3/3/5	600	10-60	**47.00**

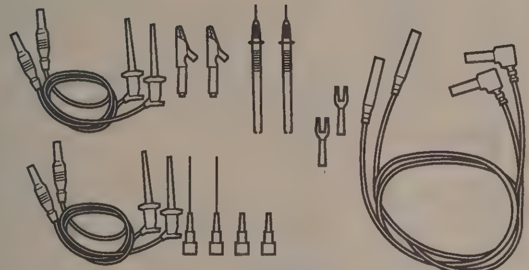
*When connected to an oscilloscope with 1 MΩ input resistance. †Derated with frequency.



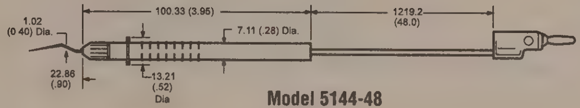
Model 5904



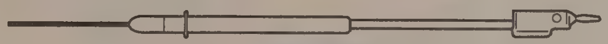
Model 5677



Model 5674



Model 5144-48



Model 5952

DMM Kits

Deluxe Electrical Kit. Contains 2 each: Probe Handles, Right Angle to Straight Plug Leads, Flexible Maxigrabber Clips, Rigid Maxigrabber Clips, Maxigrabber Grip Clips and Extra Large Jaw Alligators, one black and one red. Supplied with nylon pouch.
885-5904. Model 5904 ... **EACH 88.00**

Multi-Use Test Lead Kit. Contains 2 each: Probe Handles, Right Angle to Straight Plug Leads, Flexible Maxigrabber Clips, and Medium Alligators, one black and one red. Supplied with nylon pouch.
885-5899. 5899 ... **EACH 39.60**

Automotive DMM Kit. Contains 2 each: Probe Handles, Right Angle to Straight Plug Leads, Flexible Maxigrabber Clips, Insulation Piercing Maxigrabber Clips and Extra Large Jaw Alligators, one black and one red. Supplied with a nylon pouch.
885-5903. Model 5903 ... **EACH 76.00**

Maxigrabber® Sets

Each clip has sheathed 4 mm (.16") receptacle to accept Pomona Flexible Leads or Fluke Multimeter Leads. One black and one red clip.

Flexible Maxigrabber® Set. Maxigrabber has hook tip.
885-5911. Model 5911 ... **EACH 14.30**

Maxigrabber® Grip Clip Set. Grabber has grip teeth.
885-5912. Model 5912 ... **EACH 19.80**

Insulation Piercing Maxigrabber® Set. Pierces cable insulation up to 3.5mm (.14") without damaging wire.
885-5913. Model 5913 ... **EACH 27.50**

Flexible Maxigrabber® Set. Maxigrabber has pincer type contact.
885-5910. Model 5910 ... **EACH 18.70**

Alligator Sets

Each clip has sheathed 4 mm (.16") receptacle to accept Pomona Flexible Leads or Fluke Multimeter Leads. One black and one red clip.

Extra Large Alligator Clip Set. Fully insulated clip with 9.65 mm (.38") jaw opening.
885-0410. Model 6041A ... **EACH 8.55**

Medium Alligator Clip Set. Fully insulated clip with 7.11 mm (.28") jaw opening.
885-5916. Model 5916 ... **EACH 7.15**

Pop Jack DMM Kits

Silicone insulation is a special quality feature on 6 kits. Won't be burned by the bump of a soldering iron. Remains flexible in cold weather. Reliably attach different probes or clips to the same lead because "pop jack" holds tight.

Maxi Kit. Kit features the very best in quality and performance. All silicone insulated leads. Contains 2 each: Extendable Probe Tip Leads, Replaceable Tip Probe Handles, Extended Slide-on Tips, Medium Alligators, Heavy Duty Alligators, Minigrabber Leads, Minipincer Leads, Slide-on IC Tips, Pop Jack Leads and Couplers, one black and one red. Also includes 2 each: Spade Lugs, Dog Leg Micro-Tips, Needle Tips, Shouldered Micro Tips and 4 each: Standard Brass Tips. Supplied with a nylon pouch.
885-5677. Model 5677A ... **EACH 88.00**

Basic Test Lead Kit for Electronics. Contains 2 each: Test Probe leads on PVC insulated 18 AWG wire, one black, one red; slide-on extended tips and alligator clips, one black and one red. Banana plugs on meter end have no sleeve. Comes in a reusable plastic case.
885-5672. Model 5672 ... **EACH 23.30**

Heavy Duty Kit for Electrical Work. This versatile kit provides the right test accessories for demanding electrical tests. Contains 2 each: Probe Handles, Extended Slide-on Tips, Medium Alligators, Heavy Duty Alligators, Pop Jack Leads and Couplers, one black and one red.
885-5673. Model 5673A ... **EACH 44.00**

Standard Replacement Test Lead Kit. Contains 2 Test Probe PVC Leads, one black and one red.
885-5519. Model 5519 ... **EACH 9.90**

Deluxe Kit for Electronics. Kits Contains 2 Each: Probe handles, medium alligator clips, minigrabber leads, minipincer leads, slide-on IC tips, slide-on extended tips, pop jack leads, one black and one red. It also contains 2 spade lugs, and a nylon pouch.
885-6270. 5674A ... **EACH 66.00**

SMD Microtip™ Test Probe. The microtip is specially designed to probe SMD contacts. It features a stainless steel needle tip that is flexible to help prevent damage to the SMD lands. The microtip is curved to aid in probing of hard to reach areas. **1st End:** SMD Microtip™ Test Probe. Chuck — Brass, nickel plated. Replaceable Microtip — Stainless steel. Insulation — Nylon. **Wire:** 20 AWG, 41 × 36 t.c., PVC insulation, 2.2 (.087) O.D. **2nd End:** Stacking banana plug — Brass body, beryllium copper spring, nickel plated; Insulation — polypropylene. **Rating:** 1200 V AC/DC, 5 amps, +55°C (+131°F) max.
885-5320. 5144-48-0. Black ... **EACH 9.65**
885-5325. 5144-48-2. Red ... **EACH 9.65**

Replaceable Tip Probe Kit. Kit Contains 2 Pieces Each: Replaceable tip test probe leads on silicone wire, one black and one red; dog leg micro tips, 2.0 (.080) needle tips, shouldered micro tips. **4 Each:** Standard brass tips.
885-5676. 5676 ... **EACH 26.85**

Extendable Tip Probe to Stacking Banana Plug. Set includes one black and one red 48" long PVC insulated test lead.
885-5952. 5952 ... **EACH 16.50**

Flexible Test Lead Sets

Sets contain one black and one red lead. Plugs fit Wavetek and Fluke Multimeters.

Right Angle to Straight Plug Set. Right Angle Sheathed Banana Plug to Straight Sheathed Banana Plug on 62" long, silicone wire.
885-5907. Model 5907 ... **EACH 13.20**

Straight Sheathed Set. Straight Sheathed Banana Plug on each end of 62" long, silicone wire.
885-5908. Model 5908 ... **EACH 13.20**

Right Angle Sheathed Banana Plug Set. Right Angle Sheathed Banana Plug on each end of 62" long silicone wire.
885-5909. Model 5909 ... **EACH 13.20**

Probe Sets

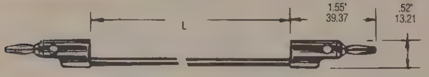
Test Probe with Stainless Steel Tip. Probe to Right Angle Plug on 48" long silicone wire, one black and one red.
885-6116. Model 5898 ... **EACH 8.80**

Test Probe with Caged Banana Plug Tip. Probe to Right Angle Plug on 48" long silicone wire, one black and one red.
885-5897. Model 5897 ... **EACH 9.90**

Test Probe Handle Set. Test Probe with caged banana plug tip and sheathed Banana Jack in handle, one black and one red.
885-5906. Model 5906 ... **EACH 7.70**

Patch Cords

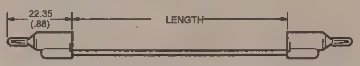
Stacking Banana Plug



Brass body; beryllium copper spring. **Insulation:** Polypropylene. **Wire:** 18 AWG, 65 × 36 t.c., PVC insulated, 3.66 mm (.144) O.D. **Rating:** 45 VAC; 15 amps; +55°C (+131°F) max.

885-0025. B-4-0. Black, 4"	EACH	3.70
885-0026. B-4-2. Red, 4"	EACH	3.70
885-0027. B-8-0. Black, 8"	EACH	3.70
885-0028. B-8-2. Red, 8"	EACH	3.70
885-0014. B-12-0. Black, 12"	EACH	3.70
885-0019. B-12-2. Red, 12"	EACH	3.70
885-0015. B-18-0. Black, 18"	EACH	3.70
885-0020. B-18-2. Red, 18"	EACH	3.70
885-0016. B-24-0. Black, 24"	EACH	3.70
885-0022. B-24-2. Red, 24"	EACH	3.70
885-0017. B-36-0. Black, 36"	EACH	3.70
885-0029. B-36-2. Red, 36"	EACH	3.70
885-0018. B-48-0. Black, 48"	EACH	4.10
885-0030. B-48-2. Red, 48"	EACH	4.10

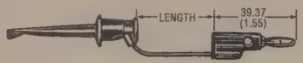
Miniature Stacking Banana Plug Each End — *NEW* —



1st End: Stacking miniature banana plug. Brass body, beryllium copper spring, gold plated. **Insulation:** Polypropylene. **Wire:** 20 AWG, 41 × 36 t.c., PVC insulated, 2.2 (.087) O.D. **2nd End:** Stacking miniature banana plug. Brass body, beryllium copper spring, gold plated. **Insulation:** Polypropylene. **Rating:** 45 VAC, 5 amps, +55°C (+131°F) max.

885-1080. 1081-4-0. Black. 4"	EACH	5.05
885-1081. 1081-4-2. Red. 4"	EACH	5.05
885-1082. 1081-8-0. Black. 8"	EACH	5.05
885-1083. 1081-8-2. Red. 8"	EACH	5.05
885-1084. 1081-12-0. Black. 12"	EACH	5.05
885-1085. 1081-12-2. Red. 12"	EACH	5.05
885-1086. 1081-18-0. Black. 18"	EACH	5.05
885-1087. 1081-18-2. Red. 18"	EACH	5.05
885-1088. 1081-24-0. Black. 24"	EACH	5.05
885-1089. 1081-24-2. Red. 24"	EACH	5.05
885-1090. 1081-36-0. Black. 36"	EACH	5.05
885-1091. 1081-36-2. Red. 36"	EACH	5.05
885-1092. 1081-48-0. Black. 48"	EACH	5.40
885-1093. 1081-48-2. Red. 48"	EACH	5.40
885-1094. 1081-60-0. Black. 60"	EACH	5.40
885-1095. 1081-60-2. Red. 60"	EACH	5.40

Minigrabber® Test Clip to Stacking Banana Plug



1st End: Minigrabber®. **Contact:** Beryllium copper, gold plated. **Insulation:** Glass filled nylon. **Wire:** 20 AWG, 41 × 36 t.c., PVC insulated, 2.21 mm (.087) O.D. **2nd End:** Stacking banana plug. Brass body, beryllium copper spring, nickel plated. **Insulation:** Polypropylene. **Rating:** 45 VAC, 5 amps. +55°C (+131°F) max.

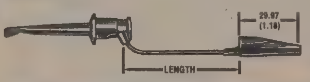
885-0920. 3782-12-0. Black, 12"	EACH	3.40
885-0921. 3782-12-2. Red, 12"	EACH	3.40
885-0922. 3782-24-0. Black, 24"	EACH	3.40
885-0923. 3782-24-2. Red, 24"	EACH	3.40
885-5446. 3782-36-0. Black, 36"	EACH	3.40
885-5447. 3782-36-2. Red, 36"	EACH	3.40
885-0924. 3782-48-0. Black, 48"	EACH	3.70
885-0925. 3782-48-2. Red, 48"	EACH	3.70
885-0926. 3782-60-0. Black, 60"	EACH	3.70
885-0927. 3782-60-2. Red, 60"	EACH	3.70

Minigrabber® Test Clips to Stacking Banana Plug on Coiled Cord

20 AWG wire. PVC insulated, 48" ±1" extended length. **Rating:** 45 VAC continuous duty, 5 amps. ±55°C.

885-4536. 4538-0. Black	EACH	9.90
885-4539. 4538-2. Red	EACH	9.90

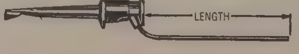
Minigrabber® Test Clip to Minigator



1st End: Minigrabber®. **Contact:** Beryllium copper, gold plated. **Insulation:** Glass filled nylon. **Wire:** 20 AWG, 41 × 36 t.c., PVC insulated, 2.21 mm (.087) O.D. **2nd End:** Minigator. Steel, nickel plated. **Insulation:** Vinyl. **Rating:** 45 VAC; 5 amps. +50°C (+122°F) max.

885-0953. 4652-12-0. Black, 12"	EACH	5.40
885-0954. 4652-12-2. Red, 12"	EACH	5.40
885-0955. 4652-24-0. Black, 24"	EACH	5.40
885-0956. 4652-24-2. Red, 24"	EACH	5.40

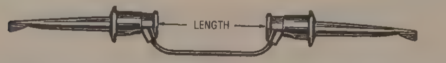
Minigrabber® Test Clip One End Only



Wire: 20 AWG, 41 × 36 t.c. PVC insulated, 2.21 mm (.087) O.D. **Rating:** 45 VAC, 12 amps.

885-0906. 3780-60-0. Black, 60"	EACH	2.65
885-0907. 3780-60-2. Red, 60"	EACH	2.65

Minigrabber® Test Clip Each End



Wire: 20 AWG, 41 × t.c. PVC insulated, 2.21 mm (.087) O.D. **Rating:** 45 VAC, 12 amps.

885-5432. 3781-8-0. Black, 8"	EACH	3.40
885-5433. 3781-8-2. Red, 8"	EACH	3.40

Minigrabber® Test Clip Each End (continued)

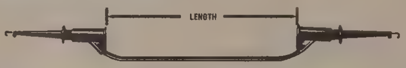
885-0910. 3781-12-0. Black, 12"	EACH	3.40
885-0911. 3781-12-2. Red, 12"	EACH	3.40
885-0916. 3781-18-0. Black, 18"	EACH	3.40
885-0917. 3781-18-2. Red, 18"	EACH	3.40
885-0912. 3781-24-0. Black, 24"	EACH	3.40
885-0913. 3781-24-2. Red, 24"	EACH	3.40
885-5438. 3781-36-0. Black, 36"	EACH	3.40
885-5439. 3781-36-2. Red, 36"	EACH	3.40
885-0914. 3781-48-0. Black, 48"	EACH	3.70
885-0915. 3781-48-2. Red, 48"	EACH	3.70
885-0918. 3781-60-0. Black, 60"	EACH	3.70
885-0919. 3781-60-2. Red, 60"	EACH	3.70

Micrograbber® Test Clip to Stacking Banana Plug

20 AWG PVC insulated wire. **Rating:** 45 VAC, 3 amps, +55°C.

885-5053. 5053-12-0. Black, 12"	EACH	5.35
885-5054. 5053-12-2. Red, 12"	EACH	5.35
885-5055. 5053-24-0. Black, 24"	EACH	5.35
885-5057. 5053-24-2. Red, 24"	EACH	5.35
885-5058. 5053-36-0. Black, 36"	EACH	5.35
885-5059. 5053-36-2. Red, 36"	EACH	5.35
885-5060. 5053-48-0. Black, 48"	EACH	5.65
885-5061. 5053-48-2. Red, 48"	EACH	5.65

Micrograbber® Each End



1st End: Micrograbber®. **Contact:** Beryllium copper, gold plated. **Insulation:** Glass filled nylon. **Wire:** 20 AWG, 41 × 36 t.c., PVC insulated, 2.21 mm (.087) O.D. **2nd End:** Same as first end. **Rating:** 45 VAC, 3 amps; +102°C (+216°F) max.

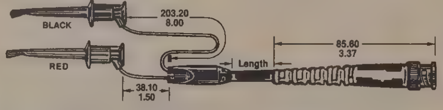
885-4613. 4613-12-0. Black, 12"	EACH	5.45
885-4614. 4613-12-2. Red, 12"	EACH	5.45
885-4615. 4613-24-0. Black, 24"	EACH	5.45
885-4616. 4613-24-2. Red, 24"	EACH	5.45
885-4617. 4613-36-0. Black, 36"	EACH	5.45
885-4618. 4613-36-2. Red, 36"	EACH	5.45
885-4619. 4613-48-0. Black, 48"	EACH	5.45
885-4620. 4613-48-2. Red, 48"	EACH	5.45

Insulated Alligator Clip Each End

18 AWG. **Rated:** 5000 WVDC, 5 amps, +50°C.

885-0060. AL-B-12-0. Black, 12"	EACH	4.10
885-0061. AL-B-12-2. Red, 12"	EACH	4.10
885-0062. AL-B-24-0. Black, 24"	EACH	4.10
885-0063. AL-B-24-2. Red, 24"	EACH	4.10
885-0064. AL-B-36-0. Black, 36"	EACH	4.10
885-0065. AL-B-36-2. Red, 36"	EACH	4.10

BNC Male with Boot Patch Cords



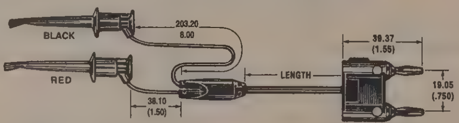
Type 5187 BNC Male with Boot Patch Cords to Minigrabber® Test Clips

885-5180. 5187-C-24. 24", 58C	EACH	14.50
885-5181. 5187-K-24. 24", 174	EACH	20.15
885-5182. 5187-C-36. 36", 58C	EACH	14.50
885-5183. 5187-K-36. 36", 174	EACH	20.15
885-5184. 5187-C-48. 48", 58C	EACH	14.50
885-5185. 5187-K-48. 48", 174	EACH	20.15

Type 5304 BNC Male with Boot Patch Cords to SMD Grabber® Test Clips

885-5290. 5304-K-24. 24", 174	EACH	20.55
885-5295. 5304-K-36. 36", 174	EACH	20.55

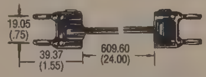
Minigrabber® Test Clips to Double Banana Plug



1st End: Minigrabber®. **Contact:** Beryllium copper, gold plated. **Insulation:** Glass filled nylon. One black and one red. **Cable:** Shielded coax., RG 58 C/U, 4.95 mm (.195) O.D. **Y-Mold Insulation:** PVC, black. **2nd End:** Banana plug. Brass body, beryllium copper spring, nickel plated. **Insulation:** Polyethylene, black. **Rating:** 45 VAC; +50°C (+122°F) max.

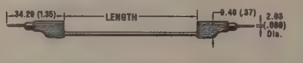
885-0936. 3786-C-18. Black/Red, 18"	EACH	13.65
885-0937. 3786-C-24. Black/Red, 24"	EACH	13.65
885-0960. 3786-C-36. Black/Red, 36"	EACH	13.65
885-0961. 3786-C-48. Black/Red, 48"	EACH	14.70
885-0962. 3786-C-60. Black/Red, 60"	EACH	14.70

Double Banana Plug Each End



885-0205. 2BC-24 (RG58C/U)	EACH	12.90

Stacking Pin Tip Plug



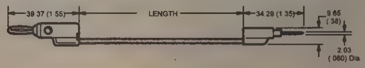
Brass body, beryllium copper spring, gold plated. **Insulation:** Polypropylene. **Wire:** 20 AWG. 41 × 36 t.c., PVC insulated, 2.21 mm (.087) O.D. **Rating:** 3000 WVDC; 5 amps; +55°C (+131°F) max.

885-0050. P-4-0. Black, 4"	EACH	4.45
885-0051. P-4-2. Red, 4"	EACH	4.45

Stacking Pin Tip Plug (continued)

885-0052. P-8-0. Black, 8"	EACH	4.45
885-0053. P-8-2. Red, 8"	EACH	4.45
885-0011. P-12-0. Black, 12"	EACH	4.45
885-0012. P-12-2. Red, 12"	EACH	4.45
885-0013. P-18-0. Black, 18"	EACH	4.45
885-0054. P-18-2. Red, 18"	EACH	4.45
885-0055. P-24-0. Black, 24"	EACH	4.45
885-0056. P-24-2. Red, 24"	EACH	4.45
885-0057. P-36-0. Black, 36"	EACH	4.45
885-0058. P-36-2. Red, 36"	EACH	4.45

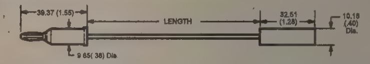
Stacking Banana Plug to Stacking Pin Tip Plug — *NEW* —



Adapts to equipment using banana jacks and pin jacks. Banana plug and pin tip allow vertical stackup. **1st End:** Stacking banana plug. Brass body, beryllium copper spring, nickel plated. **Insulation:** Polypropylene. **Wire:** 20 AWG, 41 × 36 t.c., PVC insulated, 2.2 (.087) O.D. **2nd End:** Stacking pin tip plug. Brass body, beryllium copper spring, gold plated. **Insulation:** Polypropylene. **Rating:** 45 VAC, 5 amps, +55°C (+131°F) max.

885-1125. 1126-4-0. Black. 4"	EACH	4.35
885-1126. 1126-4-2. Red. 4"	EACH	4.35
885-1127. 1126-8-0. Black. 8"	EACH	4.35
885-1128. 1126-8-2. Red. 8"	EACH	4.35
885-1129. 1126-12-0. Black. 12"	EACH	4.35
885-1130. 1126-12-2. Red. 12"	EACH	4.35
885-1131. 1126-18-0. Black. 18"	EACH	4.35
885-1132. 1126-18-2. Red. 18"	EACH	4.35
885-1133. 1126-24-0. Black. 24"	EACH	4.35
885-1134. 1126-24-2. Red. 24"	EACH	4.35
885-1135. 1126-36-0. Black. 36"	EACH	4.35
885-1136. 1126-36-2. Red. 36"	EACH	4.35
885-1137. 1126-48-0. Black. 48"	EACH	4.55
885-1138. 1126-48-2. Red. 48"	EACH	4.55
885-1139. 1126-60-0. Black. 60"	EACH	4.55
885-1140. 1126-60-2. Red. 60"	EACH	4.55

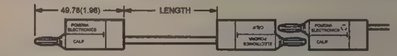
Banana Plug to In-Line Banana Jack — *NEW* —



Dual purpose. Insulates all hot leads when used as an extension cord. Endless extension couplings possible with any banana plug patch cord. **1st End:** Banana plug. Brass body, beryllium copper spring, nickel plated. **Insulation:** Polypropylene. **Wire:** 18 AWG, 65 × 36 t.c., PVC insulated, 3.7 (.144) O.D. **2nd End:** In-line banana jack. Brass, nickel plated. **Insulation:** Polypropylene. **Rating:** 45 VAC, 15 amps, +55°C (+131°F) max.

885-4700. 4702-12-0. Black. 12"	EACH	4.95
885-4701. 4702-12-2. Red. 12"	EACH	4.95
885-4702. 4702-18-0. Black. 18"	EACH	4.95
885-4703. 4702-18-2. Red. 18"	EACH	4.95
885-4704. 4702-24-0. Black. 24"	EACH	4.95
885-4705. 4702-24-2. Red. 24"	EACH	4.95
885-4706. 4702-36-0. Black. 36"	EACH	4.95
885-4707. 4702-36-2. Red. 36"	EACH	4.95
885-4708. 4702-48-0. Black. 48"	EACH	5.15
885-4709. 4702-48-2. Red. 48"	EACH	5.15
885-4710. 4702-60-0. Black. 60"	EACH	5.15
885-4711. 4702-60-2. Red. 60"	EACH	5.15

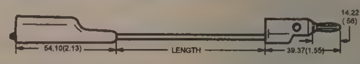
Extension Stacking Banana Plug Each End — *NEW* —



Dual purpose. Insulates all hot leads when used as an extension cord. Endless extension couplings possible with any banana plug patch cord. **1st End:** Extension stacking banana plug. Brass body, beryllium copper spring, nickel plated. **Insulation:** Polypropylene. **Wire:** 18 AWG, 65 × 36 t.c., PVC insulated, 3.7 (.144) O.D. **2nd End:** Extension stacking banana plug. Brass body, beryllium copper spring, nickel plated. **Insulation:** Polypropylene. **Rating:** 45 VAC, 15 amps, +55°C (+131°F) max.

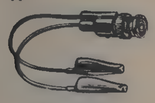
885-4008. HB-12-0. Black. 12"	EACH	5.85
885-4009. HB-12-2. Red. 12"	EACH	5.85
885-4010. HB-24-0. Black. 24"	EACH	5.85
885-4011. HB-24-2. Red. 24"	EACH	5.85
885-4012. HB-36-0. Black. 36"	EACH	5.85
885-4013. HB-36-2. Red. 36"	EACH	5.85
885-9984. HB-48-0. Black. 48"	EACH	5.85
885-9983. HB-48-2. Red. 48"	EACH	5.85

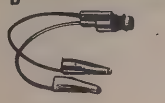
Alligator Clip to Stacking Banana — *NEW* —

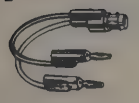


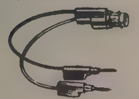
1st End: Alligator clip. Steel, nickel plated. Vinyl boot. **Wire:** 18 AWG, 65 × 36 t.c., PVC insulated, 3.7 (.144) O.D. **2nd End:** Stacking banana plug, Brass body, beryllium copper, gold plated. **Insulation:** Polypropylene. **Rating:** 45 VAC, 5 amps, +50°C (+122°F) max.

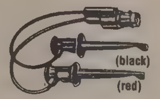
885-1166. 1166-4-0. Black. 4"	EACH	4.10
885-1167. 1166-4-2. Red. 4"	EACH	4.10
885-1168. 1166-8-0. Black. 8"	EACH	4.10
885-1169. 1166-8-2. Red. 8"	EACH	4.10
885-4040. 1166-12-0. Black. 12"	EACH	4.10
885-4041. 1166-12-2. Red. 12"	EACH	4.10
885-4042. 1166-24-0. Black. 24"	EACH	4.10
885-4043. 1166-24-2. Red. 24"	EACH	4.10
885-4045. 1166-36-0. Black. 36"	EACH	4.10
885-4046. 1166-36-2. Red. 36"	EACH	4.10
885-4047. 1166-48-0. Black. 48"	EACH	4.45
885-4048. 1166-48-2. Red. 48"	EACH	4.45
885-1170. 1166-60-0. Black. 60"	EACH	4.45
885-1171. 1166-60-2. Red. 60"	EACH	4.45

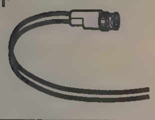
A


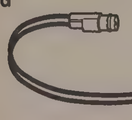
B


D


C


F


F


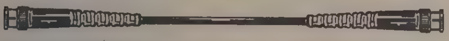
G


BNC Breakouts

BNC Male to Test Clips — Fig. A
885-0654. 2886. BNC Male to Minigator Clips ....**EACH 11.55**
BNC Female to Test Clips — Fig. B
885-2630. 2630. BNC Female to Alligator Clips.......**EACH 8.50**
885-0625. 2631. BNC Female to Minigator Clips.....**EACH 8.50**
BNC Female to Pin Tip Plugs — Fig. C
885-3221. 3221..**EACH 9.15**
BNC Female to Stacking Banana Plugs — Fig. D
885-3073. 3073..**EACH 7.90**
BNC Male to Stacking Banana Plugs — Fig. D
885-6005. 3957..**EACH 11.45**
BNC Female to MINIGRABBER® Test Clips — Fig. E
885-3788. 3788,.......................................**EACH 8.20**
BNC Male to MINIGRABBER® Test Clips — Fig. E
885-3700. 3789..**EACH 10.10**
BNC Male to 20 AWG Leads — Fig. F
885-4970. 4970..**EACH 7.65**
BNC Female to 20 AWG Leads — Fig. G
885-4969. 4969..**EACH 5.55**

Cable Assemblies

Low Noise BNC Male Each End With Boot



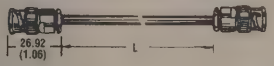
885-4964. 4964-SS-24. 24" ....**EACH 15.75**
885-4965. 4964-SS-36. 36" ....**EACH 15.75**
885-4966. 4964-SS-48. 48" ....**EACH 19.00**
885-4967. 4964-SS-60. 60" ....**EACH 19.00**

Stress-Relieved/Weatherproof Cable Assemblies

RG58C/U — 50 Ohm. BNC Male Each End.
885-0500. 2249-C-12. 12"................................**EACH 11.75**
885-0501. 2249-C-24. 24"................................**EACH 11.75**
885-0502. 2249-C-36. 36"................................**EACH 11.75**
885-2252. 2249-C-48. 48"................................**EACH 14.65**
885-2253. 2249-C-60. 60"................................**EACH 14.65**
885-0503. 2249-C-72. 72"................................**EACH 14.65**
885-0504. 2249-C-120. 120" ....**EACH 17.60**
885-0505. 2249-C-180. 180" ....**EACH 21.25**

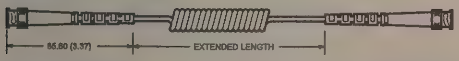
RG59B/U–75 Ohm. BNC Male Each End.
885-2256. 2249-E-12. 12"................................**EACH 12.50**
885-2254. 2249-E-36. 36"................................**EACH 12.50**
885-2257. 2249-E-48. 48"................................**EACH 14.65**
885-2255. 2249-E-60. 60"................................**EACH 14.65**

BNC Male Each End/RG58C/U–50 Ohms



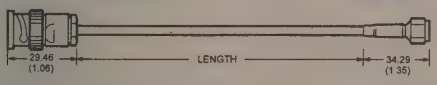
885-0035. BNC-C-18. 18"................................**EACH 13.45**
885-0036. BNC-C-24. 24"................................**EACH 13.45**
885-0008. BNC-C-36. 36"................................**EACH 13.45**
885-0037. BNC-C-48. 48"................................**EACH 15.25**
885-0009. BNC-C-60. 60"................................**EACH 15.25**

BNC Male on Retractile (Coiled) Cord — *NEW* —



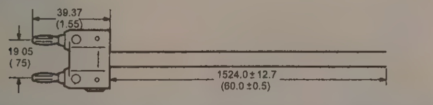
885-4480. 4487-48. 48" ....**EACH 41.00**
885-4481. 4487-60. 60" ....**EACH 41.00**
885-4482. 4487-72. 72" ....**EACH 41.00**

BNC Male to SMA Male — *NEW* —



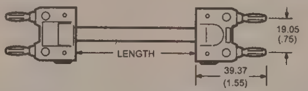
885-4015. 4935-BB-24. 24" ....**EACH 34.95**
885-4935. 4935-BB-48. 48" ....**EACH 34.95**
885-4936. 4935-BB-60. 60" ....**EACH 34.95**

Double Banana Plug, One End Only — *NEW* —



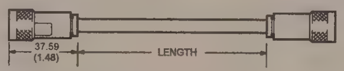
885-6003. 1326-A-60. Two Cond. Twisted Pr. 60" ..**EACH 11.50**
885-1326. 1326-C-60. RG58C/U. 60" ....**EACH 11.50**

Double Banana Plug, Each End — *NEW* —



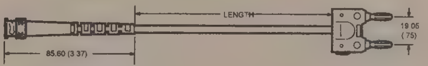
885-6190. 2BA-18. Two Cond. Twisted Pr. 18". ......**EACH 13.75**
885-6191. 2BA-24. Two Cond. Twisted Pr. 24" ....**EACH 13.75**
885-6017. 2BA-36. Two Cond. Twisted Pr. 36" ....**EACH 13.75**
885-6038. 2BA-48. Two Cond. Twisted Pr. 48" ....**EACH 15.25**
885-6192. 2BA-60. Two Cond. Twisted Pr. 60" ....**EACH 15.25**
885-6211. 2BB-18. Shielded Mic. Cable. 18". ....**EACH 12.10**
885-6212. 2BB-24. Shielded Mic. Cable. 24" ....**EACH 12.10**
885-6213. 2BB-36. Shielded Mic. Cable. 36" ....**EACH 12.10**
885-6214. 2BB-48. Shielded Mic. Cable. 48" ....**EACH 13.40**
885-6215. 2BB-60. Shielded Mic. Cable. 60" ....**EACH 13.40**
885-6216. 2BC-18. RG58C/U. 18"........................**EACH 12.90**
885-0205. 2BC-24. RG58C/U. 24"........................**EACH 12.90**
885-6029. 2BC-36. RG58C/U. 36"........................**EACH 12.90**
885-6217. 2BC-48. RG58C/U. 48"........................**EACH 13.95**
885-6218. 2BC-60. RG58C/U. 60"........................**EACH 13.95**

Type “N” Male, Each End — *NEW* —



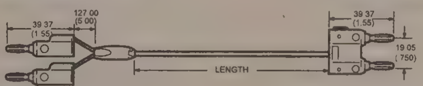
885-1600. 1658-S-18. RG 213/U. 18"....................**EACH 35.70**
885-1601. 1658-S-24. RG 213/U. 24"....................**EACH 35.70**
885-1602. 1658-S-36. RG 213/U. 36"....................**EACH 35.70**
885-1603. 1658-S-48. RG 213/U. 48"....................**EACH 37.30**
885-1604. 1658-S-60. RG 213/U. 60"....................**EACH 37.30**
885-1650. 1658-T-18. RG 214/U. 18"....................**EACH 40.00**
885-1651. 1658-T-24. RG 214/U. 24"....................**EACH 40.00**
885-1652. 1658-T-36. RG 214/U. 36"....................**EACH 40.00**
885-1653. 1658-T-48. RG 214/U. 48"....................**EACH 61.00**
885-1654. 1658-T-60. RG 214/U. 60"....................**EACH 61.00**

BNC Male to Double Banana Plug — *NEW* —



885-4530. 4530-C-18. 18"................................**EACH 13.35**
885-4531. 4530-C-24. 24"................................**EACH 13.35**
885-4532. 4530-C-36. 36"................................**EACH 13.35**
885-4533. 4530-C-48. 48"................................**EACH 14.80**
885-4534. 4530-C-60. 60"................................**EACH 14.80**

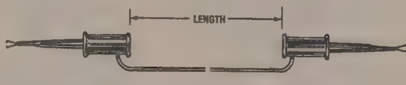
Stacking Banana Plugs to Double Banana Plug — *NEW* —



885-1300. 1368-A-18. 18"................................**EACH 21.40**
885-1301. 1368-A-24. 24"................................**EACH 21.40**
885-1302. 1368-A-30. 30"................................**EACH 21.40**
885-1303. 1368-A-36. 36"................................**EACH 21.40**
885-4036. 1368-A-48. 48"................................**EACH 22.45**
885-1304. 1368-A-60. 60"................................**EACH 22.45**

SMD Products

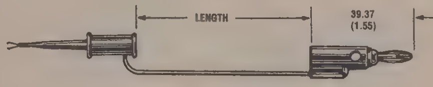
SMD GRABBER™, Each End



1st End: SMD GRABBER™. **Contact:** Selectively gold plated stainless steel. **Insulation:** Glass filled nylon. **Wire:** 22 AWG, 26 × 36 t.c., PVC insulated, 1.63 mm (.064) O.D. **2nd End:** Same as first end. **Rating:** 45 VAC; 0.5 amps; +102°C. (+216°F.) max.

885-5230. 5301-12-0. Black, 12" ....**EACH 5.80**
885-5235. 5301-12-2. Red, 12" ....**EACH 5.80**
885-5240. 5301-24-0. Black, 24" ....**EACH 5.80**
885-5245. 5301-24-2. Red, 24" ....**EACH 5.80**
885-5250. 5301-36-0. Black, 36" ....**EACH 5.80**
885-5255. 5301-36-2. Red, 36" ....**EACH 5.80**

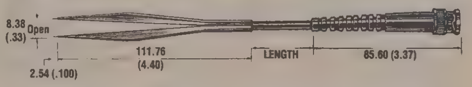
SMD GRABBER™ To Stacking Banana Plug



1st End: SMD GRABBER™. **Contact:** Selectively gold plated stainless steel. **Insulation:** Glass filled nylon. **Wire:** 22 AWG, 26 × 36 t.c., PVC insulated, 1.63 mm (.064) O.D. **2nd End:** Stacking Banana Plug. Brass body, beryllium copper spring, nickel plated. Polypropylene insulation. **Rating:** 45 VAC; 0.5 amps; +55°C. (+131°F) max.

885-5260. 5302-12-0. Black, 12" ....**EACH 5.45**
885-5265. 5302-12-2. Red, 12" ....**EACH 5.45**
885-5270. 5302-24-0. Black, 24" ....**EACH 5.45**
885-5275. 5302-24-2. Red, 24" ....**EACH 5.45**
885-5280. 5302-36-0. Black, 36" ....**EACH 5.45**
885-5285. 5302-36-2. Red, 36" ....**EACH 5.45**

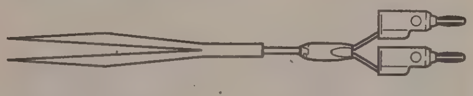
SMD Test Tweezer™ To BNC Male



1st End: SMD Test Tweezer™. **Tips:** Beryllium copper, gold plated. **Insulation:** Glass filled nylon, black and red. **Cable:** Shielded coaxial, RG174/U, 2.54 mm (.100) O.D. **2nd End:** BNC Male. Brass body, tarnish resistant plated. **Center Contact:** Brass, gold plated. **Boot:** PVC, black. **Rating:** 45 VAC; 3 amps; +50°C. (+122°F) max.

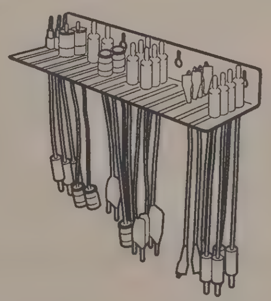
885-5315. 5142-K-48...**EACH 20.65**

SMD Test Tweezer™ Leads to Multi-Stacking Banana Plugs — *NEW* —



885-6271. 5143-K-48...**EACH 20.65**

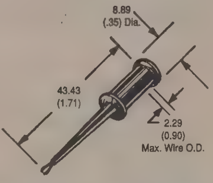
Test Lead Holder — *NEW* —



Stock No.	Mfr.'s Type	Color	Dia.	Slots	EACH
885-0382	1508	Orange	.210"	14	5.55
885-4408	4408	Black	.320"	10	5.45
885-0631	2708	Blue	.450"	9	5.55

Test Clips

SMD Grabber® Test Clips

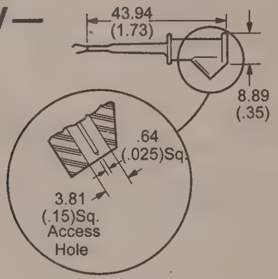


Do-It-Yourself SMD Grabber Test Clip. Do-it-yourself test clip especially suited for testing surface mounted packages on centers as small as .030". Pincer-like contact grasps individual legs of SMDs, such as the SOIC, SOJ, PCC, etc. **Material:** Selectively gold plated stainless steel contact. **Insulation:** Glass filled nylon. **Rating:** 45 VAC, 0.5 amps, +102°C max. Access in cap for .090" maximum wire diameter.

885-5200. 5243-0. Black	PER PK./10	18.00
885-5205. 5243-2. Red	PER PK./10	18.00

SMD Grabber® Test Clip with 0.6 (.025) Square Pin

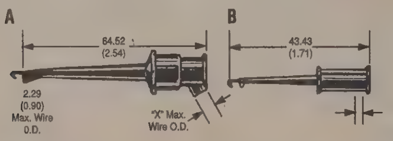
— NEW —



1st End: Contact, stainless steel, selectively gold plated. **Insulation:** Glass filled nylon. **2nd End:** Square pin, phosphor bronze, gold plated. **Rating:** 45 VAC; 0.5 amps; +102°C (+216°F) max.

885-6274. 5360-0. Black	EACH	2.20
885-6276. 5360-2. Red	EACH	2.20
885-6275. 5360-1. Brown	EACH	2.20
885-6277. 5360-3. Orange	EACH	2.20
885-6278. 5360-4. Yellow	EACH	2.20
885-6279. 5360-5. Green	EACH	2.20
885-6280. 5360-6. Blue	EACH	2.20
885-6281. 5360-7. Violet	EACH	2.20
885-6282. 5360-8. Gray	EACH	2.20
885-6283. 5360-9. White	EACH	2.20

Do-It-Yourself Minigrabber® Test Clip — Fig. A



Material. Contact: Gold plated beryllium copper. **Finish:** Glass plated. **Insulation:** Glass filled nylon. **Rating:** +102°C (+216°F) max. **Rating:** 45 VAC, 12 amps.

885-0952. 3925-0. Black, Dim. "X" = 2.30 (.090)	PK./10	13.50
885-0951. 3925-2. Red, Dim. "X" = 2.30 (.090)	PK./10	13.50
885-5416. 3925-4. Yellow, Dim. "X" = 2.30 (.090)	PK./10	13.50
885-5417. 3925-5. Green, Dim. "X" = 2.30 (.090)	PK./10	13.50
885-0958. 4555-0. Black, Dim. "X" = 3.66 (.144)	PK./10	13.50
885-0957. 4555-2. Red, Dim. "X" = 3.66 (.144)	PK./10	13.50
885-5420. 4555-4. Yellow, Dim. "X" = 3.66 (.144)	PK./10	13.50
885-5421. 4555-5. Green, Dim. "X" = 3.66 (.144)	PK./10	13.50

Minigrabber® Test Clip with 6-32 Thread — Fig. A

Test clip can be used with oscilloscope leads with a 6-32 screw. Threaded insert, brass. Rating 45 VAC, 12 amps.

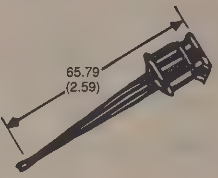
885-5450. 4011-0. Black	EACH	3.15

Do-It-Yourself Micrograbber® Test Clip — Fig. B

Accepts 2.3 (.090) O.D. wire. **Rating:** 45 VAC, 3 amps.

885-5410. 4233-0. Black	PK./10	14.00
885-5411. 4233-2. Red	PK./10	14.00
885-5412. 4233-4. Yellow	PK./10	14.00
885-5413. 4233-6. Blue	PK./10	14.00

Minipincer Test Clips



Do-It-Yourself Minipincer Test Clip. Utilizes a snap-on cap and a solder contact to provide a reliable connection. Lower contact has pincer-type action. **Material:** Contact, selectively gold plated beryllium copper. **Insulation:** Nylon. **Rating:** 45 VAC, 5 amps, +102°C max.

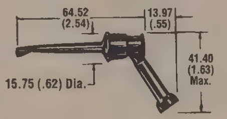
885-5418. 5418-0. Black	EACH	1.65
885-5419. 5418-2. Red	EACH	1.65

Rotating Micrograbber® Test Clip

Rotating Micrograbber Test Clip. Ideal for testing surface mounted devices (SMDs), high density leads with 1.2 mm (0.05") spacing, and fine gauge wires (0.1 mm/0.004"). Two access entries with 0.6 mm (.025") square pins. Rotating pincers grasp leads firmly. Extended guide tube reaches into tight areas and can be bent to a 35° angle. **Rating:** 42 VAC, 2 A max.

885-5780. 5790-0. Black	EACH	5.40
885-5781. 5790-2. Red	EACH	5.40

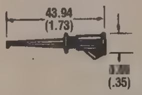
Minigrabber® Test Clip with Banana Jack



Clip has a standard banana jack built into the plunger. Banana jack, brass, nickel plated. **Rating:** 45 VAC; 12 amps.

885-4722. 4723-0. Black	EACH	4.10
885-4723. 4723-2. Red	EACH	4.10

Micrograbber® Test Clip with 0.64 mm (.025) Square Pin

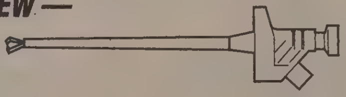


Square pin, phosphor bronze. **Rating:** 45 VAC; 5 amps.

885-5451. 4521-0. Black	EACH	2.50

Do-It-Yourself Flexible Maxigrabber® Test Clip

— NEW —



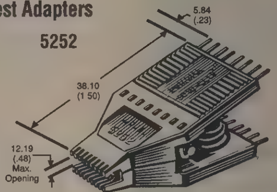
This flexible clip has a rotating pincer type contact to make access easier. Standard banana jack and screw for direct wire termination.

885-6067. 5830-0. Black	EACH	7.45
885-6068. 5830-2. Red	EACH	7.45

Test Adapters

SOIC Clip® Test Adapters

5252



Test clips have a spring design similar to Pomona's Dip Clip Test Adapter. The clip design allows testing of wide or narrow body chips and smaller size PLCC. **Upper:** .025" square pins, gold plated phosphor bronze. **Lower:** Contacts, gold plated beryllium copper. **Insulation:** Glass filled nylon, blue. **Rating:** 500 Vrms, 1 amp, +102°C max.

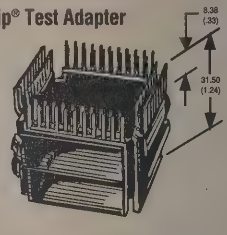
885-5301. 5250. 8 Pin	EACH	8.00
885-5300. 5251. 14 Pin	EACH	8.75
885-5305. 5252. 16 Pin	EACH	9.50
885-5302. 5253. 20 Pin	EACH	10.95
885-5303. 5254. 24 Pin	EACH	15.95
885-5304. 5437. 28 Pin	EACH	19.50

SOIC Clip® Test Adapter Kit

Kit contains 6 sizes of SOIC Clips: 8, 14, 16, 20, 24 and 28 Pin, housed in a protective case.

885-5514. 5514	EACH	65.00

PLCC Quad Clip® Test Adapter



Test adapters designed for plastic leaded chip carriers (PCC or PLCC) with "J" leads. Snap-ring design allows Quad Clip® Test Adapter to fit directly into IC, providing hands-free testing. **Upper:** .025" square pins, gold plated, phosphor bronze. **Lower:** Contracts, gold plated beryllium copper. **Insulation:** Glass filled nylon, gray. **Rating:** 500 Vrms, 1 amp, +102°C max.

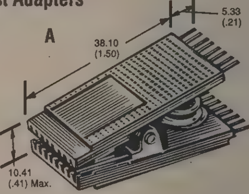
885-5279. 5279. 20 Pin	EACH	19.50
885-5281. 5280. 28 Pin	EACH	31.90
885-5733. 5733. 32 Pin	EACH	33.50
885-5261. 5281. 44 Pin	EACH	37.50
885-5312. 5312. 52 Pin	EACH	44.00
885-5310. 5401. 68 Pin	EACH	50.00
885-5311. 5402. 84 Pin	EACH	60.00

Quad Clip® Test Adapter Kit

Kit contains 6 sizes of Quad Clips: 20, 28, 32, 44, 52, 68 and 84 pin, housed in a protective case.

885-5515. 5515A	EACH	245.00

DIP Clip® Test Adapters



DIP Clip test adapters are designed especially for testing dual-in-line IC packages on high-density P.C. boards. The DIP Clip test adapter has many built-in features that assure a positive electrical connection and at the same time provide hands-free testing. The high density DIP Clip TEST adapters are used for ultra-dense packaged chips located adjacent to each other on 2.54 mm (.100) spacing. **Material:** Contact, tarnish resistant nickel, silver or gold plated beryllium copper. Stainless steel hinge pin and spring. **Insulation:** Glass filled nylon, blue. **Rating:** 500 VRMS; 1 amp; +102°C (+216°F) max.

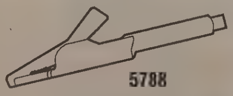
Standard Test Clips

885-5014. 5014. 14 Pin DIP	EACH	7.60
885-3916. 3916A. 16 Pin DIP	EACH	6.85
885-5120, 5120. 20 Pin DIP, Gold	EACH	11.55
885-4124. 4124A. 24 Pin DIP	EACH	15.00
885-4140. 4140A. 40 Pin DIP	EACH	21.95

High Density Test Clips

885-5114. 5114. 14 Pin DIP	EACH	7.60
885-4236. 4236A. 16 Pin DIP	EACH	6.85
885-5001. 5220. 20 Pin DIP	EACH	11.55
885-4324. 4324A. 24 Pin DIP	EACH	15.00
885-4340. 4340A. 40 Pin DIP	EACH	21.95

Insulated Alligator Clip Banana Jack



5788

Material: Alligator clip, steel. Accepts standard banana plug. **Finish:** Nickel plated. **Insulation:** Vinyl. **Rating:** +50°C (+122°F) max.

885-2241. 2240-0. Black	PER PK./10	6.00
885-2243. 2240-2. Red	PER PK./10	6.00

Medium with standard banana jack. **Overall Length:** 2.20".

885-5789. 5787-0. Black	EACH	2.95
885-5790. 5787-2. Red	EACH	2.95

Miniature insulated with miniature banana jack. **Overall Length:** 1.57".

885-5791. 5788-0. Black	PER PK./10	16.50
885-6792. 5788-2. Red	PER PK./10	16.50

Test Companion™ Test Kits Guide

▶ **Each Test Companion™ Kit Is Tailored to Your Instrument**

Simply find the model number of your Fluke, Hewlett-Packard or Tektronix meter to locate the Test Companion™ Test Kit that's been specifically configured to suit your instrument. Then look at the chart below and you'll be able to immediately see the contents of that Test Companion™ Test Kit. Most test leads, probes, grabbers and clips are designed to IEC1010-safe specifications. Each kit is expressly tailored to assure reliable testing and added functionality for your meter.

▶ **Contact Your Local Allied Sales Representative for ITT Pomona Electronics' New 1996 Catalog**

Model	Kit
Fluke Series I and II ScopeMeter®	6120
Fluke 10 Series DMM	6161, 6164
Fluke 70 Series II DMM	6122
Fluke 80 Series DMM	6112, 6172

Model	Kit
Fluke 860 Series Graphical™ Multimeter	6118
Hewlett-Packard HP 970A Series	6113, 6195, 6131
Hewlett-Packard HP 54600B Series	6131, 6132
Tektronix DMM250 Series	6133, 6130

Model	Kit
Tektronix TDS 300 Series TekBench™	6121, 6130
Tektronix THM 500 Series TekMeter®	6119
Tektronix THS 700 Series TekScope™	6134
—	—

6161	6112	6113	6118	6119	6120	6121	6164	6172	6195	6130	6131	6132	6133	6134	Test Accessory	Description	IEC1010 Safety
	●	●	●		●		●	●	●				●	●	Test Lead Set	ø4 mm rt. ang. to str. sheathed banana plugs; 1.5 m silicone jacketed wire	1000 V, CAT III P2, 12 A
				●											Test Lead Set	ø4 mm str. to str. sheathed banana plugs; 1.5 m silicone jacketed wire	1000 V, CAT III P2, 12 A
					●										Oscilloscope Probes	X1/X10 switchable; fully insulated; 1.2 m cable; accessories included	360 V CAT II P2
										●	●				RF Detector Probe	1 MHz-16 GHz with sheathed ø4 mm banana plugs	100 V CAT I P1
						●									Oscilloscope Probe	Micro-LC™ (Model 6102) X10 fixed with readout, 250 MHz	Model 6102
												●		●	Oscilloscope Probe	Micro-LC™ (Model 6049) X10 fixed, 150 MHz	Model 6049
				●											Oscilloscope Probe	Micro-LC™ (Model 6046) X1 fixed, 30 MHz	Model 6046
	●	●	●	●	●								●	●	Large Safety Alligator Clips	Heavy duty; jaws open to 20 mm (.79")	1000 V, CAT III P2, 12 A
●															Fused Probe Set	Heavy duty; repl. 500 mA/660 V fuse; 1.2 m silicone jacketed wire	600 V, CAT III P2, 500 mA fuse
			●												Extended Probe Bodies	Sharp tip; clear thermoplastic IC tip cover	1000 V, CAT III P2, 20 A
	●	●											●	●	Minispring Needle Tip	ø.7 mm spring-loaded tip; clear thermoplastic tip cover	500 V, CAT III P2, 10 A
	●	●	●		●		●	●	●				●	●	Probe Bodies with Banana Plug Tips	Tip with ø4 mm banana plug contact; nylon IC (color matched)	1000 V, CAT III P2, 20 A
	●	●	●		●			●	●				●	●	Flexible Grabbers	Grips up to ø4 mm contacts, wires; tips flexible through wide arc.	1000 V, CAT III P2, 10 A
				●											Flexible Grabbers	Grips up to ø4 mm contacts, wires; tips flexible through wide arc (R, Y, Bl)	1000 V, CAT III P2, 10 A
										●	●				Sheathed BNC (m) To Banana Jacks	Insulated BNC connector; std. ø 4 mm banana jacks (signal and ground)	500 V, CAT III P2
			●	●	●									●	Grip Clips	Alligator clip-like grips; grips up,to ø10 mm contacts, terminals	1000 V CAT III P2, 10 A
	●	●											●		Splices	Accepts sheathed ø4 mm banana plugs	1000 V, CAT III P2, 25 A
	●	●	●		●		●	●	●				●		Medium Alligator Clips	Steel contacts, grips; jaws open to 7.1 mm (.28")	300 V, CAT III P2, 5 A
							●								Hook Attachments	Steel contacts; fits on ø4 mm banana spring of probe body	500 V, CAT I P1, 5 A
							●								Insulated Spade Lugs	Copper alloy lug (nickel plated); sheathed ø4 mm banana jack	750 V, 16 A*
				●											Probe Bodies with Banana Plug Tips	Tip with ø4 mm banana plug contact; nylon IC cover (4 colors)	1000 V, CAT III P2, 20 A
				●											Adapter Banana Plugs to BNC (f)	Double banana plugs to BNC female; ABS insulation	500 V, 50 Ω impedance*
	●	●	●	●	●								●	●	Briefcase Carrying Case	Padded Cordura with inner and outer pockets, large outer flap, shoulder strap	
●							●	●	●						Shoulder Pack Carrying Case	Padded Cordura with zippered outer pockets, shoulder strap	
						●				●	●	●			Tri-Fold Pouch	Velcro® sealed pouch (holds accessories only)	

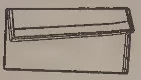
*Non IEC Rated Product.

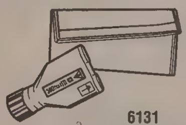
Test Companion™ Test Kits Guide

6164

6119

6120


6130


6131

6133

6134

Model 6161 Electrical/Industrial Kit for Fluke Series 10 DMM

- ▶ **DMM Test Lead Set — St. to St.**
- ▶ **Probe Bodies with Banana Plug Tip**
- ▶ **Medium Alligator Clips**
- ▶ **Flexible Maxigrabber with Pincer Tips**

Features medium-size Cordura shoulder pack carrying case with shoulder strap and accessories listed. Meters and scopes not included.

885-6161. Model 6161 .... EACH 79.00

Model 6112 Fluke 80 Series DMM Test Companion™ Test Kit

- ▶ **DMM Test Lead Set**
- ▶ **Probe Bodies with Banana Plug Tip**
- ▶ **Flexible Grabber® Test Clips**
- ▶ **Large Safety Alligator Clips**
- ▶ **Medium Alligator Clips**
- ▶ **Minispring Needle Tips**
- ▶ **Splices**

Features large briefcase style Cordura carrying case with shoulder strap and test accessories listed. Holds DMM plus additional test accessories, manuals, references and miscellaneous items. Meters and scopes not included.

885-6251. Model 6112 .... EACH 185.00

Model 6113 Hewlett-Packard HP 970A Series DMM Test Companion™ Test Kit

- ▶ **DMM Test Lead Set**
- ▶ **Probe Bodies with Banana Plug Tip**
- ▶ **Flexible Grabber® Test Clips**
- ▶ **Large Safety Alligator Clips**
- ▶ **Medium Alligator Clips**
- ▶ **Minispring Needle Tips**
- ▶ **Splices**

Features large briefcase style Cordura carrying case with shoulder strap and accessories listed. Holds your HP DMM plus additional test accessories, manuals, references and miscellaneous items. Meters and scopes not included.

885-6256. Model 6113 .... EACH 185.00

Model 6118 860 Series Graphical™ Multimeter Test Companion™ Test Kit

- ▶ **Test Lead Set**
- ▶ **Probe Bodies with Banana Plug Tip**
- ▶ **Flexible Grabber® Test Clips**
- ▶ **Grip Clips**
- ▶ **Large Safety Alligator Clips**
- ▶ **Medium Alligator Clips**
- ▶ **Extended Probe Bodies**

Features large briefcase style Cordura carrying case with shoulder strap and test accessories listed. Holds your Fluke GMM plus additional test accessories, manuals, references and miscellaneous items. Meters and scopes not included.

885-6250. Model 6118 .... EACH 215.00

Model 6119 Tektronix TEKMETER™ THM 500 Series Test Companion™ Test Kit

- ▶ **Oscilloscope Probes (X1, 30 MHz)**
- ▶ **Test Lead Set**
- ▶ **Probe Bodies with Banana Plug Tip**
- ▶ **Flexible Grabber® Test Clips**
- ▶ **Grip Clip**
- ▶ **Large Safety Alligator Clips**
- ▶ **Adapter Banana Plugs to BNC Female**

Features large briefcase style Cordura carrying case with shoulder strap and accessories listed. Holds meter, test accessories, manuals, references and miscellaneous items. Meters and scopes not included.

885-6262. Model 6119 .... EACH 255.00

Model 6120 Fluke Scopemeter® Series I and II Test Companion™ Test Kit

- ▶ **Oscilloscope Probes (X1/X10 Switchable) Fully Insulated**
- ▶ **Test Lead Set**
- ▶ **Probe Bodies with Banana Plug Tip**
- ▶ **Flexible Grabber® Test Clips**
- ▶ **Grip Clips**
- ▶ **Large Safety Alligator Clips**
- ▶ **Medium Alligator Clips**

Features large briefcase style Cordura carrying case with shoulder strap and test accessories listed. Holds your ScopeMeter® plus additional test accessories, manuals, references and miscellaneous items. Meters and scopes not included.

885-6252. Model 6120 .... EACH 375.00

Model 6121 Tektronix TDS 300 Series Oscilloscope Tri-Fold Test Companion™ Test Kit

- ▶ **RA Oscilloscope Probes (X10, 250 MHz)**

Features a compact tri-fold pouch for holding test leads, clips and small tools.

885-6263. Model 6121 .... EACH 110.00

Model 6164 Deluxe Electrical/Industrial Test Companion Kit for Fluke 70 Series II DMM

- ▶ **DMM Test Lead Set — St. to RA**
- ▶ **Probe Bodies with Banana Plug Tip**
- ▶ **Medium Alligator Clips**
- ▶ **Flexible Maxigrabbers with Pincer Tips and Hook Tips**

Features medium-size Cordura shoulder pack carrying case with shoulder strap and accessories listed. Meters and scopes not included.

885-6164. Model 6164 .... EACH 94.00

Model 6172 Electrical/Industrial Test Companion Kit for Fluke 80 Series DMM

- ▶ **DMM Test Lead Set**
- ▶ **Probe Bodies with Banana Plug Tip**
- ▶ **Medium Alligator Clips**
- ▶ **Flexible Maxigrabbers with Pincer Tips and Hook Tips**
- ▶ **Extra Durable Probe Leads**
- ▶ **Insulated Spade Lugs**

Features medium-size Cordura shoulder pack carrying case with shoulder strap and accessories listed. Meters and scopes not included.

885-6172. Model 6172 .... EACH 106.00

Model 6195 Electrical/Industrial Test Companion Kit for HP970 Series DMM

- ▶ **DMM Test Lead Set**
- ▶ **Probe Bodies with Banana Plug Tip**
- ▶ **Medium Alligator Clips**
- ▶ **Flexible Maxigrabbers with Pincer Tips and Hook Tips**
- ▶ **Extra Durable Probe Leads**
- ▶ **Insulated Spade Lugs**

Features medium-size Cordura shoulder pack carrying case with shoulder strap and accessories listed. Meters and scopes not included.

885-6195. Model 6195 .... EACH 106.00

Model 6130 Tektronix TEK DMM250 Series and TDS 300 Series Oscilloscope Tri-Fold Test Companion™ Test Kit

- ▶ **RF Detector Probe with Sheathed Banana Plugs**
- ▶ **Sheathed BNC Male to Banana Jacks**

Features a compact tri-fold pouch for holding RF Detector Kit and small tools.

885-6264. Model 6130 .... EACH 100.00

Model 6131 Hewlett-Packard HP 970A Series DMM and HP 54600B Series Oscilloscope Tri-Fold Test Companion™ Test Kit

- ▶ **RF Detector Probe with Sheathed Banana Plugs**
- ▶ **Insulated BNC Male to Banana Jacks**

Features a compact tri-fold pouch for holding RF Detector Kit and small tools.

885-6258. Model 6131 .... EACH 100.00

Model 6132 Hewlett-Packard HP 54600B Series Oscilloscope Tri-Fold Test Companion™ Test Kit

- ▶ **Oscilloscope Probes (X10 Fixed, 150 MHz)**

Features a compact tri-fold pouch for holding test leads, clips and small tools.

885-6259. Model 6132 .... EACH 80.00

Model 6133 Tektronix TEK DMM250 Series Test Companion™ Test Kit

- ▶ **DMM Test Lead Set**
- ▶ **Probe Bodies with Banana Plug Tip**
- ▶ **Flexible Grabber® Test Clips**
- ▶ **Large Safety Alligator Clips**
- ▶ **Medium Alligator Clips**
- ▶ **Minispring Needle Tips**
- ▶ **Splices**

Features large briefcase style Cordura carrying case with shoulder strap and accessories listed. Holds DMM plus additional test accessories, manuals, references and miscellaneous items. Meters and scopes not included.

885-6260. Model 6133 .... EACH 185.00

Model 6134 Tektronix TEKSCOPE™ THS 700 Series Test Companion™ Test Kit

- ▶ **Oscilloscope Probes (X10, 150 MHz)**
- ▶ **Test Lead Set**
- ▶ **Probe Bodies with Banana Plug Tip**
- ▶ **Flexible Grabber® Test Clips**
- ▶ **Grip Clips**
- ▶ **Large Safety Alligator Clips**
- ▶ **Minispring Needle Tips**

Features large briefcase style Cordura carrying case with shoulder strap and accessories listed. Holds your scope, test accessories, manuals, references and miscellaneous items. Meters and scopes not included.

885-6261. Model 6134 .... EACH 375.00

Solder-On Test Adapters

► Enabling Advanced Circuit Design and Testing

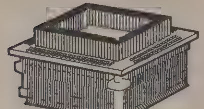


Fig. 1

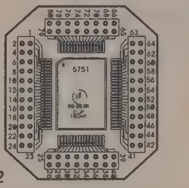


Fig. 2

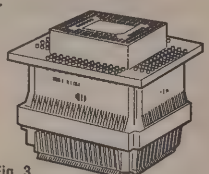


Fig. 3

Pomona's new Solder-On Adapters offer secure, reliable soldered connections to your circuit board in place of the target chip and include a breakout board for connection to logic analyzers and other advanced test instrumentation. Solder-On Adapters provide the crucial interface between circuit boards and test instruments to enable engineers to design and test when the target chip is unavailable or is inappropriate for use in a specific design or test environment. Breakout board included with each base provides test access via .025" square pins.

Pomona Solder-On Adapters are generic test interfaces and work on standard EIAJ (metric) and JEDEC SMT layouts. While only a few typical applications are shown in the table, Solder-On Adapters will work for all chips with the same lead pattern.

Stock No.	Mfr.'s Type	Fig.	No. of Leads	Body Size*	Lead Pitch*	Typical Applications	EACH
885-6285 **885-6286**	5751S 7050S	1 2	80	14 × 20	0.80	Intel 80C186XL, Cirrus Logic CL-SH2601, AMD S80C186/188	**260.00** **475.00**
885-6287 **885-6288**	5867S 7051S	1 2	80	20 × 20	0.65	Hitachi HD64180, H8 / 3001, HD 6473332, Analog Devices ADSP 2115	**260.00** **495.00**
885-6289 **885-6290**	5643S 7052S	1 2	100	14 × 20	0.65	Xilinx XC4003, Motorola 68EC020F, NEC 77017, Philips SAA7186, Siemens 80C166	**295.00** **575.00**
885-6291	5780S	3	132	.95" × .95"	.025"	Intel 80386DX, 80386EXS, 80960KA	**325.00**
885-6292 **885-6293**	5645S 7053S	1 2	160	28 × 28	0.65	Actel A1280, Emulex FAS256, Toshiba TMPR3901F, Symphony SL82C492	**405.00** **635.00**
885-6294 **885-6295**	5770S 7054S	4 2	208	28 × 28	0.50	Intel 80486DX2E, TI TMS320C30, Toshiba TC85M831F	**800.00** **958.00**
885-6296 **885-6297**	5998AS 7055S	4 2	240	32 × 32	0.50	Analog Devices ADSP-21060, Toshiba 93F3167, Xilinx XC4013	**875.00** **1190.00**
885-6298	5968S	4	240	32 × 32	0.50	Motorola 68360	**895.00**

*Dimensions in mm except where noted.

JEDEC PQFP Test Clips

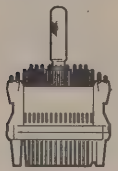


Fig. 1

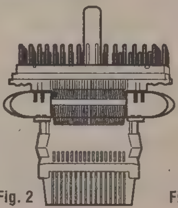


Fig. 2

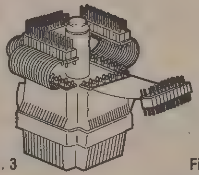


Fig. 3

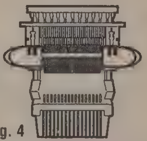


Fig. 4

Pomona's JEDEC QFP test clips are designed to fit on surface-mounted plastic and ceramic JEDEC chips. Choose from four clip types specifically designed to give you optimum functionality and ease of use for testing, troubleshooting and custom-design evaluation with logic analyzers and oscilloscopes. Ceramic adapters are included with each clip.

The basic JEDEC QFP test clip (Fig. 1) is designed for use on densely-populated boards where space is at a minimum. Leads at the top of the clip are .022" × .012" and are spaced .075" apart. Clip leads can be accessed with special flying leads (not included) or with Pomona Micrograbber® clips.

Pomona's most popular JEDEC QFP test clip (Fig. 2) features a large board with .025" pins at .100" × .100" spacing for easy connection to logic analyzers and oscilloscopes. The board is elevated to avoid other board components near the target chip.

The Custom Flexible Interface Network (FIN™) clip (Fig. 3) provides a platform for your own board designs. Attach your custom-designed board to the top of the clip. Flex cables conduct the chip leads to your board using high-density connectors with .018" pins at .050" × .100" spacing. Requirements for board layouts are available from Pomona upon request.

Finally, Pomona's JEDEC QFP test clip (Fig. 4) with generic PGA socket provides a compact, standardized interface for design and testing.

Stock No.	Mfr.'s Type	Fig.	No. of Leads	Body Size*	Lead Pitch*	Typical Applications	EACH
885-6300	5885	2	68	.55 × .55	.025"	Motorola MC68HC001	**310.00**
885-6301	5886	2	84	.65 × .65	.025"	Intel 80C188EB	**360.00**
885-6302 **885-6303** **885-6304** **885-6305**	5713 5764† 5777 5775	1 1 2 3	100	.75 × .75	.025"	Texas Instruments 486SXLC, Intel 80C186EC, 80386SX, AMD 29205, 386EM, 386SXLP, AT&T SDP1633	**150.00** **333.00** **375.00** **297.00**
885-5711 **885-6306** **885-6307** **885-6308** **885-6309**	5711 5765† 5780 5778 5876	1 1 2 3 4	132	.95 × .95	.025"	Intel 80386DX, 80386EXS, 80960KZ, AT&T ATT92020, ATT1C05, DSP3210, Motorola DSP56002f, 56I002, 68HC16, Texas Instrument TMS320C31, TMS320C51, AMD AM386DE	**168.00** **448.00** **408.00** **324.00** **487.00**
885-6310 **885-6311**	5887 5881	2 3	164	1.15 × 1.15	.025"	Intel 80960MC, Intel 82353	**575.00** **457.00**
885-6312 **885-6313** **885-6314** **885-6315** **885-6316**	5715 5829† 5783 5781 5877	1 1 2 3 4	196	1.34 × 1.34	.025"	Intel 80386SL, 80386SLP, 80960KB, AMD AM29240, AM29243, AM29245, AM486SE, AM486SELV, Xilinx XC4880, XC4010	**243.00** **500.00** **461.00** **365.00** **656.00**

*Dimensions in mm except where noted. †Includes 3" long flying leads.

Metric QFP Test Clips

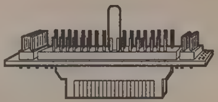


Fig. 1

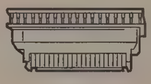


Fig. 2

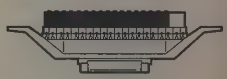


Fig. 3

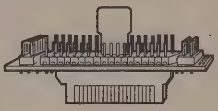


Fig. 4

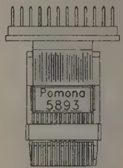


Fig. 5

Pomona's Metric QFP test clips are uniquely designed to provide innovative solutions for testing surface-mounted metric QFP chips and evaluating custom circuit designs.

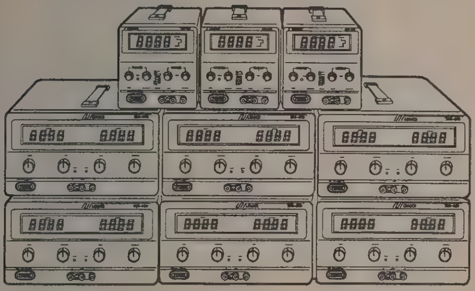
Stock No.	Mfr.'s Type	Fig.	No. of Leads	Body Size*	Lead Pitch*	Nom. Height*	Critical Dim.†	Typical Applications	EACH
885-6324 **885-6325**	5751 5751L	1 4	80	14 × 20	0.800	3.4	16.3 × 22.3	Intel 80C186XL, Cirrus Logic CL-SH260, Adaptec AIC-6360Q	**205.00** **230.00**
885-6326 **885-6327**	5751-2 5751L-2	1 4	80	14 × 20	0.800	3.4	15.6 × 21.6	AMD 80C186, AMD S80L188, Philips 9XC1X0, AMD S80L186	**205.00** **230.00**
885-6328	5867-2	3	80	14 × 14	0.650	3.4	15.6	Intel 80960SA, Hitachi H81350	**205.00**
885-5769	5769	1	100	22 × 22	0.800	3.4	25.3	Texas Instruments TMS320C51	**225.00**
885-5643 **885-6330**	5643 5643L	1 4	100	14 × 20	0.650	3.4	16.3 × 22.3	Xilinx XC4003, Motorola 68EC020F, AT&T 3042, Fujitsu MB86600	**225.00** **245.00**
885-6331 **885-6332**	5643-2 5643L-2	1 4	100	14 × 20	0.650	3.4	15.6 × 21.6	Altera EPM5130, Cirrus Logic CL-SH3620, Standard SMC91C92, Xilinx XC3042	**225.00** **245.00**
885-6335	5868L-2	4	112	19 × 19	0.650	3.4	21.7	Motorola DSP56156	**225.00**
885-5664	5644	1	120	28 × 28	0.800	3.4	30.3	AMD AM29C960, Lattice	**255.00**
885-6336	5644-2	1	120	28 × 28	0.800	3.4	29.6	ispLSI1048, NEC µPD70236	**255.00**
885-6337	5772	1	128	28 × 28	0.800	3.4	30.3	Analog Devices PM7224FS	**275.00**
885-6338	5773	1	144	28 × 28	0.650	3.4	30.3	AMD AM29040, IDT 49C465	**285.00**
885-6339	5986-3	1	144	20 × 20	0.500	3.4	21.6	Motorola 68331	**565.00**
885-6340	5986	3	144	20 × 20	0.500	1.4	21.0	Motorola 68302	**684.00**
885-5645 **885-6341**	5645 5645L	1 4	160	28 × 28	0.650	3.4	30.3	Actel A1280, Emulex FAS256	**300.00** **325.00**
885-6342 **885-6343**	5645-2 5645L-2	1 4	160	28 × 28	0.650	3.4	29.6	Altera EPF8452, Motorola MPC400, MPC403	**300.00** **325.00**
885-5774 **885-6344**	5774 5774-2	1 1	168	28 × 28	0.650	3.4	30.3 29.6	AMD AM29205	**310.00** **310.00**
885-6345	5991	3	176	24 × 24	0.500	1.4	25:0	Intel 486SX	**880.00**
885-5771	5771	1	184	32 × 32	0.650	3.4	34.3	Toshiba TC85M911F	**345.00**
885-5770 **885-6346**	5770 5770L	1 4	208	28 × 28	0.500	3.4	29.6 30.3	Intel 80486DX2E, Motorola MC68HC05, Actel A1480, Altera EPF8636, EPF8820	**685.00** **770.00**
885-6348	5770L-2	4	208	28 × 28	0.500	3.4	29.3	Hitachi HG62G027	**770.00**
885-6349 **885-6350**	5770-3 5770L-3	1 4	208	28 × 28	0.500	3.4	30.3	PLX Technology PCI9032, IDT 49C466	**685.00** **770.00**
885-6353	5968C	2	240	32 × 32	0.500	3.4	33.8	Motorola XC68360 Ceramic	**985.00**
885-6354 **885-6355**	5998A 5998AL	2 4	240	32 × 32	0.500	3.4	33.8	Analog Devices ADSP-21060, AMD Tidalwave, Altera EPF81188	**745.00** **840.00**
885-6356 **885-6357**	5998A-1 5998AL-1	2 4	240	32 × 32	0.500	3.4	33.8	Xilinx XC4025-MQ240	**745.00** **840.00**
885-6358 **885-6359**	5998A-2 5998AL-2	2 4	240	32 × 32	0.500	3.4	33.8	Motorola XC68360, MPC603	**745.00** **840.00**
885-6360 **885-6361**	7048A 7048AL	2 4	304	40 × 40	0.500	3.4	41.8	Altera EPF81500, VLSI VP12252-2, LSI L1A9349, NEC D75304GF	**830.00** **985.00**
885-5893 **885-5894**	5893 5894	5 5	48 56	0.3" 0.3"	0.025" 0.025"	— —	— —	TI ABT16244, ACT16245 IDT FCT16223, FCT162511	**337.00** **375.00**

*Dimensions in mm except where noted. †Measure distance between vertical portions of chip leads from one side of chip to the other (preferably while chip is soldered to board).

Test Equipment, 2-Year Warranty on Labor And Parts

LEADER
Instruments Corporation

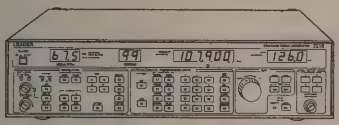
Model 700 Series Power Supplies



All Model 700 Series Single Output Power Supplies feature constant voltage and current modes of operation. Coarse and fine adjust controls for both voltage and current enhance setability and accuracy of the digital meters. The 3½ digit red LED displays are a half inch high and easy to see. All nine models have excellent specifications of ripple and noise including line and load regulation to maintain clean, stable output even under adverse conditions. Standard reverse polarity protection and fast overload recovery protect both the supply and the unit under test. **Specifications. Output Voltage:** 718-3D, 718-5D, 718-10D, 718-20D — 0-18; 730-3D — 0-30; 735-10D — 0-35; 760-3D — 0-0; 775-5D — 0-75; 7110-3D — 0-110. **Output Polarity:** ±. **Output Current:** 718-3D, 730-3D, 760-3D, 7110-3D — 0-3; 718-5D, 775-5D — 0-5; 718-10D, 735-10D — 0-10; 718-20D — 0-20. **Constant Voltage. Ripple Voltage rms:** 718-3D, 730-3D — ≤0.5 mV rms; 718-5D, 718-10D, 718-20D, 735-10D, 760-3D, 775-5D, 7110-3D — ≤1 mV rms. **Regulation Line:** ≤0.01% +3 mV. **Regulation Load:** 718-3D, 718-5D, 730-3D, 760-3D, 775-5D, 7110-3D — ≤0.01% +3 mV; 718-10D, 718-20D, 735-10D — ≤0.02% +5 mV. **Recovery Time:** ≤100 µs. Constant Current. **Ripple Current:** 718-3D718-5D,, 718-10D, 730-3D, 760-3D — ≤3 mA rms; 718-20D, 735-10D, 775-5D, 7110-3D — ≤5 mA rms. **Regulation Line/Load:** ≤0.2% +3 mA. Metering. **Voltmeter/Ammeter:** 3½ digit 0.5" LED ± (0.5% of rdg +2 dgt). Insulation. **Chassis and Terminal:** 718-3D, 718-5D, 718-10D, 730-3D, 760-3D — ≥20 mΩ, 500 Vdc; 718-20D, 735-10D, 775-5D, 7110-3D — ≥100 mΩ, 1 kVdc. **Chassis and AC Cord:** 718-3D, 718-5D, 718-10D, 730-3D, 760-D — ≥30 mΩ, 500 VDC. 718-20D, 735-10D, 775-5D, 7110-3D — ≥100 mΩ, 1 kVdc. Size (H × H × D): 718-3D, 718-5D — 5 × 5.7 × 11.2"; 718-10D, 760-3D — 10 × 5.7 × 13.2"; 718-20D, 735-10D, 775-5D, 7110-3D — 10 × 5.7 × 16.5"; 730-3D — 5 × 5.7 × 11.2". **Weight:** 718-3D — 8.8 lbs.; 718-5D, 730-3D — 11 lbs.; 718-10D, 760-3D — 25.3 lbs.; 718-20D, 735-10D, 775-5D — 40.7 lbs.; 7110-3D — 29.7 lbs. **Power Requirements:** 100 V, 120 V, 220 V, 2140 V ac ±10%, 50/60 Hz User Switchable.

843-0700. Model 718-3D. 18 V, 3 A	EACH	345.00
843-0750. Model 718-5D. 18 V, 5 A	EACH	365.93
843-0705. Model 718-10D. 18 V, 10 A	EACH	645.00
843-0715. Model 718-20D. 18 V, 20 A	EACH	1095.00
843-0720. Model 730-3D. 30 V, 3 A	EACH	385.00
843-0725. Model 735-10D. 35 V, 10 A	EACH	1045.00
843-0730. Model 760-3D. 60 V, 3 A	EACH	645.00
843-0735. Model 775-5D. 75 V, 5 A	EACH	1095.93
843-0745. Model 7110-3D. 110 V, 3 A	EACH	1145.46

AM/FM Synthesized RF Signal Generators



- 100 kHz to 140 MHz Range
- AM/FM Modulation Int/Ext
- RF Output Level in 0.1 dB Steps
- Storage and Recall of 100 Test Conditions
- Stereo Separation ≥55 dB for Model 3216 Only

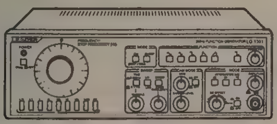
843Q3216. Model 3216	EACH	3467.33
843Q3215. Model 3215	EACH	3157.33

Model LAG-120B Audio Sine/Squarewave Generator

- Low Distortion: <0.05%
- Wideband 10 Hz to 1 MHz
- Frequency Response ± 0.5 dB
- 20 dB Variable, +50 dB Step Attenuators

843-0120. LAG-120B............EACH 445.00

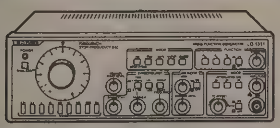
Model LG-1301 — NEW —
2 MHz Sweep/Function Generator



- Sine, Square, Triangle, Ramp and Pulse Outlet
- Adjustable Symmetry
- Sine, Square, Triangle, Ramps and Pulse Outlet
- Changing the Symmetry Does Not Affect Frequency
- Lin/Log Sweep Frequency Outputs

843-1301. Model 1301 ....EACH 495.00

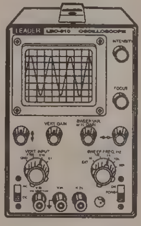
Model LG-1311 — NEW —
10 MHz Sweep/Function Generator



- Sine, Square, Triangle, Ramp and Pulse Outlet
- Adjustable Symmetry for all Waveforms
- CW, Trigger, Gate, Burst Plus Lin/Log Sweep Modes

843-1311. Model 1311 ....EACH 995.00

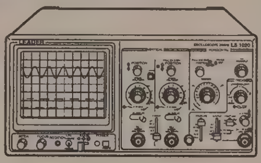
Model LBO-310A 4 MHz Recurrent Sweep Oscilloscope



- Practical for OEM Applications Needing Displays
- Low Cost
- Simple Operation
- Excellent for Continuous Monitoring

843-0310. Model LBO-310A..........................EACH 85.00

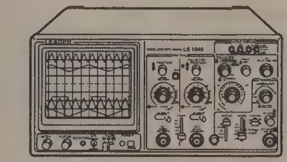
Model LS 1020 — NEW —
20 MHz 2-Channel Oscilloscope



- 20 MHz Bandwidth Referred to 8 Div.
- 500 µV/Div. Sensitivity
- 10 ns./Div. Maximum Sweep Speed
- Alternate Vertical Mode
- Alternate Triggering
- Variable Holdoff
- Channel 1 Monitor Output
- 400 V (dc + ac Peak) Maximum Input

843-1020. Model LS 1020..........................EACH 525.00

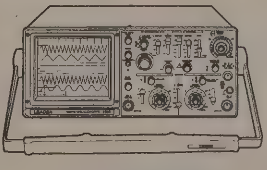
Model LS 1040 — NEW —
40 MHz 3-Channel Oscilloscope



- 0.5 mV Sensitivity
- 3 Channel 6 Trace Capability
- Alternate Vertical and Sweep Modes
- 10 ns./div. Max. Sweep Speed
- 12 kV PDA for Sharp Traces

843-1040. Model LS 1040..........................EACH 995.00

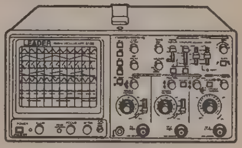
Model 8063 60 MHz 3-Channel Oscilloscope



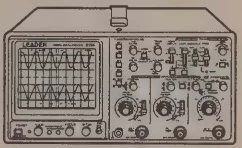
- 1 mV Sensitivity
- Calibrated Delayed Sweep
- 6 Trace Capability
- 5 ns Sweep Speed

843Q8063. Model 8063..........................EACH 1495.00

Model 8104 100-MHz 3 Channel Oscilloscope



8103



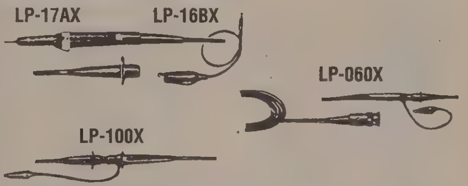
8104

- CRT Readout and Cursor Functions on 8104 Only
- 5 ns/div. Max. Sweep Speed
- 3 Channels with 8 Trace Capability
- Video Sync Pulse Sampling Circuit
- Channel 1 Output to 100 MHz
- XY Operation
- Z Axis (Intensity) Modulation

— NEW —

843-8103. Model 8103	EACH	1760.00
843-8104. Model 8104	EACH	1995.00

Oscilloscope Probes



LP-16BX (At X1 Position). Specifications. Bandwidth: DC-5 MHz. **Input Resistance:** 1 MΩ. **Input Capacitance:** <250 pF. **Maximum Input:** 600 V (DC + AC peak). **Cable Length:** 50" (125 cm). **LP-16BX (At X10 Position). Specifications. Bandwidth:** DC-40 MHz. **Input Resistance:** 10 MΩ. **Input Capacitance:** 22 pF±10%. **Max. Input:** 600 V (DC+AC peak).
843-9016. LP-16BX..........................EACH 50.00

LP-17AX (At X10 Position). Specifications. Attenuation: $\frac{1}{10}$ ±2%. **Frequency Range:** DC-40 MHz. **Input Resistance:** 10 MΩ. **Input Capacitance:** less than 25 pF. **Compensation Range:** 20-40 pF. **Max. Input:** 600 VDC. **Connector:** BNC.**LP-17AX (X100 Position). Specifications. Attenuation:** $\frac{1}{100}$ ±3%. **Frequency Range:** DC-20 MHz. **Input Capacitance:** less than 8 pF. **Compensation Range:** 20-40 pF. **Max. Input:** 1500 VDC. **Cable Length:** 50" (125 cm).
843-9017. LP-17AX..........................EACH 89.00

LP-100X (X1 Position). Specifications. Bandwidth: DC-100 MHz. **Input Resistance:** 10 MΩ. **Input Capacitance:** 22 pF ±10%. **LP-100X (X10 Position). Specifications. Bandwidth:** DC-6 MHz. **Input Resistance:** 1 MΩ. **Input Capacitance:** <150 pF. **General. Max. Input:** 600 V (DC + AC Peak). **Cable Length:** 59" (150 cm).
843-9011. LP-100X..........................EACH 89.00

LP-060X (X10 Position). Specifications. Bandwidth: DC to 50 MHz. **Attenuation:** $\frac{1}{10}$ ±2% (into 1 MΩ). **Input Resistance:** 10 MΩ (when connected to 1 MΩ input). **Input Capacitance:** 22 pF +10%. **Compensation Range:** 20 to 40 pF. **Maximum Input:** 600 V (DC + AC peak). **LP-060X (X1 Position). Specifications. Bandwidth:** DC to 3 MHz. **Input Resistance:** 1 MΩ (when connected to 1 MΩ input). **Input Capacitance:** <250 pF. **Maximum Input:** 600 V (DC + AC peak). **Cable Length:** 50" (125 cm).
843-9060. LP-060X..........................EACH 75.00

5 Amp Alligator Clips

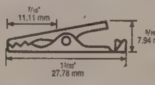


Fig. 1

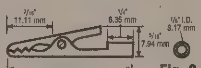


Fig. 2

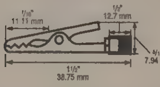


Fig. 3

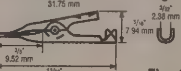


Fig. 4

BU-30 steel, BU-30C solid copper for #20 wire or smaller. BU-30BL barrel tail; solder or crimp connection. BU-30TBO threaded barrel tail; connects to 6-32 threaded male test prod. BU-34 and BU-34C for #20 wire or smaller; solder connection.

Stock No.	Mfr.'s Type	Fig.	Clip Length	Jaws Open	EACH
860-4240	BU-30	1	1³/₃₂"	³/₁₆"	.20
860-4250	BU-30C	1	1³/₃₂"	³/₁₆"	.25
860-4235	BU-30BL	2	1¹/₄"	³/₁₆"	.20
860-4245	BU-30TBO	3	1¹/₂"	³/₁₆"	.40
860-4335	BU-34	4	1³/₃₂"	⁷/₃₂"	.39
860-4340	BU-34C	4	1³/₃₂"	⁷/₃₂"	.40

10 Amp Alligator Clips

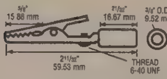


Fig. 5

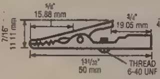


Fig. 8

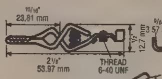


Fig. 11

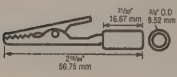


Fig. 6

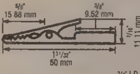


Fig. 9

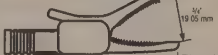


Fig. 12

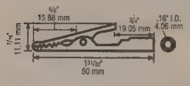


Fig. 7

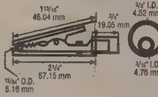


Fig. 10

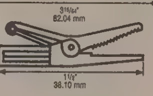


Fig. 13

Plated steel except BU-60CHS, BU-63C, BU-60CS, and BU-85C which are solid copper, BU-60 is stainless steel and #65, 66 plated brass. BU-60CHS and BU-60HS have insulated sleeve, 6-40 screw, BU-60HPR has insulated acetate handle. BU-63 and BU-63C have 2-piece flexible vinyl insulation; barrel takes wire or banana plug. BU-60 has lip for soldering. BU-60S and BU-60CS are the same as BU-60 except have 6-40 screw. BU-85 and BU-85C 10 amp crocodile clips. Insulated, plug-on crocodile clips BU-66, 2 amp and BU-65 34 amp.

Stock No.	Mfr.'s Type	Fig.	Color	Clip Length	Jaws Open	EACH
860-4230	BU-60CHS-0	5	Black	2¹¹/₃₂"	⁵/₁₆"	.60
860-4225	BU-60CHS-2	5	Red	2¹¹/₃₂"	⁵/₁₆"	.60
860-4220	BU-60HS-0	5	Black	2¹¹/₃₂"	⁵/₁₆"	.45
860-4215	BU-60HS-2	5	Red	2¹¹/₃₂"	⁵/₁₆"	.45
860-4365	BU-60HPR-0	6	Black	2¹⁵/₆₄"	⁵/₁₆"	.50
860-4360	BU-60HPR-2	6	Red	1³¹/₃₂"	⁵/₁₆"	.50
860-4341	BU-60	7	—	1³¹/₃₂"	⁵/₁₆"	.25
860-4345	BU-60S	8	—	1³¹/₃₂"	⁵/₁₆"	.30
860-4350	BU-60CS	8	—	1³¹/₃₂"	⁵/₁₆"	.50
860-4355	BU-60PR-2	9	Red	2¹/₄"	⁵/₁₆"	.40
860-4305	BU-63-0	10	Black	2¹/₄"	⁵/₁₆"	.70
860-4300	BU-63-2	10	Red	2¹/₄"	⁵/₁₆"	.70
860-4315	BU-63C-0	10	Black	2¹/₄"	⁵/₁₆"	.75
860-4310	BU-63C-2	10	Red	2¹/₈"	⁵/₁₆"	.75
860-4510	BU-85	11	—	2¹/₈"	⁵/₁₆"	.35
860-4515	BU-85C	11	—	3¹/₄"	³/₄"	.65
860-7660	BU-65-0	12	Black	3¹/₄"	³/₄"	4.15
860-7661	BU-65-2	12	Red	1¹/₂"	¹/₂"	4.15
860-7662	BU-66-0	13	Black	1¹/₂"	¹/₂"	2.40
860-7663	BU-66-2	13	Red	1¹/₂"	¹/₂"	2.40

General Purpose 10 Amp "Pee-Wee" Copper Clips

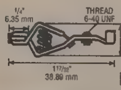


Fig. 14

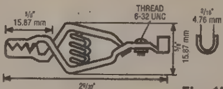


Fig. 15

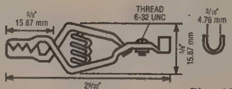


Fig. 16

BU-45 plated steel finish. BU-45C solid copper finish.

Stock No.	Mfr.'s Type	Fig.	Clip Length	Jaws Open	EACH
860-4290	BU-45	14	1¹⁷/₃₂"	⁵/₁₆"	.35
860-4295	BU-45C	14	1¹⁷/₃₂"	¹/₄"	.50

20 Amp Alligator Solid Copper Clips

BU-50C beryllium copper piercing needle in top jaw; 6-32 brass screw. BU-51C same but no needle; 6-32 steel screw.

Stock No.	Mfr.'s Type	Fig.	Clip Length	Jaws Open	EACH
860-5400	BU-50C	15	2⁹/₃₂"	¹/₂"	1.15
860-5405	BU-51C	16	2⁹/₃₂"	¹/₂"	.80

Clip Kits and Crimp Tool

DC-100 clip bar kit contains over 250 test clips and insulators in metal tray. DH-111 crimp tool kit contains 500 test clips and insulators, crimp tool for 14-24 AWG. BU-900 ratcheting crimp tool for 24-14 AWG.

860-5410. Type DC-100 .... EACH 99.40
860-1111. Type DH-111 .... EACH 198.80
860-7685. Type BU-900 .... EACH 99.20

Heavy Duty Test and Battery Clips

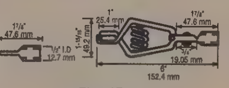


Fig. 17

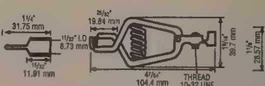


Fig. 18

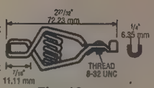


Fig. 19

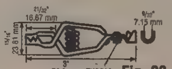


Fig. 20

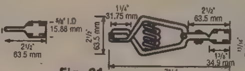


Fig. 21

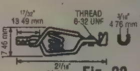


Fig. 22

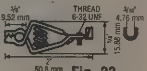


Fig. 23

Heavy duty clips are designed for fast chargers, battery discharge tests and heavy grounding requirements. PN, plain grounding and PS, plus grounding available.

Stock No.	Mfr.'s Type	Fig.	Amps	Clip Length	Jaws Open	EACH
860-4285	BU-11APN	17	100	6"	1⁵/₈"	3.90
860-4286	BU-11APS	17	100	6"	1⁵/₈"	3.90
860-4265	BU-11CPN	17	200	6"	1⁵/₈"	5.30
860-4266	BU-11CPS	17	200	6"	1⁵/₈"	5.30
860-4280	BU-21APN	18	50	4⁷/₆₄"	1¹/₆"	1.50
860-4281	BU-21APS	18	50	4⁷/₆₄"	1¹/₆"	1.50
860-4260	BU-21CPN	18	100	4⁷/₆₄"	1¹/₆"	3.00
860-4261	BU-21CPS	18	100	4⁷/₆₄"	1¹/₆"	3.00
860-4275	BU-24APN	19	25	2²⁷/₃₂"	³/₄"	.85
860-4270	BU-24APS	19	25	2²⁷/₃₂"	³/₄"	.85
860-4485	BU-25	20	40	3"	³/₄"	.70
860-4255	BU-25C	20	75	3"	³/₄"	1.25
860-4271	BU-33C	21	300	7³/₄"	1¹³/₁₆"	11.20

General Purpose Clips

BU-27 and BU-48B steel; BU-27C and BU-48C solid copper.

Stock No.	Mfr.'s Type	Fig.	Amps	Clip Length	Jaws Open	EACH
860-4490	BU-27	22	20	2⁷/₁₆"	⁵/₈"	.55
860-4495	BU-27C	22	40	2⁷/₁₆"	⁵/₈"	.70
860-4500	BU-48B	23	10	2"	¹/₂"	.45
860-4505	BU-48C	23	10	2"	¹/₂"	.55

Plier-Type Battery Clips

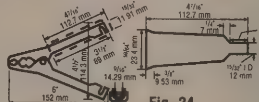


Fig. 24

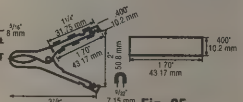


Fig. 25

BU-41 lock on both side and top terminal batteries, ⁵/₁₆" ID lug for #2 AWG wire. BU-46 for trickle chargers and timing lights. Suffix "A" copper-plated steel; suffix "C" burnished solid copper. All have vinyl insulating sleeves.

Stock No.	Mfr.'s Type	Fig.	Color	Amps	Clip Length	Jaws Open	EACH
860-4525	BU-41A-2	24	Red	200	6"	1⁵/₈"	2.15
860-4520	BU-41A-0	24	Black	200	6"	1⁵/₈"	2.15
860-4522	BU-41C-2	24	Red	400	6"	1⁵/₈"	5.40
860-4523	BU-41C-0	24	Black	400	6"	1⁵/₈"	5.40
860-4540	BU-46A-2	25	Red	50	3"	1¹/₈"	.75
860-4530	BU-46A-0	25	Black	50	3"	1¹/₈"	.75
860-4532	BU-46C-2	25	Red	75	3"	1¹/₈"	1.15
860-4533	BU-46C-0	25	Black	75	3"	1¹/₈"	1.15

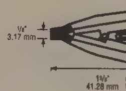


Fig. 26

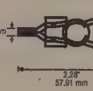


Fig. 27

Kelvin Clips

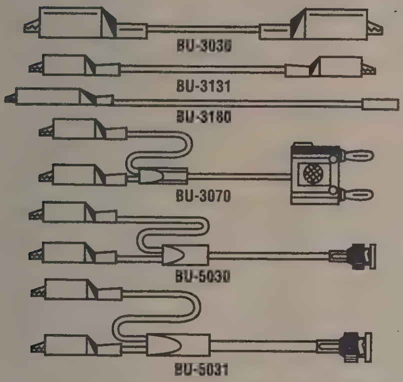
Used for 4-wire resistance measurement systems. Jaws are electrically isolated when open, shorted when closed. BU-75K silver/gold tip contacts, 18 AWG wire. BU-78K gold contacts, 20 AWG wire.

860-4205. BU-75K. Fig. 26. 1⁵/₈" Clip Length. Jaws Open ⁵/₁₆" .... EACH 7.70
860-4210. BU-78K. Fig. 27. 2.28" Clip Length. Jaws Open ¹/₂" .... EACH 32.60

Flexible Vinyl Insulators For Clips

Stock No.	Mfr.'s Type	Color	For Clips	EACH
860-4375	BU-13-2	Red	BU-11A, BU-11C	1.90
860-4380	BU-13-0	Black	BU-11A, BU-11C	1.90
860-4385	BU-23-2	Red	BU-21A, BU-21C	.90
860-4390	BU-23-0	Black	BU-21A, BU-21C	.90
860-4395	BU-26-2	Red	BU-24A, BU-25, BU-25C	.70
860-4400	BU-26-0	Black	BU-24A, BU-25, BU-25C	.70
860-4405	BU-29-2	Red	BU-27, BU-27C	.45
860-4410	BU-29-0	Black	BU-27, BU-27C	.45
860-4412	BU-31-2	Red	BU-30BL, BU-30TBO	.15
860-4414	BU-31-0	Black	BU-30BL, BU-30TBO	.15
860-4415	BU-32-2	Red	BU-30, BU-30C	.15
860-4420	BU-32-0	Black	BU-30, BU-30C	.15
860-4422	BU-35-2	Red	BU-33C	4.95
860-4424	BU-35-0	Black	BU-33C	4.95
860-4425	BU-36-2	Red	BU-34, BU-34C	.15
860-4430	BU-36-0	Black	BU-34, BU-34C	.15
860-4435	BU-47-2	Red	BU-45, BU-45C	.20
860-4440	BU-47-0	Black	BU-45, BU-45C	.20
860-4445	BU-49-2	Red	BU-48B, BU-48C	.40
860-4450	BU-49-0	Black	BU-48B, BU-48C	.40
860-4455	BU-62-2	Red	All BU-60 Series	.15
860-4460	BU-62-0	Black	All BU-60 Series	.15
860-4475	BU-87-2	Red	BU-85, BU-85C	.25
860-4480	BU-87-0	Black	BU-85, BU-85C	.25

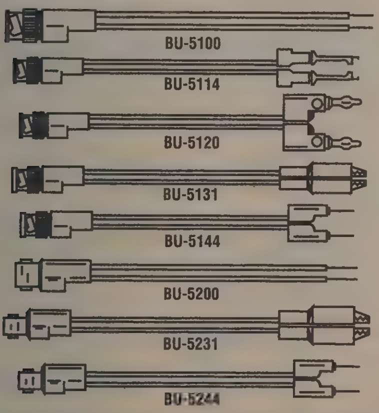
Alligator Clips



Type BU-3030 insulated alligator clip both ends. Type BU-3070 insulated alligator clips, positive and negative with 3" (76.2 mm) and 8" (203.2 mm), respectively lead wires with molded Y-block to stackable double banana plug. Type BU-3131 insulated mini-alligator clip, both ends. Type BU-3180 insulated mini-alligator clip to 0.025" (0.625 mm) square pin receptacle. Type BU-5030 insulated alligator clips, positive and negative with 3" (76.2 mm) and 8" (203.2 mm), respectively lead wires with molded Y-block to BNC male. Type BU-5031 insulated mini-alligator clips, positive and negative with 3" (76.2 mm) and 8" (203.2 mm), respectively lead wires with molded Y-block to BNC male.

860-4115.	BU-3030-A-12-0. Black. 12"	EACH	2.40
860-4120.	BU-3030-A-12-2. Red. 12"	EACH	2.40
860-4122.	BU-3131-A-12-0. Black. 12"	EACH	3.35
860-4124.	BU-3131-A-12-2. Red. 12"	EACH	3.35
860-4126.	BU-3180-E-12-0. Black. 12"	EACH	3.80
860-4128.	BU-3180-E-12-2. Red. 12"	EACH	3.80
860-4125.	BU-3030-A-24-0. Black. 24"	EACH	2.40
860-4130.	BU-3030-A-24-2. Red. 24"	EACH	2.40
860-4132.	BU-3131-A-24-0. Black. 24"	EACH	3.35
860-4134.	BU-3131-A-24-2. Red. 24"	EACH	3.35
860-4136.	BU-3180-E-24-0. Black. 24"	EACH	3.80
860-4138.	BU-3180-E-24-2. Red. 24"	EACH	3.80
860-4145.	BU-3070-C-24-0. Black. 24"	EACH	12.20
860-7740.	BU-5030-C-24-0. Black. 24"	EACH	13.10
860-7742.	BU-5031-C-24-0. Black. 24"	EACH	13.25
860-4150.	BU-3070-C-36-0. Black. 36"	EACH	12.20
860-7744.	BU-5031-C-36-0. Black. 36"	EACH	13.25
860-4135.	BU-3030-A-36-0. Black. 36"	EACH	2.40
860-4140.	BU-3030-A-36-2. Red. 36"	EACH	2.40

BNC Breakouts



Series 5100 BNC Male Breakouts and Series 5200 BNC Female Breakouts feature tarnish resistant plated brass body, gold-plated center contact. Types BU-5100 and BU-5200 are BNC Male/Female to tinned end wires. Types BU-5131 and BU-5231 feature BNC to alligator clips. Types BU-5144 and BU-5244 feature BNC to 0.080" pins. In addition, male only BNC connectors are available to "Clipper" Test Leads (Type BU-5114), and to standard banana plugs (Type BU-5120). All Breakouts are four inches (4") long. Wires and terminations are color coded red and black for easy identification.

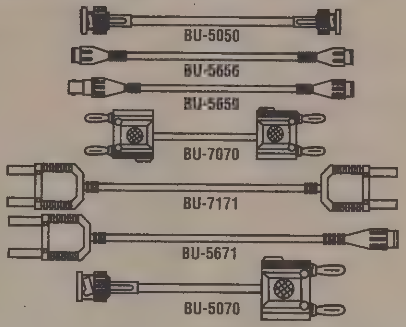
860-5100.	BU-5100-A-4-0. 4"	EACH	7.20
860-5102.	BU-5114-A-4-0. 4"	EACH	12.25
860-5104.	BU-5120-A-4-0. 4"	EACH	10.65
860-5106.	BU-5131-A-4-0. 4"	EACH	10.30
860-5144.	BU-5144-A-4-0. 4"	EACH	11.10
860-5108.	BU-5200-A-4-0. 4"	EACH	4.85
860-5110.	BU-5231-A-4-0. 4"	EACH	7.70
860-5244.	BU-5244-A-4-0. 4"	EACH	8.30

Square Pin Receptacles

Type BU-8080-E series are patch cords for PC boards with 0.025" (0.635) square pins.

860-8080.	BU-8080-E-12-0. Black. 12"	EACH	3.35
860-8082.	BU-8080-E-12-2. Red. 12"	EACH	3.35

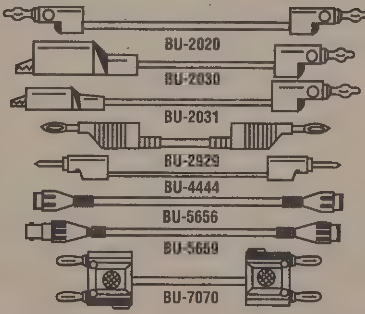
BNC and Banana Interconnects



Type BU-5050 has BNC Male Connectors at both ends. Type BU-5656 is the same except features fully insulated BNC Male Connectors. Type BU-5659 is a BNC Male-Female coaxial cable. Type BU-5070 is a BNC to Banana cable assembly. Type BU-7070 has dual banana plugs 0.75" OC on coax. Type BU-7171 features shielded dual banana (0.75" OC). Type BU-5671 combines the insulated versions of both the BNC Male and double banana into the same assembly. All on RG-58 (50 Ω) cable.

860-4175.	BU-5050-B-12-0. Black. 12"	EACH	6.80
860-4180.	BU-5050-B-24-0. Black. 24"	EACH	6.80
860-4185.	BU-5050-B-36-0. Black. 36"	EACH	6.80
860-4585.	BU-5656-B-12-0. Black. 12"	EACH	19.45
860-4590.	BU-5656-B-24-0. Black. 24"	EACH	19.45
860-4595.	BU-5656-B-36-0. Black. 36"	EACH	19.45
860-7504.	BU-5659-B-36-0. Black. 36"	EACH	19.45
860-4095.	BU-7070-B-12-0. Black. 12"	EACH	9.80
860-4096.	BU-7070-B-12-2. Red. 12"	EACH	9.80
860-4105.	BU-7070-B-24-0. Black. 24"	EACH	9.80
860-4106.	BU-7070-B-24-2. Red. 24"	EACH	9.80
860-4110.	BU-7070-B-36-0. Black. 36"	EACH	9.80
860-4111.	BU-7070-B-36-2. Red. 36"	EACH	9.80
860-4112.	BU-7171-B-12-0. Black. 12"	EACH	15.20
860-4114.	BU-7171-B-24-0. Black. 24"	EACH	15.20
860-4116.	BU-7171-B-36-0. Black. 36"	EACH	15.20
860-4118.	BU-5671-B-12-0. Black. 12"	EACH	21.60
860-4119.	BU-5671-B-24-0. Black. 24"	EACH	21.60
860-4121.	BU-5671-B-36-0. Black. 36"	EACH	21.60
860-4155.	BU-5070-B-12-0. Black. 12"	EACH	10.65
860-4160.	BU-5070-B-24-0. Black. 24"	EACH	10.65
860-4170.	BU-5070-B-36-0. Black. 36"	EACH	10.65

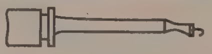
Banana and Pin Plugs



Type BU-2020 stackable single banana plugs both ends. BU-2030 insulated alligator clip to stackable banana plug. BU-2031 stackable single banana plug to insulated mini-alligator clip. BU-2929 "Ultra-Flex" test leads are laboratory-grade for superior performance and longer life. BU-4444 stackable 0.080" pin plug both ends. BU-5656-B insulated BNC male both ends, black only. BU-5659-B insulated BNC male to BNC female, black only. BU-7070 stackable double banana plugs both ends.

860-7574.	BU-2020-A-12-0. Black. 12.00"	EACH	3.20
860-7576.	BU-2020-A-12-2. Red. 12.00"	EACH	3.20
860-7578.	BU-2020-A-24-0. Black. 24.00"	EACH	3.20
860-7580.	BU-2020-A-24-2. Red. 24.00"	EACH	3.20
860-7582.	BU-2020-A-36-0. Black. 36.00"	EACH	3.20
860-7584.	BU-2020-A-36-2. Red. 36.00"	EACH	3.20
860-2132.	BU-2030-A-24-0. Black. 24.00"	EACH	3.20
860-2133.	BU-2030-A-24-2. Red. 24.00"	EACH	3.20
860-2134.	BU-2030-A-36-0. Black. 36.00"	EACH	3.20
860-2135.	BU-2030-A-36-2. Red. 36.00"	EACH	3.20
860-2231.	BU-2031-A-12-0. Black. 12.00"	EACH	3.20
860-2232.	BU-2031-A-12-2. Red. 12.00"	EACH	3.20
860-2233.	BU-2031-A-24-0. Black. 24.00"	EACH	3.20
860-2234.	BU-2031-A-24-2. Red. 24.00"	EACH	3.20
860-7647.	BU-2929-K-20-0. Black. 9.80"	EACH	5.50
860-7648.	BU-2929-K-20-2. Red. 9.80"	EACH	5.50
860-7649.	BU-2929-K-39-0. Black. 39.40"	EACH	6.60
860-7650.	BU-2929-K-39-2. Red. 39.40"	EACH	6.00
860-7586.	BU-4444-A-12-0. Black. 12.00"	EACH	4.00
860-7588.	BU-4444-A-12-2. Red. 12.00"	EACH	4.00
860-7590.	BU-4444-A-24-0. Black. 24.00"	EACH	4.00
860-7592.	BU-4444-A-24-2. Red. 24.00"	EACH	4.00
860-4585.	BU-5656-B-12-0. Black. 12.00"	EACH	19.45
860-4595.	BU-5659-B-36-0. Black. 39.37"	EACH	19.45
860-4095.	BU-7070-B-12-0. Black. 12.00"	EACH	9.80
860-4096.	BU-7070-B-12-2. Red. 12.00"	EACH	9.80
860-4105.	BU-7070-B-24-0. Black. 24.00"	EACH	9.80
860-4106.	BU-7070-B-24-2. Red. 24.00"	EACH	9.80

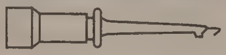
"Clipper" Plunger Test Clips



Type BU-00202 and BU-00203 spring-loaded hook attaches to fragile component leads and terminals while trouble-shooting. Designed for connection to components up to 0.060" dia. BeCu contacts.

Stock No.	Mfr.'s Type	Color	Length	EACH
860-7655	BU-00202-0	Black	2.5"	1.65
860-7656	BU-00202-2	Red	2.5"	1.65
860-7657	BU-00203-0	Black	3.5"	1.90
860-7658	BU-00203-2	Red	3.5"	1.90

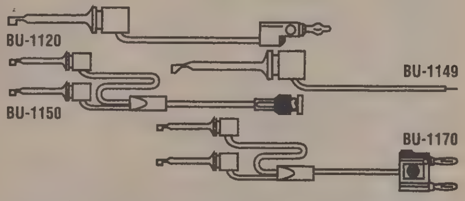
"Mini-Micro-Clipper" Plunger Test Clips



Type BU-00208 is similar, except small extremely lightweight. Plastic barrier on tip to prevent shorting between DIP legs. For connection to component leads to 0.025". BeCu contacts. MIL Spec G45204.

Stock No.	Mfr.'s Type	Color	Length	EACH
860-7675	BU-00208-0	Black	1.8"	1.55
860-7676	BU-00208-2	Red	1.8"	1.55

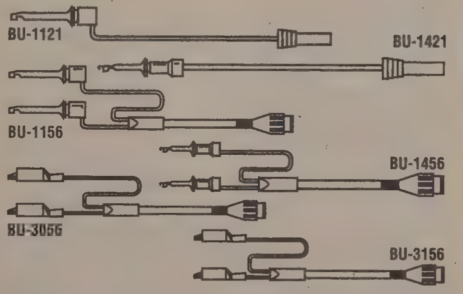
"Mini-Clipper" Test Clips



Type BU-1120 attaches to delicate component leads and terminals. Stackable banana plug terminates the other end of test lead. Type BU-1149 to tinned end wire. Type BU-1150 positive and negative with 3" and 8" leads with molded "Y" block to BNC male. Type BU-1170 positive and negative with 3" and 8" lead wires with molded "Y" block to stackable double banana plug.

860-4010.	BU-1120-A-24-0. Black. 24"	EACH	4.35
860-4015.	BU-1120-A-24-2. Red. 24"	EACH	4.35
860-4020.	BU-1120-A-36-0. Black. 36"	EACH	4.35
860-4025.	BU-1120-A-36-2. Red. 36"	EACH	4.35
860-4026.	BU-1149-A-12-0. Black. 12"	EACH	2.60
860-4027.	BU-1149-A-12-2. Red. 12"	EACH	2.60
860-4075.	BU-1149-A-24-0. Black. 24"	EACH	2.60
860-4080.	BU-1149-A-24-2. Red. 24"	EACH	2.60
860-4085.	BU-1149-A-36-0. Black. 36"	EACH	2.60
860-4090.	BU-1149-A-36-2. Red. 36"	EACH	2.60
860-4035.	BU-1150-C-24-0. Black. 24"	EACH	12.60
860-4040.	BU-1150-C-36-0. Black. 36"	EACH	12.60
860-4000.	BU-1170-C-24-0. Black. 24"	EACH	12.60
860-4005.	BU-1170-C-36-0. Black. 36"	EACH	12.60

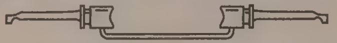
Safety Test Clips

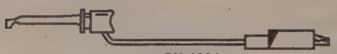


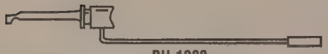
Type BU-1121 consists of a clipper to shielded banana plug. Type BU-1421 includes a mini-micro clipper to shielded banana plug useful for connection to fine wiring. Types BU-3056 and BU-3156 are dual alligator clips and mini-alligator clips, respectively to completely shielded BNCs. Types BU-1156 and BU-1456 are clippers and mini clippers, respectively to completely shielded BNCs.

860-4600.	BU-1121-A-12-0. Black. 12"	EACH	4.40
860-4602.	BU-1121-A-12-2. Red. 12"	EACH	4.40
860-4604.	BU-1121-A-36-0. Black. 36"	EACH	4.40
860-4606.	BU-1121-A-36-2. Red. 36"	EACH	4.40
860-7665.	BU-1421-A-12-0. Black. 12"	EACH	4.80
860-7666.	BU-1421-A-12-2. Red. 12"	EACH	4.80
860-7669.	BU-1421-A-36-0. Black. 36"	EACH	4.80
860-7670.	BU-1421-A-36-2. Red. 36"	EACH	4.80
860-4608.	BU-1156-C-36-0. Black. 36"	EACH	17.15
860-4710.	BU-1456-C-36-0. Black. 36"	EACH	17.60
860-4712.	BU-3056-C-36-0. Black. 36"	EACH	17.60
860-4714.	BU-3156-C-36-0. Black. 36"	EACH	18.00

"Clipper" and "Micro-Clipper" Test Leads


BU-1010

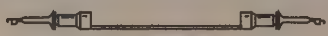

BU-1031

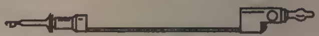

BU-1080

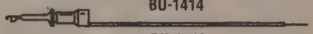
Type BU-1010 test leads make difficult IC connections fast and easy. Spring-loaded beryllium copper conductor attaches to component leads and terminals. Type BU-1031 test clip to insulated mini-alligator clip. Type BU-1080 test clip to 0.025" (0.635) square pin receptacle.

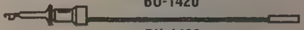
860-4618. BU-1010-A-24-0. Black. 24" ....**EACH 4.05**
860-4616. BU-1010-A-24-2. Red. 24" ....**EACH 4.05**
860-4620. BU-1010-A-36-0. Black. 36" ....**EACH 4.05**
860-4622. BU-1010-A-36-2. Red. 36" ....**EACH 4.05**
860-4624. BU-1031-A-24-0. Black. 24" ....**EACH 4.25**
860-4626. BU-1031-A-24-2. Red. 24" ....**EACH 4.25**
860-4628. BU-1031-A-36-0. Black. 36" ....**EACH 4.25**
860-4630. BU-1031-A-36-2. Red. 36" ....**EACH 4.25**
860-4632. BU-1080-E-12-0. Black. 12" ....**EACH 3.60**
860-4634. BU-1080-E-12-2. Red. 12" ....**EACH 3.60**

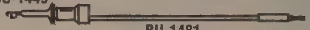
"Mini-Micro-Clipper" Test Clips


BU-1414


BU-1420


BU-1449


BU-1480

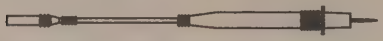

BU-1481

These clips are the smallest of the "Clipper" series. Type BU-1414 to 0.025" (0.635) diameter and smaller leads. Type BU-1420 to stackable banana plug. Type BU-1449 to tinned end wire. Type BU-1480 to 0.025" (0.635) square pin receptacle. Type BU-1481 to 0.025" (0.635) square pin.

860-4636. BU-1414-E-12-0. Black. 12" ....**EACH 5.00**
860-4638. BU-1414-E-12-2. Red. 12" ....**EACH 5.00**
860-4640. BU-1414-E-24-0. Black. 24" ....**EACH 5.00**
860-4642. BU-1414-E-24-2. Red. 24" ....**EACH 5.00**
860-4644. BU-1420-A-12-0. Black. 12" ....**EACH 4.90**
860-4646. BU-1420-A-12-2. Red. 12" ....**EACH 4.90**
860-4648. BU-1420-A-24-0. Black. 24" ....**EACH 4.90**
860-4650. BU-1420-A-24-2. Red. 24" ....**EACH 4.90**
860-4652. BU-1449-E-12-0. Black. 12" ....**EACH 3.20**
860-4654. BU-1449-E-12-2. Red. 12" ....**EACH 3.20**
860-4656. BU-1449-E-24-0. Black. 24" ....**EACH 3.20**
860-4658. BU-1449-E-24-2. Red. 24" ....**EACH 3.20**
860-4660. BU-1480-E-12-0. Black. 12" ....**EACH 4.10**
860-4662. BU-1480-E-12-2. Red. 12" ....**EACH 4.10**
860-4664. BU-1481-E-12-0. Black. 12" ....**EACH 4.35**
860-4666. BU-1481-E-12-2. Red. 12" ....**EACH 4.35**
860-4668. BU-1481-E-24-0. Black. 24" ....**EACH 4.35**
860-4670. BU-1481-E-24-2. Red. 24" ....**EACH 4.35**

Insulated Test Accessories

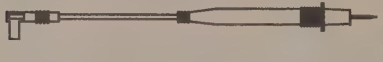
BU-4061-M-39/BU-4061-N-39 Shielded Banana Plug to Safety Test Prod — Silicone or PVC



Instrument end features a nine-leaf cage spring 4 mm shielded banana plug. Probe end has a stainless steel tip with 8-32 UNC thread to accept accessories such as BU-60TBO, BU-209, BU-225 or BU-226. Molded housing.

860-4718. BU-4061-M-39-0. Black ....**EACH 8.00**
860-4720. BU-4061-M-39-2. Red ....**EACH 8.00**
860-4722. BU-4061-N-39-0. Black ....**EACH 6.40**
860-4724. BU-4061-N-39-2. Red ....**EACH 6.40**

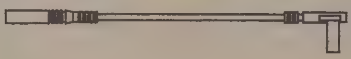
BU-4062-M-39/BU-4062-N-39 Shielded Right Angle Banana Plug to Safety Test Prod — Silicone or PVC



Instrument end features a 90° right angle nine-leaf cage spring 4 mm shielded banana plug. Probe end has a stainless steel tip with 8-32 UNC thread to accept accessories such as BU-60TBO, BU-209, BU-225 or BU-226. Molded housing.

860-4734. BU-4062-M-39-0. Black ....**EACH 8.00**
860-4736. BU-4062-M-39-2. Red ....**EACH 8.00**
860-4738. BU-4062-N-39-0. Black ....**EACH 6.40**
860-4740. BU-4062-N-39-2. Red ....**EACH 6.40**

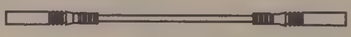
BU-6162-M-39/BU-6162-N-39 Right Angle Shielded Banana Plug to Shielded Banana Plug — Silicone or PVC



Straight and right angle banana plugs have exclusive free rotation, nine-leaf beryllium copper, nickel-plated cage springs protected by rigid plastic sleeves. A constant positive contact with minimum resistance is provided by the plugs. Molded housing.

860-7506. BU-6162-M-39-0. Black ....**EACH 8.00**
860-7508. BU-6162-M-39-2. Red ....**EACH 8.00**
860-4726. BU-6162-N-39-0. Black ....**EACH 6.40**
860-4728. BU-6162-N-39-2. Red ....**EACH 6.40**

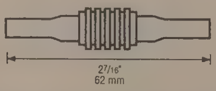
BU-6161-M-39/BU-6161-N-39 Shielded Banana Plugs — Both Ends — Silicone or PVC



Insulated banana plugs have exclusive free rotation, nine-leaf beryllium copper, nickel-plated cage springs protected by rigid plastic sleeves. A constant positive contact with minimum resistance is provided by the plugs. Molded housing.

860-6060. BU-6161-M-39-0. Black ....**EACH 8.00**
860-6161. BU-6161-M-39-2. Red ....**EACH 8.00**
860-4730. BU-6161-N-39-0. Black ....**EACH 6.40**
860-4732. BU-6161-N-39-2. Red ....**EACH 6.40**

BU-32601 Insulated Banana Couplings



Convenient couplings for extended test leads. It is designed to prevent unintentional disconnections. 4 mm banana plugs are accepted at both ends.

860-4614. BU-32601-0. Black ....**EACH 2.15**
860-4716. BU-32601-2. Red ....**EACH 2.15**

Pressfit Insulated Banana Jacks

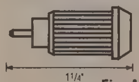


Fig. A

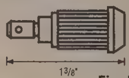


Fig. B

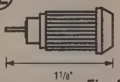


Fig. C

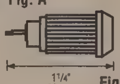


Fig. D

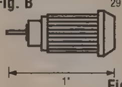
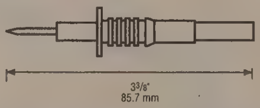


Fig. E

Quick mounting in $\frac{7}{16}$" (10.9 mm) diameter holes in metal or plastic. Accepts 4 mm banana plugs. Nickel plated brass. Molded housing. 20 amp.

Solder Pin Connection — Fig. A
860-4579. BU-31602-0. Black ....**EACH 2.15**
860-4578. BU-31602-2. Red ....**EACH 2.15**
Spade Connection — Fig. B
860-4581. BU-31603-0. Black ....**EACH 2.15**
860-4580. BU-31603-2. Red ....**EACH 2.15**
Crimp Terminal — Fig. C
860-4742. BU-31604-0. Black ....**EACH 2.15**
860-4744. BU-31604-2. Red ....**EACH 2.15**
Solder Cup — Fig. D
860-4746. BU-31605-0. Black ....**EACH 2.15**
860-4748. BU-31605-2. Red ....**EACH 2.15**
Amp Lug — Fig. E
860-4750. BU-31606-0. Black ....**EACH 2.15**
860-4752. BU-31606-2. Red ....**EACH 2.15**

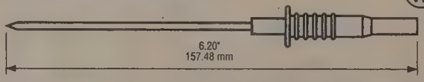
BU-26101 Insulated Plug-On Test Prod with Stainless Steel Tip



Accepts 4 mm insulated banana plugs. Positive contact up to 1000 V is provided by the high quality 0.08" (2 mm) stainless steel test point. The insulated body reduces risk of contact with voltage carrying parts with a tough safety shock guard collar. The collar is flat on one side to prevent rolling. **Mech. Connection:** 0.16" (4 mm) nickel-plated brass banana jack.

860-7526. BU-26101-0. Black ....**EACH 3.20**
860-7528. BU-26101-2. Red ....**EACH 3.20**

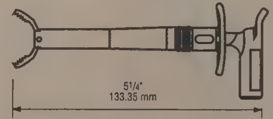
BU-26130 Ultra Tech Test Prod



Accepts both safety and uninsulated 4 mm banana plugs. The high quality polished stainless steel prod tip easily pierces lacquered and oxidized contact points up to 1000 V. Insulated body with safety shock guard collar reduces the risk of contact with voltage carrying parts. The slim-line prod design with clear Kynar® insulated sleeve allows for easy testing in confined areas. **Mech. Connection:** 0.16" (4 mm) nickel-plated brass banana jack.

860-7522. BU-26130-0. Black ....**EACH 3.35**
860-7524. BU-26130-2. Red ....**EACH 3.35**

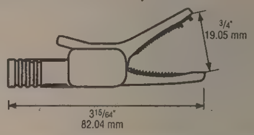
BU-20434 Right Angle Insulated Plunger Jaw Clip — 1000 V, 15 Amp



Powerful jaws hold thick wire and cable, ground leads and rails, even screw heads, securely to make work easier, more accurate. Depress the plunger and the steel jaws extend 0.48" (12 mm) and open to 1" (25 mm). The right angle banana jack accepts ultra-flex leads and numerous other insulated and conventional banana plugs. The plunger body is fully insulated and the jaws are nickel-plated steel. **Mech. Connections:** 0.16" (4 mm) insulated right angle banana jack.

860-7518. BU-20434-0. Black ....**EACH 9.95**
860-7520. BU-20434-2. Red ....**EACH 9.95**

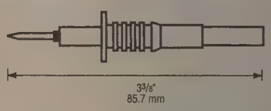
BU-65 Safety Crocodile Clip — 34 Amp



Fully insulated and molded from high-strength, glass-filled nylon. Plastic shrouds completely cover metal parts. Rated to 1000 V. The hinge and spring design permits wide jaw opening and high clamp pressure from a comparatively low-profile clip. A sharp tooth in the lower jaw of the clip prevents it from falling off when in operation.

860-7660. BU-65-0. Black ....**EACH 4.15**
860-7661. BU-65-2. Red ....**EACH 4.15**

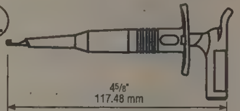
BU-26106 Insulated Plug-On Test Prod with 8-32 Thread



Accepts 4 mm insulated banana plugs. Positive contact up to 1000 V is provided by the high quality 0.08" (2 mm) stainless steel test point. The collar is flat on one side to prevent rolling. The insulated body reduces risk of contact with voltage carrying parts with a tough safety shock guard collar. 0.16" (4 mm) nickel-plated brass banana jack.

860-4702. BU-26106-0. Black ....**EACH 3.40**
860-4704. BU-26106-2. Red ....**EACH 3.40**

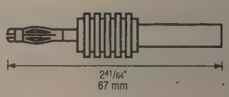
BU-20431 Right Angle Insulated Plunger Hook Clip — 1000 V, 3-Amp



Two tools in one, a BeCu contact hook and a probe tip with the plunger retracted. The hook extends 0.41" (10 mm) when fully depressed. The right angle lead connection accepts ultra-flex leads and numerous other insulated and conventional 0.16" (4 mm) banana plugs. The plunger body is fully insulated. **Mech. Connections:** 0.16" (4 mm) insulated right angle jack.

860-7510. BU-20431-0. Black ....**EACH 7.30**
860-7512. BU-20431-2. Red ....**EACH 7.30**

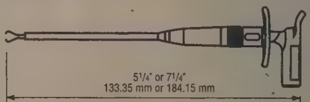
BU-32101 Insulated Banana Jack to Standard Banana Plug



This adapter lets you use insulated banana plugs with equipment having standard banana jacks. Single banana plug has a brass body and a beryllium copper, nickel-plated, nine-leaf cage spring. The insulated banana jack, with a 4 mm nickel-plated brass insert, has molded housing.

860-4706. BU-32101-0. Black ....**EACH 3.20**
860-4708. BU-32101-2. Red ....**EACH 3.20**

BU-20432/BU-20433 Right Angle Insulated Plunger Clamp Clip — 1000 V, 1 Amp

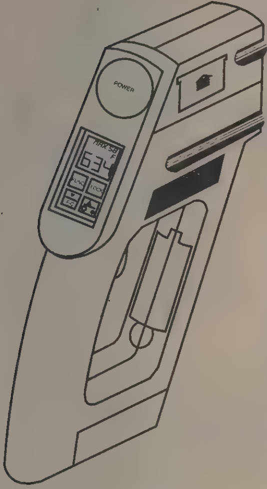


Make hard-to-reach test points easily accessible with this sleek mini-plunger clamp. Depress the plunger and two wire hooks emerge and spread at the plunger tip. Reach into narrow passages with the highly flexible clip. Grip and hold solder leads, pins and wire up to 0.2" (5 mm) dia. Use the clamp when soldering, the silicon insulation resists the heat. A choice of two lengths. The plunger body is fully insulated. **Mech. Connection:** 0.16" (4 mm) insulated right angle banana jack.

860-7514. BU-20432-0. Black ....**EACH 9.40**
860-7516. BU-20432-2. Red ....**EACH 9.40**
860-4610. BU-20433-0. Black ....**EACH 9.40**
860-4612. BU-20433-2. Red ....**EACH 9.40**

Handheld Infrared Thermometers

— NEW —

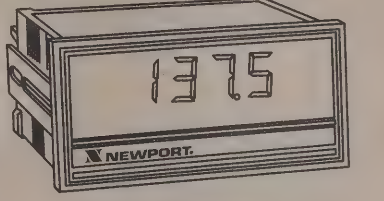


With a combination of powerful features, the new portable and rugged OS520 series infrared thermometers offer solutions for many non-contact temperature measurement applications. Emissivity range of 0.1 to 1.0 is adjustable in 0.01 increments, provides versatility when measuring a variety of surfaces. A custom backlit LCD display provides dual digital display of current and max. or min. temperatures simultaneously. This provides the user with more information at a glance. The OS520 also features a high alarm setpoint, providing both audible and visual indication of the alarm status. The standard 1 mV per degree analog output allows interfacing with data acquisition equipment, including chart recorders, dataloggers and computers. The standard accuracy is ±2% of reading or 3°F (whichever is greater). Unit shown with optional laser sight.

Stock No.	Mfr.'s Type	Infrared Thermometer	EACH
544-0158	OS520/N	0-750°F range; 10:1 distance to spot size ratio	**345.00**
544-0159	LS-120/N	Single dot laser sight module	**200.00**
544-0160	LS-720/N	Laser circle sight module	**350.00**

DC Voltmeters

— NEW —



201AN

215

Factory calibrated for DC input range indicated. Bright, 0.56" (14.22 mm) LED display. Decimal point programmable at connector. 201AN and 2001 series are 120 VAC and fit standard ⅛ DIN panel cutout; screw-terminal barrier strip standard for signal and power. 215 series are 5 VDC and fit half-height 1⁄16 DIN panel cutout; solder-tab board edge connector standard. **Display Range:** 3½-digits (±1,999 counts) or 4½-digits (±19,999 counts).

Stock No.	Mfr.'s Type	Signal Input Range (VDC)	Display Range	Operating Voltage	EACH
544-0147	201AN-2D4	0.1990	±1,999	120 VAC	**161.00**
544-0148	201AN-3D4	1.9990	±1,999	120 VAC	**161.00**
544-0149	201AN-4D4	19.9900	±1,999	120 VAC	**161.00**
544-0150	201AN-5D4	199.9000	±1,999	120 VAC	**161.00**
544-0151	2001A-3D4	1.9999	±19,999	120 VAC	**201.00**
544-0152	2001A-4D4	19.9990	±19,999	120 VAC	**201.00**
544-0153	2001A-5D4	199.9900	±19,999	120 VAC	**201.00**
544-0154	215-2	0.1999	±1,999	5 VDC	**95.00**
544-0155	215-3	1.9990	±1,999	5 VDC	**95.00**
544-0156	215-4	19.9900	±1,999	5 VDC	**95.00**
544-0157	215-5	199.9000	±1,999	5 VDC	**95.00**

Thermocouple Probes, Connectors and Wire

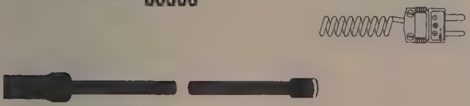
Unique Surface Probes

88003

88202

88007

88306



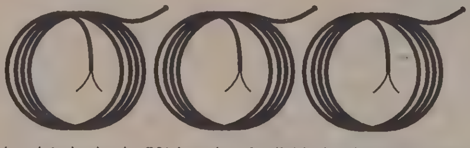
88010

► **All Probes Feature 1' Retractable Cable Standard — Stretches to 5', and Subminiature Male Connector**

For precision surface measurement. Available in K calibration (E calibration upon request). For temperatures up to 760°C (1400°F). Additional styles available upon request.

Stock No.	Mfr.'s Type	Input Types	EACH
544-0107	88007K/N	Teflon surface probe 480°F max.	**110.00**
544-0108	88010K/N	12" surface probe 1400°F max.	**175.00**
544-0109	88003K/N	Heavy duty probe 900°F max.	**120.00**
544-0110	88306K/N	Penetration probe 930°F max.	**80.00**
544-0111	88202K/N	Roller surface probe 400°F max.	**160.00**

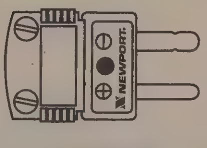
Thermocouple Wire



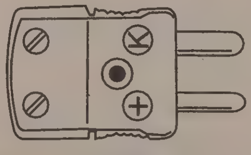
Insulated wire in 50' lengths. Available in chromel-alumel (K). Thermocouple types J, T and E are available upon request. Maximum physical operating temperature is 500°F for Teflon, 900°F for Glass insulation.

Stock No.	Mfr.'s Type	AWG	T/C	Insulation	EACH
544-0112	TT-K-20-50/N	20	K	Teflon	**49.00**
544-0113	TT-K-24-50/N	24	K	Teflon	**37.00**
544-0114	GG-K-20-50/N	20	K	Glass	**41.00**
544-0115	GG-K-24-50/N	24	K	Glass	**29.00**

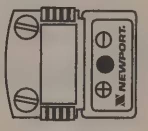
Thermocouple Connectors



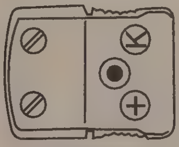
SMP Male



OST Male



SMP Female



OST Female

Glass-filled nylon and alloy construction for accurate connections. Physical operating temperature is 425°F max. Available in type K (chromel-alumel), J, T, E, R, S, G, C, D, and N are available upon request. SMP connector is miniature flat pronged. OST connector is standard size round prong.

Stock No.	Mfr.'s Type	T/C Type	Connector	EACH
544-0121	SMP-K-M/N	K	Male	**1.76**
544-0122	SMP-K-F/N	K	Female	**2.26**
544-0123	OST-K-M/N	K	Male	**2.26**
544-0124	OST-K-F/N	K	Female	**3.40**

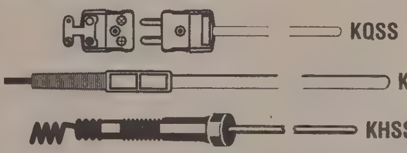
Ready Made Insulated Thermocouple

Package of 5. Insulated thermocouples. Supplied standard in 36" and 72" lengths with a choice of either Teflon or Glass insulation manufactured with 24 AWG. Maximum physical operating temperature is 500°F for Teflon, 900°F for Glass insulation. Available in chromel-alumel (K). Thermocouple types J, T and E are available upon request.

Stock No.	Mfr.'s Type	Length (In.)	T/C	Insulation	EACH
544-0117	5TC-GG-K-24-36/N	36	K	Glass	**33.00**
544-0118	5TC-GG-K-24-72/N	72	K	Glass	**43.00**
544-0119	5TC-TT-K-24-36/N	36	K	Teflon	**39.00**
544-0120	5TC-TT-K-24-72/N	72	K	Teflon	**49.00**

Allied carries a complete line of NEWPORT™ thermocouples, RTDs and thermistors. Consult Sales for additional information.

Clad Thermocouple Probes



12" long 304 SS sheathed probes with sheath diameters of 1/16", 1/8", 3/16" and 1/4" standard. Available in quick disconnect, transition joint or utility handle styles. Type K calibration, grounded junction. Quick disconnect probe includes mating connector. Transition joint probes include 36" Teflon coated lead wire. Handle probe includes 1' retractable cable (expands to 5') with subminiature connector. Types J, T, and E, ungrounded/exposed junction, Inconel or 321 SS sheath and various lengths available on request.

Stock No.	Mfr.'s Type	Style/Sheath Diameter	EACH
544-0125	KQSS-116G-12/N	Quick disconnect, 1/16"	**22.00**
544-0126	KQSS-18G-12/N	Quick disconnect, 1/8"	**23.00**
544-0127	KQSS-316G-12/N	Quick disconnect, 3/16"	**25.00**
544-0128	KQSS-14G-12/N	Quick disconnect, 1/4"	**27.00**
544-0129	KTSS-116G-12/N	Transition joint, 1/16"	**19.00**
544-0130	KTSS-18G-12/N	Transition joint, 1/8"	**19.00**
544-0131	KTSS-316G-12/N	Transition joint, 3/16"	**19.00**
544-0132	KTSS-14G-12/N	Transition joint, 1/4"	**19.00**
544-0133	KHSS-116G-RSC-12/N	Utility handle, 1/16"	**33.00**
544-0134	KHSS-18G-RSC-12/N	Utility handle, 1/8"	**34.00**
544-0135	KHSS-316G-RSC-12/N	Utility handle, 3/16"	**36.00**
544-0136	KHSS-14G-RSC-12/N	Utility handle, 1/4"	**38.00**

SANTRONICS DC Detector

Applications

- Automotive
- Trucks/RVs
- Marine
- Heavy Equipment
- Telecommunications
- Industrial Controls
- Aviation
- Farm Equipment
- Office Equipment
- Any Other 6-50 DC Volt System

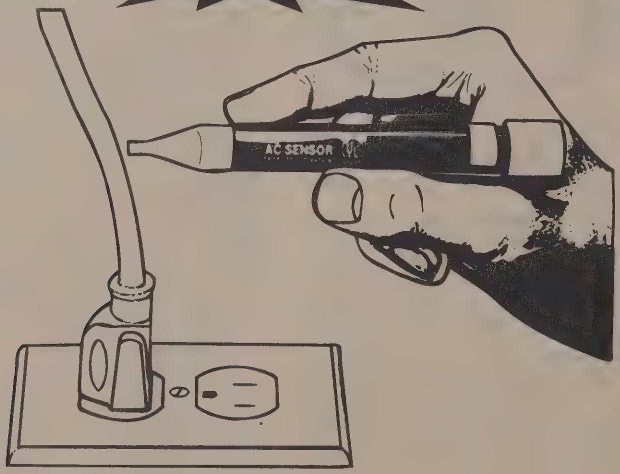
Advantages

- Buzzer — Provides Audio Indication of DC Voltage
- LED Light — Will Never Burn Out
- Large Clip — Fits Ground Connection Points Small to Large
- Sharp Tip — Penetrates Fine and Heavy Wire
- Construction — Using the Finest Materials Available
- Stainless Steel Tip — Rust Proof
- Solid State Circuitry — Total Reliability
- Test Lead Wire — 20 Gauge Heavy Duty Heat Resistant
- Pen Sized — to Fit Comfortably in User's Hand
- 100% Manufactured in the U.S.A.
- Safe for Use on Computerized Vehicles

973-0006. Model 3315 .... **EACH 19.95**

SANTRONICS AC Sensor

THE CHOICE OF OSHA



Features of the Santronics AC Sensor

- UL Listed – Tested for Public Safety
- Outstanding Safety Instrument – Locates Defective Ground, Energized Circuits, Induced Voltage
- No Contact with Conductor Wire Required
- Senses Voltage Through Insulation
- All Outer Surfaces Are Non-Conductive for Safety
- Fits in Shirt Pocket for Convenience
- Excellent Circuit Tracer
- Electrician, Maintenance, Service, and Safety Personnel Need This Tool Daily
- Probe Glows Cherry Red in Presence of AC Voltage — No Skill Required for Operation
- Detects 110–600 Volts AC
- Guarantee Certificate with Each Unit
- ENERGIZER® Alkaline Batteries Included
- Product Manufactured, Printed, and Packaged in the U.S.A.
- Meets OSHA Requirements for Personal Verification in Lockout/Tagout Procedures

14

973-0002. Model 3115 .... **EACH 19.95**

SANTRONICS Low AC Locator

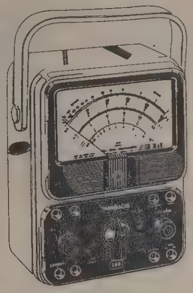
- Quickly Locate Breaks in AC Circuits from 24-90 Volts
- HVAC Thermostat Wiring
- Irrigation Systems
- Control Panels
- Security Systems

Features of the Santronics Low AC Locator

- UL Listed – Tested for Public Safety
- No Contact with Conductor Wire Required
- Senses Voltage Through Insulation
- All Outer Surfaces Are Non-Conductive for Safety
- Fits in Shirt Pocket for Convenience
- Excellent Circuit Tracer for Troubleshooting
- Probe Glows Cherry Red in Presence of AC Voltage
- No Skill Required for Operation
- ENERGIZER® Alkaline Batteries Included
- Product Manufactured, Printed, and Packaged in the U.S.A.
- Electrician, Maintenance, Service Technicians Need This Tool Daily

973-0004. Model 3215 .... **EACH 21.95**

260 Series 8 VOMs



- ► Accuracy for the Lab, Rugged Construction for the Field
- ► Excellent for Adjustments Such as Nulling and Peaking
- ► Large Color Coded Scales
- ► AC Frequency Response to 100 KHz
- ► Zero RFI
- ► Standard and High Energy Overload Fusing
- ► Varistor Protected Meter Movement
- ► UL 1244 Listed
- ► Mirrored Scale
- ► Broad Range of Accessories and Probes
- ► Wide Range Capabilities
- ► Includes Test Leads and Batteries
- ► Overload Protection Circuits — Models 260-8P, 260-8PRT, 260-8XPi
- ► Audible Continuity Checking — Models 260-8P and 260-8PRT

Traditional design, rugged reliability and excellent performance keep the 260s on the bench of generations of engineers. The 260-8 series reflects commitment to provide the best combination of quality, technology and affordability. Needs no external power, avoids common mode problems, no interference or triggering of external sensitive circuits, no RF radiation. Offers reliable and rapid checks for semiconductor junctions and forward/reverse resistance tests. The 260-8 series is UL listed and continues the tradition of practicality and reliability which made the 260 the best known VOM of all time. All versions have mirror scale for parallax elimination, allowing you to make more accurate measurements.

Specifications. DC Volts. Range: 250 mV, 1 V, 2.5 V, 10 V, 25 V, 50 V, 250 V, 1000 V. **Sensitivity:** 20 K Ohms/Volt. **AC Volts. Range:** 2.5 V, 10 V, 25 V, 50 V, 250 V, 500 V, 1000 V. **Sensitivity:** 5 K Ohms/Volt. **Resistance Range:** x1, x100, x10K. **DC Current Range:** 50 µA, 1 mA, 10 mA, 100 mA, 500 mA, 10A. **AC Current Range:** up to 250 A AC with amp-clamp accessory probe (not supplied). **Decibels Range:** –20 dB to +50 dB (5 ranges). **Continuity Test (260-8P and 260-8PRT Only):** Audible sound when a resistance of less than 150 ohms is measured between the probes. **Meter Movement:** taut band, self-shielding, annular, 100° arc, 4.2" length, color coded, mirror backed for parallax elimination. Direct reading amp-clamp scales. **Overload Protection:** Models 260-8 and 260-8PRT — one 1 A/250 V fuse and one 2 A/600 V fuse; Models 260-8P and 260-8PRT — resettable circuit breaker. **Dimensions:** 7"H × 5.5"W × 3.1"D. **Weight:** 3 lbs.

919-0268. Type 12388. Model 260-8. Standard Model	**EACH**	**187.50**
919-0267. Type 12391. Model 260-8P. Circuit Breaker Protected	**EACH**	**250.00**
919-0269. Type 12389. Model 260-8RT. Roll-Top Case	**EACH**	**225.00**
919-0266. Type 12392. Model 260-8PRT. Breaker Protected with Roll-Top Case	**EACH**	**286.76**
919-0260. Type 12395. Model 260-8Xi. Yellow Case	**EACH**	**212.63**
919-0261. Type 12396. Model 260-8XPi. Yellow Case with Resettable Overload Protection	**EACH**	**265.00**

Accessories for 260 and 360 Series VOMs

Carrying Cases — Fig. A. (360 Series Meters Not Shown)

For Models 250, 270-5 and 260-8/260-6XL Series. **Weight:** 2 lbs.

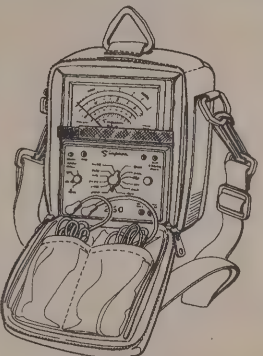
919-0805. Type 00805. Leatherette	**EACH**	**63.62**
919-1818. Type 01818. Vinyl	**EACH**	**52.98**
919-0549. Type 00549. Vinyl with Extra Space	**EACH**	**63.62**
919-0815. Type 45028. For Model 360-3	**EACH**	**59.49**
919-0832. Type 00832. Yellow Padded Carrying Case	**EACH**	**50.50**
919-0834. Type 00834. Black Padded Carrying Case	**EACH**	**50.50**

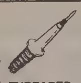
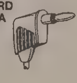
Test Leads; Screw-On Clips (00125 Are Banana Style Jacks)

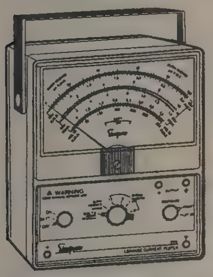
919-0043. Type 00043. 260-B, 270-5, 360-3, 461-2-3	**EACH**	**15.31**
919-0115. Type 00125. 260-6XL, 250, 360-2, 228	**EACH**	**15.31**
919-7500. Type 07500. 260-6XL (Standard Alligator Tips)	**EACH**	**12.85**

Test Lead Systems

919-5577. Type 05577. Standard — 14 Parts	**EACH**	**70.76**
919-0818. Type 00818. Deluxe — 23 Parts	**EACH**	**121.26**



		 THREADED	ALLIGATOR
REVERSE INSULATED	260-7,8 360-3 270-5 460-5,6 461, 462, 463, 464-4 16979, 14510	00043 (Includes alligator clips)	*
STANDARD BANANA 	260-8xi, 260-6XLM (260-3,4,5,6 270-1,2,3,4) 229-2, 250, 255, 265 362-2, 370 TO 377 605-2, TS111-3	00125 (Includes alligator clips)	07500

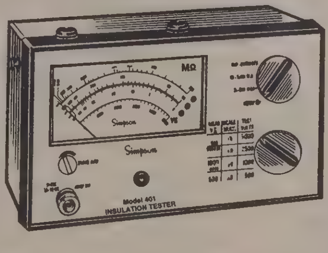


228 Leakage Current Tester

► **Meets New ANSI Specifications C101-1992**

Model 228 is a special purpose AC/DC milliammeter designed to measure hazardous currents (leakage currents, or touch currents) which may appear when a person touches the surfaces of electrical or electronic equipment. The 228 meets the guidelines set forth in: IEC-930, ANSI C101-1992, UL 1459, and IEC 1010-1. This unit has special networks for burn hazard, react response, and let go response. Measures leakage current and matches the human body's decreasing sensitivity to the sensation of electrical shock as the frequency increases. It has an integral RMS reading/measuring device and output for measuring peaks on non-sinusoidal waveforms.

919-0288. Type 40027. 228 Leakage Current Tester	**EACH**	**535.00**
919-0115. Type 00125. Replacement Test Leads	**EACH**	**15.31**
919-0834. Type 00834. Carrying Case — Black	**EACH**	**50.50**



Insulation Testers — Battery Operated

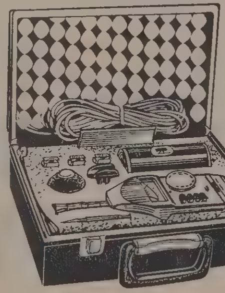
- ► Three Types Available: 0-5000 V
- ► Push-to-Read/Lock-On Feature Saves Batteries
- ► No Hand-Cranking Required
- ► Neon Scale Selection Indicators

Ideal for high voltage, non-destructive insulation tests on electrical installations, machines, equipment and transformers. Neon indication for range selection. **Specifications. Accuracy:** Megohm ranges — ±1.5% fs length. Comes complete with batteries, two plug-in insulated test leads, probes, carrying strap, and operators manual.

919-0405. Type 12504. Model 405-2, 0-5000 V	**EACH**	**2186.67**

Environmental Testers — Sound Level Meters

Meets ANSI S1.4-1983 (R1976) and IEC 651specifications. Meters are type S2a. Solid state construction housed in rugged, high-impact plastic case. Model 884-2 offers 40-140 dB range, in 10 dB increments, and offers 'A' weighting. Model 886-2 offers 40-140 dB range, and has 'A-B-C' weightings, selectable by push-button. Model 899 is an Impulse Sound Level meter, for more accurate monitoring of short duration sounds. All models have omnidirectional condenser, type L size microphones. All sound level meters shipped with carrying case, wind screen, batteries, calibration screwdriver, and operators manuals.

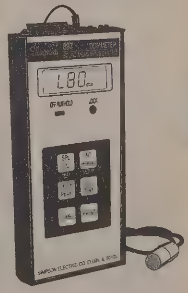


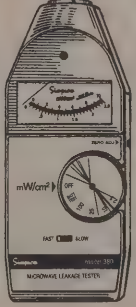
919-4003. Type 40003. Model 884-2	**EACH**	**395.76**
919-4004. Type 40004. Model 886-2, A/B/C Weight	**EACH**	**558.50**
919-4005. Type 40005. Model 889 Impulse Meter	**EACH**	**699.50**
919-4006. Type 40006. Models 884-2 and 890-2	**EACH**	**640.50**
919-4007. Type 40007. Models 886-2 and 890-2	**EACH**	**805.25**
919-4008. Type 40008. Models 889 and 890-2	**EACH**	**934.50**
919-4009. Type 40013. Models 884-2, 896 and 898	**EACH**	**1090.00**
919-4010. Type 40014. Models 886-2, 896 and 898	**EACH**	**1258.00**
919-4011. Type 40015. Models 889, 896 and 898	**EACH**	**1389.00**
919-4012. Type 00198. 25' Microphone Cable	**EACH**	**63.25**
919-4013. Type 12890. Model 890-2 Calibrator	**EACH**	**281.26**
919-4014. Type 12709. Model 896 Calibrator	**EACH**	**329.95**
919-4015. Type 00184. Microphone Holder (886-2)	**EACH**	**24.95**
919-4016. Type 02231. Model 898 Octave Filter	**EACH**	**473.50**
919-4017. Type 40022. Model 606 Chart Recorder	**EACH**	**1902.86**
919-4018. Type 45009. Red Ink Pens (5)	**PER PK./5**	**32.95**
919-4019. Type 45010. Inkless Sapphire Pen (1)	**EACH**	**23.50**
919-4020. Type 45011: Carrying Case, Attache	**EACH**	**92.76**

Environmental Testers — Sound Dosimeters

Simpson Model 897 Dosimeter Sound Measuring System computes dosage and records up to 31 hours of data at one minute intervals. Use the 897 for taking measurements, or viewing printed reports using your PC computer/printer. Used as a sound level meter, the 897 provides a quick survey of targeted areas and identifies suspect locations. The SMS-2 kit includes dosimeter, calibrator, batteries, parallel and serial cables, AC adapter, wrench, and case.

919-2645. Type 12645. Model 897 Dosimeter	**EACH**	**841.50**
919-2646. Type 12646. SMS-2 Kit	**EACH**	**1297.21**
919-2647. Type 12648. 887-2 Calibrator	**EACH**	**304.00**
919-2648. Type 02233. RS-232 Cable	**EACH**	**47.75**
919-2649. Type 02234. Parallel Cable — For Printers	**EACH**	**59.95**





Environmental Testers — Microwave Leakage Tester 380-2

This battery-operated direct reading portable instrument meets the measurement requirements of the Federal Performance Standard for leakage from microwave ovens. Used for pre-testing by manufacturers and for in-the-field checking of commercial, industrial and institutional installations by professionals, this unit is completely self-contained with readings in mW/cm2. It measures the amount of microwave frequency leakage at 2450 MHz. **Specifications. Power Density Reading Ranges:** 0-2.5-10-25-100 mW/cm^2. Fast — 1.2 sec. max.; Slow — 3.0 sec. max. **Weight:** 0.8 lbs. **Power:** One 9-Volt batteries. **Supplied With:** Probe, foam spacer, battery, owners manual, carrying case.

919-0012. Type 40012. Model 380-2 Tester	**EACH**	**738.00**

TFS3031 TekRanger™ Mini-OTDR

- One-Button Automatic Fiber Analysis
- Large, High-Resolution Display
- "Real Time" Testing
- Easy-to-Change Wavelengths
- 5 Meter Singlemode Dead Zone
- 8 Meter Multimode Dead Zone
- .02 dB Loss Threshold
- 32 dB Singlemode Dynamic Range
- 26 dB Multimode Dynamic Range
- Measurements Reported: Splice Loss, Reflectance, Link Loss, Fiber Attenuation, Distance to Events
- Shock, Water, And Dust Resistant
- Echo Detection
- Compatible with: FiberMaster, FMTAP, PC Spreadsheets
- Internal Memory for 100 Waveforms
- Software Upgradeable in The Field
- 4 Hour Battery Charge Time
- RS232 and Parallel Ports
- 3.5 Inch Internal Floppy-Disk Drive (Optional)
- Multimode/Singlemode (CCITT G.652) in One Unit (Optional)

The TFS3031 TekRanger™ Mini-ODTR with IntelliTrace™ Automated Fiber Analysis System is a rugged, easy-to-use, mini-optical time domain reflectometer (OTDR) built to stand the rigors of field work, while providing precise measurements on singlemode or multimode optical fiber systems.

The location, reflectance and loss of every splice in a system appears quickly and clearly on the large 7-inch display screen. The TFS3031 is the only mini-OTDR that can report a splice 30 meters away while also finding splices more than 100 kilometers away at the push of a single button.

The IntelliTrace Advantage. IntelliTrace technology automatically adjusts acquisition parameters to provide the best possible resolution, while maintaining the necessary dynamic range for accurate measurements. The various pulse widths used during the acquisition result in a much more accurate waveform.

Easy to Operate. Operation of the TFS3031 with IntelliTrace Automated Fiber Analysis System is simple and quickly learned. One-button operation brings up easy-to-read traces on the display screen along with an event table, indicating everything about a splice.

Optional Floppy Disk. Test results are stored in the TekRanger Mini-OTDR's ample internal memory or collected on the optional floppy disk. The data, uploaded to a PC, allows further analysis with FMTAP Trace Analysis Software. The data can also be used in the full-sized Tektronix FiberMaster OTDR.

Specifications

Optical Characteristics: 850 nm optical output — 850 ±20 nm; 1300 nm optical output — 1300 ±20 nm; 1310 nm optical output — 1310 ±5 nm; 1550 nm optical output — 1550 ±10 nm. **Loss Threshold:** .02 dB minimum. **Loss Resolution:** .001 dB.

Dynamic and Measurement Range

	Dynamic Range SNR=1	Measurement Range Bellcore: GR-196-CORE
850 nm (opt 01)	26 dB	20 dB
850/1300 nm (opt 03)	26/25 dB	20/19 dB
1310 nm (opt 04)	28 dB	22 dB
1310/1550 nm (opt 06)	28/26 dB	22/20 dB
1310/1550 nm (opt 08)	32/30 dB	26/24 dB
1550 nm (opt 09)	31 dB	25 dB

Distance Measurements: Meters, feet, miles. **OTDR Distance Range Settings:** Singlemode — 1 to 160 km; Multimode — 1 to 40 km. **Distance Resolution (Intellitrace):** 25 cm-20 m. **Field Usage:** Shock, water and dust resistant — tested to Bellcore mini-OTDR TR environmental specifications (i.e. 30-inch drop, shock, etc.).

Dead Zone (Options 01, 03, 04, 06, 08)

	Event Detection	Loss Measurement
Singlemode	5 m	20 m
Multimode	8 m	15 m

Display: High resolution 640 × 480, 307,200 pixels; 7 inch, high contrast; operator switchable backlite. **Selectable Pulse Widths:** 850 nm Multimode — 1 m, 5 m, 10 m; 1300 nm Multimode — 1 m, 5 m, 10 m, 20 m, 50 m, 100 m; Singlemode — 1 m, 5 m, 10 m, 20 m, 50 m, 100 m, 500 m, 1000 m, 2000 m. **Memory Capacity:** 100 traces in internal memory (typical), 3.5 inch floppy disk drive (optional). **Output Ports:** RS 232 Serial, Centronix parallel printer. **Power Options:** AC (100-240 V, 50-60 Hz); 916 VDC internal NiCad rechargeable battery (8 hours of operation). **Safety:** Laser safety — Class I per 21 CFR 1040, Class I per CEI/IEC 825-1: 1993. **Ordering Information. TFS3031 TekRanger Base Unit Output Port Options:** Multimode Options — option 01 single wavelength 850 nm, option 03 dual wavelength 850/1300 nm; Singlemode Options — option 04 single wavelength 1310 nm, option 06 dual wavelength 1310/1550 nm, option 08 dual wavelength (extended range), 1310/1550 nm, option 09 single wavelength (extended range) 1550 nm. **Multimode/Singlemode Option Packages:** The following multimode/singlemode options can be combined into one instrument — 03 and 06, 01 and 06, 03 and 04, 03 and 08, 01 and 04.

Connector Options

Multimode Option	Singlemode Option	Connector Type	Part Number
20	30	Biconic	119-4515-00
21	31	FCPC	119-4516-00
22	32	D4PC	119-4514-00
24	34	STPC	119-4513-00
25	35	DINPC 47256	119-4546-00
26	36	DIAMOND 3.5	119-4558-00
28	38	SCPC	119-4518-00
—	41	FC/APC	119-5115-00
—	42	SC/APC	119-5116-00

TFP2A FiberMaster®
Optical Time Domain Reflectometer

- High-Speed Processing
- User-Friendly
- High-Resolution Color Display System
- Custom Configurable Design
- Dual Optical Plug-In Capacity Mainframe
- High-Resolution and Long-Range Performance
- Expandable Overview/Window Design
- Dual Trace Display Capability
- Automatic or Manual Mark Events
- Event Tables
- Pop-Up Menus
- Automatic/Manual Masking
- Cleanable/Interchangeable Optical Connector Adapter
- High-Resolution Internal Printer (Optional)
- Link and Event Return Loss Capability
- MS-DOS File Compatible
- Floppy Disk Drive
- Internal RAM (Optional)
- AT Compatible Keyboard Interface
- GPIB and RS-232C Interfaces
- PC Trace Analysis Software, FMTAP
- Remote Operation
- Language Options

Unlike any other OTDR on the market, the TFP2A FiberMaster sets a new level of performance and flexibility, providing faster, easier, more efficient solutions to fiber optic network testing requirements. FiberMaster is the only OTDR equipped to accommodate two dual-wavelength optical plug-in modules at the same time. Fully utilized, this feature gives you dual-wavelength multimode and dual-wavelength singlemode optical cable testing at the touch of a button. This allows testing of virtually any communications network, Telco, CATV or LAN without switching modules. FiberMaster is driven by a high-speed 32-bit processor that delivers clear, concise, accurate waveforms in a fraction of the averaging time taken by other OTDR systems which are based on traditional PC technology.

Characteristics. CRT Display. Size: 16.5 cm (6.5") diagonal. **Resolution:** 640 × 480 pixels. **Type (Color):** CRT with liquid crystal color shutter. **Cursors:** Selectable, dual independent. **Module Capacity:** Maximum 2 plug-ins providing 4 wavelengths. **Hardcopy Output. Internal Printer:** High-speed/resolution dot matrix, thermal. **Resolution:** 150 dots/in. vertical and horizontal (1.1 ratio to CRT display). **Print Dimensions:** 10.2 cm × 12.7 cm (4". × 5"). **GPIB to External:** HPGL Plotter and HP ThinkJet. **RS-232C to External:** HPGL Plotter, HP ThinkJet, Epson, Postscript. **Defaults:** Factory and user selectable. **Non-Volatile Memory. Mass Storage:** MS-DOS compatible. **Internal Floppy Disk Drive:** Size — 8.9 cm (3.5"); 1.44 MB or 720 KB. **Internal RAM:** Capacity — 1 MB, non-volatile. **Keyboard Interface:** AT compatible, 6-pin modular. **Display Range. Vertical System:** Vertical display range, one way — 1.0 dB to 100 dB; Loss readout resolution range — 0.001 dB to 0.01 dB. **Mainframe Horizontal System:** Distance display range — 1 m to 320 km; Distance measurement cursor resolution — 850 nm MM - 5 cm normal density, 1 cm high density; 1300 nm MM, 1310 nm SM, 1550 nm SM - 20 cm normal density, 10 cm high density. **Index of Refraction Range:** 1.4000 to 1.6000. **Distance Measurement Accuracy:** ±0.001% ± min. cursor resolution, ± uncertainty in fiber cal. factor. **Number of Stored Waveform Points:** 16 K max. (normal), 32 K max. (high density).

Ordering Information. FiberMaster with Color Display: Order TFP2A. **FiberMaster with MonoChrome Display:** Order TFP2AM. **Includes:** Operator's manual (070-7906-05); soft carrying case (016-1037-01); front panel cover (200-3566-00); power cord (161-0104-00). **Optics Plug-In Options (Multimode):** Opt. 01 — 850 nm MM; Opt. 02 — 1300 nm MM; Opt. 03 — 850 nm/1300 nm MM. **Optics Plug-In Options (Singlemode):** Opt. 04 — 1310 nm SM; Opt. 05 — 1550 nm SM; Opt. 06 — 1310 nm/1550 nm SM; For options 01-06 select one connector per option at no charge. **Connector Options (Multimode):** Opt. 20 — Biconic (119-4515-00); Opt. 21 — FCPC (119-4516-00); Opt. 22 — D4PC (119-4514-00); Opt. 23 — SMA906 (119-4517-00); Opt. 24 — STPC (119-4513-00); Opt. 25 — DIN 47256 (119-4556-00); Opt. 26 — Diamond 3.5 (119-4558-00); Opt. 27 — Diamond 2.5 (119-4546-00); Opt. 28 — SCPC (119-4518-00); Opt. 29 — SMA 2.5 (119-4517-00). **Connector Options (Singlemode):** Opt. 30 — Biconic (119-4515-00); Opt. 31 — FCPC (119-4516-00); Opt. 32 — D4PC (119-4514-00); Opt. 33 — SMA 905/906 (119-4557-00); Opt. 34 — STPC (119-4513-00); Opt. 35 — DIN 47256 (119-4556-00); Opt. 36 — Diamond 3.5 (119-4558-00); Opt. 37 — Diamond 2.5 (119-4546-00); Opt. 38 — SCPC (119-4518-00); Opt. 39 — SMA 2.5 (119-4517-00).

FMTAP FiberMaster
Trace Analysis Package 2.1

- Screen-Dumps For Printing on a Variety of Printers, or Importing Into Word Processor Documents
- Screen-Dumps to a File in BMP or TIFF Format
- Batch Printing of Waveforms
- Export of Waveform Data for Use with Spreadsheet or Word Processor
- Two-Way Event Averaging
- Automatic and Manual Event Marking
- Comprehensive Event Table
- Waveform File Searches with Selectable Tolerances for All Event Table Measurements
- Copy Established Event Markers for Documenting Redundant Fibers
- Link Return Loss
- Event Return Loss
- High Density Data
- Waveform Subtraction
- Waveform Averaging

FMTAP, Trace Analysis Software for the TFP2 FiberMaster™ and TFS3031 FiberMini™ OTDRs, allows you to use an IBM PC or compatible to display and analyze waveforms created by a FiberMaster or FiberMini OTDR. Use the FiberMaster or FiberMini to acquire the waveform data and save it to a floppy disk file. Then use the PC to manipulate the waveforms and perform many of the same kinds of measurements that are possible on the FiberMaster and FiberMini. **System Requirements. Processor:** 80286-, 80386-, or 80486-based IBM PC or PS/2 (or 100% compatible). **Operating System:** MS-DOS or PC-DOS 3.30 or later. **Base Memory:** 640 Kbytes RAM minimum, 580K available. **Extended or Expanded Memory:** At least 1 Mbyte required. **Graphics Adapter:** Color VGA. **Monitor:** Color VGA. **Fixed Disk Drive:** Two Mbytes minimum. **Floppy Disk Drive:** 3½ inch, 1.44-Mbyte or 5¼ inch, 1.2 Mbyte capacity, IBM compatible. **Mouse:** Two- or three-button Microsoft-compatible serial mouse. **Ordering Information. FMTAP:** FiberMaster Trace Analysis Package. **Includes:** Disk pack — contains one 3½ inch and one 5¼ inch floppy disk, FMTAP users manual (070-8433-02), FMTAP quick reference card (063-0828-02), FiberMaster utilities disk pack (063-1493-01).

Optical LED Source
TOP130 — 850/1300 nm

- Dual Wavelength — 850 nm and 1300 nm
- Excellent Long-Term Stability
- Selectable Output — CW or Modulated
- Three Modulation Frequencies — 270 Hz, 1 kHz, and 2 kHz
- >20 Hours Battery Life
- Universal (SOC) Interface
- Functions: MOD — Modulated Output Mode; CW — Continuous Wave DC Output Mode; FREQ — User Selectable Frequency - 270 Hz, 1 kHz, or 2 kHz

Optical Laser Source
TOP140 — 1310 nm,
TOP150 — 1550 nm,
TOP160 — 1310/1550 nm

- Stabilized Calibrated Output
- Hermetically Sealed Laser Diode for Longevity
- Selectable Modulation Frequencies — 270 Hz, 1 kHz, 2 kHz
- Universal (UCI) Connector Interface
- >36/100 Hours Battery Life (>50 Hours TOP160)
- Functions: MOD — Modulated Output Mode; CW — Continuous Wave DC Output Mode; FREQ — User Selectable Frequency - 270 Hz, 1 kHz, or 2 kHz

Optical Power Meter
TOP200 — 850/1300/1550 nm

- Relative dB Mode for Direct Attenuation and Insertion Loss Measurements
- 0.01 dB Resolution
- Set Reference for Different Wavelengths
- Saves References for Each Wavelength
- Universal, SOC Interface
- >100 Hours Battery Life
- Functions: dBm — Absolute Power; dB — Relative Power, Also Used to Save/Recall Reference Values; λ Select CAL Wavelength, Also Used to Set Default/CAL Wavelength; CAL — Calibrate Unit

Visual Fault Finder
TOP300 — 635 nm

- High Brightness
- Universal (UCI) Connector Interface
- Fiber Tracing
- Fault Location to Millimeter Accuracy
- Long Battery Life
- Solid State Substitute for HeNe Laser

Ordering Information

LED Optical Source
TOP130 — 850/1300 nm

Includes: User manual (070-9372-01), protective rubber jacket with stand (348-1480-00), two adapters (user selected from following Optional Adapters list).

Laser Optical Source
TOP140 — 1310 nm,
TOP150 — 1550 nm,
TOP160 — 1310/1550 nm

Includes: User manual (070-9372-01), protective rubber jacket with stand (348-1480-00).

LED Optical Power Meter
TOP200 — 850/1300/1550 nm

Includes: User manual (070-9372-01), protective rubber jacket with stand (348-1480-00).

LED Visual Fault Finder
TOP300 — 635 nm

Includes: User manual (070-9372-01), protective rubber jacket with stand (348-1480-00).

Optional Adapters

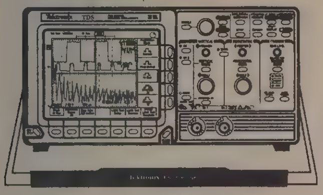
Option*	Connector	Mfr.'s Type
31	FC	119-5146-00
33	SMA	119-5169-00
34	ST	119-5144-00
35	DIN	119-5166-00
36	Diamond 3.5	119-5172-00
38	SC	119-5145-00
39*	SMA 2.5	119-4517-00

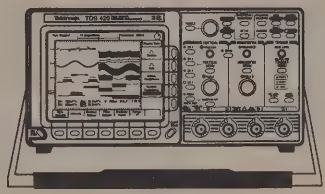
Optional Universal (SOC) Connector Adapters

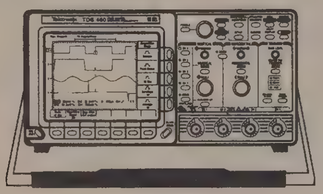
30	Biconic	119-5168-00
32	D4	119-5167-00
37	Diamond 2.5	119-5171-00
	E-2000	119-5165-00

*TOP140, TOP150, TOP160, TOP200 and TOP300 only.

High-Performance Programmable Digital Oscilloscope


TDS 430A


TDS 420A


TDS 460A

TDS 430A
- **400 MHz Bandwidth**
- **Two Channels Each With 100 MS/s Sampling Rate**

TDS 420A
- **200 MHz Bandwidth**
- **Four Channels Each With 100 MS/s Sampling Rate**

TDS 460A
- **400 MHz Bandwidth**
- **Four Channels Each With 100 MS/s Sampling Rate**

Common Features
- **30 K Point Records Standard; 120 K Optional**
- **1 mV To 10 V/div Sensitivity**
- **Hi-Res Mode For Up To 12 Bits Of Single Shot Vertical Resolution**
- **8-Bit Vertical Resolution**
- **10 ns Peak Detect Mode For Glitch Capture**
- **Pass/Fail Waveform Testing**
- **Roll and Triggered Roll Mode**
- **25 Automatic Measurements**
- **3.5" Floppy Disk**
- **1.5% Vertical Accuracy**
- **GPIB Programmable**
- **Infinite and Variable Persistence**
- **High-Performance Video Trigger (Optional)**
- **FFT, Integration and Differentiation Package (Optional)**
- **Printer Pack (Optional)**

Applications
- **Biophysical Research**
- **Biomedical Research**
- **Electromechanical System Design**
- **Audio System Measurement and Analysis**
- **Manufacturing Test and Quality Control**
- **Power Supply and Power-Related Design**
- **Product Service and Maintenance**

TDS 400A Series
The TDS 400A Series high-performance four-channel oscilloscopes (TDS 430A, two channels) are well suited to electromechanical and medical research, circuit design, electronic service, and manufacturing quality control. They offer wide dynamic range, fast overdrive recovery, flat response, 1 mV/div. sensitivity, and calibrated DC offset. Bandwidths of 200 MHz (TDS 420A) and 400 MHz (TDS 430A and TDS 460A) with 100 MS/s sampling rate — coupled with record lengths to 120,000 points — provide acquisition power and flexibility.

Workhorse Power
Many powerful features have been integrated into the intuitive TDS 400A Series user interface. At slow sweep speeds, Hi-Res mode provides up to 12 bits of vertical resolution on single-shot events. A zoom feature magnifies waveforms for analysis of small details. Template testing, roll mode, and 25 automated measurements make these products work for you.

The TDS 400A Series scopes have sensitive, wide bandwidth triggers with AC, DC, LF Reject, HF Reject, and Noise Reject coupling modes. The optional video trigger has positive and negative sync, line rates to 64 kHz, selectable fields, interlaced or non-interlaced video, and individual line selection.

Advanced Performance
At timebase settings of 50 ms/division or slower, newly-acquired points roll onto the screen from the right, making slowly varying signals easier to view. A unique Triggered Roll Mode allows the user to view pretrigger information, then capture a waveform record when a trigger event occurs.

Twenty-five automatic measurements eliminate the counting of divisions and manual cursor measurements. The user can set reference levels. In addition, measurement gating allows selection of a specific part of a waveform for measurement. The Snapshot feature simultaneously makes all 25 measurements on any single waveform. At slow sweep speeds, digitizing scopes reach a point where the available record length limits the number of samples than can be retained per second. Most scopes react by saving a point every few points and discarding the rest — missing high-speed waveform details. Peak Detect Mode employs proprietary hardware to retain data about those "extra" points and shows detail up to the maximum sample rate.

Variable Persistence allows waveform points to decay gradually through a 16-level gray scale, providing "z-axis" information about rapidly changing signals. Limit Testing compares waveforms against a template on-the-fly, automatically stopping acquisitions or saving the waveform whenever the template is violated. Templates can be created and adjusted from the front panel or imported over the GPIB interface and saved in non-volatile memory.

700-0430. Model TDS 430A .... **EACH 5495.00**
700-0420. Model TDS 420A .... **EACH 6595.00**
700-0460. TDS 460A .... **EACH 7695.00**

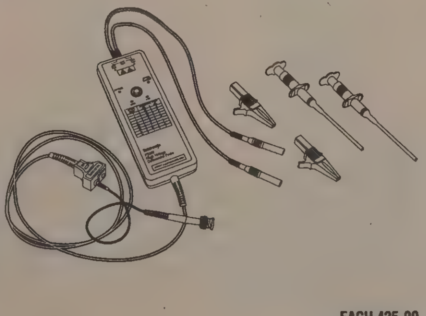
Specifications	TDS 430A	TDS 420A	TDS 460A
Bandwidth	400 MHz	200 MHz	400 MHz
Digitizers/Channels	2	4	4
Time Base	Dual		
Maximum Sample Rate (Each Channel)	100 MS/s		
Vertical Resolution	8 bits (up to 12 bits with Hi-Res		
Vertical Sensitivity	1 mV/div. to 10 V/div.		
Acquisition Modes	Peak Detect, Sample, Envelope, Average, Hi-Res		
Peak Detect/Glitch Capture	10 ns		
Record Length/Channel	500 to 30 K points; 120 K points with Opt. 1M		
Signal Processing	Linear or Sin(x)/x Interpolation, Average, Envelope, Add, Subtract, Invert, Multiply; FFT, Integration, Differentiation with Opt. 2F		
Automatic Measurements	25, plus Snapshot		
Trigger	Main, Delayed, Basic Video, SGL SEQ, AC, DC, LF Reject, HF Reject, Noise Reject, VIdeo with Video Clamp Pod (Opt. 05)		
Video Trigger Types	NTSC, PAL, SECAM, Custom; TV field, field 2, or both, any line within a field		
Display	Dot, Vector, Gray Scale, VGA Out		
Printer Ports (Opt. 13)	RS-232-C and Centronics-type		
I/O Interface	GPIB		
Waveform/Setup Storage	IF 3.5" Floppy Disk Drive		
Warranty	Three years		
Safety Certification	UL, CSA		

Included Accessories

Description	TDS 430A	TDS 420A	TDS 460A
10X Probes	P6138A (2)	P6138A (4)	P6138A (4)
Reference Guide	070-8035-02	070-8035-01	070-8035-01
User Manual	070-8034-02	070-8034-01	070-8034-01
Programmer's Manual	070-8709-03	070-8318-05	070-8318-05
US Power Cord	161-0230-01	161-0230-01	161-0230-01
Performance Verification Document	070-8721-01	070-8722-00	070-8722-00

P5200 Differential Probe

- **1300 V Differential**
- **±1 kV to Ground (Each Channel)**
- **50X/500X Attenuation**
- **25 MHz**
- **Excellent Signal Fidelity**
- **Easy Connection to ICs and Bus Bars**
- **Safe for User and DUT**
- **UL Certified 1244**
- **IEC 1010 Certified**

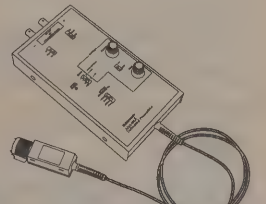


The P5200 enables users to safely make measurements up to 1300 V differential of floating circuits with their oscilloscopes grounded. The P5200 Active Differential Probe converts floating signals to low voltage ground referenced signals that can be displayed safely and easily on any ground referenced oscilloscope.

700-5200. Model P5200 .... **EACH 425.00**

ADA400A
Differential Preamplifier

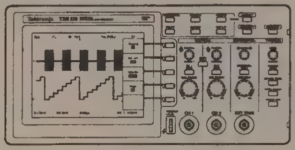
- **Active Differential Preamplifier**
- **10 µV/div. Sensitivity**
- **Typically 100 dB CMRR DC 10 KHz**
- **Integral Probe Power in TEKPROBE™ BNC**



The ADA400A Differential Preamplifier allows direct oscilloscope measurements of very low amplitude voltages and signals which are not ground referenced. The high impedance of both inputs eliminates the need to add additional ground points in the DUT, thereby avoiding circulating currents which disturb the measurement or the circuit.

700-5205. Model ADA400A .... **EACH 995.00**

TDS 200 Series Digital Real-Time Oscilloscopes

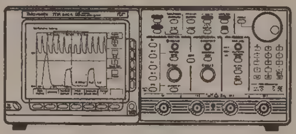


- **TDS 210 — 60 MHz; TDS 220 — 100 MHz**
- **1 GS/s Sample Rate**
- **2 Channels**
- **Dual Timebase**
- **Cursors and Measurements**
- **Autoset**
- **5 Setup Memories**
- **2 Reference Waveforms**
- **Edge and Video Triggering**
- **5 Automatic Measurements**
- **Vector and Dot Modes**
- **Multi-Language User Interface**
- **Extension Modules for RS-232, GPIB Programmability, and Parallel Printer Interface**
- **Compact, Lightweight**

The 60 MHz TDS 210 and the 100 MHz TDS 220 Digital Real-Time Oscilloscopes offer an unbeatable combination of performance, reliability, and affordability. Fast, error-free measurement,s low cost, and a familiar user interface encourage analog users to move to digital oscilloscopes.

700-0910. TDS 210 .... **EACH 995.00**
700-0920. TDS 220 .... **EACH 1695.00**

TDS 640A Digital Real-Time Oscilloscope

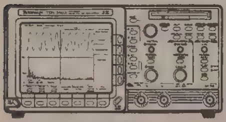


- **500 MHz Bandwidth**
- **2 GS/s Sample Rate on 4 Channels**
- **Time Interval, 2 ns Glitch, Runt, Pattern, and State Triggering**
- **1 mV to 10 V/div. Sensitivity**
- **Infinite and Variable Persistence**
- **Record Length to 2000 Points**
- **8-Bit Resolution 11-Bit with Averaging**
- **1.5% Vertical Accuracy**
- **FFT, Integration, Differentiation**
- **25 Automatic Measurements**
- **Full GPIB Programmability**
- **HDTV Triggering (Optional)**

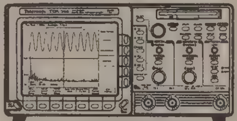
The TDS 640A oscilloscope provides an excellent combination of affordability and high performance. It delivers full 500 MHz bandwidth and 2 GS/s Digital Real-Time acquisition on all channels simultaneously. Its intuitive interface combines dedicated controls with graphical displays, icon-based menus, and on-line help. The TDS 640A scope also offers extensive triggering capabilities and 25 automatic measurements. Includes: 4 each P6139A active FET probes, Reference Card (070-8711-01), user manual (070-8715-03), programmer's manual (070-8709-01), front cover (200-3696-00), U.S. power cord (161-0203-01), performance verification (070-9717-02).

700-0641. TDS 640A .... **EACH 9950.00**

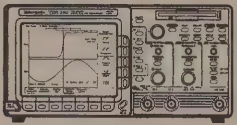
TDS 300 Series Digital Real-Time Oscilloscopes



TDS 340A



TDS 360



TDS 380

The TDS 300 Series oscilloscopes set a new price/performance standard. They are the first low-cost scopes with the power to acquire signals over their entire bandwidth with minimal aliasing, even when measuring high-speed transient and single-shot events. Their intuitive interface combines dedicated knobs with menu-driven digital functions. Twenty-one automatic measurements, FFT, information-enhancing display modes, and both edge and basic video triggering are standard. The TDS 360 and TDS 380 also include a built-in floppy disk drive.

Specifications. Signal Acquisition. Channels: 2. **Sensitivity:** 2 mV to 10 V/div. **Calibrated Offset Ranges:** ±1 V offset range — 3-99.5 mV/div.; ±10 V offset range — 100-995 mV/div.; ±100 V — 1-10 V/div. **Position Range:** ±5 div. **DC Gain Accuracy:** ±2%. **Vertical Resolution:** 8 bits. **Time Base System. Record Length:** 1000 points. **Horizontal Accuracy:** ±0.01%. **Roll Mode:** 0.1 s/div. **Acquisition Modes:** Sample, Envelop, Average, Peak Detect. Trigger System. **Trigger Types:** Edge, Video. **Trigger Modes:** Auto, Normal. **Video Trigger Formats and Field Rates:** Triggers on Field 1, Field 2, Any Field (noninterlaced systems), or Lines; from Sync-negative composite video; triggers on broadcast standard NTSC, PAL, or SECAM video, and other interlaced and noninterlaced video with horizontal line rates from 15 to 65 kHz (in 5 ranges) and field rates from 50 to 60 Hz. **Display System. Interpolation:** Sin(x)/x. **Mode:** Vector, Dots, Vector Accumulate, Dot Accumulate. **Format:** YT and XY. **Includes:** User Manual (070-9459-00), Reference (070-9434-00), NIST-traceable certificate of calibration, U.S. power cord (161-0230-01), and two each P6109B 10X passive probes for the TDS 340, two each P6111B 10X passive probes for the TDS 360 or two each P6114B 10X passive probes for the TDS 380. **Model TDS 340. Bandwidth:** TDS 340 — 100 MHz; TDS 360 — 200 MHz; TDS 380 — 400 MHz. **Sample Rate (Each Channel):** TDS 340 — 500 MS/s; TDS 360 — 1 GS/s; TDS 380 2 GS/s. **Time/Division Range:** TDS 340 — 5 ns to 5 s/div; TDS 360 and TDS 380 — 2.5 ns to 5 s/div.

700-0342. TDS 340A .... **EACH 2995.00**
700-0361. TDS 360 .... **EACH 3595.00**
700-0380. TDS 380 .... **EACH 4595.00**

Accessories for Digital Real-Time Oscilloscopes

Soft-Sided Carrying Case

This accessory is a convenient way to protect and carry your TDS 200 Series oscilloscopes with its probes and other accessories.
700-0914. AC220 .... **EACH 65.00**

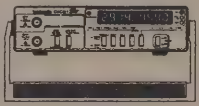
Communications Extension Module

This accessory adds GPIB and RS-232 programmability and a Centronics-type printer port. Extension modules simply plug into the back of the TDS 200 Series.
700-0912. TDS2CM .... **EACH 250.00**

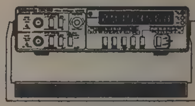
Hardcopy Extension Module

This accessory allows printing of screen shots and reference waveforms via a Centronics-type printer port.
700-0913. TDS2HM .... **EACH 150.00**

Counters



CMC251



CDC250

Selection Guide

Key Specifications	CMC251	CDC250
Channel A Frequency Range	1 Hz to 100 MHz	1 Hz to 175 MHz
Channel B Frequency Range	80 MHz to 1.3 GHz	1 Hz to 2 MHz
Period Range	0.04 µs to 1.0 s	0.5 µs to 0.2 s
Totalize Range	0 to 99,999,999	0 to 99,999,999
Pulse Width Range	0.25 µs to 0.5 s	—
Minimum Pulse Width	20 ns	250 ns
Time Interval Channel A to Channel B	No	Yes
Ratio of Channel A to Channel B	No	Yes
Time Base Stability	±1 ppm	±1 ppm

Customer Requested Features

Digital Display	8-digit LED	8-digit LED
Display Hold	Yes	Yes
Switchable Low-Pass Filter	100 kHz	10 kHz
Overrange Indication	Yes	Yes
Remote Start/Stop	Yes	Yes
Selectable Resolution	Yes	Yes
Self-Check	Yes	Yes
Selectable Slope	No	Yes
External Time Base	No	Yes
Adjustable Trigger Level	No	Yes
Safety Certification	ETL, CSA	UL, CSA

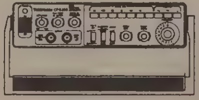
CMC251

The CMC251 1.3 GHz Multifunction Counter measures the frequency of sine, square, and triangle waves from 1 Hz to 1.3 GHz. The CMC251 also provides period, totalize, and pulse width measurements. The counter has two input channels. Channel A is a standard 1 MΩ input for frequency measurements up to 100 MHz. Channel B is a 50 Ω terminated input for use in high-frequency systems. This counter is of interest to radio amateurs because of its ability to measure high-frequency systems. The temperature-compensated, crystal-controlled time base is stable to ±1 part per million per year.
700-0255. CMC251 .... **EACH 620.00**

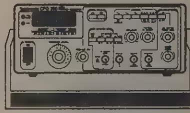
CDC250

The CDC250 175 MHz Universal Counter measures frequency of sine, square, and triangle waves from 1 Hz to 175 MHz at input levels from 20 mV to 42 V peak. The CDC250 also provides period measurements, frequency ratio, time interval, and totalize measurement functions. The CDC250 has a ±1 ppm/year, temperature-compensated time base to ensure consistent accuracy. Service technicians will find the CDC250 useful as a standard for calibrating other equipment.
700-0260. CDC250 .... **EACH 545.00**

Function Generators



CFG253



CFG280

Selection Guide

Key Specifications	CFG253	CFG280
Waveform Outputs (for all outputs) and sweep functions	Square, sine, triangle waves, TTL pulse, and sweep functions	Square, sine, triangle waves, TTL pulse,
Frequency Range	0.03 Hz to 3 MHz	0.1 Hz to 11 MHz
Frequency Multiplier	0.3 to 3.0	0.1 to 11
Symmetry/Duty Cycle	80/20 minimum	95/5 fixed
Amplitude	5 mV to 20 V p-p	10 mV to 20 V p-p
Dial Accuracy	±5% of full scale	±5% of full scale
Sine Wave Distortion	<1%	<1%
Square Wave Response	≤100 ns rise/fall	≤25 ns rise/fall
Triangle Wave Linearity	≥99% (20 Hz to 200 KHz)	≥99% (0.1 Hz to 110 KHz)
SYNC Output	<25 ns rise/fall	<25 ns rise/fall

Customer Requested Features

AM Input	No	0 to 100% DBSC
Attenuator	20 dB	20 dB
Integral Counter	No	Yes, 100 MHz
Variable Duty Cycle	Yes	No
External Gate Input	No	Yes
Internal or External Sweep Control	Yes	Yes
Variable Sweep Rate	Yes	Yes
Variable Sweep Width	Yes	Yes
Variable Symmetry	20 to 80%	No
VCF (FM) Input	No	Yes
Safety Certification	UL, CSA	ETL, CSA

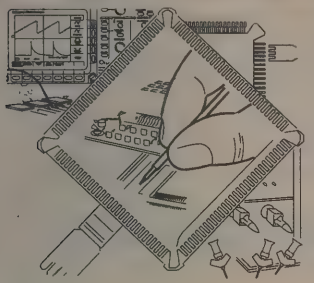
CFG253

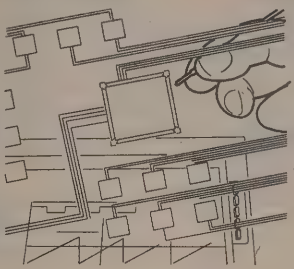
Function Generators produce sine, square, and triangle waves, and TTL signals for testing amplifiers, filters, and digital circuits. Sweep function can be controlled internally or with an external signal. Duty-cycle, DC offset, sweep rate, sweep width, and amplitude are all operator controlled. Bandwidth: 0.03 Hz to 3 MHz.
700-0253. CFG253 .... **EACH 420.00**

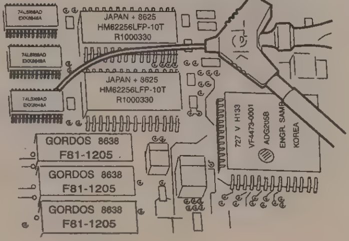
CFG280 11 MHz Function Generator with Counter

The CFG280 combines an 11 MHz Function Generator with a 1 Hz to 100 MHz Frequency Counter. The on board counter allows the operator to set the frequency output of the function generator precisely. This versatile instrument conserves both bench space and budget.
700-0280. CFG280 .... **EACH 1030.00**

Surface Mount Device Interconnects







Applications
- ► Research and Design
- ► Manufacturing Test Of SMD Circuitry
- ► Servicing Of SMD Circuitry
- ► Prototype Debug and Design

SMG50/SMT KlipChip™ Kits
- ► Access To 0.050" Centers PLCC, SOIC, and Other Packages PQFP100/132 PQFP Adapter Clips
- ► 386SX Attachment With PQFP100
- ► 68020/68030 Attachment With PQFP132
- ► 350 MHz Bandwidth
- ► Small Low-Profile Design Fits In Tight Spaces

SureFoot™
- ► Hand Probe Fine Pitch SMD Packages: 25 mil JEDEC; 0.65 mm EIAJ; 0.5 mm EIAJ
- ► For P656XA/AS

SMCK1/SMQK1 SOIC/PLCC Adapter Kits
- ► Assortment Of SOIC Or PLCC Clips
- ► Leads and SMT KlipChip™ Included
- ► Signal Insertion and Temporary Lead Jumpers Without Soldering

Surface Mount Device Probing and Interconnects
The increasing use of surface mount technology (SMT) brings many benefits to electronic circuit board (ECB) design and manufacture. Among these are increased circuit density, increased product reliability, and lower assembly costs.

Troubleshooting and device interconnection, however, have become more difficult due to decreased device size, tighter lead spacing and increased ECB densities. Tektronix' offering of the following SMT probing and inter-connect devices meets these demanding requirements.

SureFoot™ Probing 25 mil JEDEC, 0.65 and 0.5 mm EIAJ Packages
SureFoot™ (patent pending) is an integral probe tip and miniature guide that enables fault-free "hands-on" probing of fine-pitch SMD packages. Guided by the IC's leads, SureFoot's miniature plastic tines align the probe before electrical contact is made. The tines also form a shield between IC leads, preventing the probe tip from shorting adjacent pins.

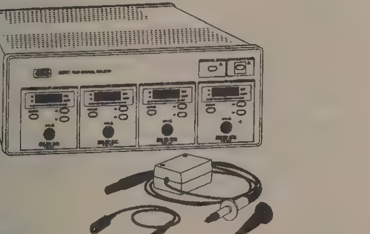
SureFoot™ conforms to EIAJ (Electronic Industry Association of Japan) or JEDEC (Joint Electron Device Engineering Council) packaging standards, assuring quick and reliable probe contact with fine-pitch IC leads. Several color-coded versions of SureFoot™ are available, addressing the most common SMD packages with leads spaced on 0.65 mm (EIAJ) and 25 mil (JEDEC) centers. A crystal orange version fits the tighter 0.5 mm lead spacing of several EIAJ packages.

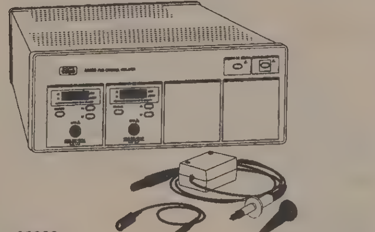
Style for Tektronix SMD Probes
Tektronix probes have replaceable probe tips. The basic contact of the new SMD probe family is a 25 mil socket that accepts square or round pins. SureFoot™ probe tips are available in styles to match each of these high-performance probe families.

Stock No.	Mfr.'s Type	Package Lead Spacing	Package Standard	Color Code	PER PKG./12
700-0501	SF501	50 mil	JEDEC	Yellow	50.00
700-0502	SF502	25 mil	JEDEC	Blue	50.00

Stock No.	Mfr.'s Type	Package Lead Spacing	Package Standard	Color Code	PER PKG./12
700-0505	SF502	0.65 mm	EIAJ	Blue	50.00
700-0504	SF503	0.5 mm	EIAJ	Red	50.00

Voltage Isolation Systems — NEW —


A6907


A6909

A6907
- ► Monolithic
- ► 4 Channels
- ► GPIB
- ► Mid Range Performance

A6909
- ► Monolithic
- ► 2 Channels
- ► GPIB Optional
- ► Mid Range Performance

A6906S
- ► Fiber Optic Separation Up to 200 m
- ► Single Channel
- ► GPIB
- ► Battery Powered Transmitter
- ► High Performance

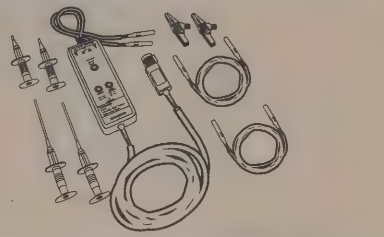
Selection Guide

Key Specifications	A6907	A6909	A6906S
Bandwidth (–3 dB)	60 MHz	60 MHz	100 MHz
Maximum Voltage	±850 V	±850 V	±850 V
Common to GND Slew Rate	20,000 V/µs	20,000 V/µs	100,000 V/µs
Separation Distance	1.5 m	1.5 m	3 m, 10 m, 20 m, 100 m, 200 m
CMRR with Probe at 60 Hz	105 dB	105 dB	120 dB
CMRR with Probe at 1 MHz	60 dB	60 dB	60 dB
CMRR with Probe at 10 MHz	50 dB	50 dB	40 dB
Channels	4 (Monolithic)	2 (Monolithic)	1
Isolation Method	Optical/Transformer	Optical/Transformer	Fiber Optic
GPIB	IEEE 488.1	Option 10 (488.1)	IEEE 488.1
Recommended Environment	Ambient	Ambient	Ambient
Battery Operating Time	—	—	12 Hours

Tektronix offers the most complete line of isolation products to satisfy your high performance floating measurement requirements. The isolation product family includes three isolation instruments which provide a wide range of accurate and safe solutions to your measurement problems. We define floating measurements as measurements in which neither reference point is ground. We provide three isolators for making floating measurements — one of which will be most appropriate to your specific situation. All the isolators are third party safety certified.

700-6907. A6907 .... **EACH 7500.00**
700-6909. A6909 .... **EACH 3995.00**
700-6906. A6906S .... **EACH 7795.00**

P5205 High Voltage Differential Probe — NEW —

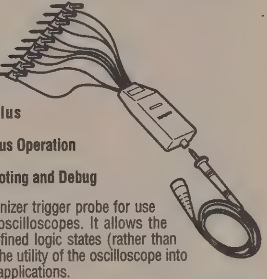


- ► Probe Connects Directly to TDS Scope through TekProbe™ Interface
- ► 1300 V Maximum Differential Input Voltage
- ► ±1000 V Maximum Floating Voltage on All Ranges
- ► 100 MHz Bandwidth
- ► UL 3111 and IEC 1010 Safety Certified

The P5205 probe enables users to make floating measurements with the scope grounded, resulting in safer, more accurate measurements and higher productivity. The P5205 probe is ideal for power supply design, motor drive design, electric vehicle research, education, and field service. The probe is specifically designed for use with Tektronix TDS oscilloscopes. It can also be used with other oscilloscopes by utilizing the 1103 TekProbe power supply. **Specifications. Max. Differential Input Voltage:** 1300 V (DC + peak AC). **Bandwidth (50X Setting):** 100 MHz. **Switchable Attenuation:** 50X/500X. **Electrostatic Immunity:** >8 kV.

700-5206. P5205 .... **EACH 895.00**

P6408 Trigger Probe

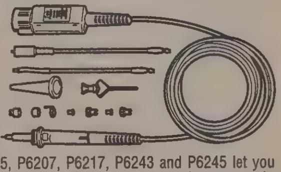


- ► For TTL and TTL-Compatible Logic
- ► 17-Bits (16 Data Bits Plus Qualifier)
- ► Synchronous and Asynchronous Operation
- ► Easy to Use
- ► Simplifies Digital Troubleshooting and Debug

The P6408 is a 16-Bit word recognizer trigger probe for use with analog and digital storage oscilloscopes. It allows the oscilloscope to trigger on user-defined logic states (rather than on analog levels), thus extending the utility of the oscilloscope into digital troubleshooting and debug applications.

700-6408. P6408 .... **EACH 615.00**

Active Probes (FET)



When you need to see signals clearly with minimal probe-induced distortion, Tektronix active FET probes are a smart choice. The P6201, P6202A, P6204, P6205, P6207, P6217, P6243 and P6245 let you faithfully capture high-frequency signals. Their linear dynamic range make them ideal for probing digital device families with today's logic voltage levels. Compatibility: All 2400 series and TDS.

Model P6021. Attenuation: 1X/10X/100X. **Bandwidth at 3 dB:** 900 MHz. **DC Offset Range:** ±5.6/56/200 V. **System Input Resistance:** 100 KΩ/1 MΩ/1 MΩ. **Typical Input C:** 3.0/1.5/1.5 pF. **Max. Voltage:** ±100/200/200 V. **Probe Power Supply:** 1101A for 2200/2400 TAS and TDS300 scopes.
700-0751. P6021 .... **EACH 1795.00**

Model P6202A. Attenuation: 10X/100X. **Bandwidth at 3 dB:** 500 MHz. **DC Offset Range:** ±55/200 V. **System Input Resistance:** 10 MΩ. **Typical Input C:** 2.0/2.0 pF. **Max. Voltage:** ±200/200 V. **Probe Power Supply:** 1101A for 2200/2400 TAS and TDS300 scopes.
700-0752. P6202A .... **EACH 1295.00**

Model P6204. Attenuation: 10X. **Bandwidth at 3 dB:** 1000 MHz. **DC Offset Range:** ±15 V. **System Input Resistance:** 10 MΩ. **Typical Input C:** 1.9 pF. **Max. Voltage:** ±40 V. **Probe Power Supply:** 1103 for 2200/2400 TAS and TDS300 scopes.
700-0732. P6204 .... **EACH 1795.00**

Model P6205. Attenuation: 10X. **Bandwidth at 3 dB:** 750 MHz. **System Input Resistance:** 1 MΩ. **Typical Input C:** 2.0 pF. **Max. Voltage:** ±40 V. **Probe Power Supply:** 1103 for 2200/2400 TAS and TDS300 scopes.
700-6205. P6205 .... **EACH 660.00**

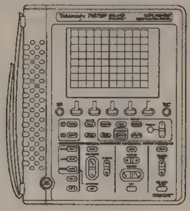
Model P6207. Attenuation: 10X. **Bandwidth at 3 dB:** 4000 MHz. **DC Offset Range:** ±5 V. **System Input Resistance:** 100 KΩ. **Typical Input C:** 0.4 pF. **Max. Voltage:** ±40 V. **Probe Power Supply:** 1103 for 2200/2400 TAS and TDS300 scopes.
700-0753. P6207 .... **EACH 3950.00**

Model P6217. Attenuation: 10X. **Bandwidth at 3 dB:** 4000 MHz. **DC Offset Range:** ±5 V. **System Input Resistance:** 100 KΩ. **Typical Input C:** 0.4 pF. **Max. Voltage:** ±40 V. **Probe Power Supply:** 1103 for 2200/2400 TAS and TDS300 scopes.
700-0754. P6217 .... **EACH 3950.00**

Model P6243. Attenuation: 10X. **Bandwidth at 3 dB:** 1000 MHz. **System Input Resistance:** 1 MΩ. **Typical Input C:** ≤1 pF. **Max. Voltage:** ±40 V. **Probe Power Supply:** 1103 for 2200/2400 TAS and TDS300 scopes.
700-0757. P6243 .... **EACH 395.00**

Model P6245. Attenuation: 10X. **Bandwidth at 3 dB:** 1500 MHz. **DC Offset Range:** ±10 V. **System Input Resistance:** 1 MΩ. **Typical Input C:** ≤1 pF. **Max. Voltage:** ±40 V. **Probe Power Supply:** 1103 for 2200/2400 TAS and TDS300 scopes.
700-0756. P6245 .... **EACH 1395.00**

TekScope™ THS720P Handheld Digital Oscilloscope



- Harmonics Up to 31st
- Automatic Power Measurement with Statistics
- PWM Electric Motor Drive Trigger
- 100 MHz Bandwidth
- 500 MS/s Sampling Rate Per Channel
- Two Channels/Digitizers Plus External Trigger
- 3³/₄ Digit DMM with Datalogger
- Hands-Free Autoranging
- Roll Mode
- Extra Bright Backlit Display
- 8 ns Glitch Capture
- Independently Floating Isolated Scope and DMM Channels for Safety
- Full Floating Measurement Capability up to 600 VRMS
- Advance Trigger — Delay, Pulse, Video (Line Counter and Field Select)
- NiCd Battery and AC Adapter
- 21 Automatic Measurements
- RS-232 Programmability
- High-Voltage Probes Up to 1 kV
- Deluxe Soft Case

The THS720P TekScope™ Isolated Channel™ Scope/DMM is ideal for electric/power electronics applications. It combines a full-featured 100 MHz bandwidth and 500 MS/s sample rate Digital Real-Time oscilloscope with a True RMS digital multimeter n a rugged, battery-operated instrument. Scope and meter modes can operate simultaneously and independently on the same or separate signals. The high-resolution, backlit display and pop-up menus make it easy for users to take full advantage of the instrument's many features. These include cursors, video trigger, voltage and resistance measurements, and storage of waveforms, data and instrument setups.

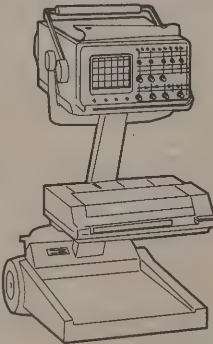
The THS720P includes the following features specifically for electric/power electronics measurements. The THS720P can test and verify correct operation of motors, transformer efficiency, power-supply performance, and the effect of neutral current. It contains the powerful features of a modern scope to allow the user to troubleshoot/verify the operation of complicated electronic control circuits. The THS720P shares measurement features with the THS730A, THS720A, THS710 Scope/DMMs, which are ideal for electronic applications.

Specifications. Bandwidth: 100 MHz. **Sample Rate Per Channel:** 500 MS/s. **Channels:** Two. **Sensitivity:** 5 mV to 50 V/div. (to 50 V/div. with 10X probe). **Position Range:** ±10 div. **DC Gain Accuracy:** ±2%. **Vertical Resolution:** 8 bits. **Record Length:** 2500 points. **Time/Division Range:** 5 ns to 50 s/div. **Horizontal Accuracy:** ±200 ppm. **Roll Mode:** ≥0.5 s/div. **Autorange:** User-selectable. **Trigger Modes:** Auto, normal. **Trigger Types:** Edge, pulse, video. **Video Trigger Formats and Field Rates:** Odd field, even field, and line. **Motor Trigger:** 3 phase. **External Trigger Input:** 5 mHz TTL compatible. **Harmonics:** Up to 31st. **Setups:** 10 front panel setups. **Safety Certification:** UL 3111-1 Listed, complies with EN61010-1. **Power:** NiCd rechargeable battery pack with AC adapter (both included). **Battery Life:** Approximately 2 hours from full charge. **Display:** Backlit LCD. **Display Resolution:** 320 × 240. **Dimensions:** 6.95"W × 8.53"H × 2.00"D. **Weight:** 3.2 lbs. **Includes:** Two P5102 10X passive probes, user manual, standard meter lead set, NiCd rechargeable battery pack, AC power adapter, soft carrying case, cable and adapters for RS-232, NIST-traceable certificate of calibration.

700-0764. THS720P .... **EACH 2995.00**

Printer, Cart

K212



- For All Portable Instruments
- Sturdy and Mobile Platform
- Enhances Sharing and Work Space
- Tiltable Top Tray
- Locking Front Casters
- Four Outlet U.S. Power Strip Option

Low Cost Portability. The K212 column and trays are made from high-strength aluminum; the base is thermoset polyester. **Physical Characteristics. Dimensions. Width:** Overall Cart — 435 mm/17.0"; Shelf — 407 mm/16.0". **Height:** Overall Cart — 840 mm/33.0". **Depth:** Overall Cart — 550 mm/21.6"; Shelf — 352 mm/14.0". **Weight:** 9 kg; 20 lb.

700-0212. K212 .... **EACH 425.00**

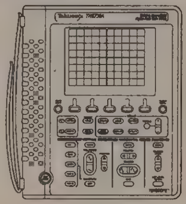
HC220

- Direct Plots in About 90 Seconds
- Compact Size
- Laser Quality Printouts

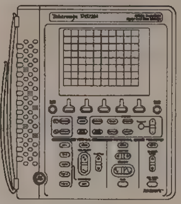
Laser Quality Printer. The HC220 bubble jet printer offers high quality printing in a small package at an economical price. Because it's an ink-jet printer, the HC220 has darker, denser, more consistent printing than most other printers. At 360 dots per inch (DPI), it is considered a laser quality printer. In addition, the printer uses plain paper.

700-0245. HC220 .... **EACH 485.00**

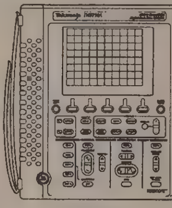
TekScope™ Series Handheld Digital Oscilloscopes



THS730A



THS720A



THS710A

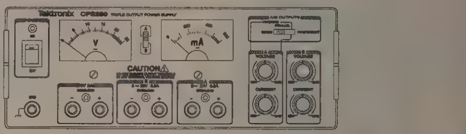
- Bandwidth: THS730A — 200 MHz; THS720A — 100 MHz; THS710A — 60 MHz
- Sampling Rates Per Channel: THS730A — 1 GS/s; THS720A — 500 MS/s; THS710A — 250 MS/s
- Time/Division Range: THS730A — 2 ns to 50 s/div.; THS720A — 5 ns to 50 s/div.; THS710A — 10 ns to 50 s/div.
- Two Channels/Digitizers Plus External Trigger
- 3³/₄ Digit DMM with Datalogger
- Hands-Free Autoranging
- Roll Mode
- Extra Bright Backlit Display
- 8 ns Glitch Capture
- Independently Floating Isolated Channels
- Advance Trigger — Delay, Pulse, and Video (Line Count and Field Select)
- NiCd Battery and AC Adapter
- 21 Automatic Measurements
- RS-232 Programmability
- Deluxe Soft Case
- Improvement of the Award Winning THS 700 Series
- Family Now Includes a 200 MHz Version
- Highest Performance Handheld Scope in the Market

The TekScope™ THS700A Series Scope/DMM combines a full-featured Digital Real-Time oscilloscope with a True RMS digital multimeter in rugged, battery-operated instruments. Scope and meter modes can operate simultaneously and independently on the same or separate signals. The high-resolution, backlit display and pop-up menus make it easy for users to take full advantage of the instrument's many features. These include cursors, video trigger, voltage and resistance measurements, and storage of waveforms, data, and instrument setups. In addition, it offers the most comprehensive triggering capabilities — external trigger and extensive triggering including delay, pulse width, video, and TV. The THS700A Series is ideal for electronic applications — at the bench or at the site. The THS700A Series share measurement features with the THS720P Scope/DMM which includes features to address the needs of electric/power electronics measurements.

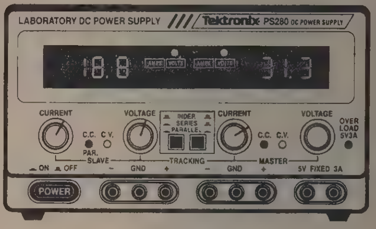
General Specifications. Setups: 10 front panel setups. **Safety Certification:** UL 3111-1 Listed, complies with EN61010-1. **Power:** NiCd rechargeable battery pack with AC adapter (both included). **Battery Life:** Approximately 2 hours from full charge. **Display:** Backlit LCD. **Display Resolution:** 320 × 240. **Dimensions:** 6.95"W × 8.53"H × 2.00"D. **Weight:** 3.2 lbs. **Includes:** Two P6117B 10X passive probes, user manual, standard meter lead set, NiCd rechargeable battery pack, AC power adapter, soft carrying case, cable and adapters for RS-232, NIST-traceable certificate of calibration.

700-0761. THS730A .... **EACH 2995.00**
700-0762. THS720A .... **EACH 2295.00**
700-0763. THS710A .... **EACH 1895.00**

Power Supplies



CPS250



PS280

Selection Guide

Key Specifications	CPS250	PS280
Fixed Voltage Supply	One, 5 V	One, 5 V
Fixed Current Supply	2.0 A	3.0 A
Variable Output Voltage (in independent mode)	Two, 0 to 20 V	Two, 0 to 30 V
Variable Output Current (in independent mode)	0.5 A max.	2.0 A max.
Variable Output Voltage (in parallel mode)	0 to 20 V	0 to 30 V
Variable Output Current (in parallel mode)	1.0 A max.	4.0 A max.
Variable Output Voltage (in series mode)	One ±20 V or One 0 to 40 V	One ±30 V or One 0 to 60 V
Variable Output Current (in series mode)	0.5 A max.	2.0 A max.
Tracking Error	±0.2% + 20 mV	≤0.5% + 10 mV

Customer Requested Features

Analog Display	Two meters	No
Auto-Series/Parallel Operation	Yes	Yes
Auto-Master/Slave Tracking	Yes	Yes
Constant Current Mode	Yes	Yes
Constant Voltage Mode	Yes	Yes
Variable Current Limiting	Yes	Yes
Digital Display	No	Two 2000 Count LEDs
Overload Indicator	Yes	Yes
Ripple and Noise	2 mV RMS	≤2 mV RMS
Dual Tracking	0 to 20 V at 0.5 A	0 to 30 V at 2.0 A
Selectable Independent Tracking Mode	Yes	Yes
Safety Certification	UL, CSA	ETL, CSA

CPS250

The CPS250 Triple Output Power Supply is a versatile instrument with two variable outputs and one fixed output. Its attractive, compact design with tilt-bail handle takes up less bench space than most other power supplies. It meets most basic test and lab bench requirements.

700-0900. CPS250 .... **EACH 495.00**

PS280 Power Supplies

The Tektronix PS280 Laboratory DC Power Supply is a multifunction benchtop or portable instrument. This regulated power supply provides fixed 5 V output for powering logic circuits and two variable outputs for a wide variety of test and experimental uses. The PS280 contains two identical, independently adjustable DC power supplies that can vary from 0 to 30 V, and 0 to 2 A. Front-panel switches select one of three modes of operation: independent, series, or parallel.

700-0285. PS280 .... **EACH 725.00**

PS2520G/PS2521G Programmable Benchtop Power Supplies

Selection Guide

Key Specifications	PS2520G	PS2521G
Number of Outputs	3	3
Output Voltage	0 to 6 V, 0 to 36 V (two)	0 to 6 V, 0 to 20 V (two)
Output Current	0 to 3 A (6 V), 0 to 1.5 A (36 V)	0 to 5 A (6 V), 0 to 2.5 A (20 V)
Voltage Accuracy	0.05% 5 mV + 25 mV	0.05% 5 mV + 25 mV
Current Accuracy	0.2% + 10 mA	0.2% + 10 mA
Programmable Voltage Resolution	10 mV	10 mV
Programmable Current Resolution	1 mA	1 mA

Customer Requested Features

Key Specifications	PS2520G	PS2521G
Display	Digital, LED	Digital, LED
Auto-Series/Parallel Operation	Yes	Yes
Auto-Master/Slave Tracking	Yes	Yes
Constant Voltage Mode	Yes	Yes
Constant Current Mode	Yes	Yes
Variable Current Limit	Yes	Yes
Over-Voltage Protection	Yes	Yes
Over-Current Protection	Yes	Yes
Dual 4-Digit Panel Meter	Yes	Yes
Internal Memory	Yes, 100	Yes, 100
Safety Certifications	ETL, CSA	ETL, CSA

The triple output PS2520G and PS2521G Power Supplies are versatile supplies suitable for many applications. The PS2520G has a single supply providing a maximum of 6 V and 3 A and two supplies providing a maximum of 36 V and 1.5 A. The PS2521G has a single supply providing a maximum of 6 V and 5 A and two supplies providing a maximum of 20 V and 2.5 A.

The supplies can be operated in one of three modes: independent, series, or parallel. In the independent mode, the output voltage and current of each supply are controlled independently. In the two tracking modes, the variable outputs are connected either in series or in parallel; the controls of the master power supply adjust the voltage or current of both power supplies.

The PS2520G and PS2521G are GPIB programmable. The GPIB command sets are SCPI compatible. Each power supply features 100 memories to store voltage and current limits for instant recall via the front panel or GPIB.

700-2635. PS2520G .... **EACH 1395.00**

700-2645. PS2521G .... **EACH 1395.00**

DMM

DMM150 — Pen Meter; CMM150 — Current Meter

The DMM 150 is one of the smallest and most versatile DMMs on the market. Easy to use, easy to carry, it's great for indoor/outdoor use, one handed operation and making measurements in tight places. It measures AD/DC voltage, resistance, continuity (with beeper) and diodes. For ease of operation it has both auto and manual range capabilities and both a 3.5 digit digital display and 65 segment analog bargraph. It also includes data hold, auto power off, and a low battery indicator.

The CMM 150 turns the DMM 150 into a 300 A digital current meter. The CMM 150 has a non-intrusive range of .1 A to 300 A and a 30 mm jaw opening with a 29 mm conductor diameter.

Instead of carrying and purchasing a separate DMM and current meter use the CMM/DMM 150 combo. The DMM 150 provides all of the features of a rugged DMM, while the CMM 150 turns the DMM 150 into a 300 A non-intrusive current meter.

DMM157 — Pocket DMM

The 157 is a full featured high value auto ranging DMM. It measure AC/DC voltage, AC/DC current, resistance, continuity (with beeper) and diodes.

DMM247/249 — Personal DMMs

The 249 Series are rugged state of the art meters enclosed in dust and water resistant cases. They both measure AC/DC voltage, AD/DC current, resistance, continuity (with beeper) and diodes. The 249 also has True RMS measurement for accurate measurement in the presence of harmonics

DMM252/254 — Professional DMMs

The 250 Series are state of the art meters designed for the professional. Water, dust and impact resistant all measurements are made with a high degree of accuracy and resolution. The meters have many uses and functions including digital meter, analog meter, frequency counter, recorder and capacitance tester.

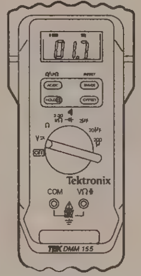
All Tek Digital Multimeters are UL Listed and come with 3 year warranty.

DMM150/CMM150

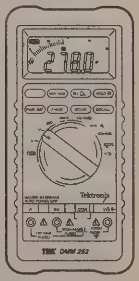
Key Specifications	CMM150	DMM150	DMM157	DMM247/249	DMM252/254
Display	3200	3200	2000	3200	4000
Basic DC Volts Accuracy	0.7%	0.7%	0.5%	0.3%	0.1%
AC Voltage Ranges	3 V-600 V	3 V-600 V	2 V-600 V	3 V-750 V	400 mV-750 V
AC Voltage Accuracy	1.7%	1.7%	1.5%	1.3%	0.5%
DC Voltage Ranges	300 mV-600 V	300 mV-600 V	200 mV-600 V	300 mV-1000 V	400 mV-1000 V
DC Voltage Accuracy	0.7%	0.7%	0.5%	0.5%	0.1%
AC Current Ranges	300 A with CMM 150	300 A with CMM 150	2 mA-10 A	300 µA-20 A	4 mA-10 A
AC Current Accuracy	1.9%	.9%	1.5%	1.5%	0.6%
DC Current Ranges	—	—	2 mA-10 A	300 µA-20 A	4 mA-10 A
DC Current Accuracy	—	—	1.0%	1.0%	0.4%
Resistance Ranges	300 Ω-30 MΩ	300 Ω-30 MΩ	200 Ω-20 MΩ	300 Ω-30 MΩ	400 Ω-40 MΩ
Resistance Accuracy	1.00%	1.00%	0.80%	0.75%	0.40%
Capacitance Ranges	—	—	2 µF-200 µF	—	4 nF-40 µF
Capacitance Accuracy	—	—	1.9%	—	1.0%
Frequency Ranges	—	—	—	—	100 Hz-1 MHz
Frequency Accuracy	—	—	—	—	0.1%
Autoranging Digital Oscilloscope	—	—	—	—	—
Digitizers	—	—	—	—	—

Customer Requested Features

	CMM150	DMM150	DMM157	DMM247/249	DMM252/254
Analog Display	65 segment	65 segment	—	65 segment	42 segment
Auto Power Off	Yes	Yes	Yes	Yes	Yes
Autoranging with range hold	Yes	Yes	Yes	Yes	Yes
Backlight	—	—	—	—	—
Beep Guard	—	—	—	Yes	—
Continuity Check/Beeper	Yes	Yes	Yes	Yes	Yes
Data Hold	Yes	Yes	Yes	Yes	Yes
Delay Hold	—	—	—	Yes	—
Diode Test	Yes	Yes	Yes	Yes	Yes
Holster and Stand	Carrying Case	Yes	Yes	Yes	Yes
Low Battery Indicator	Yes	Yes	Yes	Yes	—
Memory Store/Recall	—	—	—	Yes	—
Min./Max. Store	—	—	—	Yes	—
Offset (Zero Reference)	—	—	Yes	—	Yes
Overrange Indicator	Yes	Yes	Yes	Yes	Yes
Relative Reference	—	—	—	—	Yes
Safety	IEC1010, UL1244, CSA	IEC1010, UL1244, CSA	IEC1010, UL1244, CSA	IEC1010, UL1244, CSA	IEC1010, UL1244,CSA
Shockproof	Yes	Yes	4 ft.	5 ft.	6 ft.
True RMS	—	—	249 only	254 only	Yes
Warranty	1 year	1 year	3 years	3 years	3 years
Water/Dust Resistant Case	—	—	—	Yes	Yes



DMM157



DMM/252/254

700-0150. DMM150	**EACH**	**69.00**
700-0151. CMM150	**EACH**	**45.00**
700-0157. DMM157	**EACH**	**99.00**
700-0247. DMM247	**EACH**	**155.00**
700-0249. DMM249	**EACH**	**195.00**
700-0252. DMM252	**EACH**	**235.00**
700-0254. DMM254	**EACH**	**260.00**

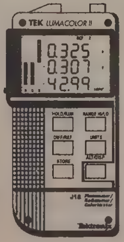
TekLuma™ Color Photometers

J17

- **Autoranging, Auto Zero**
- **RS-232 Interface (Output Only)**
- **Wide Dynamic Features**

J18

- **Real-Time Color Measurements**
- **Ten Memories For Storing Reference Colors (With J1810)**
- **RGB Bar Graph**
- **D6500 Kelvin Calibration**
- **Color Temperature Measurement**
- **Analog Output**
- **Full Control Of Measurements Plus Output Of Results (RS-232)**



Common Features

- **Interchangeable Pre-Calibrated Heads**
- **Accurate Spectral and Cosine Corrections**
- **Metric/English Conversions**
- **Large LCD With Backlight**
- **Rugged**
- **Handheld**
- **Adaptable To Many Light Measurement Needs**

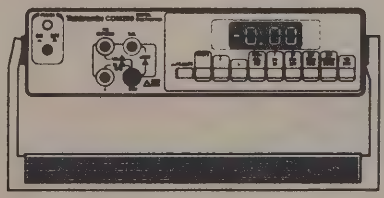
The Tektronix J17 and J18 are handheld digital Photometers/Radiometers/Colorimeters for the laboratory, field, or production area. A J17/J18 System consists of a J17/J18 handheld meter and one of eight interchangeable heads. At the heart of the J17/J18 is a microprocessor capable of performing several functions: Metric-to-US conversion, auto-range, auto-zero, hold, and conversion between color coordinate systems. The J17/J18 can be used with a PC for automated testing and data recording. The J17/J18 are powered by a 9-volt battery. **Specifications. Interchangeable Pre-Calibrated Heads:** Yes. **Accurate Spectral and Cosine Corrections:** Yes. **Metric/English Conversions:** Yes. **Backlit LCD:** Yes. **Analog Output:** Yes, RS-232. **Digital Output:** J17 — No; J18 — Yes. **Programmable:** J17 — No; J18 — Yes, RS-232. **RGB Bar Graph:** J17 — No; J18 — Yes. **Reference Memories:** 10 with J1810 (J18 only). **Color TekMeter™ Measurements:** J17 — No; J18 — Yes. **D6500 Calibration (True White):** J17 — No; J18 — Yes.

700-0017. Model J17	**EACH**	**1095.00**
700-0018. Model J18	**EACH**	**1995.00**

Probe Heads

700-1803. J1803	**EACH**	**595.00**
700-1810. J1810	**EACH**	**1495.00**
700-1820. J1820	**EACH**	**1495.00**
700-1811. J1811	**EACH**	**695.00**
700-1812. J1812	**EACH**	**795.00**
700-1805. J1805	**EACH**	**595.00**
700-1806. J1806	**EACH**	**595.00**

Model CDM250 Digital Multimeter



- **3½ Digit LED Display**
- **Diode Test**
- **Overrange Indicator**
- **UL, CSA**

The CDM250 Digital Multimeter measures and displays voltage, current, and resistance using a 3½ digit LED display. Sine wave alternating voltages and currents are displayed in RMS values. The CDM250 is safe and easy to use in the classroom and on the job. This meter has overload protection and is UL listed and CSA certified. Test leads are included. **Specifications. AC Voltage:** 500 V. **DC Voltage:** 500 V. **AC Current:** 10 A. **DC Current:** 10 A. **Resistance:** 20 MΩ.

700-0275. CDM250	**EACH**	**399.00**

Voltage Probes

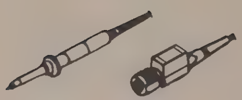
P6063B

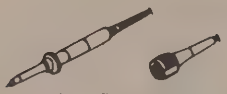
P6101B

P6103B

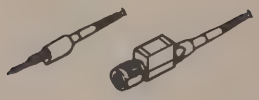
P6105A

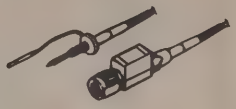
P6101A


P6111B


P6109B

P6119B

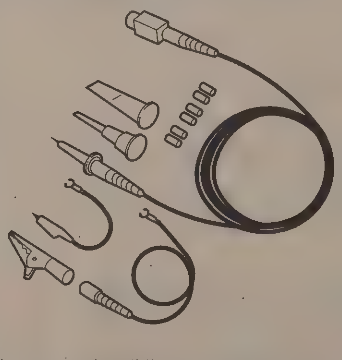

P6131


P6133

Tek brings you the world's widest choice of probes to enhance your scope's performance and assure maximum signal fidelity. Plus, you'll find special features like modularity and miniaturization to save you time and money.

Stock No.	Mfr.'s Type	Attenuation	Nominal Length	Loading	BW MHz at –3 dB	DC + pk AC Maximum	Scope C In pF	Readout/ GRD Ref.	EACH
700-6063	P6063B	10X	6.0 ft.	10 MΩ/14.0 pF	200	500 V	15 to 24	Yes/Yes	**415.00**
		1X		1 MΩ/105.0 pF	6				
700-6101	P6101B	1X	2.0 m	10 MΩ/100.0 pF	15	420 V	Any	— (1X)/No	**65.00**
700-6103	P6103B	10X	2.0 m.	10 MΩ/13.0 pF	50	420 V	15 to 35	No/No	**75.00**
700-6105	P6105A	10X	2.0 m	10 MΩ/11.0 pF	100	500 V	15 to 35	Yes/Yes	**200.00**
700-6106	P6106A	10X	2.0 m	10 MΩ/11.0 pF	250	500 V	15 to 35	Yes/Yes	**235.00**
700-6111	P6111B	10X	2.0 m	10 MΩ/14.0 pF	200	420 V	15 to 35	Yes/No	**150.00**
700-6109	P6109B	10X	1.5 m	10 MΩ/13.0 pF	150	500 V	15 to 35	Yes/Yes	**90.00**
700-6119	P6119B	10X	2.0 m	10 MΩ/15.3 pF	100	500 V	15 to 35	No/Yes	**105.00**
		1X		1 MΩ/120.0 pF	8	350 V			
700-6131	P6131	10X	1.3 m	10 MΩ/10.8 pF	300	500 V	12 to 18	Yes/No	**220.00**
700-6133	P6133	10X	1.3 m	10 MΩ/11.4 pF	150	500 V	15 to 30	Yes/No	**195.00**
700-6134	YT5060	10X	1.3 m	10 MΩ/11.4 pF	60	500 V	15 to 30	No/No	**45.00**
		1X		1 MΩ/120.0 pF	8	350 V			
700-6135	YT5100	10X	1.5 m	10 MΩ/16.5 pF	100	500 V	20 to 45	No/No	**50.00**
		1X			100				
700-6137	P6137	10X	1.3 m	10 MΩ/10.8 pF	400	400 V	12 to 18	Yes/Yes	**250.00**

High Voltage Probes



P5100

- DC to 250 MHz
- 2,500 V DC+ Peak AC
- 100 X With Readout
- UL Listed 1244
- IEC 1010 Certified
- 7 To 30 pF Compensation Range

P6015A

- High Voltage — 20 kV DC/40 kV Peak (100 ms Pulse Width)
- High Bandwidth — 75 MHz
- Silicone Dielectric
- Optional 1000 X Coding
- Wide Compensation Range (7 To 49 pF)
- Heavy Duty Versatile Ground Lead and Clip

Peak AC

- Low Capacitance — 2.5 pF

Use Tek's 100X and 1000X high voltage probes to measure elevated voltages without damaging your probe, scope... or yourself. These high-performance probes provide low capacitance, high input impedance, and frequency response starting at DC. All Tektronix probes come with instruction manuals and the appropriate probe tips, ground leads, attachments and other accessories.

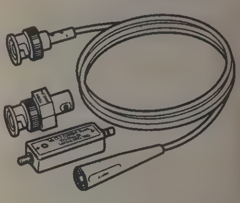
High Voltage Probe Feature Summary

Tek high voltage probes are compatible with a wide range of scopes. They can be used with any scope with nominal input capacitances of 12 pF to 47 pF and input resistance of 1 MΩ.

Stock No.	Mfr.'s Type	Nominal Length	Attenuation	Bandwidth	Rise Time	Loading	Max. Input V	In pF DC or RMS	Readout	EACH
700-6015	P6015A	10.0 ft.	1000X	75 MHz	4.00 ns	100 MΩ/3 pF	20.0 kV	7 to 49	No	**1050.00**
700-6115	P6015A/Opt. 1R	10.0 ft.	1000X	75 MHz	4.00 ns	100 MΩ/3 pF	20.0 kV	7 to 49	Yes	**1115.00**
700-6215	P6015A/Opt. 25	25.0 ft.	1000X	25 MHz	14.00 ns	100 MΩ/4 pF	20.0 kV	7 to 49	No	**1200.00**
700-6615	P6015A/Opt. 2R	25.0 ft.	1000X	25 MHz	14.00 ns	100 MΩ/4 pF	20.0 kV	7 to 49	Yes	**1200.00**
700-5100	P5100	10.0 ft.	100X	250 MHz	1.75 ns	10 MΩ/2.75 pF	2.5 kV	7 to 30	Yes	**199.00**

AC Current Probes

— NEW —



CT-1

- 25 kHz to 1 GHz
- Maximum Pulse Current: 12 A
- Maximum CW Current: 450 mA
- For 50 Ω Input
- AC Only
- Solid Core
- ESD Testing

700-6200. CT-1 .... **EACH 325.00**

CT-2

- 1.2 kHz to 200 MHz
- Maximum Pulse Current: 36 A
- Maximum CW Current: 2.5 A
- For 50 Ω Input
- AC Only
- Solid Core
- Disk Driver Read/Write Signals

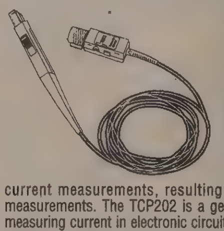
700-6201. CT-2 .... **EACH 300.00**

CT-4

- Pulsed Currents to 20,000 A
- Continuous Currents Up to 2000 A p-p
- Accepts 1.5" Diameter Conductors
- Measurements on Bare Conductors to 3000 V
- AC
- Split Core
- Use with A6302/XL, P6021 or TCP202

700-6202. CT-4 .... **EACH 1850.00**

TCP202 DC Coupled Current Probe



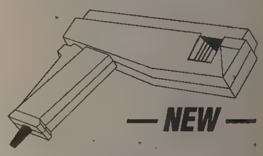
- Probe Connects Directly to TDS Scope through TEKPROBE™ Interface
- DC to 50 MHz Bandwidth
- 15 Amps DC + Peak AC Current
- 50 Amps Peak Pulse Current
- 500 × 10^{-6} Amp * Sec Product
- UL, CSA, CE Marking

When combined with a Tektronix TDS oscilloscope, the TCP202 enables users to make direct readout DC and AC current measurements, resulting in accurate displayed and recorded measurements. The TCP202 is a general-purpose probe for displaying and measuring current in electronic circuits. It is ideal for power supply and motor drive design, and for device testing.

— NEW —

700-0202. TCP202 .... **EACH 1320.00**

A6304XL Current Probe



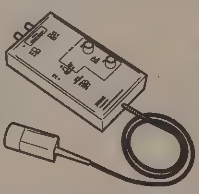
- 8 Meter Cable
- 500 Amps
- DC to 2 MHz

— NEW —

The A6304XL is for use with the AM 503B Current Probe Amplifier and is an AC/DC probe with a bandwidth of DC to 2 MHz. The probe is rated for 500 amps continuous and 700 amps peak. It comes with an 8 meter cable and a carrying case.

700-6304. A6304XL .... **EACH 2150.00**

ADA400A Differential Preamplifier

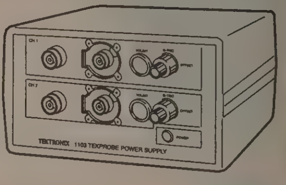


- Active Differential Preamplifier
- 10 µV/div Sensitivity
- Typically 100 dB CMRR, DC to 10 kHz
- Integral Probe Power in TekProbe™ BNC

The ADA400A Differential Preamplifier allows direct oscilloscope measurements of very low amplitude voltages and signals which are not ground referenced. The high impedance of both inputs eliminates the need to add additional ground points in the DUT, thereby avoiding circulating currents which disturb the measurement or the circuit.

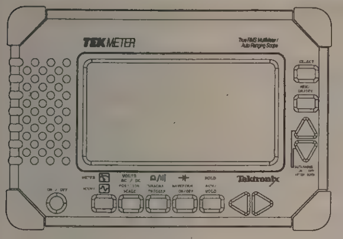
700-5205. ADA400A .... **EACH 995.00**

1103 Active Probe



The 1103 TEKPROBE™ Power Supply provides power for up to two P6205 Probes or other compatible probes. Also powers ADA400A Active Differential Probe.

700-1103. 1103 .... **EACH 745.00**



THM565 TekMeter™

The TekMeter Series combines the power of a true RMS digital multimeter and a 25 MS/s autoranging digital storage oscilloscope in one compact, simple-to-use, rugged, battery-powered unit. Designed for a wide variety of industrial applications, the TekMeter measures and displays signals from a few millivolts to several hundreds of volts. Its unique, autoranging scope tracks the signal and adjusts the instrument automatically. There's no need to be an expert scope user to get immediate results.

The simple interface allows access to numerous powerful and time-saving features such as automatic measurements, capturing and time stamping AC-line faults, calculation of transformer harmonic derating factor (THDF), stable triggering on complex AC-motor drive signals, measuring true power, plus several other DMM252 and scope functions.

A Unique Multi-Function Display
Unlike a traditional DMM, the TekMeter's large display tells you everything you need to know about what you're measuring. In addition to the numerical and analog bar readout you're used to seeing on a DMM, the display shows Max., Min., Max.-Min., Hold, and ΔHold all at once. You get more information about the signal, all on a single display.

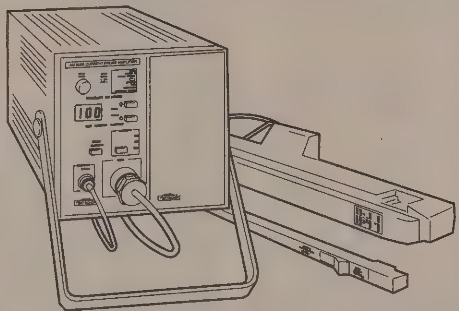
Switch to the scope mode and TekMeter provides a waveform display similar to a traditional oscilloscope. The scope-mode display is autoranging, so it automatically scales and tracks as the signal changes, giving you hands-free operation. You can concentrate on the measurement, not the instrument, making measurements easier and faster.

Lots of Power in a Small Package
Even though the TekMeter easily fits in your hand, it packs more power and features than instruments many times its size. Its simple interface allows quick access to a host of features such as cursors, automatic measurements, true power measurements, Transformer Harmonic Derating Factor (THDF), and spike detect — all of which will help you get to the source of your problem more quickly. TekMeter can do anything you're doing now, and more. You get measurable results that get the job done.

Deluxe True RMS Multimeter with Dual (2) Channel Oscilloscope. **Digital Multimeter Mode:** True RMS VAC; VDC; Ω-Ohms; Audible Continuity Tester; Hold, ΔHold; Min., Max., Max. to Min. **Oscilloscope Mode:** Autoranging; Dual Channel; Spike Detect; Save Waveforms; Save Screens; ΔV, ΔT Cursors; Frequency; Line Test, Duty Cycle, Period, Voltage Disturbance; Current, Power and Power Factor*; Transformer Harmonic Derating Factor*; 3-Phase Test; Event Clock; Extended Save Memory; Backlit Display; Motor Test.
* Requires optional current probe.

700-0565. THM565 .... **EACH 1295.00**

AM503S Current Measurement System



- **AC/DC Measurements**
- **With A6302 Probe: DC To 50 MHz; 20 A Continuous/50 A Peak; Split Core; Clips On To Conductors Up To 0.15" Diameter**
- **With A6303 Probe: DC To 15 MHz; 100 A Continuous/500 A Peak; Split Core; Clips On To Conductors Up To 0.83" Diameter**
- **With A6312 Probe: DC To 100 MHz; 20 A Continuous/50 A Peak; Split Core; Clips On To Conductors Up To 0.15" Diameter**

Applications

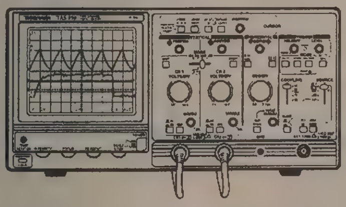
- **Switching Power Supplies**
- **Disk Drives**
- **Electronic Ballast**
- **Motor Drives**
- **Inverters**
- **All Mixed AC/DC Current Signals**

The AM503S Current Probe System is the most versatile current measurement system available. Since the probes incorporate both a transformer and a Hall Effect device, broadband AC/DC current can be measured simultaneously. Depending on the probe used, current from DC to 50 MHz and up to 700 A can be measured by clipping the split-core probes around the conductor. The AM 503S is truly a system, consisting of an AM 503B Current Probe Amplifier, a TM 502A two-wide Power Module, an A6302 Current Probe and a handy plug-in tool box. Options enable you to add or substitute an A6303 or A6312 Current Probe.

700-0503. Model AM503S .... **EACH 3095.00**

Stock No.	Mfr.'s Type	Bandwidth Hz to MHz	Peak Pulse (A)	Max. AC p-p (A)	Derate Above (kHz)	Max. DC (A)	Amp*S Product	Risetime	Current/ Div. Display Range	Insertion Imped. @ 1 MHz (Ω)	Max. Barewire Voltage (V)	Max. Cond. Dia. (In.)	Cable Length (m)	EACH
700-6302	A6302	DC to 50	50	40	20	20	100 × 10–6	≤7.0 ns	1 mA to 5 A*1	0.10	300	0.15	2	**850.00**
700-6303	A6303	DC to 15	500	200	20	100	10,000 × 10–6	≤23.0 ns	5 mA to 50 A*1	0.02	700	0.83	2	**1595.00**
700-6312	A6312	DC to 100	50	40	20	20	100 × 10–6	<3.5 ns	1 mA to 5 A*1	0.10	300	0.15	2	**995.00**

*1 Scope set to 10 mV/Div.



TAS 250 Analog Oscilloscope

- **50 MHz**
- **Single Time Base**
- **Two Channels**
- **Measurement Cursors**

Specifications. Bandwidth: 50 MHz. **Input Channels:** Two. **Risetime:** <7 ns. **Time Base:** Single. **Main Sweep Range:** 0.5 s/div. to 0.1 µs/div. **Vertical Sensitivity:** 5 mV to 5 V/div. **Vertical Accuracy:** ±3%. **Horizontal Accuracy:** ±3%. **X10 Horizontal Accuracy:** ±5%. **Sweep Speed (X10 Mag.):** Main — 10 ns; Delayed — 10 ns. **Trigger Modes:** Auto, normal, TV, SGL sweep. **Trigger Coupling (Both Main and Delayed):** AC, DC. CRT: 12 kV. One year warranty. **Safety Certification:** ETL, CSA.

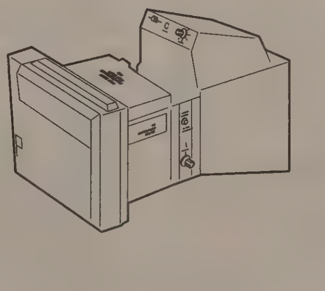
700-0300. TAS 250 .... **EACH 795.00**

C-9 Oscilloscope Camera

The C-9 CRT Camera uses Polaroid film packs to document most CRT displays. A 3.25" × 4.25" pack film back is standard. An optional motorized film back is available to reduce handling. It automatically ejects a clean, dry, self-developed print. An optional flash unit is also available for scopes without graticule lighting.

Characteristics. Lens and Aperture: Fixed focus at f/11. **Magnification:** 0.55 or 0.73. **Geometric Distortion:** Less than 0.5%. **Shutter:** Electronic; timed mode from 0.1 to 5 seconds and manual exposure. **Power:** Eight AA alkaline batteries (not included). **Resolving Power:** At least 6 lines/mm at center, 3 lines/mm at the corners. **Safety:** UL Listed 1244. **Includes:** Camera Body without Hood (a hood is required), Instruction Manual. Order 070-8105-01
Opt. 1A — AutoFilm™ Motorized Film Back
Opt. 1F — Graticule Flash Unit for Use with Opt. 07 and/or Opt. 20
Opt. 04 — TDS 400 Series Scope Hood
Opt. 05 — TDS 500/600/800 Series Scope Hood
Opt. 06 — TAS 400 Series Hood
Opt. 07 — 7K Series Scope Hood
Opt. 11 — 11K, CSA, DSA Series Scope Hood
Opt. 20 — Portables (2000) Series Scope Hood

700-0009. C-9 .... **EACH 665.00**



TekTools Accessories

A605 500 Amp AC Current Probe

This "busbar" style clamp-on probe is a current/voltage transformer for digital multimeters and TekMeter. The A605 can measure RMS AC currents ≥4 amps and peak currents up to 500 amps over a frequency range of 48 Hz to 1 kHz. It provides a 1 mV output for each amp measured.
700-0630. Model A605 .... **EACH 85.00**

A610 500 Amp AC/DC Current Probe

This "busbar" style clamp-on probe uses a Hall Effect current sensor to provide a voltage output to digital multimeters. The A610 can measure RMS AC currents ≥2 amps and peak currents up to 500 amps over a frequency range of DC to 440 Hz. It provides a 1 mV output for each amp measured.
700-0635. Model A610 .... **EACH 195.00**

A621 1000 Amp AC Current Probe/BNC

This industrial style clamp-on probe has a BNC connector and a shrouded banana plug adapter so it can also be used on digital multimeters, TekMeter™, and scopes. The A621 can measure AC currents from 100 milliamps to 2000 amps peak over a frequency range of 5 Hz to 50 kHz. It provides a 1 mV, 10 mV, or 100 mV output for each amp measured.
700-0640. Model A621 .... **EACH 390.00**

A622 100 Amp AC Current Probe/BNC

This "long nose" style clamp-on probe uses a Hall Effect current sensor to provide a voltage output to oscilloscopes. It has a BNC connector and a shrouded banana plug adapter so it can also be used on digital multimeters and TekMeter. The A622 can measure AC/DC currents from 50 mA to 100 amps peak over a frequency range of DC to 100 kHz. It provides 10 mV or 100 mV output for each amp measured.
700-0622. Model A622 .... **EACH 415.00**

HC411 Thermal Printer

Battery operated thermal printer for use with TekScope. Also useful for many other portable printer applications.
700-0740. HC411 .... **EACH 470.00**

P5102 High Voltage Probe

100 MHz, high voltage probe for TekScope. Safety certified for up to 1000 volts and with the TekScope, can be floated safely to 600 volts
700-0760. P5102 .... **EACH 199.00**

THM5BAT Rechargeable NiCad Battery Pack

The Rechargeable NiCad Battery Pack is specially designed for the TekMeter. With 750 milliamp hours of capacity, the TekMeter Battery Pack has 50% more energy than regular NiCad batteries. Matched cells ensure that the battery pack delivers full power. Buy two battery packs and keep one ready to go with the THM5CHG charger.
700-0615. Model THM5BAT .... **EACH 45.00**

THM5CHG Quick Charge Battery Charger

Never be without power! Charge your TekMeter THM5BAT NiCad Battery Pack in one hour or less. The smart charger senses when the battery pack is fully charged and shifts into trickle charge mode to keep it fully charged, maximizing the life of your battery pack. A wall-mount transformer and a cigarette lighter adapter are included.
700-0545. Model THM5CHG .... **EACH 145.00**

THM5AC AC Power Adapter

The AC Power Adapter allows continuous operation of the TekMeter from an AC power source. The specially designed wall-mount transformer supplies power directly to the TekMeter battery compartment while maintaining the 600 V/floatability specification.
700-0650. Model THM5AC .... **EACH 50.00**

THM5HCA Protective Transport Case

The Hard-Sided Transport Case provides heavy duty protection for transport of your TekMeter and all its accessories.
700-0610. Model THM5HCA .... **EACH 67.00**

THM5SCA Soft Case

The Soft Case has an adjustable neck strap which frees you to make measurements that require both hands. A thumbscrew holds your TekMeter securely in the padded case, so even it tipped upside down it won't fall out. The Soft Case is also a carrying case with handle. There's space inside for probes, probe attachments, and a pocket for notes or reference guides.
700-0605. Model THM5SCA .... **EACH 75.00**

THMCOM1 Communications Pack

The Communications Pack provides an AC/DC cigarette lighter adapter, RS-232 cable, PC-link software, and a flip-out stand.
700-0620. Model THMCOM1 .... **EACH 320.00**

THS7BAT Battery Pack

The rechargeable NiCad battery pack is specifically designed for the TekScope. Used with the battery included in the TekScope and the recharger (THS7CHG) the user will always have a charged battery for operation of the TekScope. The battery pack will provide power for TekScope for longer than it takes to recharge the second battery pack.
700-0725. THS7BAT .... **EACH 54.00**

THS7CHG Battery Charger

Battery charger for the THS7BAT. This will provide a complete recharge in the THS7BAT in less than 2 hours. Also included is an adapter to plug the charger into 12 volt cigarette lighter.
700-0730. THS7CHG .... **EACH 179.00**

THS7HCA Hard Case

The hard case is designed for safe transport of the TekScope and has room to also include the HC411 printer, the THS7CHG charger, an extra battery, extra probes, both voltage and current. Safely transport your complete set-up.
700-0735. THS7HCA .... **EACH 135.00**

TXMDXPB Deluxe Probe Set

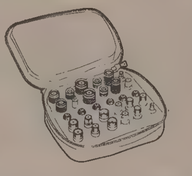
The Deluxe Probe Set consists of four high-temperature, silicone-insulated probe leads with matching attachments. Each set includes a very sharp test point useful for piercing conformal coatings or corrosion that might interfere with accurate readings. The set also includes two mini-plunger clamps for hands-free operation, one red hook-style test clip, and one black wide-jaw alligator test clip for secure attachment to ground.
700-0600. Model TXMDXPB .... **EACH 99.00**

Instrumentation Adapter Kit

Individual pieces are the same as the TPI 3000A shown to the right. Kit contains 2 male and 2 female types BNC, N, TNC and SMA plus 4 Universal Interfaces — 20 pieces in all.

955-4000. Model TPI 4000 ....**EACH 98.00**

TPI 3000A Coax Adapter Kit

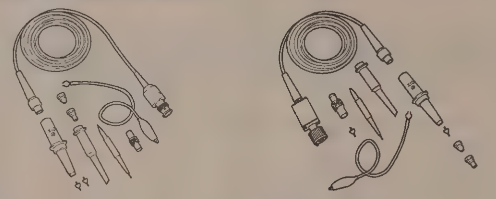


The TPI 3000A Kit includes male and female connectors of all eight types. Any adapter can be created on the spot, in just seconds. Simply screw any combination of 24 connectors to one of the 6 Universal interfaces. No soldering or crimping is needed so connectors can be used over and over again in different combinations. All contacts are gold plated. Connector bodies are silver plated, machined brass with teflon insulation. The zippered, soft leather case protects and organizes the collection. The TPI 3000A Coax Adapter Kit contains 2 male and 2 female types BNC, TNC, N and UHF; 1 male and 1 female types SMA, Mini-UHF, F and RCA; and 6 Universal Interface Connectors. Spare pieces can be ordered individually.

955-3000. TPI 3000A. Entire Kit ....**EACH 150.00**

Repairable Oscilloscope Probes — 250 MHz, 300 MHz

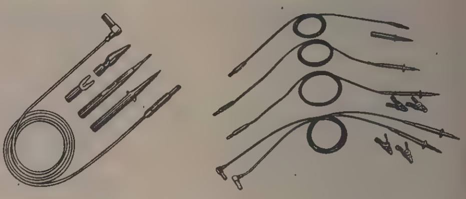
These probes fit all oscilloscopes with BNC connectors. They are intended for use by professional engineers and technicians who need accuracy and durability at an economical price. Cables are thin and flexible so they bend for easy handling, but they don't break. Modular probes screw together without soldering for instant, on-site repair. Performance criteria such as 1.2 nanosecond risetime and less than 3 percent overshoot assure precise measurements. Model numbers ending with AP have the activator pin for readout or automatic scale factoring.



Stock No.	Mfr.'s Type	Atten.	Cable Length	Input R	Imped. C	Band Width	Max. Input V DC+AC Peak	Read-out	EACH
955-0415	M15X10HFB	X10	1.2 m	10 MΩ	15.0 pF	300 MHz	600 V	No	**83.00**
955-0420	M20X10HFB	X10	2.0 m	10 MΩ	16.0 pF	250 MHz	600 V	No	**96.00**
955-0515	M15X10HFAPB	X10	1.2 m	10 MΩ	15.0 pF	300 MHz	600 V	Yes	**98.00**
955-0520	M20X10HFAPB	X10	2.0 m	10 MΩ	16.0 pF	250 MHz	600 V	Yes	**112.00**
955-0615	M15X100B	X100	1.5 m	100 MΩ	6.5 pF	200 MHz	2000 V	No	**85.00**
955-0622	M25X100B	X100	2.5 m	100 MΩ	7.5 pF	150 MHz	2000 V	No	**91.00**
955-6012	M12X10B	X10	1.2 m	10 MΩ	15.0 pF	250 MHz	600 V	No	**64.00**
955-6020	M20X10B	X10	2.0 m	10 MΩ	16.0 pF	200 MHz	600 V	No	**68.00**
955-6022	M30X10B	X10	3.0 m	10 MΩ	18.0 pF	150 MHz	600 V	No	**75.00**
955-7013	M12X10APB	X10	1.2 m	10 MΩ	15.0 pF	250 MHz	600 V	Yes	**72.00**
955-7020	M20X10APB	X10	2.0 m	10 MΩ	16.0 pF	200 MHz	600 V	Yes	**77.00**
955-7030	M30X10APB	X10	3.0 m	10 MΩ	18.0 pF	150 MHz	600 V	Yes	**83.00**
955-6025	M12X1B	X1	1.2 m	1 MΩ	47.0 pF	30 MHz	600 V	No	**46.00**
955-6028	M20X1B	X1	2.0 m	1 MΩ	70.0 pF	25 MHz	600 V	No	**49.00**
955-6030	M30X1B	X1	3.0 m	1 MΩ	100.0 pF	15 MHz	600 V	No	**55.00**
955-5012	M12SWB*	X1-X10	1.2 m	10 MΩ	55-15	20-250	600 V	No	**74.00**
955-5020	M20SWB*	X1-X10	2.0 m	10 MΩ	70-16	15-100	600 V	No	**78.00**
955-5030	M30SWB*	X1-X10	3.0 m	10 MΩ	100-18	10-100	600 V	No	**85.00**

*Switchable Probe.

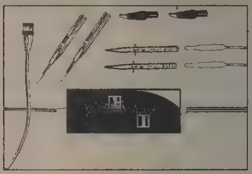
Multimeter Silicone Rubber Leads



All cables are silicone-rubber insulated. Soft, flexible when cold and burn-resistant. Durable. Wrap right angle versions around meter for stowage. **Max. Voltage:** 1000 VRMS. **Max. Current:** 10 A. Plug-on accessories for TLS series include 2 standard probes, 2 hook probes, 2 alligator clips and spade lugs. TL 1000 has banana plug on measuring tip to accept push-on accessories and is supplied with 2 deluxe insulated alligator clips. TL 1500 has spring-loaded safety sleeves. **Suffix letter "R" indicates right angle plug.**

955-2000. Model TLS2000B. Length 1.5 m.............**PER SET 35.00**
955-2020. Model TLS2000RB. Length 1.5 m.........**PER SET 35.00**
955-0010. Model TL1000B. Length 1.2 m...............**PER SET 17.50**
955-0011. Model TL1000RB. Length 1.2 m ....**PER SET 17.50**

Differential Oscilloscope Probe



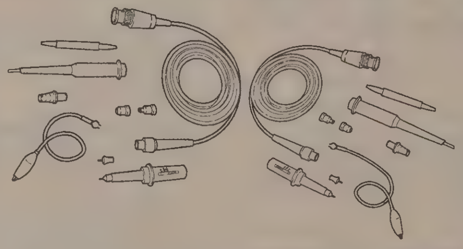
- **Bandwidth: DC to 25 MHz**
- **Safe — Make Floating Measurements with Oscilloscope Grounded**
- **Input Voltage: 1400 V dc Incl. Peak AC Max.**
- **6.6" × 2.4" × 0.8" Operates From 4 AA Internal Batteries or External 6 V Source**
- **Common Mode Rejection to –86 dB**
- **Model ADF25: X20-X200 Switchable Attenuation**
- **Model ADF25A: X10-X100 Switchable Attenuation**
- **Simple — Needs No Isolation Amplifier**
- **For Power Supply, Large Motor Drives and Similar Applications**

The TPI model ADF25 is an active probe for making differential measurements with any oscilloscope.

955-1116. Model ADF25...**EACH 375.00**
955-1117. Model ADF25A ....**EACH 375.00**

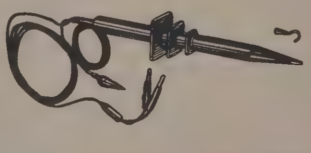
Repairable Oscilloscope Probes — 100 MHz, 200 MHz

Design improvements provide superior performance in an economical probe. New circuitry gives faster risetime and sharp pulse response. A rubber seal around the compensation screw and silicone insulation on the circuitry seal out moisture. Soft, slotted strain reliefs and better crimping prolong cable life.



Stock No.	Mfr.'s Type	Atten.	Cable Length	Input R	Imped. C	Band Width	Max. Input V DC+AC Peak	EACH
955-0205	P200B	X10	1.4 m	10 MΩ	12 pF	200 MHz	600 V	**44.10**
955-0115	1P20B	X1	1.2 m	1 MΩ	47 pF	20 MHz	600 V	**30.00**
955-0100	SP100B	X1-X10	1.4 m	1-10	100-14 pF	6-100 MHz	600 V	**45.00**
955-0300	SP200B	X1-X10	1.4 m	1-10	100-14 pF	7-200 MHz	600 V	**49.00**

High Voltage Probe

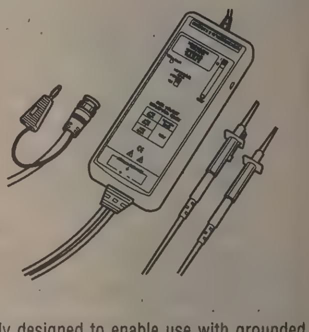


Low frequency probe for use with any instrument having input resistance of 10 Mohms. **Specifications. Bandwidth:** 150 Hz. **Max. Input V. (DC + Peak AC):** 40,000 V. **Input Resistance:** 1000 Mohms. **Voltage Division Ratio:** 1000:1. **Cable Length:** 1.5 meters.

955-0045. Model HV40C ....**EACH 85.00**

ADF25B High Voltage Differential Probes — NEW —

- **IEC 1010 Approved for Safety**
- **Wide Bandwidth DC –25 MHz**
- **Up to 2500 VRMS Differential Inputs**
- **High Common Mode Rejection**



Permits conventional grounded oscilloscopes to be used for the display and measurement of multiple floating signals with high common mode voltages. The ADF25B will accept up to 2500 Vrms differential and common mode voltage. The probes can withstand their rated common mode voltage on either attenuation range without damage. It is therefore possible to observe small signals superimposed on large common mode voltages by selecting the lower attenuation range. This is useful, for example, in measuring and observing small gate signals of semiconductor devices which may be several hundred volts above ground. Although the probes are primarily designed to enable use with grounded oscilloscopes, they may also be used with insulated or battery-operated oscilloscopes; but with such scopes the probe output lead still must be grounded using the ground lead supplied.

Input Voltage Max. Differential: ±350 V DC Inc. Pk AC @ 50:1 or 250 VRMS; ±3500 V DC Inc. Pk AC @ 500:1 or 2500 VRMS. **Common Mode Maximum:** ±3500 V DC Inc. Pk AC or 2500 VRMS. **CMRR (Typical):** 50 Hz — –80 dB; 20 kHz — –60 dB; 200 kHz — –50 dB. **Bandwidth:** DC –25 MHz (–3 dB). **Accuracy:** ±2%. **Risetime:** 14 nS. **Input Impedance:** 10 MΩ — 5 pF each side to ground; 20 MΩ — 2.5 pF between inputs. **Output Voltage:** ±7 V (minimum 2 KΩ load). **Offset (Typical):** <±5 mV –10°C to +40°C. **Noise (Typical):** 1.5/2.5 mV. **Output Source Impedance:** 1 Ω @ 1 kHz, 8 Ω @ 1 MHz. **Operating Temperature:** –10°C to +40°C. **Power Requirements:** 4 × AA cells or 6 V DC/60 mA Mains adapter (not supplied). **Input Leads:** 95 cm double insulated silicone rubber terminated in sprung hooks. **Sprung Test Hooks:** Permanently attached to input cables. **Output Cable:** 95 cm RG58 C/U terminated with standard BNC Plug. **Weight (Less Batteries):** 500 gm (1.1 lbs.). **Dimensions (L × W × W):** 202 mm × 77 mm × 36 mm (8.0" × 3.0" × 1.4"). **IEC 1010 Compliance:** Category III up to 1000 VRMS. Above 1000 VRMS Type 2 secondary circuits (where the primary is Category III).

955-1118. Model ADF25B ....**EACH 585.00**

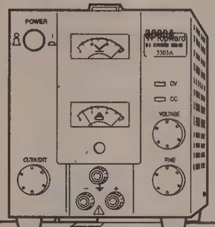
3000 A/D, 6000 A/D Series Power Supplies

General Specifications
Output Voltage: Zero to rated voltage continuously variable with front panel voltage knob. **Output Current:** Zero to rated current continuously variable with front panel current knob. **Line Regulation:** CV — ±0.01% +2 mV; CC — ±0.01% +2 mA. **Load Regulation:** CV — ±0.01% +2 mV; CC — <10 mA at 100 W; <15 mA at above 100 W. **Ripple and Noise:** CV — <0.5 mVrms at 100 W; <1 mVrms at above 100 W; CC — <1 mArms at 100 W; <3 mArms at above 100 W. **Transient Response:** <100 µS to within 0.1% of set voltage (50% to 100% load change). **Output Impedance:** <2 mΩ +2 mH. **Operating Range:** 0 to 40°C ambient temperature. **Display Accuracy:** Analog Meter — 3% of full scale; Digital Meter — ≤0.1% +2 digits. **Overload Protection:** Automatic crossover from CV to CC mode. **Series Connection:** Different models can be chained to increase output up to 240 VDC. **Parallel Connection:** Another same model can be paralleled to increase output to 24 amps. **Power Requirement:** 100/120/220/240 ±10% VAC, 50/60 Hz single phase. **Supplied Accessories:** Power cord, hook-up leads, instruction manual.

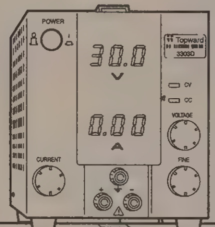
Model 6000 A/D Series Specifications
5 V/5 A Fixed Supply. **Regulation:** ≤10 mV. **Ripple and Noise:** ≤2 mVrms. **Output:** 5 V ±0.25 V. **Tracking Accuracy:** ±0.2% +10 mV. **Operation Mode Switch. Independent:** Two fully independent variable supplies at rated voltage and current and a fixed 5 V/5 A supply. **Series:** One variable supply with 2X rated voltage output at rated current. Or, one dual polarity tracking supply with rated output and current. Plus a fixed 5 V/5 A supply. **Parallel:** One variable supply with rated voltage at 2X rated current and a fixed 5 V/5 A supply.

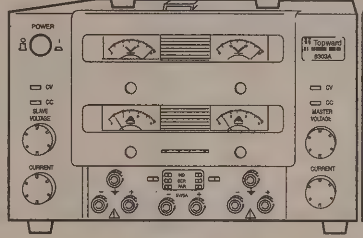
668-3300.	Model 3302A. 0-30 V/0-2 A, Single, Analog	EACH	249.00
668-3301.	Model 3302D. 0-30 V/0-2 A, Single, Digital	EACH	350.00
668-3302.	Model 3303A. 0-30 V/0-3 A, Single, Analog	EACH	298.00
668-3303.	Model 3303D. 0-30 V/0-3 A, Single, Digital	EACH	373.00
668-3304.	Model 3306D. 0-30 V/0-6 A, Single, Digital	EACH	563.00
668-3305.	Model 33010D. 0-30 V/0-10 A, Single, Digital	EACH	803.00
668-3600.	Model 3601A. 0-60 V/0-1 A, Single, Analog	EACH	269.00
668-3601.	Model 3601D. 0-60 V/0-1 A, Single, Digital	EACH	350.00
668-3602.	Model 3603D. 0-60 V/0-3 A, Single, Digital	EACH	550.00
668-6300.	Model 6302A. 0-30 V/0-2 A X2, 5 V/5 A, Triple, Analog	EACH	525.00
668-6301.	Model 6302D. 0-30 V/0-2 A X2, 5 V/5 A, Triple, Digital	EACH	630.00
668-6302.	Model 6303A. 0-30 V/0-3 A X2, 5 V/5 A, Triple, Analog	EACH	560.00
668-6303.	Model 6303D. 0-30 V/0-3 A X2, 5 V/5 A, Triple, Digital	EACH	665.00
668-6304.	Model 6306A. 0-30 V/0-6 A X2, 5 V/5 A, Triple, Analog	EACH	893.00
668-6305.	Model 6306D. 0-30 V/0-6 A X2, 5 V/5 A, Triple, Digital	EACH	1005.00
668-6306.	Model 6603A. 0-60 V/0-3 A X2, 5 V/5 A, Triple, Analog	EACH	873.00
668-6307.	Model 6603D. 0-60 V/0-3 A X2, 5 V/5 A, Triple, Digital	EACH	985.00

3000A

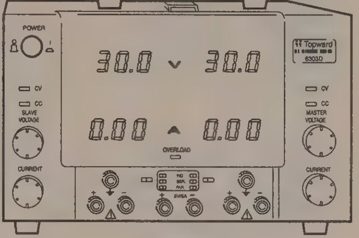


3000D



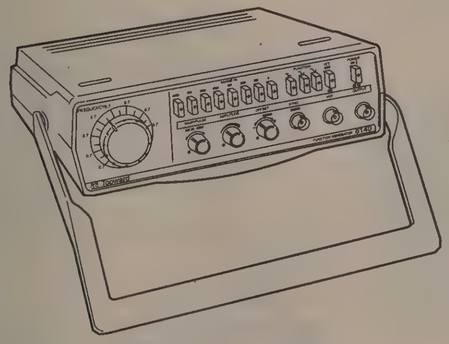


6000A

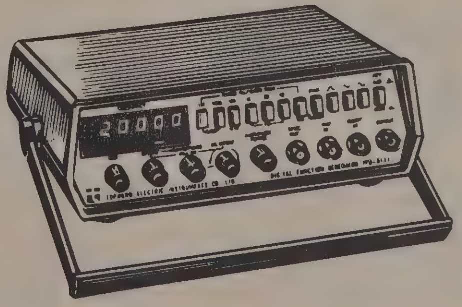


6000D

Digital Function Generator



8110, 8140

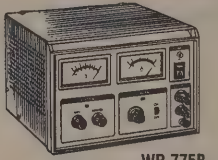


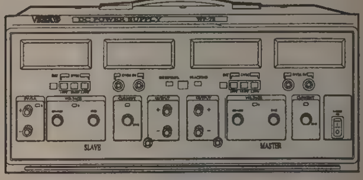
8120, 8130, 8150

Ideal for electronic servicing, design labs, education, and manufacturing applications. **Specifications. Waveforms:** Sine, square, triangle, ramp, pulse. **Amplitude:** 20 Vp-p, open (output protected up to 30 V (DC+AC)). **Attenuator:** 0 dB, 30 dB. **Output Impedance:** 50 Ω ±10% for main and sync. **DC Offset:** +10 V to –10 V. **Duty Control:** 20:80 (frequency unchanged) continuously variable with 50:50 calibrated switch. **VCF:** 0 to +5 V control frequency to 1000:1. **Power Requirement:** 115/230 Vac; 50/60 Hz single phase. **Supplied Accessories:** Power cord, hook-up leads, instruction manual. **Dimensions:** 10.2"W × 3.3"H × 10.1"D. **Frequency Range:** 8110, 8120 — 0.1 Hz to 2 MHz in 7 ranges; 8130 — 0.1 Hz to 5 MHz in 7 ranges; 8140, 8150 — 0.1 Hz to 10 MHz in 8 ranges. **Frequency Accuracy:** 8140, 8150 — ±5% of full scale; 8120, 8130, 8150 — counter accuracy. **Distortion:** 8110, 8120, 8130 — <1%, 10 Hz to 100 KHz; 8140, 8150 — <0.5%, 10 Hz to 100 KHz. **Rise/Fall Time:** 8110, 8120, 8130 — <100 nS; 8140, 8150 — <20 nS. **Rise Time for Sync Output:** 8110, 8120, 8130 — <25 nS; 8140, 8150 — <10 nS. **Sync Output Level:** 8110, 8120, 8130 — >3 Vp-p (open), 20 TTL load; 8140, 8150 — >1Vp-p. **Sweep Type:** 8120, 8150 — Linear, log; 8130 — Linear, Log with start and stop function. **Sweep Width:** 8120, 8130, 8150 — >100:1, continuously variable. **Sweep Rate:** Continuously variable; 8120, 8150 — 10 mS-5 S; 8130 — 100 mS-1 S. **Frequency Counter (8120, 8130, 8150):** Display — Six digits 0.4" green LED display with Hz, KHz, GATE, OVFL LED (MHz for 8150 only); Mode — Func./Count; Attenuator — 0 dB, 30 dB; Accuracy — ±(1 count + time base accuracy); Time Base — 10 MHz ±10 ppm (28°C ±5°C); Resolution — 0.1 Hz, 1 Hz, 10 Hz, 100 Hz, 1 KHz; Gate Time — 10 S, 1 S, 0.1 S, 0.01 S; Range — 10 Hz to 100 MHz; Sensitivity — ≤25 mVrms (10 Hz- 10 MHz), <10 mVrms (10 MHz-100 MHz); Maximum Input — 150 Vrms; Input Impedance — 1 MΩ/100 pF. **Weight:** 8110 — 3.5 lbs.; 8120, 8130, 8140 — 4.4 lbs., 8150 — 4.6 lbs.

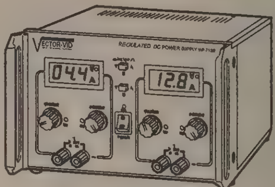
668-8110.	Model 8110. 2 MHz	EACH	199.00
668-8120.	Model 8120. 2 MHz Digital with Counter and Sweep	EACH	399.00
668-8130.	Model 8130. 5 MHz Digital with Counter and Sweep	EACH	499.00
668-8140.	Model 8140. 10 MHz	EACH	299.00
668-8150.	Model 8150. 10 MHz Digital with Counter and Sweep	EACH	469.00

Power Supplies


WP-775B



WP-78A



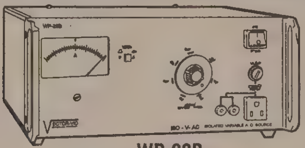
WP-713

DC power supplies feature constant current, constant voltage modes. This wide range of supplies is for use in laboratories, industries, schools and hospitals. Output voltage and current values are displayed on a three digit DPM with ±0.1% resolution. These highly reliable models are fully protected against continuous output short circuit and overload.

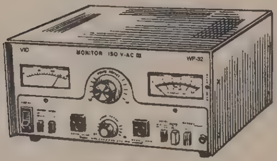
Stock No.	Mfr.'s Type	Outputs	Voltage (V)	Current (A)	Load Regulation	Ripple	Operating Temperature	EACH
								1-4
901-5702	WP-702B	2	0-20 V	0-.20 A	.050%	2 mV (P-P)	.01%/°C	325.00
901-5704	WP-704A*	1	0-40 V	0-.25 A	.050%	2 mV (P-P)	.01%/°C	270.00
901-5705	WP-705B	1	0-64 V	0-2.5 A	.100%	1 mV RMS	0-40°C	575.00
901-5706	WP-706B	1	0-32 V	0-5.0 A	.100%	1 mV RMS	0-40°C	630.00
901-5707	WP-707B	2	0-32 V	0-5.0 A	.100%	1 mV RMS	0-40°C	950.00
901-0710	WP-710**	1	0-16 V	0-1.0 A	.040%	<1 mV RMS	0-36°C	480.00
901-0713	WP-713B	2	0-32 V	0-1.0 A	.100%	1 mV RMS	0-40°C	500.00
901-0718	WP-718	1	0-36 V	0-2.0 A	.100%	1 mV RMS	0-40°C	1640.00
901-0720	WP-75	1	0-50 V	0-2.0 A	.050%	1 mV	0-40°C	509.00
901-0725	WP-76	2	0-50 V	0-2.0 A	.050%	1 mV	0-40°C	1170.00
901-0773	WP-773B**	1	0-30 V	0-3.0 A	.020%	1 mV RMS	0-36°C	295.00
901-0775	WP-775B**	1	0-30 V	0-5.0 A	.020%	.5 mV RMS	0-36°C	365.00
901-0078	WP-78A	3	0-30 V 0-30 V 5 V	0-5.0 A 0-5.0 A 3.0 A	.020%	.5 mV RMS	0-40°C	650.00

*Constant current, constant voltage and overload protection for all models except WP-704A. **Analog.

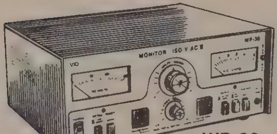
WP Series Isolated AC Power Sources



WP-29B



WP-30

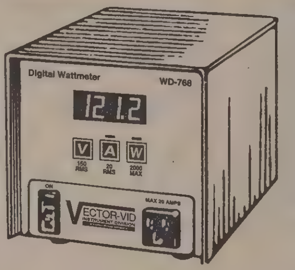


WP-32

Designed to isolate equipment and circuits from the AC power line. Useful for safe servicing in the school, lab or shop, to help the service transformerless AC-operated equipment and devices with intermittent troubles and hazardous equipment. **Maximum VA Continuous:** 1050. **Maximum Leakage:** 0.01 mA. WP29B, WP30 and WP32 feature variable and fixed isolated AC outputs, leakage of less than 0.2 mA, audible leakage test, and adjustable current limiting. 105/130 VAC, 50/60 Hz for all models.

Stock No.	Mfr.'s Type	Output	Ratings	EACH
901-0029	WP-29B	Single	0-150 VAC @ 0-3 A	455.00
901-0030	WP-30	Double	0-150 VAC @ 0-5 A	750.00
901-3200	WP-32	Double	0-150 VAC @ 0-10 A	925.00

AC/RMS Digital Wattmeters



WD-766A and WD-767 Wattmeters

AC/RMS Digital Wattmeters. LED display and indicators. Measures RMS voltage and current, and apparent power. Operates directly from 120 VAC line. **Specifications. Line Voltage Input:** 105 to 150 VAC. **Power Factor:** .5 to unity. **Amp Accuracy:** ±1% ±1 digit. **Watt Accuracy:** ±1% ±2 digits. **Frequency Response:** 40 Hz to 5 KHz. **Model WD-766A.** 1 KW, 10 A. 3-digit display. **Max. Current:** RMS — 10 A; Peak — 20 A. **Max. Power:** 999 W. **Volt Accuracy:** ±1% ±1 digit. **Resolution:** 1 V, .1 A, 1 W. **Model WD-767.** 2 KW, 20 A, 3.5-digit display. **Max Current:** RMS — 20 A; Peak — 35 A. **Max Power:** 1999 W. **Volt Accuracy:** ±.75% ±1 digit. **Resolution:** .1 V, .01 A, 1 W. **Dimensions:** 5.75 × 5.8 × 8.5" (14.6 × 14.9 × 21.6 cm). **Weight:** 4 lbs. (1.8 kg).

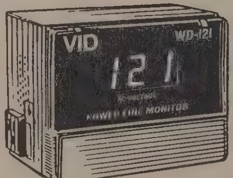
901-0766. Model WD-766A .... **EACH 450.00**
901-0767. Model WD-767 .... **EACH 560.00**

WD-768 Wattmeter

The WD-768 Wattmeter is designed to provide quick, accurate, and direct measurement of RMS voltage, current, and apparent power. The WD-768 combines measuring versatility and accuracy in a compact, low cost unit. This unit incorporates three discrete analog output channels, one each for volts, amps, and watts. This feature allows independent monitoring of all three functions without regard to the front panel display selection. The WD-768 is designed to operate directly from the 120 VAC line, and line voltage can be measured up to 150 VAC. The WD-768 measures RMS current to 20 A RMS and power to 1999 W.

901-0768. Model WD-768.. **EACH 770.00**

Power Line Monitors



WD-121A

- ► **High Accuracy**
- ► **Easy to Read LED Display**
- ► **Reveals Voltage Fluctuation**
- ► **Indicates Brown Outs**
- ► **50 to 60 Hz Frequency**
- ► **±2% Accuracy**

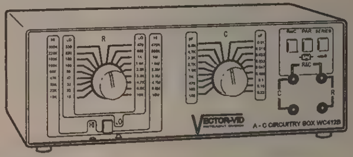
WV-120D

- ► **Large, 3 Color Scale**
- ► **True RMS Readings Even on Distorted Sine Waves**
- ► **Fast Meter Action Shows Bounces and Fluctuations in Line Voltage**
- ► **25 to 400 Hz Frequency**
- ► **Accuracy: ±2% Center Scale, 3% Both Ends**

AC Current: 0-8 A max. **Size:** 4 × 5 × 3". **Weight:** 1.5 lbs.

901-4261. WV-120D. 100-140 VAC .... **EACH 185.00**
901-4621. WV-121A. 100-150 VAC........................ **EACH 229.00**

WC-412B R-C Circuit Box

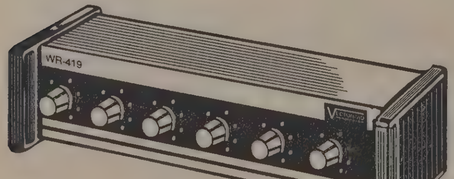


- ► **36 Resistor Values**
- ► **18 Capacitor Values**
- ► **10% Tolerance**

Offers 36 standard resistor values from 15 ohms 10 M ohms. 1 W power rating; tolerance +10%, and 18 capacitor values from 100 pf to .22 µf, 600 V rating tolerance ±10%. Selections are available individually, in series, or in parallel RC combinations. Switchable high or low resistance. Comes with plug-in test leads. **Dimensions:** 7 × 5½ × 2½" (17.5 × 13.7 × 6 cm). **Weight:** 28 oz. (340 g).

901-0412. Model WC-412B.. **EACH 172.00**

Decade Boxes



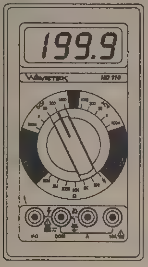
- ► **Accuracy 1% or Better**
- ► **Light Durable Construction**
- ► **High Quality Resolution**
- ► **5 Year Accuracy Stability**

Vector-VID's line of decade boxes feature the highest quality, aged standard resistors with a typical accuracy stability of five years.

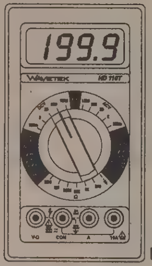
Resistance Decades

Stock No.	Mfr.'s Type	Resolution	Accuracy	Switches	EACH
901Q6415	WR-415	1,111,111.1	0.10%	8	1305.00
901-6416	WR-416	11,111.1	0.10%	4	605.00
901-6417	WR-417	111,111.0	0.10%	6	728.00
901-6418	WR-418	1,111,110.0	1.00%	6	320.00

HD Series Digital Multimeters



HD110



HD110T

- ► **Waterproof**
- ► **Drop-Proof**
- ► **Fused to 600 V**
- ► **Shockproof**
- ► **Meets Mil-T2880, Style A, Class II**
- ► **High Visibility Yellow**

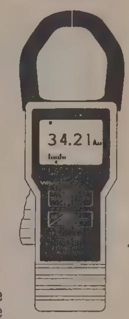
HD110/HD110T. Measures DCV to 1500 V, AC to 1000 A, AC/DC current to 10 A, resistance to 20 MΩ, diode and continuity tests. **Dimensions:** 6.9 × 3.7 × 12.8". **Weight:** 1.03 lbs.

743-0110. Model HD110	**EACH 219.95**
743-0111. Model HD110T	**EACH 239.95**

HD160. 4 digit, analog and digital display, true RMS, Probe Hold™, Auto-Min Max™, relative mode, AC/DC current to 20 A. **Dimensions:** 7.6 × 3.2 × 1.6". **Weight:** 11.5 oz.

743-0160. Model HD160	**EACH 219.95**

CPM Series True RMS Power Meters

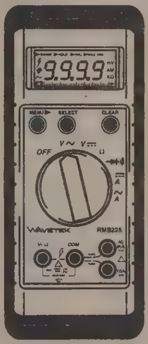


- ► **True Power to 2000 kW**
- ► **Apparent Power to 2000 kVA**
- ► **Power Factor (cos ø)**
- ► **AC/DC Current to 2000 A**
- ► **AC/DC Voltage to 750/1000 V**
- ► **Resistance to 400 kΩ**
- ► **Frequency to 1000 Hz**
- ► **Surge/Peak/Average**
- ► **Analog Output**
- ► **Three-Phase Adapter**
- ► **RS232 Interface**
- ► **Scope Meter (Harmonic Analysis)**

The CPM Series clamp-on power meters combine the capabilities of many meters into one easy-to-use handheld instrument for power measurement when installing, maintaining, and monitoring electrical systems with traditional and nonlinear loads. Both the CPM2000 and the CPM2100 operate as a wattmeter, voltampere meter, and power factor meter, as well as an autoranging DMM with data hold, continuity, and diode test. Measurements are displayed on a 4-digit/4000 count display with a bar graph. Hall-effect sensors and a clamp-on jaw allow measurements without interrupting the circuit. Scope meter shows harmonics.

743-2000. Model 2000	**EACH 795.00**
743-2005. Model 2100	**EACH 995.00**

RMS225 Professional Digital Multimeters



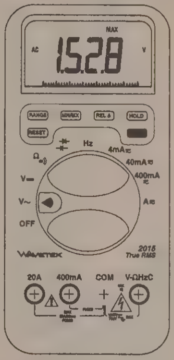
- ► **True RMS**
- ► **4 Digit LCD (10000 Counts)**
- ► **Auto Min Max™**
- ► **Probe Hold (Automatic Reading Hold)**
- ► **Overload Alert™**

The RMS225 is a 4 digit autoranging true RMS meter which measures up to 1000 VDC, 750 VAC, 10 amps AC/DC (fused), 0.25% basic accuracy. Can record minimums and maximums, and can automatically capture and freeze display with last stable reading. Includes protective holster. **Display:** 4 digit LCD, 1/2" high digits. **Dimensions:** 7.6" × 3.2" × 1.6" with holster. **Operating Temperature:** 0 to +50°C. **Battery Type/Life:** NEDA 1604 9 V/1000 hrs. **Weight:** 11.5 oz. **Warranty:** Three years standard, one year calibration.

743-0225. Model RMS225	**EACH 189.95**

Professional Series 2005 and 2015 Digital Multimeters

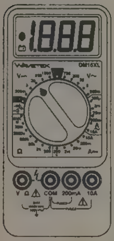
— NEW —



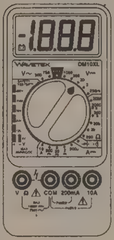
- ► **Analog Digital Display**
- ► **AC/DC Voltage: 100 VDC/750 AC**
- ► **Frequency to 400 kHz**
- ► **Resistance to 40 MΩ**
- ► **Min./Max. and Rel. Modes**
- ► **2015 Has True RMS**
- ► **4000 Count, 42 Segment Bargraph**
- ► **AC/DC Current: 4 mA/20 A**
- ► **Capacitance to 40 µF**
- ► **Continuity and Diode Tests**

Includes 9 V battery, test leads, protective holster, multilingual manual. CE marked. EN-61010-1, Cat. III designed. **Dimensions:** 7.5 × 3.5 × 1.3". **Weight:** 20 oz.

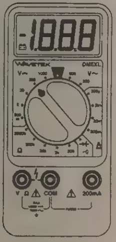
743-2035. Model 2005	**EACH 159.95**
743-2040. Model 2015	**EACH 179.95**



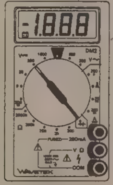
DM15XL



DM10XL



DM5XL



DM2

Pocket-Sized Digital Multimeters

General Specifications. Display: 3½ digit LCD, 1999 counts. **Operating Temperature:** 0° to 50°C. **Battery Type/Life:** NEDA 1604 9 V/300 hrs. alkaline (170 hrs., DM2). **Dimensions:** 6.1" × 2.8" × 1.3" (4.7" × 2.8" × 1", DM2). **Optional Accessories (XL Series):** VC20 padded vinyl carrying case; H10/H10Y protective rubber holster with tilt stand (black/yellow).

Special Features (XL Series). Safety Tester™. Detects and displays the presence of AC or DC voltage levels (positive or negative) through a series of LEDs. This feature does not use the multimeter's battery which means you can always ascertain a voltage presence even if the meter battery is dead. (DM10XL only) input warning beeper. This warning beeper indicates that the test lead is plugged into a current jack when the function switch is not set to a current range. A safety feature for both the meter and user. Safety test leads. Insulation on the test lead probe tips allows only 3½ mm exposure of metal for making those measurements in dense component areas. Fused 10 A current jacks. A safety feature previously found only in expensive DMMs, provides protection against meter damage. (DM10XL and DM15XL).

DM15XL. The DM15XL features a 20 MHz logic detector and also offers 28 measurement ranges, including AC volts to 750 V, DC volts to 1000 V, AC/DC current to 10 A (fused), resistance to 2000 MΩ, diode testing and a continuity beeper. Basic accuracy is 0.5%.

743-0010. Model DM15XL	**EACH 62.95**

DM10XL. The DM10XL provides 21 ranges, measuring AC volts to 750 V, DC volts to 1000 V, DC current to 10 A (fused), resistance to 20 MΩ, diode testing and a continuity beeper. Basic accuracy is 0.7%. Safety Tester™ quickly indicates live voltage levels with LEDs (6, 12, 24, 50, 110 and 220 V).

743-0015. Model DM10XL	**EACH 52.45**

DM5XL. The DM5XL provides 17 ranges to measure AC volts to 500 V, DC volts to 1000 V, DC current to 200 mA, resistance to 2 MΩ, diode test and continuity beeper. Basic accuracy is 0.8%.

743-0020. Model DM5XL	**EACH 41.95**

DM2. The DM2 is a smaller sized unit with full DMM capacity, measuring AC volts to 500 V, DC volts to 1000 V, DC current to 200 mA, resistance to 2 MΩ, and diode test. Basic accuracy is 0.8%.

743-0005. Model DM2	**EACH 29.95**

XT Series Mid-Size Digital Multimeters

General Specifications. Display: 3½ digit, 2000 counts. Designed to EN-61010-1/UL3111. **Dimensions:** 7.2 × 3.1 × 1.3". **Weight:** 11 oz.

23XT. Mid-size, full-functioning DMM, measures ACV/DCV to 750/1000 V, current to 10 A, fully fused, resistance to 2000 MΩ, diode and continuity tests, transistor hFe, TTL and CMOS logic and temperature to 1400°F/750°C and data hold, 550 VAC safety tester. Units shipped with K-type beaded wire thermocouple, test leads, multilingual operator manuals and spare fuse.

743-0024. Model 23XT	**EACH 89.95**

25XT. Mid-size, full-functioning DMM, measures ACV/DCV to 750/100 V, AC/DC current to 10 A, fully fused, resistance to 20 MΩ, capacitance to 20 mF (full capacitance meter with zero adjust cap slots), frequency to 40 kHz, TTL and CMOS logic and transistor hFe, data hold, test leads, multilingual operator manuals and spare fuse.

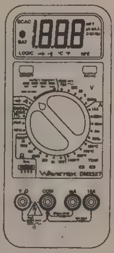
743-0026. Model 25XT	**EACH 99.95**

27XT. Mid-size, full-functioning DMM, measures ACV/DCV to 7500/1000 V, AC/DC current to 20 A, fully fused; resistance to 2000 MΩ, frequency to 20 Mhz, capacitance to 2000 µF, inductance to 20 H, both CMOS and TTL logic, diode and continuity tests. Multilingual operator manuals and spare fuse.

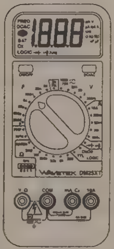
743-0028. Model 27XT	**EACH 119.95**

28XT. The ideal field service multimeter includes temperature to 2000°F/1300°C, capacitance to 20 mF, frequency to 20 kHz, resistance to 20 MΩ, TTL and CMOS logic, continuity and diode tests. Includes beaded type K thermocouple probe, test leads, multilingual manual, and spare fuse.

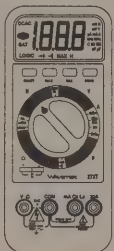
743-0030. Model 28XT	**EACH 119.95**
743-0032. Model H30. Holster Black	**EACH 11.95**
743-0034. Model H30Y. Holster Yellow	**EACH 11.95**
743-0036. Model VC30. Vinyl Case Black	**EACH 12.95**



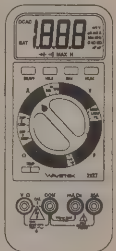
23XT



25XT

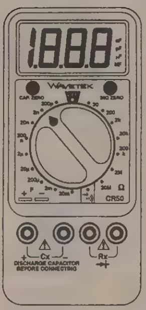


27XT



28XT

CR50 —NEW— Capacitance and Resistance Meter



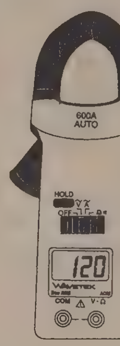
- Unique, Full Range Capacitance and Resistance Meter
- 7 Resistance Ranges to 20 MΩ
- 9 Capacitance Ranges to 20 mF
- Diode and Continuity Tests
- Dual "Zero Adjust" Pots

Dimensions: 6.1 × 2.8 × 1.3". **Weight:** 6.0 oz.

743-0057. Model CR50..........**EACH 69.95**

Clamp-On Multimeters

CDM600



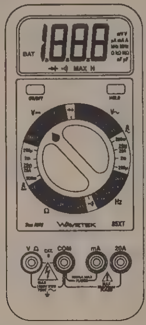
AC65

CDM600. Hall effect technology accurately measures AC and DC current to 600 A without disturbing the test circuit. CDM600 also measures AC voltage to 750 V, DC voltage to 1000 V, resistance to 200 Ω, continuity beeper and data hold.
743-0075. CDM600..........**EACH 279.95**

AC60. AC65 includes true RMS measurement. 400 count, AC current to 600 A, resistance to 40 kΩ, continuity, autoranging, display hold, auto-off, safe hand-gard design, safety test leads, carrying case included.
743-0076. AC60..........**EACH 109.95**
743-0077. AC65..........**EACH 149.95**

AD105. Utilizes hall effect technology and accurately measures AC/DC current to 1000 A, frequency to 10 kHz. Autoranging, high resolution, 4000 count display and measures true RMS.
743-0078. AD105..........**EACH 249.50**

High Accuracy, True RMS, —NEW— 4½ Digit DMM

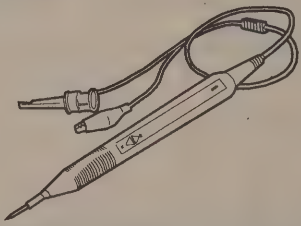


- ACV/DCV to 750/1000 V, AC/DC Current to 20 A
- Resistance to 20 MΩ
- Frequency to 200 kHz
- Duty Cycle
- Diode and Continuity Tests

85XT. High resolution, 20000 count, .05 basic DC accuracy, true RMS. **Dimensions:** 7.2 × 3.1 × 1.5". **Weight:** 11 oz.

743-0031. 85XT..........**EACH 179.95**

Logic Probe



LP10A. Pen-size logic probe with LED indicators. Measures TTL and CMOS levels at speeds up to 17 MHz. Indicates or holds pulses as short as 30 nsec. Powers from circuit under test 4 V-18 V.
LP25A. Pen-size logic probe with LED indicators and audible tone indicators. Measures TTL, DTL, RTL, CMOS, NMOS and MOS logic levels at speeds up to 25 MHz. Detects pulses as short as 30 nsec., with pulse memory feature. Slim ball-type power clips and coiled power cord. **PR41A.**

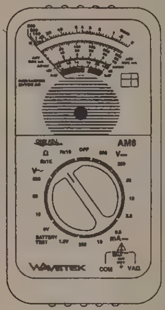
743-0085. LP10A..........**EACH 19.95**
743-0090. LP25A..........**EACH 39.95**

LCR55 —NEW— LCR Meter

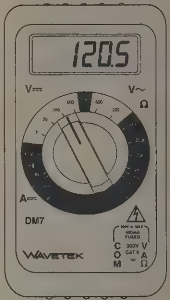
3½ digit LCR meter. Measures resistance, capacitance, inductance, transistor hFe and has continuity offers diode tests. 7 resistance ranges to 20 MΩ, 8 capacitance ranges to 2000 μF, 7 inductance ranges to 200 H. Designed to IEC-1010-1, Cat. II, UL3111. **Dimensions:** 7.2 × 3.1 × 1.5". **Weight:** 11 oz.

743-0056. Model LCR55..........**EACH 179.95**

Analog and Digital Meters —NEW—



AM8



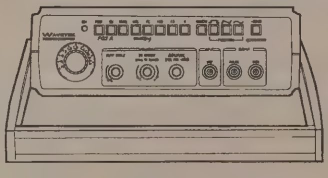
DM7, DM9

AM8. Analog meter, DCV 10/500 V, ACV 10/500 V, DC current 500 μA to 250 mA, resistance Rx1 kΩ/1 MΩ, battery tester 1.5 V, 9 V. **Dimensions:** 5.1 × 2.6 × 1.7". **Weight:** 6.7 oz.
743-0008. AM8..........**EACH 14.95**

DM7. 2000 count, DCV 2/500 V, ACV 200/500 V, DC current 200 mA, resistance 2000 Ω/200 kΩ, battery tester 1.5 V, 9 V. **Dimensions:** 5.5 × 3.1 × 1.6". **Weight:** 8.2 oz.
743-0007. DM7..........**EACH 19.95**

DM9. 4000 count, DCV 40 mV/600 V, ACV 40 mV/600 V, DC current 40 mA/400 mA, resistance 400 Ω/40 mΩ, battery tester 1.5 V, 9 V. **Dimensions:** 5.5 × 3.1 × 1.6". **Weight:** 8.2 oz.
743-0009. DM9..........**EACH 39.95**

FG2A Function Generator

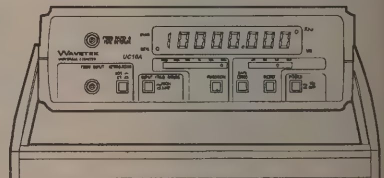


- Five Outputs — Sine, Square, Triangle, Ramp, and TTL
- Seven Ranges — 0.2 Hz to 2 MHz
- VCF Input (Voltage Controlled Frequency)
- DC Offset Control
- Duty Cycle Control
- One Year Warranty

The FG2A, a versatile general purpose signal source, has five different outputs that can be modified with variable duty cycle and DC offset controls. The VCF input allows the frequency output to be controlled by a DC voltage. The FG2A is shipped with two test cables. Two switchable 20 dB attenuators permit easy setting of low-amplitude signals.

743-0800. FG2A..........**EACH 244.95**
743-0805. RTL1. Replacement test leads for FG2A, FG3B, UC10A. BNC to alligator clips (2 each)..**EACH 27.95**

UC10A Universal Counter

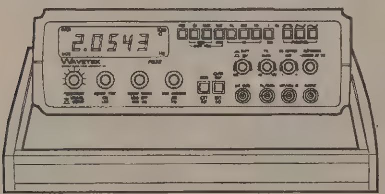


- Universal Counter from 5Hz to 100MHz
- Measures Frequency, Period, Frequency Ratio, Time Interval, Unit Count
- Large 8-Digit LED Display
- Self-Checking Capability
- Highly Accurate Readings
- One Year Warranty

The Model UC10A Universal Counter has six measurement functions and four gate time selections to make it a counter that's universal for a wide variety of applications. The UC10A has a large LED display, reset capability and signal attenuation. The UC10A is shipped with two test cables.

743-0815. UC10A..........**EACH 389.95**

FG3B Sweep Function Generator

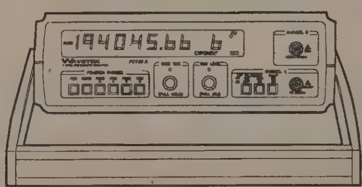


- Six Outputs — Sine, Square, Triangle, Ramp, TTL, and CMOS
- Seven Ranges — 0.2Hz to 2MHz
- Sweep Generator — Linear or Log Sweep
- Modulation — AM or FM
- Built-In 100 MHz/5 Digit Counter
- One Year Warranty

The FG3B with six different outputs, sweep generator, modulation, and built-in frequency counter is the bench top instrument that does it all. Any output can be modified with the variable duty cycle and DC offset controls. The FG3B provides logarithmic or linear sweep of any signal output, amplitude or frequency modulation with internal or external signals and a frequency counter that may be used as a stand-alone counter for measuring external signals up to 100 MHz. The FG3B is shipped with two test cables.

743-0810. FG3B..........**EACH 489.95**

FC130A High Frequency Counter

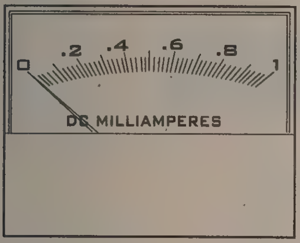


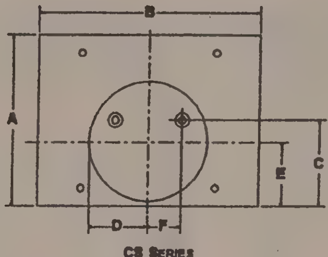
- 1.3 GHz Frequency Counter
- Measures Frequency, Period and Rate Per Minute (RPM)
- Large 8-Digit LED Display
- High Sensitivity and Resolution
- Built-In Self Diagnostics
- One Year Warranty

The Model FC130A is a microprocessor-controlled frequency counter that measures signals from 0.01 Hz to 1.3 GHz with up to 10 mV sensitivity. The FC130A is capable of monitoring transmitter output frequencies with a simple whip antenna due to its high sensitivity and broad frequency range. The FC130A is shipped with two test cables.

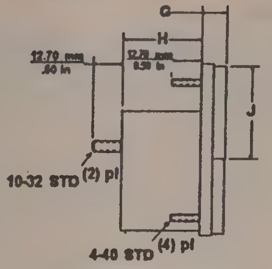
743-0820. FC130A..........**EACH 599.95**

Allied® 2½ and 3½ Panel Meters

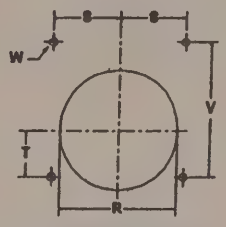




CS Series
(Rear View)



Side View



CS Series Panel Cutout
4 Stud Mount

American-made panel meters feature full scale accuracy of 2%, shielded meter movements with easy to read knife edge pointer. 100° pointer arc offers enhanced resolution; rugged taut-band suspension. All have 4-40 mounting studs. These surface mount meters can be readily mounted behind the panel with optional Bezel Mounting Kit listed below. Unique small barrel design significantly reduces space behind panel although these meters will also fit in standard American National Standards Institute (ANSI) 2½" and 3½" panel cutout.

Dimensions — mm (In.)

	A	B	C	D	E	F	G	H	J	R	S	T	V	W
AL/C2S	57.70 2.27	75.90 2.99	34.00 1.34	25.10 0.99	27.30 1.08	14.20 0.56	10.20 0.40	33.00 1.30	31.50 1.24	50.80 2.00	23.90 0.94	22.40 0.88	47.80 1.88	3.56 0.14
AL/C3S	72.90 2.87	94.00 3.70	36.50 1.44	25.10 0.99	27.30 1.08	14.20 0.56	10.40 0.41	33.00 1.30	39.40 1.55	50.80 2.00	28.40 1.12	19.60 0.77	57.20 2.25	3.56 0.14

DC mV

Range	2½					3½				
	Stock No.	Mfr.'s Type	EACH			Stock No.	Mfr.'s Type	EACH		
			1-9	10-24	25-99			1-9	10-24	25-99
0-50	**701-0500**	AL/C2S-DMV-050-U	**47.00**	**42.73**	**36.15**	**701-0502**	AL/C3S-DMV-050-U	**50.00**	**45.45**	**38.46**
0-100	**701-0501**	AL/C2S-DMV-100-U	**47.00**	**42.73**	**36.15**	**701-0503**	AL/C3S-DMV-100-U	**50.00**	**45.45**	**38.46**

DC Volts

Range	2½ Stock No.	2½ Mfr.'s Type	1-9	10-24	25-99	3½ Stock No.	3½ Mfr.'s Type	1-9	10-24	25-99
0-5	**701-0504**	AL/C2S-DVV-005-U	**47.00**	**42.73**	**36.15**	**701-0512**	AL/C3S-DVV-005-U	**50.00**	**45.45**	**38.46**
0-10	**701-0505**	AL/C2S-DVV-010-U	**47.00**	**42.73**	**36.15**	**701-0513**	AL/C3S-DVV-010-U	**50.00**	**45.45**	**38.46**
0-15	**701-0506**	AL/C2S-DVV-015-U	**47.00**	**42.73**	**36.15**	**701-0514**	AL/C3S-DVV-015-U	**50.00**	**45.45**	**38.46**
0-25	**701-0507**	AL/C2S-DVV-025-U	**47.00**	**42.73**	**36.15**	**701-0515**	AL/C3S-DVV-025-U	**50.00**	**45.45**	**38.46**
0-50	**701-0508**	AL/C2S-DVV-050-U	**47.00**	**42.73**	**36.15**	**701-0516**	AL/C3S-DVV-050-U	**50.00**	**45.45**	**38.46**
0-100	**701-0509**	AL/C2S-DVV-100-U	**47.00**	**42.73**	**36.15**	**701-0517**	AL/C3S-DVV-100-U	**50.00**	**45.45**	**38.46**
0-150	**701-0510**	AL/C2S-DVV-150-U	**47.00**	**42.73**	**36.15**	**701-0518**	AL/C3S-DVV-150-U	**50.00**	**45.45**	**38.46**
0-300	**701-0511**	AL/C2S-DVV-300-U	**47.00**	**42.73**	**36.15**	**701-0519**	AL/C3S-DVV-300-U	**50.00**	**45.45**	**38.46**

AC Volts

Range	2½ Stock No.	2½ Mfr.'s Type	1-9	10-24	25-99	3½ Stock No.	3½ Mfr.'s Type	1-9	10-24	25-99
0-5	**701-0520**	AL/C2S-AVC-005-U	**50.00**	**45.45**	**38.46**	**701-0528**	AL/C3S-AVC-005-U	**50.00**	**45.45**	**38.46**
0-10	**701-0521**	AL/C2S-AVC-010-U	**50.00**	**45.45**	**38.46**	**701-0529**	AL/C3S-AVC-010-U	**50.00**	**45.45**	**38.46**
0-15	**701-0522**	AL/C2S-AVC-015-U	**50.00**	**45.45**	**38.46**	**701-0530**	AL/C3S-AVC-015-U	**50.00**	**45.45**	**38.46**
0-25	**701-0523**	AL/C2S-AVC-025-U	**50.00**	**45.45**	**38.46**	**701-0531**	AL/C3S-AVC-025-U	**50.00**	**45.45**	**38.46**
0-50	**701-0524**	AL/C2S-AVC-050-U	**50.00**	**45.45**	**38.46**	**701-0532**	AL/C3S-AVC-050-U	**50.00**	**45.45**	**38.46**
0-100	**701-0525**	AL/C2S-AVC-100-U	**50.00**	**45.45**	**38.46**	**701-0533**	AL/C3S-AVC-100-U	**50.00**	**45.45**	**38.46**
0-150	**701-0526**	AL/C2S-AVC-150-U	**50.00**	**45.45**	**38.46**	**701-0534**	AL/C3S-AVC-150-U	**50.00**	**45.45**	**38.46**
0-300	**701-0527**	AL/C2S-AVC-300-U	**50.00**	**45.45**	**38.46**	**701-0535**	AL/C3S-AVC-300-U	**50.00**	**45.45**	**38.46**

AC Amps (*Requires separate current transformers.)

Range	2½ Stock No.	2½ Mfr.'s Type	1-9	10-24	25-99	3½ Stock No.	3½ Mfr.'s Type	1-9	10-24	25-99
0-1	**701-0536**	AL/C2S-AAC-001-U	**49.00**	**44.55**	**37.69**	**701-0546**	AL/C3S-AAC-001-U	**49.00**	**44.55**	**37.69**
0-3	**701-0537**	AL/C2S-AAC-003-U	**49.00**	**44.55**	**37.69**	**701-0547**	AL/C3S-AAC-003-U	**49.00**	**44.55**	**37.69**
0-5	**701-0538**	AL/C2S-AAC-005-U	**49.00**	**44.55**	**37.69**	**701-0548**	AL/C3S-AAC-005-U	**49.00**	**44.55**	**37.69**
0-10	**701-0539**	AL/C2S-AAC-010-U	**49.00**	**44.55**	**37.69**	**701-0549**	AL/C3S-AAC-010-U	**49.00**	**44.55**	**37.69**
0-15	**701-0540**	AL/C2S-AAC-015-U	**49.00**	**44.55**	**37.69**	**701-0550**	AL/C3S-AAC-015-U	**49.00**	**44.55**	**37.69**
0-25	**701-0541**	AL/C2S-AAC-025-U	**49.00**	**44.55**	**37.69**	**701-0551**	AL/C3S-AAC-025-U	**49.00**	**44.55**	**37.69**
0-50	**701-0542**	AL/C2S-AAC-050-U	**49.00**	**44.55**	**37.69**	**701-0552**	AL/C3S-AAC-050-U	**49.00**	**44.55**	**37.69**
0-100*	**701-0543**	AL/C2S-AACX-100-U	**49.00**	**44.55**	**37.69**	**701-0553**	AL/C3S-AACX-100-U	**49.00**	**44.55**	**37.69**
0-200*	**701-0544**	AL/C2S-AACX-200-U	**49.00**	**44.55**	**37.69**	**701-0554**	AL/C3S-AACX-200-U	**49.00**	**44.55**	**37.69**
0-300*	**701-0545**	AL/C2S-AACX-300-U	**49.00**	**44.55**	**37.69**	**701-0555**	AL/C3S-AACX-300-U	**49.00**	**44.55**	**37.69**

DC µA

Range	2½ Stock No.	2½ Mfr.'s Type	1-9	10-24	25-99	3½ Stock No.	3½ Mfr.'s Type	1-9	10-24	25-99
0-100	**701-0556**	AL/C2S-DUA-100-U	**47.00**	**42.73**	**36.15**	**701-0561**	AL/C3S-DUA-100-U	**50.00**	**45.45**	**38.46**
0-200	**701-0557**	AL/C2S-DUA-200-U	**47.00**	**42.73**	**36.15**	**701-0562**	AL/C3S-DUA-200-U	**50.00**	**45.45**	**38.46**
0-500	**701-0558**	AL/C2S-DUA-500-U	**47.00**	**42.73**	**36.15**	**701-0563**	AL/C3S-DUA-500-U	**50.00**	**45.45**	**38.46**
50-0-50	**701-0559**	AL/C2S-DUA-50U50-U	**47.00**	**42.73**	**36.15**	**701-0564**	AL/C3S-DUA-50U50-U	**50.00**	**45.45**	**38.46**
100-0-100	**701-0560**	AL/C2S-DUA-1H1-U	**47.00**	**42.73**	**36.15**	**701-0565**	AL/C3S-DUA-1H1-U	**50.00**	**45.45**	**38.46**

DC mA

Range	2½ Stock No.	2½ Mfr.'s Type	1-9	10-24	25-99	3½ Stock No.	3½ Mfr.'s Type	1-9	10-24	25-99
0-1	**701-0566**	AL/C2S-DMA-001-U	**47.00**	**42.73**	**36.15**	**701-0574**	AL/C3S-DMA-001-U	**50.00**	**45.45**	**38.46**
0-5	**701-0567**	AL/C2S-DMA-005-U	**47.00**	**42.73**	**36.15**	**701-0575**	AL/C3S-DMA-005-U	**50.00**	**45.45**	**38.46**
0-10	**701-0568**	AL/C2S-DMA-010-U	**47.00**	**42.73**	**36.15**	**701-0576**	AL/C3S-DMA-010-U	**50.00**	**45.45**	**38.46**
0-15	**701-0569**	AL/C2S-DMA-015-U	**47.00**	**42.73**	**36.15**	**701-0577**	AL/C3S-DMA-015-U	**50.00**	**45.45**	**38.46**
0-25	**701-0510**	AL/C2S-DMA-025-U	**47.00**	**42.73**	**36.15**	**701-0478**	AL/C3S-DMA-025-U	**50.00**	**45.45**	**38.46**
0-50	**701-0571**	AL/C2S-DMA-050-U	**47.00**	**42.73**	**36.15**	**701-0599**	AL/C3S-DMA-050-U	**50.00**	**45.45**	**38.46**
0-100	**701-0572**	AL/C2S-DMA-100-U	**47.00**	**42.73**	**36.15**	**701-0479**	AL/C3S-DMA-100-U	**50.00**	**45.45**	**38.46**
0-200	**701-0573**	AL/C2S-DMA-200-U	**47.00**	**42.73**	**36.15**	**701-0581**	AL/C3S-DMA-200-U	**50.00**	**45.45**	**38.46**

DC Amps

Range	2½ Stock No.	2½ Mfr.'s Type	1-9	10-24	25-99	3½ Stock No.	3½ Mfr.'s Type	1-9	10-24	25-99
0-1	**701-0581**	AL/C2S-DAA-001-U	**49.00**	**44.55**	**37.69**	**701-0589**	AL/C3S-DAA-001-U	**51.00**	**46.36**	**39.23**
0-3	**701-0582**	AL/C2S-DAA-003-U	**49.00**	**44.55**	**37.69**	**701-0590**	AL/C3S-DAA-003-U	**51.00**	**46.36**	**39.23**
0-5	**701-0583**	AL/C2S-DAA-005-U	**49.00**	**44.55**	**37.69**	**701-0591**	AL/C3S-DAA-005-U	**51.00**	**46.36**	**39.23**
0-10	**701-0584**	AL/C2S-DAA-010-U	**49.00**	**44.55**	**37.69**	**701-0592**	AL/C3S-DAA-010-U	**51.00**	**46.36**	**39.23**
0-15	**701-0585**	AL/C2S-DAA-015-U	**49.00**	**44.55**	**37.69**	**701-0593**	AL/C3S-DAA-015-U	**51.00**	**46.36**	**39.23**
0-25	**701-0586**	AL/C2S-DAA-025-U	**49.00**	**44.55**	**37.69**	**701-0594**	AL/C3S-DAA-025-U	**51.00**	**46.36**	**39.23**
0-30	**701-0587**	AL/C2S-DAA-030-U	**49.00**	**44.55**	**37.69**	**701-0595**	AL/C3S-DAA-030-U	**51.00**	**46.36**	**39.23**
0-50	**701-0588**	AL/C2S-DAA-050-U	**49.00**	**44.55**	**37.69**	**701-0596**	AL/C3S-DAA-050-U	**51.00**	**46.36**	**39.23**

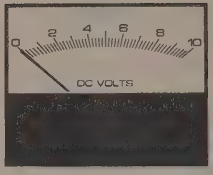
Bezel Mounting Kit

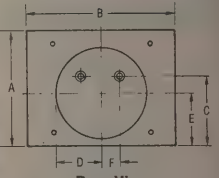
Panel Cutout Requirements: 2½" — 1.594"H × 3.00"W; 3½" — 2.156"H × 3.72"W.

Range	2½ Stock No.	2½ Mfr.'s Type	1-9	10-24	25-99	3½ Stock No.	3½ Mfr.'s Type	1-9	10-24	25-99
—	701-0597	00-990795-004	9.00	8.10	6.50	701-0598	00-990795-006	9.50	8.55	6.75

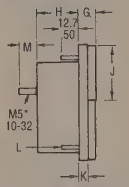
2% Accuracy Panel Meters

S Series Surface Mount. These clean-cut meters with straightforward design and pleasing aspect ratio are leaders of the line and will add distinction to any instrument or controll panel. Meet or exceed performance required of ANSI C39/1-1981. **Accuracy:** ±2%. **Tracking:** ±1½%. **Repeatability:** ±0.5%. **Response Time:** 1.5 seconds max. for all ranges except 0-50 µA which is 3.0 seconds max. **Scale Arc:** 100°. **Shielding:** Self shielding — no special calibration needed for steel or nonferrous panel mounting, including iron vane meters. Specifications are percent of full scale. Custom scales and special inputs available as custom orders. Bezels available for window mount. Large quantity pricing available.

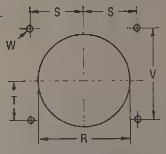




Rear View



Side View



Panel Cutout

Dimensions

		A	B	C	D	E	F	G	H	J	K	L	M	R	S	T	V	W
2S	mm	57.70	75.90	33.80	27.20	28.70	14.20	10.20	33.00	31.50	—	M3*	12.70	56.40	23.90	23.90	47.80	3.200
	in.	2.27	2.99	1.33	1.07	1.13	0.56	0.40	1.30	1.24	—	4-40	0.50	2.22	0.94	0.94	1.88	0.125
3S	mm	72.90	94.00	36.60	33.80	36.60	14.20	10.40	33.00	39.40	—	M3*	12.70	71.60	28.40	28.40	57.20	3.200
	in.	2.87	3.70	1.44	1.33	1.44	0.56	0.41	1.30	1.55	—	4-40	0.50	2.82	1.12	1.12	2.25	0.125
4S	mm	100.60	129.50	44.20	33.80	44.20	14.20	12.90	33.00	55.90	—	M3.5*	12.70	71.60	50.80	39.10	90.40	3.800
	in.	3.96	5.10	1.74	1.33	1.74	0.56	0.51	1.30	2.20	—	6-32	0.50	2.82	2.00	1.54	3.56	0.150

DC Microammeters

Range	2S Series 2½"		3S Series 3½"		4S Series 4½"	
	Stock No.	1-9	Stock No.	1-9	Stock No.	1-9
0-50	229-0100	65.60	229-1100	65.60	229-2100	68.15
0-100	229-0102	55.35	229-1102	55.35	229-2102	57.85
0-200	229-0104	48.80	229-1104	48.80	229-2104	51.35
10-0-10	229-0106	83.60	229-1106	83.60	229-2106	86.10
25-0-25	229-0108	68.15	229-1108	68.15	229-2108	70.65
50-0-50	229-0110	57.85	229-1110	57.85	229-2110	60.35
100-0-100	229-0112	51.35	229-1112	51.35	229-2112	54.10
DC Milliammeters						
0-1	229-0114	47.55	229-1114	47.55	229-2114	50.10
0-10	229-0116	47.55	229-1116	47.55	229-2116	50.10
0-15	229-0118	47.55	229-1118	47.55	229-2118	50.10
0-20	229-0120	47.55	229-1120	47.55	229-2120	50.10
0-25	229-0122	47.55	229-1122	47.55	229-2122	50.10
0-50	229-0124	47.55	229-1124	47.55	229-2124	50.10
0-100	229-0126	47.55	229-1126	47.55	229-2126	50.10
0-200	229-0128	47.55	229-1128	47.55	229-2128	50.10
DC Ammeters						
0-1	229-0130	48.80	229-1130	48.80	229-2130	51.35
0-5	229-0132	48.80	229-1132	48.80	229-2132	51.35
0-10	229-0134	48.80	229-1134	48.80	229-2134	51.35
0-15	229-0136	48.80	229-1136	48.80	229-2136	51.35
0-25	229-0138	48.80	229-1138	48.80	229-2138	51.35
0-50	229-0140	48.80	229-1140	48.80	229-2140	51.35

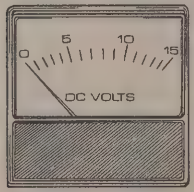
DC Voltmeters

Range	2S Series 2½"		3S Series 3½"		4S Series 4½"	
	Stock No.	1-9	Stock No.	1-9	Stock No.	1-9
0-1	229-0142	50.10	229-1142	50.10	229-2142	52.80
0-5	229-0144	50.10	229-1144	50.10	229-2144	52.80
0-10	229-0146	50.10	229-1146	50.10	229-2146	52.80
0-15	229-0148	50.10	229-1148	50.10	229-2148	52.80
0-30	229-0150	50.10	229-1150	50.10	229-2150	52.80
0-50	229-0152	50.10	229-1152	50.10	229-2152	52.80
0-100	229-0154	50.10	229-1154	50.10	229-2154	52.80
0-300	229-0156	50.10	229-1156	50.10	229-2156	52.80
10-0-10	229-0158	52.80	229-1158	52.80	229-2158	55.35
25-0-25	229-0160	52.80	229-1160	52.80	229-2160	55.35
50-0-50	229-0162	52.80	229-1162	52.80	229-2162	55.35
100-0-100	229-0164	52.80	229-1164	52.80	229-2164	55.35
AC Ammeters (Iron Vane)						
0-1	229-0166	51.45	229-1166	51.45	229-2166	53.85
0-3	229-0168	51.45	229-1168	51.45	229-2168	53.85
0-5	229-0170	51.45	229-1170	51.45	229-2170	53.85
0-10	229-0172	51.45	229-1172	51.45	229-2172	53.85
0-15	229-0174	51.45	229-1174	51.45	229-2174	53.85
0-25	229-0176	51.45	229-1176	51.45	229-2176	53.85
0-30	229-0178	51.45	229-1178	51.45	229-2178	53.85
0-50	229-0180	51.45	229-1180	51.45	229-2180	53.85

AC Voltmeters (Taut Band)

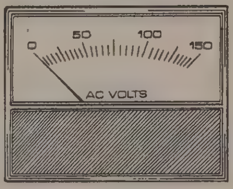
Range	2S Series 2½"		3S Series 3½"		4S Series 4½"	
	Stock No.	1-9	Stock No.	1-9	Stock No.	1-9
0-3	229-0182	55.10	229-1182	55.10	229-2182	57.55
0-5	229-0184	55.10	229-1184	55.10	229-2184	57.55
0-10	229-0186	55.10	229-1186	55.10	229-2186	57.55
0-15	229-0188	55.10	229-1188	55.10	229-2188	57.55
0-25	229-0190	55.10	229-1190	55.10	229-2190	57.55
0-50	229-0192	55.10	229-1192	55.10	229-2192	57.55
0-100	229-0194	55.10	229-1194	55.10	229-2194	57.55
0-150	229-0196	55.10	229-1196	55.10	229-2196	57.55
0-300	229-0198	55.10	229-1198	55.10	229-2198	57.55
0-500	229-0200	55.10	229-1200	55.10	229-2200	57.55
AC Voltmeters (Iron Vane)						
0-3	229-0202	55.10	229-1202	55.10	229-2202	57.55
0-5	229-0204	55.10	229-1204	55.10	229-2204	57.55
0-10	229-0206	55.10	229-1206	55.10	229-2206	57.55
0-15	229-0208	55.10	229-1208	55.10	229-2208	57.55
0-30	229-0210	55.10	229-1210	55.10	229-2210	57.55
0-50	229-0212	55.10	229-1212	55.10	229-2212	57.55
0-100	229-0214	55.10	229-1214	55.10	229-2214	57.55
0-150	229-0216	55.10	229-1216	55.10	229-2216	57.55
0-300	229-0218	55.10	229-1218	55.10	229-2218	57.55
0-500	229-0220	55.10	229-1220	55.10	229-2220	57.55

M Series Economy Moving-Magnet Panel Meter



OMS and MSQ Series

ME Series



3MAS Series

- Features 5% Accuracy of Full Scale
- Rectangular, Square, or Edgewise Configuration
- Flush or Surface Mount without Modification
- Precision-Molded Covers and Cases; UL Recognized Plastic Optional

Quality meters feature high-torque, powerful ballistic movements that permit mounting in steel panels without special calibration and production-engineered mounting and electrical connections. OMS and MSQ series square meters are 1½" and 2½" units with operating zero adjusters and scales printed on translucent plastic. ME series edgewise meters are 2" long units that are interchangeable with many d'Arsonval meters. Feature flush-to-panel covers — no disfiguring bulge. 3MAS series rectangular models are 3½" meters with operating zero adjusters and scales printed on translucent plastic, permitting diffused lighting. All M-series meters operate in a temperature range of 0°C to +50°C.

DC Microammeters

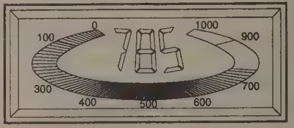
Range	OMS Series 1½		MSQ Series 2½		3MAS Series 3½		ME Series 2	
	Stock No.	1-9	Stock No.	1-9	Stock No.	1-9	Stock No.	1-9
500-0-500	—	—	—	—	229-4300	21.85	229-4400	18.35

DC Milliammeters

Range	OMS Series		MSQ Series		3MAS Series		ME Series	
	Stock No.	1-9	Stock No.	1-9	Stock No.	1-9	Stock No.	1-9
0-1	229-4102	16.70	229-4202	19.20	229-4302	20.55	229-4402	15.95
0-5	229-4104	16.70	229-4204	19.20	229-4304	20.55	229-4404	15.95
0-10	229-4106	16.70	229-4206	19.20	229-4306	20.55	229-4406	15.95
1-0-1	229-4108	16.70	229-4208	19.20	229-4308	20.55	229-4408	15.95
DC Ammeters								
0-5	229-4110	16.70	229-4210	19.20	229-4310	20.55	229-4410	15.95
0-10	229-4112	16.70	229-4212	19.20	229-4312	20.55	229-4412	15.95
0-20	229-4114	16.70	229-4214	19.20	229-4314	20.55	229-4414	15.95
0-30	229-4116	16.70	229-4216	19.20	229-4316	20.55	229-4416	15.95
DC Voltmeters								
0-10	229-4118	18.05	229-4218	20.55	229-4318	21.85	229-4418	16.70
0-15	229-4120	18.05	229-4220	20.55	229-4320	21.85	229-4420	16.70
0-30	229-4122	18.05	229-4222	20.55	229-4322	21.85	229-4422	16.70
0-50	229-4124	18.05	229-4224	20.55	229-4324	21.85	229-4424	16.70
0-100	229-4126	18.05	229-4226	20.55	229-4326	21.85	229-4426	16.70
AC Ammeters								
0-1	229-4128	20.55	229-4228	23.10	229-4328	24.45	229-4428	19.20
0-5	229-4130	20.55	229-4230	23.10	229-4330	24.45	229-4430	19.20
0-10	229-4132	20.55	229-4232	23.10	229-4332	24.45	229-4432	19.20
AC Voltmeters								
0-150	229-4134	18.05	229-4234	20.55	229-4334	21.85	229-4434	18.05
0-300	229-4136	18.05	229-4236	20.55	229-4336	21.85	229-4436	18.05

BGE™ Elliptical Bargraph with Single or Dual Inputs

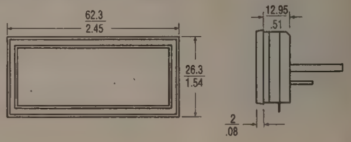
The BGE series elliptical LCD bargraph/digital panel meter utilize chip-on-board and surface mount technology. Fast response (25 times per second) 100 segment, 3½" long bargraph with 1% accuracy. Independent 3 digit (±999), seven segment, 0.34" display (updated 2.5 times per second) gives accurate readout of a second signal input with 0.1% accuracy. Digital readout has selectable decimal point. The input signal to the bargraph and digital display is 0 to 200 mVDC with the resultant display of 999 digital counts and 100 segments of the elliptical bargraph displayed. The dual displays can monitor either two separate input signals or they can used to monitor one input signal. The backlit display is readable in sunlight or low ambient lighting. The dual displays share either 5 VDC or 9 VDC power. Power consumption is 165 mA (nominal) for red displays and 115 mA (nominal) for green displays. Three different displays available — green segments on dark background; red segments on dark background; and green background with dark segments. Standard labeling is 0 to 1000 units on the bargraph and no label on the digital readout.



Stock No.	Mfr.'s Type	Power* Req'd.	Segments/ Background	EACH
229-5184	BGE-30-999-0U	5 VDC	Grn/Dark	98.00
229-5186	BGE-40-999-0U	5 VDC	Dark/Grn	100.40
229-5188	BGE-50-999-0U	5 VDC	Red/Dark	104.10

Stock No.	Mfr.'s Type	Power* Req'd.	Segments/ Background	EACH
229-5190	BGE-30-999-1U	9 VDC	Grn/Dark	98.00
229-5192	BGE-40-999-1U	9 VDC	Dark/Grn	100.40
229-5194	BGE-50-999-1U	9 VDC	Red/Dark	104.10

*All back lighting requires 5 VDC power.



Big-Little™ LCD Digital Panel Meters

BL series DPMs feature 3½ digits that read 1999 full scale. BH series DPMs feature 4½ digits that read 19999 full scale. Big-Little digital meters feature ½" high digits on high contrast liquid crystal display. **Specifications. Accuracy:** BL @ ± (0.1% of full scale + 2 counts). BH @ ± (0.15% reading + 1 count). **Resolution:** 1 part in 2000 or 20000. **Decimal Points:** User selectable. Auto polarity (–) displayed. **Mounting/Wiring:** BL and BH100 are window mounted with 13-pin terminals; BL and BH130 are bezel mounted with 13-pin terminals; BL176 are flat pack DPMs with solder pad connections. 176-BK is bezel mounting kit for flat pack DPMs. Thirteen pin connector for BH and BL series meters is #00-939033-091.

Surface Mount Digital Panel Meters

Stock No.	Mfr.'s Type	Input	DPM Power	EACH
229-5115	BL100201-U	200mVDC	+5V and –5VDC	53.70
229-5118	BL100202-U	2VDC	+5V and –5VDC	53.70
229-5120	BL100203-U	20VDC	+5V and –5VDC	53.70
229-7116	BH100201-A	200mVDC	+5V and –5VDC	83.08
229-7117	BH100202-A	2VDC	+5V and –5VDC	83.08
229-5122	BL100301-U	200mVDC	+5VDC	60.75
229-5124	BL100302-U	2VDC	+5VDC	60.75
229-5126	BL100303-U	20VDC	+5VDC	60.75
229-7118	BH100301-A	200mVDC	+5VDC	83.08
229-7119	BH100302-A	2VDC	+5VDC	83.08

Bezel Mount Digital Panel Meters

229-5128	BL130201-U	200mVDC	+5V and –5VDC	57.20
229-5130	BL130202-U	2VDC	+5V and –5VDC	57.20
229-5132	BL130203-U	20VDC	+5V and –5VDC	57.20
229-7120	BH130201-A	200mVDC	+5V and –5VDC	86.58

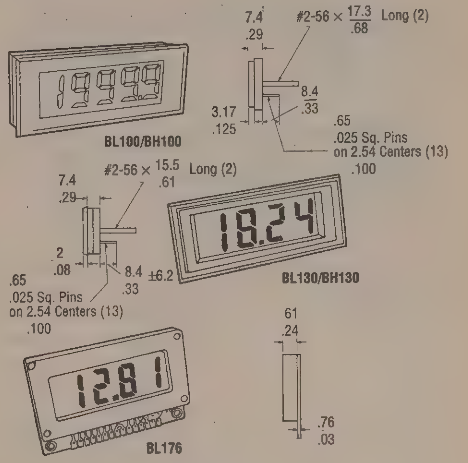
Bezel Mount Digital Panel Meters — Continued

Stock No.	Mfr.'s Type	Input	DPM Power	EACH
229-7121	BH130202-A	2VDC	+5V and –5VDC	86.58
229-5134	BL130301-U	200mVDC	+5VDC	64.25
229-5136	BL130302-U	2VDC	+5VDC	64.25
229-5138	BL130303-U	20VDC	+5VDC	64.25
229-7122	BH130301-A	200mVDC	+5VDC	86.58
229-7123	BH130302-A	2VDC	+5VDC	86.58

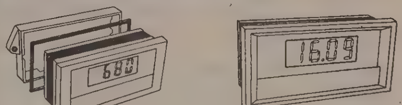
Flat Pack Digital Panel Meters

229-5140	BL176201-U	200mVDC	+5V and –5VDC	37.30
229-5142	BL176202-U	2VDC	+5V and –5VDC	37.30
229-5144	BL176203-U	20VDC	+5V and –5VDC	37.30
229-5145	BL176301-U	200mVDC	+5VDC	53.60
229-5148	BL176302-U	2VDC	+5VDC	53.60
229-5150	BL176303-U	20VDC	+5VDC	53.60

229-0015. 176-BK. Bezel Kit..**EACH 3.70**
229-7124. 00-939033-091. Connector ....**EACH 4.00**



2000 Series Industrial Digital Panel Instruments



Fits industry standard ⅛ DIN panel cutout. Depth behind panel less than 1". Meets NEMA 4, 12, and IPC 55 requirements for splash-proof and hose down. Auto polarity. Overrange indication. Common mode rejection greater than or equal to 100 dB at 50-60 Hz. 7 segment, 0.5" high, back lit 3½ digit LCD display is readable in sunlight or under bright lights. High impact resistant polycarbonate case. **Specifications. Operating Temperature Range:** –20°C to +60°C. User selectable decimal point and built-in screw terminals. All units require 115 VAC power except Loop Powered Process Meters.

DC Volts and Amperes

Accuracy: ± (0.1% + 1 count) typical. Green backlit background with dark numerals.

Stock No.	Mfr.'s Type	Input Range	Input Resistance	EACH
229-6100	2033-3401-04	200mVDC	100MΩ	120.00
229-6102	2033-3402-04	2VDC	100MΩ	120.00
229-6104	2033-3403-04	20VDC	1MΩ	120.00
229-6106	2033-3404-04	200VDC	1MΩ	120.00
229-6158	2033-3410-04	200µADC	200mV drop	120.00
229-6108	2033-3411-04	2mADC	200mV drop	120.00
229-6110	2033-3412-04	20mADC	200mV drop	120.00
229-6112	2033-3413-04	200mADC	200mV drop	120.00

AC Volts and Amperes

Accuracy: ± (0.5% + 1 count) except (*) is ± (0.5% + 5 counts). Bright red numerals on dark background.

229-6114	2053-3428-04	80-130VAC	1MΩ	120.00
229-6116	2053-3429-04	80-260VAC	1MΩ	120.00
229-6118	2053-3438-04-01	0-2000AAC	**	120.00
229-6120*	2053-3439-04	0-50AAC	***	120.00

**Requires 2000:5 current transformer, not supplied. ***Supplied with 50:5 current transformer.

Temperature

Thermocouple and RTD inputs (thermocouples and RTDs sold separately). **Specifications. Input Characteristics:** Thermocouple Accuracy — ± (0.1% + 1 count) with 45 µV max. per 100 ohms input resistance; RTD Accuracy — ± (0.2% + 1 count), 100 ohm platinum 0.00385, 2 or 3 wire connection, 1 madc RTD current. Bright red numerals on dark background.

Stock No.	Mfr.'s Type	Input Range	Input Type	EACH
229-6122	2053-3480-04	–30° to +650°C	Type J	120.00
229-6124	2053-3481-04	–40° to +800°C	Type K	120.00
229-6126	2053-3482-04	–100° to +350°C	Type T	120.00
229-6128	2053-3470-04	–100° to +500°C	RTD	120.00
229-6130	2053-3471-04	–100° to +199.9°C	RTD	120.00

Frequency

Accuracy: ±0.2 Hz from 40 to 70 Hz, ±0.5 Hz from 70 Hz to 199.9 Hz, except #2053-3460-04 ±1 Hz. Bright red numerals on dark background.

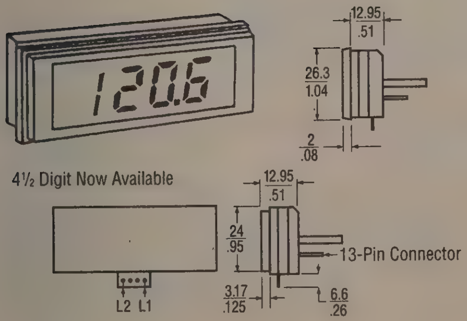
Stock No.	Mfr.'s Type	Displays Range of	EACH
229-6136	2053-3461-04	40 to 199.9Hz	120.00
229-6138	2053-3460-04	40 to 440Hz	120.00

Loop Powered Process Meters

Derives power for meter from process loop (no external power required). To conserve loop power, these LCD meters are not illuminated. Field scalable and reverse polarity protected. **Specifications. Expanded Temperature Range:** –40°C to +65°C. **Accuracy:** ±0.1% f.s. + 1 count. **Depth Behind Panel:** 2". **Range of Input:** 4 to 20 madc with full scale factory calibrated to 100.0. Type 2013-3018-00 displays scalable square root of input for flow measurement.

Stock No.	Mfr.'s Type	Type of Display	EACH
229-6132	2013-3019-00	Linear Process	153.00
229-6134	2013-3018-00	Square Root	171.40

Big-Little™ Backlit Digital Panel Meters



Series BH/BL300 have dark numerals on a green backlit background; Series BH/BL500 have red backlit numerals on a dark background. Easily visible in dark areas or bright sunlight. The BH series DPMs feature 4½ digits that read 19999 full scale; BL series DPMs feature 3½ digits that read 1999 full scale. These Liquid Crystal Display DPMs utilize LED backlighting; have an operating range of –20°C to +60°C; user selectable decimal point; ½" high numerals; and autopolarity. The backlight power (isolated from the meter) is 5 VDC with power consumption of 165 mADC nominal for the red backlighting and 115 mADC for the green backlighting. Select between 3½ and 4½ digits; green or red backlighting; window or bezel mounting.

Red Backlight, Window Mount DPMs

Stock No.	Mfr.'s Type	Full Scale Input	DPM Power	EACH
229-5152	BL500201-01U	200mVDC	±5VDC	74.60
229-5154	BL500202-01U	2VDC	±5VDC	74.60
229-5156	BL500301-01U	200mVDC	+5VDC	81.65
229-5158	BL500302-01U	2VDC	+5VDC	81.65
229-7108	BH500201-01A	200mVDC	+5V and –5VDC	102.25
229-7109	BH500202-01A	2VDC	+5V and –5VDC	102.25
229-7110	BH500301-01A	200mVDC	+5VDC	102.25
229-7111	BH500302-01A	2VDC	+5VDC	102.25

Red Backlight, Bezel Mount DPMs

229-5160	BL530201-01U	200mVDC	±5VDC	78.10
229-5162	BL530202-01U	2VDC	±5VDC	78.10
229-5164	BL530301-01U	200mVDC	+5VDC	85.15
229-5166	BL530302-01U	2VDC	+5VDC	85.15
229-7100	BH530201-01A	200mVDC	+5V and –5VDC	105.75
229-7101	BH530202-01A	2VDC	+5V and –5VDC	105.75
229-7102	BH530301-01A	200mVDC	+5VDC	105.75
229-7103	BH530302-01A	2VDC	+5VDC	105.75

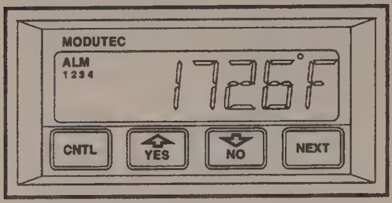
Green Backlight, Window Mount DPMs

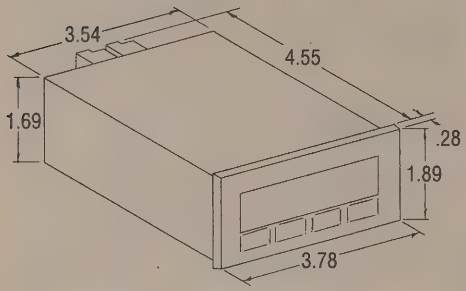
Stock No.	Mfr.'s Type	Full Scale Input	DPM Power	EACH
229-5168	BL300201-01U	200mVDC	±5VDC	68.75
229-5170	BL300202-01U	2VDC	±5VDC	68.75
229-5172	BL300301-01U	200mVDC	+5VDC	75.80
229-5174	BL300302-01U	2VDC	+5VDC	75.80
229-7112	BH300201-01A	200mVDC	+5V and –5VDC	102.25
229-7113	BH300202-01A	2VDC	+5V and –5VDC	102.25
229-7114	BH300301-01A	200mVDC	+5VDC	102.25
229-7115	BH300302-01A	2VDC	+5VDC	102.25

Green Backlight, Bezel Mount DPMs

229-5176	BL330201-01U	200mVDC	±5VDC	72.25
229-5178	BL330202-01U	2VDC	±5VDC	72.25
229-5180	BL330301-01U	200mVDC	+5VDC	79.30
229-5182	BL330302-01U	2VDC	+5VDC	79.30
229-7104	BH330201-01A	200mVDC	+5V and –5VDC	105.75
229-7105	BH330202-01A	2VDC	+5V and –5VDC	105.75
229-7106	BH330301-01A	200mVDC	+5VDC	105.75
229-7107	BH330302-01A	2VDC	+5VDC	105.75

Genesis® Microprocessor Based Digital Controller





Powerful 16 bit microcontroller is ideally suited for process control. User adjustable parameters are stored in nonvolatile EEPROM. NEMA 4 meter requires less than 5" depth behind panel. Illuminated alphanumeric LCD display is 0.5" high, four and one-half digit with dummy zero. Isolated input, outputs and power supply. Peak and valley hold; open sensor and over range indication. Power supply operates from 85-265 VAC or 90-300 VDC. Outputs include up to 4, Form C Relays (7 Amp/250 VAC) for alarm and/or control. Optional plug-in cards are available for proportionate volt/milliampere output and computer communications. User adjustable max. resolution; dummy zero (0, 1 or 2); decimal point (5 places); security lockout; output configuration; hysteresis; and mode of on-off control. **Temperature Units Offer the User the Ability to Select:** Degrees F or C; type J, K, or T thermocouple for temperature measurements from –450°F to 2500°F; RTD measurements from –328°F to 1472°F with 1.0° or 0.1° resolution. **Accuracy:** DC voltage — ±0.005% FS; DC current — ±0.05% FS; Tempco of RTD — 0.03°/°C. The Genesis® meters are available with bright red numerals on a dark background or dark numerals on a green background.

Stock No.	Mfr.'s Type	Full Scale Input	No. of Outputs	Numerals/ Background	EACH
229-3066	3100-DA-00-R2-00-A5	200 mVDC	2	Red/Dark	**319.00**
229-3067	3100-DF-00-R2-00-A5	200 VDC	2	Red/Dark	**319.00**
229-3068	3100-DI-00-R2-00-A5	20 mADC	2	Red/Dark	**319.00**
229-3069	3100-DI-00-R2-R2-A5	20 mADC	4	Red/Dark	**379.00**
229-3070	3100-DA-00-R2-00-A3	200 mVDC	2	Dark/Green	**319.00**
229-3071	3100-AG-00-R2-00-A5	650 VAC	2	Red/Dark	**379.00**
229-3072	3100-AL-00-R2-00-A5	5 AAC	2	Red/Dark	**379.00**
229-3073	3100-AL-00-R2-R2-A5	5 AAC	2	Red/Dark	**439.00**
229-3074	3100-ST-00-R2-00-A5	t/c and RTD	2	Red/Dark	**389.00**

229-3075. 00-939141-001. Genesis® Plug-In Output Card — RS-232 Plug-In Card..**EACH 195.00**
229-3076. 00-939141-002. Genesis® Plug-In Output Card — RS-432 Plug-In Card..**EACH 195.00**
229-3079. 00-939141-003. Genesis® Plug-In Output Card — RS-485 Plug-In Card..**EACH 195.00**
229-3078. 00-939139-006. Genesis® Plug-In Output Card — Volts/Milliamperes Plug-In Card*........................**EACH 80.00**

*Addition of analog volt/milliampere card limits Genesis® to two relay outputs.

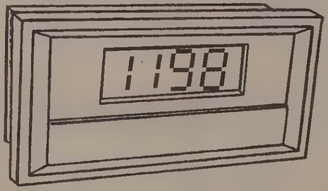
Universal Selectable Industrial Digital Panel Instruments

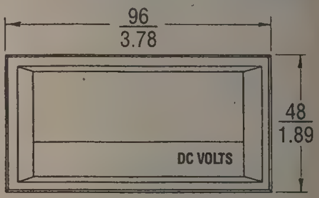
These DPMs provide the ability for the user to switch select range and scale to display the input signal in engineering units. **Depth Behind Panel:** less than 1". NEMA 4, 12, and IPC 55 case with built-in screw terminals of impact resistant polycarbonate. 0.5"-7 segment, backlit 3½ digit LCD display is readable in sunlight or low ambient lighting conditions. **Common Mode Rejection:** ≥100 dB @ 50-60 Hz. **Operating Temperature Range:** –20°C to +60°C.

DC Volts and Amps

Calibrated to the input range and display shown. All may be re-scaled by user to any DC amp or voltage input. Zero adjustment for either 4-20 mADC or 1-5 VDC is –1000 to +1500 counts. Zero adjustment for non-offset inputs is –1500 to +1500 counts. Full scale span adjustment for all ranges is 0 to 2000 counts. All DC units require 115 VAC external power and have dark numerals on green backlit background.

Stock No.	Mfr.'s Type	Input Range	Display	EACH
229-6140	2133-3401-04	200 mVDC	0 to 199.9	**183.60**
229-6142	2133-3402-04	2 VDC	0 to 199.9	**183.60**
229-6144	2133-3406-04	10 VDC	0 to 10.00	**183.60**
229-6146	2133-3405-04	1-5 VDC	0 to 100.0	**183.60**
229-6148	2133-3419-04	4-20 mADC	0 to 100.0	**183.60**



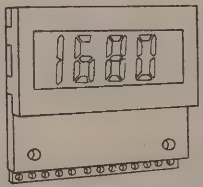


AC Volts and Amps

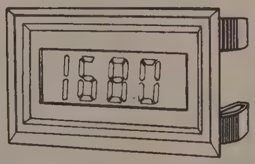
True RMS measurement and designed for either power or instrument applications. Power ranges are for full scale inputs from 20 to 250 volts AC or 2 to 5 amps AC. Instrument ranges are for full scale voltage inputs of 200 mVAC to 20 VAC or full scale amperage inputs of 200 mAAC to 2 AAC. Both power and instrument units can be re-scaled by the user to any input, within their designated range. The universal AC units are available with dark numerals on a green backlit background or bright red numerals on a dark background. Require external, user selectable, 115/230 VAC power.

Stock No.	Mfr.'s Type	Input Range	Numerals/ Background	EACH
229-6150	2253-1021-10	Instrument	Red/Dark	**212.50**
229-6152	2353-1036-105	Power	Red/Dark	**212.50**
229-6154	2233-1021-10	Instrument	Dark/Green	**212.50**
229-6156	2333-1036-105	Power	Dark/Green	**212.50**

Miniature Digital Panel and Process Meters with Set Point Capability



Window Mount



With Bezel Kit

3½ digit, backlit miniature panel and process meters require 1.3" × 0.75" (window mount) panel space with a depth behind panel of <0.70". Feature 0.3" illuminated LCD digits. **Conversion Rate:** 2.5 times/second. Autopolarity. 3 selectable decimal points. **Operating Temperature:** 0°C to 60°C. Bezel mounting kit available for front of the panel mounting.

Panel Meters

Input: 0-200 mVDC. **Accuracy:** 0.25% +1 count. CMR >86 db, 50-60 Hz. **Input Resistance:** >100 Mohms. **Power Requirement:** ±5 V @ 150 µA; 9 V (isolated) @ 150 µA.

Stock No.	Mfr.'s Type	DPM Power	Numerals/ Background	EACH
229-5100	1050-0101U	9 VDC	Red/Dark	**55.10**
229-5102	1050-0201U	±5 VDC	Red/Dark	**55.10**
229-5104	1030-0101U	9 VDC	Dark/Green	**55.10**
229-5106	1030-0201U	±5 VDC	Dark/Green	**55.10**
229-5108	1060-0101U	9 VDC	Dark/Red	**55.10**
229-5110	1060-0201U	±5 VDC	Dark/Red	**55.10**

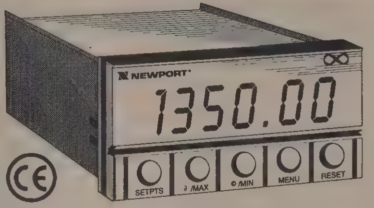
229-5010. BK-1000. Bezel Kit..**EACH 6.15**

Process Meters

Input: 4-020 mADC. **Accuracy:** 0.1% +1 count. Meter power derived from loop current. **Loop Burden @ 20 mA:** Without setpoint — 3.3 VDC max.; with setpoint — 4.4 VDC max. **Outputs:** Darlington or open collector* (24 VDC, 50 mA). Setpoint units have switch to display setpoint(s) or measured value. *Has separate bias supply terminal.

Stock No.	Mfr.'s Type	Control Output	Numerals/ Background	EACH
229-5112	1030-0019U	—	Dark/Green	**91.80**
229-5114	1060-0019U	—	Dark/Red	**91.80**
229-7125	SPM-600019-103	1 Open Collector	Dark/Red	**129.00**
229-7126	SPM-600019-113	2 Open Collectors	Dark/Red	**153.00**
229-7127	SPM-600019-203	1 Darlington	Dark/Red	**129.00**
229-7128	SPM-600019-223	2 Darlingtons	Dark/Red	**153.00**

Infinity™ Series 1/8 DIN Indicators/Controllers



- ► High Accuracy, 6-Digit, 14-Segment LED
- ► Optional 7 A Dual Relays
- ► Optional Scalable Analog Output
- ► Optional Serial RS-232 or RS-485 Communications

High accuracy 6-digit panel meters allow user to select various input signal via front panel pushbutton and jumpers. NEMA-4 front panel, security lockout. For INFP and INFS units there is a choice of 10 or 24 VDC sensor excitation. Inputs can be scaled to engineering units. The INFs come with 4 programmable open-collector outputs for setpoint or alarms, read rates up to 13/sec, high accuracy, peak/valley detection with memory. Standard ⅛ DIN case panel cutout. Strain models have Auto Tare.

Temperature Meters

Stock No.	Mfr.'s Type	Signal Input	Relay Output	Analog Output	Serial Comm.	EACH
544-0077	INFT-0000-KF	J, K, T, E,	No	No	No	**595.00**
544-0078	INFT-0200-KF	B, R, S, N,	Yes	No	No	**670.00**
544-0079	INFT-0210-KF	or J DIN	Yes	Yes	No	**780.00**
544-0080	INFT-0211-KF	(thermocouples)	Yes	Yes	Yes	**890.00**
544-0081	INFT-0000-RTD2	100 Ω Pt. RTD	No	No	No	**595.00**
544-0082	INFT-0200-RTD2	0.00385 alpha	No	No	No	**670.00**
544-0083	INFT-0210-RTD2	100 Ω Pt. RTD	Yes	Yes	No	**780.00**
544-0084	INFT-0211-RTD2	0.00392 Pt. RTD	Yes	Yes	Yes	**890.00**
		or 10 Ω copper				

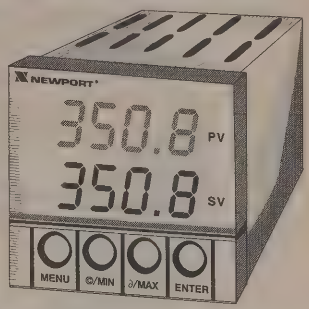
Strain Meters

Stock No.	Mfr.'s Type	Signal Input	Relay Output	Analog Output	Serial Comm.	EACH
544-0085	INFS-0000-DC1	0-100 mV, 0-1 V,	No	No	No	**545.00**
544-0086	INFS-0200-DC1	0-5 V, 1-5 V, 0-10 V,	Yes	No	No	**620.00**
544-0087	INFS-0210-DC1	0-100 V, ±50 mV,	Yes	Yes	No	**730.00**
544-0088	INFS-0211-DC1	±500 mV, ±5 V,	Yes	Yes	Yes	**840.00**
		±50 V, 0-20 mA,				
		or 4-20 mA				

Process Meters

Stock No.	Mfr.'s Type	Signal Input	Relay Output	Analog Output	Serial Comm.	EACH
544-0089	INFP-0000-DC1	0-100 mV, 0-1 V,	No	No	No	**545.00**
544-0090	INFP-0200-DC1	0-5 V, 1-5 V, 0-10 V,	Yes	No	No	**620.00**
544-0091	INFP-0210-DC1	0-100 V, ±50 mV,	Yes	Yes	No	**730.00**
544-0092	INFP-0211-DC1	±500 mV, ±5 V,	Yes	Yes	Yes	**840.00**
		±50 V, 0-20 mA,				
		or 4-20 mA				

ICN77000 Micro-Infinity™ Series 1/16 DIN Autotune Temperature/Process Controllers



2 Versions Available

- ► 1/16 DIN Cutout with 2.1" Square Bezel, NEMA 4 Protection
- ► 1/16 DIN Bezel and Cutout, NEMA 12 Protection

The ICN77000 Series meters feature a large, dual display, front panel configuration, and selectable temperature/process inputs. Available in single and dual output configurations, the ICN77000 meters are available with relay, SSR, DC pulse, analog voltage or current outputs. A single alarm is standard. Options include a second alarm, RS-232, RS-485, analog output or remote setpoint selection. Please specify options at time of order.

Stock No.	Mfr.'s Type	Description	EACH
544-0003	ICN77333	Dual relay output, 1 alarm standard, NEMA-12	**229.00**
544-0004	ICN77343	Dual output, DC pulse and relay, 1 alarm standard, NEMA-12	**229.00**
544-0005	ICN77353	Dual output, analog and relay, 1 alarm standard, NEMA-12	**229.00**
544-0009	ICN77533	Dual relay output, 1 alarm standard, NEMA-4	**239.00**
544-0010	ICN77543	Dual output, DC pulse and relay, 1 alarm standard, NEMA-4	**239.00**
544-0011	ICN77553	Dual output, analog and relay, 1 alarm standard, NEMA-4	**239.00**

Additional Options Available for Controller
Not field installable. Must be specified at time of order.

Stock No.	Order Suffix	Alarm and Communications Options	EACH
544Q0032	-A2	2nd Alarm	**6.00**
544Q0033	-C2	Isolated RS-232 Communications	**50.00**
544Q0034	-C4	Isolated RS-485 Communications	**50.00**
544Q0035	-PV	Isolated Analog Output	**65.00**

Note: Options are mutually exclusive. Only one option may be specified with a unit.

Stock No.	Order Suffix	Power Options	EACH
544Q0037	-DC	10-34 VAC/VDC Power	**20.00**

Infinity™ D Series Economical Meters for Process and Temperature

IDP-0 (Shown with HHCT-6 Milliamp Calibrator/Meter)

- ► Thermocouple, Process Input Models
- ► 4-Digit Red LED Displays
- ► Front Panel Setup
- ► 115 VAC Power Standard
- ► User Selectable Inputs
- ► IDP Series CE Approved

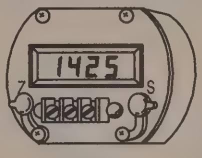
Process Meter — Type IDP
Easily scaled to engineering units, −1999 to +9999 display, front panel and remote tare, peak or valley detection and memory.

Temperature Meter — Type IDT
°C/°F switchable, 1° and 0.1° resolution, min./max. recall, external display HOLD input.

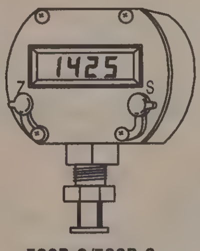
Stock No.	Mfr.'s Type	Type	Input Types	Excitation	EACH
544-0093	IDP-0/E	Process	0-5 V, 1-5 V, 0-10 V, 4-20 mA	10 or 24 VDC	**155.00**
544-0094	IDT-00/E	Thermocouple	J, K, T, J DIN	—	**225.00**
544-0096	HHCT-6	mA Calibrator	0-21 mA	0-21 mA	**495.00**

Two-Wire Process Indicators

— NEW —



508B-1



508B-2/508B-3

558B

- ► LCD Display Indicators
- ► Process Variables: Pressure, Flow, Temperature or Level Depending on Sensor and Application
- ► Powered by 4-20 mA Input Signal and Jumper Selectable for 1-5 and 10-50 mA Input Signal Applications
- ► 3½ Active Digit Display to ±1,999 with Selectable Dummy Right Hand Zero for Displays to ±19,990

The 508B series is housed in a NEMA-4 die-cast metal housing, weatherproof to 5 psi with a temperature range of −40°F to +85°C. The 558A fits ⅛ DIN cutout with a temperature range of 0° to +55°C. Supplied with 3-pole mating socket connector with screw clamps for wire sizes 26-16 AWG for connections to 3-pole male header on circuit board.

Stock No.	Mfr.'s Type	Description	EACH
544-0161	508B-1	Wall Mount with Screw Terminal Barrier Strip	**325.00**
544-0162	508B-2	½" EMT Male Conduit Fitting with 2 #18 AWG Wires	**345.00**
544-0163	508B-3	½" NPT Male Pipe Fitting with 2 #18 AWG Wires	**345.00**
544-0164	558B	⅛ DIN Panel Meter Cutout Indicator	**150.00**

Infinity™ C Series Indicators/Controllers

- ► 9 Models for Process, Thermocouple, RTD, Thermistor, Strain and pH Inputs
- ► Dual 7 A Relays and Analog Output Options Available At Time of Order
- ► High Accuracy, 4-Digit LED
- ► Sleek ⅛ DIN Design
- ► 115 VAC Power Standard — 230 VAC, 10-32 VDC or 26-56 VDC Power Also Available

INFCT Thermocouple Input Temperature Meter

Standard features include 0.1° or 1° resolution, °C/°F switchable.

Stock No.	Mfr.'s Type	Signal Input	Control Output	Analog Output	EACH
544-0038	INFCT-000	J, K, T or J-DIN	No	No	245.00
544-0039	INFCT-001		No	Yes	325.00
544-0040	INFCT-010		Yes	No	315.00
544-0041	INFCT-011		Yes	Yes	395.00

INFCS Strain Meter

Standard features include a wide selection of signal inputs, dual setpoints, peak reading, large offset capabilities for display in engineering units, front panel and remote tare, user selectable sensor excitation of 5,10,12 or 24 VDC.

Stock No.	Mfr.'s Type	Signal Input	Control Output	Analog Output	EACH
544-0042	INFCS-000	0-100 mV, ±50 mV,	No	No	245.00
544-0043	INFCS-001	0-5 V, 1-5 V, 0-10 V,	No	Yes	325.00
544-0044	INFCS-010	±5 VDC, 0-20 mA,	Yes	No	315.00
544-0045	INFCS-011	or 4-20 mA	Yes	Yes	395.00

INFCP Process Meter

Standard features include a wide selection of signal inputs, dual setpoints, peak reading, large offset capabilities for display in engineering units, front panel and remote tare, user selectable sensor excitation of 5,10,12 or 24 VDC.

Stock No.	Mfr.'s Type	Signal Input	Control Output	Analog Output	EACH
544-0046	INFCP-000	0-100 mV, ±50 mV,	No	No	245.00
544-0047	INFCP-001	0-100 mV, ±50 mV,	No	Yes	325.00
544-0048	INFCP-010	0-5 V, 1-5 V, 0-10 V,	Yes	No	315.00
544-0049	INFCP-011	or 4-20 mA	Yes	Yes	395.00

INFCR RTD Temperature Meter

Standard features include 0.00385 alpha curve, 2, 3, or 4 wire RTDs, 0.1° or 1° resolution, °C/°F switchable.

Stock No.	Mfr.'s Type	Signal Input	Control Output	Analog Output	EACH
544-0050	INFCR-000	0.00385	No	No	245.00
544-0051	INFCR-001		No	Yes	325.00
544-0052	INFCR-010		Yes	No	315.00
544-0053	INFCR-011		Yes	Yes	395.00

INFCH Thermistor Meter

Standard features include accuracy of ±0.1°C, resolution of 0.1° or 1°, °C/°F switchable.

Stock No.	Mfr.'s Type	Signal Input	Control Output	Analog Output	EACH
544-0054	INFCH-000	400 Series or 700 Series	No	No	245.00
544-0055	INFCH-001		No	Yes	315.00
544-0056	INFCH-010		Yes	No	315.00
544-0057	INFCH-011		Yes	Yes	395.00

INFCRP Proportional RTD Temperature Meter

Features time proportional relay and open-collector outputs, 0.1° or 1° resolution, °C/°F switchable, dual 6 A relay outputs and analog outputs.

Stock No.	Mfr.'s Type	Signal Input	Control Output	Analog Output	EACH
544-0058	INFCRP-011	0.00385	Yes	Yes	395.00

INFCTP Proportional T/C Temperature Meter

Features time proportional relay and open-collector outputs, 0.1° or 1.0° resolution, °C/°F switchable, dual 6 A relay outputs and analog outputs.

Stock No.	Mfr.'s Type	Signal Input	Control Output	Analog Output	EACH
544-0059	INFCTP-011	J, K, or T	Yes	Yes	395.00

INFCDR Differential RTD Temperature Meter

Accepts 2, 3, or 4 wire RTDs, a choice of 0.00385 or 0.00392 alpha curve, front panel selection of T1, T2 or T1-T2 indication, 0.1° or 1° resolution, °C/°F switchable.

Stock No.	Mfr.'s Type	Signal Input	Control Output	Analog Output	EACH
544-0060	INFCDR-000	0.00385 or 0.00392	No	No	345.00
544-0061	INFCDR-010		Yes	No	415.00
544-0062	INFCDR-011		Yes	Yes	495.00

INFCDT Differential Thermocouple Temperature Meter

Features include front panel selection of T1, T2 or T1-T2 indication. 0.1° or 1° resolution, °C/°F switchable.

Stock No.	Mfr.'s Type	Signal Input	Control Output	Analog Output	EACH
544-0063	INFCDT-000	J, K, T, or J-DIN	No	No	345.00
544-0064	INFCDT-010		Yes	No	415.00
544-0065	INFCDT-011		Yes	Yes	495.00

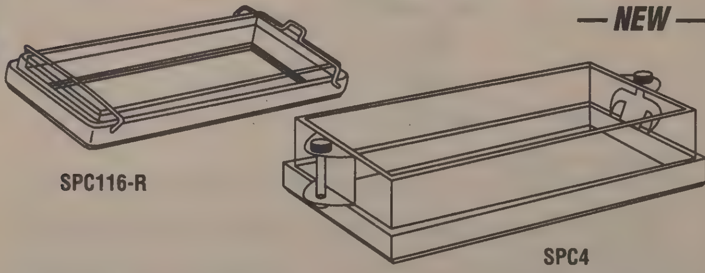
INFCPH pH Meter

Stock No.	Mfr.'s Type	Signal Input	Control Output	Analog Output	EACH
544-0066	INFCPH-011	pH	Yes	Yes	395.00
544-0068	INFCOR-011	ORP	Yes	Yes	395.00

*U.S. and International Patents and Pending Applications.

NEMA 4 Splash-Proof Lens Cover for Panel Meters

— NEW —



Splash-proof covers provide additional protection for instruments. Following NEMA 4/IP65 guidelines for windblown dust and rain, splashing water and hose directed water, SPC covers form a protective seal around the instrument bezel.

Stock No.	Mfr.'s Type	Case Size	EACH
544-0165	SPC364	³⁄₆₄ DIN	30.00
544-0166	SPC116-R	¹⁄₁₆ DIN Rectangular	30.00
544-0167	SPC116-S	¹⁄₁₆ DIN Square	30.00
544-0168	SPC14	¼ DIN	30.00
544-0169	SPC4	⅛ DIN	30.00
544-0170	SPC18	⅛ DIN	30.00

Infinity™ C True RMS Meter

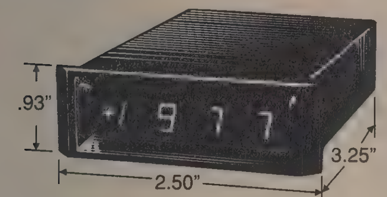
- ► 4-Digit, 14-Segment Red LED
- ► High 0.1% Of Reading Accuracy
- ► AC Current and Voltage Ranges
- ► Smart Filtering Detects The Difference Between A Spike Or Process Change
- ► Front Panel Configuration
- ► Peak and Valley Detection and Memory

The INFCAC true RMS meter represents an advance in AC monitoring and control. The two models available are an AC voltmeter and an AC ammeter. The INFCAC has broad scaling capabilities for most applications. Easy plug-in rear panel connectors make installation/removal quick and easy. The range can be changed via the front panel or via the serial communications option. Security is provided by an internal hardware lockout.

Stock No.	Mfr.'s Type	Power/LED	Relay	Analog Output	Input Type	EACH
544-0069	INFCAC-0000-V5	115 VAC, Red	No	No	0-750 V	345.00
544-0070	INFCAC-0010-V5	115 VAC, Red	No	Yes	0-750 V	425.00
544-0071	INFCAC-0100-V5	115 VAC, Red	Yes	No	0-750 V	415.00
544-0072	INFCAC-0110-V5	115 VAC, Red	Yes	Yes	0-750 V	495.00
544-0073	INFCAC-0000-C5	115 VAC, Red	No	No	0-5 A	345.00
544-0074	INFCAC-0010-C5	115 VAC, Red	No	Yes	0-5 A	425.00
544-0075	INFCAC-0100-C5	115 VAC, Red	Yes	No	0-5 A	415.00
544-0076	INFCAC-0110-C5	115 VAC, Red	Yes	Yes	0-5 A	495.00

*Note: relay and analog outputs must be specified at time of order. 230 Vac, green display and serial communications available upon request.

PM Series Miniature Panel Meters — Voltage, Current, Ratio Meters



- **Small Stackable Case**
- **Multiple Options**
- **0.3" Red LED Display (Green and Yellow Optional)**
- **Automatic Zero and Polarity Indication**
- **Special Scaling and Zero Offset Option Available**
- **Presettable Decimal Points**

The PM Series full-functioned miniature digital panel meters are suited for Voltage (DC or AC), Ratio or Current applications. They feature DC reading (Model PM-352 has an AC reading option) as well as DC or AC power options. Highly accurate (from 0.1% to 0.02% full scale), with rapid update rates (three readings per second), MUX/BCD output on same models. **Common Mode Rejection Rates:** 80 dB min. **Normal Mode Rejection Ratio:** 40 dB min. **Warm-Up to Rated Accuracy:** 10 seconds. Connector, if required, must be purchased separately.

Model PM-349 3½ Digit LED Voltage Meter

Stock No.	DC Voltage Range	Digits	Input Impedance	EACH
667-8000	200 mV	3½	100 MΩ	92.00
667-9997	2 V	3½	1000 MΩ	72.00
667-8020	20 V	3½	1 MΩ	92.00
667-8030	200 V	3½	10 MΩ	92.00
667-8040	1000 V	3½	10 MΩ	92.00

Model PM-352 3½ Digit LED Voltage Meter

667-5001	2 V	3½	1000 MΩ	138.00
667-5003	20 V	3½	1 MΩ	158.00
667-5004	200 V	3½	10 MΩ	158.00
667-5006	1000 V	3½	10 MΩ	158.00

Model PM-4 4 Digit LED Voltage Meter

667-2100	1 V	4	1000 MΩ	182.00
667-2102	10 V	4	1 MΩ	202.00
667-2104	100 V	4	10 MΩ	202.00
667-2106	1000 V	4	10 MΩ	202.00

Model PM-452 4½ Digit LED Voltage Meter

667-5501	2 V	4½	1000 MΩ	99.00
667-5503	20 V	4½	1 MΩ	119.00
667-5505	200 V	4½	10 MΩ	119.00
667-5506	1000 V	4½	10 MΩ	119.00

Model PM-349/CS 3½ Digit LED Current Meter

Stock No.	DC Current Range	Digits	Voltage Drop Full Scale	EACH
667-3005	20 µA	3½	200 mV	97.00
667-3010	200 µA	3½	200 mV	97.00
667-3015	2 mA	3½	200 mV	97.00
667-3020	20 mA	3½	200 mV	97.00
667-3025	200 mA	3½	200 mV	97.00

Model PM-352/CS 3½ Digit LED Current Meter

667-3055	20 µA	3½	2 V	163.00
667-3060	200 µA	3½	2 V	163.00
667-3065	2 mA	3½	2 V	163.00
667-3070	20 mA	3½	2 V	163.00
667-3075	200 mA	3½	2 V	163.00

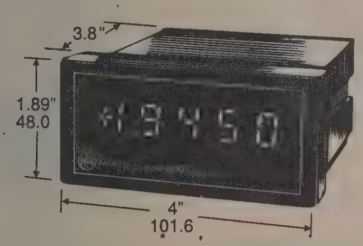
Model PM-4/CS 4 Digit LED Current Meter

667-3030	10 µA	4	1 V	207.00
667-3035	100 µA	4	1 V	207.00
667-3040	1 mA	4	1 V	207.00
667-3045	10 mA	4	1 V	207.00
667-3050	100 mA	4	1 V	207.00

Model PM-452/CS 4½ Digit LED Current Meter

667-3080	20 µA	4½	2 V	124.00
667-3085	200 µA	4½	2 V	124.00
667-3090	2 mA	4½	2 V	124.00
667-3095	20 mA	4½	2 V	124.00
667-4000	200 mA	4½	2 V	124.00

RM-Series Panel Meters — Voltage, Current, Ratio, or Ohms



- **High Accuracy (From 0.1% to 0.02% Full Scale)**
- **Automatic Zero and Polarity Indication**
- **120 or 240 VAC Power Input Optional**
- **Special Scaling and Zero Offset Available**
- **Bright Red 0.56" LEDs (Green and Yellow Optional)**
- **0.6" LCD on RM-351 and 0.4" LCD Display on RM-453 Model**
- **+5 Vdc Power Standard (+5, 12, 24, 28 and 18-34 Vdc Isolated Optional)**

Ideal for OEM and replacement applications. New large 0.8 inch LED display available on RM-350 model. 2000 variations, sized to industry standard case (1/8 DIN/NEMA cutout). Meter standard is DC powered and DC reading. AC power and/or AC reading option can be ordered. **Accuracy:** 0.1% to 0.02% full scale. **Update Rate:** 3 readings per second. **Common Mode Rejection Rates:** 80 dB min. **Normal Mode Rejection Ratio:** 40 dB min. A presettable decimal point to any of 3 or 4 locations. **Warm-Up to Rated Accuracy:** 10 seconds. **Operating Temperature:** 0°C to 50°C ambient. MUX/BDC output on some models, choose Edge Connector (EC) or Terminal Block (TB).

Model RM-350/120 3½ Digit LED AC Power VDC Meter

Stock No.	DC Voltage Range	Digits	VAC Powered	EACH
667-7020	2 V	3½	Yes	158.00
667-7021	20 V	3½	Yes	158.00
667-7022	200 V	3½	Yes	158.00
667-7023	1000 V	3½	Yes	158.00

Model RM-350 3½ Digit LED Voltage Meter

Stock No.	DC Voltage Range	Digits	Input Impedance	EACH
667-4005	200 mV	3½	100 MΩ	92.00
667-4090	2 V	3½	1000 MΩ	92.00
667-4015	20 V	3½	1 MΩ	112.00
667-4020	200 V	3½	10 MΩ	112.00
667-4025	1000 V	3½	10 MΩ	112.00

Model RM-351 3½ Digit LCD Voltage Meter

667-4030	200 mV	3½	100 MΩ	110.00
667-4035	2 V	3½	1000 MΩ	110.00
667-4040	20 V	3½	1 MΩ	130.00
667-4045	200 V	3½	10 MΩ	130.00
667-4050	1000 V	3½	10 MΩ	130.00

Model RM-452 4½ Digit LED Voltage Meter

667-5600	2 V	4½	1000 MΩ	171.00
667-5602	20 V	4½	1 MΩ	191.00
667-5604	200 V	4½	10 MΩ	191.00
667-5605	1000 V	4½	10 MΩ	191.00

Model RM-351/120 3½ Digit LCD AC Power VDC Meter

Stock No.	DC Voltage Range	Digits	VAC Powered	EACH
667-7024	2 V	3½	Yes	176.00
667-7025	20 V	3½	Yes	176.00
667-7026	200 V	3½	Yes	176.00
667-7027	1000 V	3½	Yes	176.00

Model RM-350/CS 3½ Digit LED Current Meter

Stock No.	DC Current Range	Digits	Voltage Drop Full Scale	EACH
667-4085	20 µA	3½	200 mV	117.00
667-4090	200 µA	3½	200 mV	117.00
667-4095	2 mA	3½	200 mV	117.00
667-5000	20 mA	3½	200 mV	117.00
667-5005	200 mA	3½	200 mV	117.00
667-5010	2 A	3½	200 mV	117.00

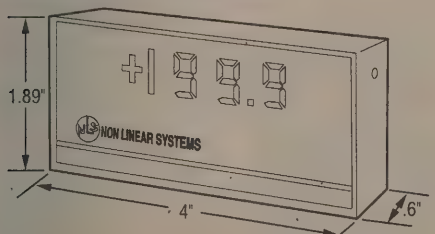
Model RM-351/CS 3½ Digit LCD Current Meter

667-5015	20 µA	3½	200 mV	135.00
667-5020	200 µA	3½	200 mV	135.00
667-5025	2 mA	3½	200 mV	135.00
667-5030	20 mA	3½	200 mV	135.00
667-5035	200 mA	3½	200 mV	135.00
667-5040	2 A	3½	200 mV	135.00

Model RM-452/CS 3½ Digit LED Current Meter

667-5075	200 µA	4½	2 V	196.00
667-5080	2 mA	4½	2 V	196.00
667-5085	20 mA	4½	2 V	196.00
667-5090	200 mA	4½	2 V	196.00

X-Series Low Cost Digital Panel Meters DC Volt and DC Ammeters



- **Short Depth, Only ½ Inch Behind Panel**
- **Accuracy from 0.2% to 0.1% Full Scale**
- **Automatic Zero and Polarity**
- **Bright Red 0.56" LEDs (Green or Yellow Option)**
- **Special Scaling and Zero Offset Available**
- **Pin Connector**

The X series meters are low-cost, short depth that are ideal for shallow equipment. Select 100 mV to 1000 V ranges depending on the model, all meters have a presettable decimal point, also a connection for external reference supply. **Update Rate:** 3 readings/second. **Power:** +5 Vdc ±5% (at 200 mA for X-32 and X-34, 6 mA for X-37). **Weight:** approximately 2 oz. **Operating Temperature:** 0°C to 50°C ambient. **Case Size:** 1.9"H × 4"W × 1.1"D (0.5" behind bezel). Connector, if required, must be purchased separately.

Model X-32 3 Digit LED Voltage Meter

Stock No.	DC Voltage Range	Digits	Input Impedance	EACH
667-9000	100 mV	3	100 MΩ	55.00
667-7500	1 V	3	1 MΩ	35.00
667-9005	10 V	3	1 MΩ	55.00
667-9010	100 V	3	1 MΩ	55.00
667-9015	1000 V	3	4 MΩ	55.00

Model X-34 3½ Digit LED Voltage Meter

667-9020	200 mV	3½	100 MΩ	67.00
667-7505	2 V	3½	1 MΩ	47.00
667-9025	20 V	3½	1 MΩ	67.00
667-9030	200 V	3½	1 MΩ	67.00
667-9035	1000 V	3½	4 MΩ	67.00

Model X-37 3½ Digit 0.60" LCD Voltage Meter

667-9040	200 mV	3½	100 MΩ	69.00
667-7015	2 V	3½	1 MΩ	49.00
667-9045	20 V	3½	1 MΩ	69.00
667-9050	200 V	3½	1 MΩ	69.00
667-9055	1000 V	3½	4 MΩ	69.00

Model X-32/CS 0.56" LED

Stock No.	DC Current Range	Digits	Voltage Drop Full Scale	EACH
667-9060	100 µA	3	200 mV	60.00
667-9065	1 mA	3	200 mV	60.00
667-9070	10 mA	3	200 mV	60.00
667-9075	100 mA	3	200 mV	60.00
667-9080	1 A	3	200 mV	60.00

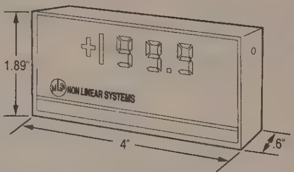
Model X-34/CS 0.56" LED

667-9085	200 µA	3½	200 mV	72.00
667-9090	2 mA	3½	200 mV	72.00
667-9095	20 mA	3½	200 mV	72.00
667-9500	200 mA	3½	200 mV	72.00
667-9505	2 A	3½	200 mV	72.00

Model X-37/CS 0.56" LCD

667-9510	200 µA	3½	200 mV	74.00
667-9515	2 mA	3½	200 mV	74.00
667-9520	20 mA	3½	200 mV	74.00
667-9525	200 mA	3½	200 mV	74.00
667-9530	2 A	3½	200 mV	74.00

Alert Meter™ Color Changing LED Display — *NEW* —

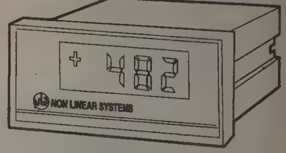


- ▶ Colors: Green, Orange, and Red
- ▶ User Set the Input Values for the Three Colors
- ▶ 3½ Digit 0.6" Color Changing LEDs
- ▶ DC Powered at +5 VDC
- ▶ Short Depth ⅛ DIN/NEMA Case (1.9"H × 4.0"W × 1.2"D)

The new NLS® Alert Meter™ is a unique visual alarm digital panel meter, with input values at which color changes occur set by the user. Low priced, too.

667-7201. AM-350. Voltmeter (0 to 2 VDC) .... **EACH 137.00**
667-7202. AM-350/CS. Current Meter (0 to 200 mA) .... **EACH 141.00**
667-7203. AM-350/F/R. Linearized "RTD" (–40° to 1112°F) .... **EACH 155.00**
667-7204. AM-350/C/R. Linearized "RTD" (–40° to 600°C) .... **EACH 155.00**
667-7205. AM-350/F/TC/K. Linearized Thermocouple (0° to 1999°F) .... **EACH 170.00**
667-7206. AM-350/C/TC/K. Linearized Thermocouple (0° to 1370°C) .... **EACH 170.00**

Current Loop Meter

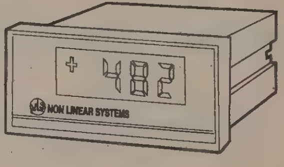


- ▶ Loop Powered
- ▶ 4-20 mA or 10-50 mA Range
- ▶ 0.6" LCD Display
- ▶ Low Power Consumption
- ▶ Adjustable Zero Offset and Scale
- ▶ Terminal Block Connection
- ▶ Presettable Decimal Point
- ▶ Accuracy: ±(0.1% of Reading + 1 Digit)
- ▶ Quick Installation DIN/NEMA Case (1.9"H × 4.0"W × 4.5"D)

The CM-1TB is a field adjustable digital current loop-powered meter that converts standard loop currents to engineering units.

667-1000. CM-1TB .... **EACH 124.00**
Special scaling available. Call for information.

Temperature Meters (3½ Digits)

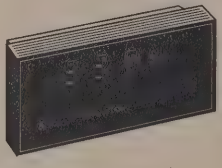


- ▶ Versatile, Low Cost Meters in 3 Case Sizes
- ▶ 3½ Digit, Bright Red LED Display (Green or Yellow Option)
- ▶ Readout in Degrees for °F or °C
- ▶ Optional 120 or 240 VAC Power Supply
- ▶ DC Powered at +5 Vdc
- ▶ K Thermocouple Standard (J, T, or E Are Optional, Specify With Order)

Accuracy: 0.1% F.S. **Resolution:** One part in 20,000. **Update Rate:** 3 readings per second. **Automatic Polarity Indication, Overload Indication, Warm-Up To Rated Accuracy:** 10 seconds. **Display:** 0.56" 3½ Digit LEDs (1999 counts) (0.3" for PT series). **Case Size:** Mini — (0.94"H × 2.88"W × 3.40"D); Short depth — (1.9"H × 4.0"W × 1.2"D); ⅛ DIN — (1.9"H × 4.0"W × 4.5"D).

Stock No.	Mfr.'s Type	Readout	Connector Type	Case Size	Sensor Input	EACH
667-9535	PT-3/C/T	°C	Edge	mini	Thermistor	**81.00**
667-9625	PT-3/F/T	°F	Edge	mini	Thermistor	**81.00**
667-9620	PT-3/C/R	°C	Edge	mini	RTD	**81.00**
667-9540	PT-3/F/R	°F	Edge	mini	RTD	**81.00**
667-9545	PT-3/C/TC/K	°C	Edge	mini	K Thermocouple	**126.00**
667-9702	PT-3/F/TC/K	°F	Edge	mini	K Thermocouple	**126.00**
667-9550	RT-3TB/F/T	°F	Terminal Blk	1/8 DIN	Thermistor	**92.00**
667-9555	RT-3TB/C/R	°C	Terminal Blk	1/8 DIN	RTD	**92.00**
667-9704	RT-3TB/F/R	°F	Terminal Blk	1/8 DIN	RTD	**92.00**
667-9560	RT-3TB/C/TC/K	°C	Terminal Blk	1/8 DIN	K Thermocouple	**137.00**
667-9705	RT-3TB/F/TC/K	°F	Terminal Blk	1/8 DIN	K Thermocouple	**137.00**
667-9565	XT-3/C/TC/K	°C	Pin Terminal	short depth	K Thermocouple	**81.00**
667-6706	XT-3/F/TC/K	°F	Pin Terminal	short depth	K Thermocouple	**81.00**

Counters



- ▶ Crystal Time-Base (PF-5 and RC-5)
- ▶ DC Powered at +5 Vdc
- ▶ Bright Red LED Display (Yellow and Green Option)
- ▶ Versatile Meters in Four Case Styles

Accuracy: ±1 count. **Input Signal Voltage:** +3 V to +15 V, +3 V to 700 V on model PF-5. Display hold, presettable decimal point, leading zero suppression. **Case Size:** Mini — (0.94"H × 2.88"W × 3.40"D); Short depth — (1.9"H × 4.0"W × 1.2"D); ⅛ DIN — (1.9"H × 4.0"W × 4.5"D).

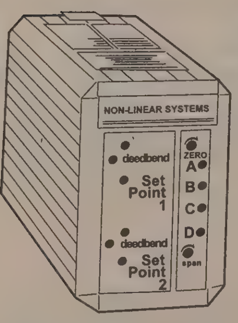
Stock No.	Mfr.'s Type	Power	Function/Max. Counter	Digits	Case Size	EACH
667-3000	PC-4	5 VDC	Counter (200,000 c/s)	4½	mini case	**80.00**
667-9580	PF-5	5 VDC	Frequency (10 mHz max.)	5	mini case	**171.00**
667-7515	XC-4	5 VDC	Counter (1,000,000 c/s)	4	short-depth	**48.00**
667-9570	RC-5TB	5 VDC	Universal (10 mHz max.)	5	⅛ DIN case	**187.00**

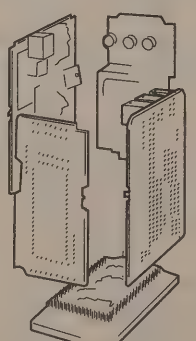
Line Frequency Monitors

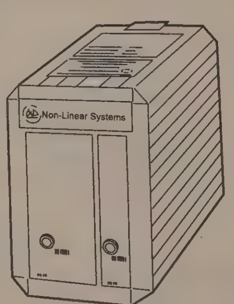
- ▶ Powered by Monitored Line
- ▶ Accuracy: ±0.1 Hz
- ▶ Terminal Block Connection
- ▶ Low Power Consumption
- ▶ One Second Crystal Controlled Time Base
- ▶ Operating Temperature: 0°C to 50°C
- ▶ Display LED (Model FM-3 Only) or LCD; Two Second Update
- ▶ Line Voltage: 120 VAC — 85 to 125 VAC; 240 VAC — 170 to 250 VAC
- ▶ Weight: 6.6 Oz. (187 g)

667-6005. FM-340TB/120 VAC .... **EACH 160.00**
667-6011. FM-340TB/240 VAC .... **EACH 160.00**
667-6015. FM-300TB/120 VAC .... **EACH 139.00**
667-6020. FM-300TB/240 VAC .... **EACH 139.00**
667-9998. FM-3TB/120 VAC .... **EACH 122.00**
667-6030. FM-3TB/240 VAC .... **EACH 122.00**

Series 8000 Signal Conditioners/Isolators — *NEW* —







- ▶ Industry Standard Plug-In Modules (Optional DIN Rail Mount)
- ▶ Integral Power Supply for Full Isolation
- ▶ Fully Pre-Configured for True Plug and Use
- ▶ All Standard Inputs and Outputs
- ▶ Three Year Warranty
- ▶ UL Recognized Component

The 8000 Series signal conditioners/isolators use a unique modern modular design to provide the greatest possible user versatility. Just plug-in pre-configured input card on the motherboard of an output-power supply for a fully functional unit. For maximum usability, all cards are pre-configured and calibrated, but can be readily scaled to user specific ranges or applications. The Series 8000 gives you one unit that will perform the tasks of up to three conventional models with up to 70% cost savings.

True isolation is achieved through the use of an integral high performance power supply in each unit. A wide choice of outputs including standard 0 to 10 volt, 4 to 20 mA, single and dual alarm trips are available. Inputs include DC and AC voltage and current, frequency or pulse, and linearized temperature. Units are standard with 120 VAC, 5/60 Hz power and can be easily converted to 240 VAC, 50/60 Hz. A +9 to +30 VDC power supply which replaces the 120 VAC or 240 VAC supply is available as an option. Call for more information.

Input Card Choices for Modules Below

667-7207. -01 (0-10 V). DC Voltage .... **EACH 105.00**
667-7208. -01 (4-20 mA). DC Current .... **EACH 105.00**
667-7209. -03 (40 Hz to 2 kHz). AC Voltage to 250 VAC .... **EACH 105.00**
667-7210. -03 (40 Hz to 2 kHz). AC Current to 100 mA .... **EACH 105.00**
667-7211. -04 (0-760°C). J Type Thermocouple Linearized .... **EACH 229.00**
667-7212. -04 (0-1370°C). K Type Thermocouple Linearized .... **EACH 229.00**
667-7213. -05 (–100°-850°C). RTD (PT 100 Ω-α.00385) Linearized .... **EACH 229.00**
667-7214. -10 (0-50 kHz). Frequency/Pulse .... **EACH 125.00**

Outputs with Isolated 120 VAC, 50/60 Hz Power Supply

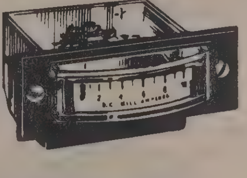
XX in Mfr.'s Type indicated input card choices from above.
667-7215. 8000-1-1-XX-60 (0 to 10 V). DC 0-10 V Output, 8 Pin .... **EACH 204.00**
667-7216. 8000-1-1-XX-60 (4 to 20 mA). DC 4-20 mA Output, 8 Pin .... **EACH 204.00**
667-7217. 8000-1-1-XX-60 (0 to 20 mA). DC 0-20 mA Output, 8 Pin .... **EACH 204.00**
667-7228. 8000-1-1-XX-60 (0 to 1 V). DC 0-1 V Output, 8 Pin .... **EACH 204.00**
667-7218. 8000-1-1-XX-70 (0 to 50 kHz). Frequency 5 V (TIL) 0-50 kHZ, 8 Pin Base .... **EACH 214.00**
667-7219. 8000-2-1-XX-85. One Alarm, Adjustable Trip Point, 11 Pin Base .... **EACH 184.00**
667-7220. 8000-3-1-XX-85. One Alarm, Adjustable Trip Point, 20 Pin Base .... **EACH 194.00**
667-7221. 8000-2-1-XX-95. Two Alarm, Adjustable Trip Point, 11 Pin Base .... **EACH 199.00**
667-7222. 8000-3-1-XX-95. Two Alarm, Adjustable Trip Point, 20 Pin Base .... **EACH 209.00**
Note: RTD with alarm output, use 20 pin base only.

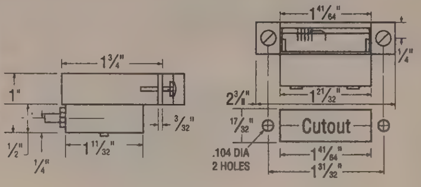
Accessories

667-7223. 9-30 VDC Power Supply. Replaces 120 VAC .... **EACH 76.00**
667-7224. DR018. 8 Pin Mount Socket for DIN Rail .... **EACH 14.00**
667-7225. DR011. 11 Pin Mount Socket for DIN Rail .... **EACH 17.00**
667-7226. DR014. Three Foot Metal Track, DIN Rail .... **EACH 15.00**
667-7227. SM020. 20 Pin Mount Socket for DIN Rail .... **EACH 69.00**

Model 350 Edgewise Meters

Model 350. DC types are moving magnet. AC types incorporate a rectifier. Mount in rectangular hole, $1^{21}/_{32}$" x $^{17}/_{32}$". Accuracy within ± 5% of full scale. High temperature polystyrene case. $1^{1}/_{16}$" scale length. Black escutcheon plate.





DC Milliammeters

Stock No.	Mfr.'s Type	Range	Ohms	EACH 1-24	25-49	50-99	100-499
698-3300	3300	0-1	500.00	14.80	13.56	12.52	11.63
698-3303	3303	0-10	45.00	13.40	12.28	11.34	10.53
698-3305	3305	0-25	15.00	13.40	12.28	11.34	10.53
698-3306	3306	0-50	4.00	13.40	12.28	11.34	10.53
698-3307	3307	0-100	1.00	13.40	12.28	11.34	10.53

DC Ammeters

Stock No.	Mfr.'s Type	Range	Ohms	EACH 1-24	25-49	50-99	100-499
698-3202	3202	0-3	0.02 max.	13.60	12.47	11.51	10.69
698-3203	3203	0-5	0.02 max.	13.60	12.47	11.51	10.60
698-3205	3205	0-10	0.02 max.	13.60	12.47	11.51	10.60

DC Voltmeters (1000Ω/v)

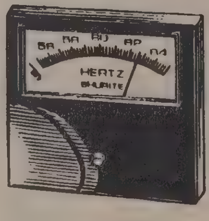
Stock No.	Mfr.'s Type	Range	Ohms	EACH 1-24	25-49	50-99	100-499
698-3104	3104	0-5	5000.00	13.90	12.19	11.26	10.45
698-3107	3107	0-10	10000.00	13.90	12.19	11.26	10.45
698-3108	3108	0-15	15000.00	13.90	12.19	11.26	10.45

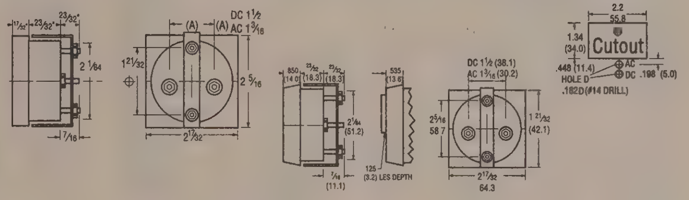
AC Voltmeter

Stock No.	Mfr.'s Type	Range	Ohms	EACH 1-24	25-49	50-99	100-499
698-3406	3406	0-150	—	16.00	14.66	13.54	12.57

Model 850 Rectangular Panel Meters

Model 850. $2^{1}/_{2}$ inch rectangular panel meters have snap-on plastic crystal and an accuracy of ± 5% of full scale. DC types have moving magnet (bridge-type) design. AC types double-vane repulsion jeweled bearing. To order conventional panel meters which mount in $2^{5}/_{32}$" dia. hole, replace "X" in stock no. with an "8". To order behind the panel meters, replace "X" in stock no. with a "6". (**Note:** These meters may be mounted either in front of the panel thru a $2^{5}/_{32}$" dia. hole or from behind the panel thru a rectangular cut-out.) Behind the panel mounting hardware not supplied. ***External current transformer required.**





DC Milliammeters

Stock No.	Mfr.'s Type	Range	Ohms	EACH 1-24	25-49	50-99	100-499
698-X336	8336Z	0-1	1000.00	14.50	13.29	12.27	11.39
698-X302	8302Z	0-5	150.00	13.25	12.15	11.21	10.41
698-X305	8305Z	0-25	15.00	13.00	11.92	11.00	10.21
698-X306	8306Z	0-50	4.00	13.00	11.92	11.00	10.21
698-X307	8307Z	0-100	1.00	13.00	11.92	11.00	10.21
698-X309	8309Z	0-200	.40	13.00	11.92	11.00	10.21
698-X310	8310Z	0-300	.15	13.00	11.92	11.00	10.21
698-X312	8312Z	0-500	.07	13.00	11.92	11.00	10.21

DC Ammeters

Stock No.	Mfr.'s Type	Range	Ohms	EACH 1-24	25-49	50-99	100-499
698-X201	8201Z	0-1	0.020max.	13.00	11.92	11.00	10.21
698-X202	8202Z	0-3	0.020max.	13.00	11.92	11.00	10.21
698-X203	8203Z	0-5	0.020max.	13.00	11.92	11.00	10.21
698-X205	8205Z	0-10	0.020max.	13.00	11.92	11.00	10.21
698-X206	8206Z	0-15	0.020max.	13.00	11.92	11.00	10.21
698-X207	8207Z	0-25	0.020max.	13.60	12.47	11.51	10.69
698-X208	8208Z	0-50	0.020max.	13.60	12.47	11.51	10.69
698-X215	8215Z	30-0-30	0.020max.	13.60	12.47	11.51	10.69

DC Voltmeters (1000Ω/v)

Stock No.	Mfr.'s Type	Range	Ohms	EACH 1-24	25-49	50-99	100-499
698-X102	8102Z	0-3	3000	13.00	12.00	11.14	10.40
698-X104	8104Z	0-5	5000	13.00	12.00	11.14	10.40
698-X107	8107Z	0-10	10000	13.00	12.00	11.14	10.40
698-X108	8108Z	0-15	15000	13.00	12.00	11.14	10.40
698-X109	8109Z	0-25	25000	13.25	12.23	11.36	10.60
698-X122	8122Z	0-50	50000	13.25	12.23	11.36	10.60
698-X115	8115Z	0-150	150000	13.75	12.69	11.79	11.00

AC Milliammeters

Stock No.	Mfr.'s Type	Range	Ohms	EACH 1-24	25-49	50-99	100-499
698-X605	8605Z	0-500	1.80	16.20	14.85	13.71	12.73

AC Ammeters

Stock No.	Mfr.'s Type	Range	Ohms	EACH 1-24	25-49	50-99	100-499
698-X501	8501Z	0-1	0.420max.	14.90	13.66	12.61	11.71
698-X503	8503Z	0-5	0.040max.	15.80	14.48	13.37	12.41
698-X504	8504Z	0-10	0.040max.	15.80	14.48	13.37	12.41
698-X508	8508Z	0-15	0.040max.	15.80	14.48	13.37	12.41
698-X506	8506Z	0-50	0.040max.	16.90	15.49	14.30	13.28
698-X507	8507Z	0-80	0.040max.	17.10	15.68	14.47	13.44

AC Voltmeters

Stock No.	Mfr.'s Type	Range	Ohms	EACH 1-24	25-49	50-99	100-499
698-X403	8403Z	0-10	25	15.00	13.75	12.69	11.79
698-X404	8404Z	0-15	25	15.00	13.75	12.69	11.79
698-X406	8406Z	0-150	100	15.00	13.75	12.69	11.79
698-X407	8407Z	0-300*	100	16.00	13.75	12.69	11.79

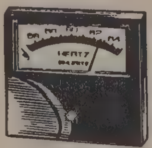
*Supplied with external resistor.

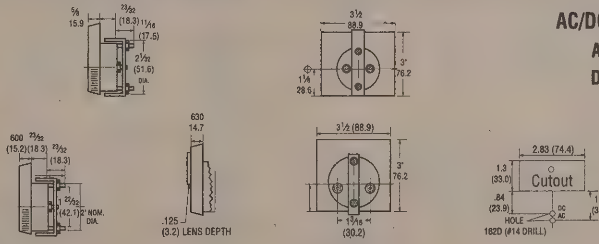
Frequency Meters

Stock No.	Mfr.'s Type	Volt Range	Scale	Hz	EACH 1-24	25-49	50-99	100-499
698-8010	8010ZBP	90/140	45-55	50	58.41	53.55	49.43	45.90
698-8011	8011ZBP	90/140	55-65	60	58.41	53.55	49.43	45.90
698-8014	8014ZBP	90/140	360-440	400	71.40	65.45	60.41	56.10
698-8020	8020ZBP	180/280	45-55	50	64.90	59.50	54.90	51.00
698-8021	8021ZBP	180/280	55-65	60	64.90	59.50	54.92	51.00
—	—	—	—	—	—	—	—	—

Model 750 Rectangular

Model 750. Accuracy within ± 5% of full scale. DC movements have moving magnet design. AC types have high torque repulsion vane design. Both AC and DC types have jeweled bearings. Polystyrene meter fronts. To order conventional panel meters which mount in $2^{5}/_{32}$" dia. hole, replace "X" in stock no. with "7". To order behind the panel meters, replace "X" in stock no. with "5". (**Note:** These meters may be mounted either in front of the panel thru a $2^{5}/_{32}$" dia. hole or from behind the panel thru a rectangular panel cut-out.) Behind the panel mounting hardware not supplied.





AC/DC Terminal Location

AC $^{1}/_{8}$" below centerline

DC $^{1}/_{8}$" above centerline

DC Milliammeters

Stock No.	Mfr.'s Type	Range	Ohms	EACH 1-24	25-49	50-99	100-499
698-X336	7336Z	0-1	1000.000	15.20	13.93	12.86	11.94
698-X303	7303Z	0-10	45.000	14.80	13.57	12.52	11.63
698-X305	7305Z	0-25	15.000	14.80	13.57	12.52	11.63
698-X309	7309Z	0-200	0.400	14.95	13.70	12.65	11.75
698-X312	7312Z	0-500	0.070	14.95	13.70	12.65	11.75

DC Ammeters

Stock No.	Mfr.'s Type	Range	Ohms	EACH 1-24	25-49	50-99	100-499
698-X201	7201Z	0-1	0.020max.	14.95	13.70	12.65	11.75
698-X203	7203Z	0-5	0.020max.	14.95	13.70	12.65	11.75
698-X205	7205Z	0-10	0.020max.	14.95	13.70	12.65	11.75
698-X207	7207Z	0-25	0.020max.	15.35	14.07	12.99	12.06
698-X208	7208Z	0-50	0.020max.	15.35	14.07	12.99	12.06

*Supplied with external resistor.

DC Voltmeters (1000Ω/v)

Stock No.	Mfr.'s Type	Range	Ohms	EACH 1-24	25-49	50-99	100-499
698-X104	7104Z	0-5	5000.000	15.75	14.40	13.29	12.34
698-X108	7108Z	0-15	15000.000	15.75	14.44	13.33	12.38
698-X109	7109Z	0-25	25000.000	15.75	14.44	13.33	12.38
698-X122	7122Z	0-50	50000.000	16.00	14.67	13.54	12.57

AC Ammeters

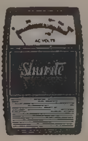
Stock No.	Mfr.'s Type	Range	Ohms	EACH 1-24	25-49	50-99	100-499
698-X503	7503Z	0-5	0.040max.	16.95	15.54	14.34	13.32
698-X504	7504Z	0-10	0.040max.	17.60	16.13	14.89	13.83
698-X508	7508Z	0-15	0.040max.	17.60	16.25	15.09	14.08
698-X505	7505Z	0-30	0.040max.	17.90	16.41	15.15	14.06
698-X506	7506Z	0-50	0.040max.	18.00	16.50	15.20	14.14
698-X507	7507Z	0-80	0.040max.	18.50	16.96	15.65	14.54

AC Voltmeters

Stock No.	Mfr.'s Type	Range	Ohms	EACH 1-24	25-49	50-99	100-499
698-X406	7406Z	0-150	100.000	16.40	15.03	13.88	12.89
698-X407	7407Z	0-300*	100.000	17.10	14.68	14.47	13.44

Frequency Meters

Stock No.	Mfr.'s Type	Volt Range	Scale	Hz	EACH 1-24	25-49	50-99	100-499
698-7010	7010ZBP	90/140	45-55	50	64.90	59.50	54.92	51.00
698-7011	7011ZBP	90/140	55-65	60	64.90	59.50	54.92	51.00
698-7014	7014ZBP	90/140	360-440	400	84.38	77.35	71.40	66.30
698-7020	7020ZBP	180/280	45-55	50	71.58	65.45	60.41	56.10
698-7021	7021ZBP	180/280	55-65	60	71.58	65.45	60.41	56.10
—	—	—	—	—	—	—	—	—



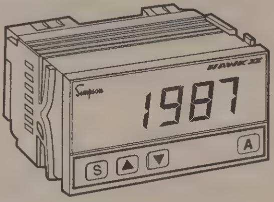
Line Voltage Tester Model 79406LT

Test single outlets with or without accessories. Simply insert the thru-plug into an outlet, read and note the line voltage, then plug in the appliance to be tested (i.e., air conditioner, test equipment, microwave, appliance, etc.) into the thru-plug. A sustained voltage drop of 5 volts or more indicates a problem that should be investigated. Cord is permanently attached to an all-plastic-case meter. Safe, fast readings. Pocket size. **Range:** 0-150 VAC.

698-7940. Model 79406LT..**EACH 17.10**

1/8 DIN On-Off Controllers

Hawk II Series Controllers



- 3½ Digit, 0.56" (14.2 mm) High, Red LED Display
- DC and AC Voltage/Current, Resistance and Temperature Ranges
- Direct 5 A Input for AC and DC Current Ranges
- Standard 120 VAC Power Supply
- Optional 24, 48, or 220 VAC or 24-48 VDC Power Supply
- Screw Terminal Connector
- NEMA 4 Rated Front Panel
- Optional Analog Output
- Optional Excitation Output (12 or 24 VDC)
- Single 5 Amp Relay Included; Dual Relays Optional

DC Voltage Controllers

Stock No.	Mfr.'s Type	Input	EACH
919-3035	H2351-0110-010	200 mV	185.00
919-3036	H2351-0120-010	2 V	185.00
919-3037	H2351-0130-010	20 V	185.00
919-3038	H2351-0140-010	200 V	185.00
919-3039	H2351-0150-010	600 V	185.00

DC Current Controllers

Stock No.	Mfr.'s Type	Input	EACH
919-3040	H2351-0210-010	200 µA	185.00
919-3041	H2351-0220-010	2 mA	185.00
919-3042	H2351-0230-010	20 mA	185.00
919-3043	H2351-0240-010	200 mA	185.00
919-3044	H2351-0250-010	2 A	185.00
919-3045	H2351-0260-010	5 A	185.00

DC Process Controllers

Stock No.	Mfr.'s Type	Input	EACH
919-3046	H2351-0710-010	4-20 mA	185.00
919-3047	H2351-0720-010	1-5 V	185.00
919-3061*	H2351-0710-011	4-20 mA	220.00
919-3062*	H2351-0720-011	1-5 V	220.00
919-3063†	H2351-0710-012	4-20 mA	220.00
919-3064†	H2351-0720-012	1-5 V	220.00

AC Voltage Controllers

Stock No.	Mfr.'s Type	Input	EACH
919-3050	H2351-0310-010	200 mV	220.00
919-3051	H2351-0320-010	2 V	220.00
919-3052	H2351-0330-010	20 V	220.00
919-3053	H2351-0340-010	200 V	220.00
919-3054	H2351-0350-010	600 V	220.00

AC Current Controllers

Stock No.	Mfr.'s Type	Input	EACH
919-3055	H2351-0410-010	200 µA	220.00
919-3056	H2351-0420-010	2 mA	220.00
919-3057	H2351-0430-010	20 mA	220.00
919-3058	H2351-0440-010	200 mA	220.00
919-3059	H2351-0450-010	2 A	220.00
919-3060	H2351-0460-010	5 A	220.00

Resistance Controllers

Stock No.	Mfr.'s Type	Input	EACH
919-3074	H2351-0810-010	200 Ω	250.00
919-3075	H2351-0820-010	2 KΩ	250.00

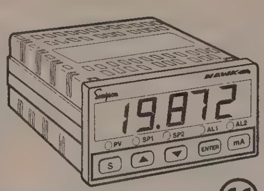
Temperature Controllers

Stock No.	Mfr.'s Type	Input	EACH
919-3032	H2351-0910-010	J T/C	245.00
919-3033	H2351-0920-010	K T/C	245.00
919-3034	H2351-0930-010	RTD Pt100	255.00

*12 VDC Excitation. †24 VDC Excitation.

1/8 DIN On-Off Controllers

Hawk Series Controllers



- HK35 Has 3½ Digits; HK45 Has 4½ Digits
- Large, 0.56" (14.2 mm) High, Red LED Display
- Standard 120 VAC Power Supply
- Optional 24/48 VAC or 9-32 VDC Power Supply
- 2-Piece Screw Terminal Connector
- Single 5 Amp Relay Included; Dual Relays Optional
- DC, AC, and ACTRMS Voltage/Current, DC Process, Frequency, Resistance, Tachometer and Temperature Ranges
- Scaling/Programming Via Buttons on Front Panel
- BCD, Digital and Analog Outputs Available
- Optional Excitation Output (12 or 24 VDC)

DC Voltage Controllers

Stock No.	Mfr.'s Type	Input	EACH
919-3000	HK351-0110-010	200 mV	254.00
919-3001	HK351-0120-010	2 V	254.00
919-3002	HK351-0130-010	20 V	254.00
919-3003	HK351-0140-010	200 V	254.00
919-3004	HK351-0150-010	750 V	254.00
919-3005	HK451-0110-010	200 mV	294.00
919-3006	HK451-0120-010	2 V	294.00
919-3007	HK451-0130-010	20 V	294.00
919-3008	HK451-0140-010	200 V	294.00
919-3009	HK451-0150-010	750 V	294.00

DC Current Controllers

Stock No.	Mfr.'s Type	Input	EACH
919-3010	HK351-0240-010	200 mA	254.00
919-3011	HK351-0250-010	2 A	254.00
919-3012	HK451-0240-010	200 mA	294.00
919-3013	HK451-0250-010	2 A	294.00

DC Process Controllers

Stock No.	Mfr.'s Type	Input	EACH
919-3014	HK351-0710-010	4-20 mA	254.00
919-3015	HK351-0720-010	1-5 V	254.00
919-3016	HK451-0710-010	4-20 mA	294.00
919-3017	HK451-0720-010	1-5 V	294.00
919-3026*	HK451-0710-011	4-20 mA	298.00
919-3027*	HK451-0720-011	1-5 V	298.00
919-3028†	HK451-0710-012	4-20 mA	298.00
919-3029†	HK451-0720-012	1-5 V	298.00

AC Voltage Controllers

Stock No.	Mfr.'s Type	Input	EACH
919-3018	HK351-0340-010	200 V	303.29
919-3019	HK351-0350-010	750 V	303.29
919-3020	HK451-0340-010	200 V	329.00
919-3021	HK451-0350-010	750 V	329.00

AC TRMS Voltage Controllers

Stock No.	Mfr.'s Type	Input	EACH
919-3066	HK351-0550-010	750 V	449.00
919-3067	HK451-0550-010	750 V	489.00

AC Current Controllers

Stock No.	Mfr.'s Type	Input	EACH
919-3022	HK351-0460-010	5 A	303.29
919-3023	HK451-0460-010	5 A	329.00

AC TRMS Current Controllers

Stock No.	Mfr.'s Type	Input	EACH
919-3024	HK351-0660-010	5 A	449.00
919-3025	HK451-0660-010	5 A	489.00

Resistance Controllers

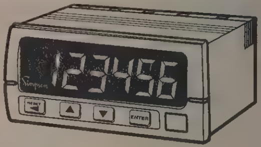
Stock No.	Mfr.'s Type	Input	EACH
919-3068	HK351-0810-010	200 Ω	319.00
919-3069	HK451-0810-010	200 Ω	359.00

Temperature Controllers

Stock No.	Mfr.'s Type	Input	EACH
919-3030	HK451-1720-010	J T/C	349.00
919-3031	HK451-1820-010	K T/C	349.00

*12 VDC Excitation. †24 VDC Excitation.

660 Series Counters

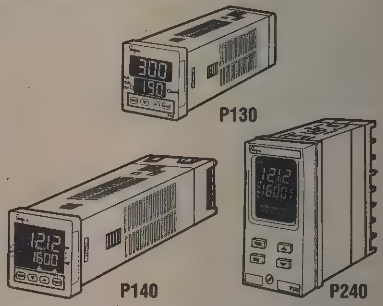


- Available May 1997
- Counts Up or Down
- Accepts Input Count Rates Up to 10 kHz
- Large Tactile Buttons for Easy Programming
- Verbal Programming Prompts, No Symbols
- Broad Range Scaling Using Front Panel Buttons
- Up to Two Presets
- Optional Field Replaceable Relay Cards
- Optional 12 VDC (100 mA) Excitation Output
- 6-Digit, Bright Red LED Display
- Rugged Case, IP65 Front Bezel
- Screw Terminal Connectors for Simple Hook-up
- 120 VAC Power Supply

Stock No.	Mfr.'s Type	Relays	Excitation	EACH
919-6000	S660-1-0-0-0	None	None	169.00
919-6001	S660-1-1-0-0	One	None	194.00
919-6002	S660-1-2-0-0	Two	None	209.00
919-6003	S660-1-0-1-0	None	12 VDC	194.00
919-6004	S660-1-1-1-0	One	12 VDC	219.00
919-6005	S660-1-2-1-0	Two	12 VDC	234.00

PID Temperature Controllers

Phoenix Series PID Controllers

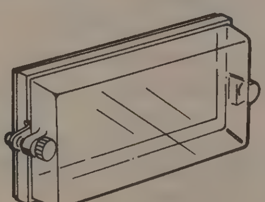


- Choice of 1/16 DIN (P130, P140) or 1/8 DIN (P240)
- SMART Tuning Auto-Tune and Continuous Adaptive Adjustment of Control Parameters
- Easily Programmed From Front Panel
- Two Control Outputs for Heat + Cool Control or Heat/Cool + Alarm
- Up to 3 Independent Programmable Alarms
- Wide Variety of T/C, RTD and Linear Inputs Accepted
- Dual Display Shows Both Measurement and Set Point Values
- P130 Has 3 Digits; P140 and P240 Have 4 Digits
- Screw Terminal Connectors With Safety Cover
- Password Protection Prevents Undesired Access
- IP65/NEMA 4X Front Panel Protection
- Optional Heater Break Detection (P140, P240)
- Auxiliary Set Point Available
- 100-240 VAC Power

Stock No.	Mfr.'s Type	Input	Features*	EACH
919-6011	P130010501	J T/C °C	1+2	199.00
919-6012	P130010111	J T/C °C	1+3	199.00
919-6013	P130020501	K T/C °C	1+2	199.00
919-6014	P130020111	K T/C °C	1+3	199.00
919-6015	P130050000	RTD Pt100°C	1, 4	199.00
919-6016	P130050211	RTD Pt100°C	1+5	199.00
919-6017	P1400L0130001	J T/C °F	1+3	244.00
919-6018	P1400L0401301	J T/C °F	1+2+3	244.00
919-6019	P1400M0130001	K T/C °F	1+3	229.00
919-6020	P1400M0401301	K T/C °F	1+2+3	244.00
919-6021	P1400S0130001	RTD Pt100°F	1+3	229.00
919-6022	P1400S0401301	RTD Pt100°F	1+2+3	244.00
919-6023	P2400L040130001	J T/C °F	1+2+3	299.00
919-6024	P2400L040230001	J T/C °F	1+2+5	299.00
919-6025	P2400M040130001	K T/C °F	1+2+3	299.00
919-6026	P2400M040230001	K T/C °F	1+2+5	299.00
919-6027	P2400S040130001	RTD Pt100°F	1+2+3	299.00
919-6028	P2400S040230001	RTD Pt100°F	1+2+5	299.00
919-6029	P2400B000000000	0-60 mV	1, 4	299.00

***Features:** 1=Heating; 2=Cooling, 3=High Process Alarm, 4=No Password, 5=Outside Band Alarm.

NEMA 4 Removable Cover

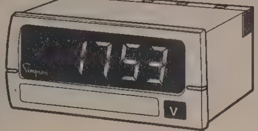


- Protects Hawk 1/8 DIN Controller
- Removable Cover, Allowing Access to Controller's Programming Buttons
- Dust-Tight and Watertight to NEMA 4 Standards
- Easy Installation

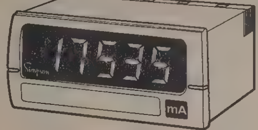
919-3076. 45003..**EACH 32.95**

1/8 DIN Indicators

Falcon Series 3½ and 4½ Digit Indicators



F35



F45

- F35 Has 3½ Digits; F45 Has 4½ Digits
- DC, AC, and AC TRMS Voltage/Current and Temperature Ranges
- 120 VAC Power Supply Standard; 220 VAC or 9-32 VDC Optional
- Large, 0.56" (14.2 mm) High, Red LED Display with Automatic Zero and Polarity Indication
- Screw Terminals Standard for Easy Installation
- Short, 3.12" (79 mm) Deep, 1/8 DIN Case
- Direct 5 AAC Input for Use with Donut Current Transformers
- Broad Range Scaling and Adjustable Zero Offset for Process Inputs
- Optional 12 VDC or 24 VDC Excitation Output

DC Voltage Indicators

Stock No.	Mfr.'s Type	Input	EACH
919-0020	F35-1-11-0	200 mV	99.00
919-0025	F35-1-12-0	2 V	99.00
919-0030	F35-1-13-0	20 V	99.00
919-0035	F35-1-14-0	200 V	99.00
919-0040	F35-1-15-0	750 V	99.00
919-0230	F45-1-11-0	200 mV	180.00
919-0235	F45-1-12-0	2 V	180.00
919-0255	F45-1-13-0	20 V	180.00
919-0240	F45-1-14-0	200 V	180.00
919-0245	F45-1-15-0	750 V	180.00

DC Current Indicators

919-0001	F35-1-21-0	200 µA	99.00
919-0005	F35-1-22-0	2 mA	99.00
919-0007	F35-1-23-0	20 mA	99.00
919-0010	F35-1-24-0	200 mA	99.00
919-0015	F35-1-25-0	2 A	99.00
919-0281	F45-1-21-0	200 µA	180.00
919-0282	F45-1-22-0	2 mA	178.92
919-0283	F45-1-23-0	20 mA	180.00
919-0284	F45-1-24-0	200 mA	180.23
919-0280	F45-1-25-0	2 A	180.00

DC Process Indicators

919-0045	F35-1-71-0	4-20 mA	130.50
919-0050	F35-1-72-0	1-5 V	130.50
919-0055	F35-1-73-0	0-10 V	130.50
919-0285	F45-1-71-0	4-20 mA	180.00

Temperature Indicators

919-0205	F45-1-80-0	J T/C	180.00
919-0210	F45-1-81-0	K T/C	180.00
919-0220	F45-1-90-0	RTD Pt100	180.00

AC Voltage Indicators

919-0125	F35-1-31-0	200 mV	132.83
919-0130	F35-1-32-0	2 V	132.83
919-0135	F35-1-33-0	20 V	132.83
919-0140	F35-1-34-0	200 V	134.00
919-0145	F35-1-35-0	750 V	134.00
919-0395	F45-1-31-0	200 mV	215.00
919-0500	F45-1-32-0	2 V	214.29
919-0505	F45-1-33-0	20 V	214.29
919-0510	F45-1-34-0	200 V	214.29
919-0515	F45-1-35-0	750 V	214.29

AC TRMS Voltage Indicators

919-0190	F35-1-53-0	20 V	164.00
919-0195	F35-1-54-0	200 V	164.00
919-0200	F35-1-55-0	750 V	164.00
919-1190	F45-1-53-0	20 V	245.00
919-1195	F45-1-54-0	200 V	245.00
919-1200	F45-1-55-0	750 V	245.00

AC Current Indicators

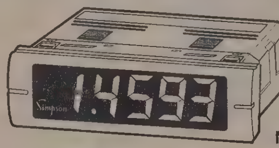
919-0291	F35-1-42-0	2 mA	134.00
919-0105	F35-1-44-0	200 mA	134.00
919-0110	F35-1-45-0	2 A	134.00
919-0120	F35-1-46-0	5 A	134.00
919-0350	F45-1-44-0	200 mA	214.29
919-0360	F45-1-46-0	5 A	214.29

AC TRMS Current Indicators

919-0158	F35-1-63-0	20 mA	164.00
919-0165	F35-1-64-0	200 mA	164.00
919-0170	F35-1-65-0	2 A	164.00
919-0175	F35-1-66-0	5 A	164.00
919-0545	F45-1-66-0	5 A	242.72

3/64 DIN Voltage/Current Indicators

Mini-Max Series 3½ and 4½ Digit Indicators



M245

- M235 Has 3½ Digits; M245 Has 4½ Digits
- 85-250 VAC Power Supply Standard; 9-32 VDC or 48 VDC Optional
- Optional Negative Image, Bright Red Backlighting
- Shallow, 2.36" (60 mm) Behind-Panel Depth
- Standard Screw Terminals for Easy Installation
- 0.5" (12.7 mm) High LCD Display

DC Process Indicators

Stock No.	Mfr.'s Type	Input	EACH
919-5080	M235-0-0-71-0	4-20 mA	99.00
919-5081	M235-0-0-72-0	1-5 V	99.00
919-5082*	M235-1-0-71-0	4-20 mA	119.00
919-5083*	M235-1-0-72-0	1-5 V	119.00
919-5084	M245-0-0-71-0	4-20 mA	134.00
919-5085	M245-0-0-72-0	1-5 V	134.00
919-5086*	M245-1-0-71-0	4-20 mA	154.00
919-5087*	M245-1-0-72-0	1-5 V	154.00

DC Voltage/Current Indicators

919-5024	M235-0-0-11-0	200 mV	84.00
919-5025	M235-0-0-12-0	2 V	84.00
919-5026	M235-0-0-13-0	20 V	84.00
919-5027	M235-0-0-14-0	200 V	84.00
919-5028	M235-0-0-15-0	750 V	84.00
919-5029	M235-0-0-24-0	200 mA	84.00
919-5030	M235-0-0-25-0	2 A	84.00
919-5031*	M235-1-0-11-0	200 mV	104.00
919-5032*	M235-1-0-12-0	2 V	104.00
919-5033*	M235-1-0-13-0	20 V	104.00
919-5034*	M235-1-0-14-0	200 V	104.00
919-5035*	M235-1-0-15-0	750 V	104.00
919-5036*	M235-1-0-24-0	200 mA	104.00
919-5037*	M235-1-0-25-0	2 A	104.00
919-5038	M245-0-0-11-0	200 mV	119.00
919-5039	M245-0-0-12-0	2 V	119.00
919-5040	M245-0-0-13-0	20 V	119.00
919-5041	M245-0-0-14-0	200 V	119.00
919-5042	M245-0-0-15-0	750 V	119.00
919-5043	M245-0-0-24-0	200 mA	119.00
919-5044	M245-0-0-25-0	2 A	119.00
919-5045*	M245-1-0-11-0	200 mV	139.00
919-5046*	M245-1-0-12-0	2 V	139.00
919-5047*	M245-1-0-13-0	20 V	139.00
919-5048*	M245-1-0-14-0	200 V	139.00
919-5049*	M245-1-0-15-0	750 V	139.00
919-5050*	M245-1-0-24-0	200 mA	139.00
919-5051*	M245-1-0-25-0	2 A	139.00

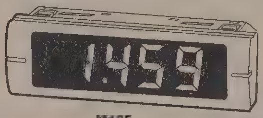
AC TRMS Voltage/Current Indicators

919-5052	M235-0-0-31-0	200 mV	119.00
919-5053	M235-0-0-32-0	2 V	119.00
919-5054	M235-0-0-33-0	20 V	119.00
919-5055	M235-0-0-34-0	200 V	119.00
919-5056	M235-0-0-35-0	750 V	119.00
919-5057	M235-0-0-44-0	200 mA	119.00
919-5058	M235-0-0-46-0	5 A	119.00
919-5059*	M235-1-0-31-0	200 mV	139.00
919-5060*	M235-1-0-32-0	2 V	139.00
919-5061*	M235-1-0-33-0	20 V	139.00
919-5062*	M235-1-0-34-0	200 V	139.00
919-5063*	M235-1-0-35-0	750 V	139.00
919-5064*	M235-1-0-44-0	200 mA	139.00
919-5065*	M235-1-0-46-0	5 A	139.00
919-5066	M245-0-0-31-0	200 mV	154.00
919-5067	M245-0-0-32-0	2 V	154.00
919-5068	M245-0-0-33-0	20 V	154.00
919-5069	M245-0-0-34-0	200 V	154.00
919-5070	M245-0-0-35-0	750 V	154.00
919-5071	M245-0-0-44-0	200 mA	154.00
919-5072	M245-0-0-46-0	5 A	154.00
919-5073*	M245-1-0-31-0	200 mV	174.00
919-5074*	M245-1-0-32-0	2 V	174.00
919-5075*	M245-1-0-33-0	20 V	174.00
919-5076*	M245-1-0-34-0	200 V	174.00
919-5077*	M245-1-0-35-0	750 V	174.00
919-5078*	M245-1-0-44-0	200 mA	174.00
919-5079*	M245-1-0-46-0	5 A	174.00

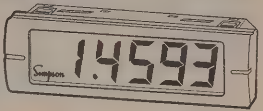
*Negative image red backlit display.

3/64 DIN Voltage/Current Indicators

Mini Series 3½ and 4½ Digit Indicators



M135



M145

- M135 Has 3½ Digits; M145 Has 4½ Digits
- +5 VDC Power Supply Standard; ±5 VDC or +9 VDC Optional
- Optional Negative Image, Bright Red Backlighting Available (with 5 VDC Power Supply)
- Less Than 0.5" (12.7 mm) Behind-Panel Depth
- 0.5" (12.7 mm) High LCD Display

Non-Backlit DC Voltage/Current Indicators

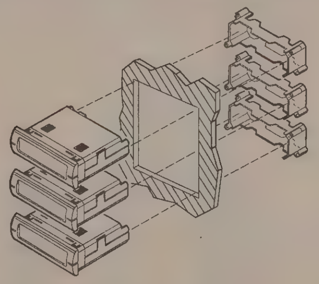
Stock No.	Mfr.'s Type	Input	EACH
919-5000	M135-0-0-11-0	200 mV	52.00
919-5001	M135-0-0-12-0	2 V	52.00
919-5002	M135-0-0-13-0	20 V	52.00
919-5003	M135-0-0-14-0	200 V	52.00
919-5004	M135-0-0-23-0	20 mA	52.00
919-5005	M135-0-0-24-0	200 mA	52.00
919-5012	M145-0-0-11-0	200 mV	78.00
919-5013	M145-0-0-12-0	2 V	78.00
919-5014	M145-0-0-13-0	20 V	78.00
919-5015	M145-0-0-14-0	200 V	78.00
919-5016	M145-0-0-23-0	20 mA	78.00
919-5017	M145-0-0-24-0	200 mA	78.00

Backlit DC Voltage/Current Indicators

919-5006	M135-1-0-11-1	200 mV	72.00
919-5007	M135-1-0-12-1	2 V	72.00
919-5008	M135-1-0-13-1	20 V	72.00
919-5009	M135-1-0-14-1	200 V	72.00
919-5010	M135-1-0-23-1	20 mA	72.00
919-5011	M135-1-0-24-1	200 mA	72.00
919-5018	M145-1-0-11-1	200 mV	98.00
919-5019	M145-1-0-12-1	2 V	98.00
919-5020	M145-1-0-13-1	20 V	98.00
919-5021	M145-1-0-14-1	200 V	98.00
919-5022	M145-1-0-23-1	20 mA	98.00
919-5023	M145-1-0-24-1	200 mA	98.00

Multiple Package 3/64 DIN Indicators

AC Voltage/Current/Frequency 3½ Digit Indicators



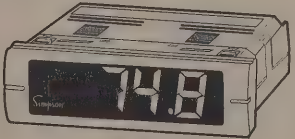
- Only One Panel Cutout Needed
- Optional Negative Image, Bright Red Backlighting
- Shallow, 2.36" (60 mm) Behind-Panel Depth
- Standard Screw Terminals For Easy Installation
- 0.5" (12.7 mm) High LCD Display

Stock No.	Mfr.'s Type	Input	EACH
919-5088	M35031	200 V/5 A/199.9 Hz	322.00
919-5089*	M35151	200 V/5 A/199.9 Hz	382.00
919-5090	M35032	750 V/5 A/1999 Hz	322.00
919-5091*	M35132	750 V/5 A/1999 Hz	382.00

*Negative image red backlit display.

3/64 DIN Temperature Indicators

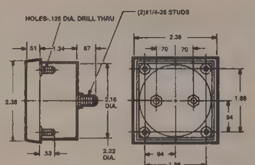
Mini-Max M240
4 Digit Indicator

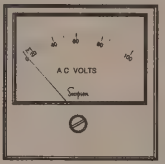


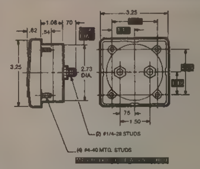
- Less Than 2.5" (63.5 mm) Behind-Panel Depth
- Screw Terminal Connectors
- 0.56" (14.2 mm) High Red LED Display
- Jumper-Selectable Input Type and °C/°F

Stock No.	Mfr.'s Type	Input	EACH
919-0546	M240-0-91-0-F	J T/C	159.00
919-0547	M240-0-92-0-F	K T/C	159.00
919-0548	M240-0-93-0-F	RTD Pt100	159.00

Century Panel Meters







Century meters have phenolic cases with glass windows with distinctive case styles and are UL Recognized. All Century DC meters have self-shielding movement (calibration is not affected by stray magnetic field or magnetic mounting). The listed AC meters have the iron-vane type movements and are calibrated at 60 Hz. Other meter sizes and ranges are available, call Allied for details.

AC Voltmeters

Range	Model 2152 2½"			Model 2153 3½"		
	Stock No.	Mfr.'s Type	EACH	Stock No.	Mfr.'s Type	EACH
0-10	918-5100	17685	65.01	—	—	—
0-15	918-5101	17686	65.01	—	—	—
0-25	918-5102	17687	65.01	918-5202	17728	67.25
0-50	918-5103	17688	65.01	918-5203	17729	67.25
0-100	—	—	—	918-5204	17730	67.25

AC Ammeters

Range	Model 2152 2½"			Model 2153 3½"		
	Stock No.	Mfr.'s Type	EACH	Stock No.	Mfr.'s Type	EACH
0-1	—	—	—	918-5205	17695	63.51
0-3	918-5405	17667	59.96	—	—	—
0-5	918-5106	17668	59.96	918-5207	17699	63.51
0-10	918-5107	17669	59.96	918-5208	17700	63.51
0-15	918-5108	17670	59.96	918-5298	17701	63.51
0-25	918-5109	17671	59.96	918-5210	17702	65.51
0-50	918-5110	17673	59.96	918-5211	17704	65.51
0-100*	918-5111	17674	59.96	918-5212	17706	63.51
0-150*	—	—	—	918-5213	17707	63.51

*Requires external donut transformer.

DC Voltmeters

Range	Model 2122 2½"			Model 2123 3½"		
	Stock No.	Mfr.'s Type	EACH	Stock No.	Mfr.'s Type	EACH
0-5	918-5113	17445	68.51	918-5214	17525	69.25
0-10	918-5114	17446	68.51	918-5215	17527	69.25
0-15	918-5115	17447	68.51	918-5216	17528	69.25
0-25	918-5116	17448	68.51	918-5217	17529	69.25
0-50	918-5117	17450	68.51	918-5218	17531	69.25
0-100	918-5118	17451	68.51	918-5219	17532	69.25

DC Ammeters

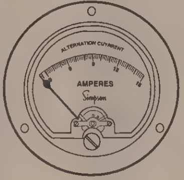
0-1	918-5119	17400	65.00	918-5220	17475	71.93
0-10	918-5120	17405	65.00	918-5221	17480	68.51
0-15	918-5121	17406	65.00	918-5222	17481	68.51
0-25	918-5122	17407	65.00	918-5223	17482	68.51
0-50	918-5123	17409	65.00	918-5224	17484	71.93
0-100*	918-5124	17410	65.00	918-5225	17485	68.51

*Requires external shunt.

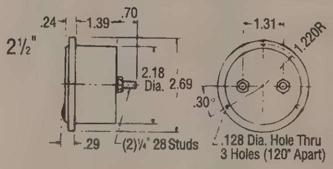
DC Milliammeters

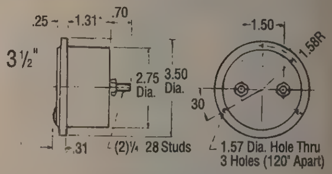
0-1	918-5125	17430	64.51	918-5226	17510	65.51
0-25	918-5126	17436	65.00	918-5227	17516	68.51
0-50	—	—	—	918-5228	17517	68.51

Round Panel Meters



Two different sizes, 2½" and 3½", are available in this popular style. Round meters have phenolic cases with glass windows and are UL recognized. All DC versions have a self-shielding movement (calibration is not affected by stray magnetic field or magnetic mounting). AC meters listed have an iron-vane type movement and are calibrated at 60 Hz. Call Allied for sizes and ranges not shown.





NOTE:*Model 55 Barrel Length 1.41

AC Voltmeters

Range	Model 155 2½"			Model 55 3½"		
	Stock No.	Mfr.'s Type	EACH	Stock No.	Mfr.'s Type	EACH
0-10	—	—	—	918-5700	08420	67.24
0-15	—	—	—	918-5701	08430	67.24
0-50	—	—	—	918-5703	08450	67.24
0-100	—	—	—	918-5704	08460	67.24

AC Ammeters

0-1	918-5604	02100	59.96	918-5705	00950	63.51
0-3	918-5605	02130	59.96	918-5706	00980	63.51
0-5	918-5606	02140	59.96	918-5707	00990	63.51
0-10	918-5607	02150	69.96	918-5708	01001	63.51
0-15	918-5608	02160	69.96	—	—	—
0-25	918-5609	02170	61.96	918-5710	01020	65.51
0-50	918-5610	02190	61.96	918-5711	01040	65.51
0-100*	918-5611	02210	59.96	918-5712	01060	63.51
0-300*	—	—	—	918-5713	01100	63.51

*Requires external donut transformer.

DC Voltmeters

Range	Model 125 2½"			Model 25 3½"		
	Stock No.	Mfr.'s Type	EACH	Stock No.	Mfr.'s Type	EACH
0-5	—	—	—	918-5714	07080	69.24
0-10	918-5614	08890	68.51	918-5715	07100	69.24
0-15	918-5615	08900	68.51	—	—	—
0-25	—	—	—	918-5717	07120	69.24
0-50	918-5617	08930	68.51	918-5718	07140	69.24
0-100	918-5618	08940	68.51	918-5719	07150	69.24

DC Ammeters

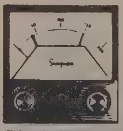
0-1	918-5619	01460	65.15	—	—	—
0-10	918-5620	01510	65.00	918-5721	00060	68.51
0-25	918-5622	01530	65.00	—	—	—
0-50	918-5623	01550	65.00	918-5724	00099	68.51
0-100*	918-5624	01570	65.00	—	—	—

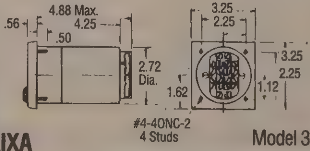
*Requires external shunt.

DC Milliammeters

0-1	918-5625	05580	64.51	918-5726	04610	65.51

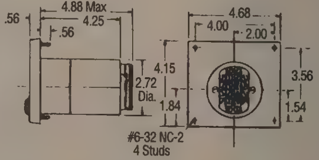
Controllers





3½" Model 3323AIXA

4½" Model 3344AIXA

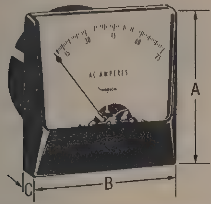


Used for a wide variety of control alarm, and limit applications. Metal cased "Rugged Seal" construction withstands rigorous environmental conditions. DPDT relay contacts for each control point rated at 5 amps, 115 VAC. Fail safe circuitry open relays in event of power failure. Meter power is 108-132 VAC, 50-400 Hz. Other sizes and ranges available — call Allied for details.

Range	3½" Single Setpoint			3½" Double Setpoint		
	Stock No.	Mfr.'s Type	EACH	Stock No.	Mfr.'s Type	EACH
0-5 DCA	918-5300	21662	349.50	—	—	—
0-50 DCmV	918-5310	21663	351.75	918-5360	21623	444.15
0-50 DCV	918-5315	21665	339.44	918-5365	21625	467.50

Range	4½" Single Setpoint			4½" Double Setpoint		
	Stock No.	Mfr.'s Type	EACH	Stock No.	Mfr.'s Type	EACH
0-5 ACA	918-5325	21677	398.50	918-5375	21637	492.96
0-150 ACV	918-5340	21680	370.85	—	—	—
0-300 ACV	—	—	—	918-5395	21642	463.96

Wide-Vue Panel Meters



Meter Dimensions

Mfr.'s Type	A		B		C	
	Inch	mm	Inch	mm	Inch	mm
1227	2.47	62.73	2.47	62.73	1.06	26.92
1257	2.47	62.73	2.47	62.73	1.06	26.92
1327	3.25	82.55	3.25	82.55	1.08	27.43
1329	4.68	118.87	3.25	82.55	1.08	27.43
1357	3.25	82.55	4.68	118.87	1.08	27.43
1359	4.68	118.87	4.68	118.87	1.08	27.43

AC Voltmeters, Iron-Vane Type Movement

Range	Model 1257 — 2½"			Model 1357 — 3½"			Model 1359 — 4½"		
	Stock No.	EACH		Stock No.	EACH		Stock No.	EACH	
		1-9	10-24		1-9	10-24		1-9	10-24
0-50	918-2981	65.00	62.80	—	—	—	918-3981	74.00	71.34
0-100	—	—	—	—	—	—	918-3982	74.00	71.34
0-150	918-2983	64.90	60.08	918-3883	67.94	65.59	918-3983	74.00	70.45
0-300	918-2984	65.00	60.18	918-3884	72.98	70.84	918-3984	74.00	70.45

AC Ammeters, Iron-Vane Type Movement

Range	Model 1257 — 2½"			Model 1357 — 3½"			Model 1359 — 4½"		
	Stock No.	EACH		Stock No.	EACH		Stock No.	EACH	
		1-9	10-24		1-9	10-24		1-9	10-24
0-1	918-2902	59.96	57.53	918-3702	63.50	60.39	918-3802	66.96	63.75
0-3	918-2903	59.96	57.53	918-3703	63.50	60.39	918-3803	66.96	63.75
0-5	918-2904	59.96	57.53	918-3704	63.50	60.39	918-3804	66.96	63.75
0-10	918-2905	59.96	57.53	918-3705	63.50	60.39	918-3805	66.96	63.75
0-15	918-2906	59.96	57.53	918-3706	63.50	60.39	918-3806	66.96	63.75
0-25	918-2907	61.96	59.26	918-3707	65.50	62.67	918-3807	68.95	66.30
0-50	918-2909	61.96	59.26	918-3709	65.50	62.67	918-3809	68.95	66.30
0-100*	918-2911	59.96	57.53	918-3711	63.50	60.39	918-3811	66.96	63.75
0-300*	918-2914	59.96	57.53	918-3714	63.50	60.39	918-3814	66.96	63.75

*Requires Donut Current Transformer.

DC Voltmeters, Self-Shielding Meter Movement

Range	Model 1227 — 2½"			Model 1327 — 3½"			Model 1329 — 4½"		
	Stock No.	EACH		Stock No.	EACH		Stock No.	EACH	
		1-9	10-24		1-9	10-24		1-9	10-24
0-10	918-2577	68.51	65.55	918-3277	69.25	66.41	918-3477	74.95	71.83
0-15	918-2578	68.56	65.55	918-3278	69.25	66.41	918-3478	74.95	71.83
0-25	918-2579	68.51	65.55	918-3279	69.25	66.41	—	—	—
0-50	918-2581	68.51	65.55	918-3281	69.25	66.41	918-3481	74.95	71.83
0-100	918-2582	68.51	65.55	918-3282	69.25	66.41	918-3482	74.95	71.83
0-150	918-2583	68.51	65.55	918-3283	69.25	66.41	918-3483	74.95	71.83
0-300	918-2586	68.51	65.55	—	—	—	918-3486	74.95	71.83

DC Ammeters, Self-Shielding Meter Movement

Range	Model 1227 — 2½"			Model 1327 — 3½"			Model 1329 — 4½"		
	Stock No.	EACH		Stock No.	EACH		Stock No.	EACH	
		1-9	10-24		1-9	10-24		1-9	10-24
0-1	918-2501	65.00	62.25	918-3201	68.51	65.55	918-3401	73.96	70.40
0-3	918-2503	65.00	62.25	918-3203	68.51	65.55	918-3403	73.96	70.40
0-5	918-2504	65.00	62.25	918-3204	68.51	65.55	918-3404	73.96	70.40
0-10	918-2505	65.00	62.25	918-3205	68.51	65.55	918-3405	73.96	70.40
0-15	918-2506	65.00	62.25	918-3206	68.51	65.55	918-3406	73.96	70.61
0-25	918-2507	65.00	62.25	918-3207	68.51	65.55	918-3407	73.96	70.61
0-30	918-2508	65.00	62.25	918-3208	68.51	65.55	918-3408	73.96	70.61
0-50	918-2509	65.00	62.25	918-3209	68.51	65.55	918-3409	73.96	70.61
0-100*	918-2510	65.00	62.25	918-3210	68.51	65.55	918-3410	73.96	70.61

*Require 50 mV shunt; meter has a 50 mV movement and a 0-100 DC amp dial.

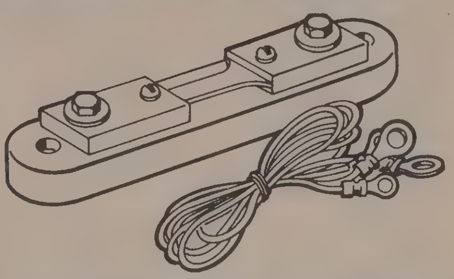
DC Milliammeters, Self-Shielding Meter Movement

Range	Model 1227 — 2½"			Model 1327 — 3½"			Model 1329 — 4½"		
	Stock No.	EACH		Stock No.	EACH		Stock No.	EACH	
		1-9	10-24		1-9	10-24		1-9	10-24
0-1	918-2550	64.51	61.31	918-3250	65.49	62.72	918-3450	70.50	67.61
0-5	—	—	—	918-3252	65.49	62.72	918-3452	70.50	67.61
0-10	918-2553	64.51	61.31	918-3253	65.49	62.72	—	—	—
0-25	918-2556	64.51	61.31	918-3256	68.51	65.55	—	—	—

DC Microammeters, Self-Shielding Meter Movement

Range	Model 1227 — 2½"			Model 1327 — 3½"			Model 1329 — 4½"		
	Stock No.	EACH		Stock No.	EACH		Stock No.	EACH	
		1-9	10-24		1-9	10-24		1-9	10-24
0-100	918-2530	74.25	70.68	918-3230	76.51	72.76	918-3430	85.00	81.96
50/0/50	918-2536	75.00	71.86	918-3236	77.00	73.81	918-3436	85.75	82.69

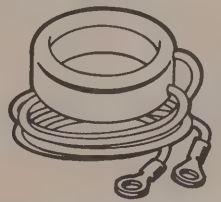
Portable Shunts For DC Ammeters



These shunts are adjusted for a 50 millivolt drop for use with analog and digital panel ammeters where external shunts are required. Portable shunts have phenolic bases and accept up to 200 amperes. **Accuracy:** ±1%. 5-foot leads (0.065 ohms) are included.

Stock No.	Mfr.'s Type	Amps	EACH
918-6705	06705	15	40.46
918-6707	06707	25	40.46
918-6709	06709	50	40.46
918-6713	06713	100	40.46
918-6715	06715	200	40.46

Donut Current Transformers



For use with AC analog and digital ammeters. Insert one turn primary type for use with switchboard and panel ammeters where external transformers are required. Rated at 2 VA input. All have 5 A output. All have 2' leads.

Stock No.	Mfr.'s Type	Amps	EACH
918-1294	01293	50	29.00
918-1297	01297	100	29.97
918-1296	01298	150	29.97
918-1298	01299	200	29.97
918-1299	01300	300	29.97

Current Transformers and Transducers

Current Transformers are similar to Donut Current transformers, except that the Transformers have terminals instead of secondary leads. These are ideal for use with a digital AC Ammeter, and can be conveniently mounted to a panel or fixture.

Current Transducers monitor high AC Current signals and emit a 4-20 mA signal. This signal can be sent over long distances (up to 1000') to a digital Process Indicator in a remote location.

Current Transformers With Terminals

Stock No.	Range	Burden VA @ 60 Hz	EACH
918-4000	100:5	2.0	26.00
918-4001	150:5	5.0	27.86
918-4002	200:5	5.0	27.86
918-4003	300:5	12.5	26.00
918-4004	500:5	20.0	27.86
918-4005	1000:5	25.0	37.44

Current Transducers (AC Amps To 4-20 DCmA)

Stock No.	Input Range	Current Output	EACH
918-4010	0-5	4-20 mA	229.50
918-4011	0-50	4-20 mA	256.50
918-4012	0-75	4-20 mA	271.13
918-4013	0-100	4-20 mA	271.13
918-4014	0-150	4-20 mA	283.50
918-4015	0-200	4-20 mA	283.50
918-4016	0-300	4-20 mA	299.26

Telephone, Audio, Security and Computer Products

Manufacturer	Page
AIM	909, 910
Atlas Soundolier	931
Bogen Communications	911, 912, 913
CSI Pro Video/CSI Speco.	914, 915, 916
David Clark	917
Fanon	918
G.C. Electronics	919, 920, 921
ICC	922, 923, 924
Mallory	925, 926, 927
Motorola Communications	928
Ohmite	929
Pelco	933
Plantronics	930
Quam-Nichols	931
Radio Shack	932
Sanyo	933
Shure	928
Walker Equipment	934

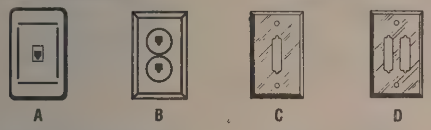
For other products by some of these manufacturers, see listing in Section 1.

Product	Page
Alarm Products	
Accessories	914, 933
Alarms	932
Buzzers	922, 923, 925, 932
Cameras	914, 933
Indicators	926
Security Video	914, 933
Sirens	916, 926, 932
Sounders	922
Monitors	914, 933
Time Lapse Recorders	933
Transducers	923, 927, 929
Video Switchers	914
Warning Devices	925
Audio Equipment	
Amplifiers	911, 912, 915, 916, 918
Attenuators	931
Baffles	913, 931
Buzzers	922, 923, 926, 932
Ceiling Baffles	931
Ceiling Speaker Mounting Device	931
Controls	915, 919
Driver Units	931
Horns	912, 913, 915, 931
Indicators	926
Intercoms	911
Megaphones	916, 918
Microphone Stands	931
Microphones	911, 924, 928, 932
Portable Radios	928
Power Supplies	912
Receivers	913
Sirens	927, 932
Sonalerts	925
Sound Columns	913
Sounders	922
Speaker Wire	919
Speakers	913, 915, 916, 918, 919, 924, 931, 932
Television Wall Mounts	919
Transceivers	918
Transducers	923, 926, 929
Transformers	912, 915, 916, 931
Tuner	913
Computer Products	
BNC Cable Assemblies	921
Cables	910, 921
Computer Hook-Up Cables	910
D-Sub Adapter	909
Data Connectors	909
Data Switch	910, 921
Gender Adapters	910
Modular Cord Assemblies	921
Network Plates	909, 921
Peripheral Cable	921
Printer Cables	921
Surge Protectors	910
Surge Suppressors	921
System Cable	921
Headsets	
AC Powered Communication System	917
Accessories	930
CompuSet	930
Encore Headset	934
FreeHand	930
Hands Free Cordless Telephone	930
Headset Adapters	930
Lightweight Telephone Headsets	930
Mirage Headset	930
Modular Headsets	930
Noise Attenuating Headsets	917
Noise Censor Series	934
Starset Headsets	930
Supra Headsets	934
TriStar Headset	934
Voice Powered Headsets	917
Telephone Products	
Access Module	912
Accessories	920
Adapters	909, 920
Amplifier	934
Announcement Equipment	912
Baluns	909
Crimping Tools	909
Data Connectors	909
Extension Cords	917, 920
Extension Ringer	920
Flat, Silver-Color Wire	909
Handsets	934
Hook-Up Wire	920
Intercoms	918
Jacks and Plugs	909, 920
Line Tester	920
Modular Jacks	909
Modular Plugs	909, 920
Noise Censor Series	934
Outdoor Bell	920
Paging Equipment	912
Punch Down Tools	909
Replacement Cords	920
Stranded Flat Modular Line Cord	920
Tele-Communications Installer Kit	909
Telephone Cords	920, 932
Twisstop	920
Wall Plates	909, 920

Baluns

Stock No.	Mfr.'s Type	Description	EACH		
			1-9	10-24	25-99
510-3010	30-9406	Twin-ax male to twisted pair/RJ-11	17.90	16.11	14.50

Wall Plates



For Wall Phones (Plastic)

Stock No.	Mfr.'s Type	Fig.	Description	EACH		
				1-9	10-24	25-99
510-3100	32-1224	A	4 Conductor	3.20	2.88	2.56

Flush Mounting for Voice and Data (Plastic)

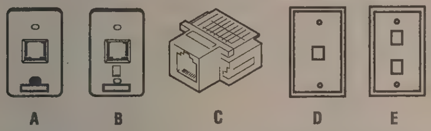
Designed and engineered to meet UL specifications except for 32-1268.

510-3135	32-1218	B	Keyed 8 Conductor (Dual)	5.90	5.31	4.78
510-3140	32-1268	B	1-6 Cond., 1-Keyed 8 Cond.	5.60	5.04	4.54

For D-Subs (Stainless Steel)

510-3180	40-9531	C	Single for 25-contact	2.21	1.89	1.62
510-3185	40-9532	D	Double for 25-contact	2.21	1.89	1.62

Data Connectors and Wall Plates



Data Connector Type 1 and Type 2 Wall Plates (Plastic)

Stock No.	Mfr.'s Type	Fig.	Description	EACH		
				1-9	10-24	25-99
510-3302	30-9204	A	Type 1 Wall Plate	2.84	2.43	2.19
510-3304	30-9205	B	Type 2 Wall Plate	2.84	2.43	2.19

Multi-Colored Keystone Jacks — Fig. C

- **Suitable for 22 to 26 AWG Wire — Stranded or Solid**
- **30 Micro Inch Gold Plated Contacts**
- **ABS Material — UL94VO**
- **Meets Level 3 and 4 Requirements**

Stock No.	Mfr.'s Type	Color	No. of Conductors	EACH		
				1-24	25-99	100-249
510-3310	30-9200	Black	4	3.90	3.51	3.16
510-3312	30-9201	Black	6	3.90	3.51	3.16
510-0210	30-9201BU	Blue	6	4.70	4.23	3.80
510-0215	30-9201GN	Green	6	4.70	4.23	3.80
510-0220	30-9201RE	Red	6	4.70	4.23	3.80
510-0225	30-9201WH	White	6	4.70	4.23	3.80
510-0230	30-9201YE	Yellow	6	4.70	4.23	3.80
510-3314	30-9203†	Black	6	4.50	4.05	3.65

Keyed Jacks

510-3316	30-9202	Black	8	4.50	4.05	3.65
510-0245	30-9202BU	Blue	8	4.90	4.41	3.96
510-0250	30-9202GN	Green	8	4.90	4.41	3.96
510-0255	30-9202RE	Red	8	4.90	4.41	3.96
510-0260	30-9202WH	White	8	4.90	4.41	3.96
510-0265	30-9202YE	Yellow	8	4.90	4.41	3.96

†Dec. Offset.

Keystone Wall Plates (Plastic)

Stock No.	Mfr.'s Type	Fig.	Description	EACH		
				1-9	10-24	25-99
510-3318	30-9209	D	Single Outlet Keystone Wall Plate	2.21	1.89	1.62
510-3320	30-9210	E	Dual Outlet Keystone Wall Plate	2.21	1.89	1.62

Modular Telephone Plugs

For Terminating Line Cords (Not for Handset Cords)

Stock No.	Mfr.'s Type	Description	EACH		
			1-99	100-499	500-999
510-3052	32-1984	4 contact (RJ-11/4) color coded*	.50	.45	.41

Designed and Engineered to Meet UL Specifications

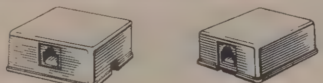
510-3040	32-1974UL	4 contact DEC offset	.53	.48	.41
510-3042	32-1976UL	6 contact DEC offset	.53	.48	.41
510-3044	32-1986UL	6 contact for round cable	.26	.23	.19
510-3046	32-1988UL	8 contact for round cable	.42	.38	.32
510-3051	32-1954UL	4 contact (RJ-11/4)	.15	.14	.11
510-3056	32-1956UL	6 contact (RJ-12/6)	.19	.17	.15
510-3061	32-1958UL	8 contact (RJ-45/8)	.38	.34	.29
510-3063	32-1968KUL	8 contact keyed	.42	.38	.32
510-3064	32-1910UL	10 contact	.84	.76	.65

Mini Handset Modular Plug (not for line cords)

510-3065	32-1964UL	4 contact mini handset	.16	.14	.13

*For flat or round wire.

Surface Mount Modular Jack



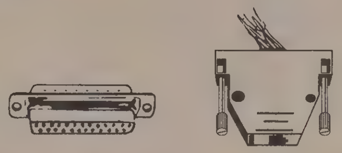
Removable Snap On Cover; Screw Terminal for Easy Wiring

Stock No.	Mfr.'s Type	Description	EACH		
			1-9	10-24	25-99
510-3250	32-2034	4 Contacts	2.10	1.89	1.70
510-3255	32-2036	6 Contacts	3.10	2.79	2.51
510-3257	32-2038K	8 Contacts	4.20	3.78	3.40

RJ31X Surface Jack

510-3260	32-2058K	8 Contact Jack with shorting bar	4.10	3.69	3.32

25-Contact D-Sub to Modular Jack Adapter



Deluxe 2-Piece Construction

RS-232 Plug to Modular Jacks

Stock No.	Mfr.'s Type	Description	EACH		
			1-9	10-24	25-99
510-3155	40-9576M	6 Contact Jack	6.00	5.40	4.86
510-3160	40-9578M	8 Contact Jack	5.50	4.95	4.46

RS-232 Receptacle to Modular Jacks

510-3175	40-9578F	8 Contact Jack	5.50	4.95	4.46

1-Piece Construction

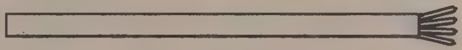
RS-232 Plug to Modular Jacks

510-3151	40-9584M	25 Pos., 4 Conductor	4.00	3.60	3.24
510-3156	40-9586M	25 Pos., 6 Conductor	4.00	3.60	3.24
510-3161	40-9588M	25 Pos., 8 Conductor	4.00	3.60	3.24

RS-232 Receptacle to Modular Jacks

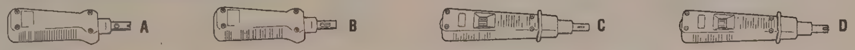
510-3171	40-9586F	25 Pos., 6 Conductor	3.68	3.15	2.84
510-3176	40-9588F	25 Pos., 8 Conductor	3.68	3.15	2.84

Flat, Silver-Color Telephone Wire



Stock No.	Mfr.'s Type	Description	PER COIL/1000'		
			1-4	5-9	10-Up
510-3075	65-TF224M	4 conductor, 28 AWG	74.00	66.60	59.94
510-3080	65-TF226M	6 conductor, 28 AWG	110.00	99.00	89.18
510-3085	65-TF228M	8 conductor, 28 AWG	150.00	135.00	121.50

Prestige® Punch Down Tools

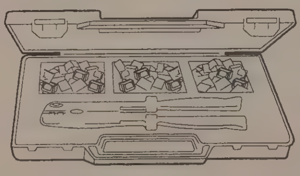


Non-Impact

Stock No.	Mfr.'s Type	Fig.	Description	EACH
510-4410	24-410P	A	For 66 and 110 type terminals (punch only)	27.90
510-4411	24-411P	B	For 66 type terminals (punch and cut)	27.90
510-4414	24-414P	—	Krone punch down tool	30.52

Impact

510-4412	24-412P	C	Automatic punch down for 66 type terminals with impact adjustment (punch and cut)	69.90
510-4413	24-413P	D	Automatic punch down for 110 type terminals with impact adjustment (punch and cut)	69.90
510-4415	24-415P	—	Krone punch down tool	69.90



Tele-Communications Installer Kit

This Kit Contains

- **1 — 24-4680P Combination Crimp Tool; Crimps 2, 4, 6, 8 and 8-Keyed Mod-Plugs (Will Not Work on AMP Modular Plugs)**
- **50 — 32-1954UL 4 Cond. Modular Plugs**
- **50 — 32-1956UL 6 Cond. Modular Plugs**
- **50 — 32-1958UL 8 Cond. Modular Plugs**
- **1 — Durable Hard Shell Storage Box**

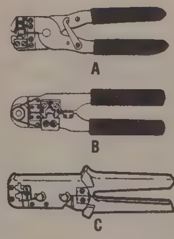
510-8832. Model 24-8832K .... EACH 115.80

Modular Plug Crimping Tools

Strips the wire and crimps the wire to plug. For round or flat cable.

Stock No.	Mfr.'s Type	Fig.	Description	EACH	
				1-9	10-24
510-7746	24-7746P	A	For 2, 4 or 6 Contact Modular Plugs	18.90	17.01
510-7748	24-7748P	B	For 8 and 8-Keyed Contact Modular Plugs	25.90	23.31
510-4680**	24-4681P	C	For 4, 6, 8 and 8-Keyed Contact Modular Plugs	59.90	53.91
510-7864†	24-7864P	—	For 4, 6, 8, 10 Contact and 6 Contact DEC Offset Plugs	199.00	179.10
510-7749	24-7749P	B	For 4 Conductor Mini Handset Plugs	25.90	23.31

**Won't work on Amp RJ-45 plugs. †Will work on Amp RJ-45 plugs.



Computer Hook-Up Cables

Meet or exceed original manufacturer's specifications.

25 Pin to 25 Pin — Fig. A

Stock No.	Mfr.'s Type	Description	Length	EACH 1-9	EACH 10-24
510-9901	30-9506MM	Male to Male	6'	9.90	8.91
510-9902	30-9510MM	Male to Male	10'	13.00	11.70
510-9903	30-9525MM	Male to Male	25'	20.00	18.00
510-9904	30-9506MF	Male to Female	6'	9.90	8.91
510-9905	30-9510MF	Male to Female	10'	13.00	11.70
510-9906	30-9525MF	Male to Female	25'	20.00	18.00

25 Pin Male to 36 Pin Centronics Male — Fig. B

Stock No.	Mfr.'s Type	Length	EACH 1-9	EACH 10-24
510-9907	30-9506MC	6'	9.90	8.91
510-9908	30-9510MC	10'	13.00	11.70
510-9909	30-9525MC	25'	20.00	18.00

36-Pin Centronics Male to 36 Pin Centronics Male — Fig. C

Stock No.	Mfr.'s Type	Length	EACH 1-4	EACH 5-9
510-9910	30-9506CC	6'	19.90	17.91
510-9911	30-9510CC	10'	23.00	20.70
510-9912	30-9525CC	25'	28.00	25.92

IBM PC Cable — 9-Pin Male to 15-Pin High Density Male — Fig. D

Stock No.	Mfr.'s Type	Length	EACH 1-9	EACH 10-24
510-9959	30-IBM10	10'	9.90	8.91
510-9960	30-IBM25	25'	15.90	14.31

9-Pin to 9-Pin — Fig. E

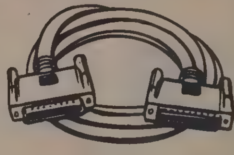
Stock No.	Mfr.'s Type	Description	Length	EACH 1-9	EACH 10-24
510-9935	30-9506-99	Male to Female	6'	7.50	6.75
510-9931	30-9510-99	Male to Female	10'	11.50	10.35
510-9936	30-9506-88	Male to Male	6'	7.50	6.75
510-9932	30-9510-88	Male to Male	10'	11.50	10.35
510-9933	30-9506-77	Female to Female	6'	5.90	5.31
510-9934	30-9510-77	Female to Female	10'	11.50	10.35

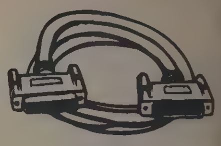
25-Pin Male to 9-Pin Female — Fig. F

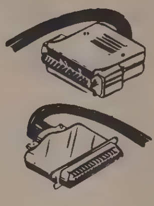
Stock No.	Mfr.'s Type	Length	EACH 1-9	EACH 10-24
510-9937	30-9506-29	6'	8.00	7.20
510-9938	30-9510-29	10'	11.90	10.71

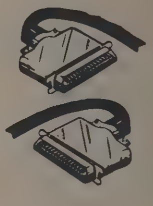
15-Pin High Density to 15-Pin High Density — 6' Length — Fig. G

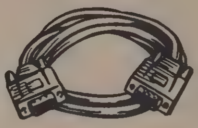
Stock No.	Mfr.'s Type	Description	EACH 1-9	EACH 10-24
510-9961	30-1506MF	Male to Female	9.50	8.55
510-9962	30-1506MM	Male to Male	9.50	8.55
510-9963	30-1506FF	Female to Female	9.50	8.55

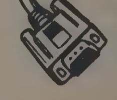

A

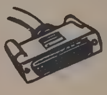

A

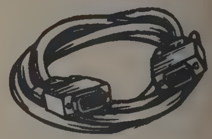

B

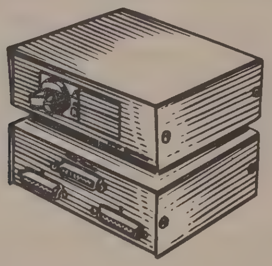

C


D


E


F


G



Multiport Data Switches

- Fully Shielded Metal Case
- Current Capacity 2 Amps
- 7 × 5 × 2'

Data Switches give you the flexibility to expand your system's capabilities. For computer port expansion or to share peripheral devices.

Stock No.	Mfr.'s Type	In and Out	Switch Position	Pin Configuration	EACH 1-4	EACH 5-9
510-9945	30-9575-2	RS-232	2 (1 in/2 out)	RS-232 9 pin female	25.90	23.31
510-9913	30-9585-2	RS-232	2 (1 in/2 out)	RS-232 25 pin female	19.90	17.91
510-9914	30-9585-4	RS-232	4 (1 in/4 out)	Pin 1 com; Switch 25	49.90	44.91
510-9946	30-9590-2	RJ-11	2 (1 in/2 out)	4 and 6 conductor teleplug	31.00	27.90
510-9916	30-9595-2	Cent	2 (1 in/2 out)	Centronics 36-pin female	33.00	29.70

Gender Adapters and Surge Protectors

9-Pin Gender Adapter — Fig. A

Stock No.	Mfr.'s Type	Gender	EACH 1-9	EACH 10-24
510-9919	30-9507	Male to Male	5.00	4.50
510-9920	30-9508	Female to Female	5.00	4.50

15-Pin Gender Adapter — Fig. B

510-9921	30-9517	Male to Male	8.00	7.20

25-Pin Gender Adapter — Fig. C

510-9923	30-9500	Male to Male	5.70	5.13
510-9924	30-9501	Female to Female	5.70	5.13
510-9925	30-9505	Male to Female	7.50	6.75

Mini Gender Changer — Fig. D

Stock No.	Mfr.'s Type	Description	EACH 1-9	EACH 10-24
510-9970	30-9530	9-Pin Female to Female	6.00	5.40
510-9971	30-9531	9-Pin Male to Male	6.00	5.40
510-9972	30-9532	15-Pin Female to Female	6.50	5.85
510-9973	30-9533	15-Pin Male to Male	6.50	5.85
510-9974	30-9534	25-Pin Female to Female	7.50	6.75
510-9975	30-9535	25-Pin Male to Male	7.50	6.75

VGA Adapter 9-Pin Female to 15-Pin High Density Male — Fig. E

Stock No.	Mfr.'s Type	Gender	EACH 1-9	EACH 10-24
510-9969	30-9522	Female to High Density Male	8.00	7.20

25-36 Adapter DB25 Male to 36-Pin Centronic Male — Fig. F

Stock No.	Mfr.'s Type	EACH 1-9	EACH 10-24
510-9930	30-9519	7.50	6.75

9-25 Pin Gender Adapter 9-Pin Female to 25-Pin Male — Fig. G

510-9955	30-9516	7.00	6.30

RS-232 Breakout Box — Pocket Size — Fig. H

- 24 Switches
- 20 Jumpers Included
- 10 Interface Signal Powered LEDs

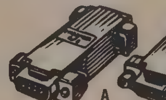
510-9956	30-9549	71.90	64.71

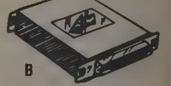
Surge Protector Female to Male G1 to 2, 3 and 7 — Fig. J

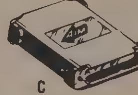
510-9928	30-9504	12.00	10.80

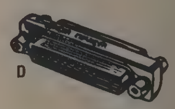
Deluxe Surge Protector Female to Male G1 to 2 through 8 and 20 — Fig. J

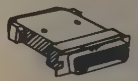
510-9957	30-9514	13.00	11.70

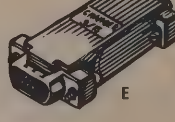

A

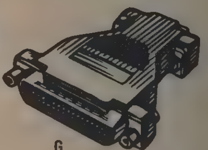

B

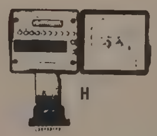

C

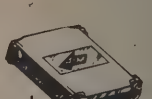

D


F


E


G


H


J

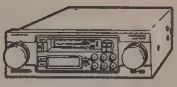
Intercoms and Amplifiers

BOGEN
COMMUNICATIONS, INC.

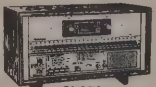
Intercoms

PI-35A and SI-35A

- Instant Two-Way Communication with Master Station
- Color Coded for Easy Operation
- Instant EMERGENCY/ALL ROOM Announcements
- Separate 35-Watt Program Channel


CR-100

PI-35A


SI-35A

Both have built-in 20-Watt intercom and 35-Watt program amplifiers. Calls from a remote station equipped with the CA-10 Call-in switch are announced by light annunciation and tone signal. Finished in simulated walnut veneer. **Specifications. Output:** Balanced 25 VCT line. **Power Requirements:** 120 V, 60 Hz AC; 100 W maximum. Model PI-35A provides communication with up to 25 remote locations. Model SI-35A provides communication with 25 to 75 remote locations.

Stock No.	Mfr.'s Type	Description	Dimensions Inches	Shipping Weight (Lbs.)	EACH	
					1-5	6-Up
733Q2560†	PI-35A	Control Center Intercom	8½ × 20½ × 11	20	1370.88	1256.64
733Q2565*†	SI-35A	Control Center Intercom	12 × 20½ × 11	35	1500.76	1374.83
733Q0101	CR100	Cassette Player	—	5	326.40	296.73
733Q2570	SBA225	Room Selector and Annunciator Panel	19 × 1¾ × 2	4	301.92	274.74

*Pictured with optional cassette player CR100. †Connector kits (below) required for installation of each 25-station group.

Accessories
733-1500. Model 25-18. Connector Kit (18 ga.) .... **PER PK./30 22.53**
733-1505. Model 25-20. Connector Kit (20 ga.) .... **PER PK./30 22.53**
733-1510. Model 25-22. Connector Kit (22 ga.) .... **PER PK./30 22.53**
733-1520. Model TL156. Insertion Tool .... **EACH 24.48**

Selective Ring-Common Talk Interphone/Paging System

- Choice of 6 or 12 Station Capacity
- High Intelligibility, High Reliability
- Selective Ringing, Common-Talk Communications
- Optional Loudspeaker Paging
- A Single Power Supply (Bogen Model RF-24A) Is Required for Each Installation

Model TP-6AP. 6 Button Interphone. **Dimensions:** 9.36 × 4.1 × 3.51.
733-6000. Model TP-6AP .... **EACH 106.82**
Model TP-12AP. 12 Button Interphone. **Dimensions:** 9.36 × 4.1 × 3.51.
733-6001. Model TP-12AP .... **EACH 115.72**
Accessories
733-2305. Model IH-8A. Horn (2 Way). 6½ × 6⅝. .... **EACH 49.33**
733-5215. Model RF-24A. Power Supply. 2.75 × 3.25 × 6.375 ... **EACH 102.82**

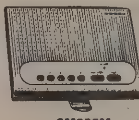
TP-6AP

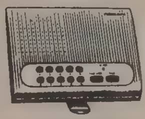
TP-12AP

RF-12A/RF-24A

IH-8A

Administrative Intercom System

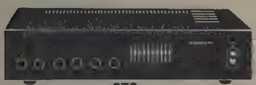

CM206M

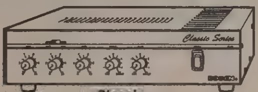

CM211M

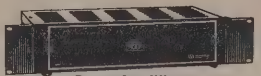
- Choice of 6 or 11 Station Capacity
- All Master or Multiple Masters with Remotes
- Selective, Electronic Tone Calling
- High Intelligibility, High Reliability
- Push-On/Push-Off Call Buttons
- Privacy Feature
- A Single Power Supply (Bogen Model RF-12A) Is Required for Each Installation

733-0206. Model CM-206M. Master Station (6). 5.46 × 7.09 × 1.67 .... **EACH 173.33**
733-0211. Model CM-211M. Master Station (11). 5.46 × 7.09 × 1.67 .... **EACH 207.99**
733-0200. Model CM-200X. Remote Station. 5.46 × 7.09 × 1.67 .... **EACH 41.67**
733-5210. Model RF-12A. Power Supply. 2.7 × 3.25 × 6.335 .... **EACH 102.82**

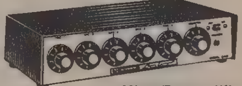
Amplifiers


CTS


Classic


Power Amplifier

Gold Seal


Mixer/Preamplifier

Classic Series

- Balanced Low-Impedance Microphone Inputs
- Classic 10 and 20 Mix 3 Inputs; 2 Mic and Tel or 1 Mic/1 Aux and Tel
- Classic 35/60/100 Mix 4 Inputs; Switch Permits 2 Mic/1 Aux and Tel or 1 Mic/2 Aux and Tel Operation
- Built-In Microphone Precedence Circuit
- Built-In Telephone Input for Paging Applications
- Vox Muting
- Volume, Treble and Bass Controls
- Bogen Model WMT-1A Can Be Installed to Allow Output-Matching to a Telephone Line
- 120 VAC, 60 Hz Source Equipped with Thermal Breaker, Electronic Overload and Electrical Circuit Breaker Protection

Stock No.	Mfr.'s Type	Power Output	Outputs Impedance	Dimensions Inches	Shipping Weight (Lbs.)	Power Consumption	EACH	
							1-5	6-Up
733-0084	C100	100 Watts	Balanced 4 and 16 Ohms, 25 V C.T. 70 V Line (49 Ohms)	14½ × 11 × 3¾	22	250 W, 120 V, 60 Hz	483.07	439.16
733-1105	C60	60 Watts	Balanced 8 and 16 Ohms, 25 V C.T. 70 V Line (82 Ohms)	14½ × 11 × 3¾	17	170 W, 120 V, 60 Hz	409.63	372.39
733-0082	C35	35 Watts	Balanced 8 and 16 Ohms, 25 V C.T. 70 V Line (140 Ohms)	14½ × 10⅝ × 3¾	15	96 W, 120 V, 60 Hz	328.03	300.56
733-2011	C20	20 Watts	Balanced or Unbalanced 4, 8 and 16 Ohms 25 V (31.3 Ohms), 70 V Line (250 Ohms)	11⅜ × 7¾ × 2⅞	8	60 W, 120 V, 60 Hz	239.04	217.43
733-2021	C10	10 Watts	Balanced or Unbalanced 4, 8 and 16 Ohms 25 V (62.5 Ohms), 70 V Line (500 Ohms)	11⅜ × 7¾ × 2⅞	7	46 W, 120 V, 60 Hz	189.31	172.10
733-1114	GA6A	6 Watts	8 Ohms, 25 V, 70 V Line	8½ × 6 × 2⅝	5	16 W, 120 V, 50 Hz	155.04	140.95

Gold Seal Series Amplifiers

- Dual Equalizer (For Either Feedback Control or Full-Range Graphic Equalization)
- Variable Loudness Contour Control
- Aphex® Aural Exciter Circuitry
- 35, 60, 100 and 1560 Watt Models All Have Identical Inputs and Features to Cover a Wide Range of System Sizes
- 6 Microphone Inputs
- 2 Aux Inputs
- Remote Volume Control
- WMT-1A Can Be Installed to Allow Output-Matching to a Telephone Line
- Phantom Power Is Built-In for Use with Condenser-Type Microphones
- 120 Volt AC Source (The Unit Can Be Adapted for 240 Volt Operation)
- Equipped with a Thermal Breaker
- Electronic Overload Protection and Resettable Circuit Breaker

Stock No.	Mfr.'s Type	Power Output	Outputs Impedance	Dimensions Inches	Shipping Weight (Lbs.)	EACH	
						1-5	6-Up
733Q3000	GS35	35 Watts	500/600 Ohm Line-Matching Transformer (with WMT-1A accessory); Balanced or Unbalanced at 8 Ohms, 25 V, 25 V CT, 70 V, 100 V*	3½ × 16½ × 12	19.0	502.00	456.00
733Q3006	GS60	60 Watts	500/600 Ohm Line-Matching Transformer (with WMT-1A accessory); Balanced or Unbalanced at 8 Ohms, 25 V, 25 V CT, 70 V, 100 V*	3½ × 16½ × 12	24.0	593.45	544.00
733Q3010	GS100	100 Watts	500/600 Ohm Line-Matching Transformer (with WMT-1A accessory); Balanced or Unbalanced at 8 Ohms, 25 V, 25 V CT, 70 V, 100 V*	3½ × 16½ × 12	28.0	730.00	663.05
733Q3015	GS150	150 Watts	500/600 Ohm Line-Matching Transformer (with WMT-1A accessory); Balanced or Unbalanced at 8 Ohms, 25 V, 25 V CT, 70 V, 100 V*	3½ × 16½ × 12	30.5	840.00	762.82

*Direct Unbalanced at 4 ohms.

CTS Series

- 5 Mixable Inputs for Balanced Low-Impedance Microphones
- 2 Inputs Switchable to High-Impedance Auxiliary Sources
- Built-In Microphone Precedence Circuitry
- Phantom Power Supply for Condenser Microphones
- Integral Automatic Level Control (ALC)
- Input or Output Matching to Telephone Line with WMT-1A Transformer
- Built-In ⅔-Octave, 10-Filter Equalizer With Slide Controls Permits Boosting or Attenuating Any of 10 Selected Frequencies
- Auxiliary Inputs Accept a Tuner, Tape/Cassette Player, Line-Matching Transformer, or Tone Generator

Model CTS1035. Power Output: 35 watts. **Outputs Impedance:** 8-, 16-ohms, 25 VCT (4.5-ohms), 25 V, and 70.7 V (140-ohms) balanced/unbalanced lines. **Dimensions:** 3¾ × 16¼ × 11". **Shipping Weight:** 16 lbs. **Power Consumption:** 0.9 A, 98 W.
733-1035. Model CTS1035. **1-5** .... **EACH 384.26**
6-Up .... **EACH 352.24**

Model CTS1060. Power Output: 60 watts. **Outputs Impedance:** 8-, 16-ohms, 25 VCT, 25 V, and 70.7 V (82-ohms) balanced/unbalanced lines. **Dimensions:** 3¾ × 16¼ × 12¾". **Shipping Weight:** 18 lbs. **Power Consumption:** 1.6 A, 170 W.
733-0091. Model CTS1060. **1-5** .... **EACH 501.02**
6-Up .... **EACH 455.48**

Model CTS1100. Power Output: 100 watts. **Outputs Impedance:** 4-, 6-, 8-, 16-ohms, 25 VCT, 25 V (6.25 ohms), and 70.7 V (40 ohms) balanced/unbalanced lines. **Dimensions:** 3¾ × 16¼ × 12¾". **Shipping Weight:** 20 lbs. **Power Consumption:** 2.5 A, 250 W.
733-1100. Model CTS1100. **1-5** .... **EACH 587.52**
6-Up .... **EACH 534.11**

Power Amplifiers

The BPA and HTA Series are designed to fulfill power amplification requirements with high quality and reliability. Inputs are high impedance, unbalanced, convertible to low impedance, balanced or unbalanced, with optional TL600 transformer. Designed for continuous heavy-duty operation. The amplifiers are thermally protected to prevent damage due to excessive temperatures. Accessory rack panel kits permit mounting in a 19-inch equipment rack. (RPK-53, RPK-54 for BPA-60, BPA-125, respectively).

Model HTA-250A. Power Output: 250 watts. **Outputs Impedance:** 4, 8 ohms, 25 VCT (2.5 ohms), 70.7 V (20 ohms). **Dimensions:** 19 × 11 × 5¼". **Shipping Weight:** 50 lbs. **Power Consumption:** 120 V, 60 Hz, 520 W Idle, 60 W. Furnished with brackets.
733Q2250. Model HTA-250A. **1-5** .... **EACH 934.69** **6-Up** .... **EACH 856.80**
Model HTA-125A. Power Output: 125 watts. **Outputs Impedance:** 4, 8 ohms, 25 VCT (5 ohms), 70.7 V (40 ohms). **Dimensions:** 19 × 11 × 5¼". **Shipping Weight:** 36 lbs. **Power Consumption:** 120 V, 60 Hz, 260 W Idle, 45 W. Furnished with brackets.
733-2125. Model HTA-125A. **1-5** .... **EACH 623.40** **6-Up** .... **EACH 599.75**
Model BPA-60. Power Output: 60 watts. **Outputs Impedance:** 8 ohms, 25 V, 16 ohms, 25 VCT, 70 V. **Dimensions:** 15¼ × 8 × 3½". **Shipping Weight:** 19 lbs. **Power Consumption:** 180 W, 120 V, 60 Hz.
733Q2240. Model BPA-60. **1-5** .... **EACH 474.76** **6-Up** .... **EACH 435.20**
733-2420. RPK-53. 3½"H brackets for BPA-60. **1-5** .... **EACH 26.71**
6-Up .... **EACH 24.48**

Mixer/Preamplifier

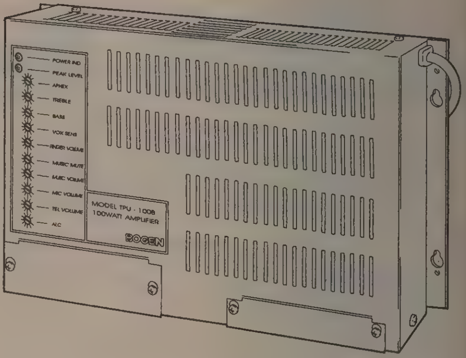
- 4 Mic Channels, 1 Aux
- Hi-Z and Lo-Z Mic Inputs
- Multiple Units May Be Interconnected for More Mic Inputs

Model CAM. Outputs: Hi-Z — 2.5 V; MIC — 125 mV; Lo-Z MIC — 12.5 mV. **Dimensions:** 11⅜ × 7¾ × 2⅞". **Shipping Weight:** 6 lbs. **Power Consumption:** 120 V, 60 Hz, .02 A; 24-28 VDC, .01 A
733-1080. Model CAM. **1-5** .... **EACH 318.24** **6-Up** .... **EACH 289.31**

Microphone

The Bogen Model MBS-1000 is a dual impedance, omnidirectional dynamic desk microphone offering modem styling and features in a rugged Cycolac housing for all industrial and commercial public address and paging applications. The Model MBS-1000 has a slide switch for low or high impedance selection. **Weight:** 1.8 lbs.
733-1000. Model MBS1000. **1-5** .... **EACH 164.83** **6-Up** .... **EACH 149.85**

TPU-A and TPU-B Series Amplifiers

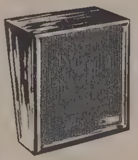


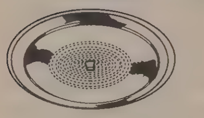
- ► **Built-In Telephone Line Input Transformers**
- ► **Screwdriver Adjustable Controls**
- ► **Wall or 19" Rack Mounting**

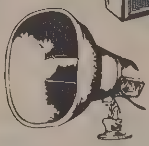
Four Models and Power Levels Available: TPU-15A — 15 watts, TPU-35B — 35 watts, TPU-60B — 60 watts, and TPU-100B — 100 watts. Inputs for 600-ohm balanced telephone line, LO-Z balanced microphone, and background music source. **Choice of Outputs:** 16-ohm, 25 VCT, 25 V, 70.7 V, or 100 V outputs, balanced or unbalanced. Choice of RCA jack or screw terminals for Music source (unbalanced). Volume controls for Tel channel, MIC, Music, and Ringer. Ringer circuit activated by contact closure or 90 V ring signal. Variable music mute with adjustable Mute level control. Signal-activated paging channel with VOX sensitivity and ALC adjustments. Aphex Aural Exciter® Circuit with on/off switch and effect adjustment. Bridging jacks supplied to a double number of inputs and outputs. Output (RCA jack) to line-matching transformer (WMT-1A).

Stock No.	Mfr.'s Type	Power Output	Outputs (Impedance)	Shp. Wt. Lbs.	EACH
733-2215	TPU-15A	15 Watts	25V, 70V Balanced, Transformer Coupled (8 Ohms)	4	**230.93**
733-2256	TPU-35B	35 Watts	25V, 25 VCT, 70V, 16 Ohms, Balanced/Unbalanced	10	**366.99**
733-2261	TPU-60B	60 Watts	25V, 25 VCT, 70V, 16 Ohms, Balanced/Unbalanced	13	**461.86**
733-2266	TPU-100B	100 Watts	25V, 25 VCT, 70V, 16 Ohms, Balanced/Unbalanced	15	**505.92**

AS-1


ASWB-1


ASWG-1


AH-5A

Amplified Speakers and Horns

Amplified speakers eliminate the need for a centralized amplifier and provide individual volume adjustment of each location. They are easy to install and interface with any phone system, via the SAM or PAM access modules.

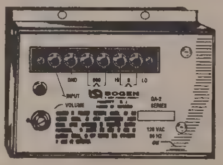
Model AS-1. 8", 45 ohm cone speaker with compact IC amplifier and volume control. 1 Watt output and operates on 24 VDC. **Weight:** 2 lbs.
733-2325............**EACH 35.90**

Model ASWB-1. For wall mounting, consists of the AS-1 in the attractive WB8 baffle. **Weight:** 8 lbs.
733-2335............**EACH 52.02**

Model ASWG-1. For recessed ceiling installation. Features an aluminum baffle finish in white enamel. **Weight:** 3 lbs.
733-2330............**EACH 42.43**

Model AH-5A. Amplified horn speaker for use outdoors or in high noise locations. 5 Watts output, operates on 24 VDC and is equipped with a volume control and mounting bracket. **Dimensions:** 8 × 8 × 9". **Weight:** 4½ lbs.
733-2435............**EACH 110.98**

GA-2 Music-On-Hold Amplifier

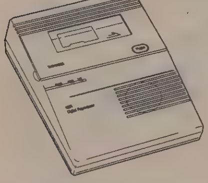


Compact, reliable, 1½ Watt amplifier. Excellent for feeding "music-on-hold" to a telephone system. It has a high-impedance input that is available at both a phono jack and screw terminals. 8 Ohms or 600 Ohms output. Only 50 mV input is required for full output. **Power Consumption:** 4 W, 120 V, 60 Hz. **Dimensions:** 5½ × 4⅛ × 2¼". **Weight:** 1 lb.

733-1113. Model GA-2............**EACH 99.55**

Digital Announcement Equipment

— NEW —



The Bogen HSR Series consisting of the HSR-4, HSR-6, HSR-8, and HSR-12 utilizes advanced digital circuitry to provide the best sounding and most reliable On Hold messages available in 4, 6, 8, and 12 minute memory length versions. The HSR announcers employ a state-of-the-art digital design to achieve a full 64 Kbps digital toll quality sampling rate. In addition, a specialized audio editing circuit creates seamless audio with no "dead air".

The HSR Series employs full microprocessor control, requiring the owner to merely insert the cassette into the housing. The HSR's automatic operation assesses the start and stop point of the audio, sets record levels, downloads, and goes into play mode automatically.

All models offer a choice of 8 ohm/1 watt or 600 ohm line output and are compatible with most telephone and audio systems. They feature LED indicators for Power On, Load, and Play and are furnished with a 12 VAC power supply. Wall or tabletop mounting. **Dimensions:** 7⅞" × 6⅜" × 2⅞. **Shipping Weight:** 4 lbs.

773Q4000. HSR-4. **1-5**..........**EACH 434.71** **6-Up**..........**EACH 398.48**
773Q4005. HSR-6. **1-5**..........**EACH 498.50** **6-Up**..........**EACH 456.96**
773Q4010. HSR-8. **1-5**..........**EACH 557.85** **6-Up**..........**EACH 511.36**
773Q4015. HSR-12. **1-5**..........**EACH 621.64** **6-Up**..........**EACH 569.84**

Telephone Access Module

- ► **Dual-Mode, Station Port or Trunk Port Paging Access**
- ► **Compact, Wall-Mount Design**
- ► **24- or 48-Volt Operation (Trunk Port Model)**
- ► **Compatible with Most Standard Telephone Systems**
- ► **Calling-Party-Controlled Disconnect**
- ► **Volume-Adjustable Preannounce or Splash Tones**

733-2281. Model TAMB............**EACH 195.84**

Microphone and Line Plug In Transformers

WMT-1A

WMT-1A may be used as input-matching transformer to connect telephone systems to aux. input of most Bogen public address amplifiers for telephone paging. It may also function as output-matching transformer in feeding special program material over 500/600 ohm telephone line for transmission to a local broadcast studio. May be used with any amplifier having a 25-Volt output terminal.

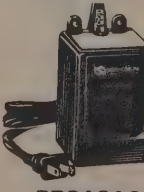
733-1107. Model WMT-1A............**EACH 29.34**

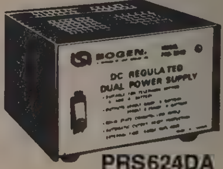
Power Supplies

Bogen power supplies can be plugged into any convenient 120 VAC/60 Hz electrical outlet. Up to ten AS-1s can be driven by a single PRSASA Power Supply. For larger systems, or those which incorporate amplified horns or zoned paging, the PRS-624DA Power Supply is recommended.

Model PRSASAC. Provides 24 VDC regulated and filtered output at .5 amps. U.L. listed. **Dimensions:** 2¾ × 4½ × 2½". **Weight:** 2 lbs.
733-2300. PRSASAC............**EACH 78.34**

Model PRS624DA. Provides 24VDC at 4 amps, also includes separate 250 mA talk battery supply. U.L. listing pending. **Dimensions:** 4⅜ × 6⅝ × 6¼". **Weight:** 10 lbs.
733-2295. PRS624DA. **1-5**..........**EACH 213.79** **6-Up**..........**EACH 194.36**

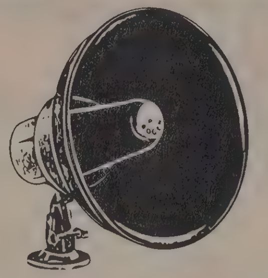

PRSASAC



PRS624DA

Re-Entrant Horns

The Bogen **SPT-15** and **SP15-8A** are high-intelligibility horns designed for one or two-way paging systems. Their weatherproof, all metal construction features a unique all-purpose mounting bracket. **SPT-15A** has a variable impedance selector switch for 25 V or 70 V line; **SP15-8A** impedance is 8 Ohms. **Power Rating (RMS):** 15 Watts continuous, 20 Watts equalized. Models **SPT-30A** and **SP30-8A** are similar to the **SPT-15A** and **SP 15-8A**, except rated at 30 Watts continuous, 40 Watts equalized. **Model SPT-5A** is a 7.5 Watt speaker with variable impedance selection for 25 V or 70 V line.



Stock No.	Mfr.'s Type	Description	Dimensions	Weight Lbs.	EACH	
					1-5	6-Up
733-2515	SPT-15A	15 Watt Paging Horn w/Trans	8 × 8 × 9"	$4\frac{1}{2}$	81.66	74.18
733-2520	SP15-8A	15 Watt Paging Horn 8 Ohms	8 × 8 × 9"	4	65.28	59.35
733-2525	SPT-30A	30 Watt Paging Horn w/Trans.	$10 \times 9\frac{1}{2} \times 10\frac{1}{2}$"	6	100.37	91.24
733-2530	ST30-8A	30 Watt Paging Horn 8 Ohms	$10 \times 9\frac{1}{2} \times 10\frac{1}{2}$"	$5\frac{1}{2}$	81.60	74.18
733-2535	SPT-5A	7.5 Watt Speaker 8 Ohms	6 × 4"	$2\frac{1}{2}$	65.28	59.35

Bi-Directional Horn

Featuring twin horns for bi-directional projection, **Model BDT-30A** is a high-intelligibility re-entrant speaker for one or two-way use. Weatherproof, all metal construction with all-purpose mounting bracket. Variable impedance selector switch to match power requirements to 25 V or 70 V constant voltage line. **Power Rating (RMS):** 30 Watts continuous, 40 Watts equalized. **Dimensions:** $16\frac{1}{2} \times 9\frac{3}{4}$". **Weight:** 8 lbs.

733-2540. Model BDT-30A. **1-5** ....**EACH 143.62**

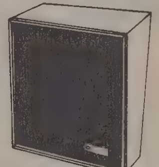
6-Up ....**EACH 130.50**

Cone Speakers and Baffles

Bogen cone speakers feature powerful ceramic magnets and diaphragms selected for high sensitivity and optimized response. They are only 3" deep and easily mounted in wall or ceiling baffles. Preassembled to save you time, the S86 and S810 are available with a 25/70 V transformer mounted and wired.

Stock No.	Mfr.'s Type	Power Hdlg. Capacity	Cone Dia.	Magnet Wt.	Voice Coil Impedance	Weight Lbs.	EACH	
							1-5	6-Up
733-2450	S86	7 Watts	8"	6 oz.	8 Ohms	4 @ 8 lbs.	9.96	9.05
733-2455	S810	15 Watts	8"	10 oz.	8 Ohms	4 @ 13 lbs.	12.74	11.13
733-2460	S86T725	S86 with 25V/70V transformer					15.30	13.91
733-2465	S810T725	S810 with 25V/70V transformer					17.74	16.14

S86



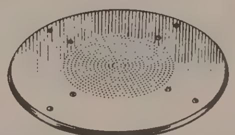
WB8

Model WB8 wall baffle is ruggedly constructed of $\frac{3}{8}$" particle board covered in simulated walnut vinyl, with textured black cellular plastic grille cloth. $9\frac{1}{2} \times 11\frac{5}{8} \times 6\frac{5}{8}$" deep, it accommodates an 8" speaker. **Weight:** 4 @ 15 lbs. For easy installation, these assemblies include cone speaker, transformer, and baffle, ready to install.

Stock No.	Mfr.'s Type	Description	EACH	
			1-5	6-Up
733-2480	WBS8T725	S86 with 25V/70V transformer in WB6 baffle	38.26	34.77
733-2485	WBS810T725	S810 with 25V/70V transformer in WB6 baffle	41.31	37.55

Bogen's metal ceiling baffles are sturdy, handsome, and economical. They are made of aluminum or steel, attractively finished, and supplied with complete hardware. **Models S86T725PG8W** and **S810T725PG8W** are ceiling baffles available in assemblies with speaker and transformer already mounted.

Stock No.	Mfr.'s Type	Speaker Size	Baffle Dia.	Finish	Weight Lbs.	EACH	
						1-5	6-Up
733-2490	CG8A Aluminum	8"	$12\frac{5}{8}$"	Satin Aluminum	15 @ 8 lbs.	7.18	6.52
733-2495	CG8AW Aluminum	8"	$12\frac{5}{8}$"	Semi-Gloss White Enamel	15 @ 9 lbs	7.18	6.52
733-2500	PG8W Steel	8"	$13\frac{1}{4}$"	Semi-Gloss White Enamel	20 @ 24 lbs.	6.53	5.94
733-2505	PG8A Aluminum	8"	$12\frac{7}{8}$"	Satin Aluminum	20 @ 10 lbs.	6.69	
733-2470	S86T725PG8W	S86 speaker with 25V/70V transformer in PG8W baffle				20.72	18.84
733-2475	S810T725PG8W	S810 speaker with 25V/70V transformer in PG8W baffle				24.48	22.25



CG8A

Model RE84 is a protective enclosure for an 8" speaker designed for use with any of the above ceiling baffles. **Weight:** 10 @ 20 lbs.

733-2545. 1-5 ....**EACH 13.05**

6-Up...**EACH 11.87**

Model MR8 is a steel plaster ring which will mount to any of the ceiling baffles. **Weight:** 25 @ 18 lbs.

733-2550. 1-5 ....**EACH 6.20**

6-Up..**EACH 5.64**

Model TB8 is a load bearing steel support designed to sustain the weight of 8" speakers, baffles and protective enclosures in suspended ceiling construction. **Weight:** 10 @ 23 lbs.

733-2555. 1-5 ....**EACH 6.53**

6-Up..**EACH 5.94**

Model TP30D

- ► **PLL — Phase Lock Loop Keeps the Station in Tune Preventing "Drift"**
- ► **Presets — 18 FM and 12 AM Presets for Quick Programming and Selection of Favorite or Most Common Channels**
- ► **Station Scan — Finds the Strongest Station Signals with the Push of a Button**
- ► **Memory Scan — Selects Only Stations Set in Memory**
- ► **Single Rack Space — Great for Both Rack and Shelf Mount Applications**
- ► **Rack Mount Kit — Available for Standard Rack Installations**

733-0030. TP30D. **1-5** ......**EACH 213.52** **6-Up** ....**EACH 197.10**

Sound Columns

Wall mounted sound columns restrict sound projection to a narrow vertical pattern, minimizing undesirable reflections. Choice of three models.

Stock No.	Mfr.'s Type	Wattage Rating (cont.)	Speakers	Size Inches	Weight Lbs.	EACH	
						1-5	6-Up
733Q2315	SCW35	35 Watts	Six 6"	$42 \times 6 \times 9\frac{1}{2}$	31	249.76	227.00
733-2310	SCW20	20 Watts	Four 5"	$20 \times 5 \times 7\frac{1}{2}$	12	120.87	109.88

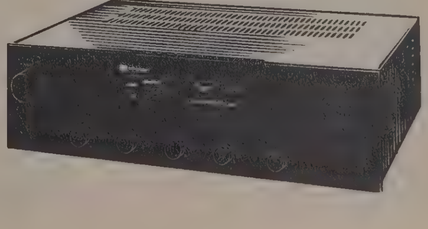
FM/AM Receiver

- ► **35 Watts of Power — Enough for Most Receiver Installs**
- ► **4 Zone Selection — Allows End User to Select Areas to Page Plus an All Call**
- ► **Three Rack Space — Great for Both Rack and Shelf Mount Applications**
- ► **Rack Mount Kits — Available for Standard Rack Installations**

Versatile receiver that features high quality mono reception on both FM and AM bands. Microphone precedence circuitry permits double duty for paging. This receiver may be rack-mounted with optional panel kit **RPK-47**.

Model RM-350D can provide music for up to 100 speakers. **Power Output:** 35 W. **Output Impedance:** 4, 8, 16 Ohms, 25 V, 70 V lines, tape/booster. **Power Consumption:** 100 W, 120 V, 60 Hz. **Dimensions:** $12 \times 10\frac{3}{8} \times 3\frac{5}{8}$". **Weight:** 20 lbs.

733-0350. 1-5..................................**EACH 439.01** **6-Up** ....**EACH 399.10**

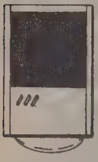


Cameras

CVC-150 Camera

Rugged, black metal case houses this 1/3" CCD camera requiring only 0.3 lux of light. Built-in electronic iris control has 400 line resolution and uses a C or CS mount lens, supplied with CS/C adapter ring and 12 volt DC power supply. (Lens sold separately). **Specifications. Image Device:** 1/3" CCD image sensor interline transfer 512 H × 492 V picture elements. **Scanning System:** EIA standard 525 TV lines 60 fields/sec. **Interlace:** PLL 2:1. **Synchronizing System:** Internal. **Resolution:** Horizontal — 400 TV lines; Vertical — 350 TV lines. **Shutter Control:** Auto 1/60-1/10,000 sec. **Auto Shutter/Iris:** Optional by slide switch and four pin connector (for auto iris lens). **Lens Mount:** C or CS mount, CS/C mount adapter ring included. **Scanning Frequency:** Horizontal — 15.75 KHz; Vertical — 60 Hz. **Minimum Illumination:** 0.3 lux (with F: 1.4 lens). **Video Output Level:** 1.0 Vp-p, 75 ohms composite, BNC connector. **Video S/N Ratio:** Greater than 45 dB. **Outputs/Connections:** BNC — Video; DC jack — Power. **Operating Temperature:** 14°F-130°F. **Humidity:** Within 90% RH. **Power Requirements:** 12 VDC supplied by AC adapter; UL and CSA listed. **Power Consumption:** 100 mA. **Weight:** 11 oz. **Dimensions:** 1 5/8"H × 2 1/8"W × 4 3/8"D. **Housing:** Black metal case. **Camera Mount Thread:** 1/4" top and bottom.

732-0120. Model CVC-150. **1-4**	**EACH 234.68**
5-Up	**EACH 191.50**



CVC-300 Camera with Audio Output with Built-In 4 mm Lens

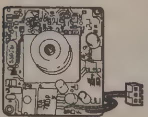
Only 1 1/4" thick, this 1/3" CCD camera offers great observation capabilities. Actually 3 1/4"H × 2 1/4"W × 1 1/4"D, this unit weighs a mere 3.7 oz. Built-in 4 mm lens with electronic iris automatically compensates for all light conditions with only a minimum of 0.1 lux. This 400 line resolution compact camera comes in a weather resistant case and can withstand temperatures from –4° to +122°F. A 12 volt DC power supply and mounting bracket are included. **Specifications. Image Device:** 1/3" CCD image sensor interline transfer 512 H × 492 V picture elements. **Scanning System:** EIA standard 525 TV lines 60 fields/sec. **Interlace:** PLL 2:1. **Synchronizing System:** Internal. **Resolution:** Horizontal — 400 TV lines; Vertical — 350 TV lines. **Shutter Control:** Auto 1/60-1/10,000 sec. **Auto Shutter/Iris:** Built-in. **Lens/Angle of View:** 4.3 mm lens, horizontal — 74°; vertical — 53°. **Scanning Frequency:** Horizontal — 15.75 KHz; Vertical — 60 Hz. **Minimum Illumination:** 0.1 lux infrared LED (200-300 lux for best picture). **Video Output Level:** 1.0 Vp-p, 75 ohms composite, RCA connector. **Video S/N Ratio:** Greater than 45 dB. **Audio Output Level:** 300 mV at 600 ohms. **Outputs/Connections:** RCA — Video; DC jack — Power. **Operating Temperature:** 0°F-122°F. **Humidity:** Within 90% RH. **Power Requirements:** 12 VDC supplied by AC adapter; UL and CSA listed. **Power Consumption:** 100 mA. **Weight:** 4 oz. **Dimensions:** 3 1/4"H × 2 1/4"W × 1 1/4"D. **Housing:** White ABS molded plastic. **Camera Mount:** Universal mounting bracket included.

732-0130. Model CVC-300. **1-4**	**EACH 325.00**
5-Up	**EACH 265.00**

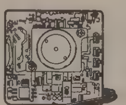
CVC-100L Camera with Audio Output with Built-In 4 mm Lens

This compact, 1/3" CCD camera with audio weighs only 8 oz. including the lens. Its 4 mm lens has auto-iris for all light conditions, requires only 0.3 lux of light to operate and has 400 line resolution. Audio output is 300 mV at 600 ohms. A 12 volt DC power supply is included. **Specifications. Image Device:** 1/3" CCD image sensor interline transfer 512 H × 492 V picture elements. **Scanning System:** EIA standard 525 TV lines 60 fields/sec. **Interlace:** PLL 2:1. **Synchronizing System:** Internal. **Resolution:** Horizontal — 400 TV lines; Vertical — 350 TV lines. **Shutter Control:** Auto 1/60-1/10,000 sec. **Auto Shutter/Iris:** Built-in. **Lens/Angle of View:** 4 mm lens, horizontal — 72°; vertical — 53°. **Scanning Frequency:** Horizontal — 15.75 KHz; Vertical — 60 Hz. **Minimum Illumination:** 0.3 lux (with F: 1.4 lens, incandescent lighting). **Video Output Level:** 1.0 Vp-p, 75 ohms composite, BNC connector. **Video S/N Ratio:** Greater than 45 dB. **Audio Output Level:** 300 mV at 600 ohms. **Outputs/Connections:** BNC — Video; RCA — Audio; DC jack — Power. **Operating Temperature:** 14°F-122°F. **Humidity:** Within 90% RH. **Power Requirements:** 12 VDC supplied by AC adapter; UL and CSA listed. **Power Consumption:** 200 mA. **Weight:** 8 oz. **Dimensions:** 2"H × 2 3/4"W × 4 1/2"D with lens. **Housing:** Charcoal grey ABS molded plastic. **Camera Mount Thread:** 1/4" top and bottom.

732-0100. Model CVC-100L. **1-4**	**EACH 325.00**
5-Up	**EACH 260.00**



CVC-50BC



CVC-50PH

CCTV Board Cameras

Model CVC-50BC. Using ultra miniature design, this high performance 1/3" CCD single board camera features a built-in wide angle lens, 400 lines of resolution and low light requirements. Model CVC-50PH. Using ultra miniature design, this high performance 1/3" CCD pin hole camera features a built-in wide angle lens, 400 lines of resolution and low light requirements. The CVC-50PH uses a pin hole lens which is easily concealed. **Specifications. Image Device:** 1/3" CCD image sensor interline transfer 512 H × 492 V picture elements. **Scanning System:** EIA standard 525 TV lines 60 fields/sec. **Interlace:** PLL 2:1. **Synchronizing System:** Internal. **Resolution:** Horizontal — 400 TV lines; Vertical — 350 TV lines. **Shutter Control:** Auto 1/60-1/50,000 sec. **Auto Shutter/Iris:** Built-in. **Lens/Angle of View:** 3.6 mm lens, Horizontal — 72°; Vertical — 53°. **Scanning Frequency:** Horizontal — 15.75 KHz; Vertical — 60 Hz. **Minimum Illumination:** CVC-50BC — .1 lux (F: 1.6); CVC-50PH — 3 lux (F: 1.5). **Video Output Level:** 1.0 Vp-p, 75 ohms composite, RCA connector. **Video S/N Ratio:** CVC-50BC — Greater than 50 dB; CVC-50PH — Greater than 46 dB. **Outputs/Connections:** RCA — Video; DC jack — Power. **Operating Temperature:** 14°F-122°F. **Humidity:** Within 90% RH. **Power Requirements:** 12 VDC (optional PSW-2). **Power Consumption:** 150 mA. **Weight:** CVC-50BC — 1.8 oz.; CVC-50PH — 1.1 oz. **Dimensions:** CVC-50BC — Approximately 1 1/2"W × 1 7/8"H × 1"D; CVC-50PH — 1"W × 1"H × 1/2"D. **Housing:** CVC-50BC — Optional, specify BCC-01; CVC-50PH — N/A.

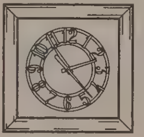
732-0160. Model CVC-50BC. **1-4**	**EACH 206.50**
5-Up	**EACH 178.75**
732-0170. Model CVC-50PH. **1-4**	**EACH 244.50**
5-Up	**EACH 205.71**

Specialty CCTV Cameras with Built-In 4 mm Lens

CVC-250SD with Audio Output

Experience an exceptional field of view with this 1/3" CCD disguised smoke detector camera with audio. A 400 line resolution and electronic iris control gives you a sharp image in a variety of light conditions even as low as 0.3 lux. Audio output is 300 mV at 600 ohms. A 12 volt DC power supply is included. NOTE: Smoke Detector Camera does not operate as a working Smoke Detector. **Specifications. Image Device:** 1/3" CCD image sensor interline transfer 512 H × 492 V picture elements. **Scanning System:** EIA standard 525 TV lines 60 fields/sec. **Interlace:** PLL 2:1. **Synchronizing System:** Internal. **Resolution:** Horizontal — 400 TV lines; Vertical — 350 TV lines. **Shutter Control:** Auto 1/60-1/50,000 sec. **Auto Shutter/Iris:** Built-in. **Lens/Angle of View:** 4 mm lens, Horizontal — 72°; Vertical — 53°. **Scanning Frequency:** Horizontal — 15.75 KHz; Vertical — 60 Hz. **Minimum Illumination:** 0.3 lux (with F: 1.4 lens, incandescent lighting). **Video Output Level:** 1.0 Vp-p, 75 ohms composite, BNC connector. **Video S/N Ratio:** Greater than 45 dB. **Audio Output Level:** 300 mV at 600 ohms. **Outputs/Connections:** BNC/RCA — Video; RCA — Audio; DC jack — Power. **Operating Temperature:** 14°F-122°F. **Humidity:** Within 90% RH. **Power Requirements:** 12 VDC supplied by AC adapter; UL and CSA listed. **Power Consumption:** 200 mA. **Weight:** 6 oz. **Dimensions:** 6 3/4"Dia. × 1 1/2"D. **Housing:** White ABS molded plastic. **Camera Mount:** Plate for ceiling/wall mount.

732Q0140. Model CVC-250SD. **1-4**	**EACH 313.70**
5-Up	**EACH 287.56**



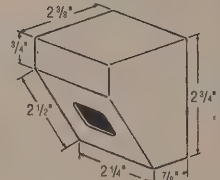
CVC-275CL with Audio

See what's going on, while others see the time with this stylish clock camera. An undetectable 1/3" CCD camera, with a 3.6 mm wide angle lens is housed within this wood frame clock. A 12 volt DC power supply is included. Clock requires one AA battery. **Specifications. Image Device:** 1/3" CCD image sensor interline transfer 512 H × 492 V picture elements. **Scanning System:** EIA standard 525 TV lines 60 fields/sec. **Interlace:** PLL 2:1. **Synchronizing System:** Internal. **Resolution:** Horizontal — 400 TV lines; Vertical — 350 TV lines. **Shutter Control:** Auto 1/60-1/50,000 sec. **Auto Shutter/Iris:** Built-in. **Lens/Angle of View:** 4 mm lens, Horizontal — 72°; Vertical — 53°. **Scanning Frequency:** Horizontal — 15.75 KHz; Vertical — 60 Hz. **Minimum Illumination:** 3 lux (F: 1.6). **Video Output Level:** 1.0 Vp-p, 75 ohms composite, RCA connector. **Video S/N Ratio:** Greater than 50 dB. **Outputs/Connections:** RCA — Video; DC jack — Power. **Operating Temperature:** 14°F-122°F. **Humidity:** Within 90% RH. **Power Requirements:** 12 VDC supplied by AC adapter; UL and CSA listed. **Power Consumption:** 170 mA (clock uses AA battery). **Weight:** 2.5 lbs. **Dimensions:** Approximately 12"W × 12"H × 2"D. **Housing:** Wood frame.

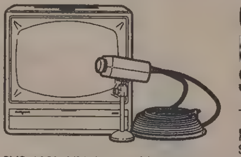
732Q0150. Model CVC-275CL. **1-4**	**EACH 376.75**
5-Up	**EACH 345.36**

CVC-95AM Weather Resistant Angle Mount Camera *— NEW —*

- ► **2.5 mm Lens (CVC-95AM/2.5 Only)**
- ► **3.6 mm Wide Angle Lens**
- ► **.1 Lux**
- ► **400 Lines Resolution**
- ► **Built-In Electronic Shutter**
- ► **Includes 12 VDC Power Supply**
- ► **Video Output — RCA Female**
- ► **18 Gauge Stainless Steel**
- ► **Includes BNC Female Adapter**



732Q0095. CVC-95AM. **1-4**	**EACH 331.00**
5-Up	**EACH 295.00**
732Q0096. CVC-95AM/2.5. **1-4**	**EACH 370.00**
5-Up	**EACH 339.06**

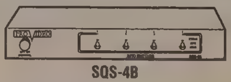


CCTV-1 Camera and Observations System

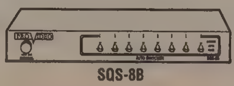
This closed circuit TV surveillance package allows both video and audio surveillance. System includes the CVC-100L, VM-1205B, CST-100, 50' of video cable and 50' of audio cable.

732Q0340. Model CCTV-1. **1-4**	**EACH 647.00**
5-Up	**EACH 581.40**

Sequential Video Switchers *— NEW —*



SQS-4B



SQS-8B

- ► **For B/W or Color Cameras**
- ► **Automatic Sequential Switching**
- ► **Override for Homing or Bypass**
- ► **LED Camera Indicator**
- ► **Sequencing Time Adjustable from 0.5 to 30 Seconds**
- ► **12 1/4"W × 1 3/4"H × 9 1/2"D**

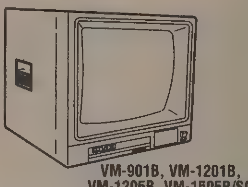
SQS-4B — 4 Position

732-0230. SQS-4B. **1-4**	**EACH 179.75**
5-Up	**EACH 154.07**

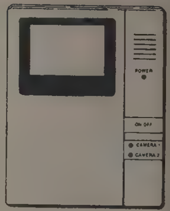
SQS-8B — 8 Position

732-0250. SQS-8B. **1-4**	**EACH 198.50**
5-Up	**EACH 178.50**

Monitors



VM-901B, VM-1201B, VM-1205B, VM-1505B/SQ



VM-401W

VM901B Monitor

Rugged, black metal cabinet houses a high resolution (1000 lines at center), B/W monitor. Monitor has flip open control cover, LED on/off indicator, video output, solid state circuitry, and is UL and CSA listed. Measures 9"W × 10"H × 9 1/4"D. **Specifications. Input Voltage:** AC 110 V/60 Hz. **Power Consumption:** 35 watts. **Input Signal:** 0.5-2.0 Vp-p composite video, sync. negative. **Input Impedance:** BNC connector, 75 ohm/high, switchable. **Bandwidth:** 100 Hz-10 MHz ±3 dB. **Video Gain:** 33 dB. **Resolution:** Center — 1000 TV lines; Corner — 800 TV lines. **Scanning Frequency:** (EIA) Horizontal — 15,750 Hz; Vertical — 48-62 Hz. **EHT Impedance:** 8 MHz. **Vertical Linearity:** 10% Max. **Horizontal Linearity:** 15% max. **Adjustment Size Range:** Vertical — 105%-70%; Horizontal — 105%-80%. **CRT:** 9", 90°. **CRT Color:** B/W. **Operating Temperature:** 32°F-140°F. **Dimensions:** 9"W × 10"H × 9 1/4"D. **Weight:** 13.5 lbs. **Housing Color:** Black, Metal.

732-0190. Model VM901B. **1-4**	**EACH 228.95**
5-Up	**EACH 184.00**

VM1201B Monitor and 1205B Monitor with One-Way Audio

Rugged, black metal cabinet houses a high resolution (1000 lines at center), B/W monitor. Monitor has flip open control cover, LED on/off indicator, video output, solid state circuitry, and is UL and CSA listed. Measures 12 1/4"W × 12 1/4"H × 12 1/4"D. **Specifications. Input Voltage:** AC 110 V/60 Hz. **Power Consumption:** 35 watts. **Input Signal:** 0.5-2.0 Vp-p composite video, sync. negative. **Input Impedance:** BNC connector, 75 ohm/high, switchable, 600 ohm voice (VM-1205B). **Bandwidth:** 100 Hz-10 MHz ±3 dB. **Video Gain:** 33 dB. **Resolution:** Center — 1000 TV lines; Corner — 800 TV lines. **Scanning Frequency:** (EIA) Horizontal — 15,750 Hz; Vertical — 48-62 Hz. **EHT Impedance:** 8 MHz. **Vertical Linearity:** 10% Max. **Horizontal Linearity:** 15% max. **Adjustment Size Range:** Vertical — 105%-70%; Horizontal — 105%-80%. **CRT:** 12", 90°. **CRT Color:** B/W. **Operating Temperature:** 32°F-140°F. **Dimensions:** 12 1/4"W × 12 1/4"H × 12 1/4"D. **Weight:** 21 lbs. **Housing Color:** Black, Metal.

732-0200. Model VM1201B. **1-4**	**EACH 270.00**
5-Up	**EACH 199.00**
732-0210. Model VM1205B. **1-4**	**EACH 299.00**
5-Up	**EACH 225.00**

VM-1505B/SQ

Rugged, black metal cabinet houses a high resolution (1000 lines at center), B/W monitor. Monitor has flip open control cover, LED on/off indicator, video output, solid state circuitry, built-in 4 camera switcher and is UL and CSA listed. Measures 18"W × 16"H × 16"D. **Specifications. Input Voltage:** AC 110 V/60 Hz. **Power Consumption:** 35 watts. **Input Signal:** 0.5-2.0 Vp-p composite video, sync. negative. **Input Impedance:** BNC connector, 75 ohm/high, switchable. **Bandwidth:** 100 Hz-10 MHz ±3 dB. **Video Gain:** 33 dB. **Resolution:** Center — 1000 TV lines; Corner — 800 TV lines. **Scanning Frequency:** (EIA) Horizontal — 15,750 Hz; Vertical — 48-62 Hz. **EHT Impedance:** 8 MHz. **Vertical Linearity:** 10% Max. **Horizontal Linearity:** 15% max. **Adjustment Size Range:** Vertical — 105%-70%; Horizontal — 105%-80%. **CRT:** 15", 90°. **CRT Color:** B/W. **Operating Temperature:** 32°F-140°F. **Dimensions:** 18"W × 16"H × 16"D. **Weight:** 28 lbs. **Housing Color:** Black, Metal.

732Q0220. VM1505B/SQ. **1-4**	**EACH 427.72**
5-Up	**EACH 394.84**

VM-401W Monitor

A flat screen B/W 4" monitor equipped with 2 camera selector and one-way audio, measures 8 1/4"W × 6 1/2"H × 2 1/2"D. Desk or wall mountable, easy screw terminal connection with 12 volt DC power supply included. **Specifications. Input Voltage:** AC 110 V/60 Hz. **Power Consumption:** 15 watts. **Input Signal:** 1 Vp-p composite video, sync. negative. **Input Impedance:** Screw terminals and/or 4 pin modular jack, 75 ohm picture, 600 ohm voice. **Bandwidth:** 100 Hz-10 MHz ±3 dB. **Video Gain:** 33 dB. **Resolution:** 450 TV lines. **Scanning Frequency:** (EIA) Horizontal — 15,750 Hz; Vertical — 60 Hz. **EHT Impedance:** 8 MHz. **Vertical Linearity:** 10% Max. **Horizontal Linearity:** 15% max. **Adjustment Size Range:** Vertical — 105%-70%; Horizontal — 105%-80%. **CRT:** 4" Flat Braun. **CRT Color:** B/W. **Operating Temperature:** 32°F-140°F. **Dimensions:** 8 1/4"W × 6 1/2"H × 2 1/2"D. **Weight:** 2.5 lbs. **Housing Color:** White Plastic.

732-0180. VM401W. **1-4**	**EACH 255.00**
5-Up	**EACH 212.00**

Accessories

VCH-100

CST-125

CST-150

CST-100

Model VCH-100. Weatherproof outdoor camera housing measures 3 3/4"H × 3 3/4"W × 10"D. Plastic.

732-0300. 1-4	**EACH 88.50**	**5-Up**	**EACH 79.74**

Model CST-125. Universal camera bracket, ABS plastic. Black.

732-0280. 1-4	**EACH 21.50**	**5-Up**	**EACH 16.00**

Model CST-150. Heavy duty universal camera bracket, ABS plastic. Black.

732-0290. 1-4	**EACH 28.50**	**5-Up**	**EACH 22.63**

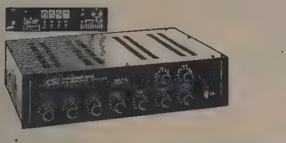
Model CST-100. Universal camera bracket, ABS plastic. Black.

732-0270. 1-4	**EACH 15.95**	**5-Up**	**EACH 12.50**

Model PSW-2. 12 VDC power adapter.

732-0310. 1-4	**EACH 8.75**	**5-Up**	**EACH 6.09**

120 Watts RMS P.A. Amplifier



Features

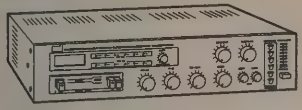
- Heavy duty heat sinks
- 4 microphone inputs with lock-in cannon connectors. Can be used with balanced or unbalanced, high or low impedance microphones
- 2 aux. inputs
- 1 magnetic phone input
- 1 equalizer input
- Separate volume control for each microphone and aux. input
- Master volume control
- Separate bass and treble control
- 4, 8, 16 ohm outputs, screw terminals
- 25 and 70 volt outputs, screw terminals
- 2 RCA speaker outputs
- 1 booster/tape output
- Built-in priority paging
- Separate on.off switch

Specifications

Power: 120 watts RMS @ less than 50% distortion. **Frequency Response:** 50 Hz to 15 KHz. **Noise:** Mic—60 dB, Aux.—75 dB. **Sensitivity:** Mic—0.3 mV, Aux.—0.3V. **Tone Controls:** Bass—±15 dB @ 100 Hz, Treble—±15 dB @ 10 KHz. **Power Req.**: 120 VAC, 50-60 Hz, 230 W. **Dimensions:** 4 1/4" (H) x 17 1/4" (W) x 11 1/2" (D). **Weight:** 33 lbs.

958Q8120. P-120A ....EACH 505.53

60 Watts RMS P.A. Amplifier with Digital FM/AM Tuner



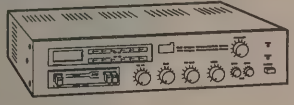
Features

- FM/AM digital tuner with 30 presets
- 4 & 8 ohm, 25 & 70 volt output
- Voice activated priority page
- Dual 110/220V AC 50/100 Hz
- 4 microphone cannon inputs
- 1 aux input
- 600 ohm telephone paging input built-in
- Auto reverse cassette deck

Specifications. Power: 60 watts RMS @ less than 1.0% distortion. **Frequency Response:** 30 Hz to 20 kHz. **Noise:** Mic—1-4 60 dB; Aux—70 dB. **Sensitivity:** Mic—0.3 mV; Aux—0.3 V.

958Q0060. P-60FAC ....EACH 580.83

30 Watts RMS P.A. Amplifier with Digital FM/AM Tuner



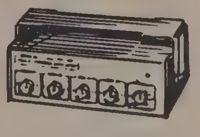
Features

- Aux/CD Input
- 4 & 8 ohm, 25 & 70 volt outputs
- Voice activated priority page
- 2 microphone 1/4" inputs
- Dual 110/220V AC 50/100 Hz
- Auto reverse cassette deck

Specifications. Power: 30 watts RMS @ less than 1.0% distortion. **Frequency Response:** 30 Hz to 20 kHz. **Noise:** Mic—1-2 60 dB; Aux—70 dB. **Sensitivity:** Mic—0.3 mV; Aux—0.3 V.

958Q0030. P-30FAC ....EACH 536.41

60 Watts PA Amplifier



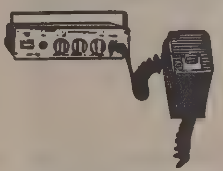
Features

- 117/220V AC or 12V DC mobile use
- Heavy duty adjustable chrome plated mounting bracket
- AC and DC fuse protected
- Inputs to accommodate micro phones, tape decks, phonos, tuners
- Attractive silver front panel, black accents, dark grey cabinet
- Output impedances for all instal lations
- Dimensions: 4 1/2 x 10 x 8 1/2

Specifications. Output Power: 60 Watts Music Power, 20 watts RMS @ 5% THD. **Frequency Response:** 100-18,000 Hz. **Output Impedance:** 4, 8, 16 Ohms, 25 and 70 Volt Line. **Power Source:** 117VAC, 50/60 Hz, 220/240V AC, 12V DC Mobile. **Weight:** 10 Lbs. **Inputs:** Mic-1 (LO-Z) 2mV/600 Ohms, Mic-2 (HI-Z) 2mV/50K Ohms, Aux.-1 200mV/100K Ohms, Aux.-2 200mV/100K Ohms. **Controls:** Mic 1, Mic 2, Aux. 1, Aux. 2, On/off Power/Tone

958-8060. PAT-60 ....EACH 195.69

20 Watt, 12V DC Mobile PA Amplifier



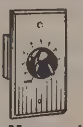
Features

- Compact, 12V DC, 20 watt PA amplifier
- Comes with push-to-talk mic and cigarette lighter plug
- Has auxiliary input for cassette tape deck, phono, or tuner
- Plugs into cigarette lighter
- Complete with mounting bracket and hardware
- Deluxe display package
- Has suction cups for portable dashboard mounting
- Perfect for auto, bus, truck or marine applications

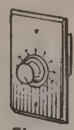
Specifications. Frequency Response: 50-18,000 Hz. **Tone Control Range:** 18dB ± 3dB at 10 KHz. **Input Sensitivity:** Mic 2mV/4K Ohms, Aux. 200mV/50K Ohms. **Current Drain:** 3.5A Maximum. **Semiconductors:** 1/C, 1TR, 1LED. **Weight:** 1.1 Lbs. **Total Distortion:** Less than 1% at 10 Watts output. **Output Impedance:** 8 Ohms. **Maximum Output Power:** 20 Watts (8 Ohm), 10 Watts RMS. **Power Supply Voltage:** DC 12V Negative Ground, 5A Fuse. **Dimensions:** 1 1/4"(H) x 5 1/8" (W) x 4 1/2" (D)

958-8200. PAT-20 ....EACH 70.82

Accessories



Monaural



Stereo

Wall mount custom design and high power attenuators. Monaural and stereo. Stainless steel plate/black knob, white plastic plate/white knob.

Monaural

Stock No.	Mfr.'s Type	Watt	Plate Type	Line/ Volt	Ohm	EACH
958-8515	WAT-10W	10	White/Plas	70/25	—	19.50
958-8520	WAT-10-8	10	Stain/Stl	—	8	16.25
958-8530	WAT-25	25	Stain/Stl	70/25	—	21.95
958-8535	WAT-25-8W	25	White/Plas	—	8	22.95
958-8540	WAT-35*	35	Stain/Stl	70/25	—	23.99

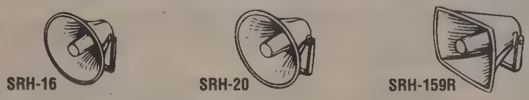
Stereo

Stock No.	Mfr.'s Type	Watt	Plate Type	Line/ Volt	Ohm	EACH
958-8545	WAT-10D	10	Stain/Stl	70/25	—	29.95
958-8550	WAT-10D-8W	10	White/Plas	—	8	30.95
958-8555	WAT-25D	25	Stain/Stl	70/25	—	38.19
958-8560	WAT-50D-8	50	Stain/Stl	—	8	52.33

* Dual Gang

Projection Horns—Aluminum, Weatherproof

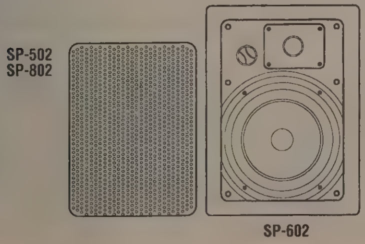
Use with SRD Drivers



Stock No.	Mfr.s Type	Diameter	Depth	Dispersion	Low End Cutoff	EACH
958-8745	SRH-16	16"	13 1/2"	90	250 Hz	41.50
958-8750	SRH-20	20"	20 1/4"	80	250 Hz	49.95
958-8755 *	SRH-159R	15" x 9"	12 3/4"	120 x 60	250 Hz	40.95

* Rectangular

In-Wall Weatherproof Speaker Systems



Paintable Grille and Frame

SP502A Hi-Fidelity 2-Way. 20 Watts RMS, 30 Watts Max., 8 Ohm — 50-20,000 Hz., 5 1/4" polypropylene woofer, Mylar cone tweeter.

958-8715. SP502A. 11"H x 7 1/2"W X 2 3/4"D ....EACH 42.41

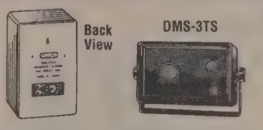
SP602A Super Hi-Fidelity 2 Way. 40 Watts RMS, 50 Watts Max., 8 Ohm — 40 20,000 Hz., 6" polypropylene woofer, Soft dome tweeter.

958-8720. SP602A. 12"H x 8 5/8"W x 3 1/4"D ....EACH 65.99

SP802A Deluxe Hi-Fidelity 2 Way. 60 Watts RMS, 80 Watts Max., 8 Ohms — 35 20,000 Hz, 8" polypropylene woofer.

958-0802. SP802A ....EACH 92.92

Weatherproof Specialty Speaker

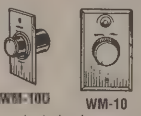


Indoor or outdoor 3-way polypropylene cone speaker system with dual built-in line transformer. 70/25 Volt line or 8 Ohm. Rotary switch adjusted by screwdriver. **Each speaker contains:** 4" 10 oz. air suspension woofer, P.P. super 2" cone tweeter, 55-20,000 Hz die cast enclosure. Complete with mounting bracket, wire and hardware. Perfect for all commercial foreground applications.

958-8605. DMS-3TS. Black ....EACH 52.33

958-8610. DMS-3TSW. White ....EACH 53.50

Wall Mount Audio Level Control



Stereo and monaural. 10 Watt, 8 Ohm, with brushed aluminum mounting plate for installation in standard gem box.

958-8570. WM-10D. Stereo ....EACH 9.69

958-8567. WM-10. Monaural ....EACH 8.50

Stereo and Monaural Audio Level Control

AT-10
AT-50
AT-100

AT-10D
AT-50D
AT-100D

Long threaded bushing for mounting in cabinets. Complete with knob and mounting plate.

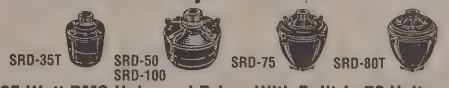
Monaural: Heavy Duty Single "L" Pad

Stock No.	Mfr.'s Type	Watts	EACH
958-8575	AT-10	10 Watts	5.06
958-8580	AT-50	50 Watts	10.85
958-8585	AT-100	100 Watts	14.95

Stereo: Dual Stereo "L" Pad with Single Control

Stock No.	Mfr.'s Type	Watts	EACH
958-8590	AT-10D	10 Watts	7.95
958-8595	AT-50D	50 Watts	18.50
958-8600	AT-100D	100 Watts	26.95

Drivers and Projection Horns



35 Watt RMS Universal Driver With Built-In 70 Volt Line Transformer

Frequency Response. 250-6000 Hz. **Transformer Taps:** 35, 25, 15, 10. **Power Rating:** 35 Watts RMS, 45 Watts Max. **Sensitivity:** 106 dB. **Throat Diameter:** 1 3/8" x 18 TPI.

958-8725. SRD-35T ....EACH 71.67

50 Watt RMS Universal Driver

Frequency Response. 250-6000 Hz. **Impedance:** 16 Ohms. **Power Rating:** 50 Watts RMS, 65 Watts Max. **Sensitivity:** 110 dB. **Throat Diameter:** 1 3/8" x 18 TPI.

958-8730. SRD-50 ....EACH 36.55

75 Watt RMS Universal Driver

Frequency Response. 250-8000 Hz. **Impedance:** 16 Ohms. **Power Rating:** 75 Watts RMS, 90 Watts Max. **Sensitivity:** 110 dB. **Throat Diameter:** 1 3/8" x 18 TPI.

958-8735. SRD-75 ....EACH 77.50

80 Watt RMS Universal Driver With Built-In 70 Volt Line Transformer

Frequency Response. 300-5000 Hz. **Transformer Taps:** 80, 40, 20, 10, 5. **Power Rating:** 80 Watts RMS, 100 Watts Max. **Sensitivity:** 112 dB. **Throat Diameter:** 1 3/8" x 18 TPI.

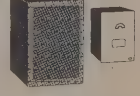
958-8740. SRD-80T ....EACH 111.34

100 Watt RMS Universal Driver

Frequency Response. 250-8000 Hz. **Impedance:** 16 Ohms. **Power Rating:** 100 Watts RMS, 120 Watts Max. **Sensitivity:** 113 dB. **Throat Diameter:** 1 3/8" x 18 TPI.

958-8746. SRD-100 ....EACH 52.80

Deluxe Professional Speaker with Built-In 70V Line Transformer



The SP-150T speakers are excellent for professional surround sound and foreground sound. Featuring a 2-way weatherproof indoor/outdoor deluxe system with big speaker sound, the systems offer a polycarbon 5 1/4" woofer, 2" tweeter and comes complete w/ mounting brackets for ease of installation. The sealed die cast aluminum housing has a 70V line transformer with wattage taps of 20, 10, 5, 2.5W and 8 Ohm VC and quick connect terminals.

RMS Power	50 Watts RMS/Channel
Max Power	80 Watts/Channel
Voice Coil Impedance	8 Ohms
Frequency Response	85-20,000 Hz
Dimensions	9"(H) x 6 1/4"(W) x 6 1/2"(D)
Weight	10Lbs. 4 oz.

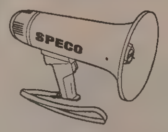
958-0150. SP150T ....EACH 113.25

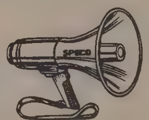
958-1150. SP150-TW ....EACH 115.52

1" to 4" Mini Speakers

Stock No.	Mfr.'s Type	Dia. Inch	Imp. Ohms	Resonant Freq. (Hz)	Frequency Range (Hz)	Sensit. DB	Power Nom. Watts	Alnico Mag. Wht. Oz.	EACH
958-8620	U101	1" RD	8	430-530	fo-5,000	89.0	0.15	0.20	**4.85**
958-8625	U105	1 1/2"RD	8	430-530	fo-7,000	89.0	0.20	0.24	**4.20**
958-8630	U105S	1 1/2"SQ	8	430-530	fo-7,000	89.0	0.20	0.24	**4.20**
958-8645	U260	2"RD	8	375-485	fo-4,500	92.0	0.20	0.33	**4.00**
958-8650	U260S	2" SQ	8	375-485	fo-4,500	92.0	0.20	0.33	**4.22**
958-8655	U261	2 1/4"RD	8	350-450	fo-5,000	93.5	0.20	0.42	**3.97**
958-8660	U261S	2 1/4"SQ	8	350-450	fo-5,000	93.5	0.20	0.42	**4.22**
958-8665	U265	2 1/2"RD	8	300-400	fo-5,000	94.0	0.20	0.42	**4.22**
958-8670	U265S	2 1/2"SQ	8	300-400	fo-5,000	94.0	0.20	0.42	**4.22**
958-8675	U208	2 3/4"RD	8	260-340	fo-4,000	95.0	0.30	0.42	**4.22**
958-8680	U208S	2 3/4"SQ	8	260-340	fo-4,000	95.0	0.30	0.42	**4.25**
958-8685	U300	3"RD	8	220-280	fo-5,000	94.5	0.50	0.42	**4.22**
958-8690	U300S	3"SQ	8	220-280	fo-5,000	94.5	0.50	0.42	**4.38**
958-8695	R305	3 1/2"RD	8	210-260	fo-5,000	94.5	0.50	0.42	**4.24**
958-8700	S305	3 1/2"SQ	8	210-260	fo-5,000	94.5	0.50	0.42	**4.27**
958-8705	G4AF1	4"SQ	8	210-260	fo-5,000	94.5	3.00	1.00	**5.10**

Megaphones for Emergency, Public Address and Marine


ER-360


ER-370

ER-380

ER-390

Model ER-360 Lightweight Portable Megaphone. Solid state megaphone features pistol grip w/press to talk switch, volume control and wrist strap. Made of weatherproof ABS plastic. Operates on AA batteries (not supplied). **Specifications: Length:** 12$^3/_4$". **Bell Diameter:** 7$^1/_2$". **Weight:** 2.2 lbs. without batteries. **Wattage:** 10 watts max. **Effective Range:** 500 ft.
958-8766 .... **EACH 90.00**

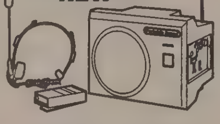
Model ER -370 Deluxe Megaphone With Siren. Powerful solid state megaphone. Features a built-in switch-selectable electronic alarm siren, pistol grip press to talk switch, volume control and shoulder strap. Durable weatherproof construction. Operates from 6C cells (not supplied). **Specifications: Length:** 15". **Bell Diameter:** 8$^1/_8$". **Weight:** 3$^1/_2$ lbs. without batteries. **Wattage:** 16 watts max. **Effective Range:** 800 ft.
958-8009 .... **EACH 124.95**

Model ER-380 Marine Megaphone With Siren And Fog Horn. Powerful solid state megaphone. Features a switch-selectable electronic alarm siren and fog horn, a pistol grip push to talk switch and shoulder strap. Durable weatherproof construction. Operates from 8C cells (not supplied). **Specifications: Length:** 14 $^1/_4$". **Bell Diameter:** 9 $^1/_8$". **Weight:** 3 $^1/_2$ lbs. without batteries. **Wattage:** 20 watts max. **Effective Range:** 1,200 ft.
958Q8770 .... **EACH 179.95**

Model ER-390 Deluxe Megaphone With Detachable Microphone And Siren. Powerful solid state megaphone. Features a built-in switch-selectable electronic alarm siren, a push to talk detachable microphone with volume control, shoulder strap and table stand. Durable weatherproof construction. Operates from 8C cells (not supplied). **Length:** 13$^1/_8$". **Bell Diameter:** 9 $^1/_8$". **Weight:** 3 $^1/_4$ lbs. without batteries. **Wattage:** 25 watts max. **Effective Range:** 1,400 ft.
958Q0390 .... **EACH 150.28**

PAW-100 CSI — 20 Watt Portable Wireless Amplifier

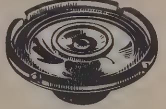
— NEW —



- Includes Wireless Headset and Lapel Mic with Belt Pack Transmitter
- Complete Self Contained Portable PA System, Great for Lectures or Demonstrations
- Additional Mic/Aux Input, Can Work with CSI Wireless Microphone
- Recorder/Line Level Output
- Operates on AC 110 or 220 Volts or DC 12-18 Volts
- Battery Included with Wireless Transmitter
- Optimum Operating Range: 60-130 Feet
- 7$^1/_2$"H × 9$^1/_2$"W × 6$^3/_8$"D
- Weight: 5.5 Lbs.
- High Performance
- VHF Frequencies Available: Channel A — 171.90 MHz; Channel B — 184.54 MHz; Channel D — 209.82 MHz; Channel F — 203.30 MHz
- 20 Watt Audio Output

958Q0100. PAW-100. **1-4** .... **EACH 359.99**
5-Up .... **EACH 329.99**

Ready-to Install, Quality 8" Speakers



Model G810CPP.
25-Watt, 10-oz. Magnet.
- **Weatherproof 8"**
- **Polypropylene**
- **With 3" Tweeter**
- **Air Suspension Coaxial**

Pre-drilled for easy line transformer installation. **Specifications: Frequency Response:** 50-50,000 Hz. **Magnet Weight:** (ceramic) 10 oz. **Power:** 25 W max. **Voice Coil:** 1" high-temp. **Impedance:** 8 Ohms.
958-8043. 1-19 .... **EACH 25.55** **20-Up** .... **EACH 23.46**

Model G8CF6W. 10 Watt Dual-Cone, Full Range Speaker. Ideal for office music systems and paging. Ready for transformer installation (pre-drilled). **Specifications: Frequency Response:** 85-15,000 Hz. **Magnet Weight:** (ceramic) 6 oz. **Power:** 10 W max. **Voice Coil:** 1" high-temp. **Impedance:** 8 Ohms. Good performance at an economical price.
958-8041. 1-19 .... **EACH 9.79** **20-Up** .... **EACH 8.72**

Model G8CA20C. 40 Watt Coaxial, 2-way, air suspension, High-Compliance Speaker. Suitable for heavy-duty Hi-Fi applications requiring superior performance. Has 3" tweeter and capacitor crossover. **Specifications: Frequency Response:** 50-18,000 Hz. **Magnet Weight:** (ceramic) 20 oz. **Power:** 40 W max. **Voice Coil:** 1" high-temp. **Impedance:** 8 Ohms. A good system speaker for build-in entertainment installations.
958-8040. 1-19 .... **EACH 26.50** **20-Up** .... **EACH 22.95**

Amplified Extension Speaker

Model AES-4. Amplified Communications Speaker. An economical extension speaker with 10 Watts of amplified power. Ideal for mobile or base 2-way. ABS plastic enclosure with soft-padded grille and all-angle swivel bracket. Includes 10' cord and 3.5 mm mini plug. **Specifications: Voltage:** 12 VDC. **Input Impedance:** 4 to 80. **Wattage:** 10 W Amplified.

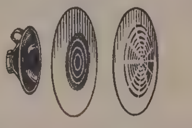
958-8036 .... **EACH 42.82**

10-Watt 70-Volt Line Transformer with Color-Coded Leads

Type T-7010. 10-watt primary. Taps at 10, 5, 2.5, 1.25, and .62 watts. **Secondary Impedance:** 4 or 8 Ohms. For driving speakers at various power levels from the same 70-volt line, simply charge the transformer taps to achieve the power level you desire. **Size:** 1.65" × 1.65" × 2". **Shipping Weight:** 1 $^1/_2$ lbs.

958-0013 .... **EACH 5.75**

8" and 12" Speaker with Line Transformer and 12" Grille



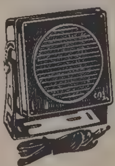
Model G86FT70GW. 8" speaker with line transformer and grille—assembled and wired. 6 oz. dual cone, 70V, 10 Watt transformer, white metal grille. (10 oz. dual cone, air susp. and coaxial in 70V and 25V also available upon request.)
958-8018. 1-9 .... **EACH 22.81**

Grilles. Fit within 12" ceiling tile for an attractive flush-mount speaker assembly. Fit 8" speaker.

Model G12WD. 12" white, round metal grille. Hardware furnished.
958-8017. 1-9 .... **EACH 6.36**

Model G12P. 12" white, round plastic grille. Hardware furnished.
958-8016. 1-9 .... **EACH 6.36**

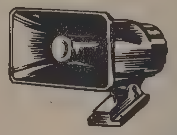
Communications Extension Speaker

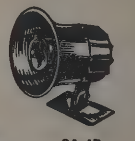


Model CBS-240. 4", 5 Watt 8 Ohms, enclosed extension voice communication speaker. Multi-angle 180° mounting bracket; 10' cord and 3.5 mm mini plug. ABS plastic enclosure.

958-7090 .... **EACH 14.10**

Alarm Sirens


SA-15RP


SA-4P

SA5-P

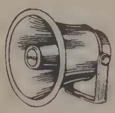
Model SA-15RP. 5 x 8", 30 Watt DC Siren. Made of weatherproof ABS plastic. Tamperproof, concealed cable. Dual tone—warbling and steady; 120 dB. Operates on 6 to 12VDC.
958-8010. 1-5 .... **EACH 34.66**
6-Up .... **EACH 31.06**

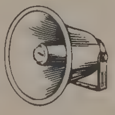
Model SA-4P. 4", 20 Watts, 120 dB, warbling tone. Weatherproof ABS plastic. Operates on 6-12VDC. Easy mounting base.
958-8111. 1-5 .... **EACH 18.50**
6-Up .... **EACH 15.00**

Model SA-5P. 5", 20 Watt DC Siren. Provides sharp, loud warbling tone, 115 dB. Black weatherproof ABS plastic with horn design. Operates on 6 to 12 VDC.
958-8012. 1-5 .... **EACH 15.95**
6-Up .... **EACH 13.95**

ABS Plastic and Aluminum Series Speakers

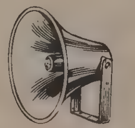
SPC-8

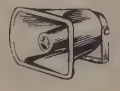

SPC-10


SPC-15

SPC-40RP

SPC-5P


SPC-30


SPC-15R

All the SPC-series aluminum and ABS plastic speakers are fully weatherproof and of rugged design to assure durability. All are furnished with hookup wires and mounting bracket. The SPC-10 is also available in 4 Ohms (SPC-10/4) at the same price shown below. Frequency response and sensitivity may vary slightly with each individual speaker.

Model SPC-8. 5" Aluminum Weatherproof PA Speaker. **Specifications. Frequency Response:** 30-15,000 Hz. **Power Rating:** 12W Nom.15W Max. **Sensitivity:** 105 dB/1W/1M. **Impedance:** 8 Ohms. **Size:** 5 x 5".
958-8005. 1-5 .... **EACH 14.95**

Model SPC-10. 6" Aluminum Weatherproof PA Speaker. **Specifications. Frequency Response:** 250-15,000 Hz. **Power Rating:** 10W Nom. 15W Max. **Sensitivity:** 105 dB/1W/1M. **Impedance:** 8 Ohms. **Size:** 6 x 6".
985-7098. 1-5 .... **EACH 24.00**

Model SPC-15. 8" Aluminum Weatherproof PA Speaker. **Specifications. Frequency Response:** 200-15,000 Hz. **Power Rating:** 15W Nom. 25W Max. **Sensitivity:** 110 dB/1W/1M. **Impedance:** 8 Ohms. **Size:** 8 x 8".
958-8006. 1-5 .... **EACH 34.95**

Model SPC-40RP. 6$^1/_2$" x 11" White ABS Speaker with universal all position mounting bracket and stainless steel hardware. Completely weatherproof. **Specifications. Frequency Response:** 200-15,000 Hz. **Power Rating:** 40W Max. **Sensitivity:** 1020 dB/1W/1M. **Impedance:** 8 Ohms. **Size:** 6$^1/_2$ x 11" (Dia.) x 9" (L).
958-8025. .... **EACH 44.95**

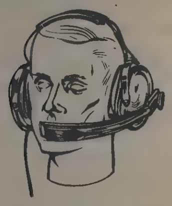
Model SPC-5P. 5" White ABS Indoor/Outdoor PA Speaker with 10' cord and mini plug and stainless steel hardware. **Specifications. Frequency Response:** 300-15,000 Hz. **Power Rating:** 8W Nom. 12W Max. **Sensitivity:** 105 dB/1W/1M. **Impedance:** 8 Ohms. **Size:** 5 x 5".
958-7097. 1-5 .... **EACH 12.27**

Model SPC-30. 15" Aluminum Weatherproof PA Speaker. **Specifications. Frequency Response:** 130-15,000 Hz. **Power Rating:** 40W Nom. 75W Max. **Sensitivity:** 120 dB/1W/1M. **Impedance:** 8 Ohms. **Size:** 15 x 13".
958-8007. 1-5 .... **EACH 87.99**

Model SPC-15R. 5 x 8" Aluminum Weatherproof PA Speaker. **Specifications. Frequency Response:** 200-15,000 Hz. **Power Rating:** 15W Nom. 25W Max. **Sensitivity:** 110 dB/1W/1M. **Impedance:** 8 Ohms. **Size:** 5 x 8 x 8".
958-8008. 1-5 .... **EACH 36.95**

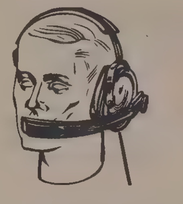
Voice Powered Communication Systems

Headsets Requiring No External Power, Batteries or Electricity


H5030

Behind-the-Head

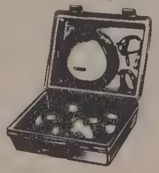
H5040


H5090

H5030 Headset With Acoustic Boom. Boom allows hand-free operations. The symmetrical design allows the headset to be worn with boom on either side of head. Recommended for noise levels to 100 dB. MSHA Approval Number 9B-67.
535-0185. Model H5030 .... EACH 293.02

H5040 Headset With Acoustic Boom. Behind-the-head version of model H5030. Has soft, adjustable over-head strap that fits under safety cap. Recommended for noise levels to 100 db. MSHA Approval Number 9B-67.
535-0380. Model H5040 .... EACH 293.02

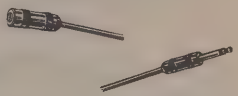
H5090 Headset With Acoustic Boom. Single ear version of model H5030. Recommended for noise levels to 80 db.
535Q0400. Model H5090 .... EACH 187.00



Voice Powered Communication Kit
Ready-to-use, easy-to-store, two-man Communication System. Complete with carrying case, kit includes two H5040 headsets, two C5401 Adapter Cords and a C52-50 Jumper Cord. Ideal for use in pulling and pairing wires, continuity checks (ringing out wires), calibrating instrument readings, etc.
535Q6025. Model K5501. Six Piece Kit .... EACH 707.42

Carrying Case. Headset carrying case (case only) available as a separate item.
535-6020. Model 9143P-26 .... EACH 72.39

Accessories

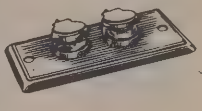


Extension Cords
Two conductor cords with phone plug and phone jacks. Extension cords are used to extend distance from jumper cord, jack plate or junction box. May be coupled for longer length. Number after dash indicates cord length.

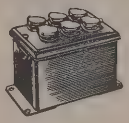
535-0012. C51-12 .... EACH 56.28
535-6005. C51-25 .... EACH 75.16
535-0074. C51-50 .... EACH 96.81
535-0075. C51-100 .... EACH 154.20

Jumper Cords
All that is needed to complete a two-man VOICE POWERED System. It is a two conductor cord with 2 phone jacks to plug into each headset. For longer systems, extension cords may be added. Number after dash indicates cord length.,

535-0059. C52-12 .... EACH 57.29
535-0010. C52-25 .... EACH 73.86
535-0064. C52-50 .... EACH 96.81
535-0065. C52-100 .... EACH 132.00



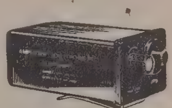
Jack Plate
Two outlets with C-11 jacks. Receives plug from headset or extension cord. Two outlet faceplate has weatherproof covers and fits standard electrical box. Can be used for permanent, multiple station installations. Electrical box not included.
535-0040. Model M5002 .... EACH 58.56



Six Plug Junction Box

Heavy duty metal box has weatherproof covers and takes up to six plugs from headsets or extension cords.

535Q6015. Model M5006 .... EACH 177.25



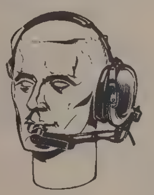
Amplifier/Belt Station
For use with Models H5030, H5040 and H5090 headsets. The amplifier increases the volume of transmission from the user's headset by up to 30 dB. Includes an adjustable talk level and a Push-To-Amplify switch. Completely portable (comes with self contained 9 V battery). Adapter cord assembly included.
535Q6110. Model M5410 .... EACH 408.00

AC Powered Communication System

Noise Attenuating Headsets for Use with Series 3400

H3330

H3340


H3391

H3140

H3330 Headset/Microphone
Over-the-Head style with boom mounted noise canceling microphone. For Noise levels to 125 db.
535Q7040. Model H3330 .... EACH 274.74

H3340 Headset/Microphone
Behind-the-Head style with boom mounted noise cancelling microphone. For noise levels to 125 db.
535Q7045. Model H3340 .... EACH 274.74

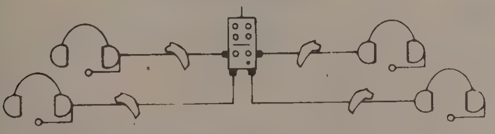
H3391 Headset/Microphone
Single ear version with boom mounted noise canceling microphone. Not to be used in noise levels above 85 db.
535Q7050. Model H3391 .... EACH 240.19

H3140 Headset/Microphone
Behind-the-Head style with throat microphone for use with breathing mask.
535Q3140. Model H3140 .... EACH 394.40

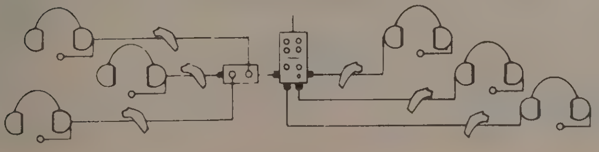
Belt Station required for each headset. All headsets shown are interchangeable throughout system.

Typical Series 3400 Applications

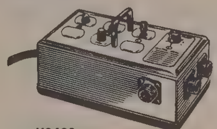
Two to Four Headsets



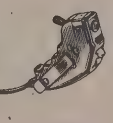
Five to Six Headsets

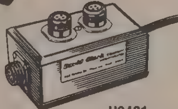


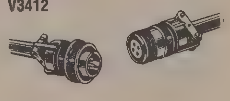
Series 3400


U3400

U3410


V3412


U3401


C34

This System operates on standard 110 VAC current and can easily be converted to 220 VAC. Up to 32 Headsets may be connected at one time using belt stations and remote junction modules. Four conductor shielded cables provide shielding from electrical and radio frequency interference.

U3400 Master Station
The heart of the Series U3400 Communication System. It contains the power supply, amplifier and impedance selector in a single, sturdy metal box. There are four output connectors, 12 ft. grounded power cord, roll bar/carry handle, master volume control, and system On/Off switch. Belt Stations connected to four outputs form a four-man communication system. See Application No. 1 below. Remote Junction Modules connected to these outputs may further expand the system. See Application No. 2 below. **Specifications. Input:** 110-125 VAC, 60-50 Hz. **Output:** 24 VDC. **Max. Current:** 1/2 amp. Dimensions: 4¾ × 9½ × 4¾".
535Q7000. Model U3400 .... EACH 822.28

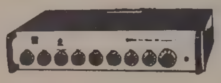
U3401 Remote Junction Module
Used for additional Belt Station connections. Will provide three Belt Station connections or two Belt Station connections plus another Remote Junction Module or extension cord. Your system arrangement will accommodate a maximum of 32 headsets. See Application No. 2 below.
535Q7005. Model U3401 .... EACH 278.80

U3410 Belt Station
Serves as a preamplifier and interfaces between Headset and system. EVERY HEADSET MUST BE PLUGGED INTO A BELT STATION. Belt Station then connects to a Master Station or Remote Junction Module, either directly or via extension cords. Unit features headset jack, individual earphone volume controls, push-to-talk or lock microphone button, belt clip, 12 ft. cord with connector.
535Q7010. Model U3410 .... EACH 249.90

V3412 Vox Belt Station
May be used in place of U3410 Belt Station. No buttons to press for hands-free operation. Voice activated start/stop transmission. Has Vox sensitivity control, headset jack, listening volume control, Vox override push to talk button, belt clip, 12 ft. cord with connector.
535Q7015. Model V3412 .... EACH 349.22

C34 Extension Cords
With screw-on-type connectors. Four conductor oil resistant cords are used to connect all components: Master Station, Remote Junction Modules and Belt Sanders. Number after dash indicates length in feet.
535Q7020. C34-12 .... EACH 132.60
535Q7025. C34-25 .... EACH 156.40
535Q7030. C34-50 .... EACH 193.80
535Q7035. C34-100 .... EACH 285.60

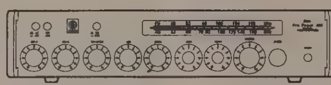
Pro-120 120 Watt PA Amplifier



With priority paging. **Specifications. Power Output:** 120 W rms. **Frequency Response:** 50 Hz to 15 kHz. **Noise:** mic — –60 dB; aux. — –75 dB. **Sensitivity:** mic — 0.3 mV; aux. — .03 V. **Tone Controls:** bass (100 Hz) — ±12 dB; treble (10 kHz) — ±12 dB. **Front Panel Controls:** 4 mic volume, master volume, (2) aux. volume, bass, treble, mag. phono volume, power on/off. **Inputs:** mic 1, 2, 3, 4 (balanced or unbalanced); HIZ; LOZ; (2) aux. –100K; mag phono; equalizer. **Outputs:** 4, 8, 16 ohms, 25 V and 70 V (balanced or unbalanced), booster/tape, screw terminals, speaker jacks. **Power Requirements:** 117 VAC, 50-60 Hz, 230 W. **Dimensions:** 3½"H × 17¼"W × 11"D. **Weight:** 33 lbs.

790Q7598. Pro-120. **1-5**	**EACH 640.92**
6-Up	**EACH 589.55**

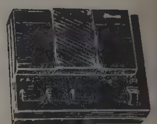
Pro-40T 40 Watt Amplifier With Built-In AM/FM Tuner



With priority paging. **Specifications. Power Output:** 40 W rms. **Frequency Response:** 50 Hz to 15 KHz. **Noise:** mic. — –60 dB; aux. — –75 dB. **Sensitivity:** mic. — 0.3 mV; aux. — 0.3 V. **Front Panel Controls:** AM/FM, AFC on/off, mic. 1, 2, 3 (Mag. phono), volume, aux. volume, tuner volume, bass/treble, master volume, tuning, power on/off. **Inputs:** Mic. 1, 2, 3, (balanced or unbalanced), HIZ; LOZ, (2) aux. –100K; mag phono; equalizer. **Outputs:** 4, 8, 16 ohms, 25 V and 70 V (balanced or unbalanced), booster/tape, screw terminals, equalizer, speaker jacks. **Power Requirements:** 117 VAC, 50-60 Hz, 125 W. **Dimensions:** 3½"H × 17¼"W × 11"D. **Weight:** 27.5 lbs.

790Q0040. Pro-40T. **1-5**	**EACH 638.35**
6-Up	**EACH 588.46**

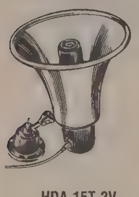
FM Wireless Intercoms



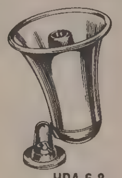
- Two Way "Hands-Free" Voice (VOX) and Manual Operation
- Operates Room-to-Room or Between Houses on Same AC Electrical Wiring; No Installation Is Required
- Any Number of Stations May Be Operated on Same Line
- Each Intercom Unit Is Plugged into an AC Outlet and Uses the House or Office Electrical Wiring as a Message Path
- Ultra-Sensitive FM Circuitry with Separate Microphone and Speaker Provides Dependable Clarity of Voice Transmission
- Instant "ON" Operation Assuring Dependable Service; No Warm-Up Time Required
- All Stations Are Equipped with "Call" Button for Signaling, Lock Buttons for Continuous Monitoring of Baby, Sickroom, etc.
- All Models Are Fully Compatible with Each Other
- Can Be Used on Desk, Table, Counter or Wall Mounted
- Cabinets Are of High Impact Plastic with Woodgrain and Charcoal Brown Colors — 6"W × 5"D × 2"H; Weights 1 lb.

790-3502. VFM-300. 3-Channel — Single Station	**EACH 46.67**
790-3504. VFM-200. 2-Channel — Single Station	**EACH 42.92**
790-3506. VFM-100. 1-Channel — Single Station	**EACH 37.39**

Multi-Purpose Speakers



HDA-15T-2V
HDA-30T-2V



HDA-6-8
HDA-10-8
HDA-10-8XL

Model HDA-15T-2V. Power 15 watts, power taps 25 and 70.7 volt lines — 15, 7.5, 3.5, 2.0 watts, 8½" bell diameter. Ruggedly constructed of aluminum with baked enamel finish. Anyone can hook up a multi-horn P.A. system with "Multi-Tap" Speakers, with built-in matching transformer. They are equipped with four different power selections on each horn. All you have to do is select the power you need. Comes complete with 18" speaker wires.

790-7605. HDA-15T-2V. **1-5**	**EACH 72.00**
6-Up	**EACH 66.07**

Model HDA-30T-2V. Same as HDA-15T, above, Power 30 watts, power taps 25 and 70.7 volt lines — 30, 15, 7.5, 4.5, watts, bell diameter 10". Recommended for higher powered system.

790-6000. HDA-30T-2V. **1-5**	**EACH 90.31**
6-Up	**EACH 81.71**

Model HDA-6 8 Ohms. Outperforms all directly competitive speakers in its size and class. Rated at full 15 watts continuous duty. Speaker has 6½" diameter bell and is 8" long. Smooth response and very high conversion efficiency. Full-range swivel mount with positive locking action. **Weight:** 4 lbs.

790-6150. HDA-6. **1-5**	**EACH 43.00**
6-Up	**EACH 37.00**

Model HDA-10 8 Ohms. Higher power version of HDA-5 and HDA-6 with improved low frequency response. Rated at 30 watts continuous output, it has a 10" diameter bell. Produces a sound pressure of 124 dB or double the efficiency of speakers of the same size and input rating. Good wide-range response. Full-range swivel mount with positive locking action. **Weight:** 5 lbs.

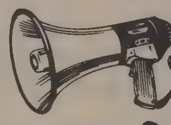
790-7603. HDA-10. **1-5**	**EACH 45.00**
6-Up	**EACH 38.00**

Model HDA-10-8XL. Same as HDA-10-8 except with 25 ft. cord.

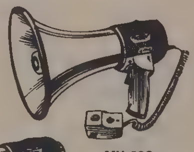
790-9015. HDA-108XL. **1-5**	**EACH 46.01**
6-Up	**EACH 39.01**

Megaphones

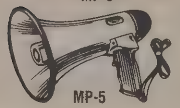
MP-3



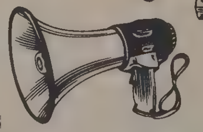
MV-10S



MV-20S



MP-5



MV-16S
MV-25WS

Model MP-3. Compact megaphone similar to our larger series. **Specifications. Power Output:** 3 watts peak — 2 watts rated. **Batteries:** 6 "AA" cells (not included).

790-7954. MP-3. **1-5**	**EACH 99.94**	**6-Up**	**EACH 68.53**

Model MP-5 — 5 Watt, 300 Yd. Range Megaphone. Battery operated and convenient to use. The sturdy, high-impact ABS plastic bell and weather-proof, built-in microphone will give years of use from this low-priced, but rugged megaphone. Trigger talk switch. Includes volume control, dynamic microphone and carrying strap. **Specifications. Power Output:** 10 watts peak, 5 watts rated. **Batteries:** 8 "AA" cells (not included).

790-7593. MP-5. **1-5**	**EACH 141.37**	**6-Up**	**EACH 97.36**

Model MV-10S — 10 Watts, 600 Yd. Range Built-In Signal Alarm/Fog Horn. Ideal for police, fire, industrial and recreational applications. Weatherproof. Carrying strap included. Sturdy high-impact ABS plastic bell. Volume control, signal alarm switch, pistol-trigger talk switch, dynamic microphone and carrying strap. **Specifications. Power Output:** 16 watts peak,10 watts rated. **Batteries:** 6 "C" cells (not included).

790-7592. MV-10S. 1-5	**EACH 183.95**	**6-Up**	**EACH 124.95**

Model MV-16S — 16 Watts, 800 Yd. Range Built-In Signal Alarm/Fog Horn. Powerful signal alarm for fog horn or general alert. Weatherproof construction. Adjustable volume control. 12 VDC Negative ground only. Features include volume control, signal alarm switch, pistol-trigger talk switch, 12 VDC input jack, dynamic microphone and carrying strap. **Specifications. Power Output:** 20 watts peak, 16 watts rated. **Batteries:** 8 "C" cells (not included).

790-7591. MV-16S. **1-5**	**EACH 165.98**	**6-Up**	**EACH 153.15**

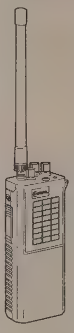
Model MV-20S — 20 Watts, 1000 Yd. Range Built-In Signal Alarm/Fog Horn. Weather-proof mike hooks on to rear for standard use. Megaphone may be shoulder mounted with mike detached. Coiled cord and talk switch on mike for hand-held use. Solid state amplifier has a signal alarm for warning alert, fog horn or "mayday". Negative ground only. Includes volume control, hand and shoulder straps, dynamic microphone with coiled cord and talk switch. Pistol-trigger switch. 12 VDC input jack. Signal alarm switch. **Specifications. Power Output:** 25 watts peak, 20 watts rated. Uses Class B push-pull circuit. **Batteries:** 8 "C" cells (not included).

790-7590. MV-20S. **1-5**	**EACH 194.63**	**6-Up**	**EACH 178.41**

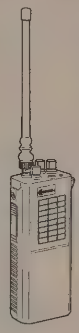
Model MV-25WS — 20 Watts Peak, 16 Watts Rated. Features are the same as the MV-16S plus an additional whistle switch.

790-9000. MV-25WS. **1-5**	**EACH 175.25**	**6-Up**	**EACH 160.65**

PROCOM VHF and UHF FM Transceivers — Crystal Controlled Handheld Miniatures — 5 Watts, 4 Channels



M54

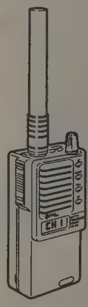


MU54

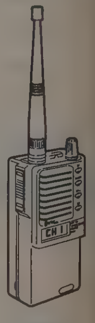
- Ideal for Use on Construction Sites, in Factories, for Security Control and Many Other
- Range Up to 3 Miles
- Rechargeable Battery Pack
- Adjustable Squelch Control/Tone Squelch On-Off Switch
- Sturdy ABS Plastic Case
- Volume Control/On-Off Switch
- Operates Off Any F.C.C. Part 90 and 95 (UHF) Radio Frequencies
- One Set of Crystals Installed

790Q0054. PROCOM M54. 5 Watts, 4 Channels. **1-5**	**EACH 280.50**
6-11	**EACH 253.00**
790Q9070. PROCOM MU54. 5 Watts, 4 Channels. **1-5**	**EACH 341.00**
6-11	**EACH 312.00**

PROCOM Synthesized Programmable VHF and UHF FM Transceivers Handheld Miniatures — 5 Watts, 10 Channels



M510



MU510

- Range Up to 3 Miles Subject to Environmental Conditions
- Weather Resistant with Die-Cast Frame, High Impact Case with Belt Clip
- Rechargeable Nickel Cadmium Battery Pack, A.C. Battery Charger, Flexible Antenna with BNC Connector, F.C.C. License Application Included
- Jacks for A.C. Charger, Earphone, External Speaker/Microphone and External Antenna with BNC Connector
- Low/Med./High Transmit Power Output
- Battery/Transmit and Busy LED Indicator
- Channel LCD Digital Readout
- Ten Channel Selector
- Channel Scan with Lockout
- Varactor Track Tuning Assures Peak Tuning when Changing Channels
- Programmable CTCSS Tone Squelch (Optional)
- Volume Control/Power On-Off Switch
- Built-In Squelch Control

790Q0510. PROCOM M510. 5 Watts, 10 Channels VHF. **1-5**	**EACH 306.00**
6-11	**EACH 338.00**
790Q0511. PROCOM MU510. 5 Watts, 10 Channels UHF. **1-5**	**EACH 366.00**
6-11	**EACH 338.00**
790Q0512. PRIVACOM-10. CTCSS Tone Module (Added at Factory)	**EACH 83.00**
790-7761. RSM-1. Remote Speaker and Microphone	**EACH 49.95**

Type VRSM-2. Voice Operated "Hands-Free" MINI-VOX/PTT Headset and VOX Control Unit with Belt Clip, for PROCOM Handheld Transceivers.

790-0513. VRSM-2	**EACH 98.00**
790-0514. DIC-10. Single Drop-In Quick Charger	**EACH 80.00**

— NEW —

PROCOM Synthesized Programmable VHF and UHF FM Transceivers Handheld — 5 Watts, 20 Channels

M520

MU520

- Range 1 to 3 Miles Subject to Environmental Conditions
- Weather Resistant with Die-Cast Frame, High Impact Case with Belt Clip
- 20 Channel Selector with Channel Digital Readout
- Scan/Priority Channel Indicator
- Built-In Programmable CTCSS/DSC Squelch with Indicators; Motorola Compatible
- Battery/Transmit and Busy LED Indicator
- Channel Scan/Priority/Lock Indicators
- Low/Med./High Transmit Power Output
- TX Time Out Timer
- DTMF Pager Module (Optional)
- Rechargeable 12 VDC, 600 mA Nickel Cadmium Battery Pack, AC Charger, Flexible Antenna with BNC Connector, F.C.C. License Application Included
- Factory Programmed or Programmed with Optional Kit

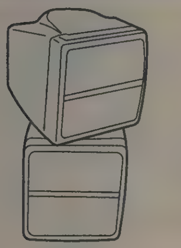
790Q0520. Procom M520. **1-5**	**EACH 499.95**	**6-11**	**EACH 456.81**
790Q0521. Procom MU520. **1-5**	**EACH 549.95**	**6-11**	**EACH 505.63**
790-7761. RSM-1. Remote Speaker and Microphone			**EACH 49.95**

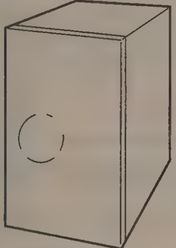
Type VRSM-2. Voice Operated "Hands-Free" MINI-VOX/PTT Headset and VOX Control Unit with Belt Clip, for PROCOM Handheld Transceivers.

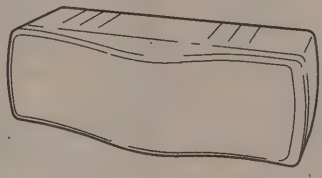
790-0513. VRSM-2	**EACH 98.00**
790-0514. DIC-10. Single Drop-In Quick Charger	**EACH 80.00**

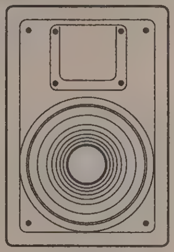
Need Larger Quantity Prices? Call 1-800-433-5700 For Prompt Handling

Epitome™ Speakers


30-3581


30-3620


30-3532


30-3580

Directional Bookshelf Speakers

— NEW —

Use for background music or main system in conjunction with a subwoofer. Can be used in rooms where an unobtrusive speaker is desired and in-wall speakers are out of the question. **Specifications. Woofer:** 3". **Impedance:** 4 ohms. **Frequency Response:** 250 Hz to 20 kHz. **Power Handling:** 40 watts (RMS). **Sensitivity:** 93 dB. **Dimensions:** 7"H × 4"W × 4"D.
797-0800. 30-3581 .... **PER PAIR 81.04**

Passive Dual 6½" Subwoofer

— NEW —

Specifications. Woofer: Dual 6½" copolymer cones. **Impedance:** 4 ohms. **Frequency Response:** 40 Hz to 150 Hz. **Power Handling:** 100 watts (max.) **Sensitivity:** 90 dB. **Dimensions:** 15¼"H × 9½"W × 15⅛"D.
797-0805. 30-3620 .... **EACH 146.56**

Shielded Center Channel Speaker

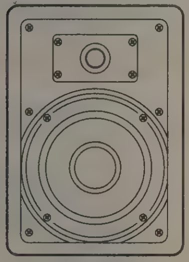
— NEW —

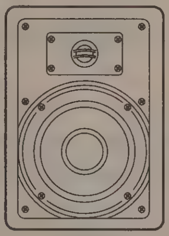
Contemporary design. **Specifications. Woofer:** Dual 3½" copolymer cones. **Tweeter:** ½" mylar dome. **Impedance:** 8 ohms. **Frequency Response:** 150 Hz to 20 kHz. **Power Handling:** 40 watts (max.) **Sensitivity:** 92 dB. **Dimensions:** 4½"H × 12¾"W × 5¾"D. Measurement taken at deepest point.
797-0810. 30-3532 .... **EACH 72.42**

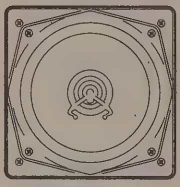
— NEW —

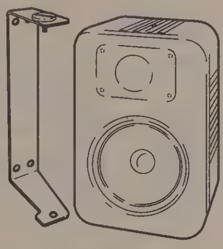
8" In-Wall Subwoofer

Specifications. Woofer: 8" polypropylene cone. **Impedance:** 8 ohms. **Frequency Response:** 40 Hz to 120 Hz. **Power Handling:** 100 watts (max.). **Sensitivity:** 90 dB. **Dimensions:** 14"H × 10¼"W × 4"D.
797-0812. 30-3580. Grill Included .... **EACH 112.07**


30-3508


30-3506


30-3525


30-3510

6½" 2-Way In-Wall Speaker

Specifications. Woofer: 6½" polypropylene cone with 25 mm voice coil and 10 oz. ceramic magnet. **Tweeter:** 1" soft dome with 6 oz. magnet. **Impedance:** 8 ohms. **Frequency Response:** 45 Hz to 20 kHz. **Power Handling:** 40 watts RMS, 80 watts (max.). **Sensitivity:** 90 dB, 1 watt, 0.5 meter. **Dimensions:** 12" L × 8½" W × 3" D.
797-0635. 30-3506. Speakers .... **PER PAIR 118.06**
797-0630. 30-3516. Mounting Brackets .... **PER PAIR 19.51**

8" In-Wall Speaker

Specifications. Woofer: 8" polypropylene cone. **Tweeter:** 1" soft dome. **Impedance:** 8 ohms. **Frequency Response:** 40 Hz to 20 kHz. **Power Handling:** 100 watts (max.). **Sensitivity:** 90 dB, 1 watt, 0.5 meter.
797-0640. 30-3508. Speakers .... **PER PAIR 155.55**
797-0645. 30-3518. Mounting Brackets .... **PER PAIR 23.42**

5¼" Coaxial In-Wall Speaker

Specifications. Woofer: 5¼" polypropylene cone. **Tweeter:** ¾" polycarbonate dome. **Impedance:** 8 ohms. **Frequency Response:** 69 Hz to 20 kHz. **Power Handling:** 25 watts RMS, 50 watts (max.). **Sensitivity:** 90 dB, 1 watt, 0.5 meter. **Dimensions:** 6¾" L × 6¾" W × 2¼" D.
797-0620. 30-3525. Speaker .... **PER PAIR 70.19**

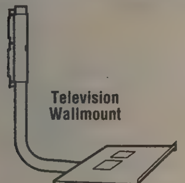
Epitome™ Acoustic Speakers

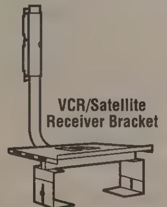
Excellent by themselves or complementing an existing home theater system. Use where space is at a premium and quality sound is a requirement. **Specifications. Woofer:** 5" polypropylene cone. **Tweeter:** ½" horn. **Impedance:** 8 ohms. **Frequency Response:** 50 Hz to 20 kHz. **Power Handling:** 80 watts (max.). **Sensitivity:** 89 dB, 1 watt, 0.5 meter.
797-0650. 30-3510. Black Speaker .... **PER PAIR 123.89**
797-0655. 30-3511. White Speaker .... **PER PAIR 123.89**

Note: All Epitome 2-Way In-Wall Speakers feature polypropylene cones and soft dome tweeter for improved sound quality and durability.

Television Wall Mounts

— NEW —





New space-saving television/monitor mounts are ideal for today's home or office. As space becomes more valuable in every room, GC mounts provide a modern alternative to bulky TV stands and home entertainment centers. By attaching your TV to a GC mount, you will save space while adding to the decor of your bedroom, den, office, bar or any room in the house. The high-tech black, scratch resistant finish complements today's contemporary lifestyles and television designs.

In addition to saving space, GC wall mounts make watching TV easier. The 10° shelf tilt angle and the 90° left/right swivel lets you position the television for optimum viewing from any point in the room. GC wall mounts fit most 13", 19/20" and 25/27" televisions and monitors.

25"/27" Ceiling Mount/Television Mount

Tray Width: 25". **Max. Depth of Set:** 19½". **Load Rating:** 125 lbs. **Fits:** Most 25" and 27" sets. **Color:** Black.
797-0820. 32-1827-CM .... **EACH 188.66**

19"/20" Wall Mount/Television Mount

Tray Width: 20". **Max. Depth of Set:** 18". **Load Rating:** 100 lbs. **Fits:** Most 19" and 20" sets. **Color:** White.
797-0825. 32-1820-WH .... **EACH 68.95**

13" Television Mount/Wall Mount

Tray Width: 14". **Max. Depth of Set:** 15½". **Load Rating:** 85 lbs. **Fits:** Most 13" sets. **Color:** Black.
797-0815. 32-1813 .... **EACH 57.12**

VCR/Satellite Receiver Bracket

- **Attaches to Wall Mount**
- **Adjustable Height and Width**
- **2½" to 4½" High**
- **12½" to 17¼" Wide**
- **5 Year Warranty**
- **Made in the USA**

797-0850. 32-1830. Black .... **EACH 33.49**
797-0855. 32-1830-WH. White .... **EACH 33.49**

Speaker Wire

For in-wall installations. 2 and 4-conductor stranded bare copper wire. Each conductor is insulated with an overall jacket.

UL/CL2 Speaker Wire (4-Conductor)

Specifications. Gauge: 16. **Stranding:** 19/29. **Insulation Thickness:** .010 PVC. **Nominal O.D.:** .232. **Length:** 1000 ft. **Color:** Grey.
797-0600. Model 14-216-4F89 .... **EACH 383.86**

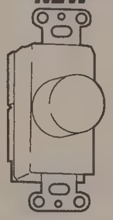
UL/CL2 Speaker Wire (2-Conductor)

16 Gauge Specifications. Stranding: 19/29. **Insulation Thickness:** .010 PVC. **Nominal O.D.:** .199.**14 Gauge Specifications. Stranding:** 19/27. **Insulation Thickness:** .014 PVC. **Nominal O.D.:** .244.
797-0605. Model 14-216-2F89 .... **EACH 195.00**

Volume Control/Speaker Selector

12 Step Stereo High Power Volume Control

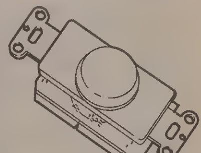
— NEW —



A 12-step control with an attenuation range of 30 dB to provide a balanced graduation of volume. The control has higher capacity for todays higher power systems. The unit is sealed to prevent malfunctions from the harmful effects of dust and moisture allowing installation in any situation. This unit also features removable screw to connect terminals for easy installation. **Specifications. Power Handling Capacity:** 40 watts RMS, 120 watts avg. 250 watts (max.). **Impedance:** 8 ohms. **Frequency Response:** 35 Hz to 20 kHz. **Attenuation Range:** 3 dB per steps, last four steps are 6 dB. **Total Attenuation:** 42 dB (max.), 0 dB (min.)/off. **Number of Switch Steps:** 12. Mounts in deep electrical J-Box at least 2.9" deep.

797-0830. 65-3540. Decor Insert, White .... **EACH 55.18**

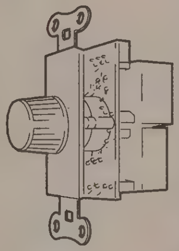
10 Step-Stereo Volume Control



10 steps of attenuation at 3 dB each, final 2 steps at 6 dB each. **Total Attenuation:** 30 dB and off. 25 RMS, 150 watts peak. Accepts up to 14 gauge wire. ABS plastic knob with indicator mark. Fits in standard single gang junction box.

65-1520. Standard White Wall Plate.
797-0680. 65-1520 .... **EACH 40.99**

12 Step Volume Control



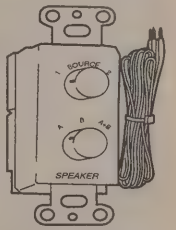
12-step control with an attenuation range of 34 dB to provide a balanced graduation of volume. The unit is sealed to prevent malfunction from the harmful effects of dust and moisture allowing installation in any situation. **Specifications. Power Handling Capacity:** 35 watts RMS, 105 watts (max.). **Impedance:** adjustable 2-32 ohms. **Frequency Response:** 35 Hz to 20 kHz. **Attenuation Range:** 3 dB per step, last two steps are 4 and 6 dB. **Total Attenuation:** 34 dB (max.), 0 dB (min.). **Number of Switch Steps:** 12. **Dimensions:** 1⅝"L × 2¼"H × 2"D.

65-3500. Decor Wall Plate, White.
797-0675. 65-3500 .... **EACH 49.99**

2 Source A/B Speaker Selector

— NEW —

- **Rotary Knobs**
- **Screw to Connect Terminal Blocks for Source Input and Speaker Output**
- **18 AWG Color Coded Wire Leads for Volume Control Input and Output**
- **Mounts in Single Gang Electrical J-Box**

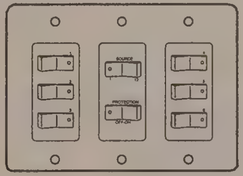


An A/B speaker selector allowing either A speaker, B speaker or both A and B speakers to be played. This selector also features 2 sources.

65-2020. Decor Insert, White.
797-0835. 65-2020 .... **EACH 25.00**

6 Pair In-Wall Speaker Selector

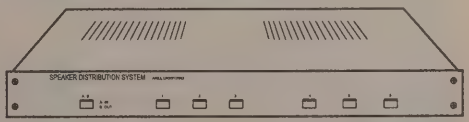
— NEW —



- **Two Source**
- **Fits in Standard Triple Gang J-Box**
- **Removable Screw to Connect Terminals for Easy Installation**
- **Selectable Impedance Protection**
- **Power Handling: 100 Watts Per Channel (RMS) 200 Watts Per Channel (Max.)**
- **Triple Gang Trim Plate Included**

797-0840. 65-2005 .... **EACH 124.14**

High Power 6 Pair Speaker Selector



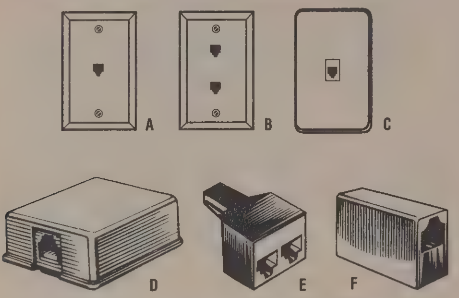
Low Profile Design

— NEW —

- **A/B Source Switch Can Play Either Source A or Source B**
- **Selectable Impedance Protection**
- **Separate Left and Right Ground Paths for Compatibility With All Amplifiers, Even Bridged**
- **Removable Screw to Connect Terminal, Accepts Up to 14 AWG Wire**
- **Pre-printed Adhesive Room Labels**
- **Power Handling: 200 Watts Per Channel (RMS); 400 Watts Per Channel (Max.)**
- **Dimensions: 17"W × 1¼"H × 11"D**

797-0845. 65-6006 .... **EACH 330.18**

Telephone Accessories



Flush Wall Jack — Fig. A. Modular flush wall jack assembly allows flush-mounted connection of plug-ended modular line cords. Ideal for initial installation or conversion from existing wall receptacles. UL Listed. Complies with USOC numbers RJ11C, RJ13C, RJ1DC.

796-9787. 30-9787-BU. 4-Conductor, White*	EACH	2.22

Flush Wall Jack — Fig. A. Modular flush wall jack assembly allows flush-mounted connection of plug-ended modular line cords. Ideal for initial installation or conversion from existing wall receptacles.

796-9707. 30-9707-BU. 4-Conductor, Ivory	EACH	1.60
796-9740. 30-9717-BU. 4-Conductor, White	EACH	1.60
796-9741. 30-9709-BU. 6-Conductor, White	EACH	2.60
796-9742. 30-9716-BU. 8-Conductor, White, Keyed	EACH	3.35

Dual Flush Jack — Fig. B. Can be flush mounted in wall to eliminate external wires. Two modular jacks permit use of two telephones at same location or one telephones and answering machine or other related equipment. Two solderless jacks can be connected independently or in series, utilizing one or two lines. UL Listed. Complies with USOC numbers RJ11C, RJ12C, RJ13C, RJ14C, RJ1DC.

796-9783. 30-9783-BU. 4-Conductor, White*	EACH	3.71
796-9745. 30-9753-BU. 4-Conductor, Ivory	EACH	3.25

Dual Flush Jack — Fig. B. Can be flush mounted in wall to eliminate external wires. Two modular jacks permit use of two telephones at same location or one telephone and answering machine or other related equipment. Two solderless jacks can be connected independently or in series, utilizing one or two lines.

796-9703. 30-9703. 4-Conductor, Ivory**	EACH	2.02
796-9743. 30-9713. 4-Conductor, White**	EACH	1.67
796-9710. 30-9710. 6-Conductor, Ivory**	EACH	4.13
796-9708. 30-9708. 8-Conductor, Ivory**	EACH	7.55
796-9744. 30-9719. 6-Conductor, White**	EACH	3.40
796-9758. 30-9728. 8-Conductor, White, Keyed**	EACH	3.92

Quick Mount Wall Phone Jack — Fig. C. Use when mounting wall-type telephones. Easy-to-hoop-up screw-type terminals. Heavy-duty construction. UL Listed Complies with USOC numbers RJ11W, RJ12W, RJ13Q, RJ14W, RJ1DC.

796-9784. 30-9784-BU. 4-Conductor, White	EACH	3.36

Quick Mount Wall Phone Jack — Fig. C. Use when mounting wall-type telephones. Easy-to-hook-up screw-type terminals. Heavy-duty construction. Complies with USOC numbers RJ11W, RJ12W, RJ13W, RJ14W, RJ1DC.

796-9704. 30-9704. 4-Conductor, Ivory	EACH	2.31
796-9746. 30-9714. 4-Conductor, White	EACH	2.23

Wall-Mount with Dual Side Jacks — Fig. C. Designed for wall-mounting phones, this unique device offers dual side jacks which accommodate hook-up of answering machine, auto-dialers or extension phones.

796-9705. 30-9705	EACH	4.67

Modular Surface Jack — Fig. D. Surface mounts to baseboard or wall.. Screw terminals for easy installation. UL Listed. Complies with USOC numbers RJ11C, RJ12C, RJ13C, RJ14C, RJ1DC.

796-9786. 30-9786-BU. 4-Conductor, Almond	EACH	2.21

Modular Surface Jack — Fig. D. Modular Surface Jack mounts to baseboard or wall. Screw terminals for easy installation.

796-9604. 30-9604. 4-Conductor, Ivory**	EACH	1.57
796-9747. 30-9614. 4-Conductor, White**	EACH	1.58
796-9607. 30-9607. 6-Conductor, Ivory**	EACH	3.61
796-9748. 30-9609. 6-Conductor, White**	EACH	2.73
796-9660. 30-9660. 8-Conductor, Ivory**	EACH	3.52
796-9616. 30-9616. 8-Conductor, White, Keyed**	EACH	3.35

Dual Modular Surface Jack — Fig. D. Surface mounts to baseboard or wall. Dual jacks for hook-up of telephone and answering machine, auto dialer. Screw terminals for easy installation.

796-9605. 30-9605	EACH	4.08

Modular "T" Adapter — Fig. E. "T" adapter enables two modular plugs to be used in a single modular jack.

796-9654. 30-9654-BU	EACH	1.26

Modular In-Line Couplers — Fig. F. Allows two modular cords to be connected together to increase length.

796-9678. 30-9678. Reverse Config., 4-Conductor, Ivory†	EACH	1.32
796-9749. 30-9618. Reverse Config., 4-Conductor, White†	EACH	1.85
796-9750. 30-9686. Reverse Config., 6-Conductor, Ivory†	EACH	2.77
796-9751. 30-9687. Reverse Config., 6-Conductor, White†	EACH	2.77
796-9752. 30-9688. Reverse Config., 8-Conductor, Ivory†	EACH	5.54
796-9753. 30-9689. Reverse Config., 8-Conductor, White†	EACH	5.54
796-9754. 30-9682. Straight Thru Config., 6-Conductor, Ivory†	EACH	1.85
796-9755. 30-9683. Straight Thru Config., 6-Conductor, White†	EACH	1.85
796-9756. 30-9684. Straight Thru Config., 8-Conductor, Ivory	EACH	5.54
796-9757. 30-9685. Straight Thru Config., 8-Conductor, White	EACH	5.54

*These telephone products are constructed with UL-94V-0 flame retardant plastic and 50 micro inches of gold plating. They comply with UL standard 1863 and article 800-51 of the National Electrical Code.
**4 conductor product complies with USOC numbers RJ11C, RJ13C, RJ1DC. 6 or 8 conductor complies with USOC numbers RJ12C, RJ18C, RJ19C, RJ25C.
†Straight thru wiring for data communication. Reverse wiring for voice communication.

Solid Telephone Hook-Up Wire

Beige-jacketed hook-up wire with color-coded wires within.

796-9901. 30-9901. (100')†	EACH	13.97
796-9905. 30-9905. (500' knockout carton)†	EACH	39.71
796-9953. 30-9953. (1000' pull-out box)†	EACH	93.45
796-9959. 30-9959. (1000')†	EACH	77.52
796-9970. 30-9970. (500')*	EACH	53.92
796-9971. 30-9971. (1000')*	EACH	140.85
796-9957. 30-9957. (500' knockout box)‡	EACH	31.40
796-9952. 30-9952. (1000' pull-out box)‡	EACH	56.68
796Q9980. 30-9980. (5000' Spool)‡	EACH	233.80
796-9958. 30-9958. (1000' knockout carton)‡	EACH	56.78
796-9976. 30-9976. (1000' knockout carton)**	EACH	78.04
796Q9972. 30-9972. (3000' Spool)**	EACH	299.28
796Q9982. 30-9982. (4000' Spool)**	EACH	284.02

†22-gauge, 4 conductor. *22-gauge, 6 conductor.
‡24-gauge, 4 conductor. **24-gauge, 6 conductor.

Tele-Check Modular Line Tester

Telephone Line Tester
GC
Green means correct wiring
Red means reversed polarity
no light means not operational

Analyzes modular phone line problems. Tester inserts into modular jack or in receptacle which holds line wire in network interface panel. Provides visual indication of the type and location of the phone line problem. Eliminates costly unneeded telephone service calls.

796-9450. 30-9451	EACH	9.86

Combination Telephone/Coax Wallplate

Specially designed wallplate allows hookup of both modular telephone wire and coax cable from one location. (4-conductor)

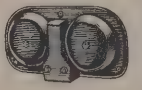
796-9732. 30-9732. Ivory	EACH	2.53

Twisstop™

Prevents handset cords from becoming twisted and tangled by allowing the handset to rotate freely. Compatible with all modular handset cords. Swivel rotary action spins the cord around to its original position, without decreasing sound quality.

796-9310. 30-9310	EACH	11.09

Outdoor Telephone Bell



The outdoor telephone bell is a loud mechanical bell. Weather resistant molded housing for use indoors or outdoors, ideal for factory, farm, porch or garage or in any noisy environment. This telephone bell is line powered and uses a modular jack for simple installation. FCC registered.

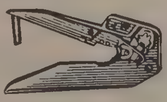
796-9835. 30-9835	EACH	58.94

Telephone Extension Ringer

Telephone ringer installs with modular connections. Ideal when in a remote location such as the basement, garage, patio or laundry room to alert the individual of a phone call.

796-9820. 30-7520	EACH	32.08

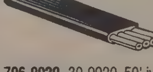
Modular Crimp Tool



Makes it easy to install modular plugs on 4-conductor modular line cord. Has built-in wire stripper.

796-9950. 30-9951	EACH	8.80

Stranded Flat Modular Line Cord



26-gauge Silver or Ivory-jacketed line cord with color-coded wires. Use with telephone modular plugs.

796-9907. 30-9907. 50' silver†	EACH	9.57
796-9920. 30-9920. 50' ivory†	EACH	9.70
796-9908. 30-9908. 100' silver†	EACH	17.31
796-9922. 30-9922. 100' ivory†	EACH	17.30
796-9906. 30-9906. 500' silver†.	EACH	43.73
796-9924. 30-9924. 500' ivory†.	EACH	42.88
796-9962. 30-9962. 1000' silver†	EACH	84.37
796-9963. 30-9963. 1000' ivory†	EACH	84.37
796-9932. 30-9932. 100' Hank silver**	EACH	25.39
796-9933. 30-9933. 100' Hank ivory**	EACH	25.39
796-9934. 30-9934. 500' Knockout silver**	EACH	66.83
796-9965. 30-9965. 1000' spool silver**	EACH	116.58
796-9966. 30-9966. 1000' spool ivory**	EACH	116.58
796-9945. 30-9945. 500' spool silver*	EACH	91.46
796-9940. 30-9940. 1000' spool silver*	EACH	176.07

†4 conductor. **6 conductor. *8 conductor.

Multi-Line-To-Modular Jack Adapter

Allows a single-line modular telephone to be connected to an existing 50-pin connector. With this adapter, installers are able to convert multi-line service, multi-button-equipped telephone stations in minutes.

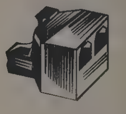
796-9812. 30-9812	EACH	13.20

Modular Plugs

Use with flat-line cord for making replacement cables or extension cords. Use modular crimp tool #30-9951.

796-9910. 30-9910. 4 cond.	PER PKG./10	3.21
796-9914. 30-9914. 6 cond.	PER PKG./10	1.96
796-9911. 30-9911. 4 cond.	PER PKG./100	29.81
796-9915. 30-9915. 6 cond.	PER PKG./100	52.07
796-9917. 30-9917. 8 cond.	PER PKG./100	70.16

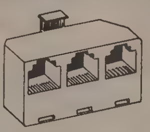
Two-Line Adapter



Converts a two-line system into two single line outlets.

796-9655. 30-9655	EACH	7.27

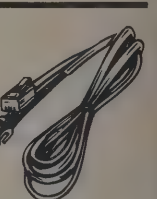
Modular Triplex Adapter



Allows three modular plugs to be used in a single modular jack.

796-9656. 30-9656	EACH	5.29

Modular Telephone Replacement Cord



Use for converting "hard-wired" telephones to modular, or as a replacement/extension. Spade terminals one end; modular plug other end. Silver.

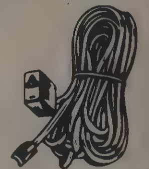
796-9540. 30-9540. 6 ft	EACH	3.22
796-9542. 30-9542. 25 ft	EACH	6.50

Modular Plug-To-Plug Extension Cord

Use to extend length of cord between telephone and wall jack or as an extension.

796-9502. 30-9502. 15 ft. White	EACH	4.29
796-9513. 30-9513. 15 ft. Ivory	EACH	5.55
796-9515. 30-9515. 15 ft. Silver	EACH	5.55
796-9503. 30-9503. 25 ft. White	EACH	5.36
796-9514. 30-9514. 25 ft. Ivory	EACH	6.84
796-9516. 30-9516. 25 ft. Silver	EACH	6.84

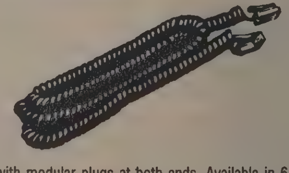
Modular Plug-To-Modular Jack Extension Cord



Extension cord with modular plug and jack on each end. Cord offers the convenience of adding 25-foot extension to existing telephone system. Modular plug at one end snaps into wall receptacle while modular jack at the other accepts line cord from existing telephone.

796-9506. 30-9506	EACH	9.00

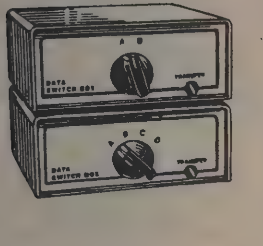
Modular Handset Coil Cords

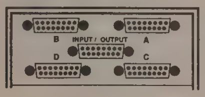


Coiled cord with modular plugs at both ends. Available in 6, 12 or 25 foot lengths and 9 color selections. Cords fit between handset and phone base.

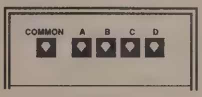
796-9565. 30-9565. 6 ft. Almond	EACH	4.67
796-9519. 30-9519. 12 ft. Black	EACH	4.96
796-9520. 30-9520. 12 ft. White	EACH	4.96
796-9521. 30-9521. 12 ft. Beige	EACH	4.96
796-9525. 30-9525. 12 ft. Almond	EACH	4.96
796-9526. 30-9526. 12 ft. Ash	EACH	4.96
796-9529. 30-9529. 25 ft. Black	EACH	6.40
796-9530. 30-9530. 25 ft. White	EACH	4.36
796-9531. 30-9531. 25 ft. Beige	EACH	6.76
796-9535. 30-9535. 25 ft. Almond	EACH	6.76
796-9536. 30-9536. 25 ft. Ash	EACH	6.76
796-9538. 30-9538. 25 ft. Ivory	EACH	6.76

Computer Data Transfer Switches





45-2005



45-2064

Data Switches

Data switches permit computer users to share printers, modems, etc., providing economy by decreasing the amount of equipment needed. All GC data switches are data-transparent and all lines are switched "straight-through". This permits using an A/B switch to a printer with two computers, or using two printers with one computer, and so forth.

This series of switches is built in sturdy steel cases for excellent shielding characteristics and durability. Switches are sealed and contacts employ precious metals. For use with printers, modems, plotters, etc.

Switch Types. Standard switch types...one printer may be switched between two (A/B) or more (A/B/C/D) computers (or vice versa). X-Switch — Two computers can share two different printers (or any peripherals) and connections are changed with a flip of a knob.

*Centronics is a registered trademark of Centronics Data Computer Corp.
**IBM is a registered trademark of International Business Machines Corp.
®Apple is a registered trademark of Apple Computer, Inc.

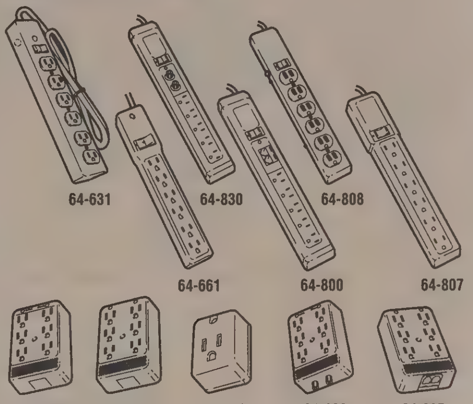
RS-232 A/B/C/D Switch
Type 45-2005. One I/O DB-25 female to four DB-25 females.

796-2004. 45-2005	EACH 47.24

RJ-11 A/B/C/D Switch
Type 45-2064. One I/O 4 conductor RJ-11 TELCO jack to four RJ-11 jacks. For switching telephone or data equipment using standard four-conductor telephone style TELCO connectors.

796-2063. 45-2064	EACH 39.09

Surge Suppressors



Six-Outlet Surge Suppressor (Three Line)

Electrical Ratings: AC 125 V, 15 A, 1875 W. **Surge Dissipation:** 90 joules. **Response Time:** <5 ns. **Surge Voltage:** 6500 V. **Surge Current:** 4000 A. **Surge Indicator:** Fused LED. **3 Line Protection:** Hot, neutral, ground. **EMI/RFI*:** Noise reduction — 100 Hz to 50 MHz.

*Electromagnetic/Radio Frequency Interference.

796-9984. 64-631	EACH 19.86

Six-Outlet Surge Suppressor

Electrical Ratings: 125 V, 15 A, 1875 W. **Surge Dissipation:** 60 joules. **Current Peak:** 4500 A. **Clamping Voltage:** 400 V. **Response Time:** <1 ns. **Maximum Surge Voltage:** 6500 V. **Line Protected:** Hot.

796-9983. 64-661	EACH 7.34

Six Outlet Surge Suppressor with EMI/RFI Filter

Electrical Ratings: 125 V, 15 A, 1875 W. **Maximum Surge Dissipation:** 120 joules. **Maximum Spike Current:** 4500 A. **Clamping Voltage:** 400 V. **Response Time:** <1 ns. **Maximum Surge Voltage:** 6500 V. **Line Protected:** Hot to neutral.

796-9886. 64-806	EACH 6.24

Six Outlet Surge Suppressor with 240 Joule Rating

Electrical Ratings: 125 V, 15 A, 1875 W. **Maximum Surge Dissipation:** 240 joules. **Maximum Spike Current:** 4500 A. **Clamping Voltage:** 400 V. **Response Time:** <1 ns. **Maximum Surge Voltage:** 6500 V. **Lines Protected:** Hot to neutral, neutral to ground, hot to ground.

796-9887. 64-803	EACH 12.29

Single Outlet Home/Office Surge Suppressor

Electrical Ratings: 125 V, 15 A, 1875 W. **Maximum Surge Dissipation:** 180 joules. **Maximum Spike Current:** 4500 A. **Clamping Voltage:** 400 V. **Response Time:** <1 ns. **Maximum Surge Voltage:** 6500 V. **Lines Protected:** Hot to neutral, neutral to ground, hot to ground.

796-9885. 64-801	EACH 4.48

Six Outlet Wall Mount Surge Suppressor/Coax Protection

Electrical Ratings: 125 V, 15 A, 1875 W. **Maximum Surge Dissipation:** 240 joules. **Maximum Spike Current:** 4500 A. **Clamping Voltage:** 400 V. **Response Time:** <1 ns. **Maximum Surge Voltage:** 6500 V. **Lines Protected:** Hot to neutral, neutral to ground, hot to ground.

796-9888. 64-802	EACH 14.75

Outlet Strip Surge Suppressor/Coax Protection with EMI/RFI

Electrical Ratings: 125 V, 15 A, 1875 W. **Maximum Surge Dissipation:** 200 joules. **Maximum Spike Current:** 4500 A. **Clamping Voltage:** 400 V. **Response Time:** <1 ns. **Maximum Surge Voltage:** 6500 V. **Lines Protected:** Hot to neutral, neutral to ground, hot to ground.

796-9889. 64-830	EACH 14.99

Six-Outlet Wall Mount AC/Telephone Surge Suppressor

Electrical Ratings: 125 V, 15 A, 1875 W. **Maximum Surge Dissipation:** 240 joules. **Maximum Spike Current:** 4500 A. **Clamping Voltage:** 400 V. **Response Time:** <1 ns. **Maximum Surge Voltage:** 6500 V. **Lines Protected:** Hot to neutral, neutral to ground, hot to ground.

796-9890. 64-805	EACH 14.75

Five-Outlet Strip AC/Telephone Suppressor with EMI/RFI

Electrical Ratings: 125 V, 15 A, 1875 W. **Maximum Surge Dissipation:** 270 joules. **Maximum Spike Current:** 4500 A. **Clamping Voltage:** 400 V. **Response Time:** <1 ns. **Maximum Surge Voltage:** 6500 V. **Lines Protected:** Hot to neutral, neutral to ground, hot to ground.

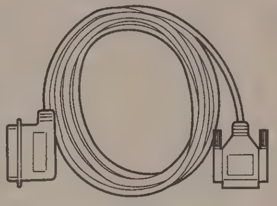
796-9891. 64-800	EACH 14.99

Six-Outlet Power Strip

Electrical Ratings: 120 V, 15 A, 1875 W. **Power Cord:** 14 AWG, UL SJT. **Circuit Breaker:** 15 A resettable.

796-9892. 64-808	EACH 9.04
796-9893. 64-807	EACH 5.73

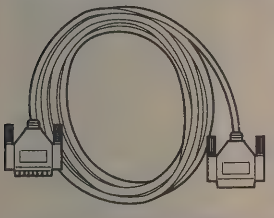
Printer Cables



These cables are designed to connect IBM (and compatible) computers to EPSON (and compatible) parallel printers. Models are available with straight, or connectors with 90 degree angle for those tight spaces. Various lengths are available. 100% Mylar foil shield.

797-0300. Model 45-201. 6' IBM Parallel Printer Cable	EACH 9.89
797-0310. Model 45-204. 10' IBM Parallel Printer Cable	EACH 11.58

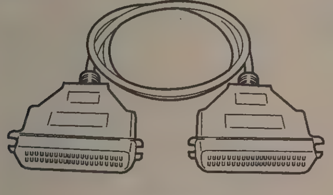
RS-232 DB-25 (25 Line)



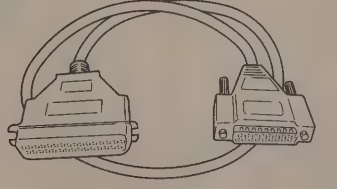
Standard DB-25 connectors all cables wired straight through. Shielded with 100% aluminized Mylar foil wrap. Contacts gold flashed.

797-0350. Model 45-379. 6' Male/Female	EACH 16.09
797-0355. Model 45-374. 10' Male/Female	EACH 19.30
797-0360. Model 45-375-BU. 25' Male/Female	EACH 15.06
797-0365. Model 45-376. 6' Male/Male	EACH 16.09
797-0370. Model 45-377. 10' Male/Male	EACH 19.30

SCSI



Peripheral Cable



System Cable

SCSI Peripheral Cable

Used to link SCSI devices, tape drives, disk drives and scanners together. The SCSI port permits high speed communication between the computer and the device. Can also be used to connect the Personal Laserwriter SC and the LaserWriter IISC printers to the SCSI port. Centronics 50-pin male to male.

797-0315. Model 45-853. 3' Length	EACH 14.79
797-0320. Model 45-854. 3' Length, 50 Wire Cable	EACH 26.52
797-0325. Model 45-856. 6' Length	EACH 17.83
797-0330. Model 45-855. 6' Length, 50 Wire Cable	EACH 31.99

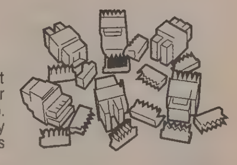
SCSI System Cable

Used to interface SCSI devices with a DB-25 female port directly to the SCSI port on the MacIntosh® computer. DB-25 male to 50-position Centronics male.

797-0335. Model 45-862. 2' Length	EACH 12.59
797-0340. Model 45-863. 3' Length	EACH 12.79
797-0345. Model 45-866. 6' Length	EACH 15.59

Network Communications

Modular IDC Connectors — Category 5

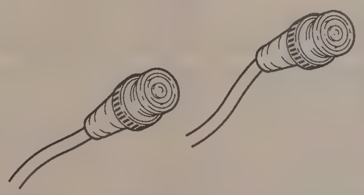


► **Category 5 Transmits Up to 100 Megabytes of Information Per Second**

Insulation displacement contacts for 22 to 26 AWG wire. Allows for convenient termination of twisted pair cable. 50 microinches of gold plating or modular contacts. Complies with IEEE standards 802.3 (10BaseT) and 802.5 (Token Ring). These connectors are designed to snap into patch panels and wall plates. A variety of colors allows flexibility in wiring configurations. TIA and AT&T wiring schemes are easily accepted by these connectors.

797-0385. Model 45-5550. 8-Conductor, Category 5, Black	EACH 10.41
797-0390. Model 45-5554. 8-Conductor, Category 5, White	EACH 10.41
797-0395. Model 45-5553. 8-Conductor, Category 5, Red	EACH 10.41
797-0400. Model 45-5555. 8-Conductor, Category 5, Yellow	EACH 10.41
797-0405. Model 45-5552. 8-Conductor, Category 5, Blue	EACH 10.41
797-0410. Model 45-5216. 8-Conductor, Category 5, Green	EACH 10.41

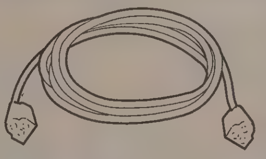
BNC Cable Assemblies



This RG-58 coaxial cable is terminated with male BNC connectors. Use these cables to link Ethernet systems.

797-0420. Model 45-5129. 12', RG-58 Male to Male BNC	EACH 5.29
797-0525. Model 45-5130. 25', RG-58 Male to Male BNC	EACH 5.54
797-0425. Model 45-5131. 50', RG-58 Male to Male BNC	EACH 9.09
797-0435. Model 45-5132. 100', RG-58 Male to Male BNC	EACH 16.19

Modular Line Cord Assemblies — Category 5

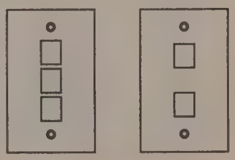


These category 5 assemblies utilize four twisted paris to meet the electrical requirements for data transmission. Speeds up to 100 megabytes per second. These assemblies are wired per the WECO, AT&T 258 A, and EIA/TIA 568 B. Applications include 10BaseT and Token Ring Networks.

Stranded

797-0440. Model 45-5281. 3', 4 Pair, Category 5 Assembly	EACH 9.11
797-0445. Model 45-5282. 7', 4 Pair, Category 5 Assembly	EACH 11.06
797-0450. Model 45-5300. 10', 4 Pair, Category 5 Assembly	EACH 12.87
797-0455. Model 45-5301. 14', 4 Pair, Category 5 Assembly	EACH 15.12
797-0460. Model 45-5302. 15', 4 Pair, Category 5 Assembly	EACH 15.73
797-0465. Model 45-5303. 25', 4 Pair, Category 5 Assembly	EACH 20.78

Network Plates

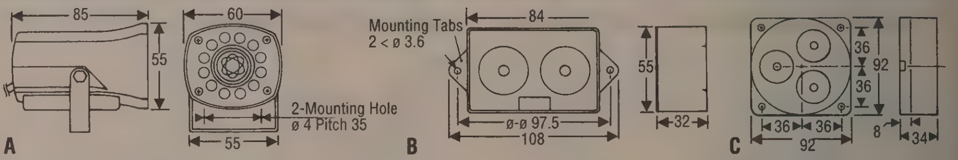


Wall plates allow custom modular connectors, BNC and "F" connectors to be installed quickly. Use to transmit voice or data in any network. Install or move equipment in minutes without any special tools.

797-0500. Model 45-950. Voice Single Connector Wall Plate	EACH 3.28
797-0505. Model 45-938. Dual Connector Wall Plate	EACH 3.79
797-0510. Model 45-933. 3-Way Connector Wall Plate	EACH 3.79
797-0515. Model 45-934. 4-Way Connector Wall Plate	EACH 3.79
797-0520. Model 45-936. 6-Way Connector Wall Plate	EACH 3.79

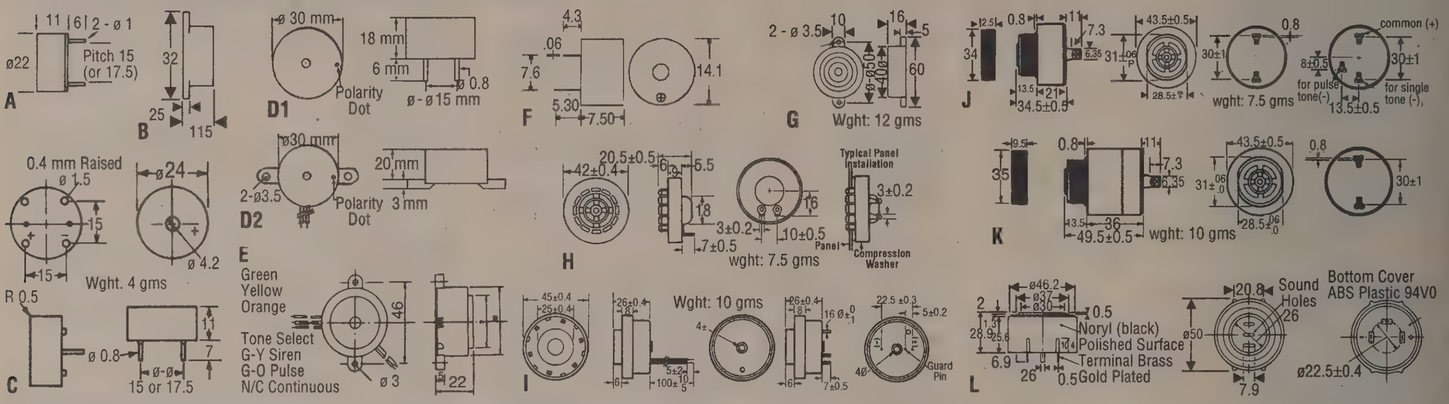
Piezo Sounders

These INTERVOX devices are designed to give immediate attention in case of emergency. Their piercing siren and two-tone sound modes make them suitable for use in auto alarms, personal protection alarms, fire alarms, etc.



Stock No.	Mfr.'s Type	Fig.	Sound Frequency (Hz)	Operating Voltage (VDC)	Tone	Max. Current (mA)	Sound Pressure Level (dB)	Diameter (mm)	Height (mm)	Terminal Type	Mounting Dim. or Pin Spacing (mm)	EACH	
												1-24	25-99
623-2032	BPS6055L-12-C	A	2500-3000	6-12	Siren	350	115 @ 100 CM	60	55	2 Leadwires	35.0	**25.01**	**20.91**
623-2035	BPS8432L-12-C	B	2500-2800	6-15	Cont.	85	105 @ 100 CM	84	32	2 Leadwires	97.5	**11.01**	**9.20**
623-2034	BPS9234S-12-C	C	2800	6-15	3 Tone	300	115 @ 100 CM	92	34	4 Screws	72.0	**15.28**	**12.78**

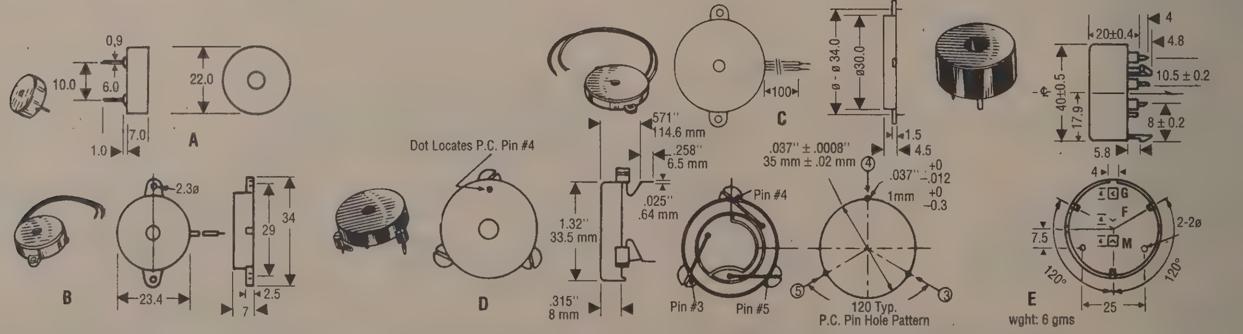
Piezo Electric Buzzers with Internal Circuitry



These INTERVOX devices were developed with circuits so they can easily be used by applying your D.C. voltage source. Their clear penetrating sound quality enables these buzzers to be used in applications such as fire and burglar alarms, smoke detectors, and medical instruments.

Stock No.	Mfr.'s Type	Fig.	Sound Frequency (Hz)	Operating Voltage (VDC)	Tone	Max. Current (mA)	Sound Pressure Level (dB)	Diameter (mm)	Height (mm)	Terminal Type	Mounting Dim. or Pin Spacing (mm)	EACH	
												1-24	25-99
623-2004	BRP1408P-12-CS	F	4000 ± 500	3.0-16	Cont.	7.0	80 @ 30 CM	14.1	7.5	2 Pins	7.6	**3.30**	**2.75**
623-2022	BRP2211P-12-CS	A	4000 ± 500	3.0-15	Cont.	4.5	75 @ 100 CM	22.0	11.0	2 Pins	15.0	**2.48**	**2.08**
623-2024	BRP2212L-12-C	B	4000 ± 500	3.0-15	Cont.	4.5	90 @ 30 CM	22.0	11.5	2 Leadwires	26.5	**2.30**	**1.93**
623-1950	BRP2411P-12-CFS	C	3700 ± 500	3.0-15	Cont.	10.0	90 @ 30 CM	24.0	11.7	2 Pins	15.0	**2.53**	**2.12**
623-1951	BRP3018L-12-C	D2	2000 ± 500	3.0-15	Cont.	10.0	90 @ 30 CM	30.0	18.0	2 Leadwires	—	**2.64**	**2.20**
623-1952	BRP3018P-12-C	D1	2000 ± 500	3.0-15	Cont.	10.0	90 @ 30 CM	30.0	20.0	2 Pins	15.0	**2.64**	**2.20**
623-2026	BRP3922L-12-CT3	E	2800 ± 500	6.0-15	3 Tone	95.0	107 @ 1 M	39.0	22.0	5 Leadwires	46.0	**6.37**	**5.33**
623-2028	BRP4016L-12-C	G	2800 ± 300	3.0-24	Cont.	18.0	100 @ 1 M	40.0	16.0	2 Leadwires	50.0	**3.10**	**2.59**
623-1953	BRP4016L-12-CP	G	2800 ± 300	3.0-24	Intermitt 1	18.0	100 @ 1 M	40.0	16.0	2 Leadwires	50.0	**3.46**	**2.89**
623-1954	BRP4222T-24-C	H	2900 ± 500	1.0-28	Cont.	15.0	85 @ 30 CM	42.0	20.5	2 Lugs	10.0	**4.22**	**3.53**
623-1955	BRP4526P-12-C	I	2900 ± 500	1.0-13	Cont.	35.0	105 @ 30 CM	45.0	26.0	2 Pins	15.0	**4.89**	**4.09**
623-2030	BRP4535S-12-C	J	2900 ± 500	1.0-16	Cont.	30.0	100 @ 30 CM	43.5	34.5	2 Screw Lugs	50.0	**6.32**	**5.29**
623-2027	BRP4535S-12-CP	J	2900 ± 500	4.0-16	Intermitt 0.8-1.2	20.0	90 @ 30 CM	43.5	34.5	2 Screw Lugs	50.0	**7.01**	**5.86**
623-2029	BRP4535S-24-C	J	2900 ± 500	1.0-28	Cont.	15.0	90 @ 30 CM	43.5	34.5	2 Screw Lugs	50.0	**5.71**	**4.77**
623-2031	BRP4535S-24-CD	J	2900 ± 500	4.0-28	Dual	30/20	80/85 @ 30 CM	43.5	34.5	3 Screw Lugs	30.0	**8.29**	**6.93**
623-1956	BRP4535S-24-CP	J	2900 ± 500	4.0-28	Intermitt 0.8-1.2	22.0	80 @ 30 CM	43.5	34.5	2 Screw Lugs	30.0	**7.63**	**6.38**
623-1957	BRP4549S-110-CP	K	2900 ± 500	30.0-120	Intermitt 0.8-1.2	20.0	90 @ 30 CM	43.5	8.0	2 Screw Lugs	30.0	**11.01**	**9.20**
623-2033	BRP4629T-09-C	L	2000 – 3000	5.0-13	Cont.	70.0	105 @ 1 M	46.0	29.0	3 Lugs	—	**8.83**	**7.38**

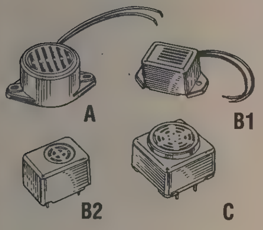
External Drive Piezo Buzzers

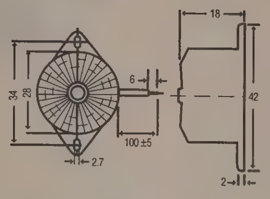


Because of their low profile housings, these INTERVOX devices can be easily mounted in limited space designs. Their clear, penetrating sound quality enables them to be used in virtually any application.

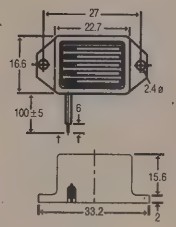
Stock No.	Mfr.'s Type	Fig.	Sound Frequency (Hz)	Resonant Resistance (Ohm) Max.	Electro-Static Capacitance (μF)	Max. Input Voltage	Diameter (mm)	Height (mm)	Terminal Type	Mounting Dim. or Pin Spacing (mm)	EACH	
											1-24	24-99
623-2036	BRP2207P-30	A	4000 ± 500	300	12,000 ± 30%	30Vp-p	22.0	7.0	2 Pins	10.0	**1.38**	**1.16**
623-2038	BRP2407L-30	B	5600 ± 600	1500	10,000 ± 30%	30Vp-p	23.4	7.0	2 Leadwires	29.0	**1.13**	**.94**
623-2039	BRP2407P-30	B	5600 ± 600	1500	10,000 ± 30%	30Vp-p	23.4	7.0	2 Pins	29.0	**1.31**	**1.09**
623-2041	BRP3005L-30	C	4500 ± 500	300	20,000 ± 30%	30Vp-p	30.0	4.5	2 Leadwires	34.3	**1.33**	**1.11**
623-2042	BRP3408P-30	D	2500 ± 500	300	25,000 ± 30%	30Vp-p	34.0	8.0	3 Pin Config.	—	**1.69**	**1.41**
623-2044	BRP4016P-30	E	3200 ± 500	200	30,000 ± 30%	30Vp-p	39.0	16.0	3 Pin Config.	—	**2.05**	**1.71**

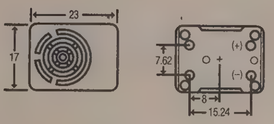
Electronic Buzzers



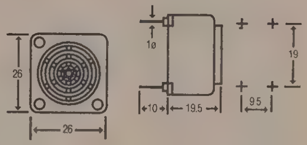


A wght: 18 gms





B2 wght: 7.5 gms

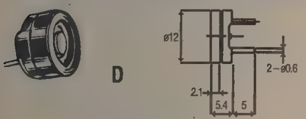


C wght: 15 gms

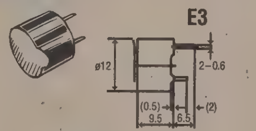
These INTERVOX devices are designed to eliminate arcing and Rf noise commonly found in electro-magnetic type buzzers. They provide a low frequency sound that is easily recognized making them ideal for applications such as Industrial Controls, Auto Warning Devices, Test Apparatus, Appliance Timers, Intrusion Alarms.

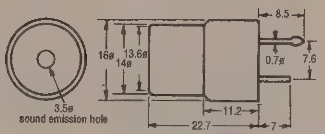
Stock No.	Mfr.'s Type	Fig.	Sound Frequency (Hz)	Operating Voltage (VDC)	Tone	Max Current (mA)	Sound Pressure Level (dB)	Diameter (mm)	Height (mm)	Terminal Type	Mounting Dim. or Pin Spacing (mm)	EACH 1-24	EACH 25-99
623-1901	BR2818L-06	A	400 ± 50	4.0-9	Cont.	35	80 @ 30 CM	28	18.0	2 Leadwires	34	**2.70**	2.25
623-2000	BR2818L-12	A	400 ± 50	9.0-20	Cont.	35	80 @ 30 CM	28	18.0	2 Leadwires	34	**2.70**	2.25
623-2002	BR2818L-24	A	400 ± 50	20.0-28	Cont.	35	85 @ 30 CM	28	18.0	2 Leadwires	34	**2.80**	2.34
623-1902	BR2818L-48	A	400 ± 50	30.0-54	Cont.	35	85 @ 30 CM	28	18.0	2 Leadwires	34	**3.11**	2.59
623-2005	BS2316L-06	B1	400 ± 50	4.0-9	Cont.	25	75 @ 30 CM	23	16.0	2 Leadwires	27	**2.26**	1.89
623-1903	BS2316L-12	B1	400 ± 50	9-20	Cont.	25	75 @ 30 CM	23	16.0	2 Leadwires	27	**2.26**	1.89
623-1904	BS2316L-24	B1	400 ± 50	10-27	Cont.	25	75 @ 30 CM	23	16.0	2 Leadwires	27	**2.34**	1.95
623-2006	BS2316P-06-C	B2	400 ± 50	4.0-8	Cont.	35	80 @ 30 CM	23	16.0	4 Pins	27	**2.75**	2.29
623-1905	BS2316P-12-C	B2	400 ± 50	8.0-16	Cont.	35	80 @ 30 CM	23	16.0	4 Pins	27	**2.75**	2.29
623-1906	BS2316P-24-C	B2	400 ± 50	16-27	Cont.	35	80 @ 30 CM	23	16.0	4 Pins	27	**2.91**	2.42
623-1908	BS2620FV-12	C	400 ± 50	8.0-16	Cont.	60	75 @ 100 CM	26	19.5	2 Fast-on	32	**3.21**	2.68
623-1909	BS2620FV-24	C	400 ± 50	20.0-28	Cont.	60	75 @ 100 CM	26	19.5	2 Fast-on	19 x 9.5	**3.57**	2.98
623-1910	BS2620PH-06-C	C	400 ± 50	4.0-8	Cont.	30	75 @ 100 CM	26	19.5	4 Pins	19 x 9.5	**3.42**	2.85
623-2008	BS2620PH-12-C	C	400 ± 50	8.0-16	Cont.	20	75 @ 100 CM	26	19.5	4 Pins	19 x 9.5	**3.42**	2.85
623-1911	BS2620PH-24-C	C	400 ± 50	20-28	Cont.	20	75 @ 100 CM	26	19.5	4 Pins	19 x 9.5	**3.42**	2.85

Electro-Acoustic Transducers

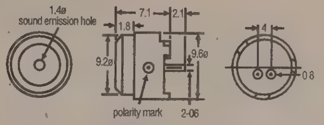


Unit: mm
Housing Material: NORYL, SE1J

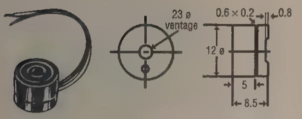




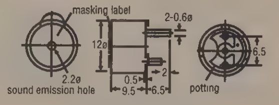
G wght: 7 gms



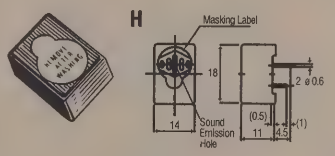
J wght: 1 gm

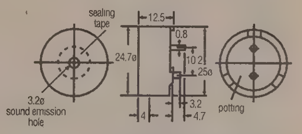


E1 wght: 2 gms

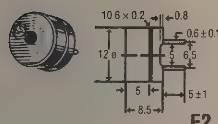


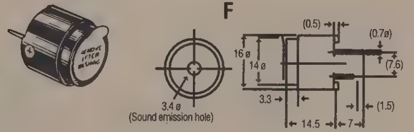
E4 wght: 2 gms

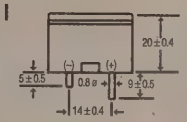


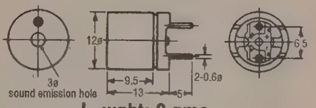


K wght: 10 gms









L wght: 2 gms

These INTERVOX devices are small and lightweight enabling them to be used in equipment where space is extremely limited. Many of these types are sealed with removable tabs for designs requiring wave solder and washing operations. In addition the BST1811P series is available with a carrier tube suitable for automatic insertion. Typical applications include Pocket Pagers, Counters, Monitors, Scanners, Computer, Peripheral equipment.

Stock No.	Mfr.'s Type	Fig.	Sound Frequency (Hz)	Operating Voltage (VDC)	Tone	Max Current (mA)	Sound Pressure Level (dB)	Diameter (mm)	Height (mm)	Terminal Type	Mounting Dim. or Pin Spacing (mm)	EACH 1-24	EACH 25-99
623-2007	BRT0907P-01	J	3100	1-2	Cont.	80	80 @ 10 CM	9.6	7.1	2 Pins	4.0	**5.53**	4.61
623-2009	BRT1206P-01	D	2048	1-2	Cont.	10	70 @ 10 CM	12.0	6.0	2 Pins	6.5	**1.08**	.90
623-2010	BRT1209L-01	E1	2048	1-2	Cont.	10	80 @ 10 CM	12.0	8.5	2 Leadwires	—	**.77**	.64
623-2012	BRT1209P-01	E2	2048	1-2	Cont.	10	80 @ 10 CM	12.0	8.5	2 Pins	6.5	**.77**	.64
623-2014	BRT1209P-06-C	E3	2300	4-8	Cont.	30	80 @ 10 CM	12.0	9.5	2 Pins	7.6	**2.80**	2.34
623-1925	BRT1209P-12-C	E3	2300	7-15	Cont.	30	80 @ 10 CM	12.0	9.5	2 Pins	7.6	**2.80**	2.34
623-2001	BRT1209PF-06	E4	2400	4-8	Cont.	40	85 @ 10 CM	12.0	9.5	2 Pins	6.5	**1.75**	1.46
623-1926	BRT1209PF-12	E4	2400	6-15	Cont.	40	85 @ 10 CM	12.0	9.5	2 Pins	6.5	**.31**	.26
623-1927	BRT1213P-01	L	2048	1-2	Cont.	30	80 @ 10 CM	12.0	13.5	2 Pins	6.5	**1.13**	.94
623-2015	BRT1615P-01	F	2048	1-3	Cont.	12	80 @ 10 CM	16.0	14.5	2 Pins	7.6	**1.90**	1.59
623-2016	BRT1615P-06	F	2048	3-12	Cont.	40	85 @ 10 CM	16.0	14.5	2 Pins	7.6	**1.90**	1.59
623-2018	BRT1615P-06-C	F	2200	4-7	Cont.	30	85 @ 10 CM	16.0	14.5	2 Pins	7.6	**3.01**	2.51
623-2011	BRT1615P-12	F	2048	6-18	Cont.	40	85 @ 10 CM	16.0	14.5	2 Pins	7.6	**1.90**	1.59
623-2013	BRT1615P-12-C	F	2200	8-16	Cont.	30	85 @ 10 CM	16.0	14.5	2 Pins	7.6	**3.01**	2.51
623-1928	BRT1623P-01	G	2048	1-3	Cont.	12	80 @ 10 CM	16.0	23.0	2 Pins	7.6	**1.90**	1.59
623-1929	BRT1623P-06	G	2048	3-12	Cont.	40	85 @ 10 CM	16.0	23.0	2 Pins	7.6	**1.90**	1.59
623-2017	BRT1623P-12	G	2048	6-18	Cont.	40	85 @ 10 CM	16.0	23.0	2 Pins	7.6	**1.90**	1.59
623-2019	BST1811P-06	H	2000-2500	3-20	Cont.	40	85 @ 10 CM	18.0	11.0	2 Pins	6.5	**2.31**	1.93
623-1930	BRT2821L-12	I	2800 ± 200	9-15	Cont.	40	95 @ 30 CM	28.0	20.0	2 Leadwires	14.0	**1.95**	1.63
623-1931	BRT2821P-06	I	2800 ± 200	4-9	Cont.	35	90 @ 30 CM	28.0	20.0	2 Pins	14.0	**2.06**	1.71
623-2020	BRT2821P-12	I	2800 ± 200	9-15	Cont.	40	95 @ 30 CM	28.0	20.0	2 Pins	14.0	**2.06**	1.71
623-1932	BRT2821P-24	I	2800 ± 200	15-28	Cont.	25	95 @ 30 CM	28.0	20.0	2 Pins	14.0	**2.16**	1.80
623-2021	BRT2513P-06	K	730	3-5	Cont.	80	85 @ 10 CM	25.0	12.5	2 Pins	10.2	**2.70**	2.25

Miniature Speakers

These INTERVOX devices were designed with a wide frequency range. Available in rare earth, alnico and ferrite magnets. These products are suitable for applications such as computers, modems, digital communication, queuing annunciators and intercoms.

General Purpose Alnico V Magnet

Stock No.	Mfr.'s Type	Fig.	Cone Diameter and Shape	Rated Power (Watts)	Voice Coil Independence (Ohms)	Frequency Response (Hz)	Magnet Material	Magnet Weight (Oz.)	Frame Depth (In.)	EACH	
										1-24	25-99
623-2046	S150RA	A	1½" Round	0.10	8 ±15%	600-5600	—	0.350	0.622	**3.34**	**2.79**
623-2070	S175RA	A	1¾" Round	0.10	8 ±15%	470-5200	—	0.350	0.653	**3.57**	**2.98**
623-2072	S175SA	B	1¾" Square	0.10	8 ±15%	470-4500	—	0.350	0.630	**3.42**	**2.85**
623-2048	S200RA	A	2" Round	0.20	8 ±15%	450-5000	—	0.350	0.709	**2.70**	**2.25**
623-2050	S200SA	B	2" Square	0.20	8 ±15%	450-5000	—	0.350	0.709	**3.11**	**2.59**
623-2052	S225RA	A	2¼" Round	0.20	8 ±15%	400-4600	—	0.350	0.748	**2.49**	**2.08**
623-2074	S250RA	A	2½" Round	0.30	8 ±15%	330-5000	—	0.350	0.827	**3.32**	**2.76**
623-2076	S250SA	B	2½" Square	0.50	8 ±15%	350-5000	—	0.350	0.843	**3.42**	**2.85**
623-2078	S275RA	A	2¾" Round	0.30	8 ±15%	280-5000	—	0.350	0.858	**3.37**	**2.81**
623-2082	S300RA	A	3" Round	0.50	8 ±15%	250-5000	—	0.350	0.913	**3.75**	**3.13**
623-2056	S300SA	B	3" Square	0.50	8 ±15%	250-5000	—	0.350	0.984	**3.57**	**2.98**
623-2084	S350RA	A	3½" Round	1.00	8 ±15%	190-12000	—	0.360	1.070	**4.27**	**3.56**
623-2086	S350SA	B	3½" Square	1.00	8 ±15%	190-12000	—	0.350	1.071	**4.47**	**3.73**
623-2214	S400RA	A	4" Round	1.00	8 ±15%	180-20000	—	0.360	1.380	**6.40**	**5.34**
623-2216	S400SA	B	4" Square	1.00	8 ±15%	180-20000	—	0.350	1.331	**6.61**	**5.51**

Telecommunications and Intercom Speakers

623-2119	S200RA-MB	C	2" Round	0.20	8 ± 15%	500-4000	—	0.350	0.748	**2.87**	**2.39**
623-2120	S200RA-16	A	2" Round	0.20	16 ±15%	500-10000	—	0.350	0.709	**3.14**	**2.61**
623-2122	S200RA-45	A	2" Round	0.20	45 ±15%	450-6000	—	0.350	0.709	**3.21**	**2.68**
623-2124	S200RA-100	A	2" Round	0.20	100 ±15%	450-4000	—	0.350	1.020	**3.83**	**3.19**
623-2126	S225RA-45	A	2¼" Round	0.50	45 ±15%	400-4500	—	0.350	0.748	**2.55**	**2.12**
623-2128	S225RA-100	A	2¼" Round	0.50	100 ±15%	400-3500	—	0.350	0.756	**3.73**	**3.11**
623-2130	S250RA-16	A	2½" Round	0.50	16 ±15%	320-4000	—	0.350	0.827	**3.73**	**3.11**
623-2132	S300RA-16	A	3" Round	0.50	16 ±15%	250-7000	—	0.350	0.984	**3.83**	**3.19**

Low Profile Rare Earth Samarium Cobalt Magnet

623-2061	S125RL	D	1¼" Round	0.10	8 ±15%	680-10000	—	0.056	0.193	**6.35**	**5.29**
623-2136	S150RLS	D	1½" Round	0.20	8 ±15%	700-5000	—	0.056	0.315	**4.73**	**3.94**
623-2138	S175RL	D	1¾" Round	0.20	8 ±15%	470-4500	—	0.056	0.327	**4.86**	**4.05**
623-2140	S200RL	D	2" Round	0.20	8 ±15%	450-4500	—	0.056	0.354	**3.91**	**3.26**
623-2142	S225RL	D	2¼" Round	0.20	8 ±15%	400-4800	—	0.056	0.378	**4.89**	**4.07**

Plastic Frame General Purpose

623-2144	SR800RMF	E	.8" Round	0.10	8 ±15%	750-3000	Ferrite	—	0.236	**2.16**	**1.80**
623-2146	S100RMF	E	1" Round	0.10	8 ±15%	800-5000	Ferrite	—	0.374	**1.59**	**1.33**
623-2148	S125RMF	E	1¼" Round	0.10	8 ±15%	700-7000	Ferrite	—	0.386	**1.70**	**1.41**
623-2152	S150RMF	E	1½" Round	0.10	8 ±15%	350-3000	Ferrite	—	0.354	**1.80**	**1.50**
623-2165	S150SLA	F	1½" Square	0.20	8 ±15%	250-7000	Rare Earth	—	0.177	**4.08**	**3.40**

Plastic Frame Low Profile

623-2158	SR800RMS	G	.8" Round	0.10	8 ±15%	750-5000	Rare Earth	—	0.157	**2.85**	**2.38**
623-2160	S100RMSS	G	1" Round	0.10	8 ±15%	550-5000	Rare Earth	—	0.150	**3.16**	**2.64**
623-2162	S150RMSS	G	1½" Round	0.10	8 ±15%	550-5000	Rare Earth	—	0.150	**1.85**	**1.54**

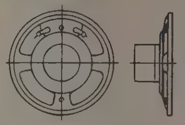
Low Leakage Flux Speakers — Shielded Magnet — For Computer and Television Monitors

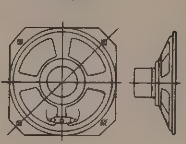
These units prevent picture distortion as well as color shearing normally associated with magnetic fields. They are available in oval, square, and round designs.

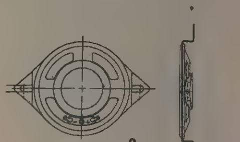
623-2088	S15X25VA	H	1.5" × 2.5" Oval	2.00	8 ±15%	280-20000	Alnico	0.410	1.161	**6.25**	**5.21**
623-2166	S20X35VFS-5W	J	2" × 3.5" Oval	5.00	8 ±15%	200-20000	Ferrite	0.580	1.700	**3.73**	**3.11**
623-2168	S20X35VFS-2W	J	2" × 3.5" Oval	2.00	8 ±15%	230-20000	Ferrite	0.580	1.500	**3.86**	**3.21**
623-2170	S300RFS-3W	K	3" Round	3.00	8 ±15%	180-20000	Ferrite	0.580	1.400	**4.04**	**3.36**

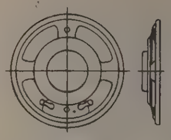
PC Board Design — The Unique Square Pin Design Permits Uniform Spacing for PC Board Mounting

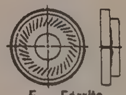
623-2164	SR900R-PC	L	.9" Round	0.10	8 ±15%	800-7000	Rare Earth	—	0.394	**3.51**	**2.91**
623-2156	S100RMF-PCR	M	1" Round	0.10	8 ±15%	800-5500	Ferrite	—	0.374	**2.34**	**1.95**
623-2167	S110R-PC	N	1⅛" Round	0.15	8 ±15%	1000-5500	Ferrite	—	0.472	**2.49**	**2.08**
623-2169	S125R-PC	O	1¼" Round	0.15	8 ±15%	1100-4000	Ferrite	—	0.591	**2.55**	**2.12**

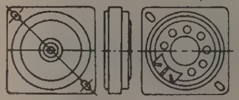

A — Round

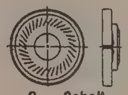

B — Square

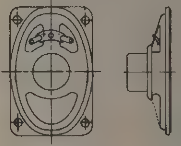

C

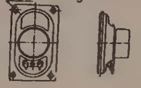

D — Samarium Cobalt Magnet

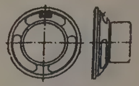

E — Ferrite Round Plastic Frame

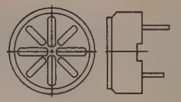

F — Square Plastic Frame

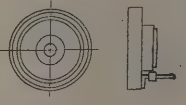

G — Cobalt

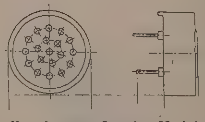

H — Oval

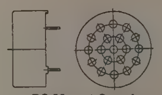

J — Low Leakage Flux


K — Round


L


M


N — Intervox Speaker Model S110R-PC


O — PC Mount Speaker S125R-PC Series

Electret Condenser Microphones

— NEW —

These INTERVOX microphones are highly efficient and are especially designed for telecommunications, computers, intercoms, teleconferencing, hearing aids, security, speech recognition, recording equipment, modems, and many other applications.

Omnidirectional

Stock No.	Mfr.'s Type	Fig.	Physical Size (mm)	Operating Voltage Std./Max.	Sensitivity 0 dB=V/ubar 1 KHz	Frequency Range (Hz)	S/N Ratio (db)	Current Consumption Max.	Sensitivity Reduction	EACH	
										1-24	25-99
623-0100	MEO-96PD-01-603	A	9.7 × 6.7	1.5 V/10 V	–60 ±3 dB	20 ~ 16,000	>60	0.3 mA	within –3 dB @ 1 V	**1.13**	**.94**
623-0110	MEO-96PN-01-603	B	9.7 × 6.7	1.5 V/10 V	–60 ±3 dB	20 ~ 16,000	>60	0.3 mA	within –3 dB @ 1 V	**1.17**	**.98**
623-0120	MEO-65PD-02-623	A	6.0 × 5.0	2.0 V/10 V	–62 ±3 dB	20 ~ 20,000	>58	0.5 mA	within –3 dB @ 1.5 V	**1.98**	**1.65**
623-0130	MEO-65PN-02-623	B	6.0 × 5.0	2.0 V/10 V	–62 ±3 dB	20 ~ 20,000	>58	0.5 mA	within –3 dB @ 1.5 V	**2.09**	**1.74**
623-0140	MEO-64PD-02-643	A	6.0 × 3.5	2.0 V/10 V	–64 ±3 dB	20 ~ 16,000	>58	0.5 mA	within –3 dB @ 1.5 V	**2.99**	**2.49**
623-0150	MEO-95PD-01-603	A	9.7 × 5.2	1.5 V/10 V	–60 ±3 dB	20 ~ 16,000	>60	0.3 mA	within –3 dB @ 1.1 V	**1.25**	**1.04**
623-0160	MEO-95PN-01-603	B	9.7 × 5.2	1.5 V/10 V	–60 ±3 dB	20 ~ 16,000	>60	0.3 mA	within –3 dB @ 1.1 V	**1.31**	**1.09**

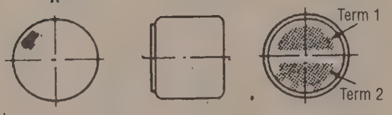
Unidirectional

623-0170	MEU-95PD-01-674	A	9.7 × 5.0	1.5 V/10 V	–67 ±4 dB	100 ~ 16,000	>58	0.5 mA	within –3 dB @ 1 V	**3.43**	**2.86**
623-0180	MEU-65PD-02-704	A	6.0 × 5.0	2.0 V/10 V	–70 ±4 dB	100 ~ 12,000	>55	0.5 mA	within –3 dB @ 1.5 V	**5.63**	**4.89**

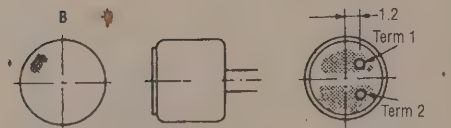
Noise Cancelling

623-0190	MEC-95PD-01-744	A	9.7 × 5.0	1.5 V/10 V	–74 ±4 dB	100 ~ 10,000	>58	0.5 mA	within –3 dB @ 1 V	**3.66**	**3.05**

A



B

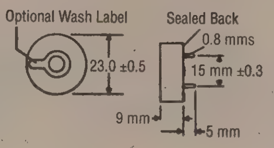


Sonalert and Minilert Audible Warning Devices

MALLORY

Compact Sonalert II Audible Signal

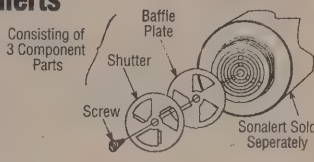
Miniature piezo audible signal uses standard printed circuit mounting. Has low power consumption. Suitable for fire alarm, call buzzers, car alarms, clocks, and cash register applications. Will accept from 3 VDC to 20 VDC at 16 mA (max). Units are available with optional wash label sealed for wave soldering on special order. Manufacturer literature is available upon request. **Frequency:** 3.4 ±0.5 kHz. **Sound Pressure, dB at 2 Ft.:** 75 dB min. at 12 VDC. **Input DC Voltage:** 3-20 VDC. **Current (mA) at 12 VDC:** 16 mA max. Sealed for wave soldering on special order.



854-9380. MSR320. **1-24**....................EACH 3.10 **25-49**....................EACH 2.58
50-99....................EACH 2.38 **100-249**....................EACH 2.07

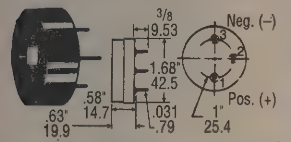
Volume Control for Mallory Sonalerts

A cost effective volume control for all Mallory SC Sonalerts using the classic screw neck. Unit consists of three component parts. The baffle plate snaps into the Sonalert's grill. The shutter is easily mounted with a screw (provided) and has flanges that can be gripped to adjust the volume of the Sonalert. The screw is tightened to hold the shutter in position. This unit allows the output of the Sonalert to be controlled. It can be assembled to the existing Sonalerts in the field while they are mounted.



854-9300. SCVC. **1-24**....................EACH .98 **25-49**....................EACH .82
50-99....................EACH .75 **100-249**....................EACH .65

PC Board Mounted Sonalert Signal



Low profile pin mounted signal. Suited for insertion and soldering into printed circuit boards. May be hand or wave soldered. Audible signal is 2900 Hz medium loud and is available as continuous tone, fast pulse, or slow pulse.

Stock No.	Mfr.'s Type	VDC	Sound Level (dB)	Typical Oper. Curr. (mA)	EACH 1-24	25-49	50-99	100-249
854-6570	SBM2*	1-5	Cont. Tone 55-68	3-16	**13.83**	**12.77**	**11.86**	**11.07**
854-6575	SBM428*	4-28	Cont. Tone 64-78	3-16	**13.83**	**12.77**	**11.86**	**11.07**
854-6561	SBM616P	6-16	Fast Pulse 68-78	1-4	**18.32**	**16.91**	**15.70**	**14.65**
854-6562	SBM616J	6-16	Slow Pulse 68-78	1-4	**18.32**	**16.91**	**15.70**	**14.65**
854-6563	SBM616PU	6-16	Dual-Cont. + Fast 68-78	3-12	**21.98**	**20.29**	**18.84**	**17.59**
854-6564	SBM616JU	6-16	Dual-Cont. + Slow 68-78	3-12	**21.98**	**20.29**	**18.84**	**17.59**

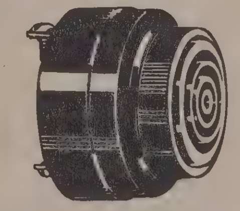
*Denotes UL models.

Sonalert® Solid-State Audible Warning Device

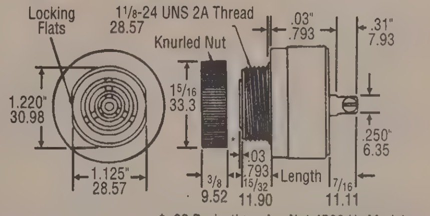
Emits penetrating signal at min. current. Solid-state circuit — no arcing — no RF noise, no mechanical wear, lowest failure rate with max. efficiency. Compact, lightweight, versatile — consumes less current than normal indicator light. Ideal for use as safety device. Alerts to mechanical malfunctions in cars, communications, computers, fire signals, medical electronics, etc. Sonalert signals may be powered by many electrical sources ranging from single cell batteries to industrial power lines. Little electrical power is required making them ideally suitable for portable battery operated equipment. This low power feature allows the Sonalert signal to be turned on or off with a low power transistor, SCR, or integrated circuit. Completely solid state with no moving parts, no arcing, and mechanical wear, the Mallory Sonalert signals should give you many years of trouble-free service. **Temperature Range:** –20°C to +65°C. Self-extinguishing black nylon case, 1.687" dia. (length in table). **Weight:** 8 oz.

Stock No.	Mfr.'s Type	Notes	Sound Freq. (Hz)	Operating Volts	Tone	Oper. Curr. (mA)	Sound Level (dB)	Length In.	EACH 1-24	25-49	50-99	100-249
854-6540	SC1.5	—	3500	1-4 DC	Cont.	4	60	0.675	**17.28**	**15.95**	**14.81**	**13.83**
854-6545	SC6	—	3500	4-8 DC	Cont.	12	68	0.675	**17.28**	**15.95**	**14.81**	**13.83**
854-6550	SC12	—	3500	8-15 DC	Cont.	14	70	0.675	**17.28**	**15.95**	**14.81**	**13.83**
854-6551	SC24	—	3500	20-30 DC	Cont.	16	70	0.675	**17.28**	**15.95**	**14.81**	**13.83**
854-6500	SC110*	—	2900	30-120 AC/DC	Cont.	6-21	68-80	1.375	**27.95**	**25.80**	**23.96**	**22.36**
854-6544	SC105	—	2900	1-5 DC	Cont.	3-16	60-75	0.812	**17.28**	**15.95**	**14.81**	**13.83**
854-6546	SC110D*	—	1900	30-120 AC/DC	Cont.	6-21	60-75	1.375	**33.27**	**30.71**	**28.51**	**26.61**
854-6510	SC110H*	—	4500	30-120 AC/DC	Cont.	6-21	68-80	1.375	**33.27**	**30.71**	**28.51**	**26.61**
854-6521	SC110N*	—	2900	30-120 AC/DC	Cont.	8-28	80-95	1.375	**37.75**	**34.85**	**32.36**	**30.20**
854-6525	SC110P*	3	2900	30-120 AC/DC	Pulse	6-21	68-80	1.937	**39.17**	**36.15**	**33.57**	**31.33**
854-6531	SC110J*	4	2900	30-120 AC/DC	Pulse	6-21	68-80	1.937	**39.17**	**36.15**	**33.57**	**31.33**
854-6529	SC250	—	2900	60-250 AC/DC	Cont.	4-16	68-80	1.375	**26.62**	**24.57**	**22.81**	**21.29**
854-6516	SC616N	—	2900	6-16 DC	Cont.	4-16	80-95	0.812	**23.58**	**21.77**	**20.21**	**18.87**
854-6547	SC616NL	1	2900	6-16 DC	Cont.	4-16	80-95	0.812	**23.58**	**21.77**	**20.21**	**18.87**
854-6543	SC616N-3	11	2900	6-16	Cont.	4-16	80-95	0.812	**25.12**	**23.18**	**21.53**	**20.09**
854-6532	SC616NPU	10	2900	6-16	Dual	4-16	80-95	1.375	**32.95**	**30.42**	**28.24**	**26.36**
854-6533	SC616PU	10	2900	6-16	Dual	3-12	68-78	1.375	**24.50**	**22.62**	**21.00**	**19.60**
854-6534	SC616JU	9	2900	6-16	Dual	3-12	68-78	1.375	**23.35**	**21.55**	**20.01**	**18.68**
854-6502	SC628*	—	2900	6-28 DC	Cont.	3-18	64-80	0.812	**17.28**	**15.95**	**14.81**	**13.83**
854-6504	SC628A*	—	2900	6-28 AC/DC	Cont.	6-23	68-80	1.375	**26.62**	**24.57**	**22.81**	**21.29**
854-6548	SC628AD*	—	1900	6-28 AC/DC	Cont.	4-16	60-75	1.375	**31.97**	**29.51**	**27.40**	**25.57**
854-6549	SC628AH*	—	4500	6-28 AC/DC	Cont.	4-16	68-80	1.375	**31.97**	**29.51**	**27.40**	**25.57**
854-6503	SC628AN	—	2900	6-28 AC/DC	Cont.	8-28	80-95	1.375	**37.40**	**34.52**	**32.06**	**29.92**
854-6520	SC628D	—	1900	6-28 AC/DC	Cont.	6-23	60-75	0.812	**19.88**	**18.35**	**17.04**	**15.91**
854-6506	SC628H	—	4500	6-28 DC	Cont.	6-23	68-80	0.812	**19.88**	**18.35**	**17.04**	**15.91**
854-6505	SC628L	1	2900	6-28 DC	Cont.	3-14	68-80	0.812	**19.02**	**17.55**	**16.30**	**15.21**
854-6571	SC648*	—	2900	10-48 DC	Cont.	5-22	68-80	0.812	**18.32**	**16.91**	**15.70**	**14.65**
854-6572	SNP2	—	2900	1-5 DC	Cont.	2-12	55-68	0.563	**16.42**	**15.15**	**14.07**	**13.13**
854-6565	SNP428*	—	2900	4-28 DC	Cont.	3-18	64-78	0.563	**16.42**	**15.15**	**14.07**	**13.13**
854-6535	SNP616P	3	2900	6-16	Pulse	1-4	65-75	0.343	**21.78**	**20.11**	**18.67**	**17.43**
854-6536	SNP616J	4	2900	6-16	Pulse	1-4	65-75	0.343	**21.78**	**20.11**	**18.67**	**17.43**
854-6530	SC628W	2	2900	6-28	Warble	3-16	68-80	1.375	**23.70**	**21.88**	**20.31**	**18.96**
854-6538	SC616JW	12	2800	6-16	Warble	6-18	68-80	0.812	**30.43**	**28.09**	**26.09**	**24.35**
854-6523	SC616CP	—	2800	6-16 DC	Chime	3-8	68-80	1.375	**30.85**	**28.48**	**26.44**	**24.68**
854-6539	SC648S	—	2800	10-48	Siren	15-30	80-90	1.375	**45.92**	**42.38**	**39.36**	**36.73**
854-6573	SC110NP	3	2900	30-120 AC/DC	Pulse	8-28	80-95	1.375	**40.08**	**37.00**	**34.36**	**32.07**
854-6574	SC110NJ	4	2900	30-120 AC/DC	Pulse	8-28	80-95	1.375	**40.08**	**37.00**	**34.36**	**32.07**
854-6522	SC616NP	3	2900	6-16 DC	Pulse	4-16	80-95	0.812	**24.50**	**22.62**	**21.00**	**19.60**
854-6512	SC616NJ	4	2900	6-16 DC	Pulse	4-16	80-95	0.812	**24.50**	**22.62**	**21.00**	**19.60**
854-6576	SC628ANP	3	2900	6-28 AC/DC	Pulse	8-28	80-95	1.375	**39.68**	**36.63**	**34.01**	**31.75**
854-6508	SC628P*	3	2900	6-28 DC	Pulse	6-22	68-80	1.375	**24.20**	**22.34**	**20.74**	**19.36**
854-6577	SC628J*	4	2900	6-28 DC	Pulse	6-22	68-80	1.375	**24.20**	**22.34**	**20.74**	**19.36**
854-6578	SC628K	5	2900	6-28 DC	Pulse	3-14	68-80	1.375	**24.20**	**22.34**	**20.74**	**19.36**
854-6579	SC110Q*	8	2900	30-120 AC Only	Chirp	6-22	68-80	0.812	**21.98**	**20.29**	**18.84**	**17.59**
854-6537	SC616Q	8	2900	6-16	Chirp	1-4	68-78	0.812	**24.50**	**22.62**	**21.00**	**19.60**
854-6519	SC628M	6	2900	6-28 DC	Cont.	3-14	68-80	0.812	**43.72**	**40.35**	**37.47**	**34.97**
854-6501	SC628MP	3/6	2900	6-28 DC	Pulse	3-14	68-80	1.375	**62.37**	**57.57**	**53.46**	**49.89**
854-6524	SC110HP	6	4500	30-120 AC/DC	Pulse	4-16	68-80	1.937	**44.57**	**41.14**	**38.20**	**35.65**
854-6580	SC250P	3	2900	60-250 AC/DC	Pulse	4-16	68-80	1.937	**37.67**	**34.77**	**32.29**	**30.13**
854-6581	SC628AP	3	2900	6-28 AC/DC	Pulse	4-16	68-80	1.937	**37.67**	**34.77**	**32.29**	**30.13**
854-6582	SC628AJ	4	2900	6-28 AC/DC	Pulse	4-16	68-80	1.937	**37.67**	**34.77**	**32.29**	**30.13**
854-6583	SC110K*	5	2900	30-120 AC/DC	Pulse	6-22	68-80	1.937	**41.17**	**38.00**	**35.29**	**32.93**
854-6584	SC307N	—	2900	3-7 DC	Cont.	3-8	68-80	0.812	**25.93**	**23.94**	**22.23**	**20.75**
854-6585	SC628N	—	2900	6-28 DC	Cont.	3-14	80-90	0.812	**19.88**	**18.35**	**17.04**	**15.91**
854-6586	SC648AN	—	2900	10-48 AC/DC	Cont.	8-28	80-90	1.375	**37.40**	**34.52**	**32.06**	**29.92**
854-6587	SC250D	—	1900	60-250 AC/DC	Cont.	4-16	80-95	1.375	**31.97**	**29.51**	**27.40**	**25.57**
854-6588	SC250H	—	4500	60-250 AC/DC	Cont.	4-16	60-75	1.375	**31.97**	**29.51**	**27.40**	**25.57**
854-6589	SC416*	—	2900	4-16 DC	Cont.	4-14	68-80	0.812	**17.28**	**15.95**	**14.81**	**13.83**
854-6590	SC648A	—	2900	10-48 AC/DC	Cont.	4-16	68-80	1.375	**26.62**	**24.57**	**22.81**	**21.29**
854-6591	SC648AD*	—	1900	10-48 AC/DC	Cont.	4-16	60-75	1.375	**31.97**	**29.51**	**27.40**	**25.57**
854-6592	SC648AH	—	4500	10-48 AC/DC	Cont.	4-16	68-80	1.375	**31.97**	**29.51**	**27.40**	**25.57**
854-6593	SC110E	—	1900	30-120 AC/DC	Cont.	3-14	55-65	1.375	**31.62**	**29.18**	**27.10**	**25.29**
854-6594	SC110F	—	2900	30-120 AC/DC	Cont.	1-4	55-70	1.375	**29.38**	**27.12**	**25.19**	**23.51**
854-6595	SC250E	—	1900	60-250 AC/DC	Cont.	3-14	55-65	1.375	**31.62**	**29.18**	**27.10**	**25.29**
854-6596	SC250F	—	2900	60-250 AC/DC	Cont.	1-4	55-70	1.375	**29.38**	**27.12**	**25.19**	**23.51**
854-6566	PW1	7	—	—	—	—	—	0.125-0.109	**.08**	—	—	—
854-6567	PW2	7	—	—	—	—	—	0.093-0.056	**.16**	—	—	—
854-6568	PW3	7	—	—	—	—	—	0.053-0.031	**.19**	—	—	—

Notes: 1=Wire leads; 2=Warble unit for use with SC628D or SC628H; 3=Fast pulse (2-10 per second); 4=Slow pulse (.5 to 2 per second); 5=Short pulse; 6=Military applications; 7=For SNP series only; 8=Chirp; 9=Dual tone (cont. + slow pulse); 10=Dual tone (cont. + fast pulse); 11=PC pins mounting; 12=Single package warbler. *Denotes UL models.

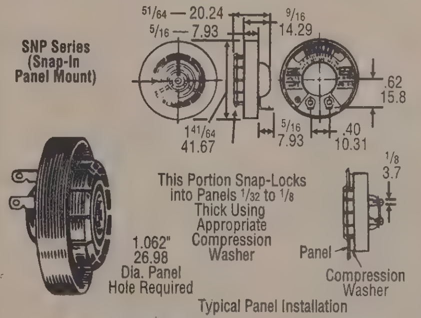


SC Series (Panel Mount)



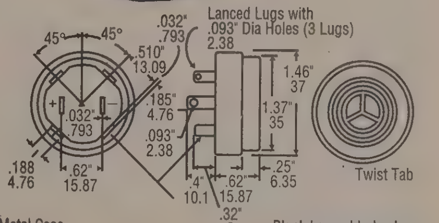
* .03 Projections Are Not 4500 Hz Models

SNP Series (Snap-In Panel Mount)

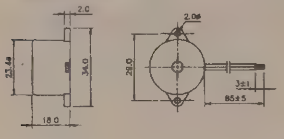


Typical Panel Installation

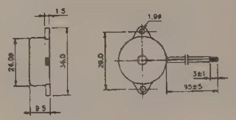
Sonalert (Chassis Mount) SC1.5, SC6, SC12, SC24



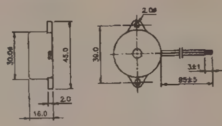
Indicators



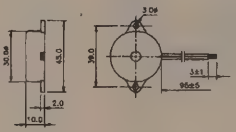
A



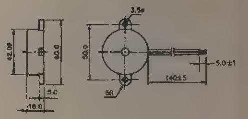
B



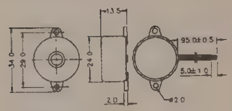
C



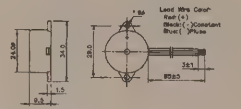
D



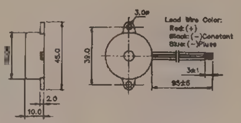
E



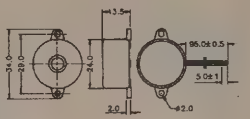
F



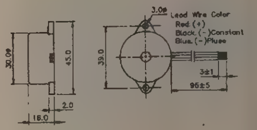
G



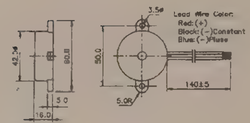
H



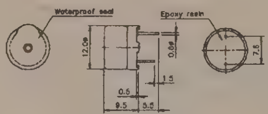
I



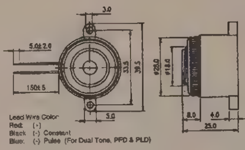
J



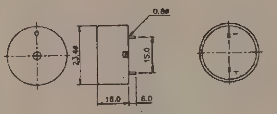
K



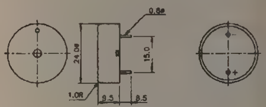
L



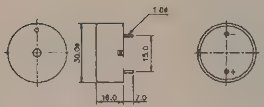
M



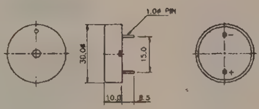
N



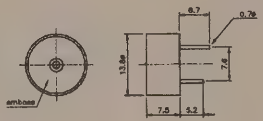
P



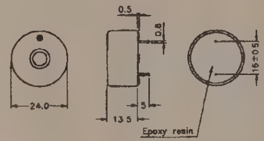
Q



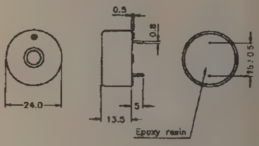
R



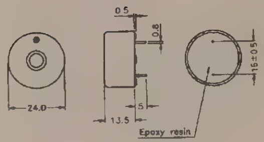
S



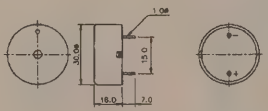
T



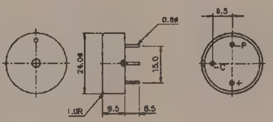
U



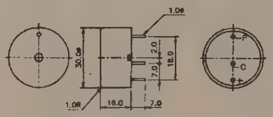
V



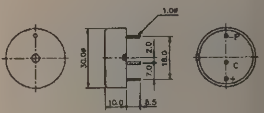
W



X



Y



Z

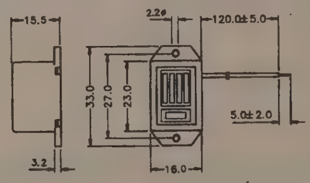
Low current consumption and high sound output of an extremely clear and penetrating sound in a small size and light weight unit make these indicators ideal for a wide range of applications. With no electronic generated EMI or RFI signal, they can be used in many electronic devices. Applications include office and communication equipment, home appliances, alarms, computers and vehicles. These indicators have internal drive circuitry built in and require only DC source voltage for operation.

Stock No.	Mfr.'s Type	Fig.	Freq. (Hz)	Operating Volts	Current (mA)	Sound Level dB (Min.)	Tone	EACH 1-24	EACH 25-49	EACH 50-99
854-6700	PK-20A38W	A	3800	3.0-20.0 VDC	15	95	Constant	**2.18**	**2.02**	**1.87**
854-6702	PK-20A25W	A	2500	3.0-20.0 VDC	15	95	Constant	**2.18**	**2.02**	**1.87**
854-6704	PK-21N30W	B	3000	1.5-30.0 VDC	12	80	Constant	**1.77**	**1.63**	**1.51**
854-6706	PF-21N30W	B	3000	4.0-28.0 VDC	12	80	Fast Pulse	**3.03**	**2.80**	**2.60**
854-6708	PL-21N30W	B	3000	4.0-28.0 VDC	12	80	Slow Pulse	**3.03**	**2.80**	**2.60**
854-6710	PK-27A35W	C	3500	3.0-20.0 VDC	10	95	Constant	**2.45**	**2.26**	**2.10**
854-6712	PF-27A35W	C	3500	3.0-20.0 VDC	10	95	Fast Pulse	**3.48**	**3.22**	**2.99**
854-6714	PL-27A35W	C	3500	3.0-20.0 VDC	10	95	Slow Pulse	**3.48**	**3.22**	**2.99**
854-6716	PK-27N26W	D	2500	3.0-28.0 VDC	8	90	Constant	**2.00**	**1.85**	**1.71**
854-6718	PF-27N26W	D	2500	3.0-28.0 VDC	8	90	Fast Pulse	**3.03**	**2.80**	**2.60**
854-6720	PL-27N26W	D	2500	3.0-28.0 VDC	8	90	Slow Pulse	**3.03**	**2.80**	**2.60**
854-6722	PK-35N29W	E	2900	3.0-28.0 VDC	8	90	Constant	**2.30**	**2.12**	**1.97**
854-6724	PF-35N29W	E	2900	3.0-28.0 VDC	8	90	Fast Pulse	**3.18**	**2.94**	**2.73**
854-6726	PL-35N29W	E	2900	3.0-28.0 VDC	8	90	Slow Pulse	**3.18**	**2.94**	**2.73**
854-6728	PK-35A29W	F	2900	3.0-20.0 VDC	10	95	Constant	**2.67**	**2.46**	**2.29**
854-6730	PF-35A29W	F	2900	3.0-20.0 VDC	10	95	Fast Pulse	**3.65**	**3.37**	**3.13**
854-6732	PL-35A29W	F	2900	3.0-20.0 VDC	10	95	Slow Pulse	**3.65**	**3.37**	**3.13**
854-6734	PFD-21N30W	G	3000	4.0-28.0 VDC	12	80	Con + Fast	**3.10**	**2.86**	**2.66**
854-6736	PLD-21N30W	G	3000	4.0-28.0 VDC	12	80	Con + Slow	**3.10**	**2.86**	**2.66**
854-6738	PFD-27N36W	H	3500	3.0-28.0 VDC	8	90	Con + Fast	**3.10**	**2.86**	**2.66**
854-6740	PLD-27N36W	H	3500	3.0-28.0 VDC	8	90	Con + Slow	**3.10**	**2.86**	**2.66**
854-6742	PFD-21A29W	I	3000	3.0-24.0 VDC	18	90	Con + Fast	**3.55**	**3.28**	**3.04**
854-6744	PLD-21A29W	I	3000	3.0-24.0 VDC	18	90	Con + Slow	**3.55**	**3.28**	**3.04**
854-6746	PFD-27A35W	J	3500	3.0-20.0 VDC	10	95	Constant	**3.55**	**3.28**	**3.04**
854-6748	PLD-27A35W	J	3500	3.0-20.0 VDC	10	95	Fast Pulse	**3.55**	**3.28**	**3.04**
854-6750	PFD-35A29W	K	2900	3.0-28.0 VDC	8	90	Con + Fast	**3.70**	**3.42**	**3.17**
854-6752	PLD-35A29W	K	2900	3.0-28.0 VDC	8	90	Con + Slow	**3.70**	**3.42**	**3.17**
854-6762	PB-12N23P-01	L	2300	1.25-2.0 VDC	20	80	Constant	**2.07**	**1.91**	**1.77**

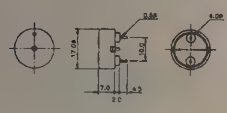
Stock No.	Mfr.'s Type	Fig.	Freq. (Hz)	Operating Volts	Current (mA)	Sound Level dB (Min.)	Tone	EACH 1-24	EACH 25-49	EACH 50-99
854-6764	PB-12N23P-03	L	2300	2.5-4.0 VDC	25	85	Constant	**2.07**	**1.91**	**1.77**
854-6766	PB-12N23P-05	L	2300	4.0-6.5 VDC	30	85	Constant	**2.07**	**1.91**	**1.77**
854-6768	PB-12N23P-12	L	2300	10.0-14.0 VDC	30	85	Constant	**2.07**	**1.91**	**1.77**
854-6770	PK-20A35EW	M	3500	3.0-28.0 VDC	10	95	Constant	**2.28**	**2.11**	**1.96**
854-6772	PF-20A35EW	M	3500	3.0-28.0 VDC	10	95	Fast Pulse	**3.33**	**3.08**	**2.86**
854-6774	PL-20A35EW	M	3500	3.0-28.0 VDC	10	95	Slow Pulse	**3.33**	**3.08**	**2.86**
854-6776	PFD-20A35EW	M	3500	3.0-28.0 VDC	10	95	Con + Fast	**3.65**	**3.37**	**3.13**
854-6778	PLD-20A35EW	M	3500	3.0-28.0 VDC	10	95	Con + Slow	**3.65**	**3.37**	**3.13**
854-6800	PK-20A38P	N	3800	3.0-20.0 VDC	15	95	Constant	**2.18**	**2.02**	**1.87**
854-6802	PK-20A25P	N	2500	3.0-20.0 VDC	20	95	Constant	**2.18**	**2.02**	**1.87**
854-6804	PK-21N30P	P	3000	1.5-3.0 VDC	12	80	Constant	**1.77**	**1.63**	**1.51**
854-6806	PK-27A25PS	Q	2500	3.0-20.0 VDC	10	95	Constant	**2.45**	**2.26**	**2.10**
854-6808	PK-27N35PS	Q	3500	3.0-28.0 VDC	8	90	Constant	**2.45**	**2.26**	**2.10**
854-6810	PK-27N26PS	R	2500	3.0-28.0 VDC	8	90	Constant	**2.00**	**1.85**	**1.71**
854-6812	PK-27N36PS	R	3500	3.0-28.0 VDC	8	90	Constant	**2.00**	**1.85**	**1.71**
854-6814	PK-12N40P	S	4100	3.0-15.0 VDC	10	83	Constant	**2.18**	**2.02**	**1.87**
854-6816	PK-21A31P	T	3500	3.0-24.0 VDC	18	90	Constant	**2.30**	**2.12**	**1.97**
854-6818	PF-21A31P	U	3000	3.0-24.0 VDC	18	90	Fast Pulse	**3.77**	**3.48**	**3.23**
854-6820	PL-21A31P	V	3000	3.0-24.0 VDC	18	90	Slow Pulse	**3.60**	**3.32**	**3.09**
854-6822	PF-27N35PS	W	3500	3.0-28.0 VDC	18	90	Fast Pulse	**3.03**	**2.80**	**2.60**
854-6824	PL-27N35PS	W	3500	3.0-28.0 VDC	18	90	Slow Pulse	**3.03**	**2.80**	**2.60**
854-6826	PFD-21N30P	X	3000	4.0-28.0 VDC	12	80	Con + Fast	**3.10**	**2.86**	**2.66**
854-6828	PLD-21N30P	X	3000	4.0-28.0 VDC	12	80	Con + Slow	**3.10**	**2.86**	**2.66**
854-6830	PFD-27A35P	Y	3500	3.0-20.0 VDC	10	95	Con + Fast	**3.55**	**3.28**	**3.04**
854-6832	PLD-27A35P	Y	3500	3.0-20.0 VDC	10	90	Con + Slow	**3.55**	**3.28**	**3.04**
854-6834	PFD-27N36P	Z	3500	3.0-28.0 VDC	8	95	Con + Fast	**3.10**	**2.86**	**2.66**
854-6836	PLD-27N36P	Z	3500	3.0-28.0 VDC	8	90	Con + Slow	**3.10**	**2.86**	**2.66**
—	—	—	—	—	—	—	—	—	—	—

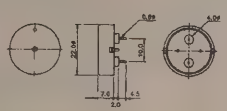
Buzzers

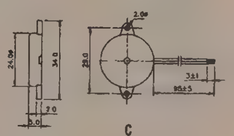
Stock No.	Mfr.'s Type	Freq. (Hz)	Operating Volts	Current (mA)	Sound Level dB (Min.)	EACH 1-24	EACH 25-49	EACH 50-99
854-6754	PK-16N04W-03	400	2.0-4.0 VDC	17	82	**3.28**	**3.03**	**2.81**
854-6756	PK-16N04W-06	400	4.0-8.0 VDC	20	85	**3.28**	**3.03**	**2.81**
854-6758	PK-16N04W-12	400	8.0-16.0 VDC	25	85	**3.28**	**3.03**	**2.81**
854-6760	PK-16N04W-24	400	20.0-28.0 VDC	20	85	**3.28**	**3.03**	**2.81**

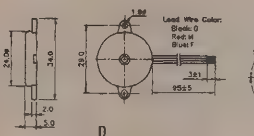


Transducers

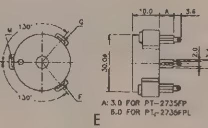

A


B

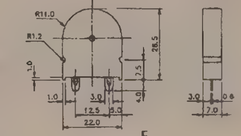

C

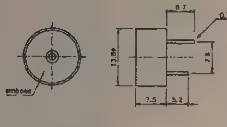


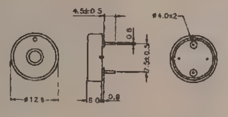
D

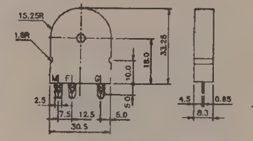


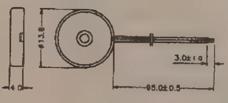
E

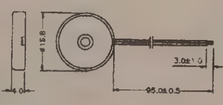

F

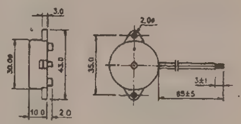

G

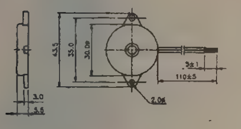

H

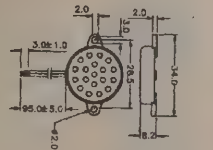

I

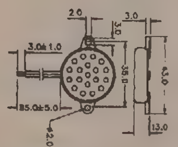

J

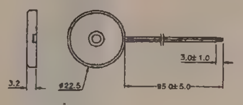

K

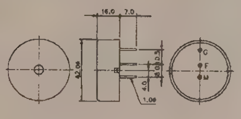

L

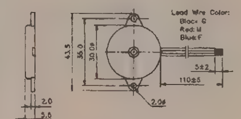

M


N

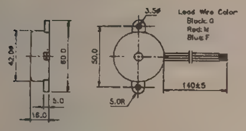

O


P

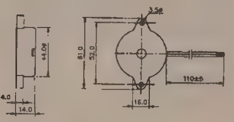

Q

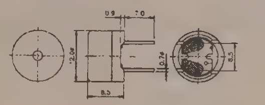


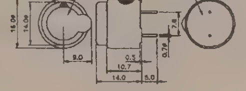
R



S


T


U



V

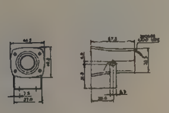
Low current consumption and high sound output of an extremely clear and penetrating sound in a small size and light weight unit make these transducers ideal for a wide range of applications. With no electronic generated EMI or RFI signal, they can be used in many electronic devices. Applications include office and communication equipment, home appliances, alarms, computers and vehicles. These transducers do not have internal drive circuitry and must be driven by other circuits.

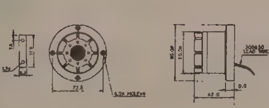
Stock No.	Mfr.'s Type	Fig.	Note	Freq. (kHz)	Operating Volts	Current (mA)	Sound Level dB (Min.)	Drive	Feed Back	EACH		
										1-24	25-49	50-99
854-6610	PT-1540P	A	—	4000	25.0 VAC	1.50	80	External	No	**.60**	**.55**	**.51**
854-6612	PT-2040P	B	—	4000	30.0 VAC	1.50	90	External	No	**.67**	**.62**	**.57**
854-6614	PT-2060W	C	—	6000	30.0 VAC	1.00	95	External	No	**.77**	**.71**	**.66**
854-6616	PT-2065FW	D	—	6500	3.0-28.0 VDC	8.00	85	Self	Yes	**.85**	**.78**	**.73**
854-6618	PT-27335FPL	E	—	3500	3.0-28.0 VDC	10.00	88	Self	Yes	**1.00**	**.92**	**.86**
854-6620	PT-2020P	F	—	2000	25.0 VAC	1.50	80	External	No	**.92**	**.85**	**.79**
854-6622	PT-1240P	G	—	4096	20.0 VAC	2.00	80	External	No	**1.48**	**1.37**	**1.27**
854-6624	PT-1245P	H	—	4000	25.0 VAC	1.50	80	External	No	**.97**	**.89**	**.83**
854-6626	PT-2728FP	I	—	2800	3.0-28.0 VDC	10.00	85	Self	Yes	**1.10**	**1.02**	**.94**
854-6628	PT-1250W	J	—	4800	25.0 VAC	1.50	80	External	No	**.97**	**.89**	**.83**
854-6630	PT-1550W	K	—	5000	25.0 VAC	1.50	80	External	No	**.70**	**.65**	**.60**
854-6632	PT-2725W	L	—	2500	30.0 VAC	1.00	90	External	No	**.92**	**.85**	**.79**
854-6634	PT-2745W	M	—	4500	30.0 VAC	1.50	90	External	No	**.67**	**.62**	**.57**

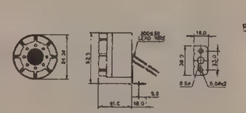
Stock No.	Mfr.'s Type	Fig.	Note	Freq. (kHz)	Operating Volts	Current (mA)	Sound Level dB (Min.)	Drive	Feed Back	EACH		
										1-24	25-49	50-99
854-6636	PB-2015W*	N	1	500-4000	0.15 watt	—	75	—	—	**2.12**	**1.95**	**1.81**
854-6638	PB-2712P*	O	1	500-4000	0.20 watt	—	85	—	—	**2.30**	**2.12**	**1.97**
854-6640	PT-2007W	P	1	300-3000	7.0	—	104	—	—	**1.22**	**1.12**	**1.04**
854-6642	PT-3529FP	Q	—	2900	3.0-28.0 VDC	8.00	90	Self	Yes	**1.33**	**1.23**	**1.14**
854-6644	PT-2038FW	D	—	3800	3.0-28.0 VDC	8.00	85	Self	Yes	**.77**	**.71**	**.66**
854-6646	PT-2745FW	R	—	4500	3.0-28.0 VDC	8.00	85	Self	Yes	**.67**	**.62**	**.57**
854-6648	PT-3529FW	S	—	2900	3.0-28.0 VDC	8.00	90	Self	Yes	**1.10**	**1.02**	**.94**
854-6650	PT-4571W	T	2	750	40.0 VAC	1.50	87	—	—	**1.07**	**.98**	**.91**
854-6652	PB-1220P	U	3	2048	1.1-1.7 VDC	32.00	85	—	—	**.78**	**.72**	**.67**
854-6654	PB-1620P	V	3	2048	1.1-3.0	4.80	80	—	—	**1.45**	**1.34**	**1.24**
854-6656	PB-1621P	V	3	2048	3.0-8.0	25.00	85	—	—	**1.45**	**1.34**	**1.24**
854-6658	PB-1622P	V	3	2048	6.0-18.0	25.00	85	—	—	**1.45**	**1.34**	**1.24**
—	—	—	—	—	—	—	—	—	—	—	—	—

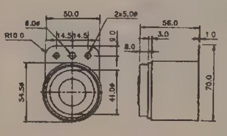
Note: 1 — Miniature Speakers; 2 — Telephone Ringer; 3 — Electro-Magnetic Transducer.

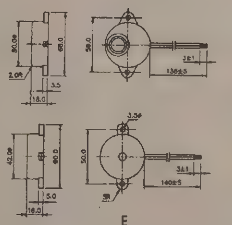
Sirens

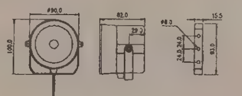

A

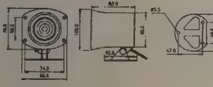

B

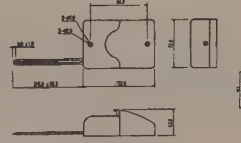

C

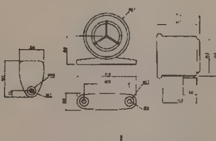

D

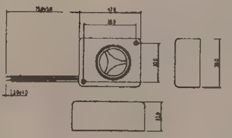

E

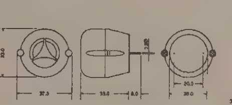

F

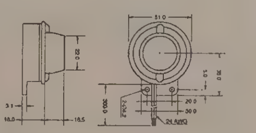

G


H


I


J


K



L

Stock No.	Mfr.'s Type	Fig.	Freq. (kHz)	Operating Volts	Current (mA)	Sound Level dB (Min.)	Tone	Rate	EACH		
									1-24	25-49	50-99
854-6850	PS520	A	3000	7.0-15.0 VDC	200	105	Constant	—	**6.87**	**6.34**	**5.89**
854-6852	PS521	A	3000	7.0-15.0 VDC	200	105	Pulse	1200	**6.87**	**6.34**	**5.89**
854-6854	PS522	A	2500/3500	7.0-15.0 VDC	200	105	Hi-Low	1200	**6.87**	**6.34**	**5.89**
854-6856	PS523	A	1500-3500	7.0-15.0 VDC	200	105	Sweep	4500	**6.87**	**6.34**	**5.89**
854-6858	PS533	B	1500-3500	7.0-15.0 VDC	200	105	Sweep	3300	**9.10**	**8.40**	**7.80**
854-6860	PS550	C	2800	7.0-15.0 VDC	200	105	Constant	—	**9.10**	**8.40**	**7.80**
854-6862	PS551	C	2800	7.0-15.0 VDC	200	105	Pulse	1200	**9.10**	**8.40**	**7.80**
854-6864	PS552	C	2500/3500	7.0-15.0 VDC	200	105	Hi-Low	1200	**9.10**	**8.40**	**7.80**
854-6866	PS553	C	1500-3500	7.0-15.0 VDC	200	105	Sweep	3300	**9.10**	**8.40**	**7.80**
854-6868	PS593	D	1500-3500	5.0-16.0 VDC	250	115	Sweep	3500	**11.53**	**10.65**	**9.89**
854-6870	PS580	E	2800	6.0-14.0 VDC	150	100	Constant	—	**6.68**	**6.17**	**5.73**
854-6872	PS562	E	2500/3500	7.0-15.0 VDC	40	100	Hi-Low	1200	**4.13**	**3.82**	**3.54**

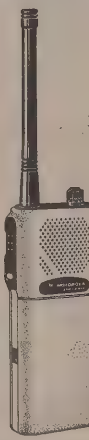
Stock No.	Mfr.'s Type	Fig.	Freq. (kHz)	Operating Volts	Current (mA)	Sound Level dB (Min.)	Tone	Rate	EACH		
									1-24	25-49	50-99
854-6874	PS583	E	1500-3500	6.0-14.0 VDC	150	100	Sweep	3300	**6.68**	**6.17**	**5.73**
854-6876	PS503	F	1500-3500	1.5-3.5 VDC	400	110	Sweep	3300	**10.32**	**9.52**	**8.84**
854-6878	PS540	G	3000	7.0-15.0 VDC	300	110	Constant	—	**9.10**	**8.40**	**7.80**
854-6880	PS541	G	3000	7.0-15.0 VDC	300	110	Pulse	1200	**9.10**	**8.40**	**7.80**
854-6882	PS542	G	2500/3500	7.0-15.0 VDC	300	110	Hi-Low	1200	**9.10**	**8.40**	**7.80**
854-6884	PS543	G	1500-3500	7.0-15.0 VDC	400	110	Sweep	4500	**9.10**	**8.40**	**7.80**
854-6886	PS913	H	1500-3500	11.0-14.0 VDC	250	105	Sweep	4500	**13.97**	**12.89**	**11.97**
854-6888	PS713A	I	1500-3500	6.0-14.0 VDC	150	108	Sweep	4500	**6.83**	**6.31**	**5.86**
854-6890	PS723A	J	1500-3500	6.0-14.0 VDC	150	108	Sweep	4500	**4.40**	**4.06**	**3.77**
854-6892	PS953	K	2000-3500	6.0-14.0 VDC	120	120	Sweep	4500	**4.10**	**3.78**	**3.51**
854-6894	PS983	L	2000-3500	6.0-14.0 VDC	150	105	Sweep	4500	**7.28**	**6.72**	**6.24**
—	—	—	—	—	—	—	—	—	—	—	—

These rugged handheld/jobsite radios are productivity builders for such typical applications as: security, plant/property maintenance, warehouse operations, construction, property management, athletics and wherever job coordination is desirable.

Each radio comes complete with antenna, removable belt clip, rechargeable battery, battery charger, operator manual, FCC licensing information and features transmit/battery status indicator and automatic squelch.

Range: 1 watt-up to 2 miles, 2 watt-up to 2.25 miles (flat terrain with few obstructions). **Durability:** Pass 5 year accelerated life and 4 foot drop to concrete tests. **Battery Charge Life:** VHF-13 hrs., UHF-8 hrs. based on 90/5/5 usage. **Frequency:** VHF models — SV21D, SV21CD, SV11CD, SV12CDT-Blue DOT, SV22CDT; UHF models — SU21D, SU21CD, SU22CDT. Other frequencies available on special order. **Frequency Conversion to MHz:** Blue=154.57, Green=154.60, J=467.7625, K=467.8125. **License:** FCC license required(information furnished with radio). **Warranty:** 1 year (limited) replacement.

Spirit SV11



Each Spirit radio comes fully equipped and ready for use. Each Spirit radio has:

- **1 Watt of Transmit Power in the VHF Frequency Range**
- **1 Channel**
- **Open Squelch (Convertible to Coded)**
- **10-Hour Charging Adapter**
- **Transmit Battery Status Indicator**
- **Removable Belt Clip**
- **Rechargeable Battery**
- **6.2" × 2.5" × 1.2"**
- **11.1 Ounces**

295-0090. SV11. 1-5......**EACH 261.79**
6-Up..............................**EACH 238.97**

Spirit Pro/Pro-CD

Each Spirit Pro Radio comes fully equipped and ready for use. Each Spirit Pro radio has:

- **2 Watts of Transmit Power in the VHF Frequency Range**
- **1 Channel**
- **10-Hour Charging Adapter**
- **Transmit Battery Status Indicator**
- **Removable Belt Clip**
- **Rechargeable Battery**
- **Audio Accessory Connector**
- **11.1 Ounces**
- **5.3" × 2.5" × 1.2"**
- **End User Programmable**

SV21D

295-0023. SV21D. 1-5.....**EACH 273.05**
6-Up..............................**EACH 253.54**

SV21CD

Same as SV21D except with Coded Squelch installed
295-0024. SV21CD. 1-5...**EACH 329.54**
6-Up..............................**EACH 306.00**

Spirit Pro+/Pro+CD

The Spirit Pro+ comes fully equipped and ready for use. Each Spirit Pro+ radio has:

- **2 Watts of Transmit Power in the UHF Frequency Range**
- **1 Channel**
- **10-Hour Charging Adapter**
- **Transmit Battery Status Indicator**
- **Removable Belt Clip**
- **Rechargeable Battery**
- **Audio Accessory Connector**
- **5.3" × 2.5" × 1.2"**
- **11 Ounces**

SU21D

295-0210. SU21D. **1-5**....**EACH 331.50**
6-Up..............................**EACH 289.00**

SU21CD

Same as SU21D except with Coded Squelch installed
295-0111. SU21CD. 1-5..**EACH 392.76**
6-Up..............................**EACH 364.73**

Spirit Pro 2 Channel

- **2 Channel**
- **Interference Eliminator**
- **Desktop Charger Included**
- **Transmit Battery Status Indicator**
- **Removable Belt Clip**
- **Rechargeable Battery**
- **Audio Accessory Connector**
- **5.3" × 2.5" × 1.2"**
- **11.1 Ounces**

SV22CDT VHF

- **2 Watts, 2 Channel VHF Frequency Range**

295-0220. 1-5 .....**EACH 384.46**
6-Up....................**EACH 357.00**

SU22CDT UHF

- **2 Watts of Transmit Power in the UHF Frequency Range**

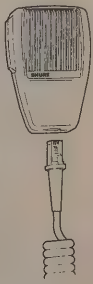
295-0022. 1-5 .....**EACH 450.50**
6-Up....................**EACH 395.41**

Accessories for Spirit Radios

Accessory	Spirit			Spirit Pro			Spirit Pro+			Spirit Pro 2		
	Stock No.	Mfr.'s Type	EACH	Stock No.	Mfr.'s Type	EACH	Stock No.	Mfr.'s Type	EACH	Stock No.	Mfr.'s Type	EACH
Rechargeable Battery Pack	**295-0035**	HNN9044	**36.00**	**295-0035**	HNN9044	**36.00**	**295-0035**	HNN9044	**36.00**	**295-0035**	HNN9044	**36.00**
3 Hr. Desktop Charger	**295-0050**	HTN9026	**64.00**	**295-0050**	HTN9026	**64.00**	**295-0050**	HTN9026	**64.00**	**295-0050**	HNN9026	**64.00**
6 Unit Desktop Charger "Manifold" (1)	—	—	—	**295-0055**	HTN9295	**95.00**	**295-0055**	HTN9295	**95.00**	**295-0055**	HTN9295	**95.00**
Carry Case/Belt Clips												
Nylon Carry Case	**295-0120**	HLN8253	**35.00**	**295-0120**	HLN8253	**35.00**	**295-0120**	HLN8253	**35.00**	**295-0120**	HLN8253	**35.00**
Swivel Belt Loop Adapter (2)	**295-0045**	HLN9149	**12.00**	**295-0045**	HLN9149	**12.00**	**295-0045**	HLN9149	**12.00**	**295-0045**	HLN9149	**12.00**
Heavy Duty Spring Belt Clip	**295-1205**	HLN8255	**10.00**	**295-1205**	HLN8255	**10.00**	**295-1205**	HLN8255	**10.00**	**295-1205**	HLN8255	**10.00**
Audio Accessories												
Earpiece	**295-0130**	HMN8433	**35.00**	**295-0130**	HMN8433	**35.00**	**295-0130**	HMN8433	**35.00**	**295-0130**	HMN8433	**35.00**
Remote Speaker/Microphone	**295-0135**	HMN8432	**76.00**	**295-0135**	HMN8432	**76.00**	**295-0135**	HMN8432	**76.00**	**295-0135**	HMN8432	**76.00**
Headset with Boom Microphone	**295-0145**	HMN9408	**69.00**	**295-0145**	HMN9408	**69.00**	**295-0145**	HMN9408	**69.00**	**295-0145**	HMN9408	**69.00**
Earpiece with Microphone	**295-0155**	BDN6774	**62.00**	**295-0155**	BDN6774	**62.00**	**295-0155**	BDN6774	**62.00**	**295-0155**	BDN6774	**62.00**
VOX Radio Adapter (3)	**295-0160**	BDN6775	**57.00**	**295-0160**	BDN6775	**57.00**	**295-0160**	BDN6775	**57.00**	**295-0160**	BDN6775	**57.00**
Surveillance Microphone	**295-0165**	HMN8435	**55.00**	**295-0165**	HMN8435	**55.00**	**295-0165**	HMN8435	**55.00**	**295-0165**	HMN8435	**55.00**
Coded Squelch Retro Kit												
Tone Coded Squelch Plug-in Module	**295-0170**	HLN3987	**62.00**	**295-0170**	HLN3987	**62.00**	**295-0170**	HLN3987	**62.00**	**295-0170**	HLN3987	**62.00**

(1)This is a "power strip" for six HTN9026R Desktop Chargers. Chargers must be purchased separately. (3) For use with Headset with Microphone HMN9408 or Earpiece with Microphone BDN6774. (5) For use with nylon carry cases.

590T Transistor Amplified Dynamic SHURE



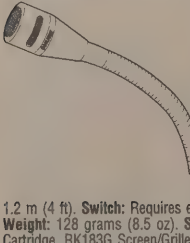
This rugged handheld microphone features a Shure dynamic cartridge. Tailored frequency response provides optimum voice articulation while it discriminates against other sounds. The 590T is ideally suited to a wide range of mobile installations. The unique replaceable ModuLink cordset system makes the 590T a workhorse that is easy to service. The microphone itself is designed to provide trouble-free service even under the harshest conditions.

Specifications. Frequency Response: 200 to 4,000 Hz. **Impedance (at 1kHz):** 200 ohms (non-amplified mode). **Recommended Load:** Greater than 500 ohms. **Non-Amplified Output. Level (at 1 kHz):** 1 5.8 mV (–36.0 dB=1 V/100 microbars). **Amplified Output. Level (at 1k Hz):** 0.32 V(–10 dB, 0 dB=1 V/100 microbars) for a DC Supply Current of 2.5 ±0.25 mA. **PTT* Switch:** Million-Cycle Plus™ leaf-type. **Cable Type:** Detachable 5-conductor, 1-shielded, coiled, with 8-conductor (6 used) modular telephone type connector. **Cable Length:** 1.2 m (4ft). **Replacement Parts:** 90A4056 Cartridge, 90A4040 Printed Circuit Board Assembly; 90A3543 Switch Assembly. **Optional Accessories:** RK6MB Mounting Bracket.

*Push to talk.

944-0590. Model 590T..**EACH 42.30**

562 Noise-Canceling Dynamic

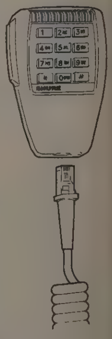


Designed to withstand abnormal moisture and temperature conditions, the 562 is perfectly suited for high-noise environments found in some mobile dispatch operations, such as numerous dispatchers in close quarters — even in situations where there is so much noise the dispatcher cannot hear himself talk. Excellent voice reproduction, highly intelligible speech communication and ruggedness. The 562 fits Shure goosenecks (not supplied) with ⁵/₈" diameter.

Specifications. Frequency Response: 100 to 6,000 Hz. **Impedance (at 1kHz):** 180 ohms. **Recommended Load:** 1,000 ohms. **Output. Level (at 1 kHz):** 0.06 mV (–84.0 dB, 0 dB=1 V/microbars). **Cable Type:** 2-conductor shielded. **Cable Length:** 1.2 m (4 ft). **Switch:** Requires external switch (not supplied). **Dimensions:** 67 mm L × 34.6 mm Dia. (2⁵/₈ × 1³/₈ in.). **Weight:** 128 grams (8.5 oz). **Supplied Accessories:** No. 4 Allen Wrench. **Replacement Parts:** 70A292 Cable, R90 Cartridge, RK183G Screen/Grille Assembly, 31A1238A Case. **Optional Accessories:** A1WS Windscreen, A12 Mounting Flange, A13HD Heavy-Duty Mounting Flange, Any length Shure ⁵/₈" gooseneck.

944-0562. Model 562..**EACH 74.75**

885TT — Quality That's Affordable SHURE



- **Continuous-Tone Dialing**
- **Illuminated Keypad**
- **Positive Tactile-Feel Keys and Audible Confirmation Tone to Help Make Number Entry Easy and Accurate**
- **Externally Adjustable Audio and DTMF Levels for Easy Installation**
- **Tailored Frequency Response and Top-Talk Sound Channels™ Provide Optimum Clarity and Intelligibility**
- **Million-Cycle Plus™ Leaf Switch — a Shure Exclusive, Giving You Longer Trouble-Free Use**
- **Virtually Indestructible Armo-Dur® Case**

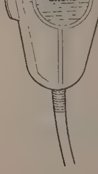
The new 885TT gives you an unbeatable combination of economy, dependability, audio quality, and ease of use. It's a manual-dial DTMF microphone that sets new standards for quality and economy.

Specifications. Frequency Response: 200 to 4,000 Hz. **Output. Level (at 1 kHz):** –5.0 dB (0 dB=1 volt per 100 microbars) for a DC Supply Current of 2.3 mA. **DTMF Output. Level:** 1.1 volts peak-to-peak. **PTT* Switch:** Million-Cycle Plus™ leaf-type. **Cable (optional):** Detachable, 1.4 (48 in.) 5-conductor (1 shielded) modular telephone type connector. **Optional Accessories:** RK6MB Mounting Bracket (3 in kit).

*Push to talk.

944-0885. Model 885TT..**EACH 148.50**

527C — Transistorized Dynamic — *NEW* —



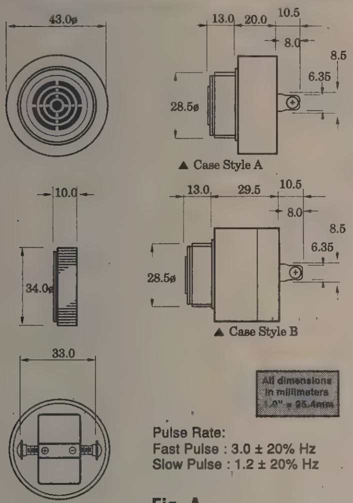
Tailored frequency response for clear, crisp voice reproduction. Built-in transistor amplifier matches carbon-type input circuitry and also provides sufficient output signal to permit use up to 100 feet (30 m) of unshielded cable. Extreme ruggedness and very intelligible response make the 527C ideal for all emergency service mobile installations, as well as transportation, utility, forestry and radiotelephone.

Specifications. Frequency Response: 300 to 5,000 Hz. **Recommended Load:** 220 ohms to 2.2 kilohms. **Output Level (at 1 kHz):** 0.28 V (–11.0 dB, 0 dB=1 V/100 microbar). **PTT* Switch:** Million-Cycle Plus™ leaf-type. **Cable Type:** 4-conductor, coiled. **Cable Length:** 1.8 m (6 ft.). **Supplied Accessories:** RK6MB mounting bracket.

*Push to talk.

944-0527. Model 527C..**EACH 64.99**

Piezo Audio Transducers



Pulse Rate:
Fast Pulse : 3.0 ± 20% Hz
Slow Pulse : 1.2 ± 20% Hz

Fig. A

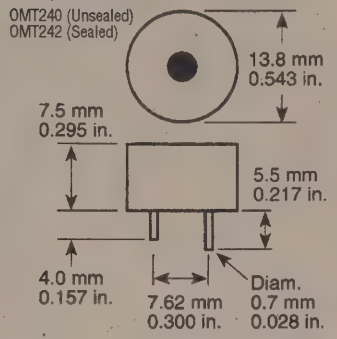


Fig. E

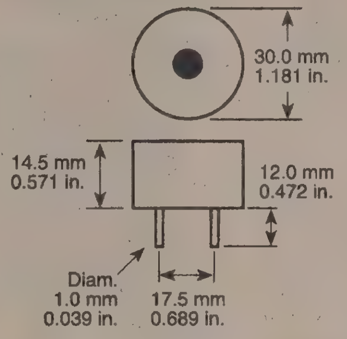


Fig. F

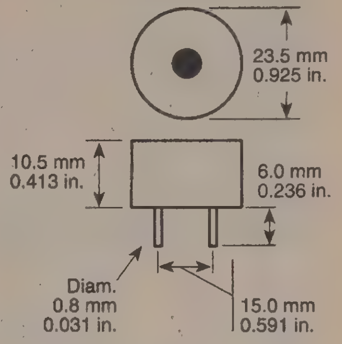


Fig. G

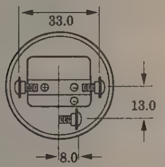


Fig. B

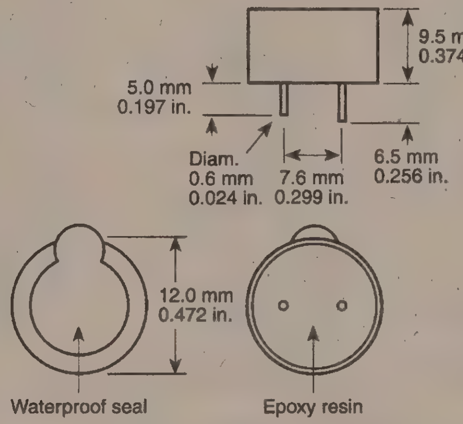


Fig. H

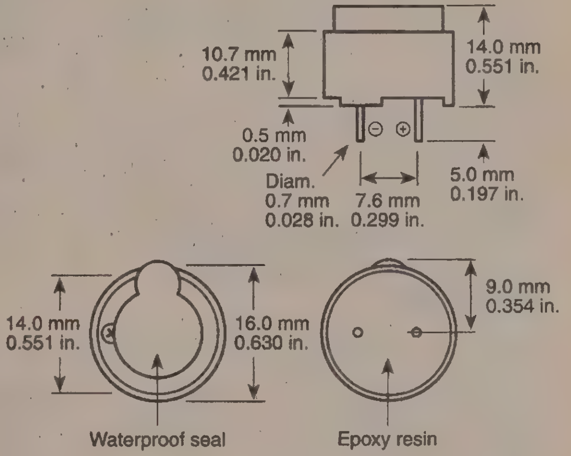


Fig. J

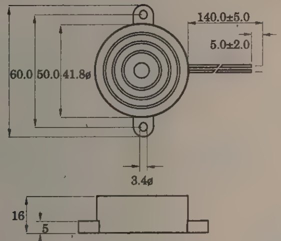


Fig. C

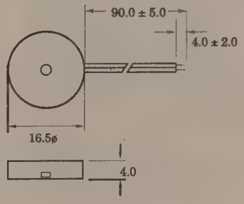


Fig. K

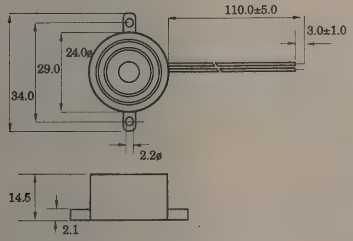


Fig. D

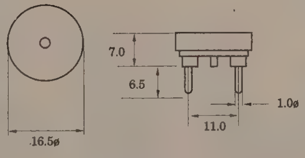


Fig. L

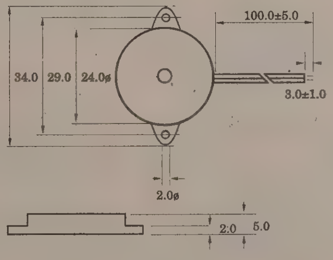


Fig. M

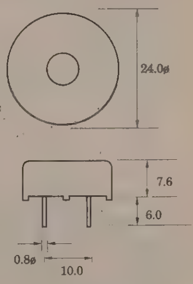


Fig. N

Stock No.	Mfr.'s Type	Fig.	Freq.	Volt	Sound	Current	Tone*	Weight (gram)	EACH 1-24	EACH 25-49
296-5000	OMT650S	A	2900	4-28	70-85	4-18	Continuous	32	**13.10**	**12.06**
296-5002	OMT651S	A	2900	6-28	70-85	6-28	Fast Pulse	37	**14.26**	**13.13**
296-5004	OMT653S	A	2900	6-28	70-85	6-28	Slow Pulse	37	**14.24**	**13.11**
296-5006	OMT655S†	B	2900	6-28	70-85	6-28	Cont.+Fast Pulse	38	**15.90**	**14.63**
296-5008	OMT610SN	A	2900	30-120‡	70-85	4-18	Continuous	40	**23.05**	**21.22**
296-5010	OMT611SN	A	2900	30-120‡	70-85	4-18	Fast Pulse	40	**24.00**	**22.10**
296-5012	OMT613SN	A	2900	30-120‡	70-85	4-18	Slow Pulse	40	**24.19**	**22.27**
296-5014	OMT350	C	2700	3-28	91	8	Continuous	20	**5.05**	**4.65**
296-5016	OMT350L	C	2700	3-20	97	10	Continuous	20	**5.81**	**5.35**
296-5018	OMT200L	D	3000	3-20	93	5	Continuous	7	**4.90**	**4.51**
296-5032	OMT351	C	2700	3-28	91	8	Pulse	20	**8.05**	**7.41**
296-5034	OMT351L	C	2700	3-20	97	10	Pulse	20	**8.91**	**8.21**
296-5036	OMT200	D	3000	3-20	87	12	Continuous	7	**4.66**	**4.29**

Stock No.	Mfr.'s Type	Fig.	Freq.	Volt	Sound	Current	Tone*	Weight (gram)	EACH 1-24	EACH 25-49
296-5038	OMT240	E	4100	3-16	72	8	Continuous	1	**4.71**	**4.33**
296-5040	OMT242	E	4100	3-16	72	8	Continuous	1	**4.72**	**4.35**
296-5044	OMT272L	F	3500	3-20	97	8	Continuous	7	**5.50**	**5.06**
296-5046	OMT276	F	2500	3-28	90	5	Continuous	7	**5.53**	**5.10**
296-5048	OMT276L	F	2500	3-20	98	8	Continuous	7	**5.53**	**5.10**
296-5050	OMT222	G	3400	3-20	84	13	Continuous	6	**4.00**	**3.68**
296-5052	OMT222L	G	3400	3-20	90	10	Continuous	6	**4.72**	**4.35**
296-5054	OMT205C	H	2300	5	80	30	Continuous	2	**5.12**	**4.71**
296-5056	OMT212C	H	2300	12	86	30	Continuous	2	**5.12**	**4.71**
296-5058	OMT1601	J	2048	1.5	86	6.8	Continuous	5	**4.03**	**3.71**
296-5060	OMT1606	J	2048	5	88	25	Continuous	5	**4.03**	**3.71**
296-5062	OMT1612	J	2048	12	88	25	Continuous	5	**4.03**	**3.71**
—	—	—	—	—	—	—	—	—	—	—

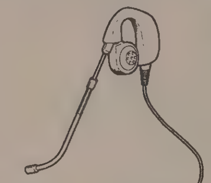
*Fast Pulse: 3 Hz; Slow Pulse: 1.2 Hz. †Three terminals instead of two. ‡AC/DC.

Stock No.	Mfr.'s Type	Fig.	Freq.	Volt (AC)	Sound Level	Cap. (pF)	Weight (gram)	EACH 1-24	EACH 25-49
296-5020	OMT150	K	5000	25	82	8000	1	**2.43**	**2.24**
296-5024	OMT152	L	5000	25	80	8000	1	**2.33**	**2.14**

Stock No.	Mfr.'s Type	Fig.	Freq.	Volt (AC)	Sound Level	Cap. (pF)	Weight (gram)	EACH 1-24	EACH 25-49
296-5022	OMT110	M	4100	30	90	14000	3	**2.33**	**2.14**
296-5026	OMT112	N	4000	30	90	14000	3	**2.43**	**2.24**

Mirage® Headset

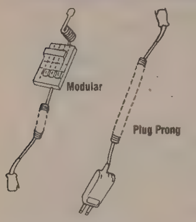
All Day Comfort



- Ultra Lightweight
- No Headband or Eartip
- Miniature On-Ear Receiver
- Quick Disconnect™
- Continuous Volume Control
- 10 Ft. Coil Cord for Free Movement
- Exclusive Call Clarity System

888-6117. Model H41 ....**EACH 88.00**

Plantronics Headset Adapters



Plantronics headsets work with any phone or phone systems. Here's how to choose the right adapter.

Plug Prong Adapter
Use this adapter with operator consoles, PBX, and most ACDs. With volume control.

Modular Adapter
Specify this adapter when using a Plantronics headset with most ordinary phones (except those with a dial in the headset). With volume control, headset/handset switch and mute button.

CompuSet® Adapter
Select this adapter when using a Plantronics headset with your personal computer, modem and standard communications software. With on-off/volume control.

888-6122. P10. Plug prong bottom only..**EACH 110.00**
888-6124. M10. Modular bottom ....**EACH 120.00**

CAT Communication Headset for Computer Audio and Telephony Applications

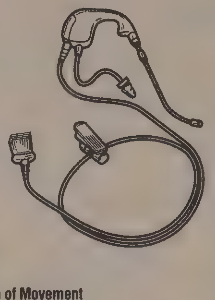
Now there is a lightweight, portable, and private alternative to PC microphones and speakers. Plantronics CAT (computer audio and telephony) headsets enable you to work with computer telephony integration (CTI), voice recognition, personal conferencing, business audio, and multimedia applications. Plantronics CAT 132 communication headset is extremely lightweight and can be put on and off in seconds. Instead of broadcasting personal messages or other sound files by playing them over speakers, you can use Plantronics headsets for private communications. Our CAT series of products reduce disruptive noise pollution and eliminate the desktop clutter that comes from PC speakers and microphones.

The CAT 132 is a high-performance headset featuring a boom-mounted, noise-cancelling microphone that dramatically reduces background noise for clear CTI or personal conferencing communications. With the CAT 132 you get high performance in a sleek, lightweight design.

888-5998. Model CAT 132...**EACH 67.32**

Starset® Headsets

For Superior Acoustics

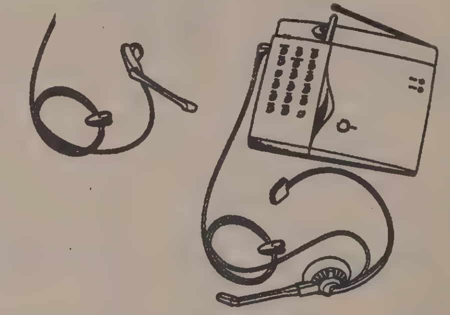


The lightest and best acoustics of any headset — the choice of seasoned professionals.

- Soft, Pliable Versatip® Eartip Fits Any Ear Comfortably to Form a Crystal Clear Acoustic Seal
- Behind-the-Ear Styling Eliminates the Need for a Headband
- So Ultra-Lightweight — Under 1/2 Oz. — You'll Forget It's On
- Adjustable, Replaceable Clear Voice Tube
- Quick Disconnect™ Feature Lets You Leave Your Desk without Removing Headset, While Caller Stays On Line
- 10-Foot Coil Cord Offers You Freedom of Movement

888-6116. Model H31. StarSet ....**EACH 88.00**
888-9984. Model H31N. With noise cancelling feature ....**EACH 112.00**

CT-460 Hands Free Cordless Telephone

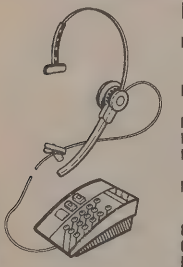


A single-line cordless telephone that lets you move about and converse hands-free, while handling any task easily and efficiently. Perfect for the office — or even at home.

Two headset designs — a cushioned earbud headset that easily slips into either ear using just one hand, and an adjustable headband-style headset for maximum stability and all day comfort. Palm-sized remote with full phone functions including on/off and mute controls, volume and ringer controls, redial/pause, flash, tone, channel select. Ten number speed dial which can accommodate up to 16 digits each. Base unit with headset holder, ringer volume control, and tone/pulse switch. Ten frequency channels in the 46/49 MHz band for optimum call clarity. One-way paging from base unit to remote. 65,000 digital security codes to prohibit other phones from calling out through the same base unit. Holster belt clip and neck strap options for wearing remote unit. Wall mount option to eliminate desktop clutter.

888-0460. CT-460...**EACH 259.99**

PLX™ Lightweight Telephone Headsets

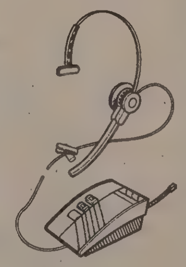


PLX™-400 Headset with Telephone

- Save! All-In-One: High Quality, Lightweight Headset and Single-Line Feature Phone
- Makes Your Job Easier, More Productive — Frees Both Hands
- Eliminate Backaches, Neckaches
- Ideal for Small Business, Home Office
- Features: Volume Control, Last Number Redial, Mute/Flash, 80" Headset Cord
- Sound Quality Equal to Your Regular Telephone

888-4000. Model PLX™-400. **1-5** ...**EACH 109.95**
6-Up..**EACH 99.00**
Model SP-66. Replacement Top.
888-9266. SP-66..............................**EACH 39.99**

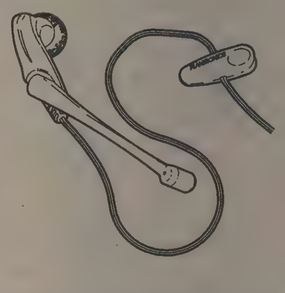
PLX™-500 Telephone Headset



- Makes Your Job Easier, More Productive — Frees Both Hands
- Superior Quality Headset
- Works with and Sounds Just Like Your Phone
- Eliminate Backaches, Neckaches
- Easy, One Minute Installation
- Ideal for Small Business, Home Office
- Features: Volume Control, Mute, Headset/Handset Selection, 80" Headset Cord

888-5000. Model PLX™-500. **1-5** ...**EACH 104.95**
6-Up..**EACH 95.00**
Model SP-66. Replacement Top.
888-9266..**EACH 39.99**

Plantronics FreeHand™

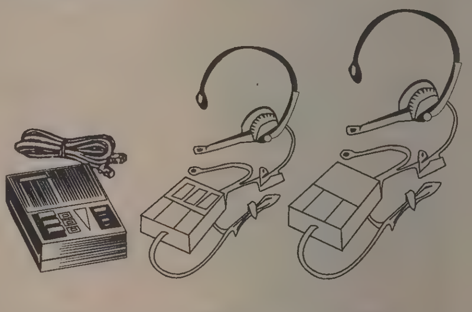


- Cushioned Earbud Receiver Slips On and Off Instantly
- Unidirectional Noise-Cancelling Microphone Reduces Unwanted Noise Up to 75%
- Lightweight — Under 1/2 Ounce
- Plugs Directly Into Your Existing Phone in a Moment
- Patented SoundGuard® Circuitry Offers Safety Beyond OSHA Levels
- 6' Cord for Freedom of Movement
- Full Two-Year Warranty

Finally, a high performance headset for professionals that slips on and off instantly. A handset replacement that makes sense. Independent professionals like you can now get a grip on work again. The Plantronics FreeHand™ is uniquely designed to let you work the way you want. Use the computer, take notes, look for papers with both hands while you're on the phone. It's comfortable, looks and sounds great. And the FreeHand is a breeze to put on, take off — and hooks up to your phone in a moment. There's no headband, no eartip — nothing to get in the way of your work. When you're ready to make or answer a call, just slip the cushioned earbud receiver on the outside of your ear. It's that easy and fast. Now you'll have both hands free to take notes, refer to documents or work at your computer. Sound quality you've got to hear to believe. The Plantronics FreeHand boasts sound equal to your regular phone. Only you will know you're using it. And it's better than an annoying speakerphone. Plus it's private. The Plantronics FreeHand is compatible with all major business phones and plugs in instantly with a modular adapter (included). It comes complete with volume control, handset/headset switch and a mute button.

888-6100. Model H132N-M06. With M10 adapter ....**EACH 184.25**
888-5999. Model H132N. With noise-cancelling feature..................**EACH 64.25**
888-6124. Model M10. Modular bottom adapter ....**EACH 120.00**

SP™ Modular Headsets for Standard Telephones



SP-02 SP-04 SP-05

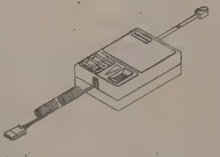
The SP™ Modular Headset makes time on the telephone in your office or home a lot easier. It frees both hands so you can write, type, or perform household chores while talking on the phone. SP™ headsets are made by the world's largest supplier of modular headsets for standard telephones. Each headset is user-installable and works with traditional style touch-tone or rotary desk telephones with modular handsets. These phones normally have "bell" rather than electronic tone ringers. All headsets feature single, lightweight earpad, adjustable headband and boom-mounted microphone. SP™ gives you superior comfort and performance at low cost.

Model SP-02. Designed for use with electronic telephones.
888-9261. Model SP-02..**EACH 79.95**

Model SP-04. Headset with dial pad. Telephone headset. Last number redial, mute/hold. Operates with tone or pulse service. Plugs directly into singe line modular phone outlet.
888-9264. Model SP-04..**EACH 99.95**

Model SP-05. Telephone headset works with all telephones, single or multi-line. Transmit/receive volume control, headset/handset switch, mute switch.
888-9265. Model SP-05..**EACH 89.95**

CompuSet®



- Make and Receive Phone Calls at Your Personal Computer; Your Computer Becomes the Telephone Freeing Desktop Space
- Select from Eight Different Plantronics Headset Styles and Take Advantage of Hands-Free Communications
- Excellent Sound Quality; Switchhook (ON/OFF) and Receiver Volume Control; Headset Quick Disconnect Puts Caller on Hold
- Ten-Foot Coil Cord Allows Ample Office Mobility
- Supports IBM PC Compatible, Apple Computers and Workstations Which Are Equipped with Modems

888-1848. Model SOH1858-12. **1-3**...**EACH 110.00**
4-Up..**EACH 95.00**

Accessories

Stock No.	Mfr.'s Type	Description	EACH		
			1-4	5-9	10-Up
888-0009	09288-02	StarSet II Earpieces, Size 2	1.31	1.06	.86
888-0010	09289-03	StarSet II Earpieces, Size 3	1.31	1.06	.86
888-0007	15729-04*	Supra Foam Ear Cushion Pair/Nutmeg	3.18	2.47	2.00
888-0050	15729-05*	Supra Foam Ear Cushion Pair/Black	2.65	2.35	2.00
888-0036	24316-01	Supra NC Windscreen Polaris/Foam	2.21	1.86	1.50
888-0022	07165-00	StarSet Eartip Kit (6 sizes)	7.95	6.67	5.71
888-0023	17593-01	StarSet II/Supra Voice Tube	6.95	5.83	5.00
888-0024	18093-01	StarSet II Voice Tube	5.10	4.64	4.25
888-0027	10757-00	StarSet II Background Noise Suppressor	1.47	1.31	2.14
888-0028	07169-00	Eyeglass Clips	1.99	1.60	1.28
888-0501	23408-01	Liteset Battery	19.95	18.00	16.66
888-1000	27019-01	Y-Connector for New Tops with Mute	39.95	36.00	32.03
888-6125	25640-01	Versatip Eartip	2.71	2.27	2.00

*Per Pair.

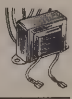
The Sound Decision
Since 1930 Quam-Nichols Company ATLAS / SOUNDOLIER

Industrial Loudspeakers

The Sound Decision Since 1930 Quam-Nichols Company

Stock No.	Mfr.'s Type	Size (In.) And Shape	Frequency Response (Hz)	Power Handling Capacity (Watts)	Voice Coil Imp. (Ohms)	Depth (In.)	Shipping Weight (Lbs.)	EACH
897-1192	2A05Z8	2 RD	300 Hz to 6 KHz	1	8-10	7/8	1/4	7.60
897-1181	30A05Z8	3 SQ	150 Hz to 12 KHz	2	8-10	1 9/32	1/4	7.23
897-1182	35A05Z8	3 × 5 OV	130 Hz to 14 KHz	2	8-10	1 1/2	1/4	7.97
897-1183	30C25Z8	3 SQ	150 Hz to 14 KHz	5	8-10	1 3/16	1/2	7.97
897-1188	4C5Z8	4 SQ	120 Hz to 15 KHz	7	8-10	1 5/8	1	10.28
897-1195	25A07Z8	2 1/2 SQ	150 Hz to 12 KHz	1 1/2	8	1 1/4	1/4	7.05
897-1196	25A07Z45	2 1/2 SQ	150 Hz to 12 KHz	1 1/2	45	1 1/4	1/4	7.97
897-1197	30A05Z45	3 SQ	130 Hz to 14 KHz	2	45	1 3/16	1/4	8.16
897-1198	3A07Z450T	3 1/2	150 Hz to 10 KHz	2 1/2	45	1 7/16	1/2	9.45
897-1199	4A1Z45	4	180 Hz to 12 KHz	3	45	1 13/16	3/4	8.72

Transformers

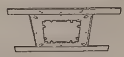


Stock No.	Mfr.'s Type	Power Rating	Primary Volts	Primary Tape	Mounting Centers	Core Size	Secondary Load	Shipping Weight (Lbs.)	EACH
897-1209	TBL70	4W	70.7	1/4-1/2-1-2-4W	2"	1/2 × 5/8	8	1/2	6.03
897-1210	TCL70	8W	70.7	1/2-1-2-4-8W	2 3/8"	5/8 × 5/8	8	3/4	11.03

Ceiling Baffles

Stock No.	Mfr.'s Type	Type	Speaker Size (In.)	Baffler Diameter	Material	Finish	Shipping Weight (Lbs.)	EACH
897-1211	BR8W	One-step	8"	12 7/8"	22-ga. steel	White epoxy	1 1/2	6.57

Ceiling Speaker Mounting Device

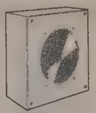


Speaker support bridge eliminates tile sag caused by weight of installation on suspended ceilings. Use with C5 Series assemblies listed above. Order separately. Can also be used in conjunction with ERD-8 Series. Backboxes mount with tabs. SSB-2 mounts round or square grills.

897-0102. Model SSB-2 .... **EACH 4.89**

Surface Mount Loudspeaker Systems

The Sound Decision Since 1930 Quam-Nichols Company



System 1

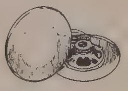
System II

Four-piece assembly systems include 8" dia. pin cushion shaped loudspeaker with ceramic magnet, regular or vandal-proof 11.50" square steel baffle with white finish in 1 step contour design, type TBLU 25/70V. 5 watt transformer has either a straight-sided or slant-sided surface mount backbox enclosure. Hardware included.

Stock No.	Mfr.'s Type	Speaker	Baffle	Enclosure	EACH
897-0160	System I	8C5PAXB**	BS8W	SE1WVP Straight	52.85
897-0165	System II	8C5PAXB**	BS8W	SE2WVP Slant	59.35
897-0170	System VPI	8C10PAOT*	BS8VP†	SE1WVP Straight	65.74
897-0175	System VPII	8C10PAOT*	BS8VP†	SE2WVP Slant	72.23

*Weatherproof, 10 oz. magnet. **5 oz. magnet. †Vandal-proof.

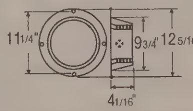
C5 Series Loudspeaker Assemblies



3-piece assemblies; Model 8C5PAX 8" dual cone loudspeaker (with 5 oz. ceramic magnet), baffle, and transformer. Completely wired and factory tested. Includes complete hardware for mounting.

Stock No.	Mfr.'s Type	Baffle Finish	Baffle Diameter	Contour	Transformer Volts	EACH
897-0130	C5/B70/A	Brushed alumin.	12 7/8"	One-step	70	26.89
897-0140	C5/B70/W	White steel	12 7/8"	One-step	70	17.62
897-0150	C5/B70/WP	White plastic	12 3/4"	Ivd two-step	70	21.23
897-0110	C5/B25/W	White steel	12 7/8"	One-step	25	17.62

Enclosures For Above Assemblies



Mounting straps, where used, are flexible, perforated steel bands that permit mounting the enclosure in virtually any ceiling.

897-1216. Model ERD-8. Round Backbox .... **EACH 7.33**

Wall Mount Autotransformer Attenuators

QC-10

QC-45

The Quam wall mount autotransformer controls the output level of a single or group of loudspeakers totaling wattage shown without the high power dissipation of resistive devices. QC-10 offers 10 steps of attenuation. QC-45 has 14 steps plus an 'off' position. Units feature silver-plated switch contact, brushed stainless wall plates.

897-1218. Model QC-10. 10 watt .... **EACH 15.49**
897-1219. Model QC-45. 45 watt .... **EACH 22.16**

Professional Omni-Purpose Speakers

ATLAS / SOUNDOLIER

AP-15T

AP-30T

APC-30T

SC-15

Stock No.	Mfr.'s Type	Continuous Power (Watts)	Equalized Power (Watts)	Frequency (Hz)	Sound Level	Impedance* (Ohms)	Power Taps* (Watts)	Dispersion	Dimensions (W × H × D)	Weight (Lbs.)	EACH
537-3003	AP-15T	15	20	275-14,000	121 db†	5000, 2500, 1300, 666, 333, 89, 45	70V: .9, 1.8, 3.8, 7.5, 15; 25V: .48, .94, 1.8, 7.5, 15	110°	8 × 8 × 9"	4; 4 1/2	91.66
537-3004	AP-30T	30	40	225-14,000	125 db‡	4000, 2000, 1000, 666, 333, 167	1.2, 2.5, 5, 7.5, 15, 30	100°	10 × 9 1/2 × 10 1/2"	5 1/2; 6; 6	100.11
537-3005	APC-30T	30	40	250-14,000	123 db	2500, 1300, 666, 333, 167, 89, 45	70V: 1.8, 3.7, 7.5, 15, 30; 25V: 1.8, 3.7, 7.5, 15, 30	120° × 60°	14 × 6 × 12 3/4"	7 1/2; 8	110.30
537-3006	SC-15	—	15	350-12,000	120 db	8	—	130°	6 1/4" dia. × 6 1/2"	3	51.08
537-3007	SC-15-4	—	15	350-12,000	111 db	4	—	130°	6 1/4" dia. × 6 1/2"	3	58.00

*Vari-Tap Switch on Transformer Models. †Measured 4' on axis at 15 watts input. ‡Measured 4' on axis at 30 watts input.

Projector Horns

BIA-100

DR-32 (Shown with driver)

Model BIA-100. Bi-axial sectoral horn with computer calculated exponential flare rate. Uniform wide angle sound coverage. The high efficiency non-resonant projector is molded of vibration-free rigid material and equipped with steel mounting bracket.

Model DR-32. Directional projector horn for uniform reflex sound path for high efficiency penetration over distance and ambient noise. Weatherproof, all-metal construction. Heavy duty adjustable mounting bracket.

Stock No.	Mfr.'s Type	Low-End Cut-Off	Dispersion	Air Column Length	Bell Size	Horn Length	Weight (Lbs.)	EACH
537-3008	BIA-100	180 Hz	130° × 60°	2.8'	21 1/2 × 10 1/2"	19 1/4"	10	153.46
537-3009	DR-32	190 Hz	95°	2.5'	16 1/2" dia.	12 1/2"	10	108.45

Driver Units

PD-30T

PD-60T

These heavy-duty weatherproof compression driver units are designed for reliability, efficient sound production, high intelligibility and penetration. PD series drivers feature self-aligning field-replaceable diaphragm and standard 1⅜" — 18 male threads for CJ-46, BIA-100, WCH-100, or DR-Series models or as replacement drivers for use with standard threaded projector horn.

Stock No.	Mfr.'s Type	Power (Continuous)	Power (Equalized)	Impedance	Frequency (Hz)	Weight (Lbs.)	EACH
537-3011	PD-30T	30 Watts	40 Watts	Built-In X-Former	120-14,000	4 3/4	95.46
537-3021	PD-30	30 Watts	40 Watts	8 Ohms	120-14,000	3	77.91
537-3013	PD-60T	60 Watts	100 Watts	Built-In X-Former	70-12,000	8	157.57

Microphone Stands, Adapters and Fittings

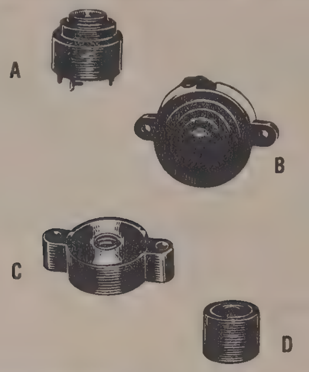
MS-10C

MS-11C

SS-70X (Shown with SSA-2 Adapter)

Stock No.	Mfr.'s Type	Description	EACH
537-2000	MS-10C	Economic floor stand. Cast Iron base (10" dia.), charcoal. Height: 35" to 63".	34.67
537-2001	MS-11C	General Purpose Stand. Low-profile chrome base (10" dia.) Height: 34" to 62".	45.42
537-2007	DS-7	Adjustable Desk Stand. Chrome tube assembly. Height: 8" to 13". Grip-action clutch. 6" dia.	21.46
537-2008	GN-13	13" Flexible Gooseneck. Attach to Atlas Sound stand or adapter, 5/8"-27 male and female threads.	9.29
537-2010	SO-1B	Snap-on Accessory. For quick fastening or disconnection of microphone-holder or boom attachment from any stand.	15.83
537-2012	AD-5B	5/8"-27 female to 5/8"-27 female, coupling.	5.43
537-2013	AD-8B	6" long tube 5/8"-27 male each end.	5.43
537-2014	AD-15B	Cable feed-thru adapter: 5/8"-27 male and female end.	9.73
537-3014	SS-70X	Heavy-duty, multi-purpose stand for stage monitor and loudspeaker cabinets, portable lighting. Instrument and industrial. Height: 55" to 100". Tubing dia: 1 3/8".	144.43

Efficient Piezo Buzzers and Elements



A. Pulsing/Continuous Piezo Buzzer. Great for alarm systems, vehicle backup alerts. May be panel mounted. Three screwdriver terminals, one is common positive. Negative terminals select mode. Approx. 2800 Hz pulsed at 1.2 Hz. **Output:** 90 dB at 12 VDC. 4 to 28 VDC, only 10 mA at 12 VDC. Fits $1^{1}/_{16}$" diameter hole. With threaded mounting ring.
910-2105. Type 273-068 .... **EACH 8.49**

B. Pulsing Piezo Buzzer. Approx. 2800 Hz. 90 dB. 3 to 28 VDC: 12 mA at 12 volts. Mounting hole centers $1^{15}/_{16}$" apart.
910-2104. Type 273-066 .... **EACH 4.99**

C. Piezo Buzzer With Leads. Piercing 3.6 kHz signal. 4 to 28VDC. 5 mA at 12 V. Mounting hole centers $1^{3}/_{4}$" apart.
910-2101. Type 273-060 .... **EACH 3.29**

D. PC Board-Mount Piezo Buzzer. 3 to 20 VDC. $1^{1}/_{16}$" × $^{5}/_{16}$" dia.
910-2106. Type 273-065B .... **EACH 2.99**

Fixed-Frequency Piezo Element. Three-wire type. Up to 90 dB at 6.5 kHz. Requires external driver circuit. $1^{1}/_{8}$" mounting centers. With data.
910-2102. Type 273-064 .... **EACH 1.79**

Mini DC Buzzers

Small enough to hide, loud enough to demand attention! $1^{1}/_{16}$" mounting centers. With leads. **DC Voltage:** 1.5 to 3.

910-2089. Type 273-053 .... **EACH 2.59**

Chassis Mount Socket and Mike Plug

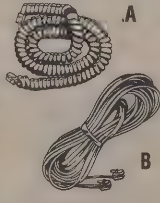
Chassis Mount Socket

Type 274-002. Mates with 4-pin plug.
910-2070 .... **EACH 1.69**

Mike Plug

Type 274-001. Many communications uses. Cable strain relief. Solder terminals
910-2116 .... **EACH 1.99**

Telephone Wires



A Handset Cord. 25' almond coiled cord for replacement or extension use in modular phones.
910-9014. Type 279-302 .... **EACH 5.99**

B Modular-Modular Line Cord. 25' extension replaces shorter cords. Both ends terminate with modular plugs.
910-7026. Type 279-356 .... **EACH 6.19**

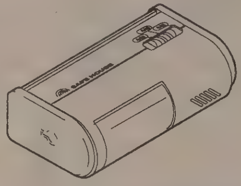
Power Transformers

Five popular values for new equipment or replacement use. The miniature types may be PC board mounted. The standard and heavy-duty types have steel frames with lugs for chassis mounting. All primaries are for 120 VAC, 60 Hz.

Stock No.	Mfr.'s Type	Volts	Current	Size Inches	EACH
910-1120	273-1385*	12.6	300 mA	$1^{1}/_{4} \times 1^{7}/_{16} \times 1^{1}/_{16}$	**3.99**
910-2213	273-1365†	12.6 CT	450 mA	$1^{7}/_{16} \times 1^{11}/_{16} \times 1^{1}/_{2}$	**4.99**
910-1180	273-1511‡	12.6 CT	3.0 A	$2^{1}/_{16} \times 2^{1}/_{2} \times 2^{1}/_{4}$	**9.99**
910-1190	273-1512‡	25.2 CT	2.0 A	$2^{1}/_{4} \times 2^{3}/_{4} \times 2^{1}/_{4}$	**9.99**

*Miniature. †Standard. ‡Heavy Duty.

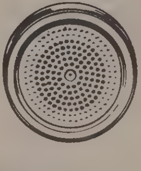
Mini Motion Detector Alarm



Type 49-425. Ideal security for home or travel. Just aim it and switch it on. Detects motion, sounds a loud, ear-piercing 90 dB alarm or chime announcer. Requires 9 V battery.

910-5296. Type 49-425 .... **EACH 24.99**

Two-Sound Indoor Siren



Type 49-490. Super loud steady or rise-fall sound. Ceiling or wall mount. 12 VDC. $^{1}/_{2}$ amp.

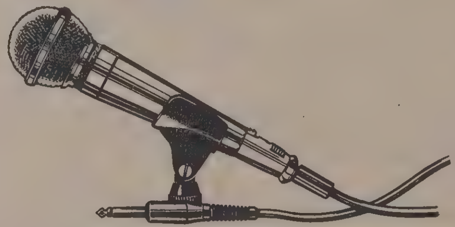
910-2109. Type 49-490 ... **EACH 14.99**

Microphones and Accessories

Super Omni Dynamic Mike

Model 33-1070. Wide 40-17,000 Hz ±3 dB response mike is perfect for music recordings or hand held vocals. Rugged all-metal body with built-in windscreen. Rubber shock ring, XLR-type connector, low impedance (500 ohms) balanced or unbalanced. 16' cable with $^{1}/_{4}$" phone plug. Includes carry case and stand adapter.
910-0021. Type 33-1070 .... **EACH 49.99**

Highball Dynamic Mike



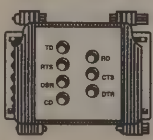
Model 33-984. Rugged, high-performance mike has 80-15,000 Hz response with emphasis on "presence" for clean, articulate, natural sound. Ball windscreen minimizes breath "pops" and rubber anti-shock ring withstands rough handling. Unidirectional pattern helps control unwanted sounds and feedback. On/Off switch. High (10 K) and low (600 ohm) impedances with balanced low Z capability. With XLR-type connector, 16' heavy-duty cable, and stand adapter.
910-0017. Type 33-984 .... **EACH 59.99**

Wide Range Speakers

For all kinds of new or replacement use. 8 ohms. **Size:** 3". **Power Cap. (Watts):** 2.0. **Magnet Wt.:** 0.4 In. Oz.

910-0112. Type 40-248 .... **EACH 3.99**

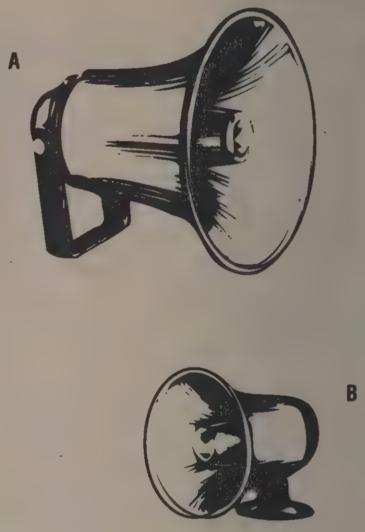
RS232 Testing and Connections



RS232 Mini Tester. Diagnose interface problems yourself, without costly repair calls. Dual-color LEDs indicate status of TD, RTS, DSR, CD, RD, CTS, and DTR lines. Connects inline.

910-9034. Type 276-1401 .... **EACH 14.99**

Multi-Purpose Powerhorns



These weatherized PA, music and paging speakers are waterproof, dustproof, shockproof and resist rust with years of quality performance, indoors or out. Choose the size that's right for your application, either 4", 5", or 8". All 8 ohms, includes mounting bracket.

A. 8" Horn. 15 watts.
910-2123. Type 40-1239 .... **EACH 34.99**

B. 5" Horn. 8 watts.
910-7097. Type 40-1236 .... **EACH 21.99**

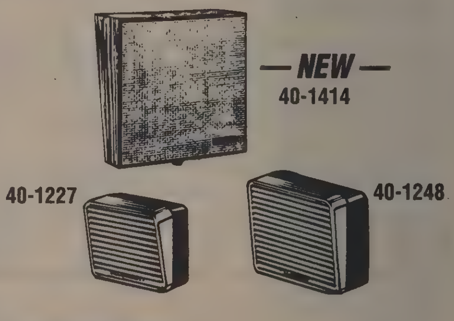
Super PowerHorn® Speaker

► **Extra-Wide 275-14,000 Hz Frequency Response**

Model 40-1307. High-efficiency design for maximum sound fidelity for speech and music. Engineered for years of reliability. Weatherized molded housing, metal swivel base. 40 watts. **SPL:** 110 dB (1W/1M). 11 × $6^{1}/_{2}$ × $8^{1}/_{2}$".

910-1307. Type 40-1307 .... **EACH 41.99**

Speakers



8" Wall Mount Speaker

Perfect for paging or background music in an office or retail space. Mounts easily on wall, has a full-range 8" driver and built-in volume control. Handles 10 watts max. **Impedance:** 8 ohms. Rated 92 dB (SPL at 1 W/1 M). $10^{1}/_{4}$" × $10^{1}/_{4}$" × $4^{3}/_{4}$".
910-1414. Type 40-1414 .... **EACH 24.99**

Indoor/Outdoor

Keyhole slots and hardware for easy wall mounting. Moisture-proof. 8 ohms.

4" Speaker. $4^{3}/_{4} \times 5^{1}/_{2} \times 3$".
910-7090. Type 40-1227 .... **EACH 16.99**

$6^{1}/_{2}$" Speaker. $4^{1}/_{2} \times 8^{1}/_{4} \times 3^{7}/_{8}$".
910-2121. Type 40-1248 .... **EACH 27.99**

Color Cameras — *NEW* —

- All Sanyo Color Cameras Have the Same Dimensions of 2.2" (W) × 1.77" (H) × 3.92" (D) without Lens; Approx. Weight: 11.6 Oz; All Have Metal Cabinets Therefore None Are Affected By Magnetic or Electrostatic Fields

Models VCC-3912 and VCC-3924

- 1/3" CCD Color Image Sensor
- 330 Lines Horizontal Resolution
- Backlight Compensation and Electronic Iris
- 8-Mode High Speed Electronic Shutter 1/60, 1/100, 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/10000 Sec.
- CS/C Mount (Adapter Supplied)
- Internal Sync.
- 12 VDC Power Adapter Supplied (Model VCC-3912 Only)
- Operates on 24 VAC and Requires a 24 VAC Power Source — See Pelco #TF2000 or #MCS40 (Model VCC-3924 Only)
- Power Consumption: 3.5 W (Model VCC-3924 Only)

912-0005. VCC-3912 .... EACH 620.50
912-0002. VCC-3924 .... EACH 539.09

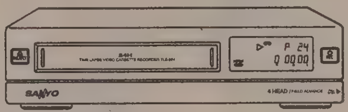
Models VCC-3972 and VCC-3974

- 1/3" CCD Color Image Sensor
- Greater Than 460 Lines of Horizontal Resolution
- Scene Illumination Needed: Less Than 2 Lux (F1.2 Lens)
- Auto White Balance and Auto Color Tracking Through the Lens
- Backlight Compensation and Electronic Iris
- 8-Mode High Speed Electronic Shutter 1/60, 1/100, 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/10000 Sec.
- Internal and External Sync (Automatic Switching)
- Y/C Signal Output
- CS/C Mount (Adapter Supplied)
- 12 VDC AC Adapter Supplied (Model VCC-3972)
- Requires 24 VAC to Operate and Requires a 24 VAC Power Source — See Pelco #TF2000 or #MCS40 (Model VCC-3974 Only)
- Power Consumption: 3.7 W (Model VCC-3974 Only)

912-0008. VCC-3972 .... EACH 780.30
912-0010. VCC-3974 .... EACH 697.00

Time Lapse Recorders — *NEW* —

- Multiple Recording Modes of 2, 12, and 24 Hours on a T-120 Tape All of Which Permit Audio Record
- Field Record and Field Playback
- Timer Recording Can Be Used on Daily or Weekly Basis
- Alarm Recording
- Built-In Microprocessor with Calendar Function
- Special Security Function Locks All Buttons
- Auto Head Cleaning
- 30 Days Backup Power for Clock Memory
- Alarm Counter
- Daylight Savings Time Adj.
- Dimensions: 14.2" (W) × 3.35" (H) × 13.3" (D); Weight: 12.6 Lbs.
- Operating Temperature: 40°F to 105°F



- Power: 120 VAC/60 Hz
- Power Consumption: 24 W (Approx.)
- 19" Rack Mount Available
- Capable of 3 Days of Time Lapse Recording with the Additional Speeds of 48 Hours and 72 Hours (Model TLS-972 Only)

912-0924. TLS-924 .... EACH 822.70
912-0972. TLS-972 .... EACH 953.75

Monitors

Black and White Monitors

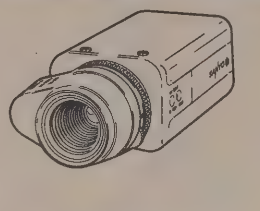
UL and DHHS listed. FCC RFI compliance video monitors offer high resolution and solid state circuitry. Flip-open control cover, DC restoration switch, Hi Z-Lo Z termination switch, video input bridging, and a regulated power supply with isolation transformer, all encased in a rugged metal cabinet. Optional rack mounts are available to mount in standard EIA 19" space. **Controls:** On-Off, Brightness, Contrasts, H-Hold, and Impedance. Also features quick start without pre-heating and recessed hand grips for portability. **Specifications, Input Signal Range:** 0.5 to 2.0 Vpp. **Horizontal Resolution:** 900 lines, nominal. **MTBF (Less CRT):** 15,000 hours. **Light Output:** 25 FL Min. **Geometric Distortion:** 2.0% Max. **Connectors:** 2 BNC Video In, Video Out. AC- 3 pin UL approved plug.

Color Monitor

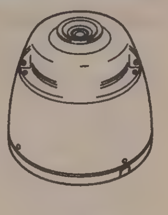
High resolution CRT with comb filter reproduces 450 horizontal lines of resolution (Y/C), or 330 lines composite. Its metal cabinet construction reduces interference from outside noise. Degaussing yields minimal magnetic build-up for superior performance. Optional rack mount is available to mount in standard 19" space. A built-in speaker with front-panel volume control is provided.

Stock No.	Mfr.'s Type	Screen	Video Bandwidth	Power	Type	EACH
912-0100	VM5509	9"	15 MHZ	120 V, 50/60 Hz, +10%, 33 W	B/W	190.00
912-9016	VM5512	12"	3 dB 15 MHz	120 VAC, +10%, 60 Hz	B/W	266.39
912-5516	VM5516	16"	15 MHz	120 VAC, +10%, 60 Hz	B/W	408.72
912-7514	VMC7514	14"	—	120 VAC, 60 Hz (95 to 135 V)	Color	558.88

Black and White Cameras — *NEW* —



VCB-3324, VCB-3512



VDC-9024

Model VCB3324

- Dimensions: 2.2" (W) × 1.77" (H) × 3.92" (D)
- Weight: 11.6 Oz.
- Has Metal Cabinets and Is Not Affected By Magnetic or Electrostatic Fields
- 1/3" CCD Image Sensor
- 400+ Lines of Horizontal Resolution
- Minimum Light Requirement: 0.22 Lux (F1. 2)
- Backlight Compensation
- Electronic/Auto Iris
- CS/C Mount Supplied
- Power Requirement: 24 VAC/60 Hz
- Power Consumption: 2.8 W

912-9831. VCB3324 .... EACH 268.02

Model VCB-3512

- Dimensions: 2.2" (W) × 1.77" (H) × 3.92" (D)
- Weight: 11.6 Oz.
- Has Metal Cabinets and Is Not Affected By Magnetic or Electrostatic Fields
- 1/2" CCD Image Sensor with Approximately 410000 Picture Elements
- High Resolution: 570+ Horizontal Lines
- High Sensitivity: 0.07 Lux (F1.2)
- Backlight Compensation and Electronic Iris
- High Speed Electronic Shutter
- Internal/External Sync.
- 12 VDC Power Supply Included

912-9833. VCB-3512 .... EACH 474.30

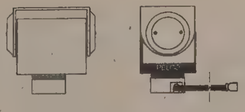
Model VDC-9024

- Dimensions: 110 mm (W) × 112 mm (H) × 110 mm (D)
- Weight: 11.6 Oz.
- Has Metal Cabinets and Is Not Affected By Magnetic or Electrostatic Fields
- Built-in IR.Led Reduces Minimum Required Illumination of 0 Lux at 4.5 Meters (Usable Video)
- More than 380 TV Lines of Horizontal Resolution
- Manual Pan/Tilt/Rotation Mechanism for Positioning; Can Be Mounted to Ceiling or Wall
- Built-In Lens That Has Electronic Iris and Manual Focus Adjustment
- Angle of View: Horizontal — 67.0°; Vertical — 51.6°; Diagonal — 80.7°
- Line Lock 24 VAC Operation

912-9837. VDC-9024 .... EACH 644.30

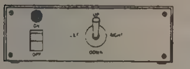
Pan/Tilts and Accessories, Indoor/Outdoor

Light Duty Pan/Tilt



PT175-24P. Light duty, indoor/outdoor pan/tilt engineered to handle camera/lens combinations weighing up to 20 lbs. (9.08 kg) and is capable of auto/random scan operation when used with the MPTA24DT control.
913-0175. PT175-24P .... EACH 1077.00

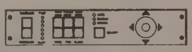
PT270-24P. Measures only 7³/₄" high, 8" wide, and 4¹/₂" deep. Ideally suited for indoor operation, use where space is at a minimum, or for discreet enclosure applications.
913-0270. PT270-24P .... EACH 682.00



Pan/Tilt Control

MPT24DT. Control is designed for use with PELCO 24 VAC, pan tilts. An 8-position joystick controls the up, down, left, right movements of a single pan/tilt. Movements can be controlled individually or simultaneously (i.e., left/down, left/up, etc.) by positioning the joystick diagonally between the two desired functions.
913-0024. MPT24DT .... EACH 260.68

Scanner and Lens Control



MPTAZ24DT. Integrate pan/tilt, scanner and motorized zoom lens functions into one desk top control and are for use with 120 VAC, 230 VAC, and 24 VAC pan/tilts or scanners.
913-0025. MPTAZ24DT .... EACH 548.00

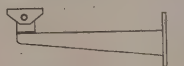
Environmental Enclosures

EH3512/EH3512-2. Designed for use with 2/3" and 1/2" format cameras and fixed focal length lenses or motorized zoom lenses with or without auto-iris operation.
913-3500. EH3512 .... EACH 103.00
913-3505. EH3512-2. 24 VAC heater/blower. 40 watts .... EACH 251.75

Environmental Enclosures (continued)

EH4718 Series. Designed to accept CCD cameras with either fixed focal length lenses or motorized zoom lenses (up to 10×). 19" long.
913-4718. EH4718 .... EACH 171.00

EH4718-2. Designed to accept CCD cameras with either fixed focal length lenses or motorized zoom lenses (up to 10×). 24 VAC heater/blower, 40 W. 2'. 20"-50" long.
913-4719. EH4718-2 .... EACH 337.98



Enclosure Mounts

EM22. Designed and engineered for use with various PELCO enclosures. The EM22 mounts to a wall or other vertical surface and features a cast aluminum wall arm which minimizes undesired horizontal movement.
913-0022. EM22 .... EACH 85.00

Camera Mounts

CM1700. Light duty, universal mount primarily designed for ceiling or pedestal mounting of CCTV cameras, but can also be used as a wall mount.
913-1700. CM1700 .... EACH 45.00

TB1700. Specifically engineered for attaching the mount to the "T" rail found in most false ceiling installations.
913-1705. TB1700 .... EACH 45.00

Sequential Switcher

VS5004/VS5008. The VS5004 is a low cost desktop, sequential switcher designed to manually or automatically switch four (4) cameras to one (1) monitor and respond automatically to alarm inputs. The VS5008 is an 8-position sequential switcher with dual output and alarm function.
913-5004. VS5004 .... EACH 286.90
913-5008. VS5008 .... EACH 384.76

VS5104/VS5108. Same features as the VS5004/VS5008 except they are homing switchers having one (1) monitor output and no alarm capability.
913-9835. VS5104. 4-Position ....EACH 167.20
913-9840. VS5108. 8-Position .... EACH 287.47

Camera Lens' — *NEW* —

1/3" Format
MZT2XGAIABCS-1. VARI-FOCAL 4.0 to 8.0 mm with auto iris, manual focus, manual zoom, ALC and spot filter, F1.4, CS-mount.
913-6000. MZT2XGAIABCS-1 .... EACH 236.00

MZT2XICS-1. VARI-FOCAL 4.0 to 8.0 mm with manual iris, manual focus, manual zoom, F1.4, CS-mount.
913-6005. MZT2XICS-1 .... EACH 153.00

TVT6AC-1. 6×, 6-36 mm motorized lens with spot filter. Auto Iris with motorized manual zoom and focus, F1.2, CS-mount.
913Q6010. TVT6AC-1 .... EACH 860.00

1/2" Format
MFH12IC-1. 12.0 mm C-mount with manual iris, manual focus, F1.2.
913-6015. MFH12IC-1 .... EACH 103.00

MFH 4.8IC-1. 4.8 mm C-mount with manual iris, manual focus, F1.4.
913-6020. MFH 4.8IC-1 .... EACH 146.00

MFH3.5GAIABCS-1. 3.5 mm CS-mount with auto iris, fixed focus with ALC, F1.4.
913Q6025. MFH3.5GAIABCS-1 .... EACH 222.00

MFH6GAIABCS-1. 6 mm CS-mount with auto iris, fixed focus with ALC, F1.4.
913Q6030. MFH6GAIABCS-1 .... EACH 198.00

MFH12GAIABCS-1. 12 mm CS-mount with auto iris, fixed focus with ALC, F1.4.
913Q6035. MFH12GAIABCS-1 .... EACH 184.00

TVH6AC-1. 6×, 8.5 mm-51 mm motorized zoom lens with spot filter and automatic iris, F1.2.
913Q6040. TVH6AC-1 .... EACH 876.00

24 VAC Power Supplies — *NEW* —

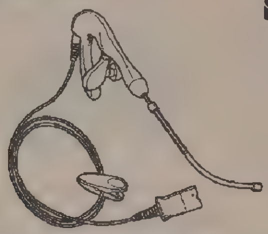
913-2000. TF2000. Power supply for 24 VAC cameras. 20 μA.....EACH 22.00
913-3000. TF3000. Power supply for 24 VAC cameras. 30 μA.....EACH 27.00
913-9000. TF9000. Power supply for 24 VAC cameras. 50 μA.....EACH 63.00
MCS40. Power supply for up to 8-24 VAC 5 watt cameras.
913-2040. MCS40 .... EACH 143.00

TriStar™ Headset

— NEW —

Comfort and stability in one unique headset.

PLANTRONICS. World Leader in Communication Headsets



- ► Three Points of Contact for Unshakable Stability
- ► Custom Fit Through User Selectable Earbuds and Multiple User Adjustments
- ► Lightweight, Streamlined Design for All Day Comfort
- ► Durability and Reliability from Rugged Construction and Strict Quality Standards

888-0200. Model H81	EACH 92.00

Encore™ Headset

— NEW —

The next generation headset that raises the standard.

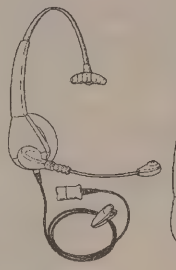
- ► User Selectable Tone Control for Custom Sound Quality
- ► Comfort and Convenience of Yokeless Binaural Cable Design
- ► Multiple User Adjustments for Near Universal Fit
- ► Durability and Reliability From Rugged Construction and Strict Quality Standards

Model H91. Encore Monaural Headset.

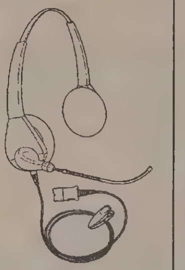
888-0210. Model H91	EACH 88.00

Model H101. Encore Binaural Headset.

888-0220. Model H101	EACH 109.00



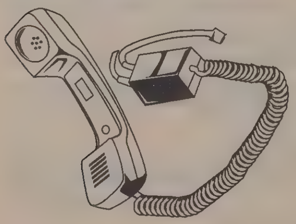
H91



H101

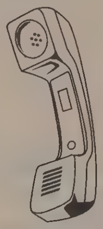
Noise Censor Series

PLANTRONICS WALKER



W6-UNI-K-NC

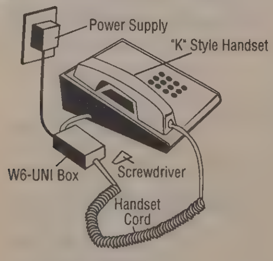
Noise Censor "NC-1" G-Style Replacement Mic



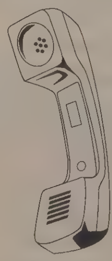
W6B-NC

Noise Censor is a family of noise-cancelling products designed for telephones that are located in noisy or hard-to-hear areas. The W6-UNI and W6B are compatible with virtually all telephones. The W6-UNI and W6B replace all K-style handsets with modular connection. The NC-1 is a noise-cancelling microphone replacement for carbon mics in "G" style handsets.

887-0001. Model W6-UNI-K-NC-44. Ash	EACH 76.50
887-0002. Model W6-UNI-K-NC-00. Black	EACH 76.50
887-0004. Model NC-1-44. Ash	EACH 31.00
887-0005. Model NC-1-00. Black	EACH 31.00
887-0040. Model W6B-KM-NC-44. Ash	EACH 76.50
887-0039. Model W6B-KM-NC-00. Black	EACH 76.50



W6-UNI



W6B

W6-UNI and W6B Universal Amplified Handsets

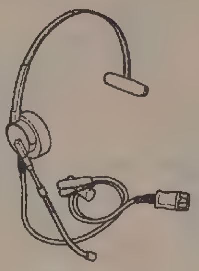
- ► Compatible with All K-Style Handsets
- ► Fingertip Volume Control up to 3 Times Normal
- ► Adjustable Transmit and Receive
- ► User Installable with Modular Connection

887-0018. Model W6-UNI-K-44. Ash	EACH 59.95
887-0019. Model W6-UNI-K-00. Black	EACH 59.95
887-0038. Model W6B-KM-44. Ash	EACH 59.50
887-0037. Model W6B-KM-00. Black	EACH 59.50

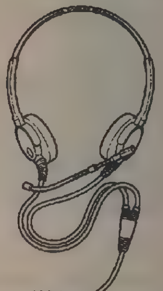
Supra® Headsets

— NEW —

PLANTRONICS. World Leader in Communication Headsets



H51
H51N



H61
H61N

- ► Lightweight — Less Than 1 Oz.
- ► Super-Soft Ear Cushions
- ► Monaural (One Ear) or Binaural (Two Ear) Models
- ► Quick Disconnect™
- ► Continuous Volume Control
- ► 10 Ft. Coil Cord for Free Movement
- ► Exclusive Call Clarity System
- ► Noise Cancelling: Clearer Calls — Reduces Transmission of Workplace Noise Up to 75%
- ► Mute and Continuous Volume Control

888-6118. Model H51. Monaural	EACH 80.00
888-6120. Model H51N. Noise-Cancelling Monaural	EACH 100.00
888-6119. H61. Binaural	EACH 100.00
888-6121. H61N. Noise-Cancelling Binaural	EACH 120.00

500 Type Handsets

PLANTRONICS WALKER

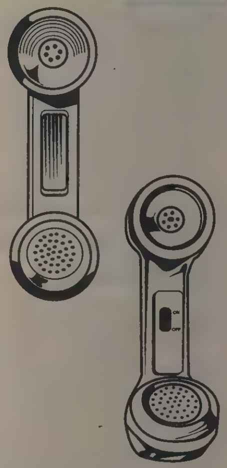
- ► Built-In 4/Cond. Mod. Jack
- ► Carbon Transmitter
- ► Use Exist. Mod. Cord
- ► For Replacing Conventional Handsets

887-0006. Model W3-500CM. Brown	EACH 19.00
887-0007. Model W3-500CM. Ash	EACH 19.00
887-0008. Model W3-500CM. Beige	EACH 19.00
887-0009. Model W3-500CM. Black	EACH 19.00
887-0010. Model W3-500CM. Ivory	EACH 19.00
887-0011. Model W3-500CM. White	EACH 19.00

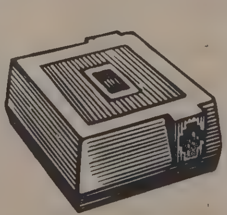
Amplified Receiver Handsets

- ► Rotary Volume Control
- ► Built-In 4/Cond. Mod. Jack
- ► Use Exist. Mod. Cord

887-0012. Model W6-500M. Brown	EACH 47.60
887-0013. Model W6-500M. Ash	EACH 47.60
887-0014. Model W6-500M. White	EACH 47.60
887-0015. Model W6-500M. Beige	EACH 47.60
887-0016. Model W6-500M. Ivory	EACH 47.60
887-0017. Model W6-500M. Black	EACH 47.60



W10 Receiver Amplifier



For fine-tuned hearing this compact phone-side companion contains a unique amplifier to boost receiver volume three times. Installs to any desk-type phone with a modular handset cord. Plugs into any phone including single or multiline electronic models. Comes with power supply module, 4" modular connection cord and fingertip volume control. **Color:** Ash.

887-0022. Model W10	EACH 34.00

Model W10BP. Same as W10, but battery-powered.

887-0023. Model W10BP	EACH 38.00

Line Test Handset

Features key pad, tone-pulse switch, talk-monitor switch, polarity indicator, ringer, built-in 4/cond. mod. jack, cord with alligator clips.

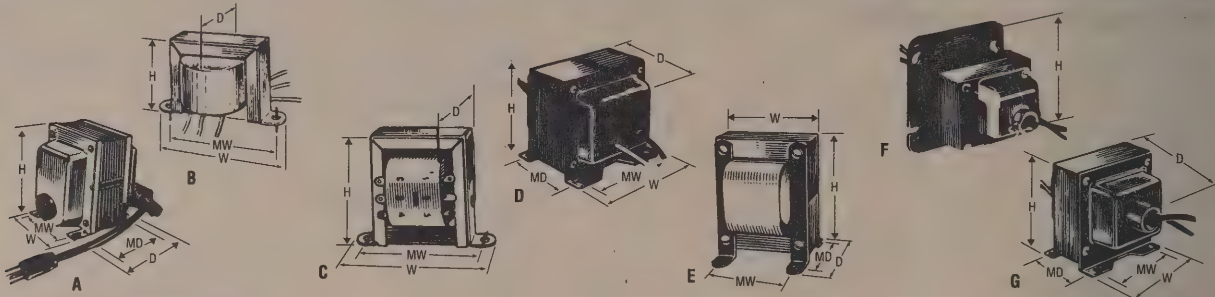
887-0021. Model WTS-201	EACH 136.00

Section Index

Adapters, Transformers and Variables

Product — **Page**

- **Audio**
  - **Allied** 936
  - **MagneTek/Triad** 946
  - **Thordarson** 963
- **Auto Transformers**
  - See Step-Up or Step-Down
- **Buck-Boost**
  - **Sola/Hevi-Duty** 951
- **Chassis Mount**
  - **MagneTek/Triad** 941
- **Chokes, Filter**
  - **MagneTek/Triad** 947
  - **Stancor** 955
- **Control**
  - **Allied** 936
  - **MagneTek/Triad** 945
  - **Stancor** 955
- **Controls, Fully Enclosed**
  - **Staco** 952
- **Electrical, General Purpose**
  - **Sola/Hevi-Duty** 951
- **Filament**
  - **Allied** 937
  - **Stancor** 955
  - **Thordarson** 963
- **Filter Chokes**
  - **Stancor** 955
- **Inductors**
  - Common Mode and Current Sense
    - **MagneTek/Triad** 947
  - Rod Core
    - **MagneTek/Triad** 948
  - Smoothing Filter Chokes
    - **MagneTek/Triad** 947
  - Toroidal Filter
    - **MagneTek/Triad** 948
- **Industrial Control**
  - **Sola/Hevi-Duty** 950
- **International Adapter Plugs**
  - **Stancor** 954
- **Isolation**
  - Step-Down
    - **Stancor** 956
    - **Thordarson** 961
  - Step-Up
    - **Thordarson** 960
  - Straight
    - **Stancor** 956
- **Machine Tool Control**
  - **Hammond** 939, 938
- **P.C. Board**
  - Flat Compact
    - **MagneTek/Triad** 942
    - **Thordarson** 962
  - Horizontal
    - **Hammond** 940
    - **MagneTek/Triad** 943
  - Low Profile
    - **Stancor** 957
  - Low Voltage
    - **Thordarson** 962
  - Split Bobbin
    - **MagneTek/Triad** 942, 941
    - **Stancor** 958
  - Vertical
    - **Hammond** 939
- **Plugs, International Adapter**
  - **Stancor** 954
- **Power**
  - **Allied** 937
  - **MagneTek/Triad** 945, 946
  - **Thordarson** 962, 963
- **Power Controls**
  - **Ohmite** 949
- **Rectifier**
  - **Hammond** 939
  - **Stancor** 955, 956
- **Step-Down**
  - Auto-Transformers
    - **Allied** 936
    - **Stancor** 954, 956
    - **Thordarson** 961
  - Isolation
    - **Allied** 936
    - **Stancor** 954
    - **Thordarson** 960
- **Step-Up**
  - Auto-Transformers
    - **Stancor** 954
- **Telephone Coupling**
  - **MagneTek/Triad** 944
  - **Stancor** 957
- **Variable**
  - Enclosures
    - **Superior Electric** 959
  - Motorized
    - **Staco** 952
  - Single Phase
    - 120 Volts
      - **Staco** 952
      - **Superior Electric** 959
    - 240 Volts
      - **Staco** 952
      - **Superior Electric** 959
  - Three Phase
    - 240 Volts
      - **Staco** 952
    - 480 Volts
      - **Staco** 952
- **Wall Plug-Ins**
  - Domestic
    - AC-AC
      - **LZR Electronics** 477
      - **Stancor** 953
    - AC-DC
      - Regulated
        - **Stancor** 953
      - Unregulated
        - **MagneTek/Triad** 944
        - **Stancor** 953
      - Wall-Plug
        - **Stancor** 953
  - European
    - AC-AC
      - **Stancor** 953
    - AC-DC
      - **Stancor** 953



Allied Step-Down Autotransformers

With 3-wire 6 ft. cord and plug, except † types. Female 3-wire outlet on case, except † types which have leads. **Frequency:** 50/60 Hz. Black enamel finish.

Stock No.	Mfr.'s Type	Fig.	Input Volts	Output Volts	VA Output	Size- Inches H x W x D	Mtg. Ctrs. MW x MD	Wt. Lbs.	EACH 1-9	EACH 10-24
705-0092	6K68HF	B †	230	115	20	1 15/16 x 3 1/4 x 1 7/8	2 13/16	1.3	**9.83**	**9.07**
705-0093	6K69HF	B †	230	115	50	2 5/16 x 3 11/16 x 2 1/8	3 1/8	1.8	**10.98**	**10.14**
705-0188	6K168VCP	A	230	115	100	3 1/2 x 2 7/8 x 3 1/2	2 1/4 x 2 1/8	4.0	**39.08**	**36.08**
705-0189	6K169VCP	A	230	115	150	3 7/8 x 3 1/8 x 3 5/8	2 1/2 x 2 5/16	4.8	**51.88**	**47.89**
705-0190	6K170VCP	A	230	115	250	4 1/2 x 3 3/4 x 4 1/4	3 x 2 15/16	7.8	**51.10**	**47.17**
705-0196	6K171VCP	A	230	115	500	4 1/2 x 3 3/4 x 4 3/4	3 x 3 7/16	10.0	**59.24**	**54.69**
705-0191	6K172VCP	A	230	115	750	5 1/2 x 4 5/8 x 5	3 1/2 x 3 3/8	13.8	**72.56**	**66.97**
705-0192	6K173VCP	A	230	115	1000	5 1/2 x 4 5/8 x 5 1/4	3 1/2 x 3 5/8	14.8	**85.87**	**79.26**
705-0193	6K174VCP	A	230	115	1500	6 x 4 1/2 x 5 5/8	3 7/16 x 3 9/16	19.0	**116.08**	**107.15**
705-0194	6K175VCP	A	230	115	2000	6 x 4 1/2 x 6 3/8	3 7/16 x 4 3/8	25.0	**138.62**	**127.96**

Allied Control Transformers

Automation types for high-speed automatic equipment. Adapted to relays, pilot lamps, solenoids, small motors, etc. Also use in high current, low voltage power supplies. Secondaries have two identical windings for series or parallel operation. Primaries operate from either 115 or 230V, 50/60 Hz.

Stock No.	Mfr.'s Type	Fig.	Input Volts	Parallel	Series	Size-Inches H x W x D	Mtg. Ctrs. MW x MD	Wt. Lbs.	EACH 1-9	EACH 10-24
705-0101	6K77VFL	C	115/230	6V@2.0A	12V@1.00A	2 3/8 x 2 7/8 x 1 3/4	2 3/8	1.0	**12.77**	**11.78**
705-0102	6K78VFL	C	115/230	6V@4.0A	12V@1.00A	2 3/4 x 3 1/8 x 2	2 13/16	1.5	**13.53**	**12.49**
705-0103	6K79VFL	C	115/230	12V@4.0A	24V@2.00A	3 1/8 x 3 5/8 x 2 3/8	3 1/8	2.5	**13.96**	**12.88**
705-0104	6K80VBR	E	115/230	12V@8.0A	24V@4.00A	3 7/16 x 2 7/8 x 3 1/8	2 1/4 x 2 5/8	4.5	**24.40**	**22.52**
705-0144	6K119VBR	E	115/230	12V@16.0A	24V@8.00A	4 3/16 x 3 1/2 x 3 7/8	2 3/4 x 3	8.0	**46.65**	**43.06**
705-0200	6K183VFL	C	115/230	24V@0.5A	48V@0.25A	2 5/16 x 2 7/8 x 1 3/4	2 3/8	1.0	**12.87**	**11.88**
705-0210	6K184VFL	C	115/230	24V@1.0A	48V@0.50A	2 3/4 x 3 1/8 x 2	2 13/16	1.5	**12.60**	**11.63**
705-0220	6K185VFL	C	115/230	24V@2.0A	48V@1.00A	3 1/8 x 3 5/8 x 2 3/8	3 1/8	2.5	**13.79**	**12.73**
705-0230	6K186VBR	E	115/230	24V@4.0A	48V@2.00A	3 7/16 x 2 7/8 x 3	2 1/4 x 2 1/4	4.5	**24.70**	**22.80**
705-0240	6K187VBR	E	115/230	24V@8.0A	48V@4.00A	4 3/16 x 3 1/2 x 3 7/8	2 3/4 x 3	8.0	**39.83**	**36.77**

Allied Control Transformers

For 120V or low voltage 24V line. 50/60 Hz. 240-480V primaries must be series connected for 480V; parallel connected for 240V.

Stock No.	Mfr.'s Type	Fig.	Input Volts	Output Volts	VA Output	Size-Inches H x W x D	Mtg. Ctrs. MW x MD	EACH 1-9	EACH 10-24
705-0172	6K147	F	120	24	50	4 x 4 3/16 x 4 3/16	*	**29.41**	**27.15**
705-0173	6K148	G	120	24	100	3 1/2 x 3 3/4 x 4 9/16	3 1/4 x 1 13/16	**33.34**	**30.77**
705-0174	6K149	G	120	24	150	3 1/2 x 3 3/4 x 5 5/16	3 1/4 x 2 9/16	**39.68**	**36.63**
705-0175	6K150	D	120	24	250	3 3/4 x 4 1/2 x 4 7/8	3 3/4 x 3 1/16	**50.56**	**46.67**
705-0180	6K155	F	480/240	24	50	4 x 4 3/16 x 4 3/16	*	**32.25**	**29.77**

* Mounts to standard conduit box.

Allied Interstage Audio Transformer

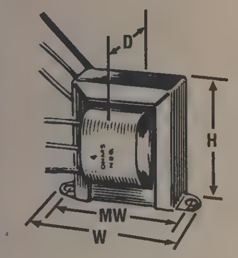
Maximum DC permissible in primary is 30 mA. Single plate to P-P grid. **Turns ratio:** 1:1.

Stock No.	Mfr.'s Type	Fig.	Impedance-Ohms		Maximum DC Amps	Size-Inches H x W x D	Mtg. Ctrs. MW x MD	Wt. Lbs.	EACH	
			Primary	Secondary					1-9	10-24
705-0862	6W68HF	B	10K	10K CT	30 mA	1 5/8 x 2 7/8 x 1 5/8	2 3/8	0.8	**14.89**	**13.75**

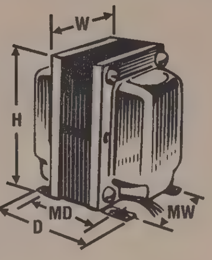
Allied Isolation Transformers

With new 3-wire 6 ft. cord, plug and receptacle, except * types which have leads. **Frequency:** 50/60 Hz.

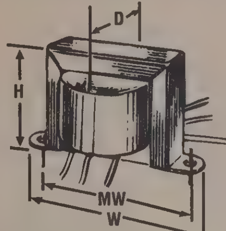
Stock No.	Mfr.'s Type	Fig.	Input Volts	Output Volts	VA Outputs	Size H x W x D	Mtg. Ctrs MW x MD	Wt. Lbs.	EACH 1-9	EACH 10-24
705-0138	6K112HF*	B	115	115	35	2 5/16 x 3 11/16 x 2 1/4"	3 1/8"	1.8	**11.85**	**10.94**
705-0165	6K140HF*	B	115/230	115	50	2 5/16 x 3 11/16 x 2 3/8"	3 1/8"	2.0	**15.44**	**14.25**
705-0197	6K180VCP	A	115	115	100	4 3/8 x 3 5/8 x 4"	2 3/4 x 2 3/4"	6.5	**53.70**	**49.57**
705-0198	6K181VCP	A	115	115	150	3 7/8 x 3 1/4 x 4 7/16"	2 1/2 2 1/2 x 3 1/16"	7.3	**57.38**	**52.96**
705-0199	6K182VCP	A	115	115	250	4 5/8 x 3 7/8 x 4 5/8"	3 x 3 7/16"	10.0	**70.87**	**65.42**



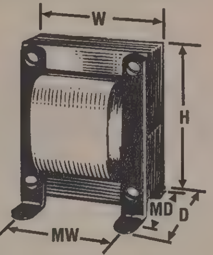
A



B



C



D

Allied transformers are specially built to Allied Electronics' high standard for quality, stability and long-term performance. Laminated cores of silicon iron electrical grade steel. Insulation is non-corrosive Class A. Temperature rating 105°C continuous operation. Superior permeability at high inductances, with low coil loss. Coils of high quality film insulated copper magnet wire. PVC leads are fast stripping and provide protection from oil, ozone and abrasion. Cold rolled steel covers provide protection to coils. Finished in semi-gloss enamel for good appearance. Compare prices and specifications and you will find that Allied transformers are your best buy.

Allied's Own Power Transformers

For new equipment or replacement use. All types listed are shielded except those indicated by ‡. Have 6" flexible color-coded leads for easy installation. Plate windings are center-tapped except *half-wave type. 6.3 volt windings are center-tapped except † not center-tapped. All have primaries for operation from 110-120 volt, 50/60 Hz AC, except for **60 Hz AC only.

Stock No.	Mfr.'s Type	Fig.	VCT	DC mA	5 V Amps	6.3 V Amps	Size H × W × D	Mtg. Size MW × MD	EACH 1-9	EACH 10-24
705-0034	6K27VF‡**	A	125*	15	—	0.6†	$2 \times 2\frac{3}{8} \times 1\frac{3}{4}$"	2"	13.46	12.43
705-0001	6K1VF‡**	A	250	25	—	1.0†	$2\frac{3}{8} \times 2\frac{7}{8} \times 1\frac{7}{8}$"	$2\frac{3}{8}$"	13.52	12.48
705-0067	6K49VG	B	460	50	—	2.5†	$3\frac{3}{16} \times 2\frac{5}{8} \times 2\frac{11}{16}$"	$2 \times 1\frac{5}{8}$"	22.41	20.68
705-0113	6K88VG	B	500	40	—	2.0	$2\frac{3}{4} \times 2\frac{3}{8} \times 2\frac{3}{8}$"	$1\frac{3}{4} \times 1\frac{1}{2}$"	19.99	18.45
705-0081	6K56VG	B	540	120	3	3.5	$3\frac{15}{16} \times 3\frac{1}{4} \times 3\frac{1}{2}$"	$2\frac{1}{2} \times 2\frac{3}{16}$"	38.45	35.50
705-0005	6K3VG	B	650	40	2	2.0	$3\frac{3}{16} \times 2\frac{5}{8} \times 2\frac{11}{16}$"	$2 \times 1\frac{11}{16}$"	22.49	20.76
705-0013	6K7VG	B	750	150	3	5.0	$3\frac{15}{16} \times 3\frac{1}{4} \times 4\frac{3}{8}$"	$2\frac{1}{2} \times 3\frac{1}{16}$"	43.37	40.03

Allied's Low Power Transformers

1500 V RMS. **Frequency:** 50/60 Hz (**60 Hz only) lead wire termination.

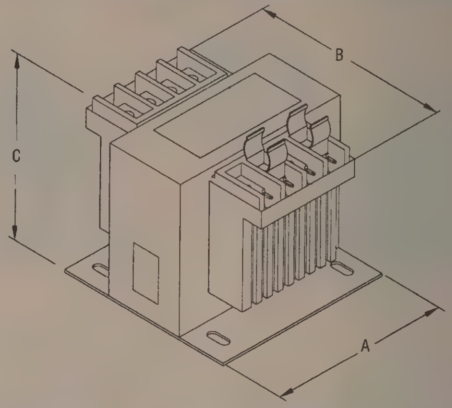
Stock No.	Mfr.'s Type	Fig.	Input Volts	Output Volts	Amps	Size H × W × D	Mtg. Ctrs. MW × MD	Wt. (Lbs.)	EACH 1-9	EACH 10-24
705-0625	6K215HF	C	117 V	12.0	0.150 A	$1\frac{1}{4} \times 2\frac{1}{16} \times 1\frac{1}{4}$"	$1\frac{3}{4}$"	0.3	6.82	6.29
705-0630	6K235HF	C	117 V	12.0	0.350 A	$1\frac{3}{8} \times 2\frac{3}{8} \times 1\frac{1}{2}$"	2"	0.4	7.17	6.62
705-0635	6K270HF**	C	117 V	12.0	0.700 A	$1\frac{5}{8} \times 2\frac{13}{16} \times 1\frac{5}{8}$"	$2\frac{3}{8}$"	0.6	7.31	6.75
705-0640	6K212HF	C	117 V	12.0	1.200 A	$2 \times 3\frac{1}{4} \times 1\frac{3}{4}$"	$2\frac{13}{16}$"	0.9	9.06	8.36
705-0645	6K240HF	C	117 V	12.0	4.000 A	$2\frac{5}{8} \times 4 \times 2\frac{1}{4}$"	$3\frac{9}{16}$"	2.3	14.47	13.35
705-0655	6K220HF	C	115 V	18.0 CT	2.000 A	$2\frac{9}{32} \times 3\frac{3}{4} \times 2\frac{1}{4}$"	$3\frac{1}{8}$"	2.1	12.92	11.93
705-0670	6K202HF**	C	117 V	24.0 CT	0.200 A	$1\frac{3}{8} \times 2\frac{3}{8} \times 1\frac{1}{2}$"	2"	0.4	7.65	7.06
705-1200	6K258HF	C	117 V	24.0 CT	0.400 A	$1\frac{5}{8} \times 2\frac{13}{16} \times 2\frac{3}{8}$"	$1\frac{5}{8}$"	0.6	8.64	7.97
705-0675	6K207HF	C	117 V	24.0 CT	0.700 A	$2 \times 3\frac{1}{4} \times 1\frac{3}{4}$"	$2\frac{13}{16}$"	0.9	9.08	8.38
705-0680	6K222HF	C	115 V	24.0 CT	2.000 A	$2\frac{9}{16} \times 4 \times 2\frac{3}{8}$"	$3\frac{9}{16}$"	2.3	13.45	12.41
705-0685	6K204VBR	D	117 V	24.0 CT	4.000 A	$3\frac{13}{16} \times 3\frac{1}{8} \times 2\frac{13}{16}$"	$2\frac{1}{2} \times 2\frac{1}{8}$"	4.0	21.84	20.16
705-0690	6K206VBR	D	117 V	24.0 CT	6.000 A	$4\frac{3}{16} \times 3\frac{7}{16} \times 3$"	$2\frac{3}{4} \times 2\frac{1}{4}$"	5.7	29.72	27.43
705-2010	6K242VBR**	D	117 V	24.0 CT	12.000 A	$4\frac{9}{16} \times 3\frac{3}{4} \times 4\frac{5}{8}$"	$3 \times 3\frac{1}{4}$"	11.5	48.08	44.38
705-2025	6K261HF	C	117 V	28.0 CT	1.000 A	$2 \times 3\frac{1}{4} \times 2\frac{1}{8}$"	$2\frac{13}{16}$"	1.4	11.68	10.78
705-2030	6K262VBR	D	117 V	28.0 CT	2.000 A	$3\frac{1}{8} \times 2\frac{1}{2} \times 2\frac{1}{2}$"	$2 \times 2\frac{3}{16}$"	2.9	16.37	15.11
705-2035	6K264VBR	D	117 V	28.0 CT	4.000 A	$3\frac{13}{16} \times 3\frac{1}{8} \times 3\frac{1}{4}$"	$2\frac{1}{2} \times 2\frac{1}{2}$"	5.3	23.34	21.55
705-2060	6K271HF	C	117 V	36.0 CT	1.000 A	$2\frac{3}{8} \times 3\frac{3}{4} \times 2\frac{3}{8}$"	$3\frac{1}{8}$"	2.0	13.53	12.49
705-2065	6K274VBR	D	117 V	36.0 CT	4.000 A	$4\frac{3}{16} \times 3\frac{7}{16} \times 3\frac{1}{8}$"	$2\frac{3}{4} \times 2\frac{3}{8}$"	6.0	25.65	23.68

Allied Filament Transformers

Quality filament transformers provide reliable operation for various applications. Primaries for 117 volts, except * which are 115 V. **Frequency:** 50/60 Hz. Types with † have an electrostate shield.

Stock No.	Mfr.'s Type	Fig.	Volts	Amps	Insul. rms V	Size H × W × D	Mtg. Ctrs. MW × MD	Wt. (Lbs.)	EACH 1-9	EACH 10-24
705-0110	6K86HF*	C	2.5 CT	3.0	1500	$1\frac{5}{8} \times 2\frac{13}{16} \times 1\frac{7}{8}$"	$2\frac{3}{8}$"	0.60	10.76	9.93
705-0018	6K11HF*	C	5.0 CT	6.0	2500	$2\frac{3}{8} \times 3\frac{11}{16} \times 2\frac{3}{8}$"	$3\frac{1}{8}$"	1.70	12.29	11.35
705-0145	6K120VBR	D	5.0 CT	15.0	2500	$3\frac{1}{8} \times 2\frac{1}{2} \times 3$"	$2 \times 2\frac{1}{2}$"	3.50	27.42	25.31
705-0086	6K62VBR	D	5.0 CT	21.0	2500	$3\frac{3}{4} \times 3\frac{1}{8} \times 3\frac{1}{4}$"	$2\frac{1}{2} \times 2\frac{1}{4}$"	5.00	28.71	26.50
705-0042	6K32HF	C	6.3	0.6	1500	$1\frac{3}{8} \times 2\frac{3}{8} \times 1\frac{3}{8}$"	2"	0.04	9.66	8.91
705-0016	6K9HF	C	6.3 CT	1.0	1500	$1\frac{5}{8} \times 2\frac{13}{16} \times 1\frac{3}{4}$"	$2\frac{3}{8}$"	0.60	7.14	6.59
705-0045	6K35HF	C	6.3 CT	1.2	2500	$1\frac{5}{8} \times 2\frac{13}{16} \times 1\frac{7}{8}$"	$2\frac{3}{8}$"	0.70	7.53	6.95
705-0017	6K10HF	C	6.3 CT	3.0	2500	$2 \times 3\frac{1}{4} \times 2\frac{3}{8}$"	$2\frac{13}{16}$"	1.25	10.29	9.49
705-0044	6K34VBR*	D	6.3 CT	10.0	2500	$3\frac{1}{2} \times 2\frac{13}{16} \times 2\frac{7}{8}$"	$2\frac{1}{4} \times 2\frac{1}{8}$"	3.50	31.03	28.64
705-0159	6K134VBR*	D	12-11-10 CT	11.0	3000	$4\frac{3}{16} \times 3\frac{1}{2} \times 3\frac{1}{8}$"	$2\frac{3}{4} \times 2\frac{1}{2}$"	6.50	30.48	28.14
705-0290	6K192HF*	C	12.6	1.0	1500	$2 \times 3\frac{1}{4} \times 1\frac{3}{4}$"	$2\frac{13}{16}$"	1.00	11.34	10.47
705-0121	6K94HF	C	12.6 CT	1.5	1500	$2 \times 3\frac{1}{4} \times 2$"	$2\frac{13}{16}$"	1.00	9.72	8.98
705-0046	6K36HF	C	12.6 CT	2.0	1500	$2 \times 3\frac{1}{4} \times 2\frac{1}{8}$"	$2\frac{13}{16}$"	1.10	9.81	9.05
705-0136	6K110HF	C	12.6 CT	3.0	1500	$2\frac{1}{4} \times 3\frac{11}{16} \times 2\frac{1}{4}$"	$3\frac{1}{8}$"	1.75	12.90	11.91
705-4030	6K324HF	C	24.0	1.0	2500	$2 \times 3\frac{1}{4} \times 2\frac{1}{8}$"	$2\frac{13}{16}$"	1.50	8.93	8.24
705-0139	6K113HF*	C	24.0 CT	1.0	1500	$2 \times 3\frac{1}{4} \times 2\frac{1}{8}$"	$2\frac{13}{16}$"	1.50	9.30	8.58
705-0047	6K37HF	C	25.2	1.0	1500	$2 \times 3\frac{1}{4} \times 2\frac{1}{8}$"	$2\frac{13}{16}$"	1.50	10.23	9.45
705-4035	6K352HF	C	25.2 CT	1.0	1500	$2 \times 3\frac{1}{4} \times 2\frac{1}{8}$"	$2\frac{13}{16}$"	1.50	9.28	8.57
705-0123	6K96HF*	C	25.2 CT	2.0	1500	$2\frac{5}{8} \times 4 \times 2\frac{3}{8}$"	$3\frac{9}{16}$"	2.20	12.33	11.38
705-4040	6K325HF	D	25.2 CT	3.0	1500	$2\frac{9}{16} \times 4 \times 2\frac{3}{8}$"	$3\frac{9}{16}$"	2.20	15.15	13.98
705-0065	6K48HF†	C	26.5 CT	0.6	3000	$2 \times 3\frac{1}{4} \times 2\frac{1}{8}$"	$2\frac{13}{16}$	1.60	10.22	9.43

PT Series Machine Tool Control Transformers



The Hammond "PT Series" of machine tool control transformers are specifically designed for high inrush applications requiring reliable output voltage stability. They meet industrial applications where electromagnetic devices such as relays, solenoids, etc., are used. The PT series features an all new "Molded Construction". The transformer core and coils are first vacuum impregnated with "VT (vinyl-tolene) Polyester Resin", and are then molded in a flame retardant polyester filler which seals the core and coils against moisture, dirt and other airborne contaminants while still providing superior strength and durability. All single secondary units are supplied with factory installed secondary fuse kits. These units operate from 50/60 Hz AC power, and are listed by both UL and CSA. The molded terminal blocks allow for easy primary or secondary fusing to meet UL 508 requirements. PT Series control transformers will be CE Marked and will have finger guards available in early 1997.

► Primary: 240/480, 230/460, 220/440 **► 50/60 Hz**
► Secondary: 120, 115, 110

Stock No.	Mfr.'s Type	VA Rating	Dimensions			Shipping Weight (Lbs.)	EACH
			A	B	C		
836-7500	PT25MQMJ	25	3.00	3.25	2.75	2.35	**26.22**
836-7502	PT50MQMJ	50	3.00	3.75	2.75	3.60	**28.90**
836-7504	PT75MQMJ	75	3.00	4.00	2.75	4.35	**32.72**
836-7506	PT100MQMJ	100	3.00	4.50	2.75	5.15	**37.50**
836-7508	PT150MQMJ	150	4.25	4.00	3.25	6.15	**47.97**
836-7510	PT200MQMJ	200	4.25	4.00	3.25	7.75	**57.11**
836-7512	PT250MQMJ	250	4.50	4.50	3.85	9.50	**64.96**
836-7514	PT300MQMJ	300	4.50	4.75	3.85	10.75	**70.28**
836-7516	PT350MQMJ	350	5.00	5.00	3.85	11.75	**74.49**
836-7518	PT500MQMJ	500	5.00	5.50	3.85	14.75	**94.00**
836-7520	PT750MQMJ	750	5.63	5.88	4.50	21.95	**131.59**
836-7522	PT1000MQMJ	1000	5.63	6.38	4.50	28.70	**138.21**

► Primary: 230, 460, 575 **► 50/60 Hz**
► Secondary: 95, 115

836-7524	PT25MBMH	25	3.00	3.50	2.75	2.35	**46.04**
836-7526	PT50MBMH	50	3.00	3.75	2.75	3.60	**47.46**
836-7528	PT75MBMH	75	3.00	4.00	2.75	4.35	**48.68**
836-7530	PT100MBMH	100	3.00	4.50	2.75	5.15	**49.80**
836-7532	PT150MBMH	150	4.25	4.00	3.25	6.15	**70.12**
836-7534	PT200MBMH	200	4.50	4.00	3.85	7.75	**75.51**
836-7536	PT250MBMH	250	4.50	4.75	3.85	9.50	**88.72**
836-7538	PT300MBMH	300	4.50	4.75	3.85	10.75	**97.66**
836-7540	PT350MBMH	350	5.00	5.50	3.85	11.75	**102.24**
836-7542	PT500MBMH	500	5.00	6.00	3.85	14.75	**110.28**
836-7544	PT750MBMH	750	5.63	6.38	4.50	21.75	**150.41**
836-7546	PT1000MBMH	1000	6.00	6.38	5.07	28.95	**185.37**

► Primary: 120/240 **► 50/60 Hz**
► Secondary: 24

836-7548	PT25PG	25	3.00	3.25	2.75	2.35	**28.66**
836-7550	PT50PG	50	3.00	3.75	2.75	3.60	**29.98**
836-7552	PT75PG	75	3.00	4.00	2.75	4.35	**33.54**
836-7554	PT100PG	100	3.00	4.50	2.75	5.15	**38.52**
836-7556	PT150PG	150	4.25	4.00	3.25	6.15	**53.66**
836-7558	PT200PG	200	4.25	4.00	3.25	7.75	**64.13**
836-7560	PT250PG	250	4.50	4.50	3.85	9.50	**68.09**
836-7562	PT300PG	300	4.50	4.75	3.85	10.75	**75.71**
836-7564	PT350PG	350	5.00	5.00	3.85	11.75	**78.35**
836-7566	PT500PG	500	5.00	5.50	3.85	14.75	**99.35**
836-7568	PT750PG	750	5.63	5.88	4.50	21.95	**144.21**

► Primary: 240/480 **► 50/60 Hz**
► Secondary: 24

Stock No.	Mfr.'s Type	VA Rating	Dimensions			Shipping Weight (Lbs.)	EACH
			A	B	C		
836-7570	PT25QG	25	3.00	3.25	2.75	2.35	**28.66**
836-7572	PT50QG	50	3.00	3.75	2.75	3.60	**29.98**
836-7574	PT75QG	75	3.00	4.00	2.75	4.35	**33.54**
836-7576	PT100QG	100	3.00	4.50	2.75	5.15	**38.52**
836-7578	PT150QG	150	4.25	4.00	3.25	6.15	**53.66**
836-7580	PT200QG	200	4.25	4.00	3.25	7.75	**64.13**
836-7582	PT250QG	250	4.50	4.50	3.85	9.50	**68.09**
836-7584	PT300QG	300	4.50	4.75	3.85	10.75	**75.51**
836-7586	PT350QG	350	5.00	5.00	3.85	11.75	**78.35**
836-7588	PT500QG	500	5.00	5.50	3.85	14.75	**99.35**
836-7590	PT750QG	750	5.63	5.88	4.50	21.95	**144.21**
—	—	—	—	—	—	—	—

► Primary: 208, 230, 460 **► 50/60 Hz**
► Secondary: 115

836-7592	PT25MLI	25	3.00	3.25	2.75	2.35	**33.84**
836-7594	PT50MLI	50	3.00	3.75	2.75	3.60	**35.26**
836-7596	PT75MLI	75	3.00	4.00	2.75	4.35	**39.43**
836-7600	PT100MLI	100	3.00	4.50	2.75	5.15	**43.80**
836-7602	PT150MLI	150	4.25	4.00	3.25	6.15	**54.67**
836-7604	PT200MLI	200	4.50	4.00	3.85	7.75	**65.96**
836-7606	PT250MLI	250	4.50	4.75	3.85	9.50	**76.63**
836-7608	PT300MLI	300	4.50	4.75	3.85	10.75	**84.11**
836-7610	PT350MLI	350	5.00	5.00	3.85	11.75	**87.15**
836-7612	PT500MLI	500	5.00	6.00	3.85	14.75	**105.89**
836-7614	PT750MLI	750	5.63	6.38	4.50	21.75	**136.89**
836-7616	PT1000MLI	1000	6.00	6.38	5.07	28.95	**172.76**

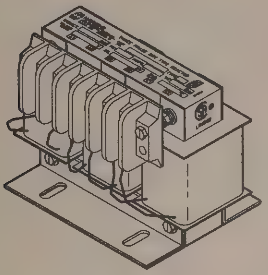
► Primary: 600, 480, 416, 240 **► 50/60 Hz**
► Secondary: 130, 120, 99

836-7618	PT50MRMA	50	3.00	3.75	2.75	3.98	**95.12**
836-7620	PT75MRMA	75	3.00	4.25	2.75	4.82	**96.04**
836-7622	PT100MRMA	100	3.00	4.25	2.75	5.36	**98.58**
836-7624	PT150MRMA	150	4.25	3.75	3.25	6.38	**99.59**
836-7626	PT200MRMA	200	4.50	4.50	3.85	8.20	**118.09**
836-7628	PT250MRMA	250	4.50	4.75	3.85	9.90	**124.09**
836-7630	PT350MRMA	350	5.00	5.50	3.85	12.33	**139.23**
836-7632	PT500MRMA	500	5.00	6.50	3.85	16.23	**177.03**
—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—

PT Series — Fusing Options. Field installed fuse kits.

Stock No.	Mfr.'s Type	Fusing Options					PER KIT
		Primary	Secondary	Max. Applicable VA			
		Block Mounted Fuse	Clip Mounted Fuse	Secondary Voltage			
				12 V	24 V	120/240 V	
836-7634	FK-1-10	—	$\frac{1}{4} \times 1\frac{1}{4}$" glass	250	500	1000	**50.00**
836-7636	FK-2-10	—	$\frac{13}{32} \times 1\frac{1}{2}$" midget	250	500	1000	**50.00**
836-7638	FK-3	Dual Rejection	$\frac{13}{32} \times 1\frac{1}{2}$" midget	250	500	1000	**17.75**
836-7640	FK-6	Dual Rejection	$\frac{1}{4} \times 1\frac{1}{4}$" glass	250	500	1000	**17.75**
836-7642	FK-9	Single Rejection	$\frac{1}{4} \times 1\frac{1}{4}$" glass	250	500	1000	**17.00**
836-7644	FK-10	Single Rejection	$\frac{13}{32} \times 1\frac{1}{2}$" midget	250	500	1000	**17.00**
836-7646	FK-11	Dual Rejection	—	1000	1000	1000	**12.75**
836-7648	FK-12	Dual Midget	—	1000	1000	1000	**12.75**

3 Phase Line Reactors — *NEW* —



Hammond Line Reactors are designed to reduce or eliminate most line problems. This includes nuisance tripping, harmonic distortion, line notching etc. In addition, performance, life expectancy and efficiency of both the motor and drive components will be extended and enhanced. These line reactors feature; core and coils of the highest quality and performance, superior insulation system, full "VPI" Impregnation using VT Polyester Resin and custom brazed connections. Both open and enclosed style line reactors are available and are recognized by UL and certified by CSA. They are built in accordance with UL 508 and UL 506.

240 Volt Line Reactors

Stock No.	Mfr.'s Type	HP	Amps	Impedance	EACH
836-9110	RI0004N71	0.5 to 1.0	4	3% or 5%	**102.00**
836-9110	RI0004N71	1.0	4	3% or 5%	**102.00**
836-9120	RI0006N45	1.5	6	3% or 5%	**105.00**
836-9125	RI0007N27	2.0	7	3% or 5%	**113.00**
836-9130	RI0010N19	3.0	10	3% or 5%	**133.00**
836-9135	RI0017N17	5.0	17	3% or 5%	**152.00**

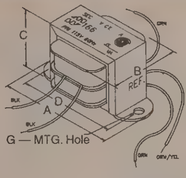
480 Volt Line Reactors

HP	Amps	3% Impedance			5% Impedance		
		Stock No.	Mfr.'s Type	EACH	Stock No.	Mfr.'s Type	EACH
1.0	3, 4	**836-9170**	RI0004M14	**98.00**	**836-9195**	RI0003M22	**94.00**
1.5	4	**836-9170**	RI0004M14	**98.00**	**836-9170**	RI0004M14	**98.00**
2.0	4	**836-9180**	RI0004N71	**102.00**	**836-9170**	RI0004M14	**98.00**
3.0	6	**836-9185**	RI0006N77	**125.00**	**836-9185**	RI0006N77	**125.00**
5.0	8	**836-9190**	RI0008N48	**129.00**	**836-9190**	RI0008N48	**129.00**
7.5	11	**836-9220**	RI0011N25	**137.00**	—	—	—
10.0	17	**836-9225**	RI0017N17	**152.00**	**836-9250**	RI0017N27	**162.00**
15.0	22	**836-9230**	RI0022N13	**162.00**	**836-9255**	RI0022N21	**192.00**
20.0	27	**836-9235**	RI0027N10	**169.00**	**836-9260**	RI0027N17	**222.00**
25.0	34	**836-9240**	RI0034P86	**186.00**	—	—	—
75.0	99	**836-9245**	RI0099P28	**355.00**	—	—	—

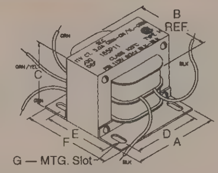
600 Volt Line Reactors

1.0	2, 3	**836-9265**	RI0003M22	**94.00**	**836-9325**	RI0002M32	**90.00**
1.5	3, 4	**836-9270**	RI0004M14	**98.00**	**836-9265**	RI0003M22	**94.00**
2.0	3, 4	**836-9270**	RI0004M14	**98.00**	**836-9265**	RI0003M22	**94.00**
3.0	4	**836-9280**	RI0004N71	**102.00**	**836-9270**	RI0004M14	**98.00**
5.0	6	**836-9285**	RI0006N45	**105.00**	**836-9345**	RI0006N77	**125.00**
7.5	9	**836-9290**	RI0009N31	**121.00**	**836-9350**	RI0009N51	**133.00**
10.0	11	**836-9295**	RI0011N25	**137.00**	**836-9355**	RI0011N51	**160.00**
15.0	17	**836-9300**	RI0017N17	**152.00**	**836-9360**	RI0017N27	**162.00**
20.0	22	**836-9305**	RI0022N13	**162.00**	**836-9365**	RI0022N21	**192.00**
25.0	27	**836-9310**	RI0027N10	**169.00**	**836-9370**	RI0027N17	**222.00**
30.0	34	**836-9315**	RI0034P86	**186.00**	—	—	—
100.0	99	**836-9320**	RI0099P28	**355.00**	—	—	—

Low Voltage Rectifier Transformers



C Style

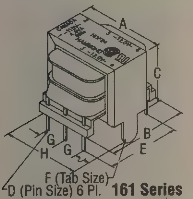


H Style

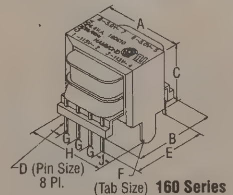
- ► All Primaries 115 Volts, 60 Hz
- ► Primary and Secondary Leads 6" Long
- ► Horizontal Channel Bracket Two Hole Mount (C Style) or Open Horizontal Four Hole Mount (H Style)

Stock No.	Mfr.'s Type	Style	Secondary		Dimensions					EACH	
			Volts	Amps	A	B	C	D	G	1-9	10-49
836-6005	166L2	C	2.5 ct	2.50	2.81	1.50	1.69	2.38	.187	**15.02**	**12.31**
836-6010	166Q2	C	2.5 ct	6.00	3.25	1.63	2.00	2.81	.187	**16.75**	**14.17**
836-6015	166G6	C	6.3 ct	0.60	2.38	1.38	1.38	2.00	.187	**13.91**	**11.77**
836-6020	166J6	C	6.3 ct	1.00	2.81	1.50	1.69	2.38	.187	**15.00**	**12.69**
836-6025	166L6	C	6.3 ct	2.00	2.81	1.63	1.69	2.38	.187	**15.09**	**12.77**
836-6030	166N6	C	6.3 ct	4.00	3.25	1.75	2.00	2.81	.187	**16.00**	**13.54**
836-6035	166J8	C	8.5 ct	1.00	2.81	1.50	1.69	2.38	.187	**15.16**	**12.83**
836-6040	166L8	C	8.5 ct	2.00	3.25	1.63	2.00	2.81	.187	**15.53**	**13.14**
836-6045	166G10	C	10.0 ct	0.50	2.38	1.50	1.38	2.00	.187	**14.55**	**12.31**
836-6050	166J10	C	10.0 ct	1.00	2.81	1.63	1.69	2.38	.187	**15.11**	**12.78**
836-6055	166M10	C	10.0 ct	3.00	3.25	2.00	2.00	2.81	.187	**16.18**	**13.69**
836-6060	166F12	C	12.6 ct	0.30	2.38	1.38	1.38	2.00	.187	**13.95**	**11.80**
836-6065	166G12	C	12.6 ct	0.50	2.81	1.50	1.69	2.38	.187	**14.80**	**12.52**
836-6070	166J12	C	12.6 ct	1.00	2.81	1.63	1.69	2.38	.187	**15.33**	**12.97**
836-6075	166L12	C	12.6 ct	2.50	3.25	2.00	2.00	2.81	.187	**17.00**	**14.38**
836-6080	166N12	C	12.6 ct	4.00	3.69	2.13	2.31	3.13	.187	**19.67**	**16.65**
836-6085	166Q12	C	12.6 ct	6.00	4.03	2.25	2.63	3.56	.187	**24.60**	**20.82**
836-6090	165S12	H	12.6 ct	10.00	3.00	3.25	2.56	2.50	.22 × .56	**41.91**	**35.46**
836-6095	165V12	H	12.6 ct	20.00	3.75	3.63	3.13	3.13	.22 × .56	**53.07**	**44.91**
836-6100	166E14	C	14.0 ct	0.15	2.06	1.38	1.19	1.75	.187	**16.11**	**13.63**
836-6105	166G14	C	14.0 ct	0.50	2.81	1.50	1.69	2.38	.187	**14.84**	**12.55**
836-6110	166J14	C	14.0 ct	1.00	2.81	1.63	1.69	2.38	.187	**15.33**	**12.97**
836-6115	166F16	C	16.0 ct	0.25	2.38	1.38	1.38	2.00	.187	**14.27**	**12.08**
836-6120	166G16	C	16.0 ct	0.50	2.81	1.50	1.69	2.38	.187	**14.89**	**12.60**
836-6125	166J16	C	16.0 ct	1.00	3.25	1.63	2.00	2.81	.187	**15.49**	**13.11**
836-6130	166L16	C	16.0 ct	2.20	3.25	2.00	2.00	2.81	.187	**16.51**	**13.97**
836-6135	166M16	C	16.0 ct	3.00	3.69	2.13	2.31	3.13	.187	**19.65**	**16.93**
836-6140	166K18	C	18.0 ct	1.50	3.25	1.75	2.00	2.81	.187	**16.05**	**13.92**
836-6145	166M18	C	18.0 ct	3.00	3.69	2.13	2.31	3.13	.187	**22.60**	**19.12**
836-6150	166P18	C	18.0 ct	5.00	4.03	2.50	2.63	3.56	.187	**26.25**	**22.22**
836-6155	165S18	H	18.0 ct	10.00	3.75	3.13	3.13	3.13	.22 × .56	**45.65**	**38.63**
836-6160	166D20	C	20.0 ct	0.10	2.06	1.38	1.19	1.75	.187	**16.15**	**13.66**
836-6165	166E20	C	20.0 ct	0.15	2.06	1.38	1.19	1.75	.187	**15.62**	**13.75**
836-6170	166G20	C	20.0 ct	0.50	2.81	1.63	1.69	2.38	.187	**14.84**	**12.55**
836-6175	166J20	C	20.0 ct	1.00	3.25	1.75	2.00	2.81	.187	**15.71**	**13.29**
836-6180	166L20	C	20.0 ct	2.00	3.69	1.88	2.31	3.13	.187	**21.38**	**18.09**
836-6185	165T22	H	22.0 ct	12.00	4.50	3.88	3.75	3.75	.28 × .56	**53.96**	**45.66**
836-6190	166L24	C	24.0 ct	2.00	3.69	2.13	2.31	3.13	.187	**19.11**	**16.17**
836-6195	166N24	C	24.0 ct	4.00	4.50	2.50	2.88	4.00	.203	**26.62**	**22.52**
836-6200	166E25	C	25.0 ct	0.15	2.38	1.38	1.38	2.00	.187	**13.98**	**11.83**
836-6205	166F25	C	25.0 ct	0.30	2.81	1.50	1.69	2.38	.187	**14.82**	**12.54**
836-6210	166G25	C	25.0 ct	0.50	2.81	1.63	1.69	2.38	.187	**15.09**	**12.77**
836-6215	166J25	C	25.0 ct	1.00	3.25	1.75	2.00	2.81	.187	**16.02**	**13.55**
836-6220	166K25	C	25.0 ct	1.50	3.69	1.88	2.31	3.13	.187	**18.73**	**15.85**
836-6225	166L25	C	25.0 ct	2.00	3.69	2.13	2.31	3.13	.187	**19.29**	**16.32**
836-6235	165S25	H	25.0 ct	10.00	3.75	3.63	3.13	3.13	.22 × .56	**50.91**	**43.08**
836-6240	166G28	C	28.0 ct	0.50	2.81	1.63	1.69	2.38	.187	**15.29**	**12.94**
836-6245	166J28	C	28.0 ct	1.00	3.25	2.00	2.00	2.81	.187	**16.04**	**13.57**
836-6250	165S30	H	30.0 ct	10.00	4.50	3.88	3.75	3.75	.28 × .56	**55.60**	**47.05**
836-6255	166J33	C	33.0 ct	1.00	3.25	2.00	2.00	2.81	.187	**16.47**	**13.94**
836-6260	166E36	C	36.0 ct	0.15	2.38	1.50	1.38	2.00	.187	**18.75**	**12.60**
836-6265	166G36	C	36.0 ct	0.50	2.81	1.63	1.69	2.38	.187	**15.36**	**13.00**
836-6270	166J36	C	36.0 ct	1.00	3.69	1.88	2.31	3.13	.187	**18.75**	**15.86**

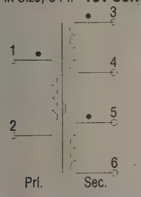
P. C. Board Mount (Vertical) Power Transformers — *NEW* —

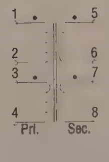


161 Series



160 Series

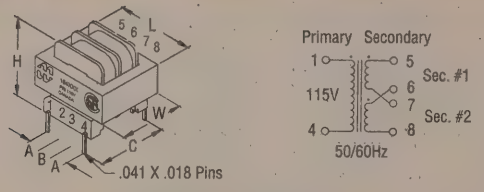




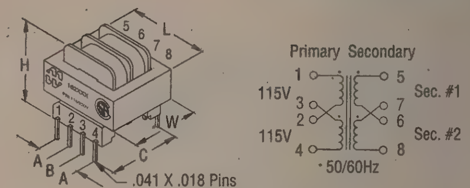
Vertical mount (for reduced board footprint), split bobbin power transformers. No electrostatic shield required due to low primary to secondary coupling. **Single Primary (161 Series)**: 115 V (60 Hz). **Dual Primary (160 Series)**: 115/230 V (50/60 Hz). Hi-pot tested at 2,500 V RMS. Both series are UL recognized and CSA certified.

Secondary (RMS)		Single Primary 115 V					Dual Primary 115 V				
Series	Parallel	Stock No.	Mfr.'s Type	EACH			Stock No.	Mfr.'s Type	EACH		
				1-5	6-49	50-99			1-5	6-49	50-99
12.6 V @ 40 ma	6.3 V @ 80 ma	**836-7130**	161C12	**9.55**	**8.08**	**7.50**	—	—	—	—	—
12.6 V @ 80 ma	6.3 V @ 160 ma	**836-7132**	161D12	**10.64**	**9.00**	**8.36**	**836-7186**	160D12	**12.45**	**10.54**	**9.79**
12.6 V @ 96 ma	6.3 V @ 191 ma	**836-7134**	161FA12	**7.91**	**6.69**	**5.80**	**836-7188**	160F12	**9.27**	**7.85**	**6.80**
12.6 V @ 350 ma	6.3 V @ 700 ma	**836-7136**	161GA12	**9.36**	**7.92**	**7.36**	**836-7190**	160G12	**10.82**	**9.15**	**8.50**
12.6 V @ 794 ma	6.3 V @ 1588 ma	**836-7138**	161K12	**10.82**	**9.15**	**8.50**	**836-7192**	160K12	**12.55**	**10.62**	**9.86**
12.6 V @ 1905 ma	6.3 V @ 3810 ma	**836-7140**	161H12	**15.09**	**12.77**	**11.86**	**836-7194**	160H12	**16.64**	**14.08**	**13.07**
16 V @ 31.3 ma	8 V @ 62.5 ma	**836-7142**	161C16	**9.55**	**8.08**	**7.50**	—	—	—	—	—
16 V @ 63 ma	8 V @ 128 ma	**836-7144**	161D16	**10.64**	**9.00**	**8.36**	**836-7196**	160D16	**12.45**	**10.54**	**9.79**
16 V @ 75 ma	8 V @ 150 ma	**836-7148**	161EA16	**10.64**	**9.00**	**8.36**	**836-7198**	160E16	**9.27**	**7.85**	**7.29**
16 V @ 275 ma	8 V @ 550 ma	**836-7150**	161FA16	**9.36**	**7.72**	**7.36**	**836-7200**	160F16	**10.82**	**9.15**	**8.50**
16 V @ 625 ma	8 V @ 1250 ma	**836-7152**	161G16	**10.82**	**9.15**	**8.50**	**836-7202**	160G16	**12.55**	**10.62**	**9.86**
16 V @ 1500 ma	8 V @ 3000 ma	**836-7154**	161H16	**15.09**	**12.77**	**11.86**	**836-7204**	160H16	**16.64**	**14.08**	**13.07**
20 V @ 50 ma	10 V @ 100 ma	**836-7156**	161D20	**10.64**	**9.00**	**8.36**	**836-7206**	160D20	**12.45**	**10.54**	**9.79**
20 V @ 60 ma	10 V @ 120 ma	**836-7158**	161EA20	**7.91**	**6.69**	**6.21**	**836-7208**	160E20	**9.27**	**7.85**	**7.29**
20 V @ 220 ma	10 V @ 440 ma	**836-7160**	161FA20	**9.36**	**7.92**	**7.36**	**836-7210**	160F20	**10.82**	**9.15**	**8.50**
20 V @ 500 ma	10 V @ 1000 ma	**836-7162**	161G20	**10.82**	**9.15**	**8.50**	**836-7212**	160G20	**12.55**	**10.62**	**9.86**
20 V @ 1200 ma	10 V @ 2400 ma	**836-7164**	161H20	**15.09**	**12.77**	**11.86**	**836-7214**	160H20	**16.64**	**14.08**	**13.07**
24 V @ 42 ma	12 V @ 84 ma	**836-7166**	161D24	**10.64**	**9.00**	**8.36**	**836-7216**	160D24	**12.45**	**10.54**	**9.79**
24 V @ 50 ma	12 V @ 100 ma	**836-7168**	161E24	**7.91**	**6.69**	**6.21**	**836-7218**	160E24	**9.27**	**7.85**	**7.29**
24 V @ 184 ma	12 V @ 367 ma	**836-7170**	161F24	**9.36**	**7.92**	**7.36**	**836-7220**	160F24	**10.82**	**9.15**	**8.50**
24 V @ 420 ma	12 V @ 840 ma	**836-7172**	161G24	**10.82**	**9.15**	**8.50**	**836-7222**	160G24	**12.55**	**10.62**	**9.86**
24 V @ 1000 ma	12 V @ 2000 ma	**836-7174**	161H24	**15.09**	**12.77**	**11.07**	**836-7224**	160H24	**16.64**	**14.08**	**13.07**
28 V @ 36 ma	14 V @ 72 ma	**836-7176**	161D28	**10.64**	**9.00**	**8.36**	**836-7226**	160D28	**12.45**	**10.54**	**9.79**
28 V @ 43 ma	14 V @ 86 ma	**836-7178**	161E28	**7.91**	**6.69**	**6.21**	**836-7228**	160E28	**9.27**	**7.82**	**7.29**
28 V @ 158 ma	14 V @ 315 ma	**836-7180**	161F28	**9.36**	**7.92**	**7.36**	**836-7230**	160F28	**10.82**	**9.15**	**8.50**
28 V @ 360 ma	14 V @ 720 ma	**836-7182**	161G28	**10.82**	**9.15**	**8.50**	**836-7232**	160G28	**12.55**	**10.62**	**9.86**
28 V @ 858 ma	14 V @ 1715 ma	**836-7184**	161H28	**15.09**	**12.77**	**11.86**	**836-7234**	160H28	**16.64**	**14.08**	**13.07**

P.C. Board Mount (Horizontal) — Power Transformers



Single Primary — 164 Series

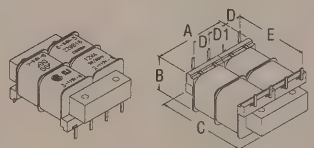


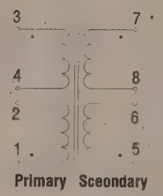
Single Primary — 162 Series

Horizontal mount (low profile), split bobbin power transformers. No electrostatic shield required due to low primary to secondary coupling. **Single Primary (164 Series):** 115 V (50/60 Hz). **Dual Primary (162 Series):** 115/230 V (50/60 Hz). Hi-pot tested at 2,500 V RMS. Both series are UL recognized and CSA certified.

Secondary (RMS)		Single Primary 115 V					Dual Primary 115/230 V				
Series	Parallel	Stock No.	Mfr.'s Type	EACH			Stock No.	Mfr.'s Type	EACH		
				1-5	6-49	50-99			1-5	6-49	50-99
12.6 V @ 90 ma	6.3 V @ 180 ma	836-7236	164D12	8.29	7.02	6.51	836-7252	162D12	9.65	8.17	7.59
12.6 V @ 200 ma	6.3 V @ 400 ma	836-7238	164E12	8.35	7.06	6.56	836-7254	162E12	9.76	8.26	7.67
12.6 V @ 500 ma	6.3 V @ 1 A	836-7240	164F12	9.60	8.12	7.54	836-7256	162F12	10.58	8.95	8.31
12.6 V @ 1 A	6.3 V @ 2 A	836-7242	164G12	10.85	9.18	8.53	836-7258	162G12	12.16	10.29	9.56
12.6 V @ 1.6 A	6.3 V @ 3.2 A	836-7244	164H12	13.04	11.03	10.24	836-7260	162H12	14.84	12.55	11.66
12.6 V @ 2.85 A	6.3 V @ 5.7 A	836-7246	164J12	15.82	13.38	12.43	836-7262	162J12	17.73	15.00	13.93
16 V @ 70 ma	8 V @ 140 ma	836-7248	164D16	8.29	7.02	6.08	836-7264	162D16	9.65	8.17	7.59
16 V @ 150 ma	8 V @ 300 ma	836-7250	164E16	8.35	7.06	6.56	836-7266	162E16	9.76	8.26	7.67
16 V @ 400 ma	8 V @ 800 ma	836-7000	164F16	9.60	8.12	7.54	836-7044	162F16	10.58	8.95	8.31
16 V @ 800 ma	8 V @ 1.6 A	836-7002	164G16	10.85	9.18	8.53	836-7046	162G16	12.16	10.29	9.56
16 V @ 1.25 A	8 V @ 2.5 A	836-7004	164H16	13.04	11.03	10.24	836-7048	162H16	14.84	12.55	10.88
16 V @ 2.25 A	8 V @ 4.5 A	836-7006	164J16	15.82	13.38	12.43	836-7050	162J16	17.73	15.00	13.93
20 V @ 55 ma	10 V @ 110 ma	836-7008	164D20	8.29	7.02	6.51	836-7052	162D20	9.65	8.17	7.59
20 V @ 120 ma	10 V @ 240 ma	836-7010	164E20	8.35	7.06	6.56	836-7054	162E20	9.76	8.26	7.67
20 V @ 300 ma	10 V @ 600 ma	836-7012	164F20	9.60	8.12	7.54	836-7056	162F20	10.58	8.95	7.76
20 V @ 600 ma	10 V @ 1.2 A	836-7014	164G20	10.85	9.18	8.53	836-7058	162G20	12.16	10.29	9.56
20 V @ 1 A	10 V @ 2 A	836-7016	164H20	13.04	11.03	10.24	836-7060	162H20	14.84	12.55	11.66
20 V @ 1.8 A	10 V @ 3.6 A	836-7018	164J20	15.82	13.38	12.43	836-7062	162J20	17.73	15.00	13.93
24 V @ 45 ma	12 V @ 90 ma	836-7020	164D24	8.29	7.02	6.51	836-7064	162D24	9.65	8.17	7.59
24 V @ 100 ma	12 V @ 200 ma	836-7022	164E24	8.35	7.06	6.56	836-7066	162E24	9.76	8.26	7.67
24 V @ 250 ma	12 V @ 500 ma	836-7024	164F24	9.60	8.12	7.54	836-7068	162F24	10.58	8.95	8.31
24 V @ 500 ma	12 V @ 1 A	836-7026	164G24	10.85	9.18	8.53	836-7070	162G24	12.16	10.29	9.56
24 V @ 800 ma	12 V @ 1.6 A	836-7028	164H24	13.04	11.03	10.24	836-7072	162H24	14.84	12.55	11.66
24 V @ 1.5 A	12 V @ 3 A	836-7030	164J24	15.82	13.38	12.43	836-7074	162J24	17.73	15.00	13.93
28 V @ 40 ma	14 V @ 80 ma	836-7032	164D28	8.29	7.02	6.51	836-7076	162D28	9.65	8.17	7.59
28 V @ 85 ma	14 V @ 170 ma	836-7034	164E28	8.35	7.06	6.56	836-7078	162E28	9.76	8.26	7.67
28 V @ 200 ma	14 V @ 400 ma	836-7036	164F28	9.60	8.12	7.54	836-7080	162F28	10.58	8.95	8.31
28 V @ 420 ma	14 V @ 840 ma	836-7038	164G28	10.85	9.18	8.53	836-7082	162G28	12.16	10.29	9.56
28 V @ 700 ma	14 V @ 1.4 A	836-7040	164H28	13.04	11.03	10.24	836-7084	162H28	14.48	12.55	11.66
28 V @ 1.3 A	14 V @ 2.6 A	836-7042	164J28	15.82	13.38	12.43	836-7086	162J28	17.73	15.00	13.96

P.C. Board Mount (Horizontal Low Profile) — Power Transformers



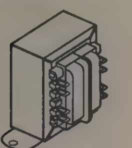


Low profile, P.C. board mount, power transformers. No electrostatic shield required due to low primary to secondary coupling. **Dual Primary**: 115/230 V (50/60 Hz). Split winding design, balanced windings for magnetic radiation. Hi-pot tested at 1,750 V RMS. UL recognized and CSA certified.

Stock No.	Mfr.'s Type	Secondary (RMS)		Dimensions						EACH		
		Series	Parallel	A	B	C	D	D1	E	1-5	6-49	50-99
836-7090	229A12	12.6 V @ 450 ma	6.3 V @ 900 ma	1.56	1.88	0.85	0.38	0.38	1.60	12.45	10.54	9.79
836-7092	229B12	12.6 V @ 900 ma	6.3 V @ 1.8 A	2.00	2.50	1.07	0.50	0.50	2.00	15.91	13.46	12.50
836-7094	229C12	12.6 V @ 1.9 A	6.3 V @ 3.8 A	2.25	2.87	1.25	0.60	0.53	1.90	18.18	15.38	14.29
836-7096	229D12	12.6 V @ 3.8 A	6.3 V @ 7.6 A	2.50	3.12	1.38	0.60	0.66	2.18	21.55	18.23	16.93
836-7098	229 A16	16 V @ 350 ma	8 V @ 700 ma	1.56	1.88	0.85	0.38	0.38	1.60	12.45	10.54	9.79
836-7100	229B16	16 V @ 700 ma	8 V @ 1.4 A	2.00	2.50	1.07	0.50	0.50	2.00	15.91	13.46	12.50
836-7102	229C16	16 V @ 1.5 A	8 V @ 3 A	2.25	2.87	1.25	0.60	0.53	1.90	18.18	15.38	14.29
836-7104	229D16	16 V @ 3 A	8 V @ 6 A	2.50	3.12	1.38	0.60	0.66	2.18	21.55	18.23	16.93
836-7106	229 A20	20 V @ 300 ma	10 V @ 600 ma	1.56	1.88	0.85	0.38	0.38	1.60	12.45	10.54	9.79
836-7108	229B20	20 V @ 600 ma	10 V @ 1.2 A	2.00	2.50	1.07	0.50	0.50	2.00	15.91	13.46	12.50
836-7110	229C20	20 V @ 1.2 A	10 V @ 2.4 A	2.25	2.87	1.25	0.60	0.53	1.90	18.18	15.38	14.29
836-7112	229D20	20 V @ 2.4 A	10 V @ 4.8 A	2.50	3.12	1.38	0.60	0.66	2.18	21.55	18.23	16.93
836-7114	229 A24	24 V @ 250 ma	12 V @ 500 ma	1.56	1.88	0.85	0.38	0.38	1.60	12.45	10.54	9.79
836-7116	229B24	24 V @ 500 ma	12 V @ 1 A	2.00	2.50	1.07	0.50	0.50	2.00	15.91	13.46	12.50
836-7118	229C24	24 V @ 1 A	12 V @ 2 A	2.25	2.87	1.25	0.60	0.53	1.90	18.18	15.38	14.29
836-7120	229D24	24 V @ 2 A	12 V @ 4 A	2.50	3.12	1.38	0.60	0.66	2.18	21.55	18.23	16.93
836-7122	229 A30	30 V @ 200 ma	15 V @ 400 ma	1.56	1.88	0.85	0.38	0.38	1.60	12.45	10.54	9.79
836-7124	229B30	30 V @ 400 ma	15 V @ 800 ma	2.00	2.50	1.07	0.50	0.50	2.00	15.91	13.46	12.50
836-7126	229C30	30 V @ 800 ma	15 V @ 1.6 A	2.25	2.87	1.25	0.60	0.53	1.90	18.18	15.88	14.29
836-7128	229D30	30 V @ 1.6 A	15 V @ 3.2 A	2.50	3.12	1.38	0.60	0.66	2.18	21.55	18.23	16.93

Power Transformers — World Series

Chassis Mount



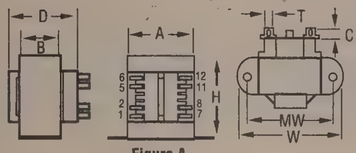
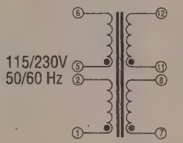
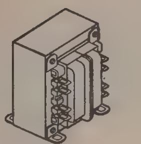


Figure A





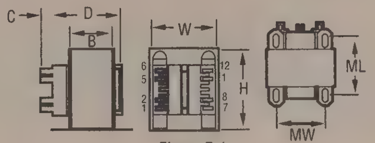
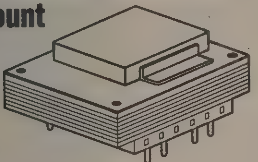


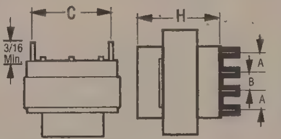
Figure B

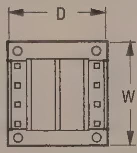
MAGNETEK Chassis Mount World Series transformers are designed to meet U.S. and international standards including CSA, IEC, VDE and UL requirements. The transformers consist of a dual bobbin design positioned inside an insulating shroud, and constructed with UL approved high temperature material. This design eliminates the need for electrostatic shielding since there is minimal capacitance between coils when using a dual bobbin configuration. The primary and secondary are both electrically isolated from each other, and from the core itself. Chassis Mount World Series transformers are available in sizes ranging from 25 VA to 175 VA, and are equipped with convenient "quick connect" terminations. **Technical Notes:** 1. Hi pot tested at 4000 RMS. 2. Both primary and secondary coils may be connected as either series or parallel, but both must be used simultaneously. **Specifications. Primary:** 115/230 V, 50/60 Hz.

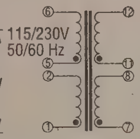
Stock No.	Mfr.'s Type	VA Size	Secondary		Dimensions						Terminals	Fig.	Mounting		Lbs.	EACH	
			Series	Parallel	H	W	D	A	B	C			MW	ML		1-9	10-49
967-8000	VPS10-2500	25	10.0 V C.T. @ 2.50 A	5.0 V @ 5.00 A	2 5/16	2 13/16	1 15/16	2	1 1/8	5/16	3/16	A	2 3/8	—	1.25	15.40	10.66
967-8001	VPS10-4300	43	10.0 V C.T. @ 4.30 A	5.0 V @ 8.60 A	2 11/16	3 1/8	2	2 5/16	1 1/8	5/16	3/16	A	2 1/4	—	1.60	19.64	13.60
967-8002	VPS10-8000	80	10.0 V C.T. @ 8.00 A	5.0 V @ 16.0 A	3	2 1/2	2 5/16	—	1 3/8	5/16	3/16	B	2	2 3/16	2.80	26.84	18.58
967-8003	VPS10-13000	130	10.0 V C.T. @ 13.0 A	5.0 V @ 26.0 A	3 3/8	2 13/16	2 11/16	—	1 5/8	3/8	1/4	B	2 1/4	2 1/2	4.10	35.53	24.60
967-8004	VPS10-17500	175	10.0 V C.T. @ 17.5 A	5.0 V @ 35.0 A	3 3/4	3 1/8	2 13/16	—	1 5/8	3/8	1/4	B	2 1/2	2 1/2	5.50	40.80	28.25
967-8005	VPS12-2000	25	12.6 V C.T. @ 2.00 A	6.3 V @ 4.00 A	2 5/16	2 13/16	1 15/16	2	1 1/8	5/16	3/16	A	2 3/8	—	1.25	15.40	10.66
967-8006	VPS12-3400	43	12.6 V C.T. @ 3.40 A	6.3 V @ 6.80 A	2 11/16	3 1/8	2	2 5/16	1 1/8	5/16	3/16	A	2 1/4	—	1.60	19.64	13.60
967-8007	VPS12-6300	80	12.6 V C.T. @ 6.30 A	6.3 V @ 12.6 A	3	2 1/2	2 5/16	—	1 3/8	5/16	3/16	B	2	2 3/16	2.80	26.84	18.58
967-8008	VPS12-10300	130	12.6 V C.T. @ 10.3 A	6.3 V @ 20.6 A	3 3/8	2 13/16	2 11/16	—	1 1/8	3/8	1/4	B	2 1/4	2 1/2	4.10	35.53	24.60
967-9001	VPS12-14000	175	12.6 V C.T. @ 14.0 A	6.3 V @ 28.0 A	3 3/4	3 1/8	2 13/16	—	1 5/8	3/8	1/4	B	2 1/2	2 1/2	5.50	40.80	28.25
967-8009	VPS16-1600	25	16.0 V C.T. @ 1.60 A	8.0 V @ 3.20 A	2 5/16	2 13/16	1 15/16	2	1 1/8	5/16	3/16	A	2 3/8	—	1.25	15.40	10.66
967-8010	VPS16-2700	43	16.0 V C.T. @ 2.70 A	8.0 V @ 5.40 A	2 11/16	3 1/8	2	2 5/16	1 3/8	5/16	3/16	A	2 1/4	—	1.60	19.64	13.60
967-8011	VPS16-5000	80	16.0 V C.T. @ 5.00 A	8.0 V @ 10.0 A	3	2 1/2	2 5/16	—	1 5/8	5/16	3/16	B	2	2 3/16	2.80	26.84	18.58
967-8012	VPS16-8100	130	16.0 V C.T. @ 8.10 A	8.0 V @ 16.2 A	3 3/8	2 13/16	2 11/16	—	1 1/8	3/8	1/4	B	2 1/4	2 1/2	4.10	35.53	24.60
967-9000	VPS16-11000	175	16.0 V C.T. @ 11.0 A	8.0 V @ 22.0 A	3 3/4	3 1/8	2 13/16	—	1 5/8	3/8	1/4	B	2 1/2	2 1/2	5.50	36.72	30.16
967-8013	VPS20-1250	25	20.0 V C.T. @ 1.25 A	10.0 V @ 2.50 A	2 5/16	2 13/16	1 15/16	2	1 1/8	5/16	3/16	A	2 3/8	—	1.25	15.40	10.66
967-8014	VPS20-2200	43	20.0 V C.T. @ 2.20 A	10.0 V @ 4.40 A	2 11/16	3 1/8	2	2 5/16	1 3/8	5/16	3/16	A	2 1/4	—	1.60	19.64	13.60
967-8015	VPS20-4000	80	20.0 V C.T. @ 4.00 A	10.0 V @ 8.00 A	3	2 1/2	2 5/16	—	1 5/8	5/16	3/16	B	2	2 3/16	2.80	26.84	18.58
967-8016	VPS20-6500	130	20.0 V C.T. @ 6.50 A	10.0 V @ 13.0 A	3 3/8	2 13/16	2 11/16	—	1 5/8	3/8	1/4	B	2 1/4	2 1/2	4.10	35.53	24.60
967-8017	VPS20-8800	175	20.0 V C.T. @ 8.80 A	10.0 V @ 17.6 A	3 3/4	3 1/8	2 13/16	—	1 1/8	3/8	1/4	B	2 1/2	2 1/2	5.50	40.80	28.25
967-8018	VPS24-1000	25	24.0 V C.T. @ 1.00 A	12.0 V @ 2.00 A	2 5/16	2 13/16	1 15/16	2	1 1/8	5/16	3/16	A	2 3/8	—	1.25	15.40	10.66
967-8019	VPS24-1800	43	24.0 V C.T. @ 1.80 A	12.0 V @ 3.60 A	2 11/16	3 1/8	2	2 5/16	1 3/8	5/16	3/16	A	2 1/4	—	1.60	19.64	13.60
967-8020	VPS24-3300	80	24.0 V C.T. @ 3.30 A	12.0 V @ 6.60 A	3	2 1/2	2 5/16	—	1 5/8	5/16	3/16	B	2	2 3/16	2.80	26.84	18.58
967-8021	VPS24-5400	130	24.0 V C.T. @ 5.40 A	12.0 V @ 10.8 A	3 3/8	2 13/16	2 11/16	—	1 5/8	3/8	1/4	B	2 1/4	2 1/2	4.10	35.53	24.60
967-8022	VPS24-7300	175	24.0 V C.T. @ 7.30 A	12.0 V @ 1.80 A	3 3/4	3 1/8	2 13/16	—	1 1/8	3/8	1/4	B	2 1/2	2 1/2	5.50	40.80	28.25
967-8023	VPS28-900	25	28.0 V C.T. @ 0.90 A	14.0 V @ 1.86 A	2 5/16	2 13/16	1 15/16	2	1 1/8	5/16	3/16	A	2 3/8	—	1.25	15.40	10.66
967-8024	VPS28-1500	43	28.0 V C.T. @ 1.50 A	14.0 V @ 3.00 A	2 11/16	3 1/8	2	2 5/16	1 3/8	5/16	3/16	A	2 1/4	—	1.60	19.64	13.60
967-8025	VPS28-2800	80	28.0 V C.T. @ 2.80 A	14.0 V @ 5.60 A	3	2 1/2	2 5/16	—	1 5/8	5/16	3/16	B	2	2 3/16	2.80	26.84	18.58
967-8026	VPS28-4600	130	28.0 V C.T. @ 4.60 A	14.0 V @ 9.20 A	3 3/8	2 13/16	2 11/16	—	1 5/8	3/8	1/4	B	2 1/4	2 1/2	4.10	35.53	24.60
967-8027	VPS28-6250	175	28.0 V C.T. @ 6.25 A	14.0 V @ 12.5 A	3 3/4	3 1/8	2 13/16	—	1 1/8	3/8	1/4	B	2 1/2	2 1/2	5.50	40.80	28.25
967-8028	VPS36-700	25	36.0 V C.T. @ 0.70 A	18.0 V @ 1.40 A	2 5/16	2 13/16	1 15/16	2	1 1/8	5/16	3/16	A	2 3/8	—	1.25	15.40	10.66
967-8029	VPS36-1200	43	36.0 V C.T. @ 1.20 A	18.0 V @ 2.40 A	2 11/16	3 1/8	2	2 5/16	1 3/8	5/16	3/16	A	2 1/4	—	1.60	19.64	13.60
967-8030	VPS36-2200	80	36.0 V C.T. @ 2.20 A	18.0 V @ 4.40 A	3	2 1/2	2 5/16	—	1 5/8	5/16	3/16	B	2	2 3/16	2.80	26.84	18.58
967-8031	VPS36-3600	130	36.0 V C.T. @ 3.60 A	18.0 V @ 7.20 A	3 3/8	2 13/16	2 11/16	—	1 5/8	3/8	1/4	B	2 1/4	2 1/2	4.10	35.53	24.60
967-8032	VPS36-4800	175	36.0 V C.T. @ 4.80 A	18.0 V @ 9.60 A	3 3/4	3 1/8	2 13/16	—	1 1/8	3/8	1/4	B	2 1/2	2 1/2	5.50	40.80	28.25
967-8033	VPS230-110	25	230.0 V C.T. @ 0.11 A	115.0 V @ 0.22 A	2 5/16	2 13/16	1 15/16	2	1 1/8	5/16	3/16	A	2 3/8	—	1.25	15.40	10.66
967-8034	VPS230-190	43	230.0 V C.T. @ 0.19 A	115.0 V @ 0.38 A	2 11/16	3 1/8	2	2 5/16	1 3/8	5/16	3/16	A	2 1/4	—	1.60	19.64	13.60
967-8035	VPS230-350	80	230.0 V C.T. @ 0.35 A	115.0 V @ 0.70 A	3	2 1/2	2 5/16	—	1 5/8	5/16	3/16	B	2	2 3/16	2.80	26.84	18.58
967-8036	VPS230-570	130	230.0 V C.T. @ 0.57 A	115.0 V @ 1.14 A	3 3/8	2 13/16	2 11/16	—	1 5/8	3/8	1/4	B	2 1/4	2 1/2	4.10	35.53	24.60
967-8037	VPS230-760	175	230.0 V C.T. @ 0.76 A	115.0 V @ 1.52 A	3 3/4	3 1/8	2 13/16	—		3/8	1/4	B	2 1/2	2 1/2	5.50	40.80	28.25

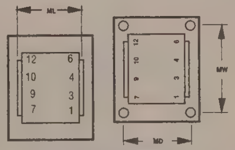
PC Mount











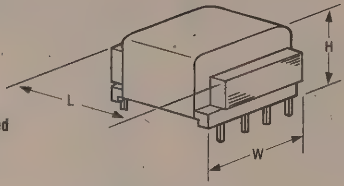
MAGNETEK PC Mount World Series transformers incorporate a dual bobbin construction with an insulating shroud, both made of a high temperature material that exceeds UL flammability requirements. These units are designed with very high isolation between the primary and secondary, and also, between each winding and the core. Since the dual bobbin construction effectively reduces capacitance, electrostatic shielding is not required. PC Mount transformers are available with ratings from 2.5 VA to 56.0 VA and have dimensionally accurate pin placement for through hole PC board mounting. All World Series transformers meet U.S. and international standards including CSA, IEC, VDE and UL requirements, and, therefore, have universal application. **Technical Notes:** 1. Hi pot tested at 4000 RMS. 2. Both primary and secondary coils may be connected as either series or parallel, but both must be used simultaneously. **Specifications. Primary:** 115/230 V, 50/60 Hz. **Variances:** 2.5 to 56.0.

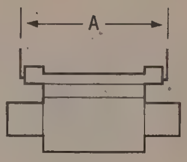
Stock No.	Mfr.'s Type	VA Size	Secondary		Dimensions						Pin Dim.	Mounting			Lbs.	EACH	
			Series	Parallel	H	W	D	A	B	C		ML	MD	MW		1-9	10-49
967-8038	VPP10-250	2.5	10.0 V C.T. @ 0.25 A	5.0 V @ 0.50 A	1 1/8	1 5/8	1 5/16	.200	.250	1.000	0.025 SQ	1 1/16	—	—	0.25	9.62	6.66
967-8039	VPP10-500	5.0	10.0 V C.T. @ 0.50 A	5.0 V @ 1.00 A	1 3/8	1 5/8	1 5/16	.200	.400	1.000	0.025 SQ	1 1/16	—	—	0.37	10.36	7.17
967-8040	VPP10-1000	10.0	10.0 V C.T. @ 1.00 A	5.0 V @ 2.00 A	1 3/8	1 7/8	1 9/16	.200	.400	1.140	0.036 SQ	1 1/4	—	—	0.53	11.60	8.03
967-8041	VPP10-2000	20.0	10.0 V C.T. @ 2.00 A	5.0 V @ 4.00 A	1 5/8	2 1/4	1 7/8	.400	.400	1.460	0.036 SQ	1 1/2	—	—	0.90	14.11	9.77
967-8042	VPP10-3000	30.0	10.0 V C.T. @ 3.00 A	5.0 V @ 6.00 A	1 9/16	2 5/8	2 3/16	.550	.275	1.680	0.045 SQ	—	1 3/4	2 3/16	1.15	16.22	11.23
967-8043	VPP10-5600	56.0	10.0 V C.T. @ 5.60 A	5.0 V @ 11.2 A	1 13/16	3	2 1/2	.600	.300	1.900	0.045 SQ	—	2	2 1/2	1.70	19.84	13.74
967-8044	VPP12-200	2.5	12.6 V C.T. @ 0.20 A	6.3 V @ 0.40 A	1 1/8	1 5/8	1 5/16	.200	.250	1.000	0.025 SQ	1 1/16	—	—	0.25	9.25	6.66
967-8045	VPP12-400	5.0	12.6 V C.T. @ 0.40 A	6.3 V @ 0.80 A	1 3/8	1 5/8	1 5/16	.200	.400	1.000	0.025 SQ	1 1/16	—	—	0.37	10.00	7.17
967-8046	VPP12-800	10.0	12.6 V C.T. @ 0.80 A	6.3 V @ 1.60 A	1 3/8	1 7/8	1 9/16	.200	.400	1.140	0.036 SQ	1 1/4	—	—	0.53	11.20	8.03
967-8047	VPP12-1600	20.0	12.6 V C.T. @ 1.60 A	6.3 V @ 3.20 A	1 5/8	2 1/4	1 7/8	.400	.400	1.460	0.036 SQ	1 1/2	—	—	0.90	14.11	9.77
967-8048	VPP12-2400	30.0	12.6 V C.T. @ 2.40 A	6.3 V @ 4.80 A	1 9/16	2 5/8	2 3/16	.550	.275	1.680	0.045 SQ	—	1 3/4	2 3/16	1.15	16.22	11.23
967-8049	VPP12-4400	56.0	12.6 V C.T. @ 4.40 A	6.3 V @ 8.80 A	1 13/16	3	2 1/2	.600	.300	1.900	0.045 SQ	—	2	2 1/2	1.70	19.84	13.74
967-8050	VPP16-150	2.5	16.0 V C.T. @ 0.15 A	8.0 V @ 0.30 A	1 1/8	1 5/8	1 5/16	.200	.250	1.000	0.025 SQ	1 1/16	—	—	0.25	9.62	6.66
967-8051	VPP16-310	5.0	16.0 V C.T. @ 0.31 A	8.0 V @ 0.62 A	1 3/8	1 5/8	1 5/16	.200	.400	1.000	0.025 SQ	1 1/16	—	—	0.37	10.36	7.17
967-8052	VPP16-620	10.0	16.0 V C.T. @ 0.62 A	8.0 V @ 1.25 A	1 3/8	1 7/8	1 9/16	.200	.400	1.140	0.036 SQ	1 1/4	—	—	0.53	11.60	8.03
967-8053	VPP16-1250	20.0	16.0 V C.T. @ 1.25 A	8.0 V @ 2.50 A	1 5/8	2 1/4	1 7/8	.400	.400	1.460	0.036 SQ	1 1/2	—	—	0.90	14.11	9.77
967-8054	VPP16-1900	30.0	16.0 V C.T. @ 1.90 A	8.0 V @ 3.80 A	1 9/16	2 5/8	2 3/16	.550	.275	1.680	0.045 SQ	—	1 3/4	2 3/16	1.15	16.22	11.23
967-8055	VPP16-3500	56.0	16.0 V C.T. @ 3.50 A	8.0 V @ 7.00 A	1 13/16	3	2 1/2	.600	.300	1.900	0.045 SQ	—	2	2 1/2	1.70	19.84	13.74
967-8056	VPP20-120	2.5	20.0 V C.T. @ 0.12 A	10.0 V @ 0.24 A	1 1/8	1 5/8	1 5/16	.200	.250	1.000	0.025 SQ	1 1/16	—	—	0.25	9.62	6.66
967-8057	VPP20-250	5.0	20.0 V C.T. @ 0.25 A	10.0 V @ 0.50 A	1 3/8	1 5/8	1 5/16	.200	.400	1.000	0.025 SQ	1 1/16	—	—	0.37	10.36	7.17
967-8058	VPP20-500	10.0	20.0 V C.T. @ 0.50 A	10.0 V @ 1.00 A	1 3/8	1 7/8	1 9/16	.200	.400	1.140	0.036 SQ	1 1/4	—	—	0.53	11.60	8.03
967-8059	VPP20-1000	20.0	20.0 V C.T. @ 1.00 A	10.0 V @ 2.00 A	1 5/8	2 1/4	1 7/8	.400	.400	1.460	0.036 SQ	1 1/2	—	—	0.90	14.11	9.77
967-8060	VPP20-1500	30.0	20.0 V C.T. @ 1.50 A	10.0 V @ 3.00 A	1 9/16	2 5/8	2 3/16	.550	.275	1.680	0.045 SQ	—	1 3/4	2 3/16	1.15	16.22	11.23
967-8061	VPP20-2800	56.0	20.0 V C.T. @ 2.80 A	10.0 V @ 5.60 A	1 13/16	3	2 1/2	.600	.300	1.900	0.045 SQ	—	2	2 1/2	1.70	19.84	13.74
967-8062	VPP24-100	2.5	24.0 V C.T. @ 0.10 A	12.0 V @ 0.20 A	1 1/8	1 5/8	1 5/16	.200	.250	1.000	0.025 SQ	1 1/16	—	—	0.25	9.62	6.66
967-8063	VPP24-210	5.0	24.0 V C.T. @ 0.21 A	12.0 V @ 0.42 A	1 3/8	1 5/8	1 5/16	.200	.400	1.000	0.025 SQ	1 1/16	—	—	0.37	10.36	7.17
967-8064	VPP24-420	10.0	24.0 V C.T. @ 0.42 A	12.0 V @ 0.84 A	1 3/8	1 7/8	1 9/16	.200	.400	1.140	0.036 SQ	1 1/4	—	—	0.53	11.60	8.03
967-8065	VPP24-830	20.0	24.0 V C.T. @ 0.83 A	12.0 V @ 1.66 A	1 5/8	2 1/4	1 7/8	.400	.400	1.460	0.036 SQ	1 1/2	—	—	0.90	14.11	9.77
967-8066	VPP24-1250	30.0	24.0 V C.T. @ 1.25 A	12.0 V @ 2.50 A	1 9/16	2 5/8	2 3/16	.550	.275	1.680	0.045 SQ	—	1 3/4	2 3/16	1.15	16.22	11.23
967-8067	VPP24-2330	56.0	24.0 V C.T. @ 2.33 A	12.0 V @ 4.66 A	1 13/16	3	2 1/2	.600	.300	1.900	0.045 SQ	—	2	2 1/2	1.70	19.84	13.74
967-8068	VPP28-090	2.5	28.0 V C.T. @ 0.09 A	14.0 V @ 0.18 A	1 1/8	1 5/8	1 5/16	.200	.250	1.000	0.025 SQ	1 1/16	—	—	0.25	9.62	6.66
967-8069	VPP28-180	5.0	28.0 V C.T. @ 0.18 A	14.0 V @ 0.36 A	1 3/8	1 5/8	1 5/16	.200	.400	1.000	0.025 SQ	1 1/16	—	—	0.37	10.36	7.17
967-8070	VPP28-360	10.0	28.0 V C.T. @ 0.36 A	14.0 V @ 0.72 A	1 3/8	1 7/8	1 9/16	.200	.400	1.140	0.036 SQ	1 1/4	—	—	0.53	11.60	8.03
967-8071	VPP28-720	20.0	28.0 V C.T. @ 0.72 A	14.0 V @ 1.44 A	1 5/8	2 1/4	1 7/8	.400	.400	1.460	0.036 SQ	1 1/2	—	—	0.90	14.11	9.77
967-8072	VPP28-1060	30.0	28.0 V C.T. @ 1.06 A	14.0 V @ 2.12 A	1 9/16	2 5/8	2 3/16	.550	.275	1.680	0.045 SQ	—	1 3/4	2 3/16	1.15	16.22	11.23
967-8073	VPP28-2000	56.0	28.0 V C.T. @ 2.00 A	14.0 V @ 4.00 A	1 13/16	3	2 1/2	.600	.300	1.900	0.045 SQ	—	2	2 1/2	1.70	19.84	13.74
967-8074	VPP36-070	2.5	36.0 V C.T. @ 0.07 A	18.0 V @ 0.14 A	1 1/8	1 5/8	1 5/16	.200	.250	1.000	0.025 SQ	1 1/16	—	—	0.25	9.62	6.66
967-8075	VPP36-140	5.0	36.0 V C.T. @ 0.14 A	18.0 V @ 0.28 A	1 3/8	1 5/8	1 5/16	.200	.400	1.000	0.025 SQ	1 1/16	—	—	0.37	10.36	7.17
967-8076	VPP36-280	10.0	36.0 V C.T. @ 0.28 A	18.0 V @ 0.56 A	1 3/8	1 7/8	1 9/16	.200	.400	1.140	0.036 SQ	1 1/4	—	—	0.53	11.60	8.03
967-8077	VPP36-560	20.0	36.0 V C.T. @ 0.56 A	18.0 V @ 1.12 A	1 5/8	2 1/4	1 7/8	.400	.400	1.460	0.036 SQ	1 1/2	—	—	0.90	14.11	9.77
967-8078	VPP36-820	30.0	36.0 V C.T. @ 0.82 A	18.0 V @ 1.64 A	1 9/16	2 5/8	2 3/16	.550	.275	1.680	0.045 SQ	—	1 3/4	2 3/16	1.15	16.22	11.23
967-8079	VPP36-1560	56.0	36.0 V C.T. @ 1.56 A	18.0 V @ 3.12 A	1 13/16	3	2 1/2	.600	.300	1.900	0.045 SQ	—	2	2 1/2	1.70	19.84	13.74

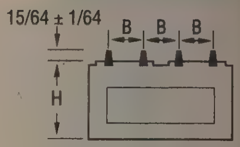
Flat Pack

The Triad Flat Pack power transformer from MagneTek is designed to meet the needs of low clearance PC board and solid state power designs. These units can also be used for control and instrumentation applications. Voltages and currents were chosen for widely used power applications. It is offered in a dual primary and dual secondary configuration. **Specifications. Primary:** 115/230V, 50/60 Hz. **Low Profile:** allows 3/4" card spacing for 2.5VA units, allows 1" card spacing for 6VA units, allows 1 1/4" card spacing for 12VA units.

Class B
UL Recognized





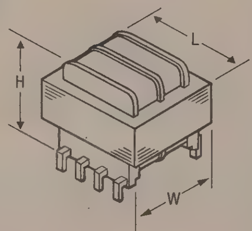


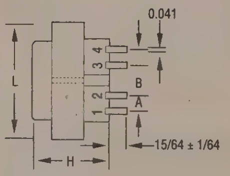
Stock No.	Mfr.'s Type	VA	Secondary Rating		Case Dimensions					Wt. Oz.	EACH
			Series	Parallel	H	W	L	A	B		1-9
967-9125	FP10-250	2.5	10.0V CT @ 0.25A	5.0V @ 0.5A	0.650	1.562	1.875	1.600	0.375	5	**10.75**
967-8200	FP12-200	2.5	12.6V CT @ 0.2A	6.3V @ 0.4A	0.650	1.562	1.875	1.600	0.375	5	**10.75**
967-8202	FP16-150	2.5	16.0V CT @ 0.15A	8.0V @ 0.3A	0.650	1.562	1.875	1.600	0.375	5	**10.75**
967-8204	FP20-125	2.5	20.0C CT @ 0.125A	10.0V @ 0.25A	0.650	1.562	1.875	1.600	0.375	5	**10.75**
967-8206	FP24-100	2.5	24.0V CT @ 0.1A	12.0V @ 0.2A	0.650	1.562	1.875	1.600	0.375	5	**10.75**
967-8208	FP30-85	2.5	30.0V CT @ 0.08A	15.0V @ 0.16A	0.650	1.562	1.875	1.600	0.375	5	**10.75**
967-8210	FP34-75	2.5	34.0V CT @ 0.075A	17.0V @ 0.15A	0.650	1.562	1.875	1.600	0.375	5	**10.75**
967-8212	FP40-60	2.5	40.0V CT @ 0.06A	20.0V @ 0.12A	0.650	1.562	1.875	1.600	0.375	5	**10.75**
967-8214	FP56-45	2.5	56.0V CT @ 0.045A	28.0V @ 0.09A	0.650	1.562	1.875	1.600	0.375	5	**10.75**
967-8216	FP88-28	2.5	88.0V CT @ 0.028A	44.0V @ 0.056A	0.650	1.562	1.875	1.600	0.375	5	**10.75**
967-8218	FP120-20	2.5	120.0V CT @ 0.02A	60.0V @ 0.04A	0.650	1.562	1.875	1.600	0.375	5	**10.75**
967-8220	FP230-10	2.5	230.0V CT @ 0.01A	115.0V @ 0.02A	0.650	1.562	1.875	1.600	0.375	5	**10.75**
967-8222	FP10-600	6.0	10.0V CT @ 0.6A	5.0V @ 1.2A	0.875	1.562	1.875	1.600	0.375	7	**12.00**
967-8224	FP12-475	6.0	12.6V CT @ 0.475A	6.3V @ 0.95A	0.875	1.562	1.875	1.600	0.375	7	**12.00**
967-8226	FP16-375	6.0	16.0V CT @ 0.375A	8.0V @ 0.75A	0.875	1.562	1.875	1.600	0.375	7	**12.00**
967-8227	FP20-300	6.0	20.0V CT @ 0.3A	10.0V @ 0.6A	0.875	1.562	1.875	1.600	0.375	7	**12.00**
967-8230	FP24-250	6.0	24.0V CT @ 0.25A	12.0V @ 0.5A	0.875	1.562	1.875	1.600	0.375	7	**12.00**
967-8232	FP30-200	6.0	30.0V CT @ 0.2A	15.0V @ 0.4A	0.875	1.562	1.875	1.600	0.375	7	**12.00**
967-8234	FP34-170	6.0	34.0V CT @ 0.17A	17.0V @ 0.34A	0.875	1.562	1.875	1.600	0.375	7	**12.00**
967-8236	FP40-150	6.0	40.0V CT @ 0.15A	20.0V @ 0.3A	0.875	1.562	1.875	1.600	0.375	7	**12.00**
967-8238	FP56-100	6.0	56.0V CT @ 0.1A	28.0V @ 0.2A	0.875	1.562	1.875	1.600	0.375	7	**12.00**
967-8240	FP88-65	6.0	88.0V CT @ 0.065A	44.0V @ 0.13A	0.875	1.562	1.875	1.600	0.375	7	**12.00**
967-8242	FP120-50	6.0	120.0V CT @ 0.05A	60.0V @ 0.1A	0.875	1.562	1.875	1.600	0.375	7	**12.00**
967-8244	FP230-25	6.0	230.0V CT @ 0.025A	115.0V @ 0.05A	0.875	1.562	1.875	1.600	0.375	7	**12.00**
967-8246	FP10-1200	12.0	10.0V CT @ 1.2A	5.0V @ 2.4A	1.062	2.000	2.500	2.000	0.500	11	**14.00**
967-8248	FP12-950	12.0	12.6V CT @ 0.95A	6.3V @ 1.9A	1.062	2.000	2.500	2.000	0.500	11	**14.00**
967-8250	FP16-750	12.0	16.0V CT @ 0.75A	8.0V @ 1.5A	1.062	2.000	2.500	2.000	0.500	11	**14.00**
967-8252	FP20-600	12.0	20.0V CT @ 0.6A	10.0V @ 1.2A	1.062	2.000	2.500	2.000	0.500	11	**14.00**
967-8254	FP24-500	12.0	24.0V CT @ 0.5A	12.0V @ 1.0A	1.062	2.000	2.500	2.000	0.500	11	**14.00**
967-8256	FP30-400	12.0	30.0V CT @ 0.4A	15.0V @ 0.8A	1.062	2.000	2.500	2.000	0.500	11	**14.00**
967-8258	FP34-340	12.0	34.0V CT @ 0.34A	17.0V @ 0.68A	1.062	2.000	2.500	2.000	0.500	11	**14.00**
967-8260	FP40-300	12.0	40.0V CT @ 0.3A	20.0V @ 0.6A	1.062	2.000	2.500	2.000	0.500	11	**14.00**
967-8262	FP56-200	12.0	56.0V CT @ 0.2A	28.0V @ 0.4A	1.062	2.000	2.500	2.000	0.500	11	**14.00**
967-8264	FP88-130	12.0	88.0V CT @ 0.13A	44.0V @ 0.26A	1.062	2.000	2.500	2.000	0.500	11	**14.00**
967-8266	FP120-100	12.0	120.0V CT @ 0.1A	60.0V @ 0.2A	1.062	2.000	2.500	2.000	0.500	11	**14.00**
967-8268	FP230-50	12.0	230.0V CT @ 0.05A	115.0V @ 0.1A	1.062	2.000	2.500	2.000	0.500	11	**14.00**

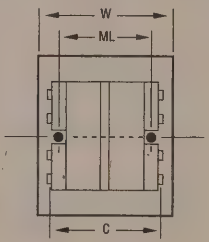
CT = Center Tap.

Split Pack

Class B
UL Recognized







The Triad Split Pack split bobbin transformer from MagneTek is an extremely versatile tool for PC board applications. Split Pack transformers are nonconcentrically wound - with primaries and secondaries side by side. Unlike the secondary-on-top-of primary designs of standard PC board transformers, the split bobbin winding and low capacitive coupling eliminate costly electrostatic shielding. It is offered in a dual secondary configuration with either single or dual primaries.

Case Dimensions (Inches)								Wt.
VA	H	W	L	ML	A	B	C	Lbs.
2.5	1 3/16	1 1/8	1 3/8	—	.250	.250	1.20	.25
6.0	1 5/16	1 5/16	1 5/8	1 1/16	.250	.350	1.28	.44
12.0	1 7/16	1 9/16	1 7/8	1 1/4	.300	.400	1.41	.70

Single Primary, 115V, 6 Pins

Stock No.	Mfr.'s Type	VA	Secondary Rating		EACH
			Series	Parallel	1-9
967-8270	F10-250	2.5	10.0V CT @ 0.25A	5.0V @ 0.5A	**10.75**
967-8272	F12-200	2.5	12.6V CT @ 0.2A	6.3V @ 0.4A	**10.75**
967-8274	F16-150	2.5	16.0V CT @ 0.15A	8.0V @ 0.3A	**10.75**
967-8276	F20-120	2.5	20.0V CT @ 0.12A	10.0V @ 0.24A	**10.75**
967-8278	F24-100	2.5	24.0V CT @ 0.1A	12.0V @ 0.2A	**7.65**
967-8280	F28-85	2.5	28.0V CT @ 0.085A	14.0V @ 0.17A	**7.65**
967-8282	F36-65	2.5	36.0V CT @ 0.065A	18.0V @ 0.13A	**7.65**
967-8284	F48-050	2.5	48.0V CT @ 0.05A	24.0V @ 0.1A	**7.65**
967-8286	F56-045	2.5	56.0V CT @ 0.045A	28.0V @ 0.09A	**7.65**
967-8288	F120-020	2.5	120.0V CT @ 0.02A	60.0V @ 0.04A	**7.65**
967-8290	F10-600	6.0	10.0V CT @ 0.6A	5.0V @ 1.2A	**8.65**
967-8292	F12-500	6.0	12.6V CT @ 0.5A	6.3V @ 1.0A	**8.65**
967-8294	F16-400	6.0	16.0V CT @ 0.4A	8.0V @ 0.8A	**8.65**
967-8296	F20-300	6.0	20.0V CT @ 0.3A	10.0V @ 0.6A	**8.65**
967-8298	F24-250	6.0	24.0V CT @ 0.25A	12.0V @ 0.5A	**8.65**
967-8300	F28-200	6.0	28.0V CT @ 0.2A	14.0V @ 0.4A	**8.65**
967-8302	F36-170	6.0	36.0V CT @ 0.17A	18.0V @ 0.34A	**8.65**
967-8304	F48-125	6.0	48.0V CT @ 0.125A	24.0V @ 0.25A	**8.65**
967-8306	F56-110	6.0	56.0V CT @ 0.11A	28.0V @ 0.22A	**8.65**
967-8308	F120-050	6.0	120.0V CT @ 0.05A	60.0V @ 0.1A	**8.65**
967-8310	F10-1200	12.0	10.0V CT @ 1.2A	5.0V @ 2.4A	**9.90**
967-8312	F12-1000	12.0	12.6V CT @ 1.0A	6.3V @ 2.0A	**9.90**
967-8314	F16-800	12.0	16.0V CT @ 0.8A	8.0V @ 1.6A	**9.90**
967-8316	F20-600	12.0	20.0V CT @ 0.6A	10.0V @ 1.2A	**9.90**
967-8318	F24-500	12.0	24.0V CT @ 0.5A	12.0V @ 1.0A	**9.90**
967-8320	F28-420	12.0	28.0V CT @ 0.42A	14.0V @ 0.84A	**9.90**
967-8322	F36-350	12.0	36.0V CT @ 0.35A	18.0V @ 0.7A	**9.90**
967-8324	F48-250	12.0	48.0V CT @ 0.25A	24.0V @ 0.5A	**9.90**
967-8326	F56-220	12.0	56.0V CT @ 0.22A	28.0V @ 0.44A	**9.90**
967-8328	F120-100	12.0	120.0V CT @ 0.1A	60.0V @ 0.2A	**9.90**

Also available in these VA Ranges: 1.1, 20.0, and 36.0. Contact your Allied branch.

Dual Primary, 115/230V, 8 Pins

Stock No.	Mfr.'s Type	VA	Secondary Rating		EACH
			Series	Parallel	1-9
967-9515	FS10-250	2.5	10.0V CT @ 0.25A	5.0V @ 0.5A	**7.64**
967-9520	FS12-200	2.5	12.6V CT @ 0.2A	6.3V @ 0.4A	**7.64**
967-9525	FS16-150	2.5	16.0V CT @ 0.15A	8.0V @ 0.3A	**7.64**
967-9530	FS20-120	2.5	20.0V CT @ 0.12A	10.0V @ 0.24A	**7.64**
967-9535	FS24-100	2.5	24.0V CT @ 0.1A	12.0V @ 0.2A	**7.64**
967-9540	FS28-85	2.5	28.0V CT @ 0.085A	14.0V @ 0.17A	**7.64**
967-9545	FS36-65	2.5	36.0V CT @ 0.065A	18.0V @ 0.13A	**7.64**
967-8330	FS48-050	2.5	48.0V CT @ 0.05A	24.0V @ 0.1A	**7.64**
967-8332	FS56-045	2.5	56.0V CT @ 0.045A	28.0V @ 0.09A	**7.64**
967-8334	FS120-02	2.5	120.0V CT @ 0.02A	60.0V @ 0.04A	**7.64**
967-9550	FS10-600	6.0	10.0V CT @ 0.6A	5.0V @ 1.2A	**8.64**
967-9555	FS12-500	6.0	12.6V CT @ 0.5A	6.3V @ 1.0A	**8.64**
967-9560	FS16-400	6.0	16.0V CT @ 0.4A	8.0V @ 0.8A	**8.64**
967-9565	FS20-300	6.0	20.0V CT @ 0.3A	10.0V @ 0.6A	**8.64**
967-9570	FS24-250	6.0	24.0V CT @ 0.25A	12.0V @ 0.5A	**8.64**
967-9575	FS28-200	6.0	28.0V CT @ 0.2A	14.0V @ 0.4A	**8.64**
967-9580	FS36-170	6.0	36.0V CT @ 0.17A	18.0V @ 0.34A	**8.64**
967-8336	FS48-125	6.0	48.0V CT @ 0.125A	24.0V @ 0.25A	**8.64**
967-8338	FS56-110	6.0	56.0V CT @ 0.11A	28.0V @ 0.22A	**8.64**
967-8340	FS120-05	6.0	120.0V CT @ 0.05A	60.0V @ 0.1A	**8.64**
967-9585	FS10-1200	12.0	10.0V CT @ 1.2A	5.0V @ 2.4A	**9.90**
967-9590	FS12-1000	12.0	12.6V CT @ 1.0A	6.3V @ 2.0A	**9.90**
967-9595	FS16-800	12.0	16.0V CT @ 0.8A	8.0V @ 1.6A	**9.90**
967-9600	FS20-600	12.0	20.0V CT @ 0.6A	10.0V @ 1.2A	**9.90**
967-9605	FS24-500	12.0	24.0V CT @ 0.5A	12.0V @ 1.0A	**9.90**
967-9610	FS28-420	12.0	28.0V CT @ 0.42A	14.0V @ 0.84A	**9.90**
967-9615	FS36-350	12.0	36.0V CT @ 0.35A	18.0V @ 0.7A	**9.90**
967-8342	FS48-250	12.0	48.0V CT @ 0.25A	24.0V @ 0.5A	**9.90**
967-8344	FS56-220	12.0	56.0V CT @ 0.22A	28.0V @ 0.44A	**9.90**
967-8346	FS120-100	12.0	120.0V CT @ 0.1A	60.0V @ 0.2A	**9.90**

PC Mount

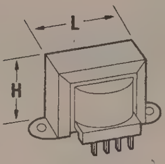


Figure A

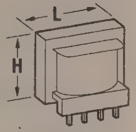


Figure B

TRIAD power transformers from MagneTek are offered in a wide selection of plug-in types to meet the needs of PC board and solid state power supply designs. These transformers can satisfy power as well as control and instrumentation applications. The transformers are available in single or dual primary and dual center tapped secondary configurations. **Specifications. Primary:** 115/230 V, 50/60 Hz.

Dual Primary, Dual Secondaries

Stock No.	Mfr.'s Type	Section	Fig.	VA	Secondary		Dimensions							Wt. Oz.	EACH	
					Series*	Parallel	H	W	D	L	A	B	MW		1-49	50-Up
967-2072	F-3132P	A	B	1 1/2	15.0 V CT @ 0.1 A	7.5 V @ 0.2 A	1 3/16	—	1 1/8	—	13/64	1	—	4.0	7.40	5.12
967-2041	F-333P	A	B	1 1/2	30.0 V CT @ 0.050 A	15.0 V @ 0.100 A	1 3/16	—	1 1/8	—	13/64	1	—	4.0	8.62	5.97
967-2057	F-367P	A	B	1 1/2	230.0 V CT @ 0.0065 A	115.0 V @ 0.013 A	1 3/16	—	1 1/8	—	13/64	1	—	4.0	9.53	6.60
967-2043	F-348XP	B	A	4 1/2	12.6 V CT @ 0.350 A	6.3 V @ 0.700 A	1 3/8	2 3/8	1 1/4	1 5/8	1/4	1 7/64	2	6.5	7.20	5.06
967-2074	F-3142XP	C	A	4 1/2	15.0 V CT @ 0.3 A	7.5 V @ 0.6 A	1 7/16	2 3/8	1 1/4	1 5/8	1/4	1 7/64	2	6.5	7.31	5.06
967-4044	F-349XP	C	A	4 1/2	16.0 V CT @ 0.280 A	8.0 V @ 0.560 A	1 7/16	2 3/8	1 1/4	1 5/8	1/4	1 7/64	2	6.5	7.31	5.06
967-2044	F-350XP	C	A	4 1/2	24.0 V CT @ 0.180 A	12.0 V @ 0.360 A	1 7/16	2 3/8	1 1/4	1 5/8	1/4	1 7/64	2	6.5	7.31	5.06
967-2048	F-358XP	C	A	4 1/2	20.0 V CT @ 0.225 A	10.0 V @ 0.450 A	1 7/16	2 3/8	1 1/4	1 5/8	1/4	1 7/64	2	6.5	7.31	5.06
967-2075	F-3143XP	C	A	4 1/2	30.0 V CT @ 0.15 A	15.0 V @ 0.3 A	1 7/16	2 3/8	1 1/4	1 5/8	1/4	1 7/64	2	6.5	7.31	5.06
967-2053	F-363XP	C	A	4 1/2	230.0 V CT @ 0.020 A	115.0 V @ 0.040 A	1 7/16	2 3/8	1 1/4	1 5/8	1/4	1 7/64	2	6.5	8.84	6.12
967-2076	F-3152XP	D	A	7 1/2	15.0 V CT @ 0.5 A	7.5 V @ 1.0 A	1 5/8	2 13/16	1 7/16	1 7/8	1/4	1 5/16	2 3/8	11.0	7.89	5.46
967-2077	F-3153XP	D	A	7 1/2	30.0 V CT @ 0.25 A	15.0 V @ 0.5 A	1 5/8	2 13/16	1 7/16	1 7/8	1/4	1 5/16	2 3/8	11.0	7.89	5.46
967-2049	F-359XP	E	A	10	24.0 V CT @ 0.450 A	12.0 V @ 0.900 A	1 5/8	2 13/16	1 7/16	1 7/8	1/4	1 5/16	2 3/8	11.0	8.00	5.54
967-2052	F-362XP	E	A	10	20.0 V CT @ 0.500 A	10.0 V @ 1.0 A	1 5/8	2 13/16	1 7/16	1 7/8	1/4	1 5/16	2 3/8	11.0	8.00	5.54
967-2054	F-365XP	E	A	10	12.6 V CT @ 0.800 A	6.3 V @ 1.6 A	1 5/8	2 13/16	1 7/16	1 7/8	1/4	1 5/16	2 3/8	11.0	8.00	5.54
967-2056	F-366XP	E	A	10	16.0 V CT @ 0.640 A	8.0 V @ 1.28 A	1 5/8	2 13/16	1 7/16	1 7/8	1/4	1 5/16	2 3/8	11.0	8.00	5.54
967-2058	F-371P	F	B	24	12.6 V CT @ 2.0 A	6.3 V @ 4.0 A	1 3/8	—	2 1/4	1 5/8	1/4	2 7/64	—	13.3	11.11	7.69
967-2059	F-372P	F	B	24	16.0 V CT @ 1.5 A	8.0 V @ 3.0 A	1 3/8	—	2 1/4	1 5/8	1/4	2 7/64	—	13.3	11.11	7.69
967-2061	F-373P	F	B	24	20.0 V CT @ 1.2 A	10.0 V @ 2.4 A	1 3/8	—	2 1/4	1 5/8	1/4	2 7/64	—	13.3	11.11	7.69
967-2062	F-374P	F	B	24	24.0 V CT @ 1.0 A	12.0 V @ 2.0 A	1 3/8	—	2 1/4	1 5/8	1/4	2 7/64	—	13.3	11.11	7.69
967-2063	F-375P	F	B	24	28.0 V CT @ 0.8 A	14.0 V @ 1.6 A	1 3/8	—	2 1/4	1 5/8	1/4	2 7/64	—	13.3	11.11	7.69
967-2064	F-376P	F	B	24	34.0 V CT @ 0.7 A	17.0 V @ 1.4 A	1 3/8	—	2 1/4	1 5/8	1/4	2 7/64	—	13.3	11.11	7.69
967-2065	F-377P	F	B	24	40.0 V CT @ 0.6 A	20.0 V @ 1.2 A	1 3/8	—	2 1/4	1 5/8	1/4	2 7/64	—	13.3	11.11	7.69
967-2066	F-378P	F	B	24	56.0 V CT @ 0.42 A	28.0 V @ 0.84 A	1 3/8	—	2 1/4	1 5/8	1/4	2 7/64	—	13.3	23.18	16.05

*CT = Center Tap. Mounting hole size: 3/16".

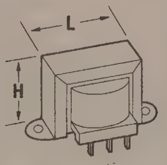


Figure A

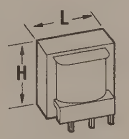


Figure B

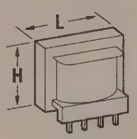


Figure C

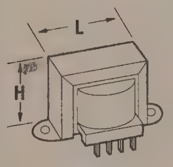


Figure D

TRIAD power transformers from MagneTek are offered in a wide selection of plug-in types to meet the needs of PC board and solid state power supply designs. These transformers can satisfy power as well as control and instrumentation applications. The transformers are available in single or dual primary and dual center tapped secondary configurations. **Specifications. Primary:** 115 V, 50/60 Hz.

Single Primary, Dual Secondaries

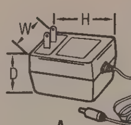
Stock No.	Mfr.'s Type	Section	Fig.	VA	Secondary		Dimensions							Wt. Oz.	EACH	
					Series*	Parallel	H	W	D	L	A	B	MW		1-49	50-Up
967-1071	F-131P	A	B	1 1/2	8.0 V CT @ 0.188 A	4.0 V @ 0.376 A	1 3/16	—	1 5/32	1 25/64	5/16	1	—	3.5	13.11	9.08
967-1077	F-139P	A	B	1 1/2	12.6 V CT @ 0.12 A	6.3 V @ 0.24 A	1 3/16	—	1 5/32	1 25/64	5/16	1	—	3.5	13.80	9.55
967-1132	F-132P	A	B	1 1/2	15.0 V CT @ 0.100 A	7.5 V @ 0.200 A	1 3/16	—	1 5/32	1 25/64	5/16	1	—	3.5	6.04	4.18
967-1076	F-138P	A	B	1 1/2	25.2 V CT @ 0.06 A	12.6 V @ 0.12 A	1 3/16	—	1 5/32	1 25/64	5/16	1	—	3.5	13.09	9.06
967-1072	F-133P	A	B	1 1/2	30.0 V CT @ 0.050 A	15.0 V @ 0.100 A	1 3/16	—	1 5/32	1 25/64	5/16	1	—	3.5	6.04	4.18
967-1097	F-160P	A	B	1 1/2	34.0 V CT @ 0.045 A	17.0 V @ 0.090 A	1 3/16	—	1 5/32	1 25/64	5/16	1	—	3.5	14.62	11.12
967-1075	F-137P	A	B	1 1/2	40.0 V CT @ 0.038 A	20.0 V @ 0.076 A	1 3/16	—	1 5/32	1 25/64	5/16	1	—	3.5	15.22	10.54
967-1087	F-149XP	B	A	4 1/2	12.6 V CT @ 0.35 A	6.3 V @ 0.70 A	1 7/16	2 3/8	1 1/4	1 45/64	13/32	1 3/32	2	7.5	13.47	9.32
967-1079	F-142XP	B	A	4 1/2	15.0 V CT @ 0.300 A	7.5 V @ 0.600 A	1 7/16	2 3/8	1 1/4	1 45/64	13/32	1 3/32	2	7.5	11.87	8.22
967-1098	F-161XP	B	A	4 1/2	17.0 V CT @ 0.264 A	8.5 V @ 0.528 A	1 7/16	2 3/8	1 1/4	1 45/64	13/32	1 3/32	2	7.5	13.47	9.32
967-1086	F-148XP	B	A	4 1/2	25.2 V CT @ 0.178 A	12.6 V @ 0.356 A	1 7/16	2 3/8	1 1/4	1 45/64	13/32	1 3/32	2	7.5	11.98	8.29
967-1080	F-143XP	B	A	4 1/2	30.0 V CT @ 0.150 A	15.0 V @ 0.300 A	1 7/16	2 3/8	1 1/4	1 45/64	13/32	1 3/32	2	7.5	10.93	7.57
967-2000	F-162XP	B	A	4 1/2	34.0 V CT @ 0.132 A	17.0 V @ 0.264 A	1 7/16	2 3/8	1 1/4	1 45/64	13/32	1 3/32	2	7.5	13.47	9.32
967-1084	F-147XP	B	A	4 1/2	40.0 V CT @ 0.112 A	20.0 V @ 0.224 A	1 7/16	2 3/8	1 1/4	1 45/64	13/32	1 3/32	2	7.5	13.47	9.32
967-1081	F-144XP	B	A	4 1/2	54.0 V CT @ 0.084 A	27.0 V @ 0.168 A	1 7/16	2 3/8	1 1/4	1 45/64	13/32	1 3/32	2	7.5	13.47	9.32
967-1089	F-151XP	C	A	7 1/2	8.0 V CT @ 0.940 A	4.0 V @ 1.88 A	1 5/8	2 13/16	1 15/32	1 61/64	13/32	1 5/16	2 3/8	10.5	16.73	11.58
967-7152	F-152XP	C	A	7 1/2	15.0 V CT @ 0.500 A	7.5 V @ 1.000 A	1 5/8	2 13/16	1 15/32	1 61/64	13/32	1 5/16	2 3/8	10.5	16.73	11.58
967-2001	F-163XP	C	A	7 1/2	17.0 V CT @ 0.441 A	8.5 V @ 0.882 A	1 5/8	2 13/16	1 15/32	1 61/64	13/32	1 5/16	2 3/8	10.5	16.87	11.68
967-1090	F-153XP	C	A	7 1/2	30.0 V CT @ 0.250 A	15.0 V @ 0.500 A	1 5/8	2 13/16	1 15/32	1 61/64	13/32	1 5/16	2 3/8	10.5	14.71	10.18
967-1094	F-157XP	C	A	7 1/2	40.0 V CT @ 0.188 A	20.0 V @ 0.376 A	1 5/8	2 13/16	1 15/32	1 61/64	13/32	1 5/16	2 3/8	10.5	16.73	11.58
967-1092	F-155XP	C	A	7 1/2	76.0 V CT @ 0.100 A	38.0 V @ 0.200 A	1 5/8	2 13/16	1 15/32	1 61/64	13/32	1 5/16	2 3/8	10.5	16.73	11.58

*CT = Center Tap. Mounting hole size: Figure A = 3/16".

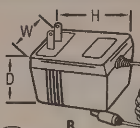
Wall Plug-Ins

► UL/CSA

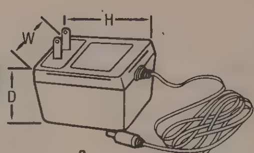
MAGNETEK'S prepackaged wall plug-in power supplies decrease product design time. These plug-in power sources eliminate the need for internal power supply cooling devices, thereby reducing the noise level, size and weight of the end product. In addition, these compact power sources keep heat away form sensitive circuits, and supply a safer lower power output to the end product. Wall plug-in power sources are completely enclosed to prevent tampering. And since they carry many required agency listings, their use aids in gaining agency approvals. Offered in a wide range of popular voltages, the plug-in power sources are available in AC-DC unregulated models with generous foot cord lengths.



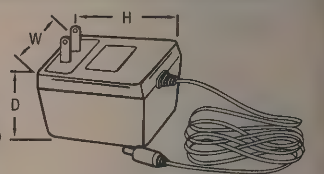
A



B



C

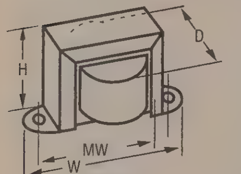


D

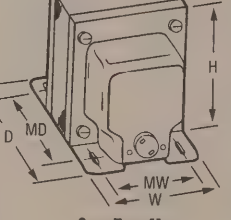
Stock No.	Mfr.'s Type	Fig.	Input VAC	Input Watts	Output VDC	Output IDC	Type	Case Dimensions H	Case Dimensions W	Case Dimensions D	EACH 1-9
967-8080	WDU6-100	A	117/120	6.0	6.0	0.10	AC/DC Unreg.	2 3/16	1 11/16	1 7/16	**6.44**
967-8081	WDU6-300	A	117/120	6.0	6.0	0.30	AC/DC Unreg.	2 3/16	1 11/16	1 7/16	**6.44**
967-8082	WDU6-600	B	117/120	10.0	6.0	0.60	AC/DC Unreg.	2 1/2	2	1 5/8	**8.22**
967-8083	WDU6-800	B	117/120	12.0	6.0	0.80	AC/DC Unreg.	2 1/2	2	1 5/8	**8.22**
967-8084	WDU6-1000	C	117/120	13.0	6.0	1.00	AC/DC Unreg.	2 13/16	2 3/16	1 7/8	**10.80**
967-8085	WDU6-1200	B	117/120	14.0	6.0	1.20	AC/DC Unreg.	2 1/2	2	1 5/8	**10.80**
967-8086	WDU75-100	A	117/120	6.0	7.5	0.10	AC/DC Unreg.	2 3/16	1 11/16	1 7/16	**6.44**
967-8087	WDU75-300	A	117/120	6.0	7.5	0.30	AC/DC Unreg.	2 3/16	1 11/16	1 7/16	**6.44**
967-8088	WDU75-1000	C	117/120	15.0	7.5	1.00	AC/DC Unreg.	2 13/16	2 3/16	1 7/8	**10.80**
967-8089	WDU9-100	A	117/120	6.0	9.0	0.10	AC/DC Unreg.	2 3/16	1 11/16	1 7/16	**6.44**
967-8090	WDU9-300	A	117/120	6.0	9.0	0.30	AC/DC Unreg.	2 3/16	1 11/16	1 7/16	**6.44**
967-8091	WDU9-500	B	117/120	12.0	9.0	0.50	AC/DC Unreg.	2 1/2	2	1 5/8	**8.22**
967-8092	WDU9-1000	C	117/120	15.0	9.0	1.00	AC/DC Unreg.	2 13/16	2 3/16	1 7/8	**10.80**
967-8093	WDU9-1200	D	117/120	20.0	9.0	1.20	AC/DC Unreg.	3 5/16	2 9/16	2 3/16	**10.80**
967-8094	WDU12-100	A	117/120	6.0	12.0	0.10	AC/DC Unreg.	2 3/16	1 11/16	1 7/16	**6.44**
967-8095	WDU12-300	B	117/120	10.0	12.0	0.30	AC/DC Unreg.	2 1/2	2	1 5/8	**8.22**
967-8096	WDU12-600	C	117/120	14.0	12.0	0.60	AC/DC Unreg.	2 13/16	2 3/16	1 7/8	**10.80**
967-8097	WDU12-1200	D	117/120	24.0	12.0	1.20	AC/DC Unreg.	3 5/16	2 9/16	2 3/16	**11.09**
967-8098	WDU15-200	B	117/120	10.0	15.0	0.20	AC/DC Unreg.	2 1/2	2	1 5/8	**6.44**
967-8099	WDU15-600	C	117/120	15.0	15.0	0.60	AC/DC Unreg.	2 13/16	2 3/16	1 7/8	**11.09**
967-8100	WDU15-1000	D	117/120	24.0	15.0	1.00	AC/DC Unreg.	3 5/16	2 9/16	2 3/16	**11.84**
967-8101	WDU18-100	A	117/120	6.0	18.0	0.10	AC/DC Unreg.	2 3/16	1 11/16	1 7/16	**6.44**
967-8102	WDU18-250	B	117/120	12.0	18.0	0.25	AC/DC Unreg.*	2 1/2	2	1 5/8	**8.22**
967-8103	WDU18-600	D	117/120	18.0	18.0	0.60	AC/DC Unreg.*	3 5/16	2 9/16	2 3/16	**10.80**
967-8104	WDU18-1000	D	117/120	30.0	18.0	1.00	AC/DC Unreg.*	3 5/16	2 9/16	2 3/16	**11.84**
—	—	—	—	—	—	—	—	—	—	—	—

*U.L. only, no CSA. **Note:** AC/DC, AC-AC available upon request.

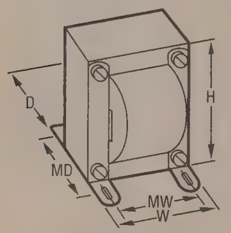
Autotransformers and Transformers



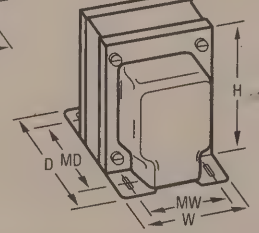
Case Type X



Case Type M



Case Type U



Case Type A

Step-Down Autotransformers. TRIAD autotransformers are single winding transformers in which the primary coil is a fraction of the entire winding for voltage step-up or the secondary coil is a fraction of the entire winding for voltage step-down. (See Technical Notes for an equivalent circuit diagram). In ordinary double wound power transformers, the primary and secondary are isolated and all the power is transferred by induction. In autotransformers, part of the power is transferred conductively through the windings. TRIAD autotransformers come in a variety of configurations, case types and output watts (VA) ratings in excess of 2000 watts. A universal isolation/autotransformer/voltage control model is available with up to a 4000 output watts rating when operated as an autotransformer.

Stock No.	Mfr.'s Type	Output Watts (VA)	Primary Voltage	Secondary Volts ±5%	Secondary RMS Amps	Case Type*	Connections	Lead Holes Used	Case Dimensions H	Case Dimensions W	Case Dimensions D	Mounting Dim. MW	Mounting Dim. MD	Wt. (Lbs.)	EACH 1-9
967-9508	N-1X	50	230	115	0.435	X (1)	Leads	—	2 9/32	3 11/16	2	3 1/8	—	1.5	**11.01**
967-9512	N-2X	100	230	115	0.870	X (1)	Leads	—	2 5/8	4	2 1/16	3 5/8	—	2.1	**16.18**
967-9514	N-6U	200	230	115	1.700	U (3)	Leads	—	3 3/8	2 13/16	2 13/16	2 1/4	2 1/4	3.6	**31.36**
967-9516	N-5M	250	230	115	2.170	M (3)	6' Cord, Plug and Socket	—	3 7/8	3 9/32	4 1/4	2 1/2	3	7.0	**47.24**
967-9518	N-7M	600	230	115	5.220	M (3)	6' Cord, Plug and Socket	—	4 5/8	3 15/16	5	3	3 7/8	12.0	**56.04**
967-9522	N-7MG†	600	230	115	5.220	M (3)	6' Cord, Plug and Socket	—	4 5/8	3 15/16	5	3	3 7/8	12.0	**76.02**

Isolation. Isolation transformers are power transformers for isolating equipment from direct connection to the power line. They are offered in a variety of voltage and case types. TRIAD isolation transformers are also offered in a hospital type (designated with an MD suffix) which are designed and constructed to meet the low leakage current requirements for today's medical equipment. The transformers are constructed with nonconcentrically precision-wound coils. The primary and secondary are precision wound on separate arbors, then assembled on a laminate core side by side separated by insulation. This prevents electrical connection, under normal or overload conditions, between the primary and secondary windings. These hospital type units are offered with a resettable circuit breaker, providing protection from overload and short circuit conditions.

Stock No.	Mfr.'s Type	Output Watts (VA)	Primary Voltage	Secondary Volts ±5%	Secondary RMS Amps	Case Type*	Connections	Lead Holes Used	Case Dimensions H	Case Dimensions W	Case Dimensions D	Mounting Dim. MW	Mounting Dim. MD	Wt. (Lbs.)	EACH 1-9
967-9500	N-51X	35	115	115	0.300	X (1)	Leads	—	2 9/32	3 11/16	2 1/8	3 1/8	—	1.7	**14.98**
967-9502	N-68X	50	115-230‡	115	0.435	X (1)	Leads	—	2 9/32	3 11/16	2 1/8	3 1/8	—	1.7	**19.40**
967-9504	N-67A	150	115-230‡	115	1.300	A (3)	Leads	2	3 7/8	3 9/32	3 7/8	2 1/2	3	7.0	**42.24**
967-9506	N-66A	250	115-230‡	115	2.170	A (3)	Leads	2	4 5/8	3 15/16	4 5/8	3	3 5/8	11.0	**62.16**

Medical/Dental

Stock No.	Mfr.'s Type	Output Watts (VA)	Primary Voltage	Secondary Volts ±5%	Secondary RMS Amps	Case Type*	Connections	Lead Holes Used	Case Dimensions H	Case Dimensions W	Case Dimensions D	Mounting Dim. MW	Mounting Dim. MD	Wt. (Lbs.)	EACH 1-9
967-2344	N-90MD	250	115	115	2.170	M (3)	6' Cord, Plug and Socket•	—	4 5/8	3 7/8	6 1/8	3	4 15/16	11.9	**104.70**
967-2345	N-92MD	500	115	115	4.350	M (4)	6' Cord, Plug and Socket•	—	5 11/32	4 1/2	7	3 1/2	5 3/8	17.6	**131.60**

***Mounting Hole Sizes:** (3)=3/8 × 3/16"; (1)=3/16". †Has 3-wire plug, cord and socket. ‡Split winding. •Circuit Breaker.

Technical Notes: 1. Leakage current from primary to secondary is rated at less than 50 micro-amps and is typically measured at less than 10 micro-amps. 2. Line cord, plug and receptacle are U.L. listed and verified to meet federal specifications. 3. Connections are by leads, plugs and sockets. 4. Hi-pot tested at 1500 VRMS. 5. All units have static shields, except those marked with an asterisk.

Telephone Coupling and Printed Circuit Audio Transformers

Telephone Coupling Transformers. TRIAD telephone coupling transformers from MagneTek are designed for use in work areas where several telephones are connected to a single incoming — outgoing line. The TY Series is adaptable for hybrid, bridging or coupling applications. These coupling transformers provide a correct means of impedance matching and balancing through close coupling and isolation — all parameters must be considered so that existing lines are not degraded. **Specifications. Frequency Response:** 300-3,500 Hz ±0.5 dB. **Longitudinal Balance:** 45 dB min. **Return Loss:** 26 dB min. **Distortion:** 0.5% max. **Impedance Matching:** ±10% over the frequency range. **Power Level:** –45 dBm to +7 dBm. Complies with FCC Rules Part 68.

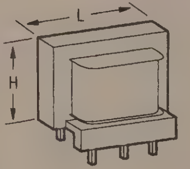
Stock No.	Mfr.'s Type	Fig.	Section	Primary Impedance*	Secondary Impedance*	Dimensions H	Dimensions D	Dimensions L	Dimensions A	Dimensions B	Pin Dim. C	Pin Dim. J	Wt. (Oz.)	EACH 1-49	EACH 50-Up
967-2542	TY-300P	A	A	600	600/600	23/32	11/16	25/32	3/16	27/64	3/16	0.041	0.51	**5.56**	**3.85**
967-2538	TY-301P	B	B	600	900	23/32	11/16	25/32	3/8	27/64	3/16	0.041	0.51	**5.56**	**3.85**
967-2550	TY-302P	A	C	600	600/600	27/32	31/32	1 1/32	13/64	25/32	3/16	0.041	1.06	**8.33**	**5.77**
967-2551	TY-303P	B	D	4000	600	23/32	11/16	25/32	3/8	27/64	3/16	0.041	0.51	**5.56**	**3.85**
967-2552	TY-304P	C	E	600 CT	600 CT	23/32	11/16	25/32	3/16	27/64	3/16	0.041	0.51	**5.56**	**3.85**

*CT = Center Tap.

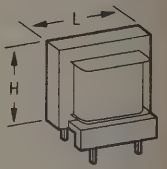
Plug-In Printed Circuit Audio Transformers. MagneTek produces a wide assortment of TRIAD audio transformers for use in printed circuit designs. These transformers fill a broad application spectrum in the audio industry. TRIAD audio printed circuit transformers are used in line matching, telephone coupling, pulse trigger, driver, interstage, output, isolation and input applications. **Specifications. Frequency Response Ranges:** 200-15,000 Hz. **Impedance Matching:** 10% over frequency range.

Stock No.	Mfr.'s Type	Fig.	Section	Output (mW)	Primary Impedance*	Secondary Impedance*	Pri. DC Unbalance	Dimensions H	Dimensions D	Dimensions L	Dimensions A	Dimensions B	Dimensions C	Dimensions J	Wt. (Oz.)	EACH 1-49	EACH 50-Up
967-2537	TY-141P	D	A	100	10000 CT	10000 CT	4 Ma	5/8	19/32	13/16	3/16	27/64	3/16	0.042	0.51	**4.01**	**2.72**
967-3338	TY-142P	D	A	100	10000 CT	2000 CT	4 Ma	5/8	19/32	13/16	3/16	27/64	3/16	0.042	0.51	**4.01**	**2.72**
967-2539	TY-144P	D	A	100	15000 CT	15000 CT	4 Ma	5/8	19/32	13/16	3/16	27/64	3/16	0.042	0.51	**4.01**	**2.72**
967-2540	TY-145P	D	A	100	600 CT	600 CT	15 Ma	5/8	19/32	13/16	3/16	27/64	3/16	0.042	0.51	**4.01**	**2.72**
967-2541	TY-146P	E	A	1 Watt	600 CT/150†	600 CT/150†	—	1 1/8	1 1/8	1 3/8	13/64	1 1/32	3/16	0.042	3.00	**7.22**	**5.00**

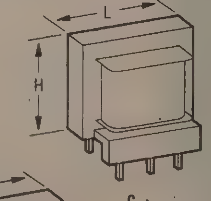
*CT = Center Tap. †Split winding.



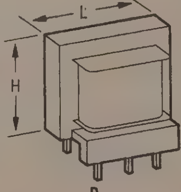
A



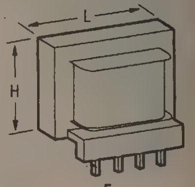
B



C



D



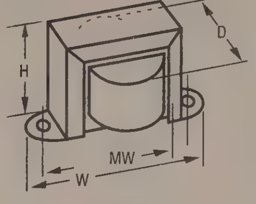
E

Power Transformers

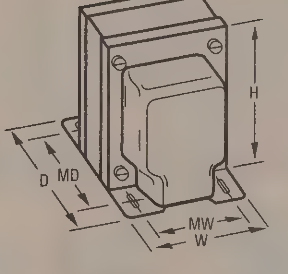
MagneTek offers a full choice of TRIAD power supply transformers for direct use or in transformer, rectifier, or filter circuits. Other available secondary voltages include control, filament and low level signaling in standard values. The transformers are single primary with single and multiple secondaries in standard size and weight configurations.

Stock No.	Mfr.'s Type	Secondary		Primary Voltage	Case Type†	Connections or Lead Holes Used	Case Dimensions			Mounting Dimensions		Wt. (Lbs.)	EACH
		Volts*	Amps				H	D	W	MW	MD		1-9
967-1013	F-13X	6.3	0.600	115	X (1)	Leads	1 3/8	2 3/8	1 3/8	2	—	0.37	**7.91**
967-8352	F-313X	6.3	0.600	115/230	X (1)	Leads	1 3/8	2 3/8	1 3/8	2	—	0.37	**13.20**
967-1014	F-14X‡	6.3 CT	1.200	115	X (1)	Leads	1 5/8	2 13/16	1 5/8	2 3/8	—	0.70	**10.60**
967-8354	F-314X	6.3 CT	1.200	115/230	X (1)	Leads	1 5/8	2 13/16	1 5/8	2 3/8	—	0.70	**13.64**
967-8360	F-16X	6.3 CT	3.000	115	X (1)	Leads	1 15/16	3 5/16	2	2 13/16	—	1.30	**12.51**
967-8362	F-316X	6.3 CT	3.000	115/230	X (1)	Leads	1 15/16	3 5/16	2	2 13/16	—	1.30	**17.53**
967-8366	F-43X‡	6.3	4.000	115	X (1)	Leads	1 15/16	3 5/16	2	2 13/16	—	1.25	**12.40**
967-8370	F-18X	6.3 CT	6.000	115	X (1)	Leads	2 19/32	4	2 1/4	3 9/16	—	2.30	**17.13**
967-8378	F-21A	6.3 CT	10.000	115	A (3)	1-Leads	3 19/32	2 31/32	3 1/8	2 1/4	2	3.80	**35.36**
967-8380	F-22A	6.3 CT	20.000	115	A (3)	2-Leads	3 7/8	3 9/32	4 1/8	2 1/2	3	7.00	**40.80**
967-8382	F-113X	12.0	0.150	115	X (1)	Leads	1 3/8	2 3/8	1 3/8	2	—	0.40	**8.36**
967-8384	F-216X‡	12.0	0.350	115	X (1)	Leads	1 3/8	2 3/8	1 3/8	2	—	0.37	**9.89**
967-8386	F-114X	12.0	0.700	115	X (1)	Leads	1 5/8	2 13/16	1 5/8	2 3/8	—	0.80	**9.07**
967-8388	F-217X‡	12.0	1.200	115	X (1)	Leads	2	3 1/4	1 3/4	2 13/16	—	1.00	**11.87**
967-8390	F-218X‡	12.0	2.000	115	X (1)	Leads	2	3 1/4	1 7/8	2 7/8	—	1.13	**12.80**
967-1219	F-219X‡	12.0	4.000	115	X (1)	Leads	2 9/16	4	2 1/4	3 9/16	—	2.30	**19.09**
967-8392	F-220U‡	12.0	6.000	115	U (3)	Leads	3 7/16	2 13/16	2 1/2	2 1/4	2 1/8	3.50	**26.60**
967-9300	F-221U‡	12.0	8.000	115	U (3)	Leads	3 13/16	3 1/8	2 3/8	2 1/2	2 1/8	4.00	**23.13**
967-8396	F-70X	12.6 CT	1.000	115	X (1)	Leads	1 15/16	3 5/16	1 3/4	2 13/16	—	1.30	**11.22**
967-1025	F-25X	12.6 CT	1.500	115	X (1)	Leads	1 15/16	3 5/16	2	2 13/16	—	1.30	**11.60**
967-8398	F-325X	12.6 CT	1.500	115/230	X (1)	Leads	1 15/16	3 5/16	2	2 13/16	—	1.30	**13.91**
967-1044	F-44X‡	12.6 CT	2.000	115	X (1)	Leads	1 15/16	3 5/16	2	2 13/16	—	1.25	**14.10**
967-9989	F-344X	12.6 CT	2.000	115/230	X (1)	Leads	1 15/16	3 5/16	2	2 13/16	—	1.25	**14.36**
967-8400	F-26X‡	12.6 CT	2.500	115	X (1)	Leads	2 9/32	3 11/16	2	3 1/8	—	1.55	**15.47**
967-8404	F-224X‡	12.6	3.000	115	X (1)	Leads	2 1/4	3 3/4	2 1/8	3 1/8	—	1.60	**16.24**
967-8406	F-225X‡	12.6	4.000	115	X (1)	Leads	2 5/8	4	2 1/16	3 9/16	—	2.30	**18.44**
967-8410	F-3181U	12.6 CT	4.000	115/230	U (1)	Leads	3 1/16	2 9/16	2 3/16	2	2	2.30	**27.78**
967-8412	F-182U	12.6 CT	6.000	115	U (2)	Leads	3 3/8	2 13/16	2 7/16	2 1/4	2 3/8	3.80	**26.87**
967-8414	F-112X	14.0 CT	0.250	115	X (1)	Leads	1 3/8	2 3/8	1 3/8	2	—	0.40	**10.40**
967-8418	F-3112X	14.0 CT	0.250	115/230	X (1)	Leads	1 3/8	2 3/8	1 1/2	2	—	0.30	**16.07**
967-9250	F-250X	14.0 CT	1.000	115	X (1)	Leads	1 15/16	3 1/4	1 3/4	2 13/16	—	1.20	**12.49**
967-9251	F-251X	14.0 CT	2.000	115	X (1)	Leads	2 1/4	3 11/16	1 15/16	3 1/8	—	1.50	**16.67**
967-8420	F-252U	14.0 CT	4.000	115	U (2)	Leads	3	2 1/2	2 7/16	2	2 1/4	3.00	**22.93**
967-8422	F-253U	14.0 CT	6.000	115	U (2)	Leads	3 3/8	2 13/16	2 7/8	2 1/4	2 3/8	4.00	**34.73**
967-8432	F-254X	20.0 CT	1.000	115	X (1)	Leads	2 1/4	3 11/16	1 15/16	3 1/8	—	1.50	**14.29**
967-8434	F-255X	20.0 CT	2.000	115	X (1)	Leads	2 9/16	4	2 1/4	3 9/16	—	2.50	**17.71**
967-8436	F-256U	20.0 CT	4.000	115	U (2)	Leads	3 3/8	2 13/16	2 7/8	2 3/8	—	4.00	**25.27**
967-8438	F-257U	20.0 CT	6.000	115	U (2)	Leads	3 3/4	3 1/8	3 1/8	2 1/2	2 5/8.	5.70	**34.32**
967-8440	F-258U	20.0 CT	8.000	115	U (2)	Leads	3 3/4	3 1/8	3 1/2	2 1/2	2 7/8	6.40	**45.69**
967-8442	F-259U	20.0 CT	10.000	115	U (2)	Leads	4 1/8	3 7/16	3 1/2	2 3/4	2 3/4	7.40	**59.53**
967-1116	F-116X	24.0 CT	0.200	115	X (1)	Leads	1 3/8	2 3/8	1 1/2	2	—	0.45	**10.20**
967-8448	F-3116X	24.0 CT	0.200	115/230	X (1)	Leads	1 3/8	2 3/8	1 1/2	2	—	0.45	**12.13**
967-8450	F-117X	24.0 CT	0.400	115	X (1)	Leads	1 5/8	2 13/16	1 5/8	2 3/8	—	0.80	**11.22**
967-8452	F-3117X	24.0 CT	0.400	115/230	X (1)	Leads	1 5/8	2 13/16	1 1/2	2 3/8	—	0.75	**14.24**
967-8456	F-118X	24.0 CT	0.700	115	X (1)	Leads	2	3 1/4	2	2 13/16	—	1.30	**12.07**
967-8458	F-3118X	24.0 CT	0.700	115/230	X (1)	Leads	2	3 1/4	2	2 13/16	—	1.30	**17.58**
967-1045	F-45X‡	24.0 CT	1.000	115	X (1)	Leads	1 15/16	3 5/16	2	2 13/16	—	1.30	**10.93**
967-8460	F-345X	24.0 CT	1.000	115/230	X (1)	Leads	1 15/16	3 5/16	2	2 13/16	—	1.30	**13.92**
967-8464	F-46X‡	24.0	1.000	115	X (1)	Leads	1 15/16	3 1/4	2 1/8	2 13/16	—	1.40	**10.89**
967-8468	F-229X‡	24.0	2.000	115	X (1)	Leads	2 9/16	4	2	3 9/16	—	2.30	**16.33**
967-8470	F-192X	24.0 CT	2.000	115	X (1)	Leads	2 19/32	4	2 1/4	3 9/16	—	2.30	**17.20**
967-8474	F-193U	24.0 CT	4.000	115	U (2)	Leads	3 13/16	3 1/8	2 13/16	2 1/2	2 1/8	4.00	**28.96**
967-8478	F-260U	24.0 CT	6.000	115	U (2)	Leads	3 3/4	3 1/8	3 1/2	2 1/2	2 7/8	6.40	**39.64**
967-8480	F-261U	24.0 CT	8.000	115	U (2)	Leads	4 1/8	3 7/16	3 1/2	2 3/4	2 3/4	7.40	**44.11**
967-8482	F-401U	24.0 CT	10.000	115	U (3)	Leads	4 1/8	3 7/16	3 3/4	2 3/4	3	8.00	**43.11**
967-8484	F-226U‡	24.0 CT	12.000	115	U (3)	Leads	4 9/16	3 3/4	4 1/8	3	3 1/4	10.40	**64.18**
967-8486	F-57X	25.2 CT	1.000	115	X (1)	Leads	1 15/16	3 9/16	2	2 13/16	—	1.50	**11.87**
967-8488	F-357X	25.2 CT	1.000	115/230	X (1)	Leads	1 15/16	3 9/16	2	2 13/16	—	1.50	**20.22**
967-8490	F-41X‡	25.2 CT	2.000	115	X (1)	Leads	2 19/32	4	2 1/4	3 9/16	—	2.20	**14.58**
967-1341	F-341X	25.2 CT	2.000	115/230	X (1)	Leads	2 19/32	4	2 1/4	3 9/16	—	2.20	**18.51**
967-1056	F-56X	25.2 CT	2.800	115	X (1)	Leads	2 21/32	4	2 1/4	3 9/16	—	2.50	**18.78**
967-8492	F-119X	26.8 CT	0.150	115	X (1)	Leads	1 3/8	2 3/8	1 1/2	2	—	0.45	**12.93**
967-1040	F-40X‡	26.8 CT	1.000	115	X (1)	Leads	1 15/16	3 5/16	2	2 13/16	—	1.30	**12.00**
967-8496	F-340X	26.8 CT	1.000	115/230	X (1)	Leads	1 15/16	3 5/16	2	2 13/16	—	1.30	**17.53**
967-8498	F-55X	26.8 CT	1.700	115	X (1)	Leads	2 19/32	4	2 1/4	3 9/16	—	2.30	**16.02**

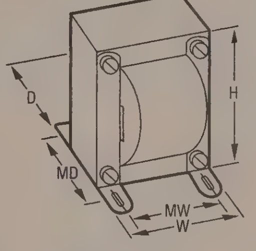
*CT = Center Tap. †**Mounting Hole Sizes:** (1) = 3/16", (2) = 5/16 × 3/16", (3) = 3/8 × 3/16". ‡60 cycle operation.



Case Type X



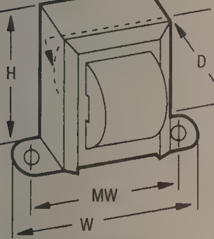
Case Type A



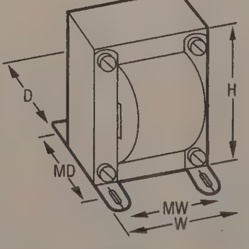
Case Type U

Chassis Mount — Control Power Transformers

TRIAD control transformers from MagneTek supply secondary voltages that are commonly utilized in various electronic, electro-magnetic and electrical control conditions. These include such applications as use with relays, solenoids, small motors, speed changers, pumps, heating elements, control valves for fluids and gases, fans and blowers, electronic tubes, automatic assembly equipment, recording devices, elevators, door openers, and low voltage lamps. **Specifications. Primary:** 115/230 VAC. 50/60 Hz. **VA Range:** 12 to 192. **Secondary:** 6/12/24 VAC. **Connections:** Lugs.



Case Type Z



Case Type U

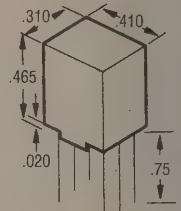
Stock No.	Mfr.'s Type	Section	Secondaries*		VA	Case Type†	Case Dimensions			Mounting Dimensions		Wt. (Lbs.)	EACH
			Series	Parallel			H	W	D	MW	MD		1-9
967-1105	F-105Z	A	12.0 V CT @ 1.00 A	6.0 V CT @ 2.0 A	12	Z	2 3/8	2 7/8	1 3/4	2 3/8	—	1.000	**13.64**
967-2018	F-211Z	A	48.0 V CT @ 0.25 A	24.0 V CT @ 0.5 A	12	Z	2 3/8	2 7/8	1 3/4	2 3/8	—	0.678	**17.82**
967-1065	F-106Z	B	12.0 V CT @ 2.00 A	6.0 V CT @ 4.0 A	24	Z	2 3/4	3 1/8	2	2 13/16	—	1.500	**18.42**
967-2019	F-212Z	B	48.0 V CT @ 0.50 A	24.0 V CT @ 1.0 A	24	Z	2 3/4	3 1/8	2	2 13/16	—	1.050	**19.82**
967-0107	F-107Z	C	24.0 V CT @ 2.00 A	12.0 V CT @ 4.0 A	48	Z	3 1/8	3 5/8	2 3/8	3 1/8	2 1/4	2.500	**17.24**
967-1213	F-213Z	C	48.0 V CT @ 1.00 A	24.0 V CT @ 2.0 A	48	Z	3 1/8	3 5/8	2 3/8	3 1/8	2 1/4	2.250	**21.49**
967-2068	F-398U	D	24.0 V CT @ 3.00 A	12.0 V CT @ 6.0 A	72	U	3 13/32	2 13/16	2 13/16	2 1/4	2 1/4	4.250	**35.13**
967-1067	F-108U	E	24.0 V CT @ 4.00 A	12.0 V CT @ 8.0 A	96	U	3 13/32	2 13/16	3 3/16	2 1/4	2 1/4	4.250	**31.53**
967-2020	F-214U	E	48.0 V CT @ 2.00 A	24.0 V CT @ 4.0 A	96	U	3 13/32	2 13/16	3 3/16	2 1/4	2 5/8	3.240	**31.20**
967-9510	F-399U	F	24.0 V CT @ 6.00 A	12.0 V CT @ 12.0 A	144	U	3 3/4	3 1/8	3 1/2	2 1/2	2 7/8	5.900	**45.71**
967-2070	F-400U	F	48.0 V CT @ 3.00 A	24.0 V CT @ 6.0 A	144	U	3 3/4	3 1/8	3 1/2	2 1/2	2 7/8	5.900	**43.16**
967-1068	F-109U	G	24.0 V CT @ 8.00 A	12.0 V CT @ 16.0 A	192	U	4 3/16	3 7/16	3 9/16	2 3/4	3	8.000	**58.69**
967-2022	F-215U	G	48.0 V CT @ 4.00 A	24.0 V CT @ 8.0 A	192	U	4 3/16	3 7/16	3 7/8	2 3/4	3	6.060	**50.80**

*CT = Center Tap. †**Mounting Hole Sizes:** Z= 3/16"; U = 13/64 × 3/8".

Audio Transformers

MIL-T-27E

TRIAD high reliability audio transformers from MagneTek provide the durability and precision required in today's demanding designs. These transformers are available for a wide variety of applications. The line of Red Spec audio transformers is designed and constructed to meet the rigid requirements of MIL-T-27E. These transformers feature an epoxy molded case, gold plated leads and exceptional operation from 300 Hz to 150 kHz. **Specifications. Frequency Response Ranges:** 300 Hz to 150 kHz.



Red Spec Printed Circuit Audio Transformers

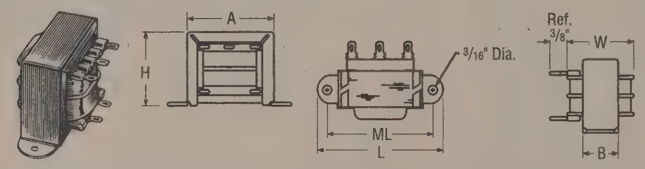
Stock No.	Mfr.'s Type	Section	Mil Type No.	Power Level (mW)	Matching Impedance		Max. Ma DC Unbalanced In Primary	4DC Resistance		Overall Turns Ratio	EACH	
					Primary*	Secondary*		Primary	Secondary		1-49	50-Up
967-2501	SP-4	A	TF5S21ZZ	10	200000 CT	1000 CT	0.0	5300.0	100.0	14.1:1.0	**21.29**	**14.74**
967-2502	SP-5	B	TF5S21ZZ	25	50000 CT	1000 CT	0.0	3800.0	75.0	7.1:1.0	**21.14**	**14.64**
967-2506	SP-13	C	TF5S21ZZ	40	25000 CT/20000 CT	1000/800 CT	0.5	1700.0	115.0	5.0:1.0	**20.11**	**13.92**
967-2507	SP-20	D	TF5S21ZZ	50	10000 CT	1200 CT	1.0	1050.0	200.0	2.88:1.0	**20.84**	**14.43**
967-2516	SP-21	D	TF5S21ZZ	50	10000 CT	2000 CT	1.0	1050.0	330.0	2.24:1.0	**21.21**	**14.69**
967-2519	SP-29	D	TF5S21ZZ	50	10000 CT	500 CT	1.0	1050.0	80.0	4.47:1.0	**20.01**	**13.85**
967-2517	SP-33	D	TF5S21ZZ	50	1000	50	3.0	145.0	8.0	4.4:1.0	**17.25**	**11.94**
967-2515	SP-42	D	TF5S21ZZ	50	150 CT	12	10.0	18.0	2.7	3.54:1.0	**15.51**	**10.73**
967-2514	SP-48	D	TF5S21ZZ	50	7500 CT	12	1.0	796.0	2.9	25.0:1.0	**18.39**	**12.73**
967-2513	SP-49	D	TF5S21ZZ	50	300	600	7.0	41.0	98.0	1.0:1.42	**21.98**	**15.22**
967-2512	SP-50	D	TF5S21ZZ	50	500 CT	600	3.0	67.0	98.0	1.0:1.1	**16.31**	**11.29**
967-2511	SP-51	D	TF5S21ZZ	50	900 CT	600	4.0	104.0	96.0	1.22:1.0	**19.21**	**13.23**
967-2510	SP-52	D	TF5S21ZZ	50	1500 CT	600	3.0	168.0	92.0	1.58:1.0	**21.29**	**14.74**
967-2530	SP-66	D	TF5S21ZZ	50	10000 CT	10000 CT	1.0	1000.0	1300.0	1.0:1.0	**16.93**	**11.72**
967-2531	SP-67	D	TF5S21ZZ	50	600 CT	600 CT	3.0	72.0	92.0	1.0:1.0	**18.64**	**12.90**
967-2532	SP-68	D	TF5S21ZZ	50	10000	10000 CT/2500†	1.0	1000.0	565.0/650.0†	2.1:1.0	**22.33**	**15.46**
967-2533	SP-69	D	TF5S21ZZ	50	600	600 CT/150†	3.0	72.0	40.0/45.0†	2.0:1.0:1.0	**18.56**	**12.85**
967-2534	SP-70	D	TF5S21ZZ	50	600	600	3.0	72.0	92.0	1.0:1.0	**17.48**	**12.10**
967-3335	SP-128	E	TF5S20ZZ	—	0.1 H	—	5.0	15.0	—	—	**11.81**	**8.17**

*CT = Center Tap. †Split secondary.

967-2536. SP-310. Shield Only. **1-49**..........**EACH 2.84** **50-Up**..........**EACH 1.93**

Single and Dual Primary Transformers

UL



Quick Pack Series small power transformers offer a significant size and weight reduction for a given VA rating. Features quick-connected or solder terminals. Available in 6 sizes for a wide variety of applications. Bobbin wound for small size. Split bobbin non-concentric winding for a higher HiPot testing (2500 V rather than 1500 V); also eliminates need for electrostatic shielding. Class B insulation for maximum total temperature of 130°C continuous. Available as single 115 V or dual 115/230 V primary, rated 50/60 Hz. UL Recognized. Our formal quality assurance system verifies that your specifications are consistently met or surpassed. We maintain accurate statistical process controls on our product and test all incoming components. Continued inspection of wire, core, insulation and other components, combined with our supplier quality assurance program, virtually eliminates imperfections. **Note:** Terminals to be quick-connect (1.87) or solder lug terminals. **Dielectric Strength:** 2500 V.

Single Primary

Stock No.	Mfr.'s Type	VA	Output Rating	Dimensions						Wt. (Lbs.)	EACH
				L	W	H	A	B	ML		1-9
967-7003	F3-10	2.4	10.0 VCT @ 0.25	2 1/16	1 1/16	1 3/16	1 5/8	9/16	1 3/4	0.25	**7.60**
967-7013	F4-10	6.0	10.0 VCT @ 0.6 A	2 3/8	1 1/4	1 3/8	1 11/16	1 11/16	2	0.44	**8.40**
967-7023	F5-10	12.0	10.0 VCT @ 1.2 A	2 13/16	1 3/8	1 5/8	1 15/16	13/16	2 3/8	0.70	**9.20**
967-7033	F6-10	30.0	10.0 VCT @ 3.0 A	3 1/4	1 11/16	1 15/16	2 5/16	1 1/16	2 13/16	1.10	**12.50**
967-7043	F7-10	56.0	10.0 VCT @ 5.0 A	3 11/16	1 13/16	2 1/4	2 11/16	1 1/16	3 1/8	1.70	**17.40**
967-7053	F8-10	100.0	10.0 VCT @ 10.0 A	4 1/32	2 1/4	2 9/16	3 1/16	1 5/16	3 9/16	2.75	**23.75**
967-7063	F3-12	2.4	12.6 VCT @ 0.2 A	2 1/16	1 1/16	1 3/16	1 5/8	9/16	1 3/4	0.25	**7.60**
967-7073	F4-12	6.0	12.6 VCT @ 0.5 A	2 3/8	1 1/4	1 3/8	1 11/16	1 11/16	2	0.44	**8.43**
967-7083	F5-12	12.0	12.6 VCT @ 1.0 A	2 13/16	1 3/8	1 5/8	1 15/16	13/16	2 3/8	0.70	**9.20**
967-7093	F6-12	30.0	12.6 VCT @ 2.5 A	3 1/4	1 11/16	1 15/16	2 5/16	1 1/16	2 13/16	1.10	**12.50**
967-7103	F7-12	56.0	12.6 VCT @ 4.0 A	3 11/16	1 13/16	2 1/4	2 11/16	1 1/16	3 1/8	1.70	**17.40**
967-7113	F8-12	100.0	12.6 VCT @ 8.0 A	4 1/32	2 1/4	2 9/16	3 1/16	1 5/16	3 9/16	2.75	**23.75**
967-7123	F3-16	2.4	16.0 VCT @ 0.15 A	2 1/16	1 1/16	1 3/16	1 5/8	9/16	1 3/4	0.25	**7.60**
967-7133	F4-16	6.0	16.0 VCT @ 0.4 A	2 3/8	1 1/4	1 3/8	1 11/16	1 11/16	2	0.44	**8.40**
967-7143	F5-16	12.0	16.0 VCT @ 0.8 A	2 13/16	1 3/8	1 5/8	1 15/16	13/16	2 3/8	0.70	**9.20**
967-7153	F6-16	30.0	16.0 VCT @ 2.0 A	3 1/4	1 11/16	1 15/16	2 5/16	1 1/16	2 13/16	1.10	**12.50**
967-7163	F7-16	56.0	16.0 VCT @ 3.5 A	3 11/16	1 13/16	2 1/4	2 11/16	1 1/16	3 1/8	1.70	**17.40**
967-7173	F8-16	100.0	16.0 VCT @ 6.25 A	4 1/32	2 1/4	2 9/16	3 1/16	1 5/16	3 9/16	2.75	**23.75**
967-7183	F3-20	2.4	20.0 VCT @ 0.12 A	2 1/16	1 1/16	1 3/16	1 5/8	9/16	1 3/4	0.25	**7.60**
967-7193	F4-20	6.0	20.0 VCT @ 0.3 A	2 3/8	1 1/4	1 3/8	1 11/16	1 11/16	2	0.44	**8.40**
967-7203	F5-20	12.0	20.0 VCT @ 0.6 A	2 13/16	1 3/8	1 5/8	1 15/16	13/16	2 3/8	0.70	**9.20**
967-7213	F6-20	30.0	20.0 VCT @ 1.5 A	3 1/4	1 11/16	1 15/16	2 5/16	1 1/16	2 13/16	1.10	**12.50**
967-7223	F7-20	56.0	20.0 VCT @ 2.8 A	3 11/16	1 13/16	2 1/4	2 11/16	1 1/16	3 1/8	1.70	**17.40**
967-7233	F8-20	100.0	20.0 VCT @ 5.0 A	4 1/32	2 1/4	2 9/16	3 1/16	1 5/16	3 9/16	2.75	**23.75**
967-7243	F3-24	2.4	24.0 VCT @ 0.1 A	2 1/16	1 1/16	1 3/16	1 5/8	9/16	1 3/4	0.25	**7.60**
967-7253	F4-24	6.0	24.0 VCT @ 0.25 A	2 3/8	1 1/4	1 3/8	1 11/16	1 11/16	2	0.44	**8.40**
967-7263	F5-24	12.0	24.0 VCT @ 0.5 A	2 13/16	1 3/8	1 5/8	1 15/16	13/16	2 3/8	0.70	**9.20**
967-7273	F6-24	30.0	24.0 VCT @ 1.25 A	3 1/4	1 11/16	1 15/16	2 5/16	1 1/16	2 13/16	1.10	**12.50**
967-7283	F7-24	56.0	24.0 VCT @ 2.4 A	3 11/16	1 13/16	2 1/4	2 11/16	1 1/16	3 1/8	1.70	**17.40**
967-7293	F8-24	100.0	24.0 VCT @ 4.0 A	4 1/32	2 1/4	2 9/16	3 1/16	1 5/16	3 9/16	2.75	**23.75**
967-7303	F3-28	2.4	28.0 VCT @ 0.085 A	2 1/16	1 1/16	1 3/16	1 5/8	9/16	1 3/4	0.25	**7.60**
967-7313	F4-28	6.0	28.0 VCT @ 0.2 A	2 3/8	1 1/4	1 3/8	1 11/16	1 11/16	2	0.44	**8.40**
967-7323	F5-28	12.0	28.0 VCT @ 0.42 A	2 13/16	1 3/8	1 5/8	1 15/16	13/16	2 3/8	0.70	**9.20**
967-7333	F6-28	30.0	28.0 VCT @ 1.1 A	3 1/4	1 11/16	1 15/16	2 5/16	1 1/16	2 13/16	1.10	**12.50**
967-7343	F7-28	56.0	28.0 VCT @ 2.0 A	3 11/16	1 13/16	2 1/4	2 11/16	1 1/16	3 1/8	1.70	**17.40**
967-7353	F8-28	100.0	28.0 VCT @ 3.6 A	4 1/32	2 1/4	2 9/16	3 1/16	1 5/16	3 9/16	2.75	**23.75**
967-7363	F3-36	2.4	36.0 VCT @ 0.065A	2 1/16	1 1/16	1 3/16	1 5/8	9/16	1 3/4	0.25	**7.60**
967-7373	F4-36	6.0	36.0 VCT @ 0.17 A	2 3/8	1 1/4	1 3/8	1 11/16	1 11/16	2	0.44	**8.40**
967-7383	F5-36	12.0	36.0 VCT @ 0.35 A	2 13/16	1 3/8	1 5/8	1 15/16	13/16	2 3/8	0.70	**9.20**
967-7393	F6-36	30.0	36.0 VCT @ 0.85 A	3 1/4	1 11/16	1 15/16	2 5/16	1 1/16	2 13/16	1.10	**12.50**
967-7403	F7-36	56.0	36.0 VCT @ 1.5 A	3 11/16	1 13/16	2 1/4	2 11/16	1 1/16	3 1/8	1.70	**17.40**
967-7413	F8-36	100.0	36.0 VCT @ 2.8 A	4 1/32	2 1/4	2 9/16	3 1/16	1 5/16	3 9/16	2.75	**23.75**
967-7423	F3-48	2.4	48.0 VCT @ 0.05 A	2 1/16	1 1/16	1 3/16	1 5/8	9/16	1 3/4	0.25	**7.60**
967-7433	F4-48	6.0	48.0 VCT @ 0.125 A	2 3/8	1 1/4	1 3/8	1 11/16	1 11/16	2	0.44	**8.40**
967-7443	F5-48	12.0	48.0 VCT @ 0.25 A	2 13/16	1 3/8	1 5/8	1 15/16	13/16	2 3/8	0.70	**9.20**
967-7453	F6-48	30.0	48.0 VCT @ 0.63 A	3 1/4	1 11/16	1 15/16	2 5/16	1 1/16	2 13/16	1.10	**12.50**
967-7463	F7-48	56.0	48.0 VCT @ 1.2 A	3 11/16	1 13/16	2 1/4	2 11/16	1 1/16	3 1/8	1.70	**17.40**
967-7473	F8-48	100.0	48.0 VCT @ 2.0 A	4 1/32	2 1/4	2 9/16	3 1/16	1 5/16	3 9/16	2.75	**23.75**
967-7483	F3-56	2.4	56.0 VCT @ 0.045 A	2 1/16	1 1/16	1 3/16	1 5/8	9/16	1 3/4	0.25	**7.60**
967-7493	F4-56	6.0	56.0 VCT @ 0.11 A	2 3/8	1 1/4	1 3/8	1 11/16	1 11/16	2	0.44	**8.40**
967-7503	F5-56	12.0	56.0 VCT @ 0.22 A	2 13/16	1 3/8	1 5/8	1 15/16	13/16	2 3/8	0.70	**9.20**
967-7513	F6-56	30.0	56.0 VCT @ 0.54 A	3 1/4	1 11/16	1 15/16	2 5/16	1 1/16	2 13/16	1.10	**12.50**
967-7523	F7-56	56.0	56.0 VCT @ 1.0 A	3 11/16	1 13/16	2 1/4	2 11/16	1 1/16	3 1/8	1.70	**17.40**
967-7533	F8-56	100.0	56.0 VCT @ 1.8 A	4 1/32	2 1/4	2 9/16	3 1/16	1 5/16	3 9/16	2.75	**23.75**
967-7543	F3-120	2.4	120.0 VCT @ 0.02 A	2 1/16	1 1/16	1 3/16	1 5/8	9/16	1 3/4	0.25	**7.60**
967-7553	F4-120	6.0	120.0 VCT @ 0.05 A	2 3/8	1 1/4	1 3/8	1 11/16	1 11/16	2	0.44	**8.40**
967-7563	F5-120	12.0	120.0 VCT @ 0.1 A	2 13/16	1 3/8	1 5/8	1 15/16	13/16	2 3/8	0.70	**9.20**
967-7573	F6-120	30.0	120.0 VCT @ 0.25 A	3 1/4	1 11/16	1 15/16	2 5/16	1 1/16	2 13/16	1.10	**12.50**
967-7583	F7-120	56.0	120.0 VCT @ 0.5 A	3 11/16	1 13/16	2 1/4	2 11/16	1 1/16	3 1/8	1.70	**17.40**
967-7593	F8-120	100.0	120.0 VCT @ 0.85 A	4 1/32	2 1/4	2 9/16	3 1/16	1 5/16	3 9/16	2.75	**23.75**

Dual Primary

967-7015	FD4-10	6.0	10.0 VCT @ 0.6 A	2 3/8	1 1/4	1 3/8	1 11/16	1 11/16	2	0.44	**10.25**
967-7025	FD5-10	12.0	10.0 VCT @ 1.2 A	2 13/16	1 3/8	1 5/8	1 15/16	13/16	2 3/8	0.70	**11.35**
967-7035	FD6-10	30.0	10.0 VCT @ 3.0 A	3 1/4	1 11/16	1 15/16	2 5/16	1 1/16	2 13/16	1.10	**14.70**
967-7045	FD7-10	56.0	10.0 VCT @ 5.0 A	3 11/16	1 13/16	2 1/4	2 11/16	1 1/16	3 1/8	1.70	**18.00**
967-7055	FD8-10	100.0	10.0 VCT @ 10.0 A	4 1/32	2 1/4	2 9/16	3 1/16	1 5/16	3 9/16	2.75	**25.00**
967-7075	FD4-12	6.0	12.6 VCT @ 0.5 A	2 3/8	1 1/4	1 3/8	1 11/16	1 11/16	2	0.44	**10.25**
967-7085	FD5-12	12.0	12.6 VCT @ 1.0 A	2 13/16	1 3/8	1 5/8	1 15/16	13/16	2 3/8	0.70	**11.35**
967-7095	FD6-12	30.0	12.6 VCT @ 2.5 A	3 1/4	1 11/16	1 15/16	2 5/16	1 1/16	2 13/16	1.10	**14.70**
967-7105	FD7-12	56.0	12.6 VCT @ 4.0 A	3 11/16	1 13/16	2 1/4	2 11/16	1 1/16	3 1/8	1.70	**18.00**
967-7115	FD8-12	100.0	12.6 VCT @ 8.0 A	4 1/32	2 1/4	2 9/16	3 1/16	1 5/16	3 9/16	2.75	**25.00**
967-7135	FD4-16	6.0	16.0 VCT @ 0.4 A	2 3/8	1 1/4	1 3/8	1 11/16	1 11/16	2	0.44	**10.25**
967-7145	FD5-16	12.0	16.0 VCT @ 0.8 A	2 13/16	1 3/8	1 5/8	1 15/16	13/16	2 3/8	0.70	**11.35**
967-7155	FD6-16	30.0	16.0 VCT @ 2.0 A	3 1/4	1 11/16	1 15/16	2 5/16	1 1/16	2 13/16	1.10	**14.75**
967-7165	FD7-16	56.0	16.0 VCT @ 3.5 A	3 11/16	1 13/16	2 1/4	2 11/16	1 1/16	3 1/8	1.70	**18.00**
967-7175	FD8-16	100.0	16.0 VCT @ 6.25 A	4 1/32	2 1/4	2 9/16	3 1/16	1 5/16	3 9/16	2.75	**25.00**
967-7195	FD4-20	6.0	20.0 VCT @ 0.3 A	2 3/8	1 1/4	1 3/8	1 11/16	1 11/16	2	0.44	**10.25**
967-7205	FD5-20	12.0	20.0 VCT @ 0.6 A	2 13/16	1 3/8	1 5/8	1 15/16	13/16	2 3/8	0.70	**11.35**
967-7215	FD6-20	30.0	20.0 VCT @ 1.5 A	3 1/4	1 11/16	1 15/16	2 5/16	1 1/16	2 13/16	1.10	**14.70**
967-7225	FD7-20	56.0	20.0 VCT @ 2.8 A	3 11/16	1 13/16	2 1/4	2 11/16	1 1/16	3 1/8	1.70	**18.00**
967-7235	FD8-20	100.0	20.0 VCT @ 5.0 A	4 1/32	2 1/4	2 9/16	3 1/16	1 5/16	3 9/16	2.75	**25.00**
967-7255	FD4-24	6.0	24.0 VCT @ 0.25 A	2 3/8	1 1/4	1 3/8	1 11/16	1 11/16	2	0.44	**10.25**
967-7265	FD5-24	12.0	24.0 VCT @ 0.5 A	2 13/16	1 3/8	1 5/8	1 15/16	13/16	2 3/8	0.70	**11.35**
967-7275	FD6-24	30.0	24.0 VCT @ 1.25 A	3 1/4	1 11/16	1 15/16	2 5/16	1 1/16	2 13/16	1.10	**14.75**
967-7285	FD7-24	56.0	24.0 VCT @ 2.4 A	3 11/16	1 13/16	2 1/4	2 11/16	1 1/16	3 1/8	1.70	**18.00**
967-7295	FD8-24	100.0	24.0 VCT @ 4.0 A	4 1/32	2 1/4	2 9/16	3 1/16	1 5/16	3 9/16	2.75	**25.00**
967-7315	FD4-28	6.0	28.0 VCT @ 0.2 A	2 3/8	1 1/4	1 3/8	1 11/16	1 11/16	2	0.44	**10.25**
967-7325	FD5-28	12.0	28.0 VCT @ 0.42 A	2 13/16	1 3/8	1 5/8	1 15/16	13/16	2 3/8	0.70	**11.35**
967-7335	FD6-28	30.0	28.0 VCT @ 1.1 A	3 1/4	1 11/16	1 15/16	2 5/16	1 1/16	2 13/16	1.10	**14.70**
967-7345	FD7-28	56.0	28.0 VCT @ 2.0 A	3 11/16	1 13/16	2 1/4	2 11/16	1 1/16	3 1/8	1.70	**18.00**
967-7355	FD8-28	100.0	28.0 VCT @ 3.6 A	4 1/32	2 1/4	2 9/16	3 1/16	1 5/16	3 9/16	2.75	**25.00**
967-7375	FD4-36	6.0	36.0 VCT @ 0.17 A	2 3/8	1 1/4	1 3/8	1 11/16	1 11/16	2	0.44	**10.25**
967-7385	FD5-36	12.0	36.0 VCT @ 0.35 A	2 13/16	1 3/8	1 5/8	1 15/16	13/16	2 3/8	0.70	**11.36**
967-7395	FD6-36	30.0	36.0 VCT @ 0.85 A	3 1/4	1 11/16	1 15/16	2 5/16	1 1/16	2 13/16	1.10	**14.70**
967-7405	FD7-36	56.0	36.0 VCT @ 1.5 A	3 11/16	1 13/16	2 1/4	2 11/16	1 1/16	3 1/8	1.70	**18.00**
967-7415	FD8-36	100.0	36.0 VCT @ 2.8 A	4 1/32	2 1/4	2 9/16	3 1/16	1 5/16	3 9/16	2.75	**25.00**
967-7435	FD4-48	6.0	48.0 VCT @ 0.125 A	2 3/8	1 1/4	1 3/8	1 11/16	1 11/16	2	0.44	**10.25**
967-7445	FD5-48	12.0	48.0 VCT @ 0.25 A	2 13/16	1 3/8	1 5/8	1 15/16	13/16	2 3/8	0.70	**11.35**
967-7455	FD6-48	30.0	48.0 VCT @ 0.63 A	3 1/4	1 11/16	1 15/16	2 5/16	1 1/16	2 13/16	1.10	**14.70**
967-7465	FD7-48	56.0	48.0 VCT @ 1.2 A	3 11/16	1 13/16	2 1/4	2 11/16	1 1/16	3 1/8	1.70	**18.00**
967-7475	FD8-48	100.0	48.0 VCT @ 2.0 A	4 1/32	2 1/4	2 9/16	3 1/16	1 5/16	3 9/16	2.75	**25.00**
967-7495	FD4-56	6.0	56.0 VCT @ 0.11 A	2 3/8	1 1/4	1 3/8	1 11/16	1 11/16	2	0.44	**10.25**
967-7515	FD6-56	30	56.0 VCT @ 0.54 A	3 1/4	1 11/16	1 15/16	2 5/16	1 1/16	2 13/16	1.10	**14.70**
967-7525	FD7-56	56.0	56.0 VCT @ 1.0 A	3 11/16	1 13/16	2 1/4	2 11/16	1 1/16	3 1/8	1.70	**18.00**
967-7535	FD8-56	100.0	56.0 VCT @ 1.8 A	4 1/32	2 1/4	2 9/16	3 1/16	1 5/16	3 9/16	2.75	**25.00**
967-7555	FD4-120	6.0	120.0 VCT @ 0.05 A	2 3/8	1 1/4	1 3/8	1 11/16	1 11/16	2	0.44	**10.25**
967-7565	FD5-120	12.0	120.0 VCT @ 0.1 A	2 13/16	1 3/8	1 5/8	1 15/16	13/16	2 3/8	0.70	**11.35**
967-7575	FD6-120	30.0	120.0 VCT @ 0.25 A	3 1/4	1 11/16	1 15/16	2 5/16	1 1/16	2 13/16	1.10	**14.70**
967-7585	FD7-120	56.0	120.0 VCT @ 0.5 A	3 11/16	1 13/16	2 1/4	2 11/16	1 1/16	3 1/8	1.70	**18.00**
967-7595	FD8-120	100.0	120.0 VCT @ 0.85 A	4 1/32	2 1/4	2 9/16	3 1/16	1 5/16	3 9/16	2.75	**25.00**

Common Mode and Current Sense Inductors, and Smoothing Filter Chokes

Common Mode Inductors

- ► Hi-Pot Tested at 2,500 VRMS
- ► DC Resistance at 20°C ±10%
- ► Inductances are Minimum Measured at 10 Gauss
- ► Current Ratings for Approximately 40°C Temperature Rise

Highly dependable TRIAD common mode EMI suppression inductors manufactured by MagneTek are used in various types of power supplies to eliminate noise common to all lines. These units also provide effective differential mode filtering. Meeting VDE, IEC, UL, and CSA requirements, they minimize AC line transmitted interference often created by high frequency switching power supplies. Normally placed close to the input power source, these compact inductors are constructed with UL rated 130°C materials.

E-Core Inductors

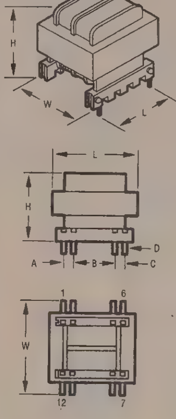
Stock No.	Mfr.'s Type	Fig.	Section	Inductance (mH)	Amps RMS	DC Resistance (Ω)	Leakage	Dimensions H	W	L	A	B	C	D	Wt. (Lbs.)	EACH 1-9
967-8600	CME375-1	A	A*	4.40	5.500	0.049	45.00 µH	1.180	1.26	1.50	0.150	0.60	0.20	0.036 Sq.	0.054	**6.78**
967-8602	CME375-2			6.90	4.400	0.077	70.00 µH									**6.78**
967-8604	CME375-3			10.90	3.500	0.122	125.00 µH									**6.78**
967-8606	CME375-4			17.80	2.700	0.196	180.00 µH									**6.78**
967-8608	CME375-5			28.60	2.200	0.316	300.00 µH									**6.78**
967-8610	CME375-6			43.60	1.750	0.489	440.00 µH									**6.78**
967-8634	CME375-7			70.30	1.380	0.785	720.00 µH									**6.78**
967-8636	CME375-8			111.60	1.100	1.240	1.10 mH									**6.78**
967-8638	CME375-9			176.10	0.087	1.980	1.80 mH									**6.78**
967-8612	CME2425-1	B	B†	2.10	2.500	0.050	9.00 µH	1.075	1.05	1.05	0.125	0.20	0.61	0.800	0.154	**6.33**
967-8614	CME2425-2			3.50	2.000	0.080	14.00 µH									**6.33**
967-8616	CME2425-3			5.50	1.600	0.127	25.00 µH									**6.33**
967-8618	CME2425-4			9.00	1.280	0.202	36.00 µH									**6.33**
967-8620	CME2425-5			13.90	1.000	0.319	60.00 µH									**6.33**
967-8622	CME2425-6			22.40	0.800	0.500	90.00 µH									**6.33**
967-8624	CME2425-7			36.00	0.630	0.820	144.00 µH									**6.33**
967-8626	CME2425-8			54.00	0.500	1.260	240.00 µH									**6.33**
967-8628	CME2425-9			86.90	0.400	2.020	360.00 µH									**6.33**

Encapsulated Toroidal Inductors

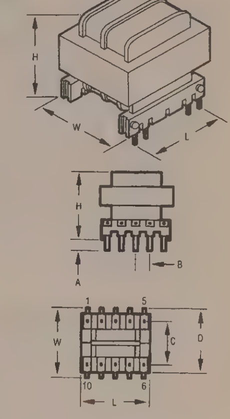
Stock No.	Mfr.'s Type	Fig.	Section	Inductance (mH)	Amps RMS	DC Resistance (Ω)	Leakage	Dimensions H	W	L	A	B	C	D	Wt. (Lbs.)	EACH 1-9
967-8630	CMT908-V1	C	C‡	2.00	7.500	0.020	25.00 µH	1.500	0.80	1.56	0.900	0.60	—	—	0.080	**4.92**
967-8632	CMT908-V2			4.00	5.200	0.040	45.00 µH									**4.92**
967-8640	CMT908-V3			8.00	3.200	0.120	90.00 µH									**4.92**
967-8642	CMT908-V4			16.00	2.600	0.160	180.00 µH									**4.92**
967-8644	CMT908-H1	D	D‡	2.00	7.500	0.020	25.00 µH	0.440	1.50	1.50	1.080	1.28	—	—	0.120	**4.92**
967-8646	CMT908-H2			4.00	5.200	0.040	45.00 µH									**4.92**
967-8648	CMT908-H3			8.00	3.200	0.120	90.00 µH									**4.92**
967-8650	CMT908-H4			16.00	2.600	0.160	180.00 µH									**4.92**

*A CME375-KIT is available which includes each one of the components in section A †A CME2425-KIT is available which includes each one of the components in section B. ‡A CMT908-KIT is available which includes one of each of the components in sections C and D.

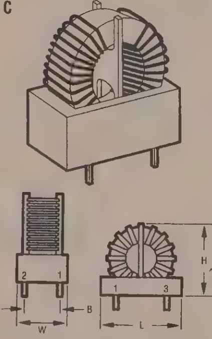
A



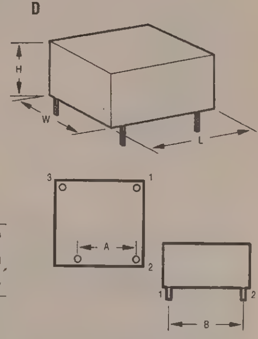
B



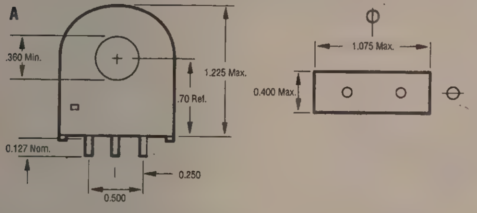
C



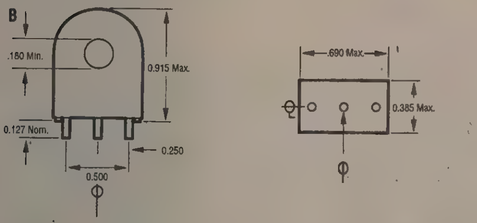
D



A



B



Current Sense Inductors

- ► Derate ET Product by 32% for 50 kHz, 52% for 100kHz and 50% for Unidirectional Operation
- ► Rated Primary Current Renders Approximately 40°C Temperature Rise
- ► CST-206 Models Have Maximum Recommended Terminating Resistance of 1 Ohm Per Turn

Designed for switching power supply applications, TRIAD current sense inductors from MagneTek are used to detect the current passing through a conductor. These inductors are very reliable and operate effectively over the frequency range of 20-200 kHz. They are constructed of UL rated 130°C materials. Both models are available with a center tap option.

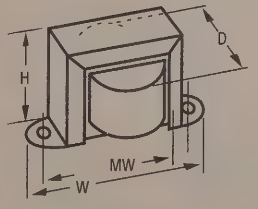
Stock No.	Mfr.'s Type	Fig.	Section	Turns	REF 20 kHz ET Products (VmSec)	Min. Inductance (mH)	Max. DCR (Ω)	Pri. Amps RMS	Wt. (Lbs.)	EACH 1-9
967-8652	CST206-1A	A	A	100	2.0	14.0	0.40	110.0	0.030	**6.11**
967-8654	CST206-1T			100 CT	2.0	14.0	0.40	110.0		**6.67**
967-8656	CST206-2A			200	4.0	56.0	1.35	80.0		**6.11**
967-8658	CST206-2T			200 CT	4.0	56.0	1.35	80.0		**6.67**
967-8660	CST206-3A			300	6.0	130.0	12.00	70.0		**6.11**
967-8662	CST206-3T			300 CT	6.0	130.0	12.00	70.0		**6.67**
967-8664	CST306-1A	B	B	50	500.0	3.5	0.33	25.0	0.012	**4.23**
967-8666	CST306-2A			50 CT	500.0	3.5	0.33	25.0		**4.81**
967-8668	CST306-3A			100	1.0	14.0	1.35	25.0		**4.23**
967-8670	CST306-1T			100 CT	1.0	14.0	1.35	25.0		**4.81**
967-8672	CST306-2T			200	2.0	55.0	2.75	35.0		**4.23**
967-8674	CST306-3T			200 CT	2.0	55.0	2.75	35.0		**4.81**

Inductors — Smoothing Filter Chokes

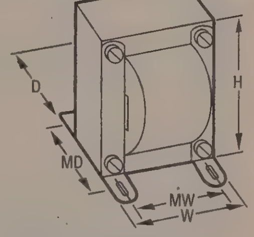
TRIAD chokes are manufactured in a wide variety of inductance values and physical configurations. MagneTek produces two styles of TRIAD filter reactors (chokes) — smoothing and swinging. Smoothing chokes are power supply filter chokes having a core with an air gap which prevents saturation at maximum direct current. Swinging chokes have cores with little or no air gap, therefore, exhibiting high inductance at low current and low inductance at high current. This inductance, which swings under conditions of varying load current, permits use of a high resistance bleeder resistor. Swinging chokes improve regulation of high voltage power supplies and prevent DC voltage from rising to the maximum peak AC rectifier input by providing a swinging input reactance. **Specifications. Inductance Ranges:** .005 to 50 H. **DC Current Ranges:** 10 Ma to 22.5 A. **Resistance Ranges:** .06 to 3500 ohms.

Stock No.	Mfr.'s Type	Section	Current DC Ma	Inductance* (Henries)	Resistance Ohms	Case Type†	Connections	Dimensions H	W	D	Mounting Dimensions MW	MD	Wt. (Lbs.)	EACH
967-0194	C-85X	A	10.0	1.5	70.0	X (1)	Leads	1 1/4	2 1/8	1 1/8	1 3/4	—	0.40	**7.47**
967-1010	C-1X	A	20.0	15.0	1000.0	X (1)	Leads	1 3/16	2 1/16	1 1/4	1 3/4	—	0.21	**8.91**
967-1009	C-3X	A	50.0	10.0	500.0	X (1)	Leads	1 5/8	2 13/16	1 1/2	2 3/8	—	0.60	**9.00**
967-1007	C-8X	B	75.0	7.0	240.0	X (1)	Leads	1 15/16	3 5/16	1 3/4	2 13/16	—	1.00	**10.96**
967-1008	C-7X	B	90.0	10.0	270.0	X (1)	Leads	1 15/16	3 5/16	2	2 13/16	—	1.30	**11.76**
967-1006	C-14X	C	200.0	6.0	150.0	X (1)	Leads	2 19/32	4	2 1/4	3 9/16	—	2.30	**17.38**
967-1004	C-24X	D	240.0	1.0	50.0	X (1)	Leads	1 5/8	2 13/16	1 1/2	2 3/8	—	0.75	**8.78**
967-1003	C-36X	D	300.0	0.5	30.0	X (1)	Leads	1 3/8	2 3/8	1 1/2	2	—	0.50	**9.18**
967-1005	C-17X	E	300.0	1.5	40.0	X (1)	Leads	2 9/32	3 11/16	2	3 1/8	—	1.60	**18.36**
967-1002	C-40X	F	600.0	0.32	10.0	X (1)	Leads	1 15/16	3 5/16	2	2 13/16	—	1.30	**10.98**
967-0198	C-56U	F	2.0	0.035	0.79	U (2)	Lugs	2 1/4	2 5/8	2	2 3/16	1 3/4	2.00	**18.04**
967-0199	C-49U	G	5.0 A/10.0 A	0.032/0.008‡	0.19/0.05	U (2)	Leads	4 1/4	3 1/2	3 5/8	2 3/4	3 1/16	8.00	**56.94**
967-0197	C-59U	G	12.5 A	0.01	0.10	U (2)	Lugs	3 1/2	4 1/8	3	3 7/16	2 3/8	6.25	**41.01**
967-0195	C-80U	G	20.0 A/40.0 A	0.024/0.006‡	0.1/0.025	U (7)	Lugs	5 5/16	4 9/16	5 1/2	2 3/4	4 1/2	21.25	**134.65**
967-0196	C-60U	G	22.5 A	0.005	0.06	U (2)	Lugs	3 3/4	4 1/2	4 3/16	3 3/4	3 1/2	12.75	**75.22**

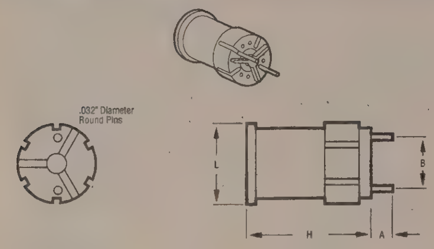
*Inductance Tolerance: 20% + 50%. †Mounting Hole Sizes: (1) = 3/16; (2) = 13/64 × 3/8"; (7) = 9/32 × 1/2". ‡Split winding.



Case Type X



Case Type U



A

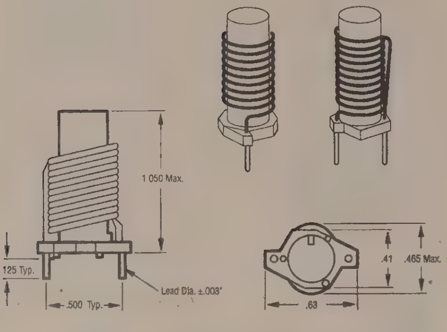
Rod Core Inductors

- ► Rated Current 10 Amps per Pin Max
- ► Rated Current Renders @ 40°C Temp. Rise

TRIAD high current rod core inductors from MagneTek provide cost effective energy storage. By conditioning the output signal, the inductor smooths out the current waveform to provide a more stable current. These low cost inductors are designed to be compatible with automated P. C. B. installation.

Stock No.	Mfr.'s Type*	Fig.	Inductance	DC Current (A)	DC Resistance (Ω)	Dimensions				Wt. (Oz.)	EACH
						H	L	A	B		1-9
967-8688	RC-1	A	5.6 mH	0.250	6.100	0.93	0.60	0.15	0:375	0.03	**2.79**
967-8690	RC-2		3.9 mH	0.320	3.900						**2.79**
967-8692	RC-3		2.5 mH	0.400	2.450						**2.79**
967-8694	RC-4		1.5 mH	0.500	1.530						**2.79**
967-8696	RC-5		960.0 µH	0.625	1.000						**2.79**
967-8698	RC-6		560.0 µH	0.800	0.600						**2.79**
967-8700	RC-7		450.0 µH	1.000	0.420						**2.79**
967-8702	RC-8		250.0 µH	1.250	0.210						**2.79**
967-8704	RC-9		200.0 µH	1.600	0.200						**2.79**
967-8706	RC-10		100.0 µH	2.000	0.077						**2.79**
967-8708	RC-11		75.0 µH	2.500	0.070						**2.79**

*An RC-KIT is available which includes one of each of the above listed components.



B

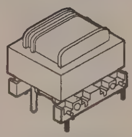
High Current Rod Core Inductors

- ► Inductance ±15%
- ► Rated Current 40°C Temp. Rise

Stock No.	Mfr.'s Type*	Fig.	Inductance	Rated DC Current (A)	Max. DC Resistance (mΩ)	Lead Dia.	Wt. (Lbs.)	EACH
								1-9
967-8680	FIRCH-1	B	2.54 µH	11.60	5.50	0.050"	0.03	**2.44**
967-8682	FIRCH-2		3.05 µH	9.70	7.31	0.045"		**2.44**
967-8684	FIRCH-3		3.60 µH	8.10	9.95	0.040"		**2.44**
967-8686	FIRCH-4		5.00 µH	6.80	14.10	0.036"		**2.44**
967-8782	FIRCH-5		5.90 µH	5.70	18.50	0.032"		**2.44**
967-8784	FIRCH-6		7.22 µH	4.80	26.10	0.028"		**2.44**

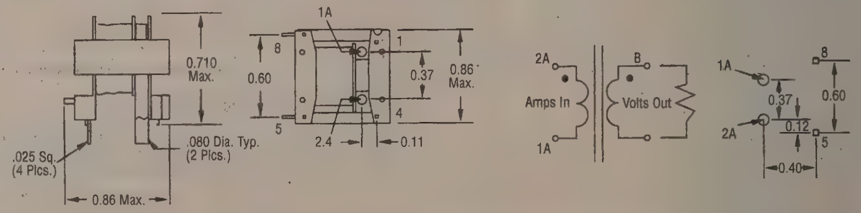
*A FIRCH-KIT is available which includes one of each of the above listed components.

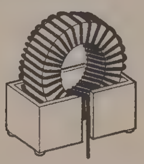
Low Frequency CSE187-L



Designed to monitor current in low frequency applications. This MagneTek part may be used to monitor current from .1 to 30 amperes at frequencies from 50 Hz to 400 Hz. **Technical Notes. Turns Ratio:** Primary to sense 1:500. **Suggested Burden Resistor:** 60 ohms. **Typical Output:** 110 mV/amp. **Primary DCR:** 250 µohms max. **Sense DCR:** 21 ohms max. Constructed with UL recognized materials (Class B, 130°C).

967-1100..**EACH 2.89**

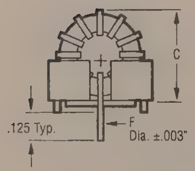


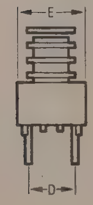


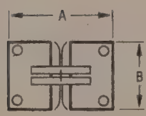
Toroidal Filter Inductors

- ► Nominal Inductance Values are Typically 10% Higher Than Minimum Rating
- ► Biased Inductance Measured at Rated DC Amps
- ► Operation at Rated Current Yields @ 40°C Rise Over 20°C Ambient

TRIAD toroidal filter inductors from MagneTek are specially designed to minimize transients. These devices store energy, and therefore, condition the output signal by leveling out the current waveform providing a more stable current supply. Generally used in high frequency circuits, our standardized design provides an economical solution for use in differential mode applications or as an output filter inductor.



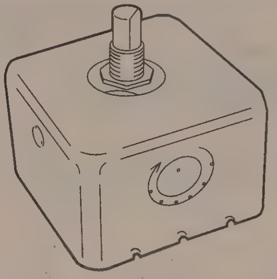




Stock No.	Mfr.'s Type*	Section	Min. Induct. (µH)		Rated DC Amps	Max. DCR (mΩ)	Dimensions						Wt. (Lbs.)	EACH
			No Bias	At Bias			A	B	C	D	E	F		1-9
967-8722	FIT44-1	A	18.85	12.72	2.8	44.8	0.625	0.350	0.70	0.25	0.350	0.020	0.008	**1.96**
967-8724	FIT44-2		14.75	9.82	3.4	30.7						0.022		**1.96**
967-8726	FIT44-3		12.30	7.75	4.0	23.4						0.025		**1.96**
967-8728	FIT44-4		8.06	5.22	4.8	15.9						0.028		**1.96**
967-8730	FIT50-1	B	47.40	29.00	2.8	78.9	0.700	0.475	0.75	0.30	0.474	0.020	0.012	**2.31**
967-8732	FIT50-2		35.48	23.77	3.4	57.8						0.022		**2.31**
967-8734	FIT50-3		27.16	16.13	4.0	40.1						0.025		**2.31**
967-8736	FIT50-4		21.65	12.27	4.8	29.2						0.028		**2.31**
967-8738	FIT50-5		16.76	10.41	5.7	17.0						0.032		**2.31**
967-8740	FIT50-6		12.50	6.75	6.8	11.8						0.036		**2.31**
967-8742	FIT50-7		8.86	5.47	8.1	8.0						0.040		**2.31**
967-8744	FIT68-1	C	89.50	57.99	2.8	108.0	0.875	0.475	0.95	0.30	0.474	0.020	0.026	**2.80**
967-8746	FIT68-2		71.10	41.59	3.4	86.1						0.023		**2.80**
967-8748	FIT68-3		54.81	33.05	4.0	59.9						0.026		**2.80**
967-8750	FIT68-4		43.30	26.63	4.8	42.4						0.028		**2.80**
967-8752	FIT68-5		33.15	18.79	5.7	28.8						0.032		**2.80**
967-8754	FIT68-6		24.31	13.56	6.8	20.2						0.036		**2.80**
967-8756	FIT68-7		18.64	10.23	8.1	14.8						0.040		**2.80**
967-8758	FIT80-1	D	132.70	74.04	4.0	95.2	0.975	0.625	1.10	0.45	0.624	0.026	0.045	**3.47**
967-8760	FIT80-2		107.50	58.05	4.8	67.9						0.029		**3.47**
967-8762	FIT80-3		80.75	45.22	5.7	44.8						0.032		**3.47**
967-8764	FIT80-4		65.04	31.60	6.8	32.8						0.036		**3.47**
967-8766	FIT80-5		47.79	22.79	8.1	22.5						0.040		**3.47**
967-8768	FIT80-6		38.07	18.11	9.7	15.8						0.045		**3.47**
967-8770	FIT106-1	E	253.00	153.00	4.0	139.0	1.300	0.725	1.40	0.50	0.724	0.026	0.090	**4.31**
967-8772	FIT106-2		197.00	113.00	4.8	106.0						0.029		**4.31**
967-8774	FIT106-3		154.00	86.00	5.7	74.0						0.032		**4.31**
967-8776	FIT106-4		116.00	61.90	6.8	48.5						0.036		**4.31**
967-8778	FIT106-5		94.48	49.31	8.1	39.1						0.040		**4.31**
967-8780	FIT106-6		70.05	35.30	9.7	21.8						0.045		**4.31**

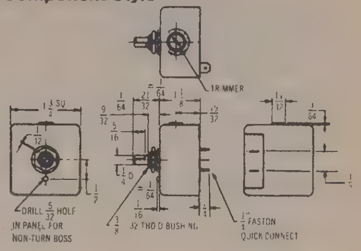
*A FIT-KIT is available which includes one of each of the above listed components.

PCA/PCD Series

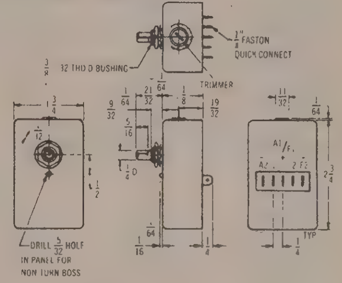


Ohmitrol Power and Motor Speed Controls are solid state units which provide an infinitely smooth power control over their entire voltage range. An integral internal trimmer allows customization of the control voltage to be set to a specific starting voltage by a simple turn of a screwdriver. The on-off switch is actuated at the counterclockwise end of the control knob rotation. The recommended optional knob is 5150 (sold separately). The PCA series has an AC output that can be used for applications to control heaters (both resistive and infrared) and some universal and shaded pole motors. The PCD with a DC output can be used to control shunt and series wound, universal, compound and permanent magnet motors, magnetic clutches, brakes, etc. The PCD models have two DC outputs, one output from an AC source is rectified DC at approximately full line voltage, the other output is variable DC. The DC units have rear terminals which accept quick-connectors. On all models, 500 mA is the minimum for proper operation. For use of either control under full power output conditions, the face of the control must be in contact with a metal panel. For optimum heat dissipation a thermal-conducting compound must be applied to the face of the power control before mounting.

Model PCA-Component Style


TRIMMER
DRILL 5/32 HOLE IN PANEL FOR NON-TURN BOSS
3/8 32 THD'D BUSHING
1/4" FASTON QUICK CONNECT

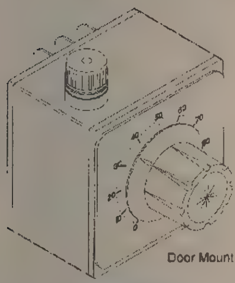
Model PCD-Component Style


1/4" FASTON QUICK CONNECT
3/8 32 THD'D BUSHING
TRIMMER
DRILL 5/32 HOLE IN PANEL FOR NON TURN BOSS
TYP

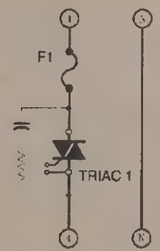
Stock No.	Mfr.'s Type	Input Volts (VAC)	Freq.	Output Range (Nominal)	Load Capacity Rating (Max.)	Trim Range (Min.)	EACH 1-9	EACH 10-24
291-4000	PCA-1000	120	60	0-120 VAC	1 KW, 8.3 Amps AC	10-50 V	**81.25**	**75.00**
291-4005	PCA-1050	120	60	0-120 VAC	15 Amps	10-50 V	**66.38**	**61.28**
291-4010	PCA-1020	240	60	0-120 VAC	2 KW, 8.3 Amps AC	20-100 V	**56.63**	**52.28**
291-4020	PCD-1000	120	60	0-120 VAC, full 120 VDC	6 Amp DC Resistive 3.5 Amp DC-Motor	20-40 V	**171.50**	**158.31**

296-1235. 5150. Optional Knob. **1-9**...............**EACH 4.86** **10-24** ....**EACH 3.86**

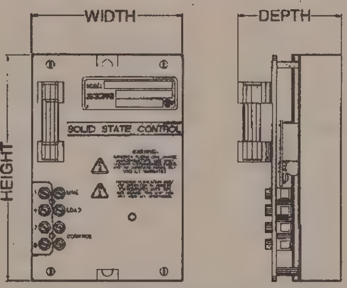
SCA/SCE Series



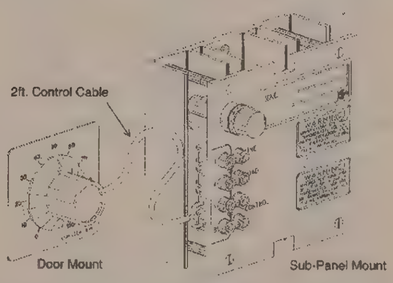
SCE SERIES



POWER CIRCUIT SCHEMATIC



OPEN CHASSIS DIMENSIONS



SCA SERIES

Infinitely variable voltage power controls for AC voltage to constant resistance loads and shaded pole motors. All solid-state construction with short circuit protection. Integral heatsink chassis means no thermal derating. Applications include replacing variable transformers, mercury relays, saturable core reactors, electromechanical contactors, for electric heater controls, light dimming, hot-wire cutting, heat sealing and packaging plastic molding and extruding and food preparation equipment. Power Triacs replace contacts and brushes to control electric power without moving parts. When operated within their stated ratings for current, voltage, and temperature, they have an extremely long life expectancy rating. The power circuit is a power Triac with parallel R-C circuit for dv/dt protection and current-clamping 2 millisecond fuse for short-circuit protection. The R-C network control circuit with variable-resistance potentiometer adjusts firing capacitor into bilateral diode connected to power Triac gate for stable full-range control. **Output Voltage:** 0-95% of input. **Overall Efficiency:** 99%. Manual input control via variable potentiometer.

Stock No.	Mfr.'s Type	Input Volts	Max. Amps	Max. HP*	KVA @ Max. Related Volt	Fuse No.	Open Frame Dimensions (In.) Height	Width	Depth	EACH 1-4	EACH 5-9
291-5200	SCE12-5	120	5	0.10	0.6	49C25-10	3.2	2.5	2.50	**110.43**	**101.94**
291-5202	SCE12-10	120	10	0.25	1.2	49C25-10	3.2	2.5	2.50	**156.82**	**144.75**
291-5204	SCE12-15	120	15	0.33	1.8	49C25-15	3.2	2.5	2.50	**218.75**	**201.92**
291-5206	SCA12-15	120	15	0.33	1.8	49C25-15	4.0	4.0	2.60	**187.63**	**173.20**
291-5208	SCA12-25	120	25	0.33	3.0	49C25-30	6.0	4.0	2.75	**218.65**	**201.83**
291-5210	SCE24-5	240	5	0.20	1.2	49C25-10	3.2	2.5	2.50	**136.88**	**126.35**
291-5212	SCE24-10	240	10	0.50	2.4	49C25-10	3.2	2.5	2.50	**172.28**	**159.03**
291-5214	SCE24-15	240	15	0.66	3.6	49C25-15	3.2	2.5	2.50	**203.30**	**187.66**
291-5216	SCA24-15	240	15	0.66	3.6	49C25-15	4.0	4.0	2.60	**203.20**	**187.57**
291-5218	SCA24-25	240	25	0.66	6.0	49C25-30	6.0	4.0	2.75	**225.27**	**207.94**

*Shaded pole motors only.

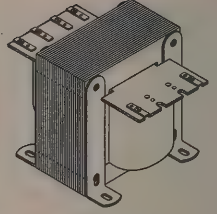
Fuses

Stock No.	Mfr.'s Type	EACH 1-4	EACH 5-9
291-5250	49C25-10	**17.33**	**16.00**
291-5252	49C25-15	**17.33**	**16.00**

Stock No.	Mfr.'s Type	EACH 1-4	EACH 5-9
291-5254	49C25-30	**17.33**	**16.00**
—	—	—	—

SBE Series Industrial Control Transformers

- ► Cooler Operating Temperature (50° to 55° C)
- ► 10-20% More VA Capacity
- ► Superior Voltage Regulation
- ► UL Listed and CSA Certified
- ► Rated for 50 or 60 Hz Use
- ► Epoxy Encapsulated Design
- ► Quantity Pricing Always Available



SBE transformers are encapsulated to permit more efficient heat dissipation for cooler operation and higher VA capacity. The higher rated capacity provides you the opportunity of meeting high inrush electromagnetic load requirements for either 50 or 60 Hz applications, with smaller transformers and less cost per VA.

120 × 240 Volt Primary, 24 Volt Secondary

Stock No.	Mfr.'s Type	VA	Height (Ins.)	Width (Ins.)	Depth (Ins.)	Mtg. Width	Mtg. Depth	Slot Size	Approx. Wt. (Lbs.)	EACH
										1-9
917-1000	E060E	60	2.81	3.00	3.56	2.50	2.00	.20 × .33	2.5	24.29
917-1010	E095E	95	3.13	3.38	3.56	2.81	2.19	.20 × .33	3.7	30.00
917-1020	E105E	105	3.13	3.38	3.56	2.81	2.38	.20 × .33	4.1	32.14
917-1030	E180E	180	4.13	4.50	4.44	3.75	2.25	.20 × .33	7.0	38.57
917-1040	E225E	225	4.13	4.50	4.69	3.75	2.50	.20 × .33	8.0	49.00
917-1050	E275E	275	4.13	4.50	5.06	3.75	2.88	.20 × .33	9.8	63.21
917-1060	E320E	320	4.94	5.25	4.94	4.38	3.25	.31 × .69	11.8	66.79

240 × 480 Volt Primary, 120 Volt Secondary

Stock No.	Mfr.'s Type	VA	Height (Ins.)	Width (Ins.)	Depth (Ins.)	Mtg. Width	Mtg. Depth	Slot Size	Approx. Wt. (Lbs.)	EACH 1-9
917-1070	E060	60	2.81	3.00	3.56	2.50	2.00	.20 × .33	2.5	20.36
917-1080	E095	95	3.13	3.38	3.56	2.81	2.19	.20 × .33	3.7	24.29
917-1090	E105	105	3.13	3.38	3.56	2.81	2.38	.20 × .33	4.1	26.79
917-1100	E180	180	4.13	4.50	4.44	3.75	2.25	.20 × .33	7.0	32.14
917-1110	E225	225	4.13	4.50	4.69	3.75	2.50	.20 × .33	8.0	40.00
917-1120	E275	275	4.13	4.50	5.06	3.75	2.88	.20 × .33	9.8	45.71
917-1130	E320	320	4.94	5.25	4.94	4.38	3.25	.31 × .69	11.8	49.64
917-1140	E380	380	4.94	5.25	5.44	4.38	3.63	.31 × .69	14.2	55.36
917-1150	E550	550	4.94	5.25	5.94	4.38	4.25	.31 × .69	17.6	66.79
917-1160	E850	850	5.88	6.38	6.88	5.31	4.25	.31 × .69	26.5	94.64
917-1170	E1100	1100	5.88	6.38	7.13	5.31	5.00	.31 × .69	33.5	115.71

208/240/277/380/480 Volt Primary, 24 Volt Secondary

Stock No.	Mfr.'s Type	VA	Height (Ins.)	Width (Ins.)	Depth (Ins.)	Mtg. Width	Mtg. Depth	Slot Size	Approx. Wt. (Lbs.)	EACH 1-9
917-1180	E060CK	60	3.13	3.38	3.56	2.81	2.19	.20 × .33	3.7	33.57
917-1190	E095CK	95	3.13	3.38	3.56	2.81	2.38	.20 × .33	4.1	36.79
917-1200	E180CK	180	4.13	4.50	4.69	3.75	2.50	.20 × .33	8.0	44.29
917-1210	E275CK	275	4.94	5.25	4.94	4.38	3.25	.31 × .69	11.8	62.50
917-1220	E380CK	380	4.94	5.25	5.94	4.38	4.25	.31 × .69	17.6	75.36
917-1230	E550CK	550	5.88	6.38	6.88	5.31	4.25	.31 × .69	26.5	78.93

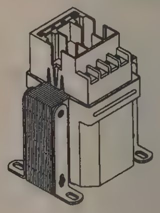
Universal Voltage 240/416/480/600 Volt Primary, 130/120/99 Volt Secondary

Stock No.	Mfr.'s Type	VA	Height (Ins.)	Width (Ins.)	Depth (Ins.)	Mtg. Width	Mtg. Depth	Slot Size	Approx. Wt. (Lbs.)	EACH 1-9
917-1240	E180N*	180	4.13	4.50	4.69	3.75	2.50	.20 × .33	8.0	76.43
917-1250	E275N*	275	4.94	5.25	4.94	4.38	3.25	.31 × .69	11.8	92.50
917-1260	E380N*	380	4.94	5.25	5.94	4.38	4.25	.31 × .69	17.6	105.00
917-1270	E550N*	550	5.88	6.38	6.88	5.31	4.25	.31 × .69	26.5	133.21
917-1280	E850N*	850	5.88	6.38	7.13	5.31	5.00	.31 × .69	33.5	158.57

*Universal voltage models are not encapsulated.

SBE-3PB Industrial Control Transformers

- ► Simplifies Compliance with NEC and UL Specification 508 Fusing Requirements
- ► Eliminates the Time and Cost of Buying Separate Fuse Blocks
- ► Saves Panel Space with Molded-in Fuse Holders Mounted on the Top Surface
- ► Exceeds NEMA, ANSI, NBMTA, JIC and Automotive Electrical Requirements
- ► Rated for 50 or 60 Hz use
- ► UL Listed and CSA Certified



120 × 240 Volt Primary, 24 Volt Secondary with 3PB Fuse Block

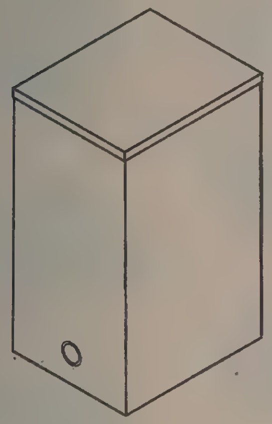
Stock No.	Mfr.'s Type	VA	Height (Ins.)	Width (Ins.)	Depth (Ins.)	Mtg. Width	Mtg. Depth	Slot Size	Approx. Wt. (Lbs.)	EACH
										1-9
917-1300	E060E-3PB	60	4.38	3.00	3.56	2.50	3.00	.20 × .33	2.5	38.60
917-1310	E095E-3PB	95	4.63	3.38	3.56	2.81	2.19	.20 × .33	3.7	44.45
917-1320	E105E-3PB	105	4.63	3.38	3.56	2.81	2.38	.20 × .33	4.1	46.60
917-1330	E180E-3PB	180	5.56	4.50	4.44	3.75	2.25	.20 × .33	7.0	53.20
917-1340	E225E-3PB	225	5.56	4.50	4.69	3.75	2.50	.20 × .33	8.0	63.00
917-1350	E275E-3PB	275	5.56	4.50	5.06	3.75	2.88	.20 × .33	9.8	78.30
917-1360	E320E-3PB	320	6.44	5.25	4.94	4.38	3.25	.31 × .69	11.8	81.95
917-1370	E380E-3PB	380	6.44	5.25	5.44	4.38	3.63	.31 × .69	14.2	86.70

240 × 480 Volt Primary, 120 Volt Secondary with 3PB Fuse Block

Stock No.	Mfr.'s Type	VA	Height (Ins.)	Width (Ins.)	Depth (Ins.)	Mtg. Width	Mtg. Depth	Slot Size	Approx. Wt. (Lbs.)	EACH 1-9
917-2000	E060-3PB	60	4.38	3.00	3.56	2.50	2.00	.20 × .33	2.5	34.60
917-2005	E095-3PB	95	4.63	3.38	3.56	2.81	2.19	.20 × .33	3.7	38.70
917-2010	E105-3PB	105	4.63	3.38	3.56	2.81	2.38	.20 × .33	4.1	41.16
917-2015	E180-3PB	180	5.56	4.50	4.44	3.75	2.25	.20 × .33	7.0	46.60
917-2020	E225-3PB	225	5.56	4.50	4.69	3.75	2.50	.20 × .33	8.0	54.65
917-2025	E275-3PB	275	5.56	4.50	5.06	3.75	2.88	.20 × .33	9.8	60.50
917-2030	E320-3PB	320	6.44	5.25	4.94	4.38	3.25	.31 × .69	11.8	64.50
917-2035	E380-3PB	380	6.44	5.25	5.44	4.38	3.63	.31 × .69	14.2	70.30
917-1380	E550-3PB	550	6.44	5.25	5.94	4.38	4.25	.31 × .69	17.6	80.36
917-1390	E850-3PB	850	7.38	6.38	6.88	5.31	4.25	.31 × .69	26.5	108.21
917-1400	E1100-3PB	1100	7.25	6.38	7.13	5.31	5.00	.31 × .69	33.5	129.29

General Purpose and Buck Boost Transformers

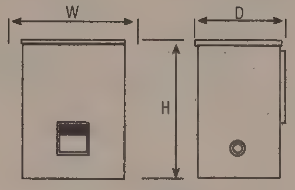
General Purpose Electrical Transformers



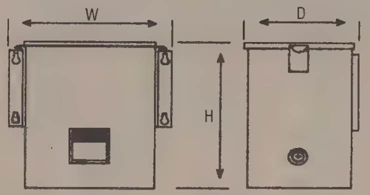
- ► Free Shielding
- ► Fast, Easy Installation
- ► UL-3R Enclosures
- ► Highly Versatile

Hevi-Duty General Purpose Transformers are the industry's workhorses. Typical applications include shopping centers, apartment buildings, high rise buildings, institutional buildings, hospitals, office buildings, industrial plants,

Design Styles



Style 1



Style 2

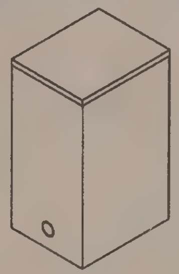
Single Phase, 0.5-.250 KVA, 240 × 480 Volt Primary, 120/240 Secondary, 60 Hz

Stock No.	Mfr.'s Type	KVA	Height (Ins.)	Width (Ins.)	Depth (Ins.)	Shipping Weight (Lbs.)	Design Style	Elec. Conn.	Primary Amps	Secondary Amps	EACH 1-4
917-3085	HS1B50	.050	6.03	3.45	3.00	6.2	1	1	.208/.104	.416/.208	**26.79**
917-3105	HS1B75	.075	6.03	3.45	3.00	6.9	1	1	.312/.156	.625/.312	**30.71**
917-3110	HS1B100	.100	6.03	3.45	3.00	7.5	1	1	.417/.208	.833/.417	**34.29**
917-3135	HS1B150	.150	6.03	3.45	3.00	8.9	1	1	.625/.313	1.25/.625	**43.21**
917-3160	HS1B250	.250	6.03	3.45	3.00	11.1	1	1	1.04/.512	2.08/1.04	**50.71**

Single Phase, .500-10 KVA, 240 480 Volt Primary, 120/240 Secondary, 60 Hz

Stock No.	Mfr.'s Type	KVA	Height (Ins.)	Width (Ins.)	Depth (Ins.)	Shipping Weight (Lbs.)	Design Style	Elec. Conn.	Primary Amps	Secondary Amps	EACH 1-4
917-3000	HS1F500B	.500	7.50	4.20	3.32	22.0	1	1	2.08/1.04	4.16/2.08	**68.21**
917-3025	HS1F750B	.750	7.50	4.20	3.32	25.0	1	1	3.13/1.56	6.25/3.13	**86.07**
917-1470	HS1F1AS	1.000	9.88	8.75	5.38	28.6	1	2	4.17/2.08	8.33/4.17	**99.29**
917-1480	HS1F1.5AS	1.500	10.44	9.88	6.50	38.3	1	2	6.25/3.13	12.5/6.25	**128.21**
917-1490	HS1F2AS	2.000	10.44	9.88	6.50	46.8	1	2	8.33/4.17	16.7/8.33	**150.00**
917-1500	HS5F3AS	3.000	12.25	10.63	7.00	61.9	2	3	12.5/6.25	25.0/12.5	**175.71**
917-1510	HS5F5AS	5.000	17.00	13.50	8.63	104.0	2	3	20.8/10.4	41.6/20.8	**268.57**
917-1520	HS5F7.5AS	7.500	17.00	13.50	8.63	135.0	2	4	31.3/15.6	62.5/31.3	**342.96**
917-1530	HS5F10AS	10.000	17.00	13.50	8.63	156.0	2	4	41.7/20.8	83.3/41.7	**412.86**

Buck-Boost Transformers



- ► Low Cost
- ► UL-3R Listed
- ► Ideal for Low Voltage Lighting and Control Applications
- ► Compact Size
- ► Dual Voltage Primary and Dual Voltage Secondary

Hevi-Duty buck-boost transformers are the ideal solution for economically changing line voltage by small amounts. Buck-Boost transformers are small, single phase, dry-type distribution transformers, designed and shipped as insulating/isolating transformers. The most common use is to buck (lower) or boost (raise) the supply voltage a small amount, usually ±5 to 2000%.

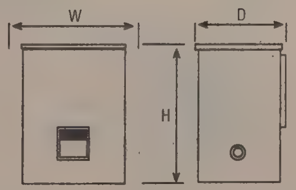
Single Phase, 120 × 240 Volt Primary, 12/24 Volt Secondary, 60 Hz

Stock No.	Mfr.'s Type	KVA	Max. Secondary Amperage		Height (Ins.)	Width (Ins.)	Depth (Ins.)	Shipping Weight (Lbs.)	Design Style	EACH
			12 V	24 V						1-4
917-3090	HS19B50	.050	4.16	2.08	6.03	3.45	3.00	6.2	1	**36.79**
917-3120	HS19B100	.100	8.33	4.16	6.03	3.45	3.00	7.5	1	**45.00**
917-3145	HS19B150	.150	12.50	6.25	6.03	3.45	3.00	8.9	1	**50.36**
917-3170	HS19B250	.250	20.80	10.40	6.03	3.45	3.00	11.1	1	**57.14**
917-3010	HS19F500B	.500	41.60	20.80	7.50	4.20	3.32	22.0	1	**74.64**
917-3035	HS19F750B	.750	62.50	31.20	7.50	4.20	3.32	25.0	1	**100.71**
917-1660	HS19F1A	1.000	83.30	41.60	9.88	8.75	5.38	28.6	1	**125.00**
917-1670	HS19F1.5A	1.500	125.00	62.50	10.44	9.88	6.50	38.3	1	**152.86**
917-1680	HS19F2A	2.000	166.60	83.30	10.44	9.88	6.50	46.8	1	**198.57**
917-1690	HS19F3A	3.000	250.00	125.00	12.25	10.63	7.00	61.9	2	**274.29**
917-1700	HS19F5A	5.000	416.60	208.30	17.00	13.50	8.63	104.0	2	**428.57**

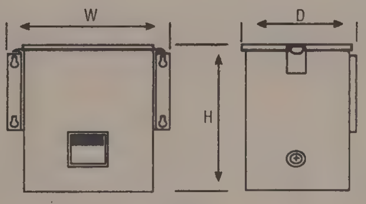
Single Phase, 120 × 240 Volt Primary, 16/32 Volt Secondary, 60 Hz

Stock No.	Mfr.'s Type	KVA	Max. Secondary Amperage		Height (Ins.)	Width (Ins.)	Depth (Ins.)	Shipping Weight (Lbs.)	Design Style	EACH
			16 V	32 V						1-4
917-3095	HS20B50	.050	3.12	1.56	6.03	3.45	3.00	6.2	1	**39.64**
917-3125	HS20B100	.100	6.25	3.12	6.03	3.45	3.00	7.5	1	**51.79**
917-9150	HS20B150	.150	9.38	4.69	6.03	3.45	3.00	8.9	1	**54.29**
917-3175	HS20B250	.250	15.60	7.81	6.03	3.45	3.00	11.1	1	**60.00**
917-3015	HS20F500B	.500	31.20	15.60	7.50	4.20	3.32	22.0	1	**78.93**
917-3040	HS20F750B	.750	46.80	23.40	7.50	4.20	3.32	25.0	1	**100.71**
917-3075	HS20F1B	1.000	62.50	31.20	9.88	8.75	5.38	28.6	1	**127.86**
917-1780	HS20F1.5A	1.500	93.70	46.80	10.44	9.88	6.50	38.3	1	**158.57**
917-1790	HS20F2A	2.000	125.00	62.50	10.44	9.88	6.50	46.8	1	**201.43**
917-1800	HS20F3A	3.000	187.50	93.70	12.25	10.63	7.00	61.9	2	**277.14**

Design Styles



Style 1



Style 2

Single Phase Models (Panel or Bench Mounting)

- ► Continuous Adjustable Output Voltages from AC Power Lines Without Wave Form Distortion or SCR Generated Noise
- ► 50/60 Hz, Except *60 Hz and †60 Hz Only With Overvoltage Output
- ► Gold-Plated Commutator Surface

Single Phase Models — 120 Volts Input (All Units CSA Approved)

Stock No.	Mfr.'s Type‡	Fig.	Input Volts	Output			Dimensions		Wt. Lbs.	EACH
				Volts	Amps	kVA	Size, Inches (A × B × C)	Size, Cm (A × B × C)		
927-3171	171†	A	120	0-120/132	1.75	0.23	$2\frac{13}{16} \times 3\frac{5}{32} \times 1\frac{7}{8}$	7.14 × 8.02 × 4.76	2	**54.00**
927-3201	201†	A	120	0-120/132	2.00	0.26	$2\frac{13}{16} \times 3\frac{5}{32} \times 1\frac{7}{8}$	7.14 × 8.02 × 4.76	2	**55.00**
927-3225	221-B	A	120	0-120/132	2.50	0.33	$2\frac{13}{16} \times 3\frac{5}{32} \times 2\frac{1}{8}$	7.14 × 8.02 × 5.40	2	**56.00**
927-3291	291†	A	120	0-120/132	3.00	0.40	$2\frac{13}{16} \times 3\frac{5}{32} \times 2\frac{5}{16}$	7.14 × 8.02 × 5.87	$2\frac{1}{2}$	**64.00**
927-5501	501	B	120	0-120/140	5.00	0.70	$5\frac{5}{32} \times 3\frac{3}{4} \times 3\frac{5}{16}$	13.10 × 9.53 × 8.41	$5\frac{1}{4}$	**100.00**
927-6010	1010	C	120	0-120/140	10.00	1.40	$6\frac{3}{32} \times 5 \times 4\frac{5}{32}$	15.23 × 12.50 × 10.39	$10\frac{1}{4}$	**122.00**
927-6011	1010CT	D	120	0-120/140	10.00	1.40	$6\frac{7}{8} \times 5 \times 4\frac{7}{16}$	17.46 × 12.70 × 11.27	$10\frac{1}{4}$	**189.00**
927-6125	1210CT*	D	120	0-120	12.00	1.40	$6\frac{7}{8} \times 5 \times 4\frac{7}{16}$	17.46 × 12.70 × 11.27	$10\frac{1}{4}$	**190.00**
927-6210	1210*	C	120	0-120	12.00	1.40	$6\frac{1}{32} \times 5 \times 4\frac{5}{32}$	12.91 × 12.70 × 10.56	$10\frac{1}{4}$	**137.00**
927-7501	1510	E	120	0-120/140	15.00	2.10	$6\frac{13}{16} \times 6\frac{1}{8} \times 4\frac{1}{4}$	17.30 × 15.56 × 10.80	$15\frac{3}{4}$	**234.00**
927-6160	2510C*	F	120	0-120/140	25.00	3.50	$8\frac{1}{4} \times 7\frac{5}{8} \times 4\frac{3}{8}$	20.96 × 19.37 × 11.11	$22\frac{1}{4}$	**368.00**
927-8001	2510	E	120	0-120/140	25.00	3.50	$8\frac{1}{4} \times 7\frac{5}{8} \times 4\frac{3}{8}$	20.96 × 19.37 × 11.11	$22\frac{1}{4}$	**341.00**
927-8006	2510CT	F	120	0-120/140	25.00	3.50	$7\frac{5}{8} \times 10\frac{1}{16} \times 6\frac{1}{2}$	19.06 × 25.16 × 16.25	$22\frac{1}{4}$	**419.00**
927-9800	5011	G	120	0-140	50.00	7.00	$15\frac{3}{8} \times 13\frac{7}{8} \times 5\frac{9}{16}$	38.44 × 34.69 × 20.16	66	**767.00**
927Q0612	6011	G	120	0-140	60.00	8.40	$15\frac{3}{8} \times 13\frac{7}{8} \times 5\frac{9}{16}$	38.44 × 34.69 × 20.16	67	**784.00**
927Q0613	6011C	H	120	0-140	60.00	8.40	$17\frac{15}{16} \times 14\frac{1}{8} \times 9$	44.84 × 35.31 × 22.50	67	**1011.00**

Single Phase Models — 240 Volts Input

Stock No.	Mfr.'s Type‡	Fig.	Input Volts	Volts	Amps	kVA	Size, Inches (A × B × C)	Size, Cm (A × B × C)	Wt. Lbs.	EACH
927-3252	252	A	240	0-240/264	0.80	0.21	$2\frac{13}{16} \times 2\frac{13}{16} \times 2\frac{1}{8}$	7.14 × 7.14 × 5.39	$2\frac{1}{2}$	**80.00**
927-6120	1020	C	240	0-240/280	3.50	0.98	$6\frac{3}{32} \times 5 \times 4\frac{5}{32}$	15.23 × 12.50 × 10.39	$10\frac{1}{4}$	**164.00**
927-6130	1220CT*	D	240	0-240	5.00	1.20	$6\frac{7}{8} \times 5 \times 4\frac{7}{16}$	17.46 × 12.70 × 11.27	$10\frac{1}{4}$	**212.00**
927-6150	SQ1220*	C	240	0-240	5.00	1.20	$5\frac{3}{16} \times 4\frac{1}{4} \times 4\frac{5}{32}$	13.18 × 10.80 × 10.56	$10\frac{1}{4}$	**170.00**
927-7507	1520	E	240	0-240/280	9.50	2.70	$6\frac{13}{16} \times 6\frac{1}{8} \times 4\frac{5}{8}$	17.30 × 15.56 × 11.75	$19\frac{1}{4}$	**234.00**
927-8500	2520	E	240	0-240/280	10.00	2.80	$8\frac{1}{4} \times 7\frac{5}{8} \times 4\frac{3}{8}$	20.96 × 19.37 × 11.11	21	**340.00**
927-6165	2520C*	F	240	0-240/280	10.00	2.80	$8\frac{1}{4} \times 7\frac{5}{8} \times 4\frac{3}{8}$	20.96 × 19.37 × 11.11	21	**294.40**
927-9805	5021	G	240	0-240/280	28.00	7.80	$15\frac{3}{8} \times 13\frac{7}{8} \times 5\frac{9}{16}$	38.44 × 34.69 × 20.16	64	**767.00**
927Q0602	6020	G	240	0-240/280	35.00	9.80	$15\frac{3}{8} \times 13\frac{7}{8} \times 5\frac{9}{16}$	38.44 × 34.69 × 20.16	64	**960.00**
927Q0603	6020C	H	240	0-240/280	35.00	9.80	$17\frac{15}{16} \times 14\frac{1}{8} \times 9$	44.84 × 35.31 × 22.50	74	**1011.00**

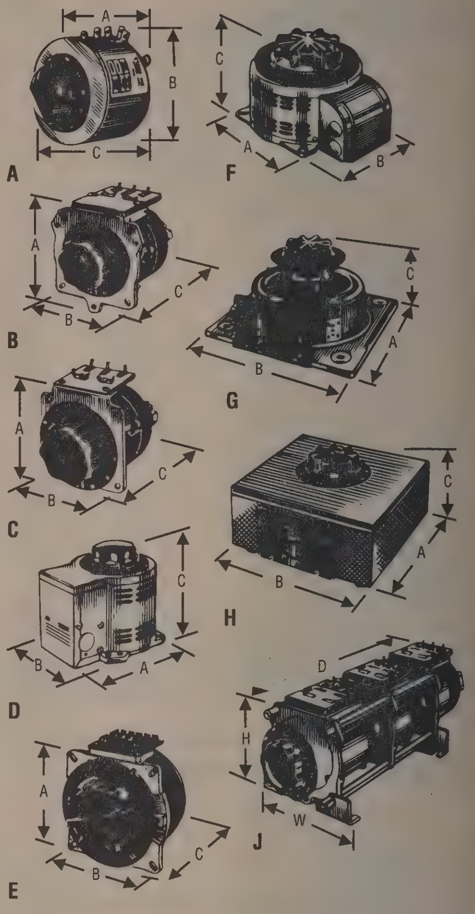
‡Type numbers without suffix are open style designed for back-of-panel mounting. Types with suffix "C" have coil enclosed in a metal enclosure. Types with suffix "CT" have coil and terminals housed in metal enclosures, for panel/conduit mtg. *60 Hz and †60 Hz only with overvoltage output.

Three Phase Models — 240 Volts Input

Stock No.	Mfr.'s Type	Fig.	Freq. Hz	Input Voltage	Output			Size (In.) H × W × D	Wt. Lbs.	EACH
					VAC	Amps	kVA			
927-9110	1010-3	J	60	240 VAC	0-240/280	10.0	4.16	6.125 × 5.000 × 14.594	$34\frac{1}{2}$	**380.00**
927Q9115	1510-3	J	60	240 VAC	0-240/280	15.0	6.22	7.063 × 6.125 × 14.563	$55\frac{1}{2}$	**696.00**
927-9120	2510-3	J	60	240 VAC	0-240/280	25.0	10.40	8.625 × 7.625 × 14.625	68	**1225.00**

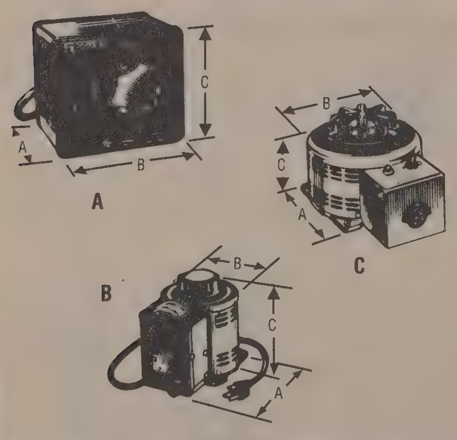
Three Phase Models — 480 Volts Input

Stock No.	Mfr.'s Type	Fig.	Freq. Hz	Input Voltage	VAC	Amps	kVA	Size (In.) H × W × D	Wt. Lbs.	EACH
927Q9700	1020-3	J	50/60	480	0-480	3.5	2.90	6.130 × 5.000 × 14.590	36	**563.00**
927-9705	1520-3	J	50/60	480	0-480	9.5	7.90	7.060 × 7.250 × 15.690	66	**852.00**
927Q9710	6020-3Y	J	50/60	480	0-480	35.0	29.10	17.630 × 18.880 × 23.130	240	**3434.00**



Motorized Units

Motorized Units are available starting with the 501 series. Units can be open or enclosed and supplied in larger sizes. Contact Allied for price and availability. For enclosed microprocessor controlled full range voltage controllers refer to page 503.



Portable Models

Prefix "3PN" indicates 3-prong cord, plug and receptacle; "V" suffix indicates voltmeter. "A" suffix indicates ammeter. All models are housed in a rugged steel enclosure and supplied with input linecord and plug with matching receptacle, on-off switch, fuse, pilot light. Available for 120 Volt AC or 240 Volt AC input.

Cord and Plug Type — 120 Volts Input

Stock No.	Mfr.'s Type	Fig.	Input Volts	Output			Dimensions		Wt. Lbs.	EACH
				Volts	Amps	kVA	Size, Inches (A × B × C)	Size, cm (A × B × C)		
927-2172	3PN171	A	120	0-132	1.75	0.23	$4 \times 4 \times 3\frac{5}{16}$	—	2	**165.00**
927-2302	3PN501	A	120	0-120/140	5.00	0.70	$4\frac{15}{32} \times 6\frac{1}{16} \times 5\frac{3}{8}$	11.35 × 15.40 × 13.65	$7\frac{3}{4}$	**177.00**
927-2303	3PN1010	B	120	0-120/140	10.00	1.40	$7\frac{5}{8} \times 5 \times 4\frac{7}{16}$	19.37 × 12.70 × 11.27	$10\frac{1}{4}$	**189.00**
927-2305	3PN1210	B	120	0-120	12.00	1.40	$7\frac{5}{8} \times 5 \times 4\frac{7}{16}$	19.37 × 12.70 × 11.27	2	**218.00**
927-2339	3PN1510	C	120	0-120/140	15.00	2.10	$9 \times 6\frac{3}{16} \times 4\frac{1}{2}$	17.46 × 12.70 × 13.65	$7\frac{3}{4}$	**346.00**
927-2309	3PN2210	C	120	0-140	22.00	3.10	$10\frac{3}{4} \times 7\frac{5}{8} \times 4\frac{3}{8}$	17.46 × 12.70 × 13.65	$10\frac{1}{4}$	**501.00**
927-8502	3PN1010V	B	120	0-140	10.00	1.40	$6\frac{7}{8} \times 5 \times 5\frac{3}{8}$	22.86 × 15.71 × 13.65	$10\frac{1}{4}$	**318.00**
927-8504	3PN1010A	B	120	0-140	10.00	1.40	$6\frac{7}{8} \times 5 \times 5\frac{3}{8}$	22.86 × 15.72 × 11.43	$10\frac{1}{4}$	**315.00**
927-8506	3PN1510V	C	120	0-140	15.00	2.10	$9 \times 6\frac{3}{16} \times 5\frac{3}{8}$	27.31 × 19.37 × 11.11	18	**492.00**

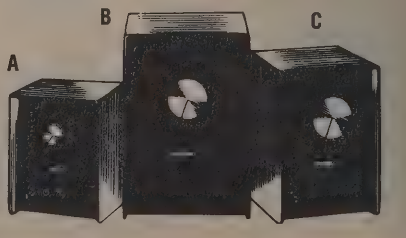
Cord and Plug Type — 240 Volts Input

Stock No.	Mfr.'s Type	Fig.	Input Volts	Volts	Amps	kVA	Size, Inches (A × B × C)	Size, cm (A × B × C)	Wt. Lbs.	EACH
927-2304	3PN1020	B	240	0-280	3.50	0.98	$7\frac{5}{8} \times 5 \times 4\frac{7}{16}$	19.87 × 12.70 × 11.27	$10\frac{1}{4}$	**225.00**
927-2342	3PN1520	B	240	0-280	9.50	2.66	$9 \times 5\frac{3}{16} \times 5\frac{3}{8}$	22.86 × 13.18 × 13.65	$19\frac{1}{4}$	**345.00**
927-2330	3PN2520	C	240	0-280	10.00	2.80	$10\frac{3}{4} \times 7\frac{5}{8} \times 4\frac{3}{8}$	27.31 × 19.37 × 11.11	$24\frac{1}{4}$	**501.00**

Fully Enclosed Variable Voltage Controls

All holes have been eliminated to prevent entry of small items. The front panel is recessed to help minimize accidental shut-off or unintentional readjustment. Designed to minimize voltage variation from no-load current conditions, thus reducing the need to readjust the output voltage as the load current changes. Much higher currents, up to 10 times the specified rating, can be drawn for a short period of time for surge current applications. These controls can operate up to 2000 Hz with virtually no loss in output current.

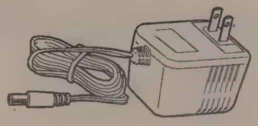
Stock No.	Mfr.'s Type	Fig.	Input Volts	Output			Dimensions		Wt. Lbs.	EACH
				Volts	Amps	kVA	Size, Inches (H × W × D)	Size, cm (H × W × D)		
927Q4221	L221	A	120V 60 Hz	0-132	1.75	0.23	$6\frac{9}{32} \times 5 \times 4\frac{1}{4}$	15.9 × 12.7 × 10.76	$3\frac{1}{2}$	**149.00**
927Q4501	L501	B	120V 50/60 Hz	0-140	4.50	0.63	$7\frac{23}{32} \times 5\frac{3}{8} \times 5\frac{7}{8}$	19.5 × 13.6 × 14.92	$7\frac{1}{4}$	**215.00**
927-4010	L1010	C	120V 50/60 Hz	0-140	10.00	1.40	$9\frac{13}{32} \times 6\frac{1}{2} \times 6\frac{1}{4}$	23.8 × 16.5 × 15.87	$12\frac{1}{4}$	**259.00**



Domestic Models

Listed Certified

Output Terminations: Stancor wall plug-in power sources have output termination compatible with Switchcraft PC-722A or 722A with 6' output cord. Secondary plug size 2.1 × 5.5 mm. Wired Outside-Positive; Inside-Negative for AC-DC models.



Wall Mount Models

AC-DC Unregulated Models 120 V, 60 Hz.

Stock No.	Mfr.'s Type	Rated Output		Size	EACH	
		Volts	MA		1-9	10-24
928-9600	STA-3530A	3.0 DC	400	1	9.46	8.04
928-9605	STA-3530	3.0 DC	500	1	9.46	8.04
928-9610	STA-3540	4.4 DC	400	1	9.46	8.04
928-9615	STA-3560B	6.0 DC	100	1	9.46	8.04
928-9620	STA-3560	6.0 DC	200	1	9.46	8.04
928-9625	STA-3560A	6.0 DC	300	1	9.46	8.04
928-9630	STA-4160	6.0 DC	600	2	11.92	9.77
928-9635	STA-4160A	6.0 DC	800	2	11.92	10.13
928-9640	STA-4860	6.0 DC	1000	3	14.67	12.46
928-9645	STA-4860A	6.0 DC	1200	3	14.67	12.46
928-9650	STA-5760	6.0 DC	2000	4	24.47	20.80
928-9655	STA-3575	7.5 DC	100	1	9.46	8.04
928-9660	STA-3575A	7.5 DC	300	1	9.46	8.04
928-9689	STA-4175A	7.5 DC	500	2	11.81	10.37
928-9665	STA-4875	7.5 DC	1000	3	16.87	14.34
928-9670	STA-5775	7.5 DC	1500	4	24.47	20.80
928-9675	STA-3590B	9.0 DC	100	1	9.46	8.04
928-9680	STA-3590	9.0 DC	200	1	9.46	8.04
928-9685	STA-3590A	9.0 DC	300	1	9.67	8.04
928-9690	STA-4190A	9.0 DC	500	2	11.92	10.13
928-9695	STA-4190F	9.0 DC	700	2	12.31	10.46
928-9700	STA-4890	9.0 DC	1000	3	17.72	15.07
928-9705	STA-4890A	9.0 DC	1200	3	18.17	15.45
928-9710	STA-3512	12.0 DC	50	1	9.67	8.22
928-9715	STA-3512C	12.0 DC	100	1	9.67	8.22
928-9720	STA-3512B	12.0 DC	200	1	9.67	8.22
928-9725	STA-4112B	12.0 DC	300	2	11.92	10.13
928-9730	STA-4112	12.0 DC	400	2	12.21	10.38
928-9735	STA-4112C	12.0 DC	500	2	12.21	10.38
928-9740	STA-4812D	12.0 DC	600	3	16.43	13.97
928-9745	STA-4812A	12.0 DC	1000	3	20.53	17.45
928-9750	STA-5712	12.0 DC	1200	4	25.14	21.37
928-9755	STA-4812	12.5 DC	800	3	18.85	16.02
928-9760	STA-5713	13.5 DC	1300	4	27.22	23.13
928-9765	STA-5713A	13.5 DC	1700	4	28.64	24.35
928-9770	STA-4814	14.5 DC	800	3	16.77	14.25
928-9775	STA-4815	15.0 DC	600	3	16.77	14.25
928-9780	STA-5715	15.0 DC	1000	4	25.14	21.37
928-9785	STA-3518	18.5 DC	80	1	9.85	8.37
928-9961	STA-3524	24.0 DC	50	1	11.00	9.36
928-9637	STA-4120	20.0 DC	280	2	14.75	13.51

AC-DC Regulated Models Input 120 V, 60 Hz.

Stock No.	Mfr.'s Type	Rated Output		Size	EACH	
		Volts	MA		1-9	10-24
928-9891	STA-4130*	3.0 DC	350	2	14.00	11.90
928-9997	STA-4850	5.0 DC	600	9	23.07	19.60
928-9892	STA-4190C*	9.0 DC	200	2	15.18	12.90
928-9893	STA-4890B	9.0 DC	400	9	20.27	17.23
928-9894	STA-4110A	10.0 DC	300	2	15.18	12.90
928-9895	STA-300R	12.0 DC	200	2	15.18	12.90

AC-AC Models Input 120 V, 60 Hz.

Stock No.	Mfr.'s Type	Volts	MA	Size	1-9	10-24
928-9896	STA-3545B	4.5 AC	300	1	8.32	6.42
928-9897	STA-4190B	9.0 AC	300	2	10.01	8.51
928-9898	STA-4190D	9.0 AC	500	2	10.01	8.51
928-9899	STA-4110	10.0 AC	700	2	10.73	9.12
928-9900	STA-3512E*	12.0 AC	100	1	8.32	7.07
928-9901	STA-3512F*	12.0 AC	200	1	8.32	7.07
928-9902	STA-4112A	12.0 AC	500	2	10.01	8.51
928-9903	STA-4812B*	12.0 AC	850	3	12.94	10.99
928-9904	STA-4116	16.0 AC	250	2	10.01	8.51
928-9905	STA-4118*	18.0 AC	300	2	10.01	8.51
928-9906	STA-4820*	20.0 AC	700	3	13.94	11.85
928-9907	STA-4124	24.0 AC	300	2	10.73	9.12
928-9924	STA-4824B	24.0 AC	450	3	14.07	12.58
928-9926**	STA-4117A	17.0 CT	500	2	9.22	8.45

Desk Top Models

AC-DC Unregulated Desk Top Models Input 120 V, 60 Hz.

Stock No.	Mfr.'s Type	Volts	MA	Size	1-9	10-24
928-9908	STA-6690	9.0 DC	3000	7	50.34	42.79
928-9909	STA-6612	12.0 DC	2000	7	48.88	41.55
928-9910	STA-6612A	12.0 DC	2500	7	51.01	41.55
928-9911	STA-6612B	12.0 DC	3000	7	53.78	45.14
928-9912	STA-5713AC	13.5 DC	1700	4	32.11	27.29
928-9913	STA-6013A	13.5 DC	2100	5	43.31	36.81
928-9914	STA-6613	13.5 DC	2400	7	51.01	43.35
928-9915	STA-6615	15.0 DC	2000	7	51.73	43.97
928-9916	STA-6618	18.0 DC	2000	7	53.78	45.72
928-9917	STA-6624	24.0 DC	1500	7	53.78	45.72

AC-AC Desk Top Models Input 120 V, 60 Hz.

Stock No.	Mfr.'s Type	Volts	MA	Size	1-9	10-24
928-9918	STA-5760A*	6.0 AC	3300	4	25.63	21.79
928-9919	STA-5790	9.0 AC	3400	4	27.22	23.13

* UL listed only/not CSA certified. ****Termination:** 6' cord with Amp connector mates with Amp 3-102202-4 or 3-102203-4.

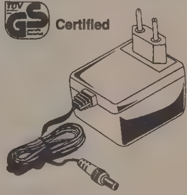
Dimensions

Size	L		W		W	
	mm	In.	mm	In.	mm	In.
1	55.0	2.2	42.8	1.7	37.2	1.5
2	63.0	2.5	51.0	2.0	41.0	1.6
3	70.5	2.8	56.0	2.2	47.0	1.9
4	84.5	3.3	64.5	2.5	55.0	2.2
5	95.2	3.7	72.0	2.8	57.0	2.2
6	55.0	2.2	42.8	1.7	35.6	1.4
7	120.0	4.7	80.0	3.1	66.5	2.6
8	120.0	4.7	82.0	3.2	66.5	2.6
9	89.0	3.5	61.0	2.4	48.0	1.9

European Models

Certified

Output Terminations: Stancor wall plug-in power sources have output termination compatible with Switchcraft PC-722A or 722A with 6' output cord. Secondary plug size 2.1 × 5.5 mm. Wired Outside-Positive; Inside-Negative for AC-DC models. All European wall plug-in power sources are TUV certified.



Wall Mount Models

AC-DC Unregulated Models Input 220 V, 50 Hz.

Stock No.	Mfr.'s Type	Rated Output		Size	EACH	
		Volts	MA		1-9	10-24
928-9790	STAF-3924F	4.5 DC	350	6	13.27	11.28
928-9795	STAF-1847F	4.8 DC	500	2	15.09	12.82
928-9800	STAF-1848F	5.2 DC	1000	3	18.50	15.73
928-9805	STAF-0381F	6.0 DC	500	2	16.15	13.72
928-9810	STAF-0797F	6.0 DC	1000	3	18.50	15.73
928-9815	STAF-2100F	6.2 DC	300	6	11.82	10.05
928-9820	STAF-0834F	6.2 DC	350	2	15.09	12.82
928-9825	STAF-2243F	7.5 DC	300	2	15.09	12.82
928-9830	STAF-2223F	9.0 DC	200	6	13.27	11.28
928-9835	STAF-3309F	9.0 DC	300	2	15.09	12.82
928-9840	STAF-1058F	9.0 DC	500	2	16.49	14.02
928-9845	STAF-0329F	9.0 DC	1000	3	19.91	16.93
928-9850	STAF-3382F	12.0 DC	300	2	16.15	13.72

AC-DC Unregulated Models Input 220 V, 50 Hz. (continued)

Stock No.	Mfr.'s Type	Rated Output		Size	EACH	
		Volts	MA		1-9	10-24
928-9855	STAF-2343F	12.0 DC	500	3	15.09	12.98
928-9860	STAF-1454F	12.0 DC	1000	4	28.70	24.39
928-9865	STAF-1948F	12.0 DC	1200	4	29.37	24.96
928-9870	STAF-0460F	12.6 DC	800	3	19.91	16.93
928-9875	STAF-1059F	13.5 DC	1300	4	32.11	27.29
928-9880	STAF-0354F	14.5 DC	800	3	19.91	16.93

AC-AC Models, Input 220 V, 50 Hz.

Stock No.	Mfr.'s Type	Volts	MA	Size	1-9	10-24
928-9886	STAF-1433F	2.9 AC	320	6	11.82	10.05
928-9887	STAF-2099F	3.0 AC	120	6	11.82	10.05
928-9888	STAF-0418F	4.5 AC	120	6	11.82	10.05
928-9889	STAF-0437F	9.0 AC	130	6	11.82	10.05
928-9890	STAF-2098	24.0 AC	400	3	20.58	17.49

Desk Top Models

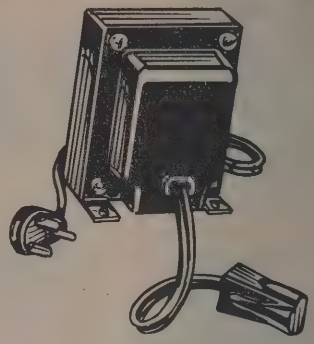
AC-DC Unregulated Desk Top Models Input 220 V, 50 Hz.

Stock No.	Mfr.'s Type	Volts	MA	Size	1-9	10-24
928-9920	STAF-2134F	13.5 DC	1700	5	50.28	42.75
928-9921	STAF-3775F	13.5 DC	2100	8	54.51	46.35
928-9922	STAF-3777F	13.5 DC	2400	8	55.90	47.51
928-9923	STAF-3613F	14.0 DC	1400	5	48.88	41.88
928-9885	STAF-1972F	15.0 DC	1000	4	30.04	25.54

Dimensions

Size	L		W		W	
	mm	In.	mm	In.	mm	In.
1	55.0	2.2	42.8	1.7	37.2	1.5
2	63.0	2.5	51.0	2.0	41.0	1.6
3	70.5	2.8	56.0	2.2	47.0	1.9
4	84.5	3.3	64.5	2.5	55.0	2.2
5	95.2	3.7	72.0	2.8	57.0	2.2
6	55.0	2.2	42.8	1.7	35.6	1.4
7	120.0	4.7	80.0	3.1	66.5	2.6
8	120.0	4.7	82.0	3.2	66.5	2.6
9	89.0	3.5	61.0	2.4	48.0	1.9

Auto Transformers



All of these items have Class "A" insulation and are rated to have a maximum operating temperature limit of 105°C. These units may be used with rectifiers but the form factor should be observed for various combinations of rectifier circuits and types of load following the rectifier.

These items are made with our standard N.E.M.A. plugs and receptacles, primarily for use in this country. However, if used overseas where different types of plugs are necessary, an international adapter plug below can be used or our plug can be removed and a foreign plug attached to the end of the line cord.

Step-Down Auto-Transformers. 230/115 volts, 50/60 Hz. May be operated from a 400 Hz source with no change in output rating. Case and core internally connected to third conductor of NEMA standard cord and receptacle for safety. **RMS Test Voltage:** 1500.

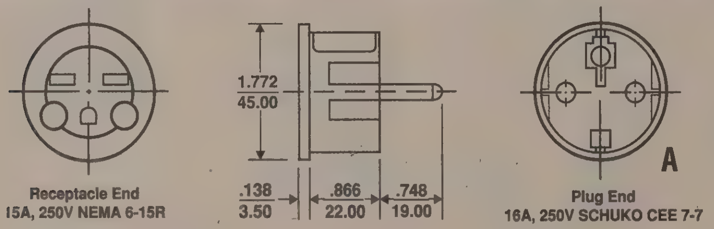
Stock No.	Mfr.'s Type	VA Cap.	Voltage Input/Output	Case Dimensions (Inches)			Mounting (Inches)		Wt. Lbs.	EACH			
				H	W	D	MW	MD		1-9	10-24	25-49	50-99
928-0300	GSD-75	75	230/115	$3\frac{7}{8}$	$3\frac{3}{16}$	$2\frac{3}{4}$	$2\frac{1}{2}$	$1\frac{1}{2}$	3.0	**52.77**	**44.86**	**40.37**	**36.34**
928-0301	GSD-100	100	230/115	$3\frac{7}{8}$	$3\frac{3}{16}$	3	$2\frac{1}{2}$	$1\frac{3}{4}$	3.7	**55.39**	**47.08**	**42.37**	**38.14**
928-0302	GSD-150	150	230/115	$3\frac{7}{8}$	$3\frac{3}{16}$	$3\frac{1}{4}$	$2\frac{1}{2}$	2	4.4	**60.59**	**51.50**	**46.35**	**41.72**
928-0303	GSD-250	250	230/115	$3\frac{7}{8}$	$3\frac{3}{16}$	$3\frac{5}{8}$	$2\frac{1}{2}$	$2\frac{3}{8}$	5.8	**70.34**	**59.79**	**53.81**	**48.44**
928-0304	GSD-300	300	230/115	$3\frac{7}{8}$	$3\frac{3}{16}$	$3\frac{5}{8}$	$2\frac{1}{2}$	$2\frac{3}{8}$	5.8	**71.88**	**61.10**	**54.99**	**49.50**
928-0305	GSD-350	350	230/115	$3\frac{7}{8}$	$3\frac{3}{16}$	$4\frac{5}{16}$	$2\frac{1}{2}$	3	7.3	**75.44**	**64.12**	**57.72**	**51.95**
928-0306	GSD-500	500	230/115	$4\frac{5}{8}$	$3\frac{13}{16}$	$4\frac{7}{16}$	3	$3\frac{3}{8}$	10.6	**80.75**	**68.64**	**61.77**	**55.60**
928-0307	GSD-750	750	230/115	$4\frac{5}{8}$	$3\frac{13}{16}$	$5\frac{3}{16}$	3	$4\frac{1}{8}$	14.4	**99.98**	**84.99**	**76.48**	**68.85**
928-0308	GSD-1000	1000	230/115	$4\frac{5}{8}$	$3\frac{13}{16}$	6	3	5	17.0	**129.74**	**110.28**	**99.25**	**89.33**
928-0309	GSD-1500	1500	230/115	$5\frac{3}{8}$	$4\frac{7}{16}$	6	$3\frac{1}{2}$	$4\frac{3}{8}$	20.0	**190.26**	**161.72**	**145.99**	**131.01**

Step-Down Isolation (Three Conductor Line Cord and Receptacle). 230/115 volts, 50/60 Hz. Case, core and electrostatic shield internally connected to third conductor of NEMA standard cord and receptacle. **RMS Test Voltage:** 1500.

Stock No.	Mfr.'s Type	VA Cap.	Voltage Input/Output	H	W	D	MW	MD	Wt. Lbs.	1-9	10-24	25-49	50-99
928-0350	GISD-100	100	230/115	$3\frac{1}{2}$	$2\frac{13}{16}$	$3\frac{9}{16}$	$2\frac{1}{4}$	$2\frac{7}{16}$	4.5	**58.62**	**49.83**	**44.85**	**40.36**
928-0351	GISD-150	150	230/115	$3\frac{7}{8}$	$3\frac{1}{8}$	$4\frac{3}{16}$	$2\frac{1}{2}$	$2\frac{15}{16}$	7.0	**62.66**	**53.27**	**47.94**	**43.16**
928-0352	GISD-250	250	230/115	$4\frac{11}{16}$	$3\frac{3}{4}$	$4\frac{1}{4}$	3	$3\frac{3}{16}$	9.0	**82.78**	**70.36**	**63.33**	**57.00**
928-0353	GISD-500	500	230/115	$4\frac{11}{16}$	$3\frac{3}{4}$	6	3	$4\frac{13}{16}$	16.0	**124.93**	**106.19**	**95.57**	**86.03**
928-0354	GISD-1000	1000	230/115	$5\frac{1}{2}$	$4\frac{3}{8}$	$8\frac{1}{8}$	$3\frac{1}{2}$	$6\frac{1}{2}$	31.0	**227.30**	**193.21**	**173.89**	**156.52**

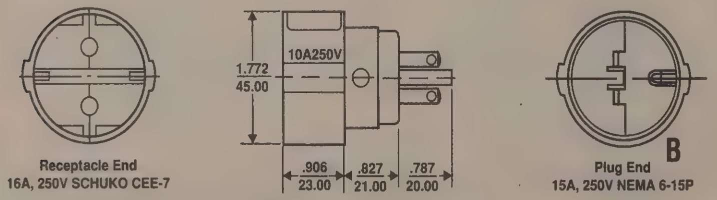
Step-Up Auto-Transformers. Primaries 115 volts 50/60 Hz, line cord and plug (may be operated from a 400 Hz source with no change in output ratings). Secondaries, 230 volts, standard female receptacles. **RMS Test Voltage:** 1500.

Stock No.	Mfr.'s Type	VA Cap.	Voltage Input/Output	H	W	D	MW	MD	Wt. Lbs.	1-9	10-24	25-49	50-99
928-4700	P-8637	85	115/230	$3\frac{1}{8}$	$2\frac{5}{8}$	$2\frac{3}{4}$	2	$1\frac{3}{4}$	2.5	**47.29**	**40.19**	**36.18**	**32.56**
928-4720	P-8638	125	115/230	$3\frac{1}{8}$	$2\frac{5}{8}$	3	2	2	3.0	**49.30**	**41.91**	**37.72**	**33.95**
928-4877	P-8639	300	115/230	$3\frac{7}{8}$	$3\frac{1}{8}$	$3\frac{7}{8}$	$2\frac{1}{2}$	$2\frac{3}{8}$	5.2	**60.89**	**51.75**	**46.58**	**41.93**
928-4878	P-8640	500	115/230	$4\frac{5}{8}$	$3\frac{3}{4}$	$4\frac{3}{4}$	3	$3\frac{5}{16}$	10.3	**82.99**	**70.54**	**63.49**	**57.15**
928-4879	P-8689	1000	115/230	$4\frac{5}{8}$	$3\frac{3}{4}$	$6\frac{1}{8}$	3	$4\frac{15}{16}$	17.4	**107.89**	**91.71**	**82.53**	**74.29**



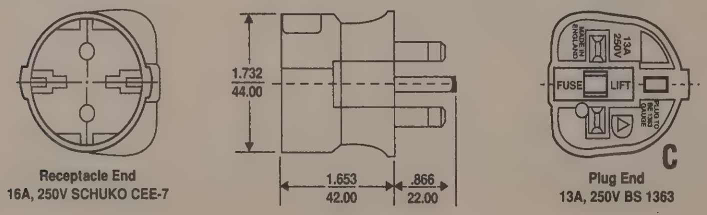
Receptacle End
15A, 250V NEMA 6-15R

Plug End
16A, 250V SCHUKO CEE 7-7



Receptacle End
16A, 250V SCHUKO CEE-7

Plug End
15A, 250V NEMA 6-15P



Receptacle End
16A, 250V SCHUKO CEE-7

Plug End
13A, 250V BS 1363

International Adapter Plugs

A new line of grounding adapters, ideal for use on electrical/electronic equipment exported to countries that have standardized on the CEE-7 SCHUKO outlet configuration. The use of these adapters reduces the need for expensive and difficult-to-obtain foreign type power cords and cord sets, as they provide a fast, easy means of connecting equipment to European outlets.

American to European - Fig. A

Allows interface from NEMA 6-15P plugs to CEE-7 SCHUKO grounding outlets.

928-9951. ADT-30100. **1-9** . . . . **EACH 13.98**

European to American - Fig. B

Allows interface from CEE-7 SCHUKO plugs to NEMA 6-15R grounding outlets.

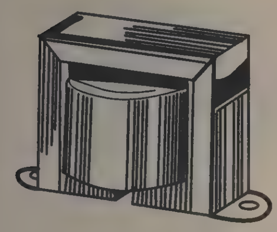
928-9952. ADT-30120. **1-9** . . . . **EACH 26.63**

European to United Kingdom - Fig. C

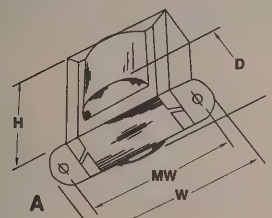
Allows interface from CEE-7 SCHUKO plugs to U.K. 13A, 250V receptacles.

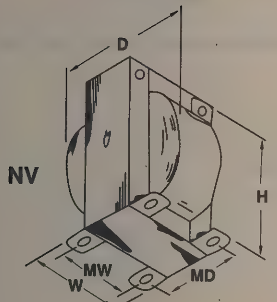
928-9953. ADT-30140. **1-9** . . . . **EACH 24.34**

Rectifier, Control and Filament Types



With single secondary: all primaries 50/60 Hz (may be operated from a 400 Hz source with no change in output ranges). Useful in all power and control applications such as relays, pilot lamps, small motors, pumps, speed changers and many other mechanical and electrical devices. Many units are center tapped for most efficient and economical rectification application, enabling the designer broader selection and versatility. All types have lead wire terminations and 117 volt primary except P-8551 which is 115 volts. Twice allowable RMS working voltage plus 1000 volts.



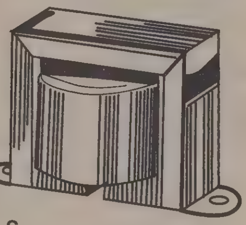


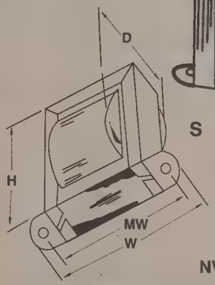
Stock No.	Mfr.'s Type	Style	Secondary RMS		Insulation Test RMS Volts*	Dimensions (Inches)					Wt. Lbs.	EACH			
			Volts	Amps		Case			Mounting			1-9	10-24	25-49	50-99
						H	W	D	MW	MD					
928-3027	P-6465	A	6.3 C.T.	0.600	1500	1 3/8	2 3/8	1 1/2	2	—	0.40	10.09	8.58	7.72	6.95
928-4040	P-8389	A	6.3	1.000	1500	1 5/8	2 7/8	1 5/8	2 3/8	—	0.60	10.52	8.95	8.05	7.25
928-3090	P-8190	A	6.3	1.200	5000	2	3 1/4	1 7/8	2 13/16	—	1.00	17.20	14.62	13,16	11.84
928-3028	P-6466	A	6.3 C.T.	3.000	2500	2	3 1/4	2 1/8	2 13/16	—	1.40	15.14	12.87	11.58	10.43
928-2079	P-6309	NV	6.3 C.T.	20.000	2500	4 9/16	3 3/4	3 3/8	3	2 3/8	6.70	56.51	48.04	43.23	38.91
928-4752	P-8652	A	10.0 C.T.	1.000	1500	2	3 1/4	1 5/8	2 13/16	—	0.90	16.95	14.41	12.97	11.67
928-4045	P-8390	A	12.0	0.150	1500	1 1/4	2 1/8	1 1/4	1 3/4	—	0.25	10.04	8.54	7.68	6.91
928-4047	P-8391	A	12.0	0.350	1500	1 3/8	2 3/8	1 3/8	2	—	0.35	10.57	8.99	8.09	7.28
928-4048	P-8392	A	12.0	0.700	1500	1 5/8	2 7/8	1 5/8	2 3/8	—	0.60	10.75	9.14	8.22	7.40
928-4049	P-8393	A	12.0	1.200	1500	2	3 1/4	1 5/8	2 13/16	—	0.85	13.37	11.36	10.23	9.21
928-4757	P-8657	A	12.0	2.000	1500	2	3 1/4	2 1/8	2 13/16	—	1.30	15.42	13.11	11.80	10.63
928-4034	P-8384	A	12.6 C.T.	1.000	1500	2	3 1/4	1 3/4	2 13/16	—	0.90	12.83	10.91	9.82	8.83
928-3040	P-8130	A	12.6 C.T.	2.000	1500	2	3 1/4	2 1/8	2 13/16	—	1.40	14.44	12.27	11.05	9.94
928-4741	P-8641	A	12.6 C.T.	4.000	1500	2 5/8	4	2 3/8	3 9/16	—	2.30	24.92	21.18	19.06	17.16
928-4604	P-8604	A	20.0 C.T.	1.000	1500	2	3 1/4	2 1/8	2 13/15	—	1.40	16.34	13.89	12.50	11.25
928-9570	P-8551	A	24.0	1.000	1500	1 15/16	3 1/4	2 1/8	2 13/16	—	1.40	13.14	11.16	10.05	9.04
928-4050	P-8394	A	24.0 C.T.	0.085	1500	1 1/4	2 1/8	1 1/4	1 3/4	—	0.25	11.43	9.72	8.75	7.88
928-9575	P-8395	A	24.0 C.T.	0.200	1500	1 3/8	2 3/8	1 3/8	2	—	0.35	11.28	9.59	8.63	7.77
928-4052	P-8396	A	24.0 C.T.	0.400	1500	1 5/8	2 7/8	1 5/8	2 3/8	—	0.60	12.73	10.82	9.73	8.77
928-4053	P-8397	A	24.0 C.T.	0.700	1500	2	3 1/4	1 3/4	2 13/16	—	0.85	13.39	11.38	10.24	9.22
928-4861	P-8661	A	24.0 C.T.	1.000	1500	2	3 1/4	2 1/16	2 13/16	—	1.40	13.69	11.63	10.48	9.43
928-4862	P-8662	A	24.0 C.T.	2.000	1500	2 5/8	4	2 3/8	3 9/16	—	2.30	20.01	17.01	15.31	13.78
928-4863	P-8663	NV	24.0 C.T.	4.000	1500	3 13/16	3 1/8	2 13/16	2 1/2	2 1/8	4.00	32.49	27.62	24.85	22.38
928-3031	P-6469	A	25.2	1.000	1500	2	3 1/4	2 1/8	2 13/16	—	1.40	15.07	12.81	11.53	10.37
928-3080	P-8180	A	25.2 C.T.	1.000	1500	2	3 1/4	2 1/4	2 13/16	—	1.40	13.67	11.62	10.46	9.41
928-4038	P-8388	A	25.2 C. T.	2.800	1500	2 5/8	4	2 1/4	3 9/16	—	2.20	22.31	18.96	17.07	15.36
928-4101	P-8601	A	28.0 C.T.	0.175	1500	1 3/8	2 3/8	1 3/8	2	—	0.35	13.87	11.79	10.62	9.56
928-4867	P-8667	A	28.0 C.T.	1.000	1500	2	3 1/4	2 1/8	2 13/16	—	1.40	17.20	14.62	13.16	11.84
928-4111	P-8611	A	36.0 C.T.	0.135	1500	1 3/8	2 3/8	1 3/8	2	—	0.35	13.08	11.12	10.01	9.01
928-4112	P-8612	A	36.0 C.T.	0.300	1500	1 5/8	2 7/8	1 5/8	2 3/8	—	0.60	13.69	11.63	10.48	9.43
928-4871	P-8671	A	36.0 C.T.	1.000	1500	2 3/8	3 3/4	2 1/4	3 1/8	—	2.00	20.15	17.13	15.41	13.87

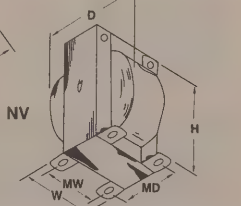
* Insulation Test voltage.

Control Transformers

Primaries 115/230 Volts 50/60 Hz (may be operated from a 400 Hz source with no change in output ratings). Solder lug termination, dual secondary windings. U.L. Recognized. **Typical applications:** automatic assembly equipment, relays, speed changers, pumps, etc.

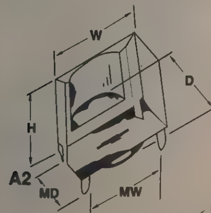


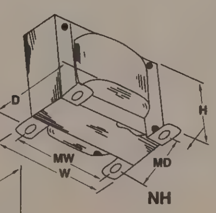


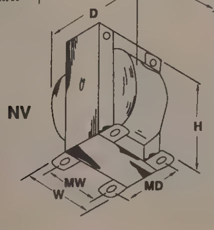


Stock No.	Mfr.'s Type	Style	V-A Cap.	Output From Two Secondary Windings*			Dimensions (Inches)					Wt. Lbs.	EACH			
				Individually	Parallel	Series	Case			Mounting			1-9	10-24	25-49	50-99
							H	W	D	MW	MD					
928-3000	P-6375	S	12	6V @ 1A	6V @ 2A	12V @ 1A	2 3/8	2 7/8	1 5/8	2 3/8	—	1.0	15.62	13.28	11.95	10.76
928-3001	P-6376	S	24	6V @ 2A	6V @ 4A	12V @ 2A	2 3/4	3 1/8	1 7/8	2 13/16	—	1.5	19.95	16.96	15.27	13.73
928-3002	P-6377	S	48	12V @ 2A	12V @ 4A	24V @ 2A	3 1/8	3 5/8	2 1/4	3 1/8	—	2.5	20.56	17.47	15.73	14.15
928-3003	P-6378	NV	96	12V @ 4A	12V @ 8A	24V @ 4A	3 1/2	2 13/16	3	2 1/4	2 1/4	4.2	35.93	30.94	27.49	24.74
928-3004	P-6379	NV	192	12V @ 8A	12V @ 16A	24V @ 8A	4 1/4	3 7/16	3 3/8	2 3/4	3	8.0	61.61	52.37	47.13	42.43
928-4615	P-8615	S	12	24V @ 0.25A	24V @ 0.5A	48V @ 0.25A	2 3/8	2 7/8	1 5/8	2 3/8	—	1.0	18.95	16.11	14.50	13.05
928-4616	P-8616	S	24	24V @ 0.5A	24V @ 1A	48V @ 0.5A	2 3/4	3 1/8	1 7/8	2 13/16	—	1.5	18.94	16.10	14.49	13.04
928-4617	P-8617	S	48	24V @ 1A	24V @ 2A	48V @ 1A	3 1/8	3 5/8	2 1/4	3 1/8	—	2.5	21.13	17.96	16.16	14.54
928-4618	P-8618	NV	96	24V @ 2A	24V @ 4A	48V @ 2A	3 1/2	2 13/16	3	2 1/4	2 1/4	4.2	36.75	31.24	28.12	25.31
928-4619	P-8619	NV	192	24V @ 4A	24V @ 8A	48V @ 4A	4 1/4	3 7/16	3 3/8	2 3/4	3	8.0	55.24	49.96	42.26	38.04

* By connecting primaries in series (for 230 volts) but using only 115 volts input, a series of half voltage output ratings becomes available at the full rated current from each secondary.







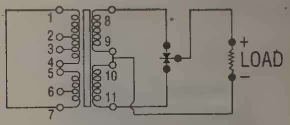
Filter Chokes

High current chokes. Inductance measured at 1 volt 60 Hz. **Insulation Test RMS volts:** TC-1 and TC-2, 1000; all others, 1500. Type C-2692 has self lead termination; all others have lead terminations.

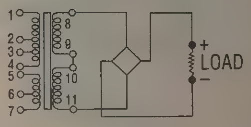
Stock No.	Mfr.'s Type	Style	Inductance Millhenries	DC Amps	DC Res. Ohms	Dimensions (Inches)					Wt. Lbs.	EACH			
						Case			Mounting			1-9	10-24	25-49	50-99
						H	W	D	MW	MD					
928-9005	TC-1	A2	3.0	1.0	0.250	1 1/4	1 1/2	1 1/8	1 1/8	7/16	0.3	8.72	7.41	7.00	6.67
928-9006	TC-2	A2	11.0	1.0	0.750	1 1/4	1 1/2	1 1/8	1 1/8	7/16	0.3	9.53	8.11	7.75	7.30
928-9580	C-2708	A	320	.6	10.0	2	3 1/4	1 3/4	2 13/16	—	1.3	14.23	12.10	10.86	9.80
928-0075	C-2690	NV	300 or 75	1.0/2.0	3.0/0.75	3 7/16	2 13/16	3	2 1/4	2 5/8	5.0	33.26	28.28	25.45	22.90
928-0070	C-2685	NH	35	2.0	0.750	2 9/16	2 5/8	2 1/8[1]	2 3/16	2	1.9	21.58	18.34	16.51	14.86
928-0076	C-2691	NV	80 or 20	2.5/5.0	0.60/0.150	3 13/16	3 1/8	3 1/2	2 1/2	3	7.0	41.50	35.27	31.74	28.57
928-0071	C-2686	NH	25	4.0	0.425	2 7/8	3 3/8	2 5/8	2 13/16	2 1/8	3.4	31.49	26.76	24.09	21.68
928-0072	C-2687	NH	10	8.0	0.150	3 3/16	3 3/4	3	3 1/8	2 1/2	5.3	38.07	32.36	29.13	26.22
928-0073	C-2688	NH	10	12.5	0.110	3 1/2	4 1/8	3 1/8[2]	3 7/16	2 3/8	5.9	44.97	38.23	34.40	30.96

[1] = Mounting foot depth — 2 11/16" O.A. [2] = Mounting foot depth — 3 3/16" O.A.

Universal Rectifier Transformers

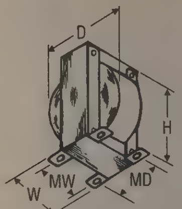


Primaries 117 volts 50/60 Hz.
May also be satisfactorily operated at 400 Cycles. Solder lug termination, **rectifiers not included.**



Stock No.	Mfr.'s Type	Rectifier Circuit	Range of Applied AC Volts Under Load (Approx.)	Output Resistive or Inductive Load Max. DC		Output Capacitive Load* Max. DC		Case Dimensions (Inches)			Mounting (Inches)		Wt. Lbs.	EACH			
				Volts	Amps	Volts	Amps	H	W	D	MW	MD		1-9	10-24	25-49	50-99
928-8001	RT-201	C.T. Bridge	11.7 to 29.4 11.1 to 28.5	11.2 23.0	2.00 1.25	13.8[1] 30.0[2]	2.00 1.25	3 1/8	2 1/2	2 3/8	2	2 1/8	2.5	35.58	30.20	27.17	24.47
928-8002	RT-202	C.T. Bridge	12.0 to 29.8 12.0 to 29.8	11.1 24.3	4.00 2.00	14.7[3] 33.0[1]	4.00 2.00	3 7/16	2 13/16	2 3/4	2 1/4	2 3/8	3.8	47.09	40.03	36.03	32.42
928-8003	RT-204	C.T. Bridge	11.7 to 29.2 11.6 to 29.2	12.0 24.0	8.00 4.00	14.5[4] 32.4[3]	8.00 4.00	3 13/16	3 1/8	3 7/8	2 1/2	2 7/8	6.1	57.25	49.82	44.03	39.63
928-8005	RT-206	C.T. Bridge	12.0 to 29.7 12.0 to 29.7	11.5 24.0	12.00 6.00	14.4[5] 32.0[6]	12.00 6.00	4 5/16	3 7/16	4 1/4	2 3/8	3 1/4	9.1	77.43	65.81	59.23	53.32
928-8006	RT-208	C.T. Bridge	12.1 to 29.2 12.1 to 29.2	11.4 23.7	15.00 8.00	14.8[7] 32.5[4]	15.00 8.00	4 9/16	3 3/4	5	2 15/16	3 3/4	12.6	99.30	84.40	75.97	68.38
928-8009	RT-402	C.T. Bridge	23.0 to 58.0 23.0 to 58.0	25.0 51.5	4.00 2.00	33.5[8] 72.5[9]	4.00 2.00	3 13/16	3 1/8	4 1/2	2 1/2	3 1/16	6.9	57.37	48.76	43.89	39.51
928-8015	RT-408	C.T. Bridge	25.0 to 54.1 25.0 to 54.1	23.4 46.3	12.00 8.00	32.0[4] 68.8[4]	12.00 8.00	5 5/16	4 3/8	6 3/4	3 1/2	5 1/4	26.5	182.44	155.07	139.57	125.62

*MFD Filter Capacitor: 1-100, 2-500, 3-2000, 4-4000, 5-6000, 7-7500, 8-12000, 9-1500, 10-600, 11-2500.



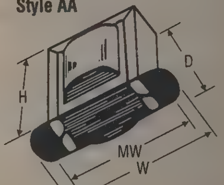
Isolation Transformers

Straight Isolation (Three Conductor Line Cord and Receptacle)

115/115 volts, 50/60 Hz (may be operated from a 400 Hz source with no change in output ratings). Case and core and electrostatic shield internally connected to third conductor of NEMA standard cord and receptacle for safety. **RMS Test Voltage:** 1500.

Stock No.	Mfr.'s Type	Input/Output Voltage	V-A Cap.	Style	Case Dimensions (Inches)			Mounting (Inches)		Wt. Lbs.	EACH			
					H	W	D.	MW	MD		1-9	10-24	25-49	50-99
928-0325	GIS-100	115/115	100	C	3 1/2	2 13/16	3 9/16	2 1/4	2 7/16	4.5	56.42	47.95	43.16	38.85
928-0326	GIS-150	115/115	150	C	3 7/8	3 1/16	4 3/16	2 1/2	2 15/16	7.0	65.35	55.55	49.99	45.00
928-0327	GIS-250	115/115	250	C	4 11/16	3 3/4	4 3/8	3	3 3/16	9.3	78.06	66.35	59.71	53.75
928-0328	GIS-500	115/115	500	C	4 11/16	3 3/4	6	3	4 13/16	16.5	117.84	100.17	90.15	81.14
928-0329	GIS-1000	115/115	1000	C	5 3/8	4 3/8	8 1/8	3 1/2	6 1/2	31.5	228.53	194.25	174.83	157.36

Style AA



Straight Isolation (Electrostatic Shields Grounded to Core)

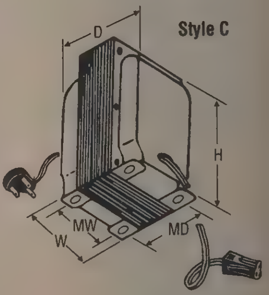
Primaries 50/60 Hz. Secondary female receptacle except for P-8622, P-6411, P-6412 and P-6413 lead termination. **RMS Test Voltage:** 1500. §Secondary is two separate 115 volt windings. †Has electrostatic shield on separate leadwire (not grounded).

Stock No.	Mfr.'s Type	Input Voltage	Output Voltage	V-A Cap.	Style	Case Dimensions (Inches)			Mounting (Inches)		Wt. Lbs.	EACH			
						H	W	D	MW	MD		1-9	10-24	25-49	50-99
928-3035	P-6413	115	115	.6	AA	1 1/4	2 1/8	1 1/4	1 3/4	—	.25	13.62	11.57	10.42	9.38
928-3033	P-6411	115	115	15	AA	2	3 1/4	1 7/8	2 13/16	—	1.00	13.82	11.75	10.57	9.51
928-3034	P-6412	115	115	35	AA	2 3/8	3 3/4	2	3 1/8	—	1.70	17.46	14.85	13.36	12.02
928-3032	P-6410	115	115	50	C	3 1/2	2 13/16	3 1/8	2 1/4	1 7/8	3.70	52.99	45.05	40.51	36.49
928-4880	P-8622	115†	115/230§	150	C	3 7/8	3 1/8	4	2 1/2	2 3/4	6.20	49.81	42.34	38.10	34.30

Step-Down Isolation (Electrostatic Shields Grounded to Core)

Primaries 50/60 Hz. Secondary female receptacle for P-6385. *Has primary terminals. #Has switch. †Has electrostatic shield on separate leadwire (not grounded). §Primary is two separate 115 volt windings. **Output Voltage:** 115. **RMS Test Voltage:** 1500.

Style C



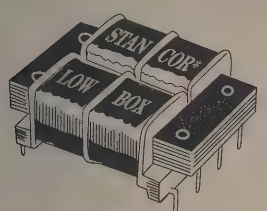
Stock No.	Mfr.'s Type	Input Voltage	Output Voltage	V-A Cap.	Style	Case Dimensions (Inches)			Mounting (Inches)		Wt. Lbs.	EACH			
						H	W	D	MW	MD		1-9	10-24	25-49	50-99
928-3037	P-6406	115/230†§	115	50	AA	2 3/8	3 3/4	2 5/16	3 1/8	—	1.8	22.74	19.33	17.40	15.67
928-3006	P-6385	210/230/250#	115	250	C	4 11/16	3 3/4	5 1/2	3	4 5/16	14.2	121.42	103.20	92.88	83.61

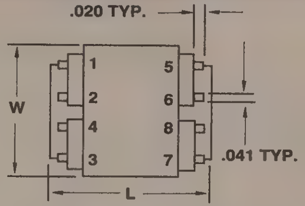
Step-Down Auto-Transformers

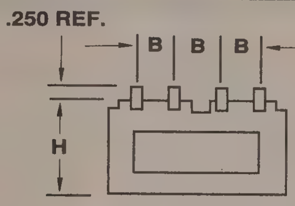
Primaries 230 volts 50/60 Hz, line cord and plug (may be operated from a 400 Hz source with no change in output ratings). Secondaries 115 volts, standard female receptacle except for P-8620 which has leadwires. **RMS Test Voltage:** 1500.

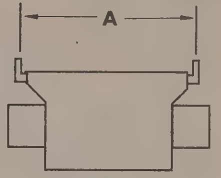
Stock No.	Mfr.'s Type	Input/Output Voltage	V-A Cap.	Style	Case Dimensions (Inches)			Mounting (Inches)		Wt. Lbs.	EACH			
					H	W	D	MW	MD		1-9	10-24	25-49	50-99
928-2075	P-6287	230/115	40	C	3 1/2	2 5/8	2 1/2	2	1 1/2	2.2	46.67	39.67	35.70	32.14
928-4872	P-8620	230/115	50	AA	2 5/16	3 11/16	1 7/8	3 1/8	—	1.5	15.05	12.79	11.51	10.36
928-4873	P-8630	230/115	85	C	3 1/8	2 5/8	2 3/4	2	1 3/4	2.5	47.88	40.70	36.62	32.97
928-4874	P-8631	230/115	125	C	3 1/8	2 5/8	3	2	2	3.0	48.46	41.19	37.07	33.37
928-4875	P-8632	230/115	200	C	3 7/8	3 1/8	3 3/4	2 1/2	2	4.2	56.83	48.30	43.47	39.13
928-4876	P-8634	230/115	400	C	3 7/8	3 1/8	4 3/4	2 1/2	3	7.0	65.89	56.01	50.40	45.37

Low Boy™ Low Profile Transformers



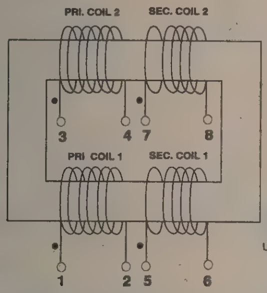






Stock No.	Mfr.'s Type	V.A. or Watts	Secondary		Wt. Oz.	EACH			
			Series	Parallel		1-9	10-24	25-49	50-99
928-5100	LB210	2	10V C.T. @ 200MA	5V @ 400MA	4.5	13.18	11.20	10.08	9.07
928-5101	LB310	3	10V C.T. @ 300MA	5V @ 600MA	4.5	13.28	11.29	10.16	9.15
928-5102	LB215	2	15V C.T. @ 150MA	7.5V @ 300MA	4.5	13.18	11.20	10.08	9.07
928-5103	LB240	2	40V C.T. @ 60MA	20V @ 120MA	4.5	13.18	11.20	10.08	9.07
928-5104	LB256	2	56V C.T. @ 45MA	28V @ 90MA	4.5	13.18	11.20	10.08	9.07
928-5105	LB288	2	88V C.T. @ 28MA	44V @ 56MA	4.5	13.18	11.20	10.08	9.07
928-5106	LB2120	2	120V C.T. @ 20MA	60V @ 40MA	4.5	13.18	11.20	10.08	9.07
928-5107	LB2230	2	230V C.T. @ 10MA	115V @ 20MA	4.5	13.18	11.20	10.08	9.07
928-5108	LB315	3	15V C.T. @ 225MA	7.5V @ 450MA	4.5	13.28	11.29	10.16	9.15
928-5109	LB410	4	10V C.T. @ 400MA	5V @ 800MA	5.5	13.58	11.54	10.38	9.35
928-5110	LB510	5	10V C.T. @ 500MA	5V @ 1A	5.5	13.68	11.63	10.47	9.42
928-5111	LB412	4	12V C.T. @ 333MA	6V @ 667MA	5.5	13.58	11.54	10.38	9.35
928-5112	LB512	5	12V C.T. @ 417MA	6V @ 833MA	5.5	13.68	11.63	10.47	9.42
928-5113	LB420	4	20V C.T. @ 200MA	10V @ 400MA	5.5	13.58	11.54	10.38	9.35
928-5114	LB520	5	20V C.T. @ 250MA	10V @ 500MA	5.5	13.68	11.63	10.47	9.42
928-5115	LB424	4	24V C.T. @ 167MA	12V @ 333MA	5.5	13.58	11.54	10.38	9.35
928-5116	LB524	5	24V C.T. @ 208MA	12V @ 417MA	5.5	13.68	11.63	10.47	9.42
928-5117	LB4120	4	120V C.T. @ 33MA	60V @ 66MA	5.5	13.58	11.54	10.38	9.35
928-5118	LB5120	5	120V C.T. @ 41.7MA	60V @ 83.3MA	5.5	13.68	11.63	10.47	9.42
928-5119	LB610	6	10V C.T. @ 600MA	5V @ 1.2A	5.5	13.89	11.81	10.63	9.57
928-5120	LB1210	12	10V C.T. @ 1200MA	5V @ 2.4A	11.5	14.33	12.18	10.96	9.87
928-5121	LB612	6	12.6V C.T. @ 450MA	6.3V @ 900MA	5.5	13.89	11.81	10.63	9.57
928-5122	LB1212	12	12.6V C.T. @ 900MA	6.3V @ 1.8A	11.5	14.33	12.18	10.96	9.87
928-5123	LB616	6	16V C.T. @ 350MA	8V @ 700MA	5.5	13.89	11.81	10.63	9.57
928-5124	LB1216	12	16V C.T. @ 700MA	8V @ 1.4A	11.5	14.33	12.18	10.96	9.87
928-5125	LB620	6	20V C.T. @ 300MA	10V @ 600MA	5.5	13.89	11.81	10.63	9.57
928-5126	LB1220	12	20V C.T. @ 600MA	10V @ 1.2A	11.5	14.33	12.18	10.96	9.87
928-5127	LB624	6	24V C.T. @ 250MA	12V @ 500MA	5.5	13.89	11.81	10.63	9.57
928-5128	LB1224	12	24V C.T. @ 500MA	12V @ 1A	11.5	14.33	12.18	10.96	9.87
928-5129	LB634	6	34V C.T. @ 170MA	17V @ 340MA	5.5	13.89	11.81	10.63	9.57
928-5130	LB1234	12	34V C.T. @ 340MA	17V @ 680MA	11.5	14.33	12.18	10.96	9.87
928-5131	LB640	6	40V C.T. @ 150MA	20V @ 300MA	5.5	13.89	11.81	10.63	9.57
928-5132	LB1240	12	40V C.T. @ 300MA	20V @ 600MA	11.5	14.33	12.18	10.96	9.87
928-5133	LB656	6	56V C.T. @ 100MA	28V @ 200MA	5.5	13.89	11.81	10.63	9.57
928-5134	LB1256	12	56V C.T. @ 200MA	28V @ 400MA	11.5	14.33	12.18	10.96	9.87
928-5135	LB688	6	88V C.T. @ 65MA	44V @ 130MA	5.5	13.89	11.81	10.63	9.57
928-5136	LB1288	12	88V C.T. @ 130MA	44V @ 260MA	11.5	14.33	12.18	10.96	9.87
928-5137	LB6120	6	120V C.T. @ 50MA	60V @ 100MA	5.5	13.89	11.81	10.63	9.57
928-5138	LB12120	12	120V C.T. @ 100MA	60V @ 200MA	11.5	14.33	12.18	10.96	9.87
928-5139	LB6230	6	230V C.T. @ 25MA	115V @ 50MA	5.5	13.89	11.81	10.63	9.57
928-5140	LB12230	12	230V C.T. @ 50MA	115V @ 100MA	11.5	14.33	12.18	10.96	9.87

Explanation of Low Boy Interconnections. Because of the toroidal effect, two *identical* coils are connected in series or parallel, but one of the coils must be connected in reverse in order to get correct polarity and voltage.



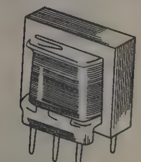
UL Recognized

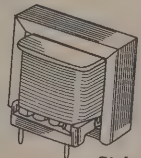
The Low-Boy Power Transformer is designed to surpass competitive market offerings in cost, size and versatility to the designer. Applicable to low clearance, stacked printed circuit board and solid state power designs, the Low-Boy will allow closer board stack spacing at lower power levels (down to 200mA at 10 volts). Semi-toroidal construction reduces radiated magnetic fields and results in balanced windings. Non-concentric winding provides isolation by design, eliminating the need for an electrostatic shield. Allow 3/4" card spacing for 2 and 3, VA units; 1" for 4, 5, and 6VA; 1¼" for 12VA units. Dual Primaries — 115/230V, 50/60 Hz. Allows standard hi Pot — 2000 volts. Precision spaced p.c. terminals.

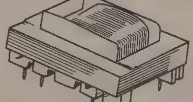
U.L. Recognized Unit (File Card E-68100)

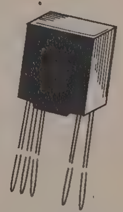
Output Watts	Dimensions (Inches)				
	H	W	L	A	B
2, 3	0.625	1.562	1.875	1.600	.375
4, 5, 6	0.875	1.562	1.875	1.600	.375
12	1.062	2.000	2.500	2.000	.500

Telephone Coupling Transformers


Style A


Style F


Style H

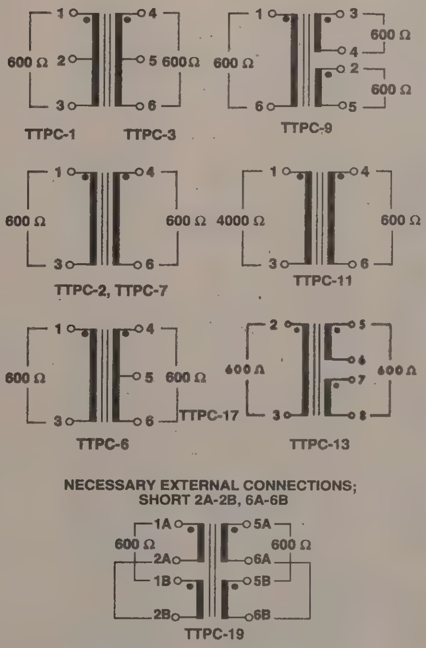

Style K

Stancor's TTPC series transformers are designed to meet the high performance requirements of today's phone interconnect and instrumentation applications. Stancor has the broadest range of units for general use in impedance matching, circuit isolation, line balancing or bridging, and hybrid applications. TTPC transformers are ideal for use in voice and data interconnect networks such as modem terminal connection to telephone lines. Stancor's units will handle 1500 volts dielectric withstand and meet FCC Part 68 requirements. See below for the highest quality and broadest selection of styles.

Stock No.	Mfr.'s Type	Impedance		DC Curr. mA	Insertion Losses dB	Style	Dimensions H × W × D	EACH			
		Primary	Secondary					1-9	10-24	25-49	50-99
928-9010	TTPC-1	600 C.T.	600 C.T.	0	1.4	A	.74 × .781 × .65	14.02	11.92	10.72	9.65
928-9012	TTPC-2	600	600	0	1.2	B†	.49 × .781 × .65	13.06	11.10	10.00	9.00
928-9014	TTPC-3	600 C.T.	600 C.T.	0	1.2	F	.49 × .781 × .65	13.06	11.10	10.00	9.00
928-9018	TTPC-5	4000	600	0	1.5	B†	.49 × .781 × .65	12.14	10.32	9.28	8.36
928-9020	TTPC-6	600	600 C.T.	90	1.8	A	.75 × .815 × .65	12.23	10.40	9.36	8.42
928-9022	TTPC-7	600	600	0	1.2	A	.74 × .781 × .65	11.00	9.36	8.42	7.58
928-9024	TTPC-8	600 C.T.	600 C.T.	0	1.2	A	.74 × .781 × .65	9.85	8.37	7.54	6.78
928-9026	TTPC-9	600	600/600	0	1.2	A	.859 × 1.04 × .958	14.83	12.60	11.34	10.21
928-9030	TTPC-11	4000	600	0	1.2	A	.74 × .781 × .65	11.58	9.85	8.86	7.98
928-9500	TTPC-13	600	600 C.T. Split	90	1.8	H	.583 × .815 × .925	9.35	7.95	7.15	6.44
928-9036	TTPC-14	600	600 C. T. Split	80	1.1	H	.66 × 1.65 × 1.37	24.75	21.03	18.93	17.04
928-9038	TTPC-15	600	600	80	1.1	H	.66 × 1.65 × 1.37	17.31	14.72	13.24	11.93
928-9046	TTPC-19	600 C.T.	600 C.T.	80	1.9	H	.60 × 1.27 × 1.65	22.59	19.19	17.28	15.55
928-9505	PCT-77	600 C.T.	600 C.T.	3	2.0	K	.465 × .310 × .410	22.19	18.86	16.97	15.28
928-9050	PCT-27*	600	600 C.T./150 Split	3	2.0	K	.465 × .310 × .410	22.19	18.86	16.97	15.28
928-9054	PCT-78*	600	600	3	2.0	K	.465 × .310 × .410	22.19	18.86	16.97	15.28

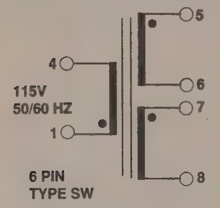
*1000 volt dielectric strength. † Not Shown.

REPRESENTATIVE SCHEMATICS FOR TELEPHONE COUPLING TRANSFORMERS

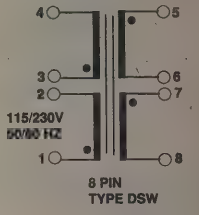


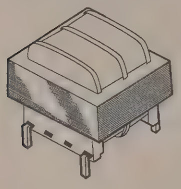
Side Winder

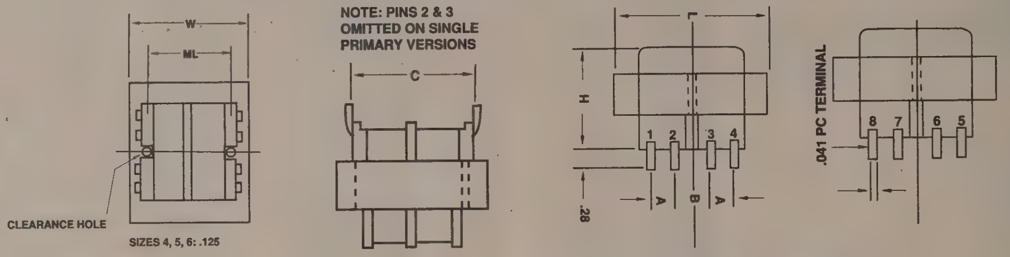
Side Winder applications include electronic game systems, computer peripherals, medical electronics, and switching power supplies. Split bobbin winding and low capacitive coupling design eliminates electrostatic shielding requirement and expense. High isolation, 2,500 V rms. Hi-Pot testing. PC pins, precision spaced, insert directly into PC boards. Class B insulation, 130° C.

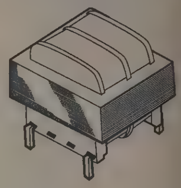


Size	Dimensions — Inches								Wt. Lbs.
	VA	H	W	L	ML	A	B	C	
2	1.1	$\frac{15}{16}$	$1\frac{1}{8}$	$1\frac{3}{8}$	—	.250	.250	1.200	.17
3	2.5	$1\frac{3}{16}$	$1\frac{1}{8}$	$1\frac{3}{8}$	—	.250	.250	1.200	.25
4	6.0	$1\frac{5}{16}$	$1\frac{5}{16}$	$1\frac{5}{8}$	$1\frac{1}{16}$	.250	.350	1.280	.44
5	12.0	$1\frac{7}{16}$	$1\frac{9}{16}$	$1\frac{7}{8}$	$1\frac{1}{4}$	.300	.400	1.410	.70
6	20.0	$1\frac{7}{16}$	$1\frac{7}{8}$	$2\frac{1}{4}$	$1\frac{1}{2}$	.300	.400	1.600	.80









"Side Winder" Single 115 V, 50/60 Hz, 6 Pin

Note: First digit after "SW" in Mfr.'s Type indicates Size Code listed above.

Stock No.	Mfr.'s Type	Secondary RMS Rating			EACH	
		Individual	Series	Parallel	1-9	10-24
928-0100	SW-210	5V @ 0.11A	10V C.T. @ 0.11A	5V @ 0.22A	**10.09**	**8.58**
928-0101	SW-310	5V @ 0.25A	10V C.T. @ 0.25A	5V @ 0.5A	**10.23**	**8.69**
928-0102	SW-410	5V @ 0.6A	10V C.T. @ 0.6A	5V @ 1.2A	**10.78**	**9.17**
928-0103	SW-510	5V @ 1.2A	10V C.T. @ 1.2A	5V @ 2.4A	**11.29**	**9.60**
928-0104	SW-610	5V @ 2A	10V C.T. @ 2A	5V @ 4A	**13.45**	**11.43**
928-0105	SW-212	6.3V @ 0.09A	12.6V C.T. @ 0.09A	6.3V @ 0.18A	**10.09**	**8.58**
928-0106	SW-312	6.3V @ 0.2A	12.6V C.T. @ 0.2A	6.3V @ 04V	**10.23**	**8.69**
928-0107	SW-412	6.3V @ 0.5A	12.6V C.T. @ 0.5A	6.3V @ 1.0A	**10.78**	**9.17**
928-0108	SW-512	6.3V @ 1.0A	12.6V C.T. @ 1.0A	6.3V @ 2.0A	**11.29**	**9.60**
928-0109	SW-612	6.3V @ 1.6A	12.6V C.T. @ 1.6A	6.3V @ 3.2A	**13.45**	**11.43**
928-0110	SW-216	8V @ 0.07A	16V C.T. @ 0.07A	8V @ 0.14A	**10.09**	**8.58**
928-0111	SW-316	8V @ .15A	16V C.T. @ .15A	8V @ 0.3A	**10.23**	**8.69**
928-0112	SW-416	8V @ .4A	16V C.T. @ .4A	8V @ 0.8A	**10.78**	**9.17**
928-0113	SW-516	8V @ .8A	16V C.T. @ .8A	8V @ 1.6A	**11.29**	**9.60**
928-0114	SW-616	8V @ 1.25A	16V C.T. @ 1.25A	8V @ 2.5A	**13.45**	**11.43**
928-0115	SW-220	10V @ 0.055A	20V C.T. @ 0.055A	10V @ 0.11A	**10.09**	**8.58**
928-0116	SW-320	10V @ 0.12A	20V C.T. @ 0.12A	10V @ 0.24A	**10.23**	**8.69**
928-0117	SW-420	10V @ 0.3A	20V C.T. @ 0.3A	10V @ 0.6A	**10.78**	**9.17**
928-0118	SW-520	10V @ 0.6A	20V C.T. @ 0.6A	10V @ 1.2A	**11.29**	**9.60**
928-0119	SW-620	10V @ 1A	20V C.T. @ 1A	10V @ 2A	**13.45**	**11.43**
928-0120	SW-224	12V @ 0.045A	24V C.T. @ 0.045A	12V @ 0.09A	**10.09**	**8.58**
928-0121	SW-324	12V @ 0.1A	24V C.T. @ 0.1A	12V @ 0.24A	**10.23**	**8.69**
928-0122	SW-424	12V @ 0.25A	24V C.T. @ 0.25A	12V @ 0.5A	**10.78**	**9.17**
928-0123	SW-524	12V @ 0.5A	24V C.T. @ 0.5A	12V @ 1.0A	**11.29**	**9.60**
928-0124	SW-624	12V @ 0.8A	24V C.T. @ 0.8A	12V @ 1.6A	**13.45**	**11.43**
928-0125	SW-228	14V @ 0.04A	28V C.T. @ 0.04A	14V @ 0.08A	**10.09**	**8.58**
928-0126	SW-328	14V @ 0.085A	28V C.T. @ 0.085A	14V @ 0.17A	**10.23**	**8.69**
928-0127	SW-428	14V @ 0.2A	28V C.T. @ 0.2A	14V @ 0.4A	**10.78**	**9.17**
928-0128	SW-528	14V @ 0.42A	28V C.T. @ 0.42A	14V @ 0.84A	**11.29**	**9.60**
928-0129	SW-628	14V @ 0.7A	28V C.T. @ 0.7A	14V @ 1.4A	**13.45**	**11.43**
928-0130	SW-232	16V @ 0.035A	32V C.T. @ .035A	16V @ 0.07A	**10.09**	**8.58**
928-0131	SW-332	16V @ 0.075A	32V C.T. @ 0.075A	16V @ 0.15A	**10.23**	**8.69**
928-0132	SW-432	16V @ 0.188A	32V C.T. @ 0.188A	16V @ 0.376A	**10.78**	**9.17**
928-0133	SW-532	16V @ 0.375A	32V C.T. @ 0.375A	16V @ 0.750A	**11.29**	**9.60**
928-0134	SW-632	16V @ 0.625A	32V C.T. @ 0.625A	16V @ 1.25A	**13.45**	**11.43**
928-0135	SW-236	18V @ 0.03A	36V C.T. @ 0.03A	18V @ 0.06A	**10.09**	**8.58**
928-0136	SW-336	18V @ 0.065A	36V C.T. @ 0.065A	18V @ 0.13A	**10.23**	**8.69**
928-0137	SW-436	18V @ 0.17A	36V C.T. @ 0.17A	18V @ 0.34A	**10.78**	**9.17**
928-0138	SW-536	18V @ 0.35A	36V C.T. @ 0.35A	18V @ 0.7A	**11.29**	**9.60**
928-0139	SW-636	18V @ 0.55A	36V C.T. @ 0.55A	18V @ 1.1A	**13.45**	**11.43**
928-0140	SW-248	24V @ 0.023A	48V C.T. @ 0.023A	24V @ 0.46A	**10.09**	**8.58**
928-0141	SW-348	24V @ 0.05A	48V C.T. @ 0.05A	24V @ 0.1A	**10.23**	**8.69**
928-0142	SW-448	24V @ 0.125A	48V C.T. @ 0.125A	24V @ 0.25A	**10.78**	**9.17**
928-0143	SW-548	24V @ 0.25A	48V C.T. @ 0.25A	24V @ 0.5A	**11.29**	**9.60**
928-0144	SW-648	24V @ 0.4A	48V C.T. @ 0.4A	24V @ 0.8A	**13.45**	**11.43**
928-0145	SW-256	28V @ 0.02A	56V C.T. @ 0.02A	28V @ 0.04A	**10.09**	**8.58**
928-0146	SW-356	28V @ 0.045A	56V C.T. @ 0.045A	28V @ 0.09A	**10.23**	**8.69**
928-0147	SW-456	28V @ 0.11A	56V C.T. @ 0.11A	28V @ 0.22A	**10.78**	**9.17**
928-0148	SW-556	28V @ 0.22A	56V C.T. @ 0.22A	28V @ 0.44A	**11.29**	**9.60**
928-0149	SW-656	28V @ 0.35A	56V C.T. @ 0.35A	28V @ 0.7A	**13.45**	**11.43**
928-9120	SW-2120	60V @ 0.01A	120V C.T. @ 0.01A	60V @ 0.02A	**10.09**	**8.58**
928-9125	SW-3120	60V @ 0.02A	120V C.T. @ 0.025A	60V @ 0.04A	**10.23**	**8.69**
928-9130	SW-4120	60V @ 0.05A	120V C.T. @ 0.05A	60V @ 0.1A	**10.78**	**9.17**
928-9135	SW-5120	60V @ 0.1A	120V C.T. @ 0.1A	60V @ 0.2A	**11.29**	**9.60**
928-9140	SW-6120	60V @ 0.16A	120V C.T. @ 0.16A	60V @ 0.32A	**13.45**	**11.43**

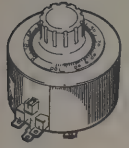
* 6 PIN, Input to 1 and 4

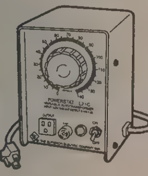
"Side Winder" Dual 115/230 V, 50/60 Hz, 8 Pin

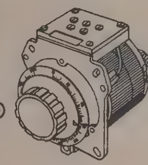
Note: First digit after "DSW" in Mfr.'s Type indicates Size Code listed above.

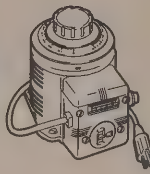
Stock No.	Mfr.'s Type	Secondary RMS Rating			EACH	
		Individual	Series	Parallel	1-9	10-24
928-0200	DSW-210	5V @ 0.11A	10V C.T. @ 0.11A	5V @ 0.22A	**10.78**	**9.17**
928-0201	DSW-310	5V @ 0.25A	10V C.T. @ 0.25A	5V @ 0.5A	**11.10**	**9.43**
928-0202	DSW-410	5V @ 0.6A	10V C.T. @ 0.6A	5V @ 1.2A	**11.63**	**9.89**
928-0203	DSW-510	5V @ 1.2A	10V C.T. @ 1.2A	5V @ 2.4A	**12.52**	**10.64**
928-0204	DSW-610	5V @ 2A	10V C.T. @ 2A	5V @ 4A	**15.06**	**12.80**
928-0205	DSW-212	6.3V @ 0.09A	12.6V C.T. @ 0.09A	6.3V @ 0.18A	**10.78**	**9.17**
928-0206	DSW-312	6.3V @ 0.2A	12.6V C.T. @ 0.2A	6.3V @ 04V	**11.10**	**9.43**
928-0207	DSW-412	6.3V @ 0.5A	12.6V C.T. @ 0.5A	6.3V @ 1.0A	**11.63**	**9.89**
928-0208	DSW-512	6.3V @ 1.0A	12.6V C.T. @ 1.0A	6.3V @ 2.0A	**12.52**	**10.64**
928-0209	DSW-612	6.3V @ 1.6A	12.6V C.T. @ 1.6A	6.3V @ 3.2A	**15.06**	**12.80**
928-0210	DSW-216	8V @ 0.07A	16V C.T. @ 0.07A	8V @ 0.14A	**10.78**	**9.17**
928-0211	DSW-316	8V @ .15A	16V C.T. @ .15A	8V @ 0.3A	**11.10**	**9.43**
928-0212	DSW-416	8V @ .4A	16V C.T. @ .4A	8V @ 0.8A	**11.63**	**9.89**
928-0213	DSW-516	8V @ .8A	16V C.T. @ .8A	8V @ 1.6A	**12.52**	**10.64**
928-0214	DSW-616	8V @ 1.25A	16V C.T. @ 1.25A	8V @ 2.5A	**15.06**	**12.80**
928-0215	DSW-220	10V @ 0.055A	20V C.T. @ 0.055A	10V @ 0.11A	**10.78**	**9.17**
928-0216	DSW-320	10V @ 0.12A	20V C.T. @ 0.12A	10V @ 0.2A	**11.10**	**9.43**
928-0217	DSW-420	10V @ 0.3A	20V C.T. @ 0.3A	10V @ 0.6A	**11.63**	**9.89**
928-0218	DSW-520	10V @ 0.6A	20V C.T. @ 0.6A	10V @ 1.2A	**12.52**	**10.64**
928-0219	DSW-620	10V @ 1A	20V C.T. @ 1A	10V @ 2A	**15.06**	**12.80**
928-0220	DSW-224	12V @ 0.045A	24V C.T. @ 0.035A	12V @ 0.09A	**10.78**	**9.17**
928-0221	DSW-324	12V @ 0.1A	24V C.T. @ 0.1A	12V @ 0.24A	**11.10**	**9.43**
928-0222	DSW-424	12V @ 0.25A	24V C.T. @ 0.25A	12V @ 0.5A	**11.63**	**9.89**
928-0223	DSW-524	12V @ 0.5A	24V C.T. @ 0.5A	12V @ 1.0A	**12.52**	**10.64**
928-0224	DSW-624	12V @ 0.8A	24V C.T. @ 0.8A	12V @ 1.6A	**15.06**	**12.80**
928-0225	DSW-228	14V @ 0.04A	28V C.T. @ 0.04A	14V @ 0.08A	**10.78**	**9.17**
928-0226	DSW-328	14V @ 0.085A	28V C.T. @ 0.085A	14V @ 0.17A	**11.10**	**9.43**
928-0227	DSW-428	14V @ 0.2A	28V C.T. @ .02A	14V @ 0.4A	**11.63**	**9.89**
928-0228	DSW-528	14V @ 0.42A	28V C.T. @ 0.42A	14V @ 0.84A	**12.52**	**10.64**
928-0229	DSW-628	14V @ 0.7A	28V C.T. @ 0.7A	14V @ 1.4A	**15.06**	**12.80**
928-0230	DSW-232	16V @ 0.035A	32V C.T. @ .035A	16V @ 0.07A	**10.78**	**9.17**
928-0231	DSW-332	16V @ 0.075A	32V C.T. @ 0.075A	16V @ 0.15A	**11.10**	**9.43**
928-0232	DSW-432	16V @ 0.188A	32V C.T. @ 0.188A	16V @ 0.376A	**11.63**	**9.89**
928-0233	DSW-532	16V @ 0.375A	32V C.T. @ 0.375A	16V @ 0.750A	**12.52**	**10.64**
928-0234	DSW-632	16V @ 0.625A	32V C.T. @ 0.625A	16V @ 1.25A	**15.06**	**12.80**
928-0235	DSW-236	18V @ 0.03A	36V C.T. @ 0.03A	18V @ 0.06A	**10.78**	**9.17**
928-0236	DSW-336	18V @ 0.065A	36V C.T. @ 0.065A	18V @ 0.13A	**11.10**	**9.43**
928-0237	DSW-436	18V @ 0.17A	36V C.T. @ .017A	18V @ 0.34A	**11.63**	**9.89**
928-0238	DSW-536	18V @ 0.35A	36V C.T. @ 0.35A	18V @ 0.7A	**12.52**	**10.64**
928-0239	DSW-636	18V @ 0.55A	36V C.T. @ 0.55A	18V @ 1.1A	**15.06**	**12.80**
928-0240	DSW-248	24V @ 0.023A	48V C.T. @ 0.023A	24V @ 0.046A	**10.78**	**9.17**
928-0241	DSW-348	24V @ 0.04A	48V C.T. @ 0.05A	24V @ 0.1A	**11.10**	**9.43**
928-0242	DSW-448	24V @ 0.125A	48V C.T. @ 0.125A	24V @ 0.25A	**11.63**	**9.89**
928-0243	DSW-548	24V @ 0.25A	48V C.T. @ 0.25A	24V @ 0.5A	**12.52**	**10.64**
928-0244	DSW-648	24V @ 0.4A	48V C.T. @ 0.4A	24V @ 0.8A	**15.06**	**12.80**
928-0245	DSW-256	28V @ 0.02A	56V C.T. @ 0.02A	28V @ 0.4A	**10.78**	**9.17**
928-0246	DSW-356	28V @ 0.045A	56V C.T. @ 0.045A	28V @ 0.09A	**11.10**	**9.43**
928-0247	DSW-456	28V @ 0.11A	56V C.T. @ 0.11A	28V @ 0.22A	**11.63**	**9.89**
928-0248	DSW-556	28V @ 0.22A	56V C.T. @ 0.22A	28V @ 0.44A	**12.52**	**10.64**
—	—	—	—	—	—	—
928-0250	DSW-2120	60V @ 0.01A	120V C.T. @ 0.01A	60V @ 0.02A	**10.78**	**9.17**
928-0251	DSW-3120	60V @ 0.02A	120V C.T. @ 0.025A	60V @ 0.04A	**11.10**	**9.43**
928-0252	DSW-4120	60V @ 0.05A	120V C.T. @ 0.05A	60V @ 0.1A	**11.63**	**9.89**
928-0253	DSW-5120	60V @ 0.1A	120V C.T. @ 0.1A	60V @ 0.2A	**12.52**	**10.64**
928-0254	DSW-6120	60V @ 0.16A	120V C.T. @ 0.16A	60V @ 0.32A	**15.06**	**12.80**

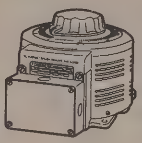
POWERSTAT® Variable Transformers

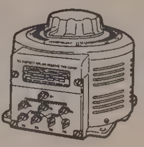

A

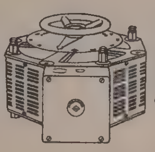

B

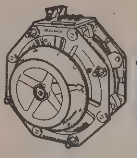

C

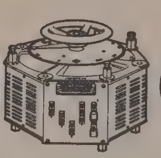

D

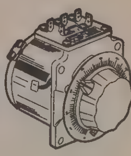

E


F


G


H


J


K

POWERSTAT® Variable Transformers with patented POWERKOTE® Coils provide a simple rugged method of controlling electrical voltage current and power. They take in utility line voltage and provide continuously adjustable output voltage. Most frame sizes are available with a boost option to allow operation up to 17% above input nominal. Open construction models have letter U suffix in the style number and have the shaft extending from the end of the assembly for panel mounting. All plug-in models have input cord-plug sets, output receptacles, switches and fuses and are connected for clockwise knob rotation. Other models, including motorized are also available. Call Allied for details. **Attributes:** Prefix — L = Enclosed, 3PN = 3-wire cord receptacle; Suffix — U = Open construction, T = Terminal enclosure, D = Open delta.

120 Volt Single Phase Input

Stock No.	Mfr.'s Type	Fig.	Hertz	Output Volts	Constant Current Load		Constant Impedance Load		Optional NEMA Enclosure Type I	Motor Version Available	EACH
					Max. Amp	Max. KVA	Max. Amp	Max. KVA			
645-0011	10C	A	50/60	0-120	2.25	0.27	3	0.36	N/A	No	**55.00**
			60	0-132	2.25	0.30	—	—			
645-9300	L10C	B	60	0-132	1.75	0.23	—	—	N/A	No	**167.00**
645-0021	21	C	50/60	0-120	5.00	0.60	7	0.84	PBA10-NO1-1	Yes	**99.00**
				0-140	5.00	0.70	—	—			
645-9302	L21C	B	50/60	0-140	4.50	0.63	—	—	N/A	No	**200.00**
645-0116 **645-0115**	116CU 3PN116C	C D	50/60	0-120	10.00	1.20	13	1.60	PBA10-NO1-1 N/A	Yes No	**121.00** **188.00**
				0-140	10.00	1.40	—	—			
645-9306	L116C	B	50/60	0-140	10.00	1.40	—	—	N/A	No	**257.00**
645-0117 **645-0118**	117CU 3PN117C	C D	60	0-120	12.00	1.40	15	1.80	PBA10-NO1-1 N/A	Yes No	**136.00** **186.00**
645-9308 **645-0126**	126T 126U	E C	50/60	0-120	15.00	1.80	20	2.40	N/A PBA30-NO1-1	No Yes	**270.00** **213.00**
				0-140	15.00	2.10	—	—			
645-0136 **645-0135**	136BU 136B	C F	50/60	0-120	22.00	2.60	28	3.40	PBA30-NO1-1 N/A	Yes No	**308.00** **334.00**
				0-140	22.00	3.10	—	—			
645-9312 **645-9314**	146T 146U	E C	50/60	0-120	30.00	3.60	35	5.80	N/A PBA40-NO1-1	No Yes	**589.00** **452.00**
				0-140	30.00	4.20	—	—			
645-9316 **645-9318** **645-9320**	1156DT 1156DU 1156D	G H J	50/60	0-120	50.00	6.00	55	6.60	N/A PBA50-NO1-A N/A	No Yes No	**781.00** **698.00** **692.00**
				0-140	50.00	7.00	—	—			

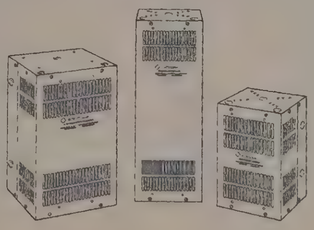
240 Volt Single Phase Input

Stock No.	Mfr.'s Type	Fig.	Hertz	Output Volts	Constant Current Load		Constant Impedance Load		Optional NEMA Enclosure Type I	Motor Version Available	EACH
					Max. Amp	Max. KVA	Max. Amp	Max. KVA			
645-0012	12	A	50/60	0-240	0.70	0.27	3	0.36	N/A	No	**74.00**
				0-264	0.50	0.30	—	—			
645-0022	22	K	50/60	0-240	2.25	1.20	7	0.78	PBA10-NO1-1	Yes	**125.00**
				0-280	2.25	1.40	—	—			
645-9322 **645-9324**	216CT 216CU	E C	50/60	0-240	3.50	0.84	5	1.20	N/A PBA10-NO1-1	No Yes	**187.00** **148.00**
				0-280	3.50	0.98	—	—			
645-9330	217CU	C	60	0-240	5.00	1.20	7	1.70	PBA10-NO1-1	Yes	**157.00**
645-9334 **645-0226** **645-9998**	226T 226U 3PN226*	E C D	50/60	0-240	7.50	1.80	10	2.40	N/A PBA30-NO1-1 N/A	No Yes No	**270.00** **233.00** **319.00**
				0-280	7.50	2.10	—	—			
645-9336 **645-0236** **645-9236** **645-9337**	236BT 236BU 236B 3PN236B*	E C F D	50/60	0-240	10.00	2.40	13	3.10	N/A PBA30-NO1-1 N/A N/A	No Yes No No	**379.00** **312.00** **338.00** **456.00**
				0-280	10.00	2.80	—	—			
645-9340 **645-0246**	246U 246	C F	50/60	0-240	15.00	4.20	19	4.60	PBA40-NO1-1 N/A	Yes No	**501.00** **599.00**
				0-280	15.00	4.20	—	—			
645-9342 **645-9344**	1256DT 1256DU	G H	50/60	0-240	28.00	6.70	28	6.70	N/A PBA40-NO1-1	No Yes	**802.00** **698.00**
				0-280	28.00	7.80	—	—			
645-9348 **645-9350**	1296DU 1296D	H J	50/60	0-240	35.00	8.40	39	9.40	PBA50-NO1-1 N/A	Yes No	**811.00** **919.00**
				0-280	35.00	9.60	—	—			

*No on/off switch.

NEMA Enclosures

— NEW —

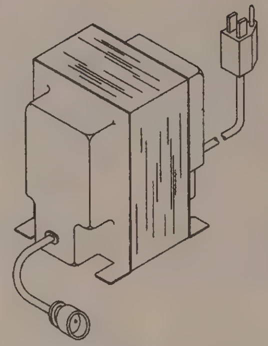


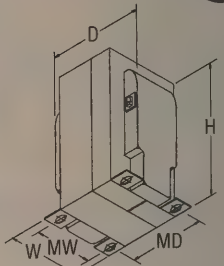
PBA Enclosures are specifically designed to house open construction (suffix U) POWERSTAT Variable Transformers. They are NEMA Type 1 as defined in NEMA Standard ICS 1-110. Constructed of heavy gauge metal, they are supplied completely assembled. Enclosures for multiple ganged units also available.

645-0002. PBA10-NO1-1. **1-5**	**EACH 108.00**
645-0001. PBA30-NO1-1. **1-5**	**EACH 154.00**
645-0003. PBA40-NO1-1. **1-5**	**EACH 179.00**
645Q0004. PBA50-NO1-A. **1-5**	**EACH 932.00**

New International Series Step-Up Autoformers

- Primary 115 V, 50/60 Hz
- Secondary 230 V
- Termination: Line Cord
- Input Plug: 100 VA-1500 VA — NEMA 5-15P; 2000 VA and 2500 VA: NEMA L5-30 Twist Lock
- Output Receptacle: European (Schuko) CEE 7/7





Stock No.	Mfr.'s Type	VA Size	Dimensions H	Dimensions W	Dimensions D	Mounting MW	Mounting MD	Weight (Lbs.)	EACH 1-9
704-8402	TSU-100	100	3 1/2	2 7/8	4 5/8	2 1/4	3 1/4	3.8	52.18
704-8405	TSU-200	200	3 7/8	3 1/8	4 1/2	2 1/2	3 1/4	4.7	57.49
704-8410	TSU-350	350	3 7/8	3 1/8	4 3/8	2 1/2	4	6.7	65.59
704-8415	TSU-500	500	4 5/8	3 13/16	5 5/8	3	4 7/16	10.0	86.36
704-8420	TSU-750	750	4 5/8	3 13/16	6 5/8	3	5 1/2	13.0	101.23
704-8425	TSU-1000	1000	5 3/8	4 1/2	7	3 1/2	5 1/4	16.4	155.93
704-8430	TSU-1500	1500	5 7/8	4 3/8	7 1/8	3 7/16	5 5/16	16.7	199.71
704-8435	TSU-2000	2000	5 7/8	4 3/8	8 1/8	3 7/16	6 5/16	21.3	206.64
704-8440	TSU-2500	2500	6 1/2	5 3/8	9 3/8	4 1/4	7 7/8	38.0	448.27

New Isolation Transformers

- Primary 115/230 V or 230/460 V
- Popular Sizes: 50 VA-2000 A

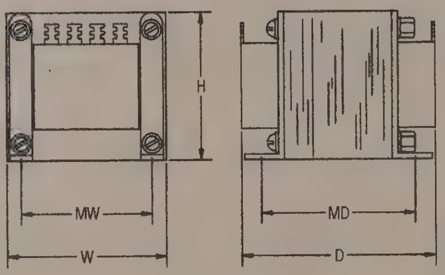


Fig. A

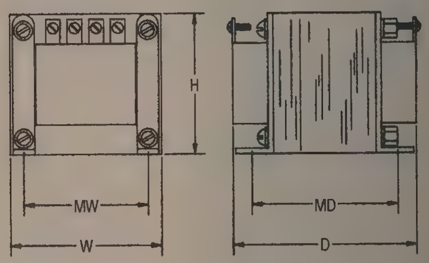


Fig. B

Primary 115/230 V

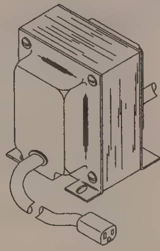
Stock No.	Mfr.'s Type	Fig.	Primary	Secondary	VA Size	Dimensions H	Dimensions W	Dimensions D	Mounting MW	Mounting MD	Weight (Lbs.)	EACH 1-9
704-0050	23V601	A	115/230	115/230	50	2 9/16	3	2 3/4	2 1/2	2 3/8	3.5	20.13
704-0051	23V602	A	115/230	115/230	100	2 9/16	3	3 5/8	2 1/2	3 1/4	5.0	24.06
704-0052	23V603	B	115/230	115/230	250	3 13/16	4 1/2	3 3/4	3 3/4	2 7/8	9.5	41.91
704-0053	23V604	B	115/230	115/230	500	4 7/16	5 1/4	5	4 3/8	3 3/4	18.0	69.61
704-0054	23V605	B	115/230	115/230	750	4 7/16	5 1/4	6 1/4	4 3/8	4 15/16	24.5	81.29
704-0055	23V606	B	115/230	115/230	1000	5 11/16	6 3/4	6 5/8	6 1/8	4	30.5	108.84
704-0056	23V607	B	115/230	115/230	1500	5 11/16	6 3/4	7 1/4	6 1/8	5 3/8	44.0	162.60
704-0057	23V608	B	115/230	115/230	2000	5 11/16	6 3/4	8	6 1/8	6 1/8	52.5	192.44

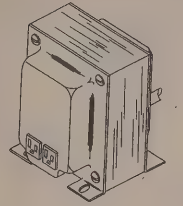
Primary 230/460V

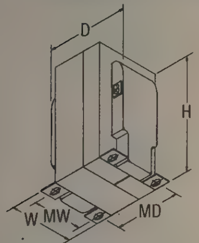
Stock No.	Mfr.'s Type	Fig.	Primary	Secondary	VA Size	Dimensions H	Dimensions W	Dimensions D	Mounting MW	Mounting MD	Weight (Lbs.)	EACH 1-9
704-0058	23V609	A	230/460	115/230	100	2 9/16	3	3 5/8	2 1/2	3 1/4	5.0	24.15
704-0059	23V610	B	230/460	115/230	250	3 13/16	4 1/2	3 3/4	3 3/4	2 7/8	9.5	42.00
704-0060	23V611	B	230/460	115/230	500	4 7/16	5 1/4	5	4 3/8	3 3/4	18.0	70.35
704-0061	23V612	B	230/460	115/230	750	4 7/16	5 1/4	6 1/4	4 3/8	4 15/16	24.5	81.68
704-0062	23V613	B	230/460	115/230	1000	5 11/16	6 3/4	6 5/8	6 1/8	4	30.5	109.64
704-0063	23V614	B	230/460	115/230	1500	5 11/16	6 3/4	7 1/4	6 1/8	5 3/8	44.0	169.20
704-0065	23V615	B	230/460	115/230	2000	5 11/16	6 3/4	8	6 1/8	6 1/8	52.5	200.18

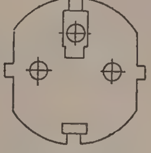
International Step-Down Autoformers

- ► Primary: 230 VAC 50/60 Hz
- ► Secondary: 115 VAC
- ► Output Termination: 100 VA-1500 VA — 4" Line Cord with NEMA 5-15R; 2000 VA — 4" Line Cord with NEMA 5-20R (Canadian Style); 2500 VA — Two 15 A Receptacles, Case Mounted

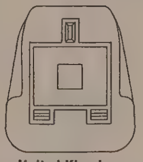




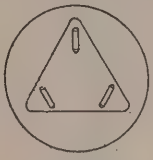




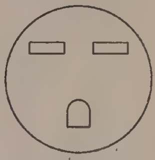
European (Schuko)
CEEE 7/7
16 A, 250 V



United Kingdom
8S 1363 with Fuse (UK1-13P)
13 A, 250 V



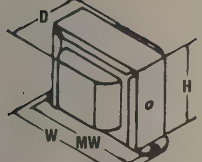
Australia
AU2-15P
15 A, 250 V



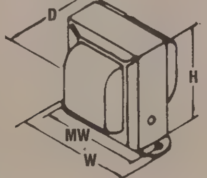
North America
6-15P
15 A, 240 V

VA Size	Dimensions			Mounting		Wt. (Lbs.)	European (Schuko)			United Kingdom			Australia			North America		
	H	W	D	MW	MD		Stock No.	Mfr.'s Type	EACH 1-9	Stock No.	Mfr.'s Type	EACH 1-9	Stock No.	Mfr.'s Type	EACH 1-9	Stock No.	Mfr.'s Type	EACH 1-9
100	$3\frac{7}{8}$	$3\frac{1}{8}$	$4\frac{1}{4}$	$2\frac{1}{2}$	3	4.3	**704-0116**	TSD-100-EU	**53.30**	**704-0152**	TSD-100-UK	**58.23**	**704-0100**	TSD-100-AU	**76.97**	**704-0134**	TSD-100-NA	**52.18**
200	$3\frac{7}{8}$	$3\frac{1}{8}$	$4\frac{1}{2}$	$2\frac{1}{2}$	$3\frac{1}{4}$	4.7	**704-0118**	TSD-200-EU	**60.26**	**704-0154**	TSD-200-UK	**62.62**	**704-0102**	TSD-200-AU	**81.45**	**704-0136**	TSD-200-NA	**57.49**
350	$3\frac{7}{8}$	$3\frac{1}{8}$	$5\frac{1}{4}$	$2\frac{1}{2}$	4	6.6	**704-0120**	TSD-350-EU	**61.65**	**704-0156**	TSD-350-UK	**69.96**	**704-0104**	TSD-350-AU	**61.65**	**704-0138**	TSD-350-NA	**65.59**
500	$4\frac{5}{8}$	$3\frac{13}{16}$	$5\frac{5}{8}$	3	$4\frac{7}{16}$	10.0	**704-0122**	TSD-500-EU	**83.56**	**704-0158**	TSD-500-UK	**93.13**	**704-0106**	TSD-500-AU	**109.33**	**704-0140**	TSD-500-NA	**86.36**
750	$4\frac{5}{8}$	$3\frac{13}{16}$	$6\frac{5}{8}$	3	$5\frac{1}{2}$	13.0	**704-0124**	TSD-750-EU	**98.80**	**704-0160**	TSD-750-UK	**109.22**	**704-0107**	TSD-750-AU	**129.13**	**704-0142**	TSD-750-NA	**101.23**
1000	$5\frac{1}{2}$	$4\frac{5}{8}$	$6\frac{7}{8}$	$3\frac{1}{2}$	$5\frac{1}{4}$	16.4	**704-0126**	TSD-1000-EU	**118.58**	**704-0162**	TSD-1000-UK	**130.57**	**704-0108**	TSD-1000-AU	**150.44**	**704-0144**	TSD-1000-NA	**155.93**
1500	$5\frac{7}{8}$	$4\frac{3}{8}$	$7\frac{1}{4}$	$3\frac{7}{16}$	$5\frac{1}{16}$	16.7	**704-0128**	TSD-1500-EU	**191.36**	**704-0164**	TSD-1500-UK	**205.83**	**704-0110**	TSD-1500-AU	**211.64**	**704-0146**	TSD-1500-NA	**199.71**
2000	$5\frac{7}{8}$	$4\frac{3}{8}$	8	$3\frac{7}{16}$	$6\frac{1}{4}$	21.3	**704-0130**	TSD-2000-EU	**220.23**	**704-0168**	TSD-2000-UK	**236.57**	**704-0112**	TSD-2000-AU	**245.68**	**704-0148**	TSD-2000-NA	**206.64**
2500	$6\frac{1}{2}$	$5\frac{3}{8}$	$9\frac{3}{8}$	$4\frac{1}{4}$	$7\frac{7}{8}$	38.0	**704-0132**	TSD-2500-EU	**467.42**	**704-0170**	TSD-2500-UK	**469.82**	**704-0114**	TSD-2500-AU	**501.26**	**704-0150**	TSD-2500-NA	**448.27**

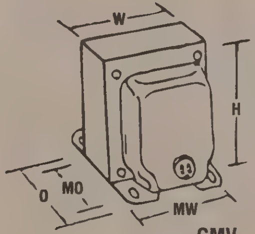
Isolation Transformers/Autoformers



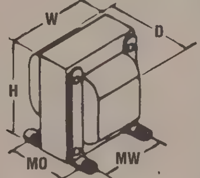
BAH



BHV



GMV



LHV

Straight Isolation: 50/60 Hz primary (three conductor line and receptacle).

Stock No.	Mfr.'s Type	Input Volts	Output Volts	VA Cap.	Insul. Test RMS	Style	Size (Inches) H × W × D	Mounting MW × MD	EACH 1-9
704-9080	23V364	115	115	100	1500	GMV	$3\frac{1}{2} \times 2\frac{13}{16} \times 3\frac{9}{16}$	$2\frac{1}{4} \times 2\frac{7}{16}$	**62.95**
704-2365	23V365	115	115	150	1500	GMV	$3\frac{7}{8} \times 3\frac{1}{8} \times 4\frac{8}{16}$	$2\frac{1}{2} \times 2\frac{15}{16}$	**63.77**
704-2366	23V366	115	115	250	1500	GMV	$4\frac{5}{8} \times 3\frac{3}{4} \times 4\frac{3}{8}$	$3 \times 3\frac{3}{16}$	**75.47**
704-2367	23V367	115	115	500	1500	GMV	$4\frac{11}{16} \times 3\frac{3}{4} \times 6$	$3 \times 4\frac{3}{16}$	**114.43**
704-2368	23V368	115	115	1000	1500	GMV	$5\frac{1}{2} \times 4\frac{9}{16} \times 8\frac{1}{8}$	$3\frac{1}{2} \times 6\frac{1}{2}$	**218.21**

Isolation and Step-Down Isolation Transformers: Shielded leads for permanent installation, 2 separate 115 V primary windings, and an electrostatic shield on separate leadwire (not grounded).

Stock No.	Mfr.'s Type	Input Volts	Output Volts	VA Cap.	Insul. Test RMS	Style	Size (Inches) H × W × D	Mounting MW × MD	EACH 1-9
704-9090	23V80	115/230	115	35	1500	BAH	$2\frac{1}{4} \times 3\frac{11}{16} \times 2\frac{1}{4}$	$3\frac{1}{8}$	**23.80**
704-9095	23V551	115/230	115	50	1500	BAH	$2\frac{1}{4} \times 3\frac{11}{16} \times 2\frac{3}{8}$	$3\frac{1}{8}$	**19.40**

Step-Down Autoformers: 50/60 Hz primary (three conductor line/receptacle except 23V393 with leads).

Stock No.	Mfr.'s Type	Input Volts	Output Volts	VA Cap.	Insul. Test RMS	Style	Size (Inches) H × W × D	Mounting MW × MD	EACH 1-9
704-5090	23V393	230	115	50	1500	BAH	$2\frac{3}{8} \times 3\frac{3}{4} \times 2$	$3\frac{1}{8} \times$ —	**11.58**
704-5095	23V338	230	115	85	1500	GMV	$3\frac{1}{8} \times 2\frac{5}{8} \times 2\frac{3}{4}$	$2 \times 1\frac{3}{4}$	**52.37**
704-5105	23V292	230	115	250	1500	GMV	$3\frac{7}{8} \times 3\frac{3}{16} \times 3\frac{5}{8}$	$2\frac{1}{2} \times 2\frac{3}{8}$	**67.63**
704-5110	23V340	230	115	400	1500	GMV	$3\frac{7}{8} \times 3\frac{3}{16} \times 4\frac{1}{2}$	$2\frac{1}{2} \times 3\frac{1}{16}$	**65.41**
704-5115	23V289	230	115	500	1500	GMV	$4\frac{5}{8} \times 3\frac{13}{16} \times 4\frac{1}{4}$	$3 \times 3\frac{1}{16}$	**81.77**
704-5127	23V294	230	115	1000	1500	GMV	$5\frac{1}{2} \times 4\frac{5}{8} \times 5\frac{3}{8}$	$3\frac{1}{2} \times 3\frac{3}{4}$	**131.38**
704-5130	23V296	230	115	1500	1500	GMV	$5\frac{1}{2} \times 4\frac{5}{8} \times 5\frac{7}{8}$	$3\frac{1}{2} \times 4\frac{1}{4}$	**192.66**

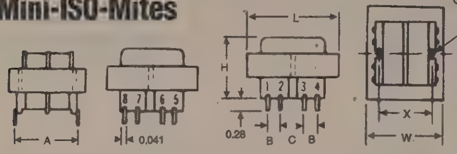
Step-Up Autoformers: 50/60 Hz primary (three conductor line/receptacle except 23V398 with line cord/line cord):

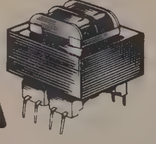
Stock No.	Mfr.'s Type	Input Volts	Output Volts	VA Cap.	Insul. Test RMS	Style	Size (Inches) H × W × D	Mounting MW × MD	EACH 1-9
704-5135	23V398	115	230	125	1500	GMV	$3\frac{1}{8} \times 2\frac{5}{8} \times 3$	2×2	**48.94**
704-5140	23V399	115	230	300	1500	GMV	$3\frac{7}{8} \times 3\frac{3}{16} \times 3\frac{7}{8}$	$2\frac{1}{2} \times 2\frac{3}{8}$	**60.45**

Control Transformers: Primaries 115/230 volts 50/60 Hz. Solder lug termination with dual secondary windings. insulation test volts RMS @ 1500 V.

Stock No.	Mfr.'s Type	Secondary Each Winding	Output of Two Secondaries		Style	Size (Inches) H × W × D	Mounting MW × MD	EACH
			In Parallel	In Series				1-9
704-9880	23V50	6.0 V @ 1.00 A	6.0 V @ 2.0 A	12 V @ 1.00 A	BHV	$2\frac{3}{8} \times 2\frac{7}{8} \times 1\frac{11}{16}$	$2\frac{3}{8} \times$ —	**13.64**
704-9885	23V51	6.0 V @ 2.00 A	6.0 V @ 4.0 A	12 V @ 2.00 A	BHV	$2\frac{3}{4} \times 3\frac{1}{8} \times 1\frac{15}{16}$	$2\frac{13}{16} \times$ —	**17.46**
704-9890	23V52	12.0 V @ 2.00 A	12.0 V @ 4.0 A	24 V @ 2.00 A	BHV	$3\frac{1}{8} \times 3\frac{5}{8} \times 2\frac{5}{16}$	$3\frac{1}{8} \times$ —	**17.78**
704-9895	23V53	12.0 V @ 4.00 A	12.0 V @ 8.0 A	24 V @ 4.00 A	LHV	$3\frac{1}{2} \times 2\frac{7}{8} \times 3\frac{1}{16}$	$2\frac{1}{4} \times 2\frac{5}{8}$	**31.54**
704-5045	23V54	12.0 V @ 8.00 A	12.0 V @ 16.0 A	24 V @ 8.00 A	LHV	$4\frac{3}{16} \times 3\frac{1}{2} \times 3\frac{5}{8}$	$2\frac{3}{4} \times 3$	**55.62**
704-5050	23V388	24.0 V @ 0.25 A	24.0 V @ 0.5 A	48 V @ 0.25 A	BHV	$2\frac{3}{8} \times 2\frac{7}{8} \times 1\frac{3}{4}$	$2\frac{3}{8} \times$ —	**16.89**
704-5055	23V389	24.0 V @ 0.50 A	24.0 V @ 1.0 A	48 V @ 0.50 A	BHV	$2\frac{3}{4} \times 3\frac{1}{8} \times 2$	$2\frac{13}{16} \times$ —	**16.29**
704-5060	23V390	24.0 V @ 1.00 A	24.0 V @ 2.0 A	48 V @ 1.00 A	BHV	$3\frac{1}{8} \times 3\frac{5}{8} \times 2\frac{3}{8}$	$3\frac{1}{8} \times$ —	**19.00**
704-5065	23V391	24.0 V @ 2.00 A	24.0 V @ 4.0 A	48 V @ 2.00 A	LHV	$3\frac{7}{16} \times 2\frac{7}{8} \times 3\frac{1}{8}$	$2\frac{1}{4} \times 2\frac{1}{4}$	**30.56**
704-5070	23V392	24.0 V @ 4.00 A	24.0 V @ 8.0 A	48 V @ 4.00 A	LHV	$4\frac{3}{16} \times 3\frac{1}{2} \times 3\frac{3}{4}$	$2\frac{3}{4} \times 3$	**48.13**

Mini-ISO-Mites





The Mini-ISO-Mites are low voltage, plug-in, power transformers. 8-pin dual 115/230 V primaries and secondaries are wound non-concentrically meaning, side by side. This construction results in smaller units and eliminates the need for costly electro-static shielding. Highly isolated units with 2500 HIPOT standard and are built to MIL-T-27 specifications.

VA Size	H	L	W	X	A	B	C	Wt.
1.1	0.9375	1.375	1.1250	—	1.200	.250	.250	0.17
2.4	1.1875	1.375	1.1250	—	1.200	.250	.250	0.25
6.0	1.3125	1.625	1.3125	1.0625	1.280	.250	.350	0.44
12.0	1.4375	1.875	1.5625	1.2500	1.410	.300	.400	0.70
20.0	1.5000	2.250	1.8750	1.5000	1.600	.300	.400	0.80
36.0	1.5625	2.625	2.1875	*	1.850	.400	.400	1.10

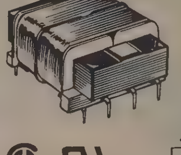
*36 VA Size has 4 mounting holes on 2 3/16 × 1 3/4 centers.

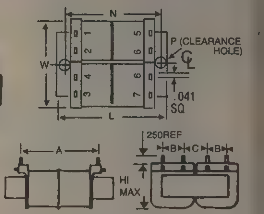
Primary 115/230 V, 50/60 Hz (All Sizes Available with Single 115 V Primary)

Stock No.	Mfr.'s Type	VA Size	Secondary RMS Ratings		EACH		
			Series	Parallel	1-9	10-24	25-49
704-0420	MIM 420	2.4	10.0 V C.T. @ 0.250 A	5.0 V @ 0.50 A	**9.48**	**8.82**	**8.19**
704-0520	MIM 520	6.0	10.0 V C.T. @ 0.600 A	5.0 V @ 1.20 A	**10.11**	**9.15**	**8.49**
704-0620	MIM 620	12.0	10.0 V C.T. @ 1.200 A	5.0 V @ 2.40 A	**11.58**	**10.56**	**9.90**
704-0721	MIM 721	20.0	10.0 V C.T. @ 2.000 A	5.0 V @ 4.00 A	**14.23**	**12.80**	**11.73**
704-0821	MIM 821	36.0	10.0 V C.T. @ 3.600 A	5.0 V @ 7.20 A	**16.85**	**15.81**	**14.59**
704-0422	MIM 422	2.4	12.6 V C.T. @ 0.200 A	6.3 V @ 0.40 A	**9.48**	**8.82**	**8.19**
704-0522	MIM 522	6.0	12.6 V C.T. @ 0.500 A	6.3 V @ 1.00 A	**10.11**	**9.15**	**8.49**
704-0622	MIM 622	12.0	12.6 V C.T. @ 1.000 A	6.3 V @ 2.00 A	**11.58**	**10.56**	**9.75**
704-0723	MIM 723	20.0	12.6 V C.T. @ 1.600 A	6.3 V @ 3.20 A	**14.23**	**12.80**	**11.73**
704-0823	MIM 823	36.0	12.6 V C.T. @ 2.850 A	6.3 V @ 5.70 A	**16.85**	**15.81**	**14.59**
704-0424	MIM 424	2.4	16.0 V C.T. @ 0.150 A	8.0 V @ 0.30 A	**9.48**	**8.82**	**8.19**
704-0524	MIM 524	6.0	16.0 V C.T. @ 0.400 A	8.0 V @ 0.80 A	**10.11**	**9.15**	**8.49**
704-0624	MIM 624	12.0	16.0 V C.T. @ 0.800 A	8.0 V @ 1.60 A	**11.58**	**10.56**	**9.75**
704-0725	MIM 725	20.0	16.0 V C.T. @ 1.250 A	8.0 V @ 2.50 A	**14.23**	**12.80**	**11.73**
704-0825	MIM 825	36.0	16.0 V C.T. @ 2.250 A	8,0 V @ 4.50 A	**16.85**	**15.81**	**14.59**
704-0426	MIM 426	2.4	20.0 V C.T. @ 0.120 A	10.0 V @ 0.24 A	**9.48**	**8.82**	**8.19**
704-0526	MIM 526	6.0	20.0 V C.T. @ 0.300 A	10.0 V @ 0.60 A	**10.11**	**9.15**	**8.49**
704-0626	MIM 626	12.0	20.0 V C.T. @ 0.600 A	10.0 V @ 1.20 A	**11.58**	**10.56**	**9.75**
704-0727	MIM 727	20.0	20.0 V C.T. @ 1.000 A	10.0 V @ 2.00 A	**14.23**	**12.80**	**11.73**
704-0827	MIM 827	36.0	20.0 V C.T. @ 1.800 A	10.0 V @ 3.60 A	**16.85**	**15.81**	**14.59**
704-0428	MIM 428	2.4	24.0 V C.T. @ 0.100 A	12.0 V @ 0.20 A	**9.48**	**8.82**	**8.19**
704-0528	MIM 528	6.0	24.0 V C.T. @ 0.250 A	12.0 V @ 0.50 A	**10.11**	**9.15**	**8.49**
704-0628	MIM 628	12.0	24.0 V C.T. @ 0.500 A	12.0 V @ 1.00 A	**11.58**	**10.56**	**9.75**
704-0729	MIM 729	20.0	24.0 V C.T. @ 0.800 A	12.0 V @ 1.60 A	**14.23**	**12.80**	**11.73**
704-0829	MIM 829	36.0	24.0 V C.T. @ 1.500 A	12.0 V @ 3.00 A	**16.85**	**15.81**	**14.59**
704-0430	MIM 430	2.4	28.0 V C.T. @ 0.085 A	14.0 V @ 0.17 A	**9.48**	**8.82**	**8.19**
704-0530	MIM 530	6.0	28.0 V C.T. @ 0.200 A	14.0 V @ 0.40 A	**10.11**	**9.15**	**8.49**
704-0630	MIM 630	12.0	28.0 V C.T. @ 0.420 A	14.0 V @ 0.84 A	**11.58**	**10.56**	**9.75**
704-0731	MIM 731	20.0	28.0 V C.T. @ 0.700 A	14.0 V @ 1.40 A	**14.23**	**12.80**	**11.73**
704-0831	MIM 831	36.0	28.0 V C.T. @ 1.300 A	14.0 V @ 2.60 A	**16.85**	**15.81**	**14.59**
704-0432	MIM 432	2.4	36.0 V C.T. @ 0.065 A	18.0 V @ 0.13 A	**9.48**	**8.82**	**8.19**
704-0532	MIM 532	6.0	36.0 V C.T. @ 0.170 A	18.0 V @ 0.34 A	**10.11**	**9.15**	**8.49**
704-0632	MIM 632	12.0	36.0 V C.T. @ 0.350 A	18.0 V @ 0.70 A	**11.58**	**10.56**	**9.75**
704-0733	MIM 733	20.0	36.0 V C.T. @ 0.550 A	18.0 V @ 1.10 A	**14.23**	**12.80**	**11.73**
704-0833	MIM 833	36.0	36.0 V C.T. @ 1.000 A	18.0 V @ 2.00 A	**16.85**	**15.81**	**14.59**
704-0434	MIM 434	2.4	48.0 V C.T. @ 0.050 A	24.0 V @ 0.10 A	**9.48**	**8.82**	**8.19**
704-0534	MIM 534	6.0	48.0 V C.T. @ 0.125 A	24.0 V @ 0.25 A	**10.11**	**9.15**	**8.49**
704-0634	MIM 634	12.0	48.0 V C.T. @ 0.250 A	24.0 V @ 0.50 A	**11.58**	**10.56**	**9.75**
704-0735	MIM 735	20.0	48.0 V C.T. @ 0.400 A	24.0 V @ 0.80 A	**14.23**	**12.80**	**11.73**
704-0835	MIM 835	36.0	48.0 V C.T. @ 0.750 A	24.0 V @ 1.50 A	**16.85**	**15.81**	**14.59**
704-0436	MIM 436	2.4	56.0 V C.T. @ 0.045 A	28.0 V @ 0.09 A	**9.48**	**8.82**	**8.19**
704-0536	MIM 536	6.0	56.0 V C.T. @ 0.110 A	28.0 V @ 0.22 A	**10.11**	**9.15**	**8.49**
704-0636	MIM 636	12.0	56.0 V C.T. @ 0.220 A	28.0 V @ 0.44 A	**11.58**	**10.56**	**9.75**
704-0737	MIM 737	20.0	56.0 V C.T. @ 0.350 A	28.0 V @ 0.70 A	**14.23**	**12.80**	**11.73**
704-0837	MIM 837	36.0	56.0 V C.T. @ 0.650 A	28.0 V @ 1.30 A	**16.85**	**15.81**	**14.59**
704-0438	MIM 438	2.4	120.0 V C.T. @ 0.020 A	60.0 V @ 0.04 A	**9.48**	**8.82**	**8.19**
704-0538	MIM 538	6.0	120.0 V C.T. @ 0.050 A	60.0 V @ 0.10 A	**10.11**	**9.15**	**8.49**
704-0638	MIM 638	12.0	120.0 V C.T. @ 0.100 A	60.0 V @ 0.20 A	**11.58**	**10.56**	**9.75**
704-0739	MIM 739	20.0	120.0 V C.T. @ 0.160 A	60.0 V @ 0.32 A	**14.23**	**12.80**	**11.73**
704-0839	MIM 839	36.0	120.0 V C.T. @ 0.300 A	60.0 V @ 0.60 A	**16.85**	**15.81**	**14.59**

Flat Compact Series

Use where space is critical. For single or dual output DC supplies and isolated control circuits and reference supplies. Incorporates non-concentric windings which means the secondary is located next to the primary instead of being wound directly over it. Hum-bucking (semitoroidal) construction diminishes radiated magnetic field and balanced windings.



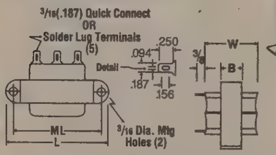


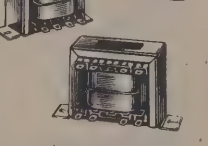
Primary 115/230 V, 50/60 Hz

VA Size	L	W	H	A	B	C	N	P	Oz.
2.4	1.875	1.562	0.650	1.60	0.375	0.375	—	—	5
6.0	1.875	1.562	0.850	1.60	0.375	0.375	—	—	7
12.0	2.500	2.000	1.065	2.00	0.500	0.500	—	—	11
24.0	2.875	2.250	1.250	1.90	0.600	0.530	2.41	Clearance Hole for #4 Screw	15
48.0	3.125	2.500	1.375	2.18	0.600	0.660	2.62	Clearance Hole for #6 Screw	21

Stock No.	Mfr.'s Type	VA Size	Secondary RMS Ratings		EACH		
			Series	Parallel	1-9	10-24	25-49
704-0200	PFC200	2.4	10.0 V C.T. @ 0.250 A	5.0 V @ 0.500 A	**11.33**	**10.47**	**9.88**
704-0202	PFC202	6.0	10.0 V C.T. @ 0.600 A	5.0 V @ 1.200 A	**12.64**	**11.58**	**10.69**
704-0204	PFC204	12.0	10.0 V C.T. @ 1.200 A	5.0 V @ 2.400 A	**14.74**	**13.39**	**12.27**
704-0206	PFC206	24.0	10.0 V C.T. @ 2.400 A	5.0 V @ 4.800 A	**21.34**	**19.34**	**17.58**
704-0208	PFC208	48.0	10.0 V C.T. @ 4.800 A	5.0 V @ 9.600 A	**23.22**	**21.05**	**19.14**
704-0210	PFC210	2.4	12.6 V C.T. @ 0.200 A	6.3 V @ 0.400 A	**11.33**	**10.80**	**10.03**
704-0212	PFC212	6.0	12.6 V C.T. @ 0.450 A	6.3 V @ 0.900 A	**12.64**	**11.58**	**10.69**
704-0214	PFC214	12.0	12.6 V C.T. @ 0.900 A	6.3 V @ 1.800 A	**14.74**	**13.39**	**12.27**
704-0216	PFC216	24.0	12.6 V C.T. @ 1.900 A	6.3 V @ 3.800 A	**21.34**	**17.58**	**16.12**
704-0218	PFC218	48.0	12.6 V C.T. @ 3.800 A	6.3 V @ 7.600 A	**23.22**	**19.14**	**17.54**
704-0220	PFC220	2.4	16.0 V C.T. @ 0.150 A	8.0 V @ 0.300 A	**11.33**	**10.80**	**10.03**
704-0222	PFC222	6.0	16.0 V C.T. @ 0.350 A	8.0 V @ 0.700 A	**12.64**	**11.58**	**10.69**
704-0224	PFC224	12.0	16.0 V C.T. @ 0.700 A	8.0 V @ 1.400 A	**14.74**	**13.39**	**12.27**
704-0226	PFC226	24.0	16.0 V C.T. @ 1.500 A	8.0 V @ 3.000 A	**21.34**	**17.58**	**16.12**
704-0228	PFC228	48.0	16.0 V C.T. @ 3.000 A	8.0 V @ 6.000 A	**23.22**	**19.14**	**17.54**
704-0230	PFC230	2.4	20.0 V C.T. @ 0.125 A	10.0 V @ 0.250 A	**11.33**	**10.80**	**10.03**
704-0232	PFC232	6.0	20.0 V C.T. @ 0.300 A	10.0 V @ 0.600 A	**12.64**	**11.58**	**10.69**
704-0234	PFC234	12.0	20.0 V C.T. @ 0.600 A	10.0 V @ 1.200 A	**14.74**	**13.39**	**12.27**
704-0236	PFC236	24.0	20.0 V C.T. @ 1.200 A	10.0 V @ 2.400 A	**21.34**	**17.58**	**16.12**
704-0238	PFC238	48.0	20.0 V C.T. @ 2.400 A	10.0 V @ 4.800 A	**23.22**	**19.14**	**17.54**
704-0240	PFC240	2.4	24.0 V C.T. @ 0.100 A	12.0 V @ 0.200 A	**11.33**	**10.80**	**10.03**
704-0242	PFC242	6.0	24.0 V C.T. @ 0.250 A	12.0 V @ 0.500 A	**12.64**	**11.58**	**10.69**
704-0244	PFC244	12.0	24.0 V C.T. @ 0.500 A	12.0 V @ 1.000 A	**14.74**	**13.39**	**12.27**
704-0246	PFC246	24.0	24.0 V C.T. @ 1.000 A	12.0 V @ 2.000 A	**21.34**	**17.58**	**16.12**
704-0248	PFC248	48.0	24.0 V C.T. @ 2.000 A	12.0 V @ 4.000 A	**23.22**	**19.14**	**17.54**
704-0190	PFC190	2.4	30.0 V C.T. @ 0.085 A	15.0 V @ 0.170 A	**11.33**	**10.80**	**10.03**
704-0192	PFC192	6.0	30.0 V C.T. @ 0.200 A	15.0 V @ 0.400 A	**12.64**	**11.58**	**10.69**
704-0294	PFC294	12.0	30.0 V C.T. @ 0.400 A	15.0 V @ 0.800 A	**14.74**	**13.39**	**12.27**
704-0296	PFC296	24.0	30.0 V C.T. @ 0.800 A	15.0 V @ 1.600 A	**21.34**	**17.58**	**16.12**
704-0298	PFC298	48.0	30.0 V C.T. @ 1.600 A	15.0 V @ 3.200 A	**23.22**	**19.14**	**17.54**
704-0250	PFC250	2.4	34.0 V C.T. @ 0.075 A	17.0 V @ 0.150 A	**11.33**	**10.80**	**10.03**
704-0252	PFC252	6.0	34.0 V C.T. @ 0.170 A	17.0 V @ 0.340 A	**12.64**	**11.58**	**10.69**
704-0254	PFC254	12.0	34.0 V C.T. @ 0.340 A	17.0 V @ 0.680 A	**14.74**	**13.39**	**12.27**
704-0256	PFC256	24.0	34.0 V C.T. @ 0.700 A	17.0 V @ 1.400 A	**21.34**	**17.58**	**16.12**
704-0258	PFC258	48.0	34.0 V C.T. @ 1.400 A	17.0 V @ 2.800 A	**23.22**	**19.14**	**17.54**
704-0260	PFC260	2.4	40.0 V C.T. @ 0.060 A	20.0 V @ 0.120 A	**11.33**	**10.80**	**10.03**
704-0262	PFC262	6.0	40.0 V C.T. @ 0.150 A	20.0 V @ 0.300 A	**12.64**	**11.58**	**10.69**
704-0264	PFC264	12.0	40.0 V C.T. @ 0.300 A	20.0 V @ 0.600 A	**14.74**	**13.39**	**12.27**
704-0266	PFC266	24.0	40.0 V C.T. @ 0.600 A	20.0 V @ 1.200 A	**21.34**	**17.58**	**16.12**
704-0268	PFC268	48.0	40.0 V C.T. @ 1.200 A	20.0 V @ 2.400 A	**23.22**	**19.14**	**17.54**
704-0270	PFC270	2.4	56.0 V C.T. @ 0.045 A	28.0 V @ 0.090 A	**11.33**	**10.80**	**10.03**
704-0272	PFC272	6.0	56.0 V C.T. @ 0.100 A	28.0 V @ 0.200 A	**12.64**	**11.58**	**10.69**
704-0274	PFC274	12.0	56.0 V C.T. @ 0.200 A	28.0 V @ 0.400 A	**14.74**	**13.39**	**12.27**
704-0276	PFC276	24.0	56.0 V C.T. @ 0.425 A	28.0 V @ 0.850 A	**21.34**	**17.58**	**16.12**
704-0278	PFC278	48.0	56.0 V C.T. @ 0.850 A	28.0 V @ 1.700 A	**23.22**	**19.14**	**17.54**
704-0280	PFC280	2.4	88.0 V C.T. @ 0.028 A	44.0 V @ 0.056 A	**11.33**	**10.80**	**10.03**
704-0282	PFC282	6.0	88.0 V C.T. @ 0.065 A	44.0 V @ 0.130 A	**12.64**	**11.58**	**10.69**
704-0284	PFC284	12.0	88.0 V C.T. @ 0.130 A	44.0 V @ 0.260 A	**14.74**	**13.39**	**12.27**
704-0290	PFC290	2.4	120.0 V C.T. @ 0.020 A	60.0 V @ 0.040 A	**11.33**	**10.80**	**10.03**
704-0292	PFC292	6.0	120.0 V C.T. @ 0.050 A	60.0 V @ 0.100 A	**12.64**	**11.58**	**10.69**
704-0324	PFC324	12.0	120.0 V C.T. @ 0.100 A	60.0 V @ 0.200 A	**14.74**	**13.39**	**12.27**
704-0300	PFC300	2.4	230.0 V C.T. @ 0.010 A	115.0 V @ 0.020 A	**11.33**	**10.80**	**10.03**
704-0302	PFC302	6.0	230.0 V C.T. @ 0.025 A	115.0 V @ 0.050 A	**12.64**	**11.58**	**10.69**
704-0334	PFC334	12.0	230.0 V C.T. @ 0.050 A	115.0 V @ 0.100 A	**14.74**	**13.39**	**12.27**

Condensed for Power Series





The CFP Series include a grain oriented core for high saturation density, lower core loss, and less steel and copper use; split bobbin for non-concentric winding (lower capacitance, high isolation, better insulation) no cross-overs of primary and secondary leads; bobbin wound for reduced size.

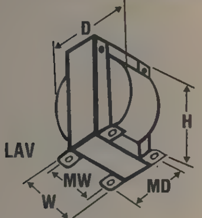
Primary 115/230 V, 50/60 Hz (All Sizes Available with Single 115 V Primary)

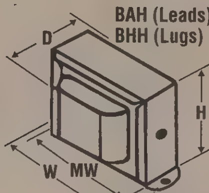
VA Size	L	W	H	A	B	ML	Wt.
6	2 3/8	1 5/16	1 3/8	1 11/16	11/16	2	0.5
12	2 7/8	1 1/2	1 5/8	1 15/16	31/32	2 3/8	0.7
30	3 1/4	1 23/32	1 15/16	2 5/16	1 1/16	2 13/16	0.1
56	3 3/4	1 27/32	2 1/4	2 11/16	1 1/16	3 1/8	1.7
100	4	2 1/4	2 9/16	3 1/16	1 5/16	3 9/16	2.8

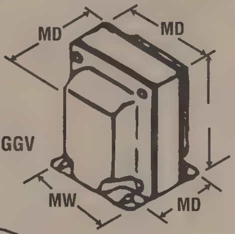
Stock No.	Mfr.'s Type	VA Size	Secondary RMS Ratings	EACH
				1-9
704-9300	CFP-300	6	10.0 V C.T. @ 0.6 A	**10.79**
704-9400	CFP-400	12	10.0 V C.T. @ 1.2 A	**11.96**
704-9500	CFP-500	30	10.0 V C.T. @ 3.0 A	**15.49**
704-9600	CFP-600	56	10.0 V C.T. @ 5.0 A	**18.95**
704-9700	CFP-700	100	10.0 V C.T. @ 10.0 A	**26.33**
704-9302	CFP-302	6	12.6 V C.T. @ 0.5 A	**11.46**
704-9402	CFP-402	12	12.6 V C.T. @ 1.0 A	**11.96**
704-9502	CFP-502	30	12.6 V C.T. @ 2.5 A	**15.49**
704-9602	CFP-602	56	12.6 V C.T. @ 4.0 A	**18.95**
704-9702	CFP-702	100	12.6 V C.T. @ 8.0 A	**26.33**
704-9304	CFP-304	6	16.0 V C.T. @ 0.4 A	**10.79**
704-9404	CFP-404	12	16.0 V C.T. @ 0.8 A	**11.96**
704-9504	CFP-504	30	16.0 V C.T. @ 2.0 A	**15.49**
704-9604	CFP-604	56	16.0 V C.T. @ 3.5 A	**18.95**
704-9704	CFP-704	100	16.0 V C.T. @ 6.25 A	**26.33**
704-9306	CFP-306	6	20.0 V C.T. @ 0.3 A	**10.79**
704-9406	CFP-406	12	20.0 V C.T. @ 0.6 A	**11.96**
704-9506	CFP-506	30	20.0 V C.T. @ 1.5 A	**15.49**
704-9606	CFP-606	56	20.0 V C.T. @ 2.8 A	**18.95**
704-9706	CFP-706	100	20.0 V C.T. @ 5.0 A	**26.33**
704-9308	CFP-308	6	24.0 V C.T. @ 0.25 A	**10.79**
704-9408	CFP-408	12	24.0 V C.T. @ 0.5 A	**11.96**
704-9508	CFP-508	30	24.0 V C.T. @ 0.125 A	**15.49**
704-9608	CFP-608	56	24.0 V C.T. @ 2.4 A	**18.95**
704-9708	CFP-708	100	24.0 V C.T. @ 4.0 A	**26.33**

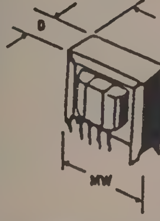
Stock No.	Mfr.'s Type	VA Size	Secondary RMS Ratings	EACH
				1-9
704-9310	CFP-310	6	28.0 V C.T. @ 0.2 A	**10.79**
704-9410	CFP-410	12	28.0 V C.T. @ 0.42 A	**11.96**
704-9510	CFP-510	30	28.0 V C.T. @ 1.1 A	**15.49**
704-9610	CFP-610	56	28.0 V C.T. @ 2.0 A	**18.95**
704-9710	CFP-710	100	28.0 V C.T. @ 3.6 A	**26.33**
704-9312	CFP-312	6	36.0 V C.T. @ 0.17 A	**10.79**
704-9412	CFP-412	12	36.0 V C.T. @ 0.35 A	**11.96**
704-9512	CFP-512	30	36.0 V C.T. @ 0.85 A	**15.49**
704-9612	CFP-612	56	36.0 V C.T. @ 1.5 A	**18.95**
704-9712	CFP-712	100	36.0 V C.T. @ 2.8 A	**26.33**
704-9314	CFP-314	6	48.0 V C.T. @ 0.125 A	**10.74**
704-9414	CFP-414	12	48.0 V C.T. @ 0.25 A	**11.96**
704-9514	CFP-514	30	48.0 V C.T. @ 0.63 A	**15.49**
704-9614	CFP-614	56	48.0 V C.T. @ 1.2 A	**18.95**
704-9714	CFP-714	100	48.0 V C.T. @ 2.0 A	**26.33**
704-9316	CFP-316	6	56.0 V C.T. @ 0.11 A	**10.79**
704-9416	CFP-416	12	56.0 V C.T. @ 0.22 A	**11.96**
704-9516	CFP-516	30	56.0 V C.T. @ 0.54 A	**15.49**
704-9616	CFP-616	56	56.0 V C.T. @ 1.0 A	**18.95**
704-9716	CFP-716	100	56.0 V C.T. @ 1.8 A	**26.33**
704-9318	CFP-318	6	120.0 V C.T. @ 0.05 A	**10.79**
704-9418	CFP-418	12	120.0 V C.T. @ 0.1 A	**11.96**
704-9518	CFP-518	30	120.0 V C.T. @ 0.25 A	**15.49**
704-9618	CFP-618	56	120.0 V C.T. @ 0.5 A	**18.95**
704-9718	CFP-718	100	120.0 V C.T. @ 0.85 A	**26.33**

Power and Audio Transformers

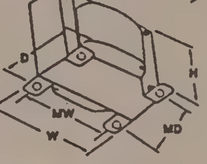








BCH-1



LAH

Filament/Low Power Transformers — With Color Coded Leads

Stock No.	Mfr.'s Type	Secondary Volts	Secondary Amps	Primary Volts	Fig.	Size (In.) H	Size (In.) W	Size (In.) D	MW	MD	EACH 1-9
704-6000	21F13	5.0 C.T.	10.000	117	LAV	$3\frac{1}{8}$	$2\frac{9}{16}$	$3\frac{1}{8}$	2	$2\frac{5}{8}$	**38.62**
704-2005	26F73	6.3 C.T.	0.300	117	BAH	$1\frac{1}{4}$	$2\frac{1}{8}$	$1\frac{3}{8}$	$1\frac{3}{4}$	—	**10.08**
704-2007	21F162	6.3 C.T.	0.600	117	BAH	$1\frac{3}{8}$	$2\frac{3}{8}$	$1\frac{7}{16}$	2	—	**8.00**
704-2009	21F143	6.3 C.T.	1.000	117	BAH	$1\frac{5}{8}$	$2\frac{7}{8}$	$1\frac{5}{8}$	$2\frac{3}{8}$	—	**10.83**
704-2012	26F60	6.3	1.200	117	BAH	2	$3\frac{1}{4}$	$2\frac{1}{4}$	$2\frac{13}{16}$	—	**15.62**
704-2011	21F09	6.3 C.T.	1.200	117	BAH	$1\frac{5}{8}$	$2\frac{7}{8}$	$1\frac{5}{8}$	$2\frac{3}{8}$	—	**10.83**
704-2013	21F10	6.3 C.T.	3.000	117	BAH	2	$3\frac{1}{4}$	$2\frac{1}{8}$	$2\frac{13}{16}$	—	**12.52**
704-6010	21F204	6.3 C.T.	5.000	115	BAH	$2\frac{3}{8}$	$3\frac{3}{4}$	$2\frac{1}{4}$	$3\frac{1}{8}$	—	**20.28**
704-2022	21F25	6.3 C.T.	20.000	107/117	LAV	$4\frac{9}{16}$	$3\frac{13}{16}$	$3\frac{3}{8}$	3	$2\frac{3}{8}$	**50.23**
704-6015	21F45	7.5 C.T.	4.000	117	LAV	$3\frac{1}{8}$	$2\frac{9}{16}$	$2\frac{11}{16}$	2	$2\frac{1}{8}$	**29.46**
704-6020	21F205	10.0 C.T.	1.000	117	BAH	2	$3\frac{1}{4}$	$1\frac{5}{8}$	$2\frac{13}{16}$	—	**14.13**
704-6030	21F207	10.0 C.T.	4.000	117	BAH	$2\frac{5}{8}$	4	$2\frac{1}{4}$	$3\frac{9}{16}$	—	**21.48**
704-6040	21F209	10.0 C.T.	8.000	117	LAV	$3\frac{7}{16}$	$2\frac{13}{16}$	$3\frac{1}{8}$	$2\frac{1}{4}$	$2\frac{1}{2}$	**30.98**
704-9810	23V252	12.0	0.150	117	BAH	$1\frac{1}{4}$	$2\frac{1}{16}$	$1\frac{1}{4}$	$1\frac{3}{4}$	—	**8.35**
704-9815	23V253	12.0	0.350	117	BAH	$1\frac{3}{8}$	$2\frac{3}{8}$	$1\frac{7}{16}$	2	—	**8.96**
704-9820	23V254	12.0	0.700	117	BAH	$1\frac{5}{8}$	$2\frac{13}{16}$	$1\frac{5}{8}$	$2\frac{3}{8}$	—	**9.27**
704-9825	23V255	12.0	1.200	117	BAH	2	$3\frac{1}{4}$	$1\frac{3}{4}$	$2\frac{13}{16}$	—	**11.86**
704-9830	23V415	12.0	2.000	117	BAH	2	$3\frac{1}{4}$	$2\frac{1}{8}$	$2\frac{13}{16}$	—	**12.80**
704-6047	23V416	12.0	4.000	117	BAH	$2\frac{5}{8}$	4	$2\frac{1}{4}$	$3\frac{9}{16}$	—	**17.69**
704-6045	23V417	12.0	6.000	117	LAV	$3\frac{7}{16}$	$2\frac{13}{16}$	$2\frac{5}{8}$	$2\frac{1}{4}$	$2\frac{1}{8}$	**24.64**
704-6050	23V418	12.0	8.000	117	LAV	$3\frac{13}{16}$	$3\frac{1}{8}$	$2\frac{3}{4}$	$2\frac{1}{2}$	$2\frac{1}{8}$	**23.38**
704-2028	26F72	12.6 C.T.	1.000	117	BAH	2	$3\frac{1}{4}$	$1\frac{3}{4}$	$2\frac{13}{16}$	—	**11.12**
704-2029	21F149	12.6 C.T.	1.500	117	BAH	2	$3\frac{1}{4}$	2	$2\frac{13}{16}$	—	**21.08**
704-2030	26F67	12.6 C.T.	2.000	117	BAH	2	$3\frac{1}{4}$	$2\frac{1}{8}$	$2\frac{13}{16}$	—	**13.81**
704-2033	21F150	12.6 C.T.	3.000	117	BAH	$2\frac{1}{4}$	$3\frac{11}{16}$	$2\frac{1}{4}$	$3\frac{1}{8}$	—	**16.08**
704-2034	21F193	12.6 C.T.	4.000	117	BAH	$2\frac{5}{8}$	4	$2\frac{3}{8}$	$3\frac{9}{16}$	—	**22.40**
704-6055	21F194	12.6 C.T.	6.000	117	GGV	$3\frac{1}{2}$	$2\frac{13}{16}$	$3\frac{3}{8}$	$2\frac{1}{4}$	$2\frac{1}{8}$	**46.40**
704-6060	21F196	12.6 C.T.	10.000	117	GGV	$4\frac{1}{4}$	$3\frac{7}{16}$	$3\frac{7}{8}$	$2\frac{3}{4}$	$2\frac{11}{16}$	**56.67**
704-6065	23V470	14.0 C.T.	1.000	115	BAH	2	$3\frac{1}{4}$	$1\frac{3}{4}$	$2\frac{13}{16}$	—	**12.89**
704-6070	23V526	14.0 C.T.	4.000	115	LAV	3	$2\frac{1}{2}$	$2\frac{5}{8}$	2	$2\frac{1}{4}$	**22.50**
704-6075	23V545	18.0 C.T.	2.000	115	BAH	$2\frac{1}{4}$	$3\frac{11}{16}$	$2\frac{1}{4}$	$3\frac{1}{8}$	—	**17.28**
704-2036	26F68	24.0	1.000	117	BAH	2	$3\frac{1}{4}$	$2\frac{1}{8}$	$2\frac{13}{16}$	—	**11.23**
704-9840	23V256	24.0 C.T.	0.085	117	BAH	$1\frac{1}{4}$	$2\frac{1}{16}$	$1\frac{1}{2}$	$1\frac{3}{4}$	—	**9.66**
704-9845	23V257	24.0 C.T.	0.200	117	BAH	$1\frac{3}{8}$	$2\frac{3}{8}$	$1\frac{1}{2}$	2	—	**9.87**
704-9850	23V258	24.0 C.T.	0.400	117	BAH	$1\frac{5}{8}$	$2\frac{13}{16}$	$1\frac{5}{8}$	$2\frac{3}{8}$	—	**10.88**
704-9855	23V259	24.0 C.T.	0.700	117	BAH	2	$3\frac{1}{4}$	$1\frac{3}{4}$	$2\frac{13}{16}$	—	**11.70**
704-6085	23V404	24.0 C.T.	0.700	230	BAH	2	$3\frac{1}{4}$	$1\frac{3}{4}$	$2\frac{13}{16}$	—	**16.06**
704-2035	21F84	24.0 C.T.	1.000	115	BAH	2	$3\frac{1}{4}$	$2\frac{1}{8}$	$2\frac{13}{16}$	—	**11.28**
704-2037	21F181	24.0 C.T.	1.000	115/230	BAH	2	$3\frac{5}{16}$	$2\frac{1}{8}$	$2\frac{13}{16}$	—	**13.38**
704-9860	23V478	24.0 C.T.	2.000	115	BAH	$2\frac{5}{8}$	4	$2\frac{3}{8}$	$3\frac{9}{16}$	—	**17.20**
704-6090	23V419	24.0 C.T.	4.000	117	LAV	$3\frac{13}{16}$	$3\frac{1}{8}$	$2\frac{13}{16}$	$2\frac{1}{2}$	$2\frac{1}{8}$	**28.78**
704-6095	23V420	24.0 C.T.	6.000	117	LAV	$4\frac{3}{16}$	$3\frac{7}{16}$	3	$2\frac{3}{4}$	$2\frac{1}{4}$	**38.40**
704-9421	23V421	24.0 C.T.	8.000	117	LAV	$4\frac{3}{16}$	$3\frac{7}{16}$	$3\frac{7}{16}$	$2\frac{3}{4}$	$2\frac{3}{4}$	**44.13**
704-6100	23V422	24.0 C.T.	12.000	117	LAV	$4\frac{9}{16}$	$3\frac{3}{4}$	$4\frac{5}{8}$	3	$3\frac{1}{4}$	**54.05**
704-2039	21F51	25.2	1.000	117	BAH	2	$3\frac{1}{4}$	$2\frac{1}{8}$	$2\frac{13}{16}$	—	**11.86**
704-2040	21F142	25.2 C.T.	1.000	117	BAH	2	$3\frac{1}{4}$	$2\frac{1}{8}$	$2\frac{13}{16}$	—	**11.86**
704-2041	21F83	25.2 C.T.	2.000	115	BAH	$2\frac{5}{8}$	4	$2\frac{1}{4}$	$3\frac{9}{16}$	—	**15.05**
704-6105	21F180	25.2 C.T.	2.000	115/230	BAH	$2\frac{5}{8}$	4	$2\frac{1}{4}$	$3\frac{9}{16}$	—	**18.91**
704-2042	21F114	25.2 C.T.	3.000	117	BAH	$2\frac{5}{8}$	4	$2\frac{3}{8}$	$3\frac{9}{16}$	—	**18.79**
704-6110	21F197	25.2 C.T.	5.000	117	GGV	$4\frac{1}{4}$	$3\frac{7}{16}$	$3\frac{7}{8}$	$2\frac{3}{4}$	$2\frac{11}{16}$	**52.24**
704-2044	21F27	26.5 C.T.	0.600	117	BAH	2	$3\frac{1}{4}$	$2\frac{1}{8}$	$2\frac{13}{16}$	—	**13.66**

Audio Transformer: Output — Single Plate to Voice Coil and/or Line 25 Volt Line to Voice Coil (Speaker). Lug Termination.

Stock No.	Mfr.'s Type	Impedance in Ohms Primary	Impedance in Ohms Secondary	Audio Watts	Overall Turns Ratio	Pri. Ohms	Sec. Ohms	Freq. Response +3 dB	RMS Test Volts	Style	Size (In.) H × W × D	MW	EACH 1-9
704-9135	24S24	125/250/500/1000/2000	4/8	5/2.5/1.25/0.63/0.31	15.8:1	120	.60	30-20000	1000	BHH	$1\frac{3}{8} \times 2\frac{3}{8} \times 1\frac{3}{8}$	2	**20.81**

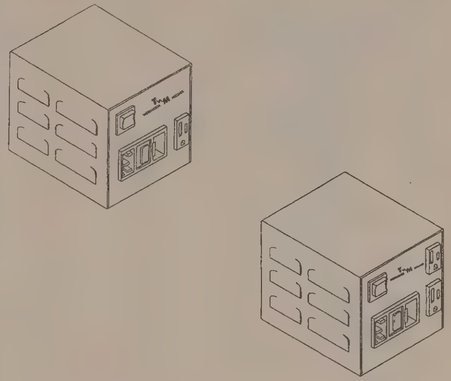
Audio Transformer: 70.7 Volt Line to Voice Coil (Speaker). Lug Termination.

Stock No.	Mfr.'s Type	Impedance in Ohms Primary	Impedance in Ohms Secondary	Audio Watts	Overall Turns Ratio	Pri. Ohms	Sec. Ohms	Freq. Response +3 dB	RMS Test Volts	Style	Size (In.) H × W × D	MW	EACH 1-9
704-9155	24S74	1000/2000/4000/8000/16000	4/8	5/2.5/1.25/0.62/0.31	44.7:1	860	.60	50-20000	1000	BHH	$1\frac{3}{8} \times 2\frac{3}{8} \times 1\frac{1}{2}$	2	**25.55**

Filter Chokes: Swinging, Smoothing, and High Current. Listed in order of M.A.D.C., with leads.

Stock No.	Mfr.'s Type	Inductance Henries	DCMA	DC Res. Ohms	RMS Test Volts	Style	Size (In.) H × W × D	MW × MD	EACH 1-9
704-9105	TR-153	3.0 mH	1.00 A	0.250	1000	BCH-1	$1\frac{1}{4} \times 1\frac{1}{2} \times 1$	$1\frac{1}{4} \times \frac{7}{16}$	**7.35**
704-9125	20C02	10.0 mH	8.00 A	0.150	1500	LAH	$3\frac{1}{4} \times 3\frac{3}{4} \times 3\frac{3}{16}$	$3\frac{1}{8} \times 2\frac{1}{2}$	**33.73**
704-9803	20C03	10.0 mH	12.00 A	0.110	1500	LAH	$3\frac{7}{16} \times 4\frac{1}{8} \times 3$	$3\frac{7}{16} \times 2\frac{3}{8}$	**39.31**

Foreign Power Supplies and Power Cords



- Four Convenient Power Sizes
- IEC Input Port For Foreign Cords
- Operates On 50 Hz and 60 Hz Input With Safety*
- Isolated Output Receptacle
- Convenient On-Off Switch
- Circuit Breaker
- Voltage Selector
- Power For Photographic/TV Crews Abroad
- Power For International Trade Shows
- Conversion for U.S. Appliances in Foreign Use

*Note: Unit does not change frequency. Use only for equipment that can be operated on 50 Hz only, 60 Hz only or 50/60 Hz.

Universal Voltage Converters — Converts 100/120/220/240 V to isolated 120 V with optional foreign power IEC input cords to suit your use location.

Foreign Power Supplies

Stock No.	Mfr.'s Type	VA Output Maximum	Dimensions (In.) H	Dimensions (In.) W	Dimensions (In.) L	Wt. (Lbs.)	EACH
704-7510	75-100	100	4	$7\frac{3}{8}$	$5\frac{7}{8}$	8	**214.58**
704-7525	75-250	250	4	$7\frac{3}{8}$	$5\frac{7}{8}$	14	**229.79**
704-0500	75-500	500	$5\frac{3}{8}$	$8\frac{1}{2}$	$7\frac{1}{2}$	26	**277.20**
704-1000	75-1000	1000	$7\frac{5}{8}$	10	8	35	**439.66**

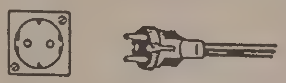


Fig. A

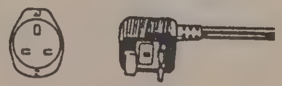


Fig. B

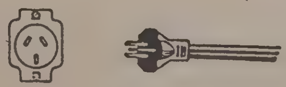


Fig. C

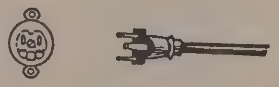


Fig. D

Power Cords Matched To Country Of Use

Stock No.	Mfr.'s Type	Fig.	Country of Use	EACH
704-7533	75C-3300	A	"Schuko" European (10 A Version of above both useable Brazil/Argentina)	**37.99**
704-7520	75C-2004	B	United Kingdom BS1363 (will not mate with BS546-Standard Prior to 1954)	**37.99**
704-7541	75C-4100	C	Australia/New Zealand	**37.99**
704-7537	75C-37030	D	North American Nema 5-15 (Japan, Vietnam and Phillipines)	**14.77**

Wire and Accessories

Page

- **Wire**
  - **3M**
    - Duct, Wire and Cable 968
    - Duct Accessories 968
    - Flat Cable (Ribbon Cable)
      - Color-Coded 966
      - Jacketed 966
      - Round Conductor 966
      - Round Jacket 966
      - Scotchflex 966
      - Shielded 966
      - Twisted Pair 966
    - Tubing, Heat Shrink
      - Adhesive Lined 967
      - Assortment Packs 967
      - Kits 967
      - Kynar 968
      - Neoprene 968
      - Polyolefin 967, 968
  - **Alpha**
    - Braid 983
    - Busbar 983
    - Coaxial Cables
      - CATV 973
      - IBM Cables 972
      - LAN Trunk Cables 973
      - Plenum Rated 974
      - Precision Video Coaxial Cable 977
      - Thin-Net 973
      - Video 977
      - Vinyl Insulation 972
    - Conduit 987
    - Connectors
      - BNC Coaxial Connectors 986
      - Conduit Tubing Connectors 987
    - Cords (See Section 9)
    - Data, Communication and Control Cables
      - Multiconductor
        - Braided Shield 975
        - Foil and Braid 978, 980
        - Foil Shielded 974, 975, 977, 978, 980
        - Unshielded 974, 980
      - Multi-Pair
        - Foil Shielded 974, 976, 978, 979, 980, 981
        - Unshielded 974, 982
    - Fire Alarm Cable 979
    - Flat Cable (Ribbon Cable)
      - Color-Coded Insulation and Grey Insulation 971
      - Cut Lengths 971
      - Grey 971
      - Round-to-Flat Cable 971
    - Heat Guns 985
    - Heat Shrink Hoods 985
    - Heat Shrink Tubing (See Tubing)
    - Hook-Up Wire
      - Kit 970
      - Kynar® 970
      - Mil Spec 969, 970
      - PVC 969, 970
      - Teflon® 970
      - Tefzel® 970
      - Test Lead 983
      - UL Rated 969, 970
    - Instrumentation Cables 981
    - Lacing Tapes and Twine 983
    - Level 3 Cable, Level 5 Cable 982
    - Local Area Network Cables (LAN) 972, 973
    - Microphone Cable 977
    - Portable Cords 977
    - Shielding Tape 983
    - Sleeving, Webbed 983
    - Telephone Cables 972, 977
    - Tools
      - Cable Strip 986
    - Transceiver Cables 976
    - Tubing
      - All Purpose PVC 987
      - Braided Polyester Sleeving 983, 987
      - Flexible, Non-Metallic 987
      - Spiral Wrap 987
      - Teflon 987
      - Webbed Sleeving 983, 987
      - Zipper Tubing 987
    - Tubing, Heat Shrinkable
      - Assortments and Kits 985
      - Highly Flame Retardant 984
      - Low Temperature Shrink 985
      - Markers 985
      - Special Material: Fluoropolymer, Kynar, Mylar, Neoprene, Nylon, Polyolefin, PVC, Shielded, Silico, Teflon, Vitron 984, 985, 986
      - Wrap 985
    - Twinaxial Cable 972, 976
    - Twisted Pair Cable 976
    - Video Cables 977
    - Xtra•Guard® 980
  - **AMP**
    - Ribbon Cable
      - Color Coded 989
      - IDC 988, 989
      - Round-to-Flat 989
      - Shielded/Jacketed 988, 989
  - **Belden**
    - Audio Cable
      - Broadcast and Instrumentation 996, 997, 999, 1002
      - Control 996, 997, 1003
      - Snake Cable 996
    - Bus Bar 992
    - Coaxial Cable
      - Broadcast 994, 995
      - High Temperature 994
      - Low Loss VHF-UHF 995
      - Low Triboelectric 994
      - MATV 994
      - Microwave 994
      - Twinaxial 995
      - Video 994
    - Communication Cables
      - Multiconductor
        - Shielded 992, 993, 996, 997, 998, 999, 1001, 1004
        - Unshielded 993, 997, 998, 1003, 1004
      - Multi-Pair
        - Individually Shielded 996, 997
        - Shielded 996, 997, 999, 1000, 1001, 1002, 1003, 1004
        - Twisted, Shielded 1001, 1002
        - Unshielded 996, 1002, 1003, 1004
    - Connectors
        - D-Subminiature 991
        - Profile Socket 991
    - Direct Burial 993
    - Duplex Primary Wire 992
    - Fire Alarm Cable 998, 999
    - Flat Cable (Ribbon Cable)
      - Pitch Prelabel 991
      - Rainbow Flat Cable 991
      - Ribbon Coaxial Flat Cable 991
      - Standard Flat Cable 991
      - Twisted Pairs 991
    - High Temperature Cable 993, 994, 1002
    - Hook-Up Wire
      - Kit 990
      - Mil Spec 990
      - PVC 990
      - Teflon® 990
      - UL Rated 990
    - Instrumentation Cable 993, 996, 997, 999, 1003, 1004
    - LAN 1003, 1004
    - Magnet Wire 992
    - Plenum Cable
      - Coaxial 1003
      - Shielded 998, 1003, 1004
      - Twinaxial 1003
      - Unshielded 1003
    - Portable Cordage 992
    - Power Cords (See Section 9)
    - Retractile Cord 1004
    - Ribbon Cable (See Flat Cable)
    - Shielding and Bonding Cable 992
    - Snake Cable 996
    - Speaker Wire 997
    - Test Prod Wire 992
    - Tray Cable 997, 998
    - Triaxial Cable 995
    - Trunk Cable 1003, 1004
    - Twinaxial Cable 995, 1004
  - **Dearborn Wire and Cable**
    - Braid, Tinned Copper 1008
    - Coaxial Cable 1008
    - High Temperature Cable 1008
    - High Voltage Wire 1006

For other products by these manufacturers, see listing in Section 1.

Wire and Accessories (Continued)

Page

- Hook-Up Wire
  - High Temperature ... 1005
  - Lead Wire ... 1005
  - Mil-Spec Hook-Up Wire ... 1005
  - UL Hook-Up Wire ... 1005
- Lacing Tapes and Twine ... 1006
- Magnet Wire ... 1006
- Multi-Conductor Cable ... 1007, 1008
- Multi-Pair Cable ... 1008
- Twinaxial Cable ... 1008

Ico-Rally
- Sleeving, ICO-FLEX Expandable ... 1009
- Tubing, Heat Shrinkable ... 1009

Olympic Wire and Cable
- Audio ... 1013, 1015, 1016
- Braid Cables ... 1010
- Braid Sleeving ... 1015
- Bus Bar ... 1010
- Coaxial Cable ... 1012
- Computer
  - Braid Shield Cables ... 1014
  - Ethernet ... 1018
  - IBM Compatible Cable ... 1018
  - Multi-Conductor ... 1013, 1014, 1016, 1017, 1018
  - Multi-Pair ... 1014, 1015, 1016, 1017
  - Shielded Pairs ... 1013, 1014, 1015, 1017
  - Single Pair ... 1013
- Control Cable ... 1016, 1017
- Direct Burial ... 1018
- Enduro ... 1018
- Extension Wire ... 1011
- Fire Alarm Cable ... 1012, 1017
- Hook-Up Wire
  - Teflon ... 1010
  - TFFN ... 1010
  - THHN ... 1010
  - UL Rated ... 1010
- Instrumentation Cables ... 1013
- Lamp Cord ... 1012
- Lead Wire ... 1011
- Modular Cord ... 1015
- Plenum Cables
  - Control Cable ... 1017
  - Level 5 ... 1018
  - Multi-Paired Individually-Shielded Cable ... 1017
  - Shielded ... 1017
  - Twinaxial Cable ... 1017
  - Unshielded ... 1017
- Retractile Cord ... 1011
- Sound and Control ... 1016
- Sound/Broadcast Cable ... 1013
- Speaker Wire ... 1010, 1012
- Telephone Wire
  - Inside Telephone Cables Type CM ... 1012
  - Station Type CM ... 1012
- Thermocouple Wire ... 1011
- Tubing, Heat Shrinkable Polyolefin ... 1015

Accessories

3M
- Adhesive Kits ... 1020
- Adhesive Systems ... 1022
- Adhesives ... 1021
- Bases, Cable Ties ... 1019
- Cable Ties ... 1019
- Embossing Tool ... 1019
- Identifying-Marking Tapes and Dispensers
  - Series SDR Numbered Tags ... 1019
  - Series SER Colored Tags ... 1019
  - Series SMP Marking Pens ... 1019
  - Series STD Tape Dispensers ... 1019
  - Series SWD Write-On Dispensers ... 1019
  - Wire Marker Books ... 1019
- Maintenance Chemicals ... 1022
- ScotchWeld™ Adhesive System ... 1022
- Shielding Tape Kit ... 1020
- Spray Adhesive ... 1021
- Tag Dispenser ... 1019
- Tapes
  - Duct ... 1020
  - Electrical ... 1020
  - Film ... 1021
  - Foam ... 1021
  - Friction ... 1019
  - Identifying ... 1019, 1020
  - Kapton™ ... 1021

Page

  - Lane Marking ... 1020
  - Mastic ... 1020
  - Plating ... 1021
  - Shielding ... 1020
  - Silicone ... 1019
  - Soldering ... 1021
  - Splicing, Rubber ... 1020
  - Transfer ... 1021
  - VHB ... 1021
- Vacuum Cleaner ... 1022

Kroy
- Case ... 1023
- Heat Shrink Tubing ... 1023
- Labelers ... 1023
- Power Adapters ... 1023

OK Industries
- Cut and Strip Tools ... 1024
- Hand Wrapping/Unwrapping Tools ... 1024
- Lead Bender and Crimper ... 1024
- Lead Cut and Clinch Tool ... 1024
- Panels, Socket Wrap ... 1024
- Wire Dispensers ... 1024
- Wire Wrapping Tools ... 1024
- Wrapping Wire ... 1024

T & B Electrical Division
- Cable Ties
  - Bolt/Screw Holes ... 1026
  - Identification ... 1026
  - Mounting Bases ... 1026
  - Self-Locking ... 1026
  - TY-FAST™ ... 1027
  - TY-RAP® ... 1026
- Connector, Wire Nut ... 1027
- Fiber Fishing Rod System ... 1027
- Identification System ... 1025
- Lubricant, Wire Pulling ... 1027
- Marker Books ... 1025
- Marker Cards ... 1025
- Marker Pens ... 1026
- Marker Printer and Refill Rolls ... 1025
- Receptacle Tester ... 1027
- Steel Fishing Tape ... 1027
- Tools
  - Hand Tools for Cable Ties ... 1026
  - Strippers and Rippers ... 1027
- Wire Nut ... 1027

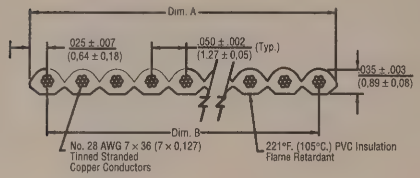
Tyton Hellerman
- Brackets ... 1030
- Cable Clamps ... 1029
- Cable Management Panel ... 1030
- Duct
  - Covers ... 1031
  - Wire ... 1031, 1033
- Grommets ... 1029
- Handicuff Flexible Restraints ... 1029
- Labels/Tags ... 1032, 1033
- Laser Tags ... 1033
- Modular Networking Frames ... 1030
- Mounting Bases ... 1028
- Outlets ... 1030
- Patch Panels ... 1030
- Rack Mount Power Strips ... 1030
- Shelves ... 1030
- Software ... 1033
- Spiral Wrap ... 1029
- Surface Raceway ... 1031
- Tapes, Electrical ... 1029
- Ties
  - Cable and Wire Ties ... 1028, 1030
  - Extended Length ... 1028
  - Identification ... 1028
  - Kit ... 1028
  - Mounting ... 1028
  - Releasable ... 1028
  - Tools ... 1028, 1029
  - Velcro Grip ... 1030
- Tubing, Convoluted ... 1029
- Wire Markers ... 1032

Wiremold
- Device Boxes ... 1034
- Electrical Raceway ... 1034
- Fittings ... 1034
- Surface Raceway ... 1034

For other products by these manufacturers, see listing in Section 1.

Scotchflex Flat Cable

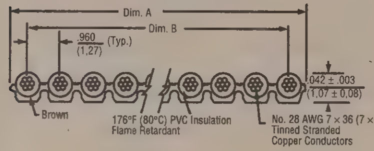
Flat Cable



Easily zippable gray flat cable is on .050" (1.27 mm) spacing with #1 conductor colored red, 28 AWG, 7/36" stranded tinned copper wire; flame retardant PVC insulator. **Voltage Rating:** 300 V. **Insulation Material:** .1 × 10¹⁰ ohms (3 m). **Nominal Thickness:** .035".

Stock No.	Mfr.'s Type	No. of Conductors	Width (In.)	PER SPOOL/ 100'
617-4212	3365/9	9	0.45	19.00
617-4213	3365/10	10	0.50	21.10
617-4214	3365/14	14	0.70	29.52
617-4215	3365/16	16	0.80	33.72
617-4216	3365/20	20	1.00	42.18
617-4261	3365/25	25	1.05	52.72
617-4217	3365/26	26	1.30	54.82
617-4218	3365/34	34	1.70	71.68
617-4219	3365/37	37	1.85	78.02
617-4220	3365/40	40	2.00	84.34
617-4221	3365/50	50	2.50	106.48
617-4222	3365/60	60	3.00	126.50

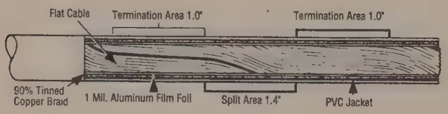
Color-Coded Flat Cable



Easily zippable on .050" (1.27 mm) spacing with a 10 color repeat allowing for wire identification. 28 AWG, 7/36" stranded tinned copper wire; flame retardant PVC insulator. **Voltage Rating:** 300 V. **Insulation Material:** 1 × 10¹⁰ Ohms/10' (3 m). **Nominal Thickness:** .042".

Stock No.	Mfr.'s Type	No. of Conductors	Width (In.)	PER SPOOL/ 100'
617-4223	3302/9	9	0.45	29.36
617-4224	3302/10	10	0.50	32.64
617-4225	3302/14	14	0.70	45.70
617-4226	3302/16	16	0.80	52.24
617-4227	3302/20	20	1.00	65.28
617-4262	3302/25	25	1.05	81.60
617-4228	3302/26	26	1.30	84.86
617-4229	3302/34	34	1.70	110.94
617-4230	3302/37	37	1.80	120.76
617-4231	3302/40	40	2.00	130.54
617-4232	3302/50	50	2.50	163.18
617-4233	3302/60	60	3.00	195.82

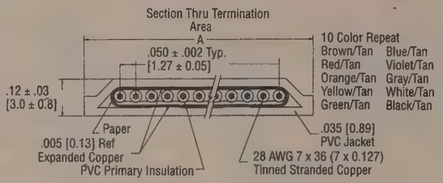
Round, Jacketed, Flat Cable with Shield



The inner 3365 Series gray flat cable has repeating areas of split and unsplit lengths to accommodate discrete or flat cable terminations. The flat cable is folded, wrapped with an aluminum/polyester film foil and then enclosed in a round, tinned copper braid for complete EMI/ESD protection. The outer jacket is flexible PVC. Combines the flexibility of round cable with the labor/cost efficiency of flat cable.

Stock No.	Mfr.'s Type	No. of Conductors	PER SPOOL/ 100'
617-4248	3659/9	9	101.14
617-4249	3359/10	10	105.88
617-4250	3359/15	15	119.68
617-4251	3659/20	20	128.86
617-4253	3659/25	25	142.42
617-4254	3659/26	26	147.28
617-4255	3659/34	34	165.70
617-4257	3659/37	37	174.90
617-4258	3659/40	40	179.50
617-4259	3659/50	50	207.12

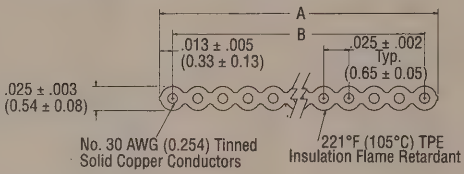
.050" Shielded/Jacketed Flat Cable



Meets external wiring requirements of National Electrical Code, Article 725 (CL2). CSA Certified AWM for external wiring. Flat jacket and expanded copper mesh shield provides durability, superior EMI and ESD protection. Provides better signal integrity and grounding than aluminum/mylar shielded cables. Jacket imprinted for flat section identification. **Jacket Material:** Polyvinyl chloride (PVC). **Color:** Black. **Primary Material:** PVC. **Conductors:** 28 AWG 7 × 36 (7 × 0.127) tinned stranded copper. **Shielding:** Expanded copper.

Stock No.	Mfr.'s Type	No. of Conductors	Width (In.)	PER SPOOL/ 100'
617-1720	1785/20	20	1.27	242.44
617-1726	1785/26	26	1.62	315.16
617-1734	1785/34	34	1.98	412.14
617-1740	1785/40	40	2.28	484.88
617-1750	1785/50	50	2.78	606.10
617-1760	1785/60	60	3.40	727.30

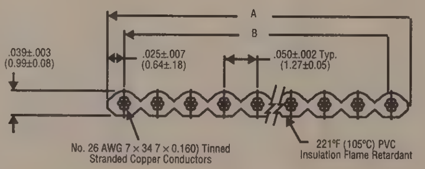
.025" Round Conductor Flat Cable



Close spacing permits higher signal density. TPE insulation provides excellent transmission properties at low cost. 30 AWG conductors on .025 inch spacing allows for mass termination. **Insulation Material:** Thermoplastic Elastomer (TPE). **Color:** Gray. **Marking:** Blue edge. **Conductors:** 30 AWG (0.254) tinned solid copper.

Stock No.	Mfr.'s Type	No. of Conductors	Dimensions (In.)		PER SPOOL/ 100'
			A	B	
617-1700	3749/20	20	.500 ± .006	.475 ± .004	49.86
617-1702	3749/26	26	.650 ± .006	.625 ± .004	[illegible]4.92
617-1704	3749/34	34	.850 ± .009	.825 ± .006	84.90
617-1706	3749/36	36	.900 ± .009	.875 ± .006	89.78
617-1708	3749/40	40	1.000 ± .009	.975 ± .006	99.88
617-1710	3749/50	50	1.250 ± .009	1.225 ± .006	124.86
617-1712	3749/60	60	1.500 ± .012	1.475 ± .009	149.84
617-1714	3749/68	68	1.700 ± .012	1.675 ± .009	169.58
617-1716	3749/80	80	2.000 ± .015	1.975 ± .011	199.50

.050" Round Conductor Flat Cable


A
B
.039±.003
(0.99±0.08)
.025±.007
(0.64±.18)
.050±.002 Typ.
(1.27±0.05)
No. 26 AWG 7 x 34 7 x 0.160) Tinned
Stranded Copper Conductors
221°F (105°C) PVC
Insulation Flame Retardant

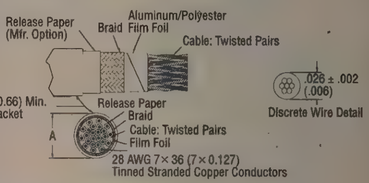
Zippable gray flat cable is on .05" spacing #1 conductor marked red, 26 AWG, 7 × 34 tin stranded copper. **Insulation Material:** Polyvinyl chloride (PVC). **Voltage Rating:** 300 V. **Insulation Resistance:** >1 × 10¹⁰ ohms/10' (3 m).

Stock No.	Mfr.'s Type	No. of Conductors	Width (In.)	PER SPOOL/ 100'
617-6000	3801/9	9	0.45	23.74
617-6001	3801/10	10	0.50	26.36
617-6002	3801/14	14	0.70	36.92
617-6003	3801/16	16	0.80	42.18
617-6004	3801/20	20	1.00	52.74
617-6005	3801/24	24	1.20	63.28
617-6006	3801/25	25	1.25	65.92
617-6007	3801/26	26	1.30	68.56
617-6008	3801/34	34	1.70	89.66
617-6009	3801/37	37	1.85	97.56
617-6010	3801/40	40	2.00	105.48
617-6011	3801/50	50	2.50	131.84
617-6012	3801/60	60	3.00	158.20

Round, Shielded/Jacketed, Discrete Wire Cable

— NEW —

28 AWG Stranded, Twisted Pair, PVC/PVC

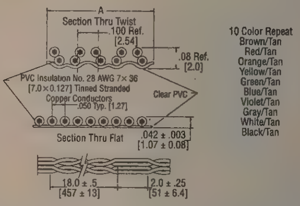


- ► **Color: Beige (Gray Available Special Order)**
- ► **Wires Are Color-Coded for Easy Identification**

Stock No.	Mfr.'s Type	No. of Conductors	No. of Pairs	Dimension A (±.02)	PER ROLL/ 300'
617-3014	3600B/14	14	7	0.22"	196.71
617-3020	3600B/20	20	10	0.24"	245.89
617-3026	3600B/26	26	13	0.25"	275.40
617-3036	3600B/36	36	18	0.29"	350.88
617-3040	3600B/40	40	20	0.30"	382.50
617-3050	3600B/50	50	25	0.32"	435.76
617-3068	3600B/68	68	34	0.36"	566.49
617-3080	3600B/80	80	40	0.39"	444.15*
617-3100	3600B/100	100	50	0.44"	574.56*

*200 ft. roll.

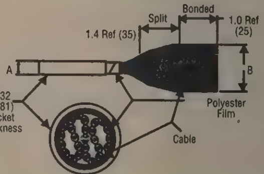
.050" Twisted Pair Flat Cable



Can be mass terminated to broad line of IDC connectors. Provides reduced crosstalk in balanced drive applications. 28 AWG stranded wire provides flexibility. 10 color repeat. **Insulation Material:** Polyvinyl chloride (PVC). **Color:** 10 color repeat with tan common, clear carrier. **Conductors:** 28 AWG 7 × 36 (7 × 0.127) tinned stranded copper.

Stock No.	Mfr.'s Type	No. of Conductors	Width (In.)	PER SPOOL/ 100'
617-1762	1700/10	10	0.50	28.00
617-1764	1700/14	14	0.70	39.20
617-1766	1700/16	16	0.80	44.80
617-1768	1700/20	20	1.00	56.00
617-1770	1700/26	26	1.30	72.80
617-1772	1700/34	34	1.70	95.20
617-1774	1700/36	36	1.80	100.80
617-1776	1700/40	40	2.00	112.00
617-1778	1700/50	50	2.50	140.00
617-1780	1700/60	60	3.00	168.00
617-1782	1700/64	64	3.20	179.20

.050" Round Jacketed Flat Cable



Round construction permits easier routing and improved air flow. 28 AWG wire on .05" centers. **Jacket Material:** Polyvinyl chloride (PVC). **Voltage Rating:** 150 V. **Insulation Resistance:** >1 × 10¹⁰ ohms/10' (3 m). **Jacket Color:** Black.

Stock No.	Mfr.'s Type	No. of Conductors	Width (In.)	PER SPOOL/ 100'
617-6013	3759/9	9	.21	89.00
617-6014	3759/10	10	.21	93.16
617-6015	3759/14	14	.25	101.26
617-6016	3759/16	16	.25	109.36
617-6017	3759/20	20	.27	113.42
617-6018	3759/24	24	.32	121.50
617-6019	3759/25	25	.32	125.32
617-6020	3759/26	26	.32	129.62
617-6021	3759/34	34	.36	145.82
617-6022	3759/37	37	.38	153.92
617-6023	3759/40	40	.38	157.94
617-6024	3759/50	50	.46	182.28
617-6025	3759/60	60	.50	204.34

FP-301 Multi-Purpose Flexible Polyolefin Heat Shrink Tubing

FP-301 offers an excellent balance of physical, electrical and chemical properties for protecting a wide variety of electronic, electrical, and mechanical applications, such as cable splices, wire marking, harness covering, strain relief, and component packaging. Meets UL/CSA requirements for flame retardance (except Clear), 2:1 shrink ratio, rated for –55°C to +135°C (+275°F) and 600 V continuous operation. Meets MIL-I-23053/5 Class 1 or 2 requirements. **Minimum Shrink Temperature:** 121°C. **Colors Available:** 1-Black, 4-Clear (available in all put-ups), 2-Red, 3-White, 5-Yellow, 6-Blue, 7-Green (available in selected sizes of 4-foot lengths and in color assortments). Insert the color number where N appears in the stock number. UL E39100, CSA LR38227.

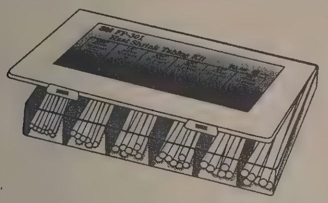
Mfr.'s Type	Min. Supplied ID (In.)	Max. Recovered ID (In.)	Recovered Wall Thickness (In.)	Small Spool			48" Lengths			6" Lengths		
				Length	Stock No.	PER SPOOL	Length	Stock No.	PER BOX	Length	Stock No.	PER PACK
FP-301 3⁄64"	.046	.023	.016	100'	**617-030N**	**17.94**	100'	**617-031N**	**16.52**	20'	**617-032N**	**7.55**
FP-301 1⁄16"	.063	.031	.017	100'	**617-033N**	**17.74**	100'	**617-034N**	**16.85**	19'	**617-035N**	**7.55**
FP-301 3⁄32"	.093	.046	.020	100'	**617-036N**	**18.83**	100'	**617-037N**	**19.13**	18'	**617-038N**	**7.55**
FP-301 ⅛"	.125	.062	.020	100'	**617-039N**	**20.11**	100'	**617-040N**	**20.23**	17'	**617-041N**	**7.55**
FP-301 3⁄16"	.187	.093	.020	100'	**617-042N**	**23.95**	100'	**617-043N**	**24.56**	15'	**617-044N**	**7.55**
FP-301 ¼"	.250	.125	.025	100'	**617-045N**	**29.28**	48'	**617-046N**	**15.52**	13'	**617-047N**	**7.55**
FP-301 ⅜"	.375	.187	.025	100'	**617-048N**	**32.41**	48'	**617-049N**	**17.28**	12'	**617-050N**	**7.55**
FP-301 ½"	.500	.250	.025	100'	**617-051N**	**36.25**	48'	**617-052N**	**18.69**	10'	**617-053N**	**7.55**
FP-301 ¾"	.750	.375	.030	50'	**617-054N**	**25.16**	48'	**617-055N**	**25.12**	7'	**617-056N**	**7.55**
FP-301 1"	1.000	.500	.035	50'	**617-057N**	**36.35**	20'	**617-058N**	**14.63**	5'	**617-059N**	**7.55**
FP-301 1½"	1.500	.750	.040	50'	**617-060N**	**69.92**	20'	**617-061N**	**27.26**	3'	**617-062N**	**7.55**
FP-301 2"	2.000	1.000	.045	50'	**617-063N**	**96.55**	20'	**617-064N**	**37.66**	2'	**617-065N**	**7.55**
FP-301 3"	3.000	1.500	.050	—	—	—	8'	**617-066N**	**30.39**	1.5'	**617-067N**	**7.55**
FP-301 4"	4.000	2.000	.055	—	—	—	8'	**617-068N**	**39.46**	1'	**617-069N**	**7.55**

FP-301 Size Assortments. 6" pieces. Black only.

Stock No.	Mfr.'s Type	Sizes	Description	PER PACK
617-0250	3⁄64-3⁄16 AST	3⁄64"-3⁄16"	6 pcs. each of 5 sizes	**7.55**
617-0252	¼-¾ AST	¼"-¾"	4 pcs. each of 4 sizes	**7.55**
617-0254	1-4 AST	1"-4"	2 pcs. each of 5 sizes	**18.12**

FP-301 Color Assortments. 6" pieces. 7 colors per pack. **Colors:** Black, clear, white, red, yellow, blue, green.

617-0260	3⁄32" Color AST	3⁄32"	5 pcs. per color	**7.55**
617-0262	⅛" Color AST	⅛"	4 pcs. per color	**7.55**
617-0264	3⁄16" Color AST	3⁄16"	3 pcs. per color	**7.55**
617-0266	¼" Color AST	¼"	3 pcs. per color	**7.55**
617-0268	⅜" Color AST	⅜"	2 pcs. per color	**7.55**
617-0270	½" Color AST	½"	2 pcs. per color	**7.55**



3M FP-301 Heat Shrink Tubing Kits

Assorted Color Kit

Kit contains over 66 feet of tubing; total of 133 pieces of 6 inch lengths. Seven different colors: Black, red, white, yellow, blue, green, and clear. Kit contains the following sizes: 3/32" (5 of each color), 1/8" (4 of each color), 3/16" (3 of each color), 1/4" (3 of each color), 3/8" (2 of each color), 1/2" (2 of each color).
617-8800. FP301. Tubing Kit. .... **EACH 54.93**

Black Kit

Kit contains 51 feet of black tubing; total of 102 pieces of 6 inch lengths. The following sizes are included within the kit: 3/16" (30 pieces), 1/4" (28 pieces), 3/8" (20 pieces), 1/2" (14 pieces), 3/4" (6 pieces), and 1" (4 pieces).
617-8801. FP301. Tubing Kit. Black.................... **EACH 54.93**

FP-301VW Highly Flame Retardant Flexible Polyolefin Heat Shrink Tubing

FP-301VW offers the same physical, electrical, and chemical properties as FP-301 with an additional level of flame retardant to meet the requirements of UL VW-1, CSA OFT, and MIL-I-23053/5 Class 3. Black only. Comes printed with UL/CSA information. UL E39100, CSA LR38227.

Mfr.'s Type	Min. Supplied ID (In.)	Max. Recovered ID (In.)	Recovered Wall Thickness (In.)	48" Lengths			6" Lengths		
				Length	Stock No.	PER BOX	Length	Stock No.	PER PACK
FP-301VW 3⁄64"	.046	.023	.016	100'	**617-0720**	**17.11**	20'	**617-0750**	**7.77**
FP-301VW 1⁄16"	.063	.031	.017	100	**617-0722**	**17.46**	19'	**617-0752**	**7.77**
FP-301VW 3⁄32"	.093	.046	.020	100'	**617-0724**	**19.81**	18'	**617-0754**	**7.77**
FP-301VW ⅛"	.125	.062	.020	100'	**617-0726**	**20.95**	17'	**617-0756**	**7.77**
FP-301VW 3⁄16"	.187	.093	.020	100'	**617-0728**	**25.44**	15'	**617-0758**	**7.77**
FP-301VW ¼"	.250	.125	.025	48'	**617-0730**	**16.07**	13'	**617-0760**	**7.77**
FP-301VW ⅜"	.375	.187	.025	48'	**617-0732**	**17.91**	12'	**617-0762**	**7.77**
FP-301VW ½"	.500	.250	.025	48'	**617-0734**	**19.37**	10'	**617-0764**	**7.77**
FP-301VW ¾"	.750	.375	.030	48'	**617-0736**	**26.02**	7'	**617-0766**	**7.77**
FP-301VW 1"	1.000	.500	.035	20'	**617-0738**	**15.14**	5'	**617-0768**	**7.77**
FP-301VW 1½"	1.500	.750	.040	20'	**617-0740**	**28.22**	3'	**617-0770**	**7.77**
FP-301VW 2"	2.000	1.000	.045	20'	**617-0742**	**38.99**	2'	**617-0772**	**7.77**
FP-301VW 3"	3.000	1.500	.050	8'	**617-0744**	**31.47**	1.5'	**617-0774**	**7.77**
FP-301VW 4"	4.000	2.000	.055	8'	**617-0746**	**40.87**	1'	**617-0776**	**7.77**

FP-301VW Size Assortments. 6" pieces. Black only.

Stock No.	Mfr.'s Type	Sizes	Description	PER PACK
617-0280	3⁄64-3⁄16 AST	3⁄64"-3⁄16"	6 pcs. each of 5 sizes	**7.77**
617-0282	¼-¾ AST	¼"-¾"	4 pcs. each of 4 sizes	**7.77**
617-0284	1-4 AST	1"-4"	2 pcs. each of 5 sizes	**18.64**

MW Adhesive Lined, 2.5:1, Semi-Rigid Polyolefin Heat Shrink Tubing

MW encapsulates and seals in one step in the same way as EPS-200. Semi-rigid outer wall gives superior abrasion and cut-through resistance. 2.5:1 shrink ratio, –55°C to +100°C continuous operating temperature, meets MIL-I-23053/6 Class 1. Black only.

Mfr.'s Type	Min. Supplied ID (In.)	Max. Recovered ID (In.)	Recovered Wall Thickness (In.)	48" Lengths			6" Lengths		
				Length	Stock No.	PER BOX	Length	Stock No.	PER PACK
MW ⅛"	.125	.023	.038	100'	**617-0900**	**79.43**	14'	**617-0910**	**15.94**
MW 3⁄16"	.187	.060	.043	48'	**617-0901**	**46.96**	12'	**617-0911**	**15.94**
MW ¼"	.250	.080	.047	48'	**617-0902**	**58.27**	10'	**617-0912**	**15.94**
MW ⅜"	.375	.130	.050	48'	**617-0903**	**66.07**	8'	**617-0913**	**15.94**
MW ½"	.500	.195	.055	48'	**617-0904**	**74.50**	7'	**617-0914**	**15.94**
MW ¾"	.750	.313	.065	20'	**617-0905**	**50.43**	6'	**617-0915**	**15.94**
MW 1"	1.000	.400	.075	20'	**617-0906**	**63.83**	4'	**617-0916**	**15.94**

EPS-200 Adhesive Lined, 2:1, Flexible Polyolefin Heat Shrink Tubing

EPS-200 features one step environmental protection of electronic, electrical, automotive and marine wiring. As the flame retardant, flexible polyolefin outer wall shrinks to a skin-tight fit, the hot melt adhesive is pushed into voids and crevices. Upon cooling the adhesive solidifies and bonds to form a permanent moisture proof barrier. 2:1 shrink ratio, jacket meets UL 224 all tubing flame test, –55°C to +100°C continuous operating temperature, meets MIL-I-23053/6 Class 2. Black only.

Mfr.'s Type	Min. Supplied ID (In.)	Max. Recovered ID (In.)	Recovered Wall Thickness (In.)	48" Lengths			6" Lengths		
				Length	Stock No.	PER BOX	Length	Stock No.	PER PACK
EPS-200 ⅛"	.125	.062	.027	100'	**617-0875**	**61.83**	14'	**617-0885**	**12.75**
EPS-200 3⁄16"	.187	.093	.027	48'	**617-0876**	**32.31**	12'	**617-0886**	**12.75**
EPS-200 ¼"	.250	.125	.030	48'	**617-0877**	**40.44**	10'	**617-0887**	**12.75**
EPS-200 ⅜"	.375	.187	.031	48'	**617-0878**	**45.43**	8'	**617-0888**	**12.75**
EPS-200 ½"	.500	.250	.032	48'	**617-0879**	**52.33**	7'	**617-0889**	**12.75**
EPS-200 ¾"	.750	.375	.037	20'	**617-0880**	**29.82**	6'	**617-0890**	**12.75**
EPS-200 1"	1.000	.500	.046	20'	**617-0881**	**43.83**	4'	**617-0891**	**12.75**
EPS-200 1½"	1.500	.750	.049	20'	**617-0882**	**76.67**	2'	**617-0892**	**12.75**
EPS-200 2"	2.000	1.000	.060	8'	**617-0883**	**49.07**	1'	**617-0893**	**12.75**

EPS-300 Adhesive Lined, 3:1, Flexible Polyolefin Heat Shrink Tubing

The meltable inner wall of EPS-300 forms a moisture proof barrier in one step in the same way as EPS-200, making it the product of choice for outdoor, automotive, or marine applications. The 3:1 shrink ratio helps to seal uneven surfaces such as connectors and components. Jacket meets UL 224 all tubing flame test, –55°C to +110°C continuous operating temperature, meets MIL-I-23053/6 Class 3. Black only.

Mfr.'s Type	Min. Supplied ID (In.)	Max. Recovered ID (In.)	Recovered Wall Thickness (In.)	48" Lengths			6" Lengths		
				Length	Stock No.	PER BOX	Length	Stock No.	PER PACK
EPS-300 3⁄16"	.187	.062	.040	48'	**617-0920**	**58.03**	12'	**617-0930**	**21.40**
EPS-300 ¼"	.250	.080	.040	48'	**617-0921**	**71.85**	10'	**617-0931**	**21.40**
EPS-300 ⅜"	.375	.120	.055	48'	**617-0922**	**81.29**	8'	**617-0932**	**21.40**
EPS-300 ½"	.500	.160	.070	48'	**617-0923**	**95.00**	7'	**617-0933**	**21.40**
EPS-300 ¾"	.750	.250	.085	20'	**617-0924**	**55.69**	6'	**617-0934**	**21.40**
EPS-300 1"	1.000	.320	.100	20'	**617-0925**	**82.35**	4'	**617-0935**	**21.40**
EPS-300 1½"	1.500	.510	.100	20'	**617-0926**	**129.94**	2'	**617-0936**	**21.40**

EPS-400 Adhesive Lined, 4:1, Semi-Rigid Polyolefin Heat Shrink Tubing

EPS-400 provides one step environmental protection in the same way as EPS-200, but a thicker meltable makes it ideal for sealing multiple wire bundles. The 4:1 shrink ratio helps seal uneven surfaces such as in-line components. A heavy outer wall provides tough mechanical protection. –55°C to +110°C continuous operating temperature. Black only.

Mfr.'s Type	Min. Supplied ID (In.)	Max. Recovered ID (In.)	Recovered Melt Wall (In.)	Recovered Outer Wall (In.)	48" Lengths			6" Lengths		
					Length	Stock No.	PER BOX	Length	Stock No.	PER PACK
EPS-400 .300	.300	.060	.033	.028	48'	**617-0970**	**93.89**	12'	**617-0975**	**25.57**
EPS-400 .350	.350	.080	.038	.033	48'	**617-0971**	**99.68**	10'	**617-0976**	**25.57**
EPS-400 .450	.450	.105	.043	.053	48'	**617-0972**	**116.47**	8'	**617-0977**	**25.57**
EPS-400 .700	.700	.175	.060	.055	20'	**617-0973**	**68.31**	7'	**617-0978**	**25.57**

VFP-876 Very Flexible Low Shrink Temperature Polyolefin Heat Shrink Tubing

VFP-876 offers the same physical, electrical, and chemical properties as FP-301 with two additional features: 100°C shrink temperature (versus 121°C) to minimize damage on temperature sensitive components, and extra flexibility for insulating flexible wire bundles. Meets MIL-R-46846 Type V. Black only. UL E39100, CSA LR38227.

Mfr.'s Type	Min. Supplied ID (In.)	Max. Recovered ID (In.)	Recovered Wall Thickness (In.)	48" Lengths			6" Lengths		
				Length	Stock No.	PER BOX	Length	Stock No.	PER PACK
VFP-876 3/64"	.046	.023	.016	100'	617-0780	21.94	20'	617-0810	7.27
VFP-876 1/16"	.063	.031	.017	100'	617-0782	23.44	19'	617-0812	7.27
VFP-876 3/32"	.093	.046	.020	100'	617-0784	23.91	18'	617-0814	7.27
VFP-876 1/8"	.125	.062	.020	100'	617-0786	25.76	17'	617-0816	7.27
VFP-876 3/16"	.187	.093	.020	100'	617-0788	31.23	15'	617-0818	7.27
VFP-876 1/4"	.250	.125	.025	48'	617-0790	19.19	13'	617-0820	7.27
VFP-876 3/8"	.375	.187	.025	48'	617-0792	21.38	12'	617-0822	7.27
VFP-876 1/2"	.500	.250	.025	48'	617-0794	25.50	10'	617-0824	7.27
VFP-876 3/4"	.750	.375	.030	48'	617-0796	32.16	7'	617-0826	7.27
VFP-876 1"	1.000	.500	.035	20'	617-0798	19.85	5'	617-0828	7.27
VFP-876 1½"	1.500	.750	.040	20'	617-0800	33.26	3'	617-0830	7.27
VFP-876 2"	2.000	1.000	.045	20'	617-0802	44.84	2'	617-0832	7.27

SR-350 Semi-Rigid Polyolefin Heat Shrink Tubing

SR-350 offers superior cut through and abrasion resistance as well as excellent physical, electrical, and chemical properties. Used for strain relief and insulating mechanically weak or susceptible points such as solder joints, wire splices and terminations. Printed easily, 2:1 shrink ratio, UL recognized for flame retardance and 600V, –55°C to +135°C continuous operating temperature, meets MIL-I-23053/6. Black only. UL E39100.

Mfr.'s Type	Min. Supplied ID (In.)	Max. Recovered ID (In.)	Recovered Wall Thickness (In.)	48" Lengths			6" Lengths		
				Length	Stock No.	PER BOX	Length	Stock No.	PER PACK
SR-350 3/64"	.046	.023	.020	100'	617-0840	33.14	20'	617-0860	8.69
SR-350 1/16"	.063	.031	.020	100'	617-0842	34.30	19'	617-0862	8.69
SR-350 3/32"	.093	.046	.020	100'	617-0844	33.44	18'	617-0864	8.69
SR-350 1/8"	.125	.062	.020	100'	617-0846	40.62	17'	617-0866	8.69
SR-350 3/16"	.187	.093	.020	100'	617-0848	46.43	15'	617-0868	8.69
SR-350 1/4"	.250	.125	.020	48'	617-0850	26.34	13'	617-0870	8.69
SR-350 3/8"	.375	.187	.020	48'	617-0852	28.06	12'	617-0872	8.69

Kynar* Modified Polyvinylidene Fluoride (PVDF) Heat Shrink Tubing

Kynar is an excellent insulation for extremes in temperature or environment. Kynar is flame retardant and is rated for continuous operation from –55°C to +175°C. PVDF fluoropolymer makes it resistant to corrosive chemicals, solvents and oils, as well as mechanically tough for cut-through and abrasion resistance. Rigidity and transparency make it a good choice for strain relief and identification. 2:1 shrink ratio, UL recognized for VW-1, meets MIL-I-23053/8. Clear only. UL E39100.

*Kynar — Pennwalt Chemical.

Mfr.'s Type	Min. Supplied ID (In.)	Max. Recovered ID (In.)	Recovered Wall Thickness (In.)	48" Lengths			6" Lengths		
				Length	Stock No.	PER BOX	Length	Stock No.	PER PACK
KYNAR 3/64"	.046	.023	.010	100'	617-0960	61.88	15'	617-0940	11.84
KYNAR 1/16"	.063	.031	.010	100'	617-0962	63.48	14'	617-0941	11.84
KYNAR 3/32"	.093	.046	.010	100'	617-0963	67.90	13'	617-0942	11.84
KYNAR 1/8"	.125	.062	.010	100'	617-0964	73.46	12'	617-0943	11.84
KYNAR 3/16"	.187	.093	.010	48'	617-0965	57.34	9'	617-0944	11.84
KYNAR 1/4"	.250	.125	.012	48'	617-0966	70.73	7'	617-0945	11.84
KYNAR 3/8"	.375	.187	.012	48'	617-0967	85.16	6'	617-0946	11.84
KYNAR 1/2"	.500	.250	.012	20'	617-0968	53.23	4'	617-0947	11.84
KYNAR 3/4"	.750	.375	.017	20'	617-0969	102.41	2'	617-0948	11.84

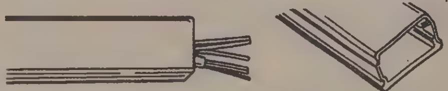
NST Modified Polychloroprene (Neoprene*) Flexible Heat Shrink Tubing

NST is particularly useful for fabrication and repair of flexible rubber harnesses, wire bundles, and for hydraulic couplings. Its superior cut-through and abrasion resistance allow use in heavy duty applications such as drop lines, drag lines, and industrial equipment cable. Excellent oil resistance make it ideal for automotive, aircraft, and construction equipments. Maintains its flexibility and resistance to vibration at temperatures down to –70°C and up to +121°C. 2:1 shrink ratio, meets MIL-I-23053/1 Class 1 and 2, and MIL-R-46846 Type I Class 1. Black only.

*Neoprene — E.I. Du Pont.

Stock No.	Mfr.'s Type	Min. Supplied ID (In.)	Max. Recovered ID (In.)	Recovered Wall Thickness (In.)	Spool Length	PER SPOOL
617-0950	1/4"	.250	.125	.035	100'	73.96
617-0951	3/8"	.375	.187	.040	100'	82.76
617-0952	1/2"	.500	.250	.048	100'	93.38
617-0953	3/4"	.750	.250	.085	100'	124.61
617-0954	1"	1.000	.500	.070	100'	187.04
617-0955	1½"	1.500	.510	.100	50'	166.34

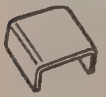
Communications Wire and Cable Duct

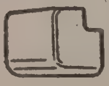


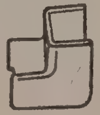
This duct has an easily installed one-piece design with a unique top-opening hinge that can be opened and closed thousands of times with no stress cracking or discoloration. The modern symmetrical design means fewer components and hides the self-locking latch. Constructed of 94V-0 UL Listed material, with strong foam-backed acrylic adhesive. 3M wiring duct is available in three sizes and has numerous accessories. White and grey are also available from 3M.

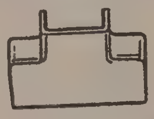
Stock No.	Mfr.'s Type	Dimensions W × H × L	PER PKG./5
617-1100	801-6I-SP Ivory	¾" × ½" × 6'	28.90
617-1102	801-6A-SP Ash	¾" × ½" × 6'	28.90
617-1104	802-6I-SP Ivory	1¼" × ¾" × 6'	41.14
617-1106	802-6A-SP Ash	1¼" × ¾" × 6'	41.14
617-1108	803-6I-SP Ivory	1¾" × 1¼" × 6'	61.83
617-1110	803-6A-SP Ash	1¾" × 1¼" × 6'	61.83

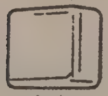
Duct Accessories

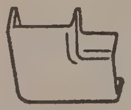

A

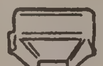

B

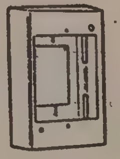

C


D


E


F


G


H

3M duct accessories are constructed of 94V-0 UL Listed materials, snap into place and eliminate special cuts to speed installation.

Joint Covers — Fig. A

Stock No.	Mfr.'s Type	Color	For Duct Number	EACH		
				1-24	25-49	50-99
617-1120	801I-JC	Ivory	801-6I-SP	1.06	.98	.91
617-1122	801A-JC	Ash	801-6A-SP	1.06	.98	.91
617-1126	802I-JC	Ivory	802-6I-SP	1.20	1.10	1.02
617-1128	802A-JC	Ash	802-6A-SP	1.20	1.10	1.02
617-1132	803I-JC	Ivory	803-6I-SP	1.33	1.23	1.14
617-1134	803A-JC	Ash	803-6A-SP	1.33	1.23	1.14

Outside Corners — Fig. B

617-1140	801I-OC	Ivory	801-6I-SP	1.06	.98	.91
617-1142	801A-OC	Ash	801-6A-SP	1.06	.98	.91
617-1146	802I-OC	Ivory	802-6I-SP	1.19	1.10	1.02
617-1148	802A-OC	Ash	802-6A-SP	1.19	1.10	1.02
617-1152	803I-OC	Ivory	803-6I-SP	1.33	1.23	1.14
617-1156	803A-OC	Ash	803-6A-SP	1.33	1.23	1.14

Inside Corners — Fig. C

617-1160	801I-IC	Ivory	801-6I-SP	1.06	.98	.91
617-1162	801A-IC	Ash	801-6A-SP	1.06	.98	.91
617-1166	802I-IC	Ivory	802-6I-SP	1.19	1.10	1.02
617-1168	802A-IC	Ash	802-6A-SP	1.19	1.10	1.02
617-1172	803I-IC	Ivory	803-6I-SP	1.33	1.23	1.14
617-1176	803A-IC	Ash	803-6A-SP	1.33	1.23	1.14

Tees — Fig. D

Stock No.	Mfr.'s Type	Color	For Duct Number	EACH		
				1-24	25-49	50-99
617-1180	801I-T	Ivory	801-6I-SP	1.06	.98	.91
617-1182	801A-T	Ash	801-6A-SP	1.06	.98	.91
617-1186	802I-T	Ivory	802-6I-SP	1.19	1.10	1.02
617-1188	802A-T	Ash	802-6A-SP	1.19	1.10	1.02
617-1192	803I-T	Ivory	803-6I-SP	1.33	1.23	1.14
617-1194	803A-T	Ash	803-6A-SP	1.33	1.23	1.14

End Caps — Fig. E

617-1200	801I-EC	Ivory	801-6I-SP	1.06	.98	.91
617-1202	801A-EC	Ash	801-6A-SP	1.06	.98	.91
617-1206	802I-EC	Ivory	802-6I-SP	1.19	1.10	1.02
617-1208	802A-EC	Ash	802-6A-SP	1.19	1.10	1.02
617-1212	803I-EC	Ivory	803-6I-SP	1.33	1.23	1.14
617-1216	803A-EC	Ash	803-6A-SP	1.33	1.23	1.14

Elbows — Fig. F

617-1220	801I-L	Ivory	801-6I-SP	1.06	.98	.91
617-1222	801A-L	Ash	801-6A-SP	1.06	.98	.91
617-1226	802I-L	Ivory	802-6I-SP	1.19	1.10	1.02
617-1228	802A-L	Ash	802-6A-SP	1.19	1.10	1.02
617-1232	803I-L	Ivory	803-6I-SP	1.33	1.23	1.14
617-1236	803A-L	Ash	803-6A-SP	1.33	1.23	1.14

Reducers — Fig. G

Stock No.	Mfr.'s Type	Color	To Reduce Number	EACH		
				1-24	25-49	50-99
617-1246	802I-RI	Ivory	803 to 802	1.06	.98	.91
617-1248	802A-RI	Ash	803 to 802	1.06	.98	.91
617-1252	803I-RI	Ivory	802 to 801	1.19	1.10	1.02
617-1254	803A-RI	Ash	802 to 801	1.19	1.10	1.02

Junction Boxes — Fig. H

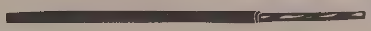
Stock No.	Mfr.'s Type	Color	Profile	EACH		
				1-24	25-49	50-99
617-1262	800I-HB	Ivory	High	6.06	5.62	5.25
617-1264	800A-HB	Ash	High	6.06	5.62	5.25
617-1266	800I-LB	Ivory	Low	6.06	5.62	5.25
617-1268	800A-LB	Ash	Low	6.06	5.62	5.25

80°C • PVC • 300 V • UL 1007 • CSA TR-64 Hook-Up Wire

Insulation: Color-coded polyvinylchloride. **Nominal Insulation Thickness:** .016" (.41 mm).

Mfr.'s Type	Stocked Colors	Conductor		Nominal O.D.	Type	Voltage Rating	100'			1000'		
		AWG	Strand				Stock No.	Wt. Lbs.	EACH	Stock No.	Wt. Lbs.	EACH
3050	0-9	24	7/32	0.057"	UL 1007/1569	300	696-910N	0.3	9.83	696-920N	2.8	47.66
3051	0-9	22	7/30	0.065"	UL 1007/1569	300	696-912N	0.4	11.13	696-921N	3.8	49.70
3053	0-9	20	10/30	0.071"	UL 1007/1569	300	696-914N	0.5	13.54	696-922N	5.0	63.05
3055	0-9	18	16/30	0.080"	UL 1007/1569	300	696-916N	0.7	14.47	696-923N	7.2	67.32
3057	0-9	16	26/30	0.095"	UL 1007/1569	300	696-918N	1.1	20.40	696-924N	10.8	100.52
3050/1	0-9	24	—	0.052"	UL 1007/1569	300	696-927N	0.3	4.69	696-932N	2.8	24.37
3051/1	0-9	22	—	0.057"	UL 1007/1569	300	696-928N	0.4	5.67	696-933N	3.8	33.07
3053/1	0-9	20	—	0.064"	UL 1007/1569	300	696-929N	0.5	6.25	696-934N	5.0	38.54
3055/1	0-9	18	—	0.072"	UL 1007/1569	300	696-930N	0.7	8.23	696-935N	7.2	55.19
3057/1	0-9	16	—	0.083"	UL 1007/1569	300	696-931N	1.1	11.37	696-936N	10.8	81.80

80°C • Semi-Rigid PVC • 300 V • UL 1061 • CSA AWM SR-PVC Hook-Up Wire



Conductor: Stranded, tinned copper. **Insulation:** color-coded semi-rigid polyvinylchloride. **Insulation Thickness:** .009" (.23 mm).

Mfr.'s Type	Stocked Colors	Conductor		Nominal O.D.	Type	Voltage Rating	100'			1000'		
		AWG	Strand				Stock No.	Wt. Lbs.	EACH	Stock No.	Wt. Lbs.	EACH
3250	0-9	24	7/32	0.042"	UL 1061	300	696-831N	0.4	9.83	696-836N	2.8	57.12
3251	0-9	22	7/30	0.048"	UL 1061	300	696-832N	0.5	10.94	696-837N	3.6	61.01

80°C • PVC • 1000 V • MIL-W-76B Type MW Hook-Up Wire

Solid or stranded tinned copper conductor. Color coded polyvinylchloride insulation. **Nominal Insulation Thickness:** .016" (.40 mm).

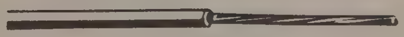
Mfr.'s Type	Stocked Colors	Conductor		Nominal O.D.	Type	Voltage Rating	100'			1000'		
		AWG	Strand				Stock No.	Wt. Lbs.	EACH	Stock No.	Wt. Lbs.	EACH
1550	0-9	24	7/32	0.059"	MW-C24(7)U	1000	696-812N	0.4	10.57	696-100N	2.8	50.81
1551	0-9	22	7/30	0.064"	MW-C22(7)U	1000	696-106N	0.5	11.31	696-101N	3.6	59.53
1553	0-9	20	10/30	0.068"	MW-C20(10)U	1000	696-107N	0.6	13.54	696-102N	4.8	67.51
1555	0-9	18	16/30	0.078"	MW-C18(16)U	1000	696-108N	0.8	14.65	696-103N	7.3	86.05
1557	0-9	16	26/30	0.095"	MW-C16(26)U	1000	696-109N	1.2	20.96	696-104N	11.2	127.96
1559	0-9	14	41/30	0.101"	MW-C14(41)U	1000	696-110N	1.7	27.82	696Q001N	16.1	224.21
1560	0-9	12	65/30	0.125"	MW-C12(65)U	1000	696-810N	2.6	48.77	696Q811N	24.9	341.61
1561/24	0-9	24	Solid	0.055"	MW-C24(1)U	1000	696-925N	0.3	9.83	696-926N	2.5	47.48
1561	0-9	22	Solid	0.060"	MW-C22(1)U	1000	696-112N	0.4	10.39	696-111N	3.3	53.97
1563	0-9	20	Solid	0.066"	MW-C20(1)U	1000	696-002N	0.6	12.05	696-003N	4.6	68.99
1565	0-9	18	Solid	0.074"	MW-C18(1)U	1000	696-004N	0.8	23.18	696-005N	6.9	105.89

105°C • PVC • 600 V • UL 1015 • CSA TEW-105 Hook-Up Wire

Conductor: Stranded tinned copper. Color-coded polyvinylchloride insulation. **Nominal Insulation Thickness:** .032" (.81 mm).

Mfr.'s Type	Stocked Colors	Conductor		Nominal O.D.	Type	Voltage Rating	100'			1000'		
		AWG	Strand				Stock No.	Wt. Lbs.	EACH	Stock No.	Wt. Lbs.	EACH
3071	0-9	22	7/30	0.095"	UL 1015	600	696-250N	0.6	12.05	696-450N	6.0	63.43
3073	0-9	20	10/30	0.102"	UL 1015	600	696-251N	0.8	15.02	696-451N	7.5	79.37
3075	0-9	18	16/30	0.112"	UL 1015	600	696-252N	1.0	18.55	696-452N	9.9	95.14
3077	0-9	16	26/30	0.125"	UL 1015	600	696-253N	1.4	22.63	696-453N	13.8	137.42
3079	0-9	14	41/30	0.142"	UL 1015	600	696-254N	2.5	33.01	696-454N	20.1	164.87

105°C • Irradiated PVC • 1000 V • MIL-W-16878D Type C UL 1430, CSA REW XL-PVC Hook-Up Wire



Conductor: Stranded, tinned copper. Irradiated color-coded PVC insulation. **Insulation Thickness:** .016" (.41 mm).

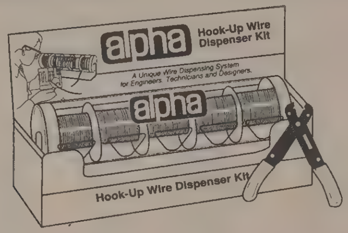
Mfr.'s Type	Stocked Colors	Conductor		Nominal O.D.	Type	Voltage Rating	100'			1000'		
		AWG	Strand				Stock No.	Wt. Lbs.	EACH	Stock No.	Wt. Lbs.	EACH
7130	0-9	24	7/32	0.056"	UL 1430	300	696-820N	0.3	30.41	696-825N	2.8	100.15
7131	0-9	22	7/30	0.062"	UL 1430	300	696-821N	0.4	34.31	696-826N	3.6	120.55
7132	0-9	20	7/28	0.070"	UL 1430	300	696-822N	0.5	35.42	696-827N	4.8	139.09
7133	0-9	18	7/26	0.080"	UL 1430	300	696-823N	0.8	38.02	696-828N	7.3	174.33
7134	0-9	16	19/29	0.091"	UL 1430	300	696-824N	1.8	56.56	696Q829N	11.2	218.84

Color Ordering Information

To order correct color, insert number of color desired where N appears in stock number. All listed types are available in 10 solid and nine striped colors. Non-stocked and striped colors available by special order.

0 – Violet (Purple)	2 – Black	4 – Green	6 – Blue	8 – Slate (Gray)
1 – White	3 – Red	5 – Yellow	7 – Orange	9 – Brown

Hook-Up Wire Dispenser Kits


alpha
Hook-Up Wire Dispenser Kit
A Unique Wire Dispensing System for Engineers, Technicians and Designers.
alpha
Hook-Up Wire Dispenser Kit

- ► Convenient, Wire Dispensing System
- ► Five Assorted Hook Up Wire Colors
- ► Includes Cut and Strip Tool

Each kit contains five spools of hook-up wire in a unique, rack mounted, transparent dispensing tube. The tube and rack system can be mounted on a bench or wall or used as a tote for portability. Uses standard Alpha hook-up wire spools when refills are required. Includes a cut and strip tool. Available in military or UL/CSA applications. Come with a 100' colors white, black, red, green and blue 22 AWG.

MIL Spec Hook-Up Wire Kits
MIL-W-76B Type MW. Reorder spool #1551 cut and strip tool AT-210, 22 AWG.
708-9891. HU-Kit-10..**EACH 52.00**

UL/CSA Hook-Up Wire Kits
UL/CSA. Reorder spool #3051 cut and strip tool AT-210, 22 AWG.
708-9892. HU-Kit-20..**EACH 52.00**

105°C • PVC • MIL-W-16878D • Type B Hook-Up Wire

Conductor: Stranded tinned copper; color coded polyvinylchloride insulation. **Insulation Thickness:** .010" (.25 mm).

Mfr.'s Type	Stocked Colors	Conductor		Nominal O.D.	Type	Voltage Rating	100'			1000'		
		AWG	Strand				Stock No.	Wt. Lbs.	EACH	Stock No.	Wt. Lbs.	EACH
1859/19	0-9	14	19/27	.091"	B-14	600	**696-813N**	2.0	**43.21**	**696-814N**	14.0	**141.87**
1858/19	0-9	16	19/29	.077"	B-16	600	**696-200N**	1.1	**20.96**	**696-282N**	9.0	**111.46**
1857/19	0-9	18	19/30	.068"	B-18	600	**696-815N**	0.8	**32.27**	**696-816N**	7.0	**103.67**
1857	0-9	18	7/26	.068"	B-18	600	**696-201N**	0.8	**15.95**	**696-281N**	7.0	**93.84**
1856	0-9	20	7/28	.058"	B-20	600	**696-202N**	0.6	**15.02**	**696-280N**	4.6	**77.52**
1855/19	0-9	22	19/34	.050"	B-22	600	**696-817N**	0.4	**24.48**	**696-818N**	3.0	**64.17**
1855	0-9	22	7/30	.050"	B-22	600	**696-204N**	0.4	**12.05**	**696-279N**	3.0	**61.81**
1854	0-9	24	7/32	.043"	B-24	600	**696-205N**	0.3	**11.13**	**696-278N**	2.2	**49.33**
1853	0-9	26	7/34	.038"	B-26	600	**696-277N**	0.3	**10.94**	**696-260N**	1.5	**55.64**
1852	0-9	28	7/36	.034"	B-28	600	**696-346N**	0.2	**11.50**	**696-259N**	1.3	**52.67**
1851	0-9	30	7/38	.032"	B-30	600	**696-348N**	0.1	**19.10**	**696-258N**	0.9	**67.88**

UL 1180, MIL-W-16878D Type EE Heavy Wall Teflon®

Conductor: Stranded silver plated copper. **Insulation:** Color coded, extruded Teflon TFE. **Temperature Range:** –60°C to +200°C (UL 200°C). **Voltage Range:** 1000 volts MIL, 300 volts UL. **Flammability:** Passes UL VW1 flame test. Use for 80°C and 105°C also. ®Trademark of Dupont.

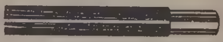
Mfr.'s Type	Stocked Colors	Conductor		Nominal O.D.	Type	100'			1000'		
		AWG	Strand			Stock No.	Wt. Lbs.	EACH	Stock No.	Wt. Lbs.	EACH
5874	1-6	24	19/36	.055"	EE-24	**696-231N**	0.5	**20.21**	**696-236N**	3.5	**180.45**
5875	1-6	22	19/34	.062"	EE-22	**696-232N**	0.7	**22.81**	**696Q237N**	5.0	**205.11**
5876	1-6	20	19/32	.070"	EE-20	**696-233N**	0.9	**27.82**	**696Q238N**	6.5	**259.45**
5877	1-6	18	19/30	.080"	EE-18	**696-234N**	1.1	**33.38**	**696Q239N**	9.0	**324.17**

MIL-W-16878D, Type E Teflon® 200°C UL 1213 (105°C)

Conductor: Stranded silver plated copper. **Insulation:** Color coded, extruded Teflon TFE. **Temperature Range:** –60°C to +200°C (UL 105°). **Voltage Range:** 600 volts (UL Voltage not specified). **Flammability:** Passes UL VW1 flame test.

Mfr.'s Type	Stocked Colors	Conductor		Nominal O.D.	Type	100'			1000'		
		AWG	Strand			Stock No.	Wt. Lbs.	EACH	Stock No.	Wt. Lbs.	EACH
5852	1-6	28	7/36	.036"	E-28	**696-210N**	0.3	**13.72**	**696-220N**	1.6	**105.15**
5854	1-6	24	19/36	.045"	E-24	**696-211N**	0.5	**17.25**	**696-221N**	2.6	**149.85**
5855	1-6	22	19/34	.051"	E-22	**696-212N**	0.6	**17.80**	**696-222N**	3.7	**152.44**
5855/7	1-6	22	7/30	.050"	E-22	**696-213N**	0.4	**16.51**	**696-223N**	3.6	**178.78**
5856	1-6	20	19/32	.059"	E-20	**696-214N**	0.8	**21.51**	**696Q224N**	5.5	**217.35**
5857	1-6	18	19/30	.070"	E-18	**696-215N**	0.9	**25.59**	**696Q225N**	6.0	**280.41**
5858	1-6	16	19/29	.077"	E-16	**696-216N**	1.2	**30.04**	**696Q226N**	6.0	**341.79**

Kynar® Insulation for Wire Wrap UL 1422, UL 1423



Solid silver-plated, oxygen-free high conductivity (OFHC) copper conductor, extruded kynar (polyvinylidene fluoride) insulation. Extremely tough, high cut-through resistance. Self-extinguishing, will not support combustion. Excellent ultra-violet and weathering resistance. Temperature rating through 125°C continuous (U.L. rated at 105°C). **Nominal Wall Thickness:** .005". **Colors Available:** 1 — White, 2 — Black, 3 — Red, 6 — Blue. ®Trademark of Pennwalt.

Stock No.	Mfr.'s Type	AWG	Nominal Thickness	Nominal O.D.	PER 1000'
708-950N	5951	30	.0050"	.020"	**148.18**
708-951N	5952	28	.0055"	.023"	**188.50**
708-952N	5953	26	.0055"	.026"	**192.58**
708Q953N	5954	24	.0050"	.030"	**260.71**

Tefzel® Insulation for Wire Wrap (UL 1516, UL 1523)

Solid silver-plated, oxygen-free high conductivity (OFHC) copper conductor. Color-coded Tefzel Insulation. High cut-through and abrasion resistance. Long flex life. **Temperature Range:** –70°C to +150°C (U.L. 105°C). **Colors Available:** 1 — White, 2 — Black, 3 — Red, 6 — Blue. ®Trademark of Dupont. OFHC is a registered trademark of AMAX, Inc.

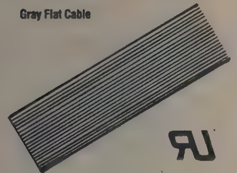
Mfr.'s Type	AWG	Nominal Thickness	Nominal O.D.	UL Style	100'		1000'	
					Stock No.	EACH	Stock No.	EACH
1805	30	.0050"	.019"	1516	**708-770N**	**67.32**	**708Q771N**	**414.73**
1806	28	.0055"	.024"	1523	**708-772N**	**73.64**	**708Q773N**	**446.96**
1807	26	.0055"	.027"	1523	**708-774N**	**74.46**	**708Q775N**	**480.62**
1808	24	.0050"	.030"	1516	**708-776N**	**75.48**	**708Q777N**	**541.82**

Color Ordering Information

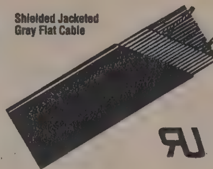
To order correct color, insert number of color desired where N appears in stock number. All listed types are available in 10 solid and nine striped colors. Non-stocked and striped colors available by special order.

0 – Violet (Purple)
1 – White
2 – Black
3 – Red
4 – Green
5 – Yellow
6 – Blue
7 – Orange
8 – Slate (Gray)
9 – Brown

Flat Cable — 100' Coils


Gray Flat Cable

Thermally-Bonded Color-Coded Flat Cable


Shielded Jacketed Gray Flat Cable

See Table Below For Cut Lengths

Gray Flat Cable

0.050" Centers UL2651. 28 AWG, 7/36 stranded tinned copper conductors, gray PVC insulation with red stripe on the leading edge. **Rated:** 105°C, 300 volts.

Stock No.	Mfr.'s Type	Number of Cond.	Overall Width	PER 100' COIL	
				1-4	5-9
943-4041	3580/9	9	0.45"	**20.60**	**18.73**
943-1311	3580/10	10	0.50"	**22.85**	**20.77**
943-1312	3580/14	14	0.70"	**32.03**	**29.12**
943-4042	3580/15	15	0.75"	**34.27**	**31.16**
943-1314	3580/16	16	0.80"	**36.72**	**33.38**
943-1315	3580/20	20	1.00"	**45.70**	**41.54**
943-1316	3580/24	24	1.20"	**54.88**	**49.89**
943-1317	3580/25	25	1.25"	**57.12**	**51.93**
943-1318	3580/26	26	1.30"	**59.57**	**54.14**
943-1319	3580/34	34	1.70"	**77.93**	**70.84**
943-4043	3580/37	37	1.85"	**84.66**	**76.96**
943-1320	3580/40	40	2.00"	**91.60**	**83.27**
943-1321	3580/50	50	2.50"	**114.44**	**104.04**
943-4044	3580/60	60	3.00"	**137.29**	**124.81**
943-4045	3580/64	64	3.20"	**146.47**	**133.16**

Thermally-Bonded Color-Coded Flat Cable

0.050" Centers UL20029. 28 AWG, 7/36 stranded tinned copper conductors, color coded PVC insulation, colors repeat every 10 conductors. **Rated:** 105°C, 300 volts.

Stock No.	Mfr.'s Type	Number of Cond.	Overall Width	PER 100' COIL	
				1-4	5-9
943-4046	3583/9	9	0.45"	**50.18**	**45.62**
943-1322	3583/10	10	0.50"	**53.04**	**48.22**
943-1323	3583/14	14	0.70"	**74.46**	**67.69**
943-4047	3583/15	15	0.75"	**79.76**	**72.51**
943-1324	3583/16	16	0.80"	**85.07**	**77.33**
943-1325	3583/20	20	1.00"	**106.28**	**96.62**
943-1326	3583/24	24	1.20"	**152.22**	**138.39**
943-1327	3583/25	25	1.25"	**132.80**	**120.73**
943-1328	3583/26	26	1.30"	**138.11**	**125.55**
943-1329	3583/34	34	1.70"	**180.74**	**164.31**
943-4048	3583/37	37	1.85"	**196.66**	**178.78**
943-1330	3583/40	40	2.00"	**214.61**	**195.10**
943-1331	3583/50	50	2.50"	**265.61**	**241.46**
943-4049	3583/60	60	3.00"	**318.85**	**289.87**
943-4050	3583/64	64	3.20"	**340.07**	**309.15**

Shielded Jacketed Gray Flat Cable

0.050" Centers UL2912. Suggested for FCC Docket 20780 application. 28 AWG, 7/36 stranded tinned copper conductors. Gray PVC insulation with red stripe on the leading edge. Overall aluminum/mylar/aluminum shield with two drain wires. Gray PVC jacket .030" minimum average thickness.

Stock No.	Mfr.'s Type	Number of Cond.	Overall Width	PER 100' COIL	
				1-4	5-9
943Q1332	3590/9	9	0.52"	**209.71**	**190.65**
943Q1333	3590/15	15	0.82"	**257.45**	**234.04**
943Q1334	3590/25	25	1.32"	**429.22**	**390.20**
943Q1335	3590/37	37	1.95"	**536.72**	**487.93**

Flat Cable Cut Lengths

Order flat cable lengths per the information below. Lengths from 1 to 99 feet may be ordered. Price is per foot. For 100 foot lengths, order from the cables above. Available in gray.

Stock No.*	Mfr.'s Type	Number of Cond.	Code	PER FOOT†
942-09XX	3580/9	9	0-9	**.43**
942-10XX	3580/10	10	0-10	**.49**
942-12XX	3580/14	14	0-14	**.68**
942-08XX	3580/15	15	0-15	**.73**
942-13XX	3580/16	16	0-16	**.77**
942-14XX	3580/20	20	0-20	**.96**
942-15XX	3580/24	24	0-24	**1.16**
942-16XX	3580/25	25	0-25	**1.22**
942-17XX	3580/26	26	0-26	**1.26**
942-18XX	3580/34	34	0-34	**1.65**
942-11XX	3580/37	37	0-37	**1.81**
942-19XX	3580/40	40	0-40	**1.94**
942-20XX	3580/50	50	0-50	**2.43**
942-35XX	3580/60	60	0-60	**2.96**
942-36XX	3580/64	64	0-64	**3.16**
942-37XX	3583/9	9	1-9	**.59**
942-21XX	3583/10	10	1-10	**.66**
942-22XX	3583/14	14	1-14	**.92**
942-38XX	3583/15	15	1-15	**.99**
942-23XX	3583/16	16	1-16	**1.05**
942-24XX	3583/20	20	1-20	**1.32**
942-25XX	3583/24	24	1-24	**1.58**
942-26XX	3583/25	25	1-25	**1.64**
942-27XX	3583/26	26	1-26	**1.71**
942-28XX	3583/34	34	1-34	**2.24**
942-39XX	3583/37	37	1-37	**2.43**
942-29XX	3583/40	40	1-40	**2.63**
942-30XX	3583/50	50	1-50	**3.29**
942-40XX	3583/60	60	1-60	**3.95**
942-41XX	3583/64	64	1-64	**4.21**

Jacketed Shielded Cable (2 drain wires)

942-31XX	3590/9	9	9-9	**3.25**
942-32XX	3590/15	15	9-15	**4.31**
942-33XX	3590/25	25	9-25	**5.81**
942-34XX	3590/37	37	9-37	**8.19**

*Insert footage where XX appears in the stock number.
†Contact the closest sales office for quantity pricing.

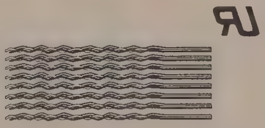
Round-to-Flat Cable 0.050" Centers — UL 2651/20381

Description
- ► Mass Terminated Round Cable
- ► Flat Cable on 0.50" Centers
- ► Supershield™ Aluminum/Polyester Tape Plus 90% Tinned Copper Braid

Application
- ► Specially Designed for Routing in Cramped Spaces Where the Mess Termination Capabilities of Flat Cable Is Required and the Flexibility of Round Cable Is Needed

Stock No.	Mfr.'s Type	No. of Cond.	Nom. Dia.	PER 100' COIL	
				1-4	5-9
943-5151	3585/25	25	.34"	**187.88**	**170.80**
943-5152	3585/26	26	.39"	**189.92**	**172.66**
943-5153	3585/40	40	.40"	**301.10**	**273.73**
943-5154	3585/50	50	.46"	**376.38**	**342.16**

Color-Coded Twist-To-Flat Cable 0.050" Centers — UL 20184

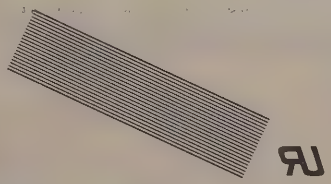


Description
- ► 28 AWG 7/36 Stranded Tinned Copper Conductors, PVC Insulation
- ► 10 Standard Color Repeat With Tan as the Common Color in Each Pair
- ► Overall Cable Thickness .037" Males With all 0.50" IDCs
- ► High Stability .007" Laminated Film is Needed to Increase Dimensional Stability
- ► Twisted Length 18", Flat Length 2"
- ► UL Recognized. Style 20184 (Internal Use Only)

Application
- ► Ideal for Situations Where Reduced Crosstalk is Necessary Such as High Speed Data Transmission in Computers, Cash Registers, and Communications Equipment

Stock No.	Mfr.'s Type	No. of Cond.	Nom. Dia.	PER 100' COIL	
				1-4	5-9
943Q5171	3586/26	26	1.30"	**401.06**	**364.60**
943Q5172	3586/40	40	2.00"	**209.71**	**190.65**
943Q5173	3586/50	50	2.50"	**244.80**	**222.55**
943Q9174	3586/60	60	3.00"	**257.45**	**234.04**

Flat Cable — 100' Coils Gray Flat Cable 0.025" Centers — UL 2678



Description
- ► 30 AWG, Solid Copper Conductors on 0.025" Centers
- ► Gray PVC Insulation With Red Strips on Leading Edge
- ► UL Recognized Style 2678
- ► Resists Acids, Alkalis, Oil, Moisture, Solvents, Ozone and Fungus
- ► Passes UL VW-1 Flame Test

Application
- ► Easy Termination to 0.025" IDC Connectors
- ► Low Cost Alternative to Fluorocarbon Transmission Cables
- ► For New Generation of Surface Mounted Connectors With Reduced Contact Spacing

Stock No.	Mfr.'s Type	No. of Cond.	Nom. Dia.	PER 100' COIL	
				1-4	5-9
943-5051	3582/26	26	.65"	**70.58**	**64.17**
943-5052	3582/40	40	1.00"	**108.53**	**98.66**
943-5053	3582/50	50	1.25"	**135.46**	**123.14**
943-5054	3582/60	60	1.50"	**162.59**	**147.81**

Coaxial Cable

Polyethylene Dielectric Flexible RG-Type

Mfr.'s Type	RG Type	Ohms	Inner Conductor			Shield		Jacket		PER 100'		PER 500'		PER 1000'	
			Mat.'l	Strand	AWG	Mat.'l	% Coverage	Mat.'l	O.D. (In.)	Stock No.	EACH	Stock No.	EACH	Stock No.	EACH
9804C•	6/U	75	C	Solid	18	A/M plus TC Braid	100	Black V	.270	708-9102	59.02	708-9122	163.89	708Q9142	203.62
9843*	6/U	75	C	Solid	18	A/M plus 4 TC DW	100	Black V	.242	708-9808	48.57	—	—	708Q9809	206.75
9008‡	8/U	52	C	7/21	13	C	96	Black V	.405	708-9818	83.70	708Q9819	340.31	708Q9820	563.96
9008A†	8A/U	52	C	7/21	13	C	96	Black NCV	.405	708-9821	116.69	708Q9822	445.54	780Q9823	672.49
9847	11/U	75	C	Solid	14	C	81	Black PE	.405	708-9990	83.60	—	—	708Q9991	521.32
9011	11/U	75	TC	7/26	18	C	96	Black V	.405	—	—	708Q9831	381.89	708Q9832	614.12
9011A	11A/U	75	TC	7/26	18	C	96	Black NCV	.405	708-9833	110.32	708Q9834	477.36	708Q9835	709.31
9848	58/U	50	C	Solid	18	TC	93	Black V	.195	708-9992	65.48	—	—	708Q9993	283.78
9058X•	58/U	53	C	Solid	20	TC	81	Black V	.195	708-9850	41.60	708-9851	116.28	708-9852	184.19
9058AC•	58A/U	50	TC	19/0.0071	20	TC	95	Black V	.195	708-9853	32.78	708-9854	114.77	708-9855	184.11
9058C†	58C/U	50	TC	19/0.0071	20	TC	95	Black NCV	.195	708-9856	62.40	708-9857	173.36	708Q9858	251.94
9803C•	59/U	75	C	7/30	22	C	95	Black V	.242	708-9101	73.17	708-9121	187.76	708Q9141	213.18
9830*	59/U	75	CW	Solid	22	C	80	Black V	.242	708-9994	46.80	708Q9995	123.05	708-9996	170.54
9840	59/U	80	CW	Solid	22	C	80	Black V	.242	708-9997	—	708Q9998	140.03	708Q9999	218.99
9059C•	59/U	75	CW	Solid	22	C	95	Black V	.242	708-9859	33.35	708-9860	103.53	708-9861	174.42
9059B†	59B/U	75	CW	Solid	23	C	95	Black NCV	.242	708-9862	74.13	708-9863	103.53	708Q9864	292.64
9062AC•**	62A/U	93	CW	Solid	22	C	95	Black V	.242	708-9870	27.25	708-9871	108.12	708Q9872	145.86
9174	174/U	50	CW	7/34	26	TC	88	Black V	.100	708-9974	30.62	708-9975	107.10	708-9976	162.79
9213†	213/U	50	C	7/.0196	13	C	96	Black NCV	.412	708-9960	127.85	708Q9961	509.18	708Q9962	724.81
9214†	214/U	50	SC	7/.0296	13	2X, SC	99	Black NCV	.432	708Q9965	638.25	708Q9966	2431.95	708Q9967	4040.73
9223‡	223/U	50	SC	Solid	19	2X, SC	99	Black NCV	.216	708Q9970	211.94	708Q9971	862.76	708Q9972	1430.24

•CL2 Rated. *UL1354, †MIL-C-17D, ‡JAN-C-17A, **UL1478. **Material Codes:** C — bare copper; TC — tinned copper, SC — silver covered copper; V — polyvinylchloride, type 1; NCV — non-contaminating polyvinylchloride, type 2; 2X — double shield; CW — copper covered steel (copperweld). A/M — Aluminum/Mylar Tape; O — Cellular (foam) polyethylene; ±100% Sweep Test 5-300 MHz. Note: Type 9059C available in 5 colors, Black, Red, Green, Blue and Gray. Type 9062AC available in 7 colors, White, Black, Red, Green, Blue, Orange and Gray. Colors other than black are available in 1000' lengths only.

TFE Teflon® Dielectric Cable

Mfr.'s Type	RG Type	Ohms	Inner Conductor			Dielectric		Shield		Jacket		PER 100'	
			Mat.'l	Strand	AWG	Mat.'l	O.D. (In.)	Mat.'l	% Coverage	Mat.'l	O.D. (In.)	Stock No.	EACH
9178B†	178B/U	50	SCW	7/38	30	TFE	.036	SC	96	Nat'l FEP	.071	708-9930	120.18
9179B†	179B/U	75	SCW	7/38	30	TFE	.057	SC	93	Nat'l FEP	.100	708-9935	125.24
9180B†	180B/U	95	SCW	7/38	30	TFE	.102	SC	93	Nat'l FEP	.140	708Q9940	213.98
9187A	187A/U	75	SCW	7/38	30	TFE	.060	SC	94	Nat'l TFE	.105	708-9945	156.90
9188A	188A/U	50	SCW	7/.0067	25	TFE	.060	SC	94	Nat'l TFE	.106	708-9950	158.61
9196A	196A/U	53	SCW	7/38	30	TFE	.034	SC	95	Nat'l TFE	.076	708-9955	101.84

†Mil-C-17D. **Material Codes:** SCW — silver-coated copperweld; TFE — tetrafluoroethylene (teflon); SC — silver coated copper; FEP — fluorinated ethylene-propylene. Teflon is a registered trademark of Dupont.

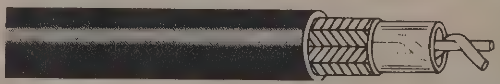
Multiconductor, Stranded, Unshielded Flat (Oval)

- ► For Use with Appletalk
- ► Jacket Is Silver Satin
- ► Temperature Rating: 150 V 60°C

Stock No.	Mfr.'s Type	Description	Std. Length (Feet)	Weight Lbs. (1000')	Conductor		Insulation Material Thickness Diameter Inches (mm)	Thickness × Width Inches (mm)	PER BOX/328'
					No. of Cond.	AWG Stranding Material			
708-3313	1604	Modular Telephone (Silver Satin)	328' Box 1000'	6	4	26 7/34 Bare Copper	Polypropylene 0.010 (0.25) 0.037 (0.95)	0.100 (2.5) × 0.200 (5.0)	34.62
708-3314	1606			8	6			0.100 (2.5) × 2.750 (7.0)	41.56
708-3315	1608			12	8			0.100 (2.5) × 3.350 (8.5)	55.41

*Box of 328 ft. stocked, box of 1000' also available.

IBM Coax 3270 and Arcnet (RG62A/U)



- ► Arcnet = 2.5 MBPS
- ► IBM = 4 to 16 MBPS

Stock No.	Mfr.'s Type	Description	Std. Length, Ft. (Weight, Lbs./1000')	Conductor AWG Stranding Material DCR Ohms/1000' (Ohms/Km)	Dielectric Material Diameter In. (mm)	Shield Material DCR Ohms/1000' Ohms/Km	Jacket Material Nom. O.D. In. (mm)	Nom. Imp. Ohms	Vel. Of Prop %	Nominal Capacitance pF/Ft (pF/m)	Nominal Attenuation		Put Up Feet	EACH
											dB/100' (dB/100 m)	@ MHz		
708-9870	9062AC CM: 300 V 60°C AWM: 30 V 60°C	RG62 A/U Non-Plenum NEC CM UL AWM 1478 CXC FT1	100 500 Box 500 1000 Box 1000 2000 (33)	22 Solid Copper Coated Steel 41.2 (135.1)	Semi-Solid Polyethylene 0.146 (3.71)	95% Bare Copper Braid 2.9 (9.5)	Black (Also available in 6 other colors — 1000' only)* 0.242 (6.15)	93	84	13.5 (44.3)	0.25 (0.82) 0.85 (2.78) 1.9 (6.23) 2.7 (8.86) 5.3 (17.4) 8.7 (28.5)	1 10 50 100 400 1000	100'	27.25
708-9871													500'	108.12
708-9872													1000'	145.86
708-3301													328'	27.25
708Q8838	9162 30 V 125°C	RG62 A/U Type Plenum NEC CL2P CXC FT4 FT6	1000 (32)	22 Solid Copper Coated Steel 52 (171)	Semi-Solid Teflon 0.146 (3.71)	95% Bare Copper Braid 3.8 (12.5)	Natural Fluorocopolymer 0.204 (5.18)	93	85	12.9 (42.3)	0.3 (0.98) 0.9 (2.95) 2.0 (6.56) 2.9 (9.51) 5.5 (18.0) 9.0 (29.5)	1 10 50 100 400 1000	1000'	805.80

***9062AC Other Available Colors:** White, Red, Green, Blue, Orange, Gray (1000 Ft. Only)

Coaxial Cables

10 BASE 2

IEEE Spec Grade "Thin" Coaxial Cable IEEE 802.3 10Base2 10 MBPS

Stock No.	Mfr.'s Type	Description	Std. Length, Ft. (Weight, Lbs./1000')	Conductor: AWG Stranding Material DCR Ohms/1000' (Ohms/Km)	Dielectric Material Diameter In. (mm)	Shield Material DCR Ohms/1000' (Ohms/Km)	Jacket Material Nom. O.D. In. (mm)	Nom. Imp. Ohms	Vel. Of Prop. %	Nominal Capacitance pF/Ft. (pF/m)	Nominal Attenuation: dB/100' (dB/100 m) Max.	Nominal Attenuation: @ MHz	EACH
708-3232*	9871C 300 V 60°C	Ethernet "Thinnet" Non-Plenum NEC CM CXC FT4	Box/1000' (28)	20 19/0.0075 Tinned Copper 12.0 (39.4)	Polyethylene 0.119 (3.02)	Alum/Polyester/Alum + 95% TC Braid 3.0 (9.8)	Black PVC 0.200 (5.08)	50	66	30.5 (100.0)	6 dB/607 Ft. (6 dB/185 m) 8.5 dB/607 Ft. (8.5 dB/185 m)	5 5 10 10	**330.48**
708Q3233†	9871F 300 V 125°C	Ethernet "Thinnet" Plenum NEC CMP CXC FT6	Coil/1000' (32)	20 19/0.0075 Tinned Copper 12.0 (39.4)	FEP Teflon 0.112 (2.84)	Alum/Polyester/Alum + 95% TC Braid 3.0 (9.8)	Gray Fluoropolymer 0.182 (4.62)	50	78	30.5 (100.0)	6 dB/607 Ft. (6 dB/185 m) 8.5 dB/607 Ft. (8.5 dB/185 m)	5 5 10 10	**852.72**

Commercial Grade Thin-Net Coaxial Cable 10 MBPS

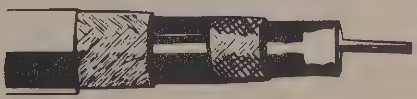
Alpha offers economical commercial grade LAN cable alternatives. These cables are designed around the IEEE specifications, but utilize cellular (foam) dielectric to reduce size and material while still offering equivalent electrical and environmental performance. Because a cellular dielectric is used, the diameter must be reduced to achieve the same electrical performance. This has an added benefit of reducing the cost of materials. However, it does not strictly meet the diameter (4.9 mm ±0.3 mm diameter for PVC or 4.7 mm ±0.3 mm for fluoropolymer jacket) required by the IEEE 802.3, 10Base2 specification. Therefore, we call it commercial grade.

Stock No.	Mfr.'s Type	Description	Std. Length, Ft. (Weight, Lbs./1000')	Conductor: AWG Stranding Material DCR Ohms/1000' (Ohms/Km)	Dielectric Material Diameter In. (mm)	Shield Material DCR Ohms/1000' (Ohms/Km)	Jacket Material Nom. O.D. In. (mm)	Nom. Imp. Ohms	Vel. Of Prop. %	Nominal Capacitance pF/Ft. (pF/m)	Nominal Attenuation: dB/100' (dB/100 m) Max.	Nominal Attenuation: @ MHz	EACH
708Q3234*	9861C CL2: 150 V 60°C AWM: 30 V 60°C	DEC ThinWire DEC P/N: 17-01248-00 Non-Plenum NEC CL2 UL AWM 1354 CXC FT4	Box/1000' (23)	20 19/0.0076 Tinned Copper 10.0 (32.8)	Cellular Polyethylene 0.101 (2.57)	Alum/Polyester/Alum + 95% TC Braid 6.2 (20.3)	Gray PVC 0.180 (4.57)	50	78	25.4 (83.3)	6 dB/607 Ft. (6 dB/185 m) 8.5 dB/607 Ft. (8.5 dB/185 m)	5 5 10 10	**320.28**
708Q3235†	9861F 150 V 125°C	DEC ThinWire DEC P/N: 17-01246-00 Plenum NEC CL2P CXC FT4 FT6	Coil/1000' (23)	20 19/0.0076 Tinned Copper 10.0 (32.8)	Cellular FEP Teflon 0.101 (2.57)	Alum/Polyester/Alum + 95% TC Braid 6.2 (20.3)	Gray Tint Fluoropolymer 0.166 (4.22)	50	78	27.0 (88.6)	6 dB/607 Ft. (6 dB/185 m) 8.5 dB/607 Ft. (8.5 dB/185 m)	5 5 10 10	**767.04**
708Q3238*	9881C 300 V 60°C	Ethernet "Thinnet" Non-Plenum NEC CM CXC FT4	Box/1000' (20)	20 19/32 Tinned Copper 10.0 (32.8)	Cellular Polyethylene 0.102 (2.59)	Alum/Polyester/Alum + 95% TC Braid 3.5 (11.5)	Black PVC 0.180 (4.57)	50	78	25.5 (83.6)	6 dB/607 Ft. (6 dB/185 m) 8.5 dB/607 Ft. (8.5 dB/185 m)	5 5 10 10	**228.89**

*Stocked in boxes of 1000. †Stocked in coils of 1000. Other put ups also available.

LAN Trunk Cables — Coaxial — IEEE 802.3

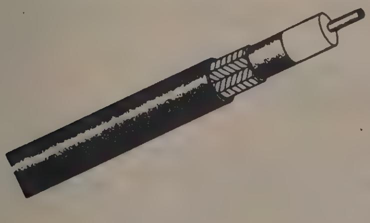
Material Code: C — Bare Copper; TC — Tinned Copper; CW — Copper Coated Steel; FEP — Fluorinated Ethylene-Propylene; A/M — Aluminum Polyester Tape; A/M/A — Aluminum/Polyester/Aluminum Tape.



Mfr.'s Type	RG Type	Imp. Ohms	Inner Conductor			Shield		Jacket		PER 100' SPOOL		PER 500' SPOOL		PER 1000' SPOOL	
			Mat.'l	Strand	AWG	Mat.'l	% Coverage	Mat.'l	O.D. (In.)	Stock No.	EACH	Stock No.	EACH	Stock No.	EACH
9804C†	6/U	71	C	Solid	18	A/M + TC Braid	100	Black V	.270	**708-9102**	**59.02**	**708-9122**	**163.89**	**708Q9142**	**230.62**
9104	6/U Plenum	75	TC	Solid	18	A/M/A + TC Braid	100	Black FEP	.249	—	—	**708Q9123**	**709.10**	**708Q9143**	**1289.28**
9858	58C/U	50	TC	19/0.0071	20	TC Braid	95	Black V	.195	**708-9104**	**73.36**	**708Q9124**	**244.47**	**708Q9144**	**454.17**
9859	58C/U Plenum	50	TC	19/0.0071	20	A/M/A + TC Braid	95	Black FEP	.165	—	—	**708Q9125**	**402.80**	**708Q9145**	**732.36**
9851C*	Ethernet	50	TC	Solid	.0855	A/M + TC Braid + A/M/A + TC Braid	100	Yellow V	.405	—	—	—	—	**708Q9147**	**1111.80**
9851F‡	Ethernet Plenum	50	C	Solid	.0855	A/M/A + TC Braid + A/M/A + TC Braid	100	Orange V	.375	—	—	**708Q9128**	**1809.48**	**708Q9148**	**3449.64**
9861C*	59C/U DEC Thinware Ethernet	50	TC	19/32	20	A/M/A + TC Braid	95	Gray PVC	.182	—	—	—	—	**708Q9149**	**320.28**
9888C**	Appletalk™	78	TC	7/30	22	TC Braid	85	Beige PVC	.185	—	—	—	—	**708Q9150**	**386.58**
9825C†	11/U[1]	75	CW	Solid	14	A/M/A + TC Braid	96	Blue V	.405	—	—	—	—	**708Q9151**	**807.84**

[1] Allen Bradley's data twinax highway 11 type cable. *UL Type CL2; CSA PCC FT4. **UL Type CM, PCC FT4. †UL Type CL2. ‡UL Type CL2P, CSA PCC FT6.

CATV Coaxial Cable



Coaxial cable consisting of solid copper covered steel conductor, foam Polyethylene dielectric, aluminum/mylar/aluminum tape, aluminum braid, with an overall polyvinylchloride jacket. UL Types CL2, CATV. **Temperature:** –20°C to 75°C.

Stock No.	Mfr.'s Type	AWG	RG Type	Ohms	Nominal Capacitance	Velocity of Propagation	Outer Shield Nominal Coverage	PER SPOOL/1000'
708-8660	9831	18 Solid	6/U	75	16.2 pF/ft.	82%	61%	**134.64**
708-8661	9832	18 Solid	6/U	75	18.0 pF/ft.	78%	40%	**124.44**
708-8662	9833	22 Solid	59/U	80	17.0 pF/ft.	78%	40%	**130.95**
708-8663	9834	20 Solid	59/U	75	17.3 pF/ft.	75%	65%	**138.68**

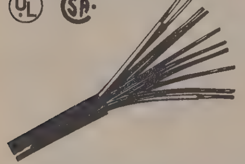
Multiconductor and Multi-Pair Unshielded Cables, and PVC Plenum Rated Cable

Multiconductor 80°C PVC — 150 Volts UL2576 (Unshielded)

- Conductor: 7/30 Stranded Tinned Copper
- Insulation: Color-Coded Polyvinylchloride; Conductors Twisted
- Temperature Range: –20° to +80°C — AWM, 75°C — CM
- Nominal Insulation Thickness: .010"
- Jacket Thickness: .032", Gray PVC Jacket
- Cable Styles: UL Type CM, AWM 2576 CSA PCC FT4

Mfr.'s Type	Conductor		Nominal O.D.	100'		500'		1000'	
	No. of Cond.	AWG		Stock No.	EACH	Stock No.	EACH	Stock No.	EACH
1172C	2	22	.164" (4.17 mm)	708-5397	15.42	708-2079	50.14	708-5400	77.52
1173C	3	22	.169" (4.29 mm)	708-5398	20.07	708-2082	67.44	708-5402	104.04
1174C	4	22	.194" (4.93 mm)	708-5399	22.18	708-2085	76.68	708-5403	126.48
1175C	5	22	.199" (5.05 mm)	708-2087	26.99	708-2088	97.86	708-5404	185.11
1176C	6	22	.209" (5.31 mm)	708-5401	28.78	708-5410	112.34	708Q5411	213.18
1177C	7	22	.214" (5.44 mm)	708-7019	31.76	708-7020	118.99	708Q7021	227.42
1178C	8	22	.224" (5.69 mm)	708-7022	35.07	708-7023	133.54	708Q7024	256.51
1179C	9	22	.249" (6.32 mm)	708-7025	37.45	708-7026	144.13	708Q7027	277.68
1180C	10	22	.259" (6.58 mm)	708-5405	40.47	708-2121	166.95	708Q5412	311.47
1181C	12	22	.279" (7.09 mm)	708-5406	46.45	708Q2128	191.52	708Q5413	407.33
1181/15C	15	22	.304" (7.72 mm)	708-5407	71.18	708Q5414	332.68	708Q5415	612.57
1181/20C	20	22	.324" (8.23 mm)	708-5408	98.35	708Q5416	457.31	708Q5417	847.46
1181/25C	25	22	.364" (9.25 mm)	708-5409	114.22	708Q5418	502.33	708Q5419	935.50
1181/40C	40	22	.439" (11.15 mm)	708-5420	268.75	708Q5421	1169.47	708Q5422	2094.65

Multiconductor 80°C PVC — 300 Volts UL2509 (Unshielded)

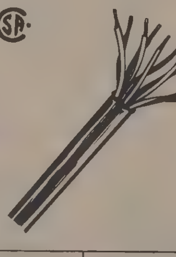


- Conductor: Tinned Copper; Color-Coded PVC Insulation .016", Gray PVC Jacket
- Temperature Range: –20°C to +80°C — AWM, 75°C — CM
- Cable Styles: UL Type CM, AWM 2509 CSA PCC FT4

Mfr.'s Type	Conductor		Nominal O.D.	100'		500'		1000'	
	No. of Cond.	AWG		Stock No.	EACH	Stock No.	EACH	Stock No.	EACH
1895C	2*	20	.180" (4.57 mm)	708-0902	17.97	708-0903	59.28	708-0904	105.79
1896C	3*	20	.190" (4.83 mm)	708-0905	20.48	708-0906	79.95	708-0907	151.71
1896/4C	4*	20	.215" (5.46 mm)	708-7028	27.89	708-7029	101.82	708-7030	193.07
1896/6C	6*	20	.255" (6.48 mm)	708-8185	40.25	708Q8186	157.14	708Q8187	298.17
1896/8C	8*	20	.270" (6.86 mm)	708-8188	66.32	708Q8189	258.92	708Q8190	491.31
1896/12C	12*	20	.350" (8.89 mm)	708-8191	70.71	708Q8192	331.56	708Q8193	640.66
1897C	2†	18	.200" (5.08 mm)	708-6250	20.97	708-2221	83.86	708-2222	146.31
1898C	3†	18	.210" (5.33 mm)	708-7031	28.44	708-7032	111.02	708-7033	210.67
1898/4C	4†	18	.240" (6.10 mm)	708-2365	32.97	708-2367	142.86	708Q2368	263.30
1898/6C	6†	18	.290" (7.37 mm)	708-8195	55.51	708Q8196	216.67	708Q8197	411.12
1898/7C	7†	18	.290" (7.37 mm)	708-8204	51.45	708Q8205	231.17	708Q8206	401.00
1898/8C	8†	18	.315" (8.00 mm)	708-8198	77.32	708Q8199	301.78	708Q8200	572.65
1898/12C	12†	18	.385" (9.78 mm)	708-7034	99.18	708Q7035	437.58	708Q7036	812.49
1898/15C	15†	18	.445" (11.30 mm)	708-6256	132.42	708Q6257	580.83	708Q6258	1084.65
1899C	2‡	16	.225" (5.72 mm)	708-2283	28.48	708-2284	132.78	708Q2285	243.15
1899/3C	3‡	16	.245" (6.22 mm)	708-8201	78.07	708Q8202	304.76	708Q8203	578.28

Strand: *7/28, †16/30, ‡19/29.

Multi-Pair 80°C PVC 150 Volts UL2576 and *UL2464 (Unshielded)



- Conductor: Stranded Tinned Copper; Color-Coded Polyvinylchloride Insulation, .010"; Conductors Twisted into Pairs; Gray PVC Jacket
- Temperature Range: –20°C to +80°C — AWM; 75°C — CM
- Cable Styles: UL Type CM, AWM 2576, 2464 CSA PCC FT4

Stock No.	Mfr.'s Type	Conductor		Nominal O.D.	PER COIL/1000"
		No. of Pairs	AWG		
708Q7003	1317C	2†	22	.239" (6.07 mm)	181.44
708Q7006	1318C	3†	22	.252" (6.40 mm)	252.43
708Q8150	1319C	4†	22	.274" (6.96 mm)	326.09
708Q8153	1320C	5†	22	.304" (7.72 mm)	492.35
708Q8212	1323C	9†	22	.370" (9.25 mm)	698.17
708Q8215	1325C	12†	22	.410" (10.46 mm)	1569.43
708Q8156	1131C*	1‡	18	.222" (5.64 mm)	290.97
708Q8159	1132C*	2‡	18	.347" (8.82 mm)	371.16
708Q8162	1133C*	3‡	18	.356" (9.04 mm)	470.71
708Q8165	1134C*	4‡	18	.412" (10.46 mm)	607.94
708Q8168	1135C*	5‡	18	.469" (11.91 mm)	829.40

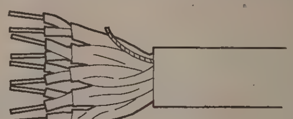
*UL2464 — Nominal Insulation thickness .016", 300 volts. **Strand:** †7/30, ‡16/30.

PVC Plenum Rated Multi Conductor Foil Shielded NEC Article 725

PVC Plenum rated cables provide an economic alternative as compared to Fluoropolymer based products. The flexible construction allows for ease of installation and meets UL Type CL2P and CSA FT6 requirements. Bare copper with PVC Plenum insulation and jacket.

Stock No.	Mfr.'s Type	Conductors	AWG	Strand	Nom. O.D.	PER SPOOL/1000'
708-8601	58401	2	24	7/32	0.114	244.80
708Q8602	57003	3	24	7/32	0.121	150.96
708Q8603	57004	4	24	7/32	0.131	191.76
708Q8604	57006	6	24	7/32	0.147	314.16
708Q8605	57008	8	24	7/32	0.164	393.72
708Q8606	57010	10	24	7/32	0.180	481.44
708Q8607	57015	15	24	7/32	0.212	848.64
708-8608	58411	2	22	7/30	0.126	326.40
708Q8609	58113	3	22	7/30	0.134	363.12
708Q8610	58114	4	22	7/30	0.145	403.92
708Q8612	58421	2	20	7/28	0.144	361.08
708Q8614	58124	4	20	7/28	0.168	542.64
708Q8616	58431	2	18	7/26	0.161	442.68
708Q8617	58133	3	18	7/26	0.176	612.00
708Q8618	58134	4	18	7/26	0.192	701.76

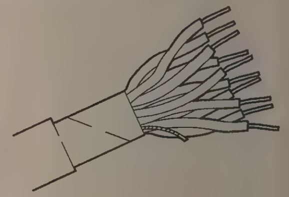
PVC Plenum Rated Multi Pair Cable Foil Shielded NEC Article 725



Meets UL Type CL2P and CSA FT6 requirements. All part numbers have overall foil shield, bare copper, and PVC plenum insulation and jacket.

Stock No.	Mfr.'s Type	No. of Pairs	AWG	Strand	Nom. O.D.	PER SPOOL/1000'
708Q8630	57602	2	24	7/32	0.157	310.08
708Q8631	57603	3	24	7/32	0.167	399.84
708Q8632	57604	4	24	7/32	0.182	571.20
708Q8633	57605	5	24	7/32	0.201	583.44
708Q8634	57606	6	24	7/32	0.220	616.08
708Q8635	58412	2	22	7/30	0.177	524.28
708Q8636	58414	4	22	7/30	0.206	724.20
708Q8637	58416	6	22	7/30	0.249	1064.88
708Q8638	57628	8	22	7/30	0.271	938.40
708Q8639	57632	2	20	7/28	0.196	405.96
708Q8640	57634	4	20	7/28	0.230	616.08
708Q8641	57636	6	20	7/28	0.279	948.60

PVC Plenum Multi Pair Cable — Low Capacitance Foil Shielded, NEC Article 725



- Low Capacitance: 12.5 pF/ft.

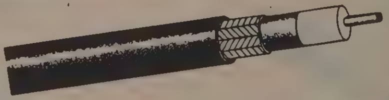
Meets UL Type CL2 and CSA FT6 requirements. Foil shield, tinned copper, FEP insulation and PVC plenum jacket.

Multi Pair Foil Shielded Low Capacitance Cable

Stock No.	Mfr.'s Type	No. of Pairs	AWG	Strand	Nom. O.D.	PER SPOOL/1000'
708Q8620	58902	2	24	7/32	0.180	845.25
708Q8621	58903	3	24	7/32	0.198	636.48
708Q8622	58904	4	24	7/32	0.212	1321.21
708Q8623	58906	6	24	7/32	0.259	1766.66
708Q8624	58909	9	24	7/32	0.312	2015.52
708Q8625	58912	12½	24	7/32	0.425	3369.65

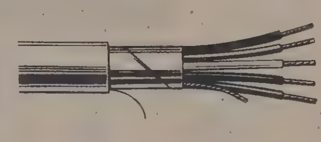
Note: Other Alpha PVC Plenum Rated Multi Conductor and Multi Pair cables are available upon request.

Plenum Rated Coaxial Cable, UL CL2P and CSA CXC FT6



Stock No.	Mfr.'s Type	RG/U	AWG	Conductor	Insulation	Nom. O.D.	Ohms	PER SPOOL/1000'
708Q8651	9859-EL	RG 58C/U	20	Str. T.C.	Foam FEP	0.158	50	569.16
708Q8653	9102-EL	RG 59/U	20	Sol. BCW	Foam FEP	0.165	75	577.36

Foil Shielded Multiconductor 150 Volts — AWM, 300 Volts — CM



UL 2576, NEC type CM, CSA PCC FT4. Conductor: Stranded tinned copper. **Insulation:** Color coded PVC. **Shield:** Aluminum/polyester tape (100% coverage). **Drain Wire:** Tinned copper. **Jacket:** Gray PVC. **Operating Temperature Range:** +80°C — AWM, 75°C — CM. **Nom Jacket Thickness:** 0.032.

Multiconductor, Foil Shielded — 24 AWG

Mfr.'s Type	No. of Cond.	Nom. O.D.	100'		500'		1000'	
			Stock No.	EACH	Stock No.	EACH	Stock No.	EACH
1212C	2	0.16"	708-0100	38.90	708-0101	89.72	708-0102	114.95
1213C	3	0.17"	708-0103	51.29	708-0104	118.36	708-0105	181.07
1214C	4	0.18"	708-0106	54.47	708-0107	125.66	708-0108	192.45
1215C	5	0.18"	708-0109	60.14	708-0110	151.31	708Q0111	231.78
1216C	6	0.20"	708-0112	61.89	708-0113	166.69	708Q0114	255.29
1217C	7	0.20"	708-0115	63.67	708-0116	182.03	708Q0117	278.83
1218C	8	0.21"	708-0118	65.81	708Q0119	202.63	708Q0120	310.26
1219C	9	0.22"	708-0121	70.93	708Q0122	217.97	708Q0123	333.78
1219/10C	10	0.23"	708-0124	75.87	708Q0125	233.36	708Q0126	357.31
1219/12C	12	0.27"	708-0127	77.81	708Q0128	287.11	708Q0129	439.74
1219/15C	15	0.28"	708-0130	98.51	708Q0131	364.06	708Q0132	557.53
1219/20C	20	0.30"	708-0133	137.43	708Q0134	508.33	708Q0135	573.53
1219/25C	25	0.33"	708-0136	163.08	708Q0137	602.49	708Q0138	922.69

Multiconductor, Foil Shielded — 22 AWG

1292C	2	0.17"	708-0139	40.15	708-0140	92.33	708-0141	141.43
1293C	3	0.18"	708-0142	54.47	708-0143	125.66	708-0144	286.76
1294C	4	0.19"	708-0145	61.89	708-0146	151.31	708Q0147	231.78
1295C	5	0.20"	708-0148	63.85	708-0149	171.75	708Q0150	263.08
1296C	6	0.22"	708-0151	65.81	708-0152	192.35	708Q0153	294.47
1297C	7	0.22"	708-0154	68.28	708Q0155	210.28	708Q0156	321.99
1298C	8	0.23"	708-0157	75.87	708Q0158	233.36	708Q0159	407.31
1299C	9	0.25"	708-0160	77.81	708Q0161	253.76	708Q0162	407.31
1299/10C	10	0.26"	708-0163	79.74	708Q0164	294.96	708Q0165	451.53
1299/12C	12	0.28"	708-0166	89.49	708Q0167	330.75	708Q0168	535.34
1299/15C	15	0.31"	708-0169	138.50	708Q0170	535.83	708Q0171	783.42
1299/20C	20	0.33"	708-0172	185.35	708Q0173	684.54	708Q0174	1048.36
1299/25C	25	0.36"	708Q0175	224.09	708Q0176	828.00	708Q0177	1268.25

Multi-Pair, Individually Foil Shielded, UL2493

— NEW —

60°C PP/PVC 300 V. Each conductor is tinned copper. Color-coded high density polyethylene insulation. Conductors twisted into pairs. Mylar supported aluminum foil shield. Stranded tinned copper drain wire. Polypropylene gray polyvinylchloride jacket. **Temp. Range:** –20°C to +60°C.

Mfr.'s Type	No. of Pairs	AWG (Stranding)	Nom. O.D.	100' Spool		500' Spool		1000' Spool	
				Stock No.	EACH	Stock No.	EACH	Stock No.	EACH
6010C	3	22 (7/30)	0.31"	708-8001	43.64	708-8002	175.85	708Q8003	301.92
6012C	6	22 (7/30)	0.39"	708-8712	74.93	708Q8713	309.41	708Q8714	561.00
6014C	9	22 (7/30)	0.46"	708-8752	149.80	708Q8704	691.09	708Q8705	1359.74
6016C	11	22 (7/30)	0.48"	708-8753	167.00	708Q8101	769.59	708Q8102	1516.76
6018C	15	22 (7/30)	0.56"	708Q8706	214.28	708Q8707	1052.97	708Q8709	2081.45
6019C	17	22 (7/30)	0.61"	708Q8711	357.00	708Q8715	1518.64	708Q8717	2866.20
6032C	2	20 (10/30)	0.31"	708-8754	56.81	708-8735	189.33	708Q8736	378.52
6033C	3	20 (10/30)	0.34"	708-8755	59.06	708Q8738	239.33	708Q8739	468.08
6036C	6	20 (10/30)	0.43"	708-8740	116.87	708Q8741	564.28	708Q8742	1106.15
6039C	9	20 (10/30)	0.53"	708Q8756	227.48	708Q8757	1044.19	708Q8758	1962.54
6023C	3	18 (16/30)	0.38"	708-8722	80.93	708Q8723	335.87	708Q8724	661.12
6024C	6	18 (16/30)	0.56"	708-8762	149.39	708Q8763	689.17	708Q8764	1355.93
6025C	9	18 (16/30)	0.62"	708Q8106	222.69	708Q8107	1078.71	708Q8108	2132.94

Multipair Data Cables, Individually Shielded

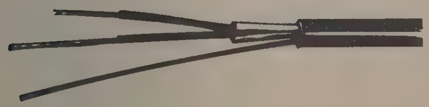
— NEW —

PP/PVC individually and overall shielded. Stranded tinned copper conductors, aluminum/polyester tape shield. PVC jacket. –20°C to 105°C, 400 volt. UL Type CM, CSA PCC FT4.

Mfr.'s Type	No. of Pairs	AWG (Stranding)	Nom. O.D.	100' Spool		500' Spool		1000' Spool	
				Stock No.	EACH	Stock No.	EACH	Stock No.	EACH
2463C	4	22 (7/30)	0.23"	708-8766	98.59	708Q8767	393.96	708Q8768	750.21
2466C	2	22 (7/30)	0.16"	708-8769	26.99	708-8770	97.86	708-6367	155.04
2467C	4	20 (7/28)	0.34"	708-8772	132.40	708Q8773	637.91	708Q8774	1204.31

Multiconductor Foil Shield 300 Volts

UL2092, 2093, 2094, UL Type CM, CSA PCC FT4



Conductor: Stranded tinned copper. **Insulation:** Color coded polyethylene .016". **Shield:** Aluminum/polyester tape (100% coverage). **Jacket:** Gray polyvinylchloride. **Operating Temperature Range:** +60°C.

Mfr.'s Type	No. of Cond.*	Cond.		Cond. Color Code**	Nom. O.D.	100'		500'		1000'	
		AWG	Strand			Stock No.	EACH	Stock No.	EACH	Stock No.	EACH
2460C†	2	22	Solid	1, 2	0.135"	708-6352	26.28	708-6353	52.02	708-6354	101.63
2461C†	2	22	7/30	1, 2	0.135"	708-6356	21.30	708-6357	59.16	708-6355	116.87
2401C	2	22	7/30	1, 3	0.170"	708-8004	16.18	708-8005	76.44	708-8006	124.83
2402C	2	22	7/30	1, 2	0.170"	708-6350	18.85	708-6349	73.58	708-6348	139.64
2403C	3	22	7/30	1, 2, 3	0.185"	708-8007	19.18	708-8008	86.25	708-8009	151.10
2404C	4	22	7/30	1, 2, 3, 4	0.210"	708-8010	23.73	708-8011	92.62	708-8012	175.73
2411C	2	20	7/30	1, 3	0.186"	708-8013	20.44	708-8014	79.83	708-8015	151.47
2412C	2	20	7/30	1, 2	0.186"	708-8016	20.44	708-8017	79.83	708-8018	151.47
2413C	3	20	7/30	1, 2, 3	0.205"	708-8019	22.17	708-8020	92.86	708-8021	164.30
2414C	4	20	7/30	1, 2, 3, 4	0.225"	708-8022	27.19	708-8023	106.14	708-8024	201.41
2421C	2	18	16/30	1, 3	0.210"	708-8025	23.72	708-8026	93.92	708-8027	159.12
2422C	2	18	16/30	1, 2	0.210"	708-8028	22.93	708-8029	89.52	708-8030	169.87
2423C	3	18	16/30	1, 2, 3, 4	0.230"	708-6359	26.38	708-6360	124.28	708Q6361	222.36
2424C	4	18	16/30	1, 2, 3, 4	0.255"	708-8031	35.54	708-8032	138.62	708Q8033	263.16
2432C	2	16	26/30	1, 2	0.245"	708-8034	34.15	708-8035	133.31	708Q8036	252.95
2433C	3	16	26/30	1, 2, 3	0.270"	708-6362	40.49	708-6363	158.04	708Q6364	299.88

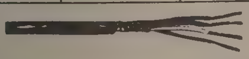
*2 cond. — UL2092, 3 cond. — UL2093, 4 cond. — UL2094, except for 2460C and 2461C. †Types 2460 and 2461 have polypropylene insulation and are rated 105°C, 200 V. **Color Codes: 1-Black; 2-Red; 3-Natural; 4-Green.

Data, Communications and Control Cables

Multiconductor, Braided Shield, PE

Each conductor stranded, tinned copper. Color-coded polyethylene insulation .015". Cabled with fillers where necessary. Mylar wrap, braided tinned copper shield. Gray PVC jacket. –20°C to +80°C, 600 V. Passes UL VW-1 Flame Test.

Mfr.'s Type	Conductor			Nominal O.D.	100'			500'			1000'		
	Number of Cond.	AWG	Strand		Stock No.	Wt. Lbs.	EACH	Stock No.	Wt. Lbs.	EACH	Stock No.	Wt. Lbs.	EACH
1712	2	20	26/34	.245" (6.22 mm)	708-8120	5.0	76.68	708Q8121	17.8	321.83	708Q8122	35.0	434.87
1713	3	20	26/34	.250" (6.35 mm)	708-8123	5.6	92.64	708Q8124	22.5	381.07	708Q8125	44.0	688.95
1715	4	20	26/34	.260" (6.60 mm)	708-8126	5.8	96.23	708Q8127	26.8	396.25	708Q8128	52.5	716.20
1716	5	20	26/34	.275" (6.99 mm)	708-6040	7.0	116.89	708Q6041	30.7	480.99	708Q6042	60.5	869.57

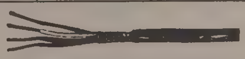


Multiconductor, Braided Shield, UL 1108, UL 2095

Each conductor stranded tinned copper. Color-coded polyvinylchloride insulation. Braided copper shield. Gray polyvinylchloride jacket. **Nom. jacket thickness:** .020". **Temp. Range:** –20°C to +80°C. 300 V. UL 1108 — 1 Conductor, UL 2095 — multiconductor. (UL Type CM, CSA PCC FT4).

1735	1	22	7/30	.125" (3.18 mm)	708-8130	2.0	64.18	708Q8131	7.0	173.40	708Q8132	13.0	298.21
1736C	2	22	7/30	.185" (4.60 mm)	708-7037	2.0	53.77	708-7038	10.0	169.32	708Q7039	19.0	333.66
1737C	3	22	7/30	.200" (5.08 mm)	708-7040	3.0	63.24	708Q7041	12.0	227.19	708Q7042	23.0	359.45
1738C	4	22	7/30	.210" (5.33 mm)	708-7043	3.0	83.40	708Q7044	15.0	314.87	708Q7045	29.0	620.43
1745	1	18	16/30	.145" (3.68 mm)	708-8133	3.0	69.40	708Q8134	14.0	267.44	708Q8135	26.0	515.69
1746C	2	18	16/30	.235" (5.97 mm)	708-7046	4.0	113.53	708Q7047	17.0	467.12	708Q7048	32.0	844.34
1747C	3	18	16/30	.245" (6.22 mm)	708-8136	4.0	159.69	708Q8137	20.0	657.39	708Q8138	38.0	1188.48

Multiconductor, Braided Shield, MIL-W-16878D, Type B/N



Conductor: Stranded, tinned copper. Color-coded polyvinylchloride insulation; conductors cabled; braided tinned copper shield, 90% coverage. Clear nylon jacket .003" and gray PVC jacket (3221 — 016"; 3232 — .019"). –55°C to +105°C. 600 V.

3221	2	22	19/34	.168" (4.27 mm)	708-7208	3.0	56.53	708Q7209	13.0	269.75	708Q7210	26.0	368.20
3232	3	20	19/32	.210" (5.33 mm)	708-7211	4.0	76.30	708Q7212	17.0	312.94	708Q7213	32.0	529.28

Transceiver Cables

► Related Products: Subminiature D Connectors

Ethernet Transceiver Cables

Stock No.*	Mfr.'s Type	Description	Std. Length, Ft. (Weight, lbs.)	Conductor		Insulation Material Thickness Diameter Inches (mm)	Shield Material DCR Ohms/1000' (Ohms/Km)	Jacket Material Nom. O.D. Inches (mm)	Data Pairs			Nominal Attenuation		PER COIL/ 1000'
				No. of Pairs	AWG Stranding Material DCR Ohms/K* (Ohms/Km)				Nom. Imp. Ohms	Vel. of Prop. %	Nominal Capacitance pF/Ft. (pF/m)	dB/100' (dB/100 m) Max.	@ MHz	
708-9181	9852C CL2: 30 V 75°C AWM: 30 V 80°C	Ethernet Non-Plenum NEC CL2 UL AWM 2919 PCC FT4	1000 (87)	4 Pairs: 3 and 1 and a Central Drain Wire	22, 7/30 Tinned Copper 16.4 (53.8) 20, 7/28 Tinned Copper 10.2 (33.5) 22, 7/28 Tinned Copper	(3) Polypropylene 0.017 (0.43) 0.064 (1.63) AND (1) Semi-rigid PVC 0.010 (0.25) 0.060 (1.52)	Individual Alum/Polyester + Overall Alum/Polyester/Alum + 95% TC Braid 3.0 (9.8)	Gray PVC 0.340 (8.64)	78	65	20.0 (65.6)	3.8 dB/164 Ft. (3.8 dB/50 m)	5-10	**1405.56**
IEEE 802.3 Transceiver Cables														
708-9182	9853C 30 V 75°C	IEEE 802.3 Non-Plenum NEC CL2 PCC FT4	1000 (93)	4 and a Central Drain Wire	20 7/28 Tinned Copper 10.2 (33.5) 22 7/28 Tinned Copper	(3) Cellular Polypropylene 0.018 (0.46) 0.074 (1.88) AND (1) Semi-rigid PVC 0.010 (0.25) 0.058 (1.47)	Individual Alum/Polyester + Overall Alum/Polyester/Alum + 95% T C Braid 3.0 (9.8)	Gray PVC 0.395 (10.03)	78	65	17.0 (55.8)	3.0 dB/164 Ft. (3 dB/50 m)	5-10	**1130.16**

Color Code: *Pair 1 — Power (PVC), Black and Red; Pair 2 — Data (FPP), Green and Blue; Pair 3 — Data (FPP), Yellow and Orange; Pair 4 — Data (FPP), White and Brown.

Twinaxial Type Cable — 78 Ohm

► For Use With Appletalk and Arcnet

Stock No.	Mfr.'s Type	Description	Std. Length, Ft. (Weight, lbs.)	Conductor		Insulation Material Thickness Diameter Inches (mm)	Shield Material DCR Ohms/1000' (Ohms/Km)	Jacket Material Nom. O.D. Inches (mm)	Nom. Imp. Ohms	Vel. of Prop. %	Nominal Capacitance pF/Ft. (pF/m)	Nominal Attenuation		PER COIL/ 1000'
				No. of Cond.	AWG Stranding Material Ohms/1000' (Ohms/Km)							dB/100' (dB/100 m)	@ MHz	
708-3310	9888C CM: 300 V 60°C AWM: 30 V 60°C	Twinax Type Non-Plenum NEC CM UL AWM 2726 PCC FT4	1000 (19)	2 Cond.	22 7/30 Tinned Copper 16.4 (53.8)	Solid Polyethylene 0.058 (1.47)	85% Tinned Copper Braid 5 (16.4)	Gray PVC 0.185 (4.70)	78	66	19.7 (64.6)	0.8 (2.6) 2.5 (8.2) 4.5 (14.8) 9.5 (31.2) 20.0 (65.6) 32.0 (105.0)	1 10 50 100 400 1000	**386.58**

Twinaxial Cable — 100 Ohm

► Ohm UL2498. 9818C is UL Type CL2, CSA PCC FT1

Mfr.'s Type	Inner Conductor			Dielectric	Shield		Jacket		PER 500'		PER 1000'	
	Mat.'l	Strand	AWG		Mat.'l	% Coverage	Mat.'l	% Coverage	Stock No.	EACH	Stock No.	EACH
9817	1st cond. — C 2nd cond. — TC	7/34	20	PE	TC Braid	85	Black V	.330	**708Q9916**	**297.02**	**708Q9917**	**534.64**
9818C	1st cond. — C 2nd cond. — TC	7/34	20	PE	TC Braid	95	Black V	.330	**708Q9919**	**269.28**	**708Q9920**	**512.04**

Data Cable — Twisted Pair, Shielded

► 9814C is UL Type CM; 9815C, 9819C, 9820C and 9823C are CL2 Related

Mfr.'s Type	No. of Type	Ohms	UL Style	Conductor		AWG Dielectric	Shield		Jacket		PER 100'		PER 500'		PER 1000'	
				Mat.'l	Strand		Mat.'l	% Coverage	Mat.'l	O.D. (In.)	Stock No.	EACH	Stock No.	EACH	Stock No.	EACH
9814C	1	78	2582	TC	7/28	PE	A/M plus TC Braid and Drain	100	Blue PVC	.242	**708-9900**	**63.65**	**708Q9901**	**254.59**	**708Q9902**	**509.18**
9815C	1	78	2092	TC	7/28	PE	TC Braid	93	Blue PVC	.242	—	—	**708Q9910**	**254.59**	**708Q9911**	**509.18**
9819C	2	100	2919	TC	Solid	PE	A/M plus TC Braid	100	Black PVC	.290	**708-9912**	**63.65**	**708Q9913**	**297.02**	**708Q9914**	**551.62**
9820C	1	124	2704	C	Solid	FPE	A/M/A plus TC Braid	100	Black PVC	.440	**708-9903**	**169.73**	**708Q9904**	**634.36**	**708Q9905**	**1230.53**
9823C	1	150	2668	TC	19/34	FPE	A/M/A	100	Black PVC	.350	**708-9926**	**112.44**	**708Q9927**	**350.06**	**708Q9928**	**700.13**

Material Code: PE — Polyethylene; C — bare copper; TC — tinned copper; V — polyvinylchloride, type 1.

Microphone Cables

Shielded Microphone Cable

60°C PE/PVC. **Type 1703.** Stranded tinned copper conductor. White polyethylene insulation. Braided tinned copper shield. Gray-polyvinylchloride jacket. **Suggested Working Voltage:** 3500 V. Type 1703 is for high impedance microphones. **Type 1710.** Stranded tinned copper conductor. Color-coded polyethylene insulation; Conductor 1 — White; Conductor 2 — Black. Cabled with fillers. Wrap over conductors. Braided tinned copper shield. Black polyvinylchloride jacket. **Suggested Working Voltage:** 1000 V. Type 1710 is for low impedance applications.

Mfr.'s Type	No. of Cond.	Conductor		Nom. Ins. Thick	Nom. Cap. pF/Ft.†	Nom. O.D.	PER 100'			PER 500'			PER 1000'		
		AWG	Strand				Stock No.	Wt. Lbs.	EACH	Stock No.	Wt. Lbs.	EACH	Stock No.	Wt. Lbs.	EACH
1703	1	24	10/34	.020"	35	.145"	**708-7049**	2.0	**29.66**	**708Q7050**	8.0	**124.48**	**708Q7051**	14.0	**168.20**
1710	2	22	16/34	.025"	31	.230"	**708-7052**	4.0	**51.24**	**708Q7053**	16.0	**215.08**	**708Q7054**	31.0	**290.60**

† Between one conductor and remaining conductors connected to shield.

Types 1448/20 and 1448/18. Conductors: Stranded tinned copper, color-coded rubber insulation, protective wrap over conductors. Braided tinned copper shield, overall cotton separator tape, black rubber* or neoprene** jacket. Low impedance applications.

1448/20*	2	20	26/34	—	68	.260"	—	—	—	—	—	—	**708Q3608**	48.0	**778.32**
1448/18**	2	18	41/34	—	78	.290"	—	—	—	—	—	—	**708Q3611**	71.0	**791.52**

Precision Video Coaxial Cable

Indoor, 75 Ohms (100% Sweep Test at 5 to 300 MHz)

Mfr.'s Type	RG	Conductor			Dielectric		Shield		Jacket*		PER 1000'	
		AWG	Strand	Mat'l.	Mat'l.	Dia.	Mat'l.	Coverage	Mat'l.	Dia.	Stock No.	EACH
9807*	Video Cable	20	Solid	BC	PE	.200"	Double TC Braid	99%	PE	.304"	**708Q9908**	**660.45**
9808	Video Cable	20	Solid	BC	PE	.200"	Double TC Braid	98%	Clear PE	.304"	**708Q9895**	**952.68**
9810	Video Cable	23	7/32	BC Compacted	PC	.146"	A/M Plus TC Braid	100%	Black NCV	.220"	**708Q9897**	**352.72**

Extra Flexible, 75 Ohms

9259*	59 B/U	24	7/32	BC	PE	.142"	BC	95%	PVC	.240"	**708Q9982**	**709.47**
9813*	Video Coax	20	7/30	BC	PE	.193"	BC	Inner @ 96%	PVC	.303"	**708Q9983**	**1219.92**

***Jacket Colors:** Black.

Audio/Video Multiconductor Cable

UL Type CM, CSA PCC FT4

Conductor: Stranded Tinned Copper. **Insulation:** Color-coded, Type 2464C — Polypropylene; Type 2465C — PVC. **Shield:** .015" Aluminum foil/mylar over conductors 2 and 3 with a stranded tinned copper drain wire for grounding. **Conductors:** 1 and 4 are paired. **Jacket:** Polyvinylchloride. **Operating Temperature Range:** +80°C, 75°C — CM.

Mfr.'s Type	Conductor			Nom. O.D.	PER 100'			PER 500'			PER 1000'		
	No. of Cond.	AWG GA	Strand		Stock No.	Wt. Lbs.	EACH	Stock No.	Wt. Lbs.	EACH	Stock No.	Wt. Lbs.	EACH
2464C	4	22	7/30	.160" (4.10 mm)	**708-6046**	2.3	**50.67**	**708-6047**	11.0	**168.20**	**708Q6048**	21.5	**214.20**
2465C	4	20	7/28	.233" (5.92 mm)	**708-6043**	3.8	**51.61**	**708-6044**	18.8	**208.08**	**708Q6045**	35.5	**404.37**

Portable Cord — 300 V, 600 V, 60°C

Each conductor stranded bare copper; color coded PVC or rubber insulation; cabled with filters, separator.

Rubber Jacket, 300 V, 60°C

Mfr.'s Type	U.L. Type	No. of Cond.	AWG	Strand	Nom. O.D.	PER 100'		PER 250'	
						Stock No.	EACH	Stock No.	EACH
1951/3	SV	3	18	41/34	.260"	**663-6053**	**49.18**	**663-6054**	**101.84**
1952/3	SJ	3	18	16/30	.330"	**663-6060**	**35.70**	**663-6061**	**89.25**

Neoprene Jacket, 300 V, 60°C

Mfr.'s Type	U.L. Type	No. of Cond.	AWG	Strand	Nom. O.D.	PER 100'		PER 250'	
						Stock No.	EACH	Stock No.	EACH
1932	SJO	2	18	16/30	.305"	—	—	**663-6031**	**83.64**
1932/3	SJO	3	18	16/30	.330"	**663-6033**	**41.21**	**663-6034**	**103.02**

Neoprene Jacket, 600 V, 60°C

1934	SO	2	18	16/30	.390"	—	—	**663-6037**	**134.13**
1934/3	SO	3	18	41/34	.405"	**663-6039**	**135.39**	**663-6040**	**153.51**

Plastic Jacket, 300 V, 60°C

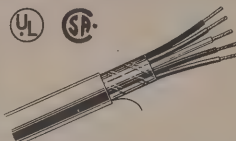
1941/3	SJT	3	18	—	.328"	**663-6042**	**19.71**	**663-6043**	**80.62**

Multiconductor Telephone Cable, Unshielded Flat (Oval)

Silver satin, 26 AWG stranded 7/34 bare copper, 150 V 80°C insulation material polypropylene. **Jacket Material:** Silver PVC. **Standard Length:** 328'. Also available in 1000'.

Stock No.	Mfr.'s Type	No. of Conductors	Jacket Thickness × Width	PER 328'
708-3313	1604	4	0.100" × 0.200"	**34.62**
708-3314	1606	6	0.100" × 0.275"	**41.56**
708-3315	1608	8	0.100" × 0.335"	**55.41**

Multiconductor, Foil Shielded

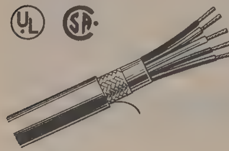


Stranded tinned copper conductors, aluminum/polyester foil shield. Drain wire is stranded tinned copper. Gray PVC jacket. **Insulation:** Color coded SR-PVC. **Operating Temperature:** –20°C to 80°C. 300 V. UL Type CM, UL AWM Style 2464, CSA PCC FT4.

24 AWG 7/32

Mfr.'s Type	No. of Cond.	Jacket Thickness	Nom. O.D.	100'		500'		1000'	
				Stock No.	EACH	Stock No.	EACH	Stock No.	EACH
6305	5	0.032"	0.189"	708-5100	19.22	708-5101	89.45	708-5102	162.67
6306	6	0.032"	0.209"	708-5103	22.62	708-5104	105.16	708-5105	191.23
6307	15	0.032"	0.284"	708-5106	58.83	708Q5107	273.50	708Q5108	497.27
6308	20	0.032"	0.314"	708-5109	82.17	708Q5110	382.03	708Q5111	694.58
6309	25	0.032"	0.339"	708-5112	90.17	708Q5113	419.18	708Q5114	762.12
6310	30	0.032"	0.380"	708-5115	189.94	708Q5116	810.37	708Q5117	1473.39
6311	40	0.032"	0.430"	708Q5353	257.75	708Q5354	1099.72	708Q5118	1999.49
6312	50	0.032"	0.490"	708Q5119	323.38	708Q5120	1379.75	708Q5121	2508.65

Multiconductor, Foil/Braid Shield



Stranded tinned copper conductors, aluminum-polyester/65% tinned copper braid. Drain wire is stranded tinned copper. Gray PVC jacket. **Operating Temperature:** –20°C to 80°C. UL Type CM.

Insulation: Color coded SR-PVC. UL AWM Style 2464, CSA PCC FT4. 300 V.

24 AWG 7/32

Mfr.'s Type	No. of Cond.	Jacket Thickness	Nom. O.D.	100'		500'		1000'	
				Stock No.	EACH	Stock No.	EACH	Stock No.	EACH
6327	3	0.032"	0.190"	708-5122	53.10	708Q5123	226.56	708Q5124	411.94
6328	4	0.032"	0.200"	708-5125	49.84	708Q5126	232.50	708Q5127	422.75
6329	5	0.032"	0.215"	708-5128	65.24	708Q5129	278.32	708Q5130	506.02
6330	6	0.032"	0.225"	708-5131	44.92	708Q5132	204.24	708Q5133	371.34
6331	7	0.032"	0.228"	708-5134	48.92	708Q5135	222.48	708Q5136	404.53
6332	8	0.032"	0.240"	708-5137	78.34	708Q5138	334.34	708Q5139	607.86
6333	9	0.032"	0.254"	708-5140	57.83	708Q5141	262.96	708Q5142	478.14
6334	10	0.032"	0.270"	708-5143	87.11	708Q5144	371.67	708Q5145	675.77
6335	15	0.032"	0.300"	708-5146	91.09	708Q5147	414.24	708Q5148	753.17
6336	25	0.032"	0.372"	708Q5149	228.70	708Q5150	975.83	708Q5151	1774.19
6337	37	0.032"	0.412"	708Q5152	341.09	708Q5153	1455.27	708Q5154	2645.92
6338	50	0.032"	0.486"	708Q5155	430.34	708Q5156	1836.08	708Q5157	3338.36

22 AWG 7/30

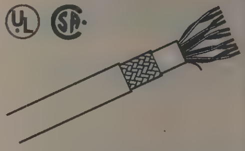
6339	3	0.032"	0.203"	708-5158	49.33	708Q5159	210.45	708Q5160	382.62
6340	4	0.032"	0.215"	708-5161	55.49	708Q5162	236.74	708Q5163	430.44
6341	5	0.032'	0.231"	708-5164	47.86	708Q5165	217.65	708Q5166	395.74
6342	6	0.032"	0.245"	708-5167	50.61	708Q5168	235.25	708Q5169	427.75
6343	7	0.032"	0.245'	708-5170	63.12	708Q5171	287.09	708Q5172	522.00
6344	8	0.032"	0.260"	708-5173	52.20	708Q5174	242.70	708Q5175	441.27
6345	9	0.032"	0.280"	708-5176	75.38	708Q5177	342.78	708Q5178	623.26
6346	10	0.032"	0.300"	708-5179	68.87	708Q5180	320.22	708Q5181	582.18
6347	15	0.032"	0.340"	708-5182	120.52	708Q5183	514.22	708Q5184	934.95
6348	25	0.032"	0.410"	708Q5185	221.54	708Q5186	945.30	708Q5187	1718.70
6349	37	0.032"	0.460"	708Q5188	328.00	708Q5189	1400.97	708Q5190	2547.21
6350	50	0.032"	0.555"	708Q5191	378.07	708Q5192	1613.11	708Q5193	2932.93

Insulation: Color coded foam polyethylene. UL AWM Style 2919, CSA PCC FT1, 300 V-CM, 30 V-AWM.

24 AWG 7/32

6351	3	0.035"	0.203"	708-5194	26.01	708-5195	120.89	708Q5196	219.81
6352	4	0.035"	0.230"	708-5197	28.99	708-5198	134.76	708Q5199	245.04
6353	5	0.035"	0.246"	708-5200	34.11	708-5201	158.55	708Q5202	288.27
6354	6	0.035"	0.265"	708-5203	38.17	708-5204	177.38	708Q5205	322.50
6355	7	0.035"	0.265"	708-5206	45.41	708Q5207	211.08	708Q5208	383.76
6356	8	0.035"	0.280"	708-5209	49.88	708Q5210	231.89	708Q5211	421.61
6357	9	0.035"	0.300"	708-5212	53.71	708Q5213	249.72	708Q5214	454.04
6358	10	0.035"	0.306"	708-5215	58.63	708Q5216	339.82	708Q5217	495.48
6359	15	0.035"	0.350"	708-5218	72.48	708Q5219	336.93	708Q5220	612.59
6360	25	0.035"	0.445"	708-5221	112.14	708Q5222	521.24	708Q5223	947.70
6361	37	0.035"	0.515"	708-5224	189.35	708Q5225	880.20	708Q5226	1600.34

Multipair, Foil/Braid Shield



Stranded tinned copper conductors, aluminum-polyester/65% tinned copper braid. Drain wire is stranded tinned copper. Gray PVC jacket. **Insulation:** Color coded SR-PVC. **Operating Temperature:** –20°C to 80°C. 300 V. UL Type CM, UL AWM Style 2464, CSA PCC FT4.

24 AWG 7/32

Mfr.'s Type	No. of Pair	Jacket Thickness	Nom. O.D.	100'		500'		1000'	
				Stock No.	EACH	Stock No.	EACH	Stock No.	EACH
6362	2	0.032"	0.230"	708-5284	34.39	708-5285	159.90	708Q5286	290.72
6363	3	0.032"	0.250"	708-5287	40.41	708-5288	187.84	708Q5289	341.52
6364	4	0.032"	0.280"	708-5290	68.91	708Q5291	305.63	708Q5292	555.72
6365	5	0.032"	0.300"	708-5293	85.99	708Q5294	381.36	708Q5295	693.40
6366	6	0.032"	0.310"	708-5296	98.39	708Q5297	436.36	708Q5298	793.38
6367	7	0.032"	0.340"	708-5299	97.92	708Q5300	465.47	708Q5301	846.31
6368	10	0.032"	0.380"	708-5302	151.35	708Q5303	645.74	708Q5304	1174.08
6369	12¹/₂	0.032"	0.390"	708-5305	165.93	708Q5306	735.87	708Q5307	1337.93
6370	15	0.032"	0.430"	708Q5308	207.98	708Q5309	922.32	708Q5310	1676.94
6371	18	0.032"	0.460"	708Q5311	272.01	708Q5312	1206.31	708Q5313	2193.31
6372	25	0.032"	0.480"	708Q5314	315.73	708Q5315	1334.47	708Q5316	2537.56

22 AWG 7/30

6373	2	0.032"	0.260"	708-5317	57.32	708Q5318	254.25	708Q5319	462.28
6374	3	0.032"	0.296"	708-5320	56.20	708Q5321	261.26	708Q5322	475.01
6375	4	0.032"	0.320"	708-5323	63.65	708Q5324	295.90	708Q5325	538.01
6376	5	0.032"	0.322"	708-5326	72.13	708Q5327	335.40	708Q5328	609.80
6377	6	0.032"	0.348"	708-5329	82.13	708Q5330	381.77	708Q5331	694.11
6378	7	0.032"	0.350"	708-5332	88.94	708Q5333	413.45	708Q5334	745.62
6379	8	0.032"	0.385"	708-5335	103.73	708Q5336	482.19	708Q5337	876.73
6380	10	0.032"	0.440"	708-5338	125.64	708Q5339	584.07	708Q5340	1061.94
6381	12¹/₂	0.032"	0.455"	708Q5341	228.91	708Q5342	1015.19	708Q5343	1845.79
6382	15	0.032"	0.502"	708Q5344	267.48	708Q5345	1141.30	708Q5346	2075.09
6383	18	0.032"	0.535"	708Q5347	316.73	708Q5348	1404.68	708Q5349	2553.96
6384	25	0.053"	0.620"	708Q5350	425.61	708Q5351	1815.91	708Q5352	3301.64

Stranded tinned copper conductors, aluminum-polyester/65% tinned copper braid. Drain wire is stranded tinned copper. Gray PVC jacket. **Insulation:** Color coded polyethylene. **Operating Temperature:** –20°C to 60°C. 300 V-CM 30 V-AWM. UL Type CM, UL AWM Style 2464, CSA PCC FT4.

28 AWG 7/36

6390	2	0.035"	0.214"	708-2600	48.92	708Q2601	208.73	708Q2602	379.54
6391	3	0.035"	0.222"	708-2603	84.52	708Q2604	360.63	708Q2605	655.70
6392	4	0.035"	0.237"	708-2606	72.99	708Q2607	311.41	708Q2608	618.22
6393	5	0.035"	0.240"	708-2609	115.34	708Q2610	492.15	708Q2611	894.83
6394	7	0.035"	0.256"	708-2612	152.73	708Q2613	651.70	708Q2614	1184.89
6395	9	0.035"	0.290"	708-2615	187.13	708Q2616	798.50	708Q2617	1451.81
6396	12	0.035"	0.319"	708Q2618	248.00	708Q2619	1058.15	708Q2620	1923.88
6397	13	0.035"	0.336"	708Q2621	274.05	708Q2622	1169.31	708Q2623	2126.03
6398	18	0.035"	0.365"	708Q2624	318.02	708Q2625	1356.84	708Q2626	2466.99
6399	25	0.035"	0.429"	708Q2627	276.05	708Q2628	1177.79	708Q2629	2141.43
6400	31	0.035"	0.462"	708Q2630	628.83	708Q2631	2683.13	708Q2632	4878.42

24 AWG 7/32

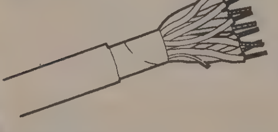
6401	2	0.035"	0.291"	708-2333	46.78	708Q2334	212.73	708Q2335	386.80
6402	3	0.035"	0.305"	708-2336	55.20	708Q2337	262.26	708Q2338	476.83
6403	4	0.035"	0.330"	708-2339	70.75	708Q2340	321.75	708Q2341	584.99
6404	5	0.035"	0.338"	708-2342	103.61	708Q2343	442.09	708Q2344	803.80
6405	6	0.035"	0.364"	708-2345	139.66	708Q2346	572.77	708Q2347	1041.42
6406	7	0.035"	0.364"	708-2348	136.44	708Q2349	582.09	708Q2350	1058.35
6407	9	0.035"	0.419"	708-2351	100.86	708Q2352	468.83	708Q2353	852.41
6408	10	0.035"	0.451"	708-2354	158.71	708Q2355	677.14	708Q2356	1231.16
6409	12	0.035"	0.464"	708Q2357	247.21	708Q2358	1054.74	708Q2359	1917.72
6410	18	0.035"	0.567"	708Q2360	346.25	708Q2361	1477.33	708Q2362	2686.05
6411	25	0.035"	0.670"	708Q2363	410.65	708Q2364	1677.59	708Q5355	3050.17

Stranded tinned copper conductors, overall aluminum/polyester foil shield with 90% coverage tinned copper braid. Drain wire is stranded tinned copper. Gray PVC jacket. **Insulation:** Color coded polyethylene. **Operating Temperature:** –20°C to 60°C. 300 V-CM 30 V-AWM. UL Type CM, UL AWM Style 2919, CSA PCC FT1.

24 AWG 7/32

6412	1	0.035"	0.232"	708-2366	45.15	708-5356	192.62	708Q5357	350.21
6413	2	0.035"	0.340"	708-2369	81.15	708Q2370	346.21	708Q2371	629.46
6414	3	0.035"	0.360"	708-2372	108.98	708Q2373	465.00	708Q2374	845.46
6415	4	0.035"	0.390"	708-2375	142.17	708Q2376	589.19	708Q2377	1071.29

Multipair, Foil Shield Tray Cable



Stranded tinned copper conductors, aluminum/polyester foil shield. Drain wire is stranded tinned copper. Gray PVC jacket. **Insulation:** Color coded PVC. **Operating Temperature:** –20°C to 105°C. 300 V. UL Type CM/PLTC, CSA PCC FT4.

22 AWG 7/30

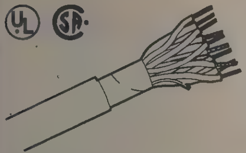
Mfr.'s Type	No. of Pair	Jacket Thickness	Nom. O.D.	500'		1000'	
				Stock No.	EACH	Stock No.	EACH
6417	2	0.043"	0.310"	708-5228	147.45	708Q5229	268.10
6418	3	0.043"	0.326"	708-5231	184.54	708Q5232	335.54
6419	4	0.043"	0.353"	708Q5234	241.03	708Q5235	438.23
6420	6	0.053"	0.425"	708Q5237	372.20	708Q5238	676.71

Mfr.'s Type	No. of Pair	Jacket Thickness	Nom. O.D.	500'		1000'	
				Stock No.	EACH	Stock No.	EACH
6421	9	0.053"	0.488"	708Q5240	527.63	708Q5241	959.33
6422	11	0.053"	0.536"	708Q5243	603.23	708Q5244	1096.79
6423	15	0.053"	0.594"	708Q5246	775.47	708Q5247	1409.95
6424	19	0.063"	0.631"	708Q5249	924.18	708Q5250	1680.33
6425	27	0.063"	0.741"	708Q5252	1313.17	708Q5253	2387.55
6426	51	0.063"	0.950"	708Q5255	2657.83	708Q5256	4832.43

18 AWG 19/30

6427	2	0.043"	0.377"	708Q5258	412.00	708Q5259	749.09
6428	3	0.053"	0.420"	708Q5261	435.72	708Q5262	792.23
6429	4	0.053"	0.458"	708Q5264	556.72	708Q5265	1012.21
6430	6	0.053"	0.509"	708Q5267	846.89	708Q5268	1539.79
6431	9	0.053"	0.591"	708Q5270	1279.77	708Q5271	2326.84
6432	11	0.063"	0.682"	708Q5273	1418.72	708Q5274	2579.46
6433	15	0.063"	0.755"	708Q5276	1868.62	708Q5277	3397.48

Multipair, Foil Shield Low Cap. Cable

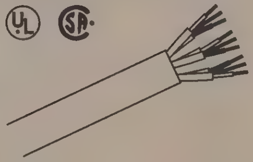


Stranded tinned copper conductors, aluminum/polyester foil shield. Drain wire is stranded tinned copper. Gray PVC jacket. **Insulation:** Color coded polyethylene. **Operating Temperature:** –20°C to 80°C. 300 V-CM. UL Listed Type CM, UL AWM Style 2919, CSA PCC FT1.

24 AWG 7/32

Mfr.'s Type	No. of Pairs	Jacket Thickness	Nom. O.D.	100'		500'		1000'	
				Stock No.	EACH	Stock No.	EACH	Stock No.	EACH
6301	6	0.035"	0.342"	708-5278	47.04	708Q5279	235.56	708Q5280	428.30
6304	12½	0.035"	0.445"	708-5281	94.86	708Q5282	440.97	708Q5283	801.76

Multipair, Individually Foil Shielded Power Limited Tray Cable



Stranded tinned copper conductors. Individually foil shielded pairs. Drain wire is stranded tinned copper. Gray PVC jacket. **Insulation:** Color coded PVC. **Operating Temperature:** –20°C to 105°C. 300 V. UL Type CM/PLTC, CSA PCC FT4.

22 AWG 7/30

Mfr.'s Type	No. of Pairs	Jacket Thickness	Nom. O.D.	500'		1000'	
				Stock No.	EACH	Stock No.	EACH
6434	2	0.043"	0.315"	708Q2379	218.34	708Q2380	396.98
6435	3	0.043"	0.331"	708Q2382	276.95	708Q2383	503.53
6436	4	0.043"	0.360"	708Q2385	355.39	708Q2386	646.17
6437	6	0.053"	0.437"	708Q2388	556.72	708Q2389	1012.21
6438	9	0.053"	0.500"	708Q2391	832.71	708Q2392	1514.01
6439	11	0.053"	0.551"	708Q2394	977.30	708Q2395	1776.94
6440	19	0.063"	0.686"	708Q2397	1612.46	708Q2398	2931.75
6441	51	0.075"	1.050"	708Q2400	3728.71	708Q2401	6779.47

18 AWG 19/30

Mfr.'s Type	No. of Pairs	Jacket Thickness	Nom. O.D.	500' Stock No.	500' EACH	1000' Stock No.	1000' EACH
6442	2	0.043"	0.380"	708Q2402	362.96	708Q2403	659.92
6443	3	0.053"	0.423"	708Q2405	497.17	708Q2406	903.94
6444	4	0.053"	0.486"	708Q2408	648.39	708Q2409	1178.90
6445	6	0.053"	0.538"	708Q2411	986.77	708Q2412	1794.14
6446	9	0.063"	0.650"	708Q2414	1398.87	708Q2415	2543.39
6447	11	0.063"	0.727"	708Q2417	1637.98	708Q2418	2978.13
6448	15	0.063"	0.806"	708Q2420	2367.64	708Q2421	4304.81

Stranded tinned copper conductors. Individually foil shielded pairs. Drain wire is 22 AWG stranded tinned copper. Gray PVC jacket. **Insulation:** Color coded SR-PVC. **Operating Temperature:** –20°C to 80°C. 300 V. UL Type CM, UL AWM Style 2464, CSA PCC FT4.

20 AWG 7/28

Mfr.'s Type	No. of Pairs	Jacket Thickness	Nom. O.D.	500' Stock No.	500' EACH	1000' Stock No.	1000' EACH
6416	2	0.041"	0.301"	708Q2423	209.81	708Q2424	381.46

Stranded tinned copper conductors. Individually foil shielded pairs. Drain wire is stranded tinned copper. Black high-density polyethylene jacket. **Insulation:** Color coded polypropylene. **Voltage Rating:** 350 V.

20 AWG 7/28

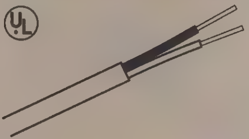
Mfr.'s Type	No. of Pairs	Jacket Thickness	Nom. O.D.	500' Stock No.	500' EACH	1000' Stock No.	1000' EACH
6314	3	0.040"	0.340"	708Q2426	349.59	708Q2427	635.64
6315	6	0.045"	0.455"	708Q2429	474.67	708Q2430	863.02

Stranded tinned copper conductors. Individually foil shielded pairs. Drain wire is stranded tinned copper. **Insulation:** Color coded polyethylene. Gray PVC jacket. **Operating Temperature:** –20°C to 80°C. 300 V-CM 30 V-AWM. UL Type CM, UL AWM Style 2919 CSA PCC FT1.

24 AWG 7/32

Mfr.'s Type	No. of Pairs	Jacket Thickness	Nom. O.D.	100'		500'		1000'	
				Stock No.	EACH	Stock No.	EACH	Stock No.	EACH
6385	3	0.035"	0.255"	708-2431	56.43	708Q2432	240.74	708Q2433	437.72
6386	6	0.035"	0.330"	708-2434	90.05	708Q2435	409.53	708Q2436	744.60
6387	9	0.035"	0.383"	708-2437	114.42	708Q2438	520.32	708Q2439	946.07
6388	12	0.035"	0.428"	708-2440	168.99	708Q2441	768.49	708Q2442	1397.22
6389	25	0.035"	0.636"	708Q2443	386.23	708Q2444	1647.89	708Q2445	2996.17

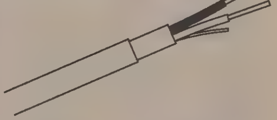
Fire Alarm Cable, Unshielded



Solid bare copper conductors. PVC insulated, red PVC jacket. **Operating Temperature:** –20°C to 60°C. UL Standard 1424, Type FPLR, NEC Article 760 and Riser Rated. California State Fire Marshal Approved.

Mfr.'s Type	AWG Size	No. of Cond.	Insulation Thickness	Jacket Thickness	Nom. O.D.	500' BOX		1000' COIL	
						Stock No.	EACH	Stock No.	EACH
6501	18	2	0.010"	0.015"	0.147"	708-2480	46.00	708-2481	83.64
6502	18	4	0.010"	0.015"	0.171"	708-2482	98.74	708-2483	179.52
6503	16	2	0.013"	0.018"	0.178"	708-2484	84.15	708-2485	153.00
6504	16	4	0.013"	0.018"	0.211"	708-2486	140.25	708Q2487	255.00
6505	14	2	0.013"	0.018"	0.216"	—	—	708Q2489	228.48
6506	12	2	0.013"	0.018"	0.260"	—	—	708Q2491	354.96

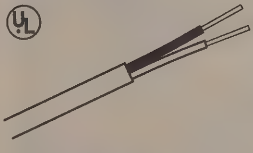
Fire Alarm Cable, Foil Shielded



Solid bare copper conductors. Aluminum polyester (100%) shielded. Tinned copper drain wire. PVC insulated, red PVC jacket. **Operating Temperature:** –20°C to 60°C. UL Standard 1424, Type FPLR, NEC Article 760 and Riser Rated. California State Fire Marshal Approved.

Mfr.'s Type	AWG Size	No. of Cond.	Insulation Thickness	Jacket Thickness	Nom. O.D.	500' BOX		1000' COIL	
						Stock No.	EACH	Stock No.	EACH
6507	18	2	0.012"	0.020"	0.147"	708-2492	62.83	708-2493	114.24
6508	18	4	0.012"	0.020"	0.171"	708-2494	123.42	708Q2495	224.40
6509	16	2	0.012"	0.020"	0.178"	708-2496	89.76	708-2497	163.20
6510	16	4	0.012"	0.020"	0.211"	708-2498	176.15	708Q2499	320.28
6511	14	2	0.015"	0.020"	0.216"	—	—	708Q2501	299.88
6512	12	2	0.015"	0.020"	0.260"	—	—	708Q2503	367.20

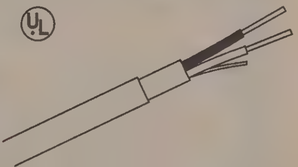
Fire Alarm Cable, Plenum-Rated, Unshielded



Solid bare copper conductors. Plenum-rated PVC insulated, plenum-rated red PVC jacket. **Operating Temperature:** –20°C to 60°C. UL Standard 1424, Type FPLP, NEC Article 760.

Mfr.'s Type	AWG Size	No. of Cond.	Insulation Thickness	Jacket Thickness	Nom. O.D.	500' BOX		1000' COIL	
						Stock No.	EACH	Stock No.	EACH
6513	18	2	0.007"	0.014"	0.138"	708-2504	78.54	708-2505	142.80
6514	18	4	0.007"	0.014"	0.155"	708-2506	143.62	708Q2507	261.12
6515	16	2	0.007"	0.014"	0.156"	708-2508	127.91	708Q2519	232.56
6516	16	4	0.007"	0.014"	0.187"	708-2520	196.35	708Q2521	357.00
6517	14	2	0.007"	0.014"	0.190"	—	—	708Q2523	301.92
6518	12	2	0.007"	0.014"	0.222"	—	—	708Q2525	403.92

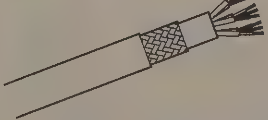
Fire Alarm Cable, Plenum-Rated Foil Shielded



Solid bare copper conductors. Aluminum polyester (100%) shielded. Tinned copper drain wire. Plenum-rated PVC insulation, plenum-rated red PVC jacket. **Operating Temperature:** –20°C to 60°C. UL Standard 1424, Type FPLP, NEC Article 760.

Mfr.'s Type	AWG Size	No. of Cond.	Insulation Thickness	Jacket Thickness	Nom. O.D.	500' BOX		1000' COIL	
						Stock No.	EACH	Stock No.	EACH
6519	18	2	0.007"	0.014"	0.138"	708-2526	104.35	708-2527	189.72
6520	18	4	0.007"	0.014"	0.155"	708-2528	116.06	708Q2529	301.92
6521	16	2	0.007"	0.014"	0.156"	708-2530	142.80	708Q2531	261.12
6522	16	4	0.007"	0.014"	0.187"	708Q2532	216.55	708Q2533	393.72
6523	14	2	0.007"	0.014"	0.190"	—	—	708Q2535	363.12
6524	12	2	0.007"	0.014"	0.222"	—	—	708Q2537	550.80

Multipair, Individually Shielded with Overall Foil/Braid Shield Low Capacitance Cable

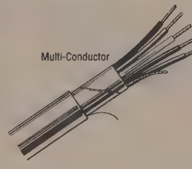


Stranded tinned copper conductors. Individually foil shielded pairs with overall foil/65% coverage tinned copper braid. Drain wire is stranded tinned copper. Gray PVC jacket. **Insulation:** Color-coded foam polyethylene. **Operating Temperature:** –20°C to 60°C. 300 V (UL Type CM) UL AWM Style 2493 — not specified. CSA PCC FT1.

24 AWG 7/32

Mfr.'s Type	No. of Pairs	Jacket Thickness	Nom. O.D.	100'		500'		1000'	
				Stock No.	EACH	Stock No.	EACH	Stock No.	EACH
6316	2	0.045"	0.343"	708-2446	57.79	708Q2447	274.46	708Q2448	499.02
6317	3	0.045"	0.356"	708-2449	80.56	708Q2450	366.32	708Q2451	666.04
6318	4	0.045"	0.388"	708-2452	104.31	708Q2453	474.34	708Q2454	862.47
6319	5	0.045"	0.413"	708-2455	167.65	708Q2456	715.33	708Q2457	1300.60
6320	6	0.045"	0.446"	708-2458	147.06	708Q2459	652.23	708Q2460	1185.85
6321	7	0.045"	0.446"	708Q2461	228.93	708Q2462	945.30	708Q2463	1718.72
6322	8	0.045"	0.479"	708Q2464	242.82	708Q2465	1136.10	708Q2466	1883.78
6323	10	0.045"	0.584"	708Q2467	266.10	708Q2468	1135.36	708Q2469	2064.30
6324	15	0.060"	0.665"	708Q2470	394.37	708Q2471	1682.69	708Q2472	3059.43
6325	18	0.060"	0.686"	708Q2473	446.09	708Q2474	1903.30	708Q2475	3460.55
6326	25	0.060"	0.862"	708Q2476	550.13	708Q2477	2439.70	708Q2478	4435.82

Multiconductor, Foil Shielded



Choose Xtra•Guard 1 For
- Unsurpassed Flame and Moisture Resistance
- Fast, Easy Stripping of Insulation and Jacket
- UL Recognized and UL Listed
- Flexible Cable Routing Requirements

Xtra•Guard 1 Use Examples
- EIA RS 232C Interface
- High Technology Applications in Controlled Environments
- Point-Of-Sale Equipment
- Computer Peripherals
- Industrial Process Controls

Conductor: Stranded tin coated copper. **Conductor Styles:** 24 and 22 AWG — UL 1061, CSA AWM SR-PVC; 20, 18 and 16 AWG — UL 1007, CSA AWM PVC. **Insulation:** Color coded, 80°C premium polyvinylchloride. **Shield:** Aluminum/polyester (25% overlap, typical), foil facing in plus stranded, tinned copper drain wire equal in size to insulated conductors of cable. Nylon rip cord for ease of jacket stripping. **Cable Styles:** UL type CM, AWM 2464, CSA PCC FT4. **Operating Temperature Range:** –20°C to +80°C AWM (75°C — CM). **Jacket:** Premium polyvinylchloride in gray or black; stocked in gray. **Cable Style:** UL 2464.

300 Volt UL Type CM, AWM 2464 CSA PCC FT4

Mfr.'s Type	No. of Cond.	AWG	Strand	Nom. O.D.	Insulation Thickness	100'			500'		
						Stock No.	Wt. Lb.	EACH	Stock No.	Wt. Lb.	EACH
5092C	2	24	7/32	0.16"	.010"	708-1062	1.3	99.96	708Q1063	6.5	499.80
5093C	3	24	7/32	0.18"	.010"	708-1065	1.6	124.44	708Q1066	8.0	622.20
5094C	4	24	7/32	0.19"	.010"	708-1068	1.9	124.44	708Q1069	9.5	622.20
5096C	6	24	7/32	0.21"	.010"	708-1071	2.4	146.88	708Q1072	12.0	734.40
5098C	8	24	7/32	0.23"	.010"	708-1074	2.9	173.40	708Q1075	14.5	867.00
5100C	10	24	7/32	0.25"	.010"	708-1077	3.4	197.88	708Q1078	17.0	989.40
5100/15C	15	24	7/32	0.28"	.010"	708Q1080	4.7	283.56	708Q1081	23.5	1417.80
5100/25C	25	24	7/32	0.34"	.010"	708Q1086	7.0	420.24	708Q1087	5.0	2101.20
5192C	2	22	7/30	0.17"	.010"	708-1089	1.7	102.00	708Q1090	8.5	510.00
5193C	3	22	7/30	0.19"	.010"	708-1092	2.1	120.36	708Q1093	10.5	601.80
5194C	4	22	7/30	0.21"	.010"	708-1095	2.5	136.68	708Q1096	12.5	683.40

300 Volt UL Type CM, AWM 2464 CSA PCC FT4 (Continued)

Mfr.'s Type	No. of Cond.	AWG	Strand	Nom. O.D.	Insulation Thickness	100'			500'		
						Stock No.	Wt. Lb.	EACH	Stock No.	Wt. Lb.	EACH
5196C	6	22	7/30	0.23"	.010"	708-1098	3.2	171.36	708Q1099	16.0	856.80
5198C	8	22	7/30	0.26"	.010"	708-1101	3.9	195.84	708Q1102	19.5	979.20
5199/10C	10	22	7/30	0.28"	.010"	708Q1104	4.6	236.64	708Q1105	23.0	1183.20
5199/15C	15	22	7/30	0.32"	.010"	708Q1107	6.3	306.00	708Q1108	31.5	1530.00
5199/20C	20	22	7/30	0.35"	.010"	708Q1110	8.0	410.04	708Q1111	40.0	2050.20
5199/25C	25	22	7/30	0.38"	.010"	708Q1113	9.6	475.32	708Q1114	48.0	2376.60
5462C	2	20	7/28	0.21"	.010"	708-1116	2.4	118.32	708Q1117	12.0	591.60
5463C	3	20	7/28	0.24"	.017"	708-1119	3.0	136.68	708Q1120	15.0	683.40
5464C	4	20	7/28	0.26"	.017"	708-1122	3.6	157.08	708Q1123	18.0	785.40
5466C	6	20	7/28	0.29"	.017"	708-1125	4.8	195.84	708Q1126	24.0	979.20
5468C	8	20	7/28	0.32"	.017"	708-1128	5.9	228.48	708Q1129	29.5	1142.40
5470C	10	20	7/28	0.35"	.017"	708-1131	7.1	285.60	708Q1132	30.5	1428.00
5470/15C	15	20	7/28	0.41"	.017"	708Q1134	9.8	385.56	708Q1135	49.0	1927.80
5470/20C	20	20	7/28	0.46"	.017"	708Q1137	12.5	493.68	708Q1138	62.5	2468.40
5382C	2	18	16/30	0.23"	.017"	708-1143	3.1	128.52	708Q1144	15.5	642.60
5383C	3	18	16/30	0.26"	.017"	708-1146	4.0	159.12	708Q1147	20.0	795.60
5384C	4	18	16/30	0.29"	.017"	708-1149	4.9	179.52	708Q1150	24.5	897.60
5386C	6	18	16/30	0.33"	.017"	708-1152	6.5	238.68	708Q1153	32.5	1193.40
5388C	8	18	16/30	0.36"	.017"	708Q1155	8.1	310.08	708Q1156	40.5	1550.40
5390C	10	18	16/30	0.39"	.017"	708Q1158	9.7	354.96	708Q1159	48.5	1774.80
5390/15C	15	18	16/30	0.45"	—	708Q0255	—	507.96	708Q0256	—	2539.80
5390/20C	20	18	16/30	0.51"	—	708Q0258	—	660.96	708Q0259	—	3304.80
5390/25C	25	18	16/30	0.56"	—	708Q0261	—	848.64	708Q0262	—	4243.20
5362C	2	16	19/29	0.25"	—	708-0264	—	167.28	708Q0265	—	836.40
5363C	3	16	19/29	0.27"	—	708-0267	—	212.16	708Q0268	—	1060.80
5364C	4	16	19/29	0.29"	—	708Q0270	—	238.68	708Q0271	—	1897.20
5366C	6	16	19/29	0.35"	—	708Q0273	—	328.44	708Q0274	—	1642.20
5368C	8	16	19/29	0.38"	—	708Q0276	—	432.48	708Q0277	—	2162.40

600 Volt UL AWM 2501 CSA AWM I A/B II A/B FT4

Mfr.'s Type	No. of Cond.	AWG	Strand	Nom. O.D.	Insulation Thickness	100' Stock No.	100' Wt. Lb.	100' EACH	500' Stock No.	500' Wt. Lb.	500' EACH
5430/2	2	18	16/30	0.35"	—	708-0245	—	150.96	708Q0246	—	754.80
5430/3	3	18	16/30	0.37"	—	708Q0248	—	218.28	708Q0249	—	1091.40

Multiconductor, Multipair SUPRASHIELD™

Choose Xtra•Guard 1 For
- Unsurpassed Flame and Moisture Resistance
- Fast, Easy Stripping of Insulation and Jacket
- UL Recognized and UL Listed
- Flexible Cable Routing Requirements

Xtra•Guard 1 Applications
- EIA RS 232C Interface (24 AWG, 22 AWG)
- High Technology Applications in Controlled Environments
- Point-Of-Sale Equipment
- Computer Peripherals
- Industrial Process Controls

Conductor: Stranded tin coated copper. **Insulation:** Color coded, 80°C premium polyvinylchloride 24 and 22 AWG — UL Style 1061, CSA AWM SR-PVC; 20, 18 and 16 AWG — UL Style 1007, CSA AWM PVC. **SupraShield™:** Aluminum/polyester/aluminum foil with drain wire plus overall braid of tinned copper. **Jacket:** Premium polyvinylchloride. **Cable Styles:** UL Type CM, AWM 2464, CSA PCC FT4. **Operating Temperature Range:** –20°C to +80°C — AWM (+75°C — CM). **Specifications:** CM rated. **Jacket Colors:** Gray or black; stocked in gray. **Cable Style:** UL 2464.

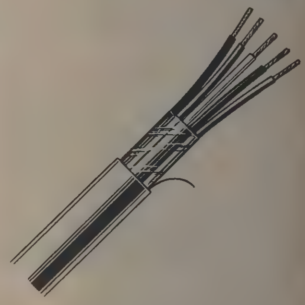
Multiconductor — 300 Volt UL Type CM, AWM 2464 CSA PCC FT4

Mfr.'s Type	No. of Cond.	AWG	Strand	Nom. O.D.	Insulation Thickness	100'		500'	
						Stock No.	EACH	Stock No.	EACH
5112C	2	24	7/32	.18"	.032"	708-1200	140.76	708Q1201	703.80
5113C	3	24	7/32	.20"	.032"	708-1203	171.36	708Q1204	856.80
5114C	4	24	7/32	.21"	.032"	708-1206	181.56	708Q1207	907.80
5116C	6	24	7/32	.23"	.032"	708-1209	195.84	708Q1210	979.20
5118C	8	24	7/32	.25"	.032"	708Q1212	232.56	708Q1213	1162.80
5120C	10	24	7/32	.27"	.032"	708Q1215	263.16	708Q1216	1315.80
5120/15C	15	24	7/32	.31"	.032"	708Q1218	357.00	708Q1219	1713.60
5120/25C	25	24	7/32	.36"	.032"	708Q1224	522.24	708Q1225	2611.20
5102C	2	22	7/30	.20"	.032"	708-9761	142.80	708Q6500	754.80
5103C	3	22	7/30	.21"	.032"	708-9762	169.32	708Q6502	846.60
5104C	4	22	7/30	.23"	.032"	708-9763	179.52	708Q6504	897.60
5106C	6	22	7/30	.26"	.032"	708-9764	218.28	708Q6506	1091.40
5108C	8	22	7/30	.28"	.032"	708Q9765	255.00	708Q6508	1275.00
5110C	10	22	7/30	.30"	.032"	708Q9766	297.84	708Q6510	1489.20
5110/15C	15	22	7/30	.34"	.032"	708Q9767	420.24	708Q6512	2101.20
5110/25C	25	22	7/30	.40"	.032"	708Q9769	638.52	708Q6516	3192.60
5152C	2	20	7/28	.23"	.032"	708-1227	175.44	708Q1228	877.20
5153C	3	20	7/28	.26"	.032"	708-1230	199.92	708Q1231	994.60
5154C	4	20	7/28	.28"	.032"	708-1233	218.28	708Q1234	1091.40
5156C	6	20	7/28	.32"	.032"	708Q1236	285.60	708Q1237	1428.00
5158C	8	20	7/28	.35"	.032"	708Q1239	314.16	708Q1240	1570.80
5160C	10	20	7/28	.37"	.032"	708Q1242	391.68	708Q1243	1958.40
5160/15C	15	20	7/28	.43"	.032"	708Q1245	552.84	708Q1246	2764.20
5160/20C	20	20	7/28	.48"	.032"	708Q1248	691.56	708Q1249	3457.80
5162C	2	18	16/30	.25"	.032"	708-1254	185.64	708Q1255	989.40
5163C	3	18	16/30	.28"	.032"	708Q6415	230.52	708Q6416	1152.60
5164C	4	18	16/30	.31"	.032"	708Q1260	259.08	708Q1261	1295.40
5166C	6	18	16/30	.35"	.032"	708Q1263	340.68	708Q1264	1703.40
5170C	10	18	16/30	.41"	.032"	708Q1269	495.72	708Q1270	2478.60
5170/25C	25	18	16/30	.62"	.032"	708Q0304	1128.12	708Q0305	5640.60
5172C	2	16	19/29	.28"	.032"	708Q1272	224.40	708Q1273	1122.00
5176C	6	16	19/29	.39"	.032"	708Q1281	432.48	708Q1282	2162.40
5178C	8	16	19/29	.43"	.032"	708Q1284	575.28	708Q1285	2876.40

Multipair — 300 Volt UL Type CM, AWM 2464 CSA PCC FT4

Mfr.'s Type	No. of Cond.	AWG	Strand	Nom. O.D.	Insulation Thickness	100' Stock No.	100' EACH	500' Stock No.	500' EACH
5271C	1	24	7/32	.18"	—	708-0280	140.76	708Q0281	703.80
5273C	3	24	7/32	.25"	—	708-0283	220.32	708Q0284	1101.60
5275C	5	24	7/32	.30"	—	—	—	708Q0287	1550.40
5279/15C	15	24	7/32	.43"	—	708Q0289	650.76	708Q0290	3253.80
5121C	1	22	7/30	20"	—	708-0292	142.80	708Q0293	714.00
5122C	2	22	7/30	.25"	—	708-0295	195.84	708Q0296	979.20
5123C	3	22	7/30	.28"	—	708Q0298	246.84	708Q0299	1234.20
5124C	4	22	7/30	31"	—	708Q0301	283.56	708Q0302	1417.80

Multiconductor, Unshielded



Choose Xtra•Guard 1 For
- Unsurpassed Flame and Moisture Resistance
- Fast, Easy Stripping of Insulation and Jacket
- UL Recognized and UL Listed
- Flexible Cable Routing Requirements

Xtra•Guard 1 Applications
- EIA RS 232C Interface (24 AWG, 22 AWG)
- High Technology Applications in Controlled Environments
- Point-Of-Sale Equipment
- Computer Peripherals
- Industrial Process Controls

Conductor: Stranded tin coated copper. **Conductor Styles:** 24 and 22 AWG — UL Style 1061, CSA AWM SR-PVC; 20, 18 and 16 AWG — UL Style 1007, CSA AWM-PVC. **Insulation:** Color coded,. 80°C premium polyvinylchloride. **Core Wrap:** Clear polyester (25% overlap, typical). Nylon rip cord for ease of jacket stripping. **Cable Styles:** 24 and 22 AWG — UL type CM, AWM 2464, CSA-PCC FT4. **Operating Temperature Range:** –20°C to 80°C — AWM, 75°C — CM. Passes UL vertical tray flame test. **Jacket:** Premium polyvinylchloride in gray or black; stocked in gray.

300 Volt UL Type CM, AWM 2464 CSA PCC FT4

Mfr.'s Type	No. of Cond.	AWG	Strand	Nom. O.D.	Insulation Thickness	100'		500'	
						Stock No.	EACH	Stock No.	EACH
5012C	2	24	7/32	.16"	.010"	708-0910	83.64	708Q0911	418.20
5013C	3	24	7/32	.17"	.010"	708-0913	93.84	708Q0914	469.20
5014C	4	24	7/32	.19"	.010"	708-0916	97.92	708Q0917	489.60
5016C	6	24	7/32	.21"	.010"	708-0919	130.56	708Q0920	652.80
5018C	8	24	7/32	.23"	.010"	708-0922	150.96	708Q0923	754.80
5020C	10	24	7/32	.24"	.010"	708-0925	173.40	708Q0926	867.00
5020/15C	15	24	7/32	.28"	.010"	708Q0928	248.88	708Q0929	1244.40
5020/20C	20	24	7/32	.31"	.010"	708Q0931	326.40	708Q0932	1632.00
5002C	2	22	7/30	.17"	.010"	708-0937	79.56	708Q0938	397.50
5003C	3	22	7/30	.19"	.010"	708-0940	95.88	708Q0941	479.40
5004C	4	22	7/30	.20"	.010"	708-0943	120.36	708Q0944	603.43
5006C	6	22	7/30	.23"	.010"	708-0946	134.64	708Q0947	673.20
5008C	8	22	7/30	.25"	.010"	708-0949	169.32	708Q0950	887.40
5010C	10	22	7/30	.27"	.010"	708-6400	195.84	708Q6401	979.20
5010/15C	15	22	7/30	.31"	.010"	708Q0955	291.72	708Q0956	1458.60
5010/20C	20	22	7/30	.35"	.010"	708Q0958	389.64	708Q0959	1948.20
5052C	2	20	7/28	.21"	.017"	708-0964	89.76	708Q0965	448.80
5053C	3	20	7/28	.23"	.017"	708-0967	114.24	708Q0968	571.20
5058C	8	20	7/28	.32"	.017"	708-0976	201.96	708Q0977	1060.80
5060/20C	20	20	7/28	.45"	.017"	708Q0985	489.60	708Q0986	2448.00
5062C	2	18	16/30	.23"	.017"	708-0991	108.12	708Q0992	540.60
5063C	3	18	16/30	.26"	.017"	708-0994	130.56	708Q0995	683.40
5064C	4	18	16/30	.28"	.017"	708-0997	163.20	708Q0998	816.00
5066C	6	18	16/30	.32"	.017"	708Q1000	236.64	708Q1001	1183.20
5068C	8	18	16/30	.36"	.017"	708Q1003	283.56	708Q1004	1417.80
5070C	10	18	16/30	.39"	.017"	708Q1006	332.52	708Q1007	1662.60
5070/15C	15	18	16/30	.45"	.017"	708Q1009	507.96	708Q1010	2539.80
5070/20C	20	18	16/30	.51"	.017"	708Q1012	638.52	708Q1013	3192.60
5070/25C	25	18	16/30	.56"	.017"	708Q1015	836.40	708Q1016	4182.00
5072C	2	16	19/29	.26"	.017"	708-1018	136.68	708Q1019	683.40
5073C	3	16	19/29	.29"	.017"	708-1021	183.60	708Q1022	918.00
5074C	4	16	19/29	.32"	.017"	708-1024	228.48	708Q1025	1142.40
5076C	6	16	19/29	.37"	.017"	708-1027	303.96	708Q1028	1519.80
5078C	8	16	19/29	.41"	.017"	708Q6480	408.00	708Q6481	2040.00
5080C	10	16	19/29	.44"	.017"	708Q1033	563.04	708Q1034	2815.20

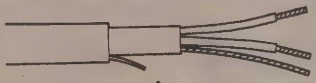
Instrumentation Cable

- ► UL Listed Under Standard 13
- ► Complies With NEC Article 725 — Type PLTC, NEC300 and NEC340
- ► ULVW-1 — 300 Volt Rated Cables Pass UL Vertical Flame Test
- ► CSA Certified — 300 Volt
- ► IEEE383 — Both 300 Volt PLTC and 600 Volt Tray Cables Pass the 70,000 BTU — Vertical Tray Flame Test

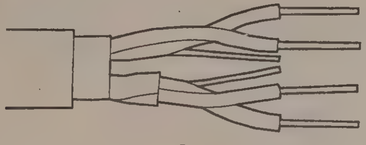
American manufacturers are automating to meet world-wide competition. However, the vital functions of measurement and control of manufacturing and process operations is dependent on the electronic circuitry and instrumentation cable used in these control networks. Alpha's instrumentation cable provides you with minimal interference and maximum durability in full compliance with all industry standards.

105°C 300V PVC

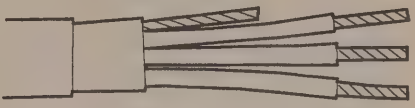
- ► Stranded Bare Copper Conductors
- ► Extruded PVC Insulation
- ► Paired Construction Color-Coded — One Black, One White; Triple Constructions Color-Coded Black, White and Red
- ► All Pairs and Triples Twisted To Minimize Magnetic Noise
- ► White Conductor (Multi-Pairs and Multi-Triples) Printed with a Pair or Triple Number at 1" (25.4 mm) Intervals for Easy Identification
- ► When Shielded, Aluminum Polyester Shield Tape and Tinned Copper Drain Wire Provided for Maximum Electrostatic Noise and Cross Talk Rejection
- ► Nylon Rip Cord Under Jacket to Simplify Stripping
- ► Extruded Black PVC Jacket Meets 70,000 BTU Flame Test
- ► Temperature Range: –20°C to +105°C (UL) Static Conditions
- ► Voltage Rating: 300 Volts (UL)
- ► An Economical, General Purpose, Flame Retardant Construction with Excellent Chemical and Abrasion Resistance
- ► UL Listed Under Standard 13
- ► Complies With NEC Article 725, Type PLTC
- ► Available in Long Continuous Lengths



A



B



C

Single Pair Shielded (Fig. A)

Stock No.	Mfr.'s Type	AWG	No.of Strands	Nom. Ins. Thickness		Nom. Jacket Thickness		Nom. O.D.		PER SPOOL 1000'
				In.	mm	In.	mm	In.	mm	
708-1350	5610B2201	22	7/30	0.013	0,33	0.035	0,89	0.191	4,85	**146.88**
708-1351	5610B2001	20	7/28	0.013	0,33	0.035	0,89	0.207	5,26	**142.80**
708-1352	5610B1801	18	7/26	0.016	0,41	0.035	0,89	0.239	6,07	**175.44**
708Q1353	5610B1601	16	7/.0192	0.016	0,41	0.035	0,89	0.257	6,53	**240.72**
708Q1354	5610B1401	14	19/.0147	0.020	0,51	0.040	1,20	0.309	7,85	**469.20**
708Q1355	5610B1201	12	19/.0185	0.020	0,51	0.040	1,20	0.347	8,81	**779.28**

Multi-Pair Overall Shielded

Stock No.	Mfr.'s Type	No. of Trip.	AWG	No.of Strands	Nom. Ins. Thickness		Nom. Jacket Thickness		Nom. O.D.		PER SPOOL 1000'
					In.	mm	In.	mm	In.	mm	
708Q1356	5610B2004	4	20	7/28	0.013	0,33	0.050	1,27	0.38	9,6	**499.80**
708Q1357	5610B2008	8	20	7/28	0.013	0,33	0.050	1,27	0.47	11,9	**765.00**
708Q1358	5610B2016	16	20	7/28	0.013	0,33	0.060	1,52	0.63	16,0	**1509.60**
708Q1359	5610B2020	20	20	7/28	0.013	0,33	0.060	1,52	0.68	17,3	**2019.60**
708Q1360	5610B1802	2	18	7/26	0.016	0.41	0.040	1,02	0.33	8,4	**459.00**
708Q1361	5610B1804	4	18	7/26	0.016	0,41	0.050	1,27	0.44	11,2	**581.40**
708Q1362	5610B1808	8	18	7/26	0.016	0,41	0.050	1,27	0.56	14,2	**1020.00**
708Q1363	5610B1820	20	18	7/26	0.016	0,41	0.060	1,52	0.82	20,8	**3366.00**
708Q1364	5610B1602	2	16	7/.0192	0.016	0,41	0.050	1,27	0.38	9,6	**652.80**
708Q1365	5610B1608	8	16	7/.0192	0.016	0,41	0.060	1,52	0.64	16,2	**1887.00**

Multi-Pair Individually and Overall Shielded (Fig. B)

Stock No.	Mfr.'s Type	No. of Trip.	AWG	No.of Strands	Nom. Ins. Thickness		Nom. Jacket Thickness		Nom. O.D.		PER SPOOL 1000'
					In.	mm	In.	mm	In.	mm	
708Q1366	5620B2002	2	20	7/28	0.013	0,33	0.040	1,02	0.36	9,2	**448.80**
708Q1367	5620B2004	4	20	7/28	0.013	0,33	0.050	1,27	0.40	10,2	**669.12**
708Q1368	5620B2008	8	20	7/28	0.013	0,33	0.050	1,27	0.51	13,0	**1181.16**
708Q1369	5620B2012	12	20	7/28	0.013	0,33	0.060	1,52	0.61	15,5	**1713.60**
708Q1370	5620B2016	16	20	7/28	0.013	0,33	0.060	1,52	0.68	17,3	**2346.00**
708Q1371	5620B2020	20	20	7/28	0.013	0,33	0.060	1,52	0.74	18,8	**2019.60**
708Q1372	5620B1804	4	18	7/26	0.016	0,41	0.050	1,27	0.46	11,7	**918.00**
708Q1373	5620B1808	8	18	7/26	0.016	0,41	0.060	1,52	0.62	15,7	**1876.80**
708Q1374	5620B1812	12	18	7/26	0.016	0,41	0.060	1,52	0.73	18,5	**2743.80**
708Q1375	5620B1820	20	18	7/26	0.016	0,41	0.070	1,79	0.91	23,1	**4590.00**
708Q1376	5620B1824	24	18	7/26	0.016	0,41	0.070	1,79	0.98	24,9	**5610.00**
708Q1377	5620B1602	2	16	7/.0192	0.016	0,41	0.050	1,02	0.40	10,2	**805.80**
708Q1378	5620B1604	4	16	7/.0192	0.016	0,41	0.050	1,02	0.51	13,0	**1395.36**
708Q1379	5620B1612	12	16	7/.0192	0.016	0,41	0.070	1,79	0.82	20,8	**3937.20**

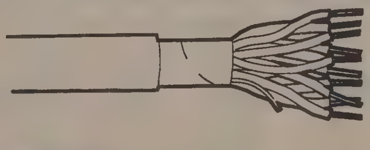
Single Triad Shielded (Fig. C)

Stock No.	Mfr.'s Type	AWG	No.of Strands	Nom. Ins. Thickness		Nom. Jacket Thickness		Nom. O.D.		PER SPOOL 1000'
				In.	mm	In.	mm	In.	mm	
708Q1380	5640B2201	22	7/30	0.013	0.33	0,035	0,89	0.230	5,80	**214.20**
708Q1381	5640B1801	18	7/26	0.016	0.41	0,035	0,89	0.290	7,40	**346.80**
708Q1382	5640B1601	16	7/.0192	0.020	0.51	0,035	0,89	0.340	8,60	**510.00**

Multi-Triad Individual and Overall Shielded

Stock No.	Mfr.'s Type	No. of Trip.	AWG	No.of Strands	Nom. Ins. Thickness		Nom. Jacket Thickness		Nom. O.D.		PER SPOOL 1000'
					In.	mm	In.	mm	In.	mm	
708Q1383	5650B2008	8	20	7/28	0.013	0,33	0.050	1,27	0.59	15,0	**1683.00**

90°C 600V PVC/Nylon



- ► Standard Bare Copper Conductors
- ► Extruded PVC Insulation with Nylon
- ► Paired Constructions Color-Coded — One Black, One White; Triple Constructions Color-Coded Black, White and Red
- ► All Pairs and Triples Twisted To Minimize Magnetic Noise
- ► Each Conductor (Multi-pairs and Multi-triples) Printed with a Pair or Triple Number At 1" (25.4 mm) Intervals for Easy Identification; Numbers Are Printed Alternately and Inverted
- ► Nylon Jacketing of Each Conductor Provides Increased Dielectric Strength
- ► When Shielded, Aluminum Polyester Shield Tape and Tinned Copper Drain Wire Provided For Maximum Electrostatic Noise and Cross Talk Rejection
- ► Nylon Rip Cord Under Jacket to Simplify Stripping
- ► Extruded Black PVC Jacket Exceeds Test Criteria Established By Underwriters Laboratories Tray Fire Test, Based On IEEE Standard 383, 70,000 BTU Flame Test
- ► Temperature Range: –20°C to +90°C (UL +90°C) — Static Conditions
- ► Voltage Rating: 600 Volts (UL)
- ► PVC/Nylon Construction Results in a 600 Volt Small Diameter Cable that Saves Space
- ► Nylon Permits a Slipping Action Between Conductors that Relieves Stresses Developed When Cable Is Flexed
- ► Listed as Tray Cable Under UL Standard 1277 and NEC Article 340 (Article 725 Class 1)
- ► Available In Long Continuous Lengths
- ► Commonly Utilized For In-Plant Process Control

Single Triad Shielded

Stock No.	Mfr.'s Type	AWG	No.of Strands	Nom. Ins. Thickness		Nom. Jacket Thickness		Nom. O.D.		PER SPOOL 1000'
				In.	mm	In.	mm	In.	mm	
708Q1386	5646B1601	16	7/.0192	0.021	0,53	0.045	1,14	0.310	7,90	**556.92**

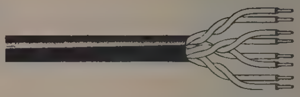
Single Pair Shielded

708-1384	5616B1801	18	7/26	0.021	0,53	0.045	1,14	0.270	7,00	**246.84**
708Q1385	5616B1601	16	7/.0192	0.021	0,53	0.045	1,14	0.290	7,50	**277.44**

Multipair Overall Shielded

Stock No.	Mfr.'s Type	No. of Pairs	AWG	No.of Strands	Nom. Ins. Thickness		Nom. Jacket Thickness		Nom. O.D.		PER SPOOL 1000'
					In.	mm	In.	mm	In.	mm	
708Q1388	5616B1812	12	18	7/26	0.021	0,53	0.060	1,52	0.74	18,8	**2366.40**
708Q1389	5616B1602	2	16	7/.0192	0.021	0,53	0.045	1,14	0.40	10,2	**640.56**
708Q1390	5616B1608	8	16	7/.0192	0.021	0,53	0.060	1,52	0.70	17,8	**2019.60**
708Q1391	5616B1624	24	16	7/.0192	0.021	0,53	0.080	2,03	1.08	27,4	**13178.40**

Twisted Pair, Solid Conductor, Level 5



300 V, 60°C. **Application:** EIA/TIA 568 — 10 Mbps, IEEE 802.3 (10BaseT); ICEA-S-80-576 — 4-16 Mbps, IEEE 802.5, 4 Mbps Arcnet, 20 Mbps Arcnet Plus; ICEA-S-80-576 — 100 Mbps, ANSI X3T9.5-TPDD1 (Standard Pending); NEMA Low Loss. **Standard Length:** 1000' Conductor. **No. of Pairs*:** 4. **AWG:** 24. **Strand:** Solid. **Material:** BC. **DCR Ohms/1000' (Ohms/Km):** 28.4 (98.2). **Max. Nominal Capacitance pF/ft. (pF/m):** 17 (55.8) at 1 KHz, max.; 17 (55.8) at 1 MHz, max.

Stock No.	Mfr.'s Type	Application	Weight Lbs./1000'	Insulation Material Thick./Dia. In. (mm)	Jacket Material Nom. O. D. In. (mm)	Nominal Impedance		Vel. of Prop. %	Nominal Attenuation		Worst Near End Cross-Talk		PER COIL/1000'
						Ohms	@ MHz		dB/100' (dB/100 m) Max.	@ MHz	dB/1000'	@ MHz	
708Q9873	9504C	Non-Plenum NEC MP PCC FT4	20	Flame Retardant Polyethylene 0.009 (0.23) 0.038 (0.97)	Black PVC 0.200 (5.08)	125 115 107 102 100 99 100	0.064 0.128 0.256 0.512 0.772 1 1-100	66	0.55 (1.80) 0.63 (2.07) 1.30 (4.26) 1.80 (5.90) 2.00 (6.56) 2.50 (8.20) 2.80 (9.18) 3.20 (10.50) 3.60 (11.80) 5.20 (17.10) 6.70 (22.00)	0.772 1 4 8 10 16 20 25 31.25 62.50 100	64 62 53 48 47 44 42 41 40 35 32	0.772 1 4 8 10 16 20 25 31.25 62.50 100	**295.80**
708Q9875	9504CS	Non-Plenum NEC MP PCC FT4 Foil Shielded											**336.60**
708Q9874	9504F	Plenum NEC MPP PCC FT4 FT6	19	FEP Teflon 0.007 (0.18) 0.034 (0.86)	Gray Plenum-PVC 0.170 (4.31)	125 115 107 102 100 99 100	0.064 0.128 0.256 0.512 0.772 1 1-100	73	0.55 (1.80) 0.63 (2.07) 1.30 (4.26) 1.80 (5.90) 2.00 (6.56) 2.50 (8.20) 2.80 (9.18) 3.20 (10.50) 3.60 (11.80) 5.20 (17.10) 6.70 (22.00)	0.772 1 4 8 10 16 20 25 31.25 62.50 100	64 62 53 48 47 44 42 41 40 35 32	0.772 1 4 8 10 16 20 25 31.25 62.50 100	**501.84**
708Q9876	9504FS	Plenum NEC MPP PCC FT4 FT6 Foil Shielded											**754.80**

***Color Code:** Pr.1: Blue/White, White/Blue, Pr. 2: Orange/White, White/Orange, Pr. 3: Green/White, White/Green, Pr. 4: Brown/White, White/Brown.

Unshielded Twisted Pair (UTP), Solid Conductor, Level 3, 10 Mbps

10BaseT

Stock No.	Mfr.'s Type	Application	Std. Length, Ft. (Weight, Lbs./1000')	Conductor		Insulation Material Thickness Diameter In. (mm)	Jacket Material Nom. O.D. In. (mm)	Nominal Impedance		Vel. of Prop. %	Nominal Capacitance pF/ft. (pF/m) Max.	Nominal Attenuation		Worst Near End Cross-Talk		PER BOX/1000'
				No. of Pairs*	AWG Stranding Material DCR Ohms/1000' (Ohms/Km)			Ohms	@ MHz			dB/100' (dB/100 m) Max.	@ MHz	dB/1000'	@ MHz	
708-3239	9304C 300 V 60°C	EIA/TIA 568 Ethernet IEE 802.3 10BaseT Non-Plenum NEC MP PCC FT4	1000' Box 1000' (23)	4	24 SOLID Bare Copper 28.4 (98.2) Max.	Semi Rigid PVC 0.009 (0.23) 0.038 (0.97)	Black PVC 0.200 (5.08)	125 115 107 102 100 100	0.064 0.128 0.256 0.512 0.772 1-16	64	22.5 (73.8) @ 1 KHz 18 (59.0) @ 1 MHz	0.024 (0.078) 0.077 (0.25) 0.25 (0.82) 0.38 (1.35) 0.54 (1.77) 0.66 (2.16) 0.76 (2.49) 1.63 (5.35) 2.43 (7.97) 2.80 (9.18) 3.70 (12.1)	0.002 0.008 0.064 0.256 0.512 0.772 1 4 8 10 16	65 54 53 46 39 38 37	0.150 0.772 1 4 8 10 16	**163.20**
708Q3255	9304F 300 V 60°C	EIA/TIA 568 Ethernet IEE 802.3 10BaseT Non-Plenum NEC MPP PCC FT4 FT6	1000' Box 1000' (18)	4	24 SOLID Bare Copper 28.4 (98.2) Max.	Semi Rigid PVC 0.009 (0.23) 0.038 (0.97)	Gray Fluoropolymer 0.170 (4.32)	125 115 107 102 100 100	0.064 0.128 0.256 0.512 0.772 1-16	62	22.5 (73.8) @ 1 KHz 18 (59.0) @ 1 MHz	0.024 (0.078) 0.077 (0.25) 0.25 (0.82) 0.38 (1.35) 0.54 (1.77) 0.67 (2.21) 0.78 (2.56) 1.67 (5.48) 2.49 (8.17) 2.87 (9.41) 3.79 (12.4)	0.002 0.008 0.064 0.256 0.512 0.772 1 4 8 10 16	65 54 53 44 39 38 37	0.150 0.772 1 4 8 10 16	**326.40**

***Color Code:** Pr.1: Blue/White, White/Blue, Pr. 2: Orange/White, White/Orange, Pr. 3: Green/White, White/Green, Pr. 4: Brown/White, White/Brown. Stocked in boxes. Coils of 1000' also available.

Unshielded Twisted Pair (UTP), Stranded Conductor, Level 3, 10 Mbps

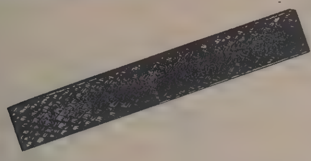
10BaseT

Stock No.	Mfr.'s Type	Application	Std. Length, Ft. (Weight, Lbs./1000')	Conductor		Insulation Material Thickness Diameter In. (mm)	Jacket Material Nom. O.D. In. (mm)	Nominal Impedance		Vel. of Prop. %	Nominal Capacitance pF/ft. (pF/m) Max.	Nominal Attenuation		Worst Near End Cross-Talk		PER BOX/328'
				No. of Pairs*	AWG Stranding Material DCR Ohms/1000' (Ohms/Km)			Ohms	@ MHz			dB/100' (dB/100 m) Max.	@ MHz	dB/1000'	@ MHz	
708-3256	9314C 300 V 60°C	IEEE 802.3 10BaseT Non-Plenum NEC MP PCC FT4	328' Box 328' (23)	4	24 7/32 Bare Copper 26 (85.3) Max.	Polyethylene 0.007 (0.18) 0.038 (0.97)	Black PVC 0.200 (5.08)	125 115 107 102 100 100	0.064 0.128 0.256 0.512 0.772 1-16	67	22.5 (73.8) @ 1 KHz 18 (59.0) @ 1 MHz	0.08 (0.26) 0.15 (0.49) 0.28 (0.92) 0.40 (1.31) 0.56 (1.84) 0.67 (2.21) 0.78 (2.56) 1.60 (5.25) 2.60 (8.53) 3.00 (9.84) 4.00 (13.1)	0.002 0.008 0.064 0.256 0.512 0.772 1 4 8 10 16	50 43 41 32 28 26 23	0.150 0.772 1 4 8 10 16	**76.58**

***Color Code:** Pr. 1: Blue/White, White/Blue, Pr. 2: Orange/White, White/Orange, Pr. 3: Green/White, White/Green, Pr.4: Brown/White, White/Brown. Stocked in boxes. Coils of 1000' also available.

Braid Bus Bar, Test Lead Wire and Lacing Cord

Tinned Copper Flat Braid



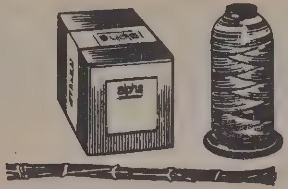
- ► Flexible Ground Strips
- ► Connect Moving Parts
- ► Retrofit Applications
- ► Bonding Straps

Woven tinned copper braid rolled to specific width. Meets requirements of Fed. Spec. QQ-W-343E Type S and ASTM-B-33. *Values shown are for bare cable in free air at 30°C and intended as a reference guide only. Actual values will depend on permissible temp. rise, permissible voltage drop and other conditions of service.

Stock No.	Mfr.'s Type	Nom. Flat Width (In.)	Nom. Thick (In.)	Braid Construction Total No. of Indiv. Ends	Approx. AWG Equiv.	Nom. Circular Mil. Area (CM)	Current Carrying Capacity (Amps*)	PER 100'
708-8068	1229†	1/8	.020	72	18	1800	16	**27.42**
708-8071	1230†	3/16	.020	120	15	3000	25	**29.85**
708-8074	1231†	1/4	.030	168	14	4200	32	**40.51**
708-8077	1232	3/8	.030	288	12	7200	46	**64.87**
708-8080	1233/2†	1/2	.030	384	10	9600	53	**82.19**
708Q8083	1233	5/8	.030	384	10	9600	53	**86.97**
708Q8086	1234	3/4	.040	832	7	20800	85	**195.70**
708Q8090	1235	1	.045	832	7	20800	85	**209.45**

†Meets QQ-B-575B.

Twisted Lacing Cord and Flat Braid Lacing Tape



Nylon and Dacron Flat Braided Lacing Tape. All types are nylon. All types are designation MIL-T-43435 with variations for type, size, and finish. LC-132 has a finish of synthetic rubber-like resin with non-mercuric fungicidal properties. Melting point is above 190°F. Softens at 140°F but doesn't flow. LC-134 and LC-136 have a finish of micro-Crystalline wax with a melting point above 130°F, compounded with a fungicide containing neither copper nor mercury. Soft, pliable and easy to tie. Also meets MIL-T-713 Type P, Class 2. LC-140 has a finish of a special continuous coating of fungistatic synthetic rubber. Knots tied with this finish will not slip. Extremely pliable and soft. LC-143 has a thermoplastic synthetic resin with a melting point above 350°F for use where a "wax free" type is specified. Dry, non-flaking finish. Available in white and black — insert 1 (white) or 2 (black) where X appears in Stock Number.

Stock No.	Mfr.'s Type	Tensile Strength	Nominal Width	Nominal Thickness	Standard Put-Up	PER SPOOL
708-942X	LC-132	50	.090"	.014"	500 yds. on spool	**49.53**
708-943X	LC-134	30	.062"	.010"	500 yds. on spool	**38.90**
708-944X	LC-136	50	.090"	.012"	500 yds. on spool	**45.19**
708-945X	LC-140	50	.090"	.014"	500 yds. on spool	**48.65**
708-946X	LC-143	50	.090"	.014"	500 yds. on spool	**36.82**

Tinned Copper Oval Braid

- ► Woven Tinned Copper Braid Manufactured in Tubular Configuration Provides 90% Coverage
- ► Each Strand Meets Requirements of Fed. Spec. QQ-W-343E and ASTM-B-33
- ► Appl. Shielding, Cable/Harness Assembly

Stock No.	Mfr.'s Type	Nom. I.D. When Rounded		Braid Construction		Approx. AWG Equiv.	Nom. Circular Mil Area CM	Approx. Current Carrying Capacity (Amps)	PER 100'
		In.	mm	AWG of Indiv. Ends	Total No. of Indiv. Ends				
696-8000	2132	1/16	1.59	34	32	19	1192	11	**17.49**
696-8001	2138	11/64	4.37	34	120	14	4770	32	**44.14**
696-8002	2140	3/16	4.76	34	144	13	5724	38	**47.40**
696-8003	2142	1/4	6.35	34	168	12	6678	41	**57.38**
696-8004	2144	3/8	9.53	34	192	11	7632	46	**70.36**
696Q8005	2146	1/2	12.70	34	336	9	13356	62	**133.48**
696Q8006	2148	5/8	15.88	34	384	8	14264	64	**132.01**
696Q8007	2150	11/16	17.46	34	480	7	19080	81	**162.90**
696Q8008	2152	25/32	19.84	34	528	7	20988	85	**177.96**

Standard Put-Up: 2132, 2138 — 100, 500, 1000 Ft.; 2140-2144 — 100, 500 Ft.; 2146-2152 — 100 Ft.

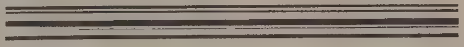
Tinned Copper Tubular Braid

- ► Each Strand Soft Drawn Tinned Copper Wire Meets Fed. Spec QQ-W-343E and ASTM-B-33
- ► Shield Coverage Is 95% When Placed Over Mandrel of Equivalent Diameter to That of Braid Interior

Stock No.	Mfr.'s Type	Nom. I.D. When Rounded		Braid Construction		Approx. AWG Equiv.	Nom. Circular Mil Area CM	Approx. Current Carrying Capacity (Amps)	PER 100'
		In.	mm	AWG of Indiv. Ends	Total No. of Indiv. Ends				
696-8010	2160	1/32	0.79	36	24	22	600	7.0	**13.43**
696-8012	2162	1/16	1.59	36	48	19	1200	11.0	**28.26**
696-8014	2163	5/64	1.98	36	72	18	1800	16.0	**32.79**
696-8016	2164	7/64	2.78	36	96	16	2400	19.0	**43.29**
696-8018	2166	1/8	3.18	36	120	15	3000	25.0	**49.65**
696Q8020	2167	5/32	3.97	36	240	12	6000	40.0	**181.10**
696-8022	2168	11/64	4.37	36	168	14	4200	32.0	**57.51**
696Q8024	2170	13/64	5.16	34	192	11	7630	46.0	**80.04**
696Q8026	2171	1/4	6.35	36	384	10	9600	53.0	**108.23**
696Q8028	2171/1	9/32	7.14	30	120	9	12060	60.0	**112.89**
696Q8030	2172	3/8	9,53	36	384	10	9600	53.0	**111.55**
696Q8032	2173	7/16	11.11	30	240	6	24120	90.0	**184.03**
696Q8034	2174	1/2	12.70	36	528	9	13200	62.0	**152.93**
696Q8036	2175	9/16	14.29	30	480	3	48240	145.0	**282.30**
696Q8038	2175/1	21/32	16.67	30	768	1	77180	190.0	**432.74**
696Q8040	2176	25/32	19.84	36	846	7	21600	88.0	**206.97**

Standard Put-Up: 2160-2168 — 100 Ft., 250 Ft.; 2170-2176 — 100 Ft. only

Tinned Copper Bus Bar



- ► MIL-W-3861* Type S
- ► QQ-W-343 Type S
- ► ASTM-B-33

Electrolytic, soft drawn and annealed, solid tin-plated copper. MIL-W-3861 Type S, QQ-W-343 Type S, ASTM-B-33. *No longer a current military specification.

Mfr.'s Type	Cond. AWG	Nom. Circular Mil. Area, CM	Nom. O.D.		100'		1000'	
			In.	mm	Stock No.	EACH	Stock No.	EACH
286	14	4110	.065	1.65	**708-8052**	**35.97**	**708-8053**	**253.98**
295	16	2580	.051	1.30	**708-8054**	**20.60**	**708-8055**	**172.58**
296	18	1620	.040	1.07	**708-8056**	**14.49**	**708-8057**	**112.40**
297	20	1020	.033	.83	**708-8058**	**11.22**	**708-8059**	**78.54**
298	22	640	.025	.63	**708-8060**	**8.57**	**708-8061**	**63.18**
299	24	404	.020	.50	**708-8062**	**8.77**	**708-8063**	**51.63**
299/1	26	253	.016	.41	**708-8064**	**8.57**	**708-8065**	**43.45**
299/2	28	159	.013	.33	—	—	**708-8067**	**37.33**

Test Lead Wire

- ► Conductor: Stranded Tinned Copper
- ► Insulation: Color Coded Rubber
- ► Temperature Range: –30°C to +90°C
- ► Colors Available: 2 — Black; 3 — Red; Insert 2 or 3 Where N Appears in Stock Number

Mfr.'s Type	Conductor		Nom. Ins. Thick	Voltage Breakdown	Sugg. Working Voltage	Nominal O.D.	100'		500'		1000'	
	AWG	Strand					Stock No.	EACH	Stock No.	EACH	Stock No.	EACH
1632	20	41/36	.040	6000	1500 V	.125" (3.18 mm)	**696-790N**	**25.96**	**696-791N**	**107.01**	**696Q792N**	**207.34**
1635	20	41/36	.047	12000	3000 V	.140" (3.56 mm)	**696-787N**	**27.82**	**696-788N**	**116.09**	**696Q789N**	**225.33**
1636	18	65/36	.045	20000	5000 V	.140" (3.56 mm)	**696-796N**	**31.53**	**696-797N**	**115.35**	**696Q798N**	**230.89**
1638	18	65/36	.090	29000	10000 V	.230" (5.84 mm)	**696-784N**	**58.57**	**696-785N**	**193.43**	**696Q786N**	**386.86**

Copper Shielding Tape

- ► UL Standard 510
- ► MIL-Standard 202C
- ► ASTM-D-1000
- ► UL Recognized
- ► Highly Conductive Pressure Sensitive Adhesive
- ► Oxidation Resistant Conductive Particles in Adhesive Produce Very Low Resistance Through Tape

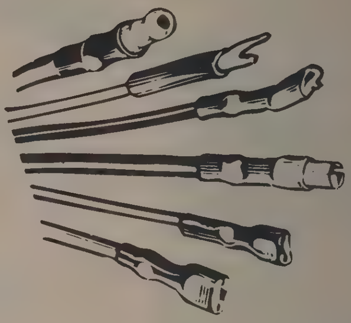
Provides a low impedance connection between metal connector backshell and the braided cable shield in molded cables. An effective EMI/RFI shielded cable assembly can be achieved without soldering the tape to the braid or backshell (a tin-plated backshell is recommended). Provides electrical contact to surfaces that cannot be soldered such as conductive plastic. EMI/RMF shielding of cables by wrapping the tape around the cable. (Recommend 40-50% overlap). Provides electrical continuity in seams of EMI/RFI shielded rooms. Draining of static charges. Bus bar application. **Specifications. Tensile Strength:** 21 lbs./in. **Adhesion:** 40 oz./in. **Thickness:** .003 in. **Flammability:** Flame retardant per UL Standard 510. **Electrical Resistance Through Tape:** .003 ohms/in.^{2} **Shielding Effectiveness:** 50 dB.

Stock No.	Mfr.'s Type	Width		Length	EACH
		In.	mm		
708-8092	CST-5	1/2	12.7	36 yards	**64.59**
708-8093	CST-10	1	25.4	36 yards	**134.84**
708-9084	CST-15	1 1/2	38.1	36 yards	**83.64**
708Q8095	CST-20	2	50.8	36 yards	**262.51**

FIT® 221 — Irradiated Polyolefin

► **UL Standard 224, CSA Standard 198 MIL-I-23053/5B, AMS 3636 (Colors), AMS 3637 (Clear)**

FIT-221 is the most widely used general purpose heat-shrinkable tubing. It is flexible, flame-retardant, self-extinguishing and fungus-resistant. The tubing shrinks a minimum of 50% of supplied diameter at 121°C longitudinal shrinkage, ±5% (UL224). **Operating Temperature:** –55°C to +135°C. **Tensile Strength:** 1800 psi nominal. **Colors Available:** 1-Black, 2-Red, 3-White, 4-Clear**; 5-Yellow; 6-Green; and 7-Blue. Insert the color number where N appears in the stock number.
**No UL recognition, CSA Certification on clear.



Now Stocked in 50' and 100' Lengths!

50'-100' FIT 221 Spools
FIT 221 is now available in 50' or 100' spools where noted. These shorter length spools are perfect for on-site installation needs. The spool is easily stored on any rack. Preprinted instructions are located right on the spool. The spool is packaged in a clear bag. Available in black and clear.

Size (")	Min. Supplied ID (")	Max. Recovered ID (")	Wall Thickness (")	6-Inch Lengths			4-Foot Lengths			Spooled Lengths			New Spooled Lengths		
				Stock No.	No. of Lengths	PER BOX	Stock No.	No. of Lengths	PER BOX	Stock No.	Put Up Length	PER BOX	Stock No.	Put Up Length	PER BOX
3/64	0.046	0.023	0.016	708-900N	40	10.76	708-901N	25	15.89	708Q902N	1000'	144.47	—	—	—
1/16	0.063	0.031	0.017	708-903N	36	10.76	708-904N	25	16.22	708Q905N	1000'	144.47	708-751N	100'	29.78
3/32	0.093	0.046	0.020	708-906N	32	10.76	708-907N	25	18.40	708-908N	500'	83.64	708-752N	100'	33.79
1/8	0.125	0.062	0.020	708-909N	28	10.76	708-710N	25	19.46	708-711N	500'	97.31	708-753N	100'	35.74
3/16	0.187	0.093	0.020	708-712N	24	10.76	708-713N	25	23.62	708-714N	500'	131.27	708-754N	100'	43.86
1/4	0.250	0.125	0.025	708-715N	20	10.76	708-716N	25	29.91	708-717N	250'	74.77	708-755N	100'	54.93
3/8	0.375	0.187	0.025	708-718N	16	10.76	708-719N	25	33.31	708-720N	200'	66.63	708-756N	50'	31.12
1/2	0.500	0.250	0.025	708-921N	14	10.76	708-722N	5	7.49	708-723N	150'	56.22	708-757N	50'	33.72
3/4	0.750	0.375	0.030	708-724N	12	10.76	708-725N	5	10.06	708-726N	250'	125.77	—	—	—
1	1.000	0.500	0.035	708-727N	8	10.76	708-728N	5	12.78	708-729N	250'	159.82	—	—	—
1 1/2	1.500	0.750	0.040	708-730N	5	10.76	708-731N	5	30.47	708Q732N	125'	163.11	—	—	—
2	2.000	1.000	0.045	708-734N	3	10.76	708-735N	5	47.45	708Q736N	125'	255.93	—	—	—

FIT® 221V — Highly Flame Retardant Polyolefin

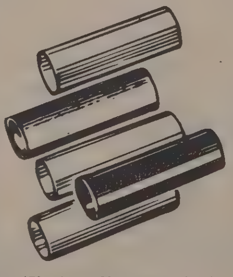
- ► **UL Recognized and CSA Certified**
- ► **Flame Retardant: Passes UL VW-1 Flame Test**
- ► **UL Standard 224, CSA Standard 198**

A radiation cross-linked polyolefin heat-shrinkable tubing designed for a wide range of applications requiring a highly flame retardant material. **Typical Applications:** for use where UL recognition with VW-1 is needed; harness bundling; electrical insulation; cable jacketing; lightweight harmless jackets; terminal insulation; wire strain relief; general purpose component packaging. **Specifications. Color:** Black. **Operating Temperature:** –40°C to +125°C. **Shrinkage Ratio:** 2:1 at 121°C. **Tensile Strength:** 1800 psi, nom. **Longitudinal Shrinkage:** ±3%. **Dielectric Strength:** 500 V/mil. **Volume Resistivity:** 1014 ohm/cm.

Size (")	Min. Supplied ID (")	Max. Recovered ID (")	6-Inch Lengths			4-Foot Lengths		
			Stock No.	Total Ft.	EACH	Stock No.	Total Ft.	EACH
3/64	0.046	0.023	708-4400	20	11.83	708-4415	100	17.65
1/16	0.063	0.031	708-4402	18	11.83	708-4418	100	18.02
3/32	0.093	0.046	708-4404	16	11.83	708-4421	100	20.44
1/8	0.125	0.062	708-4406	14	11.83	708-4424	100	19.46
3/16	0.187	0.093	708-4408	12	11.83	708-4427	100	23.62
1/4	0.250	0.125	708-4430	10	11.83	708-4442	100	29.91
3/8	0.375	0.187	708-4432	8	11.83	708-4445	100	33.31
1/2	0.500	0.250	708-4434	7	11.83	708-4448	20	8.32
3/4	0.750	0.375	708-4436	6	11.83	708-4451	20	10.06
1	1.000	0.500	708-4438	4	11.83	708-4454	20	14.06

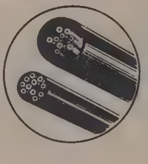
FIT® 300 — Surface Irradiated Polyolefin

- ► **MIL-I-23053/4B, Class 1 AMS-3634**
- ► **UL Standard 224**
- ► **UL Recognized (Black Only)**



When heated, the outer jacket shrinks and the inner wall melts and flows. The result is semi-rigid tubing with an inner wall that seals and provides tough mechanical protection. The tubing shrinks to 15% to 40% of the supplied diameter depending on the size at 135°C. Longitudinal shrinkage is 10% nominal. Non-flame retardant. Does not support fungus growth. **Operating Temperature:** –55°C to +110°C. **Tensile Strength:** 2500 psi nominal. All sizes available in black, but only one additional color is available for each size (see right). For 6" lengths, insert '5' where N appears in the stock number. For 4' lengths, insert '7' where N appears in the stock number.

Stock No.	Size (")	Min. Supplied ID (")	Max. Recovered ID (")	Wall Thickness (")	Color	6-Inch Lengths		4-Foot Lengths	
						No. of Lengths	PER BOX	No. of Lengths	PER BOX
708-780N	1/8	0.125	0.023	0.038	Black	14	13.72	25	127.78
708-781N	3/16	0.187	0.060	0.043	Black	12	13.72	25	155.97
708-782N	1/4	0.250	0.080	0.047	Black	10	13.72	25	194.17
708-783N	3/8	0.375	0.135	0.050	Black	8	13.72	25	216.24
708-784N	1/2	0.500	0.195	0.055	Black	6	13.72	5	51.19
708-785N	3/4	0.750	0.313	0.065	Black	4	13.72	5	78.82



FIT® 105 — Flexible Irradiated Polyvinylchloride

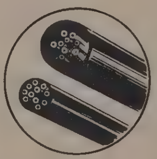
► **UL Recognized/CSA Certified, MIL-I-23053/2C***

FIT 105 is an economical alternative to crosslinked polyolefin tubing in some circumstances. FIT 105 features high mechanical strength and excellent flexibility. It will not cold flow or melt and will not split — even over sharp edges. It is flame-retardant, self extinguishing, and does not support fungus growth (MIL-I-7444). The tubing shrinks to 50% of supplied diameter at 175°C, longitudinal shrinkage 10% nominal. **Operating Temperature:** –35°C to +105°C. Tensile strength 2600 psi nominal. Stocked in black.

*MIL-I-23053/2C is inactive for new design and is no longer used by the Department of Defense except for replacement purposes.

Size (")	Min. Supplied ID (")	Max. Recovered ID (")	Wall Thickness (")	25' Coil			100' Coil		
				Stock No.	Wt. Lbs.	EACH	Stock No.	Wt. Lbs.	EACH
3/64	0.046	0.023	0.020	708-3804	0.1	11.22	708-3808	0.1	39.98
1/16	0.062	0.031	0.020	708-3810	0.1	12.04	708-3813	0.3	43.05
3/32	0.093	0.046	0.020	708-3817	0.1	13.67	708-3820	0.5	48.55
1/8	0.125	0.062	0.025	708-3823	0.2	14.28	708-3827	1.1	51.41
3/16	0.197	0.093	0.025	708-3830	0.3	17.55	708-3833	1.4	62.63
1/4	0.250	0.125	0.025	708-3837	0.4	22.04	708-3840	1.4	79.15
3/8	0.375	0.187	0.030	708-3843	0.5	24.48	708-3847	2.0	24.48
1/2	0.500	0.020	0.030	708-3850	0.8	27.54	708-3853	4.5	99.14
3/4	0.750	0.375	0.035	708-3857	1.3	37.13	708-3860	5.0	132.81
1	1.000	0.500	0.040	708-3863	2.2	51.82	708-3865	8.3	186.05
1 1/2	1.500	0.750	0.045	708-3867	3.9	97.51	708-3870	15.4	140.66

FIT® FLEX

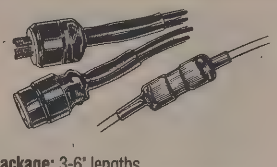


FIT® FLEX provides strain relief, terminal insulation, cable jacketing and wire harnessing protection in applications where flexibility and durability are mandatory. Most flexible heat shrink tubing product in the industry. Passes the UL VW-1 flame test. **Operating Temperature:** –75°C to +200°C (UL). **Shrink Ratio:** approximately 1.7:1 at 125°C. Non-corrosive. **Water Absorption:** 0.4%. 1 year shelf life. Stocked in gray.

Mfr.'s Type	Minimum Supplied		Maximum Recovered		Wall Thickness		25' Spool		100' Spool	
	In.	mm	In.	mm	In.	mm	Stock No.	EACH	Stock No.	EACH
FIT-FLEX-2	0.112	2.84	0.070	1.77	0.040	1.02	708Q5071	194.62	708Q5072	1037.85
FIT-FLEX-3	0.190	4.82	0.116	2.94	0.040	1.02	708Q5073	252.92	708Q5074	1011.72
FIT-FLEX-5	0.305	7.74	0.184	4.67	0.040	1.02	708Q5075	341.86	708Q5076	1367.07
FIT-FLEX-6	0.391	9.93	0.240	6.09	0.060	1.52	708Q5077	385.85	708Q5078	319.38
FIT-FLEX-9	0.588	14.93	0.357	9.06	0.060	1.52	708Q5079	508.18	—	—
FIT-FLEX-12	0.825	20.95	0.475	12.06	0.080	2.03	708Q5081	747.25	—	—
FIT-FLEX-20	1.217	30.91	0.790	20.06	0.080	2.03	708Q5083	1310.07	—	—

Letter "Q" In Stock Number Indicates Direct Factory Shipment To You

FIT® 621 High Shrink Ratio Tubing

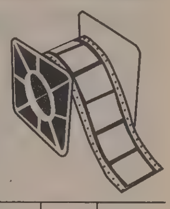


► **Shrinks to 1/6 Original Size**

Adhesive-lined, polyolefin shrink tubing that shrinks up to 1/6 of the supplied diameter at 120°C. Superior moisture protection. Excellent for field repair of indoor-outdoor cables rated to 1000V. Suitable for direct burial. Conforms to odd shapes and sizes. **Operating Temperature:** –40°C to +125°C. **Color:** Black. **Package:** 3-6" lengths.

Stock No.	Mfr.'s Type	Min. Supplied I.D.	Max. Recovered I.D.	PER PKG.
708-0010	FIT621-2	2.00" (50.80 mm)	.375" (9.50 mm)	**36.72**
708-0011	FIT621-3	3.00" (76.20 mm)	.750" (19.05 mm)	**81.09**
708-0015	FIT621-4	4.00" (101.60 mm)	.900" (22.86 mm)	**128.52**
708-0017	FIT621-5/8	0.60" (15.24 mm)	.150" (3.81 mm)	**34.27**
708-0019	FIT621-1 1/4	1.25" (31.75 mm)	.220" (5.59 mm)	**35.80**
708-0021	FIT621-2 1/2	2.50" (63.50 mm)	.500" (12.70 mm)	**59.06**

Heat Shrinkable Identification System
FIT®-PRINT



Polyolefin tubing with a shrink ratio of 3:1 at 125°C. Smear-resistant, permanent identification. The sleeves feed directly into standard typewriters or dot matrix printers. For best results use a ribbon with a high carbon content and for write-on convenience a standard ball point pen may also be used. Flame retardant. 250 markers per spool.

Stock No.	Mfr.'s Type	Wire Gauge	Min. Supplied I.D.	Max. Recovered I.D.	Width	EACH
708-302N	FIT Print-1/8	22-16	0.125" (3.20 mm)	.042" (1.0 mm)	0.235	**98.74**
708-303N	FIT Print-1/4	16-8	0.250" (6.40 mm)	.083" (2.1 mm)	0.420	**112.87**
708Q304N	FIT Print-1/2	8-2	0.500" (12.70 mm)	.166" (4.2 mm)	0.840	**255.33**
708Q305N	FIT Print-1	2-400 mcm	1.000" (25.40 mm)	.333" (8.4 mm)	1.630	**294.94**

Colors available: 1-white, 5-yellow. Insert the color number where "N" appears in the stock number.

FIT® 321...High Shrink Ratio (3:1) Polyolefin

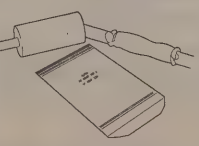
- ► **6" Lengths**
- ► **3:1 Shrink Ratio**
- ► **Flame Retarded Outer Wall**
- ► **Water Resistant (0.5% Maximum Absorption)**

When heated, inner wall melts and fills all crevices and interstices of the covered object while outer wall shrinks. Upon cooling, the entire mass becomes a tough molding that provides excellent environmental protection. **Specifications. Operating Temperature:** –55°C to +110°C. **Shrink Ratio:** 3:1 at 125°C. **Tensile Strength:** 2500 psi, nominal. **Ultimate Elongation:** 400% nominal. **Longitudinal Shrinkage:** 15%, nominal. MIL-I-23053C/4B Class 3.

Stock No.	Size	Min. Supplied I.D. (")	Max. Recovered I.D. (")	Total Ft.	EACH
708-4490	1/8"	0.120	0.040	14.0	**49.47**
708-4492	1/4"	0.240	0.080	10.0	**49.47**
708-4494	1/2"	0.470	0.160	7.0	**49.47**
708-4496	1"	0.940	0.320	4.0	**49.47**
708-4498	1 1/2"	1.570	0.510	2.5	**49.47**
—	—	—	—	—	—

708-9628. FIT 321-MS/1. Assortment. 5 lengths each per size. 4 sizes, 1/8" through 1". Total of 20 lengths. Black ....**EACH 59.47**

FIT® WRAP



Alpha's innovative FIT® WRAP sleeves redefine the FIT® shrinkable tubing concept! FIT® WRAP permanently repairs damaged or split cables without cutting or disconnecting them from equipment. A fast and easy solution that eliminates costly downtime! Meets MIL-I-23053/15A flammability requirements. Resists de-icing and hydraulic fluid, JP-4, diesel and lubricating oils and 5% NaCl. Non-corrosive, outer wall self-extinguishing. **Operating Temperature:** –55°C to +110°C. **Shrinkage Ratio:** 3:1 at +121°C, depending on size. **Physical Properties. Tensile Strength:** 1200 psi. **Ultimate Elongation:** 200%. **Specific Gravity:** 1.4. **Low Temperature Flexibility:** no cracking after four hours exposure at –55°C.

Stock No.	Mfr.'s Type	Min. Recovered Diameter Range	Max. Recovered Diameter Range	Flat Length	PER PACK/5
708-2510	FIT WRAP 80-6	.25" (6.35 mm)	1.20" (30.48 mm)	6	**114.75**
708-2511	FIT WRAP 80-8	.25" (6.35 mm)	1.20" (30.48 mm)	8	**160.00**
708Q2512	FIT WRAP 80-16	.25" (6.35 mm)	1.20" (30.48 mm)	16	**290.00**
708-2513	FIT WRAP 110-6	.31" (7.87 mm)	1.70" (43.18 mm)	6	**160.00**
708-2514	FIT WRAP 110-8	.31" (7.87 mm)	1.70" (43.18 mm)	8	**185.00**
708Q2515	FIT WRAP 110-16	.31" (7.87 mm)	1.70" (43.18 mm)	16	**310.00**
708-2516	FIT WRAP 180-6	.47" (11.94 mm)	2.05" (52.07 mm)	6	**170.00**
708-2517	FIT WRAP 180-8	.47" (11.94 mm)	2.05" (52.07 mm)	8	**190.00**
708Q2518	FIT WRAP 180-16	.47" (11.94 mm)	2.05" (52.07 mm)	16	**330.00**

FIT® 350 Irradiated Kynar*

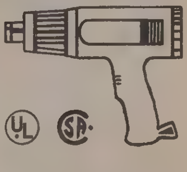
► **UL Subject 224 CSA Standard 198 MIL-I-23053/8B AMS 3632**

FIT-350 is transparent, thin-wall, high temperature, flame-retardant tubing which is excellent for installations requiring high resistance to abrasion and cut-through. Allows easy inspection of covered components. The tubing shrinks to 50% of supplied diameter at 175°C, longitudinal shrinkage 5% nominal. Semi-rigid, chemical resistant and self-extinguishing. Does not support fungus growth. **Operating Temperature:** –55°C to +175°C. **Tensile Strength:** 8000 psi, nominal. 4' lengths are available by special order.

*TM Pennwalt.

Stock No.	Size	Min. Supplied I.D. (")	Max. Recovered I.D. (")	Wall Thickness (")	No. of 6" Lengths	PER BOX
708-4309	1/16"	.063	.031	.010	28	**17.75**
708-4315	3/32"	.093	.046	.010	24	**17.75**
708-4321	1/8"	.125	.062	.010	20	**17.75**
708-4327	3/16"	.187	.093	.010	16	**17.75**
708-4333	1/4"	.250	.125	.012	12	**17.75**

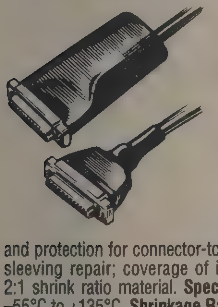
FIT® Gun



Durable, efficient and multi-functional. 3-position rocker switch (off-low-high). Ceramic encapsulated heating element. No cool down cycle. **Electrical Properties:** 120 V, 11.6 A. UL listed. CSA certified. Comes with a free concentrator nozzle attachment and slip on hook attachment.

FIT® Gun-1. Low: 300°C. **High:** 566°C. **Cord Length:** 6.5'. **New Weight:** 1.6 lbs.
708-4019. FIT® Gun-1..**EACH 133.66**
FIT® Gun-3. Low: 400°C. **High:** 585°C. **Cord Length:** 6'. **New Weight:** 1.5 lbs.
708-3999. FIT® Gun-3..**EACH 62.96**

FIT® 421...High Shrink Ratio (4:1) Polyolefin



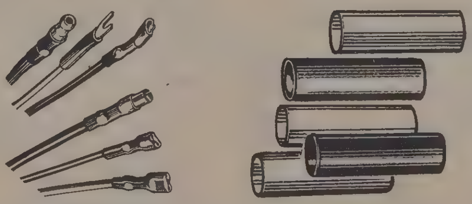
Stands up to your toughest tests. FIT 421 is a tough, irradiated polyolefin with a 4:1 shrinkage ratio that solves the problem of covering and protecting the connections between cables and bulky connectors. **Applications:** Insulation and protection for connector-to-cable terminations; harmless jacket sleeving repair; coverage of irregular shapes not possible with 2:1 shrink ratio material. **Specifications. Operating Temperature:** –55°C to +135°C. **Shrinkage Ratio:** 4:1 at 121°C. **Tensile Strength:** 1800 psi. **Longitudinal Shrinkage:** 50% maximum. MIL-I-23053/5B Class 1 overexpanded. AMS 3636D. Non-corrosive; self-extinguishing. **Color:** Black.

4' Lengths

Stock No.	Size	Min. Supplied I.D. (")	Max. Recovered I.D. (")	Total Ft.	EACH
708Q4460	1"	1.000	0.275	20	**194.62**
708Q4465	1 1/2"	1.500	0.375	20	**251.80**
708Q4470	2"	2.000	0.550	20	**268.06**
708Q4475	3"	3.000	0.810	8	**116.52**
708Q4480	4"	4.000	1.050	8	**201.72**

Small Quantity Packaged Assortments — 6" Lengths

FIT® Heat Shrink Tubing



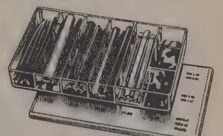
FIT 221 Assortments

FIT 221-MS/1. Six 6" lengths each of 5 different sizes, 3/64" through 3/16". 30 lengths total.
708-3901. FIT 221-MS/1 ....**EACH 17.75**
FIT 221-MS/2. Four 6" lengths each of 4 different sizes, 1/4" through 3/4". 16 lengths total.
708-3902. FIT 221-MS/2 ....**EACH 35.29**

FIT 105 Assortments

FIT 105-MS/1. Contains ten 6" lengths each of six sizes from 3/64" through 1/4". **Weight:** 1/2 lb. 60 lengths total.
708-3801. FIT 105-MS/1 ....**EACH 24.72**
FIT 105-MS/2. Contains ten 6" lengths each of four sizes from 3/8" through 1". **Weight:** 1/2 lb. 40 lengths total.
708-3802. FIT105-MS/2 ....**EACH 32.23**

Fit® Kits



Fit Kits provide the designer, engineer or technician with a complete sampler selection of the most popular types, sizes and colors of shrink tubing. The tubing is in 6" lengths in a clear plastic box. Each type has its own compartment. Assortments for most FIT types are also available from stock.

FIT KIT-1. Contents: 18 lengths, 9 sizes of FIT-105; 19 lengths, 9 sizes of FIT-221; 12 lengths, 8 sizes of FIT-295; 10 lengths, 5 sizes of FIT-300; 14 lengths, 7 sizes of FIT-350; 3 FIT crimps in 3 sizes; 6 FIT caps in 3 sizes. Total of 73 lengths plus 3 FIT crimps and 6 caps.
708-3775. FIT Kit-1..**EACH 97.61**

FIT KIT-2. Contents: FIT Kit-1 plus a second plastic compartmented box containing: 16 lengths of 6" and 24 lengths of 1" in 2 sizes of FIT-321; 22 lengths, 6 sizes of FIT-400; 17 lengths, 5 sizes of FIT-500; 8 lengths, 5 sizes of FIT-600; 2 lengths, 2 sizes of FIT-700; 10 1" lengths of FIT-750. Total of 138 6" lengths and 34 1" lengths. 3 FIT crimps in 3 sizes.
708-9601. FIT Kit-2..**EACH 119.55**

FIT KIT-7. Electronic Applications. Contents: 14 lengths, 7 sizes of FIT-105; 14 lengths, 7 sizes of FIT-400; 28 lengths, 7 sizes of FIT-221; 10 lengths, 5 sizes of FIT-750; 6 lengths, 3 sizes of FIT-260; 8 lengths, 4 sizes of FIT-300; 14 lengths, 7 sizes of FIT-350 and 12 FIT crimps in 3 sizes. Total of 100 lengths and 12 crimps.
708-9705. FIT Kit-7..**EACH 107.69**

17

Alpha BNC Connectors

Alpha BNC connectors provide highly reliable, quick connect/disconnect coaxial connections. A quick coupling device for plug and jack connectors is accomplished by rotation of a cam operating device designed to bring the two halves together. Alpha's hex terminations insure high conductivity, low resistance and high pullout values.

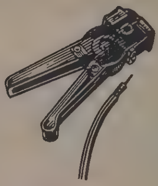
BNC Plug

Stock No.	Mfr.'s Type	Cable	Description	EACH
943-3001	CMC-3005	Ethernet IEEE 802.3 (10Base2) "Thin" Coaxial Cable	3 Piece BNC Plug Crimp Type	1.95

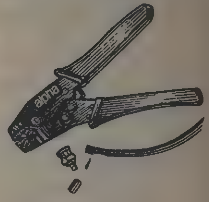
Stock No.	Mfr.'s Type	Cable RG/U	Description	EACH
943-0031	CMC-3001	58	3 Piece BNC Plug Crimp Type	2.01
943-0032	CMC-3002	59, 62	3 Piece BNC Plug Crimp Type	3.50

Coaxial Connectors and Tools

Three-Cut Coaxial Strip Tool
Easily strips single or double shielded coaxial cable in a single motion. Cassettes will last for more than 2000 strips. Adjustable blade depth.



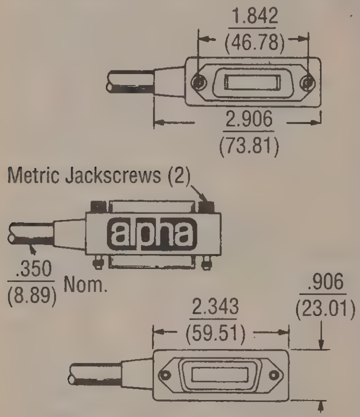
AT-140/3



AT-330

Stock No.	Mfr.'s Type	For RG/U Cable	EACH
943-0033	AT-140/3	6, 58, 59, 62	54.98
943-0034	AT-141/3	Replacement Cassette	15.71

Ratchet Crimp Tool
Full ratchet action for crimping Alpha's crimp-type BNC connectors.
943-0035. AT-330. Coax Ratchet Crimp Tool....................**EACH 222.16**



Connector Dimensional Layout

IEEE-488 Interface Bus Cables

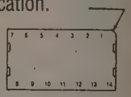
Construction. 6 twisted pairs conductors #26 AWG (7/34) tinned copper +.010" semi-rigid PVC insulation. 10 single conductors #26 AWG (7/34) tinned copper +.010" semi-rigid PVC insulation. 1 single conductor #24 AWG (7/32) tinned copper +.010" semi-rigid PVC insulation. **Drain Wire:** #24 AWG (7/32) tinned copper. **Shield:** Braided tinned copper (90% coverage). **Jacket:** Gray PVC 0.035" (0.89 mm) nominal wall thickness. **Nominal O.D.:** 0.350" (8.89 mm). **Shield:** Braided tinned copper, 90% coverage, min. (P/N 5910 only). **Jacket:** Gray PVC, 0.035" (0.89 mm) nominal wall thickness (P/N 5900 only). **Nominal O.D.:** 0.440" (11.23 mm), (P/N 5910 only). **Characteristics. Temperature Rating:** 80°C. **Voltage Rating:** 300 Volt. **D.C. Resistance:** #24 AWG — 23.9 ohms/ft. (78.4 ohms/km); #26 AWG — 38.4 ohms/ft. (126.0 ohms/km). **Capacitance. Conductor to Conductor, Nominal:** Single Conductors — 35 pF/ft. (114.8 pF/m); Pairs — 38 pF/ft. (124.7 pF/m). **Characteristic Impedance, Nominal:** Single Conductors — 70 ohms; Pairs — 75 ohms.

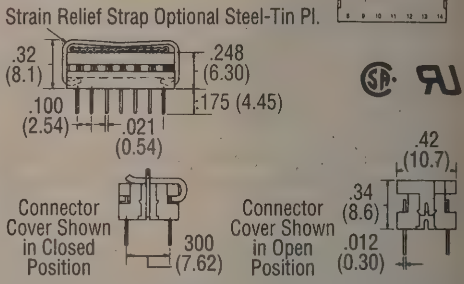
Single Shield

Stock No.	Mfr.'s Type	Length Feet	EACH
943-3901	5900/1	3.3	93.11
943-3902	5900/2	6.6	93.11
943-3903	5900/3	9.9	96.90
943-3904	5900/4	13.1	101.65
943-3905	5900/8	26.2	119.71
943-3906	5900/12	39.4	136.82
943Q3907	5900/16	52.5	153.92

IDC DIP Connectors

Notched Corner Orients No. 1 Contact Location.
(14 Contact Postitions Shown:
Also Available with 16 Positions.)




Strain Relief Strap Optional Steel-Tin Pl.
.32
(8.1)
.248
(6.30)
.175 (4.45)
.100
(2.54)
.021
(0.54)
Connector Cover Shown in Closed Position
300
(7.62)
Connector Cover Shown in Open Position
.42
(10.7)
.34
(8.6)
.012
(0.30)

UL Recognized, CSA Certified. These sturdy but lightweight connectors fit all standard DIP sockets and are compatible to MIL-C-83503. FCC-130-10 μ in. gold (in mating area) over 50 μ in. nickel.

Series 130

Stock No.	Mfr.'s Type	No. of Contacts	EACH 1-9	EACH 10
943-1535	FCC-130-14	14	1.97	1.76
943-1540	FCC-130-16	16	3.38	3.02
943-1556	FCC-130-24	24	3.48	3.16
943-4000	FCC-130-40	40	5.60	5.09

RS-232-C Pre-Terminated Assemblies

Construction. 25 cabled conductors: #22 AWG (0.36 mm²), 7/30 (7 × 0.25 mm), tinned copper. 0.009" (0.23 mm) color coded SR-PVC insulation. Aluminum/polyester foil shield with stranded tinned copper drain wire. Gray PVC jacket. **Wall Thickness:** 0.032" (0.81 mm). **O.D.:** 0.380" (9.65 mm), nominal. UL 2464. Alpha P/N 5199/25. **Characteristics. Temperature Rating:** 80°C. **Voltage Rating:** 300 Volt. **Cord Configuration.** Male connector, each end, fully pinned. Male connector to a female connector, fully pinned. **Connectors. Current Rating:** 4.0 amps/contact (with #22 AWG conductor). **Dielectric Withstand Voltage:** 1000 Volts, minimum. **Insulation Resistance:** 5000 M-ohms. **Contacts:** Gold over nickel plated beryllium copper. **No. of Positions:** 25 (pins or sockets). **Electrical Specifications. Capacitance:** 35 pF/ft. (115 pF/m), nominal. **Impedance:** 50 ohms, nominal. **Shielding:** Pin-to-pin shielded. **Applications.** General purpose EIA RS-232-C extensions. Modem control and error detection.

Male-To-Male Assemblies

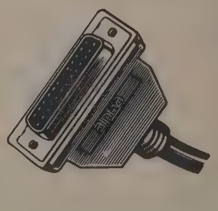
Stock No.	Mfr.'s Type	Length Feet	EACH
708-0805	DCA512A-6	6	42.43
708-0806	DCA512A-10	10	46.68
708-0807	DCA512A-15	15	50.39
708-0808	DCA512A-25	25	57.18
708-0809	DCA512A-50	50	84.76

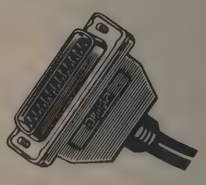
Male-To-Female Assemblies

Stock No.	Mfr.'s Type	Length Feet	EACH
708-0810	DCA522A-6	6	42.43
708-0811	DCA522A-10	10	46.68
708-0812	DCA522A-15	15	50.39
708-0813	DCA522A-25	25	57.18
708-0814	DCA522A-50	50	84.76

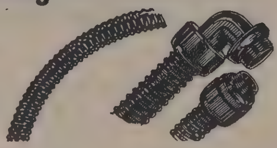
Cable Only

Mfr.'s Type	100'		500'		1000'	
	Stock No.	EACH	Stock No.	EACH	Stock No.	EACH
5199/25	708Q0800	461.04	708Q0801	1866.60	708Q0802	1911.48





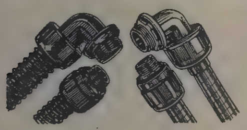
Flexible, Non-Metallic Electrical Tubing



- ► Available In Small 25' Coils
- ► UL Recognized. CSA Certified (Except For 1/4" Size)
- ► Fusion Of PVC Construction To Rigid PVC Core Forms Integral Extra-Flexible Tubing
- ► Smooth Inside Facilitates Easy Wire Pulling and Installation
- ► Uses Nylon Straight or Right-Angle Alpha Connectors Fittings To Insure Liquid Tight Integrity
- ► UL Rated: 70°C; Color: Black

Stock No.	Mfr.'s Type	Max. I.D.	Min. O.D.	PER 25' COIL*
708-0061	FNT-1/4	0.405" (10.3 mm)	0.560" (14.2 mm)	**33.09**
708-0062	FNT-3/8	0.504" (12.8 mm)	0.690" (17.5 mm)	**35.01**
708-0063	FNT-1/2	0.642" (16.3 mm)	0.820" (20.8 mm)	**42.86**
708-0064	FNT-3/4	0.840" (21.3 mm)	1.030" (26.1 mm)	**47.31**
708-0065	FNT-1	1.066" (27.1 mm)	1.290" (32.8 mm)	**73.62**
708-0066	FNT-1 1/4	1.410" (35.8 mm)	1.630" (42.2 mm)	**94.62**
708Q0067	FNT-1 1/2	1.600" (40.6 mm)	1.865" (47.4 mm)	**251.41**
708Q0068	FNT-2	2.045" (51.9 mm)	2.340" (59.4 mm)	**346.88**

*100' Coils available. Contact the nearest Allied sales office for assistance.



Connectors

- ► UL Listed, CSA Certified
- ► Molded Of 6/6 Nylon. ASTM D-4066-82
- ► Flammability Classification 94V-2
- ► Temperature Rating: 125°C
- ► Liquid-Tight, Non-Metallic

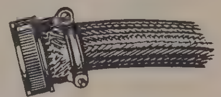
Straight

Stock No.	Mfr.'s Type	Trade Sizes	Thread Size	EACH
708-0077	SLC-3/8 Black	3/8"	1/2 NPT	**2.50**
708-0079	SLC-1/2 Black	1/2"	1/2 NPT	**2.65**
708-0081	SLC-3/4 Black	3/4"	3/4 NPT	**4.10**
708-0083	SLC-1 Black	1"	1 NPT	**7.04**
708-0031	SLC-1/4 Black	1/4"	1/4 NPT	**3.82**

Right Angle

Stock No.	Mfr.'s Type	Trade Sizes	Thread Size	EACH
708-0085	RLC-3/8 Black	3/8"	1/2 NPT	**3.92**
708-0087	RLC-1/2 Black	1/2"	1/2 NPT	**3.97**
708-0089	RLC-3/4 Black	3/4"	3/4 NPT	**6.49**
708-0091	RLC-1 Black	1"	1 NPT	**12.61**
—	—	—	—	—

Expandable Braided Polyester Sleeving



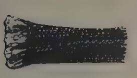
Lightweight, expandable woven polyester sleeving. High flexibility; high resistance. Open weave for wide range of expansion of the sleeving diameter for easy installation and gripping action. An ideal protective sleeve for wire bundles, harnesses, wire and cable, pneumatic hoses, flat cable, hydraulic lines, and highly polished or threaded machine parts. **Specifications. Operating Temperature:** –70°C to +125°C (UL). Rot-Free, Fungus Proof Per MIL-STD-810B-Method 508. Not affected by most chemical environments and common solvents.

Flame Retardant GRP-120

Stock No.	Mfr.'s Type	Size	Min. Supplied I.D.	Max. Expanded I.D.	Put Up Length	EACH
708-4800	GRP-120-1/8	1/8	0.093"	0.250"	100' spool	**49.45**
708-4802	GRP-120-1/4	1/4	0.125"	0.437"	100' spool	**71.28**
708-4804	GRP-120-1/2	1/2	0.250"	0.750"	100' spool	**127.42**
708-4806	GRP-120-3/4	3/4	0.500"	1.250"	100' spool	**190.01**
708-4808	GRP-120-1 1/4	1 1/4	0.750"	1.750"	50' spool	**124.30**

General Purpose GRP-110

708-4790	GRP-110-1/8	1/8	0.093"	0.250"	100' spool	**34.31**
708-4791	GRP-110-1/4	1/4	0.125"	0.437"	100' spool	**47.00**
708-4792	GRP-110-1/2	1/2	0.250"	0.750"	100' spool	**94.90**
708-4793	GRP-110-3/4	3/4	0.500"	1.250"	100' spool	**141.45**
708-4794	GRP-110-1 1/4	1 1/4	0.750"	1.750"	50' spool	**90.45**
708-4795	GRP-110-1 3/4	1 3/4	1.250"	2.750"	50' spool	**148.12**



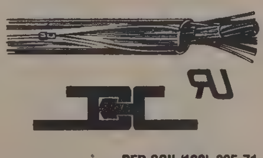
Expandable Polyester Webbed Sleeving

Highly flexible and expandable sleeving. Velcro type enclosure can be easily opened for breakouts or access to assemblies. Passes UL VW-1 Flame Test. **Operating Temperature:** –70°C to +125°C. **Color:** Black.

Stock No.	Mfr.'s Type	Min. Supplied I.D.	Max. Recovered I.D.	PER 25' COIL*
708-0040	ZIP-GRP-7/8	0.750" (19.05 mm)	1.000" (25.4 mm)	**143.21**
708-0041	ZIP-GRP-1 1/2	1.000" (25.40 mm)	2.000" (50.8 mm)	**155.51**
708-0042	ZIP-GRP-2	1.500" (38.10 mm)	2.125" (53.9 mm)	**173.77**

*50' Coils are also available from Alpha.

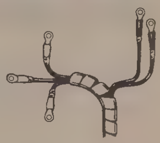
Zipper Tubing — ZIP-41 LOC-TRAC®



UL Standard 224, UL VW-1. Saves time and labor in making prototype cables. Adds extra jacketing protection to existing cable assemblies without need to disconnect or tape wrap. Ideal for cable repairs or modification — no need to disturb or disconnect existing connections. Zipper tubing is manufactured from the highest quality, high-temperature, stabilized PVC. **Temperature Range:** –36°C to 105°C. **Wall Thickness:** .020".

708-9284. ZIP-41. 1/2" dia. **1-4** ......**PER COIL/100' 259.28** **5-9** ......**PER COIL/100' 235.71**
708-9294. ZIP-41. 3/4" dia **1-4** ......**PER COIL/100' 279.32** **5-9** ......**PER COIL/100' 253.92**
708-9304. ZIP-41. 1" dia. **1-4** ......**PER COIL/100' 300.86** **5-9** ......**PER COIL/100' 273.51**
708-9314. ZIP-41. 1 1/4" dia. **1-4** ....**PER COIL/100' 315.51** **5-9** ......**PER COIL/100' 286.82**
708-9324. ZIP-41. 1 1/2" dia. **1-4** ....**PER COIL/100' 335.54** **5-9** ......**PER COIL/100' 305.04**
708-9334. ZIP-41. 1 3/4" dia. **1-4** ....**PER COIL/100' 355.82** **5-9** ......**PER COIL/100' 323.47**
708-9344. ZIP-41. 2" dia. **1-4** ......**PER COIL/100' 375.32** **5-9** ......**PER COIL/100' 341.20**

Spiral Wrap Tubing



Wire harnessing, cabling and bundling work is simplified with the use of Alpha's SW series spiral wrap tubing. SW tubing clings tightly to the wire and cable being bundled, yet is flexible and simple to apply. All types maintain flexibility, even when bent around sharp edges or subjected to repeated handling. Breakouts or tapoff connections may be made through the openings of the wrap.

Clear (natural) polyethylene with an operating temperature of –20°C to +80°C.

Mfr.'s Type	Nom. O.D. "	25' Put-Up		100' Put-Up	
		Stock No.	PER COIL	Stock No.	PER COIL
SW1	.125	**708-7501**	**3.68**	**708-7502**	**12.24**
SW2	.250	**708-7503**	**6.45**	**708-7504**	**20.50**
SW3	.375	**708-7506**	**9.02**	**708-7507**	**33.95**
SW4	.500	**708-7505**	**10.81**	**708-7508**	**38.19**

Black, ultra-violet resistant polyethylene with an operating temperature of –20°C to +80°C.

SW40	.125	**708-7428**	**3.88**	**708-7429**	**12.69**
SW41	.250	**708-7430**	**7.57**	**708-7435**	**26.05**
SW42	.375	**708-7431**	**10.69**	**708-7436**	**37.19**
SW43	.500	**708-7432**	**14.02**	**708-7437**	**48.33**

Natural color nylon with an operating temperature of –40°C to +120°C.

SW20	.125	**708-7440**	**9.57**	**708-7442**	**32.74**
SW21	.250	**708-7444**	**16.69**	**708-7446**	**57.92**
SW22	.375	**708-7448**	**37.43**	**708Q7450**	**129.64**
SW23	.500	**708-7452**	**48.33**	**708Q7454**	**168.18**

Clear natural teflon with an operating temperature of –70°C to +250°C.

SW30	.125	**708-7418**	**78.62**	**708Q7419**	**273.12**
SW31	.250	**708-7420**	**136.33**	**708Q7425**	**474.26**
SW32	.375	**708Q7421**	**220.10**	**708Q7426**	**765.43**
SW33	.500	**708Q7422**	**296.31**	**708Q7427**	**1030.53**

PVC Spiral Wrap. Operating Temperature: –20°C to +105°C. Stocked in black.

SW-51	.250	—	—	**708-0052**	**51.90**
SW-52	.375	—	—	**708-0056**	**85.31**
SW-53	.500	—	—	**708-0060**	**113.16**

TFT Teflon Tubing ASTM D 3295

Exceptional toughness and flexibility throughout its temperature range. Superior dielectrical strength at high frequencies. Excellent heat and chemical resistance. Self-extinguishing, non-corrosive, does not support fungus growth. **Operating Temperature:** –65°C to +260°C. Natural color.

TFT-200 Thin-Wall Teflon Tubing

Stock No.	Mfr.'s Type Size	Nom. I.D. "	Nom. Wall "	PER 100' COIL	
				1-4	5-9
708-4930	TFT-200-30	.012	.009	**26.50**	**24.09**
708-4926	TFT-200-26	.018	.010	**20.93**	**19.03**
708-4924	TFT-200-24	.022	.010	**22.73**	**20.66**
708-4922	TFT-200-22	.027	.010	**26.72**	**24.29**
708-4920	TFT-200-20	.034	.012	**32.29**	**29.36**
708-4918	TFT-200-18	.042	.012	**45.21**	**41.11**
708-4916	TFT-200-16	.053	.012	**45.21**	**41.11**
708-4914	TFT-200-14	.066	.012	**49.67**	**45.16**

TFT-250 Standard-Wall Teflon Tubing

708-5024	TFT-250-24	.022	.012	**27.83**	**25.30**
708-5022	TFT-250-22	.027	.012	**30.95**	**28.13**
708-5020	TFT-250-20	.034	.016	**42.53**	**38.76**

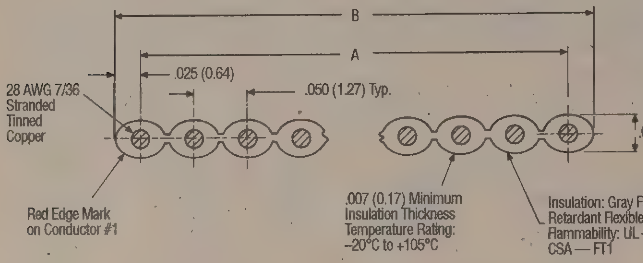
PVC-105 All Purpose Tubing

- ► **U.L. Recognized, CSA Certified ASTM D-876, D-922, MIL-I-1631D Passes UL VW-1 Flame Test**

Superior thermal, mechanical and electrical properties with economical cost.
Compounded with highest quality, non-migratory resinous type plasticizers–stabilizers and modifiers added. Flexible, resistant to heat, oil, abrasion, fungus and chemical corrosion. **Operating Temperature:** –20°C to +105°C. Furnished in black and clear in 100' lengths. Other colors and lengths available by special order.

Stock No.		Mfr.'s Type Size	I.D.	Wall Thk.	Put Up	PER COIL
Clear	Black					
708-0470	**708-0504**	PVC-105-24	.022	.013	1000'	**35.86**
708-0472	**708-0506**	PVC-105-22	.027	.012	1000'	**35.86**
708-0474	**708-0508**	PVC-105-20	.034	.016	1000'	**38.76**
708-0476	**708-0510**	PVC-105-18	.042	.016	1000'	**41.88**
708-0478	**708-0512**	PVC-105-16	.053	.016	1000'	**45.00**
708-0480	**708-0514**	PVC-105-14	.066	.016	500'	**23.83**
708-0482	**708-0516**	PVC-105-12	.085	.016	500'	**25.40**
708-0484	**708-0518**	PVC-105-10	.106	.016	500'	**29.85**
708-0486	**708-0520**	PVC-105-8	.133	.020	500'	**38.76**
708-0488	**708-0522**	PVC-105-6	.166	.020	500'	**44.76**
708-0490	**708-0524**	PVC-105-4	.208	.020	250'	**25.40**
708-0492	**708-0526**	PVC-105-2	.263	.020	250'	**29.85**
708-0494	**708-0528**	PVC-105-5/16	.312	.025	250'	**44.11**
708-0496	**708-0530**	PVC-105-3/8	.375	.025	250'	**52.35**
708-0498	**708-0532**	PVC-105-1/2A	.500	.030	100'	**28.07**
708-0500	**708-0534**	PVC-105-5/8	.625	.035	100'	**40.53**
708-0502	**708-0536**	PVC-105-3/4	.750	.035	50'	**34.76**

.050 (1.27) Centerline IDC Ribbon Cable PVC Insulation


B
A
.025 (0.64)
.050 (1.27) Typ.
28 AWG 7/36 Stranded Tinned Copper
.035 (0.89)
Red Edge Mark on Conductor #1
.007 (0.17) Minimum Insulation Thickness Temperature Rating: −20°C to +105°C
Insulation: Gray Flame Retardant Flexible PVC Flammability: UL — VW1; CSA — FT1

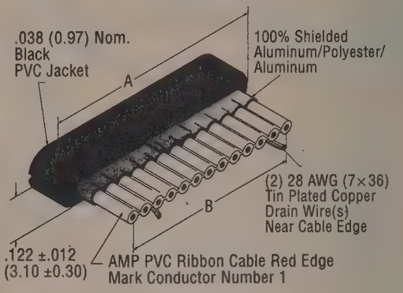
Certified

- ► **28 AWG, 7/36 Stranded Tinned Copper**
- ► **Cable Surface Printed Per UL and CSA Requirements**

Electrical Ratings. Voltage Rating: 300 volts. **Impedance:** 105 ohms nom. (GND, SIG, GND). **Insulation Resistance:** 10^{10} ohms/10 ft. (3.048). **Capacitance:** 15 pF/ft. at 1 MHz max. **Propagation Delay:** 1.41 ns/ft. nom. **Crosstalk:** 10 ft. sample 5 ns rise time; Near End — 4.0% max.; Far End — 6.0% max. **UL Style:** 2651.

No. of Cond.	Dimensions		100' Coil			500' Coil		
	A	B	Stock No.	Mfr.'s Type	EACH 1-9	Stock No.	Mfr.'s Type	EACH 1-4
8	0.350	0.400	**512-9240**	2-57040-0	**9.85**	**512-9248**	2-971111-0	**44.80**
9	0.400	0.450	**512-3792**	1-57040-2	**10.07**	**512-9249**	1-971111-2	**45.75**
10	0.450	0.500	**512-3793**	1-57040-3	**11.18**	**512-9250**	1-971111-3	**50.80**
14	0.650	0.700	**512-3794**	1-57040-4	**15.66**	**512-9251**	1-971111-4	**71.20**
15	0.700	0.750	**512-3796**	1-57040-5	**16.77**	**512-9252**	1-971111-5	**76.20**
16	0.750	0.800	**512-3797**	1-57040-6	**17.87**	**512-9253**	1-971111-6	**81.25**
18	0.850	0.900	**512-9241**	2-57040-3	**20.12**	**512-9254**	2-971111-3	**91.45**
20	0.950	1.000	**512-3798**	57040-1	**20.58**	**512-9255**	971111-1	**93.55**
24	1.150	1.200	**512-9242**	1-57040-7	**27.04**	**512-9256**	1-971111-7	**122.90**
25	1.200	1.250	**512-3799**	57040-2	**28.09**	**512-9257**	971111-2	**127.70**
26	1.250	1.300	**512-3800**	57040-3	**26.76**	**512-9258**	971111-3	**121.65**
30	1.450	1.500	**512-9243**	2-57040-1	**32.85**	**512-9259**	2-971111-1	**149.30**
34	1.650	1.700	**512-3801**	57040-4	**34.99**	**512-9260**	971111-4	**159.05**
36	1.750	1.800	**512-9244**	2-57040-5	**39.00**	**512-9261**	2-971111-5	**160.70**
37	1.800	1.850	**512-3803**	1-57040-8	**42.98**	**512-9262**	1-971111-8	**195.35**
40	1.950	2.000	**512-3805**	57040-5	**41.17**	**512-9263**	971111-5	**187.15**
44	2.150	2.200	**512-9245**	2-57040-4	**52.38**	**512-9264**	2-971111-4	**238.05**
50	2.450	2.500	**512-3807**	57040-6	**51.47**	**512-9265**	971111-6	**233.95**
60	2.950	3.000	**512-9246**	57040-7	**61.76**	**512-9266**	971111-7	**280.75**
64	3.150	3.200	**512-9247**	2-57040-2	**65.88**	**512-9267**	2-971111-2	**299.45**

Shielded/Jacketed .050 (1.27) Centerline IDC Ribbon Cable, PVC Insulation

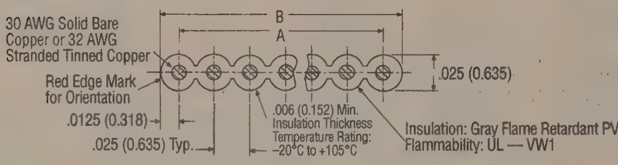

.038 (0.97) Nom. Black PVC Jacket
A
100% Shielded Aluminum/Polyester/ Aluminum
(2) 28 AWG (7×36) Tin Plated Copper Drain Wire(s) Near Cable Edge
B
.122 ±.012 (3.10 ±0.30)
AMP PVC Ribbon Cable Red Edge Mark Conductor Number 1

Certified

Mechanical Specifications. Conductor: 28 AWG (7 × 36) tinned copper. **Insulation:** .010" (.254) nom. wall grey PVC. **Pitch:** .050" ±.002" (1.27 ±0.051). **Color:** Internal cable — gray with red polarity stripe. **Shielding:** Aluminum/polyester/aluminum. **Drain Wires:** Two 28 AWG (7 × 36) tinned copper. **Jacket:** 0.38" (0.97) nom. wall black PVC. **UL File#:** E53793 Style 20081. **Temperature Rating:** −20°C to +105°C. **Flammability Rating:** UL — VW-1; CSA — FT-1. **CSA Certificate Number:** LL 700828. **Electrical Specifications. Voltage Rating:** 300 V RMS. **Current Rating:** 1 amp. **Conductor Resistance:** 68 ohms/1000 ft. (304.8 m). **Insulation Resistance:** >1 × 10^{10} ohms; 10 ft. (3.048 m). **Impedance:** 45 ohms. **Capacitance @ 1 MHz:** 50 pF/ft. (164 pF/m). **Inductance @ 1 MHz:** .11 µH/ft. (.36 µH/m). **Propagation Delay:** 1.70 ns/ft. (5.6 ns/m).

Stock No.	Mfr.'s Type	No. of Cond.	Dimensions		PER COIL/ 100'
			A	B	1-9
512-9464	57646-9	9	0.550	0.400	**70.20**
512-9465	1-57646-0	10	0.600	0.450	**76.28**
512-9466	1-57646-5	15	0.850	0.700	**81.00**
512-9467	2-57646-0	20	1.100	0.950	**91.80**
512-9468	2-57646-5	25	1.350	1.200	**102.60**
512-9469	2-57646-6	26	1.400	1.250	**108.00**
512-9470	3-57646-4	34	1.800	1.650	**125.55**
512-9471	3-57646-6	36	1.900	1.750	**145.80**
512-9472	3-57646-7	37	1.950	1.800	**151.20**
512-9473	4-57646-0	40	2.100	1.950	**162.00**
512-9474	5-57646-0	50	2.600	2.450	**202.50**
512-9475	6-57646-0	60	3.100	2.950	**240.30**
512-9476	6-57646-4	64	3.300	3.150	**269.33**

.025 (0.63) Centerline IDC Ribbon Cable, PVC Insulation


B
A
30 AWG Solid Bare Copper or 32 AWG Stranded Tinned Copper
Red Edge Mark for Orientation
.0125 (0.318)
.025 (0.635) Typ.
.006 (0.152) Min. Insulation Thickness Temperature Rating: −20°C to +105°C
Insulation: Gray Flame Retardant PVC Flammability: UL — VW1
.025 (0.635)

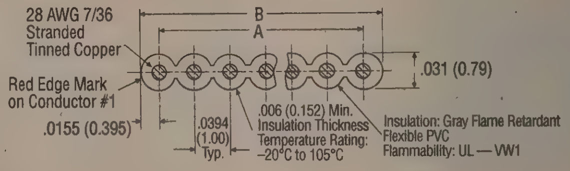
Certified

- ► **30 AWG, Solid Bare Copper**
- ► **Cable Surface Printed Per UL and CSA Requirements**

Electrical Ratings. Voltage: 150 volts. **Impedance:** 80 ohms nom. (GND, SIG, GND). **Capacitance:** 19.2 pF/ft. at 1 MHz nom. **Propagation Delay:** 1.51 ns/ft. nom. **Insulation Resistance:** 10^{10} Ohms/10 ft. (3.048 m). **Crosstalk:** 10 ft. sample 5 ns rise time; Near End — 4.0% max.; Far End — 6.0% max. **UL Style:** 2678.

Stock No.	Mfr.'s Type	No. of Cond.	Dimensions		PER COIL/ 100'
			A	B	1-9
512-9268	1-57013-3	20	0.475	0.500	**11.03**
512-9269	1-57013-4	24	0.575	0.600	**13.24**
512-9270	2-57013-6	26	0.625	0.650	**13.04**
512-9271	4-57013-6	28	0.675	0.700	**15.45**
512-9272	1-57013-5	30	0.725	0.750	**16.56**
512-9273	4-57013-9	34	0.800	0.825	**18.77**
512-9274	1-57013-6	36	0.875	0.900	**19.87**
512-9275	1-57013-7	40	0.975	1.000	**22.07**
512-9276	1-57013-8	44	1.075	1.100	**24.28**
512-9277	1-57013-9	50	1.225	1.250	**27.59**
512-9278	2-57013-0	60	1.475	1.500	**33.12**
512-9279	2-57013-1	68	1.675	1.700	**37.54**
512-9280	2-57013-2	72	1.775	1.800	**39.75**
512-9281	2-57013-3	80	1.975	2.000	**44.15**
512-9282	2-57013-4	100	2.475	2.500	**55.20**

1 mm (.0394) Centerline IDC Ribbon Cable, PVC Insulation


B
A
28 AWG 7/36 Stranded Tinned Copper
.031 (0.79)
Red Edge Mark on Conductor #1
.0155 (0.395)
.0394 (1.00) Typ.
.006 (0.152) Min. Insulation Thickness Temperature Rating: −20°C to 105°C
Insulation: Gray Flame Retardant Flexible PVC Flammability: UL — VW1

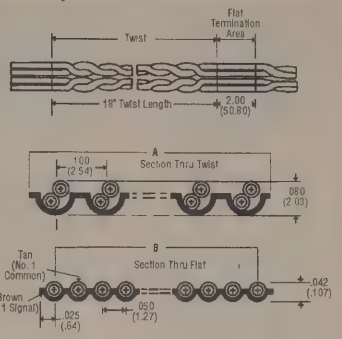
Certified

- ► **28 AWG Stranded, 7/36 Stranded Tinned Copper**
- ► **Cable Surface Printed Per UL and CSA Requirements**

Electrical Ratings. Voltage: 150 volts. **Impedance:** 80 ohms nom. (GND, SIG, GND). **Capacitance:** 18.3 pF/ft. at 1 MHz nom. **Propagation Delay:** 1.47 ns/ft. nom. **Insulation Resistance:** 10^{10} ohms/10 ft. (3.048 m). **Crosstalk:** 10 ft. sample, 5 ns rise time; Near End — 4.0% max.; Far End — 6.0% max. **UL Style:** 2678.

Stock No.	Mfr.'s Type	No. of Cond.	Dimensions		PER COIL/ 100'
			A	B	1-9
512-9283	1-57051-7	6	0.197	0.236	**15.51**
512-9284	1-57051-8	8	0.276	0.315	**15.84**
512-9285	1-57051-9	10	0.354	0.394	**19.44**
512-9286	5-57051-2	12	0.433	0.472	**22.00**
512-9287	2-57051-0	14	0.512	0.551	**24.81**
512-9288	2-57051-1	16	0.591	0.630	**25.14**
512-9289	2-57051-2	20	0.748	0.787	**28.99**
512-9290	2-57051-3	24	0.906	0.945	**31.24**
512-9291	2-57051-4	26	0.984	1.024	**34.77**
512-9292	2-57051-5	30	1.142	1.181	**40.23**
512-9293	2-57051-6	34	1.299	1.339	**40.89**
512-9294	2-57051-7	40	1.535	1.575	**48.27**
512-9295	2-57051-8	44	1.693	1.732	**50.52**
512-9296	2-57051-9	50	1.929	1.969	**57.90**
512-9297	3-57051-0	60	2.323	2.362	**65.94**
512-9298	3-57051-1	64	2.480	2.519	**76.84**
512-9299	3-57051-2	68	2.638	2.677	**86.59**

AMP-TWIST™ .050 Centerline Color Coded Twisted Pair PVC, Cable Insulation

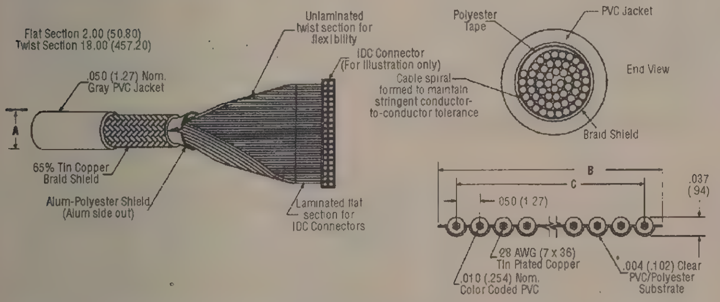


Mechanical Specifications. Conductor: 28 AWG (7 × 36) tinned copper. **Insulation:** .010" (.254 m) nom. wall color coded PVC. **Substrate:** .010" (.254 m); nom. wall clear PVC. **Pitch:** Twisted pair centers — .100" nom. (2.54 m); Conductors centers — Flat .050" ±.005" (1.27 ±0.13 m). **Pairs:** 1/2" nom. lay — adjacent pairs have opposite direction lay. **Construction:** 18" of twisted pairs, 2" of flat section. **Color:** Brown, red, orange, yellow, green, blue, violet, grey, white, black, with common tan, repeat. **UL File No.:** E53793. **UL Style:** Dual rated 2693 and 2697. **Temperature Rating:** –20°C to +105°C UL. **Flammability Rating:** UL — VW-1.

Electrical Specifications. Voltage Rating: 300 V RMS. **Current Rating:** 1 amp. **Conductor Resistance:** 68 ohms/1000 ft. (304.8 m). **Insulation Resistance:** >1 × 10^{10} ohms; 10 ft. (3.048 m). **Impedance (Balanced):** 115 ohms. **Impedance (Unbalanced):** 100 ohms. **Capacitance @ 1 MHz:** 16 pF/ft. (52 pF/m). **Inductance @ 1 MHz:** .24 µH/ft. (.79 µH/m). **Propagation Delay:** 1.6 ns/ft. (5.25 ns/m).

Stock No.	Mfr.'s Type	No. of Cond.	No. of Pairs	Dimensions		PER COIL/100'
				A	B	1-9
512-9477	57641-5	10	5	.500	.450	**23.22**
512-9478	57641-7	14	7	.700	.650	**32.40**
512-9479	57641-8	16	8	.800	.750	**37.13**
512-9480	1-57641-0	20	10	1.000	.950	**41.58**
512-9481	1-57641-3	26	13	1.300	1.250	**54.00**
512-9482	1-57641-7	34	17	1.700	1.650	**70.88**
512-9483	1-57641-8	36	18	1.800	1.750	**74.93**
512-9484	2-57641-0	40	20	2.000	1.950	**83.16**
512-9485	2-57641-5	50	25	2.500	2.450	**103.95**
512-9486	3-57641-0	60	30	3.000	2.950	**124.88**
512-9487	3-57641-2	64	32	3.200	3.150	**132.98**

AMP-TWIST™ .050 Centerline Shielded Color Coded Round-To-Flat Cable

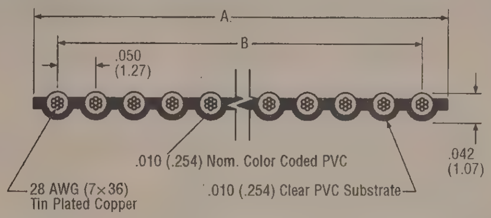

Flat Section 2.00 (50.80)
Twist Section 18.00 (457.20)
Unlaminated twist section for flexibility
IDC Connector (For illustration only)
.050 (1.27) Nom. Gray PVC Jacket
A
65% Tin Copper Braid Shield
Alum-Polyester Shield (Alum side out)
Laminated flat section for IDC Connectors
Polyester Tape
PVC Jacket
Cable spiral formed to maintain stringent conductor-to-conductor tolerance
End View
Braid Shield
B
C
.050 (1.27)
.037 (.94)
28 AWG (7 x 36) Tin Plated Copper
.010 (.254) Nom. Color Coded PVC
.004 (.102) Clear PVC/Polyester Substrate

Mechanical Specifications. Conductor: 28 AWG (7 × 36) tinned copper. **Insulation:** .010" (.254 m) nom. wall color coded PVC. **Substrate:** .004" (.102 m) nom. wall clear PVC/polyester (flat section only). **Pitch:** Conductor centers in flat — .050" ±.005" (1.27 ±0.13 m). **Pairs:** 3/4" nom. lay — adjacent pairs have opposite direction lay. **Construction:** 18" of twisted pairs (non-laminated), 2" of flat section (laminated). **Color:** Internal Cable — Brown, red, orange, yellow, green, blue, violet, gray, white, black, with common tan, repeat. **Shielding:** Aluminum/polyester plus 65% coverage tinned copper braid. **Jacket:** .050" (1.27 m) nom. wall gray PVC. **Temperature Rating:** –20°C to +105°C. **Flammability Rating:** UL — VW-1, UL-1581 Vertical Tray; N.E.C. — 725, CL2. **UL File No.:** E53793. **UL Style:** 20381.

Electrical Specifications. Voltage Rating: 300 V RMS. **Current Rating:** .5 amp. **Conductor Resistance:** 68 ohms/1000 ft. (304.8 m). **Insulation Resistance:** >1 × 10^{10} ohms; 10 ft. (3.048 m). **Impedance (Balanced):** 110 ohms. **Impedance (Unbalanced):** 65 ohms. **Capacitance @ 1 MHz:** 27 pF/ft. (89 pF/m). **Inductance @ 1 MHz:** .22 µH/ft. (.72 µH/m). **Propagation Delay:** 1.70 ns/ft. (5.6 ns/m).

Stock No.	Mfr.'s Type	No. of Cond.	No. of Pairs	Dimensions			PER COIL/100'
				A	B	C	1-9
512-9494	1-57647-3	26	13	.380	1.300	1.250	**156.65**
512-9495	1-57647-7	34	17	.410	1.700	1.650	**197.27**
512-9496	2-57647-0	40	20	.440	2.000	1.950	**220.48**
512-9497	2-57647-5	50	25	.480	2.500	2.450	**240.78**
512-9498	3-57647-0	60	30	.510	3.000	2.950	**263.99**
512-9499	3-57647-2	64	32	.520	3.200	3.150	**273.42**

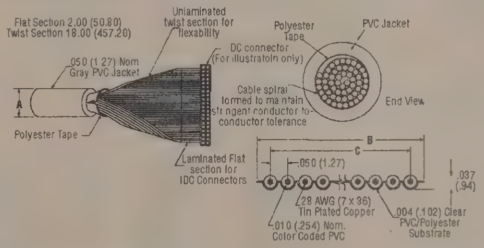
AMP® CODE 10™ .050 Centerline Multi-Colored IDC Ribbon Cable, PVC Installation


A
B
.050 (1.27)
.010 (.254) Nom. Color Coded PVC
.042 (1.07)
28 AWG (7×36) Tin Plated Copper
.010 (.254) Clear PVC Substrate

Mechanical Specifications. Conductor: 28 AWG (7 × 36) tinned copper. **Insulation:** .010" (.254) nom. wall color coded PVC. **Substrate:** .010" (.254) nom. wall clear PVC. **Pitch:** .050" ±.005" (1.27 ±0.13). **Color:** Brown, red, orange, yellow, green, blue, violet, grey, white, black, repeat. **UL File#:** E53793 Style 2884. **Temperature Rating:** CSA — –20°C to +80°C; UL — –20°C to +105°C. **Flammability Rating:** UL — VW-1; CSA — FT-1. **CSA Certificate Number:** LL 700828. **Electrical Specifications. Voltage Rating:** 300 V RMS. **Current Rating:** 1 amp. **Conductor Resistance:** 68 ohms/1000 ft. (304.8 m). **Insulation Resistance:** >1 × 10^{10} ohms; 10 ft. (3.048 m). **Impedance:** 105 ohms. **Capacitance @ 1 MHz:** 15 pF/ft. (49 pF/m). **Inductance @ 1 MHz:** .20 µH/ft. (.66 µH/m). **Propagation Delay:** 1.4 ns/ft. (4.6 ns/m).

Stock No.	Mfr.'s Type	No. of Cond.	Dimensions		PER COIL/ 100'
			A	B	1-9
512-9450	1-57643-0	10	0.500	0.450	**33.75**
512-9451	1-57643-4	14	0.700	0.650	**39.15**
512-9452	1-57643-6	16	0.800	0.750	**41.85**
512-9453	2-57643-0	20	1.000	0.950	**47.25**
512-9454	2-57643-4	24	1.200	1.150	**51.98**
512-9455	2-57643-5	25	1.250	1.200	**53.33**
512-9456	2-57643-6	26	1.300	1.250	**55.35**
512-9457	3-57643-4	34	1.700	1.650	**84.38**
512-9458	3-57643-6	36	1.800	1.750	**86.40**
512-9459	3-57643-7	37	1.850	1.800	**88.43**
512-9460	4-57643-0	40	2.000	1.950	**92.48**
512-9461	5-57643-0	50	2.500	2.450	**103.95**
512-9462	6-57643-0	60	3.000	2.950	**119.48**
512-9463	6-57643-4	64	3.200	3.150	**126.90**

AMP-TWIST™ .050 Centerline Unshielded Color Coded Round-To-Flat Cable

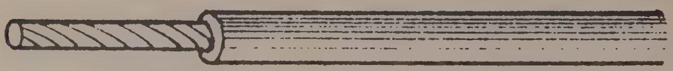

Flat Section 2.00 (50.80)
Twist Section 18.00 (457.20)
Unlaminated twist section for flexability
DC connector (For illustratoin only)
Polyester Tape
PVC Jacket
.050 (1.27) Nom Gray PVC Jacket
A
Cable spiral formed to maintain stringent conductor-to-conductor tolerance
End View
Polyester Tape
Laminated Flat section for IDC Connectors
B
C
.050 (1.27)
.037 (.94)
28 AWG (7 x 36) Tin Plated Copper
.010 (.254) Nom. Color Coded PVC
.004 (.102) Clear PVC/Polyester Substrate

Mechanical Specifications. Conductor: 28 AWG (7 × 36) tinned copper. **Insulation:** .010" (.254 m) nom. wall color coded PVC. **Substrate:** .004" (.102 m) nom. wall clear PVC/polyester (flat section only). **Pitch:** Conductor centers in flat — .050" ±.005" (1.27 ±0.13 m). **Pairs:** 3/4" nom. lay — adjacent pairs have opposite direction lay. **Construction:** 18" of twisted pairs (non-laminated), 2" of flat section (laminated). **Color:** Internal Cable — Brown, red, orange, yellow, green, blue, violet, gray, white, black, with common tan, repeat. **Jacket:** .050" (1.27 m) nom. wall gray PVC. **Tape Separator:** Spiral wrapped polyester tape between jacket and cable. **Temperature Rating:** –20°C to +105°C. **Flammability Rating:** UL — VW-1, UL-1581 Vertical Tray; N.E.C. — 725, CL2. **UL File No.:** E53793. **UL Style:** 20381.

Electrical Specifications. Voltage Rating: 300 V RMS. **Current Rating:** .5 amp. **Conductor Resistance:** 68 ohms/1000 ft. (304.8 m). **Insulation Resistance:** >1 × 10^{10} ohms; 10 ft. (3.048 m). **Impedance (Balanced):** 125 ohms. **Impedance (Unbalanced):** 80 ohms. **Capacitance @ 1 MHz:** 13 pF/ft. (43 pF/m). **Inductance @ 1 MHz:** .36 µH/ft. (1.18 µH/m). **Propagation Delay:** 1.70 ns/ft. (5.6 ns/m).

Stock No.	Mfr.'s Type	No. of Cond.	No. of Pairs	Dimensions			PER COIL/100'
				A	B	C	1-9
512-9488	1-57648-3	26	13	.350	1.300	1.250	**138.06**
512-9489	1-57648-7	34	17	.385	1.700	1.650	**147.08**
512-9490	2-57648-0	40	20	.415	2.000	1.950	**160.95**
512-9491	2-57648-5	50	25	.455	2.500	2.450	**191.48**
512-9492	3-57648-0	60	30	.495	3.000	2.950	**199.80**
512-9493	3-57648-2	64	32	.500	3.200	3.150	**208.13**

PVC Insulated Hook-up Wire



All hook-up wire has either tinned copper conductor insulated with extruded PVC or stranded silver-coated conductor insulated with extruded TFE Teflon®. PVC is flame and ozone resistant, as well as being inert to most chemicals, oils, and solvents. Teflon® is a fluorinated thermoplastic with outstanding thermal, physical, and electrical properties.

UL Style 1007 300V, 80°C Passes VW-1 Vertical Wire Flame Test

Rated 80°C, 300V. Rated 600V peak for electronic circuits, and internal wiring of electronic and electrical equipment.

Mfr.'s Type	AWG (Stranding)	Insulation Thickness	Nominal O.D.	Stock Colors†	100' Spool		1000' Spool	
					Stock No.	EACH	Stock No.	EACH
9930	30 (7 × 38)	0.016"	0.044"	0-7, 9	214-001X	10.80	214-002X	72.00

Dual Rated UL Style 1007, 300V 80°C and 1569 300V, 105°C CSA Type TR-64,90°C and CSA Type TRSR-64, 105°C

Rated 105°C, 300V. Rated 600V peak for electronic circuits, and internal wiring of electronic and electrical equipment.

9928	28 (7 × 36)	0.016"	0.047"	0-7, 9	214-003X	10.20	214-010X	66.00
9926	26 (7 × 34)	0.016"	0.051"	0-9	214-004X	10.80	214-011X	68.00
9923	24 (7 × 32)	0.016"	0.056"	0-9	214-005X	11.20	214-012X	72.00
9921	22 (7 × 30)	0.016"	0.062"	0-9	214-006X	12.60	214-013X	84.00
9919	20 (7 × 28)	0.016"	0.069"	0-9	214-007X	15.40	214-014X	101.00
9918	18 (16 × 30)	0.016"	0.079"	0-9	214-008X	16.40	214-015X	114.00
9916	16 (26 × 30)	0.016"	0.092"	0-9	214-009X	23.20	214-016X	170.00

UL Style 1015 600V, 105°C CSA Type TEW Passes VW-1 Vertical Wire Flame Test

Rated –10°C to 105°C, 600V. Rated 2500V peak for electronic circuits, and internal wiring of electronic and electrical equipment.

9924	24 (7 × 32)	0.031"	0.088"	0-9	214-017X	12.80	214-025X	89.00
8920	22 (7 × 30)	0.031"	0.093"	1-7, 9	214-018X	13.60	214-026X	96.00
8919	20 (10 × 30)	0.031"	0.100"	1-7, 9	214-019X	17.00	214-027X	120.00
8918	18 (16 × 30)	0.031"	0.110"	1-7, 9	214-020X	21.00	214-028X	144.00
8917	16 (26 × 30)	0.031"	0.123"	1-7, 9	214-021X	25.40	214-029X	204.00
8916	14 (41 × 30)	0.031"	0.138"	1-7, 9	214-022X	36.20	—	—
9912	12 (65 × 30)	0.031"	0.158"	1-7, 9	214-023X	59.00	—	—
9910	10 (65 × 28)	0.031"	0.180"	1-3, 5	214-024X	85.00	—	—

UL Style 1028 600V, 105°C CSA Type TEW Passes VW-1 Vertical Wire Flame Test

9908	8 (84 × 27)	0.045"	0.250"	1-3, 5	214-030X	146.00	—	—

UL Style 1061 300V, 80°C CSA Type AWM (CSA S-R PVC)

Solid conductors suitable for wire wrap applications.

9978	30 Solid	0.010"	0.030"	0-9	214-031X	9.68	214-043X	65.00
9987	30 (7 × 38)	0.010"	0.032"	0-3, 8	214-032X	10.80	214-044X	72.00
9977	28 Solid	0.010"	0.033"	0-9	214-033X	7.98	214-045X	53.00
9986	28 (7 × 36)	0.010"	0.035"	0-9	214-034X	10.20	214-046X	66.00
9976	26 Solid	0.010"	0.036"	0-9	214-035X	6.94	214-047X	44.20
9985	26 (7 × 34)	0.010"	0.039"	0-9	214-036X	10.80	214-048X	68.00
9975	24 Solid	0.010"	0.040"	0-9	214-037X	7.34	214-049X	47.00
9984	24 (7 × 32)	0.010"	0.044"	0-9	214-038X	11.20	214-050X	72.00
9983	22 (7 × 30)	0.010"	0.050"	0-9	214-039X	12.40	214-051X	77.00
9982	20 (7 × 28)	0.010"	0.057"	0-9	214-040X	15.40	214-052X	91.00
9981	18 (19 × 30)	0.010"	0.066"	0-9	214-041X	16.20	214-053X	115.00
9980	16 (19 × 28)	0.010"	0.078"	0-9	214-042X	20.60	214-054X	152.00

(Type B) MIL-W-16878/1-PVC 600V-105°C

8597	28 (7 × 36)	0.010"	0.035"	0-9	214-055X	12.40	214-062X	78.00
8505	26 (7 × 34)	0.010"	0.039"	0-9	214-056X	12.60	214-063X	86.00
8504	24 (7 × 32)	0.010"	0.044"	0-9	214-057X	12.80	214-064X	79.00
8503	22 (7 × 30)	0.010"	0.050"	0-9	214-058X	13.80	214-065X	85.00
8502	20 (7 × 28)	0.010"	0.058"	0-9	214-059X	17.20	214-066X	103.00
8501	18 (7 × 26)	0.010"	0.068"	0-9	214-060X	18.40	214-067X	132.00
8500	16 (19 × 29)	0.010"	0.077"	0-9	214-061X	23.40	214-068X	173.00

Type MW MIL-W-76C-PVC 1000V-80°C

8525	24 (7 × 32)	0.017"	0.058"	0-9	214-070X	12.20	214-079X	77.00
8530	24 Solid	0.017"	0.059"	0-9	214-071X	11.80	214-080X	72.00
8524	22 (7 × 30)	0.017"	0.064"	0-9	214-072X	13.60	214-081X	90.00
8529	20 Solid	0.017"	0.066"	0-9	214-073X	13.60	214-082X	87.00
8523	20 (10 × 30)	0.017"	0.070"	0-9	214-074X	16.00	214-083X	102.00
8522	18 (16 × 30)	0.017"	0.080"	0-9	214-075X	18.20	214-084X	130.00
8521	16 (26 × 30)	0.019"	0.098"	0-9	214-076X	26.40	214-085X	190.00
8520	14 (41 × 30)	0.018"	0.111"	0-9	214-077X	36.40	214-086X	298.00
8527	12 (65 × 30)	0.018"	0.128"	0-9	214-078X	56.00	214-087X	428.00

†Color Code: 0–Violet, 1–White, 2–Black, 3–Red, 4–Green, 5–Yellow, 6–Blue, 7–Orange, 8–Slate, 9–Brown. Other colors available upon request. See stock Colors column for other colors stocked.

High Temperature Teflon Insulated Hook-Up Wire

All hook-up wire has either tinned copper conductor insulated with extruded PVC or stranded silver-coated conductor insulated with extruded TFE Teflon®. PVC is flame and ozone resistant, as well as being inert to most chemicals, oils, and solvents. Teflon® is a fluorinated thermoplastic with outstanding thermal, physical, and electrical properties.

UL Style 1180 300V-200°C (Type EE) – MIL-W-16878E/5 Teflon — 1000V-200°C Passes VW-1 Vertical Wire Flame Test

Mfr.'s Type	AWG (Stranding)	Insulation Thickness	Nominal O.D.	Stock Colors†	100' Spool		1000' Spool	
					Stock No.	EACH	Stock No.	EACH
83023	24 (19 × 36)	0.015"	0.054"	0-9	214-088X	23.00	214-095X	206.00
83025	22 (7 × 30)	0.015"	0.060"	0-7, 9	214-089X	22.40	214-096X	200.00
83026	22 (19 × 34)	0.015"	0.060"	0-9	214-090X	25.80	214-097X	234.00
83027	20 (19 × 32)	0.015"	0.068"	0-9	214-091X	32.00	214-098X	296.00
83028	20 (7 × 28)	0.015"	0.068"	0-9	214-092X	27.60	214-099X	252.00
83029	18 (19 × 30)	0.015"	0.077"	0-9	214-093X	39.40	214-100X	370.00
83030	16 (19 × 29)	0.015"	0.088"	0-9	214-094X	47.00	214-101X	446.00

UL Style 1371 105°C (Type E) – MIL-W-16878E/4 Teflon — 600V-200°C Passes VW-1 Vertical Wire Flame Test

83009	18 (19 × 30)	0.011"	0.069"	0-9	214-102X	34.40	214-104X	320.00
83010	16 (19 × 29)	0.012"	0.077"	0-9	214-103X	41.40	214-105X	390.00

UL Style 1213 105°C (Type E) – MIL-W-16878E/4 Teflon — 600V-200°C Passes VW-1 Vertical Wire Flame Test

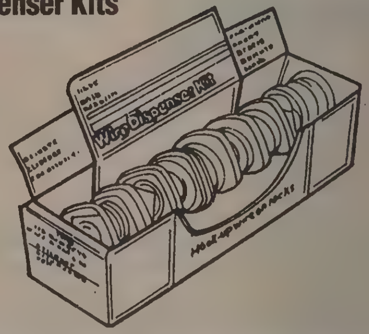
83000	30 (7 × 38)	0.010"	0.032"	0-9	214-106X	14.20	214-115X	118.00
83001	28 (7 × 36)	0.010"	0.035"	0-9	214-107X	14.40	214-116X	120.00
83002	26 (7 × 34)	0.010"	0.037"	0-9	214-108X	15.40	214-117X	129.00
83003	24 (19 × 36)	0.010"	0.044"	0-9	214-109X	19.60	214-118X	171.00
83004	24 (7 × 32)	0.010"	0.044"	0-9	214-110X	16.40	214-119X	139.00
83005	22 (7 × 30)	0.010"	0.050"	0-9	214-111X	19.80	214-120X	174.00
83006	22 (19 × 34)	0.010"	0.048"	0-9	214-112X	22.80	214-121X	204.00
83007	20 (19 × 32)	0.010"	0.056"	0-9	214-113X	27.20	214-122X	248.00
83008	20 (7 × 28)	0.010"	0.058"	0-9	214-114X	24.80	214-123X	224.00

UL Style 1371 105°C (Type ET) – MIL-W-16878E/6 Teflon — 250V-200°C Passes VW-1 Vertical Wire Flame Test

83041	32 (7 × 40)	0.006"	0.022"	0, 2, 6	214-124X	13.80	214-132X	114.00
83043	30 (7 × 38)	0.006"	0.024"	0-4, 8	214-125X	14.00	214-133X	116.00
83045	28 (7 × 36)	0.006"	0.027"	1-4, 6, 9	214-126X	14.20	214-134X	118.00
83046	26 (7 × 34)	0.006"	0.031"	1, 3, 5-9	214-127X	15.20	214-135X	128.00
83047	24 (7 × 32)	0.006"	0.036"	1-3, 6, 8	214-128X	16.20	214-136X	138.00
83048	24 (19 × 36)	0.006"	0.036"	0, 2-4, 7-9	214-129X	19.20	214-137X	168.00
83049	22 (7 × 30)	0.006"	0.042"	0-9	214-130X	19.40	214-138X	170.00
83050	22 (19 × 34)	0.006"	0.042"	0-4, 6-9	214-131X	22.20	214-139X	198.00

†Color Code: 0–Violet, 1–White, 2–Black, 3–Red, 4–Green, 5–Yellow, 6–Blue, 7–Orange, 8–Slate, 9–Brown. Other colors available upon request. See stock Colors column for other colors stocked.

Hook-Up Wire Dispenser Kits



Ideal for R and D labs, engineers and technicians. Choose kits containing five 100' spools or eigh 25' spools of popular hook-up wire; each spool a different color. Spools come in portabl dispenser rack, convenient for field work, for work bench or wall mount use. Passes VW-1 Vertical Wire Flame Test.

Kits of Five 100-Foot Spools

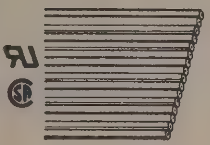
Stock No.	Mfr.'s Type	Wire	Colors	EACH
214-3780	9531	22AWG, (7 × 30) Stranded, Tinned PVC (8524-100)	Red, Green, White, Light Blue, Black	6.34
214-3782	8825	20AWG, (7 × 28) Stranded, Tinned PVC (8502-100)	Red, Green, White, Yellow, Black	86.70

Kits of Eight 25-Foot Spools

214-3784	8824	20AWG, (10 × 30) Stranded, Tinned PVC (8523-25)	Brown, White, Black, Orange, Green, Red, Light Blue, Yellow	62.22
214-3786	8816	18AWG, (16 × 30) Stranded, Tinned PVC (8522-25)	Brown, White, Black, Orange, Green, Red, Light Blue, Yellow	65.28

Standard Flat Cable

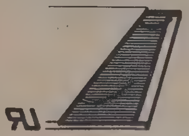
All flat cable types on this page are 28AWG (7 × 36) stranded and feature 0.050" conductor spacing. PVC insulated, except where noted, and rated 300 V, 105°C. **Voltage Rating:** 300 Vrms. **Dielectric Withstanding Voltage:** 2000 Vrms. All will terminate to any standard IDC flat cable connector. See Product Index for complete selection. Passes VW-1 vertical wire flame test. UL recognized.



9L280XX Series 0.050" Pitch Unshielded

Tinned copper conductors. Gray PVC insulation with red polarity stripe. CSA certified T1.

Stock No.	Mfr.'s Type	No. of Conductors	Nominal Width	100' Spool
214-3002	9L28016	16	0.80"	**24.00**
214-3004	9L28020	20	1.00"	**30.00**
214-3006	9L28025	25	1.25"	**37.50**
214-3008	9L28026	26	1.30"	**39.00**
214-3010	9L28034	34	1.70"	**51.00**
214-3012	9L28037	37	1.85"	**55.50**
214-3014	9L28040	40	2.00"	**60.00**
214-3016	9L28060	60	3.00"	**90.00**

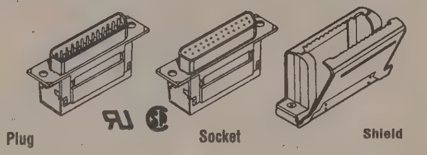


9L283XX Series 0.050" Pitch Beldfoil® Shielded, PVC Jacketed

Tinned copper conductors with overall Beldfoil® aluminum-polyester shield. Two 28 AWG drain wires. Black PVC jacket.

Stock No.	Mfr.'s Type	No. of Conductors	Nominal Width	100' Spool
214-3018	9L28309	9	0.55"	**118.00**
214-3020	9L28310	10	0.60"	**131.00**
214-3022	9L28315	15	0.85"	**196.00**
214-3024	9L28320	20	1.10"	**262.00**
214-3026	9L28325	25	1.35"	**326.00**
214-3028	9L28326	26	1.40"	**340.00**
214-3030	9L28334	34	1.80"	**444.00**
214-3032	9L28337	37	1.95"	**482.00**
214-3034	9L28340	40	2.10"	**522.00**
214-3036	9L28350	50	2.60"	**652.00**
214-3038	9L28364	64	3.30"	**834.00**

D-Subminiature Connectors with Metal Face and EMI/RFI Shield



Accepts standard 0.050" conductor center space flat cable without special cable preparation. No special alignment tools required. Accepts jacketed and shielded cable without need for a backshell. **Temperature Range:** -55° to +125°C. **Current Rating:** 1 A DC per contact. **UL Voltage Rating:** 125 VDC. Phosphor-bronze contacts with selective gold plating. UL recognized, CSA certified. Order type DSO0001 locator plate separately below.

Plugs

Stock No.	Mfr.'s Type	No. of Contacts	Width	EACH
214-3254	9DMJ009	9	1.224" (31.09)	**7.64**
214-3256	9DMJ015	15	1.552" (39.42)	**9.30**
214-3258	9DMJ025	25	2.092" (53.14)	**11.00**
214-3260	9DMJ037	37	2.734" (69.44)	**16.20**

Sockets

Stock No.	Mfr.'s Type	No. of Contacts	Width	EACH
214-3262	9DMP009	9	1.224" (31.09)	**7.02**
214-3264	9DMP015	15	1.552" (39.42)	**8.26**
214-3266	9DMP025	25	2.092" (53.14)	**9.30**
214-3268	9DMP037	37	2.734" (69.44)	**14.00**

Shields

Stock No.	Mfr.'s Type	No. of Contacts	Width	EACH
214-3270	9DMS009	9	0.984" (24.99)	**5.47**
214-3272	9DMS015	15	1.312" (33.32)	**5.47**
214-3274	9DMS025	25	1.852" (47.04)	**5.47**
214-3276	9DMS037	37	2.500" (63.50)	**5.47**

Locator Plate

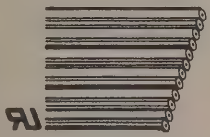
Type DS00001 locator plate designed for use with **9DSP Series** and **9DMJ Series** D-subminiature connectors, listed above.

214-3000. Type DS00001. **1-4**..**EACH 125.00**

Rainbow Flat Cable

8R280XX Series High-Temperature 0.050" Pitch FEP Insulated

Silver-plated copper conductors. FEP pre-insulated color-coded conductors laminated to clear FEP film. For high-temperature applications. Rated 150 Vrms, 150°C. **Characteristic Impedance:** 170 ohms.



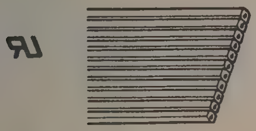
Stock No.	Mfr.'s Type	No. of Conductors	Nominal Width	100' Spool
214-3040	8R28014	14	0.70"	**612.00**
214-3042	8R28016	16	0.80"	**700.00**
214-3044	8R28024	24	1.20"	**1050.00**
214-3046	8R28034	34	1.70"	**1486.00**
214-3048	8R28050	50	2.50"	**2227.68**

9R280XX Series 0.050" Pitch PVC Insulated

Tinned copper conductors. PVC pre-insulated color-coded conductors laminated to clear PVC film. **Characteristic Impedance:** 150 ohms.

Stock No.	Mfr.'s Type	No. of Conductors	Nominal Width	100' Spool
214-3050	9R28010	10	0.50"	**42.40**
214-3052	9R28014	14	0.70"	**60.00**
214-3054	9R28016	16	0.80"	**67.00**
214-3056	9R28020	20	1.00"	**85.00**
214-3058	9R28024	24	1.20"	**102.00**
214-3060	9R28025	25	1.25"	**107.00**
214-3062	9R28026	26	1.30"	**110.00**
214-3064	9R28034	34	1.70"	**144.00**
214-3066	9R28036	36	1.80"	**153.00**
214-3068	9R28037	37	1.85"	**158.00**
214-3070	9R28040	40	2.00"	**170.00**
214-3072	9R28050	50	2.50"	**214.00**
214-3074	9R28060	60	3.00"	**256.00**
214-3076	9R28064	64	3.20"	**272.00**

Ribbon Coaxial Flat Cable



All ribbon coaxial flat cable features solid copper conductors, coated with an alkyd baked enamel; 0.100" center conductor spacing. Polypropylene insulated, Beldfoil® aluminum-polyester shielded with tinned copper drain wire and PVC jacket. 105°C rating; UL recognized 20115, 30 V, 60°C.

50-OHM 28AWG Solid Conductor — 0.028" Thick Black PVC Jacketed

Stock No.	Mfr.'s Type	No. of Conductors	Nominal Width	100' Spool
214-3120	9K50004	4	0.40"	**102.00**
214-3122	9K50006	6	0.60"	**153.00**
214-3124	9K50009	9	0.90"	**230.00**
214-3126	9K50010	10	1.00"	**256.00**
214-3128	9K50020	20	2.00"	**516.30**

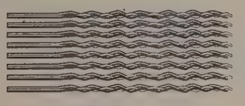
75-OHM 30AWG Solid Conductor — 0.025" Thick Grey PVC Jacketed

Stock No.	Mfr.'s Type	No. of Conductors	Nominal Width	100' Spool
214-3130	9K75005	5	0.50"	**148.00**
214-3132	9K75007	7	0.70"	**210.00**
214-3134	9K75009	9	0.90"	**268.00**
214-3136	9K75013	13	1.30"	**386.00**
214-3138	9K75020	20	2.00"	**592.00**
214-3140	9K75025	25	2.50"	**742.00**

93-OHM 30AWG Solid Conductor — 0.015" Thick Red PVC Jacketed

Stock No.	Mfr.'s Type	No. of Conductors	Nominal Width	100' Spool
214-3142	9K93004	4	0.40"	**153.00**
214-3144	9K93005	5	0.50"	**191.00**
214-3146	9K93006	6	0.60"	**230.00**
214-3148	9K93007	7	0.70"	**268.00**
214-3150	9K93009	9	0.90"	**344.00**
214-3152	9K93010	10	1.00"	**382.00**
214-3154	9K93013	13	1.30"	**496.00**
214-3156	9K93017	17	1.70"	**648.00**
214-3158	9K93020	20	2.00"	**762.00**
214-3160	9K93025	25	2.50"	**952.00**

.050 Pitch PVC Vari-Twist® Flat Cable

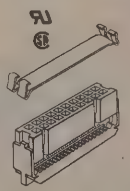


UL 2693
105°C 300V VW-1
and/or
UL 2697
80°C 300V VW-1

Tinned copper (.050 conductor spacing in flat section). PVC preinsulated twisted pairs laminated to a Clear PVC substrate. Standard twist length is 18 inches followed by a 2-inch flat section. Each adjacent pair is twisted in an opposite direction. 28 Gage, Stranded 7 × 36. Passed VW-1 vertical wire flame test.

Stock No.	Mfr.'s Type	No. of Conductors	Nominal Width	100' Spool
214-3161	9V28010	5	0.50"	**38.35**
214-3162	9V28014	7	0.70"	**55.08**
214-3163	9V28016	8	0.80"	**62.22**
214-3164	9V28020	10	1.00"	**77.52**
214-3165	9V28026	13	1.30"	**98.94**
214-3166	9V28034	17	1.70"	**130.56**
214-3167	9V28036	18	1.80"	**137.70**
214-3168	9V28040	20	2.00"	**153.00**
214-3169	9V28050	25	2.50"	**190.74**
214-3170	9V28060	30	3.00"	**230.52**
214-3171	9V28064	32	3.20"	**244.80**

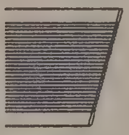
Standard-Profile Socket Connectors



MIL-C-83503 compatible. 0.100" (2.54mm) grid contact/terminal spacing. Insulated stainless steel strain relief strap. Gas-tight termination and daisy-chainable. Pre–assembled cover for easy termination. **Temperature Range:** -55° to +125°C. **Current Rating:** 1 A max. per contact. **UL Voltage Rating:** 125 VDC. Phosphor-bronze contacts with selective gold plating. UL recognized, CSA certified.

Stock No.	Mfr.'s Type	No. of Conductors	Nominal Width	EACH
214-3176	9S4J010	10	0.690"	**2.70**
214-3178	9S4J014	14	0.890"	**3.19**
214-3180	9S4J016	16	0.990"	**3.46**
214-3182	9S4J020	20	1.190"	**3.81**
214-3184	9S4J026	26	1.490"	**4.88**
214-3186	9S4J034	34	1.890"	**6.00**
214-3188	9S4J040	40	2.190"	**7.24**
214-3190	9S4J050	50	2.690"	**8.68**

.050 Pitch Peelable Ground Plane Cable



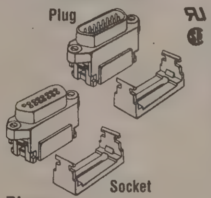
Tinned copper (.050 conductor spacing). Gray PVC insulation. Expanded copper mesh ground plane. 28 AWG drain wire (in contact with copper mesh). Black polarity stripe indicates drain wire. 28 Gage, stranded 7 × 36. Passes VW-1 vertical wire flame test.

UL 2682
105°C 300V VW-1

Stock No.	Mfr.'s Type	No. of Conductors	Nominal Width	100' Spool
214-3192	9GP1020	20	1.25"	**220.32**
214-3193	9GP1026	26	1.55"	**285.60**
214-3194	9GP1034	34	1.95"	**373.32**
214-3195	9GP1040	40	2.25"	**438.60**
214-3196	9GP1050	50	2.75"	**548.76**
214-3197	9GP1060	60	3.25"	**656.88**

Note: One conductor designated as "ground".

D-Subminiature All-Plastic Connectors



Accept standard 0.050" centered conductors without special cable preparation. No need for special alignment tools. Accept jacketed and shielded cable without need for a backshell. **Temperature Range:** -55° to +125°C. **Current Rating:** 1 A max. per contact. **UL Voltage Rating:** 125 VDC. Phosphor-bronze contacts with selective gold plating. UL recognized, CSA certified. Order Type DSO0001 locator plate separately above.

Plugs

Stock No.	Mfr.'s Type	No. of Contacts	Width	EACH	
				1-99	100-499
214-3234	9DSP009	9	0.984" (24.99)	**6.40**	**5.76**
214-3236	9DSP015	15	1.312" (33.32)	**7.44**	**6.69**
214-3238	9DSP025	25	1.852" (47.04)	**8.48**	**7.63**
214-3240	9DSP037	37	2.500" (63.50)	**12.40**	**11.16**

Sockets

Stock No.	Mfr.'s Type	No. of Contacts	Width	1-99	100-499
214-3242	9DSJ009	9	0.640" (16.26)	**7.64**	**6.87**
214-3244	9DSJ015	15	0.966" (24.54)	**8.48**	**7.63**
214-3246	9DSJ025	25	1.510" (38.35)	**9.92**	**8.92**
214-3248	9DSJ037	37	2.162" (54.91)	**14.60**	**13.14**

Portable Cordage

Available in 2, 3, 4, and 5-conductor cordage. **Variety of Jacket Materials:** Rubber, PVC, Hypalon® and Neoprene. Hypalon® and Neoprene materials are recommended for outdoor applications.

SPT-1 2-Conductor PVC Parallel Lamp Cord 300 V, Rated 60°C — Fig. A

Stock No.	Mfr.'s Type	AWG (Stranding)	Nom. O.D. and Color	250' Spool
				EACH
214-3300	19122	18 (41 × 34)	0.110" × 0.207" Brown	45.90
214-3301	19122	18 (41 × 34)	Black	45.90
214-3302	8888	18 (41 × 34)	.110" Brown	45.70
214-3303	8888	18 (41 × 34)	and Ivory	45.70

SPT-2 2-Conductor PVC Parallel Lamp Cord 300 V, Rated 60°C — Fig. A

214-3304	19123	18 (41 × 34)	0.144" × 0.277" Brown	52.53
214-3305	19123	18 (41 × 34)	Black	52.53
214-3306	19126	16 (65 × 34)	0.115" × 0.299" Brown	68.85
214-3307	19126	16 (65 × 34)	Black	68.85

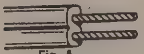


Fig. A

Fig. B

Fig. C

SP-1 Rubber Parallel Lamp Cord 300 V, Rated 60°C

Stock No.	Mfr.'s Type	AWG (Stranding)	Nom. O.D. and Color	250' Spool
				EACH
214-3308	8462	18 (41 × 34)	0.123" Brown	59.16
214-3310	19115	18 (41 × 34)	0.123" × 0.227" Brown	58.65
214-3311	19115	18 (41 × 84)	Black	58.65

HPN-2-Conductor Hypalon® Heater Cord 300 V, Rated 90°C

214-3344	19328	18 (41 × 34)	0.154" × 0.286" Black	73.44
214-3346	19326	16 (65 × 34)	0.164" × 0.312" Black	88.74

SVT-2-Conductor PVC Jacket 300 V, Rated 60°C — Fig. B

Stock No.	Mfr.'s Type	AWG (Stranding)	Nom. O.D. and Color	250' Spool
				EACH
214-3312	19140	18 (41 × 34)	0.243" Black	65.79

SJO-2-Conductor Neoprene Jacket 300 V, Rated 60°C

214-3314	19227	18 (16 × 30)	0.298" Black	109.65
214-3316	19228	16 (26 × 30)	0.323" Black	140.25

SJ-3-Conductor Rubber Jacket 300 V, Rated 60°C — Fig. C

214-3348	19129	18 (16 × 30)	0.328" Black	116.79
214-3350	19130	18 (26 × 30)	0.353" Black	148.41
214-3352	19125	18 (41 × 34)	0.328" Black	126.48
214-3354	19124	16 (65 × 34)	0.353" Black	162.18

SJT-3-Conductor PVC Jacket 300 V, Rated 60°C — Fig. C

214-3324	19348	18 (41 × 34)	0.328" Black	106.59
214-3326	19352	18 (41 × 34)	0.428" Black	106.59
214-3328	19362	18 (41 × 34)	0.340" Black	139.74
214-3330	19349	16 (65 × 34)	0.353" Black	130.05
214-3332	19353	16 (65 × 34)	0.353" Black	130.05
214-3334	19354	14 (41 × 30)	0.380" Black	150.45
214-3336	19364	14 (41 x 30)	0.402" Black	189.21

Heavy-Armored Poly-Thermaleze® High Temperature Magnet Wire

Dual polyester film coated magnet wire, rated for use to 180°C. Has exceptional ability to resist chemical solvents and abuse in intricate windings. Complies with J-W-1177/14 specifications. One Pound spools. MW35-C (heavy).

Stock No.	Mfr.'s Type	AWG	Approx. Length (Ft.)	EACH
214-3550	8073	14	80	26.72
214-3552	8074	16	126	28.15
214-3554	8075	18	199	28.97
214-3556	8076	20	315	29.38
214-3558	8077	22	501	29.38
214-3560	8078	24	793	30.60
214-3562	8079	26	1260	32.03
214-3564	8080	28	1990	34.27
214-3566	8081	30	3140	39.58
214-3568	8083	34	7860	49.57
214-3570	8085	38	19300	72.42

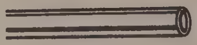
Single Beldsol® Solderable Magnet Wire

Dual film insulated magnet wire combines excellent dielectric characteristics of polyurethane with toughness and solvent resistance of a nylon overcoat. May be soldered without insulation removal at 750°F. Rated by IEEE tests for 270°F usage. Complies with J-W-1177/9 specifications. Half-pound spools. MW 28-C (single).

Stock No.	Mfr.'s Type	AWG	Approx. Length (Ft.)	EACH
214-3572	8049	18	100	17.34
214-3574	8050	20	160	17.34
214-3576	8051	22	254	17.34
214-3578	8052	24	404	17.75
214-3580	8053	26	645	18.16
214-3582	8054	28	1020	18.77
214-3584	8055	30	1615	20.40
214-3586	8056	32	2515	22.64
214-3588	8057	34	4060	23.87

Bus Bar Wire

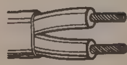
Solid tinned copper. Made in accordance with Federal specification QQ-W-343-D.



Mfr.'s Type	AWG	Nominal O.D. (In.)	Circular Area (CMA)	100' Spool		1000' Spool	
				Stock No.	EACH	Stock No.	EACH
8025	30	0.0101	102	214-3510	8.85	214-3512	37.74
8024	28	0.0128	164	214-3514	8.85	214-3516	39.37
8023	26	0.0162	262	214-3518	9.08	214-3520	45.70
8022	24	0.0206	424	214-3522	9.32	214-3524	48.55
8021	22	0.0255	650	214-3526	9.53	214-6528	62.22
8020	20	0.0321	1029	214-3529	11.83	214-3532	82.62
8019	18	0.0402	1616	214-3534	15.30	214-3536	118.32
8013	16	0.0512	2621	214-3538	21.62	214-3540	181.56
8012	14	0.0652	4251	214-3542	32.84	214-3544	267.24
8011	12	0.0824	6790	214-3546	48.14	—	—

Duplex Primary Wire

Bare copper conductors parallel, PVC insulated and jacketed. Passes VW-1 Vertical Wire Flame Test. Rated 300 V, 75°C.



Mfr.'s Type	AWG Stranding	Nominal O.D. (In.)	100' Spool		500' Spool	
			Stock No.	EACH	Stock No.	EACH
8677	16 (19 × 29)	0.146 × 0.248	214-3448	21.22	214-3450	103.02
8675	14 (19 × 27)	0.161 × 0.278	214-6452	28.08	214-3454	143.82
8673	12 (19 × 25)	0.186 × 0.328	214-3451	39.25	214-3453	196.25
8678	10 (19 × 23)	0.225 × 0.400	214-3456	56.22	214-3458	281.11

Belflex™ Premium PVC Jacket and Portable Cordage

A

B

C

D

- **Remains Flexible in Cold Temperatures**
- **Exceptional Oil Resistance**
- **Excellent Retractile Properties**
- **Superb Abrasion Resistance**
- **Distinctive Matte Black Appearance**

Belden® Belflex™ is a premium PVC jacket compound (Class 43) that is superior to standard PVC for flexibility and durability. Belflex cordage and cords offer a superior feel and appearance and are ideal for any number of applications where resiliency, ruggedness, and appearance are key considerations. It's a breakthrough jacketing compound that is an outstanding value. Twelve standard Belflex portable cordage products are now offered. Each features a matte black finish, as opposed to the normal glossy appearance of PVC, and is available in 250 ft. lengths. Custom power cords are also available using the new Belflex cordage. **Insulation Thickness:** .030" (.76 mm) except for 19502 and 19505 which are .045" (1.14 mm).

UL and CSA Approved For Outdoor Use. These Belflex jacketed cordage items have a US and CSA temperature rating of 105°C and are suitable for outside use. Belflex also passes the VW-1 Vertical Wire Flame Test. These constructions are approved as water and oil resistant.

Fig. A. SJTOW-A-2-Conductor: 300 V 150°C Belflex Matte Black Premium PVC. **IEC Color Code:** Light Blue, Brown. **Fig. B. STOW-A-2-Conductor:** 300 V 150°C Belflex Matte Black Premium PVC. **IEC Color Code:** Light Blue, Brown. **Fig. C. SJTOW-A-3-Conductor:** 300 V 150°C Belflex Matte Black Premium PVC. **IEC Color Code:** Light Blue, Brown, Green/Yellow. **Fig. D. STOW-A-3-Conductor:** 300 V 150°C Belflex Matte Black Premium PVC. **IEC Color Code:** Light Blue, Brown, Green/Yellow.

Stock No.	Mfr.'s Type	Fig.	Std. Unit Lbs.	Jacket Thickness		Nom. O.D.		PER COIL/ 250'
				In.	mm	In.	mm	
216-3550	19506*	A	9.9	.030	.76	.290	7.34	89.76
216-3552	19507†	A	13.5	.030	.76	.319	8.10	114.24
216-3554	19508‡	A	14.7	.030	.76	.340	8.64	126.48
216-3556	19500*	B	16.3	.060	1.52	.360	9.14	131.07
216-3558	19501†	B	18.6	.060	1.52	.386	9.80	160.14
216-3560	19502‡	B	33.6	.080	2.03	.524	13.31	224.91
216-3562	19509*	C	14.0	.030	.76	.315	8.00	108.12
216-3564	19510†	C	18.3	.030	.76	.340	8.64	142.29
216-3566	19511‡	C	23.6	.030	.76	.380	9.65	156.06
216-3568	19503*	D	19.2	.060	1.52	.380	9.65	150.45
216-3570	19504†	D	22.6	.060	1.52	.405	10.29	179.01
216-3572	19505‡	D	41.2	.080	2.03	.558	14.17	256.02

AWG Stranding: *18 (42 × 34); †16 (65 × 34); ‡14 (41 × 30).

Shielding And Bonding Cable

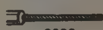
Tinned copper braided wire provides approximately 90% shield coverage when applied over recommended diameter. Conforms to QQ-B-575B specifications.

Mfr.'s Type	Tubular I.D. (In.)	Stranding	Circular Area (CMA)	50' Spool		250' Spool	
				Stock No.	EACH	Stock No.	EACH
8660	0.12500	96 × 34	3800	214-3420	29.38	214-3422	138.72
8668	0.17188	120 × 34	4800	214-3424	37.33	214-3426	164.22
8663	0.21875	168 × 34	6700	214-3428	47.12	214-3430	208.08
8661	0.20313	192 × 34	7600	214-3432	43.66	214-3434	204.00
8669	0.50000	336 × 34	13,300	214-3436	88.74	214-3438	408.00
8662	0.78125	576 × 34	22,900	214-3440	123.42	214-3442	585.48
8670	0.75000*	480 × 30	48,000	214-3444	224.40	214-3446	958.80

Test Prod Wire

Stranded tinned-copper conductors, separator wrapping, red or black rubber insulated. Type 9899 is PVC insulated and UL recognized. Working voltages listed in table below are AC rms values and for intermittent-duty only. Type 8897 is manufactured per MIL-W-13169B specs; 8890 is miniature type wire.

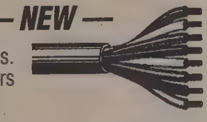
8897-99
8890


UL 9899

Mfr.'s Type	Color	AWG Stranding	Nominal O.D. (In.)	Working Voltage	25' Spool		100' Spool		500' Spool	
					Stock No.	EACH	Stock No.	EACH	Stock No.	EACH
8898	Red	18 (65 × 36)	0.229	10000	214-3460	19.38	214-3462	49.98	214-3464	206.04
8898	Black	18 (65 × 36)	0.229	10000	214-3466	19.38	214-3468	49.98	214-3470	206.04
8899	Red	18 (65 × 36)	0.114	5000	214-3472	11.83	214-3474	36.31	214-3476	133.62
8899	Black	18 (65 × 36)	0.114	5000	214-3478	11.83	214-3480	36.31	214-3482	133.62
8897	Red	18 (65 × 36)	0.114	5000	—	—	—	—	214-3484	198.86
8897	Black	18 (65 × 36)	0.114	5000	—	—	—	—	214-3486	198.86
9899	Red	18 (65 × 36)	0.114	5000	—	—	214-3488	30.60	—	—
9899	Black	18 (65 × 36)	0.114	5000	—	—	214-3490	30.60	214-3491	125.46
8890	Red	24 (45 × 40)	0.066	1000	214-3492	9.71	214-3494	24.07	214-3496	103.02
8890	Black	24 (45 × 40)	0.066	1000	214-3498	9.71	214-3500	24.07	214-3502	103.02

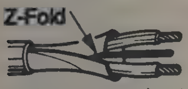
Power and Control Cables

— NEW —



Bare copper, rubber insulated, conductors cabled with fillers. 600 V 60°C. Black Neoprene jacket. 16 gauge stranded conductors (65 × 34).

Mfr.'s Type	No. of Cond.	Nom. O.D. (In.)	100' Coil		500' Coil		1000' Coil	
			Stock No.	EACH	Stock No.	EACH	Stock No.	EACH
9420	5	0.506	216-5000	110.81	216-5006	554.06	216-5012	1108.13
9422	7	0.581	216-5002	158.30	216-5008	791.52	216-5014	1583.04
9424	9	0.720	216-5004	197.88	216-5010	989.40	216-5016	1978.80



Control and Instrumentation Cables

Tinned copper, insulated with FEP Teflon, twisted pair, noise reducing tape, special Beldfoil® shield, 150°C maximum –70°C minimum operating temperature. 100% shield coverage. **Jacket Working Voltage:** 2000 VDC, shield to ground.

— NEW —

Mfr.'s Type	No. of Pairs	AWG (Stranding)	Nom. O.D. (In.)	100' Coil		500' Coil	
				Stock No.	EACH	Stock No.	EACH
83394	1	22 (7 × 30)	0.204	216-5020	135.54	216-5024	677.73
83393	1	20 (10 × 30)	0.242	216-5022	190.96	216-5026	954.76

Communication, Control and Instrumentation Cables

Tinned copper, polyethylene insulated, conductors cabled. Tinned copper braid shield over one pair. Chrome PVC jacket. 22 gauge stranded conductors (7 × 30). Braid shield 62%. **Shield Coverage:** 300 V 60°C.

— NEW —

Mfr.'s Type	No. of Pairs	Nom. O.D. (In.)	500' Coil		1000' Coil	
			Stock No.	EACH	Stock No.	EACH
8732*	2*	0.332	216-5030	153.35	216-5032	306.71

*1 shielded, 1 unshielded.

Control and Instrumentation Cables

Tinned copper, insulated with FEP Teflon, conductors cabled. Noise reducing tape, 22 AWG (7 × 30) stranded tinned copper drain wire. Special Beldfoil® shield, 150°C max –70°C min. operating temperature. 100% shield coverage. **Jacket Working Voltage:** 2000 DC, shield to ground.

— NEW —

Mfr.'s Type	No. of Pairs	Nom. O.D. (In.)	100' Coil		500' Coil	
			Stock No.	EACH	Stock No.	EACH
83395	3	0.213	216-5034	151.37	216-5036	756.88
83396	4	0.222	216-3200	173.15	216-3202	865.73

Control and Instrumentation Cables

Tinned copper, polypropylene insulated, conductors cabled around textile strength member. Tinned copper braid shield, paper separator. Chrome PVC jacket. **Suggested Working Voltage:** 200 V. Braid shield 95% shield coverage 105°C. 30 gauge stranded conductors (7 × 38).

— NEW —

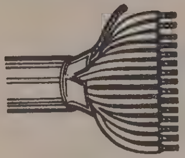
Mfr.'s Type	No. of Cond.	Nom. O.D. (In.)	100' Coil		250' Coil	
			Stock No.	EACH	Stock No.	EACH
8643	3	0.096	216-5040	46.49	216-5042	116.26

High-Temperature Unshielded

Tinned copper conductors. Clear Tefzel jacket. 300 V 150°C. 16 gauge stranded conductors (19 × 29).

Mfr.'s Type	No. of Cond.	Nom. O.D. (In.)	100' Coil		500' Coil		1000' Coil	
			Stock No.	EACH	Stock No.	EACH	Stock No.	EACH
85102	2	0.215	216-3800	172.16	216-3801	860.78	216-3802	1721.56
85103	3	0.228	216-3803	215.69	216-3804	1078.45	216-3805	2156.89
85105	5	0.273	216-3806	296.82	216-3807	1484.10	216-3808	2968.20
85107	7	0.308	216-3809	415.55	216-3810	2077.74	216-3811	4155.48
85109	9	0.359	216-3812	518.45	216-3813	2592.23	216-3814	5184.46

Direct Burial Cables — Multi-Conductor Cables



Tinned copper, polypropylene insulated, conductors cabled. Beldfoil® aluminum-polyester shield overall. 22 AWG solid tinned copper drain wire. Black high density polyethylene jacket. **Suggested Working Voltage:** 350 V.

Mfr.'s Type	No. of Cond.	Nom. O.D. (In.)	500' Coil		1000' Coil	
			Stock No.	EACH	Stock No.	EACH
9803	3	0.205	216-3773	94.00	216-3776	187.99
9890	10	0.310	216-3774	296.82	216-3777	593.64
9894	15	0.390	216-3775	494.70	216-3778	989.40

High-Temperature Overall Braid Shield, Type E MIL-W-16878/4

Stranded silver-coated copper conductors insulated with extruded TFE Teflon. **Temperature Rating:** –65°C to 200°C. **Voltage:** 600 V.

26 Gauge Stranded (7 × 34)

Mfr.'s Type	No. of Cond.	Nom. O.D. (In.)	100' Coil		500' Coil		1000' Coil	
			Stock No.	EACH	Stock No.	EACH	Stock No.	EACH
83303	1	0.079	216-3820	82.72	216-3821	390.81	216-3822	781.63
83317	2	0.112	216-3823	102.90	216-3824	514.49	216-3825	1028.98
83332	3	0.126	216-3826	119.73	216-3827	598.59	216-3828	1197.17
83347	4	0.135	216-3829	128.62	216-3830	643.11	216-3831	1286.22
24 Gauge Stranded (19 × 36)								
83304	1	0.079	216-3840	82.11	216-3841	415.55	216-3842	821.10
83333	3	0.137	216-3846	146.43	216-3847	732.16	216-3848	1464.31
83348	4	0.135	216-3849	161.28	216-3850	806.36	216-3851	1612.72
22 Gauge Stranded (19 × 34)								
83305	1	0.088	216-3860	84.11	216-3861	420.50	216-3862	848.99
83319	2	0.142	216-3863	124.66	216-3864	623.32	216-3865	1216.64
83334	3	0.150	216-3866	166.24	216-3867	761.04	216-3868	1662.08
83349	4	0.163	216-3869	185.03	216-3870	978.52	216-3871	1850.18
20 Gauge Stranded (19 × 29)								
83306	1	0.096	216-3880	98.40	216-3881	465.02	216-3882	930.04
83320	2	0.158	216-3883	135.64	216-3884	702.78	216-3885	1385.16
83335	3	0.167	216-3886	187.01	216-3887	934.98	216-3888	1896.97
83350	4	0.182	216-3889	215.69	216-3890	1078.45	216-3891	2156.89
18 Gauge Stranded (19 × 30)								
83307	1	0.111	216-3900	101.92	216-3901	505.54	216-3902	1019.08
83321	2	0.180	216-3903	167.22	216-3904	836.64	216-3905	1672.09
83336	3	0.191	216-3906	221.63	216-3907	1108.13	216-3908	2216.26
83351	4	0.209	216-3909	253.29	216-3910	1266.43	216-3911	2532.86
16 Gauge Stranded (19 × 29)								
83308	1	0.123	216-3920	109.83	216-3921	549.12	216-3922	1098.23
83322	2	0.200	216-3923	187.01	216-3924	934.98	216-3925	1869.97
83337	3	0.212	216-3926	231.52	216-3927	1157.60	216-3928	2315.20
83352	4	0.232	216-3929	310.67	216-3930	1553.36	216-3931	3106.72

Paired Control and Instrumentation Cables

Tinned copper, clear Tefzel insulated, pairs cabled together. Overall Beldfoil® aluminum-Kapton shielded drain wire. 150°C, 300 V.

20 Gauge Stranded (7 × 28)

Mfr.'s Type	No. of Pairs	Nom. O.D. (In.)	100' Coil		500' Coil		1000' Coil	
			Stock No.	EACH	Stock No.	EACH	Stock No.	EACH
85230	1	0.182	216-3750	148.41	216-3753	742.05	216-3756	1484.10
85164	4	0.344	216-3751	440.29	216-3754	2201.41	216-3757	4402.83
85168	8	0.439	216-3752	627.28	216-3755	3136.40	216-3758	6272.80
16 Gauge Stranded (19 × 29)								
85231	1	0.380	216-3760	178.09	216-3761	890.46	216-3762	1789.92

Low Triboelectric Noise Coaxial Cable

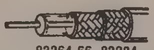
Mfr.'s Type	AWG (Stranding)	Nominal O.D. (In.)	Nom. Imp. (Ohms)	Shield Coverage (%)	RG/U	100' Spool		500' Spool		1000' Spool	
						Stock No.	EACH	Stock No.	EACH	Stock No.	EACH
9239	26 (7 × 34)	0.101	50	88.0	RG-174/U	216-0260	50.80	216-0262	188.70	216-0264	375.36
9223	22 (7 × 30)	0.195	50	100.0	RG-58/U	216-0266	78.95	216-0268	299.88	216-0270	597.72
9224	22 (Solid)	0.242	73	93.0	RG-59/U	—	—	216-0274	316.20	216-0276	628.32

High Temperature MIL-C-17 Teflon Coaxial Cable

83241

83242, 84142

83267, 83269



83264-66, 83284, 84303, 84316

Silver-coated, copper-covered steel conductor. TFE Teflon-Insulation. 200°C. Passes VW-1 vertical wire flame test.

Mfr.'s Type	AWG (Stranding)	Nominal O.D. (In.)	Nom. Imp. (Ohms)	Shield Coverage (%)	RG/U	100' Spool		500' Spool		1000' Spool	
						Stock No.	EACH	Stock No.	EACH	Stock No.	EACH
83241	18 (Solid)	.187	50	96.0	RG-141A/U†	216-0280	232.56	216-0282	1023.06	216-0284	2046.12
83242	18 (Solid)	.195	50	96.0	RG-142B/U††	216-0286	238.68	216-0288	1063.86	216-0290	2127.72
84142	18 (Solid)	.195	50	98.0	RG-142††	216-0292	250.92	216-0294	1150.56	216-0296	2301.12
83265	30 (7 × 38)	.071	50	95.0	RG-178B/U††	216-0322	54.26	216-0324	246.84	—	—
83264	30 (7 × 38)	.100	75	95.0	RG-179††	216-0334	80.17	216-0336	333.54	216-0338	667.08
83266	30 (7 × 38)	.141	95	95.0	RG-180††	216-0340	163.20	216-0342	718.08	216-0344	1436.16
83267	30 (7 × 38)	.113	75	95.0	RG-187A/U†	216-0328	105.06	216-0330	461.04	216-0332	922.08
83269	26 (7 × .0067)	.108	50	96.5	RG-188/U†	216-0316	100.78	216-0318	453.90	216-0320	907.80
84303	18 (Solid)	.170	50	95.0	RG-303*	216-0298	179.52	216-0300	834.40	216-0302	1672.80
84316	26 (7 × .0067)	.098	50	95.0	RG-316††	216-0304	104.04	216-0306	461.04	216-0308	922.08
83284	26 (7 × .0067)	.096	50	95.0	RG-316/U††	216-0310	90.78	216-0312	399.84	216-0314	799.68

*MIL-C-17G, 17/111. †MIL-C-17D. ††MIL-C-17G QPL.

Conformable® Coax Cable For Microwave and High Frequency Video Applications

- **Low VSWR Up To 20 GHz (50 Ohm Cables)**
- **Exceptional Phase Stability**
- **Patented Copper Foil Tape and Tin-Filled Composite Shield Provides Unmatched and Electrical Stability and Shielding Performance**
- **Longest Flex Life Of Any Hand-Formable Product On The Market**
- **Retention Of Shape After Bending, No Buckling When Reformed Or Flexed**
- **Reduced Equipment Spec Drawing Requirements and Shortened Design Time**
- **Reduced Labor, Purchasing, Manufacturing, and Packaging Expenses**

Microwave Applications

- **1671A — RG-405 Type 50 Ohm With .085" O.D.**
- **1673A — RG-402 Type 50 Ohm With .138" O.D.**

High Frequency Video Applications

- **1672 — 75 Ohm With .087" O.D. For High Frequency Video Applications**

50 Ohm Microwave Cables

Silver coated copper covered steel conductor, TFE Teflon insulation, and patented copper foil tape and tin-filled braid composite shield. –70° C to200° C. **Nominal Impedance:** 50 ohms. **Nominal Vel. of Prop.:** 69.5%. **Nominal Capacitance:** 29.5 pF/ft. (96.8 pF/m). Copper-tin composite shield. 100% shield coverage.

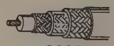
Mfr.'s Type	AWG Stranding	Nominal O.D. (In.)	Nominal Attenuation			50' Coil		100' Coil		500' Coil	
			MHz	dB/100'	dB/100 m	Stock No.	EACH	Stock No.	EACH	Stock No.	EACH
1671A	24 (solid)	.085	50	4.5	14.8	216-3501	166.26	216-3502	281.52	216-3503	1122.00
			100	6.5	21.3						
			200	9.2	30.2						
			400	13.0	42.7						
			700	17.0	55.8						
			900	20.7	67.9						
			1,000	22.0	72.2						
			4,000	50.0	164.0						
			7,000	70.0	229.7						
			10,000	83.0	272.2						
			15,000	105.0	344.4						
			18,000	120.0	393.6						
			20,000	126.0	413.3						
1673A	19 (solid)	.138	50	2.3	7.5	216-3504	143.82	216-3505	263.16	216-3506	1201.56
			100	3.3	10.8						
			200	4.7	15.4						
			400	6.9	22.6						
			700	9.3	30.5						
			900	10.8	35.4						
			1,000	12.0	39.4						
			4,000	26.0	85.3						
			7,000	37.0	121.4						
			10,000	45.0	147.6						
			15,000	58.0	190.2						
			18,000	65.0	213.2						
			20,000	70.0	229.6						

75 Ohm High Frequency Video Cables

Silver coated copper covered steel conductor, TFE Teflon insulation, and patented copper foil tape and tin-filled braid composite shield. –70°C to 200°C. **Nominal Impedance:** 75 ohms. **Nominal Vel. of Prop.:** 69.5%. **Nominal Capacitance:** 19.5 pF/ft. (64.0 pF/m).

1672A	29 (solid)	.087	1	1.6	5.1	216-3507	166.26	216-3508	281.52	216-3509	1122.00
			10	2.3	7.4						
			50	5.0	16.4						
			100	7.2	23.5						
			200	10.3	33.8						
			400	14.9	49.0						
			500	16.9	53.3						
			700	20.3	66.6						
			900	23.3	76.5						
			1,000	24.7	81.0						
			1,500	31.0	101.7						
			2,000	36.3	119.1						

Brilliance® Triaxial Broadcast and Computer Cable



9888

8232

9232

Mfr.'s Type	AWG (Stranding)	Nominal O.D. (In.)	Nom. Imp. (Ohms)	Shield Coverage (%)	RG/U	500' Spool		1000' Spool	
						Stock No.	EACH	Stock No.	EACH
9888	11 (7 × 19)	.480	50	80.0	RG-8/U	216-0386	588.96	216-0388	1177.39
9232*	15 (19 × 27)	.520	75	82.0	RG-11/U	216-0390	1379.04	216-0392	2754.00
8232	20 (Solid)	.315	75	96.0	RG-59/U	216-0394	442.68	216-0396	881.28

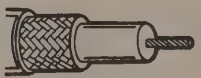
*UL Recognized; Contact your local Allied Branch for details.

Brilliance® Precision Video Coaxial Cable

Mfr.'s Type	AWG (Stranding)	Nominal O.D. (In.)	Nominal Imp.(Ohms)	Shield Coverage (%)	500' Spool		1000' Spool	
					Stock No.	EACH	Stock No.	EACH
9141	20 (Solid)	.305	75	98.0	—	—	216-0224	850.68
9231	20 (Solid)	.305	75	98.0	216-0226	493.68	216-0228	985.32
8281	20 (Solid)	.305	75	98.0	216-0230	403.92	216-0234	807.84
8281B*‡	20 (Solid)	.305	75	98.0	—	—	216-0236	871.08
8281F	22 (7 × 29)	.305	75	98.0	—	—	216-0238	893.52
8279	23 (7 × 32)	.220	75	95.0	216-0240	244.80	216-0244	485.52
8279A*•	23 (7 × 32)	.220	75	95.0	—	—	216-0246	550.80
9209	23 (Solid)	.220	75	100.0	216-0248	244.80	216-0250	483.48

*UL Recognized; •NEC CM; ‡NEC CL2; Plenum version available — Contact your local Allied Branch for details.

Broadcast and MATV Coaxial Cable



9244, 8221

9011

9248

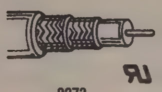
Mfr.'s Type	AWG (Stranding)	Nominal O.D. (In.)	Nom. Imp. (Ohms)	Shield Coverage (%)	RG/U	500' Spool		1000' Spool	
						Stock No.	EACH	Stock No.	EACH
9248*#‡	18 (Solid)	.270	75	100.0	RG-6/U	216-0170	155.04	216-0172	310.08
9114+	18 (Solid)	.275	75	100.0	RG-6/U	216-0174	88.41	216-0176	178.46
9290‡	18 (Solid)	.288	75	98.0	RG-6/U	216-0178	326.40	216-0180	646.68
8213	14 (Solid)	.405	75	97.0	RG-11/U	216-0162	371.28	216-0164	744.60
9292	14 (Solid)	.405	75	100.0	RG-11/U	—	—	216-0166	644.64
9011	14 (Solid)	.405	75	100.0	RG-11/U	—	—	216-0168	553.00
8212	20 (Solid)	.242	75	95.0	RG-59/U	216-0182	189.72	216-0184	377.40
9240	20 (Solid)	.241	75	80.0	RG-59/U	216-0186	147.90	216-0188	295.80
9274‡	20 (Solid)	.240	75	95.0	RG-59/U	216-0190	158.10	216-0192	312.12
9275+	20 (Solid)	.242	75	100.0	RG-59/U	216-0194	69.95	216-0196	139.90
9100+‡	20 (Solid)	.242	75	100.0	RG-59/U	—	—	216-0198	142.98
9659*†	22 (7 × 30)	.242	75	95.0	RG-59/U	216-0200	232.56	216-0202	461.04
9204	23 (Solid)	.241	75	95.0	RG-59††	216-0204	283.56	216-0206	567.12
9244*‡	22 (Solid)	.242	73	85.0	RG-59/U	216-0158	117.30	216-0160	232.56
8221	22 (Solid)	.242	80	95.0	RG-59/U	216-0210	156.06	216-0211	310.08

*UL Recognized. +NEC-CATV. ‡NEC CL2. †NEC CL2X. #Plenum version available — contact your local Allied Branch for details. ††MIL-C-17G QPL.

Broadcast Coaxial, Twinaxial and Triaxial Cable

Broadcast Coaxial Cable

8700


9273

9221

Mfr.'s Type	AWG (Stranding)	Nom. O.D.	Nom. Imp. (Ohms)	Shield Coverage	RG/U	100' Spool		500' Spool		1000' Spool	
						Stock No.	EACH	Stock No.	EACH	Stock No.	EACH
8214*‡	11 (7× 19)	0.405"	50.0	97.0%	RG-8/U	216-0012	105.06	216-0014	465.12	216-0016	926.16
8237 ‡‡	23 (7 × 21)	0.405"	52.0	97.0%	RG-8/U	216-0058	103.02	216-0060	391.68	216-0062	779.28
9251* ‡‡	23 (7 × 21)	0.405"	52.0	97.0%	RG-8A/U	216-0052	139.74	216-0054	520.20	216-0056	1040.40
8238‡	18 (7 × 26)	0.405"	75.0	97.0%	RG-11/U	216-0076	117.30	216-0078	436.56	216-0080	873.12
8240*# ‡‡	20 (Solid)	0.193"	53.5	95.0%	RG-58/U	216-0064	37.13	216-0066	128.52	216-0068	257.04
9201	20 (Solid)	0.193"	53.5	78.0%	RG-58/U	216-0070	31.01	216-0072	113.22	216-0074	224.40
8219*‡	20 (19 × 32)	0.198"	50.0	96.0%	RG-58A/U	216-0032	44.68	216-0034	151.98	216-0036	303.96
8259	20 (19 × 33)	0.193"	50.0	96.0%	RG-58A/U	216-0042	40.40	216-0044	129.54	216-0046	257.04
8262	20 (19 × 33)	0.195"	50.0	96.0%	RG-58C/U††	—	—	216-0038	176.46	216-0040	350.88
8263 ‡‡	23 (Solid)	0.241"	75.0	95.0%	RG-59B/U	—	—	216-0082	206.04	216-0084	412.08
8267* ‡‡	13 (7 × 21)	0.405"	50.0	97.0%	RG-213/U††	—	—	216-0018	571.20	216-0020	1136.28
8268* ‡‡	13 (7 × 0.0296)	0.425"	50.0	98.0%	RG-214/U††	—	—	216-0022	2690.76	216-0024	5381.52
9273* ‡‡	19 (Solid)	0.212"	50.0	97.0%	RG-223/U††	216-0026	269.28	216-0028	1064.88	216-0030	2127.72
8700	28 (Solid)	0.054"	32.0	91.0%	—	216-0010	142.80	—	—	—	—
8218* ‡‡	27 (7 × 35)	0.150"	75.0	93.0%	—	216-0086	42.23	216-0088	150.96	216-0090	301.92
9221*	30 (7 × 38)	0.097"	75.0	89.0%	—	216-0092	45.70	216-0094	164.22	—	—
9203**	20 (19 × 33)	0.195"	50.0	96.0%	RG-58**	—	—	216-0048	230.52	216-0050	459.00

*UL: Recognized; **I.E.C.Q. Certified MIL-C17G M17/28-RG058; ‡NEC CL2; ‡‡NEC CL2X; # Plenum version available — Contact your local Allied Branch for details; ††MIL-C-17G QPL.

Brilliance® Low Loss VHF-UHF Coaxial Cable

Duobond II Tinned Copper Braid, 100% Shielded Coverage

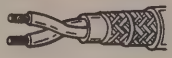
Mfr.'s Type	AWG (Stranding)	Nom. O.D.	Nom. Imp. (Ohms)	Shield Coverage	RG/U	100' Spool		500' Spool		1000' Spool	
						Stock No.	EACH	Stock No.	EACH	Stock No.	EACH
9913‡	10 (Solid)	0.405"	50	100.0%	RG-8/U	216-0212	105.06	216-0214	446.76	216-0216	891.48
9914*‡	10 (Solid)	0.403"	50	100.0%	RG-8/U	216-0218	99.96	216-0220	420.24	216-0222	836.40

*UL: Recognized; ‡NEC CL2.

Twinaxial Broadcast and Computer Cable

9272

9463


9250

9207, 9815

9271, 9182

Mfr.'s Type	AWG (Stranding)	Nom. O.D.	Nom. Imp. (Ohms)	Shield Coverage	RG/U	100' Spool		500' Spool		1000' Spool	
						Stock No.	EACH	Stock No.	EACH	Stock No.	EACH
9272*•	20 (7 × 28)	.244"	78	93.0%	—	216-0350	31.66	216-0352	158.30	216-0354	316.61
9463*•	20 (7 × 28)	.243"	78	100.0%	—	—	—	—	—	216-0360	438.60
9250	18 (7 × .0152)	.420"	95	95.0%	RG-22B/U	—	—	216-0358	469.97	216-0362	939.93
9207‡††	20 (7 × 28)	.330"	100	86.0%	—	216-0364	104.04	216-0366	168.20	216-0368	336.40
9815	20 (7 × 28)	.330"	100	96.0%	—	—	—	216-0372	207.77	216-0373	415.55
9271*•	25 (7 × 33)	.240"	124	100.0%	—	216-0374	15.83	216-0376	79.15	216-0380	158.30
9182*†	22 (19 × 34)	.350"	150	100.0%	—	—	—	216-0382	487.56	216-0384	966.96

*UL: Recognized; •NEC CM; ‡NEC CL2; †NEC CL2X; †† Plenum version available — Contact your local Allied Branch for details.

Brilliance® Triaxial Broadcast Cable

9222

9192

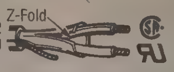
Mfr.'s Type	AWG (Stranding)	Nom. O.D.	Nom. Imp. (Ohms)	Shield Coverage	RG/U	100' Spool		500' Spool		1000' Spool	
						Stock No.	EACH	Stock No.	EACH	Stock No.	EACH
9192*†	15 (19 × 27)	.520"	75	82.0%	RG-11/U	—	—	216-0383	730.32	216-0385	1458.60
9222	20 (7 × 28)	.240"	50	96.0%	RG-58A/U	216-0379	36.79	216-0381	184.03	—	—

*UL: Recognized; †NEC CL2X; — Contact your local Allied Branch for details.

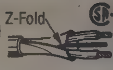
Shielded Twisted Pair Audio, Broadcast and Instrumentation Cable

Beldfoil® 100% shielded twisted pair cable featuring Brilliance® state-of-the-art technology provides a sharp, clean sound through improved signal integrity. Solid or stranded tinned copper pairs. Durable PVC jacket.

8451
8760-62
8718-20
9462

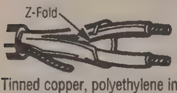


9460-61
9464



Mfr.'s Type	AWG (Stranding)	Nom. O.D.	ЯU	Work Volt	Insulation‡	100' Spool		250' Spool		500' Spool		1000' Spool	
						Stock No.	EACH	Stock No.	EACH	Stock No.	EACH	Stock No.	EACH
8450	22 Solid	0.118"	—	200	PP	—	—	—	—	216-0970	78.95	216-0972	155.04
8451*	22 (7 × 30)	0.135"	—	200	PP	216-0974	28.76	—	—	216-0976	87.52	216-0978	173.40
8761*	22 (7 × 30)	0.175"	2092	300	PE	—	—	—	—	216-0984	79.56	216-0986	159.12
9462*	22 (7 × 30)	0.178"	2464	300	PVC	216-0988	15.82	—	—	216-0990	79.15	216-0992	158.30
9461†*	22 (7 × 30)	0.180"	2092	300	PE	—	—	—	—	216-0994	84.10	216-0995	168.20
9685*	22 (7 × 30)	0.199"	—	300	PVC	—	—	—	—	—	—	216-0979	277.03
8762*	20 (7 × 28)	0.204"	2092	300	PE	216-0998	17.78	216-1000	44.52	216-1002	89.05	216-1004	178.09
9464†*	20 (7 × 28)	0.204"	2092	300	PE	—	—	—	—	216-1006	93.99	216-1008	187.99
9154*	20 (7 × 28)	0.198"	2464	300	PVC	—	—	—	—	216-1010	84.11	216-1012	168.20
8760*	18 (16 × 30)	0.222"	2092	300	PE	—	—	216-1014	44.53	216-1016	89.05	216-1018	178.09
9460†*	18 (16 × 30)	0.222"	2092	300	PE	—	—	—	—	216-1020	84.10	216-1022	227.56
8719**	16 (19 × 29)	0.310"	2106	600	PE	—	—	—	—	216-1024	148.41	216-1026	296.82
8720**	14 (19 × 27)	0.340"	2106	600	PE	—	—	—	—	216-1028	173.16	216-1030	346.29
8718**	12 (19 × 25)	0.400"	2106	600	PE	—	—	—	—	216-1032	262.20	216-1034	524.38

*NEC Type CM. **NEC Type CL2. †Shield bonded to jacket for automatic stripping. ‡PP = Polypropylene; PE = Polyethylene; PVC = Polyvinyl Chloride.

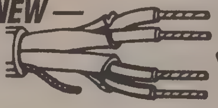


Audio and Instrumentation Cables — NEW —

Tinned copper, polyethylene insulated, twisted pair. Beldfoil® aluminum-polyester shield. 24 AWG stranded tinned copper drain wire, Chrome PVC jacket. The Beldfoil® shield combines high cable reliability with ease termination.

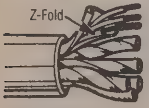
Mfr.'s Type	No. of Pairs	Nom. O.D.	100' Spool		500' Spool		1000' Spool	
			Stock No.	EACH	Stock No.	EACH	Stock No.	EACH
8641	1	0.168"	216-1102	10.88	216-1104	54.53	216-1106	108.83

Audio and Instrumentation Cables — NEW —



Tinned copper, S-R PVC insulated, twisted pairs. Each pair individually shielded with Beldfoil® aluminum-polyester shield and 22 AWG stranded tinned copper drain wire. Overall chrome PVC jacket. Beldfoil® 100% shield coverage. 300 V 80°C. 20 AWG stranded conductors (7 × 28).

Mfr.'s Type	No. of Pairs	Nom. O.D.	100' Spool		500' Spool		1000' Spool	
			Stock No.	EACH	Stock No.	EACH	Stock No.	EACH
9402	2	0.300"	216-5100	46.39	216-5102	231.99	216-5104	460.00



Audio and Computer Cables — NEW —

Tinned copper, polyethylene insulated, twisted pairs. Each pair individually shielded with Beldfoil® aluminum-polyester shield and 20 AWG stranded tinned copper drain wire. Overall chrome PVC jacket. Beldfoil® 100% shielded coverage. 30 V 80°C. 20 AWG stranded conductors (7 × 28).

Mfr.'s Type	No. of Pairs	Nom. O.D.	100' Spool		500' Spool		1000' Spool	
			Stock No.	EACH	Stock No.	EACH	Stock No.	EACH
9873	3	0.337"	216-5110	45.51	216-5122	227.56	216-5134	455.12
9874	6	0.439"	216-5112	89.05	216-5124	445.23	216-5136	890.46
9875	9	0.549"	216-5114	128.62	216-5126	643.11	216-5138	1286.00
9876	11	0.609"	216-5116	168.20	216-5128	840.99	216-5140	1681.98
9877	12	0.609"	216-5118	179.09	216-5130	890.46	216-5142	1780.92
9879	15	0.680"	216-5120	217.67	216-5132	1088.34	216-5144	2176.68

Audio and Control Cables — NEW —

Tinned copper, PVC insulated, twisted pairs. Chrome PVC jacket. 18 AWG stranded conductors (16 × 30) 300 V 80°C.

Mfr.'s Type	No. of Pairs	Nom. O.D.	500' Spool		1000' Spool	
			Stock No.	EACH	Stock No.	EACH
8692	9	0.524"	216-5146	692.58	216-5148	1385.16

Audio and Control Cables — NEW —

Tinned copper, PVC insulated, twisted pair. Chrome PVC jacket.

Mfr.'s Type	No. of Pairs	AWG Stranding	Nom. O.D.	500' Spool		1000' Spool	
				Stock No.	EACH	Stock No.	EACH
8471	1	16 (19 × 29)	0.274"	216-5150	133.56	216-5156	267.14
8473	1	14 (42 × 30)	0.340"	216-5152	197.88	216-5158	395.76
8477	1	12 (65 × 30)	0.386"	216-5154	222.60	216-5160	445.23

Audio and Control Cables — NEW —

Tinned copper, PVC insulated, twisted pair. Chrome PVC jacket. 300 V 80°C 18 AWG stranded conductors (16 × 30).

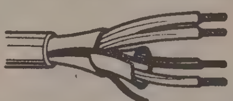
Mfr.'s Type	No. of Pairs	Nom. O.D.	100' Spool		500' Spool		1000' Spool	
			Stock No.	EACH	Stock No.	EACH	Stock No.	EACH
9740	1	0.210"	—	—	216-5176	69.26	216-5190	138.52
9156	2	0.327"	—	—	216-5178	148.41	216-5192	296.82
8690	3	0.347"	216-5166	39.58	216-5180	197.88	216-5194	395.76
9157	4	0.381"	216-5168	53.43	216-5182	267.14	216-5196	534.28
9159	5	0.391"	—	—	216-5184	366.08	216-5198	732.16
8691	6	0.433"	216-5172	98.94	216-5186	494.70	216-5200	989.40
9161	8	0.475"	216-5174	118.73	216-5188	593.64	216-5202	1187.28

Individually Shielded Paired Audio and Computer Cable — Polypropylene Insulated

Type 8723 tinned copper conductors, polypropylene insulated. Black and red under a Beldfoil® aluminum-polyester shield, green and white under a Beldfoil® aluminum-polyester shield. Stranded tinned common drain wire. Chrome PVC jacket. Pairs cabled on common axis to reduce diameter. 60°C. NEC Type CM.

22 AWG Stranded Conductors (7 × 30) 2919; NEC Type CM

Mfr.'s Type	No. of Pairs	Nom. O.D.	Cap. pF/ft.	100' Spool		500' Spool		1000' Spool	
				Stock No.	EACH	Stock No.	EACH	Stock No.	EACH
8723	2	0.165"	35	216-1456	16.69	216-1458	84.11	216-1460	168.20

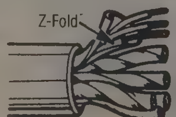


Audio, Communication and Instrumentation Cable

Tinned 25 AWG, 7 × 33 stranded conductors, polyethylene insulated, Beldfoil® aluminum-polyester shields and chrome PVC jacket. Pairs cabled on common axis to reduce diameter. Rated 400 V, 80°C. **Nominal Capacitance Between Conductors:** 25 pF/ft.

Mfr.'s Type	No. of Conductors	Nom. O.D.	100' Spool		500' Spool		1000' Spool	
			Stock No.	EACH	Stock No.	EACH	Stock No.	EACH
8434	4	0.013"	216-1036	27.70	216-1038	138.52	216-1040	277.03

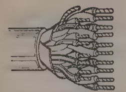
Audio Multi-Pair Individually Shielded Snake Cable

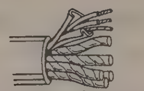


Tinned copper 22 AWG, 7 × 30 stranded conductors. Twisted pairs, individually Beldfoil® shielded with a Z-fold™ for greater interference elimination and overall chrome PVC jacket. **Nominal Impedance:** 50 ohms. **Nominal Capacitance Between Conductors:** 30 pF/ft. All rated 30 V, 80°C; UL recognized, CSA certified and NEC type CM rated.

Mfr.'s Type	No. of Pairs	Nom. O.D.	100' Spool		500' Spool		1000' Spool	
			Stock No.	EACH	Stock No.	EACH	Stock No.	EACH
8777	3	0.273"	216-1450	33.64	216-1452	168.20	216-1454	336.40
8778	6	0.362"	216-0912	62.34	216-0914	311.67	216-0916	623.32
8774	9	0.430"	216-0918	120.71	216-0920	603.53	216-0922	1207.07
8775	11	0.475"	216-0924	128.62	216-0926	643.11	216-0928	1286.22
9768	12	0.475"	216-0930	160.28	216-0932	801.41	216-0934	1602.83
8776	15	0.565"	216-0936	178.09	216-0938	890.46	216-0940	1780.92
9769	17	0.595"	216-0942	197.88	216-0944	989.40	216-0946	1978.80
8769	19	0.595"	216-0948	237.46	216-0950	1187.28	216-0952	2374.56
8773	27	0.707"	216-0954	375.97	216-0956	1879.86	216-0958	3759.72
9767	37	0.827"	216-0960	692.58	216-0962	3462.90	216-0964	6925.80

Paired Beldfoil® Shielded Tray Cable — UL Subject 13 and 444


Overall Shielded


Individually Shielded

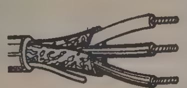
Tinned copper stranded conductors, PVC insulated pairs, except **types 9328-9333, 9368, 9388-9391** which are twisted pairs. All with Beldfoil® shield and tinned copper drain wire. Chrome sun-resistant PVC jacket. Multi-pairs are numbered at one-inch intervals; conductor pairs are color-coded black and red. Meets UL Subject 13 (NEC Article 725 Type CL3) for use as tray cable; 300V, 105°C. Meets UL Subject 444 (NEC Article 800 Type CM) for use as communication cable. Meets CSA, PCC and FAS90.

Overall Shielded

Mfr.'s Type	No. of. Pairs	AWG (Stranding)	Nom. Imped. (Ohms)	500' Spool		1000' Spool	
				Stock No.	EACH	Stock No.	EACH
9512	2	22 (7 × 30)	.310"	216-2020	204.00	216-2040	410.04
9513	3	22 (7 × 30)	.326"	216-2021	248.88	216-2041	501.84
9514	4	22 (7 × 30)	.353"	216-2022	338.64	216-2042	675.24
9516	6	22 (7 × 30)	.425"	216-2023	491.64	216-2043	981.24
9520	9	22 (7 × 30)	.488"	216-2024	697.68	216-2044	1389.24
9521	11	22 (7 × 30)	.536"	216-2025	795.60	216-2045	1593.24
9524	15	22 (7 × 30)	.594"	216-2026	1022.04	216-2046	2042.04
9526	19	22 (7 × 30)	.631"	216-2027	1232.16	216-2047	2458.20
9552	2	18 (16 × 30)	.377"	216-2028	369.24	216-2048	740.52
9553	3	18 (16 × 30)	.420"	216-2029	577.32	216-2049	1152.60
9554	4	18 (16 × 30)	.458"	216-2030	652.80	216-2050	1303.56
9556	6	18 (16 × 30)	.509"	216-2031	993.48	216-2051	1989.00
9559	9	18 (16 × 30)	.591"	216-2032	1501.44	216-2052	3000.84
9563	11	18 (16 × 30)	.682"	216-2033	1664.64	216-2053	3325.20
9565	15	18 (16 × 30)	.755"	216-2034	2193.00	216-2054	4379.88

Individually Shielded

9328	2	22 (7 × 30)	.315"	216-2075	257.04	216-2090	514.08
9329	3	22 (7 × 30)	.331"	216-2076	328.44	216-2091	652.80
9330	4	22 (7 × 30)	.360"	216-2077	416.16	216-2092	830.28
9331	6	22 (7 × 30)	.437"	216-2078	652.80	216-2093	1303.56
9332	9	22 (7 × 30)	.500"	216-2079	977.16	216-2094	1950.24
9333	11	22 (7 × 30)	.551"	216-2080	1146.48	216-2095	2292.96
9368	2	18 (16 × 30)	.380"	216-2081	481.44	216-2096	956.76
9369	3	18 (16 × 30)	.423"	216-2082	581.40	216-2097	1164.84
9388	4	18 (16 × 30)	.461"	216-2083	760.92	216-2098	1519.80
9389	6	18 (16 × 30)	.538"	216-2084	1158.72	216-2099	2313.36
9390	9	18 (16 × 30)	.650"	216-2085	1640.16	216-2100	3280.32
9391	11	18 (16 × 30)	.727"	216-2086	1921.68	216-2101	3843.36



Multi-Conductor Beldfoil® Shielded Tray Cable — UL Subject 13

Bare copper stranded conductors cabled, PVC insulated Beldfoil® shield with tinned copper drain wire. Sunlight-resistant PVC jacket. Dual-rated, power limited 300V, 105°C tray cable meets UL Subject 13 (NEC Article 725 Type CL3) and NEC Article 725 Class 2 and 3 requirements.

Mfr.'s Type	No. of Cond.	AWG (Stranding)	Nominal O.D.	1000' Spool	
				Stock No.	EACH
1033A	2	20 (7 × 28)	.216"	216-2660	194.82
1032A	2	18 (7 × 26)	.236"	216-2662	222.36
1030A	2	16 (7 × 24)	.264"	216-2664	240.72
1036A	3	18 (7 × 26)	.248"	216-2666	234.60
1031A	3	16 (7 × 24)	.289"	216-2668	316.20

Multi-Conductor Unshielded Sound and Control Cable

Mfr.'s Type	AWG (Stranding)	Nominal O.D.	Volts/ Temp.°C	500' Spool		1000' Spool	
				Stock No.	EACH	Stock No.	EACH
8795*	22 (Solid)	.160"	300V/60°C	216-2196	69.26	216-2197	138.52
8442†	22 (7 × 30)	.170"	150V/80°C	216-2198	44.51	216-2199	89.05

*UL listed and UL recognized †CSA certified.

TV and Amateur Radio Cables

Bare copper, parallel. One conductor oblong insulation. Fits channel Master Rotors. **Suggested Working Voltage:** 200 V. Tinned copper conductors, PVC insulation, chrome PVC jacket.

Mfr.'s Type	AWG (Stranding)	Nominal O.D.	Volts/ Temp.°C	500' Spool		1000' Spool	
				Stock No.	EACH	Stock No.	EACH
9405	2-16 (19 × 28)* 6-18 (16 × 30)†	.345"	300V/80°C	216-3602	390.82	216-3604	781.63
8448	6-22 (7 × 30)† 2-18 (16 × 30)*	.259"	150V/80°C	216-3606	158.30	216-3608	316.61

***Color Code:** Black, white. †**Color Code:** Brown, red, yellow, blue, orange, green.

Audio Speaker Wire and Zip Cord

Parallel

Cabled

Cabled

Two-Conductor Speaker Wire-Parallel

Mfr.'s Type	AWG (Stranding)	Nominal O.D.	Volts/ Temp.°C	100' Spool		500' Spool		1000' Spool	
				Stock No.	EACH	Stock No.	EACH	Stock No.	EACH
8782	24 (7 × 32)	.058 × .115"	300/76	—	—	—	—	216-2116	93.40
9712	22 (7 × 30)	.065 × .130"	300/75	216-2118	17.34	—	—	—	—
8649	20 (7 × 28)	.073 × .146"	300/75	216-2120	19.58	216-2122	71.60	216-2124	142.80
9708	18 (16 × 30)	.110 × .207"	300/75	216-2126	29.99	216-2128	117.30	216-2130	234.60
9716	16 (26 × 30)	.115 × .230"	300/75	—	—	216-2132	160.14	—	—

Two-Conductor Speaker Wire — Cabled

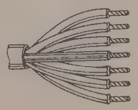
9151*	22 (7 × 30)	.108'	90/90	—	—	—	—	216-2140	123.42
9152*	20 (10 × 30)	.125"	90/90	—	—	—	—	216-2142	148.92
8460†	18 (7 × 26)	.180"	300/80	—	—	216-2146	125.46	216-2148	250.92
8470†	16 (19 × 29)	.205"	300/80	—	—	216-2150	138.72	216-2152	277.44
9497*	16 (19 × 29)	.206"	300/80	—	—	216-2154	148.92	216-2156	295.80

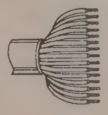
Three-Conductor Speaker Wire — Cabled

9498	16 (19 × 29)	.236'	300/80	—	—	216-2160	301.92	216-2162	603.84

*UL listed †UL recognized.

Multi-Conductor Unshielded Control, Audio and Computer Cable





Tinned copper stranded, conductors cabled, PVC insulated, chrome PVC jacket except type 9794 which has bare copper solid conductors cabled, polyethylene insulated, PVC jacket. All are NEC type CM except types 8620-23, 8627-29, 9620-23, 9721.

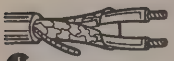
Control, Audio, and Computer Cable—For EIA RS-232 Applications

Mfr.'s Type	No. Cond.	AWG (Stranding)	Nom. O.D.	100' Spool		500' Spool		1000' Spool	
				Stock No.	EACH	Stock No.	EACH	Stock No.	EACH
8443	3	22 (7 × 30)	.172"	216-2202	11.87	216-2224	59.36	216-2254	118.73
8444	4	22 (7 × 30)	.185"	216-2204	14.85	216-2226	74.22	216-2256	148.71
8445	5	22 (7 × 30)	.194"	216-2206	18.81	216-2228	94.00	216-2258	187.99
9430	7	22 (7 × 30)	.214"	—	—	216-2230	103.89	216-2260	207.77
9421	8	22 (7 × 30)	.229"	216-2208	26.53	216-2232	123.69	216-2262	247.35
9423	9	22 (7 × 30)	.244"	216-2210	26.71	216-2234	133.57	216-2264	267.14
8456	10	22 (7 × 30)	.264"	216-2212	29.68	216-2236	148.41	216-2266	296.82
8457	12	22 (7 × 30)	.272"	216-2214	32.66	216-2238	163.25	216-2268	326.50
8458	15	22 (7 × 30)	.315"	216-2216	51.45	216-2240	257.24	216-2270	514.49
9431	20	22 (7 × 30)	.345"	216-2271	69.26	216-2272	346.29	216-2273	692.58
8459	25	22 (7 × 30)	.387"	216-2274	89.05	216-2275	445.23	216-2276	890.46
9432	30	22 (7 × 30)	.400"	216-2278	104.88	216-2279	524.38	216-2280	1048.76
9433	40	22 (7 × 30)	.455"	216-2281	158.30	216-2282	791.52	216-2283	1583.04
9434	50	22 (7 × 30)	.500"	—	—	216-2285	939.93	216-2286	1879.86

Control and Audio Cable

9794	4	22 Solid	.190"	—	—	216-2344	89.05	216-2402	178.09
8446	6	22 (7 × 30)	.236"	216-2290	42.84	216-2346	138.52	216-2406	277.03
9444	4	22 (7 × 28)	.217"	216-2292	17.81	216-2348	89.05	216-2408	178.09
9445	5	22 (7 × 28)	.239"	216-2294	21.77	216-2350	108.83	216-2410	217.67
9439	7	22 (7 × 28)	.260"	216-2296	35.33	216-2352	153.36	216-2412	306.71
9455	9	22 (7 × 28)	.317"	216-2298	41.55	216-2354	207.77	216-2414	415.55
9457	12	22 (7 × 28)	.338"	216-2300	59.36	216-2356	296.82	216-2416	593.64
9458	15	22 (7 × 28)	.389"	216-2302	76.19	216-2358	380.93	216-2418	761.84
8489	4	18 (16 × 30)	.264"	216-2304	22.77	216-2360	113.79	216-2420	227.56
8465	5	18 (16 × 30)	.290"	216-2306	26.72	216-2362	113.58	216-2422	267.14
8467	7	18 (16 × 30)	.324"	216-2308	37.60	216-2364	187.99	216-2424	375.97
8469	9	18 (16 × 30)	.379"	216-2310	46.51	216-2366	232.52	216-2426	465.02
8466	12	18 (16 × 30)	.424"	216-2312	62.34	216-2368	311.65	216-2428	623.32
8468	15	18 (16 × 30)	.505"	216-2314	81.13	216-2370	405.65	—	—
8620	4	16 (19 × 29)	.375"	216-2320	47.49	216-2376	237.46	216-2434	474.91
9620	5	16 (19 × 29)	.405"	216-2322	59.36	216-2378	296.82	216-2436	593.64
8621	7	16 (19 × 29)	.450"	216-2324	79.15	216-2380	395.76	216-2438	791.52
9721	8	16 (19 × 29)	.495"	216-2326	93.00	216-2382	465.02	216-2440	930.04
9621	9	16 (19 × 29)	.520"	216-2328	118.73	216-2384	593.64	216-2442	1187.28
8622	12	16 (19 × 29)	.610"	216-2330	178.09	216-2386	890.46	216-2444	1780.92
8623	15	16 (19 × 29)	.670"	216-2332	257.24	216-2388	1286.22	216-2446	2572.44
9622	25	16 (19 × 29)	.850"	216-2333	366.08	216-2339	1830.39	—	—
8627	4	14 (19 × 27)	.476"	216-2336	97.19	216-2394	435.34	216-2452	870.67
9623	5	14 (19 × 27)	.557"	216-2338	134.56	216-2396	703.39	216-2454	1345.58
8628	7	14 (19 × 27)	.605"	216-2340	142.47	216-2398	712.37	216-2456	1424.74
8629	12	14 (19 × 27)	.800"	216-2342	306.71	216-2400	1533.57	216-2458	3067.14

Multi-Conductor Beldfoil® Shield Tray Cable — UL Subject 13 and 444

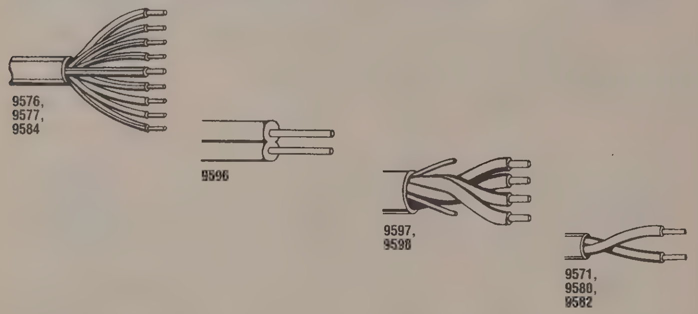

Two Cond.

Three Cond.

Tinned copper conductors cabled, PVC insulated. Beldfoil® tape shield with tinned copper drain wire. Sunlight-resistant PVC jacket. Tri-rated cable meets UL Subject 13, 300 V, 105°C; CSA PCC and/or FAS90. Also meets Article 725 of NEC, Class 2 and 3 requirements. **Types 9341** and **9342** feature same construction with PVC insulated nylon overcoat and are UL listed under Subject 1277 for use as Tray Cable in accordance with NEC Articles 318, 340 and 501, Class I 600 V, 90°C. Suitable for outdoor use and direct burial. All are NEC Type CM except **Types 9341, 9342**, which are NEC Type TC, and **Types 9364, 9366, 9367**, which are NEC **Type CL3**.

Mfr.'s Type	No. of Cond.	AWG (Stranding)	Nominal O. D. (In.)	500' Spool		1000' Spool	
				Stock No.	EACH	Stock No.	EACH
9322	2	22 (7 × 30)	.200	216-2696	137.70	216-2722	277.44
9320	2	20 (7 × 28)	.216	216-2698	224.40	216-2724	444.72
9318	2	18 (7 × 26)	.232	216-2700	236.64	216-2726	471.24
9341	2	18 (7 × 26)	.215	216-2702	324.36	216-2728	646.68
9342	2	16 (7 × 24)	.276	216-2704	456.96	216-2730	915.96
9316	2	16 (7 × 24)	.256	216-2706	255.00	216-2732	510.00
9314	2	14 (41 × 30)	.326	216-2708	471.24	216-2734	940.44
9312	2	12 (65 × 30)	.426	216-2710	575.28	216-2736	1148.52
9363	3	22 (7 × 30)	.210	216-2712	144.84	216-2738	289.68
9364	3	20 (7 × 28)	.227	216-2714	238.68	216-2740	477.36
9365	3	18 (7 × 26)	.244	216-2716	287.64	216-2742	569.16
9366	3	16 (7 × 24)	.270	216-2718	359.04	216-2744	720.12

Multi-Conductor Unshielded Fire Alarm and Tray Cable



Types **9576, 9577** and **9584** have tinned copper solid conductors cabled, PVC insulated. Black PVC jacket. **Type 9596** has one solid conductor tinned copper; one conductor bare; parallel. Red PVC jacket. **Types 9597** and **9598** have bare copper solid conductors cabled, PVC insulated. Red PVC jacket. **Types 9571, 9580** and **9582** have solid bare copper conductors, PVC insulated. Red PVC jacket. All are NEC Type FPLR; power limited fire protective signaling circuit cable for use in accordance with NEC Article 760 power limited circuits. Suitable for use as a power limited circuit cable in accordance with NEC Article 725 Class 2 or 3 circuits, when marked as suitable for appropriate tray cable installations. 300 V, 105°C. Component Recognized UL 2464, 300 V, 80°C.

Mfr.'s Type	No. of Cond.	AWG	Nominal O. D. (In.)	500' Spool		1000' Spool	
				Stock No.	EACH	Stock No.	EACH
9576	6	22	.234	216-2550	183.04	216-2568	366.08
9577	9	22	.267	216-2552	257.24	216-2570	514.49
9584	12	22	.302	216-2554	326.50	216-2572	653.00
9596	2	19	.101 × .191	216-2556	93.99	216-2574	187.99
9597	4	19	.248	216-2558	202.83	216-2576	405.65
9598	6	19	.294	216-2560	296.82	216-2578	593.64
9571	2	18	.228	216-2562	98.94	216-2580	197.88
9580	2	14	.306	216-2564	252.30	216-2582	504.59
9582	2	12	.340	—	—	216-2584	593.64

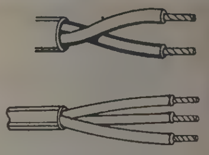
DataTray™ Cables for UL-1277 Tray Applications

Belden® DataTray™ cables provide excellent performance for a variety of data transmission applications in industrial environments where UL-1277 is desirable. This includes control systems such as PLCs and DCSs, as well as intercom systems, RS-232, RS-422 and RS-485 interfaces. The Belden® DataTray™ series of cables utilizes one pair of 18 AWG tinned copper conductors, with tight lay lengths to minimize 60 Hz interference. These cables feature low-attenuation FRPO insulation, and a 100% coverage tinned copper braid shield. The jacket is dark blue "sun resistant" PVC. DataTray™ cables are available in 78, 100 and 124 ohm impedance. **AWG Stranding:** 18 AWG (7 × 26) .046" tinned copper, 6.92 Ω/M' 22.7 Ω/km. **Nom. Vel. of Prop.:** 64.5%.

Stock No.	Mfr.'s Type	Insulation and Nom. Core O.D.		Nom. O.D.		No. of Shields and Material Nom. D.C.R.	Nom. Imp. (Ohms)	Nom. Attenuation			PER COIL/250'
		In.	mm	In.	mm			MHz	dB/100'	dB/100 m	
216-3590	3072F*	FR Polyolefin .192	4.88	.315	8.00	Beldfoil® +55% tinned copper braid 100% shield coverage 3.17 Ω/M' 10.4 Ω/km	78	1 10 50 100 200 400	0.7 2.0 3.8 5.5 7.8 10.8	2.3 6.6 12.5 18.0 25.6 35.4	222.36
216-3592	3073F†	FR Polyolefin .246	6.24	.370	9.40	Beldfoil® +55% tinned copper braid 100% shield coverage 2.92 Ω/M' 9.58 Ω/km	100	1 10 50 100 200 400	0.6 1.6 3.0 4.3 6.1 7.6	1.8 5.2 9.8 14.2 20.1 24.9	287.13

Nominal Capacitance: *22.5 pF/ft. (73.8 pF/m); †17.5 pF/ft. (57.5 pF/m).

Multi-Conductor Unshielded Tray Cable — UL Subject 13 and 444



Tinned copper stranded conductors cabled, PVC insulated. Chrome sunlight resistant PVC jacket. Tri-rated cable meets UL Subject 13, 300 V, 105°C; Appliance Wiring Material style 2464, 300 V 80°C; CSA Appliance Wiring Material standards. Also meets Article 725 of NEC, Class 2 and 3 requirements. All are NEC Type CL3 except types 9491 and 9493 which are NEC Type CM.

Mfr.'s Type	No. of Cond.	AWG (Stranding)	Nominal O. D. (In.)	500' Spool		1000' Spool	
				Stock No.	EACH	Stock No.	EACH
9407	2	22 (7 × 30)	.198	216-2500	96.90	216-2522	194.82
9408	2	20 (7 × 28)	.214	216-2502	153.00	216-2524	308.04
9409	2	18 (7 × 26)	.226	216-2504	185.64	216-2526	373.32
9410	2	16 (7 × 24)	.254	216-2506	226.44	216-2528	448.80
9411	2	14 (41 × 30)	.324	216-2508	389.64	216-2530	775.20
9412	2	12 (65 × 30)	.424	216-2510	461.04	216-2532	924.12
9491	3	22 (7 × 30)	.208	216-2512	120.36	216-2534	240.72
9492	3	20 (7 × 28)	.225	216-2514	196.86	216-2536	393.72
9493	3	18 (7 × 26)	.242	216-2516	238.68	216-2538	475.32
9494	3	16 (7 × 24)	.268	216-2518	322.32	216-2540	640.56
9495	3	14 (41 × 30)	.342	216-2520	491.64	216-2542	981.24

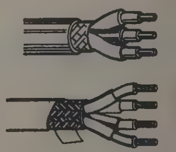
Multi-Conductor Overall Foil/Braid Shielded Computer Cable — Datalene® Insulated

Low capacitance cables for EIA RS-232, EIA RS-423 and CAD/CAM applications. Tinned copper, Datalene® insulated, multi-conductor cable with overall Beldfoil® aluminum-polyester plus 65% tinned copper braid shield. 24 AWG stranded tinned copper drain wire. Chrome PVC jacket. Rated 30 V, 80°C. UL recognized. Datalene insulation features low dielectric constant and a dissipation factor for high-speed, low-distortion data handling. Physical properties include good crush resistance and light weight.

24 AWG Stranded Conductors (7 × 32) 2919, NEC Type CM

Mfr.'s Type	No. of Cond.	Nominal O. D. (In.)	100' Spool		500' Spool		1000' Spool	
			Stock No.	EACH	Stock No.	EACH	Stock No.	EACH
9925	3	.215	216-2950	21.77	216-2961	108.83	216-2979	217.67
9927	4	.230	216-2951	26.73	216-2962	133.58	216-2980	267.14
9929	5	.246	216-2952	33.65	216-2963	168.20	216-2981	336.40
9931	6	.265	216-2953	35.62	216-2964	178.70	216-2982	356.18
9932	7	.265	216-2954	37.60	216-2965	198.19	216-2983	375.97
9933	8	.280	216-2955	39.58	216-2966	197.88	216-2984	395.76
9934	9	.300	216-2956	46.51	216-2967	232.52	216-2985	465.02
9935	10	.306	216-2957	47.49	216-2968	237.46	216-2986	474.91
9936	15	.360	216-2958	73.22	216-2969	366.08	216-2987	732.16
9937	25	.445	216-2959	116.75	216-2970	583.75	216-2988	1167.49
9938	37	.500	216-2960	194.88	216-2971	974.56	216-2989	1949.12

Multi-Conductor Braid Shielded Communication and Instrumentation Cable — MIL-W-16878D Type B Conductors



Stranded tinned copper conductors, PVC insulated. Clear nylon jacket, tinned copper braid shield. White PVC jacket. Nominal nylon thickness .003" except types 9951-54 which are .004" thick. **Working Voltage:** 600 V; 105°C.

Mfr.'s Type	No. of Cond.	AWG (Stranding)	Nominal O. D. (In.)	100' Spool		500' Spool		1000' Spool	
				Stock No.	EACH	Stock No.	EACH	Stock No.	EACH
9961	1	20 (19 × 32)	.109	216-3002	26.73	216-3024	133.58	216-3046	267.14
9951	1	16 (19 × 29)	.143	216-3004	47.49	216-3026	237.46	216-3048	474.91
9966	2	22 (19 × 34)	.176	216-3006	35.62	216-3028	178.09	216-3050	356.18
9962	2	20 (19 × 32)	.192	216-3008	42.54	216-3030	212.72	216-3052	425.44
9952	2	16 (19 × 29)	.250	216-3010	60.36	216-3032	301.77	216-3054	603.53
9967	3	22 (19 × 34)	.184	216-3012	44.52	216-3034	222.62	216-3056	445.23
9963	3	20 (19 × 32)	.210	216-3014	51.45	216-3036	257.24	216-3058	514.49
9953	3	16 (19 × 29)	.264	216-3016	82.12	216-3038	410.60	216-3060	821.20
9968	4	22 (19 × 34)	.200	216-3018	51.45	216-3040	257.24	216-3062	514.49
9964	4	20 (19 × 32)	.226	216-3020	63.32	216-3042	316.61	216-3064	633.22
9965	4	16 (19 × 29)	.291	—	—	—	—	216-3066	277.03
9954	4	16 (19 × 29)	.291	216-3640	102.90	216-3641	514.49	216-3642	1028.98

Plenum-Overall Foil/Braid Shield Control and Instrumentation Cable

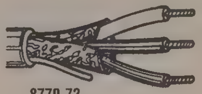
Tinned copper, Teflon® insulated, conductors cabled. Beldfoil® aluminum-polyester shield with 85% tinned copper braid shield. Teflon jacket, Red tint. Listed for use in an air plenum non-conduit. Beldfoil® 100% shield coverage 200°C.

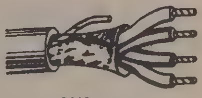
Mfr.'s Type	No. of Cond.	AWG (Stranding)	Nominal O. D. (In.)	100' Spool		500' Spool	
				Stock No.	EACH	Stock No.	EACH
83752	2	14 (7 × 22)	.267	216-3668	220.65	216-3650	1103.18
83753	3	14 (7 × 22)	.284	216-3669	288.90	216-3652	1444.52
83754	4	14 (7 × 22)	.311	216-3670	295.84	216-3654	1479.15
83756	6	14 (7 × 22)	.376	216-3671	373.01	216-3656	1865.02
83802	2	12 (7 × 20)	.303	216-3672	208.77	216-3660	1043.82
83803	3	12 (7 × 20)	.323	216-3673	266.16	216-3662	1330.74
83804	4	12 (7 × 20)	.359	216-3674	352.08	216-3664	1959.01
83806	6	12 (7 × 20)	.430	216-3675	447.21	216-3666	2236.04

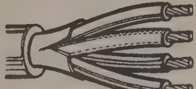
Multi-Conductor Shielded Cable

Multi-Conductor Shielded Broadcast, Audio and Instrumentation Cable

Tinned copper stranded conductors cabled. Polyethylene insulated except type 9770 which is polypropylene and has a paper wrap, and type 9418 which is S-R PVC insulated. All have Beldfoil® aluminum-polyester shield with stranded tinned copper drain wire except type 8729 which has 3 solid tinned copper-coated steel drain wires. All have PVC jackets. NEC type CM except type 8729, which is NEC type CL3. All UL recognized except type 9770.


8770-72
8618

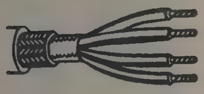

9418

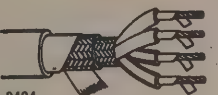

8729

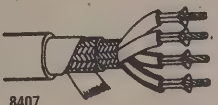
Mfr.'s Type	No. Cond.	AWG (Stranding)	Nom. O.D.	Cap. pF/ft.	500' Spool		1000' Spool	
					Stock No.	EACH	Stock No.	EACH
9770	3	22 (7 × 30)	.145"	32	216-2776	84.11	216-2790	168.00
8771*	3	22 (7 × 30)	.183"	23	216-2778	79.15	216-2792	158.30
8729**	4	22 (19 × 34)	.262"	22	216-2780	277.03	216-2794	554.06
8772*	3	22 (7 × 28)	.208"	27	216-2782	94.00	216-2796	187.99
8770*	3	18 (16 × 30)	.236"	24	216-2784	123.69	216-2798	247.35
9418†	4	18 (19 × 30)	.245"	70	216-2786	158.30	216-2800	316.61
8618††	3	16 (19 × 29)	.318"	26	216-2788	207.77	216-2802	415.55

* -2093; 300V, 60°C ** -2904; 300V, 60°C † -2464; 300V, 80°C †† -2107; 600V, 60°C.

Multi-Conductor Braid Shielded Professional Music Cable


8404


8424

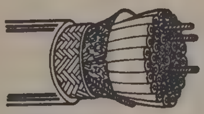

8407

Type 8404 is tinned copper stranded conductors cabled, polyethylene insulated. Rayon braid, tinned copper braid shield. Chrome PVC jacket. UL recognized 2094; 300V, 60°C. **Type 8424** is tinned copper stranded conductors cabled, cotton wrap, rubber insulated. Rayon braid, tinned copper braid shield. Black EPDM rubber jacket. **Working voltage:** 600V RMS; 60°C. **Type 8407** is tinned copper stranded conductors cabled, paper wrap, rubber insulated. Rayon braid, tinned copper braid shield. Black neoprene jacket. **Working voltage:** 600Vrms, 60°C. All types passed the VW-1 Vertical Wire Flame Test.

Mfr.'s Type	No. Cond.	AWG (Stranding)	Nom. O.D.	Cap. pF/ft.	100' Spool		500' Spool		1000' Spool	
					Stock No.	EACH	Stock No.	EACH	Stock No.	EACH
8404	4	20 (26 × 34)	.252"	23	216-3070	113.22	216-3072	556.92	216-3074	960.84
8424	4	20 (26 × 34)	.294"	27	216-3076	116.28	216-3078	528.36	216-3080	1052.64
8407	4	16 (65 × 34)	.416"	30	216-3082	220.32	—	—	—	—

Multi-Conductor Overall Foil/Braid Shielded Computer Cable

9608-9617
9939-9647


9618
9619
9948
9649
9950

For EIA RS-232 and CAD/CAM applications. Tinned copper, SR-PVC insulated, multi-conductor cable with overall Beldfoil® aluminum-polyester plus 65% tinned copper braid shield. Chrome PVC jacket. Rated 300V, 80°C. UL recognized, CSA certified.

24AWG Stranded Conductors (7 x 32) 2464 Type T2 NEC Type CM

Mfr.'s Type	No. Cond.	Nom. O.D.	Cap. pF/ft.	100' Spool		500' Spool		1000' Spool	
				Stock No.	EACH	Stock No.	EACH	Stock No.	EACH
9608	3	.190"	35	216-2855	24.73	216-2870	123.67	216-2885	247.35
9609	4	.200"	35	216-2856	29.68	216-2871	148.41	216-2886	296.82
9610	5	.215"	35	216-2857	35.62	216-2872	178.09	216-2887	356.18
9611	6	.225"	30	216-2858	43.53	216-2873	217.67	216-2888	435.34
9612	7	.225"	30	216-2859	51.45	216-2874	257.24	216-2889	514.49
9613	8	.240"	30	216-2860	57.39	216-2875	286.93	216-2890	573.85
9614	9	.253"	30	216-2861	71.24	216-2876	356.18	216-2891	712.37
9615	10	.270"	30	216-2862	89.05	216-2877	445.23	216-2892	890.46
9616	15	.300"	30	216-2863	118.73	216-2878	593.64	216-2893	1187.28
9617	25	.370"	30	216-2864	197.88	216-2879	989.40	216-2894	1978.80
9618	37	.411"	30	216-2865	316.61	216-2880	1583.04	216-2895	3166.08
9619	50	.485"	30	216-2866	395.76	216-2881	1978.80	216-2896	3957.60

22AWG Stranded Conductors (7 x 30) 2464 Type T2 NEC Type CM

Mfr.'s Type	No. Cond.	Nom. O.D.	Cap. pF/ft.	100' Spool Stock No.	100' Spool EACH	500' Spool Stock No.	500' Spool EACH	1000' Spool Stock No.	1000' Spool EACH
9939	3	.202"	37	216-2901	20.77	216-2920	103.88	216-2935	207.77
9940	4	.215"	37	216-2902	26.72	216-2921	133.57	216-2936	267.14
9941	5	.230"	37	216-2903	31.66	216-2922	158.30	216-2937	316.61
9942	6	.245"	35	216-2904	35.62	216-2923	178.09	216-2938	356.18
9943	7	.245"	35	216-2905	40.58	216-2924	202.83	216-2939	405.65
9944	8	.260"	35	216-2906	43.53	216-2925	217.67	216-2940	435.34
9945	9	.280"	35	216-2907	49.47	216-2926	247.35	216-2941	494.70
9946	10	.300	35	216-2908	54.43	216-2927	272.08	216-2942	544.17
9947	15	.340"	35	216-2909	75.19	216-2928	375.97	216-2943	751.94
9948	25	.410"	35	216-2910	148.41	216-2929	742.05	216-2944	1484.10
9949	37	.460"	35	216-2911	356.18	216-2930	1780.29	216-2945	3561.84
9950	50	.555"	35	216-2912	411.59	216-2931	2057.95	216-2946	4115.90

Multi-Conductor Beldfoil® Shielded Fire Alarm and Tray Cable

9574
9575
9581

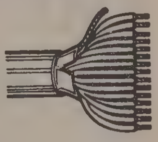
9579

9578

Solid bare copper conductors cabled with Beldfoil® aluminum-polyester shield. Stranded tinned copper drain wire. Red PVC jacket. NEC Type FPLR; power limited fire protective signaling circuit cable for use in accordance with NEC Article 760 power limited circuits. Suitable for use as a power limited circuit cable in accordance with NEC Article 725 Class 2 or 3 circuits, when marked as suitable for appropriate tray cable installations. 300V, 105°C. UL recognized 2464, 300V, 80°C.

Mfr.'s Type	No. of Cond.	AWG	Nominal O.D.	500' Spool		1000' Spool	
				Stock No.	EACH	Stock No.	EACH
9574	2	18	.231"	216-2750	89.05	216-2760	178.09
9578	4	18	.263"	216-2752	187.99	216-2762	375.97
9575	2	16	.253"	216-2754	163.25	216-2764	326.50
9579	4	16	.301"	216-2756	197.88	216-2766	395.76
9581	2	14	.309"	216-2758	227.56	216-2768	455.12

Multi-Conductor Shielded Broadcast, Audio and Instrumentation Cable



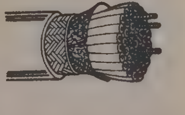
Tinned copper stranded conductors cabled, S-R PVC insulated. Beldfoil® aluminum-polyester shield with stranded tinned copper drain wire. Chrome PVC jacket. UL recognized 2464; 300V, 80°C. CSA Type T2; NEC Type CM.

24AWG Stranded Conductors (7 × 32) 2464 Type T2 NEC Type CM

For EIA RS-232 Applications

Mfr.'s Type	No. of Cond.	Nom. O.D.	Cap. pF/ft.	100' Spool		500' Spool		1000' Spool	
				Stock No.	EACH	Stock No.	EACH	Stock No.	EACH
9533	3	.168'	33	216-2810	13.85	216-2825	69.26	216-2840	138.52
9534	4	.190"	33	216-2811	15.83	216-2826	79.15	216-2841	158.30
9535	5	.195"	33	216-2812	19.79	216-2827	98.94	216-2842	197.88
9536	6	.215"	33	216-2813	22.76	216-2828	113.79	216-2843	227.56
9537	7	.215"	33	216-2814	26.73	216-2829	133.57	216-2844	267.14
9538	8	.230"	33	216-2815	27.71	216-2830	138.49	216-2845	277.03
9539	9	.250"	30	216-2816	29.68	216-2831	148.41	216-2846	296.82
9540	10	.250"	30	216-2817	31.66	216-2832	158.30	216-2847	316.61
9541	15	.290"	30	216-2818	45.51	216-2833	227.56	216-2848	455.12
9542	20	.320"	30	216-2819	79.15	216-2834	395.76	216-2849	791.52
9543	25	.360"	30	216-2820	89.05	216-2835	445.23	216-2850	890.46
9544	30	.380"	30	216-2821	128.62	216-2836	643.11	216-2851	1286.22
9545	40	.430"	30	216-2822	168.20	216-2837	840.99	216-2852	1681.98
9546	50	.490"	30	216-2823	247.35	216-2838	1236.75	216-2853	2473.50

Paired Overall Foil/Braid Shield



Tinned copper, 28 AWG (7 x 36), polyolefin insulated, twisted pairs. Polypropylene buffer layer. Overall Beldfoil, aluminum-polyester shield. Overall tinned copper braid shield (85% coverage). Light gray PVC jacket. Color coded: Modified Western Electric Standard.

Mfr.'s Type	No. of Pairs	Nom. O.D.	Cap. pF/ft.	500' Spool		1000' Spool	
				Stock No.	EACH	Stock No.	EACH
1401A	25	.420"	14	216-3610	700.13	216-3611	1400.26
1403A	.34	.480"	14	216-3614	1007.76	216-3615	2015.12

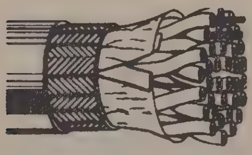
Low Capacitance Cables For EIA RS-232 and EIA RS-422 Applications

Overall Foil/Braid Shield

Tinned copper, Datalene insulated, twisted pairs. Overall Beldfoil® aluminum-polyester shield. 24 AWG stranded (7 × 32) tinned copper drain wire. Overall tinned copper braid shield (65% coverage). Chrome PVC jacket. Beldfoil 100% shield coverage. NEC CM CSA PCC FT 1. UL Recognized 2919.

Mfr.'s Type	No. of Pairs	Nom. O.D. (In.)	100' Coils		500' Coils		1000' Coils	
			Stock No.	PER COIL	Stock No.	PER COIL	Stock No.	PER COIL
8102	2	.268	216-3980	35.62	216-3981	178.09	216-3982	356.18
8103	3	.279	216-3983	42.54	216-3984	212.72	216-3985	425.44
8104	4	.298	216-3986	51.45	216-3987	257.24	216-3988	514.49
8105	5	.312	216-3989	65.29	216-3990	326.50	216-3991	653.00
8106	6	.337	216-3992	83.11	216-3993	415.55	216-3994	831.10
8107	7	.337	216-3995	93.00	216-3996	465.02	216-3997	930.04
8108	8	.366	216-3998	97.96	216-3999	489.75	216-4000	979.51
8110	10	.427	216-4001	109.81	216-4002	549.01	216-4003	1098.23
8112	12½	.440	216-4004	129.62	216-4005	648.06	216-4006	1296.11
8115	15	.495	216-4007	149.41	216-4008	747.01	216-4009	1493.99
8118	18	.537	216-4010	208.77	216-4011	1043.82	216-4012	2087.63
8125	25	.637	216-4013	307.71	216-4014	1538.52	216-4015	3077.03

Computer Cables For EIA RS-232 and CAD/CAM Applications

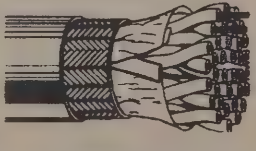


Overall Foil/Braid Shield — 22 Gauge

Tinned copper, S-R PVC insulated, twisted pairs. Overall Beldfoil® aluminum-polyester shield 65% tinned copper braid shield. Chrome PVC jacket. 22 AWG stranded (7 × 30) conductors. 300 V 80°C. Beldfoil 100% shield coverage. NEC CM CSA PCC FT 4. UL Recognized 2464. CSA Type T2.

Mfr.'s Type	No. of Pairs	Nom. O.D. (In.)	100' Coils		500' Coils		1000' Coils	
			Stock No.	PER COIL	Stock No.	PER COIL	Stock No.	PER COIL
8302	2	.260	216-4020	35.62	216-4021	178.09	216-4022	356.18
8303	3	.296	216-4023	40.58	216-4024	202.83	216-4025	405.65
8304	4	.320	216-4026	49.47	216-4027	247.35	216-4028	654.84
8305	5	.322	216-4029	57.39	216-4030	286.93	216-4031	573.85
8306	6	.348	216-4032	61.34	216-4033	306.71	216-4034	613.43
8307	7	.348	216-4035	69.26	216-4036	346.29	216-4037	692.58
8308	8	.384	216-4038	79.15	216-4039	395.76	216-4040	791.52
8310	10	.440	216-4041	93.00	216-4042	465.02	216-4043	930.04
8312	12½	.455	216-4044	112.79	216-4045	563.96	216-4046	1127.92
8315	15	.502	216-4047	158.30	216-4048	791.52	216-4049	1583.04
8318	18	.535	216-4050	187.99	216-4051	939.93	216-4052	1879.86
8325	25	.620	216-4053	296.82	216-4054	1484.10	216-4055	2968.20

Overall Foil/Braid Shield — 24 Gauge



Tinned copper, S-R PVC insulated multi-paired cable with overall Beldfoil® aluminum-polyester shield plus 65% tinned copper braid shield. Chrome PVC jacket. 24 AWG stranded (7 × 32) conductors. 300 V 80°C. NEC CM CSA PCC FT 4. UL Recognized 2464. CSA Type T2.

8332	2	.250	216-4060	26.72	216-4061	133.57	216-4062	267.14
8333	3	.265	216-4063	35.62	216-4064	178.09	216-4065	356.18
8334	4	.288	216-4066	39.58	216-4067	197.88	216-4068	395.76
8335	5	.295	216-4069	45.51	216-4070	227.56	216-4071	455.12
8336	6	.310	216-4072	49.47	216-4073	247.35	216-4074	494.70
8337	7	.321	216-4075	59.36	216-4076	296.82	216-4077	593.64
8340	10	.385	216-4078	77.17	216-4079	385.87	216-4080	771.73
8342	12½	.405	216-4081	91.02	216-4082	455.12	216-4083	910.25
8245	15	.445	216-4084	187.99	216-4085	939.93	216-4086	1879.86
8348	18	.480	216-4087	257.24	216-4088	1286.22	216-4089	2572.44
8355	25	.550	216-4090	316.61	216-4091	1583.04	216-4092	3166.08

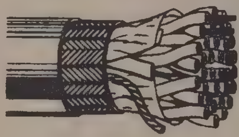
Low Capacitance Computer Cables For EIA RS-422 Applications

Overall Foil/Braid Shield — 24 Gauge

Tinned copper, polyethylene insulated, twisted pairs. Overall Beldfoil® aluminum-polyester shield. 24 AWG stranded (7 × 32) tinned copper drain wire. Overall tinned copper braid shield (65% coverage). Chrome PVC jacket. 300 V 80°C. NEC CM CSA PCC FT 1. Beldfoil® 100% shield coverage. UL Recognized 2919.

Mfr.'s Type	No. of Pairs	Nom. O.D. (In.)	100' Coils		500' Coils		1000' Coils	
			Stock No.	PER COIL	Stock No.	PER COIL	Stock No.	PER COIL
9829	2	.291	216-4100	52.45	216-4101	262.20	216-4102	524.38
9830	3	.305	216-4103	59.32	216-4104	301.77	216-4105	603.53
9831	4	.330	216-4106	69.26	216-4107	346.29	216-4108	692.58
9832	5	.338	216-4109	79.15	216-4110	395.76	216-4111	791.52
9839	6	.364	216-4112	89.05	216-4113	445.23	216-4114	890.46
9833	7	.364	216-4115	98.94	216-4116	494.70	216-4117	989.40
9834	9	.419	216-4118	118.73	216-4119	593.64	216-4120	1187.28
9835	10	.451	216-4121	138.52	216-4122	692.58	216-4123	1385.16
9836	12	.464	216-4124	217.67	216-4125	1088.34	216-4126	2176.68
9837	18	.567	216-4127	356.18	216-4128	1780.92	216-4129	3561.84
9838	25	.670	216-4130	395.76	216-4131	1978.80	216-4132	3957.60

Low Capacitance Computer Cables For EIA RS-422 Applications



Overall Foil/Braid Shield — 28 Gauge

Tinned copper, polyethylene insulated, twisted pairs. Overall Beldfoil® aluminum-polyester shield. 28 AWG stranded (7 × 36) tinned copper drain wire. Overall tinned copper braid shield (90% coverage). Chrome PVC jacket 30 V 60°C. NEC CL2 CSA FT1. Beldfoil 100% shield coverage. UL Recognized 2960.

Mfr.'s Type	No. of Pairs	Nom. O.D. (In.)	100' Coils		500' Coils		1000' Coils	
			Stock No.	PER COIL	Stock No.	PER COIL	Stock No.	PER COIL
9804	2	.214	216-4135	35.62	216-4136	178.09	216-4137	356.18
9805	3	.222	216-4138	45.51	216-4139	227.56	216-4140	455.12
9806	4	.237	216-4141	50.47	216-4142	252.30	216-4143	504.59
9807	5	.240	216-4144	59.36	216-4145	296.82	216-4146	593.64
9808	7	.256	216-4147	72.24	216-4148	361.13	216-4149	722.26
9809	9	.290	216-4150	98.94	216-4151	494.70	216-4152	989.40
9812	12	.319	216-4153	138.52	216-4154	692.58	216-4155	1385.16
9813	13	.336	216-4156	158.30	216-4157	791.52	216-4158	1583.04
9819	18	.365	216-4159	217.67	216-4160	1088.34	216-4161	2176.68
9825	25	.429	216-4162	237.46	216-4163	1187.28	216-4164	2374.56
9814	31	.462	216-4165	494.70	216-4166	2473.50	216-4167	4947.00

Low Capacitance Cables For EIA RS-232 and EIA RS 485 Applications

Overall Foil/Braid Shield — 28 Gauge

Tinned copper, Datalene insulated, twisted pairs. Overall Beldfoil® aluminum-polyester shield. 28 AWG stranded (7 × 36) tinned copper drain wire. Overall tinned copper braid shield (65% coverage). Chrome PVC jacket. Beldfoil 100% shield coverage. NEC CL2 CSA FT1. 30 V 600°C. UL Recognized 2919.

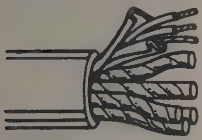
Mfr.'s Type	No. of Pairs	Nom. O.D. (In.)	100' Coils		500' Coils		1000' Coils	
			Stock No.	PER COIL	Stock No.	PER COIL	Stock No.	PER COIL
8132	2	.235	216-4170	33.64	216-4171	168.20	216-4172	336.40
8133	3	.270	216-4173	51.45	216-4174	257.24	216-4175	514.49
8134	4	.290	216-4176	61.34	216-4177	306.71	216-4178	613.43
8135	5	.300	216-4179	69.26	216-4180	346.29	216-4181	692.58
8138	8	.330	216-4182	98.94	216-4183	494.70	216-4184	989.40
8142	12½	.415	216-4185	143.70	216-4186	717.32	216-4187	1434.63
8148	18	.465	216-4188	178.09	216-4189	890.46	216-4190	1780.92
8155	25	.565	216-4191	217.67	216-4192	1088.34	216-4193	2176.68

Computer Cables

Polyethylene Insulated 18 AWG

Tinned copper, polyethylene insulated, twisted pairs. Each pair individually shielded with Beldfoil® aluminum-polyester shield and 20 AWG stranded (19 × 30) tinned copper drain wire. Overall chrome PVC jacket. 30 V 80°C. NEC CM CSA FT 1. UL recognized 2919.

Mfr.'s Type	No. of Pairs	Nom. O.D. (In.)	100' Coil		500' Coil		1000' Coil	
			Stock No.	EACH	Stock No.	EACH	Stock No.	EACH
9773	3	0.402	216-4260	50.47	216-4261	252.31	216-4262	504.59
9774	6	0.560	216-4266	118.73	216-4264	593.64	216-4265	1187.28
9775	9	0.655	216-4265	184.03	216-4267	920.14	216-4268	1840.28
9776	12	0.735	216-4269	282.97	216-4270	1414.84	216-4271	2829.68
9777	15	0.719	216-4272	322.52	216-4273	1612.72	216-4274	3225.44



Polyethylene Insulated 24 AWG

Tinned copper, polyethylene insulated, twisted pairs. Each pair individually shielded with Beldfoil® aluminum-polyester shield and 24 AWG stranded (7 × 32) tinned copper drain wire. Overall chrome PVC jacket. 30 V 80°C. NEC CM CSA FT 1.

9990	3	0.253	216-4280	35.62	216-4281	178.09	216-4282	356.18
9991	6	0.328	216-4283	63.32	216-4284	316.61	216-4285	633.22
9992	9	0.381	216-4286	93.00	216-4287	465.02	216-4288	930.04
9993	12	0.426	216-4289	128.62	216-4290	643.11	216-4291	1286.22
9995	25	0.636	216-4292	395.76	216-4293	1978.80	216-4294	3957.60

Computer Cables

— NEW —

Datalene insulation features are low dielectric constant and a dissipation factor for high speed, low distortion data handling. Physical properties include good crush resistance and light weight. Tinned copper, twisted pairs, Duofoil aluminum-polyester shield, 22 AWG stranded tinned copper drain wire. Black PVC jacket. 22 AWG solid conductors. 100% shield coverage 30 V 60°C.

Mfr.'s Type	No. of Pairs	Nom. O.D. (In.)	500' Coil		1000' Coil	
			Stock No.	EACH	Stock No.	EACH
9184	2	0.385	216-1260	197.88	216-1262	395.76

Low Capacitance Cables For EIA RS-232 and EIA RS-422 Applications

Overall Beldfoil® Shield

Tinned copper, Datalene insulated, twisted pairs. Overall Beldfoil® aluminum-polyester shielded. 24 AWG stranded (7 × 32) tinned copper drain wire. Chrome PVC jacket. Beldfoil® 100% shielded coverage. NEC CM CSA PCC FT 1. 300 V 80°C. UL recognized 2919.

Mfr.'s Type	No. of Pairs	Nom. O.D. (In.)	500' Coil		1000' Coil	
			Stock No.	EACH	Stock No.	EACH
1419A	2	0.244	216-3960	79.56	216-3961	159.12
1420A	3	0.257	216-3962	116.69	216-3963	233.38
1421A	4	0.276	216-3964	127.30	216-3965	254.59
1422A	5	0.290	216-3966	153.82	216-3967	307.83
1423A	6	0.315	216-3968	169.73	216-3969	339.46
1424A	12½	0.418	216-3970	323.54	216-3971	647.09
1425A	15	0.473	216-3972	434.93	216-3973	869.86

Low Capacitance Cables for EIA RS-232 and EIA RS-423 Applications ***— NEW —***

Tinned copper, Datalene insulated multi-conductor cable with overall Beldfoil® aluminum-polyester plus 65% minimum tinned copper braid shield. 28 AWG stranded tinned copper drain wire. Chrome PVC jacket. Passes CSA FT 1 Flame Test. 30 V 80°C 28 AWG stranded conductors (7 × 36).

Mfr.'s Type	No. of Cond.	Nom. O.D. (In.)	100' Coil		500' Coil		1000' Coil	
			Stock No.	EACH	Stock No.	EACH	Stock No.	EACH
9791	6	0.225	216-5210	37.60	216-5212	187.99	216-5214	375.97

Computer Cables for EIA RS-422 and CAD/CAM Applications

Paired Individually Shielded Pairs with Overall Foil/Braid Shield

Tinned copper, Datalene insulated, twisted pairs. Each pair individually shielded with Beldfoil® aluminum-polyester shield and 24 AWG stranded (7 × 32) tinned copper drain wire. Overall Beldfoil® aluminum-polyester shield plus 65% tinned copper braid shield. Chrome PVC jacket. Beldfoil® 100% shield coverage. 60°C. UL recognized 2493.

Mfr.'s Type	No. of Pairs	Nom. O.D. (In.)	100' Coil		500' Coil		1000' Coil	
			Stock No.	EACH	Stock No.	EACH	Stock No.	EACH
8162	2	0.343	216-4220	55.41	216-4221	277.03	216-4222	554.06
8163	3	0.359	216-4223	70.26	216-4224	351.23	216-4225	702.47
8164	4	0.388	216-4226	86.09	216-4227	430.39	216-4228	860.78
8165	5	0.413	216-4229	109.83	216-4230	549.12	216-4231	1098.23
8166	6	0.446	216-4232	129.62	216-4233	648.06	216-4234	1296.11
8167	7	0.446	216-4235	149.41	216-4236	747.00	216-4237	1493.99
8168	8	0.479	216-4238	169.20	216-4239	845.94	216-4240	1691.87
8170	10	0.584	216-4241	188.99	216-4242	944.88	216-4243	1786.83
8175	15	0.665	216-4244	307.71	216-4245	1538.52	216-4246	3077.03
8178	18	0.686	216-4247	505.59	216-4248	2527.92	216-4249	2055.83
8185	25	0.822	216-4250	604.53	216-4251	3022.62	216-4252	6045.23

Computer Cables for EIA RS-422 Applications

Paired Individually Shielded

Tinned copper, Datalene insulated, twisted pairs. Each pair individually shielded with Beldfoil® aluminum-polyester shield and a 24 AWG stranded (7 × 32) tinned copper drain wire. Overall chrome PVC jacket. Beldfoil® 100% shield coverage. 300 V 60°C. NEC CM CSA PCC FT 1. UL recognized 2493.

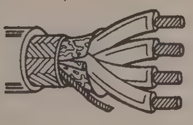
Mfr.'s Type	No. of Pairs	Nom. O.D. (In.)	100' Coil		500' Coil		1000' Coil	
			Stock No.	EACH	Stock No.	EACH	Stock No.	EACH
9734	12	0.575	216-4200	207.77	216-4201	1038.87	216-4202	2077.74
9735	15	0.639	216-4203	237.46	216-4204	1187.28	216-4205	2374.56
9736	17	0.671	216-4206	395.76	216-4207	1978.80	216-4208	3957.60
9737	19	0.671	216-4209	474.91	216-4210	2374.56	216-4211	4749.12
9738	27	0.797	216-4212	573.85	216-4213	2869.26	216-4214	5738.52

Computer Cables for EIA RS-422 Applications ***— NEW —***

Tinned copper, Datalene insulated, twisted pairs. Each pair individually shielded with Beldfoil aluminum-polyester shield and a 24 AWG stranded tinned copper drain wire. Overall chrome PVC jacket. 300 V 60°C. Beldfoil 100% shield coverage. 24 AWG stranded conductors (7 × 32).

Mfr.'s Type	No. of Cond.	Nom. O.D. (In.)	100' Coil		500' Coil		1000' Coil	
			Stock No.	EACH	Stock No.	EACH	Stock No.	EACH
9729	2	0.317	216-5216	36.60	216-5218	183.03	216-5220	366.08
9730	3	0.334	216-5222	50.45	216-5224	252.29	216-5226	504.59

Computer Cables for EIA RS-485 Applications

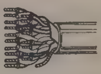


— NEW —

Tinned copper, polyethylene insulated, twisted pairs. Overall Beldfoil® aluminum-polyester shield. 24 AWG stranded tinned copper drain wire. Overall tinned copper braid shield (90% coverage). Chrome PVC jacket. Beldfoil® 100% shield coverage. 24 AWG stranded conductors (7 × 32).

Mfr.'s Type	No. of Cond.	Nom. O.D. (In.)	100' Coil		500' Coil		1000' Coil	
			Stock No.	EACH	Stock No.	EACH	Stock No.	EACH
9841	1	0.232	216-5230	35.62	216-5238	178.09	216-5246	356.18
9842	2	0.340	216-5232	45.51	216-5240	227.56	216-5248	455.12
9843	3	0.360	216-5234	55.41	216-5242	277.03	216-5250	554.06
9844	4	0.390	216-5236	79.15	216-5244	395.76	216-5252	791.52

Paired Beldfoil® Shielded Sound, Broadcast, Instrumentation, and Computer Cable



Tinned copper conductors, PVC insulated, twisted pairs. Overall Beldfoil® aluminum-polyester shield with tinned copper drain wire. Chrome PVC jacket. UL recognized 2464 300 V, 80°C; except Type 8751 300 Vrms, 60°C. NEC Type CM.

24 AWG (7 × 32) Stranded Conductors ЯU 2464; ⊕ T2; NEC Type CM for EIA RS-232 applications.

Mfr.'s Type	No. of Pairs	Nominal O.D. (In.)	Cap. (pF/Ft.)	100' Spool		500' Spool		1000' Spool	
				Stock No.	EACH	Stock No.	EACH	Stock No.	EACH
9501	1	0.156	40	216-1180	10.89	216-1193	54.43	216-1206	108.83
9502	2	0.222	30	216-1181	16.81	216-1194	84.11	216-1207	168.20
9503	3	0.232	30	216-1182	27.77	216-1195	108.83	216-1208	217.67
9504	4	0.265	30	216-1183	26.73	216-1196	133.58	216-1209	267.14
9505	5	0.295	30	216-1184	29.69	216-1197	148.41	216-1210	296.82
9506	6	0.295	30	216-1185	40.58	216-1198	202.83	216-1211	405.65
9507	7	0.300	30	216-1186	42.54	216-1199	212.72	216-1212	425.44
9508	8	0.330	30	216-1187	48.48	216-1200	242.41	216-1213	484.81
9509	9	0.340	30	216-1188	55.41	216-1201	277.03	216-1214	554.06
9510	10	0.380	30	216-1189	59.36	216-1202	296.82	216-1215	593.64
9515	15	0.425	30	216-1190	89.05	216-1203	455.23	216-1216	890.46
9519	19	0.448	30	216-5330	118.73	216-5332	593.64	216-5334	1187.28
9525	25	0.515	30	216-1191	178.09	216-1204	890.46	216-1217	1780.92
9550	50	0.700	30	216-1192	494.70	216-1205	2473.50	216-1218	4947.00

22 AWG Solid Conductors ЯU 2464; NEC Type CM

9302	2	0.244	35	216-1220	19.79	216-1227	98.94	216-1234	197.88
9305	4	0.265	35	216-1221	31.67	216-1228	158.30	216-1235	304.51
9306	6	0.321	35	216-1222	45.51	216-1229	227.56	216-1236	455.12
9309	9	0.373	35	216-1223	59.36	216-1230	296.82	216-1237	593.64
9315	15	0.455	35	216-1224	91.02	216-1231	455.12	216-1238	910.25
9319	19	0.495	35	216-1225	158.30	216-1232	791.52	216-1239	1583.04

Paired Overall Braid Shielded Communication and Instrumentation Cable

Tinned copper conductors, PVC insulated, except Type 8208 which is rubber insulated, twisted pair. Tinned copper braid shield. Black PVC jacket except Type 8208, which is chrome. Types 8437 and 8441 have tinned copper drain wire; Type 8437 is polyester taped. Type 8208 has separator. No. of pairs: 1.

22 AWG Solid Conductors ЯU 2095; 300 V, 80°C. NEC Type CM

Mfr.'s Type	Nominal O.D. (In.)	Cap. (pF/Ft.)	100' Spool		500' Spool		1000' Spool	
			Stock No.	EACH	Stock No.	EACH	Stock No.	EACH
8437	0.200	48	—	—	216-1270	236.64	216-1272	469.20

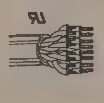
22 AWG (16 × 34) Stranded Conductors ЯU 2095; 300 V, 80°C. NEC Type CM

8441	0.210	49	216-1274	56.92	216-1276	234.60	216-1278	465.12

18 AWG (16 × 30) Stranded Conductors 300 V, 60°C. NEC Type CM

8208	0.257	46	216-1280	51.45	216-1282	257.24	216-1284	514.49

Paired Unshielded Stranded Sound and Control Cable



Tinned stranded copper conductors, PVC Insulated, twisted pairs. Chrome PVC jacket.

22 AWG (7 × 30) Stranded Conductors ЯU 2576; NEC Type CM

Mfr.'s Type	No. of Pairs	Nominal O.D. (In.)	Work Voltage	100' Spool		500' Spool		1000' Spool	
				Stock No.	EACH	Stock No.	EACH	Stock No.	EACH
9744	2	0.244	150	—	—	216-3705	79.15	216-3715	158.30
9745	3	0.257	150	—	—	216-3706	108.83	216-3716	217.67
9746	4	0.281	150	—	—	216-3707	138.52	216-3717	277.03
8747	6	0.320	150	216-3698	39.58	216-3708	197.88	216-3718	395.76
8748	9	0.389	150	216-3699	68.27	216-3709	341.34	216-3719	682.69
9747	12	0.425	150	216-3700	152.37	216-3710	761.84	216-3720	1523.68
8749	15	0.440	150	216-3701	158.30	216-3711	795.52	216-3721	1583.04
9748	19	0.505	150	216-3702	247.35	216-3712	1236.75	216-3722	2473.50
9749	23	0.555	150	216-3703	286.93	216-3713	1434.63	216-3723	2869.26

20 AWG (7 × 36) Stranded Conductors ЯU 2576; NEC Type CM

8205	1	0.180	300	216-3725	10.89	216-3730	54.43	216-3735	108.83
9750	3	0.299	300	216-3726	39.58	216-3731	197.88	216-3736	395.76
9751	6	0.366	300	216-3727	59.36	216-3732	296.82	216-3738	593.64
9752	9	0.429	300	216-3728	79.15	216-3733	395.76	216-3739	791.52
9755	15	0.545	300	216-3729	217.67	216-3734	1088.34	216-3740	2176.68

18 AWG (7 × 26) Stranded Conductors

8461	1	0.234	350	216-3741	14.85	216-3742	74.19	216-3743	148.41

Paired Overall Spiral Shielded Sound, Broadcast and Audio Cable

Tinned copper conductors, PVC insulated, twisted pair. Tinned copper spiral wrapped shield. Chrome PVC jacket. **No. of pairs:** 1.

22 AWG (7 × 30) Stranded Conductors ЯU 2095; 300 V, 80°C. NEC Type CM

Mfr.'s Type	Nominal O.D. (In.)	Cap. (pF/Ft.)	100' Spool		500' Spool		1000' Spool	
			Stock No.	EACH	Stock No.	EACH	Stock No.	EACH
8737	0.180	48	216-1286	41.20	216-1290	164.22	216-1292	328.44

16 AWG (19 × 29) Stranded Conductors 60°C; NEC Type CM

8780	0.280	57	216-1306	77.93	216-1308	306.00	216-1310	612.00

Paired Unshielded High-Temperature Control and Instrumentation Cable

Tinned copper conductors, Tefzel® Insulated, conductors cabled. Clear Tefzel® jacket. 150°C, 300 V RMS.

20 AWG Stranded Conductors (7 × 28) Stranded Conductors

Mfr.'s Type	No. of Pairs	Nominal O.D. (In.)	Work Voltage	100' Spool		500' Spool	
				Stock No.	EACH	Stock No.	EACH
85220	1	0.185	300	216-1820	139.52	216-1822	697.53

16 AWG Stranded Conductors (19 × 29) Stranded Conductors

85221	1	0.215	300	216-1824	182.05	216-1826	910.25

Paired Beldfoil® Shielded Computer Cable

Tinned copper conductors, polyethylene insulated, except Type 9414 which is S-R PVC insulated, twisted pairs. Overall Beldfoil® aluminum-polyester shield. Stranded tinned copper drain wire. Chrome PVC jacket, except Type 9414 which has fawn-beige colored PVC jacket.

24 AWG (7 × 32) Stranded Conductors- ЯU 2919, 30 V, 80°C; NEC Type CM Low Capacitance Cable for EIA RS-232 Applications

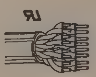
Mfr.'s Type	No. of Pairs	Nominal O.D. (In.)	Cap. (pF/Ft.)	500' Spool		1000' Spool	
				Stock No.	EACH	Stock No.	EACH
9680	3	0.276	15.5	216-1245	158.30	216-1250	316.61
9681	4	0.307	15.5	216-1246	187.99	216-1251	375.97
9682	6	0.342	15.5	216-1247	247.35	216-1252	494.70
9683	9	0.397	15.5	216-1248	366.08	216-1253	732.16
9684	12 1/2*	0.445	15.5	216-1249	430.39	216-1254	860.78

*25 Conductors.

22 AWG (7 × 30) Stranded Conductors- ЯU 2464, 300 V, 80°C; NEC Type CM

9414	1	0.180	50	216-1256	98.94	216-1258	197.88

Paired Unshielded Solid Sound and Control Cable



Tinned solid copper conductors, except Type 8486, which is bare solid copper, PVC Insulated, twisted pairs. Chrome PVC jacket. UL recognized; NEC Type CM.

24 AWG Solid Conductors ЯU 2576; NEC Type CM

Mfr.'s Type	No. of Pairs	Nominal O.D. (In.)	Work Voltage	100' Spool		500' Spool		1000' Spool	
				Stock No.	EACH	Stock No.	EACH	Stock No.	EACH
9562	2	0.199	150	—	—	216-3684	74.22	216-3688	148.41
9566	6	0.289	150	—	—	216-3685	183.04	216-3689	366.08
9570	10	0.310	150	—	—	216-3686	296.82	216-3690	593.64

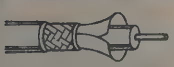
22 AWG Solid Conductors ЯU 2576,* ЯU 2464; NEC Type CM

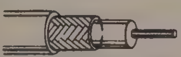
8741	2	0.230	300	—	—	216-1640	73.90	216-1641	148.41
8742	3	0.242	300	216-1642	19.78	216-1643	98.94	216-1644	197.88
8757	4	0.264	300	—	—	216-1646	128.62	216-1648	257.24
9160	8	0.323	300	—	—	216-1650	395.76	216-1651	791.52
8740	1	0.156	150	—	—	216-1652	39.58	—	—
8743	6	0.293	150	—	—	216-1654	252.30	216-1656	504.59
8744*	9	0.350	150	—	—	—	—	216-1660	860.78

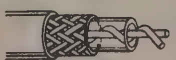
19 AWG Solid Conductors NEC Type CM

8486	1	0.182	350	—	—	216-1666	49.47	216-1668	98.94

Plenum Coaxial Cable for Computer, Instrumentation, and Broadcast Uses


89248, 89907, 89108

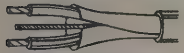

88240, 89259, 86262, 88241

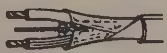

89269

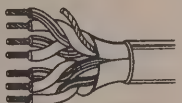
All are single solid conductor except Type 89259, which is single 7 × 30 stranded, Type 89907 (thinnet, 10 base 2), which is single 19 × 32 stranded and Type 89555 which is dual solid conductor. All are NEC type CL2P; Types 89108 and 89120 are also NEC type CATVP NEC article 725, class 2 circuits, UL listed. All are 200°C.

Mfr.'s Type	RG/U	AWG	Nom. O.D.	Nom. Imp. (Ω)	Nom. Cap. (pF/ft.)	100' Spool		500' Spool		1000' Spool	
						Stock No.	EACH	Stock No.	EACH	Stock No.	EACH
89248	6/U	18	0.230"	75.0	16.3	—	—	216-0406	855.78	216-0408	1711.56
89907	—	20	0.165"	50.0	25.4	—	—	216-0410	236.64	216-0412	473.28
88240	58/U	20	0.165"	53.5	28.5	216-0414	149.94	216-0416	504.90	216-0418	1009.80
89108	59/U	20	0.216"	75.0	16.3	216-0420	141.78	216-0422	626.28	216-0424	1252.56
89259	59/U	22	0.198"	75.0	17.3	216-0430	181.56	216-0432	803.76	216-0434	1607.52
86262	62/U	22	0.204"	93.0	12.5	—	—	216-0436	346.29	216-0438	692.58
89269	62/U	22	0.200"	93.0	12.8	—	—	216-0440	316.61	216-0442	633.22
88241	59/U	23	0.197"	75.0	21.0	216-0444	184.62	216-0446	619.14	216-0448	1238.28

Paired Shielded Plenum Cable for Instrumentation, Computers and P.O.S.


88641, 88760, 88761


89182


89504

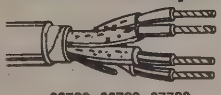
Tinned copper conductors, Teflon insulated and jacketed. Beldfoil® shield overall. 200°C, non-conduit. All are NEC Article 800, Type CMP and rated 300 Vrms except Type 89182, which is Duofoil® individually shielded computer, control, instrumentation cable for low capacitance applications — NEC Article 725 and 800, Type CL2P and rated 150 Vrms. All are UL listed and CSA PCC FT4/FT6 rated.

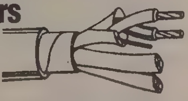
Mfr.'s Type	No. of Pairs	AWG (Stranding)	Nom. O.D.	100' Spool		500' Spool		1000' Spool	
				Stock No.	EACH	Stock No.	EACH	Stock No.	EACH
88641	1	24 (7 × 32)	0.108"	216-0640	48.48	216-0642	242.40	216-0644	484.81
88760*	1	18 (19 × 30)	0.157"	216-0646	43.54	216-0648	217.67	216-0650	435.34
88761	1	22 (7 × 30)	0.118"	216-0652	40.58	216-0654	202.83	216-0656	405.65
89182	1	22 (19 × 34)	0.308"	216-0658	153.00	216-0660	1187.28	216-0662	2374.56
89503	3	24 (7 × 32)	0.177"	216-0664	107.85	216-0668	539.22	216-0670	1078.45
89504	4	24 (7 × 32)	0.194"	216-0672	115.77	216-0674	578.80	216-0676	1157.60
89505*	5	24 (7 × 32)	0.199"	216-0678	156.33	216-0680	781.63	216-0682	1563.25

*Sound, broadcast, and instrumentation cable.

Paired Shielded Plenum Cable for Computers and Instrumentation

Tinned copper, twisted pairs each individually shielded with Beldfoil® overall. 300 VRMS. Non-conduit. NEC Article 800, Type CMP and CSA Pcc FT4/FT6 rated, UL listed.

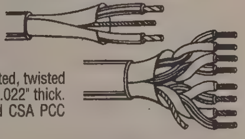

82723, 88723, 87723


82777, 82778, 82729, 88777, 87777, 88778

Mfr.'s Type	No. of Pairs	AWG (Stranding)	Nom. O.D.	500' Spool		1000' Spool	
				Stock No.	EACH	Stock No.	EACH
82723*	2	22 (7 × 30)	0.137"	216-5260	183.03	216-0810	366.08
82777	3	22 (7 × 30)	0.234"	216-5262	326.50	216-0812	653.00
82778	6	22 (7 × 30)	0.308"	—	—	216-0814	1533.57
82729	2	24 (7 × 32)	0.274"	—	—	216-0816	930.04
88777	3	22 (7 × 30)	0.226"	216-5268	494.70	216-3630	989.40
87777	3	22 (7 × 30)	0.226"	216-5270	460.06	216-3631	920.14
88778	6	22 (7 × 30)	0.306"	216-5272	1142.75	216-3632	2285.51
88723*	2	22 (7 × 30)	0.137"	216-5274	286.93	216-3633	573.85
87723*	2	22 (7 × 30)	0.137"	216-5276	232.50	216-3634	465.02

*Pairs cabled on common axis to reduce diameter.

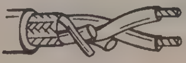
Paired Shielded Plenum Cable for Instrumentation, Computers and P.O.S.

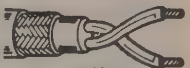


Tinned copper conductors. Overall Beldfoil® 100% shield coverage. Halar™-insulated, twisted pairs. Natural Flamarrest® jacket, 0.015" thickness except Type 82761 which is 0.022" thick. Listed for use in an air plenum non-conduit. NEC Article 800, Type CMP and CSA PCC FT4/FT6 rated, UL listed.

Mfr.'s Type	No. of Pairs	AWG (Stranding)	Nom. O.D.	500' Spool		1000' Spool	
				Stock No.	EACH	Stock No.	EACH
82502	3	24 (7 × 32)	0.164"	216-5300	192.92	216-0786	385.87
82503	3	24 (7 × 32)	0.171"	—	—	216-0788	583.75
82504	4	24 (7 × 32)	0.195"	216-5304	346.29	216-0790	692.58
82505	5	24 (7 × 32)	0.196"	—	—	216-0792	840.99
82506	6	24 (7 × 32)	0.209"	216-5308	638.15	216-0794	1276.33
82509	9	24 (7 × 32)	0.246"	—	—	216-0796	1840.28
82512	12½	24 (7 × 32)	0.278"	—	—	216-0798	2057.95
82641	1	24 (7 × 32)	0.108"	—	—	216-0800	346.29
82760	1	18 (19 × 30)	0.157"	216-5316	168.20	216-0802	336.40
82761	1	22 (7 × 30)	0.118"	216-5318	123.66	216-0804	247.35

Plenum Twinaxial Cable for IBM System 34/35/38 and AS400

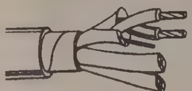

89272


89207

Both are NEC Article 800, type CMP. UL listed.

Mfr.'s Type	AWG (Stranding)	Nom. O.D.	Nom. Imp. (Ω)	100' Spool		500' Spool		1000' Spool	
				Stock No.	EACH	Stock No.	EACH	Stock No.	EACH
89272	20 (7 × 28)	0.204"	78	—	—	216-0482	639.54	216-0484	1197.17
89207	20 (7 × 28)	0.267"	100	216-0486	120.71	216-0488	603.53	216-0490	1207.07

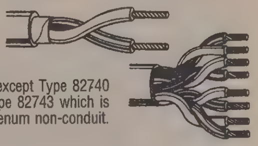
Plenum — Paired Cables/Individually Shielded Computer, Control, and Instrumentation Cables for Low Capacitance Applications — *NEW* —



Tinned copper, twisted pairs. Each pair individually shielded with Beldfoil® aluminum-polyester shield. 24 AWG stranded tinned copper drain wire.

Mfr.'s Type	No. of Pairs	Nom. O.D.	500' Spool		1000' Spool	
			Stock No.	EACH	Stock No.	EACH
89729	2	0.271"	216-5060	677.73	216-5080	1355.48
82729	2	0.257"	—	—	216-0816	930.04
89730	3	0.288"	216-5064	836.03	216-5082	1672.09

Paired Unshielded Plenum Sound, Audio, and Control Cable

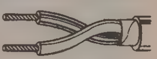


Tinned copper conductors, twisted pairs Halar® insulation, 0.010" thickness except Type 82740 which is 0.007" thick. Natural Flamarrest® jacket, 0.015" thickness except Type 82743 which is 0.022" thick and Type 82740 which is 0.010" thick. Listed for use in an air plenum non-conduit. NEC Article 800, Type CMP and CSA PCC FT4/FT6 rated, UL listed.

Mfr.'s Type	No. of Pairs	AWG (Stranding)	Nom. O.D.	500' Spool		1000' Spool	
				Stock No.	EACH	Stock No.	EACH
82442	1	22 (7 × 30)	0.114"	—	—	216-0772	197.88
82741	2	22 (7 × 30)	0.181"	—	—	216-0774	554.06
82742	3	22 (7 × 30)	0.193"	—	—	216-0776	850.88
88757*	4	22 (7 × 30)	0.202"	216-5286	821.20	216-3626	1642.40
82757	4	22 (7 × 30)	0.212"	—	—	216-0778	1167.49
82743	6	22 (7 × 30)	0.239"	—	—	216-0780	1493.99
87740*	1	18 (19 × 30)	0.142"	216-5292	183.03	216-3628	366.08
82740	1	18 (19 × 30)	0.152"	—	—	216-0782	316.61

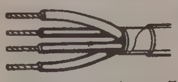
*Teflon® insulated. Overall tape wrap.

Paired Unshielded Plenum Sound, Audio, and Control Cable



Tinned copper conductors. Teflon insulation, 0.007" thickness. Overall tape wrap. Red transparent Teflon jacket, 0.010" thickness, 300 Vrms, 200°C Non-conduit. NEC Article 800, Type CMP. UL listed and CSA PCC FT4/FT6 rated.

Mfr.'s Type	No. of Pairs	AWG (Stranding)	Nom. O.D.	100' Spool		500' Spool		1000' Spool	
				Stock No.	EACH	Stock No.	EACH	Stock No.	EACH
88442	1	22 (7 × 30)	0.104"	216-0622	24.74	216-0624	123.67	216-0626	247.35
88741	2	22 (7 × 30)	0.171"	—	—	216-0630	524.38	216-0632	1048.76
89740	1	18 (19 × 30)	0.142"	216-0634	52.44	216-0636	262.19	216-0638	524.38

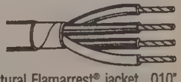


Multi-Conductor Unshielded Plenum Control Cable

Tinned copper conductors. Teflon insulation, 0.007" thickness. Overall tape wrap, red transparent Teflon jacket, 0.010" thickness. 200°C, Non-conduit. NEC Article 800, Type CMP. UL listed and CSA PCC FT4/FT6 rated.

Mfr.'s Type	No. of Cond.	AWG (Stranding)	Nom. O.D.	100' Spool		500' Spool		1000' Spool	
				Stock No.	EACH	Stock No.	EACH	Stock No.	EACH
88444	4	22 (7 × 30)	0.121"	216-0492	34.62	216-0494	173.15	216-0496	346.29
88489	4	18 (7 × 30)	0.167"	216-0498	123.69	216-0500	618.38	216-0502	1236.75

Multi-Conductor Unshielded Plenum Control Cable



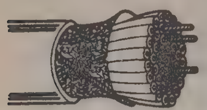
Tinned copper cabled conductors. Halar™ insulation, .007" thickness. Overall tape wrap natural Flamarrest® jacket, .010" thickness. Listed for use in an air plenum non-conduit. NEC Article 800, Type CMP. UL listed.

Mfr.'s Type	No. of Pairs	AWG (Stranding)	Nom. O.D.	500' Spool		1000' Spool	
				Stock No.	EACH	Stock No.	EACH
82444	4	22 (7 × 30)	0.134"	216-5320	128.62	216-0766	257.24

Plenum — Multi Conductor Control and Instrumentation Cables

Tinned copper conductors cabled. 100% shield coverage. NEC 800. Listed for use in air plenum non-conduit. 18 gage stranded conductors (19 × 30).

Mfr.'s Type	No. of Cond.	Nom. O.D.	100' Spool		500' Spool		1000' Spool	
			Stock No.	EACH	Stock No.	EACH	Stock No.	EACH
89418	4	0.185"	216-0504	118.73	216-0506	593.64	216-0508	1187.28
82418	4	0.182"	—	—	—	—	216-5054	643.11



Plenum-Paired Cables, Overall Foil

Computer, Control, and Instrumentation Cables for Low Capacitance Applications

Tinned copper, foamed Teflon insulated, twisted pairs. Overall aluminum-polyester shield. 24 AWG stranded (7 × 32) tinned copper drain wire. Grey fluorocopolymer jacket. 300 V RMS. NEC CMP, CSA PCC FT 4 FT 6 Beldfoil® 100% shielded coverage, non-conduit.

Mfr.'s Type	No. of Pairs	Nom. O.D.	500' Spool		1000' Spool	
			Stock No.	EACH	Stock No.	EACH
88102	2	0.227"	216-3940	747.00	216-3941	1493.99
88103	3	0.241"	216-3942	801.41	216-3943	1602.83
88104	4	0.261"	216-3944	880.57	216-3945	1761.13
88105	5	0.269"	216-3946	964.66	216-3947	1929.33
88106	6	0.295"	216-3948	1281.27	216-3949	2562.55
88107	7½	0.295"	216-3950	1771.03	216-3951	3542.05
88109	9	0.358"	216-3952	2191.52	216-3953	4383.04
88112	12½	0.403"	216-3954	2557.60	216-3955	5115.20
88118	18½	0.484"	216-3956	4368.20	216-3957	8736.40
88125	25	0.583"	216-3958	5337.81	216-3959	10675.63

Plenum-Overall Foil/Braid Shield Control and Instrumentation Cable

Tinned copper, Teflon® insulated, conductors cabled. Beldfoil® aluminum-polyester shield with 85% tinned copper braid shield. Teflon jacket, Red tint. Listed for use in an air plenum non-conduit. Beldfoil® 100% shield coverage 200°C.

Mfr.'s Type	No. of Cond.	AWG (Stranding)	Nom. O. D.	100' Spool		500' Spool		500' Spool	
				Stock No.	EACH	Stock No.	EACH	Stock No.	EACH
83752	2	14 (7 × 22)	0.267"	216-3668	220.65	216-3650	1103.18	216-3651	2206.36
83753	3	14 (7 × 22)	0.284"	216-3669	288.90	216-3652	1444.52	216-3653	2889.05
83754	4	14 (7 × 22)	0.311"	216-3670	295.84	216-3654	1479.15	216-3655	2958.31
83756	6	14 (7 × 22)	0.376"	216-3671	373.01	216-3656	1865.02	216-3658	3730.04
83802	2	12 (7 × 20)	0.303"	216-3672	208.77	216-3660	1043.82	216-3661	2087.63
83803	3	12 (7 × 20)	0.323"	216-3673	266.16	216-3662	1330.74	216-3663	2661.49
83804	4	12 (7 × 20)	0.359"	216-3674	352.08	216-3664	1959.01	216-3665	3918.02
83806	6	12 (7 × 20)	0.430"	216-3675	447.21	216-3666	2236.04	216-3667	4472.09

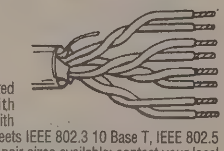
AppleTalk® Non-Plenum LAN Twinaxial Cable

300 V, 60°C UL Recognized 2092/CSA Certified PCC FT1 NEC CM

AWG (Stranding): 22 (7 × 30) stranded tinned copper. **Shields:** 1 tinned copper braid.

Mfr.'s Type	Nom. O.D.	Nom. (Ω)	Cap. pF/Ft.	500' Spool		1000' Spool	
				Stock No.	EACH	Stock No.	EACH
9999	0.185"	78	19.7	216-1840	138.52	216-1842	277.03

Datatwist™ High Performance Twisted Pair Data Cable



For data speeds up to 20 Mbs. in any computer application which supports twisted pair cabling. Type 1455A cable CSA certified FT4 and compatible with DEC 17-01313-01 system. Type 1456A cable CSA certified FT1 and compatible with DEC 17-01286-01 system. Types 1457A and 1458A cable CSA certified FT4, FT6. Meets IEEE 802.3 10 Base T, IEEE 802.5 specs. Meets and exceeds EIA/TA 568 commercial building wiring standard. Larger pair sizes available; contact your local Allied branch. **No. of Pairs:** 4. **Nominal Ohms:** 100.

Stock No.	Mfr.'s Type	Jacket	Shielding	Nom. O. D.	Cap. pF/Ft.	Attenuation (db/100 ft. @ 1 KHz)	NEC Type	PER SPOOL/1000'
216-1970	1455A	Polyolefin Insulated PVC Jacket	Unshielded	0.186"	14	0.50	CM	175.44
216-1972	1457A	FEP Insul. Plenum Flamarrest® Jacket	Unshielded	0.173"	13	0.50	CMP	414.00
216-1974*	1456A	Polyolefin Insulated PVC Jacket	Beldfoil® Overall†	0.231"	16	0.75	CM	240.00

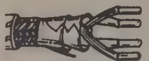
*24 AWG Solid Bare Copper. †With Drain Wire.

Non-Plenum Trunk Cable Meets IEEE 802.3 10 Base 2, NEC CL2

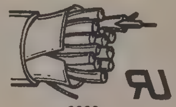
30 V 60°C UL Recognized 1354/CSA Certified CXC FT1

Mfr.'s Type	AWG (Stranding)	Shields	Nom. O.D.	Nom. (Ω)	Cap. pF/Ft.	500' Spool		1000' Spool	
						Stock No.	EACH	Stock No.	EACH
9907 Ethernet™ (Thinnet-10 Base 2)	20 (19 × 32) Tinned Copper	Duobond® II plus 95% Tinned Copper Braid Shield	0.182"	50	25.4	216-2918	132.60	216-1920	265.20

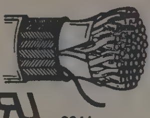
Special Application Computer Cable



9855



9868



9641

9665, 9693

Keyboard Retractile Cable

NCR P.O.S. Cable/150 V 60°C UL Recognized 2582/CSA Certified PCC FT1, NEC CM

AWG (Stranding): 2 pairs 22 solid tinned copper. **Shields:** Overall Beldfoil® with solid tinned copper braid.

Mfr.'s Type	Nom. O.D.	Nom. (Ω)	Cap. pF/Ft.	100' Spool		500' Spool		1000' Spool	
				Stock No.	EACH	Stock No.	EACH	Stock No.	EACH
9855	0.270"	100	15.5	216-1870	33.95	216-1872	169.73	216-1874	356.18

Synchronous EIA Interface Cable/30 V 60°C UL Recognized 2464 NEC CM

AWG (Stranding): 14-conductor 28 (7 × 36) tinned copper. **Shields:** Individual Beldfoil® over each conductor, overall Beldfoil® shield.

9868	0.394"	65	—	216-1882	107.84	216-1884	539.22	216-1886	1078.45

IEEE 488 Interface Copper Computer Cable/300 V 80°C UL Recognized 2464 NEC CM

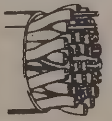
AWG (Stranding): 23-conductor, 6 twist pairs 26 (7 × 34); 10-conductor 26 (7 × 34); 1-conductor 24 (7 × 32). **Shields:** Overall tinned copper braid shield.

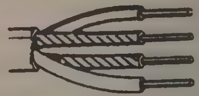
9641	0.350"	—	38.0	216-1888	177.10	216-1890	885.51	216-1892	1771.03

Keyboard Retractile Cable

Stock No.	Mfr.'s Type	AWG (Stranding)	Shields	Retracted Length	Extended Length	Nom. O.D.	Jacket Material	EACH
214-3600	9665 300 V 80°C UL Recognized 2464	7 Conductor 26 (10 × 36) Tinned Copper	Overall Beldfoil® With Tinned Copper Shield	14.5"	6'	0.250"	Black PVC	15.10
214-3601	9693 30 V 60°C UL Recognized 20197	7 Conductor 26 (7 × 34) Tinned Copper	Overall Beldfoil® With Tinned Copper Shield	14.5"	6'	0.200"	Black Poly-urethane	17.14

Telephone and Computer Network Data Cable





1242A

UL Recognized NEC Article 800. **Unshielded Nominal Ohms:** 600.

Stock No.	Mfr.'s Type	No. of Pairs	AWG	Nom. O.D.	Cap. pF/Ft.	Attenuation (db/100 ft. @ 1 KHz)	NEC Type	PER SPOOL/1000'
216-1940	1227A	2	24 Solid Bare Copper SR-PVC Insulated/ Jacketed	0.120"	17.5	0.046	CM	72.60
216-1941	1228A	3		0.150"	17.5	0.046	CM	.78.54
216-1942	1229A	4		0.190"	17.5	0.046	CMR	109.32
216-1943	1230A	6		0.230"	17.5	0.046	CMR	155.04
216-1944	1231A	12		0.300"	18.8	0.049	CMR	303.96
216-1945	1232A	25		0.380"	18.9	0.049	CMR	514.08
216-1955	1242A	4*	22 Solid Bare Copper Polyethylene Insulated PVC Jacket	0.140	18.5	0.033	CMX	77.52

*Conductors.

Hook-Up and Lead Wire

To order correct color, insert number of color desired where N appears in stock numbers below. 0. Violet, 1. White, 2. Black, 3. Red, 4. Green, 5. Yellow, 6. Blue, 7. Orange, 8. Slate, 9 Brown. Stocked in colors 1-6.

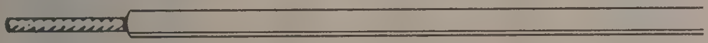
Hook-Up Wire

UL Style 1007 CSA-TR64 VW-1, M76B-MW, 1/64" Wall PVC 80°C 300V

Semi-rigid PVC stranded tinned copper. Colors 0-9.

Mfr.'s Type	Nominal O.D.	AWG (Stranding)	Stock No.	1000' Spool
792407	.056	24 (7/32)	**293-100N**	**39.69**
792207	.062	22 (7/30)	**293-101N**	**40.81**
791816	.077	18 (16/30)	**293-102N**	**68.34**

UL Style 1335 MTW Machine Tool Wire, 1/32" Wall PVC

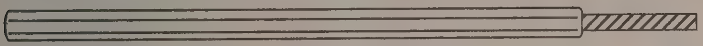


Stranded bare copper conductor. UL listed.

461816	.107	18 (16/30)	**293-103N**	**68.34**
461626	.120	16 (26/30)	**293-104N**	**87.82**
461419	.136	14 (19/27)	**293-105N**	**121.98**
461219	.154	12 (19/25)	**293-106N**	**170.95**
461019	.179	10 (19/0.0234)	**293-107N**	**275.40**

High Temperature Hook-Up Wire

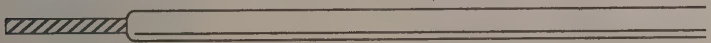
MIL-W-16878E/4 Type Teflon TFE Teflon 200°C, 600V



Stranded silver plated copper. **Specify colors 0 through 9 when ordering, see chart above.**

Mfr.'s Type	Nominal O.D.	AWG (Stranding)	Stock No.	100' Spool	Stock No.	1000' Spool
12807	.036	28 (7/36)	**293-108N**	**16.52**	**293-117N**	**109.14**
12607	.039	26 (7/34)	**293-109N**	**21.83**	**293-118N**	**144.53**
12407	.044	24 (7/32)	**293-110N**	**19.18**	**293-119N**	**127.09**
12207	.050	22 (7/30)	**293-111N**	**24.32**	**293-120N**	**159.22**
12219	.052	22 (19/34)	**293-112N**	**28.11**	**293-121N**	**186.97**
12019	.060	20 (19/32)	**293-113N**	**42.02**	**293-122N**	**274.30**
11819	.070	18 (19/30)	**293-114N**	**43.66**	**293-123N**	**291.11**
11619	.077	16 (19/29)	**293-115N**	**51.92**	**293-124N**	**345.27**
11419	.094	14 (19/27)	**293-116N**	**81.50**	**293Q125N**	**543.05**

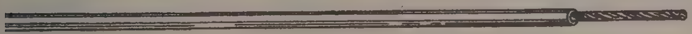
MIL-W-16878E/1 Type B, 0.010" Wall PVC 105°C 600V



Stranded tinned copper.

173007	.032	30 (7/38)	**293-126N**	**7.03**	**293-139N**	**48.25**
172807	.034	28 (7/36)	**293-127N**	**6.73**	**293-140N**	**47.23**
172607	.038	26 (7/34)	**293-128N**	**7.34**	**293-141N**	**50.90**
172619	.038	26 (19/38)	**293-129N**	**8.47**	**293-142N**	**58.45**
172407	.044	24 (7/32)	**293-130N**	**5.92**	**293-143N**	**41.00**
172419	.044	24 (19/36)	**293-131N**	**6.73**	**293-144N**	**47.12**
172207	.051	22 (7/30)	**293-132N**	**6.12**	**293-145N**	**42.23**
172219	.051	22 (19/34)	**293-133N**	**7.03**	**293-146N**	**48.55**
172007	.058	20 (7/28)	**293-134N**	**7.65**	**293-147N**	**53.55**
172019	.058	20 (19/32)	**293-135N**	**8.77**	**293-148N**	**61.61**
171819	.068	18 (19/30)	**293-136N**	**11.73**	**293-149N**	**81.40**
171619	.077	16 (19/29)	**293-137N**	**15.40**	**293-150N**	**107.20**
171419	.091	14 (19/27)	**293-138N**	**20.10**	**293-151N**	**140.86**

TGGT High-Temperature Lead Wire — *NEW* —



UL Style 5196 250°C, 600 Volts, CSA AWM. TFE Teflon, PTFE insulation. Stocked in natural.

Stock No.	Mfr.'s Type	AWG (Stranding)	Nom. O.D.	100' Spool
293-2171	3131816	22 (7/30)	.108"	**134.95**
293-2181	3131626	20 (10/30)	.123"	**149.84**
293-2191	3131441	18 (16/30)	.140"	**195.94**
293-2201	3131265	18 (26/30)	.161"	**270.40**
293-2211	3131000	14 (41/30)	.184"	**346.80**

Hook-Up Wire

Add color code when ordering: Black, Red, Green, White

UL Style 1015 CSA-TEW VW-1, 1/32" Wall PVC 105°C 600V

Stranded tinned copper.

Mfr.'s Type	Nominal O.D.	AWG (Stranding)	Stock No.	100' Spool	Stock No.	1000' Spool
781441	.141	14 (41/30)	**293-160N**	**19.44**	**293-163N**	**170.65**
781265	.160	12 (65/30)	**293-161N**	**38.25**	**293-164N**	**311.30**
781000	.194	10 (105/30)	**293-162N**	**48.04**	**293-165N**	**391.48**

UL Style 1028 CSA-TEW VW-1, 3/64" Wall PVC 105°C 600V

Stranded tinned copper.

788133	.255	8 (133/29)	**293-166N**	**79.15**	**293Q167N**	**644.84**

UL Style 1283 CSA-TEW VW-1, 1/16" Wall PVC 105°C 600V

Stranded tinned copper.

786133	.335	6 (133/27)	**293-168N**	**114.34**	**293Q172N**	**930.95**
784133	.390	4 (133/25)	**293-169N**	**224.20**	**293Q173N**	**1826.62**
782133	.460	2 (133/23)	**293Q170N**	**350.98**	**293Q174N**	**2757.57**
782665	.470	2 (665/30)	**293Q171N**	**365.57**	**293Q175N**	**2978.40**

UL Style 1284 CSA-TEW VW-1, 5/64" Wall PVC 105°C 600V

Stranded tinned copper.

781836	.535	1 (836/30)	**293Q176N**	**459.60**	**293Q179N**	**3676.08**
780001	.580	1/0 (1045/30)	**293Q177N**	**607.92**	**293Q180N**	**4953.12**
780002	.640	2/0 (1330/30)	**293Q178N**	**733.28**	**293Q181N**	**5974.34**

UL Style 1015 CSA-TEW VW-1, 1/32" Wall PVC 105°C 600V

Stranded tinned copper.

Mfr.'s Type	Nominal O.D.	AWG (Stranding)	Stock No.	500' Spool	Stock No.	1000' Spool
782407	.088	24 (7/32)	**293-182N**	**29.58**	**293-187N**	**45.29**
782207	.095	22 (7/30)	**293-183N**	**28.56**	**293-188N**	**46.51**
782010	.100	20 (10/30)	**293-184N**	**38.25**	**293-189N**	**56.06**
781816	.110	18 (16/30)	**293-185N**	**48.45**	**293-190N**	**77.93**
781626	.124	16 (26/30)	**293-186N**	**74.63**	**293-191N**	**117.91**

Bonded tinned copper.

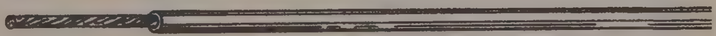
782407F	.088	24 (7/32)	**293-192N**	**33.66**	**293-196N**	**53.75**
782207F	.095	22 (7/30)	**293-193N**	**35.00**	**293-197N**	**60.18**
782010F	.100	20 (10/30)	**293-194N**	**41.31**	**293-198N**	**66.61**
781816F	.110	18 (16/30)	**293-195N**	**55.08**	**293-199N**	**89.15**

UL Style 1015 CSA-TEW VW-1, 1/32" Wall PVC 105°C 600V

Solid tinned copper conductor.

782201	.093	22 (1/22)	**293-200N**	**29.58**	**293-204N**	**44.88**
782001	.098	20 (1/20)	**293-201N**	**35.70**	**293-205N**	**55.79**
781801	.104	18 (1/18)	**293-202N**	**43.35**	**293-206N**	**67.83**
781601	.115	16 (1/16)	**293-203N**	**60.69**	**293-207N**	**95.06**
781401	.130	14 (1/14)	—	—	**293-208N**	**157.18**

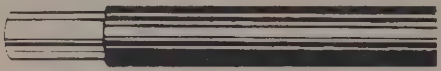
MGT High-Temperature Lead Wire — *NEW* —



UL 5107 450°C, 600 Volts, CSA AWM, 1000°F (538°C). Stocked in natural.

Stock No.	Mfr.'s Type	AWG (Stranding)	Nom. O.D.	100' Spool
293-2221	3111816	18 (16/30)	.117"	**161.98**
293-2231	3111626	18 (26/30)	.128"	**204.31**
293-2241	3111441	14 (41/30)	.144"	**274.07**
293-2251	3111265	12 (65/30)	.161"	**366.28**
293Q2261	3111000	10 (105/30)	.223"	**548.05**

Magnet Wire



SP-Single Polyurethane Class A, Type T-1

Specification: MIL-W-583B. Readily solderable, adaptable to automatic soldering and winding operations. Round bar copper single conductor covered with Polyurethane film. Proved to have physical and electrical properties equal or superior to those of the oleoresinous and polyvinyl acetal films. 105°C. **Weight:** 1 lb. (gross).

Stock No.	Mfr.'s Type	Size (AWG)	Nom. O.D.	Ft. Per Lb.	PER LB.
293-0100	12SP	12	.0825"	50	**18.56**
293-0102	13SP	13	.0738"	62	**18.56**
293-0104	14SP	14	.0657"	79	**18.56**
293-0106	15SP	15	.0588"	100	**19.70**
293-0108	16SP	16	.0522"	127	**19.28**
293-0110	17SP	17	.0469"	160	**20.90**
293-0112	18SP	18	.0416"	203	**20.30**
293-0114	19SP	19	.0374"	256	**20.20**
293-0116	20SP	20	.0332"	319	**20.71**
293-0118	21SP	21	.0299"	402	**20.81**
293-0120	22SP	22	.0266"	507	**20.81**
293-0122	23SP	23	.0238"	639	**20.91**
293-0124	24SP	24	.0212"	806	**21.83**
293-0126	25SP	25	.0191"	1012	**22.13**
293-0128	26SP	26	.0169"	1276	**27.44**
293-0130	27SP	27	.0153"	1605	**29.78**
293-0132	28SP	28	.0135"	2020	**32.03**
293-0134	29SP	29	.0122"	2538	**31.42**
293-0136	30SP	30	.0108"	3205	**35.70**
293-0138	31SP	31	.0097"	4032	**41.11**
293-0140	32SP	32	.0087"	5086	**45.70**

Also available, but not stocked by Allied, in AWG 33-44 with minimums.

HPT—Heavy Poly-thermaleze Class F, Type T-2

Rated at 155°C usage. Dual polyester film insulation has exceptional resistance to solvents and abuse. **Weight:** 1 lb. (gross).

Stock No.	Mfr.'s Type	Size (AWG)	Nom. O.D.	Ft. Per Lb.	PER LB.
293-0150	12HPT	12	.0842"	49	**18.87**
293-0152	13HPT	13	.0753"	61	**17.85**
293-0154	14HPT	14	.0673"	78	**19.99**
293-0156	15HPT	15	.0602"	99	**20.20**
293-0158	16HPT	16	.0539"	125	**20.71**
293-0160	17HPT	17	.0482"	158	**20.71**
293-0162	18HPT	18	.0432"	200	**20.91**
293-0164	19HPT	19	.0386"	250	**21.52**
293-0166	20HPT	20	.0346"	316	**20.70**
293-0168	21HPT	21	.0310"	398	**21.83**
293-0170	22HPT	22	.0277"	502	**21.83**
293-0172	23HPT	23	.0249"	628	**22.03**
293-0174	24HPT	24	.0224"	793	**22.24**
293-0176	25HPT	25	.0201"	995	**24.58**
293-0178	26HPT	26	.0180"	1252	**26.83**
293-0180	27HPT	27	.0161"	1577	**28.97**
293-0182	28HPT	28	.0144"	1984	**31.72**
293-0184	29HPT	29	.0130"	2494	**34.50**
293-0186	30HPT	30	.0116"	3145	**37.80**
293-0188	31HPT	31	.0105"	3937	**48.04**
293-0190	32HPT	32	.0095"	4953	**49.16**

Also available, but not stocked by Allied, in AWG 33-44 with minimums.

Corona Resistant High Voltage Wire
UL Style 3239

- **High Dielectric Strength**
- **Flame Retardant**
- **Radiation Resistant**
- **Abrasion Resistant**

Stranded, tinned copper conductor. Silicone rubber insulation rated for 150°C (UL) and 10 KVDC through 40 KVDC. **Color:** Natural.

Mfr.'s Type	AWG	Strand	Voltage DC	Nom. O.D.	Stock No.	PER SPOOL/1000'	Stock No.	PER SPOOL/1000'
392240	22	7/30 TC	10 KV	.111"	**293-0200**	**107.71**	**293Q0201**	**445.00**
392245	22	7/30 TC	15 KV	.121"	**293-0202**	**156.88**	**293Q0203**	**482.77**
392250	22	7/30 TC	20 KV	.131"	**293-0204**	**163.71**	**293Q0205**	**509.90**
392262	22	7/30 TC	25 KV*	.181"	**293-0206**	**171.97**	**293Q0207**	**635.36**
392275	22	7/30 TC	30 KV*	.181"	**293-0208**	**184.01**	**293Q0209**	**815.69**
392297	22	7/30 TC	40 KV	.225"	**293-0210**	**238.88**	**293Q0211**	**978.38**
392040	20	10/30 TC	10 KV	.118"	**293-0212**	**164.12**	**293Q0213**	**473.10**

*392262—.062" wall thickness. 392275—.075" wall thickness. Special constructions are available upon request.

Mfr.'s Type	AWG	Strand	Voltage DC	Nom. O.D.	Stock No.	PER SPOOL/100'	Stock No.	PER SPOOL/1000'
392045	20	10/30 TC	15 KV	.128"	**293-0214**	**168.40**	**293Q0215**	**550.80**
392050	20	10/30 TC	20 KV	.138"	**293-0216**	**179.01**	**293Q0217**	**557.74**
392062	20	10/30 TC	25 KV	.162"	**293-0218**	**185.95**	**293Q0219**	**702.78**
392075	20	10/30 TC	30 KV	.188"	**293-0220**	**240.11**	**293Q0221**	**996.44**
392097	20	10/30 TC	40 KV	.232"	**293-0222**	**254.39**	**293Q0223**	**1193.20**
391845	18	16/30 TC	15 KV	.140"	**293-0224**	**202.00**	**293Q0225**	**570.79**
391862	18	16/30 TC	25 KV	.174"	**293-0226**	**157.32**	**293Q0227**	**715.84**
391897	18	16/30 TC	40 KV	.244"	**293-0228**	**273.16**	**293Q0229**	**1305.70**
391645	16	26/30 TC	15 KV	.152"	**293-0230**	**222.50**	**293Q0231**	**692.17**
391662	16	26/30 TC	25 KV	.186"	**293-0232**	**252.25**	**293Q0233**	**923.20**
391697	16	26/30 TC	40 KV	.256"	**293-0234**	**298.50**	**293Q0235**	**1454.42**
391445	14	41/30 TC	15 KV	.170"	**293-0236**	**253.47**	**293Q0237**	**805.00**
391462	14	41/30 TC	25 KV	.204"	**293-0238**	**301.31**	**293Q0239**	**816.51**
391497	14	41/30 TC	40 KV	.274"	**293Q0240**	**451.45**	**293Q0241**	**1546.43**
391245	12	65/30 TC	15 KV	.186"	**293-0242**	**297.94**	**293Q0243**	**1611.20**
391297	12	65/30 TC	40 KV	.290"	**293Q0244**	**482.46**	**293Q0245**	**1741.45**
391045	10	105/30 TC	15 KV	.220"	**293-0246**	**335.27**	**293Q0247**	**1353.44**
391097	10	105/30 TC	40 KV	.324"	**293Q0248**	**538.50**	**293Q0249**	**2169.44**

Lacing Tapes and Twine

Designed to meet and exceed MIL-T-713, Type P and MIL-T-43435 Types I and II also AMS 3815, AMS 3816, AMS 3817.

Finishes and Coatings

W — Wax, MIL Spec "B". A microcrystalline fungicidal wax which exceeds military specifications, provides excellent knot retention and is suitable for either lacing or spot ties.

G — Synthetic Rubber, MIL Spec "C"
A special continuous coating of fungicidal synthetic elastomer (rubber) which exceeds MIL Spec requirements, ties easily and exhibits outstanding knot holding characteristics.

A — Synthetic Resin, MIL Spec "E"
A synthetic rubber-like resin formulated with fungicidal ingredients. Handling characteristics are excellent, knot retention is outstanding; meets or exceeds MIL Spec requirements.

Operational Temperature Ranges: –67°F to +250°F on all items.

Nylon Lacing Tape MIL-T-43435 Type-I

Flat braided high tenacity nylon yarn impregnated with microcrystalline fungicidal wax or impregnations to meet military specifications.

Stock No.	Mfr.'s Type	MIL Spec.		Finish	Tensile Strength	Width	Color	PER 500 YD. SPOOL
		Size	Finish					
293-0400	805032W	3	E	A	50 Lbs.	.090"	Natural	**27.95**
293-0405	805032B	3	E	A	50 Lbs.	.090"	Black	**28.56**
293-0410	802534W	4	B	W	25 Lbs.	.062"	Natural	**22.24**
293-0415	802534B	4	B	W	25 Lbs.	.062"	Black	**30.29**
293-0420	805036W	3	B	W	50 Lbs.	.090"	Natural	**29.17**
293-0425	805036B	3	B	W	50 Lbs.	.090"	Black	**32.00**
293-0430	805040W	3	C	G	50 Lbs.	.090"	Natural	**26.41**
293-0435	805040B	3	C	G	50 Lbs.	.090"	Black	**32.84**

Polyester Lacing Tape MIL-T-43435 Type-II

Flat braided polyester yarn impregnated with special finishes to military specifications.

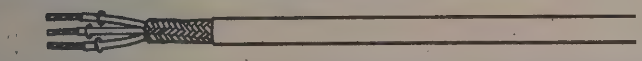
293-0440	805058W	3	E	A	50 Lbs.	.090"	Natural	**27.23**
293-0445	805058B	3	E	A	50 Lbs.	.090"	Black	**33.56**
293-0450	805062W	3	B	W	50 Lbs.	.090"	Natural	**26.70**
293-0455	805062B	3	B	W	50 Lbs.	.090"	Black	**33.56**

Nylon Lacing Twine MIL-T-713D Type P

Round twisted nylon fiber impregnated with microcrystalline fungicidal wax.

Stock No.	Mfr.'s Type	MIL Spec.		Finish	Tensile Strength	Length Per Spool	PER 1 LB. SPOOL
		Class	Finish				
293-0470	807013W	1	B	W	70 Lbs.	550 yds.	**37.74**
293-0475	807013B	1	B	W	70 Lbs.	550 yds.	**43.00**
293-0480	804814W	2	B	W	48 Lbs.	750 yds.	**27.53**
293-0485	804814B	2	B	W	48 Lbs.	750 yds.	**43.86**
293-0490	803215W	3	B	W	32 Lbs.	1100 yds.	**29.74**
293-0495	803215B	3	B	W	32 Lbs.	1100 yds.	**43.86**

Multi-Conductor, Type B, Nylon, Shielded and Jacketed with White PVC Jacket



Stranded tinned copper conductors with .010 PVC insulation color coded. .003" nylon jacket on each conductor, 90% coverage braided tinned copper shield and white PVC jacket overall.

Mfr.'s Type	No. of Conductors	AWG Size	Stranding	Nom. O.D.	100' Spool		1000' Spool	
					Stock No.	EACH	Stock No.	EACH
262202	2	22	19/34	.168"	293-3032	53.35	293Q3050	458.39
262203	3	22	19/34	.178"	293-3034	76.19	293Q3052	665.75
262204	4	22	19/34	.184"	293-3036	84.76	293Q3054	711.45
262002	2	20	19/32	.186"	293-3038	63.50	293Q3056	574.57
262003	3	20	19/32	.196"	293-3040	78.03	293Q3058	715.22
262004	4	20	19/32	.203"	293-3042	94.15	293Q3060	857.42
261802	2	18	19/30	.210"	293-3044	70.89	293Q3062	638.21
261803	3	18	19/30	.227"	293-3046	91.80	293Q3064	837.01
261804	4	18	19/30	.238"	293-3048	113.22	293Q3066	1022.45

Multi-Conductor Shielded Cable

OSHA

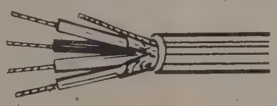
VW-1

For sound, broadcast and instrumentation cable applications. **Temperature Range:** –20°C to +80°C. **Jacket:** Chrome polyvinylchloride. **Voltage Rating:** 300V. NEC type CL2.

22 AWG Stranded Tinned Copper Drain Wire. Number of Strands: 7/30.

Mfr.'s Type	No. of Conductors	Jacket Thickness	Nom. O.D.	100' Spool		1000' Spool	
				Stock No.	EACH	Stock No.	EACH
1012203	3	.035"	.184"	293-3092	41.00	293-3108	286.11
1012204	4	.035"	.197"	293-3094	46.32	293-3110	323.14
1012205	5	.035"	.212"	293-3096	48.86	293-3112	341.09
1012206	6	.035"	.222"	293-3098	49.78	293-3114	347.51
1012207	7	.035"	.222"	293-3100	52.33	293-3116	365.16
1012208	8	.035"	.243"	293-3102	55.49	293Q3118	380.10
1012209	9	.035"	.258"	293-3104	57.83	293Q3120	404.63
1012210	10	.035"	.278"	293-3106	61.50	293Q3122	438.19
24 AWG Stranded Tinned Copper Drain Wire. Number of Strands: 7/32.							
1012404	4	.035"	.180"	293-3124	25.81	293-3148	176.10
1012405	5	.035"	.190"	293-3126	35.80	293-3150	249.19
1012406	6	.035"	.205"	293-3128	40.20	293-3152	280.91
1012407	7	.035"	.205"	293-3130	45.49	293-3154	317.83
1012408	8	.035"	.220"	293-3132	48.35	293Q3156	404.50
1012409	9	.035"	.240"	293-3134	50.29	293-3158	345.00
1012410	10	.035"	.250"	293-3136	54.67	293Q3160	381.07
1012415	15	.035"	.280"	293-3138	70.90	293Q3162	566.61
1012420	20	.035"	.310"	293-3140	111.59	293Q3164	779.18
1012425	25	.040"	.370"	293-3142	120.16	293Q3166	840.28
1012430	30	.040"	.390"	293-3144	168.34	293Q3168	1206.66
1012440	40	.040"	.440"	293-3146	234.00	293Q3170	1429.91

Foil Shielded, Multi-Conductor Cable



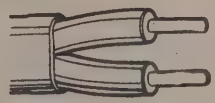
OSHA

Stranded tinned copper conductors, insulated with color-coded polyethylene. Provide 100% effective shielding and is suitable for audio and data work where cross talk must be at a minimum. Shielded with mylar-backed foil and drain wire. **Temperature Range:** –20°C to +60°C. **Operating Voltage:** 400V. NEC type CL2.

Mfr.'s Type	No. of Conductors	AWG Size	Stranding	100' Spool		1000' Spool	
				Stock No.	EACH	Stock No.	EACH
972203	3	22	7/30	293-3068	30.50	293-3080	211.85
972204	4	22	7/30	293-3070	46.70	293-3082	332.21
971802	2	18	16/30	293-3072	45.49	293-3084	316.10
971803	3	18	16/30	293-3074	53.55	293-3086	373.63
971402	2	14	19/27	293-3076	69.26	293Q3088	483.89
971403	3	14	19/27	293-3078	110.87	293Q3090	774.08

Power-Limited Circuit Cable

— NEW —



70,000 B.T.U.

OSHA

VW-1

NEC

Stranded tinned copper conductors. Insulation is color-coded polyvinylchloride. Jacket is chrome polyvinylchloride. **Temperature Range:** 105°C, 300 volts. UL Subject 13, power limited cable. UL 70,000 BTU flame and tray test, comparable to IEEE 383 flame test. Meets NEC Article 725. Recognized under the components program of Underwriters' Laboratories, Inc. UL Styles 2464, 80°C-300 Volts. Passes VW-1 Vertical flame test. CSA TR-64 approval, OSHA acceptable. Surface printed.

Stock No.	Mfr.'s Type	No. of Conductors	AWG Size	Stranding	Nom. O.D.	PER 100' SPOOL
293-4000	1102202	2	22	7/30	.200"	30.06
293-4002	1102203	3	22	7/30	.210"	39.07
293-4004	1102002	2	20	10/30	.214"	37.03
293-4006	1102003	3	20	10/30	.225"	46.00
293-4008	1101802	2	18	16/30	.230"	44.88
293-4010	1101803	3	18	16/30	.246"	59.98
293-4012	1101602	2	16	6/30	.260"	64.77
293-4014	1101603	3	16	26/30	.274"	88.13
293-4016	1101402	2	14	41/30	.324"	93.64
293-4018	1101403	3	14	41/30	.342"	124.03

Multi-Conductor Unshielded Control and Audio Cable

OSHA

VW-1

Designed for control and processing systems; communications, instrumentation and audio systems. Stranded tinned copper. **Jacket:** Overall grey polyvinylchloride. **Temperature Range:** –10°C to +80°C, (except 18 AWG — –10°C to +60°C). **Voltage Rating:** 150V for 16 AWG, 22 AWG; 300V for 12 AWG, 18 AWG and 20 AWG. NEC type CL2.

Mfr.'s Type	No. of Conductors	AWG Size	Stranding	100' Spool		1000' Spool	
				Stock No.	EACH	Stock No.	EACH
832202	2	22	7/30	293-3172	12.89	293-3250	98.43
832203	3	22	7/30	293-3174	16.52	293-3252	114.95
832204	4	22	7/30	293-3176	23.15	293-3254	143.68
832205	5	22	7/30	293-3178	28.87	293-3256	201.55
832206	6	22	7/30	293-3180	32.44	293-3258	242.96
832207	7	22	7/30	293-3182	40.69	293-3260	284.48
832208	8	22	7/30	293-3184	46.51	293-3262	324.67
832209	9	22	7/30	293-3186	56.41	293Q3264	393.41
832210	10	22	7/30	293-3188	58.75	293Q3266	410.14
832212	12	22	7/30	293-3190	63.22	293Q3268	495.41
832215	15	22	7/30	293-3192	86.41	293Q3270	677.69
832220	20	22	7/30	293-3194	131.90	293Q3272	940.85
832224	24	22	7/30	293-3196	161.29	293Q3274	1126.59
832225	25	22	7/30	293-3198	164.50	293Q3276	1173.10
832230	30	22	7/30	293-3200	240.41	293Q3278	1680.25
832240	40	22	7/30	293-3202	339.56	293Q3280	2374.46
832250	50	22	7/30	293Q3204	388.98	293Q3282	2996.76
832260	60	22	7/30	293Q3206	586.81	293Q3284	4105.40
831802	2	18	16/30	293-3208	25.26	293-3286	198.90
831803	3	18	16/30	293-3210	40.39	293-3288	282.64
831804	4	18	16/30	293-3212	52.63	293-3290	367.40
831805	5	18	16/30	293-3214	68.85	293Q3292	481.13
831806	6	18	16/30	293-3216	82.72	293Q3294	578.34
831807	7	18	16/30	293-3218	96.80	293Q3296	675.44
831808	8	18	16/30	293-3220	123.11	293Q3298	860.27
831812	12	18	16/30	293-3222	201.76	293Q3300	1410.05
831815	15	18	16/30	293-3224	244.39	293Q3302	1708.60
831820	20	18	16/30	293-3226	298.50	293Q3304	2128.13
831825	25	18	16/30	293Q3228	458.59	293Q3306	3206.27
831602	2	16	26/30	293-3230	39.69	293-3308	277.24
831603	3	16	26/30	293-3232	72.83	293-3310	509.49
831604	4	16	26/30	293-3234	106.08	293Q3312	741.74
831605	5	16	26/30	293-3236	125.96	293Q3314	988.18
831607	7	16	26/30	293-3238	208.69	293Q3316	1459.72
831610	10	16	26/30	293-3240	282.64	293Q3318	1977.58
831612	12	16	26/30	293-3242	331.09	293Q3320	2315.20
831615	15	16	26/30	293Q3244	505.92	293Q3322	3538.07
831202	2	12	65/30	293-3246	108.73	293Q3324	760.72
831203	3	12	65/30	293-3248	206.55	293Q3326	1443.40

Multi-Pair Alumylar™ Shielded Cable

OSHA VW-1

Designed for use in instrumentation and computer applications. 24 AWG stranded tinned copper. **Number of Strands:** 7/32. **Temperature Range:** –20°C to +80°C. **Jacket:** Chrome polyvinylchloride. **Voltage Rating:** 300V. UL recognized, CSA certified, OSHA acceptable and passes VW-1 vertical flame test. NEC Type CL2.

Mfr.'s Type	No. of Pairs	Nom. Jacket Thickness	Nom. O.D.	100' Spool		1000' Spool	
				Stock No.	EACH	Stock No.	EACH
1022402	2	.032"	.222"	**293-3502**	**28.00**	**293-3528**	**195.70**
1022403	3	.032"	.232"	**293-3504**	**33.30**	**293-3530**	**232.60**
1022404	4	.032"	.265"	**293-3506**	**40.70**	**293-3532**	**279.20**
1022405	5	.035"	.295"	**293-3508**	**57.10**	**293Q3534**	**399.70**
1022406	6	.035"	.295"	**293-3510**	**69.05**	**293Q3536**	**473.70**
1022407	7	.035"	.300"	**293-3512**	**87.10**	**293Q3538**	**621.18**
1022408	8	.035"	.330"	**293-3514**	**104.70**	**293Q3540**	**731.60**
1022409	9	.035"	.340"	**293-3516**	**111.00**	**293Q3542**	**776.10**
1022410	10	.040"	.380"	**293-3518**	**118.80**	**293Q3544**	**847.62**
1022415	15	.040"	.425"	**293-3520**	**174.80**	**293Q3546**	**1332.20**
1022419	19	.040"	.450"	**293-3522**	**237.56**	**293Q3548**	**1629.26**
1022425	25	.045"	.515"	**293-3524**	**239.04**	**293Q3550**	**2220.40**
1022450	50	.050"	.700"	**293Q3526**	**592.70**	**293Q3552**	**2378.80**

Multi-Paired Individually Alumylar™ Shielded Cable

70,000 B.T.U. VW-1 OSHA NEC

22 AWG stranded tinned copper conductors, insulated with color-coded PVC. **Shield:** Alumylar™ shield over each pair with stranded tinned copper drain wire. **Jacket:** PVC. **Temperature Range:** 105°C. **Voltage Rating:** 300 volts. Suitable as tray cable for Class II and III circuits. UL subject 13, Power-Limited Circuit Cable. UL 70,000 BTU Flame and Tray Test. Meets NEC Article 725, 105°C, 300V. Recognized under the components program of Underwriters' Laboratories, Inc. UL Style 2464, 80°C-300V. Passes VW-1 Vertical Flame Test. CSA TR-64 Approval. OSHA Acceptable. **Color Code:** Pairs are color-coded black and red. On multi-paired cable, each pair is numbered.

Mfr.'s Type	No. of Pairs	Jacket Thickness	Nom. O.D.	100' Spool		1000' Spool	
				Stock No.	EACH	Stock No.	EACH
1132202	2	.043"	.316"	**293-3554**	**76.70**	**293Q3566**	**536.42**
1132203	3	.043"	.331"	**293-3556**	**98.63**	**293Q3568**	**689.62**
1132204	4	.043"	.360"	**293-3558**	**131.58**	**293Q3570**	**919.53**
1132206	6	.053"	.431"	**293-3560**	**206.96**	**293Q3572**	**1446.26**
1132209	9	.053"	.500"	**293-3562**	**303.04**	**293Q3574**	**2119.05**
1132215	15	.053"	.606"	**293Q3564**	**620.87**	**293Q3576**	**4341.02**

Tinned Copper Tubular Braid Per Mil-Spec QQ-B-575

Tubular braid offers shielding of 95% or more when placed over equivalent diameter mandrel to I.D. of tubular braid. May also be used as protective cover.

Stock No.	Mfr.'s Type	I.D.	AWG	Cir. MIL	Amps	PER 100' SPOOL
293-3580	92160	1/32"	22	600	7.5	**24.78**
293-3581	92162	1/18"	19	1200	12.0	**30.60**
293-3582	92164	7/64"	16	2400	19.0	**50.90**
293-3583	92166	1/8"	15	3000	22.0	**39.60**
293-3584	92168	11/64"	14	4200	30.0	**50.80**
293-3586	92170	13/64"	11	7632	42.0	**82.21**
293-3587	92171	1/4"	10	9600	48.0	**93.94**
293-3588	92174	1/2"	9	13200	61.0	**152.18**
293-3589	92176	25/32"	7	21600	84.0	**212.47**

Braided Copper Cable — *NEW* —

Conductors: Strands are soft-drawn tinned copper. **Construction:** Strands are woven into a tubular braid and rolled flat. **Features and Applications:** For bonding, straps, grounding or connecting moving parts. Recommended for high current use. **Approvals:** QQ-W-343, Type S, Class S, 1T ASTM-B-33.

Stock No.	Mfr.'s Type	AWG Approx.	No./Size of Strands	Width	PER 100' SPOOL
293-4040	91229	18	72/36	.125"	**28.76**
293-4042	91230	15	120/36	.188"	**36.11**
293-4044	91231	14	168/36	.250"	**44.68**
293-4046	91232	12	288/36	.375"	**59.98**
293-4048	91233/2	10	384/36	.500"	**86.19**
293-4050	91233	10	384/36	.625"	**99.14**

High Temperature Cable

MIL-W-16878E Shielded Teflon Tape Wrapped Cable

Conductors are stranded silver plated copper, "Type E" extruded, color-coded TFE teflon (.010" wall thickness). Braided silver plated copper shield, 90% coverage. White TFE teflon jacket, wrapped and sintered. –65°C to +200°C; 600 volts.

Mfr.'s Type	No. of Conductors	AWG Size	Stranding	Nom. O.D.	100' Spool		1000' Spool	
					Stock No.	EACH	Stock No.	EACH
62401	1	24	19/36	.095"	**293-3602**	**79.97**	**293Q3642**	**701.56**
62402	2	24	19/36	.140"	**293-3604**	**117.61**	**293Q3644**	**1054.58**
62403	3	24	19/36	.147"	**293-3606**	**137.80**	**293Q3646**	**1238.59**
62404	4	24	19/36	.159"	**293-3608**	**151.47**	**293Q3648**	**1363.64**
62201	1	22	19/34	.102"	**293-3610**	**81.70**	**293Q3650**	**707.47**
62202	2	22	19/34	.154"	**293-3612**	**127.91**	**293Q3652**	**1143.42**
62203	3	22	19/34	.162"	**293-3614**	**154.84**	**293Q3654**	**1393.63**
62204	4	22	19/34	.176"	**293-3616**	**174.73**	**293Q3656**	**1560.50**
62001	1	20	19/32	.110"	**293-3618**	**87.92**	**293Q3658**	**777.65**
62002	2	20	19/32	.170"	**293-3620**	**139.03**	**293Q3660**	**1258.58**
62003	3	20	19/32	.175"	**293-3622**	**175.64**	**293Q3662**	**1579.88**
62004	4	20	19/32	.213"	**293-3624**	**202.47**	**293Q3664**	**1815.91**
61801	1	18	19/30	.120"	**293-3626**	**96.29**	**293Q3666**	**852.72**
61802	2	18	19/30	.190"	**293-3628**	**170.54**	**293Q3668**	**1528.88**
61803	3	18	19/30	.219"	**293-3630**	**203.80**	**293Q3670**	**1865.17**
61804	4	18	19/30	.237"	**293-3632**	**241.33**	**293Q3672**	**2160.26**
61601	1	16	19/29	.130"	**293-3634**	**106.18**	**293Q3674**	**948.40**
61602	2	16	19/29	.230"	**293-3636**	**191.30**	**293Q3676**	**1745.53**
61603	3	16	19/29	.240"	**293-3638**	**246.43**	**293Q3678**	**2191.67**
61604	4	16	19/29	.270"	**293-3640**	**324.26**	**293Q3680**	**2920.46**

Coaxial Cable for Industrial and Military Applications

Mfr.'s Type	RG/U No.	Jacket O.D.	Nom. Impedance	100' Spool		1000' Spool	
				Stock No.	EACH	Stock No.	EACH
6008	8	.405"	52.0	**293-3702**	**98.02**	**293Q3720**	**684.22**
6058C	58C	.192"	50.0	**293-3704**	**43.20**	**293-3722**	**306.92**
6059B	59B	.242"	75.0	**293-3706**	**50.49**	**293-3724**	**352.10**
6062A	62A	.242"	93.0	**293-3708**	**37.54**	**293-3726**	**257.65**
6108A	108A	.235"	78.0	**293-3710**	**70.69**	**293Q3728**	**494.09**
6174	174	.100"	50.0	**293-3712**	**29.68**	**293-3730**	**201.33**
6213	213	.405"	50.0	**293-3714**	**130.66**	**293Q3732**	**947.99**
6214	214	.425"	50.0	**293Q3716**	**702.98**	**293Q3734**	**4916.50**
6220	220	1.120"	50.0	**293Q3718**	**2641.80**	**293Q3736**	**18564.00**

High Temperature Teflon Dielectric Jacket Coaxial Cable364.14

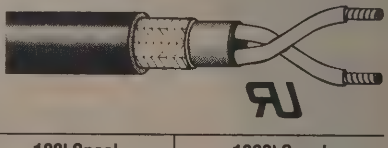
6142B	142B	.195"	50.0	**293-3740**	**364.14**	**293Q3758**	**2545.10**
6178B	178B	.075"	50.0	**293-3742**	**75.58**	**293Q3760**	**527.24**
6179B	179B	.105"	75.0	**293-3744**	**108.94**	**293Q3762**	**760.72**
6180B	180B	.145"	95.0	**293-3746**	**184.09**	**293Q3764**	**1286.73**
6187A	187A	.110"	75.0	**293-3748**	**121.28**	**293Q3766**	**847.82**
6188A	188A	.100"	50.0	**293-3750**	**124.64**	**293Q3768**	**869.14**
6196A	196A	.080"	50.0	**293-3752**	**98.43**	**293Q3770**	**687.48**
6316	316	.102"	50.0	**293-3754**	**115.57**	**293Q3772**	**804.88**
6400	400	.195"	50.0	**293-3756**	**477.97**	**293Q3774**	**3342.44**

Low Loss Coaxial Cable with Foam Cellular Polyethylene Dielectric

6008F	8	.405"	50.0	**293-3776**	**113.63**	**293Q3782**	**792.74**
6058F	58	.195"	50.0	**293-3778**	**29.59**	**293-3784**	**244.70**
6059F	59	.242"	75.0	**293-3780**	**44.98**	**293-3786**	**374.44**

Twinaxial Low-Loss Transmission Line

OSHA



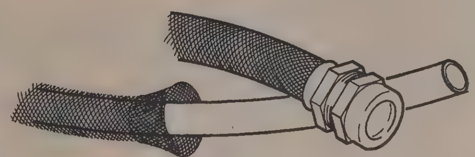
Designed for use with IBM Systems 34, 36 and AS400 transmission line. Has braided tinned copper shield, black PVC jacket, and twinaxial conductors — 1 tinned, 1 bare copper. **Capacitance:** 15.5 pF/ft. VW-1 UL2498.

Mfr.'s Type	Jacket O.D.	Nom. Impedance	100' Spool		1000' Spool	
			Stock No.	EACH	Stock No.	EACH
6207X	.330"	100	**293-3790**	**96.50**	**293Q3792**	**687.28**

ICO-FLEX Expandable Sleeving

- ► Lightweight
- ► Flexible
- ► Easy To Install
- ► Abrasion Resistant
- ► Removable For Repair
- ► Flame Retardant

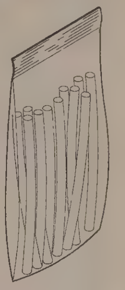
ICO-FLEX is a lightweight, self-fitting, polyester, monofilament sleeving, designed to encapsulate and protect cable bundles and wire assemblies. ICO-FLEX expandable sleeving adjusts to irregular surfaces and contours providing abrasion resistance and protection with a minimum of bulk and weight. Sleeving is marked with Flame Retardant Identification tracers.



Black		White		Size	Size Range (Inches)	Quantity Per Spool	PER SPOOL
Stock No.	Mfr.'s Type	Stock No.	Mfr.'s Type				
205-0647	73247	**205-0654**	73254	XPF-⅛	3⁄32-⅛	100'	**19.60**
205-0648	73248	**205-0655**	73255	XPF-¼	⅛-⅜	100'	**28.78**
205-0649	73249	**205-0656**	73256	XPF-½	¼-¾	100'	**55.55**
205-0650	73250	**205-0657**	73257	XPF-¾	½-1¼	100'	**81.14**
205-0651	73251	**205-0658**	73258	XPF-1¼	¾-1½	50'	**50.64**
205-0652	73252	**205-0659**	73259	XPF-1¾	1¼-2½	50'	**81.78**
205-0653	73253	**205-0660**	73260	XPF-2	1½-3	50'	**115.39**

HIX — Color Assortments

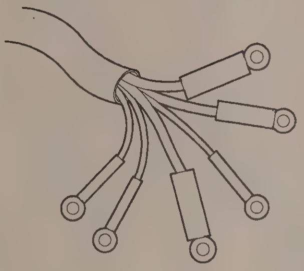
6" pieces of 10 standard colors plus Clear. 11 pieces per pack. Great for wire identification and color coding. Packaged in resealable plastic bags.

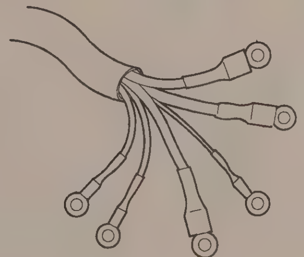


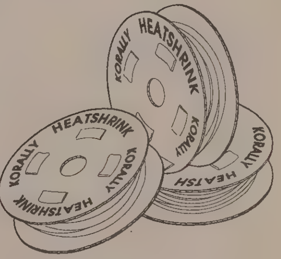
Stock No.	Mfr.'s Type	Size	EACH
205-0641	73241	1⁄16	3.50
205-0642	73242	3⁄32	4.00
205-0643	73243	⅛	4.30
205-0644	73244	3⁄16	4.80
205-0645	73245	¼	5.80
205-0646	73246	⅜	6.40

HIX Irradiated Flexible Polyolefin

HIX is the most popular, general purpose heat-shrinkable tubing used for insulating, jacketing, bundling, and identification. It is mechanically tough, will not cold flow, never melts, and will not split when shrunk over sharp or irregularly shaped objects. **Applicable Specifications:** MIL-I-23053B/5, Classes 1, 2; AMS 3636B, AMS 3637B. **Operating Temperature Range:** –55°C to 135°C (–67°F to 275°F). **Shrink Ratio:** 2 to 1 (50%). **Shrink Temperature:** 121°C (250°F).







4 Foot Lengths

Black		Black*		Clear		Red		Yellow		Blue		White		Size	Inside Diameter		Recovered Nom. Wall Thickness (Inches)	Quantity Per Box	PER BOX
Stock No.	Mfr.'s Type	Stock No.	Mfr.'s Type	Stock No.	Mfr.'s Type	Stock No.	Mfr.'s Type	Stock No.	Mfr.'s Type	Stock No.	Mfr.'s Type	Stock No.	Mfr.'s Type		Expanded As Supplied (Inches, Min.)	Recovered After Heating (Inches, Max.)			
205-0401	73001	205-0413	73013	205-0425	73025	205-0437	73037	205-0449	73049	205-0461	73061	205-0473	73073	HIX-3⁄64	.046	.023	.016	100'	**19.41**
205-0402	73002	205-0414	73014	205-0426	73026	205-0438	73038	205-0450	73050	205-0462	73062	205-0474	73074	HIX-1⁄16	.063	.031	.017	100'	**20.48**
205-0403	73003	205-0415	73015	205-0427	73027	205-0439	73039	205-0451	73051	205-0463	73063	205-0475	73075	HIX-3⁄32	.093	.046	.020	100'	**23.11**
205-0404	73004	205-0416	73016	205-0428	73028	205-0440	73040	205-0452	73052	205-0464	73064	205-0476	73076	HIX-⅛	.125	.062	.020	100'	**24.68**
205-0405	73005	205-0417	73017	205-0429	73029	205-0441	73041	205-0453	73053	205-0465	73065	205-0477	73077	HIX-3⁄16	.187	.093	.020	100'	**28.13**
205-0406	73006	205-0418	73018	205-0430	73030	205-0442	73042	205-0454	73054	205-0466	73066	205-0478	73078	HIX-¼	.250	.125	.025	100'	**35.54**
205-0407	73007	205-0419	73019	205-0431	73031	205-0443	73043	205-0455	73055	205-0467	73067	205-0479	73079	HIX-⅜	.375	.187	.025	100'	**40.06**
205-0408	73008	205-0420	73020	205-0432	73032	205-0444	73044	205-0456	73056	205-0468	73068	205-0480	73080	HIX-½	.500	.250	.025	100'	**44.58**
205-0409	73009	205-0421	73021	205-0433	73033	205-0445	73045	205-0457	73057	205-0469	73069	205-0481	73081	HIX-¾	.750	.375	.030	52'	**37.92**
205-0410	73010	205-0422	73022	205-0434	73034	205-0446	73046	205-0458	73058	205-0470	73070	205-0482	73082	HIX-1	1.000	.500	.035	20'	**17.44**
205-0411	73011	205-0423	73023	205-0435	73035	205-0447	73047	205-0459	73059	205-0471	73071	205-0483	73083	HIX-1½	1.500	.750	.040	16'	**23.94**
205-0412	73012	205-0424	73024	205-0436	73036	205-0448	73048	205-0460	73060	205-0472	73072	205-0484	73084	HIX-2	2.000	1.000	.045	12'	**24.76**

Spools

Black		Black*		Clear		Red		Yellow		Blue		White		Size	Inside Diameter		Recovered Nom. Wall Thickness (Inches)	Quantity Per Spool	PER SPOOL
Stock No.	Mfr.'s Type	Stock No.	Mfr.'s Type	Stock No.	Mfr.'s Type	Stock No.	Mfr.'s Type	Stock No.	Mfr.'s Type	Stock No.	Mfr.'s Type	Stock No.	Mfr.'s Type		Expanded As Supplied (Inches, Min.)	Recovered After Heating (Inches, Max.)			
205-0485	73085	205-0497	73097	205-0509	73109	205-0521	73121	205-0533	73133	205-0545	73145	205-0557	73157	HIX-3⁄64	.046	.023	.016	500'	**97.06**
205-0486	73086	205-0498	73098	205-0510	73110	205-0522	73122	205-0534	73134	205-0546	73146	205-0558	73158	HIX-1⁄16	.063	.031	.017	500'	**102.41**
205-0487	73087	205-0499	73099	205-0511	73111	205-0523	73123	205-0535	73135	205-0547	73147	205-0559	73159	HIX-3⁄32	.093	.046	.020	500'	**115.57**
205-0488	73088	205-0500	73100	205-0512	73112	205-0524	73124	205-0536	73136	205-0548	73148	205-0560	73160	HIX-⅛	.125	.062	.020	250'	**61.69**
205-0489	73089	205-0501	73101	205-0513	73113	205-0525	73125	205-0537	73137	205-0549	73149	205-0561	73161	HIX-3⁄16	.187	.093	.020	250'	**70.33**
205-0490	73090	205-0502	73102	205-0514	73114	205-0526	73126	205-0538	73138	205-0550	73150	205-0562	73162	HIX-¼	.250	.125	.025	100'	**35.54**
205-0491	73091	205-0503	73103	205-0515	73115	205-0527	73127	205-0539	73139	205-0551	73151	205-0563	73163	HIX-⅜	.375	.187	.025	100'	**40.06**
205-0492	73092	205-0504	73104	205-0516	73116	205-0528	73128	205-0540	73140	205-0552	73152	205-0564	73164	HIX-½	.500	.250	.025	100'	**44.58**
205-0493	73093	205-0505	73105	205-0517	73117	205-0529	73129	205-0541	73141	205-0553	73153	205-0565	73165	HIX-¾	.750	.375	.030	50'	**36.44**
205-0494	73094	205-0506	73106	205-0518	73118	205-0530	73130	205-0542	73142	205-0554	73154	205-0566	73166	HIX-1	1.000	.500	.035	50'	**43.60**
205-0495	73095	205-0507	73107	205-0519	73119	205-0531	73131	205-0543	73143	205-0555	73155	205-0567	73167	HIX-1½	1.500	.750	.040	25'	**37.43**
205-0496	73096	205-0508	73108	205-0520	73120	205-0532	73132	205-0544	73144	205-0556	73156	205-0568	73168	HIX-2	2.000	1.000	.045	25'	**51.58**

Mini Spools

Black		Black*		Clear		Red		Yellow		Blue		White		Green		Size	Quantity Per Spool	PER SPOOL
Stock No.	Mfr.'s Type	Stock No.	Mfr.'s Type	Stock No.	Mfr.'s Type	Stock No.	Mfr.'s Type	Stock No.	Mfr.'s Type	Stock No.	Mfr.'s Type	Stock No.	Mfr.'s Type	Stock No.	Mfr.'s Type			
205-0569	73169	205-0632	73232	205-0578	73178	205-0596	73196	205-0605	73205	205-0614	73214	205-0587	73187	205-0623	73223	HIX-1⁄16	70'	**17.55**
205-0570	73170	205-0633	73233	205-0579	73179	205-0597	73197	205-0606	73206	205-0615	73215	205-0588	73188	205-0624	73224	HIX-3⁄32	65'	**17.55**
205-0571	73171	205-0634	73234	205-0580	73180	205-0598	73198	205-0607	73207	205-0616	73216	205-0589	73189	205-0625	73225	HIX-⅛	60'	**17.55**
205-0572	73172	205-0635	73235	205-0581	73181	205-0671	73199	205-0608	73208	205-0617	73217	205-0590	73190	205-0626	73226	HIX-3⁄16	50'	**17.55**
205-0573	73173	205-0636	73236	205-0582	73182	205-0600	73200	205-0609	73209	205-0618	73218	205-0591	73191	205-0627	73227	HIX-¼	40'	**17.55**
205-0574	73174	205-0637	73237	205-0583	73183	205-0601	73201	205-0610	73210	205-0619	73219	205-0592	73192	205-0628	73228	HIX-⅜	35'	**17.55**
205-0575	73175	205-0638	73238	205-0584	73184	205-0602	73202	205-0611	73211	205-0620	73220	205-0593	73193	205-0629	73229	HIX-½	32'	**17.55**
205-0576	73176	205-0639	73239	205-0585	73185	205-0603	73203	205-0612	73212	205-0621	73221	205-0594	73194	205-0630	73230	HIX-¾	24'	**17.55**
205-0577	73177	205-0640	73240	205-0586	73186	205-0604	73204	205-0613	73213	205-0622	73222	205-0595	73195	205-0631	73231	HIX-1	16'	**17.55**

*UL, CSA Printed.

Teflon and Hook-Up Wire

Type E Extruded Teflon Wire

Mfr.'s Type	AWG	Strand	Nom. O.D.	500' Stock No.	500' Wt. Lbs.	500' EACH	1000' Stock No.	1000' Wt. Lbs.	1000' EACH
302*	28	7/36	.036"	876-126N	1.0	49.98	876-127N	1.6	99.96
303*	26	7/34	.040"	876-128N	1.0	45.90	876-129N	2.0	91.80
304*	26	19/38	.041"	876-130N	1.0	53.04	876-131N	2.0	106.08
305*	24	19/36	.045"	876-132N	2.0	59.16	876-133N	2.8	118.32
306*	24	7/32	.044"	876-134N	3.0	51.00	876-135N	2.8	102.00
307*	22	19/34	.051"	876-136N	3.0	68.34	876-137N	3.7	136.68
308*	22	7/30	.050"	876-138N	2.0	60.18	876-139N	3.7	120.36
309*	20	19/32	.059"	876-140N	3.0	85.68	876-141N	5.5	171.36
310*	20	7/28	.058"	876-142N	3.0	77.52	876-143N	5.5	155.04
311*	18	19/30	.070"	876-144N	3.0	117.30	876Q145N	6.0	234.60
312*	16	19/29	.077"	876Q146N	4.0	163.20	876Q147N	8.0	326.40
313	14	19/27	.094"	876Q148N	8.0	209.10	876Q149N	16.1	418.20
314	12	19/25	.113"	876Q150N	12.0	316.20	876Q151N	23.5	632.40
315	10	37/26	.134"	876Q152N	18.0	453.90	876Q153N	35.0	907.80

100' Lengths Available as Non-Cancelable, Non-returnable. *UL 1213 only supplied if specified when ordering.

UL 1007/UL 1569 Hook-Up Wire

Mfr.'s Type	AWG	Strand	Nom. O.D.	500' Stock No.	500' Wt. Lbs.	500' EACH	1000' Stock No.	1000' Wt. Lbs.	1000' EACH
350	24	7/32	.057"	876-100N	3.0	17.34	876-101N	2.8	34.68
351	22	7/30	.065"	876-102N	2.0	20.91	876-103N	3.8	41.82
353	20	10/30	.071"	876-104N	3.0	27.54	876-105N	5.0	55.08
355	18	16/30	.080"	876-106N	4.0	32.64	876-107N	7.2	65.28
357	16	26/30	.095"	876-108N	6.0	52.02	876-109N	10.8	104.04

UL 1015

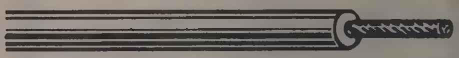
Mfr.'s Type	AWG	Strand	Nom. O.D.	500' Stock No.	500' Wt. Lbs.	500' EACH	1000' Stock No.	1000' Wt. Lbs.	1000' EACH
361	22	7/30	.095"	876-110N	3.0	20.40	876-111N	6.0	40.80
362	20	10/30	.102"	876-112N	4.0	28.56	876-113N	7.5	57.12
363	18	16/30	.112"	876-114N	5.0	33.66	876-115N	9.9	67.32
364	16	26/30	.125"	876-116N	7.0	48.96	876-117N	13.8	97.92
365	14	41/30	.142"	876-118N	10.0	70.38	876-119N	20.0	140.76
366	12	65/30	.158"	876-120N	16.0	116.28	876Q121N	31.2	232.56
367	10	105/30	.183"	876Q122N	22.0	175.00	876Q123N	44.0	346.80
368	8	133/29	.250"	876Q124N	37.0	294.78	876Q125N	73.8	589.56

Substitute color number for "N" in stock number.

0 — VIOLET	5 — YELLOW
1 — WHITE	6 — BLUE
2 — BLACK	7 — ORANGE
3 — RED	8 — SLATE
4 — GREEN	9 — BROWN

Other colors available by special order.

Type E. Single conductor stranded silver plated copper, extruded TFE Teflon Insulation. –65°C to +200°C. **Voltage Rating:** 600 V. Resistant to acids, alkalis, oil, flame, moisture, solvents, and fungus.



U.L. Style 1007. CSA Style TR-64 MIL-W-76B. 300 V, 80°C. Stranded tinned copper, color coded, medium wall polyvinylchloride insulation. –40°C to +105°C. Resistant to acids, alkalis, oil, flame, moisture, and fungus.

U.L. Style 1015. CSA Style TEW. 600 V, 105°C. Stranded tinned copper, color coded, polyvinylchloride insulation. –55°C to +105°C. Resistant to acids, alkalis, oil, flame, moisture, and fungus.

Substitute color number for "N" in stock number. 0 — Violet; 1 — White; 2 — Black; 3 — Red; 4 — Green; 5 — Yellow; 6 — Blue; 7 — Orange; 8 — Slate; 9 — Brown.

THHN/TFFN Wire

Stranded bare copper conductor, color coded, PVC insulation, nylon sheath. 600 V, 90°C. Gas and oil resistant. **Stocked Colors:** 1-4 and 6.

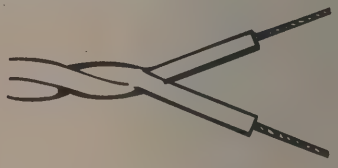
Stock No.	AWG	Strand	Ins. Thickness	Nylon Sheath	O.D.	Amp Impacity	Wt. Lbs.	PER 500'
876-154N	16	26	.015"	.004"	.100	10	3.0	44.80
876-155N	14	19	.015"	.004"	.110	15	4.0	50.00
876-156N	12	19	.015"	.004"	.130	20	6.0	73.00
876-157N	10	19	.020"	.004"	.170	30	10.0	115.00
876Q158N	8	19	.030"	.005"	.220	50	16.0	183.60

Conductor Speaker Wire

UL 1007 2-Conductor Speaker Wire

300 V. Tinned copper, vinyl insulated.

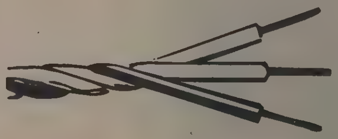
Mfr.'s Type	AWG	Strand	Nom. O.D.	Color Code	500' Stock No.	500' Wt. Lbs.	500' EACH	1000' Stock No.	1000' Wt. Lbs.	1000' EACH
2370	18	16/30	.180"	Black/White	876-1600	9	83.64	876-1601	18.0	161.16
2372	16	19/29	.204"	Black/White	876-1604	13	117.30	876-1605	25.0	228.48
2373	16	19/29	.206"	Orange/Black	876-1608	13	122.40	876-1609	25.8	242.76



UL 1007 3-Conductor Speaker Wire

300 V. Tinned copper, vinyl insulated.

Mfr.'s Type	AWG	Strand	Nom. O.D.	Color Code	500' Stock No.	500' Wt. Lbs.	500' EACH	1000' Stock No.	1000' Wt. Lbs.	1000' EACH
2375	16	19/29	.220"	Orange/Black Orange w/Black stripe	876-1612	19	175.44	876Q1613	37.4	442.28



Tinned Copper Flat Braid and Bus Bar

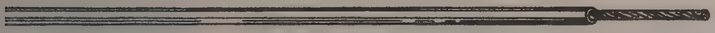
Flat Braid. Woven braid of tinned copper strands rolled flat. Use where top flexibility and low-volt/high current capacity are needed. Often used for grounding and as bonding straps or in connections to moving parts.

Mfr.'s Type	Nom. Flat Width	Nom. Thick	AWG Indiv. Ends	Total No. Of Indiv. Ends	Current Cap	100' Stock No.	100' EACH	500' Stock No.	500' EACH	1000' Stock No.	1000' EACH
701	1/32"	.020"	36	16	6	876-4139	26.00	876-4140	80.00	876-4141	144.00
702	3/64"	.020"	36	24	7	876-4142	28.00	876-4143	88.00	876-4144	156.00
703	3/32"	.020"	36	48	11	876-4145	36.00	876-4146	110.00	876-4147	166.00
704	1/8"	.020"	36	72	16	876-4148	42.00	876-4149	115.00	876-4150	190.00
705	3/16"	.020"	36	120	25	876-4151	48.96	876-4152	175.00	876Q4153	264.00
706	1/4"	.030"	36	168	32	876-4154	56.00	846-4155	205.00	876Q4156	313.00
707	3/8"	.030"	36	288	46	876-4157	101.85	876Q4158	366.66	876Q4159	534.00
708	1/2"	.030"	36	384	53	876-4160	94.00	876Q4161	346.29	876Q4162	509.00
709	5/8"	.030"	36	384	53	876-4163	98.00	876Q4164	336.00	876Q4165	450.00
710	3/4"	.040"	36	832	85	876-4166	190.00	876Q4167	765.00	876Q4168	1387.20
711	1"	.045"	36	832	85	876-4169	195.00	876Q4170	700.00	876Q4171	1034.00

Bus Bar. Pure electrolytic, soft-drawn solid copper properly annealed and tinned Used for coil windings, antennas, component leads, bus bar, ground wire, and point-to-point wiring. MIL-W-3861, QQ-W-343-Type S, ASTM-B-33 specs.

Stock No.	Mfr.'s Type	Conductor Size (AWG)	Nom. O.D.	PER 1000'
876-4172	749	32	.008"	9.36
876-4173	750	30	.010"	10.87
876-4174	751	28	.013"	12.47
876-4175	752	26	.016"	19.48
876-4176	753	24	.020"	24.48
876-4177	754	22	.025"	30.56
876-4178	755	20	.033"	42.84
876-4179	756	18	.040"	63.74
876-4180	757	16	.051"	91.80
876-4181	758	14	.065"	140.76
876-4182	759	12	.082"	147.88

High Temperature Lead Wire



Type TGGT — UL Style 5251, CSA Type C3; 250°C, 600 Volts

► **UL Listed and CSA**

Flexible, stranded, 10% nickel-plated copper conductor. Teflon® (TFE) tape wrapped, ceramic tape insulation. Teflon impregnated glass braid jacket (tan), optional colors available on request. The ceramic tape insulation combines high dielectric strength with excellent flexibility and ease of stripping to achieve a lead wire of superior resistance to high temperatures, abrasion, chemicals and moisture. For internal wiring of heating equipment and heat producing appliances in domestic, industrial and cooking applications. **Nominal Thicknesses. TFE Tape:** All sizes .015". **Insulation:** 24-8 AWG .010", 6-4/0 AWG .015". **Jacket:** 24-08 AWG .005", 6-2 AWG .0075", 1-4/0 AWG .010".

Mfr.'s Type	Conductor AWG	Conductor Stranding	Nom. O.D.	Nom. Bend Radius	PER 500' SPOOL Stock No.	PER 500' SPOOL EACH	PER 1000' SPOOL Stock No.	PER 1000' SPOOL EACH
530	24	7 × 32	.085"	.51"	876Q3000	221.34	876Q3034	442.68
531	22	7 × 30	.090"	.54"	876Q3002	233.58	876Q3036	467.16
532	20	10 × 30	.100"	.60"	876Q3004	261.12	876Q3038	512.00
533	18	16 × 30	.110"	.66"	876Q3006	273.36	876Q3040	536.00
534	16	26 × 30	.120"	.72"	876Q3008	319.26	876Q3042	626.00
535	14	41 × 30	.140"	1.12"	876Q3010	383.52	876Q3044	752.00
536	12	65 × 30	.160"	1.28"	876Q3012	476.34	876Q3046	934.00
537	10	105 × 30	.185"	1.48"	876Q3014	661.98	876Q3048	1298.00
538	8	133 × 29	.230"	2.30"	876Q3016	1275.00	876Q3050	2250.00
539	6	133 × 27	.285"	2.85"	876Q3018	1688.10	876Q3052	3310.00
540	4	133 × 25	.340"	4.08"	876Q3020	2212.38	876Q3054	4338.00
541	2	133 × 23	.410"	4.92"	876Q3022	3291.54	876Q3056	6454.00
542	1	259 × 25	.470"	5.64"	876Q3024	5840.00	876Q3058	11680.00
543	1/0	259 × 24	.515"	6.18"	876Q3026	6590.00	876Q3060	13180.00
544	2/0	259 × 23	.570"	6.84"	876Q3028	8750.00	876Q3062	17500.00
545	3/0	259 × 22	.625"	7.50"	876Q3030	10700.00	876Q3064	21400.00
546	4/0	259 × 21	.690"	8.28"	876Q3032	11800.00	876Q3066	23600.00

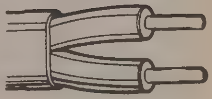
Type MG — UL Style 5107; 450°C, 600 Volts

► **UL Listed, CSA Applied For**

Flexible, stranded, 27% nickel-plated copper conductor. Glass reinforced mica tapes insulation. Glass braid jacket impregnated with high temperature finisher (tan), optional colors available on request. Superior resistance to high temperature and the effects of radiation, insulating materials retain their integrity after exposure to 10^{12} Roentgens of radiation. For wiring in ovens and other high temperature equipment where temperatures do not exceed 450°C. **Nominal Thicknesses. Insulation:** 24-8 AWG .025",10-4 AWG .030", 2-4/0 AWG .035". **Jacket:** 22-12 AWG .007", 10-4 AWG .015", 2-4/0 AWG .020".

500	22	7 × 30	.10"	.60"	876Q3070	325.00	876Q3100	650.00
501	20	10 × 30	.11"	.66"	876Q3072	530.40	876Q3102	686.00
502	18	16 × 30	.12"	.72"	876Q3074	379.00	876Q3104	758.00
503	16	26 × 30	.13"	.78"	876Q3076	463.00	876Q3106	926.00
504	14	41 × 30	.14"	1.12"	876Q3078	646.00	876Q3108	1292.00
505	12	65 × 30	.15"	1.20"	876Q3080	798.66	876Q3110	1566.00
507	8	133 × 29	.26"	2.60"	876Q3082	1879.00	876Q3112	3758.00
508	6	133 × 27	.31"	3.10"	876Q3084	2808.00	876Q3114	5616.00
509	4	133 × 25	.36"	4.32"	876Q3086	4360.00	876Q3116	8720.00
510	2	133 × 23	.45"	5.40"	876Q3088	6029.00	876Q3118	12058.00
512	1/0	259 × 24	.54"	6.48"	876Q3092	12500.00	876Q3122	25000.00
513	2/0	259 × 23	.60"	7.20"	876Q3094	15000.00	876Q3124	30000.00
514	3/0	259 × 22	.66"	7.92"	876Q3096	18100.00	876Q3126	36200.00
515	4/0	259 × 21	.72"	8.64"	876Q3098	20300.00	876Q3128	40600.00

Thermocouple Wire and Extension Wire



A thermocouple is made by the joining together of two dissimilar metal conductors. When the temperature changes at the joint between the two conductors, a voltage is generated. By transmitting that voltage to a special meter, those temperature changes may be monitored and, if desired, recorded. This process is most useful in process instrumentation where monitoring is essential.

ISA Standards

Wire Type	Calibration Temperature	Standard Limits of Error
J	0° to 530°F	±4°F
	530° to 1400°F	±3/4%
K	0° to 530°F	±4°F
	530° to 2300°F	±3/4%
T	–150° to –75°F	±2%
	–75° to 200°F	±1 1/2°F
	200° to 700°F	±3/4%

Wire Type	Calibration Temperature	Standard Limits of Error
E	0° to 600°F	±3%
	600° to 1400°F	±1/2%
JX	400°F	±4°F
KX	400°F	±4°F
TX	200°F	±1 1/2°F
EX	400°F	±3°F
—	—	—

ISA/ANSI Color Code

Type Grade	Type Extension	Positive Wires		Negative Wires		Overall Jacket Grade	Overall Jacket Tracer	Overall Jacket Extension
J	JX	Iron	White	Constantan	Red	Brown	Black	Black
K	KX	Chromel	Yellow	Alumel	Red	Brown	Yellow	Yellow
T	TX	Copper	Blue	Constantan	Red	Brown	Blue	Blue
E	EX	Chromel	Purple	Constantan	Red	Brown	Purple	Purple
—	RX, SX	Copper	Black	Alloy #11	Red	—	—	Green

Duplex Extension Wire

Solid or stranded alloy wire matched and calibrated to standard limits of error per ASA C96.1. Interconnection of thermocouples to temperature recording apparatus.

Mfr.'s Type	ANSI Type	Cond. AWG	Cond. Strand	Cond. Insul./ Jacket Mat'l.	Nom. O.D.	PER 500' SPOOL Stock No.	PER 500' SPOOL EACH	PER 1000' SPOOL Stock No.	PER 1000' SPOOL EACH
1011	EX	20	ONE	PVC	.084" × .142"	876Q3130	265.00	876Q3152	530.00
1012	JX	16	ONE	PVC	.121" × .201"	876Q3132	278.00	876Q3154	556.00
1014	JX	16	ONE	*	.081" × .142"	876Q3134	510.00	876Q3156	1020.00
1015	JX	16	ONE	FEP	.091" × .161"	876Q3136	588.00	876Q3158	1176.00
1016	JX	20	ONE	PVC	.100" × .163"	876-3138	138.00	876Q3160	276.00
1021	KX	16	ONE	PVC	.121" × .201"	876Q3140	428.40	876Q3162	708.00
1023	KX	16	ONE	*	.081" × .142"	876Q3142	574.00	876Q3164	1148.00
1024	KX	20	ONE	PVC	.100" × .163"	876Q3144	222.00	876Q3166	444.00
1024F	KX	20	7/28	PVC	.090" × .154"	876Q3146	397.00	876Q3168	794.00
1030	TX	16	ONE	PVC	.121" × .201"	876Q3148	272.00	876Q3170	544.00
1031	TX	20	ONE	PVC	.100" × .163"	876-3150	135.00	876Q3172	270.00

Duplex Thermocouple Wire Grade

Solid or stranded alloy wire matched and calibrated to standard limits of error per ASA C96.1. For primary thermocouple fabrication and interconnection of thermocouples to temperature recording apparatus.

1102	J	20	ONE	*	.064" × .109"	876Q3180	303.00	876Q3194	606.00
1102F	J	20	7/28	*	.090" × .154"	876Q3182	385.00	876Q3194	770.00
1105	J	20	ONE	FEP	.072" × .124"	876Q3184	348.00	876Q3198	696.00
1112	K	20	ONE	*	.065" × .109"	876Q3186	407.00	876Q3200	814.00
1112F	K	20	7/28	*	.090" × .154"	876Q3188	574.00	876Q3202	1148.00
1115	K	20	ONE	FEP	.072" × .124"	876Q3190	460.00	876Q3204	920.00
1125	T	20	ONE	FEP	.072" × .124"	876Q3192	356.00	876Q3206	712.00

*Silicone varnish impregnated glass braid.

Retractile Cords

Unshielded Neoprene Jacket Power Cords

- ► Retracted Lengths 1, 2 and 4 Feet
- ► Extended Lengths 5, 10 and 20 Feet

Long-lasting service is assured with this quality multiconductor power cord. Each conductor is stranded copper, with rubber insulation, and a rugged weather and oil resistant neoprene jacket overall. Used on electric tools, portable drills, soldering irons; electrical appliances, household appliances, etc., to eliminate loose hanging wires and to prevent wires from tangling and twisting. **Suggested Operating Temperature:** –20°C to +60°C. **Conductor Color Code:** 1 — Black; 2 — White; 3 — Green; 4 — Red.

No. of Cond.	Cond. Size	Cond. Strand	UL Type	Amp Rating	Nom. Coil O.D.	Nom. O.D. Cord	PER 1' LENGTHS Stock No.	PER 1' LENGTHS Mfr.'s Type	PER 1' LENGTHS EACH	PER 2' LENGTHS Stock No.	PER 2' LENGTHS Mfr.'s Type	PER 2' LENGTHS EACH	PER 4' LENGTHS Stock No.	PER 4' LENGTHS Mfr.'s Type	PER 4' LENGTHS EACH
2	18	41/34	SVO	7.0†	7/8"	.260"	876-3210	6310	16.80	—	—	—	—	—	—
3	18	41/34	SJO	7.0†	1 3/8"	.360"	876-3210	6311	29.80	—	—	—	—	—	—
3	16	65/34	SJO	10.0†	1 7/16"	.390"	876-3214	6312	29.40	—	—	—	—	—	—
2	18	41/34	SVO	7.0†	7/8"	.260"	—	—	—	876-3220	6313	29.70	876-3250	6314	57.20
3	18	41/34	SVO	7.0†	1"	.275"	—	—	—	876-3222	6315	38.00	876-3252	6316	69.00
2	18	41/34	SJO	7.0†	1 3/16"	.320"	—	—	—	876-3224	6350	30.70	876-3254	6351	62.86
3	18	41/34	SJO	7.0†	1 3/8"	.250"	—	—	—	876-3226	6317	44.20	876-3256	6318	78.60
4*	18	41/34	SJO	4.6†	1 7/16"	.385"	—	—	—	876-3228	6319	49.80	876-3258	6320	89.64
2	16	65/34	SJP	10.0†	1 3/8"	.360"	—	—	—	876-3230	6352	41.20	876-3260	6353	74.40
3	16	65/34	SJO	10.0†	1 7/16"	.360"	—	—	—	876-3232	6321	53.20	876-3262	6322	100.40
4*	16	65/34	SJO	8.0†	1 1/2"	.425"	—	—	—	876-3234	6354	62.86	876-3264	6355	119.30
3	16	65/34	SO	10.0‡	1 13/16"	.470"	—	—	—	876-3236	6356	68.50	876-3268	6357	129.20
4*	16	65/34	SO	8.0‡	1 7/8"	.500"	—	—	—	876-3238	6358	78.50	876-3270	6359	146.30
3	14	41/30	SO	15.0‡	2 1/8"	.560"	—	—	—	876-3240	6360	88.72	876-3272	6361	165.60
4*	14	41/30	SO	12.0‡	2 1/4"	.605"	—	—	—	876-3242	6362	91.50	876-3274	6363	172.40

*If all four conductors normally carry current, amp rating is as shown. If one lead is used as a ground, amp rating is the same as 2 and 3 conductor cords. †Voltage Rating: 300. ‡Voltage Rating: 600.

Coaxial Cable

Polyethylene Dielectric Flexible RG-Type

Mfr.'s Type	RG Type	Impedance Ohms	Inner Conductor			Shield		Jacket		100' SPOOL		500' SPOOL		1000' SPOOL	
			Mat.'l	Strand	AWG	Mat.'l Inner	Mat.'l Outer	Mat.'l	O.D. (In.)	Stock No.	EACH	Stock No.	EACH	Stock No.	EACH
6246R*	6U	75.0	C	Solid	18	F	TC	Black V	.270	876-9700	40.74	876Q9730	124.26	876Q9760	277.04
5237	8U	52.0	C	7/21	13	C	—	Black V	.415	876-9701	93.71	876Q9731	320.83	876Q9761	630.00
5254	8A/U	52.0	C	7/21	13	C	—	Black NCV	.415	876-9702	126.30	876Q9732	458.33	876Q9762	865.73
5238	11/U	75.0	TC	7/26	18	C	—	Black V	.415	876-9703	71.30	876Q9733	249.54	876Q9763	484.81
5240R*	58/U	53.5	C	Solid	20	TC	—	Black V	.200	876-9704	32.60	876Q9734	117.13	876Q9764	226.11
5259	58A/U	50.0	TC	19/32	20	TC	—	Black V	.199	876-9705	30.56	876Q9735	117.13	876Q9765	222.04
5262	58C/U	50.0	TC	19/32	20	TC	—	Black NCV	.199	876-9706	30.56	876Q9736	117.13	876Q9766	222.04
6244R*	59/U	73.0	CW	Solid	22	C	—	Black V	.242	876-9707	36.57	876Q9737	112.04	876Q9767	213.89
6244TF	59/U	75.0	C	Solid	20	C	—	Teflon	.220	876-9708	86.04	876Q9738	331.50	876Q9768	663.00
5263	59B/U	75.0	CW	Solid	23	C	—	Black NCV	.242	876-9709	32.60	876Q9739	117.13	876Q9769	224.07
6555T	Dual 59B/U	75.0	CW	Solid	23	C	—	Teflon	.230 x .430	876-9710	176.00	876Q9740	896.58	876Q9770	1793.16
6269R*	62A/U†	93.0	CW	Solid	22	C	—	Black V	.242	876-9711	32.60	876Q9741	117.30	876Q9771	199.63
6269TF	62A/U	93.0	C	Solid	22	C	—	Teflon	.222	876-9713	57.73	876Q9743	288.66	876Q9773	600.00
5216	174/U	50.0	CW	7/34	26	C	—	Black V	.105	876-9714	21.67	876Q9744	82.00	876Q9774	164.00
5267	213/U	50.0	C	7/21	13	C	—	Black NCV	.405	876-9715	101.85	876Q9745	387.03	876Q9775	753.69
5268	214/U	50.0	SC	7/21	13	SC	SC	Black NCV	.425	876-9716	387.03	876Q9746	1833.30	876Q9776	3666.60
6273	223/U	50.0	SC	Solid	19	SC	SC	Black NCV	.212	876-9717	138.52	876Q9747	499.07	876Q9777	967.58

*Type CL2. †UL 1478. **Material Code:** C — bare copper; TC — tinned copper; SC — silver covered copper; V — polyvinylchloride, Type 1; NVC — non contaminating polyvinylchloride, Type 2; 2X — double shield; CW — copper covered steel (copperweld); AM — Aluminum/Mylar Tape; O — Cellular (foam) polyethylene.

Fire Alarm Economy Grade Cable

- ► Power Limited
- ► 60°C-300 Volts
- ► Fire-Protective Signaling Cable Riser Rated

Unshielded

Solid bare copper, vinyl insulated, conductors cabled, red vinyl jacket. UL Classified FPLR, Article 760.

Stock No.	Mfr.'s Type	Number of Conductors	AWG Size	Insul. Thickness	Jacket Thickness	Nom. O.D.	PER 1000'
876-5142	3106L	2	18	.010"	.020"	.180"	124.44
876-5144	3109L	4	18	.010"	.020"	.200"	210.12
876Q5146	3109/6	6	18	.010"	.024"	.254"	326.40
876Q5148	3109/8	8	18	.010"	.025"	.268"	448.80
876Q5150	3112L	2	16	.013"	.020"	.206"	177.48
876Q5152	3115L	4	16	.013"	.023"	.271"	324.36
876Q5154	3118L	2	14	.013"	.020"	.230"	273.36
876Q5156	3119L	4	14	.013"	.025"	.267"	507.96
876Q5158	3122L	2	12	.015"	.025"	.272"	493.68

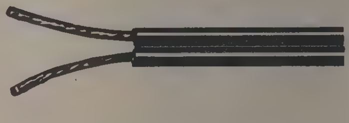
Shielded

Solid bare copper, vinyl insulated, with aluminum mylar shield and #22-7 tinned copper drain wire, red vinyl jacket.

Stock No.	Mfr.'s Type	Number of Conductors	AWG Size	Insul. Thickness	Jacket Thickness	Nom. O.D.	PER 1000'
876-5160	3108L	2	18	.010"	.020"	.180"	157.08
876Q5164	3110/6	6	18	.010"	.024"	.254"	354.96
876Q5166	3110/8	8	18	.010"	.025"	.268"	479.40
876Q5168	3114L	2	16	.013"	.020"	.206"	222.36
876Q5170	3116L	4	16	.013"	.023"	.271"	377.40
876Q5172	3120L	2	14	.013"	.020"	.230"	369.24
876Q5174	3124L	2	12	.013"	.025"	.272"	516.12

Color Code: Black, Red, White, Green, Orange, Blue, Brown, Yellow.

Lamp Cord/Speaker Cable



Speaker Cable

For use in High Definition Speaker Systems, provides a cable with low capacitance and allows it to be used with all amplifiers as opposed to other specialized high capacitance speaker wires, which cause high frequency oscillation in amplifiers.

Stock No.	Mfr.'s Type	Number of Conductors	Conductor		Nom. O.D.	PER 500'
			AWG	Stranding		
876Q5112	2391	2	10	413 × 36	.240" × .485"	459.00
876Q5114	2392	2	12	259 × 36	.200" × .415"	390.00
876Q5116	2393	2	14	168 × 65	.200" × .415"	258.00
876Q5118	2394	2	16	105 × 36	.160" × .335"	177.00

Lamp Cord

Stranded bare copper conductors. UL Class II 60°C type VW-1 flame retardant PVC, rip type construction for easy separation of conductors, one conductor ribbed for polarity i.d., surface printed with manufacturer's UL identifying code and wire gage. **Applications.** For use with fans, lamps, hanging fixtures, radios, TV sets, stereo and HiFi, small appliances and other applications. **Packaging.** All SPT-1 and SPT-2 wires available on bulk reels.

Stock No.	Mfr.'s Type	Current Rating	Conductor		UL Type	Nom. O.D.	Avail. Colors*	PER 250'
			AWG	Stranding				
876-5120	2395	10	18	41 × 34	SPT-1	.105" × .210"	1-4	39.00
876-5122	2396	10	18	41 × 34	SPT-2	.145" × .300"	1-3	47.45
876-5124	2397	13	16	65 × 34	SPT-2	.155" × .310"	1-4	58.00
876-5126	2398	4	24	7 × 32	—	.050" × .120"	4	11.45

Available Colors: 1=Brown, 2=White, 3=Black, 4=Clear.

Type CM Inside Telephone Cables

Solid bare copper, vinyl insulated, twisted pairs. Gray vinyl jacket with nylon rip cord.

Mfr.'s Type	No. of Pairs	AWG	Nom. O.D.	500'			1000'		
				Stock No.	Wt. (Lbs.)	EACH	Stock No.	Wt. (Lbs.)	EACH
3079	3	24	.190"	876-1630	8	51.00	876-1631	15	91.80
3078	4	24	.220"	876-1632	9	63.00	876-1633	18	110.16
3080	6	24	.270"	876-1635	20	91.80	876-1636	39	153.00
3083	25	24	.460"	876Q1640	55	236.64	876Q1641	110	456.96

Telephone Station Type CM

Solid bare copper, polyethylene insulation. Conductors twisted. Rose gray vinyl jacket .022". Solid in knockout cartons.

Stock No.	Mfr.'s Type	No. of Cond.	AWG	Strand	Nom. O.D.	Color Code	PER 500'
876-1620	2380	2	22	Solid	.160"	Red, Green	51.00
876-1625	2382	4	22	Solid	.190"	Green, Red, Yellow, Black	59.00

Single Pair Cable — Type CM

Aluminum Mylar Shield. 22 AWG, Strand Conductors, Tinned copper.
Vinyl insulated, stranded tinned copper drain wire, chrome vinyl jacket. **Temperature Rating:** –20°C to +80°C. 300 V. UL 2464.

Mfr.'s Type	No. of Conductors	Nom. O.D.	500'		1000'		
			Stock No.	EACH	Stock No.	Wt. Lbs.	EACH
2970	2	.178"	876-4000	87.72	876-4001	19	157.08

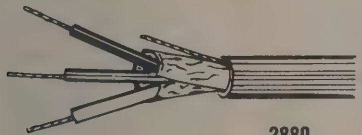
Polypropylene insulated, 24 AWG, stranded tinned copper drain wire. Black or gray vinyl jacket. **Temperature Rating:** –55°C to +105°C. 200 V.

2875	2	.135"	876-4002	74.00	876-4003	15	144.84

Polyethylene insulated, 22 AWG, stranded tinned copper drain wire. Chrome vinyl jacket. **Temperature Rating:** –20°C to +60°C. 350 V. UL 2092.

2877	2	.175"	876-4004	58.00	876-4005	16	116.00

Multi-Conductor Cable — Type CM



Aluminum Mylar Shield. 22 AWG, Strand Conductors, Tinned Copper. Conductors Cabled.
Polypropylene insulated, stranded tinned copper drain wire. Brown vinyl jacket. **Temperature Rating:** –20°C to +80°C. 200 V.

Mfr.'s Type	No. of Conductors	Nom. O.D.	500'		1000'		
			Stock No.	EACH	Stock No.	Wt. Lbs.	EACH
2879	3	.145"	876-4008	110.00	876Q4009	18	212.00

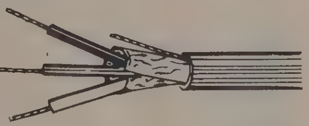
Polyethylene insulated, 22 AWG, stranded tinned copper drain wire. Gray vinyl jacket. **Temperature Rating:** –20°C to +80°C. 350 V. UL 2093

2880	3	.183"	876-4010	72.00	876-4011	21	144.00

Polyethylene insulated, 22 AWG, stranded tinned copper drain wire. Gray vinyl jacket. **Temperature Rating:** –20°C to +60°C. 350 V. UL 2094.

2882	4	.215"	876-4012	150.00	876-4013	30	168.00

Shielded Multi-Conductor Cable



- **22 Gage (7 × 30)**
- **CSA Certified, AWM T2 FT1**

Tinned copper, vinyl insulated, conductors cabled, aluminum mylar shield with 24 AWG stranded tinned copper drain wire, chrome vinyl jacket. **Temperature Rating:** –20°C to +80°C. UL 2464.

Stock No.	Mfr.'s Type	No. of Cond.	Nom. Wall Thickness	Nom. Jacket Thickness	Nom. O.D.	Nom. Cap. pF/ft.	PER 1000'
876Q5101	2005SHD	5	.010"	.035"	.212"	35	232.56
876Q5102	2006SHD	6	.010"	.035"	.227"	35	352.92
876Q5103	2007SHD	7	.010"	.035"	.230"	35	312.12
876Q5104	2008SHD	8	.010"	.035"	.242"	35	324.36
876Q5105	2009SHD	9	.010"	.035"	.259"	35	367.20
876Q5106	2010SHD	10	.010"	.035"	.260"	35	422.28
876Q5107	2012SHD	12	.010"	.035"	.286"	35	491.64
876Q5108	2015SHD	15	.010"	.035"	.301"	35	544.68
876Q5109	2020SHD	20	.010"	.035"	.335"	35	846.60
876Q5110	2025SHD	25	.010"	.040"	.370"	35	1452.48

Sound/Broadcast Audio and Instrumentation Cables — Type CM

20 Gauge, Stranded Conductors
Stranded, tinned copper conductor, polyethylene-insulated, 20 AWG stranded tinned copper drain wire with chrome vinyl jacket. 300 V. **Temperature Rating:** –20°C to +60°C.

Mfr.'s Type	No. of Cond.	Strand	Nom. O.D.	500'		1000'		
				Stock No.	EACH	Stock No.	Wt. Lbs.	EACH
2881*†	2	7/28	.204"	876-4101	72.93	876-4102	24	145.68
2883*†	2	10/30	.186"	876-4104	74.46	876-4105	20	146.00
2884*	3	7/28	.208"	876-4107	95.88	876-4108	29	191.76
2887*	4	10/30	.225"	876-4110	185.00	876Q4111	38	328.00

*2 Cond. UL 2092, 3 Cond. UL 2093, 4 Cond. UL 2094. †Twisted pair.

18 Gauge, Stranded Conductors
Stranded, tinned copper conductor, polyethylene-insulated, 20 AWG drain wire with chrome vinyl jacket. 300 V. **Temperature Rating:** –20°C to +60°C.

2886*†	2	16/30	.222"	876-4113	82.00	876-4114	30	164.00
2888*	3	16/30	.236"	876-4116	180.00	876-4117	42	276.00

*2 Cond. UL 2092, 3 Cond. UL 2093. †Twisted pair.

18 Gauge, Stranded Conductors UL 2464
Cabled conductor, tinned copper, vinyl-insulated, aluminum mylar shield overall, 20 AWG stranded tinned copper drain wire with chrome vinyl jacket. 300 V. **Temperature Rating:** –20°C to +80°C.

2890	4	16/30	.245"	876-4119	174.00	876Q4120	46	348.00

16 Gauge, Stranded Conductors
Stranded, tinned copper conductor, polyethylene-insulated, twisted pair, aluminum mylar shield, 18 AWG stranded tinned copper drain wire with chrome vinyl jacket. 600 V. **Temperature Rating:** –20°C to +60°C.

2891*	2	19/29	.304"	876-4122	180.00	876Q4123	49	313.40

*2 Cond. UL 2106.

16 Gauge, Cabled Conductors
Cabled conductor, tinned copper, vinyl-insulated, aluminum mylar shield overall, 18 AWG stranded tinned copper drain wire with chrome vinyl jacket. 600 V. **Temperature Rating:** –20°C to +60°C.

2892*	3	19/29	.318"	876-4125	250.00	876Q4126	68	430.00
2892/4*	4	19/29	.385"	876-4128	320.00	876Q4129	85	570.00

*3 Cond. UL 2107, 4 Cond. UL 2108.

14 Gauge, Stranded Conductors
Stranded, tinned copper conductor, polyethylene-insulated, twisted pair, aluminum mylar shield, 16 AWG stranded tinned copper drain wire with chrome vinyl jacket. 600 V. **Temperature Rating:** –20°C to +60°C.

2893	2	19/27	.340"	876Q4131	246.00	876Q4132	73	403.40

12 Gauge, Stranded Conductors
Stranded, tinned copper conductor, polyethylene-insulated, twisted pair, aluminum mylar shield, 18 AWG stranded tinned copper drain wire with chrome vinyl jacket. 600 V. **Temperature Rating:** –20°C to +60°C.

2894	2	19/25	.400"	876Q4134	367.00	876Q4135	103	664.00

Low Voltage Control Mylar Foil Shielded Cable

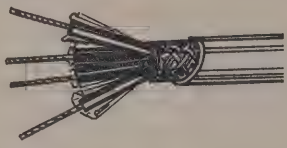
— NEW —

- **UL Classified CL2**

Bare copper, vinyl insulated, cabled, aluminum mylar shield, stranded tinned copper drain wire, chrome vinyl jacket. **Insulation Thickness:** .010". **Jacket Thickness:** .020". **Temperature Rating:** –20°C to +75°C. **Color Code:** Black, red, white, and green.

Mfr.'s Type	No. of Cond.	AWG Stranding	Nom. Cap.	Nom. O.D.	500'		1000'	
					Stock No.	EACH	Stock No.	EACH
2877L	2	22 (7/30)	55	.141"	876-5370	56.10	876-5380	104.04
2886L	2	18 (7/26)	68	.169"	876-5372	83.64	876-5382	153.00
2888L	3	18 (7/26)	68	.188"	876-5374	114.24	876Q5384	214.20
2890L	4	18 (7/26)	68	.205"	876-5376	146.88	876Q5386	277.44
2891L	2	16 (19/29)	80	.192"	876-5378	159.12	876Q5388	293.76

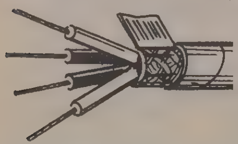
Nylon Shielded Cables MIL-W-16878 Type B



► **Passes the VW-1 Vertical Flame Test**

Stranded tinned copper, vinyl insulated, clear nylon jacket, conductors cabled, 90% tinned copper braid shield, white vinyl jacket overall. **Nominal Nylon Thickness**: .003". **Temperature Rating:** –55°C to +105°C. **Suggested Operating Voltage:** 600 V. **Color Code:** 1 — White; 2 — White, Black; 3 — White, Black, Red; 4 — White, Black, Red, Green.

Mfr.'s Type	No. of Cond.	Cond. Size	Cond. Strand	Nom. Wall Thick.	Nom. Jacket Thick.	Nom. O.D.	PER 500' SPOOL		PER 1000' SPOOL	
							Stock No.	EACH	Stock No.	EACH
2928	1	22	19/34	.010"	.010"	.100"	876-3740	169.00	876Q3772	338.00
2929	2	22	19/34	.010"	.016"	.168"	876Q3742	267.00	876Q3774	534.00
2930	3	22	19/34	.010"	.017"	.178"	876Q3744	368.00	876Q3776	736.00
2931	4	22	19/34	.010"	.019"	.194"	876Q3746	399.00	876Q3778	798.00
2932	1	20	19/32	.010"	.010"	.106"	876-3748	191.00	876Q3780	382.00
2933	2	20	19/32	.010"	.019"	.186"	876Q3750	316.00	876Q3782	632.00
2934	3	20	19/32	.010"	.019"	.196"	876Q3752	382.00	876Q3784	764.00
2935	4	20	19/32	.010"	.021"	.218"	876Q3754	476.00	876Q3786	952.00
2936	1	18	19/30	.010"	.012"	.120"	876-3756	155.00	876Q3788	310.00
2937	2	18	19/30	.010"	.021"	.210"	876Q3758	300.00	876Q3790	600.00
2938	3	18	19/30	.010"	.022"	.227"	876Q3760	389.00	876Q3792	778.00
2939	4	18	19/30	.010"	.023"	.250"	876Q3762	526.00	876Q3794	1052.00
2940	1	16	19/29	.010"	.016"	.137"	876Q3764	216.00	876Q3796	432.00
2941	2	16	19/29	.010"	.023"	.236"	876Q3766	367.00	876Q3798	734.00
2942	3	16	19/29	.010"	.023"	.240"	876Q3768	497.00	876Q3800	994.00
2943	4	16	19/29	.010"	.025"	.274"	876Q3770	623.00	876Q3802	1246.00



Teflon® Shielded Cables MIL-W-16878 Type E

► **Passes the VW-1 Vertical Flame Test**

Stranded silver plated copper conductors, insulated with Type E extruded TFE TEFLON, color coded, cabled, braided silver plated copper shield (90% coverage), white TFE TEFLON tape wrapped jacket. **Temperature Rating:** –65°C to +200°C. **Suggested Operating Voltage:** 600 V. **Color Code:** 1 — White; 2 — White, Black; 3 — White, Black, Red; 4 — White, Black, Red, Green.

Mfr.'s Type	No. of Cond.	Cond. Size	Cond. Strand	Nom. Wall Thick.	Nom. Jacket Thick.	Nom. O.D.	PER 500' SPOOL		PER 1000' SPOOL	
							Stock No.	EACH	Stock No.	EACH
3416	1	22	19/34	.010"	.010"	.089"	876Q3860	340.00	876Q3892	644.64
3417	2	22	19/34	.010"	.010"	.144"	876Q3862	510.00	876Q3894	890.00
3418	3	22	19/34	.010"	.012"	.156"	876Q3864	860.00	876Q3896	1680.00
3419	4	22	19/34	.010"	.012"	.166"	876Q3866	1020.00	876Q3898	1880.00
3420	1	20	19/32	.010"	.010"	.100"	876Q3868	380.00	876Q3900	708.00
3421	2	20	19/32	.010"	.012"	.162"	876Q3870	740.00	876Q3902	1210.00
3422	3	20	19/32	.010"	.012"	.175"	876Q3872	765.00	876Q3904	1428.00
3423	4	20	19/32	.010"	.012"	.185"	876Q3874	994.50	876Q3906	1760.00
3424	1	18	19/30	.010"	.010"	.113"	876Q3876	425.00	876Q3908	806.00
3425	2	18	19/30	.010"	.012"	.188"	876Q3878	720.00	876Q3910	1238.00
3426	3	18	19/30	.010"	.012"	.196"	876Q3880	910.00	876Q3912	1722.00
3427	4	18	19/30	.010"	.012"	.215"	876Q3882	984.30	876Q3914	1876.80
3428	1	16	19/29	.011"	.012"	.123"	876Q3884	465.00	876Q3916	850.00
3429	2	16	19/29	.011"	.012"	.200"	876Q3886	750.00	876Q3918	1470.00
3430	3	16	19/29	.011"	.012"	.218"	876Q3888	1170.00	876Q3920	2000.00
3431	4	16	19/29	.011"	.012"	.235"	876Q3890	1750.00	876Q3922	3362.00

Computer Cables — Type CM

For your Computer requirements. U.L. style 2464 (300 V) CSA S-R PVC. Available in both single conductors and twisted pairs. Both are 24 gauge (7 × 32), tinned copper, vinyl insulated, overall aluminum mylar shield, 24 AWG stranded tinned copper drain wire, and chrome vinyl jacket. Passes the VW-1 (FR-1) vertical flame test.

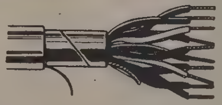
Multi-Conductor Cable

Mfr.'s Type	No. of Cond.	Nom. O.D.	500'		1000'		
			Stock No.	EACH	Stock No.	Wt. Lbs.	EACH
2823	3	.168"	876-7001	79.00	876-7002	18	158.00
2824	4	.180"	876-7004	84.00	876-7005	22	168.00
2825	5	.190"	876-7007	103.00	876Q7008	25	206.00
2826	6	.205"	876-7010	115.00	876Q7011	28	230.00
2827	7	.205"	876-7013	137.00	876Q7014	30	274.00
2828	8	.220"	876-7016	142.00	876Q7017	34	284.00
2829	9	.240"	876-7019	207.00	876Q7020	38	401.88
2830	10	.250"	876-7022	234.60	876Q7023	40	418.20
2835	15	.280"	876Q7025	259.00	876Q7026	56	563.04
2840	20	.310"	876Q7028	409.00	876Q7029	70	750.00
2845	25	.370"	876Q7031	434.00	876Q7032	89	792.00

Multi-Pair Cables

Mfr.'s Type	No. of Pairs	Nom. O.D.	500'		1000'		
			Stock No.	EACH	Stock No.	Wt. Lbs.	EACH
2945	2	.222"	876-7037	126.00	876Q7038	24	242.76
2946	3	.232"	876-7040	146.88	876Q7041	29	279.48
2947	4	.265"	876-7043	178.00	876Q7044	35	320.00
2948	5	.280"	876-7046	230.00	876Q7047	47	358.00
2949	6	.295"	876Q7049	297.84	876Q7050	50	569.16
2950	7	.300"	876Q7052	373.32	876Q7053	55	687.48
2951	8	.330"	876Q7055	397.80	876Q7056	65	769.08
2952	9	.340"	876Q7058	438.60	876Q7059	70	809.88
2953	10	.380"	876Q7061	503.88	876Q7062	79	871.08
2954	15	.425"	876Q7064	675.24	876Q7065	105	1303.56
2956	25	.515"	876Q7034	1009.80	876Q7035	166	1949.20

Overall Foil Shielded Pairs



► **Plenum Cable** ► **UL Classified CL2P** ► **NEC 725-38(b)3 Class 2**

Stranded tinned copper conductors, insulated, twisted pairs, with overall aluminum mylar shield, opaque jacket.

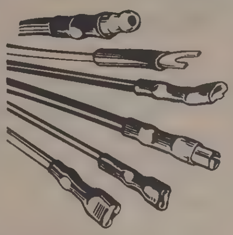
Stock No.	Mfr.'s Type	No. of Pairs	Conductor		Nom. O.D.	Nom. Cap pF/ft.	PER 1000'
			AWG	Stranding			
876Q5179	3170T	2	22	7	.130"	28.6	512.04
876Q5181	3171T	3	22	7	.140"	28.6	954.72
876Q5183	3172T	4	22	7	.160"	28.6	793.56
876Q5185	3173T	6	22	7	.090"	28.6	1144.44
876Q5187	3180T	2	18	16	.260"	36.0	762.96
876Q5189	3181T	3	18	16	.270"	36.0	840.48
876Q5191	3182T	4	18	7	.384"	36.0	1999.20

Multi-Paired Overall Shielded Cables Type CL2

ULAWM Style 2448 and UL 2919. Passes VW-1 (FR-1) vertical flame test. **Temperature Rating:** –20°C to +60°C. Twisted pairs of polyethylene insulated 24 AWG, seven strand tinned conductors, cabled with overall aluminum/mylar shield with 22 (7) AWG tinned copper drain wire. Jacketed with flame retardant gray PVC, .032" nominal wall thickness. Nominal mutual capacitance 12.5 pF/FT.

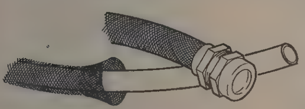
Mfr.'s Type	No. of Pairs	Nom. O.D.	Nom. Capacitance pF/FT	500'		1000'	
				Stock No.	EACH	Stock No.	EACH
9600	2	.264"	12.5	876Q9600	108.12	876Q9610	216.24
9601	3	.278"	12.5	876Q9601	142.82	876Q9611	285.60
9602	4	.300"	12.5	876Q9602	207.06	876Q9612	414.12
9604	6	.353"	12.5	876Q9604	246.84	876Q9614	493.68
9607	9	.409"	12.5	876Q9607	418.20	876Q9617	836.40
9609	12 + 1 Single	.456"	12.5	876Q9609	430.44	876Q9619	860.88

FP Heat-Shrinkable Tubing



FP221 Irradiated Polyolefin (M23053/5)
FP221 is a general purpose heat-shrinkable tubing. Its features are flexibility, flame retardant, self extinguishing and fungus proof. This tubing has a max. shrink rate of 50% of supplied diameter. **Operating Temperature:** –55°C to +135°C. **Colors Available:** 1 — Black, 2 — Red, 3 — White, 4 — Clear. Insert the color number where N appears in the stock number.

Size	Min. Supplied ID (")	Max. Recovered ID (")	Wall Thickness (")	4' Lengths			100' Lengths	
				Stock No.	No. of Lengths	PER BOX	Stock No.	PER SPOOL
3/64"	0.046	0.023	0.016	876-200N	25	17.54	876-220N	17.54
1/16"	0.063	0.031	0.017	876-201N	25	17.95	876-221N	17.95
3/32"	0.093	0.046	0.020	876-202N	25	18.77	876-222N	18.77
1/8"	0.125	0.062	0.020	876-203N	25	20.40	876-223N	20.40
3/16"	0.187	0.093	0.020	876-204N	25	24.89	876-224N	24.89
1/4"	0.250	0.125	0.025	876-205N	25	30.60	876-225N	30.60
3/8"	0.375	0.187	0.025	876-206N	25	35.29	876-226N	35.29
1/2"	0.500	0.250	0.025	876-207N	5	11.07	876-227N	44.27
3/4"	0.750	0.375	0.030	876-208N	5	15.20	876-228N	52.43
1"	1.000	0.500	0.035	876-209N	5	20.80	876-229N	84.05
1 1/2"	1.500	0.750	0.040	876-210N	5	44.44	876Q230N	181.56
2"	2.000	1.000	0.045	876-211N	5	66.67	876Q231N	183.60
3"	3.000	1.500	0.050	876-212N	2	60.22	876Q232N	816.00
4"	4.000	2.000	0.055	876-213N	2	96.00	876Q233N	1224.00



Expandable Braid Polyester Sleeving

— NEW —

Olympic's expandable polyester sleeving is designed for protecting cable bundles and wire assemblies.

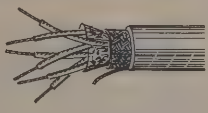
General Purpose

Stock No.	Mfr.'s Type	Min. Supplied I.D.	Max. Supplied I.D.	Nom. Wall Thickness	PER 1000' COIL
876-1801	XC100 1/8"	0.0937"	0.125"	0.25"	**163.20**
876Q1803	XC100 1/4"	0.1250"	0.375"	0.25"	**257.04**
876Q1805	XC100 3/8"	0.2500"	0.625"	0.25"	**354.96**
876Q1807	XC100 1/2"	0.2500"	0.750"	0.25"	**485.52**
876Q1809	XC100 3/4"	0.5000"	1.250"	0.25"	**714.00**
876Q1821	XC100 1 1/4"	0.8750"	1.375"	0.25"	**979.20**
876Q1823	XC100 1 1/2"	1.0000"	2.000"	0.25"	**1285.20**
876Q1825	XC100 1 3/4"	1.2500"	2.750"	0.25"	**1672.80**
876Q1827	XC100 2"	1.5000"	3.500"	0.25"	**1856.40**
876Q1829	XC100 2 1/2"	1.7500"	4.500"	0.25"	**2601.00**

Flame Retardant

Stock No.	Mfr.'s Type	Min. Supplied I.D.	Max. Supplied I.D.	Nom. Wall Thickness	PER 1000' COIL
876Q1831	XF100 1/8"	0.0937"	0.125"	0.25"	**199.92**
876Q1833	XF100 1/4"	0.1250"	0.375"	0.25"	**326.40**
876Q1835	XF100 3/8"	0.2500"	0.625"	0.25"	**428.40**
876Q1837	XF100 1/2"	0.2500"	0.750"	0.25"	**591.60**
876Q1839	XF100 3/4"	0.5000"	1.250"	0.25"	**877.20**
876Q1841	XF100 1 1/4"	0.8750"	1.375"	0.25"	**1203.60**
876Q1843	XF100 1 1/2"	1.0000"	2.000"	0.25"	**1621.80**
876Q1845	XF100 1 3/4"	1.2500"	2.750"	0.25"	**2162.40**
876Q1847	XF100 2"	1.5000"	3.500"	0.25"	**2403.12**
876Q1849	XF100 2 1/2"	1.7500"	4.500"	0.25"	**2845.80**

Multi-Pair Computer Cable



- **Suitable for RS-422 Type Application**
- **24 Gage, Stranded Conductors (7 × 32)**
- **UL Classified CM**

Tinned copper, polyethylene insulated twisted pairs, 100% foil and 90% T.C. braid shield and drain wire with chrome PVC jacket. 30 V. **Temperature Range:** –20°C to +80°C. **Nominal Impedance:** 100. **Nominal Velocity of Property:** 66%. **Nominal Capacitance:** 15.5 pF/ft. between conductors; 27.5 pF/ft. between one conductor and other conductor connected to shield.

Mfr.'s Type	No. of Pairs	Nominal Wall Thickness	Nom. O.D.	PER 500' SPOOL		PER 1000' SPOOL	
				Stock No.	EACH	Stock No.	EACH
3929	2	.010"	.300"	**876Q3720**	**217.00**	**876Q3726**	**434.00**
3930	3	.010"	.310"	**876Q3722**	**384.00**	**876Q3728**	**768.00**
3931	4	.010"	.330"	**876Q3724**	**449.00**	**876Q3730**	**898.00**

Overall Shielded Paired Cable

- **UL Subject 13**
- **UL Listed, 300 V and UL 2464 AWM**
- **CSA Certified, CSA TR-64 Appliance Wiring Material**

Tinned copper, vinyl insulation, conductors cabled, overall aluminum mylar shield and drain wire, chrome vinyl jacket. **Color Code:** conductor pairs are color coded black and red. Multipairs are numbered at one inch intervals. Meets Article 725 of the NEC. Also marked as Tray Cable suitable for class 2 and 3 circuits. Passes the UL 70,000 BTU Flame and Tray Cable test which is comparable to the IEEE 383 Flame Test, Sunlight Resistant. Passes the VW1 vertical flame test.

22 AWG (7 × 30)

Mfr.'s Type	No. of Pairs	Insulation Thickness	Jacket Thickness	Nom. O.D.	PER 500' SPOOL		PER 1000' SPOOL	
					Stock No.	EACH	Stock No.	EACH
3170	2	.016"	.043"	.310"	**876-3650**	**183.00**	**876Q3670**	**366.00**
3171	3	.016"	.043"	.326"	**876Q3652**	**227.00**	**876Q3672**	**454.00**
3172	4	.016"	.043"	.353"	**876Q3654**	**266.00**	**876Q3674**	**532.00**
3173	6	.016"	.053"	.425"	**876Q3656**	**403.00**	**876Q3676**	**806.00**
3174	9	.016"	.053"	.488"	**876Q3658**	**550.00**	**876Q3678**	**1100.00**
3175	11	.016"	.053"	.536"	**876Q3660**	**655.00**	**876Q3680**	**1310.00**
3176	15	.016"	.053"	.594"	**876Q3662**	**857.00**	**876Q3682**	**1714.00**
3177	19	.016"	.063"	.741"	**876Q3664**	**1100.00**	**876Q3684**	**2200.00**
3178	27	.016"	.063"	.761"	**876Q3666**	**1540.00**	**876Q3686**	**3080.00**
3179	51	.016"	.075"	.950"	**876Q3668**	**2730.00**	**876Q3688**	**5460.00**

18 AWG (16 × 30)

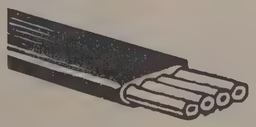
Mfr.'s Type	No. of Pairs	Insulation Thickness	Jacket Thickness	Nom. O.D.	PER 500' SPOOL Stock No.	PER 500' SPOOL EACH	PER 1000' SPOOL Stock No.	PER 1000' SPOOL EACH
3181	3	.016"	.053"	.416"	**876Q3690**	**412.00**	**876Q3702**	**824.00**
3182	4	.016"	.053"	.451"	**876Q3692**	**478.00**	**876Q3704**	**956.00**
3183	6	.016"	.053"	.516"	**876Q3694**	**612.00**	**876Q3706**	**1224.00**
3184	9	.016"	.053"	.596"	**876Q3696**	**916.00**	**876Q3708**	**1382.00**
3185	11	.016"	.063"	.676"	**876Q3698**	**1215.00**	**876Q3710**	**2430.00**
3186	15	.016"	.063"	.751"	**876Q3700**	**1744.00**	**876Q3712**	**3488.00**

Shielded Pairs Audio/Control Cable Type CM

Tinned copper conductors, polypropylene insulation. Individually shielded pairs with a 24 AWG common drain wire. Aluminum mylar shield. 22 AWG, 7/30 stranded conductors. Pairs cabled on common axis to reduce diameter. Chrome vinyl jacket. 400 V.

Mfr.'s Type	No. of Pairs	Nom. O.D.	500'		1000'		
			Stock No.	EACH	Stock No.	Wt. Lbs.	EACH
2976	2	.165"	**876-5049**	**91.00**	**876-5050**	22	**182.00**

Modular Cord



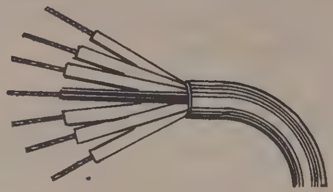
- **26 Gage (7 × 34) or 28 Gage (7 × 36)**
- **UL Listed**

Stranded tinned copper, vinyl insulated, conductors parallel, silver vinyl jacket. **Color Code:** Four Wire — Black, Red, Green, Yellow; Six Wire — White, Black, Red, Green, Yellow, Blue; Eight Wire — Blue, Orange, Black, Red, Green, Yellow, Brown, Grey; Ten Wire — Violet, Blue, Orange, Black, Red, Green, Yellow, Brown, Grey, White.

Stock No.	Mfr.'s Type	No. of Conductors	Conductor		Nom. O.D.	PER 1000'
			AWG	Stranding		
876-5128	3744-26*	4	26	7 × 34	.090" × .193"	**94.00**
876-5130	3746-26*	6	26	7 × 34	.090" × .280"	**132.00**
876Q5132	3748-26*	8	26	7 × 34	.090" × .335"	**170.00**
876Q5134	3750-26*	10	26	7 × 34	.090" × .430"	**246.00**
876-5136	3744†	4	28	7 × 36	.090" × .190"	**102.00**
876Q5138	3746†	6	28	7 × 36	.090" × .265"	**186.00**
876Q5140	3748†‡	8	28	7 × 36	.090" × .330"	**240.00**

*CSA Certified. †Tinned Copper. ‡**Color Code:** Eight Wire — White, Orange, Black, Red, Green, Yellow, Blue, Brown.

Unshielded Audio Cable



2464

Applications
- ► Unbalanced Intercom Systems
- ► Low Voltage Relay Control Cable
- ► Electronic Computer Cable
- ► Interconnecting Cables
- ► PA Systems
- ► Remote Control Circuits
- ► Telephone and Telemetering Connecting Cable

Temperature Rating: –20°C to +80°C. Stranded 7/30 tinned copper. Vinyl insulation conductors twisted 22 AWG. Gray vinyl jacket overall. **Suggested Working Voltage:** 200.

Mfr.'s Type	No. of Cond.	Nominal Wall Thickness	Nominal Jacket Thickness	Nominal O.D.	PER 500' SPOOL		PER 1000' SPOOL	
					Stock No.	EACH	Stock No.	EACH
2002	2	.010"	.032"	.164"	876-3290	52.00	876-3324	104.00
2003	3	.010"	.032"	.169"	876-3292	70.00	876-3326	140.00
2004	4	.010"	.032"	.194"	876-3294	77.00	876-3328	154.00
2005	5	.010"	.032"	.199"	876-3296	100.00	876Q3330	200.00
2006	6	.010"	.032"	.209"	876-3298	107.00	876Q3332	214.00
2007	7	.010"	.032"	.214"	876-3300	149.00	876Q3334	298.00
2008	8	.010"	.032"	.224"	876-3302	153.00	876Q3336	306.00
2009	9	.010"	.032"	.249"	876-3304	180.00	876Q3338	360.00
2010	10	.010"	.032"	.259"	876Q3306	207.00	876Q3340	414.00
2012	12	.010"	.032"	.279"	876Q3308	241.00	876Q3342	482.00
2015	15	.010"	.032"	.304"	876Q3310	267.00	876Q3344	534.00
2020	20	.010"	.032"	.324"	876Q3312	415.00	876Q3346	830.00
2025	25	.010"	.032"	.364"	876Q3314	489.00	876Q3348	978.00
2030	30	.010"	.032"	.379"	876Q3316	740.00	876Q3350	1480.00
2040	40	.010"	.032"	.439"	876Q3318	856.80	876Q3352	1680.00
2050	50	.010"	.035"	.500"	876Q3320	1342.00	876Q3354	2684.00
2060	60	.010"	.035"	.530"	876Q3322	1720.00	876Q3356	3440.00

Control and Tray Cables

- ► Unshielded/Vinyl Jacket
- ► Direct Burial
- ► UL Subject 1277, NEC ART. 340 Class 1, Div. 11, IPCEA S-61-402, IEEE 383 Flame Test
- ► Sunlight Resistant and Flame Retardant
- ► Suitable for Outdoor Use

Stranded bare copper, .015 PVC insulation and .005 clear nylon fillers where necessary, and covered with binder tape, black PVC jacket. **Temperature Rating:** –40° to +90°C. **Voltage Rating:** 600 V.

16 AWG Stranded Bare Copper

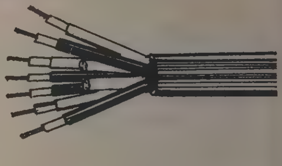
Mfr.'s Type	No. of Cond.	Nominal Jacket Thickness	Nominal O.D.	PER 500' SPOOL		PER 1000' SPOOL	
				Stock No.	EACH	Stock No.	EACH
8300	2*	.045"	.200" × .315"	876-3510	133.00	876Q3540	266.00
8302	3	.045"	.315"	876Q3512	200.00	876Q3542	400.00
8303	4	.045"	.340"	876Q3514	233.00	876Q3544	466.00
8304	5	.045"	.370"	876Q3516	334.00	876Q3546	668.00
8306	7	.045"	.400"	876Q3518	417.00	876Q3548	834.00
8307	8	.045"	.430"	876Q3520	458.00	876Q3550	916.00
8308	9	.045"	.460"	876Q3522	541.00	876Q3552	1082.00
8309	10	.045"	.500"	876Q3524	567.00	876Q3554	1134.00
8310	12	.045"	.515"	876Q3526	691.00	876Q3556	1382.00
8315	16	.060"	.605"	876Q3528	892.00	876Q3558	1784.00
8321	19	.060"	.635"	876Q3530	991.00	876Q3560	1982.00
8340	20	.060"	.665"	876Q3532	1034.00	876Q3562	2068.00
8345	25	.060"	.735"	876Q3534	1250.00	876Q3564	2500.00
8349	30	.060"	.775"	876Q3536	1670.00	876Q3566	3340.00
8350	37	.060"	.880"	876Q3538	2010.00	876Q3568	4020.00

14 AWG Stranded Bare Copper

Mfr.'s Type	No. of Cond.	Nominal Jacket Thickness	Nominal O.D.	PER 500' SPOOL		PER 1000' SPOOL	
				Stock No.	EACH	Stock No.	EACH
8400	2*	.045"	.240" × .325"	876-3570	158.00	876Q3600	316.00
8402	3	.045"	.345"	876Q3572	225.00	876Q3602	450.00
8403	4	.045"	.375"	876Q3574	317.00	876Q3604	634.00
8404	5	.045"	.410"	876Q3576	383.00	876Q3606	766.00
8406	7	.045"	.445"	876Q3578	450.00	876Q3608	900.00
8408	9	.045"	.515"	876Q3580	758.00	876Q3610	1516.00
8409	10	.060"	.595"	876Q3582	791.00	876Q3612	1582.00
8410	12	.060"	.610"	876Q3584	859.00	876Q3614	1718.00
8413	15	.060"	.675"	876Q3586	1150.00	876Q3616	2300.00
8415	16	.060"	.675"	876Q3588	1200.00	876Q3618	2400.00
8421	19	.060"	.710"	876Q3590	1292.00	876Q3620	2584.00
8440	20	.060"	.745"	876Q3592	1393.00	876Q3622	2786.00
8445	25	.060"	.825"	876Q3594	1834.00	876Q3624	3668.00
8449	30	.080"	.915"	876Q3596	2170.00	876Q3626	4340.00
8450	37	.080"	.985"	876Q3598	2750.00	876Q3628	5500.00

*Flat.

Unshielded Audio Cable — Vinyl Control



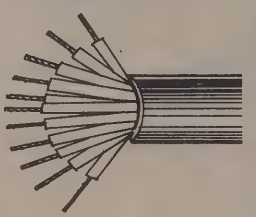
- ► UL Classified CM/CL2
- ► Passes VW-1 Vertical Flame Test

Temperature Rating: –20°C to +80°C. Stranded 16/30 tinned copper. Vinyl insulated conductors cabled 18 AWG. Chrome vinyl jacket.

Mfr.'s Type	No. of Cond.	Nominal Wall Thickness	Nominal Jacket Thickness	Nom. O.D.	UL Style No.	PER 500' SPOOL		PER 1000' SPOOL	
						Stock No.	EACH	Stock No.	EACH
2202†	2	.018"	.032"	.224"	2598	876-3360	80.00	876-3386	160.00
2203‡	3	.016"	.020"	.210"	2509	876-3362	120.00	876Q3388	240.00
2204†	4	.017"	.032'	.254"	2598	876-3364	160.00	876Q3390	320.00
2205†	5	.017"	.033"	.286"	2598	876Q3366	212.00	876Q3392	424.00
2206‡	6	.017"	.020"	.290"	2509	876Q3368	268.00	876Q3394	536.00
2207†	7	.017"	.037"	.324"	2598	876Q3370	290.00	876Q3394	580.00
2208‡	8	.017"	.025"	.315"	2509	876Q3372	319.00	876Q3398	638.00
2209†	9	.017"	.037"	.379"	2598	876Q3374	375.00	876Q3400	750.00
2210‡	10	.017"	.025"	.370"	2509	876Q3376	452.00	876Q3402	904.00
2212*†	12	.017"	.040"	.412"	2598	876Q3378	520.00	876Q3404	1040.00
2215*†	15	.017"	.045"	.505"	2598	876Q3380	622.00	876Q3406	1244.00
2219*†	19	.017"	.045"	.530"	2598	876Q3382	771.00	876Q3408	1542.00
2225*†	25	.017"	.060"	.600"	2598	876Q3384	940.00	876Q3410	1880.00

*UL Recognized. †Suggested Working Voltage: 400. ‡Suggested Working Voltage: 300.

Unshielded Audio Cable — Vinyl Control



- ► UL Classified CM/CL2

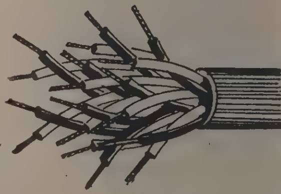
Temperature Rating: –20°C to +80°C. Stranded tinned copper. Vinyl insulated conductors cabled. Chrome vinyl jacket. **Suggested Working Voltage:** 600 except where noted. UL Style 2509 except where noted.

Mfr.'s Type	No. of Cond.	Cond. Size	Cond. Strand	Nom. Wall Thick.	Nom. Jacket Thick.	Nom. O.D.	PER 500' SPOOL		PER 1000' SPOOL	
							Stock No.	EACH	Stock No.	EACH
2302†	2	16	19/29	.023"	.030"	.256"	876-3420	130.00	876Q3444	260.00
2303‡	3	16	26/30	.016"	.020"	.245"	876Q3422	219.00	876Q3446	438.00
2304	4	16	19/29	.030"	.045"	.375"	876Q3424	261.00	876Q3448	522.00
2305	5	16	19/29	.030"	.045"	.405"	876Q3426	378.00	876Q3450	756.00
2307	7	16	19/29	.030"	.045"	.455"	876Q3428	499.00	876Q3452	998.00
2309	9	16	19/29	.030"	.045"	.520"	876Q3430	693.60	876Q3454	1170.00
2312	12	16	19/29	.030"	.060"	.610"	876Q3432	1056.00	876Q3456	2112.00
2315	15	16	19/29	.030"	.060'	.670"	876Q3434	1200.00	876Q3458	2400.00
2319	19	16	19/29	.030"	.065"	.700"	876Q3436	1540.00	876Q3460	3080.00
2325	25	16	19/29	.030"	.065"	.850"	876Q3438	2067.00	876Q3462	4134.00
2342	2	14	19/27	.031"	.035"	.332"	876Q3440	210.00	876Q3464	420.00
2362	2	12	19/25	.031"	.040"	.384"	876Q3442	284.00	876Q3468	568.00

†UL Style 2598. ‡Suggested Working Voltage: 300.

Sound and Control Cables — Paired/Unshielded

2464



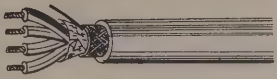
- ► UL Classified CM
- ► 18 AWG Stranded Conductors (16 × 30)

Temperature Rating: –20°C to +80°C. Stranded tinned copper. Vinyl insulated. Twisted pairs. Chrome vinyl jacket. **Suggested Working Voltage:** 300.

Mfr.'s Type	No. of Pairs	Insulation Thickness	Jacket Thickness	Nom. O.D.	PER 500' SPOOL		PER 1000' SPOOL	
					Stock No.	EACH	Stock No.	EACH
2802	2	.014"	.032"	.327"	876Q3472	233.58	876Q3490	458.00
2803	3	.014"	.032"	.362"	876Q3474	309.00	876Q3492	618.00
2804	4	.014"	.032"	.358"	876Q3476	442.00	876Q3494	884.00
2806	6	.014"	.032"	.433"	876Q3478	577.00	876Q3496	1154.00
2809	9	.013"	.055"	.524"	876Q3480	851.00	876Q3498	1702.00
2812	12	.013"	.055"	.600"	876Q3482	1291.00	876Q3500	2582.00
2815	15	.013"	.060"	.677"	876Q3484	1783.00	876Q3502	3566.00
2819	19	.013"	.070"	.721"	876Q3486	2580.00	876Q3504	5160.00

High Temperature, Plenum Control Cable

— NEW —



Overall foil and braid shield. Teflon insulated with a red teflon jacket. **Jacket Thickness:** 0.15". Conductors are stranded tinned copper. **Temperature Rating:** 200°C. Plenum CMP.

24 AWG 7 Strand

Stock No.	Mfr.'s Type	No. of Cond.	Insulation Thickness	Nom. O.D.	PER 1000' COIL
876Q1701	43503	3	0.006"	0.137"	818.04
876Q1703	43504	4	0.006"	0.146"	983.28
876Q1705	43506	6	0.006"	0.167"	1250.52
876Q1707	43509	9	0.006"	0.190"	1505.52
876Q1709	43512	12	0.006"	0.209"	1650.36
876Q1711	43515	15	0.006"	0.229"	1993.08

22 AWG 7 Strand

876Q1713	43552	2	0.006"	0.143"	795.60
876Q1715	43553	3	0.006"	0.150"	897.60
876Q1717	43554	4	0.006"	0.161"	960.84
876Q1719	43556	6	0.006"	0.185"	1207.68
876Q1721	43559	9	0.006"	0.211"	1599.36
876Q1723	43562	12	0.006"	0.234"	2125.68
876Q1725	43569	19	0.006"	0.269"	2794.80

20 AWG 7 Strand

876Q1727	43602	2	0.006"	0.159"	714.00
876Q1729	43604	4	0.006"	0.180"	1138.32
876Q1731	43606	6	0.006"	0.209"	1515.72
876Q1733	43609	9	0.006"	0.240"	1893.12
876Q1735	43612	12	0.006"	0.267"	2421.48

18 AWG 19 Strand

876Q1737	43652	2	0.007"	0.182"	1122.00
876Q1739	43653	3	0.007"	0.191"	1305.60
876Q1741	43654	4	0.007"	0.207"	1495.32
876Q1743	43656	6	0.007"	0.243"	1752.36
876Q1745	43659	9	0.007"	0.281"	2284.80
876Q1747	43662	12	0.007"	0.313"	3060.00

16 AWG 19 Strand

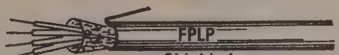
876Q1749	43702	2	0.007"	0.200"	1287.24
876Q1751	43703	3	0.007"	0.211"	1391.28
876Q1753	43704	4	0.007"	0.228"	1628.84
876Q1755	43706	6	0.007"	0.270"	1797.24
876Q1757	43709	9	0.007"	0.313"	2611.20
876Q1759	43712	12	0.007"	0.350"	3476.16
876Q1761	43715	15	0.007"	0.389"	4308.48
876Q1763	43719	19	0.007"	0.410"	4875.60

Plenum Cable Fire Alarm

Unshielded

▶ UL Classified FPLP NEC 760

Unshielded



Shielded

Solid soft bare copper, insulated with extruded insulation, cabled, with a TFE binder tape, overall red jacket.

Mfr.'s Type	No. of Cond.	Cond. AWG	Cond. Strand	Nom. O.D.	PER 500' SPOOL		PER 1000' SPOOL	
					Stock No.	EACH	Stock No.	EACH
3752-760	2	18	1	.139"	876-3810	102.00	876-3832	192.00
3754-760	4	18	1	.164"	876-3812	187.68	876Q3834	306.00
3757-760	4	16	1	.160"	876Q3814	224.40	876Q3836	406.00
3758-760	2	16	1	.189"	876-3816	155.04	876Q3838	252.00
3784-760	2	14	1	.186"	876-3818	173.40	876Q3840	314.16
3122T	2	12	1	.230"	876Q3820	308.00	876Q3842	616.00

Shielded

Solid soft bare copper, insulated with extruded insulation, cabled, aluminum mylar shield and tinned copper drain wire, overall Red jacket. **Color Code:** Black, White, Red, Green, Brown, Blue, Orange, Yellow.

3762-760	2	18	1	.146"	876-3822	144.84	876Q3844	261.12
3774-760	4	18	1	.171"	876-3824	356.00	876Q3846	356.00
3782-760	2	16	1	.167"	876-3826	181.56	876Q3848	318.00
3783-760	4	16	1	.196"	876Q3828	285.60	876Q3850	482.00
3760-760	2	14	1	.193"	876Q3830	285.60	876Q3852	518.16

Plenum Cables — Type CL2P

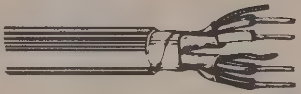
Power Limited Circuit Cable — Class 2

Approved for direct installation in air plenums without conduit. Use up to 200'. Low cap. 12.5 PF/FT between conductors twisted pairs. 24 AWG stranded tinned conductors, cabled with overall aluminum mylar shield, 22 AWG stranded tinned copper drain wire, overall opaque jacket.

Mfr.'s Type	No. of Pairs	Strand	Nom. O.D.	500'		1000'		
				Stock No.	EACH	Stock No.	Wt. (Lbs.)	EACH
9500	2	7/32	0.208"	876Q4029	259.00	876Q4030	20	559.00
9501	3	7/32	0.220"	876Q4032	292.00	876Q4033	36	559.00
9502	4	7/32	0.240"	876Q4035	400.00	876Q4036	37	700.00
9503	6	7/32	0.290"	876Q4038	500.00	876Q4039	52	967.00
9504	7	7/32	0.300"	876Q4041	680.00	876Q4042	58	1300.00
9505	9	7/32	0.350"	876Q4044	834.00	876Q4045	63	1559.00
9506	12*	7/32	0.420"	876Q4047	1183.20	876Q4048	129	2209.32

*12 pairs plus 1 single.

Multi-Paired Individually — Shielded Cable



Tinned copper, teflon insulated, black/red and green/white pairs each under an aluminum-mylar shield. 22 AWG stranded drain wires with overall tape wrap, opaque jacket. NEC725-38(B)(3); UL Subject 13.

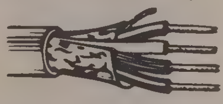
2976T	2	7/30	0.180"	876Q4080	234.60	876Q4081	24	440.64
2980T	3	7/30	0.252"	876Q4083	367.00	876Q4084	36	803.76

POS Cables

Solid, tinned copper conductor. Foil shield with drain wire, tinned copper braid shield. Opaque jacket.

Mfr.'s Type	No. of Cond.	AWG	Nom. O.D.	500'		1000'		
				Stock No.	EACH	Stock No.	Wt. (Lbs.)	EACH
6173T	2	22	0.280"	876Q8017	482.00	876Q8018	41	884.00

Remote — Control, Signaling, Power Limited Circuits



Stranded, tinned copper using extruded insulation, cabled; TFE binder tape, overall opaque jacket unshielded or shielded. Shielded has aluminum mylar shield and drain wire NEC725-38(B)(3).

Unshielded

2202T	2	18	0.175"	876Q7090	110.00	876Q7091	24	206.04
2204T	4	18	0.214"	876Q7093	191.76	876Q7094	42	328.44
2206T	6	18	0.290"	876Q7096	265.20	876Q7097	54	497.76
2208T	8	18	0.224"	876Q7099	346.80	876Q8000	70	616.08
2302T	2	16	0.256"	876Q8002	154.00	876Q8003	27	284.00

Shielded

2877T	2	22	0.150"	876Q8005	110.00	876Q8006	16	204.00
2882T	4	22	0.215"	876Q8008	158.00	876Q8009	24	298.00
2886T	2	18	0.196"	876Q4077	132.60	876Q4078	26	252.96
2890T	4	18	0.215"	876Q8011	240.00	876Q8012	33	442.00

Twinaxial Cable

NEC725-38(B)(3). UL Subject 13, Computer cables — equivalent to IBM 7362061 type. **Shield:** TC braid 95%. **Jacket:** Black tint.

Mfr.'s Type	Conductor	AWG	Nom. O.D.	500'		1000'		
				Stock No.	EACH	Stock No.	Wt. (Lbs.)	EACH
6275T	1 TC, 1 C	20	0.282"	876Q4074	670.14	876Q4075	57	1340.28

Enduro I General Response Indoor Control

Foil Shield 18 AWG, 16/30

- CM, UL, AWM 2464, CSA PCC FT4
- Flexible Construction
- Good Impact/Abrasion Resistance
- Premium Polyvinylchloride Jacket
- Operating Temperature Range: –20°C to 80°C-AWM
- Insulation Thickness: .017"
- Jacket Material: PVC
- Jacket Colors: Gray, Black, and Sand Beige

Stock No.	Mfr.'s Type	No. of Cond.	Jacket Thickness (In.)	Diameter (In.)	PER 1000' COIL
876Q5300	81382	2	.032	.23	897.60
876Q5301	81383	3	.032	.24	1115.88
876Q5302	81384	4	.032	.26	1256.64
876Q5303	81386	6	.032	.31	1020.00
876Q5304	81388	8	.032	.33	2174.64

Stock No.	Mfr.'s Type	No. of Cond.	Jacket Thickness (In.)	Diameter (In.)	PER 1000' COIL
876Q5305	81390	10	.032	.39	2480.64
876Q5306	81390/15	15	.032	.45	3127.32
876Q5307	81390/20	20	.032	.51	4351.32
876Q5308	81390/25	25	.053	.56	5793.60
—	—	—	—	—	—

Enduro II Industrial Control

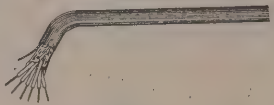
Foil Shield 22 AWG, 7/30

- 24 and 22 AWG: UL Style 1061, UL20200
- 20, 18 and 16 AWG: UL Style 1007
- Aluminum/Polyester Shield, Foil Facing In Plus Stranded, Tinned Copper Drain Wire Equal In Size To Insulated Conductors Of Cable
- Stranded Tin Coated Copper Conductor
- Passes UL VW-1 Flame Test
- Color Coded Insulation, 80°C Premium PVC
- Nylon Rip Cord For Ease Of Jacket Stripping
- Insulation Thickness: .010"
- Jacket Material: Polyurethane
- Jacket Colors: Black and Gray (Other Colors Available)

Stock No.	Mfr.'s Type	No. of Cond.	Jacket Thickness (In.)	Diameter (In.)	PER 1000' COIL
876Q5310	82192	2	.032	.18	1179.12
876Q5311	82193	3	.032	.19	1266.84
876Q5312	82194	4	.032	.20	1570.80
876Q5313	82196	6	.032	.23	1774.80
876Q5314	82198	8	.032	.25	1876.80
876Q5315	82199/10	10	.032	.28	2290.22

Stock No.	Mfr.'s Type	No. of Cond.	Jacket Thickness (In.)	Diameter (In.)	PER 1000' COIL
876Q5316	82199/15	15	.032	.31	3223.20
876Q5317	82199/20	20	.032	.34	3753.60
876Q5318	82199/25	25	.032	.38	4243.20
876Q5319	82199/30	30	.032	.40	4936.80
876Q5320	82199/40	40	.032	.45	6038.40
876Q5321	82199/50	50	.032	.49	6895.20

Enduro III Outdoor and Direct Burial



Foil Shield 16 AWG, 19/29

- High Tensile/Tear Strength
- Superior Abrasion/Cut-Through Resistance
- Excellent OutdoOr Aging Characteristics
- Excellent Resistance To Most Oils, Solvents, Fuels and Water
- Fungus Resistant Per MIL-STD-810C
- Passes UL VW-1 Flame Test
- Ultraviolet Light Stabilized (Color Black Recommended)
- Operating Temperature Range: –20°C To 80°C
- Low Temperature Flexibility To –20°C
- Insulation Thickness: .017"
- Jacket Material: Polyethylene
- Jacket Colors: Black and Gray (Other Colors Available)

Stock No.	Mfr.'s Type	No. of Cond.	Jacket Thickness (In.)	Diameter (In.)	PER 1000' COIL
876Q5330	83362	2	.032	.25	1509.60
876Q5331	83363	3	.032	.27	1734.00
876Q5332	83364	4	.032	.29	2297.04
876Q5333	83366	6	.032	.35	2915.16
876Q5334	83368	8	.032	.38	3965.76

Stock No.	Mfr.'s Type	No. of Cond.	Jacket Thickness (In.)	Diameter (In.)	PER 1000' COIL
876Q5335	83370	10	.032	.44	4651.20
876Q5336	83370/15	15	.032	.49	6150.60
876Q5337	83370/20	20	.053	.59	8710.80
876Q5338	83370/25	25	.053	.66	11077.20
—	—	—	—	—	—

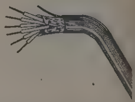
Enduro IV Computer and Control

Foil and Braid Shield 22 AWG, 7/30, 300 V

- UL Conductor Style 1888, UL20237 and UL20238 Power Limited Tray Cable, 300 V, 90°C
- Stranded Tin Coated Copper Conductor
- Passes IEEE Flame Test
- Color Coded Insulation, 125°C Thermoplastic Rubber
- Nylon Rip Cord For Ease Of Jacket Stripping
- Insulation Jacket Thickness: .016"
- Jacket Material: Thermoplastic Rubber
- Jacket Colors: Black and Gray (Other Colors Available)

Stock No.	Mfr.'s Type	No. of Cond.	Jacket Thickness (In.)	Diameter (In.)	PER 1000' COIL
876Q5340	84102	2	.032	.22	1672.80
876Q5341	84103	3	.032	.24	1907.40
876Q5342	84104	4	.032	.26	2003.28
876Q5343	84106	6	.032	.29	2488.80
876Q5344	84108	8	.032	.31	2672.40
876Q5345	84110	10	.032	.34	3182.40
876Q5346	84110/15	15	.032	.39	4120.80
876Q5347	84110/20	20	.032	.43	4977.60
876Q5348	84110/25	25	.032	.47	6426.00

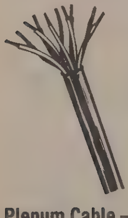
Enduro V High Temperature/ Low Smoke Control



Foil Shield 18 AWG, 7/28

- UL Cable Style 20229, 300 V
- Outstanding Moisture, Abrasion and Impact Resistance
- Passes Steiner Tunnel Test (Low Smoke and Flame Generation)
- Passes IEEE-383, 210,000 BTU Flame Test
- Excellent Chemical, Oil, Solvent and Fungus Resistance
- Low Coefficient Of Friction
- Reduced Cable Diameters
- Direct Burial In Wet Earth Without Conduit
- Operating Temperature Range: –80°C To 200°C (UL, 150°C)
- Insulation Thickness: .010"
- Jacket Material: FEP Teflon
- Jacket Color: Natural Tan

Stock No.	Mfr.'s Type	No. of Cond.	Jacket Thickness (In.)	Diameter (In.)	PER 1000' COIL
876Q5350	85382	2	.025	.19	3702.60
876Q5351	85383	3	.025	.22	4304.40
876Q5352	85384	4	.025	.24	5242.80
876Q5353	85385	5	.025	.26	6344.40
876Q5354	85386	6	.025	.27	7405.20
876Q5355	85387	7	.025	.29	8649.60
876Q5356	85388	8	.025	.30	9975.60
876Q5357	85389	9	.025	.32	12688.80
876Q5358	85390	10	.025	.33	13566.00
876Q5359	85390/12	12	.025	.35	14443.20
876Q5360	85390/15	15	.025	.38	16830.00
876Q5361	85390/20	20	.025	.43	19002.60
876Q5362	85390/25	25	.025	.47	26112.00



Level 5

- Category 5
- NEC 800 Type CMP/MPP and CMR
- ETL Verified to EIA/TIA
- 24 AWG

Solid bare copper, insulated, twisted, jacketed. **Applications.** IBM Type 3 IEEE 802.3 (10 BASE T), Ethernet IEEE 802.5 16 Mbps Token Ring, other high speed data applications up to and including 100 Mbps data transmission rates. **DC Conductor Resistance — Max. Individual:** 25.7 ohms/kFT. **Mutual Capacitance at 1 MHz — Max. Individual:** 14 pf/kFT. **Capacitance Unbalance Pair to Ground — Max. Individual:** 1000 pF/kFT.

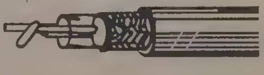
Plenum Cable — CSA Type PCC FT-6

Stock No.	Mfr.'s Type	Number of Pairs	Nom. O.D.	PER 1000'
876Q5190	3602M5U	2	.147"	266.00
876Q5194	3604M5U	4	.170"	489.60
876Q5200	3625M5	25	.341"	4400.00

Riser Cable — CSA Type PCC FT-4

Stock No.	Mfr.'s Type	Number of Pairs	Nom. O.D.	PER 1000'
876Q5180	3077M5U	2	.181"	140.76
876Q5184	3078M5U	4	.205"	164.00
876Q5188	3083M5	25	.420"	1624.00

Ethernet Cable



- CL2 Rated

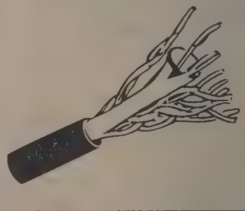
RG58 type coaxial cable, 50 ohm impedance. 21-19 AWG bare copper conductor. Foil shield and 95% tinned copper braid shield.

Mfr.'s Type	Nom. O.D.	Jacket	500'		1000'	
			Stock No.	EACH	Stock No.	EACH
6907	.183"	PVC	876-9780	150.00	876Q9782	250.00
6907T	.158"	Opaque	876-9784	267.00	876Q9786	475.00

IBM Compatible Cables

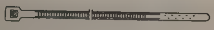
Voice and Data Cables

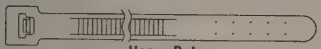
- UL Classified CL2 or CL2P
- Aluminum Shielded
- Bare Copper Conductors

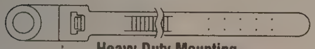


Stock No.	Mfr.'s Type	Description	Wt. 1000'	PER 1000'
876Q4200	6688	Type 1 IBM 4716748 Type CL2 2 Data Pairs Non-Plenum 22 AWG Solid Bare Copper	52.00	420.24
876Q4201	6688T	Type 1 IBM 4716749 Type CL2P 2 Data Pairs Plenum 22 AWG Solid Bare Copper	63.00	1073.04
876Q4202	6689	Type 2 IBM 4716739 Type CM 2 Data Pairs 4 Voice Pairs Non-Plenum, 22 AWG Solid Bare Copper	84.00	592.00
876Q4203	6689T	Type 2 IBM 4716738 Type CMP 2 Data Pairs, 4 Voice Pairs Plenum, 22 AWG Solid Bare Copper	95.00	1530.00
876Q4204	6690	Type 6 2 Pair Office Type CL2 Grade Data Cable	52.00	430.44

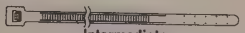
Cable Ties

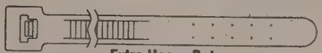

Miniature

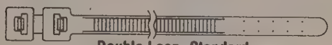

Heavy Duty

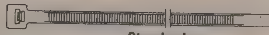

Heavy Duty Mounting

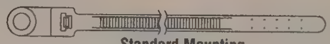
— NEW —

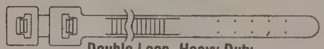

Intermediate


Extra Heavy Duty


Double Loop, Standard


Standard


Standard Mounting


Double Loop, Heavy Duty

3M cable ties secure wire bundles, harnesses and components quickly, without slipping. The self-locking head with heavy double teeth on the one-piece lock mechanism assures the 3M reliability you've come to expect. Molded from 6/6 nylon, 3M cable ties are designed to meet a wide range of temperatures from –140°F (–40°C) to 185°F (85°C). They are available in a variety of sizes and styles and weather-resistant black nylon for outdoor use. Our cable ties are UL Recognized. UL File No.E116841.

Approx. Length	Approx. Max. Bundle Dia.	Approx. Width	Approx. Thickness	Loop Tensile	Description/Color	Small Pack				Bulk Pack			
						Stock No.	Mfr.'s Type	Pack Size	PER PACK	Stock No.	Mfr.'s Type	Pack Size	PER PACK
4.00"	0.70"	0.100"	0.04"	18 Lbs.	Miniature, Natural	617-9400	06224	100	**10.09**	617-9401	06248	1000	**43.65**
4.00"	0.70"	0.100"	0.04"	18 Lbs.	Miniature, Black*	617-9402	06200	100	**12.07**	617-9403	06270	1000	**50.22**
5.88"	1.25"	0.140"	0.05"	30 Lbs.	Intermediate, Natural	617-9404	06225	100	**12.00**	617-9405	06249	1000	**55.89**
5.88"	1.25"	0.140"	0.05"	30 Lbs.	Intermediate, Black*	617-9406	06201	100	**13.28**	617-9407	06271	1000	**64.30**
7.94"	1.75"	0.180"	0.05"	50 Lbs.	Standard, Natural	617-9408	06226	100	**15.22**	617-9409	06250	1000	**73.63**
7.94"	1.75"	0.180"	0.05"	50 Lbs.	Standard, Black*	617-9410	06202	100	**16.59**	617-9411	06272	1000	**74.17**
12.00"	3.00"	0.180"	0.05"	50 Lbs.	Standard, Natural	617-9412	06227	100	**29.89**	617-9413	06251	1000	**164.67**
12.00"	3.00"	0.180"	0.05"	50 Lbs.	Standard, Black*	617-9414	06203	100	**34.41**	617-9415	06273	1000	**190.46**
15.00"	4.00"	0.190"	0.05"	50 Lbs.	Standard, Natural	617-9416	06228	50	**17.56**	617-9417	06252	500	**94.88**
15.00"	4.00"	0.190"	0.05"	50 Lbs.	Standard, Black*	617-9418	06204	50	**18.98**	617-9419	06274	500	**105.32**
8.00"	2.00"	0.300"	0.07"	120 Lbs.	Heavy Duty, Natural	617-9420	06229	50	**24.00**	—	—	—	—
8.00"	2.00"	0.300"	0.07"	120 Lbs.	Heavy Duty, Black*	617-9422	06206	50	**26.21**	—	—	—	—
15.00"	4.00"	0.300"	0.07"	120 Lbs.	Heavy Duty, Natural	617-9424	06240	50	**25.94**	617-9425	06264	500	**187.74**
15.00"	4.00"	0.300"	0.07"	120 Lbs.	Heavy Duty, Black*	617-9426	06207	50	**27.77**	617-9427	06277	500	**215.81**
32.00"	9.00"	0.300"	0.07"	120 Lbs.	Heavy Duty, Natural	617-9428	06230	50	**64.85**	—	—	—	—
32.00"	9.00"	0.300"	0.07"	120 Lbs.	Heavy Duty, Black*	617-9430	06208	50	**71.96**	—	—	—	—
34.00"	10.00"	0.345"	0.09"	175 Lbs.	Extra Heavy Duty, Natural	617-9432	06231	50	**76.40**	—	—	—	—
34.00"	10.00"	0.345"	0.09"	175 Lbs.	Extra Heavy Duty, Black*	617-9434	06209	50	**79.53**	—	—	—	—
8.31"	1.75"	0.190"	0.06"	50 Lbs.	Standard Mounting, Natural	617-9436	06232	100	**24.35**	617-9437	06256	1000	**170.28**
8.31"	1.75"	0.190"	0.06"	50 Lbs.	Standard Mounting, Black*	617-9438	06205	100	**27.98**	617-9439	06275	1000	**205.93**
15.25"	4.00"	0.190"	0.06"	50 Lbs.	Standard Mounting, Natural	617-9440	06234	50	**27.85**	617-9441	06258	500	**174.39**
15.63"	4.00"	0.300"	0.07"	120 Lbs.	Heavy Duty Mounting, Natural	617-9442	06243	50	**38.82**	617-9443	06267	500	**280.27**
15.25"	4.00"	0.190"	0.05"	50 Lbs.	Standard Double Loop, Natural	617-9444	06242	50	**30.95**	617-9445	06266	500	**141.21**
15.40"	4.00"	0.300"	0.07"	120 Lbs.	Heavy Duty Double Loop, Natural	617-9446	06245	50	**47.87**	617-9447	06269	500	**218.65**

*Weather Resistant.

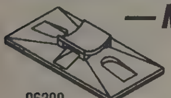
Cable Tie Assortment Pack — *NEW* —

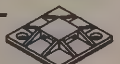
The cable tie assortment pack contains 100 of our most commonly used ties. Consists of 4", 5", 7.5" and 11" lengths. For each size there are 15 natural and 10 black cable ties.

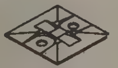
617-9466. 06220..**PER PACK 20.46**

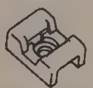
6290 Series Cable Tie Bases

— *NEW* —


06290


06294
06295
06296
06297


06292


06298, 06299

Stock No.	Mfr.'s Type	Cable Tie Size†	Entry Locations	Color/ Material	PER PK./100
617-9450	06290	1	2	Ivory/ABS	**62.09**
617-9452	06292	1	2	Ivory/ABS	**54.24**
617-9454	06294	2	4	Natural/Nylon	**56.41**
617-9456	06295	2	4	Black/Nylon	**67.13**
617-9458	06296	1	4	Natural/Nylon	**74.39**
617-9460	06297	1	4	Black/Nylon	**88.04**
617-9462	06298*	1	2	Natural/Nylon	**21.02**
617-9464	06299*	3	2	Natural/Nylon	**53.67**

*Screw Mounting Only, others listed have adhesive backing. †1 — Miniature, Intermediate, Standard; 2 — Miniature, Intermediate; 3 — All Cable Tie Sizes.

ScotchCode® Write-On Dispensers and Marking Pens

The disposable write-on tape dispenser contains 250 die-cut markers and comes complete with marking pens. Writing area measures 3/4" × 5/16". O.D. range of each marker is 22-6 ang. (.090"-.315"). Vinyl tape is resistant to oils and solvents and has a high-tack acrylic adhesive. Additional marking pens can be ordered in red or black permanent ink.

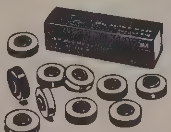
617-4685. SWD. Dispenser with pen. **1-9**....................**EACH 21.88**
10-24....................**EACH 19.91**
617-4690. SWD-R. Dispenser Refill. **1-9**....................**EACH 16.90**
10-24....................**EACH 15.38**
617-4695. SMP. Black....................**EACH 4.09**
617-4700. SMP-R. Red....................**EACH 4.09**

ScotchCode® STD Wire Marker Tape Dispenser

This handy dispenser is a fast convenient system for marking wire or cable. Easy to carry in pocket or tool box; always at hand.

617-4545. Type STD-0-9. Dispenser with #0-9....................**EACH 27.71**
617-4550. Type STD-C. Dispenser with colored tape....................**EACH 27.71**
617-4540. STD. Dispenser only....................**EACH 9.10**

ScotchCode® SDR Identifying Tapes



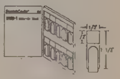
5.5 mil reinforced flame-retardant epoxy film tape with an acrylic high tack pressure-sensitive adhesive. Tape resists abrasion, oil and water. Excellent adhesion to clean Neoprene™, Hypalon, nylon and PVC insulation materials.

Stock No.	Mfr.'s Type	Description	PER ROLL	
			1-9	10-49
617-4555	SDR-0-9	Numbered 0-9	**17.65***	**16.07***
617-4560	SDR-0	Numbered "0" only	**1.76**	**1.61**
617-4565	SDR-1	Numbered "1" only	**1.76**	**1.61**
617-4570	SDR-2	Numbered "2" only	**1.76**	**1.61**
617-4575	SDR-3	Numbered "3" only	**1.76**	**1.61**
617-4580	SDR-4	Numbered "4" only	**1.76**	**1.61**
617-4585	SDR-5	Numbered "5" only	**1.76**	**1.61**
617-4590	SDR-6	Numbered "6" only	**1.76**	**1.61**
617-4595	SDR-7	Numbered "7" only	**1.76**	**1.61**
617-4600	SDR-8	Numbered "8" only	**1.76**	**1.61**
617-4605	SDR-9	Numbered "9" only	**1.76**	**1.61**
617-4610	SDR-GN	Green	**1.76**	**1.61**
617-4615	SDR-GY	Gray	**1.76**	**1.61**
617-4620	SDR-OR	Orange	**1.76**	**1.61**
617-4625	SDR-RD	Red	**1.76**	**1.61**
617-4630	SDR-BK	Black	**1.76**	**1.61**
617-4635	SDR-BL	Blue	**1.76**	**1.61**
617-4640	SDR-BR	Brown	**1.76**	**1.61**
617-4645	SDR-VL	Violet	**1.76**	**1.61**
617-4650	SDR-WH	White	**1.76**	**1.61**
617-4655	SDR-YL	Yellow	**1.76**	**1.61**

*Box of 10 rolls; each roll has a different number.

Wire Marker Books

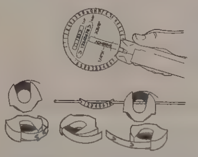
Pre-Printed


Write-On

Use the SPB book markers to mark electrical wires and terminal strips to the diameter of .47". Markers are made of vinyl impregnated cloth with a rubber adhesive back. Books contain printed vinyl cloth wire and terminal center book. **Printed Area:** 1.3" × 0.22" and 0.22" × 0.22" for terminals.

Type SPB-01. Pre-printed wire marker book, 45 each 0-9; 15 each L1, L2, L3, T1, T2, T3.
617-4722. SPB-01....................**PER BOOK 13.76**
Type SPB-02. Pre-printed book of markers, 10 each A-Z, 0-15, +, –, /.
617-4723. SPB-02....................**PER BOOK 13.76**
Type SPB-03. Pre-printed book of markers, 10 each 1-43.
617-4724. SPB-03....................**PER BOOK 13.76**
Type SPB-14. Pre-printed book of markers, 10 each 46-90.
617-4728. SPB-14....................**PER BOOK 13.76**
Type SWB-1. Write-on book, 180 markers. **Marker Size:** 0.5" × 1.5". **Write-On Area:** .05" × .05".
617-4729. SWB-1....................**PER BOOK 13.76**
Type SWB-2. Write-on book, 120 markers. **Marker Size:** 0.75" × 1.75". **Write-On Area:** 0.75" × 0.75".
617-4726. SWB-2....................**PER BOOK 13.76**
Type SWB-3. Write-on book, 60 markers. **Marker Size:** 1.0" × 2.85". **Write-On Area:** 1.0" × 1.0".
617-4727. SWB-3....................**PER BOOK 13.76**

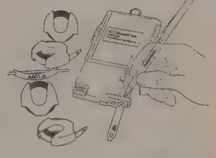
ScotchCode® STL-100 Embossing Tool



The 3M ScotchCode® STL-100 embossing tool allows users to quickly produce slip-on wire marker tags that will always be easy to read.

617-4556. STL-100K. Embossing tool and 3 marker rolls....................**EACH 28.36**
617-4557. STL-101*. 3/8" tag/label, 50 labels per roll....................**EACH 4.47**
617-4558. STL-102*. 1/4" tab/label, 75 labels per roll....................**EACH 3.98**
617-4559. STL-103. 3/8" label tape roll, embossed....................**EACH 3.48**
*STL-101 — 8 characters per label; STL-102 — 3 characters per label.

ScotchCode® STD-TAG Dispenser

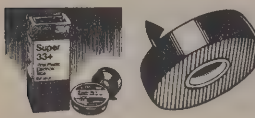


Unique write-on tag dispenser features continuous-feed design for ease of use. Dispenser holds two size wire marker tags. Dispenser contains one roll of STD-101, 102 and one SMP marking pen.

617-4561. STD-TAG. Dispenser with tags and pen....................**EACH 37.84**
617-4562. STD-101. 3/8" wire marker tag, 50 per roll....................**EACH 5.48**
617-4563. STD-102. 1/4" wire marker tag, 75 per roll....................**EACH 4.97**

Vinyl Electrical Tapes

Scotch® Super 33+ Premium Vinyl Electrical Tape



Typical Applications
- **Primary Insulation for Splices Up to 600 V**
- **Protective Jacketing**

Super 33+ is highly conformable in all weather applications; resists UV rays, abrasion, corrosion, alkalies and acids. Flame retardant UL listed. CSA certified. **Tape Thickness:** 7 mil. **Temperature Rating:** 105°C/220°F.

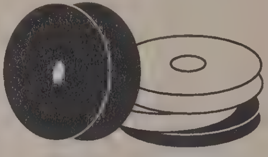
617-4725. 33+. 3/4" × 66'. Black .... **PER ROLL 3.67**
617-4730. 33+. 3/4" × 20'. Black .... **PER ROLL 1.43**

Scotch® Super 88 Premium Vinyl Electrical Tape

Typical Applications
- **Primary Insulation for Splices Up to 600 V**
- **Protective Jacketing**

All weather, heavy-duty, abrasion resistant; fast build up. UL listed. CSA certified. **Tape Thickness:** 8.5 mil. **Temperature Rating:** 105°C/220°F.
617-4735. 88. 3/4" × 66'. Black .... **PER ROLL 4.14**

Scotch™ 35 Vinyl Electrical/Color Coding Tape



Typical Applications
- **Phase Identification and Marking**
- **Harnessing**

35 Tape comes in 9 fade resistant colors, excellent insulating properties. Resists UV rays, abrasion, corrosion, alkalies, and acid. **Tape Thickness:** 7 mil. **Temperature Rating:** 105°C/220°F.

617-4902. 35. Red. 3/4" × 66' .... **PER ROLL 3.50**
617-4911. 35. Red. 1/2" × 20' .... **PER ROLL 1.10**
617-4903. 35. Green. 3/4" × 66' .... **PER ROLL 3.50**
617-4912. 35. Green. 1/2" × 20' .... **PER ROLL 1.10**
617-4904. 35. Blue. 3/4" × 66' .... **PER ROLL 3.50**
617-4913. 35. Blue. 1/2" × 20' .... **PER ROLL 1.10**
617-4905. 35. Yellow. 3/4" × 66' .... **PER ROLL 3.50**
617-4914. 35. Yellow. 1/2" × 20' .... **PER ROLL 1.10**
617-4906. 35. White. 3/4" × 66' .... **PER ROLL 3.50**
617-4915. 35. White. 1/2" × 20' .... **PER ROLL 1.10**
617-4907. 35. Orange. 3/4" × 66' .... **PER ROLL 3.50**
617-4916. 35. Orange. 1/2" × 20' .... **PER ROLL 1.10**
617-4908. 35. Brown. 3/4" × 66' .... **PER ROLL 3.50**
617-4917. 35. Brown. 1/2" × 20' .... **PER ROLL 1.10**
617-4909. 35. Gray. 3/4" × 66' .... **PER ROLL 3.50**
617-4919. 35. Gray. 1/2" × 20' .... **PER ROLL 1.10**
617-4910. 35. Violet. 3/4" × 66' .... **PER ROLL 3.50**
617-4918. 35. Violet. 1/2" × 20' .... **PER ROLL 1.10**

3M Professional Quality Electrical Tape Kit for Color Coding

Kit consists of five rolls (1/2" × 6 2/3 yds.) of Scotch™ 35 Vinyl Electrical Tape. **Five Colors:** Blue, green, red, yellow and white.
617-1045. 10457 .... **PER PACK 6.60**

Highland™ Vinyl Electrical Tape

Typical Applications
- **Protective Jacketing**
- **Harnessing**

Flexible, conformable, general purpose vinyl. UL listed and flame retardant. **Tape Thickness:** 7 mil. **Temperature Rating:** 80°C/176°F.
617-4920. 16720. Highland. 3/4" × 66' .... **PER ROLL 1.67**

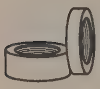
Tem Flex™ Series Tapes

Typical Applications
- **Protective Jacketing**
- **Harnessing**

1700 Vinyl Electrical Tape. Economy-grade, general purpose vinyl electrical tape. 7-mil tape that is UL listed and CSA certified for 176°F and 80°C.
617-4736. 1700. 3/4" × 60' .... **PER ROLL .67**

Highland™ Cloth Duct Tape

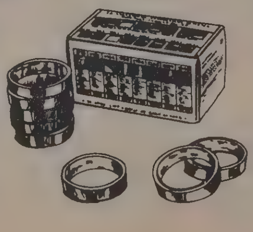
— NEW —



High performance duct tape, excellent adhesion, tears easily. **Color**: Silver. **Tape Thickness:** 10.8 mil. **Temperature Rating:** 93°C/200°F. Used for moisture proofing, plumbing, duct sealing and protecting.

617-6969. 6969. 2" × 60 yds. .... **PER ROLL 8.64**

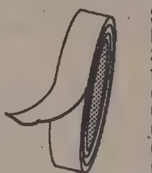
Engineering Kit for Foil Shielding Tapes



This kit is a unique new way to have a variety of foil shielding tapes conveniently at hand for design or prototype needs. **Kit Contains:** Eight rolls — 1170, 1181, 1182, 1183, 1190, 1194, 1245, 1267 and 1345; each is 3/4" by 4 yds. The compact dispenser box (4 × 7.5") serves as a desktop reference with basic technical information on each tape including product number, backing and adhesive type and thickness, adhesion, resistance, and shielding effectiveness.

617-4721. Foil Tape Kit .... **EACH 49.95**

Electrical Tapes for Splicing and Terminating



Scotch™ 130C Linerless Rubber Splicing Tape

High-voltage insulating; thermally conductive; self-bonding. **Tape Thickness:** 30 mil. **Temperature Rating**: 90°C/194°F (continuous), 130°C/266°F (short-term). **Typical Application:** Primary electrical insulation for splicing all solid dielectric cables through 69 KV.

617-0130. 130C. 1" × 30' .... **PER ROLL 10.36**
617-0131. 130C. 1 1/2" × 30' .... **PER ROLL 15.76**
617-0132. 130C. 2" × 30' .... **PER ROLL 20.71**
617-0133. 130C. 3/4" × 30' .... **PER ROLL 8.33**

Tem Flex™ 1755 Cotton Friction Tape

Typical Applications
- **Abrasion Protection for Splices and Connections**

High grade friction tape. Good abrasion resistance. **Temperature Rating:** 80°C/76°F. **Tape Thickness:** 15 mil.
617-1755. 1755. 3/4" × 60 .... **PER ROLL 1.95**

Tem Flex™ 2150 Rubber Splicing Tape

Typical Applications
- **Insulating Wire Splices, Split Bolt Connections, and Motor Leads Up to 600 V**

Economical, low voltage rubber insulating tape; self-fusing, UL rated. **Tape Thickness**: 30 mil. **Temperature Rating:** 80°C/176°F.
617-1756. 2150. 3/4" × 22 .... **PER ROLL 3.84**

Scotch™ 70 Self-Fusing Silicone Tape

Arc and track resistant; self-fusing, long lasting silicone rubber. **Tape Thickness:** 12 mil. **Temperature Rating:** 180°C/356°F. **Typical Application**: Protective overwrap for terminating high voltage cables.
617-4737. 70. 1" × 30' .... **PER ROLL 27.90**

Scotch™ 27 and 69 Glass Cloth Tapes

Woven insulating glass cloth; high temperature resistance; high mechanical strength. **Typical Application:** Heat stable insulation for furnace and oven controls, motor leads and switches.
27. Tape Thickness: 7 mil. **Class B Temperature Rating:** 130°C/266°F.
617-4921. 27. 1/2" × 66' .... **PER ROLL 7.62**
617-4922. 27. 3/4" × 66' .... **PER ROLL 11.30**
69. Tape Thickness: 7.5 mil. **Class H Temperature Rating:** 180°C/356°F.
617-4923. 69. 1/2" × 66' .... **PER ROLL 9.74**
617-4924. 69. 3/4" × 66' .... **PER ROLL 14.60**

Electrical Sealing Tape

Scotch™ 2228 Rubber Mastic Tape

Self-fusing rubber based compound bonded to a moisture sealing mastic; all weather. **Tape Thickness:** 65 mil. **Temperature Rating:** 90°C/194°F (emergency overload of 130°C/266°F). **Typical Application:** Insulate, pad and seal bar and splice connections.
617-4742. 2228. 2" × 10' .... **PER ROLL 17.28**

Scotch™ Brand Lane Marking Tape

— NEW —

- **Cost Effective — Outlasts Many Other Marking Materials**
- **Vivid, Contrasting Colors for Coding and Identification**
- **Colors That Comply With OSHA Standards**
- **Excellent Color Retention Because of "Color-Throughout" Backing and Protected Safety Stripes**
- **Heat Resistant to 180°F**
- **Ready Conformability to Irregular Shapes**
- **Resists Abrasion, Moisture, Weathering and Most Solvents**
- **Provides a Sharp Paint Line for Critical Masking Applications**
- **A Tight Effective Seal Against Air and Moisture**
- **Clean and Easy Removal**
- **Roll Length: 36 Yards**

Stock No.	Mfr.'s Type	Color	Width	EACH
617-8802	471	Black	2"	18.82
617-8804	471	Blue	2"	18.82
617-8806	471	Brown	2"	18.82
617-8808	471	Green	2"	18.82
617-8810	471	Orange	2"	18.82
617-8812	471	Red	2"	18.82
617-8814	471	Red Orange	2"	18.82
617-8816	471	White	2"	18.82
617-8818	471	Yellow	2"	18.82

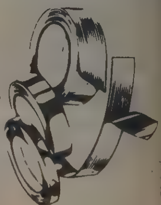
Scotch™ Brand 5700/5702 Safety Stripe Tapes

Stock No.	Mfr.'s Type	Color	Width	EACH
617-5700	5700	Black/White	2"	25.72
617-5702	5702	Black/Yellow	2"	25.72

Lane Marking Applicator

617-0077. MP-77 .... **EACH 449.68**

EMI/RFI Foil Shielding Tapes



Copper foil electrical tapes provide an easy-to-apply, timesaving, cost-effective way to shield against EMI/RFI radiation. Foil tapes are conductive through the adhesive and offer mechanical, electrical and thermal values to meet your shielding effectiveness and frequency requirements.

617-4705. 1181. Copper Foil with smooth finish. 1/2" × 18 yds .. **PER ROLL 18.44**
617-4710. 1181. Copper Foil with smooth finish. 1" × 18 yds .... **PER ROLL 36.89**
617-4715. 1245. Copper Foil with embossed finish. 1/2" × 18 yds .. **PER ROLL 15.99**
617-4720. 1245. Copper Foil with embossed finish. 1" × 18 yds... **PER ROLL 31.95**

Double Coated Urethane Foam Tapes — *NEW* —

These urethane foams are soft, conformable and have high shear strength which makes them ideal for general purpose lightweight mounting and joining. **Application Ideas. 4008:** Bond acoustic panels to walls. **4016:** Mount interior signs and nameplates. **4026:** Mount air fresheners and soap dispensers. **4032:** Attach wire clips to various surfaces. **Ideal Tape Temperature Range:** 70°F to 100°F.

Stock No.	Mfr.'s Type	Tape Thickness	Roll Size	Adhesive Type*	EACH
617-7008	4008	1/8"	1" × 36 yds.	A-20	**39.56**
617-7009	4008	1/8"	1" × 4 yds.	A-20	**12.04**
617-7016	4016	1/16"	1" × 36 yds.	A-20	**26.63**
617-7026	4026	1/16"	1" × 36 yds.	A-20	**26.63**
617-7027	4026	1/16"	1" × 6 yds.	A-20	**11.78**
617-7032	4032	1/32"	1" × 72 yds.	A-20	**45.59**

*A-20 is a firm acrylic pressure sensitive adhesive system. It features high ultimate bond strength, very good high temperature and solvent resistance and very high shear holding power. Bond strength increases substantially with natural aging.

Double Coated Vinyl Foam Tapes — *NEW* —

These products are designed for general purpose mounting and joining. The high degree of conformability of these tapes make them ideal for joining many rough irregular surfaces, and the closed-cell foam can make good water and air seals in certain applications. **Ideal Temperature Range:** 70°F to 100°F.

Stock No.	Mfr.'s Type	Tape Thickness	Roll Size	Adhesive Type*	EACH
617-4408	4408	1/8"	1" × 36 yds.	A-30	**54.94**
617-4416	4416	1/16"	1" × 36 yds.	A-30	**42.14**
617-4432	4432	1/32"	1" × 72 yds.	A-30	**75.45**

*A-30 is a firm acrylic pressure sensitive adhesive which features both high initial adhesion and good high temperature holding power.

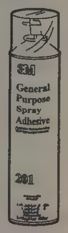
Double Coated Polyethylene Foam Tape — *NEW* —

The foam construction makes these products ideal for many lightweight joining, mounting, gasketing, and sealing applications involving irregular surfaces. **Application Ideas Include:** Signs, nameplates, and plaques, retail displays, plastic hooks, racks, and dispensers, interior storm window frames, appliance, display case and electronic equipment trim wire and cable clips.

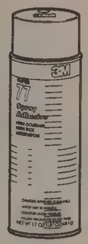
Stock No.	Mfr.'s Type	Tape Thickness	Roll Size	Adhesive Type*	EACH
617-4482	4482	1/32"	1" × 72 yds.	R-45	**31.98**
617-4484	4484	1/16"	1" × 36 yds.	R-45	**19.32**

*R-45 adhesive provides excellent tack and adhesion to a wide variety of surfaces including many low surface energy plastics.

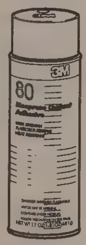
Spray Adhesives — *NEW* —



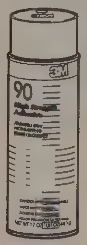
Spray 201



Spray 77



Spray 80



Spray 90

General Purpose Spray Adhesive 201

- ► Aggressive Adhesive for Bonding Many Lightweight Materials
- ► Low VOC
- ► Non-Flammable
- ► Advanced Water-Based Formula with High Adhesive and Temperature Performance

201 is a general purpose aerosol spray adhesive which is waterborne and non-flammable.

617-5303. Spray 201 .... **EACH 12.32**

Low Mist Super 77 Spray Adhesive

- ► High Coverage
- ► Versatile — Securely Bonds Most Lightweight Materials
- ► Low Soak-In for Long Lasting Bonds
- ► Fast, Aggressive Tack
- ► Long Bonding Range
- ► Meets Performance Requirements of MMM-A-1058A
- ► 12 Cans Per Case

617-5300. Spray 77. 24 oz. Aerosol .... **PER CASE 93.78**

80 Neoprene Contact Adhesive

- ► Neoprene-Based Contact
- ► Plasticizer Resistance
- ► High Temperature Resistance to 200°F
- ► Fast Drying: Fast Bonding
- ► Nonmisting — Precise Spray Control
- ► Durable — High Strength Adhesive
- ► Meets Physical Requirements of MIL-A-24179A and MMM-A-130 B
- ► 12 Cans Per Case

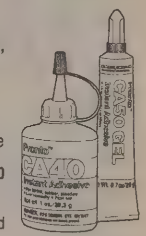
617-5301. Spray 80. 24 oz .... **PER CASE 128.99**

90 High Strength Adhesive

- ► High Contact Bond Strength
- ► One-Minute Dry Time
- ► High Temperature Resistance
- ► Nonmisting — Precise Spray Control
- ► Variable Width Spray Pattern
- ► Meets Performance Requirements of MMM-A-130 B
- ► 12 Cans Per Case

617-5302. Spray 90. 24 oz .... **PER CASE 126.73**

Pronto™ Instant Adhesives — *NEW* —



- ► **Adhesives Cure at Room Temperature**
- ► **Used to Bond a Variety of Substrates Including Most Rubber, Plastics, and Metal**
- ► **Economical to Use; Requires Only Drops of Adhesive to Provide Strong Bonds to Most Metals, Plastics, and Rubbers**

Pronto™ Instant Adhesives are one component, high strength cyanoacrylate adhesives.

CA-8

Rapid setting adhesive. Excellent for metals, plastics, and rubber. Produces bonds with more shock resistance than most cyanoacrylate adhesives. Meets Mil-A-46050C Type II Class 2.

617-5307. CA-8. 1 oz. bottle .... **EACH 11.10**

CA-40H

Fast setting adhesive. Bonds well to difficult substrates, such as aluminum, EPDM rubber, and flexible vinyl. Meets MIL-A-46050C Type II Class 3.

617-5308. CA-40H. 1 oz. bottle .... **EACH 11.10**

CA-50 Gel

Surface insensitive, gel cyanoacrylate adhesive. Very slow cure rate allows maximum time to reposition parts. Provides a gel consistency that doesn't sag. Can be used on vertical surfaces.

617-0150. CA-50. 20 gram tube .... **EACH 13.28**

Low Static Polyimide Film Tape (Solvent Cleaning) — *NEW* —

A translucent, polyimide film-backed silicone adhesive tape with unique and extremely low electrostatic discharge properties. For gold tab protection during wave soldering of printed circuit boards. **Features:** Polyimide film, silicone adhesive, low static. **Roll Length:** 36 yds.

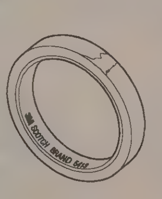
617-5419. 5419 (1/2") .... **PER ROLL 19.91**
617-5420. 5419 (3/4") .... **PER ROLL 29.86**
617-5421. 5419 (1") .... **PER ROLL 39.81**

Wave Solder Tape (H_2O Cleaning)

- ► **Get Reliable Protection for Your Circuit Boards During Wave Soldering with This Water Soluble Tape**
- ► **Saves Time and Clean-Up Costs By Completely Dissolving During In-Line Aqueous Cleaning Operations**
- ► **Biodegradable, Non-Toxic Tape Has a Neutral pH and Leaves No Residue**
- ► **Eliminates Static and Labor Usually Associated With Tape Removal**
- ► **Packaged In a Moisture Impervious Bag Which Insures Long Term Storage Stability Under Extreme Humidity**
- ► **Roll Length: 36 Yds**

617-7414. 5414 (1/2") .... **PER ROLL 19.64**
617-7415. 5414 (3/4") .... **PER ROLL 29.48**

Kapton™ Polyimide Film Tape



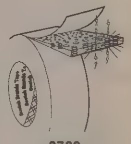
- ► **Chemical and Radiation Resistant Polyimide Film Is Dimensionally Stable at High Temperatures, and Flame Retardant**
- ► **Strong, Heat Resistant Silicone Adhesive Resists Adhesive Transfer at Elevated Temperatures, Providing Higher Productivity**
- ► **Color: Amber**
- ► **Roll Length: 36 Yds.**

617-5413. 5413 (1/2") .... **PER ROLL 19.22**
617-5414. 5413 (3/4") .... **PER ROLL 29.29**
617-5415. 5413 (1") .... **PER ROLL 39.05**

Scotch™ Adhesive Transfer Tape

9703

Scotch 9703 Conductive Adhesive Transfer Tape is an effective time-saving, cost-reducing product for use in numerous electronics assembly applications. It features anisotropic electrical conductivity, i.e. conductivity only through the adhesive thickness and not along the plane of the tape. Moreover, for bond performance you can depend on, it offers consistent caliper and high ultimate bond strength with moderate high temperature performance. And bond strength increases substantially with natural or accelerated aging.

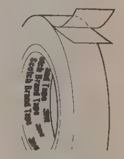


9703

9882

- ► **Fully-Cured Acrylic Pressure Sensitive Adhesive**

Say "yes" to new Scotch brand Thermally Conductive Adhesive Transfer Tapes and you get an advanced alternative for thermal management in electronics bonding and assembly.



9882

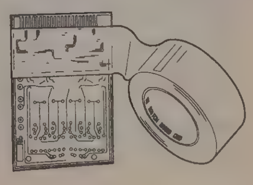
604-0020. 9703. Electrically Conductive 1" × 3 Yds. .... **PER ROLL 19.10**
604-0025. 9703. Electrically Conductive 1" × 36 Yds. .... **PER ROLL 140.45**
604-0030. 9882. Thermally Conductive 1" × 3 Yds. .... **PER ROLL 18.28**
604-0035. 9882. Thermally Conductive 1" × 36 Yds. .... **PER ROLL 133.57**

Scotch™ brand VHB™ Tape

Very-High-Bond (VHB™) Tape Bonds with the strength enough to replace rivets, bolts, welds and similar fastening methods. Product seals against the environment as well as resists UV light. Helps cut costs and increases manufacturing efficiency. **Color:** white. **Thickness:** .045".

604-0010. 4950 Tape (1" × 3" Strips). .... **PER PK./8 2.16**
604-0015. 4950 Tape (1" × 36 Yds.) .... **PER ROLL 83.95**

Scotch™ brand Plating Tape



The 1280 tape is a premium grade tape with the most process latitude. It features an extra conformable adhesive that makes it an ideal choice for difficult jobs such as gold plating tin/lead PWBs. **Roll Size:** 2" × 72.

617-1280. 1280. Red plating tape, silicone/rubber .... **EACH 24.15**

Hot Melt Adhesive System

The Polygun TC Applicator is a real work-horse that delivers Jet-melt™ adhesive quickly and economically. 3M has drawn from its years of leadership in hot melt hand-gun technology to produce the ultimate low-cost applicator.

Easy Operation. The convenient cartridge holder speeds reloading and features "touch control" with special non-fatiguing thumb operation and precise, even adhesive flow. Applicator is ready to go after a brief 5-minute warm-up.

High-Speed Application. Does bigger jobs faster, dispensing industrial grade Jet-melt adhesives at flow rates that are 50% higher than comparably sized handguns. A single loading applies over 89 inches of 1/8" adhesive bead in one uninterrupted application.

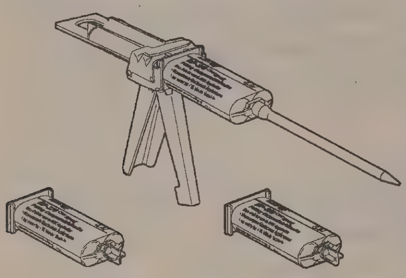
617-3770. Polygun TC. Applicator Tool .... **EACH 98.92**

Adhesive Sticks

Stock No.	Mfr.'s Type	Description	Color	Typical Markets*	PER 1 LB. BAG†
617-3701	3748 TC	Jet-Melt Adhesive 5/8" × 2"	Off-White	3, 4, 5	**12.61**
617-3704	3748 VOTC‡	Jet-Melt Adhesive 5/8" × 2"	Lt. Yellow	4	**12.77**
617-3705	3764 TC	Hotmelt Adhesive 5/8" × 2"	Clear	1, 3, 4, 5	**11.32**
617-3779	3779 TC	Hotmelt Adhesive 5/8" × 2"	Amber	4	**21.13**
617-3797	3797 TC	Hotmelt Adhesive 5/8" × 2"	Lt. Grey	4	**13.11**
617-3702	3762 TC	Jet-Melt Adhesive 5/8" × 2"	Tan	1	**6.79**
617-3703	3792 TC	Jet-Melt Adhesive 5/8" × 2"	Clear	2	**8.50**
617-3706	3796 TC	Hotmelt Adhesive 5/8" × 2"	Lt. Tan	5	**21.32**

*1 — Manual corrugated case and carton sealing; 2 — Furniture and woodworking; 3 — Point of purchase display and trade exhibits; 4 — Electronics and electrical; 5 — Industrial product assembly. †Multiple adhesive sticks in a 1 lb. bag. ‡Flame resistant.

ScotchWeld™ Adhesive System



The Scotch-Weld EPX Applicator System is a fast, convenient way to simultaneously meter, mix and apply two-component adhesives and potting compounds. The system features handy Duo-Pak cartridges that snap quickly into the durable, lightweight EPX applicator. For dispensing, a slight squeeze on the trigger advances the plunger into the cartridge. You're assured of accurate measurement and the mixing nozzle provides thorough mixing and precise placement of material. It's the ideal system for assembly, maintenance and in-field service. Now to meet the specialized needs of the electronics industry, 3M offers three unique new two-part epoxy formulations in Duo-Pak cartridges. These Scotch-Weld products are electrolytically noncorrosive to copper — a vital consideration where long-term reliability of electronic components is a factor.

617-7000. EPX Applicator. Applicator Tool .... **EACH 31.94**

Duo-Pak Epoxy Cartridges

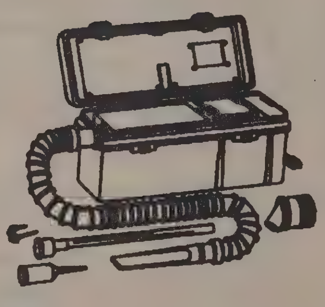
Stock No.	Mfr.'s Type	Epoxy Color	Description	EACH
617-7001	DP-100	Clear	Fast cure adhesive, rigid epoxy, 15-20 min. handling strength; machinable product	**7.23**
617-7010	DP-100NS	Translucent	Low flow version of DP-100, clear 25-30 min. handling strength	**8.49**
617-7011	DP-100 Plus	Clear	Water clear, fast cure, good peel and shear strength	**8.50**
617-7012	DP-110	Gray	Fast cure adhesive, flexible epoxy, 30 min. handling strength	**8.74**
617-7013	DP-110	Translucent	Translucent version of DP-110 gray	**8.74**
617-7004	DP-190	Gray	Long work-life adhesive, flexible epoxy, 8-12 hrs. handling strength	**8.74**
617-7003	DP-270	Black	Long work-life potting compound, 8-12 hrs. handling strength, rigid epoxy	**7.45**
617-7002	DP-270	Clear	Clear version of DP-270 black	**7.45**
617-7014	2216 B/A	Gray	Long work-life adhesive, flexible epoxy, 8-12 hrs. handling strength	**16.98**
617-7015	2216 B/A	Translucent	Translucent version of 2216 B/A gray, 16-20 hrs. handling strength	**16.98**

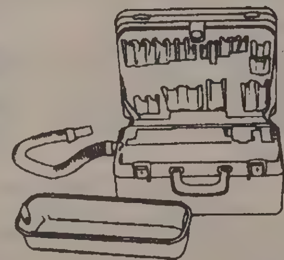
Electronics Vacuum Cleaners, and Filters

► **3 Year Warranty**

Features

- ► **Stretch Hose — The Stretch Hose Extends from 32" to Seven Feet Long. Long Enough to Reach Into Large Machines Without Lifting the Vacuum, Yet Compact for Easy Storage.**
- ► **Disposable Filters — A Choice of Two Conveniently Disposable Filters to Fit Your Specific Applications.**
- ► **Roomy Storage Compartment for Attachments — Attachments and Power Cord are Easily Stored Inside the Cover and Held Securely in Place With an Internal Door.**
- ► **Replaceable 1 HP Motor — A Replaceable One-Horsepower Motor Gives You All the Cleaning Power You Need and is Easy to Service.**
- ► **Strong Resilient Case — High Impact Plastic Case is Tough All Over for Years of Hard Work.**
- ► **Two Durable Latches — Two Sturdy Latches Keep the Lid On Tight and the Attachments Inside During Transit.**
- ► **Current-Limiting Attachments — Technician Safety is Increased Because 3M's Current-Limiting Attachments, Which Include a Crevice Tool, a Wand to Reach Hard-to-Get-at-Places and a Brush to Loosen Toner and Dust Particles.**
- ► **Detachable Power Cord — Power Cord is Detachable for Effortless Storage.**





The 3M Service Vacuum Cleaner, the professionals' choice, is a powerful unit developed for high efficiency cleanup of most business equipment. Designed to be easier to use than ever, this portable vacuum makes even difficult jobs a breeze. And with a high-quality filtration system and advanced safety features, it's the only service vacuum designed specifically with the professionals' needs in mind. Convenience, quality and safety make the 3M Service Vacuum Cleaner far and away the professionals' choice for cleaning office equipment. Transporting the 3M Service Vacuum Cleaner is easier, too. A replaceable handle, two replaceable latches and new hinges mean it travels well. The case is made of high impact plastic, so it's tough on the job or on the road. The new 3M Service Vacuum Cleaner features a hose assembly, wand and crevice tool made with a new plastic that slows down the flow of electricity and drains away static, dramatically reducing potential for shock. These important current-limiting features help to protect customer engineers from the potential danger of contact with electrical power and the annoyance of electrostatic discharge (ESD). They also reduce the risk of shock damage to sensitive electronic components.

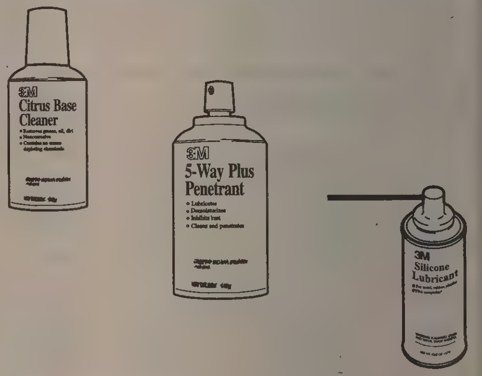
Specifications. Electrical: 115 VAC, 50/60 Hz, 5.0 amps. **Dimensions:** Length — 17.80" (45.2cm); Width — 7.75" (19.7cm); Height — 9.25" (23.5cm); Weight — 9 lbs., 14 oz. **Certification:** U.L. listed, CSA listed. **Motor:** Continuous duty rated with one sealed ball bearing and one sleeve bearing lubricated for life. Thermally protected with automatic reset. Conducted RFI filtered (reduces EMI to be below FCC requirements). Comes complete with hose, 32" - 10 ft., wand, crevice tool, crevice tool brush, dusting brush, needle nozzle, 3 year warranty.
Tool Case Vacuum: The Tool Case Vacuum comes with pallet for tools. Comes with: 25"-10" stretch hose, wand, crevice tool, creative tool brush, dusting brush and needle nozzle. Three year warranty.

617-8500. SV-Model 497AJM. 3M Electronics Service Vacuum Cleaner .... **EACH 218.57**
617-8501. SV-Model 497AJN. 3M Tool Case Vacuum Cleaner .... **EACH 339.66**

Replacement Filters

617-8505. SV-SPF1. Type I – small particle (HEPA) .... **EACH 33.94**
617-8506. SV-MPF2. Type II – medium particle .... **EACH 16.15**

Maintenance Chemicals — *NEW* —



Citrus Base Cleaners

► **24 Cans Per Case**

Pump action puts 100% active ingredients on a dirty surface and helps you remove oil, grease, tar, liquid adhesive, adhesive tape residue, inks, dirt and scuff marks. Non-corrosive, this industrial cleaner/degreaser has a fresh citrus scent. Residue can be washed away with water.

617-5304. Citrus Base Clnr. 6 oz .... **PER CASE 116.80**

5-Way Plus Penetrant

- ► **Penetrates**
- ► **Lubricates**
- ► **Demoisturizes**
- ► **Helps Prevent Rust**
- ► **Helps Stop Squeaks**
- ► **24 Cans Per Case**

Concentrated in this compact pump are 100% active ingredients for five jobs.

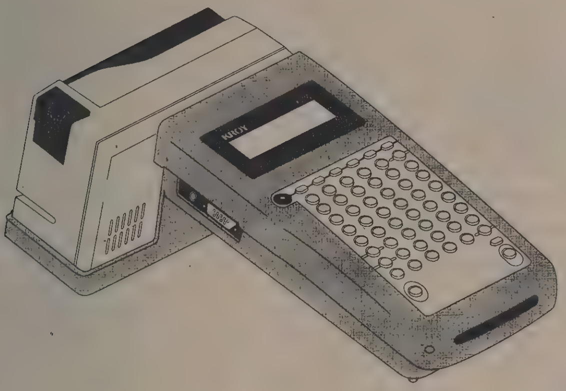
617-5305. 5-Way Plus .... **PER CASE 99.84**

Silicone Lubricant

- ► **Resists Temperatures to 350°F**
- ► **Won't Stain or Become Gummy**
- ► **Helps Prevent Build-Up of Glues, Waxes, Inks, and Paints**
- ► **Lubricates Cutting Tools and Tables**
- ► **12 Cans Per Case**

617-5306. Silicone Lubricant. 6 oz .... **PER CASE 65.76**

K2000 and New K2500
The "All In One" Industrial Labeling System



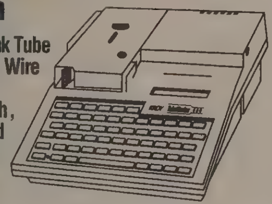
- **Prints From 6 to 72 Point Alpha/Numeric Legends on Industrial Laminate Tape Cartridge Supply and Repeats (1-999)**
- **Eight Resident BARCODES, RS232 Port for Scanner Wand, Computer Generated Labels and PCMCIA Interface Card Slot for Custom Programs; K2500 Provides 2 Dimensional Bar Code PDF-417 and MSI-PLESSEY**
- **Prints on Heat Shrink Tubing with Either Alpha/Numeric Legends, Bar Codes or Both for Easy Wire/Cable Identification**
- **No Smear Thermal Transfer Technology**
- **K2000 Has Six Resident Languages: English, Spanish, French, German, Italian and Portuguese; K2500 Adds Dutch, Danish, Swedish, Norwegian and Finnish**
- **$\frac{1}{4}$", $\frac{3}{8}$" And $\frac{1}{2}$" Tubing Meets MIL-I-23053/5 Class 3 Specifications**
- **K2500 Has Time and Date Real Clock and Annunciator Feature Plus Increased Memory Up to 600 K**

Portable labeler prints .5", .8" and 1" labels. 203 dpi (dots per inch) thermal transfer resolution with resident typestyle corresponds to Helvetica. **Resident Barcode Symbologies:** 3 of 9, 12, of 5, 128, UPC-A, UPC-E, EAN 8, EAN 13, CODABAR. **Features Include:** 1 to 6 line printing, 67 scalable type sizes (6 pt-72 pt in 1 pt increments). **Styles:** outline, bold, underline, shadow, frame, italic, mirror, vertical and rotation feature. Left, right or center justification and label format options for margins and label width.

Alpha/numeric sequencing and repeat (1-999). 128 K memory (6000 characters) to save label files. Systems are shipped complete with one black on white (40 ft.) tape supply, 6 ni-cad C-cell batteries, battery charger and owners manual. Optional AC adapter, carrying case and supplies are listed below. Unit measures 4"H × 6"W × 11$\frac{1}{4}$"D. **Weight with Batteries:** 4 lbs.

Stock No.	Mfr.'s Type	Description	EACH
255-0010	2426501	K2000 Labeling System	**895.00**
255-0180	2504201	K2500 Labeling System	**1095.00**
255-0015	2435100	AC adapter	**84.95**
255-0020	2447100	Hard sided carrying case	**64.95**
Industrial Laminated Tape Supplies and Heat Shrink Tubing			
255-0025	2438601	1" black image on clear tape 40'	**39.95**
255-0026	2438616	1" black image on white tape	**39.95**
255-0169	2487901	$\frac{1}{2}$" black image on clear tape	**32.95**
255-0070	2487916	$\frac{1}{2}$" black image on white tape	**32.95**
255-0040	2470021	$\frac{1}{4}$" white tube, black print 9'	**34.95**
255-0041	2470022	$\frac{1}{4}$" yellow tube, black print	**37.95**
255-0045	2470031	$\frac{3}{8}$" white tube, black print 9'	**34.95**
255-0046	2470032	$\frac{3}{8}$" yellow tube, black print	**37.95**
255-0050	2470041	$\frac{1}{2}$" white tube, black print 9'	**34.95**
255-0051	2470042	$\frac{1}{2}$" yellow tube, black print 9'	**37.95**
255-0055	2483801	TAMPER-EVIDENT security tape	**39.95**
255-0056	2526301	1" × 40" direct thermal white tape	**29.95**
255-0057	2523591	Two 1" × 40" refills for above black/white	**17.90**

Tubemarker Model TM600 Heat Shrink Tube Labeling System



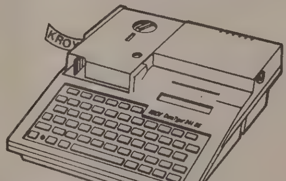
- **Prints on 3 Sizes Shrink Tube Covering 10-22 Gauge Wire Sizes**
- **Prints on $\frac{1}{2}$ Inch, 50 Foot Laminated Tape Supply, Fast Changeover**
- **Prints One Line Legend, Any Length, in Four Font Sizes: 8, 10, 12 and 16 Point**
- **16 Character LED Display Affords Proofing Before Printing**

Model TM600 is about the size of a desktop calculator and uses either industrial grade laminated tape, or shrinkable tubing. Unit prints in four font sizes in bold, underline, vertically or horizontally. Repeats legend up to 99 times and will sequence up to four letters or numbers. Legends can be centered automatically to tube size selected. **Six Resident Languages:** English, Spanish, French, German, Italian and Portuguese. Shipped as AC or battery operated kit; includes carrying case, AC adapter or battery charger and one each shrink tubing sizes. 8" W × 2$\frac{7}{8}$" H × 9$\frac{1}{2}$" D. **Shipping Weight of Kits:** 9 lbs, 10 oz.

Stock No.	Mfr.'s Type	Description	EACH
255-0060	2404101	TM600 Kit AC Powered	**449.00**
255-0065	2404102	TM600 Kit Battery Powered	**449.00**
255-0070	2404201	.125" white tubing*	**29.95**
255-0075	2404210	.188" white tubing*	**29.95**
255-0080	2404220	.250" white tubing*	**29.95**
255-0085	2404202	.125" yellow tubing*	**32.95**
255-0090	2404211	.188" yellow tubing*	**32.95**
255-0095	2404221	.250" yellow tubing*	**32.95**
255-0100	2464401	.50" × 50' clear tape*	**34.95**
255-0105	2464416	.50" × 50' white tape*	**34.95**
255-0110	2464435	.50" × 50' red tape*	**34.95**
255-0115	2464443	.50" × 50' yellow tape*	**34.95**

*Black print.

Duratype 240/244SE Labelers for Office, Plant and Labs



240/244SE

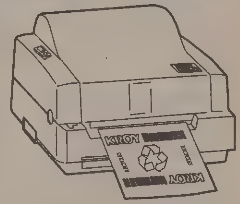
- **240 Dots Per Inch Resolution**
- **Automatic Alpha/Numeric Sequencing A-Z, 1-99**
- **Prints Up To 15 Characters Per Second Quietly**
- **Industrial Grade Tape Supplies With Built In Cutter**

240 has 1-line 10 and 24 pt. type, vary text with outline, underline, bold, frame or mirror. 244SE adds negative image and shadow text feature and is a 4-line printer with 6, 8, and 12 pt. type. Both models repeat text up to 99 times. Horizontal or vertical printing. Six resident languages. Barcode cards option available.

Stock No.	Mfr.'s Type	Description	EACH
255-0120	2225700	240 1-line printer requires 4 ni-cads C-cell batteries or adapter (not included)	**169.00**
255-0160	2476800	AC adapter	**19.95**
255-0130	2383201	244SE 4-line printer includes AC adapter	**329.00**
255-0135	2383206	244SE kit includes AC adapter, carrying case, 3 tape supplies and 36 pt. type card	**488.80**
255-0140	2357501	.5" × 50' clear tape*	**34.95**
255-0145	2357516	.5" × 50' white tape*	**34.95**
255-0150	2357536	.5" × 50' red tape†	**34.95**
255-0155	2357543	.5" × 50' yellow tape*	**34.95**
255-0157	2360422	.375" × 50' black tape†	**34.95**

*Black print. †White print.

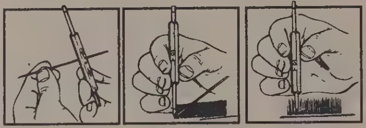
K4200 High Volume Printer —*NEW*—



- **Up to 5000 Label Runs**
- **Prints Up to 2" Per Second**
- **RS232C Parallel Port**
- **15 Bar Code Symbologies**
- **203 dpi — Thermal Transfer and Direct Thermal**
- **Max. Print Width: 4"**
- **Prints on Roll-Fed, Die-Cut Continuous/Fan-Fold Labels, Tags, or Tickets**
- **Cal Tools and Windows Driver Software**
- **Label Software Not Included, See Below**
- **Serial and Paralleled Interface (Cables Not Included)**
- **126 K Internal Memory and 364 K Memory Cartridge with Real Time Clock Included (Total 512 K)**

Stock No.	Mfr.'s Type	Description	EACH
255-0190	2493700	Thermal transfer or direct thermal printer	**995.00**
255-0195	2496911	Roll thermal label 2.25 × 3.00", 500 per roll perforated	**5.45**
255-0200	2496917	Roll thermal label 4 × 1.5", 960 per roll perforated	**8.45**
255-0205	2496914	Roll thermal label 4 × 4", 380 per roll perforated	**8.45**
255-0210	2496916	Roll thermal label 4 × 6", 250 per roll perforated	**8.45**
255-0215	2496813	Roll thermal transfer ribbons, general purpose resin, 2.5" wide	**6.95**
255-0220	2496814	Roll thermal transfer ribbons, general purpose resin, 4.3" wide	**11.45**
255-0225	2492501	Strandware Label Matrix® DOS or Windows	**495.00**

WSU Series Hand Wrapping, Stripping and Unwrapping Tools



Model WSU-30M performs the work of three separate tools. Wraps/unwraps 30 AWG (0.25 mm) wire onto standard .025" (0.6 mm) square DIP socket posts and strips 30 AWG wire nick-free. Makes a "modified style" of wrap, in which approximately 1½ turns of insulated wire are wrapped in addition to the bare wire for added mechanical stability. All metal construction for years of dependable service. Model WSU-30 offers same design, quality, and workmanship but will wrap lengths of stripped wire only.

Stock No.	Mfr.'s Type	Use With	EACH
825-0224	WSU-2224	22-24 AWG on standard .03" × .06" and .045" square posts	32.00
827-1431	WSU-30M	Modified wrap for 30 AWG on .025" square posts	23.01
827-1430	WSU-30	Regular wrap for 30 AWG on .025" square posts	20.62
825-0024	WSU-24M	Modified wrap for 24 AWG wire on .03" × .06" and .045 square posts	35.00
825-0026	WSU-26M	Modified wrap for 26 AWG wire on .03" × .06" and .045 square posts	35.00

— NEW —

Hand Wrapping Tools

Compact, convenient for use where occasional wraps are required and where power wrapping tools are not practical. **Wrapping Type:** Regular.

Stock No.	Mfr.'s Type	Wrap	Wire Size (AWG)	Term. Hole Depth	EACH
825-1224	HW-224	Reg.	22-24	0.075" × 0.807"	52.50
825-1026	HW-26	Reg.	26	0.075" × 1.000"	52.50
825-1126	HW-26SM	Mod.	26	0.040" × 0.750"	58.50
825-1030	HW-30	Mod.	30	0.036" × 0.750"	58.50

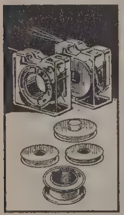
Wire Wrapping Bits and Sleeve

Bit					Sleeve								
Stock No.	Mfr.'s Type	Wire Gauge (AWG)	Wrap	EACH	Stock No.	Mfr.'s Type	Max. Insul. Dia.	Term. Hole Dia.	Term. Hole Depth	Min. Term. Diag.	Max. Term. Diag.	EACH
825-2010	KB22	22	Reg.	42.00	825-2015	P2224	—	.075	0.750	.054	.073	14.75
825-2100	WB2275M	22	Mod.	40.00	825-2015	P2224	.052	.075	1.000	.049	.074	14.75
825-2013	KB224	22-24	Reg.	33.00	825-2015	P2224	—	.075	0.807	.054	.073	14.75
825-2011	KB24	24	Reg.	38.00	825-2016	P2426	—	.075	0.750	.055	.074	15.00
825-2101	WB24M	24	Mod.	46.00	825-2015	P2224	.046	.075	0.750	.054	.073	14.75
825-2012	KB26	26	Reg.	38.76	825-2016	P2426	—	.075	1.000	.058	.073	15.00
825-2102	WB26SM	26	Mod.	46.00	825-2020	P26LN	.031	.040	0.750	.023	.038	24.75
825-2103	WB26M	26	Mod.	46.00	825-2015	P2224	.046	.075	1.000	.054	.073	14.75
825-2104	WB28SHM	28	Mod.	40.48	825-2018	P3032	.030	.036	0.750	.031	.034	24.93
825-2025	SB30MSH-B	30	Mod.	42.88	825-2018	P3032	.027	.036	0.750	.031	.034	24.93
825-2105	WB3032M	30-32	Mod.	39.96	825-2018	P3032	.027	.040	0.750	.034	.038	24.93

Wire Bit and Sleeve Sets

Stock No.	Mfr.'s Type	Term. Hole		Term. Hole		Wire Insul. Dia.		EACH
		Max.	Min.	Diameter	Depth	Max.	Min.	
825-2470*	CSW24-7035	0.068"	0.057"	0.070"	1.00"	0.040"	0.035"	231.75
825-2640**	CSW26M-4026‡	0.035"	0.031"	0.040"	0.75"	0.030"	0.026"	231.75
825-3036†	CSW30M-3619‡	0.035"	0.031"	0.036"	0.75"	0.021"	0.019"	231.75

*Fits 24 AWG regular wrap. **Fits 26 AWG modified wrap. †Fits 30 AWG modified wrap. ‡Manufacturer's recommendation for 0.025" terminals in 0.100" centers.



Wire Dispenser

Cuts wire to length, strips 1" of insulation. With 50-ft. roll of AWG #30 Kynar wire-wrapping wire. Refillable.

827-4030.	WD-30-B. Wire Dispenser. Blue	EACH 12.18
827-4031.	WD-30-Y. Wire Dispenser. Yellow	EACH 12.18
827-4032.	WD-30-W. Wire Dispenser. White	EACH 12.18
827-4033.	WD-30-R. Wire Dispenser. Red	EACH 12.18
827-4040.	R-30-B-0050. Replacement Rolls	EACH 7.00
827-4041.	R-30-Y-0050. Replacement Rolls	EACH 7.00
827-4042.	R-30-W-0050. Replacement Rolls	EACH 7.00
827-4043.	R-30-R-0050. Replacement Rolls	EACH 7.00
827-4020.	WD-30-TRI. Wire Dispenser. Tri-Color	EACH 21.00
827-4025.	R-30-TRI. Wire Dispenser. Tri-Color	EACH 16.00

Wire Cut-and-Strip Tools

ST-100

ST-100-24

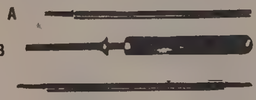
A revolutionary new concept for easy and clean stripping of wires for wire-wrapping. Easy to operate — place wires (up to 4) in stripping slot with ends extending beyond cutter blades — press tool and pull — wire is cut and stripped to proper "wire-wrapping" length. **Length:** 6.75.

Stock No.	Mfr.'s Type	Wire Size (AWG)	Adjustable "Shiner" Length of Stripped Wire		Blade Type	EACH	Stock No.	Replacement Blade Numbers	EACH
			From	To					
825-2201	ST-100	22-24 GA	1 5/16"	1 9/16"	Double	29.96	825-2221	OK-3907-B	5.55
825-2202	ST-100-24	24 GA	1 5/16"	1 9/16"	Single	29.96	825-2222	OK-3907-24B	6.17
825-2203	ST-100-26	26 GA	1 5/16"	1 11/16"	Single	29.96	825-2223	OK-3907-26B	7.00
825-2204	ST-100-28	28 GA	1 1/8"	1 1/8"	Single	34.24	825-2224	OK-3907-28B	7.00
825-2205	ST-100-30	30 GA	1 1/8"	1 1/8"	Single	34.24	825-2225	OK-3907-30B	7.00

Hand Wrapping/Unwrapping Tools

New convenience. One tool that does the job of two. Quick, convenient and easy to use. To switch from wire-wrapping to unwrapping takes only seconds — just a quick change of the cap from one end to the other.

Stock No.	Mfr.'s Type	Wrapping Side					Unwrap. Side		EACH
		Wrap	Wire Size (AWG)	Max. Insul. Dia.	Term. Hole Dia.	Term. Hole Depth	Term. Hole Dia.	Term. Hole Depth	
825-2052	HW-UW-224	Reg.	22-24 GA	—	0.075"	0.807	0.070	1.000	72.25
825-2057	HW-UW-26SM	Mod.	26 GA	0.031"	0.040"	0.750	0.038	1.000	84.50
825-4225	HW-UW-26	Reg.	26	—	0.075"	1.000	0.070	1.000	72.25
825-0030	HW-UW-30	Mod.	30	—	0.036"	0.750	0.038	1.000	84.50



Hand Unwrapping Tools

These tools are used to easily remove solderless wrapped connections from 18 thru 32 gauge wire.

Stock No.	Mfr.'s Type	Type	Wire Size (AWG)	Type	Term. Hole Dia.	Term. Hole Depth	EACH
825-2030	UW-1	A	20-26	Left	0.070	1.000	16.73
825-2031	UW-2	C	20-26	Left	0.070	1.000	20.68
825-2032	UW-4	B	20-26	Right	0.070	2.360	21.61
825-2033	UW-7	A	20-26	Left	0.086	0.750	13.28
825-2036	UW52-L	C	20-26	Left	0.052	0.750	20.64
825-2035	UW-093R	A	24-32	Left	0.038	1.000	13.28
825-2038	UWD-93-93	C	24-32	Right	0.038	1.000	20.64
825-2039	UW-2832C	B	28-32	Left	0.038	0.750	20.64

Pre-Cut and Pre-Stripped Wrapping Wire

KYNAR™ 30 AWG (0.25 mm)

Insulation Diameter: .0195" (0.50 mm). **Strip-off Length Both Ends:** 1" (25 mm). 500 wires per package. Replace "X" in Stock No. with number indicated above color.

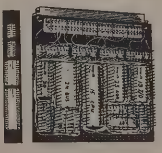
Stock No.	Mfr.'s Type					Insulation Length		PER PK./500	
	0 White	1 Yellow	2 Blue	3 Red	4 Black	Inch	mm	1-4	5-25
825-3X11	30W-010	30Y-010	30B-010	30R-010	30BLK-010	1	25	11.50	10.56
825-3X12	30W-020	30Y-020	30B-020	30R-020	30BLK-020	2	51	13.11	12.15
825-3X13	30W-030	30Y-030	30B-030	30R-030	30BLK-030	3	76	14.30	13.26
825-3X14	30W-040	30Y-040	30B-040	30R-040	30BLK-040	4	101	18.00	17.00
825-3X15	30W-050	30Y-050	30B-050	30R-050	30BLK-050	5	127	19.26	18.24

KYNAR™ Wire Rolls; 30 and 28 AWG

Stock No.	Mfr.'s Type				AWG Size	Roll Size	PER ROLL
	1 Blue	2 White	3 Yellow	4 Red			
825-8X16	R30B0100	R30W0100	R30Y0100	R30R0100	30	100'	9.01
825-8X17	R30B0500	R30W0500	R30Y0500	R30R0500	30	500'	24.08
825-8X18	R28B0100	R28W0100	R28Y0100	R28R0100	28	100'	10.06
825-8X19	R28B0500	R28W0500	R28Y0500	R28R0500	28	500'	35.66

Cut/Strip/Wrap Wire-Wrapping Wire Rolls; 24, 26 and 30 AWG

Stock No.	Mfr.'s Type			AWG Size	Roll Size	PER ROLL
	1 Blue	2 Yellow	3 White			
825-8X20	KSW24B0100	KSW24Y0100	KSW24W0100	24	100'	17.47
825-8X21	KSW26B0100	KSW26Y0100	KSW26W0100	26	100'	13.97
825-8X22	KSW30B0100	KSW30Y0100	KSW30W0100	30	100'	11.50



Socket-Wrap I.D. Plastic Panels

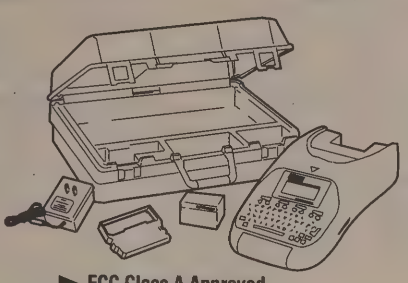
Don't get stuck with unmarked pins. Identify pin numbers on wire-wrapping sockets with these socket-sized plastic panels with numbered holes in pin locations. Simply slip on the socket before wrapping to greatly simplify both initial wire-wrapping and troubleshooting or repair. Can also be written on for easy identification of location. IC part numbers, function, etc.

Stock No.	Mfr.'s Type	Pins	Row Spacing	Quantity Per Pack	EACH
825-5049	ID-8-100	8	0.3" (7.5 mm)	100	14.98
825-5050	ID-14-100	14	0.3" (7.5 mm)	100	13.75
825-5051	ID-16-100	16	0.3" (7.5 mm)	100	14.57
825-5052	ID-18-50	18	0.3" (7.5 mm)	50	11.78
825-5053	ID-20-50	20	0.3" (7.5 mm)	50	13.11
825-5054	ID-22-50	22	0.4" (10 mm)	50	13.11
825-2432	ID-24-3-25	24	0.3" (7.5 mm)	25	11.00
825-2433	ID-24-4-25	24	0.4" (10 mm)	25	11.00
825-5055	ID-24-50	24	0.6" (15 mm)	50	15.51
825-5056	ID-28-50	28	0.6" (15 mm)	50	18.18
825-5057	ID-40-25	40	0.6" (15 mm)	25	15.40
825-5058	ID-96-25	96	0.3" (7.5 mm)	25	17.67

IS951 Identification System

— NEW —

- Unique PCMCIA Slot Expandability
- Full Travel Standard QWERTY Keyboard
- Four Line Liquid Crystal Display (LCD) with Horizontal Scrolling Feature for Up to 32 Characters
- RJ-11 Serial Communications Port
- Can Print Label Widths Up to 2"
- 32 K RAM Expandable 1 MB Via PCMCIA Card
- Rechargeable Nicad Battery System (2400 mA)
- Weight: 7.5 Lbs. (Without Case)
- 1 Year Warranty



- FCC Class A Approved
- UL-Listed AC Adapter

The E-Z-Code® IS951 is a feature-packed, portable labeling system designed to mark and identify practically anything electrical, electronic, or industrial. Us it on any equipment that requires identification, from wires and cables to terminal blocks and rating plates. Label virtually anything from control panels and components to voice and data equipment.

Stock No.	Mfr.'s Type	Description	EACH
534-0951	IS951	Printer (includes ink ribbon, one roll of markers, user manual, hard shell plastic carrying case, AC adapter, registration card)	1291.14
534-0952	IS951-ICS	Black high performance ribbon	15.70
534-0953	IS951-HC	Carrying case	84.27
534-0954	IS951-AC	AC adapter	29.82
534-0955	IS951-BP	Rechargeable Nicad replacement battery pack	102.00
534-0956	WL050125-2-V	Wire marker labels, vinyl clear, .050" × 1.25", 2 labels, 180 labels per roll (refill roll for marker included in printer*)	12.95

*Other types of markers/labels available through special order.

Portable Wire Marker Printer

Internal Ni-Cad batteries require 10-12 hours charging time to print approximately 3 rolls of markers without adapter. 120 VAC, 60 Hz power required for use with adapter. Storage capacity for 100 labels and jobs lists. Can print a directory of entries. Prints up to 16 Alpha, numeric, and special symbols on a single line. Keyboard includes special symbols for marking electrical wires or panel boards. Sequences infinitely. Multiple sequence quantity up to 99, select marker quantity up to 99. Automatic shut-off with recall of last legend. Includes wall adapter, 1 roll of WPR-125A labels, 1 cartridge ribbon, an instruction manual, a marker removal tool and a carrying case for the printer and accessories.

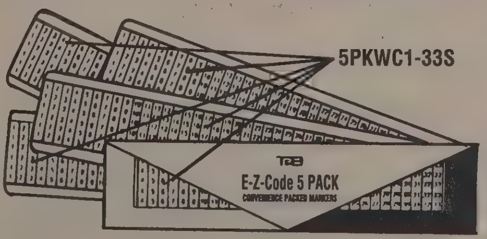
534-3001. WD-26P. Wire Marker Printer...**EACH 530.62**

Refill Rolls*

Stock No.	Mfr.'s Type	Description	EACH
534-3002	WPR-125A	500 markers, 1 1/16"W × 1 3/8"L — 7 char./line	45.07
534-3004	WPR-125B	250 markers, 1 3/8"W × 1 3/8"L — 16 char./line	45.07
534-3006	WPR-125C	750 markers, 15/32"W × 1 3/8"L — 4 char./line	45.07
534-3008	WPR-125D	1000 markers, 11/32"W × 1 3/8"L — 3 char./line	45.07
534-3010	WPR-135A	200 markers, 11/16"W × 3 5/16"L — 7 char./line	45.07
534-3012	WPR-135B	100 markers, 1 3/8"W × 3 5/16"L — 16 char./line	45.07
534-3014	WPR-145A	150 markers, 11/16"W × 5 1/16"L — 7 char./line	45.07
534-3016	WPR-145B	75 markers, 1 3/8"W × 5 1/16"L — 16 char./line	45.07

*Each refill roll comes in a package with a carbon black ink cartridge.

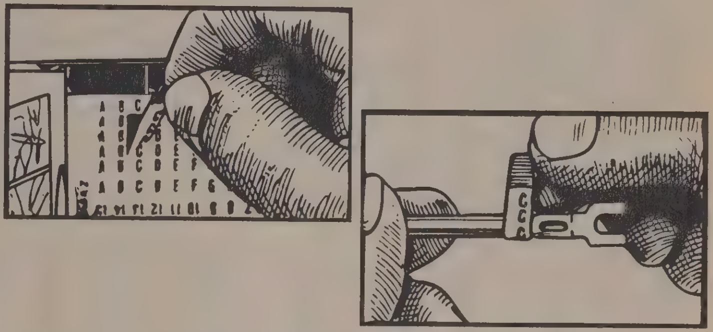
E-Z-Code® Wire Marker Cards



Each package contains 5 cards of 36 markers per card, durable WBC vinyl cloth for long-life reliability.

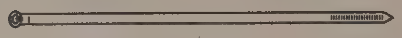
534-3090. 5PKWC1-33S. 1 through 33....................................PER PK./5 7.11
534-3092. 5PKWC34-66S. 34 through 66..................................PER PK./5 7.11
534-3094. 5PKWC67-99S. 67 through 99..................................PER PK./5 7.11
534-3096. 5PKWCAZ-AJS. A through Z plus A through J...............PER PK./5 7.11

E-Z-Code® WBC Vinyl Cloth Standard Books



Stock No.	Mfr.'s Type	Description	EACH
534-3021	WM-0 Thru 9	40 markers each — 0 through 9 10 markers each — T1, T2, T3, L1, L2, L3	12.97
534-3022	WM-0-9M	46 markers each — 0 through 9 One number per page	12.97
534-3024	WM-0-45	10 markers each — 0 through 45	12.97
534-3026	WM-46-90	10 markers each — 46 through 90	12.97
534-3028	WM-A-Z	10 markers each — A through Z, +, –, and 0 through 15	12.97
534-3030	WM-123	150 markers each — 1, 2, 3	12.97
534-3032	WM-ABC	150 markers each — A, B, C	12.97
534-3034	WM-A-33	10 markers each — 1 through 33, A, B, C, +, –, T1, T2, T3, L1, L2, L3	12.97
534-3036	WM-A-90	6 markers each — 0 through 15 4 markers each — 16 through 90, 2 markers each — A through Z	12.97
534-3038	WM-GRD-7/16" × 2 1/2"	120 markers with ground legend	12.97
534-3040	WM-GRD-7/16" × 1 1/4"	240 markers with ground legend	12.97
534-3042	WM-0	460 markers with 0	12.97
534-3044	WM-1	460 markers with 1	12.97
534-3046	WM-2	460 markers with 2	12.97
534-3048	WM-3	460 markers with 3	12.97
534-3050	WM-4	460 markers with 4	12.97
534-3052	WM-5	460 markers with 5	12.97
534-3054	WM-6	460 markers with 6	12.97
534-3056	WM-7	460 markers with 7	12.97
534-3058	WM-8	460 markers with 8	12.97
534-3060	WM-9	460 markers with 9	12.97
534-3062	WM-A	460 markers with A	12.97
534-3064	WM-B	460 markers with B	12.97
534-3066	WM-C	460 markers with C	12.97
534-3068	WM-D	460 markers with D	12.97
534-3070	WM-E	460 markers with E	12.97
534-3072	WM-F	460 markers with F	12.97
534-3074	WM-G	460 markers with G	12.97
534-3076	WM-L	460 markers with L	12.97
534-3078	WM-N	460 markers with N	12.97
534-3080	WM-P	460 markers with P	12.97
534-3082	WM-R	460 markers with R	12.97
534-3084	WM-S	460 markers with S	12.97
534-3086	WM-T	460 markers with T	12.97
534-3088	WM-X	460 markers with X	12.97

Nylon Self-Locking TY-RAP® Cable Ties



- Low Profile Head
- Stainless Steel Lock
- Smooth Molded Body
- Easy to Install — Won't Slip

Miniature

Wire Bundle Range	Minimum Unlocking Strength	Length	Width	PKG./100				PKG./1000		
				Stock No.	Mfr.'s Type	1-4	5-9	Stock No.	Mfr.'s Type	1-4
1/16" — 5/8"	18 lbs.	3.62"	0.091"	**534-2000**	TY523M	**9.08**	**8.38**	**534-2005**	TY23M	**26.01**
1/16" — 5/8"	18 lbs.	3.62"	0.091"	**534-2001**	TY523MX*	**11.82**	**10.91**	**534-2006**	TY23MX*	**40.29**
1/16" — 1 1/2"	18 lbs.	7.00"	0.091"	**534-2010**	TY52315M	**11.82**	**10.91**	**534-2015**	TYB2315M	**37.23**
1/16" — 2"	18 lbs.	8.00"	0.091"	**534-2020**	TY5232M	**12.57**	**11.60**	**534-2025**	TY232M	**38.59**
1/16" — 2"	18 lbs.	8.00"	0.091"	**534-2021**	TY5232MX*	**15.90**	**14.68**	**534-2026**	TY232MX*	**54.91**
1/16" — 4"	18 lbs.	14.00"	0.091"	**534-2030**	TY5234M	**18.06**	**16.67**	**534-2035**	TY234M	**68.34**

Intermediate

Wire Bundle Range	Minimum Unlocking Strength	Length	Width	PKG./100 Stock No.	PKG./100 Mfr.'s Type	PKG./100 1-4	PKG./100 5-9	PKG./1000 Stock No.	PKG./1000 Mfr.'s Type	PKG./1000 1-4
1/16" — 1 1/4"	40 lbs.	5.50"	0.140"	**534-2040**	TY524M	**10.51**	**9.70**	**534-2045**	TY24M	**40.29**
1/16" — 1 1/4"	40 lbs.	5.50"	0.140"	**534-2050**	TY524MX*	**12.96**	**11.96**	**534-2055**	TY24MX*	**54.06**
1/16" — 2"	40 lbs.	8.19"	0.140"	**534-2060**	TY5242M	**15.69**	**14.49**	**534-2065**	TY242M	**50.32**
1/16" — 2"	40 lbs.	8.19"	0.140"	**534-2061**	TY5242MX*	**18.82**	**17.38**	**534-2066**	TY242MX*	**68.34**
1/16" — 3"	40 lbs.	11.08"	0.140"	**534-2070**	TY526M	**20.71**	**19.12**	**534-2075**	TY26M	**108.12**
1/16" — 3"	40 lbs.	11.08"	0.140"	**534-2080**	TY526MX*	**26.11**	**24.11**	**534-2085**	TY26MX*	**151.30**
1/16" — 4"	40 lbs.	14.50"	0.140"	**534-2090**	TY5244M	**27.25**	**25.16**	**534-2095**	TY244M	**160.31**

Standard

Wire Bundle Range	Minimum Unlocking Strength	Length	Width	PKG./100 Stock No.	PKG./100 Mfr.'s Type	PKG./100 1-4	PKG./100 5-9	PKG./1000 Stock No.	PKG./1000 Mfr.'s Type	PKG./1000 1-4
1/16" — 1 3/4"	50 lbs.	7.31"	0.184"	**534-2100**	TY525M	**13.25**	**12.23**	**534-2105**	TY25M	**54.06**
1/16" — 1 3/4"	50 lbs.	7.31"	0.184"	**534-2110**	TY525MX*	**14.76**	**13.62**	**534-2115**	TY25MX*	**60.35**
1/16" — 3"	50 lbs.	11.41"	0.184"	**534-2120**	TY5253M	**26.78**	**24.72**	**534-2125**	TY253M	**140.59**
1/16" — 3"	50 lbs.	11.41"	0.184"	**534-2121**	TY5253MX*	**28.68**	**26.47**	**534-2126**	TY253MX*	**162.18**
1/16" — 4"	50 lbs.	14.19"	0.184"	**534-2130**	TY528M	**30.48**	**28.14**	**534-2135**	TY28M	**158.61**
1/16" — 4"	50 lbs.	14.19"	0.184"	**534-2140**	TY528MX*	**32.64**	**30.13**	**534-2145**	TY28MX*	**179.18**

*X versions are for outdoor use; black.

Heavy Duty

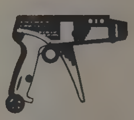
Wire Bundle Range	Minimum Unlocking Strength	Length	Width	PKG./50				PKG./500		
				Stock No.	Mfr.'s Type	1-4	5-9	Stock No.	Mfr.'s Type	1-4
3/16" — 2"	120 lbs.	8.00"	0.270"	**534-2150**	TY5272M	**15.53**	**14.34**	**534-2155**	TY272M	**120.36**
3/16" — 3 1/2"	120 lbs.	13.38"	0.270"	**534-2160**	TY527M	**21.56**	**19.90**	**534-2165**	TY27M	**164.48**
3/16" — 3 1/2"	120 lbs.	13.38"	0.270"	**534-2170**	TY527MX*	**24.13**	**22.28**	**534-2175**	TY27MX*	**188.78**
3/16" — 5"	120 lbs.	18.00"	0.270"	**534-9000**	TY5275M	**26.84**	**24.77**	**534-9001**	TY275M	**181.40**
3/16" — 5"	120 lbs.	18.00"	0.270"	**534-9002**	TY5275MX*	**30.86**	**28.48**	**534-9003**	TY275MX*	**221.73**
3/16" — 9"	120 lbs.	30.00"	0.301"	**534-2180**	TY529M	**47.29**	**43.65**	**534-2185**	TY29M	**295.58**

*X versions are for outdoor use; black.

Hand Tools and Marking Pens

Hand Tools

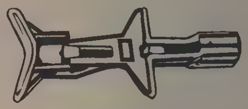
WT193A



WT197

Pistol-type easy tension adjustment. Cuts tails off flush.

534-2600. WT193A. .094"-.184" width ties ....**EACH 137.31**
534-2605. WT197. .184"-.301" width ties..**EACH 239.73**

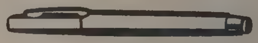


WT1-TB/WT2-TB

Compact hand tool made of high impact plastic. Pre-set tension. Cuts off flush. Lightweight and economical.

534-2610. Type WT1-TB. .094"-.184" width ties ....**EACH 22.44**
534-2615. Type WT2-TB. .184"-.301" width ties ....**EACH 29.45**

Nylon Marking Pens

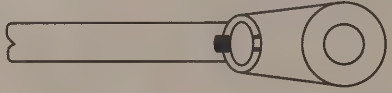


WT163M

Fine tip marking pen for use with identification ties.

534-2620. WT163M-1. Black..**EACH 11.28**
534-2625. WT163M-3. Red..**EACH 11.28**

Cable Straps with Bolt/Screw Holes



Wire Bundle Range	Mount Hole Size No.	Minimum Unlocking Strength	Cable Type	Length	Width	PKG./100				PKG./1000		
						Stock No.	Mfr.'s Type	1-4	5-9	Stock No.	Mfr.'s Type	1-4
1/16" — 5/8"	4	18 lbs.	Miniature	4.0"	0.091"	**534-2200**	TY533M	**17.31**	**15.98**	**534-2205**	TY33M	**134.64**
1/16" — 1 1/8"	8	40 lbs.	Intermediate	6.0"	0.140"	**534-2210**	TY534M	**18.26**	**16.86**	**534-2215**	TY34M	**141.95**
1/16" — 1 3/4"	10	50 lbs.	Standard	7.8"	0.184"	**534-2220**	TY535M	**20.54**	**18.96**	**534-2225**	TY35M	**139.06**
3/16" — 3 1/2"	1/4"	120 lbs.	Heavy Duty	13.9"	0.301"	**534-2230**	TY537M	**30.44***	**28.10***	**534-2235**	TY37M	**236.09****

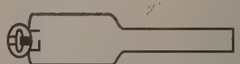
*Package of 50. **Package of 500.

Identification Cable Ties

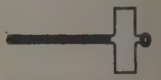
These ties can be permanently marked with the marking pens listed below.

Stock No.	Mfr.'s. Type	Wire Bundle Range	Marking Pad Size	Minimum Unlocking Strength	Cable Type	Length	Width	PKG./100	
								1-4	5-9
534-2300	TY546M	3/8" — 1 3/4"	1/2" × 7/8"	50 lbs.	Standard	7.25"	0.184"	**38.81**	**35.83**
534-2310	TY548M	3/4" — 4"	1/2" × 2 1/8"	50 lbs.	Standard	14.20"	0.184"	**51.43**	**44.08**
534-2320	TY551M	3/16" — 5/8"	1" × 5/16"	18 lbs.	Miniature	3.60"	0.091"	**9.89***	**9.13***
534-2330	TY5512M	3/16" — 2"	1" × 5/16"	18 lbs.	Miniature	8.30"	0.094"	**27.61**	**25.49**

*Package of 50.



TY546M/TY548M



TY551M/TY5512M

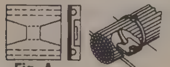


Fig. A

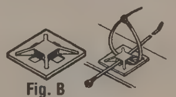


Fig. B

Holes for no. 8 screws

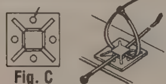


Fig. C

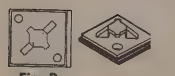


Fig. D

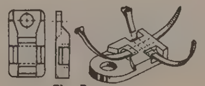


Fig. E

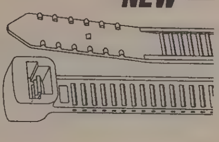
Mounting Bases

Fig.	Description	Use With Cable Tie Types†	PKG./100				PKG./1000		
			Stock No.	Mfr.'s Type	1-4	5-9	Stock No.	Mfr.'s Type	1-4
A	Adhesive, 2 way, 1.125" × 1.125"	M, I, S	**534-2505**	TC5342A	**66.64**	**57.12**	**534-2510**	TC342A	**312.85**
B	Adhesive, 4 way, .750" × .750"‡	M, I	**534-2515**	TC5344A	**49.49**	**42.42**	**534-2520**	TC344A	**266.80**
B	Adhesive, 4 way, 0.50" × 0.50"‡	M, I	**534-2516**	TC050X050A-C	**34.00**	**31.39**	**534-2517**	TC050X050A	**216.55**
B	Screw mount, 4 way, 1.50" × 1.50"	M, I, S, H	**534-2518**	TC150X150-L	**45.05***	**38.62***	**534-2519**	TC150X150	**247.71****
B	Adhesive, 4 way, 1.50" × 1.50"‡	M, I, S, H	**534-2521**	TC150X150A-L	**49.73***	**42.62***	**534-2522**	TC150X150A	**269.57****
B	Screw mount, 4 way, 2.0" × 2.0"	M, I, S, H	**534-2523**	TC200X200-L	**52.28***	**44.81***	**534-2524**	TC200X200	**306.00****
B	Adhesive, 4 way, 2.0" × 2.0"‡	M, I, S, H	**534-2526**	TC200X200A-L	**58.06***	**49.76***	**534-2527**	TC200X200A	**340.00****
C	Adhesive, 4-way, 1.25" ×1.125"	M, I, S	**534-2525**	TC5345A	**66.64**	**57.12**	**534-2530**	TC345A	**312.85**
D	Adhesive, 4-way/2-way, 1.125" × 1.125"	M, I, S, H	**534-2535**	TC5347A	**63.99**	**54.85**	**534-2540**	TC347A	**308.91**
E	No. 8 screws, 2-way, .390" × .875"	M, I, S	**534-2545**	TC5828	**21.66**	**20.00**	**534-2550**	TC828	**100.12**

*Package of 50. **Package of 500. †M = Miniature, I = Intermediate, S = Standard, H = Heavy Duty. ‡Adhesive backed with #8 screw holes.

Ty-Fast™ Cable Ties

— NEW —



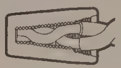
- ► The Integrally Formed Nylon Pawl Combines Low Insertion and High Locking Strength
- ► A Rounded, Low-Profile Head Makes for Less Snags
- ► Tails Have An Improved Two-Sided Finger Grip Design That Helps the Operator Grasp and Pull Ties Snug
- ► "Sure Grip" Tab Keeps the Tail from Popping Out While Being Threaded, Then Holds It Securely for Final Tightening By Hand or Tool
- ► Quick, Easy Pull Through Increases Productivity, Reduces Operator Fatigue

Designed with OEMs in mind, this new series of competitively priced Ty-Fast cable ties holds down costs and speeds up cable fastening. Our all-nylon design lowers installation costs and provides features to ease fastening for harness fabrication and wire bundling in the manufacturing environment.

Stock No.	Mfr.'s Type	Min. Tensile Strength (Lbs.)	Military Standard Part No.	Tie Length (In.)	Max. Bundle Dia. (In.)	Tie Width (In.)	Color†	PER PK./1000	
								1-4	5-9
534-9800	TY075-18	18	MS3367-4	3.60	0.75	0.095	Natural	20.57	17.64
534-9805	TY075-18X	18	—	3.60	0.75	0.095	Black	33.49	28.71
534-9810	TY125-18	18	—	5.34	1.25	0.095	Natural	32.30	27.69
534-9815	TY125-18X	18	—	5.34	1.25	0.095	Black	45.73	39.20
534-9820	TY200-18	18	—	7.75	2.00	0.095	Natural	33.49	28.71
534-9825	TY200-18X	18	—	7.75	2.00	0.095	Black	47.60	40.80
534-9830	TY125-40	40	MS3367-5	5.60	1.25	0.140	Natural	46.92	40.22
534-9835	TY125-40X	40	—	5.60	1.25	0.140	Black	46.92	40.22
534-9840	TY200-40	40	—	8.00	2.00	0.140	Natural	43.69	37.45
534-9845	TY200-40X	40	—	8.00	2.00	0.140	Black	59.16	50.71
534-9850	TY300-40	40	—	11.40	3.00	0.140	Natural	86.46	74.94
534-9855	TY300-40X	40	—	11.40	3.00	0.140	Black	120.99	104.86
534-9860	TY175-50	50	MS3367-1	7.30	1.75	0.184	Natural	46.92	40.22
534-9865	TY175-50X	50	—	7.30	1.75	0.184	Black	52.19	44.74
534-9870	TY300-50	50	MS3367-7	11.40	3.00	0.184	Natural	112.51	97.51
534-9875	TY300-50X	50	—	11.40	3.00	0.184	Black	129.78	112.47
534-9880	TY400-50	50	MS3367-2	14.30	4.00	0.184	Natural	126.79	109.89
534-9885	TY400-50X	50	—	14.30	4.00	0.184	Black	133.04	117.88
534-9890	TY200-120	120	—	8.63	2.00	0.299	Natural	96.27*	83.44*
534-9895	TY200-120X	120	—	8.63	2.00	0.299	Black	111.34*	96.49*
534-9896	TY400-120	120	MS3367-3	14.30	4.00	0.301	Natural	131.50*	113.97*
534-9897	TY400-120X	120	—	14.30	4.00	0.301	Black	140.18*	130.83*

*PER PK./500. †Black is weatherable for outdoor use.

Fixed Spring® Wire Connectors

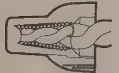


- ► Five Space Efficient, Color-Coded Sizes
- ► Deep, Wide Connector Entry
- ► Wire Range #22-10 AWG Copper Only
- ► Plated Steel, Square Wire Springs
- ► Flame Retardant Thermoplastic Shells
- ► UL Listed E17010 and CSA Certified LR6541
- ► Rated 105°C (221°F)

For making branch circuit wire or fixture wire connections on numerous combinations of solid and/or stranded copper wire.

Stock No.	Mfr.'s Type	Description	Wire Range	Min.	Max.	NAED Number	PER PK./100	
							1-4	5-9
534-0010	10-100	(Hi-0) Grey	22-16	1#20W/1#22	2#16	783786-10130	5.25	4.85
534-0012	10-102-H	(Hi-2) Blue	22-14	3#22	3#16	783786-10102	5.52	5.09
534-0013	10-103-H	(Hi-3) Orange	22-14	3#22	2#14W/1#18	783786-10103	6.32	5.83
534-0014	10-104	(Hi-4) Yellow	18-10	1#14W/1#18	1#10W/1#14	783786-10104	7.38	6.81
534-0016	10-106-H	(Hi-6) Red	18-10	2#14	4#12	783786-10106	10.73	9.90

Freespring® Wire Connector



- ► Each Size Joins a Wide Range of Conductor Sizes and Combinations
- ► Four Color Coded Sizes
- ► Wire Range #22-6AWG Copper Only
- ► No Need to Pre-twist Wires
- ► Flame Retardant Thermoplastic Shells
- ► Plated Steel, Square Wire Springs
- ► UL Listed E17010 and CSA Certified LR6541
- ► Rated 105°C (221°F)

For making branch circuit wire or fixture wire connections on numerous combinations of solid and/or stranded copper wire.

Stock No.	Mfr.'s Type	Description	Wire Range	Min.	Max.	NAED Number	PER PK./100	
							1-4	5-9
534-0062	10-602-H	(Hi-Y) Yellow	22-10	2#18	3#12 Sol.	783786-10602	8.95	8.26
534-0064	10-604-H	(Hi-R) Red	18-8	2#16	5#12 Sol.	783786-10604	11.87	10.96
534-0066	10-606-H	(Hi-G) Grey	18-8	2#12	3#10W/1#12	783786-10606	11.28*	10.41*
534-0068	10-608-H	(Hi-B) Blue	14-6	1#10W/1#12	1#6W/2#8	783786-10608	13.69*	12.64*

*PER PK./50.

Wire Strippers and Cable Rippers

18-800

18-850S

Combination Wiring Tool

- ► Sizes Strips, and Cuts Wire #16-6 Solid, #18-8 Stranded
- ► Sizes Threads and Cuts Bolts, 4-40, 6-32, 8-32, 10-32, 10-24
- ► Crimps Bare and Insulated Terminals #22-10 AWG
- ► Conduit Reaming Nose, Wire Looping Holes
- ► Adjustable Hinge Bolt Assures Stripping Blade Alignment
- ► ½" Cutting Blade Is Hardened to Hold the Edge
- ► Made of Premium Tool Steel

Wire Stripper

- ► Sizes, Strips, and Cuts Wire #16-6 Solid, #18-8 Stranded
- ► Model 18-850S has Anchored Handle Spring for Easy Handle Operation, Spring Stays Put
- ► Conduit Reaming Nose, Wire Looping Holes
- ► Adjustable Hinge Bolt Assures Stripping Blade Alignment
- ► ½" Cutting Blade Is Hardened to Hold the Edge
- ► Made of Premium Tool Steel

Stock No.	Mfr.'s Type	Description	NAED Number	EACH	
				1-4	5-9
534-8800	18-800	Combination Wiring Tool	783786-18800	21.60	20.05
534-8850	18-850S	Wire Stripper with Wire Spring	783786-18851	11.84	10.93

Receptacle Tester

- ► Conveniently Tests Receptacles for Proper Wiring Including Polarity and Presence of Safety Ground wire
- ► Easy to Read Indication Legend
- ► Pocket Size
- ► U.L. Listed E80682, CSA Certified

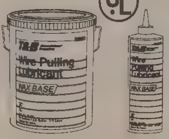
Model 19-060. Receptacle tester for 120 V ckts. **NAED Number:** 783786-19060.
534-9060. 19-060. **1-4** ....**EACH 15.64** **5-9** ....**EACH 14.44**

Self Adjusting Wire Stripper

- ► The First Good End Stripper on the Market
- ► No Need to Determine Wire Size, Stripper Adjusts Automatically
- ► Grips Wire and Strips with One Squeeze of the Handles
- ► Strips and Cuts #18-10 Solid or Stranded
- ► Wire Is Never Nicked or Cut Because Blade Never Touches It

Stock No.	Mfr.'s Type	Description	NAED Number	EACH	
				1-4	5-9
534-8300	18-300	Self-Adjusting Wire Stripper	783786-18300	30.49	28.32

Premium Grade Wire Pulling Lubricant

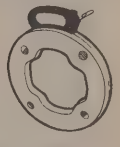


15-231 15-236

- ► Preferred Wax Base Formulation
- ► Retains Lubricating Properties and Will Not Separate Up to 200°F
- ► Will Not Separate After Frozen
- ► Superior Adherence to Cable
- ► Recommended for Use on All Commonly Used Wire and Cable Including High Voltage Cable
- ► Dries to Slick, Waxy Film
- ► Non-toxic, No Silicones, Non-staining, Easy Clean Up
- ► UL Listed E43782

Stock No.	Mfr.'s Type	Description	NAED Number	EACH	
				1-4	5-9
534-5230	15-230	1 Quart	783786-15230	5.97	5.51
534-5231	15-231	1 Gallon	783786-15231	13.78	12.80
534-5236	15-236	Squeeze Bottle, one quart	783786-15236	6.14	5.67

Steel Fish Tape



- ► High-Impact Case
- ► Slip Resistant Inner Ring
- ► Durable, Easy Grip Handle and Brake
- ► Enlarged Tape Viewports

Best quality, oil tempered, flat spring steel fish tape in patented Tapemaster® dispenser and storage reel.

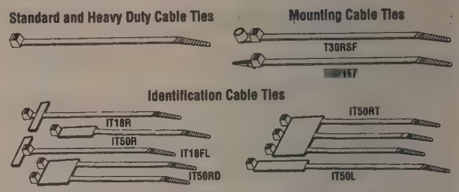
Stock No.	Mfr.'s Type	Description	NAED Number	EACH	
				1-4	5-9
534-4250	14-250	8½" reel dia.⅛"×.060"×50'	783786-14250	32.17	29.87
534-4251	14-251	8½" reel dia.⅛"×.045"×50'	783786-14251	33.32	30.94
534-4258	14-258	12" reel dia.⅛"×.060"×100'	783786-14258	48.76	45.28
534-4259	14-259	12" reel dia.⅛"×.060"×200'	783786-14259	67.92	63.07
534-4260	14-260	12" reel dia.¼"×.060"×100'	783786-14260	57.06	52.98

Fiber Fishing Rod System

- ► Best Combination of Rigidity, Flexibility and Strength Available in Any Fish Tape
- ► Easily Negotiates Multiple Bends, Even in Flexible Conduit
- ► All Non-metallic Construction with High Dielectric Properties, Reduces Personal Hazards Around Hot Circuits
- ► Tighter Bending Radius than Conventional Fish Tapes, Only ¼ the Pulling Effort
- ► Field Repairable If Broken

Stock No.	Mfr.'s Type	Description	NAED Number	EACH	
				1-4	5-9
534-4806	14-806	8½" Dia. Reel-50' × ⅛" Rod	783786-14806	71.81	66.88
534-4807	14-807	12" Dia. Reel-100' × ⅛" Rod	783786-14807	130.21	112.85
534-4808	14-808	12" Dia. Reel-200' × ⅛" Rod	783786-14808	219.65	205.01

Cable Ties



Tying wire bundles and cables is easy and seconds-fast with these speed binding and harnessing wire ties. Their rounded ends and flexibility enable you to slip them easily under and around cables and harnesses. Gradually tapered tail inserts readily into self-locking head. Uniform serrations along the length of the tie permit easy "pull-through" right down to the wire bundle — ready for final tensioning and cut-off for a neat, tight harness. One-piece molded of self-extinguishing, fungus-inert 6/6 Nylon, the wire tie remains continuously serviceable to 185°F (85°C). There are no loose heads and no metal barbs. Packed in moisture-tight bags of 100 and 1000. Meet all applicable Military Specifications and are QPL listed. Standard color is natural, but ties are available in a variety of colors and materials; including Halar which is approved for use in plenum spaces, radiation and chemical-resistant Tefzel and heat-stabilized black for outdoor applications. Identification cable ties have a large flat area for imprinting or writing the required information.

Standard Cable Ties

PKG./100		PKG./1000		Panduit Cross Reference		Government Designation	Minimum Tensile Unlocking Strength	Max. Bundle Dia.		Approx. Length		Approx. Width		PKG./100	PKG./1000
Stock No.	Mfr.'s Type	Stock No.	Mfr.'s Type	1 Piece PLT	2 Piece SST			In.	mm	In.	mm	In.	mm	PER PKG.	PER PKG.
805-1297	T18S	805-1105	T18S	PLT.7M	—	MS3367-4	18 lbs.	5/8	15.9	3 3/8	85.7	0.08	2.0	2.38	19.99
805-0106	T18R	805-1106	T18R	PLT1M	SST1M	MS3367-4	18 lbs.	3/4	19.0	4	101.6	0.10	2.5	2.66	25.14
805-1270	T18I	805-1110	T18I	PLT1.5M	SST1.5M	MS3367-4	18 lbs.	1 1/4	31.8	5 3/4	146.1	0.10	2.5	3.86	32.66
805-1271	T18L	805-1111	T18L	PLT2M	—	MS3367-4	18 lbs.	2	50.8	8	203.2	0.10	2.5	3.96	33.49
805-0107	T30R	805-1107	T30R	PLT1.5I	SST1.5I	MS3367-5	30 lbs.	1 1/4	31.8	6	152.4	0.14	3.6	3.91	34.65
805-1272	T30M	805-1112	T30M	PLT2I	SST2I	—	30 lbs.	2	50.8	8	203.2	0.14	3.6	4.49	39.70
805-1113	T30I	805-1114	T30I	PLT3I	SST3I	—	30 lbs.	3	76.2	11 1/4	285.8	0.15	3.8	10.32	92.77
805-1273	T30L	805-1115	T30L	PLT4I	SST4I	—	30 lbs.	4	101.6	14 1/2	368.3	0.15	3.8	13.67	118.66
805-1117	T40R	805-1118	T40R	—	—	MS3367-1	40 lbs.	2	50.8	8 1/2	215.9	0.15	3.8	4.83	42.65
805-1119	T40I	805-1120	T40I	—	—	MS3367-7	40 lbs.	3	76.2	11 1/2	292.1	0.15	3.8	10.75	96.56
805-1121	T40L	805-1122	T40L	—	—	MS3367-2	40 lbs.	4	101.6	14 1/2	368.3	0.15	3.8	14.57	126.43
805-1274	T50S	805-1123	T50S	PLT1.5S	SST1.5S	—	50 lbs.	1 1/4	31.8	6 1/2	165.1	0.18	4.6	4.36	38.88
805-0108	T50R	805-1108	T50R	PLT2S	SST2S	MS3367-1	50 lbs.	1 3/4	44.5	8	203.2	0.18	4.6	5.00	44.67
805-0140	T50I	805-1140	T50I	PLT3S	SST3S	MS3367-7	50 lbs.	3	76.2	11 3/4	298.5	0.18	4.6	13.05	111.89
805-0150	T50L	805-1150	T50L	PLT4S	SST4S	MS3367-2	50 lbs.	4	101.6	15 1/2	393.7	0.18	4.6	15.31	135.03

Heavy Duty Lashing Cable Ties

PKG./50		PKG./500		Panduit Cross Reference		Government Designation	Minimum Tensile Unlocking Strength	Max. Bundle Dia.		Approx. Length		Approx. Width		PKG./50	PKG./500
Stock No.	Mfr.'s Type	Stock No.	Mfr.'s Type	1 Piece PLT	2 Piece SST			In.	mm	In.	mm	In.	mm	PER PKG.	PER PKG.
805-1287	T120S	805-1124	T120S	PLT2H	SST2H	—	120 lbs.	2	50.8	8 7/8	225.4	0.30	7.6	9.75	83.65
805-1288	T120I	805-1125	T120I	PLT3H	—	—	120 lbs.	3	76.2	11 7/8	301.6	0.30	7.6	12.45	107.00
805-1298	T120R	805-1126	T120R	PLT4H	SST4H	MS3367-3	120 lbs.	4	101.6	15 1/4	387.4	0.30	7.6	14.00	120.00
805-1299	T120L	—	—	PLT9LH	SST8H	MS3367-6	120 lbs.	8 3/4	222.3	29 3/4	755.7	0.30	7.6	27.10	—

Identification Cable Ties

PKG./100		Panduit Cross Reference		Government Designation	Minimum Tensile Unlocking Strength	Max. Bundle Dia.		Approx. Length		Approx. Width		PER PKG./100
Stock No.	Mfr.'s Type	1 Piece PLT	2 Piece SST			In.	mm	In.	mm	In.	mm	
805-1282	IT18R	PLM1M	—	MS3368-5-E	18 lbs.	3/4	19.0	4	101.6	0.10	2.5	13.02
805-1283	IT18FL	PLF1M	—	—	18 lbs.	3/4	19.0	4 1/4	107.9	0.10	2.5	13.77
805-0117	IT50R	PLM2S	SSM2S	MS3368-1-A	50 lbs.	1 3/4	44.4	8	203.2	0.18	4.6	19.67
805-1284	IT50RD*	PL2M2S	—	MS3368-3-C	50 lbs.	1 3/4	44.4	8	203.2	0.18	4.6	26.85
805-1285	IT50RT*	PL3M2S	—	MS3368-4-D	50 lbs.	1 3/4	44.4	8	203.2	0.18	4.6	47.78
805-1286	IT50L	PLM4S	SSM4S	MS3368-2-A	50 lbs.	4	101.6	15	381.1	0.18	4.6	30.69

*Only available in PKG./50.

Releasable Cable Ties

PKG./100		PKG./1000		Panduit Cross Reference		Minimum Tensile Unlocking Strength	Max. Bundle Dia.		Approx. Length		Approx. Width		PKG./100	PKG./1000
Stock No.	Mfr.'s Type	Stock No.	Mfr.'s Type	1 Piece PLT	2 Piece SST		In.	mm	In.	mm	In.	mm	PER PKG.	PER PKG.
805-1128	RT40R	805-1131	RT40R	—	—	40 lbs.	2	50.8	8 1/2	215.9	0.16	4.1	9.24	80.60
805-1129	RT50S	805-1132	RT50S	PRT1.5S	—	50 lbs.	1 3/8	34.9	6 1/2	165.1	0.18	4.6	8.34	72.77
805-1130	RT50LL	805-1133	RT50LL	PRT4S	—	50 lbs.	4	101.6	15 1/2	393.7	0.18	4.6	23.66	203.83

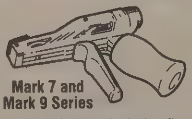
Mounting Cable Ties

805-1289	T18MR	805-1315	T18MR	PLC1M	—	18 lbs.	3/4	19.0	4 1/4	107.9	0.10	2.5	10.77	89.36
805-1279	T30MR	805-1316	T30MR	PLC1.51	—	30 lbs.	1 1/4	31.8	6 1/4	158.7	0.14	3.6	11.86	109.61
805-0116	T50MR	805-1116	T50MR	PLC2S	—	50 lbs.	1 3/4	44.4	8 1/2	215.9	0.18	4.6	11.72	99.57
805-1310	T50MRT	805-1317	T50MRT	—	—	50 lbs.	1 3/4	44.4	8 1/2	215.9	0.18	4.6	193.48	300.71
805-1311	T50ML	805-1318	T50ML	—	—	50 lbs.	4	101.6	16	406.4	0.18	4.6	97.31	292.41
805-1312	T120MR*	805-1319	T120MR†	PLC4H	—	120 lbs.	4	101.6	16 1/4	412.7	0.30	7.6	60.75	164.68
805-1312	T30RSF	805-1320	T30RSF	PLP1.51	—	30 lbs.	1 1/4	31.8	6 1/2	165.1	0.14	3.6	37.19	131.06
805-1281	T50RSF	805-1321	T50RSF	PLP2S	—	50 lbs.	1 3/4	44.4	8 1/2	215.9	0.18	4.6	14.09	127.76

*Only available in PKG./50. †Only available in PKG./500.

Tensioning Tools

- **Reduce Operator Fatigue and Speed Installation**
- **Quick Infinite Adjustability for Flush Cut-Off**
- **Long Service Life**



Mark 7 and Mark 9 Series

Mark 7. Unique 1" stroke decreases tensioning cycles. Ergonomic design fits operator's hand, while hand grip ensures comfort. Roller bearing mechanism reduces return spring tension for smooth stroke. Lightweight; only 9 1/2 oz. Inner cam knob sets to 3 variable tension levels. Outer cam knob "fine tunes" within the tension ranges. Easy to read digital display speeds adjustment and verification. Durable, high impact, glass reinforced nylon casing. Double-wall linkage for added strength. Tough chromium steel components. Roller bearing mechanism assures low friction between mechanical components. Used to install Tyton ties T18 through T50 series. **Mark 9.** The Mark 9 tool has all the ergonomic design features of the Mark 7, but it can be used to install every Tyton tie, from the T18 Series to the T250 Series. The Mark 9 weighs 11 1/2 ozs. and has a spare blade compartment. **Mark 7HT and Mark 9HT.** Higher tension versions of both the Mark 7 and Mark 9 tools offer the same design features as their standard counterparts but with higher cut-off tension capabilities. **Mark 5.** The Mark 5 tensioning tool is made from a polycarbonate material. It features a short squeeze stroke and a positive cut-off feature which ensures consistently flush, burr-free edges. Can be used to install Tyton ties T18 through T50 Series.

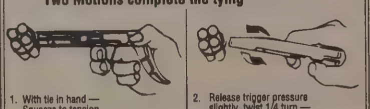
805-0101. Model Mark 7	**EACH 145.54**
805-0103. Model Mark 7HT	**EACH 162.31**
805-1290. Model Mark 9	**EACH 242.33**
805-0104. Model Mark 9HT	**EACH 208.44**
805-0005. Model Mark 5 (Not Shown)	**EACH 103.90**

Tytontwyster Cable Tie Tool

The Tytontwyster is a pocket sized, installer controlled, tying tool. Model TWT cuts tail off flush. Made of high visibility, colored, high impact engineering resin. You control the tensioning and cut-off. TWT1 (orange) installs Tyton ties T18 through T50 Series. TWT2 (blue) installs Tyton ties T120 Series.

805-0102. Model TWT1	**EACH 22.33**
805-1296. Model TWT2	**EACH 26.45**

Two Motions complete the tying



1. With tie in hand — Squeeze to tension
2. Release trigger pressure slightly, twist 1/4 turn — then squeeze trigger

Cable Tie Kit

Tyton's cable tie kit contains ties, mounts, and a Tytontwyster Tool in a convenient case. The case is made from a durable polypropylene, and it keeps items in separate compartments for easy access and organization.

Each Kit Contains: 100 18-lb., 4" ties (T18R), 100 18 lb., 5 3/4" ties (T18I), 100 50-lb., 8" ties (T50R), 50 4-way adhesive mounts (MB4A), 1 Tytontwyster Tool (TWT1)

805-1011. TMK1	**EACH 63.94**

Nylon Mounting Bases (For Cable Ties Above)

MB-2.5A. 5/8" square; adhesive back; or use two #3 screws. For T18 ties.

805-2002. MB2.5A	**PER PKG./100 16.00**

MB-3A. 3/4" square; adhesive back; or use two #4 screws. For T18-T30 ties.

805-2003. MB3A. Natural	**PER PKG./100 26.50**
805-2013. MB3A. Black	**PER PKG./100 23.85**

MB-4A. 1 1/8" square; adhesive back; or use two #8 screws. For T18-T50 ties.

805-2004. MB4A	**PER PKG./100 30.35**

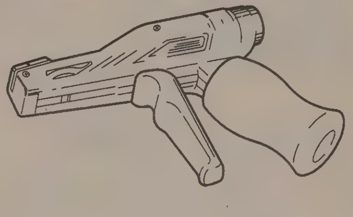
Stainless Steel Clamps and Tool

— NEW —

Tyton's stainless steel clamps are designed to secure hoses, cables, pipes, and more when harsh environmental conditions may adversely affect the clamping application. Used where corrosion, vibration, weathering, radiation, and temperature extremes are a concern, Tyton's stainless steel clamps come in two materials for different applications. **Material 304.** This is the most commonly used material for stainless steel applications. It features the ability to withstand most environmental conditions, particularly in applications where vibration, general weathering, radiation and temperature extremes are a concern. **Material 316.** Material 316 is a highly resistant to corrosion and is widely used in marine environments where chemicals, salts, acids, and high temperatures may affect the clamping application. **Temperature Range:** –112°F to +1000°F (–80°C to +538°C). Tyton's stainless steel clamps and materials should be tested thoroughly under end use conditions to determine suitability for the application.

Stock No.	Mfr.'s Type	Material	Minimum Tensile Unlocking Strength (Lbs.)	Maximum Bundle Diameter		Approximate Length		Approximate Width		Package Quantity	PER PKG.
				In.	mm	In.	mm	In.	mm		
805-3515	SST100S-304C2	304	100	2	50	7.9	201	0.18	4.6	100	**62.20**
805-3516	SST100R-304C2	304	100	4	102	14.2	360	0.18	4.6	100	**72.98**
805-3517	SST100M-304C2	304	100	6	152	20.4	520	0.18	4.6	100	**109.79**
805-3518	SST250S-304K2	304	250	2	50	7.9	201	0.31	7.9	50	**37.40**
805-3519	SST250R-304K2	304	250	4	102	14.2	360	0.31	7.9	50	**43.82**
805-3520	SST250M-304K2	304	250	6	152	20.4	520	0.31	7.9	50	**65.58**
805-3521	SST100S-316C2	316	100	2	50	7.9	201	0.18	4.6	100	**80.94**
805-3522	SST100R-316C2	316	100	4	102	14.2	360	0.18	4.6	100	**94.99**
805-3523	SST250S-316K2	316	250	2	50	7.9	201	0.31	7.9	50	**48.39**
805-3524	SST250R-316K2	316	250	4	102	14.2	360	0.31	7.9	50	**56.75**

Installation Tool

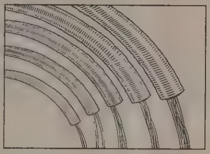


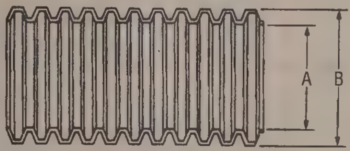
With the same design as Tyton's standard Mark 9 tool, the MK9SST has been adapted to tension and cut-off all Tyton stainless steel clamps. Ergonomically designed, the MK9SST offers a long service life and consistent reliable performance.

805-3530. MK9SST ....**EACH 295.00**

Convoluted Tubing

Convoluted tubing offers routing flexibility and protection against environmental conditions; acids, oils and greases; and potential installation damage. Convoluted tubing is available in black polyethylene with an operating range of –40°F min., 200°F max. Nylon available by special request.

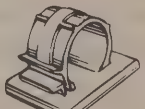




Stock No.	Mfr.'s Type	Size	I.D. In./mm A	O.D. In./mm B	Wall Thickness In./mm	Box Quantity	PER BOX
805-0231	CTP140STD	1/4"	.236/0.264	0.376/0.400	.0047/.0193	3200'	**170.85**
805-0238	CTP380STD	3/8"	.337/0.362	0.491/0.516	.0059/.0217	2000'	**130.30**
805-0232	CTP120STD	1/2"	.484/0.509	0.670/0.695	.0071/.0028	1200'	**88.20**
805-2233	CTP340STD	3/4"	.730/0.755	0.960/0.985	.0094/.0252	600'	**100.20**
805-0239	CTP10STD	1"	1.000/1.039	1.278/1.306	.0118/.0276	350'	**86.60**
805-0240	CTP1120STD	1 1/2"	1.500/1.528	1.858/1.925	.0118/.0276	150'	**78.10**

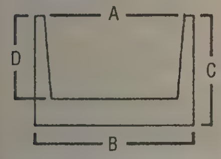
Series 12 Adhesive Cable Clamps

- ► **Injection Molded**
- ► **Flame resistant**
- ► **Nylon**
- ► **Material Is UL Rated 94V-2**



Stock No.	Mfr.'s Type	Color	Max. Bundle Diameter	PER PKG./100	
				1-4	5-9
805-5000	12-0250	Gray	1/4"	**25.40**	**22.22**
805-5003	12-0375	Gray	3/8"	**30.04**	**26.35**
805-5005	12-0500	Natural	1/2"	**38.07**	**33.40**
805-5010	12-0750	Gray	3/4"	**58.65**	**51.44**

Grommet

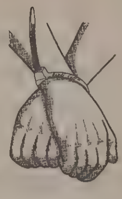


Tyton's Flexiform grommet fits easily in all shapes and sizes of panel holes without tools or adhesives. Flexiform grommet can be used on any type panel material including wood, steel, aluminum, plexiglass, and glass. **Standard Color:** Natural.

Stock No.	Mfr.'s Type	Material	Standard Dimensions (Inches)						PER 82' REEL
			A	B	C	D	For Panel Thickness	Panel Gauges	
805-1260	FP/AA	Polyethylene	.037	.087	.094	.063	.016-.040	20,19, 18	**28.92**
805-1261	FP/A	Polyethylene	.055	.150	.157	.099	.016-.052	21, 20, 19, 18	**33.29**
805-1262	FP/B	Polyethylene	.091	.177	.157	.099	.052-.083	17, 16, 15, 14	**36.00**
805-1263	FP/C	Polyethylene	.130	.220	.157	.099	.083-.130	13,12, 11	**41.66**
805-1264	FP/D	Polyethylene	.197	.327	.228	.157	.130-.189	11, 10, 9, 8, 7, 6	**54.82**
805-1265	FP/E	Polyethylene	.260	.386	.241	.170	.189-.256	6, 5, 4, 3	**65.53**
805-1266	FP/F	Polyethylene	.319	.445	.256	.181	.256-.319	3, 2, 1	**71.72**
805-1267	FP/G	Polyethylene	.394	.512	.256	.181	.319-.382	1/0, 2/0, 3/0	**77.77**
805-1268	FP/H	Polyethylene	.512	.638	.256	.181	.382-.512	4/0, 5/0, 6/0, 7/0	**83.59**

Handi-Cuff Flexible Restraints

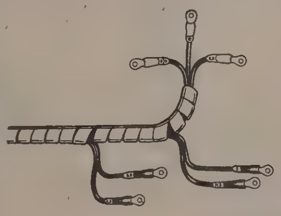
Tyton Handi-Cuffs offer you the strength and security you need when using flexible restraints. Features include: Special rounded head which provides extra strength without pinching. Can help prevent nerve damage, carpal tunnel syndrome, and other medical complications. Locking mechanism recessed within head prevents unwanted release. Write-on area for quick identification.



805-1295. Model HC9P2 ....**PER PKG./10 6.20**

Spiral Wrap

A range of Spiral Wrap in four materials for neatly harnessing cables. The range of materials covers all applications and conditions. Spiral Wrap is a versatile form of protection enabling cables to be led out at any point. Furthermore, because of its flexibility, it will follow any route taken by cable. **Spiral Wrap is stocked by Allied in the following material:** Non-flame retarded polyethylene (Spirathene Ref. NFP), **Color:** Natural. **Operating Range:** –76°C to +101°C. Also available on special order in the following materials: P.T.F.E. (Spiratemp Ref. P), **Color:** Natural. **Operating Range:** –68°C to +260°C (300°C for intermittent use). Nylon (Spiralon Ref. N), **Color:** Natural. **Operating Range:** –55°C to +95°C (135°C for intermittent use). Flame retarded polyethylene (Spirathene Ref, FRP), **Color:** White. **Operating Range:** –19°C to +93°C. **Standard Packs:** Spiralon and Spiratemp are supplied in 3 meter lengths, in polyethylene envelopes. Spirathene (flame retarded and non-flame retarded) are supplied in 30 meter lengths, in polyethylene envelopes.

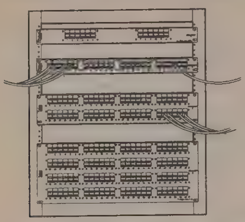


Stock No.	Mfr.'s Type	Outside Diameter	Wall Thickness	Distance Between Lead Out Points	Cable Diameter	PER SPOOL/100'		
						1-24	25-49	50-99
805-3000	1NFP	.125	.032	.22	1/16-1/2	**22.64**	**19.98**	**17.98**
805-3010	2NFP	.250	.045	.37	3/16-2	**23.42**	**20.67**	**18.60**
805-3040	3NFP	.500	.062	.50	3/8-4	**58.29**	**51.44**	**46.29**
805-3030	4NFP	.750	.065	1.00	3/4-5	**78.21**	**69.01**	**62.11**

Electrical Tape

- ► **Manufactured From High Quality PVC and Butyl Rubber**
- ► **Exceptional Surface and Adhesive Characteristics**
- ► **UL Listed**

Stock No.	Mfr.'s Type	Thickness	Material	Description	EACH
805-0235	ET660	7 mil.	PVC	Black vinyl ideal for general purpose applications. Meets U.L. standard 510 and Mil-Std. Mil-1-7798-A	**.88**
805-0236	ETCW660	8 mil	PVC	Black vinyl ideal for cold weather applications Meets U.L. standard 510 and Mil-Std. Mil-1-24391-A.	**1.36**
805-0237	ETSB210	20 mil	Self-bonding Butyl rubber	Provides void free insulation over irregular surfaces. Outstanding self-bonding properties.	**2.76**



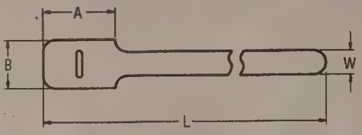
Tyton 110 Series — Category 5 Performance Patch Panels

The Tyton 110 Series Patch Panel features PC board construction for optimum system performance, modular design, and offers the installer the option to terminate trunk or station lines directly to an AT&T 100 punch or Krone block mounted on the rear of the panel. The Tyton 110 Series Patch Panel is available in 12-, 24-, 48-, or 96-port versions and is configured to the AT&T 258A (EIA-T-568B) standard or EIA-T-568A configuration.

805-1211. P-108-12-110. 12 Port 8 Wire with AT&T 110 Connector on Rear in 19" × 3.50" .... **EACH 95.25**
805-2411. P-108-24-110. 24 Port 8 Wire with AT&T 110 Connector on Rear in 19" × 3.50" .... **EACH 123.80**
805-4811. P-108-48-110. 48 Port 8 Wire with AT&T 110 Connector on Rear in 19" × 3.50" .... **EACH 214.25**
805-9611. P-108-96-110. 96 Port 8 Wire with AT&T 110 Connector on Rear in 19" × 7.00" .... **EACH 377.10**
805-1084. P-108-48-Krone. 48 Port 8 Wire with Krone Punch Block Connector on Rear in 19" × 3.50" .... **EACH 235.70**
805-1089. P-108-96-Krone: 12 Port 8 Wire with Krone Punch Block Connector on Rear in 19" × 7.00" .... **EACH 410.85**

Grip Ties VELCRO* Fasteners

— NEW —



- ► **Manage and Protect Your Cable and Fiber with Tyton Grip Ties**

The Grip Tie is a low profile, one piece fastening device. Constructed of VELCRO* Brand polyethylene hook and nylon loop, laminated back to back, the Grip Tie features quick release for repetitive access to cable and wire. The Grip Tie's design provides ease of installation in tight areas such as telecommunications closets. The tie will also not cause damage to Category 5 cable or fiber optic cable since it cannot be overcinched. **Grip Tie Installation.** Wrap Grip Tie around cable or wire bundle. Insert end through slit and pull to tighten. Wrap remaining length of Grip Tie around itself. **Grip Tie Roll Installation.** Unroll the desired length of Grip Tie and cut. Wrap around wire bundle. Secure remaining length around itself. Since the Grip Tie is self gripping, it is fast and easy to install. Other colors are available, contact Allied for more information.

*VELCRO is a registered trademark for fasteners of the Velcro companies.

Stock No.	Mfr.'s Type	Color	Max. Bundle Dia.	L Length	W Width	A Head Length	B Head Width	PER PK./100
805-4520	GT.50X60C2	Black	1.00"	6"	0.50"	1.50"	1.00"	**66.07**
805-4522	GT.50X80C2	Black	1.75"	8"	0.50"	1.50"	1.00"	**73.21**
805-4524	GT.50X110C2	Black	2.63"	11"	0.50"	1.50"	1.00"	**87.86**
805-4526	GT.75X150C2	Black	3.88"	15"	0.75"	2.50"	1.50"	**182.86**

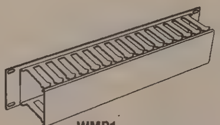
805-4528. GT.75X1800. Black. 180" (5 yds.) Length, 0.75" Width .... **PER ROLL 12.20**

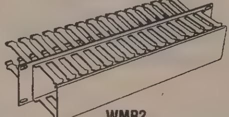
Horizontal and Vertical Wire Managers

— NEW —

Both horizontal and vertical cable managers route patch cables, helping eliminate cable clutter on patch panel racks. The cables can be routed on the front and back of racks for patch and station cables. Both the horizontal and vertical wire managers accommodate standard 19" rack mounting and route all types of wire and cable including fiber optic, ScTP, and coaxial cables. The duct is black and features slotted fingers which both route and protect the cable. The duct is double scored so that the duct fingers can easily be bent and broken away when a greater opening is needed. Duct covers are included.

Horizontal Wire Management Brackets


WMB1


WMB2

- ► **Eliminates Cable Clutter On Patch Panel Racks by Routing Patch Cables**
- ► **Single and Double Panels Are Available**
- ► **Cables Can Be Routed on the Front and Back of the Racks for Patch and Station Cables**
- ► **Accommodates Standard 19" Rack Mounting (Screws Provided)**
- ► **Routes All Types of Wire and Cable Including Fiber Optic, ScTP, and Coaxial Cables**

WMB1. One-sided horizontal wire management bracket. **Dimensions:** 3.5"H × 19"W with 3" × 3" slotted duct.
805-4500. WMB1 .... **EACH 35.85**
WMB2. Dual-sided. **Dimensions:** 3.5"H × 19"W with 3" × 3" slotted duct on front and 2" × 4" slotted duct on back.
805-4502. WMB2 .... **EACH 48.30**

Vertical Wire Managers

The vertical wire managers comes in single and dual sided styles for both mounting on the side of racks and mounting between racks. Each vertical wire manager is 35" tall for easy manageability during installation. Mounting screws are included.

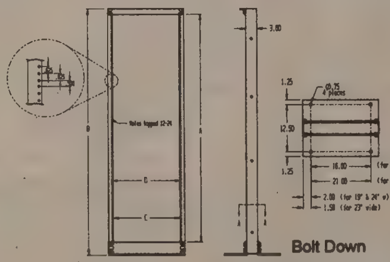
805-4504. VWMSC4X5. Single Sided, Center Mounting .... **EACH 48.65**
805-4506. VWMDC4X5. Dual Sided, Center Mounting .... **EACH 48.65**
805-4508. VWMSS4X5. Single Sided, Side Mounting .... **EACH 66.65**
805-4510. VWMDS4X5. Dual Sided, Center Mounting .... **EACH 66.65**
805-4512. VWMSC3X3. Single Sided, Center Mounting .... **EACH 48.30**
805-4514. VWMSS3X3. Single Sided, Side Mounting .... **EACH 48.30**

Modular Networking Frames and Data Communications Accessories

Tyton offers modular networking frames and data communications accessories for rack mount needs. The frames and accessories are ideal for mounting Tyton patch panels and other telecommunications equipment.

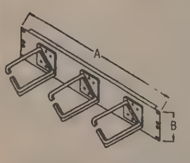
Modular Networking Frames

- ► **19" EIA Rack Mount Width**
- ► **Available with 10/32" or with 12/24" Tapped Holes**
- ► **Mounting Holes Are on both Front and Rear Flanges Per EIA Universal Hole Spacing**
- ► **Comes with Double Top Angle and Two Symmetrical Bases**
- ► **Comes in Aluminum (Mill) Finish**
- ► **Meets UL Standards 1459 and UL 1863**
- ► **Rack Units: 45U**



Stock No.	Mfr.'s Type	A Vertical Opening	B Overall Height	C Inside Width	D Hole-Hole Centers	E Overall Width	EACH
805-8401	T7RR	78.125"	84.00"	17.81"	18.31"	20.18"	**213.50**

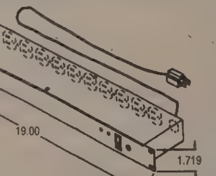
Cable Management Panel



- ► **Manufactured from 18 Gauge Steel**
- ► **Completely Assembled with Cable Hangers Installed**
- ► **Mounting Holes Available for Vertical Positioning of Large Cable Hangers**
- ► **Quantity of Hangers: 3**
- ► **Smooth Black Polyurethane Finish; Other Colors Available Dependent Upon Volume Requirements; Contact Allied for More Information**

Stock No.	Mfr.'s Type	A Width	B Height	EACH
805-8408	TCMP	19"	3.46"	**39.32**

Rack Mount Power Strips

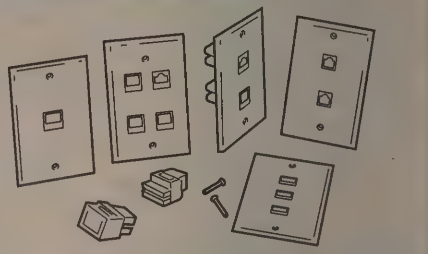


- ► **15 A, 125 V Receptacle**
- ► **Includes Switch, Pilot Light, and Circuit Breaker**
- ► **Extremely Modular Design Only Uses One Rack Space**
- ► **Color: Black**

PowerStrip-6. Meets UL Standard 1363. 15' power cord. **Outlets:** 6.
805-8410 .... **EACH 109.54**

Powerstrip-10. 360 joules of surge protection. Meets UL Standards 1363 and UL 1449. **Watts:** 1875. 10' power cord. **Outlets:** 10.
805-8415. Powerstrip-10 .... **EACH 152.44**

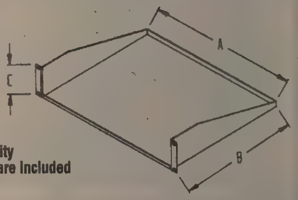
Flush Mount Outlets Category 5 Performance



Tyton's high speed information outlet system offers snap-in inserts and connectors for installation versatility. This design allows outlets to be retrofitted at the workstation, if desired. With choices of single, dual, triple, or quad face plates, ports may be added in the future without making the existing outlet obsolete. Used with the RJ45, 110 block connectors, Tyton information outlets exceed Category 5 requirements. This system is UL and CSA Certified to meet EIA/TIA 568, TSB40-A specification for attenuation, NEXT, and return loss. It provides high performance with all categories of building wiring to 100 Mbps. Printed circuit board technology is used for impedance matched performance. Tyton face plates are manufactured from ABS plastic and meet requirements for UL rated 94V-0.

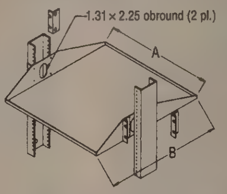
805-3500. FPSINGLE. Face Plate — Single Port .... **EACH 1.54**
805-3501. FPDUAL. Face Plate — Dual Port .... **EACH 1.54**
805-3502. FPTRIPLE. Face Plate — Triple Port .... **EACH 1.54**
805-3503. FPQUAD. Face Plate — Quad Port .... **EACH 1.54**
805-3504. RJ-45BLK. RJ45, 110 Block Connector, Black .... **EACH 6.15**
805-3505. RJ-45BLU. RJ45, 110 Block Connector, Blue .... **EACH 6.15**
805-3506. RJ-45GRN. RJ45, 110 Block Connector, Green .... **EACH 6.15**
805-3507. RJ-45RED. RJ45, 110 Block Connector, Red .... **EACH 6.15**
805-3508. RJ-45WHT. RJ45, 110 Block Connector, White .... **EACH 6.15**
805-3509. RJ-45YEL. RJ45, 110 Block Connector, Yellow .... **EACH 6.15**
805-3510. BLANKINSERT. Blank Insert for Face Plate .... **EACH .49**
805-3511. BNCINSERT. BNC Connector Insert for Face Plate .... **EACH .80**
805-3512. FIBERINSERT. Fiber Coupler Insert for Face Plate .... **EACH .80**
805-3513. FINSERT. F Connector Insert for Face Plate .... **EACH .49**

Cantilevered Equipment Shelves



- ► **Manufactured from 16 Gauge Steel**
- ► **Rated for 50 Lbs. Capacity**
- ► **10/32" Mounting Hardware Included**
- ► **Smooth Black Finish**

Stock No.	Mfr.'s Type	Type	A Width	B Depth	EACH
805-8402	T19X145	Solid	19"	14"	**47.33**

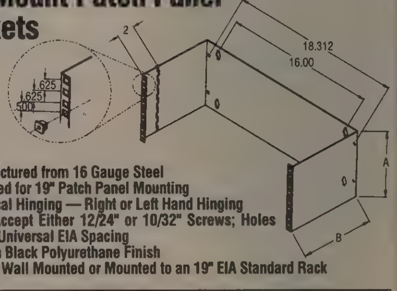


Center Weight Equipment Shelves

- ► **Manufactured from 16 Gauge Steel**
- ► **Rated for 75 Lbs. Capacity with Optional Mounting Brackets (Included with Each Shelf)**
- ► **Rated for 50 Lbs. Capacity**
- ► **10/32" Mounting Hardware Included**
- ► **Smooth Black Finish**

Stock No.	Mfr.'s Type	Type	A Width	B Depth	EACH
805-8403	T19X195CW	Solid	19"	19"	**61.49**

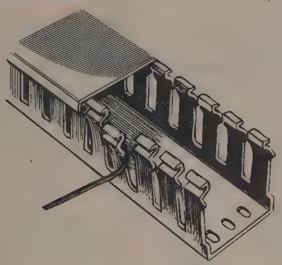
Wall Mount Patch Panel Brackets

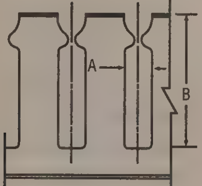


- ► **Manufactured from 16 Gauge Steel**
- ► **Designed for 19" Patch Panel Mounting**
- ► **Universal Hinging — Right or Left Hand Hinging**
- ► **Units Accept Either 12/24" or 10/32" Screws; Holes Utilize Universal EIA Spacing**
- ► **Smooth Black Polyurethane Finish**
- ► **Can Be Wall Mounted or Mounted to an 19" EIA Standard Rack**

Stock No.	Mfr.'s Type	A Height	B Depth	Rack Units	EACH
805-8405	T3PPB	3.50"	8.00"	2	**24.74**
805-8406	T5PPB	5.25"	8.00"	3	**27.60**
805-8407	T7PPB	7.00"	8.00"	4	**30.32**

Wiring Duct and Covers





Slotted sidewall style is the popular choice of panel builders. Features restricted slot openings, scored sidewalls for corner and T junctions, breakaway fingers to provide additional access for wire leads, and smooth edges. Buffed edges on slotted wall fingers help prevent worker hand injury during installation and pressure sensitive adhesive backing can be utilized for either temporary positioning or permanent mounting. 1" width duct is provided with 1/2" adhesive strip along centerline. 2", 3" and 4" widths have two 1/2" or 3/4" adhesive strips along their length. Duct must be mounted on a clean, oil-free panel surface. Wiring Duct Covers with their non-slip plastic lining ensure that the covers will remain in place under vibration. Duct and cover sold separately. Packaged 30 feet (carton of 5 6-foot lengths). Manufactured from rigid PVC. UL Recognized, UL Flame Rating of 94V-0, CSA Certified.

Slotted Wall Duct With Adhesive

White		Gray		Duct Size W × H	Dimensions			PER CARTON/30'		
Stock No.	Mfr.'s Type	Stock No.	Mfr.'s Type		A	B	C	1-3	4-16	17-Up
805-8060	SLA1.5 × 1.5W	**805-8061**	SLA1.5 × 1.5G	1.5 × 1.5	.40	1.19	1.50	**81.50**	**73.35**	**66.00**
805-8062	SLA1.5 × 1W	**805-8063**	SLA1.5 × 1G	1.5 × 1.0	.40	.75	1.50	**68.50**	**61.65**	**55.50**
805-8064	SLA1.5 × 2W	**805-8065**	SLA1.5 × 2G	1.5 × 2.0	.40	1.62	1.50	**91.00**	**81.90**	**73.70**
805-0500	SLA1 × 1W	**805-0600**	SLA1 × 1G	1.0 × 1.0	.40	.75	1.00	**58.50**	**52.65**	**47.40**
805-0505	SLA1 × 2W	**805-0605**	SLA1 × 2G	1.0 × 2.0	.40	1.62	1.00	**81.50**	**73.35**	**66.00**
805-8066	SLA1 × 3W	**805-8067**	SLA1 × 3G	1.0 × 3.0	.40	2.62	1.00	**106.50**	**95.85**	**86.25**
805-8068	SLA1 × 4W	**805-8069**	SLA1 × 4G	1.0 × 4.0	.40	3.62	1.00	**133.00**	**119.70**	**107.70**
805-0510	SLA2 × 1W	**805-0610**	SLA2 × 1G	2.0 × 1.0	.38	.75	2.00	**80.00**	**72.00**	**64.80**
805-0515	SLA2 × 2W	**805-0615**	SLA2 × 2G	2.0 × 2.0	.40	1.62	2.00	**89.00**	**80.10**	**72.10**
805-0520	SLA2 × 3W	**805-0620**	SLA2 × 3G	2.0 × 3.0	.40	2.62	2.00	**115.00**	**103.50**	**93.15**
805-8070	SLA3 × 1W	**805-8071**	SLA3 × 1G	3.0 × 1.0	.40	.75	3.00	**88.00**	**79.20**	**71.25**
805-0525	SLA3 × 2W	**805-0625**	SLA3 × 2G	3.0 × 2.0	.40	1.62	3.00	**108.00**	**97.20**	**87.45**
805-8072	SLA3 × 3W	**805-8073**	SLA3 × 3G	3.0 × 3.0	.40	2.62	3.00	**132.50**	**119.25**	**107.30**
805-0530	SLA4 × 2W	**805-0630**	SLA4 × 2G	4.0 × 2.0	.40	1.62	4.00	**112.50**	**101.25**	**91.10**

Solid Wall Duct With Adhesive.

Designed for straight wire runs where no break-outs are required.

805-8075	SDA.5 × .5W	**805-8091**	SDA.5 × .5G	0.5 × 0.5	Solid	Solid	.76	**53.50**	**48.15**	**43.30**
805-8076	SDA1 × 1W	**805-8092**	SDA1 × 1G	1.0 × 1.0	.40	.75	1.00	**58.50**	**52.65**	**47.35**
805-8077	SDA1 × 2W	**805-8093**	SDA1 × 2G	1.0 × 2.0	.40	1.62	1.00	**81.50**	**73.35**	**66.00**
805-8088	SDA1 × 3W	**805-8094**	SDA1 × 3G	1.0 × 3.0	.40	2.62	1.00	**106.50**	**95.85**	**86.25**
805-8089	SDA2 × 2W	**805-8095**	SDA2 × 2G	2.0 × 2.0	.40	1.62	2.00	**89.00**	**80.10**	**72.05**
805-8090	SDA2 × 3W	**805-8096**	SDA2 × 3G	2.0 × 3.0	.40	2.62	2.00	**115.50**	**103.95**	**93.55**

Covers

White		Gray		Width	PER CARTON/30'		
Stock No.	Mfr.'s Type	Stock No.	Mfr.'s Type		1-3	4-16	17-Up
805-0700	TC1W	**805-0720**	TC1G	1.0	**17.50**	**15.75**	**14.20**
805-8097	TC1.5W	**805-8098**	TC1.5G	1.5	**21.50**	**19.35**	**17.40**
805-0705	TC2W	**805-0725**	TC2G	2.0	**26.50**	**23.65**	**21.45**
805-0710	TC3W	**805-0730**	TC3G	3.0	**39.50**	**35.55**	**31.95**
805-0715	TC4W	**805-0735**	TC4G	4.0	**43.50**	**39.15**	**35.25**

Black Slotted Wall Wiring Duct — *NEW* —

With the same features as Tyton's standard slotted wiring duct, black duct is now available in 2" and 3" widths. Duct and cover need to be purchased separately.

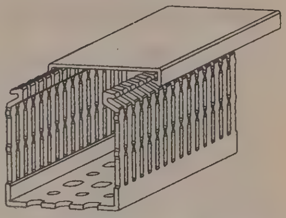
Black Slotted Wall Duct (Non-Adhesive)

Stock No.	Mfr.'s Type	Duct Size W × H (In.)	Dimensions (In.)			PER CARTON/30'
			A	B	C	
805-9001	SL2x2BK	2 × 2	0.40	1.62	2.00	**89.05**
805-9002	SL3x3BK	3 × 3	0.40	2.62	3.00	**132.60**
805-9003	SL3x2BK	3 × 2	0.40	1.62	3.00	**108.00**
805-9004	SL3x5BK	3 × 5	0.40	4.60	3.00	**206.70**

Covers

Stock No.	Mfr.'s Type	Width (In.)	PER CARTON/30'	Stock No.	Mfr.'s Type	Width (In.)	PER CARTON/30'
805-9005	TC2BK	2	**26.70**	**805-9006**	TC3BK	3	**39.60**

High Density Wiring Duct



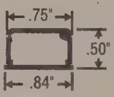
- **2 to 1 Finger Ratio**
- **Versatile Mounting Hole Design**
- **Covers Are Flush With the Side of the Duct**
- **Manufactured from Rigid PVC**
- **Duct and Covers Sold Separately in Six Foot Lengths**
- **UL Recognized**
- **CSA Certified**
- **UL Flame Rating of 94V-0**
- **Made in the USA**

Tyton High Density Wiring Duct incorporates many of the features of its standard wiring duct but features narrow slotted wall fingers. These slotted wall fingers equal a 2 to 1 finger ratio compared to standard slotted wiring duct. The narrow fingers reduce the fanning of wires to terminal blocks for a neater appearance and to accommodate more compact designs. Tyton's versatile mounting hole pattern on the high density duct lines up with DIN rail, as well as numerous other mounting designs. Also, the mounting hole rows are consistent with Tyton's standard wiring duct, so the two ducts can easily be interchanged. Tyton's standard wiring duct cover can also be interchanged with the high density duct, eliminating the need to order additional cover inventory. Tyton's high density wiring duct comes with pressure sensitive rubber based adhesive backing. The adhesive backing can be utilized for temporary positions or permanent mounting. **Color:** Gray.

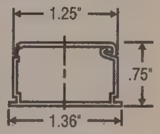
Stock No.	Mfr.'s Type	Duct Size	PER CARTON/30'		
			1-3	4-16	17-Up
805-8000	SLHDA1 × 1G	1 × 1	**67.35**	**62.15**	**59.50**
805-8002	SLHDA1 × 2G	1 × 2	**95.40**	**88.10**	**83.70**
805-8004	SLHDA1 × 3G	1 × 3	**123.95**	**114.45**	**108.75**
805-8006	SLHDA1 × 4G	1 × 4	**152.50**	**140.80**	**133.75**
805-8008	SLHDA2 × 1G	2 × 1	**92.35**	**85.25**	**80.15**
805-8010	SLHDA2 × 2G	2 × 2	**104.55**	**96.55**	**91.75**
805-8012	SLHDA2 × 3G	2 × 3	**135.70**	**125.25**	**118.98**
805-8014	SLHDA2 × 4G	2 × 4	**164.25**	**151.60**	**144.00**
805-8016	SLHDA3 × 1G	3 × 1	**103.55**	**95.60**	**90.85**

Surface Raceway

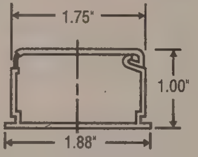
- **A Special Flexible Hinge Allows for Numerous Openings Without Creating Discoloration or Stress Cracking**
- **The Self-Locking, Hidden Positive Latch Allows for Quick Re-Entry As Well As Secure Installation of Wire and Cable**
- **The Adhesive is an Acrylic Pressure Sensitive Foam Tape with High Ultimate Bond Strength, Which Conforms to Any Surface**
- **Ivory Is The Standard Color, White Is Available Upon Request And Both Are Paintable With A Latex-Based Paint**
- **A Wide Variety of Accessories Are Available, Including EIA/TIA Compliant 1" Minimum Bend Radius Accessories for Category 5 Installations**



TSR1-6A



TSR2-6A



TSR1-6A

Tyton Surface Raceway is a one-piece latching duct designed to contain, route, and protect wire and cable when it is not feasible to run it within the wall.

805-0201. TSR1I-6A. ¾"W × ½"H × 6'L....................**PER PK./120' 115.20**
805-0202. TSR2I-6A. 1¼"W × ¾"H × 6'L....................**PER PK./120' 168.00**
805-0203. TSR3I-6A. 1¾"W × 1"H × 6'L....................**PER PK./120' 261.60**

Accessories

Stock No.	Mfr.'s Type	Dimensions	EACH
805-0204	TSR1I-14	Splice Cover — ¾"	**.44**
805-0205	TSR2I-14	Splice Cover — 1¼"	**.83**
805-0206	TSR3I-14	Splice Cover — 1¾"	**2.02**
805-0207	TSR1I-36	End Cap — ¾"	**.60**
805-0208	TSR2I-36	End Cap — 1¼"	**.89**
805-0209	TSR3I-36	End Cap — 1¾"	**1.98**
805-0210	TSR1I-33	Internal Cover — ¾"	**1.38**
805-0211	TSR2I-33	Internal Cover — 1¼"	**1.47**
805-0212	TSR3I-33	Internal Cover — 1¾"	**1.95**
805-1330	TSR1I-33-1	Internal Cover — 3/4" with 1" Minimum Bend Radius	**1.34**
805-1331	TSR2I-33-1	Internal Cover — 1 1/4" with 1" Minimum Bend Radius	**1.48**
805-1332	TSR3I-33-1	Internal Cover — 1 3/4" with 1" Minimum Bend Radius	**1.60**
805-0213	TSR1I-29	External Cover — ¾"	**1.38**
805-0214	TSR2I-29	External Cover — 1¼"	**1.47**
805-0215	TSR3I-29	External Cover — 1¾"	**1.95**
805-1333	TSR1I-29-1	External Cover — 3/4" with 1" Minimum Bend Radius	**2.30**
805-1334	TSR2I-29-1	External Cover — 1 1/4" with 1" Minimum Bend Radius	**2.54**
805-1335	TSR3I-29-1	External Cover — 1 3/4" with 1" Minimum Bend Radius	**2.92**
805-0216	TSR1I-25	Elbow Cover — ¾"	**1.47**
805-0217	TSR2I-25	Elbow Cover — 1¼"	**1.55**
805-0218	TSR3I-25	Elbow Cover — 1¾"	**1.98**
805-1336	TSR1I-25-1	Elbow Cover — 3/4" with 1" Minimum Bend Radius	**1.34**
805-1337	TSR2I-25-1	Elbow Cover — 1 1/4" with 1" Minimum Bend Radius	**1.48**
805-1338	TSR3I-25-1	Elbow Cover — 1 3/4" with 1" Minimum Bend Radius	**1.60**
805-0219	TSR1I-21	Tee Cover — ¾"	**1.47**
805-0220	TSR2I-21	Tee Cover — 1¼"	**1.55**
805-0221	TSR3I-21	Tee Cover — 1¾"	**1.98**
805-1339	TSR1I-21-1	Tee Cover — 3/4" with 1" Minimum Bend Radius	**1.34**
805-1340	TSR2I-21-1	Tee Cover — 1 1/4" with 1" Minimum Bend Radius	**1.48**
805-1341	TSR3I-21-1	Tee Cover — 1 3/4" with 1" Minimum Bend Radius	**1.60**
805-0222	TSR1I-50	Ceiling Drop — ¾"	**1.90**
805-0223	TSR2I-50	Ceiling Drop — 1¼"	**2.04**
805-0224	TSR3I-50	Ceiling Drop — 1¾"	**2.57**
805-0225	TSR1I-12	Reducer — 1¾" to 1¼"	**1.73**
805-0226	TSR2I-12	Reducer — 1¾" to ¾"	**1.73**
805-0227	TSR3I-12	Reducer — 1¼" to ¾"	**1.73**
805-0228	TSRI-JB1*	Junction Box — 1¼" depth	**5.22**
805-0229	TSRI-JB2*	Junction Box — 2" depth	**5.37**
805-0230	TSRI-JBD*	Junction Box — Dual-Gang 1½" Depth	**10.21**

Ivory is standard color. White is available upon request. *Includes base and cover.

Tyton Rite-On Markers

- **A Special Label Window Holds Label Firm for Easy Marking (Fig. 1)**
- **Can Easily Be Held in the Palm of the Hand to Provide a Flat Writing Surface (Fig. 2)**
- **Label Dispenses Automatically When the Liner Is Pulled from the Front of the Unit (Fig. 3)**
- **Excess Liner Is Easily Cut Off by Tearing It Over the Edge Guide at the Front of the Unit**
- **Easy to Reload, Refills Are Readily Available**
- **Once Reloaded, Unit Allows Minimal Label Exposure to Dust and Moisture**
- **Easily and Conveniently Fits in Shirt or Pants Pocket**

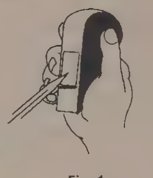


Fig. 1

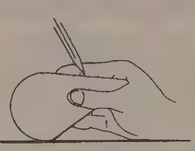


Fig. 2

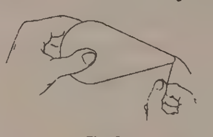


Fig. 3

Tyton Rite-On markers are self-laminating markers in different sizes which allow for efficient wire and cable identification. The labels have a clear tail which overwraps the legend for protection and longevity of the information. The Rite-On markers come with a reusable dispenser made from high impact yellow plastic which is resistant to oils and grease. The dispenser can be reloaded over and over again, making it a cost-effective and efficient method of labeling. Once reloaded, the unit allows minimal label exposure to dust and moisture. And the dispenser easily fits in a shirt of pants pocket. Non-smear marking pens are also available, helping ensure easy-to-read labeling.

Self-Laminating Labels

Rite-on marker dispensers are loaded with self-laminating labels. These labels have a clear tail which seals the legend under clear vinyl.

Stock No.	Mfr.'s Type	Write-On Area W × L (In.)	Marker Size W × L (In.)	Wire Size Range				Markers Per Roll	EACH
				Min. Wire Size (In.)	AWG	Max. Wire Size (In.)	AWG		
805-0815	RO101	3/4 × 1	3/4 × 6	0.625	250 mcm	1.500	1000 mcm	40	**11.55**
805-0810	RO175	3/4 × 3/4	3/4 × 3	0.330	1/0	0.625	250 mcm	90	**11.55**
805-0805	RO512	3/4 × 1/2	3/4 × 1 7/8	0.263	#2	0.330	1/0	150	**9.37**
805-0800	RO514	3/4 × 5/16	3/4 × 1 1/4	0.053	16 ga.	0.263	#2	200	**9.37**
805-0812	RO175WP*	3/4 × 3/4	3/4 × 3	0.330	1/0	0.625	250 mcm	90	**14.56**

*RO175WP includes FTP1 marking pen.

Refill Rolls for Self-Laminating Labels

Tyton provides refill rolls of self-laminating labels for use in the Rite-On dispensers. Refill rolls reduce the cost of using Rite-On markers, as the plastic dispenser can be reused. In addition to being cost effective, using refill rolls is an environmentally sound way to label, as waste is reduced. Each refill box is marked with the size and part number for easy reference and can be used with point-of-purchase displays.

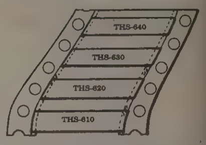
Stock No.	Mfr.'s Type	Write-On Area W × L (In.)	Marker Size W × L (In.)	Markers Per Roll	EACH
805-0816	101REF	3/4 × 1	3/4 × 6	40	**5.77**
805-0811	175REF	3/4 × 3/4	3/4 × 3	90	**5.43**
805-0806	512REF	3/4 × 1/2	3/4 × 1 7/8	150	**5.27**
805-0801	514REF	3/4 × 5/16	3/4 × 1 1/4	200	**5.27**

Nylon Marking Pens

When coupled with the non-smear FTP nylon marking pen, marking is fast and economical.

805-0900. FTP1. Black	**EACH 4.29**
805-0902. FTP2. White	**EACH 4.29**
805-0903. FTP3. Red	**EACH 4.29**

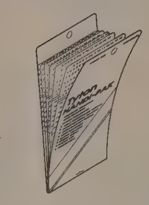
Shrink-Tag Markers



Shrink-Tag markers are a heat shrinkable marking system which provides permanent, solvent-resistant identification for wires, wire harness products, terminals, and other components. Pin-fed Shrink Tag can be efficiently marked with Tyton Tagprint labeling software, an IBM compatible computer, and most printers. Marks can also be made with a typewriter or pen. Manufactured from flexible polyolefin, self-extinguishing, Shrink-Tag can be used in a temperature range of –22°C to 220°C and is recognized to UL standard 224 for print performance, heat shock, and flammability. Shrink-Tag has a 2.0 inch printable marker width and a shrink ratio of 3 to 1. All sizes are available in yellow or white and are packaged on a spool for easy handling. This product meets MIL-S-85848/1 and MIL-M-81531 for print performance. Tyton Shrink-Tags can also be printed using Tyton's thermal transfer printer.

Diameter (Per Inch)		Wire and Cable Size Range (AWG/MCM)	Yellow			White		
As Supplied	Use Range		Stock No.	Mfr.'s Type	PER PK./250	Stock No.	Mfr.'s Type	PER PK./250
0.125	0.044-0.100	18-22	**805-1610**	THS-610Y	**75.55**	**805-3610**	THS-610W	**102.54**
0.250	0.091-0.219	10-16	**805-1620**	THS-620Y	**87.10**	**805-3620**	THS-620W	**132.82**
0.500	0.183-0.425	2-10	**805-1630**	THS-630Y	**210.35**	**805Q3630**	THS-630W	**280.92**
1.000	0.366-0.876	1-400	**805-0640**	THS-640Y	**223.89**	**805Q3640**	THS-640W	**367.68**

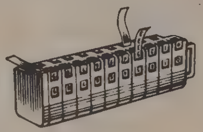
Handi-Paks Pressures Sensitive Wire Markers



- **Convenient Pocket Size Booklets**
- **Black Non-Smear Legends on a White Background**
- **Plastic Coated Cloth Material Remains Flexible**
- **Strong Adhesive Assures Firm Bond on Wire**

Stock No.	Mfr.'s Type	Description	EACH
805-5011	TCWM1	45 Markers Each #0-9	**6.60**
805-5012	TCWM2	10 Markers Each A-Z, 1-15, +, ±, /	**6.60**
805-5013	TCWM3	10 Markers Each 1-45	**6.60**
805-5014	TCWM4	150 Markers Each 1, 2, 3	**6.60**
805-5016	TCWM5	150 Markers Each A, B, C	**6.60**
805-5017	TCWM6	150 Markers Each T1, T2, T3	**6.60**
805-5018	TCWM7	150 Markers Each L1, L2, L3	**6.60**
805-5019	TCWM8	6 Markers Each 1-15; 4 Markers Each 16-90, 2 Markers Each A-Z, +, ±, /, 0	**6.60**
805-5020	TCWM9	45 Markers Each 1, 2, 3, A, B, C; 30 Markers Each L1, L2, L3 30 Markers Each T1, T2, T3	**6.60**
805-5021	TCWM10	45 Markers Each of 10 NEMA Colors	**6.60**
805-5022	TCWM11	15 Markers Each of #1-30	**6.60**
805-5023	TCWM12	15 Markers Each A-Z; 21 Markers Blank; 8 Markers +; 7 Markers ±	**6.60**
805-5024	TCWM13	45 Markers Each +, ±, AC, DC; 33 Markers Each POS, NEG, GND; 27 Markers NEUT 21 Markers Each SPARE and BLANK	**6.60**
805-5026	TCWM14	45 Markers Each 0-9; 15 Markers Each L1, L2, L3; 15 Markers Each T1, T2, T3	**6.60**
805-5027	TCWM15	10 Markers Each 46-90	**6.60**
805-5028	TCWM16	10 Markers Each 1-33, A, B, C, +, ±; T1, T2, T3, L1, L2, L3	**6.60**

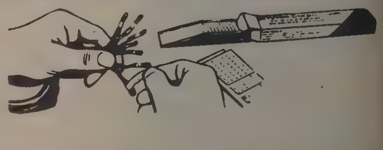
Tyton Wire Marker Tape



The Tyton Wire Marker Tape Dispenser provides a convenient economical system for wire marking. Sharp, crisp legends are coated to resist smearing and abrasion. The Wire Marker Tape is provided on a carrier strip to prevent contamination of the adhesive prior to dispensing for installation. This assures permanent non-flagging marker ends. **Dimensions:** 1/4" wide × 1 1/4" long. **Markers Per Roll:** 76 each legend. **Adhesive:** Aggressive acrylic base. **Marker Material:** Dupont Tyvek — This is polyolefin material that resists tearing and abrasion.

WMTD0-9. One wire marker tape dispenser with 10 rolls of markers — 1 roll each of 0-9 legends.
805-0751. Type WMTD0-9 .... **EACH 21.15**
WMT0-9. Single box of wire marker tape refill — 1 roll each of 0-9 legends.
805-0760. Type WMT0-9 .... **EACH 17.53**
Note: One roll per box. Other legends available upon request.

Handi-Cards Pressure Sensitive Wire Markers



Tyton Handi-Cards are easy release markers on a plastic car. They feature a strong adhesive which assures a long lasting bond on wire. Permanent pre-printed legends are available in solid or sequence order.

Sequence Handi-Cards. Each marker on the card contains a different number or letter. It runs in sequence beginning with the lowest number or letter first, and ending with the highest.

805-3080. TYHC1-33. 33 Markers Per Card	**PER BOX/25 20.89**
805-3090. TYHC34-66. 33 Markers Per Card	**PER BOX/25 20.89**
805-3100. TYHC67-99. 33 Markers Per Card	**PER BOX/25 20.89**
805-3110. TYHCA-Z. 36 Markers Per Card	**PER BOX/25 20.89**

The Labels — *NEW* —

Tyton provides several types of labels in a range of sizes and materials for wire and component marking. Tyton provides a combination of ribbon and material that produces a chemical and solvent resistance, non-smear mark, that is clean and legible. Both self-laminating labels for use with wires, and blank polyester labels, for component and product marking, are featured in this system. **Topcoat:** Specially formulated for superb ink anchorage. **Liner:** 80#. **Temperature Range:** –50°F to +200°F (–46°C to +93°C). **Adhesive:** Permanent pressure sensitive acrylic. **Application:** For wires and cable and other conformable surfaces.

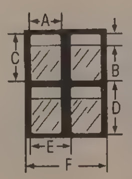
Tyton Thermal Transfer Ribbons

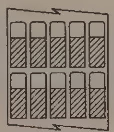
Tyton thermal transfer ribbons are specifically designed for use with Tyton thermal transfer materials. Due to various settings in printers, the different label types and variations in ribbons, each material must have its own specific ribbon. For instance, when ordering Tyton 822 material labels, you must specify and use the ribbon that is configured for the 822 stock. In this case it would be the TT822 ribbon. In addition, you must use this ribbon if you want an Underwriters Laboratories recognized on the 822 material. Call Allied for more information on blank labels.

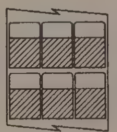
Stock No.	Mfr.'s Type*	Size	Recommended Materials	EACH
805-2105	TT100IN	4.3" × 1181' (110.0 mm × 360 M)	100 (Clear Vinyl)	**53.47**
805-2114	TT100OUT	4.3" × 985' (110.0 mm × 300 M)	100 (Clear Vinyl)	**46.70**
805-2115	TT822IN	4.0" × 688' (101.6 mm × 210 M)	822 (White Polyester)	**56.36**
805-2117	TT822OUT	4.3" × 985' (110.0 mm × 300 M)	822 (White Polyester)	**71.23**
805-2118	TTHSTIN	4.0" × 1181' (102.0 mm × 360 M)	Shrink-Tubing	**63.05**
805-2119	TTHSTOUT	4.0" × 985' (102.0 mm × 300 M)	Shrink-Tubing	**53.55**
805-2120	TT900OUT	4.0" × 985' (101.6 mm × 300 M)	900 (Polymide Film)	**110.81**

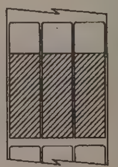
*When ordering ribbons for other printer manufacturers, specify core diameter, width and length, as well as how the ribbon is wound on the spool. Example: Ink facing in or ink facing out. Also please specify if you need a take-up spool.

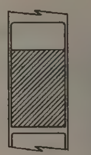
Thermal Transfer Self-Laminating Labels

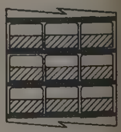



TAG-2T5-100


TAG-22T3-100


TAG-3T3-100


TAG-6T1-100


TAG-51T3-100

Stock No.	Mfr.'s Type	Labels Per Roll	No. of Labels Across	Dimensions (In.)						PER ROLL
				A Width of Label	B Length of Write on Area	C Length of Label	D Vert. Repeat	E Horiz. Repeat	F Label Width	
805-2100	TAG2T5-100	10,000	5	0.5	0.50	1.43	1.620	0.660	3.35	**146.88**
805-2101	TAG22T3-100	5,000	3	1.0	0.50	1.43	1.620	1.075	3.35	**101.47**
805-2102	TAG3T3-100	3,000	3	1.0	1.00	3.75	4.000	1.075	3.35	**226.80**
805-2103	TAG6T1-100	1,000	1	2.0	1.00	3.75	4.000	—	2.20	**97.20**
805-2104	TAG51T3-100	10,000	3	1.0	0.35	0.75	0.937	1.075	3.35	**193.50**

Tagprint Labeling Software

Tyton Corporation offers two versions of Tagprint labeling software for efficient computer generated labeling. Tagprint for Windows and Tagprint II are both ideal for creating labels for wire and cable marking, PC boards and components, terminal blocks, and almost any industrial identification application. Tagprint for Windows and Tagprint II are IBM compatible. Both versions of Tagprint can be used with dot matrix and laser printers, as well as Tyton's TT1000 thermal transfer printer. Call Allied for more information on Tyton's thermal transfer labeling system, which incorporates Tagprint software. Easy to use, Tyton's software speeds production, while offering many labeling options. Bar coding, serialization, label sets, and text choices are just some of the capabilities of Tyton's Tagprint software.

Tagprint for Windows Labeling Software

Tagprint for Windows provides many features for labeling versatility and efficiency. **WYSIWYG:** "What You See Is What You Get" label creation. The label is shown on the screen for easy editing and proofing. Graphic images appear, as well as representations of type styles, sizes and placement. **Preview:** View a sheet of labels at one time. **Serial Numbers:** Alpha and numeric options include decimal, octal, and hexadecimal capabilities. Most serial configurations increment automatically. Custom options are available to meet special requirements. **Random Access:** Allows easy data entry for labels that have different information on each label. **Graphics:** Windows-created graphics can be printed. **Bar Codes:** Code 39, Interleaved 2/5, UPC-A, and EAN standard bar codes are offered. All bar code dimensions can be altered to fit on various sized labels and printed with or without text. High density bar codes with sharp, clear imaging can be produced when using a laser printer or Tyton's TT1000 thermal transfer printer. **Fonts:** Uses the Window true type fonts for a wide choice of sizes. **Label Sets:** Prints multiple sets for group repetition. **External Field:** Separate ASCII data bases can be accessed. Both fixed and free formats are read. **Time/Date Functions:** If desired, Tagprint for Windows prints time and date of label printing. Time and date are continually updated during the printing process, so there is no need to stop for changes. **Complete Storage Capacity:** Once a label is created, it can be stored in any directory or file and is automatically sorted for easy recall. **Printers:** Prints to laser and dot matrix printers, along with Tyton's TT1000 thermal transfer printer. **Unlimited Label Stock Sizes:** All standard Tabtag label sizes appear on Tagprint for Windows, but non-standard sizes can easily be added to the label data base. **Customer Support:** The software comes with a user's manual and toll-free number for friendly, knowledgeable customer support. **Requirements:** IBM PC, PS/2 or compatible with at least a 286 microprocessor. Microsoft DOS 3.3 or higher and Microsoft Windows 3.1 or later. IBM VGA or other graphic adapter supported by Windows. Mouse supported by Windows. At least 4 MB of RAM. At least 2 MB of free space on the local hard disk. A 3.5" disk drive for installation. A printer with device driver for Windows 3.1. A 368 or 486 processor is preferred.

805-7500. TPSWIN50 ....**EACH 408.00**

Note: Windows is a trademark of Microsoft Corporation. Microsoft, MS, and MS-DOS are registered trademarks of Microsoft Corporation. IBM is a registered trademark of International Business Machines Corporation.

Tagprint II Labeling Software

Like Tagprint for Windows, Tagprint II software offers labeling efficiency and versatility. Tagprint II runs on any IBM compatible computer with DOS 2.1 or later. Easy to use, no prior computer experience is needed to create, save, and store label files. As in Tagprint for Windows, Tagprint II offers: WYSIWYG ("What You See Is What You Get") Label Creation, Graphics, Label Sets, External Field, Time/Date Functions, Complete Storage Capacity, Unlimited Label Stock Sizes and Customer Support. Tagprint II also provides other features. **Serial Numbers:** Alpha and numeric options include decimal and hexadecimal capabilities. Most serial configurations increment automatically. Custom options are available to meet special requirements. **Bar Codes:** Five bar codes are offered on Tagprint II, including Code 39, Interleaved 2/5, UPC, Codabar, and EAN standard. All bar code dimensions can be altered to fit on various sized labels and printed with or without text. High density bar codes with sharp, clear imaging can be produced when using a laser printer or Tyton's TT1000 thermal transfer printer. **Various Text Sizes:** Six standard sizes can be printed, from 5 characters per inch (c.p.i.) to 17 c.p.i. With the smaller text sizes, greater amounts of information can be placed on the small labels. Larger text sized can make the label readable from a distance. **Automatic Centering:** Inputted information is automatically centered on the Tabtag label. Information can also be moved to very specific coordinates on the label. **Mouse Support:** Tagprint II can be used with or without a mouse. **Printers:** Prints to laser and dot matrix printers, along with Tyton's TT1000 thermal transfer printer.

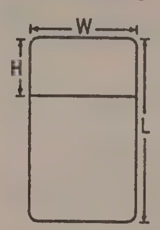
805-0002. TPS-2 ....**EACH 395.00**

Tabtag and Handi-Labels Computer Printable Labels

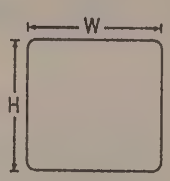
Tabtag Labels

Computer-printable Tabtag labels are available in self-laminating and blank styles for nearly any labeling application. Self-laminating Tabtags are manufactured with a clear, flexible vinyl film which overwraps the legend to provide protection against moisture, chemicals, and abrasion. Blank Tabtags are used to flag wire and cable and identify terminal blocks, printed circuit boards, E-Proms, ICs and other components. Used for bar coding and other industrial identification purposes, Tabtags resist harsh chemicals and extreme temperatures, while providing smudge-resistant identification. Additional stock sizes are available, and custom labels can be designed to meet specific requirements. Standard label color is white.

Self-laminating

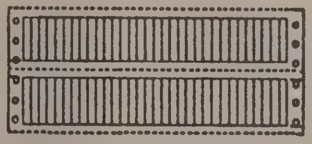


Blank



Stock No.	Mfr.'s Type	Label Type	Material	Label Size W × H × L	Web Width	Labels Per Row	Rows Per Fanfold	Vertical Spacing	Labels Per Pkg.	PER PKG.
805-1100	TAG1-100	Self-laminating	Vinyl Film	1.9" × .75" × 3.19"	9.500"	4	3	6 or 8 lines per inch	2,500	**297.12**
805-5100	TAG5-100	Self-laminating	Vinyl Film	.8" × .5" × 1.437"	6.300"	6	8	6 or 8 lines per inch	5,000	**167.28**
805-6100	TAG6-100	Self-laminating	Vinyl Film	2" × 1" × 3.75"	9.000"	4	3	6 or 8 lines per inch	2,500	**335.90**
805-1420	TAG14-202	Blank	Vinyl Cloth	1" × .375"	8.600"	7	24	6 or 8 lines per inch	5,000	**111.92**
805-1540	TAG15-400	Blank	Polyester	1" × .5"	8.600"	7	18	6 lines per inch	5,000	**83.93**
805-1560	TAG15-600	Blank	Metallized Polyester*	1" × .5"	8.600"	7	18	6 lines per inch	5,000	**111.01**
805-1640	TAG16-400	Blank	Polyester	.9" × .25"	8.900"	8	36	6 lines per inch	5,000	**48.93**
805-1770	TAG17-707	Blank	Paper	1.5" × .25"	8.000"	4	36	6 lines per inch	5,000	**47.22**
805-1920	TAG19-200	Blank	Plastic Cloth	2" × .375"	9.300"	4	24	6 or 8 lines per inch	5,000	**170.68**
805-2210	TAG22-100	Self-laminating	Vinyl Film	1" × .5" × 1.437"	9.000"	8	8	6 or 8 lines per inch	5,000	**123.33**
805-2610	TAG26-100	Self-laminating	Vinyl Film	.5" × .375" × .75"	9.300"	14	12	6 or 8 lines per inch	5,000	**69.00**
805-2730	TAG27-300	Blank	Polyvinylfluoride Film	1.5" × .75"	7.625"	4	12	6 or 8 lines per inch	5,000	**277.91**

*Aluminum. If you have any questions on label materials or applications, please call Allied.



Handi-Labels

Tyton now offers Handi Cards for computer printing using Tagprint software. **Label Dimensions:** .235" W × 1.5" L, 32 labels across the pages. Each section of labels is perforated so that it can be separated into individual cards after printing. This makes it possible to print custom legends on a standard Handi-Card size product. Handi-Labels come in packages of 2500 markers. The material is a white, conformable vinyl with a rubber based, permanent adhesive. **Temperature Range:** –40°F (40°C) to +175°F (347°C).

805-6101. TAG46-102 ....**PER PK./2500 42.66**

Tyton Laser Tags

Laser Printable labels for quality label solutions.

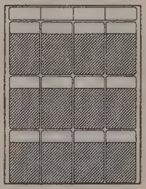
- ► **High Legibility**
- ► **Clear Imaging**
- ► **Solvent Resistant**
- ► **Smudge Resistance**
- ► **Heat Resistant**
- ► **Permanent**

Self-Laminating Laser Tags

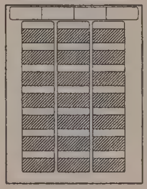
► **For Wire Wrapping and Flat Ribbon Cable**

Tyton self-laminating Laser Tags are durable, yet conformable to compound surfaces like wires and cables. These labels can be wrapped onto wires without fear of flagging or popping off the wires. Self-laminating Laser Tags are available in vinyl. The labels come on 8.5" × 11" sheets and are printable using Tyton Tagprint II software or Tagprint for Windows and a standard laser printer. (Not recommended for use with personal label printers.)

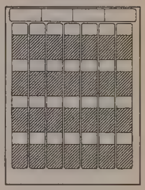
TAG1L-105



TAG52L-105

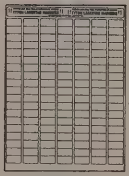


TAG9L-105

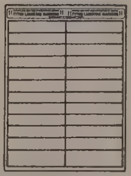


Stock No.	Mfr.'s Type	Labels Per Sheet	Sheets Per Pkg.	No. Across	No. Down	Width of Label A	Height of Printable Area B	Height of Marker and Tail C	Labels Per Pkg.	PER PKG.
805-6510	TAG1L-105	12	84	4	3	1.9" (48.2 mm)	0.750" (19.0 mm)	3.25" (82.5 mm)	1000	**152.69**
805-6511	TAG2L-105	91	55	13	7	0.5" (12.7 mm)	0.500" (12.7 mm)	1.43" (36.4 mm)	5000	**111.29**
805-6512	TAG5L-105	56	90	8	7	0.8" (20.3 mm)	0.500" (12.7 mm)	1.43" (36.4 mm)	5000	**163.94**
805-6513	TAG9L-105	28	36	7	4	1.0" (25.4 mm)	0.750" (19.0 mm)	2.25" (57.1 mm)	1000	**69.18**
805-6000	TAG26L-105	156	33	13	12	0.5" (12.7 mm)	0.375" (9.5 mm)	0.75" (19.0 mm)	5000	**64.80**
805-6001	TAG49L-105	70	36	7	10	1.0" (25.4 mm)	0.350" (8.8 mm)	1.00" (25.4 mm)	2500	**119.85**
805-6002	TAG50L-105	21	48	3	2	1.0" (25.4 mm)	1.000" (25.4 mm)	3.16" (80.4 mm)	1000	**91.05**
805-6003	TAG51L-105	84	60	7	12	1.0" (25.4 mm)	0.350" (8.8 mm)	0.75" (19.0 mm)	5000	**102.51**
805-6004	TAG52L-105	21	48	3	7	2.0" (50.8 mm)	0.470" (11.9 mm)	1.33" (33.7 mm)	1000	**91.05**
805-6030	TAG63L-105	49	52	7	7	1.0" (25.4 mm)	0.500" (12.7 mm)	1.33" (33.7 mm)	2500	**112.08**

TAG15L-789



TAG45L-789

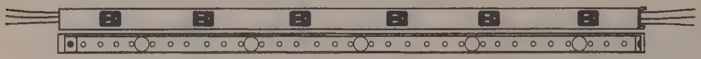


Blank Laser Tags

Blank Laser Tags are durable, laser printable labels for applications requiring clear, crisp legibility. The labels come on 8.5" × 11" sheets and are printable using Tyton Tagprint II software or Tagprint for Windows and a standard laser printer. Specially designed adhesives and materials are used for the Laser Tags, ensuring that the labels will not curl, change color, or jam laser printers. Blank Laser Tags are available in white polyester. (Not recommended for use with personal label printers.)

Stock No.	Mfr.'s Type	Labels Per Sheet	Sheet Per Pkg.	No. Across	No. Down	Width A	Height B	Labels Per Pkg.	PER PKG.
805-6005	TAG11L-789	480	11	10	48	0.65" (16.5 mm)	.200" (5.08 mm)	5000	**46.35**
805-6006	TAG13L-789	312	17	8	39	0.75" (19.0 mm)	.250" (6.35 mm)	5000	**63.31**
805-6007	TAG14L-789	175	29	7	25	1.00" (25.4 mm)	.375" (9.52 mm)	5000	**68.25**
805-6008	TAG15L-789	133	38	7	19	1.00" (25.4 mm)	.500" (12.70 mm)	5000	**104.18**
805-6009	TAG45L-789	24	209	2	12	4.00" (101.6 mm)	.800" (20.32 mm)	5000	**335.17**

Wiremold® Wire-Management Products — 2000 Plugmold® Multioutlet Systems



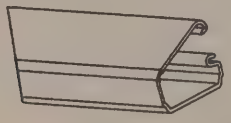
- Pre-Wired Electrical Raceway Provides Multiple Outlet Convenience for Electrically Busy Locations
- Hardwired for Permanent Installations
- 15 A Specification Grade Receptacles at 6" or 12" Centers
- Compact Low Profile Design (19/32" W × 3/4" D)
- Baked Enamel Ivory Finish or Gray Finish
- Pre-Wired with 12 Gauge Insulated Solid Wire
- 3, 5 or 6 Ft. Lengths
- UL Listed, CSA Certified

Stock No.	Mfr.'s Type	Length	Color	Quantity of Outlets	Center to Center	EACH
533-7400	V20GB306	3'	Ivory	6	6"	23.00
533-7405	G20GB306	3'	Gray	6	6"	23.00
533-7410	V20GB506	5'	Ivory	10	6"	32.00
533-7415	G20GB506	5'	Gray	10	6"	32.00
533-7420	V20GB512	5'	Ivory	5	12"	22.00
533-7425	G20GB512	5'	Gray	5	12"	22.00
533-7430	V20GB606	6'	Ivory	12	6"	35.00
533-7435	G20GB606	6'	Gray	12	6"	35.00
533-7440	V20GB609	6'	Ivory	8	9"	29.00
533-7445	G20GB609	6'	Gray	8	9"	29.00
533-7450	V20GB612	6'	Ivory	6	12"	28.00
533-7455	G20GB612	6'	Gray	6	12"	28.00

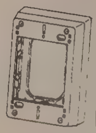
Surface Raceway

Shape Electronics offers a full line of Wiremold® plastic surface raceway to simplify any new or existing wiring or cabling job. Wiremold raceway systems are ideal for smoke detectors, burglar alarms, fire alarms, additional receptacles and switches, ceiling fans, telecommunication systems or computer networking. These systems offer a flexible organized method to run power or data cabling over walls or on the floor and most models can be painted to match the surroundings. Adhesive backing speeds installation and snap-on fittings provide easy access for changes or future additions. Wiremold raceway protects electrical wiring for a safer installation.

Uniduct™ Ivory 1 Piece Raceway



Uniduct



Device Box

Uniduct is a single piece latching raceway designed to secure and protect low-voltage (50 volts or less) wires and communication cables. The easy open and snap-close flexible hinge allows for quick installations and changes.

Raceway

Stock No.	Mfr.'s Type	Description	EACH
			1-4
533-7001	2700	¾"H × ¾"D — 6 ft. lengths	10.60
533-7005	2800	1"H × ½"D — 6 ft. lengths	10.80
533-7012	2900	1½"H × ¾"D — 6 ft. lengths	14.50

Fittings for 2700 Raceway

Stock No.	Mfr.'s Type	Description	EACH 1-4
533-0100	2706	Cover Clip	.96
533-0105	2710B	Blank End Fitting	.96
533-0110	2711	90° Flat Elbow	1.02
533-0115	2715	Tee	1.02
533-0120	2717	Internal Elbow	1.02
533-0125	2718	External Elbow	1.02
533-0130	2786	Ceiling Drop Connector	1.19

Fittings for 2800 Raceway

Stock No.	Mfr.'s Type	Description	EACH 1-4
533-0135	2806	Cover Clip	1.02
533-0140	2810B	Blank End Fitting	1.02
533-0145	2811	90° Flat Elbow	1.02
533-0150	2815	Tee	1.02
533-0155	2817	Internal Elbow	1.02
533-0160	2818	External Elbow	1.02
533-0165	2886	Ceiling Drop Connector	1.19
533-0170	2889	2800 to 2700 Reducer	1.02

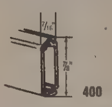
Fittings for 2900 Raceway

Stock No.	Mfr.'s Type	Description	EACH 1-4
533-0175	2906	Cover Clip	1.10
533-0180	2910B	Blank End Fitting	1.10
533-0185	2911	90° Flat Elbow	1.10
533-0190	2915	Tee	1.10
533-0195	2917	Internal Elbow	1.10
533-0200	2918	External Elbow	1.10
533-0205	2986	Ceiling Drop Connector	1.19
533-0210	2989	2900 to 2800 Reducer	1.10
533-0215	2989A	2900 to 2700 Reducer	1.10

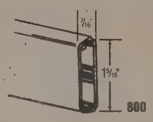
Device Boxes

Stock No.	Mfr.'s Type	Description	EACH 1-4
533-7135	2948	1 Gang Box 1¾" Deep	3.81
533-7140	2948-2	2 Gang Box 1¾" Deep	6.20
533-7145	2949	Communication Box	6.70
533-7150	2949FO	Fiber Optic Kit	2.90

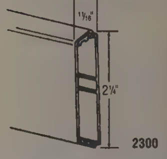
2 Piece Ivory Raceway Base and Cover



400



800



2300

The Two Piece raceway systems are constructed of rigid PVC that resists impact and corrosion and are UL and CSA listed for applications up to 300 volts. Three sizes to choose, simply mount the base, run the wire and snap on the cover.

Raceway

Stock No.	Mfr.'s Type	Description	EACH
			1-4
533-7155	400BAC	⅞"H × 7⁄16"D — 5 ft. lengths	6.00
533-7160	800BAC	15⁄16"H × 7⁄16"D — 5 ft. lengths	7.00
533-7165	2300BAC	2¼"H × 11⁄16"D — 5 ft. lengths	10.00

Fittings for 400 Raceway

Stock No.	Mfr.'s Type	Description	EACH 1-4
533-0220	400WC	Wire Clip	.19
533-0225	406	Cover Clip	.33
533-0230	410B	Blank End Fitting	.46
533-0235	411	90° Flat Elbow	1.19
533-0240	415	Tee Base and Cover	1.60
533-0245	417	Internal Elbow	1.13
533-0250	418	External Elbow	1.13

Fittings for 800 Raceway

Stock No.	Mfr.'s Type	Description	EACH 1-4
533-0255	800WC	Wire Clip	.22
533-0260	806	Cover Clip	.30
533-0265	810A1	Entrance End Fitting	3.15
533-0270	810B	Blank End Fitting	.50
533-0275	811	90° Flat Elbow	1.26
533-0280	815	Tee	1.65
533-0285	817	Internal Elbow	1.16
533-0290	818	External Elbow	1.16
533-0295	889A	800 to 400 Reducer	1.85

Fittings for 2300 Raceway

Stock No.	Mfr.'s Type	Description	EACH 1-4
533-0305	2300WC	Wire Clip	.28
533-0310	2306	Cover Clip	.50
533-0315	2310A	Entrance End Fitting	3.91
533-0320	2310B	Blank End Fitting	.80
533-0325	2311	90° Flat Elbow	1.43
533-0330	2315	Tee	1.73
533-0335	2317	Internal Elbow	1.43
533-0340	2318	External Elbow	1.43
533-0345	2389	2300 to 800 Reducer	2.02
533-0350	2389A	2300 to 400 Reducer	2.02

Device Boxes

Stock No.	Mfr.'s Type	Description	EACH 1-4
533-7300	2336	Blank Cover	3.71
533-7305	2337A	Round Extension Box	8.40
533-7310	2338	Round Box 4¾" Dia.	8.00
533-7315	2338A	Round Box 5½" Dia.	8.40
533-7320	2347	1 Gang Box 1⅜" Deep	3.81
533-7325	2347-2	2 Gang Box 1⅜" Deep	6.00
533-7330	2348	1 Gang Box 1¾" Deep	4.22
533-7335	2348-2	2 Gang Box 1¾" Deep	6.70
533-7340	2348-3	3 Gang Box 1¾" Deep	10.00
533-7345	2348S/51	Extension Box ⅞" Deep	3.50
533-7350	2348AMP	1 Gang Magnetic Box	8.00
533-7355	2348-2AMP	2 Gang Magnetic Box	11.39
533-7360	2349	Communication Box	7.40
533-7150	2949FO	Fiber Optic Kit	2.90

RF Microwave Capacitors, Connectors and Semiconductors

Manufacturer — **Page**

AMP 1037, 1038, 1039, 1040, 1041
Amphenol 1042, 1043, 1044, 1045
Bomar Interconnect Products 1046, 1047
Comlinear 1053
Hewlett-Packard 1054, 1055
Johnson Components 1048
Kings 1052
M/A-COM 1049, 1050, 1051, 1056, 1057
Motorola 1058, 1059, 1060, 1061
Olympic 1047
PSelect 1062
Toko 1036
Wiltron 1052

Product — **Page**

Chip Inductors and Filters

Toko
- Filters
  - Low Pass 1036
  - Medium Frequency 1036
- Inductors
  - Fixed 1036
  - Multilayer 1036
- Voltage Regulator 1036

Connectors

AMP
- Coaxial Connectors
  - BNC 1038, 1039, 1040, 1041
  - N Type 1038
  - SHV 1038
  - SMA 1037
  - SMB 1037
  - UHF 1038

Amphenol
- Coaxial Connectors
  - BNC 1042, 1044, 1045
  - N Type 1043, 1045
  - SMA 1042
  - Twin-Ax 1044, 1045
  - UHF 1043, 1045

Bomar Interconnect Products
- Coaxial Connectors
  - Between Series Adapters 1047
  - BNC 1046
  - F-Series 1046
  - Twin-Ax 1046

Johnson Components
- Coaxial Connectors
  - Mini-Subminiature 1048
  - SMA 1048
  - SMB 1048

Kings
- Coaxial Connectors
  - BNC 1052
  - N Type 1052
  - TNC 1052

M/A-COM
- Coaxial Connectors
  - Between Series Adapters 1049, 1050
  - SMA 1050
  - SMB 1050
  - SMC 1050
  - Subminiature Snap-On 1051

Olympic
- Coaxial Cable 1047

Wiltron
- Coaxial Connectors
  - SMA 1052
  - Stress Reliefs 1052
  - Subminiature 1052

Semiconductors

Comlinear
- Amplifiers
  - Buffer 1053
  - Operational 1053
  - Variable Gain 1053
- Converters, Analog to Digital 1053

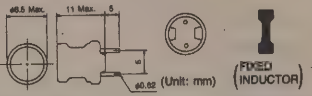
Hewlett Packard
- Amplifiers 1054
- Diodes
  - Pin 1055
  - Schottky 1055
- GaAs FETs 1054
- Integrated Circuits 1054
- Mixers 1054
- Silicon Monolithic Integrated Circuits 1054
- Transistors
  - General Purpose 1055
  - Low Noise 1055

M/A-COM
- Attenuators 1056
- Diodes 1057
- IC Switches 1056
- Mixers 1057
- Power Splitters 1057
- Schottky Diodes 1057
- Test Cables 1056
- Transformers 1057

Motorola
- Amplifiers
  - General Purpose 1060
  - High Power 1060
  - Low Power 1060
- Diodes
  - Abrupt Junction 1060, 1061
  - Pin Switching 1061
  - Schottky 1061
  - Tuning 1061
- FETs
  - MOSFETs 1058, 1059
- Integrated Circuits 1060
- Mixers
  - Narrowband 1058
  - Transmitters 1058
  - Wideband 1058
- Modules 1062
- Transistors
  - Bipolar 1059
  - HF 1059
  - Low Noise 1055
  - Small Signal 1059
  - UHF 1059
  - VHF 1059

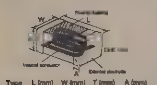
PSelect
- Cable Assemblies 1062
- Cascadable Modules 1062

Type 8RHB



Inductance Range: 1.0-1000 µH. **Temperature Coefficient:** 400 ppm/°C, max. Ideal as a choke coil for noise filtering and DC/DC convertor applications.

Stock No.	Mfr.'s Type	Inductance L (µH)	Q (Min.)	Rated DC Current (A) Max.	Self Resonant Frequency (MHz) Min.	EACH		
						1-9	10-99	100-Up
844-0002	R622LY-1R0M	1.0 ±20%	20	10.00	150.0	2.50	1.98	.99
844-0004	R622LY-3R3M	3.3 ±20%	20	5.50	79.0	2.50	1.98	.99
844-0006	R622LY-4R7M	4.7 ±20%	20	4.30	51.0	2.50	1.98	.99
844-0008	R622LY-100K	10.0 ±10%	50	3.00	14.0	2.50	1.98	.99
844-0010	R622LY-220K	22.0 ±10%	40	2.00	9.2	2.50	1.98	.99
844-0012	R622LY-270K	27.0 ±10%	40	1.70	8.5	2.50	1.98	.99
844-0014	R622LY-470K	47.0 ±10%	30	1.40	6.5	2.50	1.98	.99
844-0016	R622LY-560K	56.0 ±10%	30	1.30	5.4	2.50	1.98	.99
844-0018	R622LY-101K	100.0 ±10%	20	0.91	3.7	2.50	1.98	.99
844-0020	R622LY-121K	120.0 ±10%	20	0.84	3.4	2.50	1.98	.99
844-0022	R622LY-151K	150.0 ±10%	20	0.75	3.2	2.50	1.98	.99
844-0024	R622LY-221K	220.0 ±10%	20	0.64	2.7	2.50	1.98	.99
844-0026	R622LY-331K	330.0 ±10%	20	0.54	2.3	2.50	1.98	.99
844-0028	R622LY-471K	470.0 ±10%	20	0.46	1.9	2.50	1.98	.99
844-0030	R622LY-102K	1000.0 ±10%	50	0.29	1.3	2.50	1.98	.99



Type L (mm) W (mm) T (mm) A (mm)
LL1005 1.0±0.15 0.5±0.15 0.5±0.15 0.25±0.1

Type LL1005F

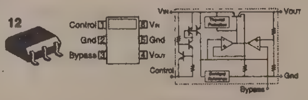
For reflow soldering. **Inductance Range:** 1.0-27 OnH. **Temperature Coefficient:** +250 ppm/°C. **Temperature Range:** –40°C +100°C. Laminated ceramic allows high SRF. **Miniature Size:** 1.0 mm × 0.5 mm. **Q:** 30 typical (at 800 MHz). **IDC mA (Max.):** 300. Stocked in packs.

Stock No.	Mfr.'s Type	Lo (nH)	Q Typical 800 MHz	Q Typical 1900 MHz	SRF MHz Typical	PER PK./10		
						1-9	10-49	50-Up
844-0040	LL1005-F1N0S	1.0	30	50	>6000	10.00	8.90	4.50
844-0042	LL1005-F1N2S	1.2	30	50	>6000	10.00	8.90	4.50
844-0044	LL1005-F1N5S	1.5	30	50	>6000	10.00	8.90	4.50
844-0046	LL1005-F1N8S	1.8	30	50	>6000	10.00	8.90	4.50
844-0048	LL1005-F2N2S	2.2	30	50	>6000	10.00	8.90	4.50
844-0050	LL1005-F2N7S	2.7	30	52	5500	10.00	8.90	4.50
844-0052	LL1005-F3N3K	3.3	28	49	5000	10.00	8.90	4.50
844-0054	LL1005-F3N9K	3.9	30	46	4700	10.00	8.90	4.50
844-0056	LL1005-F4N7K	4.7	28	43	4300	10.00	8.90	4.50
844-0058	LL1005-F5N6K	5.6	28	40	4000	10.00	8.90	4.50
844-0060	LL1005-F6N8K	6.8	28	37	3650	10.00	8.90	4.50
844-0062	LL1005-F8N2K	8.2	28	32	3200	10.00	8.90	4.50
844-0064	LL1005-F10NK	10.0	23	22	2800	10.00	8.90	4.50
844-0066	LL1005-F12NK	12.0	24	18	2700	10.00	8.90	4.50
844-0068	LL1005-F15NK	15.0	25	15	2200	10.00	8.90	4.50
844-0070	LL1005-F18NK	18.0	17	—	2000	10.00	8.90	4.50
844-0072	LL1005-F22NK	22.0	23	—	1800	10.00	8.90	4.50
844-0074	LL1005-F27NK	27.0	20	—	1600	10.00	8.90	4.50

Medium Frequency LC Filters

Stock No.	Mfr.'s Type	Type	IC Part No.	Description	EACH		
					1-9	10-49	50-Up
844-0220	H315LNLS-2722TBD	5VFT	TDA8708/8709	5mhz LPF	8.50	7.45	5.90
844-0222	H321LNP-1436PBAB	5VFNP	MC1378/13/13077	400 ns Delay Line Filter	14.50	11.25	9.15
844-0224	H286BAIS-6276DAD	5VUS	MC1378/1377/13077	3.58 MHz NTSC BPF	2.80	2.60	1.85
844-0226	H286BAIS-4963DAD	5VUS	MC1378/1377/13077	4.43 MHz PAL BPF	2.80	2.60	1.85
844-0228	166NNF-10264AG	10NSF	MC1378/1377/13077	10 mm Xformer - Chroma BPF	2.80	2.60	1.75

Low Dropout Voltage Regulators

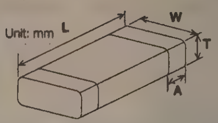


Type TK112 Series. Maximum Power (Mounted): 400 mW. **Temperature Range:** –30 to +80°C. **Quiescent Voltage:** 180 µA. **Standby Current:** 100 nA. **Noise Voltage:** 30 µVrms.

Stock No.	Mfr.'s Type	Voltage	Max. Current	Output Tolerance	Dropout Voltage	EACH		
						1-9	10-49	50-Up
844-0230	TK11230AMTL	3.0	220 mA	±3% or 100 mV	100 mV	1.70	1.55	1.25
844-0232	TK11235AMTL	3.5	220 mA	±3% or 100 mV	100 mV	1.70	1.55	1.25
844-0234	TK11240AMTL	4.0	220 mA	±3% or 100 mV	100 mV	1.70	1.55	1.25
844-0236	TK11245AMTL	4.5	220 mA	±3% or 100 mV	100 mV	1.70	1:55	1.25
844-0238	TK11250AMTL	5.0	220 mA	±3% or 100 mV	100 mV	1.70	1.55	1.25
844-0240	TK11250MTL	5.0	240 mA	±2.4% or 80 mV	70 mV	1.70	1.55	1.25

Type LL2012F

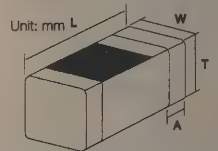
Type T (mm)
LL2012 0.60±0.2
L (mm) 0.85±0.3
2.0±0.2 1.00±0.3
W (mm) A (mm)
1.25±0.2 0.5±0.3



For reflow soldering. **Inductance Range:** 1.5-470 µH. **Temperature Coefficient:** +250 ppm/°C. **Temperature Range:** –40°C +100°C. **Features:** Laminated ceramic allows high SRF. **Miniature Size:** 2 mm × 1.2 mm. **Q:** 50 typical (at 800 MHz). Stocked in packs of 10. **IDC mA (Max.):** 300 for inductance 1.5-100.0, 250 for inductance 120.0-180.0, 200 for inductance 220.0-270.0, 150 for inductance 330.0-390.0, 100 for inductance 470.0.

Stock No.	Mfr.'s Type	Height (T) (mm)	Inductance (nH) 100 MHz	Q Typical 800 MHz	SRF MHz Typical	PER PK./10		
						1-9	10-49	50-Up
844-0130	LL2012-F1N5S	0.60	1.5	40	>6000	11.00	9.20	4.80
844-0132	LL2012-F1N8S	0.60	1.8	45	>6000	11.00	9.20	4:80
844-0134	LL2012-F2N2S	0.60	2.2	48	>6000	11.00	9.20	4.80
844-0136	LL2012-F2N7S	0.60	2.7	36	>6000	11.00	9.20	4.80
844-0138	LL2012-F3N3K	0.60	3.3	56	>6000	11.00	9.20	4.80
844-0140	LL2012-F3N9K	0.60	3.9	54	5400	11.00	9.20	4.80
844-0142	LL2012-F4N7K	0.60	4.7	50	4500	11.00	9.20	4.80
844-0144	LL2012-F5N6K	0.60	5.6	53	4000	11.00	9.20	4.80
844-0146	LL2012-F6N8K	0.60	6.8	51	3650	11.00	9.20	4.80
844-0148	LL2012-F8N2K	0.60	8.2	53	3000	11.00	9.20	4.80
844-0150	LL2012-F10NK	0.85	10.0	45	2500	11.00	9.20	4.80
844-0152	LL2012-F12NK	0.85	12.0	48	2450	11.00	9.20	4.80
844-0154	LL2012-F15NK	0.85	15.0	48	2000	11.00	9.20	4.80
844-0156	LL2012-F18NK	0.85	18.0	43	1750	11.00	9.20	4.80
844-0158	LL2012-F22NK	0.85	22.0	47	1700	11.00	9.20	4.80
844-0160	LL2012-F27NK	0.85	27.0	38	1550	11.00	9.20	4.80
844-0162	LL2012-F33NK	0.85	33.0	35	1350	11.00	9.20	4.80
844-0164	LL2012-F39NK	0.85	39.0	40	1300	11.00	9.20	4.80
844-0166	LL2012-F47NK	1.00	47.0	33	1200	11.00	9.20	4.80
844-0168	LL2012-F56NK	1.00	56.0	31	1150	11.00	9.20	4.80
844-0170	LL2012-F68NK	1.00	68.0	28	1000	11.00	9.20	4.80
844-0172	LL2012-F82NK	1.00	82.0	9	850	11.00	9.20	4.80
844-0174	LL2012-FR10K	1.00	100.0	—	730	11.00	9.20	4.80
844-0176	LL2012-FR12K	1.10	120.0	—	650	11.00	9.20	4.80
844-0178	LL2012-FR15K	1.10	150.0	—	550	11.00	9.20	4.80
844-0180	LL2012-FR18K	1.10	180.0	—	500	11.00	9.20	4.80
844-0182	LL2012-FR22K	1.10	220.0	—	450	11.00	9.20	4.80
844-0184	LL2012-FR27K	1.10	270.0	—	400	11.00	9.20	4.80
844-0186	LL2012-FR33K	1.10	330.0	—	380	11.00	9.20	4.80
844-0188	LL2012-FR39K	1.10	390.0	—	330	11.00	9.20	4.80
844-0190	LL2012-FR47K	1.10	470.0	—	300	11.00	9.20	4.80

Type LL1608F

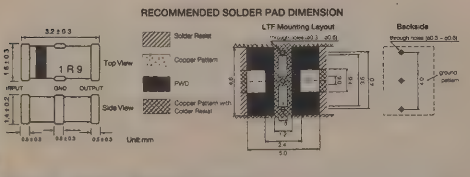


For reflow soldering. **Inductance Range:** 1.2-100 µH. **Temperature Coefficient:** +250 ppm/°C. **Temperature Range:** –40°C + 100°C. **Features:** Laminated ceramic allows high SRF. **Miniature Size:** 1.6 mm × 0.8 mm. **Q:** 30 Typical (at 800 Hz). **IDC mA (Max.):** 300. Stocked in packs.

Type	L (mm)	W (mm)	T (mm)	A (mm)
LL1608	1.6±0.15	0.8±0.15	0.8±0.15	0.3±0.2

Stock No.	Mfr.'s Type	Lo (nH)	Q Typical 800 MHz	SRF MHz Typical	PER PK./10		
					1-9	10-49	50-Up
844-0080	LL1608-F1N2S	1.2	40	>6000	10.50	9.10	4.70
844-0082	LL1608-F1N5S	1.5	38	>6000	10.50	9.10	4.70
844-0084	LL1608-F1N8S	1.8	36	>6000	10.50	9.10	4.70
844-0086	LL1608-F2N2S	2.2	34	>6000	10.50	9.10	4.70
844-0088	LL1608-F2N7S	2.7	32	>6000	10.50	9.10	4.70
844-0090	LL1608-F3N3K	3.3	30	5700	10.50	9.10	4.70
844-0092	LL1608-F3N9K	3.9	32	5600	10.50	9.10	4.70
844-0094	LL1608-F4N7K	4.7	32	4800	10.50	9.10	4.70
844-0096	LL1608-F5N6K	5.6	32	4350	10.50	9.10	4.70
844-0098	LL1608-F6N8K	6.8	32	3750	10.50	9.10	4.70
844-0100	LL1608-F8N2K	8.2	28	3300	10.50	9.10	4.70
844-0102	LL1608-F10NK	10.0	31	2850	10.50	9.10	4.70
844-0104	LL1608-F12NK	12.0	30	2700	10.50	9.10	4.70
844-0106	LL1608-F15NK	15.0	26	2400	10.50	9.10	4.70
844-0108	LL1608-F18NK	18.0	25	2050	10.50	9.10	4.70
844-0110	LL1608-F22NK	22.0	30	1850	10.50	9.10	4.70
844-0112	LL1608-F27NK	27.0	26	1750	10.50	9.10	4.70
844-0114	LL1608-F33NK	33.0	24	500	10.50	9.10	4.70
844-0116	LL1608-F39NK	39.0	20	1350	10.50	9.10	4.70
844-0118	LL1608-F47NK	47.0	18	1200	10.50	9.10	4.70
844-0120	LL1608-F56NK	56.0	14	1100	10.50	9.10	4.70
844-0122	LL1608-F68NK	68.0	18	1000	10.50	9.10	4.70
844-0124	LL1608-F82NK	82.0	18	900	10.50	9.10	4.70
844-0126	LL1608-FR10K	100.0	3	830	10.50	9.10	4.70

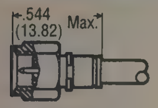
Chip Low Pass Filter



Type LTF. Features Miniature Footprint: 3.2 × 1.6 mm (1206). Low profile (1.4 mm). **Carrier Frequency Range:** 800 MHz-2.6 GHz. Suitable for flow and reflow soldering. **Operating Temperature Range:** –25°C to +80°C. **Storage Temperature Range:** –40°C to +85°C.

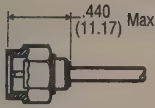
Stock No.	Mfr.'s Type	Nominal Fo MHz	Insertion Loss (Max.)	Bandwidth VSWR (Max.)	Attenuation (Min.)	Attenuation (Min.)	Power Capacity	Impedance	EACH		
									1-9	10-49	50-Up
844-0192	LTF3216L-FR80G	836.5	0.6 dB	1.5	30 dB	18 dB	2 W	50	4.50	4.25	3.00
844-0194	LTF3216L-FR90G	902.5	0.6 dB	1.5	30 dB	18 dB	2 W	50	4.50	4.25	3.00
844-0196	LTF3216L-FR80B	904.0	0.6 dB	1.5	30 dB	18 dB	2 W	50	4.50	4.25	3.00
844-0198	LTF3216L-FR90C	968.0	0.6 dB	1.5	30 dB	18 dB	2 W	50	4.50	4.25	3.00
844-0200	LTF3216L-FR90A	915.0	0.6 dB	1.5	30 dB	18 dB	2 W	50	4.50	4.25	3.00
844-0202	LTF3216L-F1R3G	1311.0	0.6 dB	1.5	30 dB	18 dB	2 W	50	4.50	4.25	3.00
844-0204	LTF3216L-F1R4G	1441.0	0.6 dB	1.5	30 dB	18 dB	2 W	50	4.50	4.25	3.00
844-0206	LTF3216L-F1R4A	1489.0	0.6 dB	1.5	30 dB	18 dB	2 W	50	4.50	4.25	3.00
844-0208	LTF3216L-F1R6G	1660.0	0.6 dB	1.5	30 dB	18 dB	2 W	50	4.50	4.25	3.00
844-0210	LTF3216L-F1R7G	1747.5	0.6 dB	1.5	30 dB	18 dB	2 W	50	4.50	4.25	3.00
844-0212	LTF3216L-F1R8G	1880.0	0.6 dB	1.5	30 dB	18 dB	2 W	50	4.50	4.25	3.00
844-0214	LTF3216L-F1R9A	1890.0	0.6 dB	1.5	30 dB	18 dB	2 W	50	4.50	4.25	3.00
844-0216	LTF3216L-F1R9G	1907.5	0.6 dB	1.5	30 dB	18 dB	2 W	50	4.50	4.25	3.00
844-0218	LTF3216L-F2R4G	2450.0	0.6 dB	1.5	30 dB	18 dB	2 W	50	4.50	4.25	3.00

SMA Subminiature Connectors, 50 Ohm



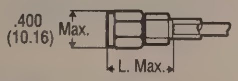
Plug with Center Contact

Fig. A



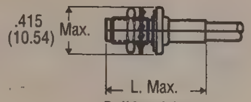
Short Plug with Center Contact

Fig. B



Plug

Fig. C



Bulkhead Jack

Fig. D

For Semi-Rigid Cable

Frequency Range: 0-18 GHz. **Center Contacts:** Gold-plated beryllium copper. **Shells:** Passivated stainless steel. **Dielectric:** Teflon.

For RG405/U, Semi-Rigid Cable, .086" (2.18) O.D.

Stock No.	Mfr.'s Type	Fig.	Description	EACH		
				1-24	25-99	100-499
512-2385	228639-1	A	Plug with center contact	5.62	5.22	4.87
512-2386	221447-1	B	Short plug with center contact	5.95	5.53	5.16

For RG402/U, Semi-Rigid Cable .141" (3.54) O.D.

Stock No.	Mfr.'s Type	Fig.	Description	EACH		
				1-24	25-99	100-499
512-2388	227743-1	A	Plug with center contact	6.63	6.15	5.74
512-2390	227531-1	A	Plug without center contact	2.01	1.86	1.72

For Flexible Cables

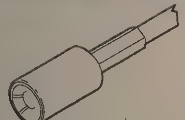
Frequency Range: 0-12.4 GHz. **Center Contact:** Gold-plated brass or beryllium copper. **Shell:** Commercial nickel-plated brass, Mil — passivated stainless steel. **CERTI-CRIMP™ Hand Tool:** 220061-1.

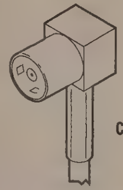
Stock No.	Mfr.'s Type	Fig.	Description	RG/U Cables	EACH		
					1-24	25-49	50-99
512-2392	221117-2	C	Commercial plug	174, 188A, 316	6.66	6.18	5.77
512-2393	225532-1	C	Mil plug	58, 58A, 58B, 58C	9.12	8.47	7.91
512-2394	225532-3	C	Mil plug	142, 142A, 142B	11.68	9.92	7.95
512-2395	225532-4	C	Mil plug	174, 188A, 316	11.68	9.92	7.95
512-2397	225608-4	D	Bulkhead jack	174, 188A, 316	21.05	19.54	17.32

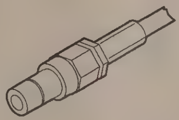
SMA Tooling

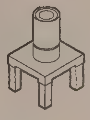
Stock No.	Mfr.'s Type	For Cable Type	Description	EACH
512-5996	59981-1	Semi-Rigid	Hand tool kit	1766.28
512-3131	313113-1	Semi-Rigid	Die set	284.70
512-2213	220221-3	Semi-Rigid	Locator	138.04
512-2418	220061-1	Flexible	Hand Tool	471.27

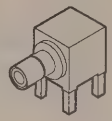
50 and 75 Ohm SMB Connectors

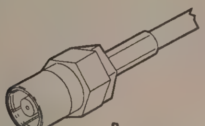

A

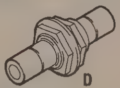

C

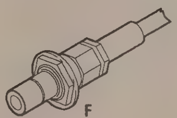

E

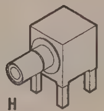

G

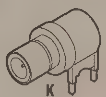

J


B


D


F


H


K

SMB Product Facts

- SMB Offers Snap-Fit Coupling for Quick Connect/Disconnect
- Choice of Commercial or MIL-Type Connectors
- 50 and 75 Ohm MIL-Type Connectors Available
- Screw Machined Components for Highest Performance
- Straight Plugs and Jacks are Completely Crimp Terminated
- Fast Easy Cable Assembly
- Low VSWR
- Standard Military, Commercial or AMP Tooling
- MIL-Type Connectors Offer Consistent Mating and Unmating Forces
- Dielectric: Teflon

50 Ohm Straight Plugs

Stock No.	Mfr.'s Type	Fig.	For RG/U Cable	Contact Plating	Other Metal Plating	Style	EACH		
							1-24	25-49	50-99
512-2502	413985-5	A	178, 178A, 178B 196, 196A	Gold	Gold	Mil-Type	5.76	5.02	4.38
512-2504	413985-6	A	178, 178A, 178B 196, 196A	Gold	Nickel	Mil-Type	4.61	4.01	3.50
512-2508	413985-1	A	174, 316, 188 188A	Gold	Gold	Mil-Type	5.48	4.78	4.17
512-2510	413985-3	A	174, 361, 188 188A	Gold	Nickel	Mil-Type	4.39	3.82	3.33
512-2514	1-413985-0	A	179, 179A, 179B 161, 187, 187A Belden 9221	Gold	Gold	Mil-Type	5.48	4.78	4.17
512-2516	1-413985-1	A	179, 179A, 179B 161, 187, 187A Belden 9221	Gold	Nickel	Mil-Type	4.39	3.82	3.33

75 Ohm Straight Plugs

512-2521	414618-2	B	179, 179A, 179B 161, 187, 187A Belden 9221	Gold*	Nickel	Zinc Die Cast	8.07	7.03	6.13

50 Ohm Right-Angle Plugs

512-2507	414363-8	C	178, 178A, 178B 196, 196A	Gold	Nickel	Zinc Die Cast	3.92	3.41	2.98
512-2509	414363-9	C	178, 178A, 178B 196, 196A	Gold*	Nickel	Zinc Die Cast	3.80	3.31	2.89
512-2526	414002-7	C	178, 178A, 178B 196, 196A	Gold	Gold	Mil-Type	7.31	6.37	5.56
512-2511	414363-3	C	174, 316, 188 188A	Gold*	Nickel	Zinc Die Cast	3.73	3.25	2.64
512-2532	414002-1	C	174, 316, 188 188A	Gold	Gold	Mil-Type	6.96	6.07	5.29
512-2534	414002-3	C	174, 316, 188 188A	Gold	Nickel	Mil-Type	5.57	4.85	4.23
512-2513	414363-5	C	179, 179A, 179B 161, 187, 187A, Belden 9221	Gold*	Nickel	Zinc Die Cast	3.62	3.15	2.75
512-2517	414363-4	C	RD316, 188 Double braid	Gold	Nickel	Zinc Die Cast	3.73	3.25	2.64
512-2519	414363-6	C	RD316, 188 Double braid	Gold*	Nickel	Zinc Die Cast	3.62	3.15	2.75
512-2540	414002-2	C	RD316, 188 Double braid	Gold	Gold	Mil-Type	6.96	6.07	5.29

*Center contact — gold; outer contact — nickel.

50 Ohm Bulkhead Jack Adapters

Stock No.	Mfr.'s Type	Fig.	Contact Plating	Body Plating	Style	EACH		
						1-24	25-49	50-99
512-2584	228553-1	D	Gold	Nickel	Mil-Type	5.70	5.10	4.74

50 Ohm Jacks and Bulkhead Jacks

Stock No.	Mfr.'s Type	Fig.	For RG/U Cable	Contact Plating	Body Plating	Style	EACH		
							1-24	25-49	50-99
512-2562	414091-6	E	178, 178A, 178B 196, 196A	Gold	Nickel	Mil-Type	7.77	7.12	6.01
512-2567	228217-2	F	178, 178A, 178B 196, 196A	Gold	Nickel	Mil-Type	7.46	6.50	5.67
512-2573	228217-1	F	174, 316, 188 188A	Gold	Nickel	Mil-Type	7.10	6.19	5.40

50 Ohm PC Board Jacks

Stock No.	Mfr.'s Type	Fig.	Contact Plating	Body Plating	PCB Leg Plating	Type	Style	EACH		
								1-24	25-49	50-99
512-2590	413990-2	G	Gold	Nickel	—	Vertical	Mil-Type	2.79	2.43	2.12
512-2592	413996-2	H	Gold	Gold	Gold	Rt. Angle	Mil-Type, Low Profile	7.47	6.51	5.68
512-2594	413996-4	H	Gold	Nickel	Nickel	Rt. Angle	Mil-Type, Low Profile	5.76	5.02	4.38
512-2596	414026-2	J	Gold	Gold	Gold	Rt. Angle	Mil-Type	5.40	4.71	4.11
512-2591	414026-3	J	Gold	Nickel	Nickel	Rt. Angle	Mil-Type	4.32	3.76	3.28
512-2525	414026-6	J	Gold	Nickel	Tin Lead	Rt. Angle	Mil-Type	4.16	3.63	3.16

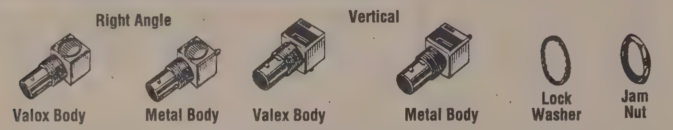
75 Ohm PC Board Jacks

Stock No.	Mfr.'s Type	Fig.	Contact Plating	Body Plating	Type	Style	EACH		
							1-24	25-49	50-99
512-2598	221014-1	K	Gold	Front-Nickel Rear-Tin Lead	Rt. Angle	Commercial	4.07	3.55	3.10

Crimp Tool and Dies

Stock No.	Mfr.'s Type	Description	EACH
512-2599	354940-1	PRO-CRIMPER™ II (Frame Only)	61.93
512-2503	58483-1	Die	45.90

BNC PC Board/Panel Mount Jacks



Right Angle (Max. Panel Thickness .240") 50 Ohm

Stock No.	Mfr.'s Type	Mtg. Hgt.	Body	Mounting Posts	Center Contact Plating	EACH 1-24	EACH 25-99	EACH 100-499
512-2171	226990-1	.625"	Wht. Valox	No	Tin	3.00	2.63	2.14
512-2172	226990-3	.625"	Wht. Valox	No	Gold	3.00	2.63	2.14
512-2173	227161-1	.625"	Wht. Valox	Yes	Tin	3.00	2.63	2.14
512-2174	227161-3	.625"	Wht. Valox	Yes	Gold	3.00	2.63	2.14
512-2176	227161-7	.519"	Wht. Valox	Yes	Tin	3.00	2.63	2.14
512-2175	226990-2	.625"	Blk. Valox	No	Tin	3.00	2.63	2.14
512-2178	226990-6	.625"	Blk. Valox	No	Gold	3.00	2.63	2.14
512-2177	227161-2	.625"	Blk. Valox	Yes	Tin	3.00	2.63	2.14
512-2180	227161-6	.625"	Blk. Valox	Yes	Gold	3.00	2.63	2.14
512-2179	227161-9	.519"	Blk. Valox	Yes	Tin	3.00	2.63	2.14
512-2181	227433-1	.625"	Metal	No	Tin	5.27	4.50	3.48
512-2182	227676-1	.625"	Metal	No	Gold	4.27	3.75	3.05
512-2183	227661-1	.625"	Metal	Yes	Tin	4.27	3.75	3.05
512-2184	227677-1	.625"	Metal	Yes	Gold	4.27	3.75	3.05

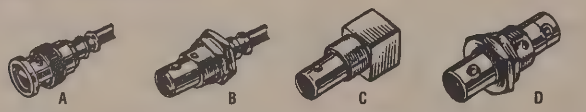
Vertical (Max. Panel Thickness .240") 50 Ohm

Stock No.	Mfr.'s Type	Mtg. Hgt.	Body	Mounting Posts	Center Contact Plating	EACH 1-24	EACH 25-99	EACH 100-499
512-2185	226993-1	1.375"	Wht. Valox	No	Tin	4.27	3.75	3.05
512-2187	226993-3	1.375"	Wht. Valox	No	Gold	4.27	3.75	3.05
512-2189	227222-1	1.375"	Wht. Valox	Yes	Tin	3.43	3.01	2.44
512-2186	227222-3	1.375"	Wht. Valox	Yes	Gold	3.43	3.01	2.44
512-2193	227222-6	1.375"	Blk. Valox	Yes	Gold	3.43	3.01	2.44
512-2195	227671-1	1.375"	Metal	Yes	Tin	4.54	3.88	3.01
512-2188	227673-1	1.375"	Metal	Yes	Gold	4.23	3.72	3.08

Hardware

Stock No.	Mfr.'s Type	Description	EACH 1-99	EACH 100-499	EACH 500-999
512-2190	1-329632-2	Lock Washer	.27	.19	.15
512-2191	1-329631-2	Jam Nut	.30	.22	.18

Twin BNC Connectors



Plugs — Fig. A

Stock No.	Mfr.'s Type	For RG/U Cable	Contact Plating	Body Plating	Dielectric	CERTI-CRIMP™ Hand Tool	EACH 1-24	EACH 25-49	EACH 50-99
512-2340	332225	108, 108A	S	S	T	69667	18.12	15.49	13.18
512-2342	332225-5	108, 108A	S	N	PP	69667	16.47	14.08	11.98

Bulkhead Jack — Fig. B

Stock No.	Mfr.'s Type	For RG/U Cable	Contact Plating	Body Plating	Dielectric	CERTI-CRIMP™ Hand Tool	EACH 1-24	EACH 25-49	EACH 50-99
512-2154	332342	108, 108A	S	N	PP	69667	24.39	20.84	17.74

Right-Angle PC Board/Panel Mount Jacks — Fig. C

Stock No.	Mfr.'s Type	Body Material	Mounting Posts	EACH 1-24	EACH 25-49	EACH 50-99
512-2344	228686-1	Wht. Valox	Yes	11.58	9.89	8.42

Bulkhead Jack Adapter — Fig. D

Stock No.	Mfr.'s Type	Contact Plating	Body Plating	EACH 1-24	EACH 25-49	EACH 50-99
512-2346	332215	S	N	15.62	13.35	11.36

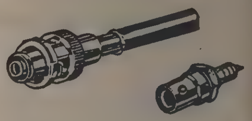
50 Ohm N Connectors

MIL-C-39012, Class 11, Category B qualified. Working voltage 1000 volt, RMS at sea level. **Frequency Range:** 0-11 GHz. **Crimp Type:** D.

Crimp Plugs

Stock No.	Mfr.'s Type	For RG/U Cable	Contact Plating	Body Plating	Dielectric	Style	CERTI-CRIMP™ Hand Tool	EACH 1-24	EACH 25-49	EACH 50-99
512-2236	1-225661-2	58, 58A, 58B, 58C	G	N	T	Mil type	220045-2	15.36	13.13	10.44
512-2238	225361-1	58, 58A, 58B, 58C	G	S	T	Mil type	220045-2	19.19	16.40	13.05
512-2241	225661-2	8, 8A, 213	G	N	T	Mil type	220015-1	11.81	10.09	8.03
512-2242	1-227086-0	8, 8A, 213	G	N	T	Commercial	220015-1	5.47	4.81	4.20
512-2248	225661-1	9, 9A, 9B, 214	G	N	T	Mil type	220015-1	11.81	10.09	8.03

SHV Connectors



Safe-tested at 5000 volts DC. Looks like, but isn't intermateable with other bayonet-type connectors. Comply with Bureau of Standard's specification ND-545. Polarized center contacts that are recessed in the dielectric. **Crimp Type:** D.

Crimp Plugs

Stock No.	Mfr.'s Type	For RG/U Cable	Contact Plating	Body Plating	Dielectric	CERTI-CRIMP™ Hand Tool	EACH 1-24	EACH 25-49	EACH 50-99
512-2254	51426-4	58, 58A, 58B, 58C	G	N	T	220022-1	19.97	17.06	14.52
512-2256	51426-2	*	G	S	T	220022-2	21.40	18.28	15.56

*59, 59A, 59B, 62, 62A, 62B, 124, 140, 210 Belden 9291, 9209, 9268.

Bulkhead Solder Jacks

Stock No.	Mfr.'s Type	Contact Plating	Body Plating	Dielectric	EACH 1-24	EACH 25-49	EACH 50-99
512-2260	51494-1	G	S	T	13.87	11.86	10.09
512-2262	51494-2	G	N	T	14.38	12.29	10.46

Miniature UHF Connectors

Rated for 335 volts rms at sea level .0 to 2.0 GHz frequency range. **Crimp Type:** D.

Crimp Plug

Stock No.	Mfr.'s Type	For RG/U Cable	Contact Plating	Body Plating	Dielectric	CERTI-CRIMP™ Hand Tool	EACH 1-24	EACH 25-99	EACH 100-499
512-2264	226600-1	58, 58A, 58B, 58C	T	N	PP	220149-1	.94	.82	.67

Crimp Jack

Stock No.	Mfr.'s Type	For RG/U Cable	Contact Plating	Body Plating	Dielectric	CERTI-CRIMP™ Hand Tool	EACH 1-24	EACH 25-99	EACH 100-499
512-2266	226602-1	58, 58A, 58B, 58C	T	N	PP	220149-1	2.62	2.29	1.86

CERTI-CRIMP™ Hand Tools

AMP's finest tools. The CERTI-CRIMP™ ratchet is designed to provide a complete crimp cycle.

512-2400. 69140-1	EACH 380.89
512-2401. 69141-1	EACH 380.89
512-2402. 69245-1	EACH 406.71
512-2407. 69477-1	EACH 238.86
512-2409. 69477-2	EACH 256.94
512-2031. 69477-4	EACH 382.18
512-2406. 69478-1	EACH 238.86
512-2133. 69667	EACH 573.27
512-2408. 220009-1	EACH 264.68
512-2415. 220009-5	EACH 272.43
512-2414. 220015-1	EACH 644.28
512-2129. 220022-1	EACH 380.89
512-2131. 220022-2	EACH 314.39
512-2410. 220043-1	EACH 328.59
512-2126. 220045-2	EACH 361.52
512-2418. 220061-1	EACH 471.27
512-2404. 220149-1	EACH 870.23
512-2416. 220187-1	EACH 229.84
512-2417. 220187-2	EACH 256.94

Commercial Crimping Tools

SUPER CHAMP® Crimp Tool

Stock No.	Mfr.'s Type	Description	EACH 1-4	EACH 5-9
512-2387	220146-1	RG58 SUPER CHAMP®	22.50	17.65
512-2389	220147-1	RG59/62 SUPER CHAMP®	22.50	17.65

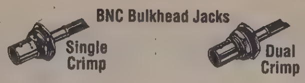
PRO-CRIMPER™II Hand Tools

Inexpensive and features interchangeable dies. Ratchet control for complete crimping cycle. Precision construction of durable high-carbon steel.

Type 58433-1. For "O" crimp plugs and jacks on RG58, 59, and 62 cables.
512-2380. 58433-1 .... **EACH 69.94**

Type 58433-2. For hex crimp plugs and jacks on RG-58, 59, and 62 cables.
512-2381. 58433-2 .... **EACH 69.94**

Coaxial Connectors



BNC Crimp Jacks (50 or 75 Ohms)

Standard single (S), dual (D), and hex (H) crimp termination jacks. Contact plating is gold (G). Body plating is nickel (N) or silver (S). The dielectric is polypropylene (PP), polymethylpenlene (PM), or teflon® (T). **Crimp Tools for connectors are on page 1038.**

Stock No.	Mfr.'s Type	Crimp Type	Ohms	For RG/U Cable	Contact Plating	Body Plating	Dielectric	Style	CERTI-CRIMP™ Hand Tool	Interchangeable Dies for PROCRIMPER™ II Hand Tool	EACH		
											1-24	25-99	100-499
512-2114	225396-7	D	50	174, 188, 188A, 316	G	N	T	Mil type	220009-1	—	**5.78**	**4.94**	**3.82**
512-2112	2-330062-1	S	50	174, 188, 188A, 316	G	N	T	Mil type	220009-1	—	**14.63**	**12.50**	**10.45**
512-2106	2-331351-4	D	50	174, 188, 188A, 316	G	S	T	Mil type	220009-1	—	**6.05**	**5.17**	**4.14**
512-2082	413779-3	H	50	174, 188, 188A, 316	G	N	PM	Com.	—	58436-3	**4.07**	**3.48**	**2.77**
512-2116	225396-8	D	50	179, 179A, 179B, 161, 187, 187A, Belden 9221	G	N	T	Mil type	220009-1	—	**5.78**	**4.94**	**3.95**
512-2083	413779-4	H	50	179, 179A, 179B, 161, 187, 187A, Belden 9221	G	N	PM	Com.	—	58436-3	**4.07**	**3.48**	**2.78**
512-2097	413760-8	H	75	179, 179A, 179B, 161, 187, 187A, Belden 9221	G	N	PM	Com.	—	58425-2	**5.67**	**4.84**	**3.88**
512-2018	225396-1	D	50	58, 58A, 58B, 58C	G	N	T	Mil type	69478-1	220189-3	**4.62**	**4.06**	**3.29**
512-2111	2-329545-1	S	50	58, 58A, 58B, 58C	G	N	T	Mil type	69140-1	—	**12.98**	**11.09**	**9.26**
512-2102	2-331351-1	D	50	58, 58A, 58B, 58C	G	S	T	Mil type†	69478-1	220189-3	**7.15**	**6.11**	**4.89**
512-2079	413779-1	H	50	58, 58A, 58B, 58C	G	N	PM	Com.	—	58436-1[2]	**3.71**	**3.17**	**2.55**
512-2019	225396-2	D	50	**	G	N	T	Mil type‡	69477-1	220189-4	**4.62**	**4.06**	**3.29**
512-2110	228979-6	D	50	**	G	N	PP	Com.	220187-2	58435-1[1]	**3.41**	**2.91**	**2.34**
512-2192	221199-2	D	75	**	G	N	PP	Com.	—	58085-1	**4.79**	**4.09**	**3.28**
512-2081	413779-2	H	50	**	G	N	PM	Com.	—	58436-1[2]	**3.71**	**3.17**	**2.55**
512-2095	413760-2	H	75	**	G	N	PM	Com.	—	58425-1	**5.17**	**4.42**	**3.54**
512-2084	413779-6	H	50	Belden 9907, 89907, RG-141	G	N	PM	Com.	—	58436-1[2]	**4.07**	**3.48**	**2.78**
512-2099	413760-1	H	75	Belden 88241	G	N	PM	Com.	—	58425-1	**5.17**	**4.42**	**3.54**
512-2104	413760-3	H	75	Belden 8218	G	N	PM	Com.	—	58425-1	**5.67**	**4.84**	**3.88**
512-2105	413760-4	H	75	AT&T KS19224 L2	G	N	PM	Com.	—	58425-2	**6.13**	**5.24**	**4.21**
512-2107	413760-5	H	75	Belden 8281, 9231, AT&T 728	G	N	PM	Com.	—	58425-3	**5.17**	**4.42**	**3.54**
512-2108	413760-6	H	75	RG-59 Double Braid	G	N	PM	Com.	—	58425-3	**5.17**	**4.42**	**3.54**
512-2109	413760-7	H	75	AT&T 734A	G	N	PM	Com.	—	58425-1	**5.17**	**4.42**	**3.54**
512-2113	413760-9	H	75	***	G	N	PM	Com.	—	58425-1	**5.17**	**4.42**	**3.54**

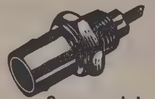
BNC Bulkhead Jacks (50 or 75 Ohms)

512-2142	225398-7	D	50	174, 188, 188A, 316	G	N	T	Mil type	220009-1	—	**4.68**	**4.12**	**3.46**
512-2148	228980-7	D	50	174, 188, 188A, 316	G	N	PP	Com.	220009-5	—	**4.51**	**3.85**	**3.08**
512-2040	2-330061-1	S	50	174, 188, 188A, 316	G	N	PP	Com.	69245-1	—	**11.11**	**9.49**	**7.93**
512-2062	2-330063-1	S	50	174, 188, 188A, 316	G	N	T	Mil type	69245-1	—	**14.00**	**11.96**	**10.18**
512-2134	1-331693-2	D	50	174, 188, 188A, 316	G	S	T	Mil type	220009-1	—	**7.87**	**6.72**	**5.39**
512-2087	413771-3	H	50	174, 188, 188A, 316	G	N	PM	Com.	—	58436-3	**4.87**	**4.16**	**3.34**
512-2144	225398-8	D	50	179, 179A, 179B, 161, 187, 187A, Belden 9221	G	N	T	Mil type	220009-1	—	**4.68**	**4.12**	**3.46**
512-2064	2-329092-1	S	50	179, 179A, 179B, 161, 187, 187A, Belden 9221	G	N	PP	Com.	69245-1	—	**16.28**	**13.91**	**11.48**
512-2194	221221-5	D	75	179, 179A, 179B, 161, 187, 187A, Belden 9221	G	N	PP	Com.	—	58304-1	**6.33**	**5.41**	**4.33**
512-2089	413771-4	H	50	179, 179A, 179B, 161, 187, 187A, Belden 9221	G	N	PM	Com.	—	58436-3	**4.87**	**4.16**	**3.34**
512-2117	413590-8	H	75	179, 179A, 179B, 161, 187, 187A, Belden 9221	G	N	PM	Com.	—	58425-2	**6.82**	**5.83**	**4.67**
512-2021	225398-1	D	50	58, 58A, 58B, 58C	G	N	T	Mil type	69478-1	220189-3	**4.68**	**4.12**	**3.46**
512-2070	228980-5	D	50	58, 58A, 58B, 58C	G	N	PP	Com.	220187-1	58435-1[1]	**4.51**	**3.85**	**3.08**
512-2132	1-331693-1	D	50	58, 58A, 58B, 58C	G	S	T	Mil type†	69478-1	220189-3	**8.20**	**7.00**	**5.61**
512-2085	413771-1	H	50	58, 58A, 58B, 58C	G	N	PM	Com.	—	58436-1[2]	**4.43**	**3.78**	**3.04**
512-2020	225398-2	D	50	**	G	N	T	Mil type	69477-1	220189-4	**4.68**	**4.12**	**3.28**
512-2146	228980-6	D	50	**	G	N	PP	Com.	220187-2	58435-1[1]	**4.10**	**3.50**	**2.81**
512-2324	331693	D	50	**	G	S	T	Mil type‡	69477-1	220189-4	**8.20**	**7.00**	**5.61**
512-2196	221221-2	D	75	**	G	N	PP	Com.	—	58085-1	**5.75**	**4.91**	**3.94**
512-2086	413771-2	H	50	**	G	N	PM	Com.	—	58436-1[2]	**4.43**	**3.78**	**3.04**
512-2115	413590-2	H	75	**	G	N	PM	Com.	—	58425-1	**6.22**	**5.31**	**4.25**
512-2091	413771-5	H	50	RG-180, 195	G	N	PM	Com.	—	58436-3	**4.87**	**4.16**	**3.34**
512-2094	413771-6	H	50	Belden 9907, 89907, RG-141	G	N	PM	Com.	—	58436-1[2]	**4.87**	**4.16**	**3.34**
512-2118	413590-3	H	75	Belden 8218	G	N	PM	Com.	—	58425-1	**6.82**	**5.83**	**4.67**
512-2119	413590-4	H	75	AT&T KS19224 L2	G	N	PM	Com.	—	58425-2	**7.40**	**6.32**	**5.06**
512-2120	413590-6	H	75	RG-59 Double Braid	G	N	PM	Com.	—	58425-3	**6.22**	**5.31**	**4.25**
512-2121	413590-7	H	75	AT&T 734A	G	N	PM	Com.	—	58425-1	**6.22**	**5.31**	**4.25**
512-2125	413590-9	H	75	***	G	N	PM	Com.	—	58425-1	**6.22**	**5.31**	**4.25**

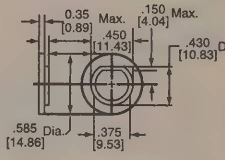
[1] Included in PRO-CRIMPER™II assembly 58433-1. [2] Included in PRO-CRIMPER™II assembly 58433-2. †Weatherproof - M39012/16B0004. ‡M39012/16B0008. **59, 59A, 59B, 62, 62A, 62B, 124, 140, 210, Belden 9291, 9209, 9268. ***Belden 8212, 9104, 9112, 9240, 9167, 9259, 9266, Times FM-59, (RG59 type with 20 AWG C.C.).

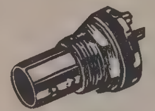
Bulkhead Solder Jacks

Isolated



Commercial





Sealed

Panel Bushing

Contact plating is gold (G), silver (S) or tin (T). Body plating is nickel (N) or silver (S). The dielectric is polypropylene (PP), polymethylpenlene (PM), or teflon® (T).

Stock No.	Mfr.'s Type	Body Plating	Contact Plating	Dielectric	Style	EACH	
						1-24	25-99
512-2127	227715-3	N	G	T	Com.	**2.64**	**2.25**
512-2090	227726-1	N	T	Valox	Isolated	**2.71**	**2.38**
512-2128	227726-2	N	S	Valox	Isolated	**2.71**	**2.38**
512-2092	227726-3	N	G	Valox	Isolated	**2.71**	**2.38**
512-2093	227426-1	N	G	PP	Sealed	**7.26**	**6.21**

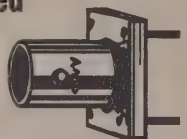
512-2124. 227223-1. Insulating panel bushing for 227715-3. **1-24**.....**EACH .19**
25-99 ....**EACH .17**

BNC Vertical PC Board Mount Jacks Press Fit Terminal

Contact plating is gold (G), silver (S) or tin (T). Body plating is nickel (N) or silver (S). The dielectric is polypropylene (PP), polymethylpenlene (PM), or teflon® (T).

Stock No.	Mfr.'s Type	Imp.	Contact Plating	Body Plating	Dielectric	Style	EACH	
							1-24	25-99
512-2197	222006-1	50 Ω	G	N	T	Com.	**5.54**	**4.74**
512-2198	222462-1	75 Ω	G	N	T	Com.	**6.95**	**5.94**

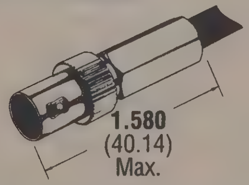
Vertical Metallized PC Board Mount Jacks



Contact plating is gold (G), silver (S) or tin (T). Body plating is nickel (N) or silver (S). The dielectric is polypropylene (PP), polymethylpenlene (PM), or teflon® (T).

Stock No.	Mfr.'s Type	Imp.	Contact Plating	Body Plating	Dielectric	Style	EACH	
							1-24	25-99
512-2130	227699-1	50 Ω	S	N	Valox	Com.	**4.85**	**4.15**
512-2200	227699-2	50 Ω	G	N	Valox	Com.	**3.93**	**3.45**
512-2136	227699-3	50 Ω	T	N	Valox	Com.	**3.93**	**3.45**
512-2139	221336-3	75 Ω	G	N	T	Com.	**11.21**	**9.58**

BNC Twist-On-Jacks



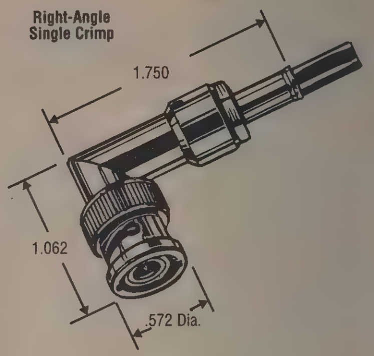
Twist-on Jacks (must be used with solid conductor cable). Dielectric Acetal (A). Contact plating is gold (G), silver (S) or tin (T). Body plating is nickel (N) or silver (S). The dielectric is polypropylene (PP), polymethylpenlene (PM), or teflon® (T).

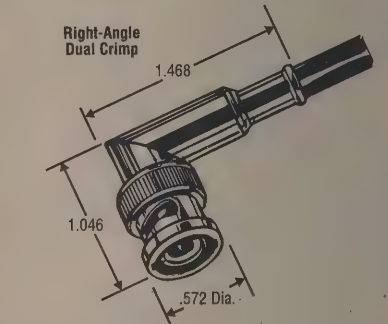
Stock No.	Mfr.'s Type	For RG/U Cable	Contact Plating	Body Plating	Dielectric	Style	EACH	
							1-24	25-99
512-2122	222428-7	*	G	N	A	Com.	**3.58**	**3.06**
512-2123	222428-1	†	G	N	A	Com.	**3.58**	**3.05**

*58, 58A, 58B, 58C, 62, 62A, 62B. †59, 59A, 59B.

Coaxial Connectors

AMP® BNC RF connectors have bayonet-lock coupling. AMP's exclusive single and dual crimp terminations insure positive insulation grip and require absolutely no soldering. They provide termination at the lowest overall applied cost. **Rating:** 500 volts (RMS). **Frequency:** 0-2.5 GHz for single crimp; 0-2 GHz for 75 ohm; 0-4 GHz for all others. **Style:** Mil type or commercial (Com.). **Crimping tools for the connectors can be located on page 1038.**





BNC Right Angle Plugs (50 or 75 Ohms)

Standard single (S), dual (D), and hex (H) crimp termination plugs. Contact plating is gold (G). Body plating is nickel (N). The dielectric is polymethylpenlene (PM) or teflon® (T).

Stock No.	Mfr.'s Type	Crimp Type	Ohms	For RG/U Cable	Contact Plating	Body Plating	Dielectric	Style	CERTI-CRIMP™ Hand Tool	Interchangeable Dies for PROCRIMPER™ II Hand Tool	EACH 1-24	EACH 25-49	EACH 50-99
512-2278	331178	S	50	174, 188, 188A, 316	G	N	T	Mil type	69245-1	—	**26.02**	**22.23**	**18.92**
512-2056	413959-3	H	50	174, 188, 188A, 316	G	N	PM	Com.	—	58436-3	**12.68**	**10.83**	**9.22**
512-2282	225974-1	D	50	58, 58A, 58B, 58C	G	N	T	Mil type	69478-1	220189-3	**22.50**	**19.22**	**16.36**
512-2057	413959-1	H	50	58, 58A, 58B, 58C	G	N	PM	Com.	—	58436-1¹	**12.10**	**10.34**	**8.80**
512-2288	225974-5	D	50	*	G	N	T	Mil type	69477-1	220189-4	**22.50**	**19.22**	**16.36**
512-2059	413959-2	H	50	*	G	N	PM	Com.	—	58436-1¹	**12.10**	**10.34**	**8.80**
512-2061	413588-2	H	75	*	G	N	PM	Com.	—	58425-1	**16.94**	**14.48**	**12.32**
512-2063	413959-4	H	50	179, 179A, 179B, 161, 187, 187A, Belden 9221	G	N	PM	Com.	—	58436-3	**12.68**	**10.83**	**9.22**
512-2065	413959-5	H	50	180, 180A, 180B, 195, 195A	G	N	PM	Com.	—	58436-3	**12.68**	**10.83**	**9.22**
512-2067	413959-6	H	50	Belden 9907, 89907	G	N	PM	Com.	—	58436-1¹	**12.68**	**10.83**	**9.22**
512-2068	413588-3	H	75	Belden 8218	G	N	PM	Com.	—	58425-1	**18.59**	**15.89**	**13.52**
512-2069	413588-5	H	75	Belden 8281, 9231, AT&T 728	G	N	PM	Com.	—	58425-3	**16.94**	**14.48**	**12.32**
512-2072	413588-6	H	75	RG-59 Double Braid	G	N	PM	Com.	—	58425-3	**16.94**	**14.48**	**12.32**
512-2073	413588-7	H	75	Belden 9145, AT&T 734A	G	N	PM	Com.	—	58425-1	**16.94**	**14.48**	**12.32**
512-2075	413588-9	H	75	†	G	N	PM	Com.	—	58425-1	**16.94**	**14.48**	**12.32**

*59, 59A, 59B, 62, 62A, 62B, 124, 140, 210, Belden 9291, 9209, 9268. †Belden 8212, 9104, 9112, 9240, 9167, 9259, 9266, Times FM-59, (RG59 type with 20 AWG C.C.). ¹Included in PRO-CRIMPER II assembly 58433-2.

— NEW —

Consumer Series BNC Plugs

► **Plating — Contact - Gold; Body - Nickel; Dielectric — Thermoplastic**

New low-cost alternative to AMP's full line of commercial and military-style BNC connectors. The sleek, lightweight plastic collars come in black, red, green, blue and computer grey for easy circuit identification without any additional assembly. Fully intermateable with standard BNC jacks.

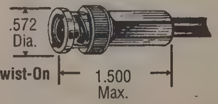
50 Ohm BNC Plugs

Stock No.	Mfr.'s Type	Cable/ RG Size	Crimp Type	Color	EACH 1-24	EACH 25-99	EACH 100-499
512-9501	2-414650-4	174, 174A, 316, 188, 188A, 179, 179A, 179B, 161, 187	Dual	Black	**1.11**	**1.02**	**.95**
512-9502	3-414650-0		Dual	Red	**1.11**	**1.02**	**.95**
512-9503	3-414650-3		Dual	Green	**1.11**	**1.02**	**.95**
512-9504	2-414650-7		Dual	Blue	**1.11**	**1.02**	**.95**
512-9505	3-414650-6		Dual	Gray	**1.11**	**1.02**	**.95**
512-9506	414852-6		Dual	Zinc Die Cast	**1.11**	**1.02**	**.95**
512-9507	2-414650-2	58, 58A, 58B, 58C, Belden 9907	Dual	Black	**1.11**	**1.02**	**.95**
512-9508	2-414650-8		Dual	Red	**1.11**	**1.02**	**.95**
512-9509	3-414650-1		Dual	Green	**1.11**	**1.02**	**.95**
512-9511	2-414650-5		Dual	Blue	**1.11**	**1.02**	**.95**
512-9512	3-414650-4		Dual	Gray	**1.11**	**1.02**	**.95**
512-9513	414852-4		Dual	Zinc Die Cast	**1.11**	**1.02**	**.95**
512-9514	2-414650-3	124, 140, 210, 62, 62A, 62B, 59, 59A, 59B, Belden 9291, 9209, 9269	Dual	Black	**1.11**	**1.02**	**.95**
512-9515	2-414650-9		Dual	Red	**1.11**	**1.02**	**.95**
512-9516	3-414650-2		Dual	Green	**1.11**	**1.02**	**.95**
512-9517	2-414650-6		Dual	Blue	**1.11**	**1.02**	**.95**
512-9518	3-414650-5		Dual	Gray	**1.11**	**1.02**	**.95**
512-9519	414852-5		Dual	Zinc Die Cast	**1.11**	**1.02**	**.95**

PRO-CRIMPER™ II Hand Tools

Item	Price
512-9521. 58559-1. Hand Tool with Die Set. For Cable/RG Sizes 174, 316, 188, 179, 161, 187	**EACH 172.04**
512-9522. 58559-2. Die Set Only. For Cable/RG Sizes 174, 316, 188, 179, 161, 187	**EACH 90.34**
512-9523. 58558-1. Hand Tool with Die Set. For Cable/RG Sizes 58, 62, 59	**EACH 125.12**
512-9524. 58558-2. Die Set Only. For Cable/RG Sizes 58,62,59	**EACH 90.34**

BNC 50 Ohm, Twist-On-Plugs



Contact plating is gold (G). Body plating is nickel (N). The dielectric is polymethylpenlene (PM).

Stock No.	Mfr.'s Type	For RG/U Cable	Contact Plating	Body Plating	Dielectric	Style	EACH 1-24	EACH 25-99	EACH 100-499
512-2322	414265-7	58, 58A, 58B, 58C	G	N	PM	Com.	**2.21**	**1.94**	**1.57**
512-2103	414265-3	59, 59A, 59B, 62, 62A, 62B	G	N	PM	Com.	**2.53**	**2.16**	**1.67**

PRO CRIMPER™ II BNC Premise Wiring Kit

Includes: Hand tool, 5 plugs for RG58, 10 plugs for RG59/62, 5 pugs for RG58 plenum, 5 plugs for RG59/62 plenum, 2 jack to jack adapters, and 2 "T" adapters.

Item	Price
512-8477. 58477-1	**EACH 114.00**

Fig. A

Fig.C

Fig.E

Fig. B

Fig. D

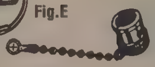


Fig. F

BNC Adapters

Contact plating is gold (G) or silver (S). Body plating is nickel (N) or silver (S). The dielectric is polypropylene (PP), polymethylpenlene (PM) or teflon® (T).

Tee Adapters — Jack-Plug-Jack (Fig. A)

221543-2 comparable to UG274A/U. 329518 comparable to UG274B/U.

Stock No.	Mfr.'s Type	Body Plating	Contact Plating	Dielectric	EACH 1-24	EACH 25-49	EACH 50-99
512-2202	221543-2	Brass, N	G	T	**13.05**	**11.47**	**9.99**
512-2156	329518	Brass, S	S	T	**16.45**	**14.61**	**12.93**
512-2155	413592-2	Zinc, N	G	Acetal	**4.79**	**4.25**	**3.74**
512-2157	413592-4	Zinc, N	S	Acetal	**4.18**	**3.72**	**3.27**

BNC Right-Angle Adapters — Jack-Plug (Fig. B)

Both are comparable to UG306B/U.

512-2160	329517	N	S	T	**16.14**	**13.79**	**11.74**
512-2161	222165-2	N	G	T	**16.14**	**13.79**	**11.74**

BNC Feed-Thru Adapters — Jack-Jack (Fig. C)

Both are comparable to UG914B/U.

512-2165	221551-1	N	S	T	**7.32**	**6.25**	**5.32**
512-2210	221551-3	N	G	T	**6.71**	**5.73**	**4.88**

BNC Bulkhead Adapters — Jack-Jack (Fig. D)

228226 is comparable to UG492/D.

Stock No.	Mfr.'s Type	Impedance	Body Plating	Contact Plating	Dielectric	EACH 1-24	EACH 25-49	EACH 50-99
512-2162	330024	50 Ohm	S	S	PP	**15.76**	**13.47**	**11.46**
512-2164	228226-1	50 Ohm	N	G	PP	**6.07**	**5.33**	**4.65**
512-2167	222117-1	75 Ohm	N	G	Polymethylpenlene	**9.35**	**7.99**	**6.80**

BNC Commercial Terminator Plugs (Fig. E)

Stock No.	Mfr.'s Type	Resistor Spec.	Body Plating	Contact Plating	Note	EACH 1-24	EACH 25-99	EACH 100-499
512-2166	221629-1	1 Watt, 50 Ohm	N	G	With Tether	**6.24**	**5.49**	**4.45**
512-2206	221629-4	1 Watt, 50 Ohm	N	G	Without Tether	**5.13**	**4.51**	**3.66**
512-2208	221629-5	1 Watt, 75 Ohm	N	G	Without Tether	**8.86**	**7.57**	**6.06**
512-2168	221629-6	1 Watt, 93 Ohm	N	G	Without Tether	**6.74**	**5.76**	**4.62**

BNC Jack Cover — Cap (Fig. F)

Stock No.	Mfr.'s Type	Body Plating	Comparable To	EACH 1-24	EACH 25-99	EACH 100-499
512-2170	330022	S	CW123-A	**6.55**	**5.59**	**4.48**

Coaxial Connectors

AMP® BNC RF connectors have bayonet-lock coupling. AMP's exclusive single and dual crimp terminations insure positive insulation grip and require absolutely no soldering. They provide termination at the lowest overall applied cost. **Rating:** 500 volts (RMS). **Frequency:** 0-2.5 GHz for single crimp; 0-2 GHz for 75 ohm; 0-4 GHz for all others. **Style:** Mil Type or Commercial (Com.). **Crimping tools for the connectors are listed on page 1038.**

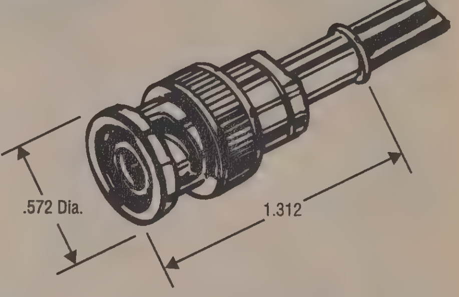
BNC 50 or 75 Ohm, Straight Crimp Plugs

Standard single (S), dual (D), and hex (H) crimp termination plugs. Contact plating is gold (G), silver (S), or tin (T). Body plating is nickel (N) or silver (S). The dielectric is polyethylene (PE), polymethylpenlene (PM), polypropylene (PP) or teflon® (T).

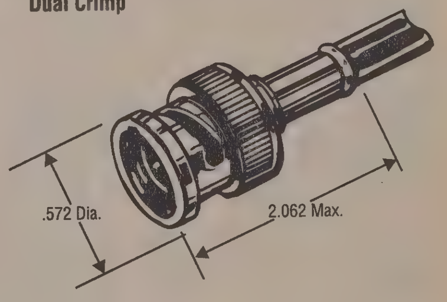
Stock No.	Mfr.'s Type	Crimp Type	Ohms	For RG/U Cable	Contact Plating	Body Plating	Dielectric	Style	CERTI-CRIMP™ Hand Tool	Interchangeable Dies for PROCRIMPER™ II Hand Tool	EACH		
											1-24	25-99	100-499
512-2074	225395-7	D	50	174, 188, 188A, 316	G	N	T	Mil type	220009-1	—	3.15	2.74	2.10
512-2000	1-227079-6	D	50	174, 188, 188A, 316	G	N	PP	Com.	220009-5	—	2.25	1.98	1.61
512-2318	2-330061-1	S	50	174, 188, 188A, 316	G	S	T	Mil type	69245-1	—	11.11	9.94	8.08
512-2046	2-331350-4	D	50	174, 188, 188A, 316	G	S	T	Mil type	220009-1	—	4.51	3.85	2.98
512-2001	2-221128-1	H	50	174, 188, 188A, 316	G	N	PM	Com.	—	58436-3	3.05	2.61	2.02
512-2076	225395-8	D	50	179, 179A, 179B, 161, 187, 187A, Belden 9221	G	N	T	Mil type	220009-5	—	3.15	2.74	2.10
512-2004	2-227079-2	D	50	179, 179A, 179B, 161, 187, 187A, Belden 9221	G	N	PP	Com.	69245-1	—	11.85	10.13	8.36
512-2312	2-329446-1	S	50	179, 179A, 179B, 161, 187, 187A, Belden 9221	G	S	T	Mil type	220009-5	—	11.11	9.49	7.35
512-2048	2-331350-5	D	50	179, 179A, 179B, 161, 187, 187A, Belden 9221	G	S	T	Mil type	69477-2	—	4.51	3.85	3.28
512-2003	2-221128-3	H	50	179, 179A, 179B, 161, 187, 187A, Belden 9221	G	N	PM	Com.	—	58436-3	3.05	2.61	2.10
512-2008	413589-8	H	75	179, 179A, 179B, 161, 187, 187A, Belden 9221	G	N	PM	Com.	—	58425-2	4.24	3.62	3.08
512-2032	221185-8	D	75	179, 179A, 179B, 161, 187, 187A, Belden 9221	G	N	PP	Com.	—	318451-2	3.17	2.78	2.26
512-2078	225395-9	D	50	180, 180A, 180B, 195, 195A	G	N	T	Mil type	69477-2	—	4.13	3.53	2.82
512-2050	2-331350-6	D	50	180, 180A, 180B, 195, 195A	G	S	T	Mil type	69477-2	—	4.51	3.85	3.08
512-2011	2-221128-5	H	50	180, 180A, 180B, 195, 195A	G	N	PM	Com.	—	58436-3	3.05	2.61	2.10
512-2080	1-225395-0	D	50	Belden 8218	G	N	T	Mil type	69477-2	—	3.15	2.74	2.18
512-2006	1-227079-9	D	50	Belden 8218	G	N	PP	Com.	69477-4	58330-1	2.25	1.98	1.61
512-2052	2-331350-2	D	50	Belden 8218	G	S	T	Mil type	69477-2	—	4.51	3.85	3.08
512-2030	413589-3	H	75	Belden 8218	G	N	PM	Com.	—	58425-2	4.24	3.62	2.90
512-2025	221128-1	H	50	58, 58A, 58B, 58C	G	N	PE	Com.	—	58436-1[2]	2.16	1.90	1.54
512-2005	1-221128-0	H	50	58, 58A, 58B, 58C	G	N	PE	Com.	—	58436-1[2]	2.81	2.40	1.86
512-2022	225395-1	D	50	58, 58A, 58B, 58C	G	N	T	Mil type	69478-1	220189-3	3.15	2.74	2.10
512-2010	227079-1	D	50	58, 58A, 58B, 58C	T	N	PP	Com.	220187-1	58435-1[1]	2.05	1.80	1.46
512-2015	227079-5	D	50	58, 58A, 58B, 58C	G	N	PP	Com.	220187-1	58435-1[1]	2.05	1.80	1.46
512-2012	227079-9	D	50	58, 58A, 58B, 58C	S	N	PP	Com.	220187-1	58435-1[1]	2.05	1.80	1.46
512-2300	2-329082-1	S	50	58, 58A, 58B, 58C	G	S	PP	Mil type	69140-1	—	9.65	8.25	6.39
512-2310	2-329444-1	S	50	58, 58A, 58B, 58C	G	S	T	Mil type	69140-1	—	10.12	8.65	6.93
512-2017	2-331350-1	D	50	58, 58A, 58B, 58C	G	S	T	Mil type†	69478-1	220189-3	5.12	4.37	3.39
512-2066	225395-3	D	50	223, 55, 55A, 55B	G	N	T	Mil type	69478-1	220189-3	3.15	2.74	2.10
512-2014	227079-6	D	50	223, 55, 55A, 55B	G	N	PP	Com.	220187-1	58435-1[1]	2.53	2.16	1.73
512-2007	1-221128-1	H	50	**	G	N	PE	Com.	—	58436-1[2]	2.81	2.40	1.92
512-2026	221128-2	H	50	**	G	N	PE	Com.	—	58436-1[2]	2.16	1.90	1.60
512-2023	225395-2	D	50	**	G	N	T	Mil type	69477-1	220189-4	3.15	2.74	2.10
512-2016	227079-7	D	50	**	G	N	PP	Com.	220187-2	58435-1[1]	2.05	1.80	1.46
512-2088	1-227079-1	D	50	**	S	N	PP	Com.	220187-2	58435-1[1]	2.05	1.80	1.51
512-2024	227079-3	D	50	**	T	N	PP	Com.	220187-2	58435-1[1]	2.05	1.80	1.51
512-2302	2-329083-1	S	50	**	G	S	PP	Mil type	69141-1	—	9.65	8.25	6.39
512-2028	2-329445-1	S	50	**	G	S	T	Mil type	69141-1	—	10.12	8.65	6.70
512-2042	331350	D	50	**	G	S	T	Mil type‡	69477-1	—	5.12	4.37	3.39
512-2034	221185-2	D	75	**	G	N	PP	Com.	—	58085-1	2.88	2.53	2.05
512-2037	413589-2	H	75	**	G	N	PM	Com.	—	58425-1	3.85	3.29	2.64
512-2036	221185-9	D	75	***	G	N	PP	Com.	—	58085-1	2.88	2.53	2.05
512-2043	1-221128-7	H	50	***	G	N	PP	Com.	—	58435-1[1]	2.81	2.40	1.92
512-2044	413589-9	H	75	***	G	N	PM	Com.	—	58425-1	3.85	3.29	2.64
512-2058	4-331350-0	D	50	Belden 8281, 9141, 9231, Western Electric 724, 728, 3049, AT&T 728	G	S	T	Mil type	220043-1	220189-6	5.31	4.54	3.64
512-2045	1-221128-2	H	50	Belden 8281, 9141, 9231, Western Electric 724, 728, 3049, AT&T 728	G	N	PP	Com.	—	58436-2	2.81	2.40	1.92
512-2049	413589-5	H	75	Belden 8281, 9141, 9231, Western Electric 724, 728, 3049, AT&T 728	G	N	PM	Com.	—	852922-3	3.85	3.29	2.64
512-8668	2-221128-7	H	50	Belden 9907, 89907, RG-141	G	N	PM	Com.	—	58436-1[2]	3.05	2.61	2.02
512-2053	413589-1	H	75	Belden 88241	G	N	PM	Com.	—	852922-3	3.85	3.29	2.64
512-2054	413589-7	H	75	AT&T 734A	G	N	PM	Com.	—	58425-1	3.85	3.29	2.64
512-2055	1-413589-0	H	75	AT&T 735A	G	N	PM	Com.	—	58425-1	4.24	3.62	2.90

[1] Included in PRO-CRIMPER™II assembly 58433-1. [2] Included in PRO-CRIMPER™II assembly 58433-2. †Weatherproof - M39012/16B0004. ‡M39012/16B0008. **59, 59A, 59B, 62, 62A, 62B, 124, 140, 210, Belden 9291, 9209, 9268. ***Belden 8212, 9104, 9112, 9240, 9167, 9259, 9266, Times FM-59, (RG59 type with 20 AWG C.C.).

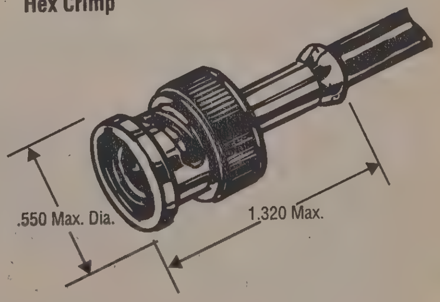
Single Crimp



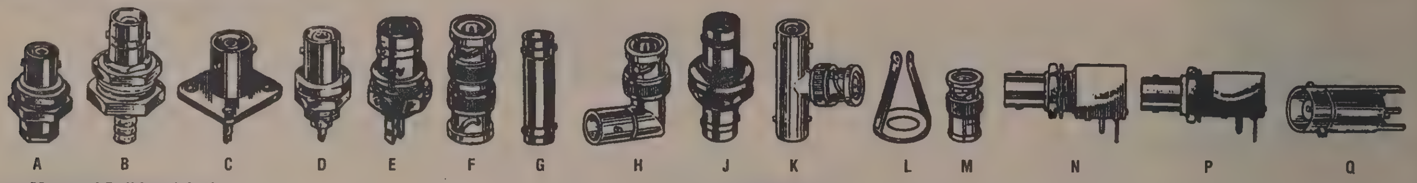
Dual Crimp



Hex Crimp



BNC Coaxial Connectors



Rear-Mounted Bulkhead Jacks

Stock No.	Mfr.'s Type	Fig.	MIL Type	Cable Term.	For RG/U Cable	EACH 1-24	EACH 25-99	EACH 100-249
713-1048	31-206	A	UG-909	MIL clamp 1	58, 141, 142, 400	6.67	5.29	4.54
713-1092	31-342	B	M23329/3-15, 3-17	Crimp crimp	58, 141	6.20	5.16	4.43
713-1088	31-318	B	—	MIL crimp 1	174, 188	9.01	7.21	6.18

Panel Receptacles

713-1043	31-203	C	UG-290A	Solder cup	No. 3-56 tapped flange holes	5.70	4.53	3.89

Front Mount Bulkhead Receptacles — Internal Tooth Lockwasher

713-1011	31-10-75	E	—	Solder cup, Ground tab	Isolated from ground, 75 ohms	4.72	3.75	3.21
713-1012	31-10	E	—	Solder cup	Isolated thermoplastic insulation	4.64	3.61	3.06
713-1099	31-2221	D	UG-1094A	Solder cup	Standard type	2.77	2.17	1.75
713-1073	31-221	D	UG-1094	Solder cup	Thin panel	2.37	1.83	1.48
713-1079	31-236	D	UG-625B	Solder cup	Standard type	2.63	2.04	1.64
713-1035	31-102	D	UG-657	Solder cup	Pressurized	4.86	3.78	3.22

Straight Adapters

713-1067	31-218	F	UG-491A	Plug-plug	—	7.52	6.27	5.37
713-1069	31-219	G	UG-914	Jack-jack	—	4.48	3.67	3.11

75 Ohm Impedance Matching Straight Adapter and Front Mounted Bulkhead Jack

713-8618	31-70018	D	—	Solder cup	—	5.88	4.90	4.20
713-8619	31-70019	G	—	Jack-jack	—	4.97	4.06	3.46

Angle Adapters

713-1013	31-9	H	UG-306	Jack-plug	—	10.77	8.55	7.34
713-8668	31-209	H	UG-306A	Jack-plug	—	11.76	9.79	8.40

Bulkhead Adapters

Stock No.	Mfr.'s Type	Fig.	MIL Type	Adapter Ends	Description	EACH 1-24	EACH 25-99	EACH 100-249
713-1071	31-220H	J	UG-492A	Jack-jack	Pressurized/glass — TFE internal lockwasher	7.91	6.60	5.65
713-1072	31-220N	J	—	Jack-jack	Non-pressurized version	6.43	5.36	4.59
713-8005	31-3220	J	UG-492D	Jack-jack	Pressurized/glass — TFE external lockwasher/thick panel	9.46	7.89	6.76
713-8028	31-4803	J	—	Jack-jack	Isolated from the panel white molded thermoplastic insulation	10.42	8.69	7.45

Tee Adapters

Stock No.	Mfr.'s Type	Fig.	MIL Type	Adapter Ends	Description	EACH 1-24	EACH 25-99	EACH 100-249
713-1010	31-8	K	UG-274	Jack-plug-jack	Standard	10.23	8.12	6.97
713-1053	31-208	K	UG-274A	Jack-plug-jack	Silver plt. contact	8.51	6.76	5.80

Accessories

713-8676	31-759	L	—	—	Grounding lug, inside panel on front mount receptacles	.52	.41	.34

Resistor Terminated Cap

713-8671	46650-51	M	**	—	BNC terminator 50 Ω, 5%, 1 W	13.36	11.13	9.27

**IEEE 802.3 10 base 2.

BNC PC Mount Bulkhead Receptacles (Hardware Sold Separate)

Stock No.	Mfr.'s Type	Fig.	Description	Mounting PIN Type	EACH 1-24	EACH 25-99	EACH 100-249
713-7200	31-5431	N	Isolated white valox housing	Round	4.72	3.86	3.27
713-7202	31-5486	P	Isolated white valox housing	Round	4.72	3.86	3.27
713-7203	31-5640	N	Metal housing	Round	4.93	4.03	3.42
713-7206	31-5652	—	HEX nut (mounting hardware)	—	.82	.71	.60
713-7207	31-5653	—	Lockwasher (mounting hardware)	—	.84	.73	.62

Vertical BNC Receptacle (PCB)

.040" diameter post terminal. .125" long. Zinc body, bright tin/lead over copper base finish. Gold plated contact, TFE Insulation.

713-7160	31-5329	Q	3-leg vertical BNC receptacle .040" dia. post terminal	—	5.84	4.87	4.17

Between Series Straight Adapters (Not Illustrated)

Stock No.	Mfr.'s Type	MIL Type	Description	EACH 1-24	EACH 25-99	EACH 100-249
713-1063	31-216	UG-201A/U	BNC jack-N-plug	11.47	9.11	7.80
713-1033	31-28	UG-273/U	BNC jack-UHF-plug	9.40	7.47	6.40
713-1065	31-217	UG-349A/U	BNC plug-N-jack	11.28	9.40	8.05
713-9500	2900	UG-255/U	BNC plug-UHF-jack	9.95	8.29	7.11
713-8007	4400	UG-146/U	N plug-UHF-jack	13.70	11.48	9.84

SMA Connectors

Semi-precision, high frequency, subminiature connectors. Rated for 500 volts peak. **Frequency:** 0-18 GHz. **Impedance:** 50 Ω. **VSWR:** 1.25 max.

SMA Plugs

Stock No.	Mfr.'s Type	Fig.	Cable RG/U	Cable Attachment Outer	Cable Attachment Inner	Construction Notes*	EACH 1-24	EACH 25-99
713-4200	901-9723	A	.086" (2.2 mm) semi-rigid RG-405 (M17/133)	Solder	Press fit	1	7.24	6.04
713-4201	901-9201-1A	B	.141" (3.6 mm) semi-rigid RG-402 (M17/130)	Solder	None	2	7.82	6.52
713-4206	901-9601-3	C	RG-174, 179, 187, 188, 316	Braid crimp	Solder	3	15.32	12.76
713-9982	901-9511-1	D	RG-55, 142, 223, 400	Braid crimp	Solder	4	9.17	7.50
713-4210	901-9511-3	D	RG-174, 179, 187, 188, 316	Braid crimp	Solder	5	8.56	7.10
713-4212	901-9511-3SF	D	RG-174, 179, 187, 188, 316	Braid crimp	Solder	6	7.30	6.09

*1 — Center conductor of cable is press fit into pre-installed center contact, not gasketed; 2 — Center conductor and insulation of cable used as center contact and insulator of connector; 3 — Captivated contact; 4 — Non-captive contact; 5 — Non-captive contact, gold-plated body and nut; 6 — Non captive contact, passivated body and nut.

Fig. A

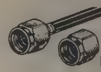


Fig. B

Fig. C

Fig. D

SMA Angle Plugs, Bulkhead Jacks

Stock No.	Mfr.'s Type	Fig.	Cable RG/U	Conn. Type	Cable Attachment Outer	Cable Attachment Inner	Plating*	Construction Notes	EACH 1-24	EACH 25-99
713-4216	901-9531-1	E	RG-55, 142, 223, 400	Angle Plug	Braid crimp	Solder	1	Captivated contact	15.56	12.97
713-4218	901-9531-1SF	E	RG-55, 142, 223, 400	Angle Plug	Braid crimp	Solder	2	Captivated contact	12.30	10.24
713-4220	901-9531-3	E	RG-174, 179, 187, 188, 316	Angle Plug	Braid crimp	Solder	1	Captivated contact	13.86	11.55
713-4224	901-9610-3	F	RG-174, 179, 187, 188, 316	Bulkhead jack	Braid crimp	Solder	1	Captivated contact	16.24	13.72

*1 — Gold plated body and nut; 2 — Passivated body and nut.

Fig. E

Fig. F

SMA Bulkhead, Female Contacts

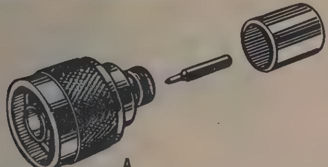
Stock No.	Mfr.'s Type	Fig.	Description	Terminal Type	Plating	Construction Notes*	EACH 1-24	EACH 25-99
713-4228	901-9211	G	Bulkhead receptacle rear mount	Solder cup	Gold plated	1	10.99	9.15
713-4232	901-9220	H	Bulkhead receptacle front or rear mount	Blunt post	Gold plated	1	8.78	7.32

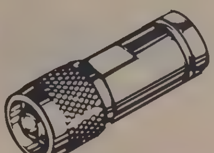
*1 — Captive contact/.062" (1.6 mm) exposed TFE.

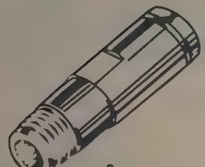
Fig. G

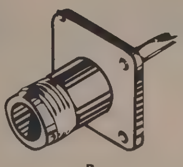
Fig. H

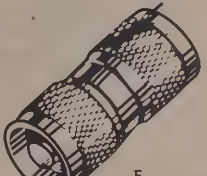
N Coaxial Connectors

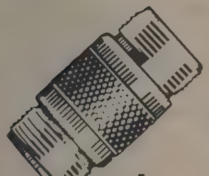

A

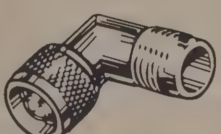

B

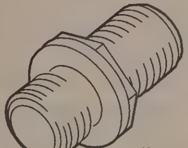

C

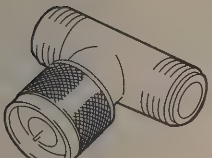

D

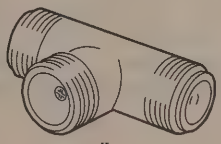

E

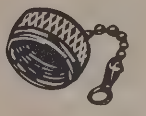

F


G


H


J


K


L

Type N Straight Plugs
Medium size. Threaded coupling. Up microwave frequencies. Male contacts. Weatherproof. 50 ohm impedance. TFE insulation.

Stock No.	Mfr.'s Type	Fig.	MIL Type	Cable Term.	For RG/U Cable	EACH		
						1-24	25-99	100-249
713-3345	82-340	A	M390†2/01-B0007	MIL-crimp-1	8, 213	8.18	6.82	5.56
713-3311	82-61	B	UG-21B	MIL-clamp-1	8, 9, 213, 214, 225	7.70	6.41	5.50
713-8015	82-202	B	UG-21D	MIL-clamp-1	8, 9, 213, 214, 225	5.84	4.77	4.08
713-8016	82-312	B	UG-1185	CC-clamp	8, 9, 213, 214, 225	7.05	5.87	5.03
713-9994	82-5370	A	—	Crimp-crimp	55, 142	8.43	7.03	5.74
713-9997	82-5375	A	—	Crimp-crimp	58, 141	10.20	8.09	6.94
713-9762	34025	B	UG-536B	MIL-clamp 1	58, 141, 142	6.62	5.52	4.73
713-9992	82-202-1006	B	—	Clamp	Belden 9913	7.37	6.15	5.02
713-3420	82-4426-1001	A	—	Crimp-crimp	Ethernet® cables	9.55	7.97	6.50

Type N Straight Jack — Female Contact

713-3313	82-63	C	UG-23B	MIL-clamp 1	8, 9, 87, 213, 214, 225	8.67	7.23	6.19

Type N Female Panel Receptacles

713-8017	82-24	D	UG-58	Standard	—	5.55	4.63	3.98
713-3336	82-97	D	UG-58A	Standard	—	4.97	4.07	3.46

Type N Adapters
50 ohms impedance. TFE insulation.

713-3340	82-100	E	UG-57B	Plug-plug	—	8.90	7.42	6.36
713-3330	82-101	F	UG-29B	Jack-jack	—	7.42	6.18	5.29

Type N Angle Adapters

713-3314	82-64	G	UG-27A	Mitre body/ jack-plug	—	20.92	17.43	14.94
713-8020	82-213	G	UG-27C	Cubic body/ plug-jack	—	23.00	19.16	16.43

Type N Bulkhead Adapter

713-3316	82-66*	H	UG-30	Jack-jack**	—	19.31	16.10	13.80

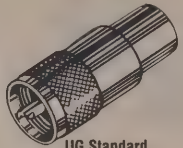
Ethernet® is a Xerox Trademark. *Copolymer of styrene insulation. **Pressurized.

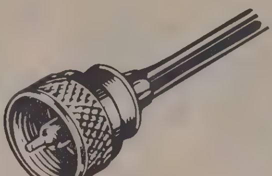
Type N Tee Adapters
5 ohm impedance. TFE Insulation.

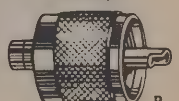
Stock No.	Mfr.'s Type	Fig.	Description	EACH		
				1-24	25-99	100-249
713-3350	82-102	J	Jack-plug-jack	53.34	42.34	36.32
713-3355	82-99	K	Jack-jack-jack	42.00	33.34	28.60

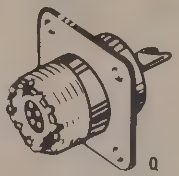
Accessories
713-3342. 82-106. Fig. L. Male Cap and Chain (MX-913). **1-24**......EACH 10.00
25-99......EACH 8.33 **100-499**......EACH 7.14

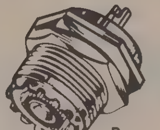
UHF Connectors

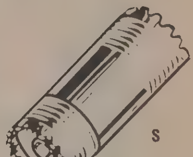

UG Standard
M

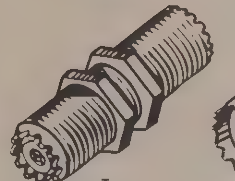

N

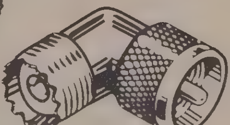
Crimp

P

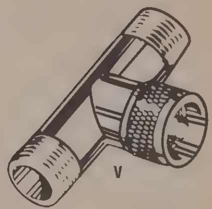

Q

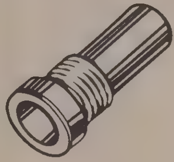

R

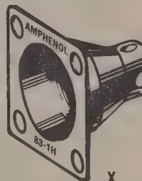

S


T

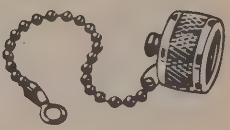

U


V


W



X


Y

Non-constant impedance. Non-weatherproofed. Mica-filled phenolic insulation. **Peak Voltage Rating:** 500 V. Operates satisfactorily up to 300 MHz.

Straight Plugs — Male Contacts

Stock No.	Mfr.'s Type	Fig.	MIL Type	Cable Term.	For RG/U Cable	EACH		
						1-24	25-99	100-249
713-3518	83-1SP	M	PL-259	UG std. silver plated	8, 9, 11, 13, 63, 87, 149, 213, 214, 216, 225	3.27	2.54	2.15
713-3519	83-1SP-1050	M	PL-259	UG std. nickel plated	8, 9, 11, 13, 63, 87, 149, 213, 214, 216, 225	2.07	1.62	1.30
713-3562	83-822*	M	PL-259A	UG std.	8, 9, 11, 13, 63, 87, 149, 213, 214, 216, 225	3.52	2.74	2.32
713-3537	83-58FCP	N	—	FCP clamp	58, 141	3.32	2.58	2.19
713-3505	83-58SP	P	—	Braid crimp	58, 141	4.11	3.20	2.72

Panel Receptacles

713-3514	83-1R	Q	SO-239	Standard	—	2.58	2.00	1.61
713-3559	83-798	Q	SO-239A	TFE insulation	—	4.35	3.56	3.02

Bulkhead Receptacle

713-8680	83-878	R	—	Rear mount**	—	2.94	2.28	1.94

Adapters — Polystyrene Insulation

713-3512	83-1J	S	PL-258	Straight/jack-jack	—	3.72	2.89	2.46
713-3507	83-1F	T	UG-363	Bulkhead/jack-jack	—	10.45	8.71	7.48
713-3503	83-1AP	U	UG-646	Angle/jack-plug	—	5.97	4.97	4.26
713-3523	83-1T	V	M-358	Tee/jack-plug-jack	—	8.72	7.26	6.23

Reducing Adapters

713-3547	83-185	W	UG-175	—	55, 58, 141, 142	.69	.57	.46
713-3545	83-168	W	UG-176	—	59, 62, 71, 140, 210	.65	.53	.43

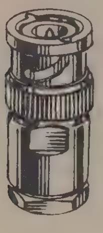
Hood
For use with panel receptacles 83-1R, 83-1RTY, 83-716, 83-798.

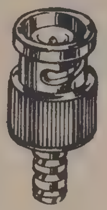
713-8011	83-765	X	UG-177	—	58, 141	2.38	1.84	1.48

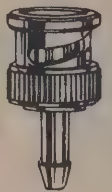
*TFE insulation. **Mica-filled phenolic.

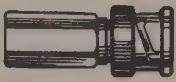
Accessories
713-3502. 83-1AC. Fig. Y. Male Cap and Chain. **1-24**......EACH 8.66
25-99......EACH 7.22 **100-499**......EACH 6.10

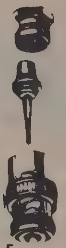
BNC Plugs and Jacks

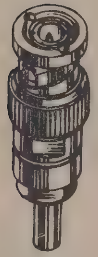

A

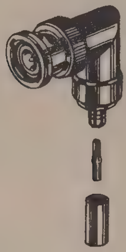

B

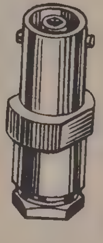

C

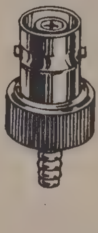

D — BNC Plug


E


F


G


H


J

Straight Plugs

Recognized under the component program of UL, Inc. Male contacts. **Weather-proof only when used in combination with other Amphenol BNC connectors. 50 Ohm impedance. TFE insulation, except † rexolite insulation.

Stock No.	Mfr.'s Type	Fig.	MIL Type	Cable Term.	For RG/U Coaxial Cable	EACH 1-24	EACH 25-99	EACH 100-249
713-9575	6775	A	UG-959	Std. clamp	8, 9	10.25	8.30	7.23
713-1041	31-202	A	UG-88C	MIL clamp II	55, 58, 141, 142, 223, 400	3.64	2.69	2.29
713-1003	31-2	A	UG-88	Std. clamp	58, 141, 142, 400	3.66	2.99	2.54
713-8660	36875	B	—	MIL crimp II	55, 142, 223, 400	5.89	4.91	4.21
713-1082	31-326	B	M23329/3-02	MIL crimp II	55, 142, 223	5.34	4.45	3.81
713-1100	31-4320	B	M39012/16-0013	MIL crimp II	58, 141	5.03	4.11	3.49
713-8662	31-320	B	M23329/3-01	MIL crimp I	58, 141	4.50	3.68	3.12
713-9784	36775	B	—	Quick crimp	58, 141	4.64	3.79	3.21
713-1110	31-4700	C	—	FCP	58	4.88	3.99	3.39
713-1137	31-5137	D	—	Sure Twist®	58, 58B	5.58	4.66	4.00
713-8004	31-4702	C	—	FCP	59	4.84	3.96	3.36
713-9819	68175-1005	B	—	Quick crimp	20 AWG 59	4.64	3.79	3.21
713-1059	31-212	A	UG-260B	MIL crimp II	59, 62, 71, 140, 210, 302	3.72	2.75	2.33
713-1085	31-321	B	M23329/3-05	MIL crimp II	59, 62, 71, 140, 210, 302	4.64	3.79	3.21
713-9818	68175	B	—	MIL crimp II	59, 140, 210, 302	4.40	3.42	2.90
713-1102	31-4321	B	M39012/16-0015	MIL crimp II	59, 62, 140, 210, 302	5.32	4.44	3.80
713-9820	68175-1004	B	—	MIL crimp II	59, 62, 140, 210, 302	5.04	4.20	3.61
713-1136	31-5136	D	—	Sure Twist®	59, 59A, 62, 62A	4.28	3.34	2.84
713-8003	31-4541	E	—	Quick trim	59, 62	5.30	4.41	3.79
713-9998	31-325	B	—	MIL crimp I	122, Belden 8218	5.97	4.73	4.06
713-1080	31-242	B	—	MIL crimp I	179, 187, 316	5.96	4.97	4.26
713-1083	31-315	B	—	MIL crimp I	174, 188, 316	5.03	4.11	3.49
713-8002	31-371	F	—	Orig. crimp	174, 179, 187, 188, 316	12.12	10.10	8.65
713-9828	69475	A	—	MIL clamp I	174, 179, 188, 316	6.69	5.58	4.78
713-9658	15875	A	—	Std. clamp	178, 196	6.43	5.36	4.59
713-1087	31-321-1000	B	—	MIL crimp II	Alpha 9807/ Belden 8281	5.12	4.27	3.66
713-9822	68175-1003	B	—	MIL Crimp I	Belden 9259	4.16	3.47	2.97
713-8663	31-320-1006	B	IEEE 802.3 10 base 2	Crimp-crimp	Thinnet Belden 89907	4.27	3.49	2.96

75 Ohm BNC Straight Plugs

These connectors can be used in a variety of applications where true 75 ohm performance is needed to insure lower signal distortion. They may be matched with standard 50 ohm BNC without damage or intermittence.

Stock No.	Mfr.'s Type	Fig.	MIL Type	Cable Term.	For RG/U Coaxial Cable	EACH 1-24	EACH 25-99	EACH 100-249
713-8600	31-70000	B	—	Crimp-crimp	6, .295 Max. O.D.	5.69	4.74	4.07
713-8608	31-70008	B	—	Crimp-crimp	59	6.04	4.80	4.12
713-8622	31-71008-2000	B	—	Crimp-crimp	RG-59, 62 Plenum	5.63	4.69	4.03
713-8628	31-71013	B	—	Crimp-crimp	RG-179 FEP	6.26	5.22	4.48
713-9980	31-71033	B	—	Crimp-crimp	Belden 8218	3.48	2.85	2.30
713-9978	31-71032	B	—	Crimp-crimp	Belden 8281, 88281	5.14	4.08	3.68

BNC Angle Plugs

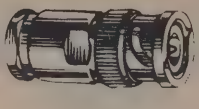
Stock No.	Mfr.'s Type	Fig.	MIL Type	Cable Term.	For RG/U Coaxial Cable	EACH 1-24	EACH 25-99	EACH 100-249
713-1089	31-335	G	—	Crimp-crimp	55, 58, 141, 142, 223, 400	20.70	17.13	14.61
713-1090	31-336	G	—	Crimp-crimp	59, 62, 140, 210	16.57	13.81	12.28

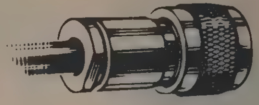
BNC Straight Jacks

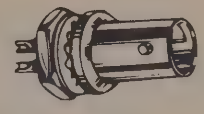
Recognized under the component program of UL, Inc. Female contacts. **Each BNC connector is considered to be weatherproof when used only in combination with other Amphenol BNC connectors described in this catalog. 50 ohm impedance. TFE insulation.

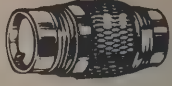
Stock No.	Mfr.'s Type	Fig.	MIL Type	Cable Term.	For RG/U Coaxial Cable	EACH 1-24	EACH 25-99	EACH 100-249
713-1007	31-5	H	UG-89	MIL clamp I	58, 141, 142, 223, 400	5.31	4.43	3.80
713-8050	31-4328	J	M39012/17-0015	MIL crimp II	59, 62, 140, 210	7.73	6.44	5.52
713-1084	31-317	J	—	MIL crimp I	174, 188	9.60	8.00	6.85

Twin Coaxial Connectors


31-224


82-5589


31-223


82-5588

Straight Plugs

Stock No.	Mfr.'s Type	Mating and Polarization	Construction	Contacts	EACH 1-24	EACH 25-99	EACH 100-249
713-1076	31-224	Polarized, BNC	V-groove clamp	1 male, 1 female	8.11	6.75	5.79
713-1097	31-2226	Polarized, BNC	TFE Insulation V-groove clamp	1 male, 1 female	11.09	9.24	7.92
713-8025	82-5589	Keyed 90°	V-groove clamp	Twin male	9.93	8.27	7.09

Front Mounted Bulkhead Receptacles

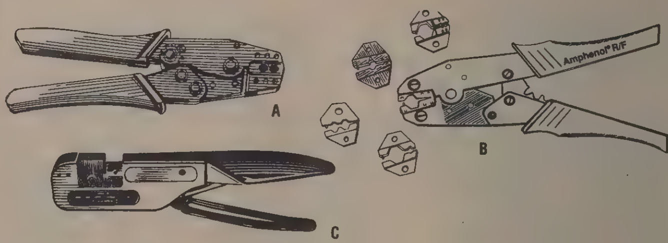
Stock No.	Mfr.'s Type	Mating and Polarization	Construction	Contacts	EACH 1-24	EACH 25-99	EACH 100-249
713-1075	31-223	Polarized, BNC	—	1 female, 1 male	15.33	12.83	11.00
713-1096	31-2225	Polarized, BNC	TFE Insulation	1 female, 1 male	14.24	11.86	10.17

Straight Adapter

Stock No.	Mfr.'s Type	Mating and Polarization	Construction	Contacts	EACH 1-24	EACH 25-99	EACH 100-249
713-8027	82-5588	Keyed 90°	Noryl insulation	Twin female	19.68	16.40	14.06

713-8031. 82-10588. Bag of contacts for 82-5589 .... **PER BAG/50 41.82**

Crimp Tools



Economy Trihex Crimp Tools — Fig. A

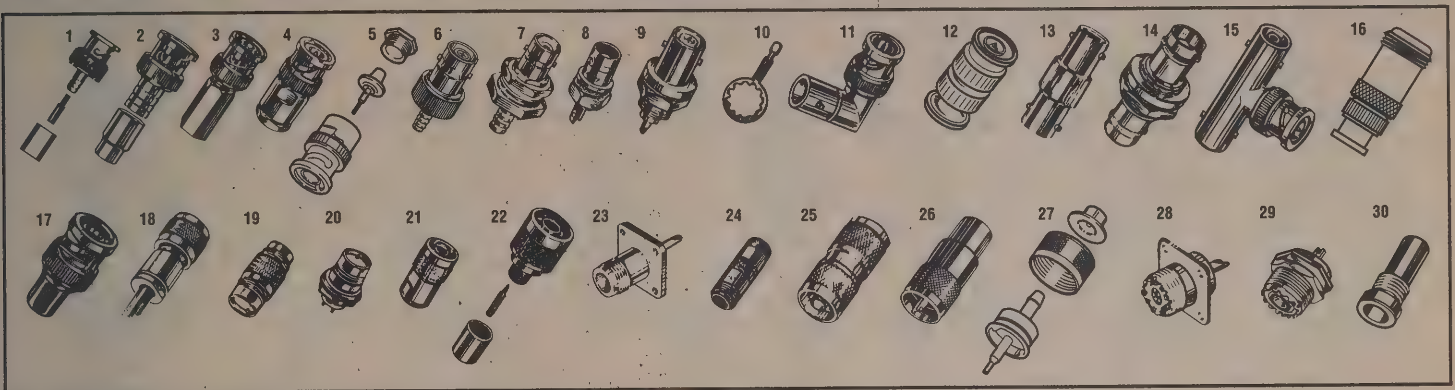
Stock No.	Mfr.'s Type	Connector Types	Cable Types	EACH
713-9190	CTL-1	3-piece crimp BNC, TNC	RG58, 59, 62, Plenum 58, 59, 62	53.33
713-9192	CTL-2	3-piece crimp BNC, TNC, 2-piece BNC	RG6, 174, 188, 316, 179, 187 and Belden 8281, 58, 59, 62, Plenum 58, 59, 62	53.33
713-9194	CTL-3	3-piece crimp N	58, 8, 213, 214, Ethernet cables	53.33
713-9196	CTL-4	Center contacts, 82-5589-RFX	Belden 8227, 9207, 89207, IBM 7362211	53.33
713-9197	CTL-5	BNC, TNC, Mini UHF, Type N, 3-piece crimp	RG55, 58, 141, 142, 223, 303, 400, 59, 62, 140, 210, Plenum 59, 62; Used on Belden 9907, 9258, 9259	53.33

Econohex™ Crimp Tools and Dies — Feature Exchangeable/Replaceable Dies — Fig. B

Stock No.	Mfr.'s Type	Description	For RG/U Cables	EACH
713-6100	227-987	Handle without dies	—	99.48
713-6105	227-1420	Die set only	8, 9, 11, 87A, 149, 165, 213, 214, 216, 225, 393	59.03
713-6106	227-1419	Die set only	55, 58, 59, 62, 140, 141, 142, 142B, 210, 223, 302, 303, 400	59.03
713-6107	227-1418	Die set only	122, 161, 174, 179, 180, 187, 188, 195, 316	59.03

Twin-Hex Tool System — Fig. C

Stock No.	Mfr.'s Type	MIL Type	For Connector Series	For RG/U Cables	EACH
713-6200	227-944	M22520/5-01	Frame (die not included)	—	271.59
713-6209	227-1221-09	M22520/5-09	BNC, TNC, SMA	174, 179B, 186A, 187A, 316	129.33
713-6208	227-1221-03	M22520/5-03	SMA, SMB	174, 179B, 186A, 187A, 316	129.33
713-6210	227-1221-11	M22520/5-11	BNC, TNC, MHV, UHF, SMA	55, 58, 141, 142, 223, 303, 400	129.33
713-6220	227-1221-13	M22520/5-13	BNC, TNC, UHF, SMA	59, 62, 140, 210	129.33
713-6225	227-1221-25	—	N, SC	8, 9, 11, 87A, 149, 165, 213, 214, 216, 225, 393	129.33
713-6230	227-980-1	—	75-Ohm BNC	59	209.81



Note: These connectors meet or exceed military specification, but aren't on the RPL and are intended for commercial use only. Military specification numbers, where shown, are for reference only.

RFX™ Commercial Coaxial Connectors

BNC 3-Piece Crimp-Type Plugs

Miniature bayonet-lock units. 50 ohm or 75 ohm impedance. Operate with low reflection DC-4 GHz on 50 ohm cables and DC-500 MHz on 75 ohm cables.

Stock No.	Mfr.'s Type	Fig.	RG/U Cable	Cable Attachment		Imp.	EACH		
				Outer	Inner		1-24	25-99	100-249
713-9005	31-320-RFX1	1	58, 141	Crimp	Crimp	50 ohm	1.66	1.28	1.05
713-9007	36650-3RFX1	1	Plenum 58	Crimp	Crimp	50 ohm	2.03	1.67	1.34
713-9010	31-321-RFX1	1	59, 62	Crimp	Crimp	50 ohm	1.66	1.28	1.05
713-9006	31-71008-RFX1	1	59, 62	Crimp	Crimp	75 ohm	2.42	1.89	1.60
713-9012	68175-1RFX1	1	Plenum 59	Crimp	Crimp	50 ohm	1.52	1.24	1.01
713-9008	31-71013-RFX	1	179, 187	Crimp	Crimp	75 ohm	2.82	2.30	1.86
713-9015	31-315-RFX	1	174, 188, 316	Crimp	Crimp	50 ohm	2.22	1.73	1.40
713-9025	31-321-1RFX1	1	Belden 8281	Crimp	Crimp	50 ohm	2.25	1.75	1.41

BNC 2-Piece Single Crimp Plugs

713-9040	31-5556-RFX	2	59, 62	Crimp	Press fit	50 ohm	2.86	2.23	1.89

BNC SureTwist® Plugs

713-9050	31-5137-RFX	3	58, 141, 142	SureTwist®	—	50 ohm	2.11	1.66	1.33
713-9055	31-5136-RFX	3	59, 62	SureTwist®	—	50 ohm	2.12	1.66	1.33

BNC Clamp-Type Plugs

713-9060	31-2-RFX	4	58, 141, 142	Clamp	Solder	50 ohm	2.28	1.78	1.44
713-9065	31-212-RFX	4	59, 62	Clamp	Solder	50 ohm	3.32	2.59	2.20

BNC Quicktrim® Plug

713-9002	31-4541-RFX	5	59, 62	—	Quicktrim®	50 ohm	3.96	3.24	2.62

BNC 3-Piece Crimp Jack

713-9069	31-71014-RFX	6	179, 187	Crimp	Crimp	75 ohm	2.89	2.37	1.91

BNC Bulkhead Jacks

713-9070	31-318-RFX	7	174, 188, 316	Crimp	Crimp	50 ohm	3.55	2.76	2.35

Front Mount BNC Bulkhead Receptacles

Stock No.	Mfr.'s Type	Fig.	Description	Terminal Type	Imp.	EACH		
						1-24	25-99	100-249
713-9080	31-10-RFX	8	Isolated from panel	Solder cup grounding tab	50 ohm	3.54	2.75	2.34
713-9085	31-221-RFX1	9	.125" max. panel	Solder cup	50 ohm	1.88	1.46	1.18
713-9087	31-221-75RFX	9	.125" max. panel	Solder Cup	75 ohm	2.58	2.10	1.69
713-9095	31-10152-RFX	10	Lug for inside panel for ground wire to circuit	—	—	.52	.41	.34

BNC Adapters

713-9100	31-9-RFX	11	Right angle jack-plug	—	50 ohm	8.84	7.36	6.32
713-9102	31-218-RFX	12	Straight plug-plug	—	50 ohm	6.51	5.43	4.65
713-9104	31-218-7RFX1	12	Straight plug-plug	—	75 ohm	9.51	7.93	6.48
713-9105	31-219-RFX1	13	Straight jack-jack	—	50 ohm	2.41	1.87	1.51
713-9110	31-220G-RFX	14	Bulkhead pressurized jack-jack	—	50 ohm	4.52	3.70	3.14
713-9115	31-220N-RFX	14	Bulkhead non-sealed jack-jack	—	50 ohm	4.13	3.21	2.73
713-9117	31-220N-75RFX	14	Bulkhead non-sealed jack-jack	—	75 ohm	4.05	3.30	2.67
713-9120	31-208-RFX	15	Tee jack-plug-jack	—	50 ohm	4.04	3.14	2.67
713-9125	31-217-RFX	16	BNC plug-n-jack	—	50 ohm	13.99	11.66	10.72

Resistor Terminated Male Cap

713-9097	46650-51RFX	17	—	—	50 ohm	2.91	2.38	2.03
713-9098	46650-75RFX	17	—	—	75 ohm	3.24	2.65	2.13
713-9099	46650-93RFX	17	—	—	93 ohm	3.59	2.94	2.38

Twinax and N-Type Connectors

Keyed 90° Twinax Connectors

Plug, Twin Male Contacts

Stock No.	Mfr.'s Type	Fig.	RG/U Cable	Cable Attachment		IBM Ref. No.	EACH		
				Outer	Inner		1-24	25-99	100-249
713-9130	82-5589-RFX1	18	Belden 8227, 9207, IBM 7362211	Clamp	Solder or Crimp	7362229	5.70	4.75	4.08

Stock No.	Mfr.'s Type	Fig.	Description	IBM Ref. No.	EACH		
					1-24	25-99	100-249
713-9135	82-5588-RFX	19	Straight adapter jack-jack	7362230	6.13	5.11	4.38
713-9140	82-5590-RFX	20	Bulkhead receptacle front-mount solder cup terminal	7362179	7.94	6.61	5.68

N Cable Plugs

Stock No.	Mfr.'s Type	Fig.	RG/U Cable	Cable Attachment		UG Ref. No.	EACH		
				Outer	Inner		1-24	25-99	100-249
713-9160	82-202-RFX	21	8, 9, 144, 165, 213, 214, 216, 225	Clamp	Solder	UG-21D	5.00	4.08	3.46
713-9165	82-4426-11RFX	22	8, 9, 144, 165, 213, 214, 216, 225 and Ethernet*	Crimp	Crimp	—	5.35	4.46	3.82
713-9167	82-5375-RFX	22	58, 141, 142A	Crimp	Crimp	—	4.28	3.57	3.06

*Ethernet = Xerox trademark.

N Panel Receptacle

Stock No.	Mfr.'s Type	Fig.	Description	UG Ref. No.	EACH		
					1-24	25-99	100-249
713-9170	82-97-REX	23	Front or rear mount	UG-58A	3.98	3.10	2.62

N Adapters

713-9175	82-101-RFX	24	Straight jack-jack	UG-29A	5.08	4.15	3.52
713-9180	82-100-RFX	25	Straight plug-plug	UG-57B	8.40	7.00	5.99

UHF Connectors

Low cost for general purpose. **Peak Voltage Rating:** 500 V. Operates satisfactory DC-300 MHz.

Straight Plugs — Male Contacts

Stock No.	Mfr.'s Type	Fig.	MIL Type Ref.	Cable Term.	For RG/U Cable	EACH		
						1-24	25-99	100-249
713-9200	83-1SP-15RFX	26	PL-259	UG std. nickel plated	8, 9, 11, 13, 63, 87A, 149, 213, 214, 216, 225	2.02	1.58	1.27
713-9215	83-58FCP-RFX	27	—	FCP clamp	58, 141, 142	3.03	2.35	1.99

Panel Receptacle

713-9220	83-1R-RFX	28	SO-239	Standard	—	2.42	1.89	1.51

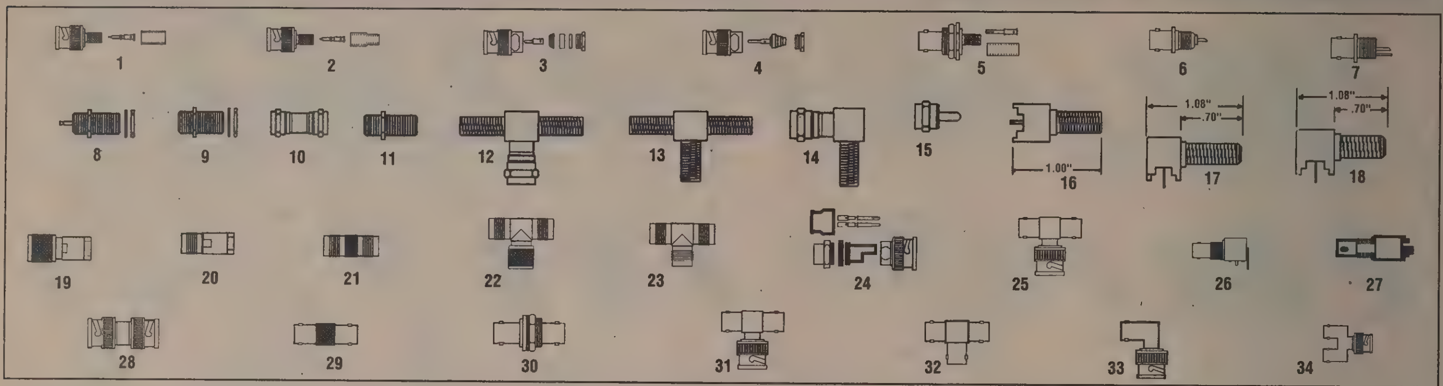
Bulkhead Receptacle

713-9225	83-878-RFX	29	—	Rear mount	—	3.12	2.44	2.07

Reducing Adapters

713-9235	83-185-RFX	30	UG 175/U	—	58, 141, 142	.40	.32	.26
713-9240	83-168-RFX	30	UG 176/U	—	59, 62, 71, 140, 210	.40	.32	.26

*TFE insulation.



These high quality RF connectors are approved for use by the major manufacturers of computer networks and are used extensively for all interconnecting and accessory cables and panels.

BNC 3 Piece Crimp Plugs For Cable Mount

These 3 piece, dual crimp connectors feature Posi-Click contacts that "click" into place when installed insuring a perfect assembly. All crimp pins are gold plated and have a vent hole for optional soldering.

Stock No.	Mfr.'s Type	Fig.	RG/U Cable	EACH		
				1-24	25-99	100-499
202-0101	310A205A18	1	6 (18 AWG)	2.39	2.01	1.78
202-0102	310A205F	1	58 Stranded Conductor, 141	1.98	1.67	1.48
202-0104	310A205FS	1	58 Solid Conductor	2.06	1.73	1.54
202-0106	310A205FV	2	58 Thin-Net Plenum	2.06	1.73	1.54
202-0108	310A205FV2	2	RGB Monitor Cable	2.51	2.11	1.88
202-0110	310A204G	1	59, 62, 210 PVC	2.02	1.70	1.51
202-0112	310A205MV	2	174, 188, 316 (4 Pc.)	2.31	1.94	1.72
202-0114	310A205N	2	179, 187 (4 Pc.)	2.31	1.94	1.72
202-0116	310A205P	1	223	2.06	1.73	1.54
202-0118	310B205Q	1	True 75 Ohm/8281	3.34	2.81	2.49
202-0120	310A204T	2	59, 62 Plenum	2.14	1.80	1.60
202-0122	310A208W2	1	Mini 59 Coax, RGB 26 AWG	1.85	1.56	1.38

BNC Clamp Type Plugs, Standard and Taper Grip

Regular clamp types use a five piece construction while taper grip styles are of three piece design and require little cable preparation. Both types tightly clamp the shield to the connector body. Soldering on the contact pin is required. All materials are machined brass with gold contacts.

Stock No.	Mfr.'s Type	Fig.	RG/U Cable	EACH		
				1-24	25-99	100-499
202-0172	310A105F	3	58, 58A, 58C, 141	2.31	1.94	1.72
202-0174	310A105G	3	59, 62, 214	2.55	2.15	1.91
202-0178	310A304F	4	58, 58A, 58C, 141	3.79	3.18	2.83
202-0180	310A304G	4	59, 62, 214	3.71	3.12	2.77

BNC Bulkhead Jacks

Versions available for front mounting (F/M), rear mounting (R/M), crimp types, panel grounded, or isolated. These jacks are held in the panel by a hex-nut and lock washer. All units feature nickel plated brass bodies, gold/phosphor bronze contacts.

Stock No.	Mfr.'s Type	Fig.	Description	EACH		
				1-24	25-99	100-499
202-0200	321A245A	5	R/M Crimp, 6½"	4.00	3.43	3.08
202-0202	321A245F	5	R/M Crimp, 58½"	4.12	3.46	3.08
202-0206	321A245G	5	R/M Crimp, 59, 62, 214, ½"	4.12	3.46	3.08
202-0208	321A245M	5	R/M Crimp 174, 178, 316, ½"	4.12	3.46	3.08
202-0210	326A515	6	F/M Solder (Grounded) ⅜"	1.44	1.21	1.08
202-0212	326R515	7	F/M Solder (Isolated) ⅜"	1.77	1.47	1.32

Color Coded BNC Bulkhead Jacks

In addition to Bomar's white Valox isolated bulkhead jack, three new versions are available with a red, green, and blue insulated panel bushing and the matching color internal insulator. These are excellent for RGB interconnect applications — instantly color codes your panel ports. For panel thicknesses up to .125 inch. Special colors available with minimum order requirements.

Stock No.	Mfr.'s Type	Fig.	Description.	EACH		
				1-24	25-99	100-499
202-0212	326R515	7	F/M Solder (Isolated) White Bushing	1.77	1.47	1.32
202-0216	326R515RD	7	F/M Solder (Isolated) Red Bushing	2.67	2.14	1.78
202-0218	326R515GN	7	F/M Solder (Isolated) Green Bushing	2.67	2.14	1.78
202-0220	326R515BL	7	F/M Solder (Isolated) Blue Bushing	2.67	2.14	1.78

BNC Adapters and *"The Goalie"*

The internal design offers the lowest possible reflected signal (VSWR) and guarantees no oxidation at the internal contact points as the connector ages. *"The Goalie"* is rated at 3 GHz with a VSWR of 1.12:1.

Stock No.	Mfr.'s Type	Fig.	Description	EACH		
				1-24	25-99	100-499
202-0300	330A505	28	Male/Male Inline splice	3.79	3.18	2.83
202-0302	332A505	29	Fem./Fem. Inline splice	2.27	1.91	1.69

"F Jacks and Adapters" — *NEW* —

F type jacks for bulkhead, inline or PC Board, and a variety of adapters are all machined brass construction. Variations of these items and special configurations are available upon request.

Stock No.	Mfr.'s Type	Fig.	Description	EACH		
				1-24	25-99	100-499
202-0221	826B519	8	Bulkhead Jack, Solder Tab	.56	.48	.41
202-0222	832A519N	9	Inline Female/Female with Nut and Washer	.67	.58	.50
202-0224	830A509	10	Inline, Male/Male	1.25	1.07	.94
202-0226	832A519	11	Inline, Female/Female	.60	.52	.44
202-0228	843A509	12	"T" Adapter, Female/Male/Female	2.07	1.77	1.53
202-0230	845A509	13	"T" Adapter, Female/Female/Female	3.86	3.31	2.81
202-0232	851A509	14	Right Angle Adapter, Male/Female	1.44	1.24	1.10
202-0234	F0884	15	75 Ohm Male Terminator	.44	.38	.32
202-0236	861A509	16	PC Board Jack, Vertical	.83	.72	.61
202-0240	864B509	17	PC Board Jack, Right Angle, Long	1.56	1.39	1.16
202-0242	864B509S	18	PC Board Jack, Right Angle, Short	1.48	1.29	1.06

Connectors For Twinax Cables

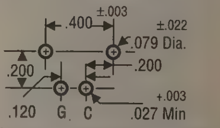
Standard Twinax connectors are impedance matched for 100 ohm cables and are used extensively with IBM computer systems. BNC *Satconn Twin* is a crimp (or solder) plug with a patented design that simplifies assembly and uses a comparatively inexpensive Bomar hand tool. For .242" diameter twinaxial cables.

Stock No.	Mfr.'s Type	Fig.	Description	EACH		
				1-24	25-99	100-499
202-0400	210A104R	19	Twinax Cable Plug	5.40	4.63	4.15
202-0402	220A106R	20	Twinax Cable Jack	9.12	7.82	7.02
202-0404	232A006	21	Twinax Fem./Fem. Inline	6.96	5.97	5.35
202-0406	243A006	22	Twinax "T" F/M/F	17.60	15.09	13.54
202-0408	245A006	23	Twinax "T" F/F/F	15.20	13.03	11.69
202-0410	410A903Y1	24	BNC Twin Crimp Plug	6.24	5.35	4.80
202-0412	443A505	25	BNC Twin F/M/F "T".	11.60	9.94	8.92

202-0414. BD10410. Crimp Tool For 410A903Y1 .... **EACH 130.00**

Printed Circuit Board BNC Jacks

These popular BNC board jacks meet or exceed the highest industry standards. They are available in many standard configurations as shown. Additional versions are available upon request. All isolated jacks are constructed with molded Valox, in White or Black, over nickel plated zinc bodies. Contacts are Phosphor Bronze and plated with tin or gold. All metal versions are fully shielded. They are nickel plated zinc and utilize the same phosphor bronze contacts in either tin or gold plating.



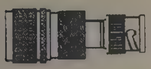
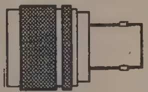
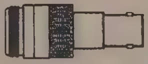
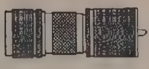
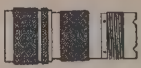
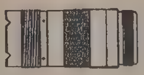
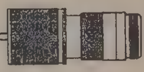
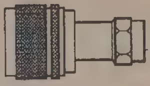
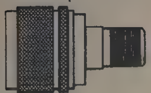
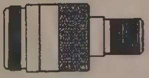
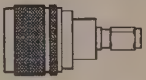
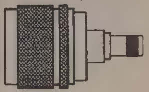
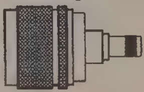
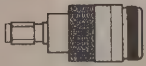
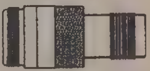
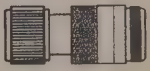
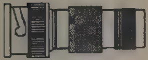
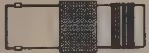
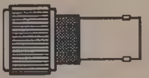
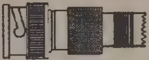
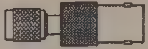
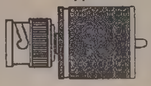
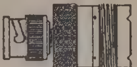
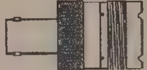
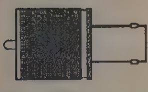
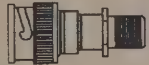
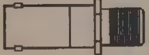
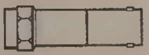
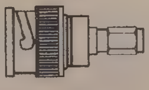
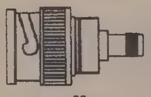
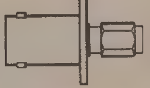
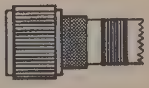
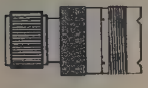
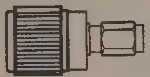
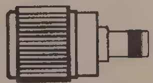
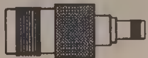
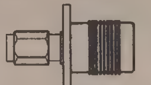
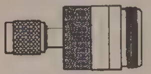
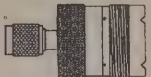
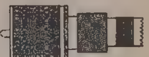
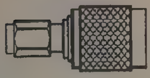
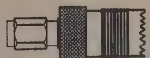
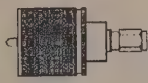
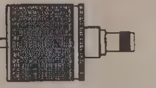
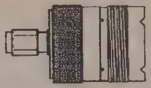
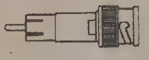
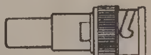
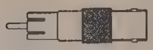
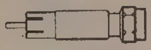
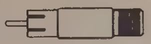
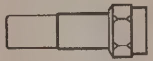
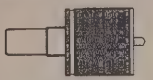
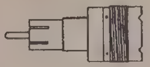
PC Board Configuration (Top View)

Stock No.	Mfr.'s Type	Fig.	Type	Description	EACH		
					1-24	25-99	100-499
202-0250	364A595	26	Right Angle	Standard Profile, White, Gold	1.44	1.21	1.08
202-0254	364A595B	26	Right Angle	Standard Profile, Black, Gold	2.06	1.73	1.54
202-0258	364A595BL	26	Right Angle	Low Profile, White, Gold	1.44	1.21	1.08
202-0262	364A595BLB	26	Right Angle	Low Profile, Black, Gold	1.98	1.67	1.48
202-0266	364M595	26	Right Angle	Standard Profile, Metal, Gold	2.72	2.28	2.03
202-0270	364M595L	26	Right Angle	Low Profile, Metal, Gold	2.72	2.28	2.03
202-0274	364S595	27	Vertical	Standard Profile, White, Gold	2.06	1.73	1.54
202-0278	364S595B	27	Vertical	Standard Profile, Black, Gold	2.10	1.77	1.57
202-0282	364S595M	27	Vertical	Standard Profile, Metal	2.68	2.25	2.00
202-0286	364LW	—	Hardware	Lock Washer For Panel Mounting	.08	.07	.06
202-0288	364NT	—	Hardware	Jam Nut For Panel Mounting	.16	.14	.12

Stock No.	Mfr.'s Type	Fig.	Description	EACH		
				1-24	25-99	100-499
202-0304	335A544	30	Fem./Fem. Bulkhead	3.79	3.18	2.83
202-0306	335R544	30	Fem./Fem. Bulkhead *Isolated*	4.57	3.85	3.42
202-0308	343A505	31	Fem./Male/Fem. "T"	3.03	2.55	2.26
202-0310	345A505	32	Fem./Fem./Fem. "T"	5.15	4.33	3.85
202-0312	351A505	33	Fem./Male Right Angle	4.28	3.81	3.20
202-0314	383U505	34	The Goalie	7.85	6.28	5.23
202-0535	383K505	34	*The Brute Goalie*	8.07	6.91	5.95

Coaxial Connectors, Between Series Adapters and Coaxial Cable

Between Series Adapters


1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

26

27

28

29

30

31

32

33

34

35

36

37

38

39

40

41

42

43

44

45

46

47

48

49

50

51

52

53

Between Series Adapters solve a variety of connection problems where connectors of different types could ordinarily not be mated together. Each adapter has a different type coupling at each end allowing for a wide variety of interconnections to fit almost all interconnection situations. All adapters are constructed of machined brass and are nickel plated.

Stock No.	Mfr.'s Type	Fig.	Description	EACH 1-24	25-99	100-499
202-0605	1303505	1	N Male to Bnc Male	22.40	19.20	16.00
202-0610	1313505	2	N Male to Bnc Female	8.13	6.97	5.81
202-0615	1323505	3	N Female to BNC Female	9.90	8.49	7.07
202-0620	1307505	4	N Male to UHF Male	8.13	6.97	5.81
202-0625	1317505	5	N Male to UHF Female	11.07	9.49	7.90
202-0630	1327505	6	N Female to UHF Female	11.37	9.74	8.12
202-0635	7311505	7	UHF Male to N Female	8.97	7.69	6.40
202-0640	1308505	8	N Male to F Male	7.87	6.74	5.62
202-0645	1318505	9	N Male to F Female	9.30	7.97	6.64
202-0650	1328505	10	N Female to F Female	8.10	6.94	5.79
202-0655	1309505	11	N Male to SMA Male	8.97	7.69	6.40
202-0660	1319505	12	N Male to SMA Female	8.43	7.23	6.02
202-0665	1329505	13	N Female to SMA Female	8.43	7.23	6.02
202-0670	9311505	14	SMA Male to N Female	10.20	8.74	7.29
202-0675	1325505	15	N Female to TNC Female	7.57	6.49	5.40
202-0680	5311505	16	TNC Male to N Female	7.57	6.49	5.40
202-0685	3315505	17	BNC Male to TNC Female	5.47	4.69	3.90
202-0690	3325505	18	BNC Female to TNC Female	7.00	6.00	5.00
202-0695	5313505	19	TNC Male to BNC Female	5.77	4.94	4.12
202-0700	3316505	20	BNC Male to Mini-UHF Female	5.23	4.49	3.74
202-0705	6313505	21	Mini-UHF Male to BNC Female	4.19	3.52	2.90
202-0710	3307505	22	BNC Male to UHF Male	6.40	5.49	4.57
202-0715	3317505	23	BNC Male to UHF Female	5.53	4.74	3.95
202-0720	3327505	24	BNC Female to UHF Female	6.10	5.23	4.36
202-0725	7313505	25	UHF Male to BNC Female	8.13	6.97	5.81
202-0730	3318505	26	BNC Male to F Female	4.81	4.04	3.33
202-0735	3328505	27	BNC Female to F Female	5.13	4.40	3.67

Stock No.	Mfr.'s Type	Fig.	Description	EACH 1-24	25-99	100-499
202-0740	8313505	28	F Male to BNC Female	7.57	6.49	5.40
202-0745	3309505	29	BNC Male to SMA Male	7.57	6.49	5.40
202-0750	3319505	30	BNC Male to SMA Female	8.73	7.49	6.24
202-0755	9313505	31	SMA Male to BNC Female	11.63	9.97	8.31
202-0760	5316505	32	TNC Male to Mini-UHF Female	4.26	3.63	3.02
202-0765	5317505	33	TNC Male to UHF Female	5.08	4.27	3.52
202-0770	5309505	34	TNC Male to SMA Male	7.57	6.49	5.40
202-0775	5319505	35	TNC Male to SMA Female	8.73	7.49	6.24
202-0780	5329505	36	TNC Female to SMA Female	7.87	6.74	5.62
202-0785	9315505	37	SMA Male to TNC Female	7.57	6.49	5.40
202-0790	6311505	38	Mini-UHF Male to N Female	6.70	5.74	4.79
202-0795	6317505	39	Mini-UHF Male to UHF Female	5.60	4.80	4.00
202-0800	7316505	40	UHF Male to Mini-UHF Female	9.67	8.29	6.90
202-0805	9306505	41	SMA Male to MIni-UHF Male	7.87	6.74	5.62
202-0810	9316505	42	SMA Male to Mini-UHF Female	7.87	6.74	5.62
202-0815	7309505	43	UHF Male to SMA Male	7.87	6.74	5.62
202-0820	7319505	44	UHF Female to SMA Male	7.87	6.74	5.62
202-0825	9317505	45	SMA Female to UHF Male	8.13	6.97	5.81
202-0830	R0842	46	RCA Male to BNC Male	5.37	4.60	3.83
202-0835	R0843	47	RCA Female to BNC Male	3.22	2.72	2.24
202-0840	R0844	48	RCA Male to BNC Female	4.24	3.46	2.78
202-0845	R0847	49	RCA Male to F Male	3.43	2.89	1.88
202-0850	R0849	50	RCA Male to F Female	2.99	2.51	2.07
202-0855	R0851	51	RCA Female to F Male	2.71	2.28	1.88
202-0860	R0811	52	RCA Female to UHF Male	4.37	3.74	3.12
202-0865	R0822	53	RCA Male to UHF Female	2.91	2.33	1.94
—	—	—	—	—	—	—

Coaxial Cable

Polyethylene Dielectric Flexible RG-Type

Mfr.'s Type	RG Type	Impedance Ohms	Inner Conductor Mat.'l	Strand	AWG	Shield Mat.'l Inner	Mat.'l Outer	Jacket Mat.'l	O.D. (In.)	100' SPOOL Stock No.	EACH	500' SPOOL Stock No.	EACH	1000' SPOOL Stock No.	EACH
6246R*	6U	75.0	C	Solid	18	F	TC	Black V	.270	876-9700	40.74	876Q9730	124.26	876Q9760	277.04
5237	8U	52.0	C	7/21	13	C	—	Black V	.415	876-9701	93.71	876Q9731	320.83	876Q9761	630.00
5254	8A/U	52.0	C	7/21	13	C	—	Black NCV	.415	876-9702	126.30	876Q9732	458.33	876Q9762	865.73
5238	11/U	75.0	TC	7/26	18	C	—	Black V	.415	876-9703	71.30	876Q9733	249.54	876Q9763	484.81
5240R*	58/U	53.5	C	Solid	20	TC	—	Black V	.200	876-9704	32.60	876Q9734	117.13	876Q9764	226.11
5259	58A/U	50.0	TC	19/32	20	TC	—	Black V	.199	876-9705	30.56	876Q9735	117.13	876Q9765	222.04
5262	58C/U	50.0	TC	19/32	20	TC	—	Black NCV	.199	876-9706	30.56	876Q9736	117.13	876Q9766	222.04
6244R*	59/U	73.0	CW	Solid	22	C	—	Black V	.242	876-9707	36.57	876Q9737	112.04	876Q9767	213.89
6244TF	59/U	75.0	C	Solid	20	C	—	Teflon	.220	876-9708	86.04	876Q9738	331.50	876Q9768	663.00
5263	59B/U	75.0	CW	Solid	23	C	—	Black NCV	.242	876-9709	32.60	876Q9739	117.13	876Q9769	224.07
6555T	Dual 59B/U	75.0	CW	Solid	23	C	—	Teflon	.230 x .430	876-9710	176.00	876Q9740	896.58	876Q9770	1793.16
5216	174/U	50.0	CW	7/34	26	C	—	Black V	.105	876-9714	21.67	876Q9744	82.00	876Q9774	164.00
5267	213/U	50.0	C	7/21	13	C	—	Black NCV	.405	876-9715	101.85	876Q9745	387.03	876Q9775	753.69
5268	214/U	50.0	SC	7/21	13	SC	SC	Black NCV	.425	876-9716	387.03	876Q9746	1833.30	876Q9776	3666.60
6273	223/U	50.0	SC	Solid	19	SC	SC	Black NCV	.212	876-9717	138.52	876Q9747	499.07	876Q9777	967.58

*Type CL2. Material Code: C — bare copper; TC — tinned copper; SC — silver covered copper; V — polyvinylchloride, Type 1; NVC — non contaminating polyvinylchloride, Type 2; 2X — double shield; CW — copper covered steel (copperweld); AM — Aluminum/Mylar Tape; O — Cellular (foam) polyethylene.

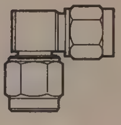
SMA Coaxial Connectors — 50 Ohm

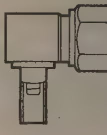
Plugs

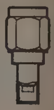
Stock No.	Mfr.'s Type	Fig.	Description	For RG Cable	Plating	EACH	
						1-9	10-49
528-0241	142-0203-101	1	Right Angle, Clamp Type	161, 174, 188, 316	Gold over Brass	10.20	9.18
528-2000	142-0403-101	2	Right Angle, Crimp Type	161, 174, 188, 316	Gold over Brass	8.11	7.30
528-2002	142-0403-106	2	Right Angle, Crimp Type	161, 174, 188, 316	Nickel over Brass	7.60	6.84
528-2004	142-0403-011	3	Straight, Solder or Crimp Type	161, 174, 188, 316	Gold over Brass	6.63	5.97
528-2006	142-0403-016	3	Straight, Solder or Crimp Type	161, 174, 188, 316	Nickel over Brass	6.02	5.42
528-2008	142-0694-021	4	Straight, Solder without Contact, Slide-On Nut, Thick Wall	.141 Semi-Rigid	Gold over Brass	2.24	2.02
528-2010	142-0693-001	5	Straight, Solder with Contact, Captive Nut, Thick Wall	.086 Semi-Rigid	Gold over Brass	3.98	3.58
528-2012	142-0694-011	6	Straight Solder, without Contact, Thread-On Nut, Thin Wall	.141 Semi-Rigid	Gold over Brass	1.63	1.47
528-0242	142-0203-011	7	Straight Clamp Type	174, 188, 316	Gold over Brass	12.65	11.38

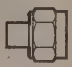
Jack Receptacles

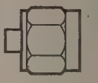
Stock No.	Mfr.'s Type	Fig.	Description	For RG Cable	Plating	1-9	10-49
528-0240	142-0701-401	8	Rear-Mount Bulkhead Jack	—	Gold over Brass	6.22	5.60
528-0239	142-0701-411	9	Front-Mount Bulkhead Jack	—	Gold over Brass	7.04	6.33
528-0229	142-0701-321	10	0.281" Right Angle PC Mount Jack, Solder Type	—	Gold over Brass	11.42	10.28
528-0230	142-0701-326	10	0.281" Right Angle PC Mount Jack, Solder Type	—	Nickel over Brass	10.71	9.64
528-2014	142-0701-301	10	0.155" Right Angle PC Mount Jack, Solder Type	—	Gold over Brass	9.23	8.31
528-2016	142-0701-306	10	0.155" Right Angle PC Mount Jack, Solder Type	—	Nickel over Brass	8.82	7.94
528-2018	142-0701-501	11	0.155" Right Angle Bulkhead Jack, Solder Type	—	Gold over Brass	11.12	10.01
528-3231	142-0701-211	12	0.281" Straight PC Mount Jack, Solder Type	—	Gold over Brass	7.60	6.84
528-0233	142-0701-201	12	0.200" Straight PC Mount Jack, Solder Type	—	Gold over Brass	6.37	5.74
528-0234	142-0701-631	13	4-Hole Flange Mount Jack, Solder Type	—	Gold over Brass	6.88	6.20
528-0235	142-0701-621	13	2-Hole Flange Mount Jack, Solder Type	—	Gold over Brass	6.97	6.27
528-0238	142-0701-801	14	End Launch PC Mount Jack for 0.062" PC Board	—	Gold over Brass	6.88	6.20

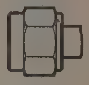

1

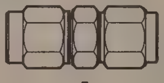

2

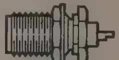

3

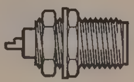

4

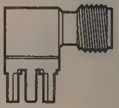

5

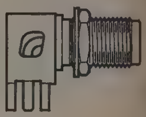

6

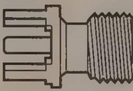

7

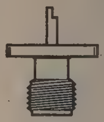

8

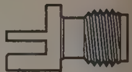

9


10


11


12


13


14

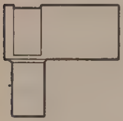
SMB Coaxial Connectors — 50 Ohm

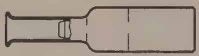
Plugs

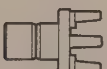
Stock No.	Mfr.'s Type	Fig.	Description	For RG Cable	Plating	EACH	
						1-9	10-49
528-0243	131-1402-101	15	Right Angle, Crimp Type, for Flexible Cable	178, 196	Gold over Die Cast Zinc	5.81	5.23
528-0244	131-1402-116	15	Right Angle, Crimp Type, for Flexible Cable	178, 196	Nickel over Die Cast Zinc	5.00	4.50
528-0247	131-1403-101	15	Right Angle, Crimp Type, for Flexible Cable	174, 188, 316	Gold over Die Cast Zinc	5.35	4.82
528-0248	131-1403-116	15	Right Angle, Crimp Type, for Flexible Cable	174, 188, 316	Nickel over Die Cast Zinc	4.59	4.13
528-0245	131-1403-001	16	Straight Crimp Type, for Flexible Cable	174, 188, 316	Gold over Die Cast Zinc	5.86	5.28
528-0246	131-1403-016	16	Straight Crimp Type, for Flexible Cable	174, 188, 316	Nickel over Die Cast Zinc	4.95	4.45

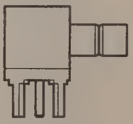
Jack Receptacles

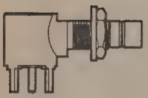
Stock No.	Mfr.'s Type	Fig.	Description	For RG Cable	Plating	1-9	10-49
528-0249	131-1701-201	17	0.155" Straight PC Mount Jack	—	Gold over Die Cast Zinc	2.29	2.07
528-0250	131-1701-206	17	0.155" Straight PC Mount Jack	—	Nickel over Die Cast Zinc	2.14	1.93
528-2020	131-1701-211	17	0.095" Straight PC Mount Jack	—	Gold over Die Cast Zinc	2.52	2.27
528-2022	131-1701-216	17	0.095" Straight PC Mount Jack	—	Nickel over Die Cast Zinc	2.24	2.02
528-0251	131-3701-301	18	0.155" Right Angle PC Mount Jack	—	Gold over Brass	5.13	4.62
528-0252	131-3701-306	18	0.155" Right Angle PC Mount Jack	—	Nickel over Brass	4.69	4.22
528-2024	131-1701-371	18	0.155" Right Angle PC Mount Jack	—	Gold over Die Cast Zinc	4.59	4.13
528-2026	131-1701-376	18	0.155" Right Angle PC Mount Jack	—	Nickel over Die Cast Zinc	4.39	3.95
528-2028	131-3701-341	19	0.155" Right Angle Bulkhead Jack, PC Mount	—	Gold over Brass	6.53	5.88
528-2030	131-3701-346	19	0.155" Right Angle Bulkhead Jack, PC Mount	—	Nickel over Brass	6.17	5.55
528-0253	131-3701-401	20	Rear-Mount Bulkhead Jack	—	Gold over Brass	5.46	4.91
528-0254	131-3701-406	20	Rear-Mount Bulkhead Jack	—	Nickel over Brass	5.25	4.73
528-2032	131-3303-501	21	Right Angle Bulkhead Jack, Crimp Type	161, 174, 179, 187, 188, 316	Gold over Brass	7.19	6.47
528-2034	131-3303-406	22	Straight Bulkhead Jack, Crimp Type	161, 174, 179, 187, 188, 316	Nickel over Brass	7.04	6.33

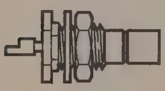

15

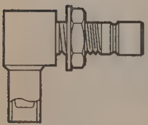

16

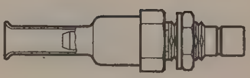

17


18


19


20


21


22

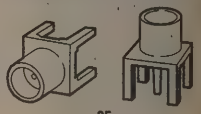
MCX Coaxial Connectors

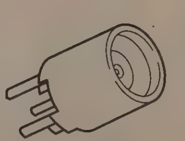
- ► 30% Smaller than the SMB Connectors

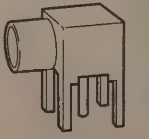
Stock No.	Mfr.'s Type	Fig.	Description	For RG Cable	Plating	EACH	
						1-9	10-49
528-2036	133-3403-001	23	Straight Cable Plug	316	Gold over Brass	6.10	5.61
528-2038	133-3402-101	24	Right Angle Cable Plug	178	Gold over Brass	5.40	4.97
528-2040	133-3403-101	24	Right Angle Cable Plug	316	Gold over Brass	5.40	4.97
528-2042	133-3701-201	25	.155" Straight PC Mount Jack	—	Gold over Brass	4.05	3.64
528-2044	133-3701-211	25	.110" Straight PC Mount Jack	—	Gold over Brass	4.00	3.60
528-2046	133-3701-221	25	.068" Straight PC Mount Jack	—	Gold over Brass	4.05	3.64
528-2048	133-3701-231	26	.100" Straight PC Mount Jack	—	Gold over Brass	4.75	4.28
528-2050	133-3701-301	27	.155" Right Angle PC Mount Jack	—	Gold over Brass	7.80	7.18
528-2052	133-3701-311	27	.110" Right Angle PC Mount Jack	—	Gold over Brass	8.00	7.36
528-2054	133-3701-401	28	Front Mount Bulkhead Jack	—	Gold over Brass	5.68	5.23

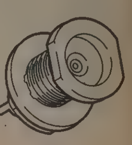
23

24

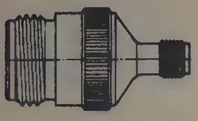

25

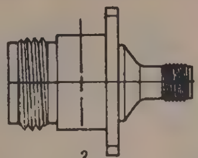

26

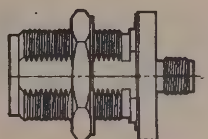

27

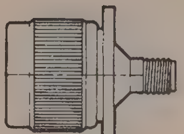

28

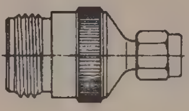
Coaxial, Between-Series Adapters

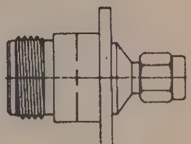

1

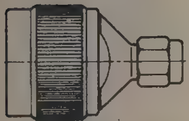

2

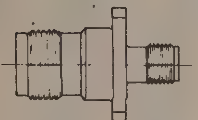

3

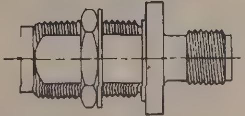

4

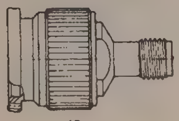

5

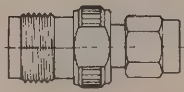

6

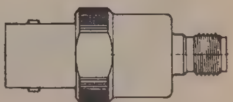

7

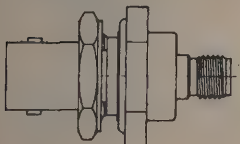

8

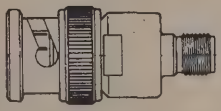

9

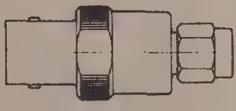

10

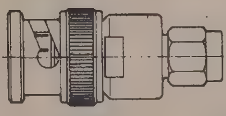

11

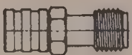

12

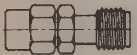

13

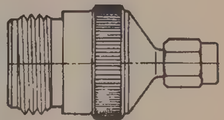

14

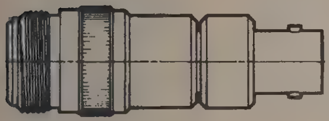

15

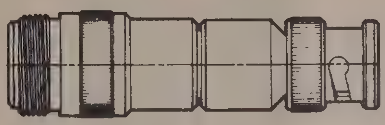

16

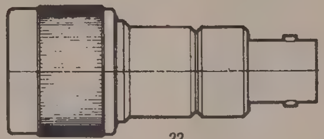

17

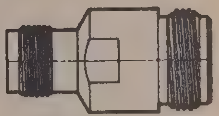

18

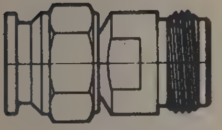

19

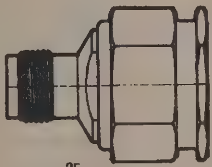

20

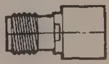

21

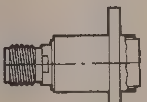

22

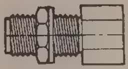

23

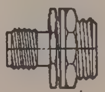

24

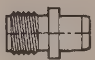

25

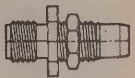

26


27


28


29


30

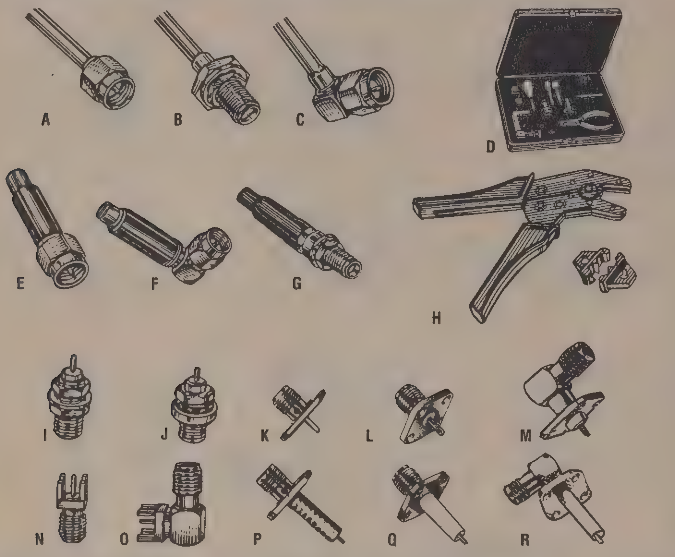

31

M/A-COM Between-Series Coaxial Transmission Line Adapters provide convenient transitions between all popular series coaxial connectors. The adapter design provides a minimum length consistent with good electrical performance. The small, low VSWR, and broad frequency coverage permits a wide range of applications in both measurement and systems use. All dielectrics are TFE fluorocarbon. The center contacts are made of beryllium copper, gold plated.

Stock No.	Mfr.'s Type	Fig.	Description	Operating Frequency	EACH	
					1-9	10-24
513-1510	3080-2240-00	1	Type N Jack to OSM (SMA) Jack	DC-12 GHz* 12.4-15.0 GHz**	64.04	60.58
513-1700	3680-2240-00	1	Type N Jack to OSM (SMA) Jack	High Freq.-18.0 GHz**	89.74	83.33
513-1513	3080-2242-00	2	Flange Mount-N to OSM (SMA) Jack	DC-12 GHz* 12.4-15.0 GHz**	73.70	68.03
513-1702	3680-2242-00	2	Flange Mount-N to OSM (SMA) Jack	High Freq.-18.0 GHz**	104.78	97.80
513-1512	3084-2240-00	3	Bulkhead Mount-N Jack to OSM (SMA) Jack with Gasket	DC-12 GHz* 12.4-15.0 GHz**	79.89	74.18
513-1704	3684-2240-00	3	Bulkhead Mount-N Jack to OSM (SMA) Jack with Gasket	High Freq.-18.0 GHz**	98.11	91.57
513-1706	3082-2242-00	4	Flange Mount-N Plug to OSM (SMA) Jack	DC-12 GHz* 12.4-15.0 GHz**	79.10	73.45
513-1520	3082-2241-00	5	N Jack to OSM (SMA) Plug	DC-12 GHz• 12.4-15.0 GHz**	55.56	52.56
513-1708	3682-2241-00	5	N Jack to OSM (SMA) Plug	High Freq.-18.0 GHz**	89.74	83.33
513-1710	3082-2243-00	6	Flange Mount-N Jack to OSM (SMA) Plug	DC-12 GHz• 12.4-15.0 GHz**	87.96	81.67
513-1525	3081-2241-00	7	N Plug to OSM (SMA) Plug	DC-12 GHz• 12.4-18.0 GHz**	59.82	55.55
513-1533	3180-2242-00	8	Flange Mount-TNC Jack to OSM (SMA) Jack	DC-15.0 GHz†	69.33	63.99
513-1712	3780-2242-00	8	Flange Mount-TNC Jack to OSM (SMA) Jack	Mode Free to 18.0 GHz†	118.78	110.29
513-1714	3184-2240-00	9	Bulkhead Mount-TNC to OSM (SMA) Jack	DC-15.0 GHz†	99.98	92.83
513-1716	3784-2240-00	9	Bulkhead Mount-TNC to OSM (SMA) Jack	Mode Free to 18.0 GHz†	114.22	106.07
513-1535	3182-2240-00	10	TNC Plug to OSM (SMA) Jack	DC-15.0 GHz+	50.87	47.24
513-1718	3782-2240-00	10	TNC Plug to OSM (SMA) Jack	Mode Free to 18.0 GHz†	98.64	91.60
513-1540	3182-2241-00	11	TNC Jack to OSM (SMA) Plug	DC-15.0 GHz†	59.36	55.12
513-1550	3280-2240-00	12	BNC Jack to OSM (SMA) Jack	—	26.78	24.72
513-1553	3284-2240-00	13	Bulkhead Mount-BNC Jack to OSM (SMA) Jack with Gasket	—	41.80	38.59
513-1555	3282-2240-00	14	BNC Plug to OSM (SMA) Jack	—	26.64	24.59
513-1560	3282-2241-00	15	BNC Jack to OSM (SMA) Plug	—	28.68	26.47
513-1565	3281-2241-00	16	BNC Plug to OSM (SMA) Plug	—	28.10	25.94
513-1720	5182-2240-00	17	SMB Plug to OSM (SMA) Jack	—	49.60	46.06
513-1722	5082-2240-00	18	SMC Plug to OSM (SMA) Jack	—	42.88	39.80
513-1724	3082-2201-00	19	N Jack to OSSM Plug	DC-12.4 GHz‡	146.99	136.49
513-1726	3080-2320-00	20	N Jack to BNC Jack	—	95.46	88.64
513-1728	3082-2321-00	21	N Jack to BNC Plug	—	106.32	98.72
513-1730	3082-2320-00	22	N Plug to BNC Jack	—	95.46	88.64
513-1732	3680-2310-02	23	TNC Jack to N Jack	—	101.31	94.07
513-1734	3682-2311-02	24	TNC Plug to N Jack	—	108.28	100.54
513-1736	3682-2310-02	25	TNC Jack to N Plug	—	108.28	100.54
513-1738	4580-2240-02	26	OSM (SMA) Jack to OSP (BMA) Jack	DC-18.0 GHz•	34.63	32.16
513-1740	4584-2242-02	27	Floating Flange Mount — OSM (SMA) Jack to OSP (BMA) Jack	DC-18.0 GHz•	90.81	84.32
513-1742	4584-2244-02	28	Bulkhead Mount — OSM (SMA) Jack to OSP (BMA) Jack	DC-18.0 GHz•	81.52	75.70
513-1744	4584-2240-02	29	Bulkhead Mount — OSM (SMA) Jack to OSP(BMA) Jack	DC-18.0 GHz•	48.83	45.35
513-1746	4582-2240-02	30	OSM (SMA) Jack to OSP (BMA) Plug	DC-18.0 GHz•	31.67	29.41
513-1748	4585-2240-02	31	Bulkhead Mount — OSM (SMA) Jack to OSP (BMA) Plug	DC-18.0 GHz•	56.54	52.50

*Max. VSWR 1.06+.005 fGHz. **Max. VSWR .83+.023 fGHz. •Max. VSWR 1.05+.005 fGHz. †Max. VSWR 1.07+.015 fGHz. ‡Max. VSWR 1.09+.009 fGHz.

SMA Series Coaxial Plug and Jack Connectors



All SMA miniature connectors meet or exceed requirements of MIL-C-39012. Part number suffix-02 indicates passivated stainless steel finish, while part number suffix-00 indicates gold plated finish.

Semi-Rigid Cable, Direct Solder Attachment: RG 402/U (.141 In.), RG 405/U (.085 In.)

Stock No.	Mfr.'s Type	Fig.	Description	RG/U Cable	EACH
					1-9
513-1001	2001-5003-02	A	Std. Plug with Contact	402	5.92
513-1005	2001-7985-02	A	Std. Plug with Contact	405	7.14
513-1010	2004-7941-00	B	Bulkhead Jack	402	14.86
513-1015	2004-7985-00	B	Bulkhead Jack	405	13.42
513-1020	2007-7941-02	C	Right Angle Plug	402	14.96
513-1025	2007-7985-02	C	Right Angle Plug	405	16.76
513-1030	2098-5066-54	D	Solder Assembly Kit	402/405	696.76

Flexible Cable, Solder Attachment

513-1042	2031-5002-02	E	Std. Plug	55, 58, 141, 142, 223, 303, 400	7.91
513-1043	2037-5005-02	F	Right Angle Plug	55, 58, 141, 142, 223, 303, 400	16.61
513-1044	2031-5003-02	E	Std. Plug	174, 188, 316	7.00
513-1045	2034-5008-00	G	Bulkhead Jack	174, 188, 316	23.60
513-1050	2037-5006-02	F	Right Angle Plug	174, 188, 316	16.61

Flexible Cable, Crimp Attachment

513-1055	2034-5005-02	G	Bulkhead Jack	174, 188, 316	13.01
513-1060	2034-5031-02	G	Bulkhead Jack	178, 196	17.02
513-1065	2037-5008-02	F	Right Angle Plug	174, 188, 316	16.66
513-1070	2037-5100-02	F	Right Angle Plug	178, 196	20.62

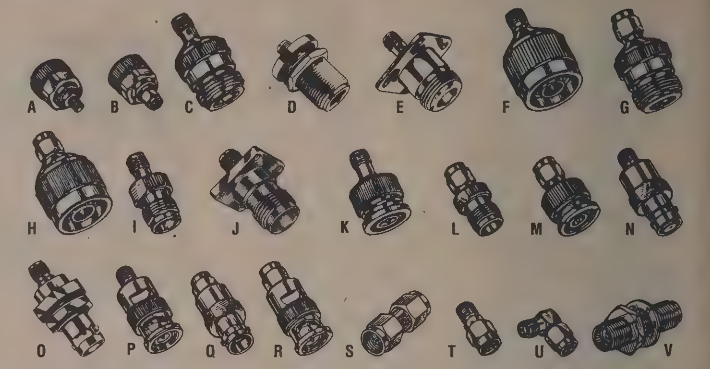
Econo-Crimp Assembly Tool for Flexible Cable — Fig. H

Includes five exchangeable hex dies — .105, .128, .178, .213, .255 inch.
513-1075. 2598-5005-54 ....**EACH 232.79**

Panel Mount Receptacles

Stock No.	Mfr.'s Type	Fig.	Description	Terminal	EACH
					1-9
513-1080	2058-0000-02	I	Bulkhead Jack	Solder Pot	11.93
513-1085	2056-0000-02	J	Bulkhead Jack	Solder Pot	7.35
513-1086	2052-1350-02	K	2-Hole Flange Jack	Solder Pot	7.85
513-1087	2052-0000-02	L	4-Hole Flange Jack	Solder Pot	6.58
513-1088	2054-0000-02	M	4-Hole Flange Rt. Ang. Jack	Straight	15.61
513-1090	2062-0000-00	N	Std. P.C. Mount Jack	Straight	8.36
513-1095	2064-0000-00	O	Right Angle P.C. Jack	Straight	11.66
513-1096	2052-1352-00	P	2-Hole Flange Jack	Straight	7.60
513-1097	2052-1201-02	Q	4-Hole Flange Jack	Straight	6.34
513-1098	2054-1201-02	R	4-Hole Flange Rt. Ang. Jack	Straight	12.98

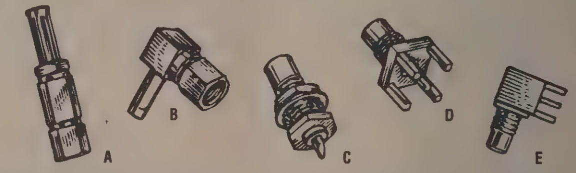
SMA Coaxial Adapters



Stock No.	Mfr.'s Type	Fig.	Description	EACH
				1-9
513-1500	2082-2700-00	A	7 mm Precision to SMA Jack	112.00
513-1505	2081-2700-00	B	7 mm Precision to SMA Plug	112.00
513-1510	3080-2240-00	C	N Jack to SMA Jack	64.04
513-1512	3084-2240-00	D	N Bulkhead Jack to SMA Jack	79.89
513-1513	3080-2242-00	E	N Jack to SMA Jack Flange	73.70
513-1515	3082-2240-00	F	N Plug to SMA Jack	47.73
513-1520	3082-2241-00	G	N Jack to SMA Plug	55.56
513-1525	3081-2241-00	H	N Plug to SMA Plug	59.82
513-1530	3180-2240-00	I	TNC Jack to SMA Jack	58.22
513-1533	3180-2242-00	J	TNC Jack to SMA Jack Flange	69.33
513-1535	3182-2240-00	K	TNC Plug to SMA Jack	50.87
513-1540	3182-2241-00	L	TNC Jack to SMA Plug	59.36
513-1545	3181-2241-00	M	TNC Plug to SMA Plug	57.64
513-1550	3280-2240-00	N	BNC Jack to SMA Jack	26.78
513-1553	3284-2240-00	O	BNC Bulkhead Jack to SMA Jack	41.80
513-1555	3282-2240-00	P	BNC Plug to SMA Jack	26.64
513-1560	3282-2241-00	Q	BNC Jack to SMA Plug	28.68
513-1565	3281-2241-00	R	BNC Plug to SMA Plug	28.10
513-1567	2081-0000-02	S	SMA Plug to Plug	18.85
513-1570	2082-5133-02	T	SMA Plug to Jack Connector Saver	21.71
513-1575	2088-1230-02	U	SMA Plug to Jack Right Angle	24.73
513-1577	2084-0000-02	V	SMA Jack to Jack Bulkhead Feed Through	18.72

Contact the closest sales office for quantity pricing.

SMC Series Screw-On Coaxial Plug and Jack Connectors



M/A-COM uses beryllium copper center contacts and brazed right angle bodies for increased durability in all SMC Series connectors. All connectors are gold plated.

Flexible Cable Crimp Attachment

Stock No.	Mfr.'s Type	Fig.	Description	Coaxial Cable	EACH
					1-9
513-1200	5031-5014-09	A	Std. Flex. Cable Plug	174, 188, 316	7.59
513-1205	5031-5007-09	A	Std. Flex. Cable Plug	178, 196	7.59
513-1210	5037-7188-09	B	Right Angle Plug	174, 188, 316	9.26
513-1215	5037-7196-09	B	Right Angle Plug	178, 196	9.52

Panel Mount

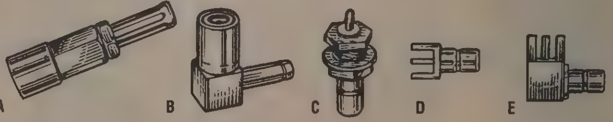
Stock No.	Mfr.'s Type	Fig.	Description	Terminal	EACH
					1-9
513-1220	5056-0000-09	C	Bulkhead Jack	Solder Pot	4.47
513-1225	5062-5003-09	D	Std. P.C. Mount Jack	Straight	5.79
513-1230	5064-5003-09	E	Right Angle P.C. Jack	Straight	9.84

SMB Series Snap-on Coaxial Plug and Jack Connectors

M/A-COM uses beryllium copper center contacts and brazed right angle bodies for increased durability in all SMB Series connectors. All connectors are gold plated.

Flexible Cable Crimp Attachment

Stock No.	Mfr.'s Type	Fig.	Description	Coaxial Cable	EACH
					1-9
513-1100	5131-5007-09	A	Std. Flex. Cable Plug	174, 188, 316	7.62
513-1105	5131-5011-09	A	Std. Flex. Cable Plug	178, 196	7.89
513-1110	5137-5010-09	B	Right Angle Plug	174, 188, 316	9.13
513-1115	5137-5011-09	B	Right Angle Plug	178, 196	10.90



Panel Mount

Stock No.	Mfr.'s Type	Fig.	Description	Terminal	EACH
					1-9
513-1120	5156-0000-09	C	Bulkhead Jack	Solder Pot	4.11
513-1125	5162-5013-09	D	Std. P.C. Mount Jack	Straight	5.47
513-1130	5164-5003-09	E	Right Angle P.C. Jack	Straight	9.34
—	—	—	—	—	—

OSX Subminiature Snap-On Connectors

- ► 30% Smaller Mated Height Than SMB
- ► Improved Force to Engage/Disengage
- ► Snap-On Interface
- ► Broadband Frequency (DC-6 GHz)

OSX subminiature snap-on connectors are an excellent blend of size, weight, durability and performance for applications such as GPS, automotive, and wireless communications.

Plugs for Flexible Cable

Stock No.	Mfr.'s Type	Fig.	Description	For RG/U Cable	Body Plating	EACH 1-9	EACH 10-24
513-5000	5807-5001-09	A	Right Angle Cable Plug, Solder Type	174, 179, 187, 188, 316	Gold	**4.00**	**3.60**
513-5002	5831-5001-10	B	Straight Cable Plug, Crimp Type, Captured Center Contact	174, 179, 187, 188, 316	Nickel	**3.65**	**3.29**
513-5004	5831-5002-10	B	Straight Cable Plug, Crimp Type, Non-Captured Center Contact	178, 196	Nickel	**3.45**	**3.11**
513-5006	5831-5003-10	B	Straight Cable Plug, Crimp Type, Non-Captured Center Contact	174, 179, 187, 188, 316	Nickel	**3.45**	**3.11**
513-5008	5831-7316-10	B	Straight Cable Plug, Crimp Type, Non-Captured Center Contact	RD-316	Nickel	**3.70**	**3.33**
513-5010	5837-5002-10	C	Right Angle Cable Plug, Crimp Type	178, 196	Nickel	**3.90**	**3.51**
513-5012	5837-5003-10	C	Right Angle Cable Plug, Crimp Type	174, 179, 187, 188, 316	Nickel	**3.25**	**2.93**
513-5014	5837-5010-10	C	Right Angle Cable Plug, Crimp Type	RD-316	Nickel	**3.50**	**3.15**

Plugs for Semi-Rigid Cable

Stock No.	Mfr.'s Type	Fig.	Description	For RG/U Cable	Body Plating	EACH 1-9	EACH 10-24
513-5016	5801-7985-09	D	Straight Cable, Solder Type	405 (.085)	Gold	**9.94**	**8.95**
513-5018	5807-7985-09	E	Right Angle Plug, Solder Type	405 (.085)	Gold	**7.50**	**6.75**

Plug PCB Mount

Stock No.	Mfr.'s Type	Fig.	Description	For RG/U Cable	Body Plating	EACH 1-9	EACH 10-24
513-5028	5863-0000-10	G	Straight PCB Plug	—	Nickel	**3.85**	**3.47**

Jacks for Flexible Cable

Stock No.	Mfr.'s Type	Fig.	Description	For RG/U Cable	Body Plating	EACH 1-9	EACH 10-24
513-5020	5834-7396-10	F	Bulkhead Cable Jack	178, 196	Nickel	**7.75**	**6.98**
513-5022	5834-7388-10	F	Bulkhead Cable Jack	174, 179, 187, 188, 316	Nickel	**7.75**	**6.98**
513-5024	5834-7316-10	F	Bulkhead Cable Jack	RD-316	Nickel	**7.75**	**6.98**

Jack for Semi-Rigid Cable

Stock No.	Mfr.'s Type	Fig.	Description	For RG/U Cable	Body Plating	EACH 1-9	EACH 10-24
513-5026	5802-7985-09	H	Straight Cable Jack, Solder Type	405 (.085)	Gold	**16.20**	**14.58**

Jacks Feedthrough and PCB and Surface Mount

Stock No.	Mfr.'s Type	Fig.	Description	Dimensions A	Dimensions B	Body Plating	EACH 1-9	EACH 10-24
513-5030	5858-0000-10	I	Bulkhead Feedthrough Jack	—	—	Nickel	**4.00**	**3.60**
513-5032	5864-5001-10	J	Right Angle PCB Jack	.391	.155	Nickel	**7.14**	**6.43**
513-5034	5864-5002-10	J	Right Angle PCB Jack	.304	.068	Nickel	**7.14**	**6.43**
513-5036	5864-5003-10	J	Right Angle PCB Jack	.351	.115	Nickel	**7.14**	**6.43**
513-5038	5862-5002-10	K	Straight PCB Jack	.326	.115	Nickel	**2.30**	**2.07**
513-5040	5862-5003-10	K	Straight PCB Jack	.366	.155	Nickel	**2.30**	**2.07**
513-5042	5862-5004-10	K	Straight PCB Jack	.279	.068	Nickel	**2.30**	**2.07**
513-5044	5862-5007-13	L	Straight SMT Jack	—	—	Tin Lead	**3.10**	**2.79**
513-5046	5864-5008-13	M	Right Angle SMT Jack	—	—	Tin Lead	**8.00**	**7.20**

Straight End Launch

Stock No.	Mfr.'s Type	Fig.	Description	Dimensions A	Dimensions B	Body Plating	EACH 1-9	EACH 10-24
513-5048	5862-5018-13	N	Straight End Launch	—	—	Tin Lead	**7.25**	**6.53**

Straight Cable Terminal

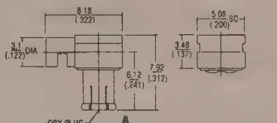
Stock No.	Mfr.'s Type	Fig.	Description	Dimensions A	Dimensions B	Body Plating	EACH 1-9	EACH 10-24
513-5050	5818-5002-10*	O	Straight Cable Terminal, No Center Contact	.463	.155	Nickel	**1.42**	**1.28**
513-5052	5818-5003-10*	O	Straight Cable Terminal, No Center Contact	.423	.115	Nickel	**1.42**	**1.28**
513-5054	5818-5004-10†	O	Straight Cable Terminal, No Center Contact	.473	.155	Nickel	**1.42**	**1.28**
513-5056	5818-5005-10†	O	Straight Cable Terminal, No Center Contact	.433	.115	Nickel	**1.42**	**1.28**

*For RG-174/U, 179/U, 187/U, 188/U, 316/U. †For RG-178/U, 196/U.

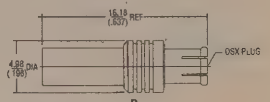
Crimp Tool and Die

513-0830. 2598-5006-54. Crimp Tool .... **EACH 97.47**

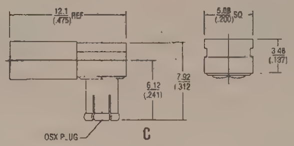
513-5060. 2598-5007-54. Die .... **EACH 59.65**



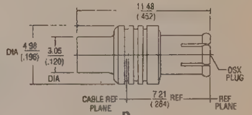
A



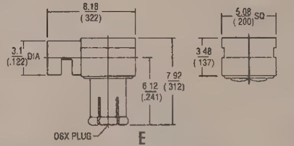
B



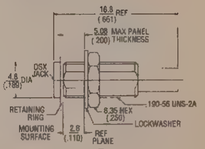
C



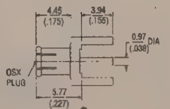
D



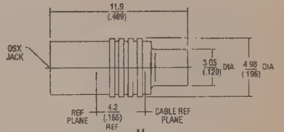
E



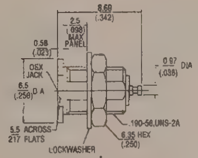
F



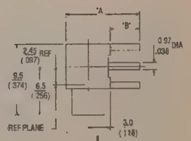
G



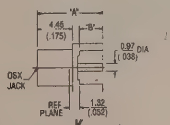
H



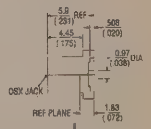
I



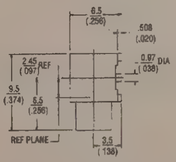
J



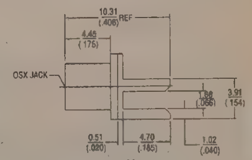
K



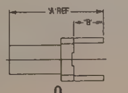
L



M



N



O

K Connectors

— NEW —

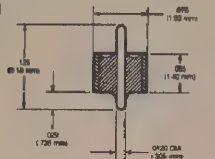
Anritsu Wiltron

- Excellent Performance Up to 46 GHz
- Performance Exceeding SMA Below 18 GHz
- Superior Reliability
- Compatibility with SMA, and 3.5 mm
- Familiar Assembly Procedures
- Complete Testability on Existing Network Analyzers

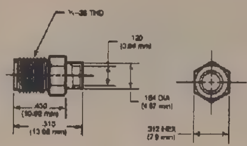
The K connector is a reliable, 2.92 mm device that operated up to 46 GHz and outperforms an SMA connector below 18 GHz. It is compatible with SMA, and 3.5 mm connectors and is assembled using procedures that are similar to those used on SMA. It is well suited to applications in components, systems, or instrumentation.

Connectors

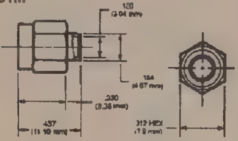
K100



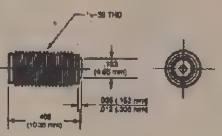
K101F



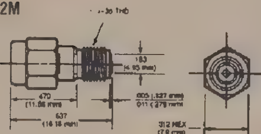
K101M



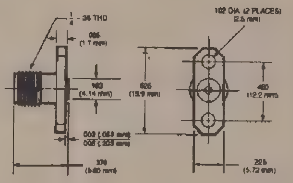
K102F



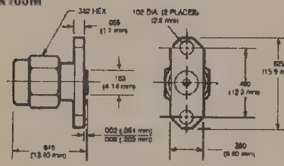
K102M



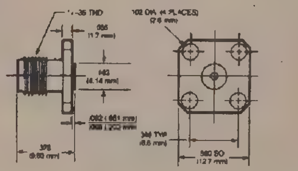
K103F



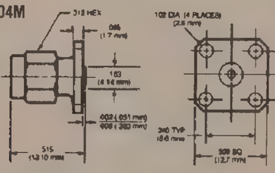
K103M



K104F

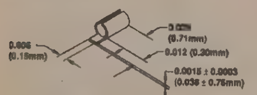


K104M

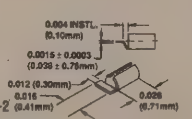


838-0002.	K100. Glass Beads for K102, K103, K104	EACH	8.90
838-0004.	K101F. K Connector, Female .118 S/R Cable	EACH	50.55
838-0006.	K101M. K Connector, Male .118 S/R Cable	EACH	30.20
838-0010.	K102F. K Connector, Female, Spark Plug, Launcher	EACH	27.95
838-0012.	K102M. K Connector, Male, Spark Plug, Launcher	EACH	40.70
838-0014.	K103F. K Connector, Female, 2 Hole Flange, Launcher	EACH	28.55
838-0016.	K103M. K Connector, Male, 2 Hole Flange, Launcher	EACH	43.75
838-0018.	K104F. K Connector, Female, 4 Hole Flange, Launcher	EACH	32.95
838-0020.	K104M. K Connector, Male, 4 Hole Flange, Launcher	EACH	43.75

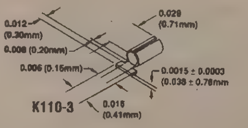
Stress Reliefs



K110-1



K110-2



K110-3

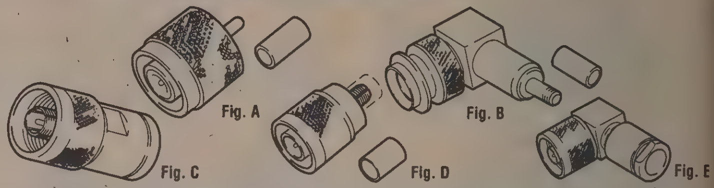
838-0024.	K110-1. Stress Relief Contact for K100, Microstrip and Coplanar Wave Guide	EACH	4.15
838-0026.	K110-2. Stress Relief Contact for K100, Stripline	EACH	4.15
838-0028.	K110-3. Stress Relief Contact for K100, Microstrip	EACH	4.15

Coaxial Adapters

The K220 series of precision adapters enables accurate measurement with K connectors. Every adapter is fully specified and 100% tested to ensure low refection and optimum performance over the DC to 60 GHz range. **Specifications. Frequency Range (GHz):** DC to 40. **SWR:** 1.22. **Material:** Outer conductor and body — stainless steel per ASTM A484/A582, passivated per QQ-P-35; Center conductor — BECU per QQ-C-530, gold plate per MIL-G-45204. **Electrical:** Frequency range — .01-40 GHz; Pin depth — .000 to -.003.

838-0030.	K220B. K Male to K Male	EACH	140.00
838-0032.	K222B. K Female to K Female	EACH	140.00
838-0034.	K224B. K Female to K Male	EACH	140.00

TNC and N Type Coaxial Connectors



Connectors below all have silver or TR-5 plated bodies and silver or gold-plated contacts, except for connectors which are Mil-C-39012, they have silver bodies and gold contacts.

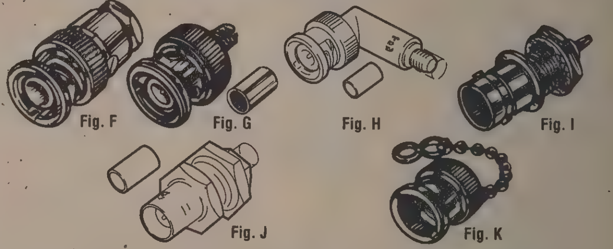
TNC Type

Stock No.	Mfr.'s Type	Fig.	For RG/U Cables	MIL-No. 39012/	EACH	
					1-24	25-99
517-3500	KA-59-400-M06	A	Belden 1478, 9880	—	**8.00**	**6.67**
517-3502	KA-59-69	A	174, 188, 316, 179, 187	—	**9.89**	**8.24**
517-3504	KA-59-406-M06	A	58, 141, 303	—	**4.94**	**4.15**
517-3506	KA-59-236	B	55, 142, 223, 400	30-0011	**15.81**	**13.18**

N Type

Stock No.	Mfr.'s Type	Fig.	For RG/U Cables	MIL-No. 39012/	1-24	25-99
517-3508	KN-59-176	C	8, 213, 11, 9, 214, 216, 393	01-0005	**13.61**	**11.31**
517-3510	KN-59-239	D	9, 214, 225, 393	01-0501	**10.04**	**8.33**
517-3512	KN-59-242	D	55, 142, 223, 400	01-0503	**12.64**	**10.53**
517-3514	KN-59-298	E	8, 9, 213, 214	05-0101	**52.22**	**43.52**

BNC — Miniature Coaxial Connectors



These connectors are rated at 500 Volt RMS. **Frequency Range:** 0-4 GHz. **Impedance:** 50 Ohm except for the 75 Ohm impedance listings. Silver-plated bodies are finished with TR-4® chromate treatment to resist tarnish and salt spray. The rest are finished with TR-5® electro-deposited plating that has superior resistance to tarnish and corrosion.

Straight Plugs — Silver-Plated with TR-4® Finish

Stock No.	Mfr.'s Type	Fig.	For RG/U Cables	MIL-No. M39012/	EACH	
					1-24	25-99
517-3001	KC-59-544	F	58, 58A, 58C, 141, 141A, 55A, 142, 142A, 223, 55, 55B, 142B	16-0101	**4.03**	**3.36**
517-3003	KC-59-545	F	59, 59A, 59B, 62, 62A, 62B, 62C, 210, 71, 71A, 71B	16-0102	**4.31**	**3.59**
517-3024	KC-59-347	G	58, 58A, 58C, 141, 141A	16-0013	**3.78**	**3.15**
517-3029	KC-59-348	G	59, 59A, 59B, 62, 62A, 62B, 62C, 210	16-0015	**3.78**	**3.15**

Straight Plugs — Non-Ferrous Body with TR-5® Plating

Stock No.	Mfr.'s Type	Fig.	For RG/U Cables	MIL-No. M39012/	1-24	25-99
517-3004	KC-59-557-M06	G	179, 179B, 187, 187A, 174, 188, 188A, 316	—	**4.01**	**3.43**
517-3005	KC-59-152	G	174, 188, 188A, 316	—	**6.62**	**5.51**
517-3022	KC-59-291	G	58, 58A, 58C, 141, 141A	—	**4.20**	**3.50**
517-3012	KC-59-294	G	59, 59A, 59B, 62, 62A, 62B, 62C, 210	—	**3.57**	**2.98**
517-3013	KC-59-299	G	Belden 8281, WE 724	—	**3.44**	**2.87**

Straight Plugs — 75 Ohm Impedance — Gold Contact

Stock No.	Mfr.'s Type	Fig.	For RG/U Cables	MIL-No. M39012/	1-24	25-99
517-3516	2025-44-9	G	735A	—	**4.68**	**3.90**
517-3518	2025-76-9	G	734A, 734D	—	**4.79**	**3.99**
517-3017	2025-58-9	G	Belden 8281, 8281B, 8281F, 9141, 88281	—	**2.98**	**2.49**
517-3030	2025-51-9	G	Belden 1426A, 8241F, 9259, 1505A	—	**3.09**	**2.57**
517-3031	2025-59-9	G	Belden 8241, 8241A, RG59	—	**2.86**	**2.38**
517-3520	2025-79-9	G	Belden 1694A, 9248	—	**4.41**	**3.68**

Right Angle Plugs — 75 Ohm Impedance — Gold Contact

Stock No.	Mfr.'s Type	Fig.	For RG/U Cables	MIL-No. M39012/	1-24	25-99
517-3522	2026-16-9	H	734A, 734D	—	**23.04**	**19.20**
517-3524	2026-17-9	H	735A	—	**21.95**	**18.29**

Bulkhead Receptacles — Silver Plated with TR-4® Finish

Stock No.	Mfr.'s Type	Fig.	Description	MIL-No. M39012/	EACH	
					1-24	25-99
517-3076	KC-79-105	I	Front Mount	21-0001	**5.23**	**4.36**
517-3077	KC-79-106	I	Front Mount	21-0002	**2.94**	**2.45**
517-3046	UG-1094/U	I	Front Mount	—	**2.41**	**1.93**

Bulkhead Receptacles — 75 Ohm Impedance — Gold Contact

Stock No.	Mfr.'s Type	Fig.	Description	MIL-No. M39012/	1-24	25-99
517-3526	2022-17-29	J	734A, 734D	—	**31.58**	**26.32**
517-3527	2022-18-29	J	735A	—	**26.48**	**22.07**

Accessory

Stock No.	Mfr.'s Type	Fig.	Description	MIL-No. M39012/	1-24	25-99
517-3084	KC-89-87	K	Cap with Beaded Chain	25-0006	**3.47**	**2.89**

Comlinear Corporation, located in Fort Collins, Colorado merged with National Semiconductor corporation in January of 1995. As a separate business unit within National's Analog Mixed Signal Systems Division, Comlinear continues to supply high performance analog signaling processing components.

Buffer Amplifiers (Typical Specifications +25°C)

Mfr.'s Type		Key Features	–3 dB Bandwidth (MHz)	Gain (V/V)	Full Power BW (MHz @ Vpp, RL)	Harmonic Distortion (dBc @ 20 MHz, 2 Vpp)	Settling Time (nsec, %)	Output (V, mA)	Slew Rate (V/µsec)	Output Offset Drift (mV, µV/°C)
PDIP	SOIC									
CLC110AJP	CLC110AJE	Closed-Loop Design Low Distortion	730	0.97	90 @ 5, 100	–65, –65	5, 0.2	4, 70	800	2, 20
CLC114AJP	CLC114AJE	Quad Buffer Low Power	200	0.97	95 @ 2, 100	–50, –58	10, 0.1	4, 25	450	.5, 9

Operational Amplifiers (Typical Specifications +25°C)

Mfr.'s Type		Key Features	–3 dB Bandwidth (MHz)			Optimal Gain Range $(A_v = V_0/V_1)$	Full Power BW (MHz @ $V_{pp1}R_L$)	Settling Time (nsec, %)	Output (V, mA)	Slew Rate (V/µsec)	Input Offset Drift (mV, µV/°C)
PDIP	SOIC		$\lvert A_v\rvert=$	$\lvert A_v\rvert=$	$\lvert A_v\rvert=$						
—	CLC206AI**	Overdrive Protected 100 mA Output Current	$\lvert A_v\rvert=4$ 200	$\lvert A_v\rvert=20$ 180	$\lvert A_v\rvert=40$ 90	+7 to +50 –1 to –50	70 @ 20, 200	19, 0.1 22, 0.05	±12, 100	3400	3.5, 11
CLC400AJP	CLC400AJE	Low Cost Low Power	$\lvert A_v\rvert=1$ 220	$\lvert A_v\rvert=2$ 200	$\lvert A_v\rvert=8$ 60	±1 to 8	50 @ 5, 100	12, 0.05	±3.5, 70	700 (NI) 1600 (IN)	2, 20
CLC401AJP	CLC401AJE	Low Cost Low Power	$\lvert A_v\rvert=5$ 400	$\lvert A_v\rvert=20$ 150	$\lvert A_v\rvert=50$ 75	±7 to 50	100 @ 5, 100	10, 0.1	±3.5, 70	1200	3, 20
CLC404AJP	CLC404AJE	High Full-Power BW Low Power, High Slew	$\lvert A_v\rvert=2$ 165	$\lvert A_v\rvert=6$ 175	$\lvert A_v\rvert=20$ 60	+2 to +21 –1 to –20	165 @ 5, 100	10, 0.2	±3.3, 70	2600	2.0,30
CLC406AJP	CLC406AJE	Low Cost Low Power	$\lvert A_v\rvert=2$ 180	$\lvert A_v\rvert=6$ 160	$\lvert A_v\rvert=10$ 100	±1 to 10	130 @ 5, 100	12, 0.05	±2.7, 70	1500	2, 30
CLC409AJP	CLC409AJE	Very Wideband	$\lvert A_v\rvert=2$ 350	$\lvert A_v\rvert=6$ 150	$\lvert A_v\rvert=10$ 100	±1 to 10	110 @ 5, 100	8, 0.1	±3.5, 70	1200	0.5, 25
CLC414AJP	CLC414AJE	Quad Amp Low Power	$\lvert A_v\rvert=2$ 70	$\lvert A_v\rvert=6$ 90	$\lvert A_v\rvert=10$ 60	±1 to 10	55 @ 5, 100	16, 0.1	±2.8, 70	1000	2, 30
CLC420AJP	CLC420AJE	Voltage Feedback Low Gain	$\lvert A_v\rvert=1$ 300	$\lvert A_v\rvert=2$ 100	$\lvert A_v\rvert=5$ 25	±1 to 10	40 @ 5, 100	18, 0.01	±3.2, 70	1100	0.5, 4/1, 3
CLC425AJP	CLC425AJE	Ultra Low Noise Wideband Op Amp	$\lvert A_v\rvert=10$ 60	$\lvert A_v\rvert=20$ 85	$\lvert A_v\rvert=40$ 40	±10 to +1000	40 @ 5, 100	22, 0.2	±3.4, 90	350	0.1, 2
CLC426AJP	CLC426AJE	Voltage Feedback Ultra Low Noise	$\lvert A_v\rvert=2$ 130	$\lvert A_v\rvert=5$ 44	$\lvert A_v\rvert=10$ 20	±1 to 1000	50 @ 5, 100	16, 0.05	±3.8, 80	400	0.3, 5
CLC430AJP	CLC430AJE	General Purpose with Disable	$\lvert A_v\rvert=1$ 100	$\lvert A_v\rvert=2$ 75	$\lvert A_v\rvert=10$ 19	±1 to 100	30 @ 10, 100	35, 0.05	±8, 85 ±14, ±85	2000	1, 25
CLC431AJP CLC432AJP	CLC431AJE CLC432AJE	Dual Amps CLC431 Has Disable	$\lvert A_v\rvert=1$ 92	$\lvert A_v\rvert=2$ 62	$\lvert A_v\rvert=10$ 60	±1 to 100	62 @ 4, 100	70, 0.05	±6, 70	2000	±3, 20
CLC449AJP	CLC449AJE	Current Feedback 1200 MHz	$\lvert A_v\rvert=2$ 1.2 GHz	$\lvert A_v\rvert=5$ 450	$\lvert A_v\rvert=10$ 130	±1 to 100	350 @ 4, 100	6, 0.2	±2.9, 90	2500	3, ±25
CLC501AJP	CLC501AJE	Clamped Output 1ns Overload Recovery	$\lvert A_v\rvert=8$ 165	$\lvert A_v\rvert=20$ 120	$\lvert A_v\rvert=32$ 80	+7 to +50 –1 to –50	80 @ 5, 100	12, 0.05	±3.5, 70	1200	1.5, 10
CLC502AJP	CLC502AJE	Clamped Output, Low Offset, 14-bit Settling	$\lvert A_v\rvert=1$ 190	$\lvert A_v\rvert=2$ 150	$\lvert A_v\rvert=8$ 75	+1 to 8	65 @ 5, 100	25, 0.0025	±3.5, 55	800	0.5, 3.0

**TO-8 package.

Variable Gain Amplifiers (Typical Specifications +25°C)

Mfr.'s Type		Key Features	–3 dB Bandwidth (MHz)		Gain Adjust Range (dB)	Signal Non-Linearity (%)	Full Power BW (MHz @ V_{pp} R_1)	Settling Time (nsec, %)	Output (V, mA)	Slew Rate (V/µsec)	Output Offset Drift (mV, µV/°C)
PDIP	SOIC		Signal Chan.	Control Chan.							
CLC520AJP	CLC520AJE	Voltage Controlled Gain	500	100	–40	0.04	140 @ 4, 100	12, 0.1	±3.5, 70	2000	40, 100

Analog to Digital Converters (Typical Specifications +25°C)

Mfr.'s Type		Resolution (Bits)	Sampling Rate (MSPS)	Input Voltage Range	Differential Non-Linearity (LSBs)	Spurious Free Signal Range SFSR (dB)	SNR (excl. Harmonics) (dB)	Dynamic Test Conditions	Digital Interface	Power Dissipation (W)	Architecture	Features
PLCC* Comm.	PLCC† Ind.											
CLC949ACQ	CLC949AJQ	12	dc to 20	±2 V Differential	0.6	72.0	65.0	F_s = 20 MSPS F_{in} = 9.663 MHz FS = –1 dB F_s = 5 MSPS	CMOS	0.22 0.07‡	Complete Subsystem*	Internal T/H and Reference

*Commercial temp. range is 0°C to 70°C. †Industrial temp. range is –40°C to +85°C. ‡User adjustable bias.

Silicon Monolithic Integrated Circuits

General Purpose Amplifiers
Typical specifications at +25°C case temperature.

Stock No.	Mfr.'s Type	GP @ 0.1 GHz (dB)	GP @ 1 GHz (dB)	NF @ 1 GHz (dB)	P_{1dB} (dBm)	Min. Supply Voltage (V_{cc})*	Device Voltage (V_d)*	Device Current (mA)*	Package	EACH
865-0002	MSA-0385	12.5	12.0	6.0	+10.0	7.0	5.0	35	85 Plastic	2.45
865-0004	MSA-0186	18.5	15.0	6.0	+1.5	7.0	5.0	17	86 Plastic	.79
865-0006	MSA-0286	12.5	12.0	6.5	+4.5	7.0	5.0	25	86 Plastic	2.35
865-0008	MSA-0386	12.5	12.0	6.0	+10.0	7.0	5.0	35	86 Plastic	2.45
865-0010	MSA-2011	18.5	16.5	5.0	+9.0	7.0	4.9	32	SOT-143 SM Plastic	1.90
865-0012	MSA-2111	22.0	16.5	3.3	+10.0	5.0	3.6	29	SOT-143 SM Plastic	3.45
865-0014	MSA-3111	25.0	18.5	4.3	+9.0	7.0	5.0	29	SOT-143 SM Plastic	2.15

Low Noise Amplifiers
Typical specifications at +25°C case temperature.

Stock No.	Mfr.'s Type	GP @ 0.1 GHz (dB)	GP @ 1 GHz (dB)	NF @ 1 GHz (dB)	P_{1dB} (dBm)	Min. Supply Voltage (V_{cc})*	Device Voltage (V_d)*	Device Current (mA)*	Package	EACH
865-0020	INA-02186	31.5	28.5	2.0†	+11.0	5.5	5.5	35	86 Plastic	4.60
865-0022	INA-10386	25.0	25.0	3.7†	+11.0	6.0	6.0	50	86 Plastic	3.00
865-0024	MSA-0611	19.5	15.0	3.2	+2.0	5.0	3.3	16	SOT-143 SM Plastic	1.25
865-0026	MSA-0686	20.0	16.5	3.2	+1.0	5.0	3.5	16	86 Plastic	2.35
865-0028	MSA-0786	13.5	12.5	5.0	+5.5	5.0	4.0	22	86 Plastic	2.70

*Refer to schematic drawing. †Noise figure at 0.5 GHz.

General Purpose GaAs FETs
Typical specifications at +25°C case temperature.

Stock No.	Mfr.'s Type	Gate Width (µm)	Optimum Freq. Range (GHz)	Test Freq. (GHz)	NF_o (dB)	G_a (dB)	P_{1dB} (dBm)	Package	EACH
865-0030	ATF-21186	750	0.5-6	2	0.6	13.5	+19	86 Plastic	2.00
865-0032	ATF-26884	250	2.0-16	12	2.2	9.0	+18	84 Plastic	2.37

High Speed Digital Communications

Variable Gain Control Amplifiers
Typical specifications at +25°C case temperature.

Stock No.	Mfr.'s Type	GP @ (dB)	Gain Control Range (dB)	3 db Bandwidth (GHz)	P_{1dB} @ 0.5 GHz	Supply Voltage (V)	Device Current (mA)	Package	EACH
865-0034	IVA-05208	30 @ 0.5 GHz	30 @ 0.5 GHz	1.5	−3	5	35.0	SO-8 SM Plastic	8.15
865-0036	IVA-14208	24 @ 1.0 GHz	34 @ 1.0 GHz	2.5	—	6	3.8	SO-8 SM Plastic	9.95

Wide Dynamic Range Amplifiers
Typical specifications at +25°C case temperature.

Stock No.	Mfr.'s Type	GP @ 0.1 GHz (dB)	GP @ 1 GHz (dB)	NF (dB)	P_{1dB} (dBm)	Min. Supply Voltage (V_{cc})*	Device Voltage (V_d)*	Device Current (mA)*	Package	EACH
865-0038	MSA-1104	12.5	10.5	4.2	+17.5	8	5.5	60	04A Plastic	3.10
865-0040	MSA-1105	12.5	10.5	4.2	+17.5	8	5.5	60	05 Plastic	3.10

*Refer to schematic drawing.

High Frequency Amplifiers
Typical specifications at +25°C case temperature.

Stock No.	Mfr.'s Type	GP @ 0.1 GHz (dB)	GP @ 1 GHz (dB)	NF @ 1 GHz (dB)	P_{1dB} (dBm)	Min. Supply Voltage (V_{cc})*	Device Voltage (V_d)*	Device Current (mA)*	Package	EACH
865-0042	MSA-0986	8.0	7.5	6.0	+11.0	12	7.8	35	86 Plastic	3.60

Medium Power Amplifiers
Typical specifications at +25°C case temperature.

Stock No.	Mfr.'s Type	GP @ 0.1 GHz (dB)	GP @ 1 GHz (dB)	NF @ 1 GHz (dB)	P_{1dB} (dBm)	Min. Supply Voltage (V_{cc})*	Device Voltage (V_d)*	Device Current (mA)*	Package	EACH
865-0044	MSA-0485	8.3	8.0	7.0	+12.5	7	5.3	50	85 Plastic	2.70
865-0046	MSA-0504	8.0	7.0	6.5	+18.0	12	8.4	80	04A Plastic	4.90
865-0048	MSA-0486	8.3	8.0	7.0	+12.5	7	5.3	50	86 Plastic	2.70
865-0050	MSA-0505	8.0	7.0	6.5	+18.0	12	8.4	80	05 Plastic	4.90

Low Noise Amplifiers
Typical specifications at +25°C case temperature.

Stock No.	Mfr.'s Type	GP @ 0.1 GHz (dB)	GP @ 1 GHz (dB)	NF @ 1 GHz (dB)	P_{1dB} (dBm)	Min. Supply Voltage (V_{cc})*	Device Voltage (V_d)*	Device Current (mA)*	Package	EACH
865-0052	INA-03184	25.5	25.0	2.6	−2.0	4	4.0	10	84 Plastic	2.45

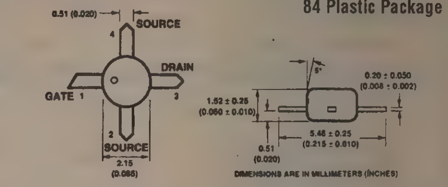
*Refer to schematic drawing.

3-Port Double-Balanced Mixers
Typical specifications at +25°C case temperature.

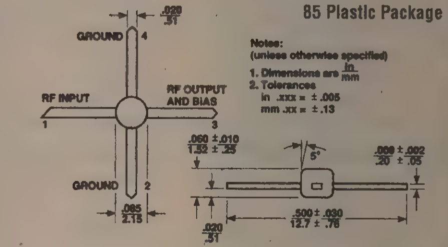
Stock No.	Mfr.'s Type	RF and LO Freq. (GHz)	Active Max. IF Freq. with Gain (GHz)	RF-IF Gain (dB)	IP_3 (dBm)	LO-RF Iso. (dB)	Supply Voltage (V)	Device Current (mA)	Package	EACH
865-0060	IAM-82008	0.05-5.0	Up to 2.0	15.0*	+18*	22*	10	55	SO-8 SM	3.05
865-0062	IAM-81008	0.05-5.0	Up to 1.0	8.5†	+3†	25†	5	13	SO-8 SM	2.95

*Noise figure at 0.1 GHz. †Refer to schematic drawing.

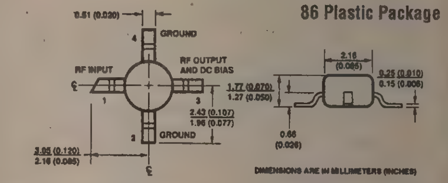
84 Plastic Package



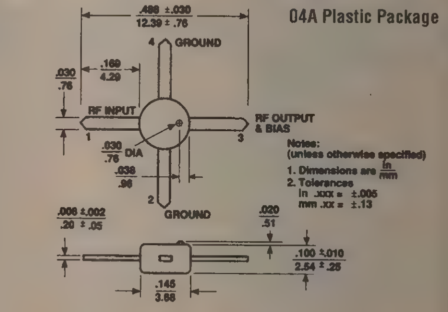
85 Plastic Package



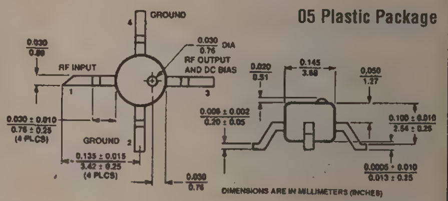
86 Plastic Package



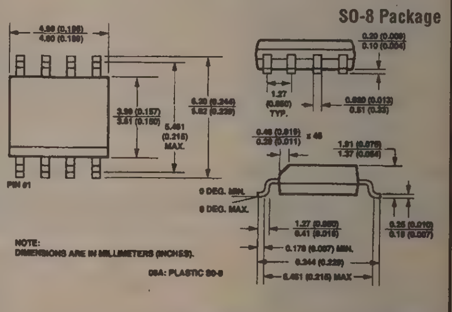
04A Plastic Package



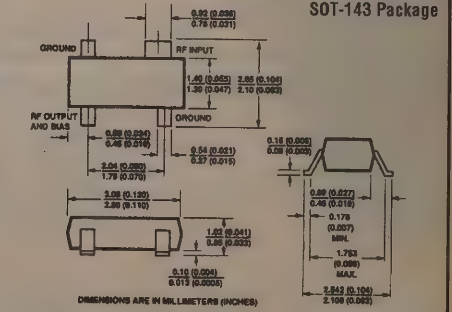
05 Plastic Package



SO-8 Package



SOT-143 Package



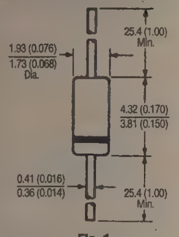


Fig. 1

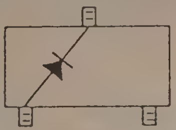


Fig. 2

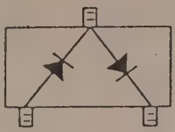


Fig. 3

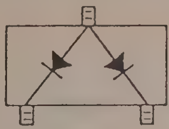


Fig. 4

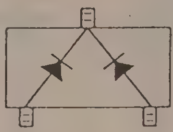


Fig. 5

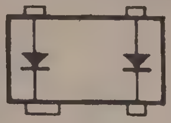


Fig. 6

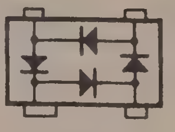


Fig. 7

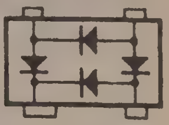


Fig. 8

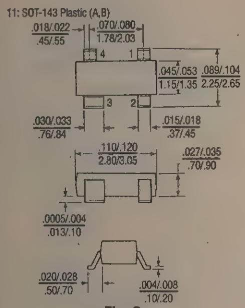


Fig. 9

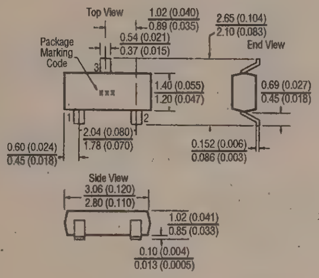


Fig. 10

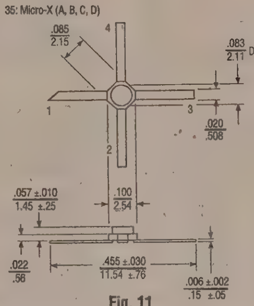


Fig. 11

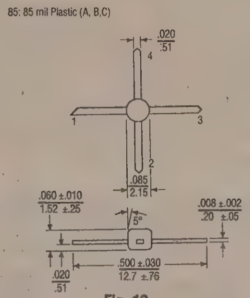


Fig. 12

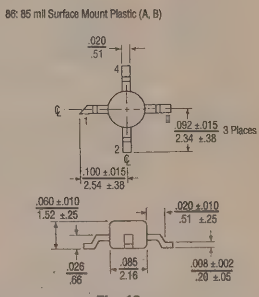


Fig. 13

Diodes

Surface Mount Pin Diodes

Mfr.'s Type		Fig.	Min. V_{BR} (V) @ 10 μA	Max. C_T (pF) @ V_R = 50 V †V_R = 20 V ‡V_R = 5 V	Max. R_S (Ω) f = 100 MHz †I_F = 10 mA ‡I_F = 5 mA	Typical Lifetime t (ns) I_F = 50 mA, I_R = 250 mA †I_F = 10 mA, I_R = 6 mA	EACH
Bulk	Tape and Reel						
5082-3080	—	1	100	0.40	2.5	1300	**2.02**
HSMP-3800#L30	HSMP-3800#L31	2	100	0.40	2.5	2500	**.90**
HSMP-3802#L30	HSMP-3802#L31	3	100	0.40	2.5	2500	**1.35**
HSMP-3804#L30	HSMP-3804#L31	5	100	0.40	2.5	2500	**1.35**
5082-3081	—	1	100	8.40	3.5	2500	**2.19**
HSMP-3810#L30	HSMP-3810#L31	2	100	0.35	4.0	1500	**.51**
HSMP-3812#L30	HSMP-3812#L31	3	100	0.35	4.0	1500	**.77**
HSMP-3813#L30	HSMP-3813#L31	4	100	0.35	4.0	1500	**.77**
HSMP-3814#L30	HSMP-3814#L31	5	100	0.35	4.0	1500	**.77**
HSMP-3820#L30	HSMP-3820#L31	2	35	1.00†	0.6†	70†	**.45**
HSMP-3822#L30	HSMP-3822#L31	3	35	1.00†	0.6†	70†	**.77**
HSMP-3823#L30	HSMP-3823#L31	4	35	1.00†	0.6†	70†	**.77**
HSMP-3824#L30	HSMP-3824#L31	5	35	1.00†	0.6†	70†	**.77**
5082-3077	—	1	200	0.30	1.5	100	**3.58**
HSMP-3830#L30	HSMP-3830#L31	2	200	0.30	1.5	500	**1.85**
HSMP-3832#L30	HSMP-3832#L31	3	200	0.30	1.5	500	**2.78**
HSMP-3833#L30	HSMP-3833#L31	4	200	0.30	1.5	500	**2.78**
HSMP-3834#L30	HSMP-3834#L31	5	200	0.30	1.5	500	**2.78**
HSMP-3880#L30	HSMP-3880#L31	2	100	0.40	6.5‡	2500	**2.60**
HSMP-3890#L30	HSMP-3890#L31	2	50	0.30‡	2.5‡	200	**.44**
HSMP-3892#L30	HSMP-3892#L31	3	50	0.30‡	2.5‡	200	**.62**
HSMP-3893#L30	HSMP-3893#L31	4	50	0.30‡	2.5‡	200	**.62**
HSMP-3894#L30	HSMP-3894#L31	5	50	0.30‡	2.5‡	200	**.62**
HSMP-3895#L30	HSMP-3895#L31	6	50	0.30‡	2.5‡	200	**1.00**

Surface Mount RF Schottky Barrier Diodes

Mfr.'s Type		Fig.	Min. V_{BR} (V) @ 10 μA †I_R = 100 μA	Max. C_T (pF) @ V_R = 0 V	Max. V_F @ 1 mA (mV) f = 100 MHz †I_F = 10 mA ‡I_F = 5 mA	EACH
Bulk	Tape and Reel					
5082-2800	—	1	70	2.0	410	**.68**
HSMS-2800#L30	HSMS-2800#L31	2	70	2.0	410	**.35**

Surface Mount RF Schottky Barrier Diodes (continued)

Mfr.'s Type		Fig.	Min. V_{BR} (V) @ 10 μA †I_R = 100 μA	Max. C_T (pF) @ V_R = 0 V	Max. V_F @ 1 mA (mV) f = 100 MHz †I_F = 10 mA ‡I_F = 5 mA	EACH
Bulk	Tape and Reel					
HSMS-2802#L30	HSMS-2802#L31	3	70	2.0	410	**.50**
HSMS-2803#L30	HSMS-2803#L31	4	70	2.0	410	**.50**
HSMS-2804#L30	HSMS-2804#L31	5	70	2.0	410	**.50**
HSMS-2805#L30	HSMS-2805#L31	6	70	2.0	410	**.50**
HSMS-2807#L30	HSMS-2807#L31	7	70	2.0	410	**.98**
HSMS-2808#L30	HSMS-2808#L31	8	70	2.0	410	**.98**
5082-2810	—	1	20	1.2	410	**1.79**
HSMS-2810#L30	HSMS-2810#L31	2	20	1.2	410	**.44**
HSMS-2812#L30	HSMS-2812#L31	3	20	1.2	410	**.66**
HSMS-2813#L30	HSMS-2813#L31	4	20	1.2	410	**.66**
HSMS-2814#L30	HSMS-2814#L31	5	20	1.2	410	**.66**
HSMS-2815#L30	HSMS-2815#L31	6	20	1.2	410	**.66**
HSMS-2817#L30	HSMS-2817#L31	7	20	1.2	410	**1.23**
HSMS-2818#L30	HSMS-2818#L31	8	20	1.2	410	**1.23**
5082-2835	—	1	—	—	480	**.58**
HSMS-2820#L30	HSMS-2820#L31	2	8†	1.0	340	**.35**
HSMS-2822#L30	HSMS-2822#L31	3	8†	1.0	340	**.50**
HSMS-2823#L30	HSMS-2823#L31	4	8†	1.0	340	**.50**
HSMS-2824#L30	HSMS-2824#L31	5	8†	1.0	340	**.50**
HSMS-2825#L30	HSMS-2825#L31	6	8†	1.0	340	**.50**
HSMS-2827#L30	HSMS-2827#L31	7	8†	1.0	340	**.98**
HSMS-2828#L30	HSMS-2828#L31	8	8†	1.0	340	**.98**

Surface Mount High Performance Schottky Diodes

DC Electrical Specifications: T_A = +25°C, single diode.

Mfr.'s Type		Fig.	Max. Forward Voltage V_F (mV) IF = 1.0 mA	Min. Breakdown Voltage V_{BR} (V) I_R = 10 μA	Typ. C_T (pF) @ VR = −0.5 to −1.0 V f = 1 MHz	EACH
Bulk	Tape and Reel					
HSMS-2850#L30	HSMS-2850#L31	2	150	250	0.30	**.95**
HSMS-2852#L30	HSMS-2852#L31	3	150	250	0.30	**1.10**
HSMS-2855#L30	HSMS-2855#L31	6	150	250	0.30	**1.10**
HSMS-2860#L30	HSMS-2860#L31	2	250	350	0.25	**.47**
HSMS-2862#L30	HSMS-2862#L31	3	250	350	0.25	**.69**
HSMS-2863#L30	HSMS-2863#L31	4	250	350	0.25	**.69**
HSMS-2864#L30	HSMS-2864#L31	5	250	350	0.25	**.69**

Transistors

Low Noise Transistors

Mfr.'s Type		Fig.	NF @ GHz (dB)	P1dB (dBm)	Ga 1 @ GHz (dB)	Package	EACH
Bulk	Tape and Reel						
AT-31011-BLK	AT-31011-TRI	9	0.9	+9.0	13.0	SOT-143 SM Plastic	**.39**
AT-31033-BLK	AT-31033-TRI	10	0.9	+9.0	11.0	SOT-23 SM Plastic	**.39**
AT-32011-BLK	AT-32011-TRI	9	1.0	+13.0	14.0	SOT-143 SM Plastic	**.40**
AT-32033-BLK	AT-32033-TRI	10	1.0	+13.0	12.5	SOT-23 SM Plastic	**.39**
AT-41511-BLK	AT-41511-TRI	9	1.0	+14.5	15.5	SOT-143 SM Plastic	**.33**
AT-41533-BLK	AT-41533-TRI	10	1.0	+14.5	14.5	SOT-23 SM Plastic	**.30**
AT-41435-BLK	—	11	1.3	+19.0	18.5	Micro-X Ceramic	**5.42**
AT-41485-BLK	—	12	1.4	+18.5	18.5	85 mil Plastic	**1.50**

Low Noise Transistors (continued)

Mfr.'s Type		Fig.	NF @ GHz (dB)	P1dB (dBm)	Ga 1 @ GHz (dB)	Package	EACH
Bulk	Tape and Reel						
AT-41411-BLK	AT-41411-TRI	9	1.4	+17.0	18.0	SOT-143 SM Plastic	**1.10**
AT-41486-BLK	AT-41486-TRI	13	1.4	+18.0	18.0	85 mil SM Plastic	**1.35**

Medium Power and General Purpose Transistors

AT-42035	—	11	1.9	+21.0	17.0	Micro-X Ceramic	**4.83**
AT-42085	—	12	1.4	+20.5	17.0	85 mil Plastic	**1.33**
AT-42086-BLK	AT-42086-TRI	13	1.4	+20.5	17.0	85 mil SM Plastic	**1.33**

Plastic Packaged IC Attenuators

Voltage Variable (Single-Bias Control)

Stock No.	Mfr.'s Type	Frequency (GHz)	Attenuation (dB)	Insertion Loss (900 MHz) (dB)	IP3 (>500 MHz) (dB)	Package	EACH
841-0002	AT-109*	0.4-2.5	0-35	2.5	12	SO-8	8.25
841-0004	AT-108*	0.4-2.5	0-40	2.5	12	SO-8	8.25
841-0006	AT-250†	DC-2.0	0-15	3.2	18	SO-8	4.33
841-0008	AT-259†	DC-2.0	0-15	3.2	18	SOT-143	3.37
841-0010	AT-635†	DC-2.0	0-35	7.0	18	SO-14	9.97

Digital

Stock No.	Mfr.'s Type	Frequency (GHz)	Attenuation (dB)	Insertion Loss (900 MHz) (dB)	IP3 (>500 MHz) (dB)	Package	EACH
841-0012	AT-210‡	DC-2.0	1,2,4,8	1.5	50	SO-16	10.50
841-0014	AT-220‡	DC-2.0	2,4,8,16	1.6	50	SO-16	10.50
841-0016	AT-230‡	DC-2.0	4,8,16	1.6	50	SO-14	10.50
841-0018	AT-260‡	DC-2.0	1,2,4,8,16	1.9	50	SSOP-20	16.80
841-0020	AT-280‡	DC-2.0	0.5,1,2,4,8	1.6	45	SO-16	16.80

*Positive control, linear. †General purpose. ‡Attenuation accuracy.

Low Noise Amplifiers

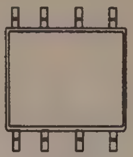
Low Noise Figure: 1.65 dB. **High Gain:** 20 dB. **Low Power Consumption:** 3 to 5 V, 8 mA. High dynamic range. DC decoupled RF input and output. No external RF tuning elements necessary. Low cost SOIC 8 plastic package.

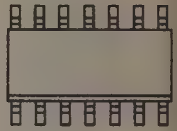
Stock No.	Mfr.'s Type	Frequency (GHz)	Gain (dB)	Noise Figure (dB)	1dB Comp. Point (dB)	IP3 (dB)	Package	EACH
841-0030	MAAM12031	1.7-2.0	20	1.65	7	+19	SO-8	7.00

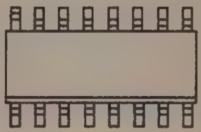
Drivers for GaAs FET Control Components

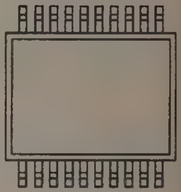
Features high speed CMOS technology. Positive voltage control. Low power dissipation and low cost plastic SOIC package.

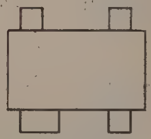
Stock No.	Mfr.'s Type	Bias	Transition Time (nsec.) Typ.	Propagation Delay (nsec.) Typ.	Package	Channel	EACH
841-0040	SWD-109	±5 V	10	45	SO-8	Single	13.20
841-0042	SWD-119	±5 V	10	45	SO-16	Quad	13.20


SO-8


SO-14

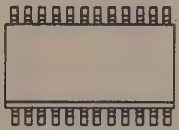

SO-16


SSOP-20


SOT-143

Plastic Packaged IC Switches

SSO-8


SO-24

SPDT

Stock No.	Mfr.'s Type	Frequency (GHz)	Insertion Loss (900 MHz) (dB)	Isolation Typ. Range (dB)	IP3 (>500 MHz) (dBm)	Package	Features	EACH
841-0050	SW-335	0.8-2.0	0.8	50-35	50	SO-8	Integral CMOS driver	9.50
841-0052	SW-373	DC-1.0	0.5	30-15	45	SO-8	+3 V control	3.95
841-0054	SW-358	DC-2.0	0.5	35-10	55	SSO-8	2 watt, antenna changeover, +3 control	4.90
841-0056	SW-359A	DC-2.0	0.5	35-10	55	SSO-8	2 watt, antenna changeover, +3 control	4.90
841-0058	SW-277	DC-2.5	0.5	40-15	61	SO-8	Power handling, positive control	8.00
841-0060	SW-279	DC-2.5	0.5	60-15	61	SO-8	Power handling	8.00
841-0062	SW-338	DC-2.5	0.5	70-25	46	SO-8	General purpose, terminated	6.80
841-0064	SW-239	DC-2.5	0.6	70-20	46	SO-8	General purpose	6.80

SP4T

Stock No.	Mfr.'s Type	Frequency (GHz)	Insertion Loss (900 MHz) (dB)	Isolation Typ. Range (dB)	IP3 (>500 MHz) (dBm)	Package	Features	EACH
841-0066	SW-419	DC-2.0	1.0	60-25	46	SO-24	General purpose, terminated	15.00

M/A-COM High Quality RF/Microwave Coaxial Test Cables with Interchangeable Connectors

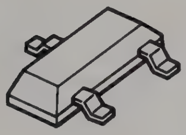
Excellent electrical characteristics to 18 GHz. Low insertion loss over operating range. **VSWR:** 1.15 — 1 7 mm connectors; 1.25 — N, SMA, TNC, or 3.5 mm connectors (male/female). Connectors must be purchased separately.

867-0002. 1999-0036. Interchangeable Interface Test Cable. 36"..................**EACH 258.00**
867-0004. 1999-0048. Interchangeable Interface Test Cable. 48"..................**EACH 271.00**
867-0006. 1999-0072. Interchangeable Interface Test Cable. 72"..................**EACH 299.00**
867-0008. 1999-0120. Interchangeable Interface Test Cable. 120"................**EACH 352.00**

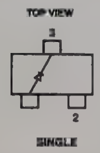
Interchangeable connector types available. Field replaceable interfaces allow a single cable to provide a variety of male or female connector combinations. SMA, TNC, and N, as well as 3.5 mm precision and 7 mm precision, without upsetting the low loss and VSWR of the cable assembly.

867-0010. 1550-0068. "N" Connector, Male, Interchangeable Interface..........**EACH 63.00**
867-0012. 1550-0069. 7 mm Connector, Interchangeable Interface................**EACH 163.00**
867-0014. 1550-0070. SMA Connector, Male, Interchangeable Interface.........**EACH 63.00**
867-0016. 1550-0164. SMA Connector, Female, Interchangeable Interface......**EACH 66.00**
867-0018. 1550-0167. TNC Connector, Male, Interchangeable Interface..........**EACH 103.00**
867-0020. 1550-0168. 3.5 mm Connector, Male, Interchangeable Interface....**EACH 96.00**
867-0030. 9604-0251. Torque Wrench..**EACH 107.00**

Surface Mount Schottky Diodes



Configuration



X-Brand Low Barrier Mixer/Detector Diodes

Designed for high volume low cost detector and mixer applications. **Low Noise Figure:** 5.7 dB (SSD) at X-Band. **High Detector Sensitivity:** –55 dB TSS. **Low Capacitance:** 0.25 pF. Fully characterized performance.

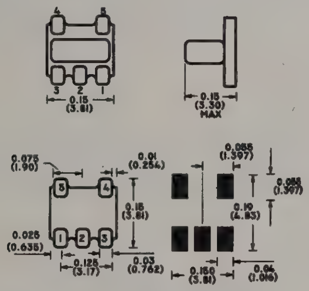
Stock No.	Mfr.'s Type	Suggested Frequency Range (GHz)	Voltage Rating (V)	Capacitance Maximum C_T (pF)	Forward Voltage @ 1 mA (V)	EACH
841-0100	MA4E1245KA	—	3	0.25	0.25	**1.00**

Power Splitters/Combiners

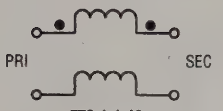
Features small size and low profile. Industry standard SOIC — 8 SMT plastic package except DS56-0001 which is SOW-16 SMT plastic package. Excellent amplitude and phase balance. Superior repeatability. 1 watt power handling.

Stock No.	Mfr.'s Type	Frequency (MHz)	Insertion Loss (dB) Typ.	Isolation (dB) Typ.	VSWR Typ.	Amplitude Balance (dB) Typ.	Phase Balance (°) Typ.	Channel	EACH
841-0070	DS52-0001	824-960	0.5	23	1.2:1	0.05	0.5	2	**8.60**
841-0072	DS52-0004	1510-1660	0.4	20	1.3:1	0.05	1.0	2	**8.95**
841-0074	DS52-0002	1850-1990	0.5	21	1.2:1	0.05	1.0	2	**8.95**
841-0076	DS56-0001	824-960	1.3	25	1.4:1	0.30	6.0	6	**22.85**

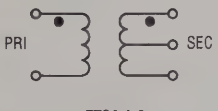
E-Series RF Transformers



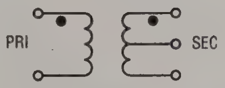
Schematics



ETC-1-1-13



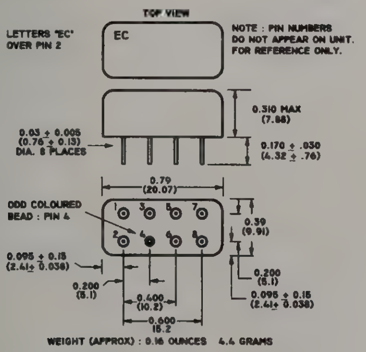
ETC4-1-2



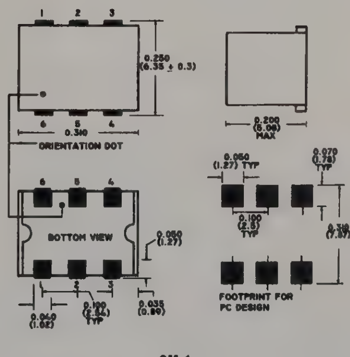
ETC9-1T-1

Stock No	Mfr.'s Type	Ω Ratio	Frequency (MHz)	Insertion Loss 3 dB (MHz)	Insertion Loss 2 dB (MHz)	Insertion Loss 1 dB (MHz)	Case Style	Functions: Primary Dot	Primary	Primary CT	Secondary Dot	Secondary	Secondary CT	Case Ground	Unconnected	EACH
841-0080	ETC-1-1-13	1:01	4.5-3000	4.5-3000	4.5-2000	4.5-1000	SM-22	5	4	—	1	3	—	—	2	**1.35**
841-0082	ETC4-1-2	4:01	2.0-800	2.0-800	5.0-600	10.0-100	SM-22	4	5	—	3	1	2	—	—	**1.14**
841-0084	ETC9-1T-1	9:01	200-700	200-700	—	—	SM-22	5	4	—	1	3	2	—	—	**1.36**

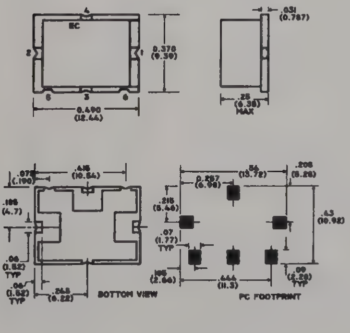
Mixer Selection Guide



R-1



SM-1



SM-2

LEVEL 7 (+7 dBm LO, Up to +1 dBm RF)

Stock No	Mfr.'s Type	Frequency (MHz) LO/RF fL-fu	Frequency (MHz) IF	Conversion Loss (dB) Mid. Typ.	Conversion Loss (dB) Total Typ.	LO-RF Isolation (dB) L Typ.	LO-RF Isolation (dB) M Typ.	LO-RF Isolation (dB) U Typ.	LO-IF Isolation (dB) L Typ.	LO-IF Isolation (dB) M Typ.	LO-IF Isolation (dB) U Typ.	Case Style	Function: LO	RF	IF	Ground	Case Ground	Unconnected	EACH
841-0090	EMS-1	1-500	DC-500	5.5	6.5	60	45	40	45	40	30	R-1	8	1	3,4	2,5,6,7	—	—	4.28
841-0092	EMS-1X	10-1000	5-500	6.0	7.0	50	40	30	50	40	30	R-1	8	3,4	1	2,5,6,7	2,5,6,7	—	5.81
841-0094	EMRS-2	5-1000	DC-1000	6.5	7.0	60	40	25	55	30	20	SM-1	1	4	5	2,3,6	—	—	6.26
841-0096	ESMD-C1	1-1000	DC-1000	6.5	7.5	60	45	40	60	35	30	SM-2	2	1	3	4,5	—	—	7.16

RF Communications

Wideband (FM/FSK) IFs

Mfr.'s Type		V_{CC} (V)	I_{CC} (mA)	Sensitivity Typ. (µV)	IF (MHz)	Mute	RSSI	Max. Data Rate	Notes	No. of Leads
PDIP	SOIC									
MC13055P	MC13055D	3 to 12	25	20	40	Yes	Yes	2.0 Mb	Wideband Data IF	16
—	MC13155D	3 to 6	10	100	70	—	Yes	12.0 Mb	Video Speed IF	16

Wideband Single Conversion Receivers — VHF

Mfr.'s Type		V_{CC} (V)	I_{CC} (mA)	Sensitivity Typ. (µV)	RF Input (MHz)	IF (MHz)	Mute	RSSI	Max. Data Rate	Notes	No. of Leads
PDIP	SOIC										
MC3356P	MC3356DW	3 to 9	25	30	200	10.7	Yes	Yes	500 Kb	Includes Front End Mixer/L.O.	20
—	MC13156DW	2 to 7	3	2	200	21.4	—	Yes	500 Kb	CT-2 FM/Demodulator	24

Narrowband Single Conversion Receivers — VHF

Mfr.'s Type		V_{CC} (V)	I_{CC} (mA)	12 dB SINAD Sensitivity Typ. (µV)	RF Input (MHz)	IF (KHz)	Mute	RSSI	Max. Data Rate	Notes	No. of Leads
PDIP	SOIC										
MC3359P	—	4 to 9	7	2	45	455	Yes	—	>4.8 Kb	Scan Output Option	18/20
—	MC3367DW	1 to 5	6	1	75	455	Yes	—	1.2 Kb	1 Cell Operation	28
—	MC3371D	2 to 8	6	1	60	455	Yes	Yes	>4.8 Kb	RSSI	16
—	MC3372D	2 to 8	6	1	60	455	Yes	Yes	>4.8 Kb	RSSI, Ceramic Quad Detect./Resonator	16

Narrowband Dual Conversion Receivers — FM/FSK — VHF

Mfr.'s Type		V_{CC} (V)	I_{CC} (mA)	12 dB SINAD Sensitivity Typ. (µV)	RF Input (MHz)	IF1 (MHz)	IF2 (Limiter In) (KHz)	Mute	RSSI	Max. Data Rate	Notes	No. of Leads
PDIP	SOIC											
MC3362P	—	2 to 7	3.0	0.7	180	10.7	455	—	Yes	>4.8 Kb	Includes Buffered VCO Output	24
—	MC3363DW	2 to 7	4.0	0.4	180	10.7	455	Yes	Yes	>4.8 Kb	Includes RF Amp/Mute	28
—	MC3335DW	2 to 7	4.0	0.7	180	10.7	455	Yes	Yes	>4.8 Kb	Low Cost Version	20
—	MC13135DW	2 to 7	3.5	0.7	200	10.7	455	—	Yes	>50 Kb	Voltage Buffered RSSI	24
—	MC13136DW	2 to 7	3.5	0.7	200	10.7	455	—	Yes	>50 Kb	High Level IF Resonator Drive	24

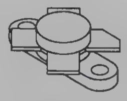
Transmitters — AM/FM/FSK

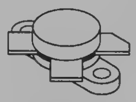
Mfr.'s Type		V_{CC} (V)	I_{CC} (mA)	P_{OUT} (dBm)	Max. RF Frequency Out	Max. Mod. Frequency	Notes	No. of Leads
PDIP	SOIC							
MC2833P	MC2833D	3 to 8	5	–30	50	50 KHz	FM Transmitter. Includes Low Battery Checker and Tone Oscillator	16
—	MC13175D	2 to 5	40	8	500	5 MHz	AM/FM Transmitter. Single Frequency PLL fout = 8 × fref	16
—	MC13176D	2 to 5	40	8	1 GHz	5 MHz	AM/FM Transmitter. Single Frequency PLL fout = 32 × fref	16

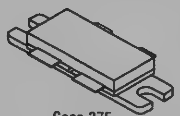
Balanced Modulator/Demodulator

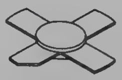
Mfr.'s Type		V_{CC} (V)	I_{CC} (mA)	Carrier Suppression	Common Mode Rejection	Function	No. of Leads
PDIP	SOIC						
MC1496P	MC1496D	5 to 30	10	65 dB typ. @ 0.5 MHz 50 dB typ. @ 10.0 MHz	85 dB typ.	Carrier Balance >50 dB, General Purpose Balanced Modulator/Demodulator For AM, SSB and FM Detection.	14

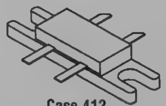
RF Power MOSFET

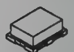

Case 211-07
Style 1, 2
(.380" Flange)

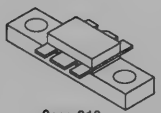

Case 211-11
Style 1, 2
(.500" Flange)

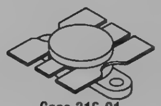

Case 375
Style 2

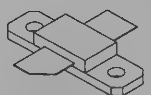

Case 249
Style 1
(.280" Pill)


Case 412
Style 1


Case 430
Style 2


Case 319
Style 1, 2, 3
(CS-12)


Case 316-01
Style 1, 2
(.500" CQ)


Case 360B
Style 1

Motorola RF Power MOSFETs are constructed using a planar process to enhance manufacturing repeatability. They are N-Channel field effect transistors with an oxide insulated gate which controls vertical current flow. Compared with bipolar transistors, RF Power FETs exhibit higher gain, higher input impedance, enhanced thermal stability and lower noise. The FETs listed in this section are specified for operation in RF Power Amplifiers and are grouped by frequency range of operation and type of application. Arrangement within each group is first by order of voltage then by increasing output power.

RF Power MOSFET (Continued)

To 150 MHz HF/SSB

V_{DD}=50 Volts, Class AB
For military and commercial HF/SSB fixed, mobile and marine transmitters.

Mfr.'s Type	P_{out} Output Power (W)	P_{in} Input Power Typ. (W)	G_{ps} Typ. Gain dB @ 30 MHz	Typical IMD		Ø$_{JC}$ °C/W	Package Style
				d_3 dB	d_{11} dB		
MRF148	30	0.5	18	–35	–60	1.5	211-07/2
MRF150	150	2.9	17	–32	–60	0.6	211-11/2

To 225 MHz VHF AM/FM

V_{DD}=28 Volts, Class AB
For VHF military and commercial aircraft radio transmitters.

Mfr.'s Type	P_{out} Output Power (W)	P_{in} Input Power Typ. (W)	G_{ps} (Typ)/Freq. dB/MHz	η Efficiency Typ. %	Ø$_{JC}$ °C/W	Package Style
MRF134	5	0.2	14.0/150	55	10.00	211-07/2
MRF174	125	8.3	11.8/150	60	0.65	211-11/2
MRF141G	300	30.0	10.0/175	55	0.35	375/2

V_{DD}=50 Volts, Class AB

Mfr.'s Type	P_{out} Output Power (W)	P_{in} Input Power Typ. (W)	G_{ps} (Typ)/Freq. dB/MHz	η Efficiency Typ. %	Ø$_{JC}$ °C/W	Package Style
MRF151G	300	7.5	16.0/175	55	0.35	375/2

To 500 MHz VHF/UHF AM/FM

V_{DD}=28 Volts, Class AB

Mfr.'s Type	P_{out} Output Power (W)	P_{in} Input Power Typ. (W)	G_{ps} (Typ)/Freq. dB/MHz	η Efficiency Typ. %	Ø$_{JC}$ °C/W	Package Style
MRF160	4	0.08	17/400	50	7.2	249/3
MRF166W	40	2.00	13/400	50	1.0	412/1

To 520 MHz

For broadband VHF and UHF commercial and industrial applications. The high gain and broadband performance of these devices make them ideal for large-signal, common-source amplifier applications in 12.5 volt mobile and base station operation.

V_{CC}=7.5 Volts, Class AB

Mfr.'s Type	P_{out} Output Power (W)	P_{in}(Max) Input Power (W)	G_{PE} (Min.)/Freq. Power Gain dB/MHz	Ø$_{JC}$ °C/W	Package Style
MRF5003	3	0.336	10.5/512	14.0	430/2

V_{CC}=12.5 Volts, Class AB

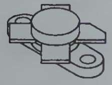
Mfr.'s Type	P_{out} Output Power (W)	P_{in}(Max) Input Power (W)	G_{PE} (Min.)/Freq. Power Gain dB/MHz	Ø$_{JC}$ °C/W	Package Style
MRF5015	15	1.300	11.5/512	3.5	319/3
MRF5035	35	4.700	7.5/512	1.8	316-01/3

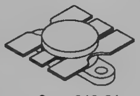
To 1.0 GHz

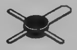
V_{DD}=28 Volts, Class AB
For HF/VHF/UHF military and commercial radio transmitters.

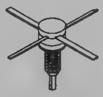
Mfr.'s Type	P_{out} Output Power (W)	P_{in} Input Power Typ. (W)	G_{ps} (Typ)/Freq. dB/MHz	η Efficiency Typ. %	Ø$_{JC}$ °C/W	Package Style
MRF182	30	1.5	13/1000	55	1.50	360B/1
MRF183	45	2.8	12/1000	55	1.25	360B/1

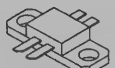
RF Power Bipolar Transistors

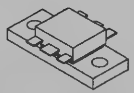

Case 211-07
Style 1, 2
(.380" Flange)

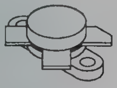

Case 316-01
Style 1, 2
(.500" CQ)

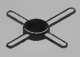

Case 317D
Style 2

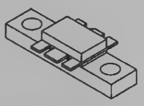

Case 305
Style 1
(.204" Stud)

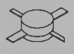

Case 395B
Style 1

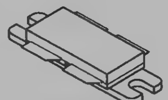

Case 333A
Style 1, 2
(MAAC PAC)

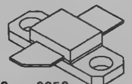

Case 211-11
Style 1, 2
(.500" Flange)


Case 317
Style 1, 2
(Macro-X)


Case 319
Style 1, 2, 3
(CS-12)


Case 305D
Style 1


Case 375A
Style 1


Case 395C
Style 1

Motorola's broad line of bipolar RF power transistors are characterized for operation in RF power amplifiers. Typical applications are in military and commercial landmobile, avionics and marine radio transmitters. Groupings are by frequency band and type of application. Within each group, the arrangement of devices is by major supply voltage rating, then in the order of increasing output power. All devices are NPN polarity except where otherwise noted.

HF Transistors

14-30 MHz, CB/Amateur Band
V_{CC}=12.5 or 13.6 Volts, Class AB
For economical, high volume use in CW, AM and SSB applications.

Mfr.'s Type	P_{out} Output Power (W)	P_{in} (Max) Input Power (W)	G_{PE} (Min.) Gain* dB	Ø$_{JC}$ °C/W	Package Style
MRF455	60	3	13	1.0	211-07/1
MRF454	80	5	12	0.7	211-11/1

VHF Transistors

136-174 MHz High Band
V_{CC}=12.5 Volts
For VHF FM High-Band

Mfr.'s Type	P_{out} Output Power (W)	P_{in} (Max) Input Power (W)	G_{PE} (Min.) Gain* dB	Ø$_{JC}$ °C/W	Package Style
MRF247†	75	15	7	0.7	316-01/1

*Gain: HF Transistors — @ 30 MHz; VHF Transistors — @ 175 MHZ. Internal Impedance Matched.

UHF Transistors

470-512 MHz Band
V_{CC}=12.5 Volts, Class C

Mfr.'s Type	P_{out} Output Power (W)	P_{in} (Max) Input Power (W)	G_{PE} (Min.)/Freq. Power Gain dB/MHz	Ø$_{JC}$ °C/W	Package Style
MRF581*	0.6	0.03	13/500	40	317/2

*Small signal gain. Pout is Typical.

900 MHz Transistors

870-960 MHz Band
V_{CC}=12.5 Volts — Class C — Si Bipolar
For 900 MHz mobile radio band, type MRF847 offers superior gain and ruggedness, using the unique CS-12 package which minimizes common element impedance, and thus maximizes gain and stability. Devices are listed for mobile and base station applications.

Mfr.'s Type	P_{out} Output Power (W)	P_{in} (Max) Input Power (W)	G_{PE} (Min.)/Freq. Power Gain dB/MHz	Ø$_{JC}$ °C/W	Package Style
MRF581*	0.6	0.06	10.0(Typ.)/870	40	317/2
MRF557*	1.5	0.23	8.0/870	25	317D/2
MRF847**	45.0	16.00	4.5/870	1	319/1

*Common Emitter Configuration. **Internal Impedance Matched, Common Base Configuration.

870-960 MHz Band (Continued)
VCC = 24 Volts - Si Bipolar

Mfr.'s Type	P_{out} Output Power (W)	Class	P_{in} (Max) Input Power (W)	G_p (Min.)/Freq. Power Gain dB/MHz	Ø$_{JC}$ °C/W	Package Style
MRF857	2.1 (CW)	A	0.40	12.5/900	8.40	305/1
MRF857S	2.1 (CW)	A	0.40	12.5/900	8.40	305D/1
MRF858	3.6 (CW)	A	0.85	11.0/900	6.90	319/2
MRF860	13.7 (CW)	A	3.25	11.0/900	1.90	395B/1
MRF861	27.0 (CW)	A	8.00	9.5/900	0.92	375A/1
MRF862	36.0 (CW)	A	13.60	9.0/900	0.75	375A/1
MRF898*	60.0	C	12.00	7.9	1.00	333A/1

*Internal Impedance Matched.

1.5 GHz Transistors

1400-1640 MHz Band
V_{CC}=28 Volts

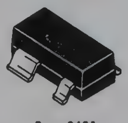
Mfr.'s Type	P_{out} Output Power (W)	Class	P_{in} (Max) Input Power (W)	G_p (Min.)/Freq. Power Gain dB/MHz	Ø$_{JC}$ °C/W	Package Style
MRF16006	6.0	C	1.09	7.4/1600	6.80	395C/2

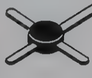
V_{CC}=26 Volts

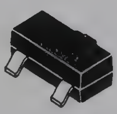
Mfr.'s Type	P_{out} Output Power (W)	Class	P_{in} (Max) Input Power (W)	G_p (Min.)/Freq. Power Gain dB/MHz	Ø$_{JC}$ °C/W	Package Style
MRF15030	30.0	A, AB	3.10	9.0/1490	1.40	395C/1

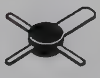
RF Small Signal Transistors

In small signal RF applications, the package style is often determined by the end application or circuit construction technique. To aid the circuit designer in device selection, the Motorola broad range of RF small signal amplifier transistors is organized by package type. These devices are NPN polarity unless otherwise designated.


Case 318A
Style 1
Low Profile
(SOT-143)


Case 317
Style 2
(Macro-X)


Case 318-07
Style 6
(SOT-23)


Case 317D
Style 2, 3
(Power Macro)

Case 317/2 — MACRO-X

Mfr.'s Type	Gain-Bandwidth @		NF @ f		Gain @ f		Maximum Ratings		
	f_T Typ. (GHz)	IC (mA)	Typ. dB	(MHz)	Typ. dB	(MHz)	$V_{(BR)CEO}$ (V)	I_C (mA)	P_T (mW)
MRF901	4.5	30	2.0	1000	12.0	1000	15	30	375
MRF581	5.0	200	2.0	500	15.5	500	18	200	2500

Case 317D/2

Mfr.'s Type	f_T Typ. (GHz)	IC (mA)	NF Typ. dB	NF (MHz)	Gain Typ. dB	Gain (MHz)	$V_{(BR)CEO}$ (V)	I_C (mA)	P_T (mW)
MRF557	—	—	—	—	9.0	870	16	400	3000

RF Small Signal Transistors (Continued)

Case 318A/1 — SOT-143

Mfr.'s Type	Gain-Bandwidth @		NF @ f		Gain @ f		Maximum Ratings		
	fT Typ. (GHz)	IC (mA)	Typ. dB	(MHz)	Typ. dB	(MHz)	$V_{(BR)CEO}$ (V)	I_C (mA)	P_T (mW)
MRF5711LT1*	8.0	–70	1.6	1000	13.5	1000	10	70	333

Case 318-07/6 — SOT-23

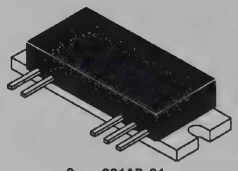
Mfr.'s Type	Gain-Bandwidth @		NF @ f		Gain @ f		Maximum Ratings		
	fT Typ. (GHz)	IC (mA)	Typ. dB	(MHz)	Typ. dB	(MHz)	$V_{(BR)CEO}$ (V)	I_C (mA)	P_T (mW)
MMBR901LT1*	4.0	30	1.9	1000	12.0	1000	15	30	296
MMBR5179LT1*	1.4	50	4.5	200	15.0	200	12	50	375

*Tape and reel packaging option suffix T1=3,000 units per reel.

RF Amplifiers

High Power

Complete amplifiers with 50 ohm in/out impedances are available for a variety of applications including land mobile radios, base stations, TV transmitters and other uses requiring large-signal amplification, both linear and Class C.



Case 301AB-01
Style 1

Land Mobile/Portable

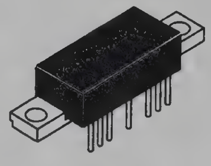
The advantages of small size, reproducibility and overall lower cost become more pronounced with increasing frequency of operation. These amplifiers offer a wide range in power levels and gain, with guaranteed performance specifications for bandwidth, stability and ruggedness.

UHF, Linear
880-960 MHz (for GSM) — Class AB (Silicon Bipolar Die)

Mfr.'s Type	P_{out} Output Power (W)	P_{in} Input Power (W)	f Frequency (MHz)	G_p Power Gain, Min. dB	V_{CC} Supply Voltage (V)	Package Style
MHW913	14	0.1	880-915	21.5	12.5	301AB/1

Low Power

The following categories describe a wide range of complete amplifier assemblies both hybrid and monolithic for use in CATV distribution systems, instrumentation, communications and military equipment. A variety of power levels and frequencies of operation is offered for many applications



Case 714G
Style 1

CATV Distribution

Motorola Hybrids are manufactured using fourth generation technology which has set new standards for CATV system performance and reliability. These hybrids have been optimized to provide premium performance in all CATV systems up to 152 channels.

40-860 MHz Hybrids, V_{CC}=24 Vdc, Class A
Conventional Hybrids

Mfr.'s Type	Hybrid Gain (Nom.) dB	Channel Loading Capacity	Maximum Distortion Specifications						Noise Figure Typ. dB		Package Style
			Output Level dBmV	2nd Order Test dB	Composite Triple Beat dB		Cross Modulation dB		@ 750 (MHz)	@ 860 (MHz)	
					110 CH	128 CH	110 CH	128 CH			
MHW7142	14	110	+40	–60	–62	—	–66	—	—	7.5*	714/1
MHW8142	14	128	+38	–60	—	–61	—	–66	—	8.0*	714/1

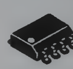
*Maximum.

40/1000 MHz Hybrids, V_{CC}=24 Vdc, Class A
Conventional Hybrids

Mfr.'s Type	Hybrid Gain (Nom.) dB	Channel Loading Capacity	Maximum Distortion Specifications						Noise Figure @ 860 MHz dB	Package Style
			Output Level dBmV	2nd Order Test dB	Cross Modulation dB		Composite Triple Beat dB			
					128 CH	152 CH	128 CH	152 CH	Typ.	
MHW9142	14	152	+38	–59*	—	–63	—	–59	8.5**	714/1

*Composite 2nd Order; V_{out}=+38 dBmV/ch. **Maximum.

RF Monolithic Integrated Circuits



Case 751
(SO-8)

Case 751B
(SO-16)

To 1.8 GHz

For DECT and JPHP, the MRFIC1801 through MRFIC1804 device series offers complete transmit and receive functions, less Lo and filters, for typical 1.8 GHz cordless telephone. The chip set is also applicable in other 1.9 GHz and 2.4 GHz personal communications systems.

Antenna Switch — SO-8

Mfr.'s Type	Operating Freq. Range (GHz)	Supply Volt. Range (Vdc)	Supply Current TX Mode (µA) Typ.	Leakage Current (µA) Typ.	Insertion Loss TX Mode dB Typ.	P_{in}, 1 dB Compression dBm Typ.	Package Style
MRFIC1801	1.5-2.5	2.7-5.5	300	45	0.6	29	751

Upconverter — SO-16

Mfr.'s Type	RF Output Freq. Range (GHz)	Supply Volt. Range (Vdc)	Supply Current TX Mode (mA) Typ.	Conversion Gain dB Typ.	Recommended IF Input (MHz) Typ.	P_{out}, 1 dB Compression dBm Typ.	Package Style
MRFIC1803	1.7-2.5	2.7-3.3	28	10	70-325	–2	751B

Amplifier and Downmixer — SO-16

Mfr.'s Type	IF Output Freq. Range (MHz)	Supply Volt. Range (Vdc)	Supply Current RX Mode (mA) Typ.	Mixer Conv. Gain dB Typ.	LNA Gain dB Typ.	LNA Noise Fig. dB Typ.	Package Style
MRFIC1804	70-325	2.7-3.3	7	4	14	2.3	751B

To 2.4 GHz

The MRFIC2401 through MRFIC2104 devices were designed for use in the 2.4-2.5 GHz Industrial-Scientific-Medical (ISM) band. This chip set may also be used from 2.0-3.0 GHz applications in telemetry and Multichannel Multipoint Distribution System (MMDS) wireless cable TV systems.

Downconverter — SO-16

Mfr.'s Type	RF Freq. Range (MHz)	IF Freq. Range (MHz)	Supply Volt. Range (Vdc)	Supply Current (mA) Typ.	Conv. Gain dB Typ.	Isolation Lo to RF, Lo to IF dB Typ.	Package Style
MRFIC2401	2400-2500	100-350	4.75-5.25	9.5	21	20	751B

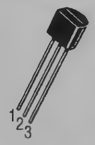
Integrated Power Amplifier — SO-16, Class B

Mfr.'s Type	Freq. Range (MHz)	Supply Volt. Range (Vdc)	Supply Current (mA) Typ.	Small Signal Gain dB Typ.	Power Control Range dB Typ.	P_{out}, 1dB Compression dBm Typ.	Package Style
MRFIC2403	2200-2700	4.75-5.25	95	23	20	19	751B

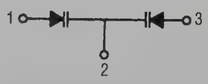
Integrated Exciter Amplifier — SO-8, Class A

Mfr.'s Type	Freq. Range (MHz)	Supply Volt. Range (Vdc)	Supply Current (mA) Typ.	Small Signal Gain dB Typ.	Noise Figure dB Typ.	P_{out}, 1dB Compression dBm Typ.	Package Style
MRFIC2404	2000-3000	4.75-5.25	9	17	4.3	5	751

Abrupt Junction Tuning Diodes

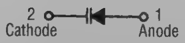


Case 29-04
TO-226AA
(TO-92)

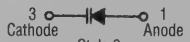


Style 15

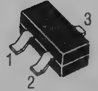
Case 182
TO-226AC
(TO-92)



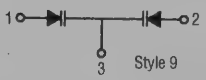
Style 1



Style 8



Case 318-07
TO-236AB
SOT-23



Style 9

Motorola supplies voltage-variable capacitance diodes serving the entire range of frequencies from HF through UHF. Used in RF receivers and transmitters, they have a variety of applications.

Two families of devices are available: Abrupt Junction and Hyper Abrupt Junction. The Abrupt Junction family includes devices suitable for virtually all tuned-circuit and narrow-range tuning applications throughout the spectrum.

General Purpose Plastic abrupt Tuning Diodes Capacitance Ratio @ 2.0 Volts/30 Volts
Case 182 — TO-226AC (TO-92) — 2-Lead

The following is a listing of plastic package, general-purpose, abrupt tuning diodes. These devices exhibit high Q characteristics.

Mfr.'s Type	C_T @ V_R=4.0 V,1.0 MHz			$V_{R(BR)R}$ (V)	Cap. Ratio C4/C30 Min.	Q 4.0 V, 50 MHz Typ.
	(pF) Min.	(pF) Nominal	(pF) Max.			
MV2101	6.1	6.8	7.5	30	2.5	400
MV2108	24.3	27.0	29.7	30	2.5	250
MV2109	29.7	33.0	36.3	30	2.5	200
MV2111	42.3	47.0	51.7	30	2.5	150
MV2115	90.0	100.0	110.0	30	2.6	100

Abrupt Tuning Diodes for FM Radio — Dual
Case 29-04 — TO-226AA (TO-92)

The following is a listing of abrupt tuning diodes that are available as dual units in a single package.

Mfr.'s Type	C_T @ V_R[2]			Cap Ratio C3/C30 Min.	Q 3.0 V, 50 MHz Min.	$V_{R(BR)R}$ (V)	Device Marking	Style
	(pF) Min.	(pF) Max.	(V)					
MV104	37	42	3.0	2.5	100	32	—	15

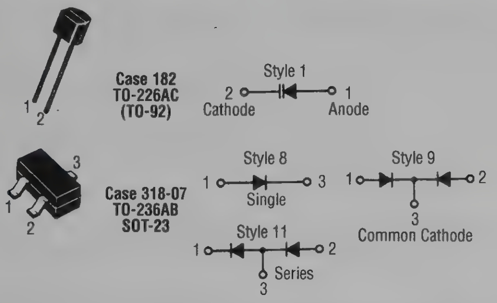
Abrupt Tuning Diodes for FM Radio — Dual
Case 318-07 — TO-236 AB (SOT-23)

MMBV432LT1	43	48.1	2.0	1.5[1]	100	14	M4B	9

[1] C2/C8. [2] Each Diode.

Tuning, Hot-Carrier and Switching Diodes

Hot-Carrier (Schottky) Diodes



Hot-Carrier diodes are ideal for VHF and UHF mixer and detector applications as well as many higher frequency applications. They provide stable electrical characteristics by eliminating the point-contact diode presently used in many applications

Hot-Carrier (Schottky) Diodes

Case 182 — TO-226AC (TO-92)
The following is a listing of hot carrier (Schottky) diodes that exhibit low forward voltage drop for improved circuit efficiency.

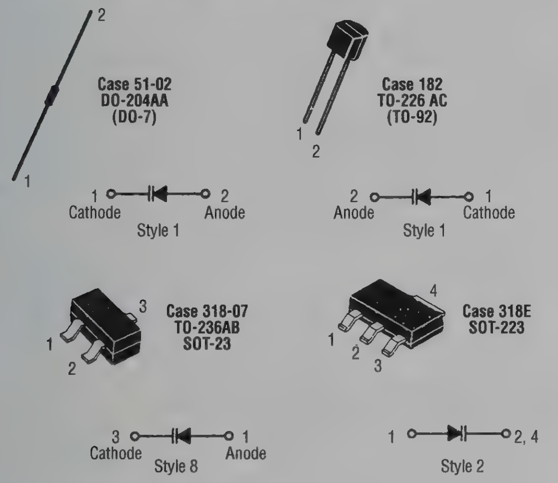
Mfr.'s Type	$V_{(BR)R}$ (V)	C_T @ V_R (pF) Max.	V_F @ 10 mA (V) Max.	I_R @ V_R (nA) Max.	Minority Lifetime (ps) Typ.	Device Marking	Style
MBD701	70.0	1.0 @ 20 V	1.0	200 @ 35.0 V	15	—	1
MBD301	30.0	1.5 @ 15 V	0.6	200 @ 25.0 V	15	—	1
MBD101	7.0	1.0 @ 0 V	0.6	250 @ 3.0 V	—	—	1

Case 318-07 — TO-236AB (SOT-23)

Mfr.'s Type	$V_{(BR)R}$ (V)	C_T @ V_R (pF) Max.	V_F @ 10 mA (V) Max.	I_R @ V_R (nA) Max.	Minority Lifetime (ps) Typ.	Device Marking	Style
MMBD701LT1	70.0	1.0 @ 20 V	1.0	200 @ 35.0 V	15	5H	8
MMBD301LT1	30.0	1.5 @ 15 V	0.6	200 @ 25.0 V	15	4T	8
MMBD101LT1	7.0	1.0 @ 0 V	0.6	250 @ 3.0 V	—	4M	8
MMBD352LT1[1]	7.0	1.0 @ 0 V	0.6	250 @ 3.0 V	—	M5G	11

[1] Dual diodes.

Hyper Abrupt Junction Tuning Diodes



Tuning Diodes — Hyper-Abrupt Junction

The Hyper-Abrupt family exhibits higher capacitance, and a much larger capacitance ratio. It is particularly well suited for wider-range application such as AM/FM radio and TV tuning.

Hyper-Abrupt Tuning Diodes For Telecommunications — Single
Case 182 — TO-226AC (TO-92)
The following is a listing of hyper-abrupt tuning diodes intended for high frequency, FM radio, and TV tuner applications.

Mfr.'s Type	C_T @ V_R (f=1.0 MHz)			Cap. Ratio @ V_R			Q		$V_{(BR)R}$ (V)	Device Marking	Case Style
	(pF) Min.	(pF) Max.	(V)	Min.	Max.	(V)	3.0 V Min.	50 MHz Max.			
MV209	26.0	32.0	3.0	5.0	6.5	3/25	200	—	30	—	1

Hyper-Abrupt Tuning Diodes For Telecommunications — Single
Case 318-07 — TO-236AB (SOT-23)

Mfr.'s Type	(pF) Min.	(pF) Max.	(V)	Min.	Max.	(V)	3.0 V Min.	50 MHz Max.	$V_{(BR)R}$ (V)	Device Marking	Case Style
MMBV105GLT1	1.8	2.8	25.0	4.0	6.0	3/25	200	—	30	M4E	8
MMBV109LT1	26.0	32.0	3.0	5.0	6.5	3/25	200	—	30	M4A	8
MMBV409LT1	26.0	32.0	3.0	1.5	2.0	3/8	200	—	20	X5	8
MMBV3102LT1	20.0	25.0	3.0	4.5	—	3/25	200	—	30	M4C	8

Hyper-Abrupt Tuning Diodes For Communications — Dual
Case 318-07 — TO-236AB (SOT-23)

Mfr.'s Type	(pF) Min.	(pF) Max.	(V)	Min.	Max.	(V)	3.0 V Min.	50 MHz Max.	$V_{(BR)R}$ (V)	Device Marking	Case Style
MMBV609LT1	26.0	32.0	3.0	1.8	2.4	3/8	250	—	20	5L	9

Hyper-Abrupt Tuning Diodes For Low Frequency Applications— Single
Case 182 — TO-226AC (TO-92)
The following is a listing of AM, hyper-abrupt tuning diodes that have a large capacity range and redesigned for low frequency circuit applications.

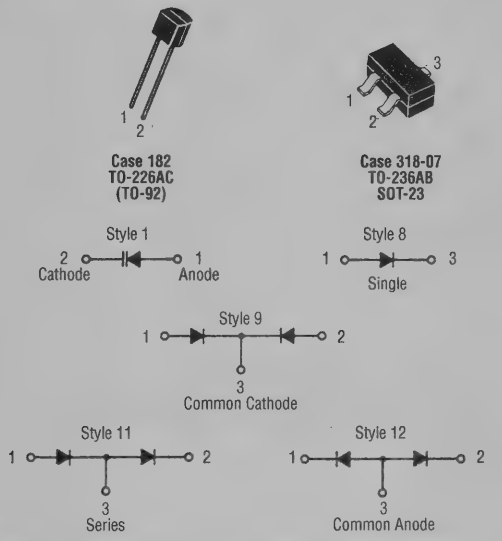
Mfr.'s Type	C_T @ 1.0 MHz			Cap. Ratio @ V_R		$V_{(BR)R}$ (V)	Style
	(pF) Min.	(pF) Max.	(V)	Min.	(V)		
MVAM108	440	560	1.0	15	1.0/8.0	12	1
MVAM109	400	520	1.0	12	1.0/9.0	15	1
MVAM115	440	560	1.0	15	1.0/15.0	18	1
MVAM125	440	560	1.0	15	1.0/25.0	28	1

Hyper-Abrupt High Capacitance Voltage Variable Diode — Surface Mount
Pinout: 1 — Anode, 2, 4 — Cathode, 3 — NC, (Case 318E — SOT-223)
The following are high capacitance voltage variable diodes intended for low frequency applications and circuits requiring large tuning capacitance.

Mfr.'s Type	$V_{(BR)R}$ (V)	I_R nA	C_T @ f=1.0 MHz		Cap. Ratio Min.	Q Min.	Style
			(pF) Min.	(pF) Max.			
MV7005T1	15	100	400	520	12[1]	150[3]	2
MV7404T1	12	100	96	144	10[2]	200[4]	2

[1] V_R=1.0 V/V_R=9.0 V. [2] V_R=2.0 V/V_R=10 V. [3] V_R=1.0 V, f=1.0 MHz. [4] V_R=2.0 V, f=1.0 MHz.

Switching Diodes



Small-signal switching diodes are intended for low current switching and steering applications. Hot-Carrier, PIN and general-purpose diodes allow a wide selection for specific application requirements.

PIN Switching Diodes

Case 182 — TO-226AC (TO-92)
The following PIN diodes are designed for VHF band switching and general-purpose low current switching applications.

Mfr.'s Type	$V_{(BR)R}$ (V) Min.	C_T @ V_R @ 1.0 MHz		I_R @ V_R (nA) Max.	Series Resistance (Ω) Max.	Device Marking	Style
		(pF) Max.	(V)				
MPN3700	200	1.0	20	0.1 @ 150	1.00 @ 10 mA	—	1
MPN3404	20	2.0	15	0.1 @ 25 V	0.85 @ 10 mA	—	1

Case 318-07 — TO-236AB (SOT-23)

Mfr.'s Type	$V_{(BR)R}$ (V) Min.	(pF) Max.	(V)	I_R @ V_R (nA) Max.	Series Resistance (Ω) Max.	Device Marking	Style
MMBV3401LT1	35	1.0	20	0.1 @ 25 V	0.7 @ 10 mA	4D	8

General-Purpose Signal and Switching Diodes — Dual

Case 318-07 — TO-236AB (SOT-23)
The Following is a listing of small-signal switching diodes in surface mount packages. These diodes are intended for low current switching and signal steering applications.

Mfr.'s Type	Marking	$V_{(BR)R}$		I_R		V_F			C_T[1] Max. (pF)	t_{rr} Max. (ns)	Case Style
		@ I_{BR} (µA)	Min. (V)	Max. (µA)	@ V_R (V)	Min. (V)	Max. (V)	@ I_F (mA)			
MMBD7000LT1	M5C	100	100	0.300	50.0	0.75	1.1	100	1.5	4	11
BAV70LT1	A4	70	100	5.000	70.0	0.75	1.0	50	1.5	6	9
BAV99LT1	A7	70	100	2.500	70.0	—	1.0	50	1.5	4	11
BAW56LT1	A1	70	100	2.500	70.0	—	1.0	50	2.0	6	12
BAV170LT1	JX	70	100	0.005	70.0	—	1.0	10	2.0	3000	9
BAV199LT1	JY	70	100	0.005	70.0	—	1.0	10	2.0	3000	11
BAW156LT1	JZ	70	100	0.005	70.0	—	1.0	10	2.0	3000	12

Low-Leakage Medium Speed Switching Diodes — Single

Case 318-07 — TO-236AB (SOT-23)

Mfr.'s Type	Marking	@ I_{BR} (µA)	Min. (V)	Max. (µA)	@ V_R (V)	Min. (V)	Max. (V)	@ I_F (mA)	C_T[1] Max. (pF)	t_{rr} Max. (ns)	Case Style
BAS116LT1	JV	75	100	0.005	75.0	—	1.0	10	2.0	3000	8

Low-Leakage Medium Speed Switching Diodes — Single

Case 318-07 — TO-236AB (SOT-23)

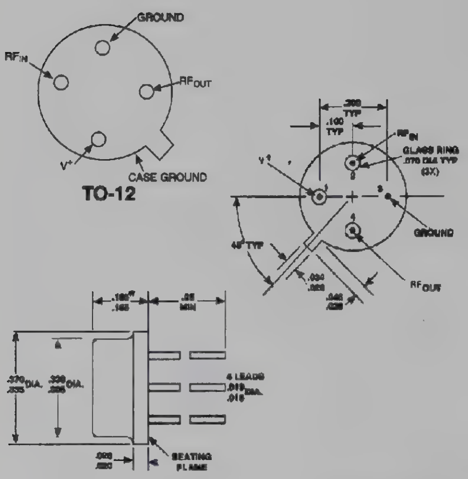
Mfr.'s Type	Marking	@ I_{BR} (µA)	Min. (V)	Max. (µA)	@ V_R (V)	Min. (V)	Max. (V)	@ I_F (mA)	C_T[1] Max. (pF)	t_{rr} Max. (ns)	Case Style
BAV170LT1	JX	70	100	0.005	70.0	—	1.0	10	2.0	3000	9
BAV199LT1	JY	70	100	0.005	70.0	—	1.0	10	2.0	3000	11
BAW156LT1	JZ	70	100	0.005	70.00	—	1.0	10	2.0	3000	12

[1] VR=0 V, f=1.0 MHz.

IF/RF Low Cost Cascadable Modules from Avantek

GPD Series Low Cost Amplifiers, TO-12 Package

- **5 to 1000 MHz Frequency Coverage**
- **High Performance-to-Cost Ratio**
- **Ideal for Mixer Post Amplification**



Avantek GPD amplifiers, available in TO-12 (4-pin) packages, are designed for applications which require the highest performance-to-cost ratio or where size is an important factor. Some versions are equipped with internal coupling and bypass capacitors. The GPD Modules are discrete hybrid devices.

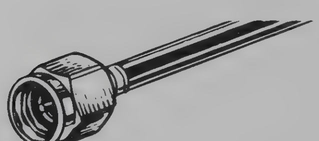
Guaranteed specifications at 0°-50°C case temperature, typical values at 25°C.

Stock No.	Mfr.'s Type	Frequency Response (MHz) Min.	Gain (dB) Min.	Gain† (dB) Min.	Noise Fig. (dB) Typ.	Power Output at 1 dB Gain Compression (dBm) Typ.	3rd-Order Intercept Point (dBm) Typ.	Input Pwr. (±1% Reg.) Voltage (VDC) Typ.	Input Pwr. (±1% Reg.) Current (mA) Typ.	EACH
817-0102	GPD-201	5-200	30	26	3.0	+ 5	+13	+15	30	30.20
817-0104	GPD-202	5-200	25	23	5.5	+11	+18	+15	60	29.40
817-0106	GPD-401	5-400	13	12	4.0	− 2	+ 9	+15	10	18.50
817-0108	GPD-402	5-400	13	12	8.0	+ 8	+18	+15	24	18.30
817-0110	GPD-462*	5-400	13	12	8.0	+ 8	+18	+15	24	18.30
817-0112	GPD-403	5-400	9	8	7.5	+16	+25	+24	65	20.50
817-0114	GPD-463*	5-400	9	8	7.5	+16	+25	+24	65	20.50
817-0116	GPD-404	5-400	9	8	7.5	+17	+26	+15	70	19.20
817-0118	GPD-464*	5-400	9	8	7.5	+17	+26	+15	70	19.20
817-0120	GPD-405	10-400	13	12	6.5	+23	+36	+15	90	38.00

Note: Gain Flatness (+db) Typical. *The 60 Series is the same as the standard series except that three external capacitors are required to establish low frequency roll-off. †**Military Temperature Conditions:** –55°-+85°C.

Cable Assemblies

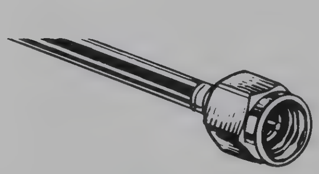
Instrumentation Grade Cable Assemblies



Construction: High grade, low loss, 0.142 O.D. flex cable with MIL grade, gold plated, SMA male backshell and soldered center pin.

Stock No.	Mfr.'s Type	Length (Ft.)	EACH 1-9	EACH 10-24
817-0500	PCBL-S9101-I	1	33.56	31.94
817-0501	PCBL-S9102-I	2	40.27	38.32
817-0502	PCBL-S9103-I	3	48.19	45.65
817-0503	PCBL-S9104-I	4	56.08	53.37
817-0504	PCBL-S9105-I	5	64.00	60.90
817-0505	PCBL-S9106-I	6	71.92	68.44

Commercial Grade Cable Assemblies



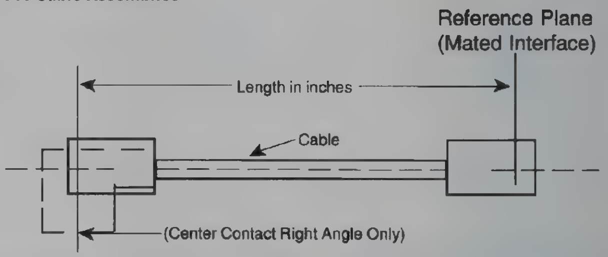
Construction: RG-316 flex cable with stainless steel, SMA male.

Stock No.	Mfr.'s Type	Length (In.)	EACH 1-9	EACH 10-24
817-0510	PLCB-S9130-C	3	24.03	22.67
817-0511	PLCB-S9160-C	6	24.25	23.08
817-0512	PLCB-S9190-C	9	24.51	23.32
817-0513	PLCB-S9101-C	12 (1 ft.)	24.75	23.55
817-0514	PLCB-S9102-C	24 (2 ft.)	25.73	24.48
817-0515	PLCB-S9103-C	36 (3 ft.)	26.69	25.30
817-0516	PLCB-S9104-C	48 (4 ft.)	27.68	26.34
817-0517	PLCB-S9105-C	60 (5 ft.)	28.64	27.26
817-0518	PLCB-S9106-C	72 (6 ft.)	29.63	28.19

Conformable and Flex .086 and .141 Cable Assemblies

Cable Length Tolerance:

Length	+/-
0-12"	.10
1'-3'	.20
3' up	.30



.141 Electrical Specifications. Connectors: Freq. range is DC-26.5 GHz (SMA); VSWR 1.02+.005X (fGHz). **Insertion Loss (DB Max.):** 03 √fGHz. **RF Leakage:** –(90-fGHz). **Voltage Rating (VRMS Max./Sea Level):** 335. **Cable:** Insertion loss per 100' — 1 GHz, 13 DB, 8 GHz, 43 DB, 18 GHz, 73 DB; 26.5 GHz, 95 DB Max. **Power Handling (CW/Sea Level):** 1 GHz — 459; 8 GHz — 120; 18 GHz — 72; 26.5 GHz — 53. **Max. Impedance:** 50 ohms ±2 ohms.

.141 Mechanical Specifications. Connectors: SMA anti-torque plug. **Finish:** Passivated stainless steel coupling nut, soldered, surface — gold plated. **Contact:** Cable center conductor. **Interface:** MIL-STD-348A, stainless steel coupling nut. **Recommended Mating Force:** 3-5 in.-lbs. **Cable:** Center conductor; silver plated copper clad steel, 0.036" normal. **Dielectric PTFE:** 116" normal. **Outer Jacket:** Tinned coated wire braid over copper foil, .141" normal. **Bending:** Per MIL-C-17 .25" minimum inside radius. **Recommended Bending Guidelines:** .25" inside radius — one time maximum; 1.00" inside radius — ten times maximum. **Connector Retention:** 60 lbs minimum. **Operating Temperature:** –60°C to +105°C unmated connector, –70°C to +200°C cable.

Pen-Flex

Stock No.	Mfr.'s Type	Length (In.)	EACH 1-9	EACH 10-24
817-0530	P-3636-601-5203	3	27.07	18.74
817-0531	P-3636-601-5206	6	27.07	18.74
817-0532	P-3636-601-5209	9	27.07	18.74
817-0533	P-3636-601-5212	12	27.07	18.74
817-0534	P-3636-601-5215	15	28.51	20.18
817-0535	P-3636-601-5218	18	28.51	20.18
817-0536	P-3636-601-5224	24	28.51	20.18

Ultra Pen-Flex

Stock No.	Mfr.'s Type	Length (In.)	EACH 1-9	EACH 10-24
817-0550	P-3636-603-5203	3	27.25	22.56
817-0551	P-3636-603-5206	6	27.25	22.56
817-0552	P-3636-603-5209	9	27.25	22.56
817-0553	P-3636-603-5212	12	27.25	22.56
817-0554	P-3636-603-5215	15	30.50	25.25
817-0555	P-3636-603-5218	18	30.50	25.25
817-0556	P-3636-603-5224	24	30.50	25.25

.086 Electrical Specifications. Connectors: Freq. range is DC-26.5 GHz (SMA); VSWR 1.02+.005X (fGHz). **Insertion Loss (DB Max.):** 03 √fGHz. **RF Leakage:** –(90-fGHz). **Voltage Rating (VRMS Max./Sea Level):** 335. **Cable:** Insertion loss per 100' — 1 GHz, 23 DB; 8 GHz, 72 DB; 18 GHz, 117 DB; 26.5 GHz, 148 DB max. **Power Handling (CW/Sea Level):** 1 GHz — 130; 8 GHz — 34; 18 GHz — 22; 26.5 GHz — 15. **Max. Impedance**: 50 ohms ±2 ohms.

.086 Mechanical Specifications. Connectors: SMA anti-torque plug. **Finish:** Passivated stainless steel coupling nut, soldered, surface — gold plated. **Contact:** Gold plated beryllium copper. **Interface:** MIL-STD-348A, stainless steel coupling nut. **Recommended Mating Force:** 3-5 in.-lbs. **Cable:** Center conductor; silver plated copper clad steel, 0.20" normal. **Dielectric PTFE:** .060" normal. **Outer Jacket:** Tinned coated wire braid over copper foil, .083" normal. **Bending:** Per MIL-C-17 .125" minimum inside radius. **Recommended Bending Guidelines:** .125" inside radius — one time maximum; .50" inside radius — ten times maximum. **Connector Retention:** 30 lbs minimum. **Operating Temperature:** –60°C to +105°C unmated connector, –70°C to +200°C cable.

Pen-Flex

Stock No.	Mfr.'s Type	Length (In.)	EACH 1-9	EACH 10-24
817-0520	P-3636-600-5203	3	27.07	18.74
817-0521	P-3636-600-5206	6	27.07	18.74
817-0522	P-3636-600-5209	9	27.07	18.74
817-0523	P-3636-600-5212	12	27.07	18.74
817-0524	P-3636-600-5215	15	28.51	20.18
817-0525	P-3636-600-5218	18	28.51	20.18
817-0526	P-3636-600-5224	24	28.51	20.18

Ultra Pen-Flex

Stock No.	Mfr.'s Type	Length (In.)	EACH 1-9	EACH 10-24
817-0540	P-3636-602-5203	3	27.25	22.56
817-0541	P-3636-602-5206	6	27.25	22.56
817-0542	P-3636-602-5209	9	27.25	22.56
817-0543	P-3636-602-5212	12	27.25	22.56
817-0544	P-3636-602-5215	15	30.50	25.25
817-0545	P-3636-602-5218	18	30.50	25.25
817-0546	P-3636-602-5224	24	30.50	25.25

Instrument Repair and Calibration Services

Avnet Industrial provides repair and calibration service for a wide variety of test instrumentation plus factory authorized warranty service for B&K, Triplett, LFE, Simpson and Yokogawa. Certificates of calibration traceable to N.I.S.T. are also available. Call Avnet Industrial for additional capabilities not listed below and for calibration outside the listed capabilities: 1(800) 332-3423. All repairs are calibrated to original manufacturers' specifications and include a 90 day warranty.

Factory Authorized Warranty Center for

- B&K
- LFE (API)
- Simpson
- Triplett
- Yokogawa

Calibration Capabilities

- **Direct Volts** - 10nV to 30KV, Best Accuracy 20PPM (100uV to 1KV)
- **Direct Current** - 1uA to 500A, Best Accuracy 100PPM (100uA to 10A)
- **DC Ratio** - 0.0000001 to 1000000, Best Accuracy 1PPM (0.010000 to 100.0000)
- **Resistance** - 1 Micro Ohm to 1 Giga Ohm, Best Accuracy 20PPM (1 Ohm to 1 Mega Ohm)
- **Alternating Volts** - 1uV to 30KV, Best Accuracy 0.01% (1mV to 1KV, 50 to 5khz)
- **AC Power** - 1W/VAR to 5KW/VAR, Best Accuracy 0.5% (100W/VAR to 1KW/VAR, 50-5khz)
- **Alternating Current** - 1uA to 500A, Best Accuracy 0.02% (100uA to 10A, 50 to 5khz)
- **Phase Angle/Power Factor** - 0 to 90°, Best Accuracy ±1° (50, 60 and 400Hz)
- **AC Ratio** - 0.01:1 to 1:1, Best Accuracy 200PPM (50 to 1khz)
- **AC Impedance** - 1 Milli Ohm to 1 Mega Ohm, Best Accuracy 0.05% (50 to 1khz)
- **Frequency** - DC to 500mhz, Best Accuracy 1 x 60-12 (at 0.1, 1, 5, and 10MHz)

We Repair and Calibrate

- Oscillators and Generators; Signal, Function and Waveform
- Semiconductor and Vacuum Tube Testers, Curve Tracers
- Multimeters
- Clamp-On Ammeters
- Insulation Testers; Megohmeters and High Potential Testers
- Power Systems Analyzers and Monitors
- Temperature Indicators
- Multifunction and Process Instrument Calibrators
- Lab Standards; Voltmeters, Ammeters, Wattmeters, etc.
- Resistance Standards; Decade Boxes, RTD Simulators
- Wheatstone and Kelvin Bridges
- Industrial Tachometers, Rate and Speed Indicators
- Halogen Leak Detectors
- Oscilloscopes, Real Time and Digital Storage
- Frequency Counters and Counters/Timers
- Chart recorders, Data Loggers

Also Available

- Certification Traceable to N.I.S.T.,
  With or Without Data
- Certificates of Calibration

AVNET®
INDUSTRIAL

1(800) 332-3423

Product Index

A

- **AC to DC Modular Power Supplies** ... 642
- **AC/AC Transformers, External** ... 457
- **Accelerometers** ... 634
- **Adapters — Also See Connectors**
- **Adhesives — See Tapes/Adhesives, Chemicals/Cleaners**
- **Aerosol Spray Equipment**
  - Brass Extension Tube ... 780
  - Precision Trigger Sprayer ... 780
  - Spiral Insert ... 780
- **Alarm and Security Devices**
  - Accessories ... 914, 933
  - Acoustic Alarms ... 135
  - Alarms ... 932
  - Buzzers ... 922, 923, 926, 932
  - Cameras ... 914, 933
  - Indicators ... 926
  - Monitors ... 914, 933
  - Piezo Alarms ... 922, 929
  - Security Video ... 914, 933
  - Sirens ... 916, 926, 932
  - Sonalerts ... 925
  - Sounders ... 922, 923
  - Time Lapse Recorders ... 933
  - Transducers ... 923, 927, 929
  - Video Switchers ... 914
  - Warning Devices ... 927
- **Alcohol**
  - Isopropyl Alcohol ... 785
  - Isopropyl Alcohol Presaturated Pads ... 785
- **Alligator Clips** ... 159, 264, 877
- **Amplifier ICs**
  - Audio ... 639
  - Comparators ... 639
  - Current Feedback High Speed ... 638
  - Difference ... 639
  - Differential ... 655
  - General Purpose ... 654, 655, 671, 672, 687, 688, 708
  - High Performance ... 654, 708
  - Instrumentation ... 637
  - Isolation ... 637
  - Low Current Noise ... 637
  - Low Voltage Noise ... 638
  - Low/Micro Power ... 637, 708
  - Precision ... 638
  - Sample and Hold ... 651
  - Sample/Track and Hold ... 637
  - Single Supply ... 638
  - Video ... 672
  - Voltage Feedback High Speed ... 638
- **Amplifiers**
  - Audio ... 911, 912, 915, 916, 918
- **Analog Interface for DSP** ... 731
- **Analog Multipliers/Dividers** ... 639
- **Analog Optoisolators-Vactrols** ... 364
- **Analog Switches and Multiplexers** ... 636
- **Analog to Digital Converters**
  - General Purpose ... 650, 670, 686, 710, 722, 730
  - High Speed ... 634
  - Non-Sampling ... 635
  - Sampling ... 634, 635
  - Sigma Delta ... 635
- **Anti-Static Products — See Static Control Products**
- **Arrays, Multielement** ... 383
- **Assemblies, Lamp** ... 380, 381
- **Audible Signal Devices**
  - Acoustic Transducers ... 923
  - Buzzers ... 922, 923, 926
  - Piezo Alarms ... 922, 929
  - Sonalerts ... 925
  - Speakers ... 924
  - Transducers ... 923, 927, 929
- **Audio**
  - Amplifiers ... 911, 912, 915, 916, 918
  - Attenuators ... 931
  - Baffles ... 913, 931
  - Buzzers ... 923, 924, 925, 932
  - Connectors ... 159, 262, 282, 283, 285, 292, 293, 294, 316
  - Controls ... 915, 919
  - Driver Units ... 931
  - Extension Cables ... 159, 997, 998, 1001
  - Headsets and Accessories ... 917, 930, 933
  - Horns ... 912, 913, 915, 931
  - Indicators ... 925
  - Intercoms ... 911
  - Megaphones ... 916, 918
  - Microphone Stands ... 931
  - Microphones ... 911, 922, 928, 932
  - Portable Radios ... 928
  - Power Supplies ... 912
  - Receivers ... 913
  - Sirens ... 926, 932
  - Sonalerts ... 927
  - Sound Columns ... 913
  - Sounders ... 923
  - Speaker Wire ... 919
  - Speakers ... 913, 915, 916, 918, 919, 922, 931, 932
  - Television Wall Mounts ... 919
  - Transceivers ... 918
  - Transducers ... 924, 926, 929
  - Transformers ... 912, 915, 916, 931
  - Tuner ... 913
- **Audio Cable**
  - Extension Cables ... 159, 997, 998, 1001
  - Hook-Up Cable ... 996, 997
  - Speaker Wire ... 997, 1010, 1012

B

- **Baluns** ... 909
- **Banana Plugs and Jacks, and Grabbers** ... 159, 263, 264, 266, 281, 285, 286, 877, 878
- **Bases** ... 346
- **Batteries (Section 2)**
  - Section Index ... 1
  - Alkaline ... 2, 6, 13, 18, 19
  - Assemblies ... 3, 15
  - Battery Holders ... 9, 10, 11
  - Battery Straps ... 9
  - Calculator ... 19
  - Chargers ... 6, 8, 15, 18
    - AC/DC Wall Mount ... 457
  - Clips ... 9, 10, 11
  - Computer Clock ... 19
  - Heavy-Duty Zinc Carbon ... 2, 6
  - Holders ... 9, 10, 11, 18
  - Industrial ... 6, 19
  - Lantern ... 19
  - Lap Top Rechargeable ... 2
  - Lead Acid ... 3, 5, 8, 14, 17
  - Lithium ... 2, 4, 6, 13, 19, 20, 21
  - Nickel-Cadmium ... 12, 16, 18
  - Rechargeable ... 6, 12, 16
    - Alkaline ... 19
    - Ni-Cad Battery Packs ... 19
    - Nickel-Cadmium ... 6, 12, 16
  - Special Application ... 2, 7
  - Video ... 14
  - Zinc Carbon ... 2
  - Zinc Chloride ... 13
- **Binding Posts** ... 159, 263, 266, 281, 285, 286, 291
- **Bipolar Programmable Logic** ... 729
- **Boost Converter ICs** ... 671
- **Brain Boards** ... 559, 561
- **Breadboards**
  - Solderless and Accessories ... 153, 772
- **Brushes**
  - Acid ... 782
  - Cleanroom ... 786
  - General Cleaning ... 786
  - Inspection Station and Instrument Cleaning ... 786
  - Technical Cleaning ... 786
- **Buffers** ... 654
  - General Purpose ... 709
  - High Performance ... 654, 708
  - Video ... 672
- **Bumpers, Protective** ... 318, 350
- **Buzzers**
  - Electronic ... 922, 923, 926
  - Piezo ... 922

C

- **Cabinets, Enclosures and Accessories (Section 3)**
  - Section Index ... 40
  - Accessories ... 45, 57, 58, 61, 62, 67, 70, 71, 72, 78, 85, 87, 89, 93, 96, 97, 99, 100, 101, 102, 103, 104
  - Adapter Kit ... 71
  - Add-A-Rack Systems ... 50
  - All American Rack ... 50
  - Aluminum Cases ... 64
  - Aluminum Chassis ... 60
  - Bins ... 41
  - Blowers ... 61
  - Bracket Kits ... 82
  - Cabinet Racks ... 52
  - Cabinets ... 41, 49, 50, 51, 52, 53, 54, 55, 56, 57, 64, 68, 71, 82, 83, 84, 86
  - Cable Management Panel ... 1030
  - Cable Management Racks ... 80
  - Card Cages ... 750
  - Card Guides ... 748, 750
  - Casters ... 62, 81, 83
  - Chassis Covers ... 58
  - Chassis Kit ... 57
  - Classic II Series ... 49
  - Contempra II Racks ... 71
  - Conversion Adapter Brackets ... 83
  - Converta Boxes ... 55
  - Cowl-Type ... 55
  - Datacom Cabinet Assembly ... 51
  - Desktop Enclosures ... 52, 57, 67
  - Die-Cast Aluminum Enclosures ... 55, 58, 65, 70, 73
  - DIN Rail Mount Enclosures ... 43
  - Dividers and Lids ... 41
  - Door Packs ... 86
  - Doors ... 48, 49, 50, 51, 52, 71, 81, 83, 84, 85
  - Drawers ... 41
  - Econoboxes ... 55
  - Economizers ... 48
  - Economy Racks ... 71
  - Economy Vertical Enclosures ... 83
  - Electrical Product ... 41
  - Electronic Enclosures ... 44, 45, 46, 58, 59, 60, 63, 66, 74, 75, 76, 77, 78
  - Express Racks ... 81
  - Fan Trays ... 61, 87
  - Fiberglass Enclosures ... 70
  - Flame Retardant ... 66
  - Grabbers ... 57
  - Hand Held Boxes ... 57, 66, 67, 75
  - Handles ... 62
  - Hardware ... 72, 85
  - High Impact Polystyrene ... 67
  - Hinged Cover Enclosures ... 68
  - Hinged Patch Panel Brackets ... 51
  - Identification Strip ... 85
  - Inclined Panel Cabinets ... 49, 50
  - Instrument Cases ... 64, 67
  - Keyboard Enclosures ... 57
  - Leg Levelers ... 87
  - Liquid Tight Strain Reliefs ... 47
  - Lock Assembly ... 87
  - Low Priced Racks ... 52
  - Low Profile Cases ... 64
  - Low-Cost Cabinets ... 54
  - Metal Cases ... 64
  - Metal Consoles ... 67
  - Miniboxes ... 55
  - Mod-U-Desk Racks ... 86
  - Mod-U-Serv ... 81
  - Modubox Enclosures ... 86
  - Modular Cabinets ... 41
  - Modular Networking Frames ... 1030
  - Modular Vertical Enclosures ... 84
  - Moduline Chassis ... 79
  - NEMA Enclosures ... 58, 68, 70
  - NEMA 12 Series Racks ... 71
  - Non-Metallic Enclosures ... 69
  - Painted Aluminum ... 65
  - Panel Mounting Rails ... 52, 62, 71, 87
  - Panel-Mounting Chassis ... 56
  - Panels ... 58, 61, 72, 85, 87
  - Patch Panel Brackets ... 82
  - Patch Panels ... 1030
  - PC Card Diecast ... 65
  - Phenolic Boxes ... 63, 73
  - Plastic Enclosures ... 43, 44, 45, 46, 55, 57, 58, 59, 60, 63, 66, 74, 75, 76, 77, 78
  - Plug-In Modules ... 77
  - Polystyrene Enclosures ... 58
  - Portable ... 53, 54, 56
  - Potting Boxes ... 60, 63, 77
  - Power Outlet Strips ... 53, 87, 1030
  - Racks ... 48, 49, 50, 51, 52, 53, 71, 80, 83, 85
  - Rak-Mount Chassis ... 56
  - Relay Racks ... 53, 85
  - Screw Cover Enclosures ... 68
  - Shelves ... 48, 51, 56, 71, 72, 73, 85, 87, 1030
  - Single Door Enclosures ... 68
  - Sliding Mechanisms ... 62
  - Slope Enclosures ... 52, 57
  - Small Rack Mount Chassis ... 58
  - Stem Levelers ... 62
  - Storage Drawer Kits ... 72
  - Stylist ... 52
  - Styrene Plastic Cases ... 66
  - Subrack Modules ... 748
  - Subracks ... 748
  - Support Angles ... 72
  - Support Brackets ... 62
  - Switch-Pac Kits ... 75
  - Table Top Racks ... 72
  - Temperature Controls ... 61
  - Tilt-A-View ... 55
  - Touch Up Paint ... 87
  - Universal Networking Frames ... 82
  - Upright Cabinet Racks ... 49, 50
  - Utilibox Series ... 60
  - Utility Boxes ... 41, 64
  - Utility Cabinets ... 55, 57
  - Valu/Line Series ... 56
  - VIP Series ... 80
  - Wall Mount Cabinets ... 51, 69, 82
  - Wall Mount Patch Panel Brackets ... 1030
  - Wall Mount Relay Racks ... 51
  - Water and Oil Tight Enclosures ... 70
  - Watertight Die-Cast Aluminum Enclosures ... 65, 70
  - Wire Management Brackets ... 1030
- **Cable — See Wire, Cable, and Accessories**
- **Cable Assemblies** ... 157, 158, 179, 207, 246, 253
- **Cable Ties** ... 1019, 1026, 1027, 1028
- **Calibration Services** ... 1063
- **Cameras** ... 914, 933
- **Capacitors (Section 4)**
  - Section Index ... 107
  - AC ... 110, 113, 114, 118
  - AC Motor ... 110, 113, 118
  - Accessories ... 110, 118
  - Aluminum Electrolytic
    - Axial ... 117, 122, 128, 130, 131, 132
    - Chip ... 125, 131
    - Radial ... 108, 116, 119, 122, 131, 132
  - Ceramic
    - Axial ... 112
    - Chip ... 111, 112, 121, 125
    - Disc ... 121, 124, 128
    - Monolithic ... 112, 118, 120, 124, 129
    - Radial ... 112
  - Computer Grade ... 115, 132
  - DC
    - General Purpose ... 114
    - High Current ... 114
    - Snubber ... 114
  - Decade Box ... 436
  - Film
    - Axial ... 109, 129, 131
    - Chip ... 125
    - Radial ... 108, 117, 118
    - Tubular ... 127
  - HID Lighting ... 113
  - High Current DC ... 114
  - Kits ... 111, 119, 121 , 123, 146
  - Low Voltage Ceramics ... 124
  - Metallized
    - Film ... 108
    - Polycarbon Film ... 109, 128
    - Polyester ... 108, 117, 118, 125, 127, 129
    - Polypropylene ... 109, 110
  - Mica ... 108
  - Mini Reel Chips ... 125
  - Miniature ... 116, 122, 124, 128
  - Motor Run AC ... 110
  - Motor Start ... 118

  - Mounting Hardware 110, 115, 118, 132
  - Paper Polyester 127
  - Plastic Film 108
  - Snubber 114, 118
  - Suppressors 111
  - Surface Mount 112, 119, 125, 126, 131, 135, 1036
  - Tantalum
    - Axial 119, 126
    - Chip 111, 112, 119, 125, 126
    - Radial 111, 127
    - Wet 119
  - Transient Voltage Suppressors 111
- **Card Cages** 750
- **Card Guides** 748, 750
- **Category 5 Cable Assemblies** 157, 158
- **Category 5 Product** 157, 158, 204, 250, 1030
- **Caution Labels (Anti-Static)** 757
- **CdS/CdSe Photoconductive Cells** 364, 382
- **Chemicals/Cleaners (Section 12)**
  - Section Index 758
  - Adhesives/Glues 1021, 1022, 1027
  - Big Bath 781
  - Bio-Clean 783
  - Butane 765
  - Cleaner, Citrus Based 1022
  - Cleaner/Degreaser 763, 764, 781, 785
  - Cleaner/Lube 780
  - Cleaners 763, 764, 780, 781, 785, 1022
  - Coatings 152, 781, 784
  - Conductive Epoxy 763
  - Conductive Grease 763
  - Conductive Pen 763
  - CRT Cleaner 781
  - Defluxer 785
  - Dusters 763, 764, 785, 780, 781, 785
  - Flux Pens 766
  - Flux Remover 780, 781, 785
  - Flux-Off 763, 764
  - Freezer 780, 781, 785
  - High Strength Flux Remover 781
  - Isopropyl Alcohol 785
    - Presaturated Pads 785
  - Label and Adhesive Remover 784
  - Lubricants 1022
  - Mat and Benchtop Reconditioner 764, 766
  - No Clean Fluxes 783
  - Optical Cleaner 781
  - Overcoat Pens 763
  - Penetrants 1022
  - Plast-N-Glass 764
  - Quick Bond Kit 763
  - RA Fluxes 783
  - Residue Remover 783
  - RMA Fluxes 783
  - Rubber Rejuvenator 784
  - Screen and Keyboard Cleaner 766
  - Screen Prep 764
  - Silicone Spray 780
  - Solvents 780
  - Static Null 780, 781
  - Thinner 783
  - Vacuum Cleaner and Filters — Electronics 318, 1022
  - Water Soluble Fluxes 783
  - Zero Charge AntiStat Spray 786
- **Chokes**
  - Hash 135
  - Molded 135, 137
  - RF 135, 137
- **Circuit Board Holders** 346
- **Circuit Boards**
  - Boards 153
  - Card Cages 750
  - Card Guides 748, 750
  - Extender Cards 744, 745, 747
  - Metric Extender Cards 747
  - PC Bus Plug Boards 746
  - PCI Developers Kit 748
  - PCI Extender Cards 747
  - PCI Prototyping Boards 749
  - PCMCIA Test Extender 749
  - Prototyping Boards 744, 746, 747, 748, 750
  - Prototyping Bread Boards 745
  - Prototyping BUS Specific Boards 744
  - Punchboards 746
  - Subrack Modules 748
  - Subracks 748
  - Surface Mount Adapters 745
  - Terminals 750
  - VME Backplane Spacer Strips 750
  - VME Backplanes 745
  - VME Extender Cards 750
  - VME Microracks 750
  - VME Prototyping Boards 746
  - VMExcel Monolithic Backplanes 750
  - Wire Wrap Terminals and Pins 749
- **Circuit Breakers** 22, 23, 24, 25, 26, 27, 38
- **Cleaning Products — See Chemicals/Cleaners**
- **Clock Oscillators** 142
- **Coaxial Cable** 972, 973, 974, 994, 995, 1003, 1004, 1012, 1018
- **Computer Accessory Products (Section 15)**
  - Section Index 908
  - Baluns 909
  - BNC Cable Assemblies 921
  - Breadboards 772
  - Cables 921
  - Computer Hook-Up Cables 910, 921
  - D-Sub Adapter 909
  - D-Sub (RS232) to Modular Jack Adapters 204, 909
  - Data Connectors 909
  - Data Connectors, IBM Style 205
  - Data Switches 910, 921
  - Gender Adapters 910
  - Hook-Up Cables 910
  - Keystone Jacks 158, 204, 909
  - Memory
    - Flash Memory Cards 726
    - Memory Modules 726
    - SIMMs 726
  - Modular Cord Assemblies 921
  - Modular IDC Connectors 921
  - Multiport Data Switches 910
  - Network Plates 909, 921
  - Peripheral Cable 921
  - Printer Cables 921
  - Surge Protectors 910
  - Surge Suppressors 921
  - System Cable 921
  - Tele-Communication Installation Kit 909
- **Conditioners, Power** 492, 501, 502, 505, 508
- **Conduit** 306, 307, 987
- **Conduit Fittings** 306, 307, 987
- **Connectors (Section 5)**
  - Section Index 143, 144
  - 2 mm Connectors
    - Boardmount Sockets 148
    - Headers 148
    - Ribbon Cable Connectors 182
  - Adapters (See Also Specific Connector Types) 262, 264, 281, 286
  - Alligator Clips 159, 264, 877
  - Attenuators 262
  - Audio Connectors, Plugs and Jacks 159, 262, 282, 283, 285, 292, 293, 294, 316
  - Audio Extension Cables 159
  - Backplane Connectors
    - DIN 260
    - VME 261
  - Banana Plugs and Jacks 159, 263, 264, 266, 281, 285, 286
  - Barrier Terminal Blocks — See Terminal Blocks/Strips
  - Binding Posts 159, 263, 266, 281, 285, 286, 291
  - Breadboards, Solderless 153
  - Cable, Flat/Ribbon 184, 185, 227, 297, 966, 988, 989
  - Cable Assemblies
    - Category 5 157, 158
    - Circular DIN 253
    - Color-Coded Coaxial 157
    - Fiber Optic 207
    - GPIB Shielded 246
    - SCSI 179
  - Card Edge Connectors 147, 182, 213, 244, 256, 301, 303, 308, 315
  - Category 5 Product 157, 158, 204, 250
  - Circular Connectors
    - DINs 179, 223, 253, 269, 283, 292, 294, 315
    - Environmentally Sealed 223
    - Power Connectors 171, 172, 173, 216, 217, 218, 219, 220, 221, 222
  - Coaxial/RF Connectors
    - Baluns 909
    - Between Series Adapters 154, 155, 250, 262, 270, 271
    - BNC Attenuator Pads 154, 262
    - BNC Connectors and Adapters 154, 159, 186, 187, 188, 189, 229, 230, 231, 249, 250, 251, 262, 264, 267, 270, 271, 281
    - Boots and Hoods 251
    - Coaxial Wall Plates 155
    - F-Series Connectors and Adapters 154, 155, 249, 250
    - Kits (Coaxial Connector) 187, 215, 262
    - MHV Connectors 231, 267
    - Mini-Subminiature Coaxial Connectors 265
    - N-Type Connectors and Adapters 155, 189, 229, 232, 250, 262, 267, 270, 271
    - RCA-Series Adapters 155, 250
    - SHV Connectors 189, 267
    - SMA Connectors and Adapters 155, 190, 228, 250, 262, 265, 270, 271
    - SMB Connectors and Adapters 190, 228, 265, 270
    - SMC Connectors 270
    - Strippers 154
    - TNC 231, 250, 251, 267, 270, 271
    - Triaxial Connectors 262
    - Twin-Ax Connectors 155, 229, 230, 249, 251
    - UHF Connectors and Adapters 155, 159, 189, 229, 232, 250, 262
    - Wall Plate 155
  - Communication (IDC) Connectors 152
  - Conduit/Tubing and Fittings 306, 307
  - D Subminiature Connectors (D-Subs)
    - Crimp Type 156, 175, 176, 252, 253, 284, 295, 314
    - Dust Caps 253
    - Filtered 180, 181, 224
    - Flat Cable/Ribbon Cable 147, 182, 225, 245, 295, 298, 299
    - Hardware 156, 178, 225, 284, 299, 314
    - High Density 156, 176, 284
    - Hoods (Backshells) 147, 156, 178, 225, 253, 284, 299, 314
    - IDC D-Subs 147, 176, 182, 245, 295, 298, 299
    - Kits 176, 178, 215
    - PC Board D-Subs 176, 177, 224, 225, 245, 252, 302
    - Solder Type 156, 175, 225, 252, 284
  - Data Connectors 205
  - DIN Connectors 179, 181, 213, 223, 253, 260, 269, 283, 290, 292, 294, 303
  - Electrical 152
    - Coating 152
    - Connectors 152, 258, 259, 260, 291, 1027
  - Electrical Connectors 152, 258, 259, 260, 291, 1027
  - Environmental Sealed Connectors 223
  - Euro Terminal Blocks — See Terminal Blocks/Strips
  - Eurocard Connectors 213
  - Ferrules 162
  - Fiber Optic Products 145, 206, 207
  - Filtered Connectors 180, 181, 224, 250
  - Flat Cable/Ribbon Cable Connectors 146, 147, 148, 182, 193, 225, 226, 228, 244, 245, 261, 280, 289, 290, 295, 297, 298, 299, 300, 301, 315
  - GPIB Cable Assemblies 246
  - Headers — See PC Board Connectors
  - Heat Shrinkable Tubing 307
  - High Current Connectors 174, 233, 276
  - I/O Connectors 261, 280
  - IDC Connectors — See Flat Cable Connectors
  - IDT Connector System 268, 269
  - Industrial Connectors 258, 259, 260, 282, 283
  - Industry Standard Tooling 215
  - Interconnective Connectors
    - "Tiny Tim" Connectors 316
    - Crimp Connector Housings 276
    - Crimp-to-Wire Housings 246
    - Crimp-to-Wire Receptacles 243
    - Headers 246, 277
    - Housings 243
    - Intra Connectors 149
    - Jumpers 243
    - Kits 277
    - Plug Connectors 147
    - Strip Connectors 316
    - Terminals Housings 277
    - Vertical Card Connectors 246
  - Interphase Modules 170, 257, 312
  - Intra Connectors 149
  - Jumper Wires 153
  - Jumpers 153, 159, 243
  - Jumpers, Unshielded 159
  - Kits
    - Coaxial Connectors 155, 215, 321
    - D-Subs 176, 178, 215
    - Ferrule 162
    - Fiber Optic Splice 145
    - Flat Cable Termination 182
    - Heat Shrink Tubing 215
    - Insulated Terminals 151
    - Jumper Wire 153
    - K.K.® PC Board Connectors 277
    - Local Area Network 215
    - Mate-N-Lok® Connectors 191
    - Modular 204, 215
    - Nylon Connectors 275
    - Premise Wiring 187, 215
    - Solderless Terminals 279
    - Terminals 204, 215
    - Universal Adapter 262
    - Universal Test Lead 286
  - Liquid Tight Strain Relief Connectors 307
  - Lug, One Hole 307
  - Modular Connectors 204, 205, 224, 245, 250, 278
  - Patch Cords 159, 283, 286
  - PC Board Connectors
    - BNCs 188, 189, 231, 249, 250
    - Card Edge 213, 256, 303
    - D-Subs 176, 177, 224, 225, 245, 252, 316
    - DINs 171, 181, 213, 253, 260, 290, 294, 303
    - DIP-Plugs 146, 182, 301
    - Headers 146, 148, 166, 169, 183, 192, 194, 196, 198, 200, 201, 228, 242, 244, 276, 277, 289, 295, 296, 298
    - I/O Connectors 261, 280
    - Interconnective
      - Commercial Mate-N-Lok® 191, 192
      - Miniature Rectangular 192
      - MT Receptacle Connectors 201
      - MTA 196, 197, 198, 199
      - MTE Interconnection System 202
      - Universal Mate-N-Lok® 193, 194
    - Memory Card Connectors 214
    - Modular Connectors 205, 224, 245, 278
    - PC Plugs and Connectors 315
    - Pin and Receptacles 274
    - Pin and Socket Connectors
      - V.35 Series 179
    - Receptacles
      - AMPMODU® 203
      - MTA and CST Series 197, 199
    - SMA Connectors 228
    - SMB Connectors 190
    - Sockets — See Separate Listing Under Connectors
    - Terminal Blocks 164, 165, 166, 167, 168, 169, 235, 257, 268, 308, 309, 310, 311
    - Transition Connectors 301
  - PCMCIA Connector System 214
  - Phone Plugs and Jacks 262, 285
  - Pin and Socket Connectors 191, 192, 193, 194, 195, 275, 276, 278, 279
  - Pin Jack 264
  - Plug Adapter Assemblies 238
  - Plug and Socket Connectors 241, 255, 316
  - Power Connectors 171, 172, 173, 174, 216, 217, 218, 219, 220, 221, 234, 258, 259, 260, 275, 276, 279, 294
  - Power Cord Connectors 306, 307
  - Quick Connect/Disconnect Binding Posts 285
  - SCSI (Small Computer Systems Interface) Products
    - Cable Assemblies 179
    - Connectors 179, 280, 290, 295
    - IDC 261
    - Terminators 179, 303
  - Shunts 149, 200, 243, 276
  - Sockets
    - DIM 290
    - DIP 211, 236, 237, 247, 272, 273, 287, 288, 300
    - Jumper Assemblies 238
    - PGA 212, 237, 247, 272, 288
    - PGMA 237
    - PLCC 212, 237, 248, 288
    - Plug Adapter Assemblies 238
    - Relay 269, 316
    - SIMM 212, 280
    - SIP 236, 300
    - SOJ 212, 238
    - Solderless Sockets 238
    - Strip 273, 287
    - Transistor 238, 273

    - ZIF ... 248
    - ZIP-DIP ... 149
  - Spade Lugs ... 264
  - Strain Reliefs — Located Throughout Section 5 with Specific Connector Families and in Section 6
  - Strip Connectors ... 307
  - Surface Mount Connectors ... 202, 238, 242
  - Tapes — Cold Shrink ... 210
  - Terminal Blocks/Strips and Accessories
    - Accessories ... 160, 161, 162
    - Ceramic ... 312
    - DIN Rail ... 160, 161, 309, 313
    - Eurostyle ... 163, 235, 239, 308
    - FLEXI-BLOCK™ System ... 214
    - Lug Type Terminal Strips ... 254
    - Modules ... 312
    - Panel Mount ... 163, 167, 168, 169
    - PC Board ... 164, 165, 166, 235, 268, 309, 310, 311
    - Pluggable ... 164, 165, 166, 167, 168, 169, 308, 312
  - Terminals and Splices ... 150, 151, 152, 208, 209, 210, 279, 304, 305
  - Terminators ... 179, 303
  - Test Adapter, Connector ... 264
  - Test Clips ... 153, 159
  - Test Jacks ... 264
  - Test Prods, Probes, and Leads ... 286
  - Test Receptacles ... 211
  - Tip Plugs and Jacks ... 264, 266, 285
  - Triaxial Connectors ... 262
  - Tubing/Conduit and Fittings ... 306, 307
  - Two-Way Connectors ... 307
  - Universal Adapter Kits ... 262
  - V.35 Connectors ... 179
  - VME Connectors ... 261
  - Voice and Data Connectors and Adapters
    - Data Connectors (IBM Style) ... 205
    - Modular Connectors ... 204, 205, 245, 250, 278
  - Weathertight Connectors ... 292
  - Wire Nut Connectors ... 152
  - Wire Duct ... 313
  - Wire Terminals and Splices ... 150, 151, 152, 208, 209, 210, 279, 304, 305
  - Wiring Devices ... 234
- **Contactors** ... 521, 575
- **Controllers** ... 528, 536, 558, 561, 583, 594
- **Converters, DC-DC** ... 471, 473. 484. 491
- **Cooling Fans — Also See Fans, Blowers and Accessories** ... 365
- **Cores, Ferrite** ... 134
- **Counters** ... 576, 577, 585, 588, 591, 593, 594
- **CPLDs** ... 742
- **Crystals**
  - Microprocessor ... 142
  - Tuning Fork Quartz ... 142

D

- **Data Switches** ... 910
- **DC-DC Converters** ... 471, 473, 484, 491, 641, 642
- **DC/AC Inverters** ... 505
- **Decade Box**
  - Capacitance ... 436
  - Resistance ... 404, 436, 892
- **Dials — See Potentiometers or Rheostats**
- **Digital Imaging Products** ... 650
- **Digital Signal Processor Filters** ... 650
- **Digital Signal Processors** ... 633, 675, 730
- **Digital Signal Synthesis** ... 650
- **Digital to Analog Converters**
  - Current Output ... 635, 636
  - General Purpose ... 651, 670, 687, 710, 722, 730
  - Voltage Output ... 635, 636
- **Diode Kits** ... 426
- **Diodes**
  - Arrays ... 655
  - General Purpose ... 719, 723
  - Hot-Carrier (Schottky) ... 701
  - Light Emitting ... 383
  - Rectifiers ... 705, 706
  - Schottky ... 705
  - Switching ... 701, 702
  - Tuning ... 700, 701
  - TVS ... 703, 704
  - Zener ... 702, 703, 719
- **Displays** ... 367, 374
- **DRAMs** ... 673
- **Drivers**
  - Display ... 651, 685
  - Line ... 684, 722
  - Motor ... 737
  - Relay ... 722
- **Duct** ... 313, 968, 1031
- **Ducting — See Wire, Cable, and Accessories**

E

- **Electrical**
  - Coating ... 152
  - Communication Connectors ... 152
  - Electrical Connectors ... 152, 258, 259, 260, 291
  - Fiber Fishing Rod System ... 1027
  - Fish Tape, Steel ... 1027
  - IDC Electrical Connectors ... 152
  - Lugs, One Hole ... 307
  - Receptacle Tester ... 1027
  - Spring Connectors ... 152, 1027
  - Tape ... 1020
  - Terminals and Splices — See Separate Listing Under Connectors
  - Wire Nut Connectors ... 152, 1027
  - Wire Pulling Lubricant ... 1027
  - Wire/Cable Strippers ... 1027
- **Electrical Connectors** ... 152, 258, 259, 260, 291
- **Electrical Industry Lamps** ... 362
- **Electrical Tape** ... 18, 1020, 1029
- **Electronic Circuit Breaker** ... 738
- **Embedded Controllers** ... 676, 677
- **EMI**
  - Beads ... 134
  - Cores ... 134
  - Kits ... 134
- **Encapsulated, On Board Switchers** ... 471
- **Enclosures — See Cabinets**
- **Encoders** ... 394, 406, 415
  - Encoder Modules ... 368
- **Entry Power Modules** ... 139, 140
- **EPROMs** ... 630, 631, 729, 730
- **Epoxy** ... 781, 763
- **ESD Products — See Static Control Products**
- **Extrusions, 4 Foot Aluminum** ... 753

F

- **Fans, Blowers and Accessories (Section 3)**
  - Section Index ... 40
  - Axial Fans ... 94
  - Blowers, AC ... 88, 94, 96, 98, 102, 103, 104
  - Blowers, DC ... 91, 96, 97, 98, 104
  - Cabinet Blowers ... 61, 92
  - Custom Fans and Blowers ... 98
  - Fan Accessories ... 89, 93, 96, 97, 99, 100, 101, 102, 103, 104, 365
  - Fan Trays ... 61, 87, 92
  - Fans, AC ... 88, 89, 95, 96, 98, 101, 103
  - Fans, DC ... 90, 91, 96, 98, 101, 103
  - Power Cords (For Fans) ... 93, 96, 97, 99, 101, 102, 103, 104
- **Fastening Systems**
  - Dual Lock ... 318
  - Hook and Loop ... 318
- **Ferrite**
  - Beads ... 134, 135
  - Cores ... 134
  - Kits ... 134
  - Rods ... 135
- **Ferrules** ... 162
- **Fiber Fishing Rod System** ... 1027
- **Fiber Optic Products** ... 145, 206, 207
- **Fiber-Optic Components**
  - Miniature Link, Versatile Link ... 369
- **Filters** ... 529
  - Chokes ... 135, 137
  - EMI ... 134, 136
  - Power
    - Fan ... 99, 100
    - Fused ... 141, 486
    - General Purpose ... 141
    - Snap-In ... 141, 486
  - RFI ... 138, 139
- **Flashers** ... 518, 520
- **Flashlight Bulbs** ... 7
- **Flashlights and Lanterns** ... 7
- **Flat Cable** ... 184, 185, 227, 297, 966, 971, 988, 989, 991
- **Flat/Ribbon Cable Connector Termination Kit** ... 182
- **Float Switches** ... 536
- **Fluxes**
  - Flux Pens ... 766
  - No Clean Fluxes ... 783
  - RA Fluxes ... 783
  - RMA Fluxes ... 783
  - Water Soluble Fluxes ... 783
- **FPGAs** ... 740, 741, 742
- **Fuse Blocks**
  - Clips ... 36, 38
  - Omni-Block FUSE Mounting ... 36
  - Open Design ... 38
  - S-8000 ... 32
- **Fuse Clips and Holders**
  - 5 × 20 mm Fuse Holder ... 38
  - Automotive Blade ... 11
  - Bakelite In-Line ... 36
  - International ... 38
  - International Shock-Safe ... 36
  - PC Mount ... 11
  - Surface Mount ... 39
  - Universal In-Line ... 34, 36
- **Fuse Kits**
  - Appliance Service Kit ... 34
  - Complete Automotive Fuse Kit ... 34
  - Complete Electronic Kit ... 34
  - Economy Kit ... 34
  - Emergency Fuse Kit ... 31
  - Fuse Kit, Fuse Tester ... 30, 31, 34
  - PC Mount Kit ... 34
- **Fuses (Section 2)**
  - Section Index ... 1
  - 122, 150, 154 ... 36, 37
  - 224, 225 ... 36
  - 229, 230 ... 36
  - 251, 252, 273, 282 ... 35
  - 312, 313, 314 ... 34
  - 326 ... 35
  - 401 ... 35
  - ABC, AGA, AGC ... 30, 31
  - Cylinder Fuses ... 28
  - Diazed Fuses (Bottle Fuses) ... 28
  - European Fuses ... 28
  - Fast Acting ... 30, 31, 33, 34, 36, 37, 39
  - FLM, FLN-R, FLQ, FLS-R ... 35
  - FNM, FRN-R, FRS-R ... 33
  - FSF, FST, SP, OMF, MSA, MSF, MST, MXT ... 38, 39
  - Fuse Clips ... 31, 36, 38
  - Fuse Holders
    - Auto ... 34
    - Blocks ... 32
    - In-Line ... 32, 36
    - International ... 32, 36, 38
    - Panel Mount ... 36
    - PC Board ... 32
    - Surface Mount ... 39
  - GDA, GDB, GDC, GMA, GMC ... 31
  - GMT ... 33
  - HBH, HBV, HBW, HFB, HHB, HTB ... 32
  - High Breaking ... 38, 39
  - Indicating ... 35
  - Kits ... 30, 31, 34
  - KLK ... 35
  - L25S ... 35
  - NLN ... 35
  - KTK-R ... 33
  - Low Breaking ... 38
  - MDA, MDL ... 30
  - Microfuses ... 39
  - Microtron ... 33
  - Neozed Fuses ... 28
  - PCB (PC-Tron) ... 33
  - PTC Resettable ... 29, 424, 449
  - R429 ... 37
  - R451 ... 37
  - R452 ... 37
  - Slo-Blo ... 31, 33, 34, 35, 36
  - SMD ... 31
  - SMT ... 31
  - Subminiature ... 35
  - Surface Mount ... 31, 39
  - Telecommunications ... 33
  - Time Delay ... 30, 31, 33
  - Type 140 Fuse Kit ... 30

G

- **Gas Filled Lamps** ... 362, 369
- **Glues/Adhesives — See Chemicals/Cleaners**
- **Grommets — See Hardware**

H

- **Hardware (Section 6)**
  - Section Index ... 317
  - Bumpers ... 318, 350
  - Cable Clamps ... 344, 349
  - Circuit Board Supports ... 349
  - Fasteners ... 349
  - Fastening Systems ... 318
  - Ferrules ... 342
  - Grommets ... 341, 344, 350, 1029
  - Handles ... 326, 342, 344, 347
  - Jack Screws ... 340
  - Knobs ... 322, 324, 325, 327, 328
  - Mounting Brackets ... 342
  - Nylon Strain Reliefs ... 344
  - Potentiometer ... 418
  - Recessed Bumpers ... 341
  - Resistor ... 414, 427, 432, 444, 435
  - Rheostat ... 385, 412, 414
  - Screws ... 347
  - Shaft Locks ... 328
  - Snap Button Hole Plugs ... 344
  - Spacers ... 341, 342, 344, 348
  - Standoffs ... 339, 340, 344, 348
  - Terminals ... 338
  - Test Jacks ... 340
  - Wire Saddles ... 349
- **Hand/Desk Tally** ... 585, 591
- **Handbook, Solid State Relays** ... 536
- **Headsets (Section 15)**
  - Section Index ... 908
  - AC Powered Communication System ... 917
  - Accessories ... 930
  - FreeHand ... 930
  - Headset Adapters ... 930
  - Headsets ... 917, 930, 934
  - Noise Censor Series ... 934
- **Heat Guns — See Tools**
- **Heat Shrinkable Tubing** ... 307, 967, 968, 984, 985, 1009, 1015, 123
- **Heatsink Compounds** ... 753, 784
- **Heatsinks** ... 533
  - Extrusions
    - 4 Foot ... 753
  - Slide-On For DIPs ... 751
  - TO-3 ... 751
  - TO-5 ... 751
  - TO-92 ... 753
  - TO-126 ... 752, 753
  - TO-127 ... 752
  - TO-202 ... 752
  - TO-218 ... 752
  - TO-220 ... 751, 752, 753
- **Home Theater Products**
  - Directional Bookshelf Speaker ... 919
  - In-Wall Speaker Selector Switches ... 919
  - In-Wall Speakers ... 919
  - In-Wall Subwoofer ... 919
  - Shielded Center Channel Speaker ... 919
  - Speaker Wire ... 919
  - Subwoofer Box ... 919
  - TV Wall Mounts ... 919
  - Volume Control Switches ... 919
- **Hook-Up Wire** ... 969, 970, 990, 1005, 1010, 1011
- **Hourmeters** ... 585, 592, 593

I

- **IC MASTER** ... 743
- **IGBTs** ... 659
- **In-Wall Timer** ... 586
- **Incandescent Lamps** ... 360, 379

- **Indicator Lights** 926
  - Circuit Board
    - General 371
    - Miniature LED T-1 Block 371
    - Super Brite LED Assembly 371
    - T-1 LED 3-Up and 4-Up 371
  - Incandescent and Solid State 373, 375
  - Light Assembly, Tiny-Mite 373
  - Neon 373
  - Non-Relampable
    - Miniature Neon Pilot 372
    - Pilot, Various Lenses 372
  - Oil-Tight 373, 375
  - Panel Mount LEDs 373, 375
  - Press Fit 375
  - Rectangular
    - Neon-Pilot 371
    - Panel Mount 375
  - Relampable Lights And Sockets 363
  - Snap Mount 375
  - Solid State 373, 375
  - Tapered and Splashproof 375
- **Inductors**
  - Bead 134, 136
  - Chokes 135, 137
  - Filter 1036
    - EMI 135
    - Low Pass 1036
    - Medium Frequency 1036
  - High Frequency 135
  - Kits 121
  - Molded 133, 135
  - RF 135, 1036
  - Subminiature Chokes 135
  - Surface Mount 133
- **Industry Standard Tooling** 215, 321
- **Instrument Repair** 1063
- **Insulator Kits** 717
- **Integrated Data Communication Processors** 677
- **Integrated Processors** 677
- **Interface ICs**
  - Display Drivers 685
  - Future Bus+ and Backplane 715
  - General Purpose Drivers 731
  - Line Drivers 684, 722, 731
  - Line Receivers 684, 722, 731
  - Motor Drivers 732
  - Transceivers 685, 722
  - Transistor Arrays 732
  - UARTs 731
  - Vacuum Fluorescent Display Drivers 731
- **Interphase Modules** 170, 257, 312
- **Inverters, DC/AC** 505
- **IR Emitters and Phototransistors** 364
- **ISDN: Integrated Services Digital Network ICs** 684
- **isp Starter Kit** 668
- **isp Synario System** 668

J

- **Jacks — See Connectors**
- **Joysticks** 410
- **Jumper Wires** 153
- **Jumpers**
  - 2-Circuit Jumper 276
  - Daisy Chain Jumpers 243
  - Low Profile Jumpers 243
  - Mini Jump™ Jumpers 243
  - Unshielded 159

K

- **Keyboard Modules** 817
- **Keypads**
  - Sealed 817
- **Kits**
  - BNC Kits 215, 321
  - BNC Premise Wiring Kit 187, 215, 321
  - Capacitors 123, 426
  - Coaxial Connectors 155, 187, 215, 321
  - D-Sub Kits 176, 178, 215, 321
  - Diode 426
  - Electrical Tape Kit 1020
  - Ferrite 134
  - Ferrule Kit 162
  - Fiber Optic Splice 145
  - Flat Cable Termination 182
  - Foil Shielding Tape Kit 1020
  - Heat Shrink Tubing 215, 321, 967, 985, 1009
  - Inductor 426
  - Insulated Terminal Kit 151
  - Jumper Wire 153
  - K.K.® PC Board Connectors 277
  - Local Area Network 215, 321
  - Mate-N-Lok® Connectors 191
  - Modular 204, 215, 321
  - Nylon Connectors 275
  - PLASTI-GRIP Termination Kit 210
  - Resistors 123, 426, 429, 430, 436
  - Shielding Tapes, Engineering Kits 1020
  - Solderless Terminals 279
  - Tele-Communications Kit 909
  - Terminals 151, 210, 215, 321
  - Universal Adapter 262
  - Universal Test Lead 286
- **Knobs**
  - Aluminum 404
  - Clamp Knobs 63
  - Control Knobs 327, 328, 404
  - Instrument Knobs 324, 325
  - Machined and Molded 322
  - Potentiometer 404
  - Rheostat 385, 412, 414, 833
  - Switches 404, 833

L

- **Labelers** 1023
- **Lampholders** 376, 377
- **Lamps (Section 7)**
  - Section Index 356
  - Assemblies 380, 391
  - Displays 367, 374
  - Electrical Industry 362
  - Gas Filled 362, 369
  - Incandescent 360, 369
  - Indicator 371
  - Neon 360
  - Non-Relampable 362
  - Outdoor Sign, Gas 362
  - Relampable Indicators 362
  - Work 365, 378
- **LCD Power Supplies** 671
- **LCDs** 358, 359, 366, 367
- **LED Indicators** 368, 371
- **LED/Photocell Optoisolators** 382
- **LEDs**
  - 2 Chip Single and Tri-Color 379
  - Blinking 379
  - Discreet 358
  - Displays 358, 368
  - Light Bars/Bar Graphs 363, 368
  - Mounting Accessories 363, 374
  - Outdoor Ultra Brite 358
  - Standards, Rectangular 363, 379
  - Super Bright 379
  - Surface Mount 367
  - Thru Hole Lamps 367
- **Light Bars** 368
- **Light Emitting Diodes** 383
- **Lighting Controller ICs** 738
- **Lights**
  - Pilot 821, 822
  - Work 365, 378
- **Line Conditioners** 492, 501, 502, 505, 508, 509
- **Linear Regulators** 671, 738
- **Liquid Crystal Displays** 359
- **Literature** 207
- **Lubricants** 763, 782

M

- **Magnet Wire** 992, 1006
- **Magnifiers and Accessories** 332, 365, 378, 765
- **Medical**
  - External Power Supplies 457, 475, 477
  - Internal Linear and Switchers 463, 464, 479
  - Outlet Strips 493, 511, 513
  - Power Cords 460, 485
  - Surge Suppression 493
- **Memory**
  - DRAMs 673
  - EPROMs 630, 631, 729, 730
  - FIFOs 673
  - Flash Memory Cards 726
  - Memory Modules 726
  - SIMMs 673, 726
  - SRAMs 673
  - Video RAMs 673
- **Metal Oxide Varistors**
  - "C" III Series 663
  - General Purpose 703, 704
  - LA Series 662
  - ML Series 663
  - SIOV Metal Oxide Varistors 724, 725
  - SVP Surge Voltage Protectors 725
  - Surgectors 663
  - Z-Trap 648
  - ZA Series 661, 662
- **Microcontrollers** 665, 666, 677, 678, 679, 720
- **Microphone Cable** 977, 994
- **Microphones** 911, 922, 924, 928, 932
- **Micropower Linear Voltage Regulators** 641
- **Microprocessor Crystals** 142
- **Microprocessor Peripherals** 649
- **Microprocessor Supervisory Circuits** 641, 670, 671
- **Microprocessor Voltage Regulator/Supervisory Circuit** 690
- **Microprocessors** 649, 675, 676
- **Microwave Product (Section 18)**
  - Section Index 1035
  - RF Chips
    - Fixed Inductor 1036
    - Multilayer 1036
    - Pass Filter 1036
    - Voltage Regulators 1036
  - RF Connectors
    - Adapters, Coaxial 1052
    - BNC 1038, 1039, 1040, 1041, 1042, 1044, 1045, 1046, 1052
    - Between Series Adapters 1047, 1049
    - Cable Assemblies 1062
    - Coaxial Cable 1047
    - Crimp Tools 1038, 1044, 1051, 1052
    - K Connectors 1052
    - Kits, Coaxial Connectors 1040
    - N Connectors 1038, 1043, 1045, 1049, 1052
    - SHV 1038
    - SMA 1037, 1042, 1048, 1050, 1052
    - SMB 1037, 1048, 1050
    - SMC 1050
    - Stress Reliefs 1052
    - Subminiature Coaxial Connectors 1048, 1051, 1052
    - Test Cables 1056
    - TNC 1052
    - Twin-Ax 1038, 1044, 1045, 1046
    - UHF 1038, 1043, 1045
  - RF Semiconductor
    - Amplifiers
      - Buffer 1053
      - General Purpose 1060
      - High Frequency 1054
      - High Power 1060
      - Low Noise 1054
      - Low Power 1060
      - Medium Power 1054
      - Operational 1053
      - Variable Gain 1053, 1054
      - Wide Dynamic Range 1054
    - Analog to Digital Converters 1053
    - Attenuators 1056
      - Digital 1056
      - Single-Bias Control 1056
      - Voltage Variable 1056
    - Diodes
      - Abrupt Junction 1060, 1061
      - General Purpose 664
      - Pin Switching 1055, 1056, 1061
      - Schottky 1055, 1057, 1061
      - Tuning 1061
    - FETs
      - GaAs, General Purpose 1056
      - MOSFETs 1058, 1059
    - Integrated Circuits 1054, 1060
    - Mixers
      - Double-Balanced 1054
      - Level 7 1057
      - Narrowband 1058
      - Transmitters 1058
      - Wideband 1058
    - Modules 1062
    - Power Splitters/Combiners 1057
    - Transformers
      - E-Series 1057
    - Transistors
      - Bipolar 1059
      - General Purpose 664
      - HF 1059
      - Low Noise 1055
      - Small Signal 1059
      - UHF 1059
- **Mixer System ICs** 722
  - VHF 1059
- **Miniature Lamp Single Socket Assembly** 380
- **Miniature Lamps** 360, 380
- **Modular Telephone Products**
  - Baluns 909
  - Jacks, PCB 205, 224, 245, 278
  - Keystone Jacks 158, 204, 909
  - Plugs 204, 250, 909
  - RS-232 Modular Jack Adapter 204, 909
  - Surface Mount Modular Jacks 909
  - Tele-Communications Installer Kit 909
  - Telephone Wire 909
  - Wall Plates 909
- **Modulator/Demodulator** 639
- **Modules**
  - I/O 526, 527, 529, 535, 541, 559, 560, 572, 578
  - Mounting Racks 541, 559, 560
  - Multimode 563, 576
- **Modules, Power Entry** 141, 486
- **MOSFETs**
  - BUZ and RF Series 660
  - Full Bridge Drivers 652
  - General Purpose 647
  - Half Bridge Drivers 652
  - JEDEC 660
  - Logic Level 660
  - MEGAFET 660
  - N-Channel 660
  - P-Channel 660
- **Motion Control ICs** 368, 643, 714
- **Motors** 106
- **MOVs**
  - "C" III Series 663
  - LA Series 662
  - ML Series 663
  - SIOV Metal Oxide Varistors 724, 725
  - Z-Trap 648
  - ZA Series 661, 662
- **Multiplexers** 670

N

- **Neon Lamps** 360
- **Non-Relampable Indicator** 362
- **Non-Volatile Memory** 630, 631

O

- **Optocouplers** 370
- **Optoelectronics** 368
- **Optoisolators/Analog** 364
- **Optoswitches** 364
- **Oscillators**
  - Clock 142
- **Operational Amplifiers**
  - General Purpose 654, 671, 672, 687, 688, 721
  - High Performance 654
  - Internally Compensated, Dual 732, 733
- **Optoisolators** 692, 693
- **Outdoor Sign, Gas Filled** 362
- **Outlet Strips (Section 9)**
  - 20 Amp 493, 494, 511

  - 90° ... 493, 494, 513
  - 250 VAC, 15 Amp, 10 Amp ... 493
  - Cabinet ... 511
  - Compact ... 512
  - Deluxe Control ... 494, 511
  - Industrial ... 493, 512
  - Medical ... 493, 511
  - Mounting Ears ... 512
  - Permanent Installation ... 493
  - Rackmount ... 493, 513
  - Residential ... 493
  - Trim-Line (2', 4', 6') ... 493, 512
  - Wire-Management System ... 1034
- **Outlets** ... 1030

P

- **Panel Meters (Section 14)**
  - Section Index ... 842
  - Analog
    - Current
      - AC ... 895, 896, 903, 906, 907
      - DC ... 895, 896, 901, 903, 906, 907
    - Voltmeters
      - AC ... 895, 896, 903, 906, 907
      - DC ... 895, 896, 901, 903, 906, 907
  - Digital ... 897
    - Backlit ... 897
    - Industrial ... 898
    - LCD ... 897
    - Loop Powered ... 898
    - Microprocessor Based ... 898
  - Elliptical ... 896
  - Shunts ... 907
  - Transformers ... 907
- **PAL Devices**
  - Asynchronous PALs ... 632
  - Standard PALs ... 632
  - Universal PALs ... 631
- **Patch Cords** ... 159, 283, 286
- **Patch Panels** ... 158
- **PC Bus Plug Boards** ... 746
- **PCI Developers Kit** ... 748
- **PCI Extender Cards** ... 747
- **PCI Prototyping Boards** ... 749
- **Phase Locked Loop Clock Drivers** ... 684
- **Phase Locked Loop Frequency Synthesizers** ... 684
- **Phase Locked Loops** ... 684, 722
- **Photocell Optoisolator/LED** ... 382
- **Photoconductive Cells, CDS/CDSE** ... 364, 382
- **Photodiodes**
  - Planar ... 383
  - Silicon, Solderable, Planar ... 364, 383
  - Solderable Contacts ... 364
- **Photoelectric Sensors** ... 584, 589, 594
- **Photomicrosensors** ... 590
- **Phototransistors** ... 382
- **Piezo**
  - Alarms ... 136, 922, 929
  - Audio Transducers ... 929
  - Buzzers ... 922
  - Sonalerts ... 925
  - Sounders ... 922
  - Transducers ... 923, 927, 929
- **Planar Photodiodes** ... 364, 383
- **Plug Assemblies, Power Cord** ... 487
- **Plug-In Wall Timer** ... 586
- **Portable Cords** ... 977, 992
- **Potentiometers (Section 8)**
  - Section Index ... 384
  - Carbon ... 402
  - Conductive Plastic ... 387, 402, 405, 407, 408, 410, 411, 415, 417
  - Dials ... 392, 397, 398, 404, 409, 414, 416
  - Hybrid ... 408
  - J-Pots ... 402
  - JA Series ... 402
  - Joysticks ... 410
  - Knobpots ... 397
  - Knobs ... 404, 414, 833
  - Linear Motion ... 407, 411
  - Modular ... 395, 403
  - Motorized ... 408
  - Multi-Turn ... 393, 399, 400, 401, 404, 408, 416
  - Panel Controls ... 394, 395, 415
  - Precision ... 386, 386, 396, 404, 415, 416
  - Resistance Decade Box ... 404, 436
  - RV Series ... 402
  - Single-Turn ... 402, 403, 405, 407, 410, 417
  - Trimmers
    - Adjustment Tool ... 398, 418
    - Cermet ... 388, 389, 390, 391, 393, 398, 399, 400, 401, 406, 413, 415, 418, 419
    - Kit ... 398
    - Multi-Turn ... 388, 390, 393, 399, 400, 401, 406, 413, 418
    - Single-Turn ... 389, 391, 393, 398, 401, 406, 413, 418, 419
    - Surface Mount ... 388, 391, 419
    - Wirewound ... 393, 401
  - Wirewound ... 386, 387, 403, 407, 408, 411, 416, 417
- **Power Connectors**
  - AC NEMA, 5-15R ... 489
  - Entry Modules ... 139, 140, 489, 490
  - Inlets/Outlets ... 488, 489
- **Power Converters** ... 711
- **Power Factor Controllers** ... 690
- **Power Factor Correction** ... 737
- **Power Entry Modules** ... 139, 140
- **Power Line Conditioners (See Line Conditioners)**
- **Power Line Filters** ... 138, 139, 140
- **Power Outlets, Fused** ... 141, 486, 487
- **Power Replacement Cords (Section 9)**
  - Section Index ... 452
  - Electric Line Cords ... 456, 459, 460, 485
  - Extension ... 459
  - Fans ... 99
  - International Cordsets ... 485
  - Jumper ... 456
  - Medical Grade ... 459, 485
  - NEMA 5-15P ... 141, 460, 461
  - Power Supply ... 456, 459, 460, 485
  - Retractile ... 460, 1004, 1011
- **Power Supplies (Section 9)**
  - Section Index ... 452
  - AC to DC Modular ... 642
  - Base Station ... 505
  - Bench, Test ... 461
  - Constant Voltage, Regulated ... 498
  - European, Tabletop and Wallmount ... 476
  - High Power Adjustable ... 498
  - Linear, External ... 458, 474, 475, 476, 477
  - Linear, Internal
    - Commercial ... 453, 454, 462, 481, 497, 498, 499
    - Encapsulated, Linear, Chassis and PC ... 497
    - High Power, Adjustable ... 498
    - Medical ... 463, 464
  - Medical, External ... 457, 475
  - Portable, 120 VAC to 13.8 VDC ... 505
  - Solid, PC Mount, Chassis ... 497
  - Switching, External ... 458, 474, 477
  - Switching, Internal
    - Commercial ... 454, 455, 464, 465, 466, 468, 471, 472, 479, 480, 482, 483, 499, 500
    - Encapsulated, On Board ... 471
    - Enclosed ... 468
    - Medical ... 463, 464, 479
    - On Board ... 471
    - Wide Range ... 465
  - Universal Desktop, World-Wide Approvals ... 477
  - Unregulated, Wallmount, North American ... 476
- **Power Supply Circuits**
  - Pulse Width Modulator ... 653
  - Voltage Converters ... 653
  - Voltage Regulators ... 653
- **Power Supply Supervisors** ... 734
- **Power Supply Support ICs** ... 738
- **Pressure Sensors** ... 691, 692
- **PRISM Radio Chipset** ... 649
- **Programmable Logic Arrays** ... 721
- **Programmable Logic Devices (MACH)** ... 630
- **Programmable Read Only Memory**
  - EPROMs ... 630, 631, 729, 730
  - One Time Programmable ... 729, 730
- **Protection Circuits** ... 653
- **Prototyping Equipment**
  - Boards ... 153
  - Card Cages ... 750
  - Card Guides ... 748, 750
  - Extender Cards ... 744, 745, 747
  - Metric Extender Cards ... 747
  - PC Bus Plug Boards ... 746
  - PCI Developers Kit ... 748
  - PCI Extender Cards ... 747
  - PCI Prototyping Boards ... 749
  - PCMCIA Test Extender ... 749
  - Prototyping Boards ... 744, 746, 747, 748, 750
  - Prototyping Bread Boards ... 745
  - Prototyping BUS Specific Boards ... 744
  - Punchboards ... 746
  - Subrack Modules ... 748
  - Subracks ... 748
  - Surface Mount Adapters ... 745
  - Terminals ... 750
  - VME Backplane Spacer Strips ... 750
  - VME Backplanes ... 745
  - VME Extender Cards ... 750
  - VME Microracks ... 750
  - VME Prototyping Boards ... 746
  - VMExcel Monolithic Backplanes ... 750
  - Wire Wrap Terminals and Pins ... 749
- **Proximity Sensors** ... 580, 581, 582, 584, 589, 806, 820
- **Publications** ... 207
- **Punch Down Tools** ... 909
- **PWM Controllers** ... 738, 739

Q

- **Quartz Crystals** ... 142

R

- **Raceways** ... 1034
- **Receptacles (Section 9)**
  - Section Index ... 452
  - AC ... 487, 488
  - AC Power Inlets and Outlets ... 487, 488, 489
  - AC Power Inlets and Outlets with Fuseholder ... 487, 488
  - IEC Connector ... 141
  - NEMA 5-15R ... 141, 489
  - PCB Mount ... 489
- **Rectifiers**
  - 1 and 3 Amp Silicon ... 645
  - Bridge, 3 Phase Full Wave ... 645
  - Bridge, Silicon ... 645, 646, 719
  - Fast Recovery ... 644, 660, 706, 719
  - Fast Recovery High Voltage ... 648
  - General Purpose ... 706, 719
  - High Voltage ... 719
  - Hyper-Fast Recovery ... 659
  - Schottky Barrier ... 644, 705
  - Standard Recovery ... 660
  - Surface Mount ... 705, 706
  - Ultra-Fast Recovery ... 660, 706
  - X-Ray/Microwave/Power Supply ... 647
- **Regulators**
  - Shunt Voltage ... 713
  - Switching ... 690
  - Voltage ... 503, 509, 689, 690, 712, 713
- **Relampable Indicator Lights and Sockets** ... 362
- **Relays (Section 10)**
  - Section Index ... 514
  - Alternating ... 547
  - Armature ... 578
  - Automotive ... 554, 565, 567
  - Brain Boards ... 559, 561
  - Coaxial ... 539
  - Contactors ... 521, 575
  - Controllers ... 528, 536, 558, 561, 583, 594
  - DIP/SIP ... 516, 523, 548, 570, 579
  - Dry Reed ... 523
  - General Purpose ... 515, 522, 543, 548, 549, 551, 552, 553, 554, 555, 556, 562, 563, 565, 566
  - Heavy Duty ... 543, 549, 552, 563, 567
  - I/O Modules ... 526, 527, 529, 535, 541, 559, 560, 572, 578
  - I/O Mounting Racks ... 547, 559, 560
  - Impulse ... 571
  - Industrial ... 553, 565
  - Interfaces/Accessories ... 561
  - Latching ... 551, 555, 571, 578
  - Mercury Displacement ... 550
  - Miniature ... 515, 543, 548, 553, 562, 564, 567, 568, 569
  - Monitoring ... 547
  - Mounting Racks ... 541
  - Multimode ... 563
  - PC Board ... 515, 516, 548, 541, 557, 562, 563, 568, 569, 570
  - Power ... 516, 543, 550, 551, 553, 556, 564, 567, 575
  - Reed ... 523, 524, 548, 554, 570, 579
  - Reversing Control ... 551
  - SCRs ... 532, 533, 534, 537, 538, 540, 543, 550, 572
  - Sequencing ... 551
  - Sockets and Accessories ... 515, 522, 543, 544, 545, 549, 551, 552, 555, 556, 574
  - Software ... 558
  - Solenoids ... 542
  - Solid State ... 521, 524, 525, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 540, 541, 543, 548, 550, 554, 558, 572, 579
  - Surge Arrestors ... 525
  - Switching ... 521, 539
  - Time Delay ... 517, 518, 519, 520, 544, 545, 546, 547, 550, 570, 571, 573, 576, 577
  - TRIACs ... 521
- **Relay/Peripheral Drivers** ... 722
- **Remote Control ICs** ... 684
- **Resettable Fuses** ... 29
- **Resistors (Section 8)**
  - Section Index ... 384
  - Adjustable ... 427, 435, 441, 442
  - Aluminum Housed ... 428, 431, 441, 446
  - Bracket Mount ... 427, 432, 435, 441, 442
  - Carbon Composition ... 448
  - Carbon Film ... 420, 445, 447, 448
  - Ceramic ... 440, 447
  - Chassis Mount ... 428, 431, 441, 446
  - Chip (SMD) ... 29, 424, 429, 430, 436, 443, 445
  - Decade Box ... 404, 436
  - Hardware ... 414, 444
  - Kits ... 123, 426, 429, 430, 436
  - Low Ohm Value ... 430, 441, 441, 444
  - Metal Film ... 420, 429, 445, 448
  - Metal Oxide ... 420, 447, 448
  - Networks
    - DIP ... 29, 422, 423, 424, 433
    - SIP ... 29, 421, 424, 425, 433
    - Surface Mount ... 29, 424, 433
  - Power ... 425, 427, 428, 432, 441, 442, 443, 444, 446, 447
  - Power Chip ... 440
  - Radial Leads ... 425, 440
  - RN Series ... 429
  - Silicone ... 428, 431, 434, 439, 446
  - Surface Mount ... 429, 430, 436, 443
  - Tape and Box ... 420
  - Tape and Reel ... 447, 448
  - Thermistors
    - Cryogenic ... 450
    - Glass Beads ... 450
    - Glass Encapsulated ... 450
    - Glass Probes ... 450
    - Inrush Current Limiters ... 449
    - Kits ... 449
    - NTC ... 449, 451
    - PTC ... 449
    - Resettable Fuses ... 449
    - Standard ... 450
    - Temperature ... 450
  - TO-126 Style ... 425
  - TO-220 Style ... 425
  - Tubular ... 427
  - Vitreous ... 427, 428, 434, 437, 437, 441, 442, 443, 444
  - Wirewound ... 427, 428, 430, 431, 432, 435, 437, 438, 439, 440, 441, 442, 443, 444, 446, 447
  - Zero Ohm ... 448
- **RF Product. (Section 18)**
  - Section Index ... 1035
  - RF Chips
    - Fixed Inductor ... 1036
    - Multilayer ... 1036
    - Pass Filter ... 1036
    - Voltage Regulators ... 1036
  - RF Connectors
    - Adapters, Coaxial ... 1052
    - BNC ... 1038, 1039, 1040, 1041, 1042, 1044, 1045, 1046, 1052
    - Between Series Adapters ... 1047, 1049
    - Cable Assemblies ... 1062

Need Larger Quantity Prices? Call 1-800-433-5700 For Prompt Handling

    - Coaxial Cable ... 1047
    - Crimp Tools ... 1038, 1044, 1051, 1052
    - K Connectors ... 1052
    - Kits, Coaxial Connectors ... 1040
    - N Connectors ... 1038, 1043, 1045, 1049, 1052
    - SHV ... 1038
    - SMA ... 1037, 1042, 1048, 1050, 1052
    - SMB ... 1037, 1048, 1050
    - SMC ... 1050
    - Stress Reliefs ... 1052
    - Subminiature Coaxial Connectors ... 1048, 1051, 1052
    - Test Cables ... 1056
    - TNC ... 1052
    - Twin-Ax ... 1038, 1044, 1045, 1046
    - UHF ... 1038, 1043, 1045
  - RF Semiconductor
    - Amplifiers
      - Buffer ... 1053
      - General Purpose ... 1060
      - High Frequency ... 1054
      - High Power ... 1060
      - Low Noise ... 1054
      - Low Power ... 1060
      - Medium Power ... 1054
      - Operational ... 1053
      - Variable Gain ... 1053, 1054
      - Wide Dynamic Range ... 1054
    - Analog to Digital Converters ... 1053
    - Attenuators ... 1056
      - Digital ... 1056
      - Single-Bias Control ... 1056
      - Voltage Variable ... 1056
    - Diodes
      - Abrupt Junction ... 1060, 1061
      - Pin Switching ... 1055, 1056, 1061
      - Schottky ... 1055, 1057, 1061
      - Tuning ... 1061
    - FETs
      - GaAs, General Purpose ... 1056
      - MOSFETs ... 1058, 1059
    - Integrated Circuits ... 1054, 1060
    - Power Splitters/Combiners ... 1057
    - Mixers
      - Double-Balanced ... 1054
      - Level 7 ... 1057
      - Narrowband ... 1058
      - Transmitters ... 1058
      - Wideband ... 1058
    - Modules ... 1062
    - Transformers
      - E-Series ... 1057
    - Transistors
      - Bipolar ... 1059
      - HF ... 1059
      - Low Noise ... 1055
      - Small Signal ... 1059
      - UHF/VHF ... 1059
- **RFI Power Line Filters** ... 138, 139, 140
- **Rheostats** ... 385, 405, 412, 414
  - Dials ... 385, 412, 414
  - Knobs ... 385, 412, 414, 833

S

- **Sample and Hold Amplifiers** ... 651, 712
- **SCRs** ... 707, 736
- **SCSI Active Terminators** ... 737
- **Semiconductors (Section 11)**
  - Section Index ... 596, 596
  - AC to DC Modular Power Supplies ... 642
  - Accelerometers ... 634
  - Amplifier ICs
    - Audio ... 639
    - Comparators ... 639
    - Current Feedback High Speed ... 638
    - Difference ... 639
    - Differential ... 655
    - General Purpose ... 654, 655, 671, 672, 687, 688, 708
    - High Performance ... 654, 708
    - Instrumentation ... 637
    - Isolation ... 637
    - Low Current Noise ... 637
    - Low Voltage Noise ... 638
    - Low/Micro Power ... 637, 708
    - Precision ... 638
    - Sample and Hold ... 651
    - Sample/Track and Hold ... 637
    - Single Supply ... 638
    - Video ... 672
    - Voltage Feedback High Speed ... 638
  - Analog Interface for DSP ... 731
  - Analog Multipliers/Dividers ... 639
  - Analog Switches and Multiplexers ... 636
  - Analog to Digital Converters
    - General Purpose ... 650, 670, 686, 710, 722, 730
    - High Speed ... 634
    - Non-Sampling ... 635
    - Sampling ... 634, 635
    - Sigma Delta ... 635
  - Audio Control/Noise Reduction Pre-Amps ... 709
  - Audio Power Amps ... 709
  - Battery Charger ICs ... 671, 738
  - Bipolar Programmable Logic ... 729
  - Boost Converter ICs ... 671
  - Buffers ... 654
    - General Purpose ... 709
    - High Performance ... 654, 708
    - Video ... 672
  - Charge-Pumps ... 671
  - Clock Drivers ... 684
  - Clocks ... 715, 722
  - Compandors ... 721
  - Comparators ... 653, 654, 672, 688, 721, 732
  - Communications Interface Drivers and Receivers ... 737
  - CPLDs ... 742
  - Data Books ... 674
  - Data Communications ... 649, 650
  - DC to DC Converters ... 641, 642
  - Digital Imaging Products ... 650
  - Digital Signal Processor Filters ... 650
  - Digital Signal Processors ... 633, 675, 730
  - Digital Signal Synthesis ... 650
  - Digital to Analog Converters
    - Current Output ... 635, 636
    - General Purpose ... 651, 670, 687, 710, 722, 730
    - Voltage Output ... 635, 636
  - Diodes
    - Arrays ... 655
    - General Purpose ... 719, 723
    - Hot-Carrier (Schottky) ... 701
    - Rectifiers ... 705, 706
    - Schottky ... 705
    - Switching ... 701, 702
    - Tuning ... 700, 701
    - TVS ... 703, 704
    - Zener ... 702, 703, 719
  - Display Drivers ... 651
  - DRAMs ... 673
  - Drivers
    - Display ... 651, 685
    - Line ... 684, 722
    - Motor ... 737
    - Relay ... 722
  - Electronic Circuit Breaker ... 738
  - Embedded Controllers ... 676, 677
  - EPROMs ... 630, 631, 729, 730
  - ESD Protection Circuits ... 653
  - Evaluation Boards ... 653
  - FIFOs ... 673
  - Flash Memory Programming Supplies ... 671
  - FM IF Systems ... 722
  - FPGAs ... 740, 741, 742
  - Frequency to Voltage Converters ... 712
  - Full Bridge Drivers ... 652
  - Function Generators ... 722
  - Generic Gate Array Logic ... 667
  - Half Bridge MOSFET Drivers ... 652
  - High Density Programmable Logic ... 668
  - High Side Switches ... 652
  - High Speed Data Converters
    - Analog to Digital ... 650
    - Digital to Analog ... 651
  - IGBTs ... 659
  - Insulator Kits ... 717
  - Integrated Data Communication Processors ... 677
  - Integrated Processors ... 677
  - Interface
    - Display Drivers ... 685
    - Future Bus+ and Backplane ... 715
    - General Purpose Drivers ... 731
    - Line Drivers ... 684, 722, 731
    - Line Receivers ... 684, 722, 731
    - Motor Drivers ... 732
    - Transceivers ... 685, 722
    - Transistor Arrays ... 732
    - UARTs ... 731
    - Vacuum Fluorescent Display Drivers ... 731
  - ISDN: Integrated Services Digital Network ICs ... 684
  - isp Starter Kit ... 668
  - isp Synario System ... 668
  - LCD Power Supplies ... 671
  - Lighting Controllers ... 738
  - Linear Regulators ... 671, 738
  - Logic
    - 74ABT ... 720
    - 74AC and 74ACT ... 657, 658, 680, 715
    - 74ACT11 ... 727
    - 74ALS ... 715, 727
    - 74AS ... 716, 727
    - 74BCT ... 727
    - 74C ... 716
    - 74F ... 680, 720, 727, 728
    - 74FCT ... 658, 659
    - 74HC and 74HCT ... 655, 656, 657, 681, 720, 728
    - 74LS ... 682, 715, 728
    - 74S ... 728
    - 7400 ... 727
    - Bipolar Programmable Logic ... 729
    - CD4000 CMOS ... 658, 716
    - ECLinPS ... 682, 683
    - Generic Gate Array ... 667
    - High Density Programmable ... 668
    - LPT ... 659
    - MC10 ... 683
    - MC10E and MC100E ... 682
    - MC10EL and MC100EL ... 683
    - MC10ELT and MC100ELT ... 683
    - MC10H and MC100H ... 683
    - MC16 ... 683
    - MC14000 ... 679
    - MECL ... 683
  - Low Side Switches ... 652
  - Memory
    - DRAMs ... 673
    - EPROMs ... 630, 631, 729, 730
    - FIFOs ... 673
    - Flash Memory Cards ... 726
    - Memory Modules ... 726
    - SIMMs ... 673, 726
    - SRAMs ... 673
    - Video RAMs ... 673
  - Microcontrollers ... 665, 666, 677, 678, 679, 720
  - Micropower Linear Voltage Regulators ... 641
  - Microprocessor Peripherals ... 649
  - Microprocessor Supervisory Circuits ... 641, 670, 671
  - Microprocessor Voltage Regulator/Supervisory Circuit ... 690
  - Microprocessors ... 649, 675, 676
  - Microwave Diodes and Transistors ... 664
  - Mixer Systems ... 722
  - Modulator/Demodulator ... 639
  - MOSFETs
    - BUZ and RF Series ... 660
    - Full Bridge Drivers ... 652
    - General Purpose ... 647
    - Half Bridge Drivers ... 652
    - JEDEC ... 660
    - Logic Level ... 660
    - MEGAFET ... 660
    - N-Channel ... 660
    - P-Channel ... 660
  - Motion Control Circuits ... 643, 714
  - Non-Volatile Memory ... 630, 631
  - MOVs
    - "C" III Series ... 663
    - LA Series ... 662
    - ML Series ... 663
    - SIOV Metal Oxide Varistors ... 724, 725
    - Z-Trap ... 648
    - ZA Series ... 661, 662
  - Multiplexers ... 670
  - Operational Amplifiers
    - General Purpose ... 654, 671, 672, 687, 688, 721
    - High Performance ... 654
    - Internally Compensated, Dual ... 732, 733
  - Optoisolators ... 692, 693
  - PAL Devices
    - Asynchronous PALs ... 632
    - Standard PALs ... 632
    - Universal PALs ... 631
  - Phase Locked Loop Clock Drivers ... 684
  - Phase Locked Loop Frequency Synthesizers ... 684
  - Phase Locked Loops ... 684, 722
  - Power Converters ... 711
  - Power Factor Controllers ... 690
  - Power Factor Correction ... 737
  - Power Supply Circuits
    - Pulse Width Modulator ... 653
    - Voltage Converters ... 653
    - Voltage Regulators ... 653
  - Power Supply Supervisors ... 734
  - Power Supply Support ICs ... 738
  - Pressure Sensors ... 691, 692
  - PRISM Radio Chipset ... 649
  - Programmable Logic Arrays ... 721
  - Programmable Logic Devices (MACH) ... 630
  - Programmable Read Only Memory
    - EPROMs ... 630, 631, 729, 730
    - One Time Programmable ... 729, 730
  - Protection Circuits ... 653
  - PWM Controllers ... 738, 739
  - Rectifiers
    - 1 and 3 Amp Silicon ... 645
    - Bridge, 3 Phase Full Wave ... 645
    - Bridge, Silicon ... 645, 646, 719
    - Fast Recovery ... 644, 660, 706, 719
    - Fast Recovery High Voltage ... 648
    - General Purpose ... 706, 719
    - High Voltage ... 719
    - Hyper-Fast Recovery ... 659
    - Schottky Barrier ... 644, 705
    - Standard Recovery ... 660
    - Surface Mount ... 705, 706
    - Ultra-Fast Recovery ... 660, 706
    - X-Ray/Microwave/Power Supply ... 647
  - Regulators
    - Shunt Voltage ... 713
    - Switching ... 690
    - Voltage ... 689, 690, 712, 713
  - Relay/Peripheral Drivers ... 722
  - Remote Control ICs ... 684
  - RF ICs
    - Amplifiers
      - Buffer ... 1053
      - General Purpose ... 721, 1060
      - High Frequency ... 1054
      - High Power ... 1060
      - Low Noise ... 1054
      - Low Power ... 1060
      - Medium Power ... 1054
      - Operational ... 1053
      - Variable Gain ... 1053, 1054
      - Wide Dynamic Range ... 1054
    - Analog to Digital Converters ... 1053
    - Attenuators ... 1056
      - Digital ... 1056
      - Single-Bias Control ... 1056
      - Voltage Variable ... 1056
    - Diodes
      - Abrupt Junction ... 1060, 1061
      - Pin Switching ... 1055, 1056, 1061
      - Schottky ... 1055, 1057, 1061
      - Tuning ... 1061
    - FETs
      - GaAs, General Purpose ... 1056
      - MOSFETs ... 1058, 1059
    - Integrated Circuits ... 1054, 1060
    - Power Splitters/Combiners ... 1057
    - Mixers
      - Double-Balanced ... 1054
      - Level 7 ... 1057
      - Narrowband ... 1058
      - Transmitters ... 1058
      - Wideband ... 1058
    - Modulator/Demodulator ... 686
    - Narrowband ... 686
    - Transmitters ... 686
    - Transistors
      - HF ... 1059

    - Low Noise 1055
    - Small Signal 1059
    - UHF 1059
    - VHF 1059
  - Wideband 685
- RGB to NTSC/PAL Encoder 640
- RMS to DC Converters, ICs 639
- Sample and Hold Amplifiers 651, 712
- SCRs 707, 736
- SCSI Active Terminators 737
- Signal Compression ICs
  - Logarithmic Amplifiers 640
  - Variable Gain Amplifiers 640
- Signal Conditioner ICs 643
- SIMMs 673
- Software 717, 735, 743
- SRAMs 673
- Supply Monitors 739
- Switched Capacitor Filters 712
- Switched Capacitor Voltage Converters 734
- Switches ICs
  - General Purpose 670
  - High Current 713
  - High Side 652
  - Low Side 652
- Switching Power Supply Controllers 734
- Switching Regulators 690, 712, 739
- Technical Literature 674, 717, 735, 743
- Telecommunication Circuits 730
- Temperature Sensor ICs 642, 711
- Temperature Switches 643
- Thermocouple Signal Conditioners 643
- Thermo Pads 717
- Thyristors 707, 736
- Timers 722, 733
- Timers/Oscillators 655
- Transient Surge Suppressors
  - “C” III Series 663
  - General Purpose 703, 704
  - LA Series 662
  - ML Series 663
  - SIOV Metal Oxide Varistors 724, 725
  - SVP Surge Voltage Protectors 725
  - Surgectors 663
  - Z-Trap 648
  - ZA Series 661, 662
- Transistors
  - Arrays 655, 732
  - Bipolar 693, 694, 695, 717, 718
  - Bipolar Power 695, 696, 697
  - FETs 697, 698
  - General Purpose 735, 736
  - JFETs 697
  - Microwave 664
  - MOSFETs 697, 698, 699
  - Multiple 694
  - Power 723
  - RF Amplifiers 700
  - RF Monolithic ICs 700
  - RF Power Bipolar Transistors 699
  - RF Power MOSFETs 698, 699
  - RF Small Signal 699, 700
  - Small Signal General Purpose 723
  - Surface Mount Bipolar 694
  - Surface Mount JFETs 697
  - Surface Mount TMOS 698
  - TMOS 697, 698
  - TMOS Power MOSFETs 698
  - Unijunction 723
- TRIACs 707, 736
- UARTs 731
- Under Voltage Sense/Reset Controllers 690
- Video Amplifiers 672
- Video Buffers 672
- Video Multiplexers/Amplifiers 672
- Video Pre-Amps/CRT Drivers 710
- Video RAMs 673
- Video Switches, RGB 672
- Voice ICs
  - Encoders 686
  - IF Circuits 686
  - Modulators 686
  - Sound IF Detector 686
  - Video Capture Chip Sets 686
- Voltage Comparators 709
- Voltage Monitoring Circuits 653
- Voltage References 641, 690, 710, 711, 734
- Voltage Regulators 689, 690, 723, 734, 736
- Voltage Sense/Reset Controllers 690
- Voltage Suppressors 703, 704
- Voltage to Freq./Freq. to Voltage Converters 640, 641
- Z-Trap Metal Oxide Varistors 648

- **Sensors**
  - Photoelectric 584, 589, 594
  - Photomicro 590
  - Pressure 691, 692
  - Proximity 580, 581, 582, 584, 589, 806, 820
  - Temperature 642, 711
- **Shunts** 149, 200, 243, 276, 790
  - DIP 790
- **Signal Compression ICs**
  - Logarithmic Amplifiers 640
  - Variable Gain Amplifiers 640
- **Signal Conditioner ICs** 643
- **SIMMs** 673
- **Sirens** 927
- **Sockets** 376, 377
  - DIM 290
  - DIP 211, 236, 237, 247, 272, 273, 287, 288, 300
  - Jumper Assemblies 238
  - PGA 212, 237, 247, 272, 288
  - PGMA 237
  - PLCC 212, 237, 248, 288
  - Plug Adapter Assemblies 238
  - Relay 269, 316
  - SIMM 212, 280
  - SIP 236, 300
  - SOJ 212, 238
  - Solderless Sockets 238
  - Strip 273, 287
  - Transistor 238, 273
  - ZIF 248
  - ZIP-DIP 149
- **Software** 717, 735, 743, 1033
- **Solder (Section 12)**
  - Section Index 758
  - 311 Water Soluble Core 766
  - Acid Wire 766
  - Bar 766
  - Electronic Silver 766
  - Kwik Draw 766
  - Lead Free Wire 766
  - Mildly Activated Rosin Core 766
  - No Clean Flux Core 766
  - Pocket Pak 766
  - Rosin Core 766
- **Solder Braid**
  - No-Clean Wick Desoldering Braid 784
  - Pro Wick Desoldering Braid 784
  - Pure Copper 765
  - Rosin Flux Solder Removal Braid 763
  - Type 44 Rosin Based Flux 766
  - Type 951 No Clean Flux 766
- **Soldering/Desoldering Equipment (Section 12)**
  - Section Index 758
  - Bar Solder 766
  - Bread Boards 772
  - Butane 765, 767, 768, 776
  - Butane Soldering/Iron Torches 765, 767, 776
  - Cordless Soldering Irons 767, 773, 776
  - Desoldering Pumps 769, 775, 776
  - Desoldering Tools/Stations 765, 769, 770, 772, 779
  - Dispensers 761, 771, 776
  - Drill 773
  - Drill Accessories 773
  - Electronic Temperature Controlled Soldering Station 765
  - ESD Soldering Stations 762, 774, 777, 778, 779
  - Extraction/Insertion Tool 769
  - Filer/Sander 773
  - Flux Pens 766
  - Flux Removers 763, 764, 780, 781, 783, 785
  - Flux/No Clean 783
  - Fluxes 783
  - Fume Absorbers 769
  - Fume Extractor 765, 779
  - Handles 775
  - Heat Blowers 768
  - Heat Guns 334, 765, 768, 775
  - Heat Tools 767, 775
  - Heaters 767, 768
  - Heatsink Compounds 782, 784
  - Lead Bender 771
  - Light Tool 773
  - Magnifying Lamp 765
  - Masks 784
  - Overcoat Pen 763
  - PC Boards 772
  - Polishing Bars 776
  - Portable Hi-Speed Desoldering Tool (Corded) 765
  - Quick Bond Kit 763
  - Refillable Butane Gas-Powered Soldering Tool 765
  - Rework Nozzles 770
  - Rework Systems 770, 779
  - RMA Fluxes 783
  - Round House 760
  - Self Contained Vacuum 773
  - Self Igniting Cordless Irons 767, 776
  - Solder 760, 766
  - Solder Aid Kit 765
  - Solder Popper 765
  - Solder Pots 759, 761
  - Solder Sponges 762, 776
  - Solder Stands 760, 762, 772, 775, 776
  - Solder Stations 759, 762, 765, 769, 770, 771, 773, 774, 778, 779
  - Solder Wick 763, 765, 784
  - Soldering Aids 765
  - Soldering Gun Kits 777
  - Soldering Guns 776, 777
  - Soldering Irons 760, 761, 762, 765, 767, 771, 772, 773, 774, 776, 777, 778
  - Solvent Dispensers 776
  - Solvents/Cleaners 780, 781
  - Swabs 764, 786
  - Temperature Control Stations 759, 762, 765, 774, 778, 779
  - Thermal Tweezers 779
  - Thinners 783
  - Tip Cleaner 760
  - Tips 762, 765, 771, 773, 774, 775, 776, 777, 778
  - Tweezers 331, 759, 770, 779
  - Ultrasonic Cleaners 760
  - Water Soluble Fluxes 783
  - Wick Gun 761
- **Solder Wick**
  - No-Clean Wick Desoldering Braid 784
  - Pro Wick Desoldering Braid 784
  - Pure Copper 765
  - Rosin Flux Solder Removal Braid 763
  - Type 44 Rosin Based Flux 766
  - Type 951 No Clean Flux 766
- **Solid State Power Controls** 949
- **Sonalerts** 925
- **Spacers — See Hardware**
- **Speakers** 924
  - Directional Bookshelf Speaker 919
  - In-Wall Speaker Selector Switches 919
  - In-Wall Speakers 919
  - In-Wall Subwoofer 919
  - Shielded Center Channel Speaker 919
  - Speaker Wire 919
  - Subwoofer Box 919
  - TV Wall Mounts 919
  - Volume Control Switches 919
- **SRAMs** 673
- **Standoffs — See Hardware**
- **Static Control Products**
  - Accessories 756, 757
  - Air Ionizers 329
  - Anti-Fatigue Floor Mats 330
  - Anti-Static Labels 757
  - Bags, Static Shielding 329
  - Big Bath 781
  - Clean-Walk Mats 757
  - Conductive Foam 329, 757
  - Cords, Replacement 330
  - Dissipative Three-Layer Floor and Table Mats 756
  - Duster 781
  - ESD Field Service Kit 756
  - ESD Warning Labels 329
  - Foam, Electrically Conductive 757
  - Freezer 763, 781
  - Grounding Kit, Portable 329
  - Hand Lotion 764, 766
  - Heel Grounders 756
  - Heel Grounding Straps 330
  - High Strength Flux Remover 781
  - Hinged Containers, Electrically Conductive 757
  - Ionized Air Blower 757
  - Keyboard Grounding Strap 329
  - Keyboard Pads 756
  - Keyboard Strip, Static Control 756
  - Mat and Benchtop Reconditioner 764, 766
  - Mats
    - Floor 330, 756
    - Table 756
      - Flexible 330
    - Terminal 329
  - Optical Cleaner 781
  - Plast-N-Glass 764
  - Portable Field Service Grounding Kits 756
  - Screen and Keyboard Cleaner 766
  - Screen Prep 764
  - Shoe Ground Assembly 756
  - Static Null 780, 781
  - Static Sensor 757
  - Static Shielding Bags 329, 757
  - Tape, Anti-Static Utility 757
  - Test Kit for Control Surfaces 756
  - Warning Labels 329, 757
  - Work Station Grounding Kit 330, 756
  - Wrist Strap Tester 756
  - Wrist Straps and Grounding Cords 330, 756
  - Zero Charge AntiStat Spray 786
- **Surface Mount Products**
  - Connectors 202, 238, 242
  - Fuses 29, 424
  - Inductors 133, 134
  - Kits 426, 430, 436
  - Networks 29, 422, 424, 433
  - Resistors 426, 429, 430, 436, 443, 445
  - Switches 794
  - Trimmers 388, 391, 419
- **Surge and Noise Protection Strips, All Applications** 492, 495, 504, 506, 510, 513
- **Surge Protection Products**
  - SEN Series 30
  - Sentry 30
  - Strip or Wall Outlets 921
- **Swabs**
  - Chamois Tips 764, 786
  - Cotton Tip 786
  - Double Head Cotton Swab 782
  - Flextips 764, 786
  - Foamtips 764
  - Poly and Cotton Lint Free Swabs 782
- **Switches (Section 13)**
  - Section Index 787
  - Basic Switches 809, 810, 813, 836
  - Binary Switches 788, 827
  - Circuit Breakers 26
  - DIP Switches 790, 793, 794, 798, 799, 823, 827
  - DIP Shunts 790
  - Disconnect Switches 789
  - Emergency Stop Switches 840
  - Flex Switches 838
  - Foot Switches 824
  - Key Switches 799, 800, 805, 806, 835, 840
  - Keyboard Switches 810
  - Keylock Switches 828
  - Keypad Switches 817, 829
  - Knobs 414, 833
  - Lever Handle Switches 795, 798, 809, 812, 823, 825
  - Lighted Switches 788, 805, 826, 831, 837, 840, 841
  - Limit Switches 837
  - Low Torque Switches 810
  - Mechanical Switches 797, 836
  - Miniature Switches 796, 797, 799, 804, 808, 810, 812, 814, 818, 821, 828
  - Mushroom Switches 822, 841
  - Paddle Switches 826
  - Panel-Mounted Switches 795, 796, 798, 802, 810
  - PC-Mounted Switches 794, 795, 796, 798, 802
  - PCB Switches 790
  - Power Switches 797, 833
  - Power Tap 833
  - Precision Switches 804, 836
  - Preprogrammed 790
  - Printed Circuit Board Switches 839

- Proximity Sensors ... 806, 820
- Pushbutton Switches ... 788, 791, 792, 796, 797, 800, 801, 805, 806, 807, 812, 813, 814, 818, 821, 825, 826, 827, 828, 829, 830, 831, 837, 840, 841
- Pushwheel Switches ... 839
- Reed Switches ... 819
- Ribbon Switches ... 838
- Rocker Switches ... 788, 795, 797, 798, 800, 801, 808, 812, 814, 826, 828
- Rotary Switches ... 789, 790, 793, 794, 797, 799, 800, 815, 816, 817, 823, 827, 831, 832, 833, 840
- Safety-Door Switches ... 834
- Sealed Switches ... 791, 793, 797, 798, 799, 800, 806, 813, 829
- Selector Switches ... 822
- Slide Switches ... 792, 794, 795, 797, 801, 828
- Snap-Action Switches ... 791, 804, 813, 827, 830, 834, 835
- Snap-In Switches ... 788, 795, 805, 808, 814, 826, 830, 834
- Strip Switches ... 839
- Subminiature Switches ... 788, 796, 804, 806, 809, 810, 812, 813, 821, 825, 827, 828, 829, 835
- Surface Mount Switches ... 794, 806
- Switching Mats ... 838
- Switchlock Switches ... 799
- Tactile Switches ... 791, 794, 806, 817
- Tap Switches ... 833
- Thumbwheel Switches ... 788, 803, 809, 823, 839
- Tiny Switches ... 791, 793, 800, 801
- Toggle Switches ... 788, 789, 793, 798, 800, 801, 802, 806, 807, 808, 811, 812, 813, 828, 829, 831

T

- **Tachometers** ... 588, 591, 594
- **Tapes/Adhesives**
  - Adhesives ... 781, 763
  - Cold Shrink Tape ... 210
  - Duct Tape ... 1020
  - Electrical, Vinyl ... 18, 1020, 1029
  - Foam Tapes, Acrylic Adhesive ... 1021
  - Hot Melt Adhesive System ... 1022
  - Kapton™ Film Tape ... 1021
  - Lane Marking Tape ... 1020
  - Mastic ... 1020
  - Plating Tapes ... 1021
  - Pronto™ Instant Adhesives ... 1021
  - Rubber ... 1020
  - ScotchWeld™ Adhesive Systems (EPX) ... 1022
  - Shielding ... 1020
  - Spray Adhesives ... 1021
  - Transfer Tape ... 1021
  - VHB (Very-High-Bond) Tape ... 1021
  - Wave Solder Tape ... 1021
- **Technical Literature and Software**
  - IC MASTER ... 743
  - IC MASTER Alternate Source Directory ... 743
  - IC MASTER CD ROM ... 743
  - Quick Cross Software ... 717, 743
  - SK Cross Software ... 735, 743
  - SK Replacement Technical Manual ... 735, 743
  - Technical Manual/Selection Guide ... 717, 743
  - Technicians Guide to Fiber Optics ... 207
  - Thermal Management Software ... 752
  - WinBoard Software ... 717
  - WinDraft Software ... 717
- **Telecommunication Circuits** ... 730
- **Telephone Cable** ... 909, 972, 977, 1004, 1012, 1015
- **Telephone Products and Accessories (Section 15)**
  - Section 15 ... 908
  - Access Module ... 912
  - Accessories ... 920
  - Adapters ... 909, 920
  - Amplifiers ... 934
  - Announcement Equipment ... 912
  - Baluns ... 909
  - Crimping Tools ... 909, 920
  - Data Connectors ... 909
  - Extension Cords ... 917, 920, 921
  - Extension Ringers ... 920
  - Hook-Up Wire ... 920
  - Intercoms ... 918
  - Jacks, PCB ... 205, 224, 245, 278
  - Keystone Jacks ... 204, 909
  - Line Tester ... 920
  - Modular Plugs ... 920
  - Outdoor Bell ... 920
  - Paging Equipment ... 912
  - Plugs ... 204, 250, 909
  - RS-232 Modular Jack Adapter ... 204, 909
  - Stranded Flat Modular Line Cord ... 920
  - Surface Mount Modular Jacks ... 909
  - Tele-Communications Installer Kit ... 909
  - Telephone Cords ... 920, 932
  - Telephone Wire ... 909, 972, 977, 1004, 1012, 1015
  - Twisstop ... 920
  - Wall Jacks ... 920
  - Wall Plates ... 909, 920, 1030
- **Telephone Wire** ... 909, 972, 977, 1004, 1012, 1015
- **Temperature Sensor ICs** ... 642, 711
- **Temperature Switch ICs** ... 643
- **Terminators** ... 179, 303
- **Test Clips** ... 153, 159, 861, 874, 876, 877, 878
- **Test Equipment (Section 14)**
  - Section Index ... 842
  - Accessories
    - "Pee-Wee" Copper Clips ... 876
    - Alligator Clips ... 876, 877
    - Alligator Sets ... 869
    - Banana and Pin Plugs ... 877
    - Battery Chargers ... 889
    - Battery Clips ... 876
    - BNC and Banana Interconnects ... 877
    - BNC Breakouts ... 871, 877
    - Cable Assemblies ... 871
    - Carrying Cases ... 862, 881, 889
    - Clamp-On Ammeter ... 964
    - Clip Kits ... 861, 876
    - Crimp Tool ... 876
    - DMM Kits ... 869
    - Flexible Test Lead Sets ... 869
    - Holsters ... 862
    - Insulated Alligator Clip Banana Jacks ... 872
    - Insulated Oscilloscope Probes ... 868
    - Insulated Test Accessories ... 878
    - Insulators ... 876
    - Kelvin Clips ... 876
    - Logic Probe Panel Voltmeter ... 964
    - Logic Scope Probes ... 868
    - Maxigrabber Sets ... 869
    - MICRO-LC Oscilloscope ... 868
    - Oscilloscope Probes ... 868
    - Patch Cords ... 870
    - Pop Jack DMM Kits ... 869
    - Probe Sets ... 860, 869, 889
    - RF Detector Probes ... 868
    - Semi-Modular Oscilloscope Probes ... 868
    - SMD Products ... 871
    - Solder-On Test Adapters ... 874
    - Sound Meter ... 964
    - Square Pin Receptacles ... 877
    - Test Clips ... 861, 874, 876, 877, 878
    - Test Companion Test Kits Guide ... 873
    - Test Lead Holders ... 871
    - Test Leads ... 861, 878, 881, 964
    - Testers ... 964
  - Capacitance Meter ... 848, 867, 894
  - Component Tester ... 851
  - Counters
    - Frequency ... 848, 884, 891, 902
    - Universal ... 848, 894, 903
  - Current Meters ... 858, 902
  - Decade Boxes
    - Capacitance ... 436
    - Resistance ... 404, 436
  - DMM
    - Bench ... 860
    - Handheld ... 843, 845, 857, 858, 887, 894
    - Snap-Around ... 844, 845, 846, 858, 894
  - Gaussmeter ... 865
  - Generators
    - Audio ... 848, 875
    - Insulation Testers (Meggers) ... 881
    - Microwave Leakage ... 881
    - NTSB/NTSC ... 848
    - Pattern ... 848
    - Pulse ... 866
    - RF Signal ... 852, 875
    - Signal Conditioners/Isolators ... 902
    - Sweep/Function ... 848, 866, 875, 894
  - LAN Meter ... 854
  - Light Meter ... 845
  - Multimeters
    - Analog ... 852
    - Bench ... 847
    - Digital ... 845, 846, 847, 851, 863, 864, 865, 893
  - Oscilloscopes ... 850, 851, 856, 875, 883, 884, 886, 889
  - Power Supplies
    - General Purpose ... 843, 461, 852, 866, 886, 892
    - Tracking Output ... 461
    - Triple Output ... 461
  - Probes ... 851, 856, 883, 885, 867, 888, 890, 894
    - High Voltage ... 851
    - Kits ... 869
    - Logic ... 867, 894
    - Oscilloscope ... 875, 890
  - Sound Meters ... 881
  - Tachometer ... 845
  - Temperature Meter ... 845, 859, 902
  - VOM — See Multimeters
- **Test Products**
  - Probe-It Clips ... 153
  - Test Clips ... 153, 159
  - Test Probe Receptacles ... 211
  - Test Probes and Leads ... 286
- **Thermal Management**
  - Extrusions, 4 Foot ... 753
  - Heat Sinks
    - Slide-On For DIPs ... 751
    - TO-3 ... 751
    - TO-5 ... 751
    - TO-92 ... 753
    - TO-126 ... 752, 753
    - TO-127 ... 752
    - TO-202 ... 752
    - TO-218 ... 752
    - TO-220 ... 751, 752, 753
  - Insulators ... 753
  - Ther-O-Bond Adhesive ... 753
  - Ther-O-Link, Thermally Conductive Compound ... 753
  - Insulator Kits ... 717
- **Thermistors**
  - Cryogenic ... 450
  - Glass Beads ... 450
  - Glass Encapsulated ... 450
  - Glass Probes ... 450
  - Inrush Current Limiters ... 449
  - Kits ... 449
  - NTC ... 449, 451
  - PTC ... 449
  - Resettable Fuses ... 449
  - Standard ... 450
  - Temperature ... 450
- **Thermo Pads** ... 717
- **Thermocouple Signal Conditioners** ... 643
- **Thyristors** ... 707, 736
- **Tie Wraps** ... 1019, 1026, 1027, 1028
- **Time Controlled Outlet Strip** ... 586
- **Timer ICs** ... 722, 733
- **Timers and Time Switches** ... 583, 586, 587, 588, 593
- **Timers, Counters and Sensors**
  - Section Index ... 514
  - Controllers ... 583, 594
  - Counters ... 585, 588, 591, 593, 594
  - Hand/Desk Tally ... 585, 591
  - Hourmeters ... 585, 592, 593
  - In-Wall Timer ... 586
  - Interval Timer ... 583
  - Photoelectric Sensors ... 584, 589, 594
  - Photomicrosensors ... 590
  - Predetermining Counters ... 591, 594
  - Programmable ... 591, 594
  - Proximity Sensors ... 580, 581, 582, 584, 589, 820
  - Sensors ... 580, 581, 582, 584, 589, 590, 594
  - Solid State Timers ... 588
  - Tachometers ... 588, 591, 594
  - TIme Controlled Outlet Strip ... 586
  - Time Switches ... 586, 587
  - Totalizers ... 591, 594
- **Timers/Oscillators** ... 655
- **Tools (Section 6)**
  - Alignment and Adjusting Tools ... 337
  - Alignment Kits ... 332
  - Attache Case Tool Kits ... 319, 320, 354
  - Balldriver Hex Tools ... 323
  - Balldriver L-Wrench Sets ... 323
  - Bases ... 346
  - Bits-Selector ... 351
  - Burnishers ... 337
  - Cable Cutters/Strippers ... 297, 986
  - Cable-Check ... 345
  - Coax Strippers ... 154, 335, 345
  - Coax-Check Tester and Remote ... 345
  - Connector Removal Tools ... 335
  - Connector Tooling — See Separate Listing Under Connectors
  - Crimping Tools ... 334, 343, 345, 771, 986
  - Cutting Tools ... 332, 333, 334, 343, 772, 986
  - Drill and Accessories ... 773
  - Drill Press Stands ... 346
  - Electricians Insulated Sets ... 351
  - Electricians Knife ... 353
  - Ergonomic Hand Tools ... 331
  - Extraction and Insertion Tools ... 337
  - Filer/Sander ... 773
  - Fish Tapes ... 1027
  - Fold-Up Tool Sets ... 323
  - Fuse Pullers ... 335
  - Gas Lamp Tester ... 333
  - Grounding System ... 335
  - Hand Tools ... 353
  - Hand Wrapping Tools ... 336
  - Handle Kits ... 351
  - Heat Guns and Accessories ... 334, 985
  - Industry Standard Tooling and Kits ... 215, 321
  - Insertion and Removal Tool Kits ... 336
  - Knife Set ... 332
  - Lead Bender ... 771
  - Magnetizer/Demagnetizer ... 351
  - Manual Quick-Wrap Gun ... 336
  - Nibbling Tool ... 332
  - Patch-Check ... 345
  - Pathfinders ... 335
  - Pliers ... 332, 343, 352, 353
  - Power Bit Adapter ... 355
  - Precision Knives and Blades ... 355
  - Precision Measuring Tools ... 323
  - Precision Tool Sets ... 336, 351
  - Punch Down Tool ... 335, 909
  - Punches ... 333
  - Screwdriver Sets ... 332, 333
  - Screwdrivers ... 354
  - Shears ... 332
  - Specialty Tools ... 323
  - Step Bits ... 333
  - Strippers ... 154, 334, 335, 343, 772, 1027
  - Telecommunication Tools ... 336
  - Tension Gauges ... 337
  - Tensioning Tools ... 1028
  - Termination Kit ... 335
  - Tool Carriers ... 334
  - Tool Kits ... 319, 320, 334, 336, 354, 355
  - Tubing Tools ... 323
  - Tweezers ... 331, 332, 759, 770, 779
  - Tying Tools ... 1028
  - Vises ... 346
  - Voltage Indicators ... 333
  - Wire Strippers ... 154, 332, 345, 986, 1027
  - Wrenches ... 332, 354
- **Totalizers** ... 594, 594
- **Transceivers and Fiber-Optic Evaluation Kits** ... 369
- **Transducers** ... 923, 927, 929
- **Transformers (Section 16)**
  - Section Index ... 935
  - AC/AC, Wall Mount ... 457
  - Audio ... 936, 946, 963
  - Auto Transformers — See Step-Up or Step-Down Under Transformers
  - Buck-Boost ... 951
  - Chassis Mount ... 941
  - Chokes, Filter ... 947, 955
  - Control ... 936, 945, 955
  - Controls, Fully Enclosed ... 952
  - Electrical, General Purpose ... 951
  - Filament ... 937, 955, 963
  - Filter Chokes ... 955
  - Inductors
    - Common Mode and Current Sense ... 947
    - Rod Core ... 948
    - Smoothing Filter Chokes ... 947
    - Toroidal Filter ... 948
  - Industrial Control ... 950

- International Adapter Plugs ... 954
- Isolation
  - Step-Down ... 956, 961
  - Step-Up ... 960
  - Straight ... 956
- Machine Tool Control ... 938
- PC Board
  - Dual Bobbin ... 941
  - Flat Compact ... 942, 962
  - Horizontal ... 940, 943
  - Low Profile ... 957
  - Low Voltage ... 962
  - Split Bobbin ... 942, 958
  - Vertical ... 939
- Plugs, International Adapter ... 954
- Portable Isolation ... 505
- Power ... 937, 945, 946, 962, 963
- Power Controls ... 949
- Rectifier ... 939, 955, 956
- Step-Down
  - Auto Transformers ... 936, 954, 956, 961
  - Isolation ... 936, 954, 960
- Step-Up
  - Auto Transformers ... 954
- Telephone Coupling ... 944, 957
- Variable
  - Enclosed ... 503
  - Enclosures ... 959
  - Motorized ... 952
  - Single Phase
    - 120 Volts ... 952, 959
    - 240 Volts ... 952, 959
  - Three Phase
    - 240 Volts ... 952
    - 480 Volts ... 952
- Wall Plug-Ins
  - Domestic
    - AC-AC ... 477, 953
  - European
    - AC-AC ... 953
    - AC-DC ... 953

Transient Surge Suppressors
- "C" III Series ... 663
- General Purpose ... 703, 704
- LA Series ... 662
- ML Series ... 663
- SIOV Metal Oxide Varistors ... 724, 725
- SVP Surge Voltage Protectors ... 725
- Surgectors ... 663
- Z-Trap ... 648
- ZA Series ... 661, 662

Transient Voltage Suppression ... 504

Transistors
- Arrays ... 655, 732
- Bipolar ... 693, 694, 695, 717, 718
- Bipolar Power ... 695, 696, 697
- FETs ... 697, 698
- General Purpose ... 735, 736
- JFETs ... 697
- Microwave ... 664
- MOSFETs ... 697, 698, 699
- Multiple ... 694
- Power ... 723
- RF Amplifiers ... 700
- RF Monolithic ICs ... 700
- RF Power Bipolar Transistors ... 699
- RF Power MOSFETs ... 698, 699
- RF Small Signal ... 699, 700
- Small Signal General Purpose ... 723
- Surface Mount Bipolar ... 694
- Surface Mount JFETs ... 697
- Surface Mount TMOS ... 698
- TMOS ... 697, 698
- TMOS Power MOSFETs ... 698
- Unijunction ... 723

TRIACs ... 707, 736

Trunk Cable ... 1004

Tubes
- Receiving, Industrial and Special-Purpose ... 357

Tubing (Section 17)
- Section Index ... 964, 965
- All Purpose PVC ... 987
- Braided Polyester Sleeving ... 983, 986, 987
- Conduit ... 987
- Expandable Sleeving ... 987, 1009
- Flexible, Non-Metallic ... 306, 987
- Spiral Wrap ... 762, 987, 1029
- Teflon ... 987
- Webbed Sleeving ... 987
- Zipper Tubing ... 987

Tubing, Heat Shrinkable
- Assortments and Kits ... 215, 321, 967, 985, 1009
- Identification ... 985, 1023
- Kit ... 985, 1009
- Special Material: Fluoropolymer, Kynar, Mylar, Neoprene, Nylon, Polyolefin, PVC, Shielded, Silico, Teflon, Vitron ... 967, 968, 984, 985, 1009, 1015, 1023
- Thick Wall ... 307

Two Way Radios ... 928

U

UARTs ... 731

Ultrasonic Cleaners ... 760

Under Voltage Sense/Reset Controllers ... 690

Uninterruptible Power Systems ... 478, 492, 496, 497, 503, 504, 507, 509

V

Vactrols — Analog Isolators ... 364

Vacuum, Electronics ... 318, 1022

Video Amplifier ICs ... 672

Video Buffer ICs ... 672

Video Cables ... 977, 994

Video Multiplexer/Amplifier ICs ... 672

Video Pre-Amp/CRT Driver ICs ... 710

Video RAMs ... 673

Video Switches, RGB ... 672

VME Backplane Spacer Strips ... 750

VME Backplanes ... 745

VME Extender Cards ... 750

VME Microracks ... 750

VME Prototyping Boards ... 746

VMExcel Monolithic Backplanes ... 750

Voice ICs
- Encoders ... 686
- IF Circuits ... 686
- Modulators ... 686
- Sound IF Detector ... 686
- Video Capture Chip Sets ... 686

Voltage Comparator ICs ... 709

Voltage Monitoring ICs ... 653

Voltage Reference ICs ... 641, 690, 710, 711, 734

Voltage Regulators ... 503, 509, 689, 690, 723, 734, 736

Voltage Sense/Reset Controllers ... 690

Voltage Suppressors
- "C" III Series ... 663
- General Purpose ... 703, 704
- LA Series ... 662
- ML Series ... 663
- SIOV Metal Oxide Varistors ... 724, 725
- SVP Surge Voltage Protectors ... 725
- Surgectors ... 663
- Z-Trap ... 648
- ZA Series ... 661, 662

Voltage to Freq./Freq. to Voltage Converters ... 640, 641, 712

Volume Control ... 925

W

Wick
- No-Clean Wick Desoldering Braid ... 784
- Pro Wick Desoldering Braid ... 784
- Pure Copper ... 765
- Rosin Flux Solder Removal Braid ... 763
- Type 44 Rosin Based Flux ... 766
- Type 951 No Clean Flux ... 766

Wipes ... 764, 786

Wire Management Systems
- Multioutlet ... 1034
- Raceway ... 1034

Wire, Cable and Accessories (Section 17, 5)
- Section Indexes ... 143, 144, 964, 965
- Adhesive Cable Clamps ... 1029
- Assemblies ... 157, 158, 179, 207, 246, 253, 986
- Audio Cable
  - Broadcast and Instrumentation ... 977, 994, 996, 998, 999, 1013
  - Snake Cable ... 996
  - Sound and Control ... 996, 997, 1001, 1003, 1007, 1015, 1016
  - Speaker Wire ... 997, 1010, 1012
  - Unshielded ... 996
- Braid ... 983, 992, 1008, 1010, 1015
- Broadcast and Instrumentation ... 994, 996, 1001
- Busbar ... 983, 992, 1010
- Cable Clamps ... 344, 349, 1029
- Cable Cutters/Strippers ... 154, 297, 985, 986, 1027
- Cable Tie Kit ... 1028
- Cable Ties and Accessories ... 1019, 1026, 1027, 1028
- Cable Wrap ... 762
- Coaxial Cables
  - Broadcast ... 994, 995, 1003, 1008
  - CATV ... 973
  - Ethernet ... 1018
  - High Temperature ... 994, 1008
  - IBM Cables ... 972
  - IEEE ... 973, 1004
  - LAN Trunk Cables ... 973, 1003
  - Low Loss ... 995, 1008
  - Low Triboelectric ... 994
  - Plenum Rated ... 974, 1003
  - Polyethylene ... 972, 1012
  - Precision Video Coaxial Cable ... 994
  - Thin-Net ... 973
  - Video ... 994
- Computer Hook-Up Cable
  - Appletalk ... 1004
  - Ethernet Transceiver ... 1000, 1018
  - IBM ... 972, 1018
- Connectors ... 971, 986
- Convoluted Tubing ... 1029
- Data, Communication and Control Cables
  - Multi-Pair
    - Shielded ... 974, 975, 976, 978, 979, 981, 993, 996, 997, 999, 1000, 1001, 1002, 1003, 1004, 1008, 1014, 1015, 1017
    - Unshielded ... 974, 982, 993, 996, 1002, 1003,
  - Multiconductor ... 1004, 1016
    - Braided Shield ... 975, 993, 998, 999, 1007, 1008, 1014
    - Foil and Braid ... 975, 978, 979, 980, 993, 997, 998, 999, 1001, 1004, 1014, 1017, 1018
    - Foil Shielded ... 974, 975, 978, 980, 981, 996, 998, 999, 1001, 1007, 1013, 1014, 1017, 1018
    - Unshielded ... 974, 980, 993, 997, 998, 1007, 1016, 1017
- Direct Burial Cable ... 993, 1018
- Duct ... 313, 968
- Duplex Wire ... 992
- Enduro ... 1018
- Extension Cords ... 459
- Fire Alarm Cable ... 979, 998, 999, 1012, 1017
- Flat Cable/Ribbon Cable ... 184, 185, 227, 297, 966, 971, 988, 989, 990
- Grip Ties ... 1030
- Heat Guns and Accessories ... 983
- High Voltage Wire ... 1006, 1013
- Hook-Up Wire
  - High Temperature ... 990, 1005
  - Kit ... 970, 990
  - Kynar ... 970
  - Mil Spec ... 969, 970, 990, 1005
  - PVC ... 969, 970
  - Teflon ... 970, 990, 1010
  - Test Lead ... 1005, 1011
  - THHN/TFFN ... 1010
  - UL Rated ... 969, 970, 1005, 1010
- Instrumentation Cables ... 981, 993, 999, 1002
- Labelers ... 1023
- Lacing Tapes and Twine ... 983, 1006
- Lamp Cord ... 997, 1012
- Level 3 ... 982
- Level 5 ... 982, 1018
- Markers — See Wire Markers and Accessories
- Magnet Wire ... 992, 1006
- Microphone Cable ... 997
- Nylon Mounting Bases ... 1028
- Plenum Cables ... 974, 979, 998, 1003, 1004, 1017
- Portable Cord ... 977, 992
- Power Replacement Cords
  - Electric Line Cords ... 456, 459, 460, 485
  - Extension ... 459
  - Fan ... 99
  - International Cordsets ... 485
  - Jumper ... 456
  - Medical Grade ... 460, 485
  - NEMA 5-15P ... 459, 460
  - Power Supply ... 456, 459, 460, 485
  - Retractile ... 460, 1004, 1011
- Restraints ... 1029
- Rite-On Markers ... 1032
- Shielded and Bonding Cable ... 992
- Shielding Tape ... 983, 1020
- Shrink-Tag Markers ... 1032
- Snake Cable ... 996
- Speaker Wire ... 997, 1010, 1012
- Spiral Wrap ... 987, 1029
- Stainless Steel Clamps ... 1029
- Surface Raceway ... 1031
- Tape, Shielding ... 1077
- Telephone Cable ... 972, 977, 1004, 1012, 1015
- Telephone Cords ... 1015
- Telephone Wire ... 909
- Tensioning Tools ... 1028
- Test Prod Wire ... 992
- Thermocouple Wire ... 1011
- Tie Wraps and Accessories ... 1019, 1026, 1027, 1028
- Tools
  - Coaxial Strip and Crimp ... 985, 986
- Transceiver Cable ... 976
- Trunk Cable ... 1004
- Tubing
  - All Purpose PVC ... 987
  - Braided Polyester Sleeving ... 987
  - Conduit ... 987
  - Convoluted
  - Electrical Tubing
  - Flexible, Non-Metallic ... 306, 987
  - Spiral Wrap ... 987
  - Teflon ... 987
  - Webbed Sleeving ... 987, 1009, 1015
  - Zipper Tubing ... 987
- Tubing, Heat Shrinkable
  - Assortments and Kits ... 967, 985
  - Flame Retardant ... 967, 968, 984
  - Hoods ... 985
  - Identification ... 985, 1023
  - Kit ... 215, 321, 967, 985, 1009
  - Low Shrink Temperature ... 968, 985
  - Special Material: Fluoropolymer, Kynar, Mylar, Neoprene, Nylon, Polyolefin, PVC, Shielded, Silicon, Teflon, Vitron ... 967, 968, 984, 985, 1009, 1015, 1023
  - Thick Wall ... 307, 985
- Twinaxial Cable ... 976, 1003, 1008, 1017
- Video Cables ... 977, 994
- Wire Duct and Accessories ... 313, 968
- Wire Markers and Accessories
  - Identification System
    - Accessories ... 1025
    - Printer ... 1025
  - Identifying Tapes ... 1019
  - Marking Pens ... 1019, 1026
  - Shrink Tag ... 985
  - Tape Dispenser ... 1019
  - Wire Marker Booklets ... 334, 1019, 1025
  - Wire Marker Cards ... 1025
  - Wire Marker Printer, Portable ... 1023, 1025
    - Refill Rolls ... 1023
  - Wire Marker Tape ... 1032
  - Wire Markers ... 1032
  - Wire Marking Supplies ... 334
  - Wire Saddles ... 349
  - Wire-Nut Wire Connectors ... 335
  - Wiring Duct and Covers ... 1031

Wire Wrap Terminals and Pins ... 749

Wonder Mask ... 784

Worklights, Accessories ... 365, 378

Wrist Straps (Anti-Static) ... 330, 756

X

Xtra•Guard® ... 980

Z

Zipper Tubing ... 987

BUD INDUSTRIES, INC.

Your Single Source Enclosure Supplier

Call ALLIED ELECTRONICS
1-800-433-5700

The best combination... AMP Products and ALLIED Service.

As your complete component source, ALLIED ELECTRONICS carries a full stock of AMP products based on a computer analysis of what you need most often for production, replacement and repair. In addition, the complete AMP industry standard product line is only a phone call away from any ALLIED Branch. For products that save time, labor and money, specify AMP and order from ALLIED today.

Eurocard Connectors	pg. 213
Filtered Connectors	pg. 180, 181
Memory Card Connectors	pg. 214
Mod plugs & Jacks	pg. 204, 205
RF Connectors	pg. 186-190
Sockets	pg. 211-212
Ribbon Cable Connectors	pg. 183
Terminators	pg. 179

Call 1-800-433-5700

AMP is a trademark

CALL NATIONWIDE 1-800-433-5700

Alabama
Huntsville (205) 721-3500
Mobile (334) 476-1875
Arizona
Phoenix (602) 831-2002
California
Orange County (714) 727-3010
Riverside Area (909) 980-6522
Sacramento (916) 632-3104
San Diego (619) 279-2550
San Fernando Valley (818) 598-0130
San Jose (408) 383-0366
Canada
Ottawa (613) 228-1964
Vancouver (604) 420-9691
Colorado
Denver (303) 790-1664
Connecticut
Cheshire (203) 272-7730
Florida
Jacksonville (904) 739-5920
Miami (305) 558-2511
Orlando (407) 539-0055
Tampa Bay (813) 579-4660
Georgia
Atlanta (770) 497-9544
Idaho
Boise (208) 331-1414

Illinois
N. Chicago (847) 548-9330
Rockford (815) 636-1010
S. Chicago (708) 535-0038
Wood Dale (630) 860-0007
Indiana
Indianapolis (317) 571-1880
Iowa
Cedar Rapids (319) 390-5730
Kansas
Kansas City (913) 338-4372
Kentucky
Louisville (502) 452-2293
Louisiana
New Orleans (504) 466-7575
Maryland/DC Area
Columbia (410) 312-0810
Massachusetts
Boston Area (617) 255-0361
North/West (508) 538-2401
Michigan
Detroit (313) 416-9300
Grand Rapids (616) 365-9960
Minnesota
Minneapolis (612) 938-5633
Missouri
St. Louis (314) 291-7031

Nebraska
Omaha (402) 697-0038
Nevada
Las Vegas (702) 258-1087
New Jersey
Central New Jersey (908) 613-0828
South New Jersey (609) 234-7769
New Mexico
Albuquerque (505) 266-7565
New York
Buffalo (716) 831-8101
East Long Island (516) 234-0485
NYC/W. L. Island (516) 487-5211
Poughkeepsie (914) 452-1470
Rochester (716) 292-1670
Syracuse (315) 446-7411
North Carolina
Charlotte (704) 525-0300
Raleigh (919) 876-5845
Ohio
Cincinnati (513) 771-6990
Cleveland (216) 831-4900
Columbus (614) 785-1270
Oklahoma
Tulsa (918) 250-4505
Oregon
Portland (503) 626-9921

Pennsylvania
Chadds Ford (610) 388-8455
Harrisburg (717) 540-7101
Philadelphia (609) 234-7769
Pittsburgh (412) 931-2774
South Carolina
Greenville (864) 288-8835
Texas
Austin (512) 219-7171
Brownsville (210) 548-1129
Counter Sales (817) 595-6455
Dallas (214) 341-8444
El Paso (915) 779-6294
Fort Worth (817) 595-3500
Houston (281) 446-8005
Utah
Salt Lake City (801) 261-5244
Virginia
Springfield (703) 644-9515
Virginia Beach (804) 363-8662
Washington
Seattle (206) 251-0240
Spokane (509) 891-4088
West Virginia
Charleston (304) 925-2487
Wisconsin
Milwaukee (414) 796-1280

© 1997 Allied Electronics, Inc. An Avnet Company. Printed in U.S.A.

ALLIED ELECTRONICS
An Avnet Company
7410 Pebble Drive
Fort Worth, TX 76118

DO NOT FORWARD
DO NOT RETURN
ADDRESS CORRECTION REQUESTED

CATALOG

BOUND PRINTED MATTER
BULK RATE
U.S. POSTAGE
PAID
BANTA
COMPANY

0000031097
1053364*11*967
COMPUTER SERVICES
DAVID MASON
ELECTRONICS ENGINEER
66 MINT CIR
MIDDLEBURG, FL 32068-4762